

Nemo File Format Specification

Version 2.27

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1 CHANGE HISTORY

New to 2.27

- Added support for HTTP protocol and browsing redirections. (DCOMP)
- Added support for partial success transfer status with HTTP browsing. (DCOMP)
- Added support for no service packet session connection failure status. (PAF)
- Added support for content download start time, content download duration, content status code and HTTP Content-Type parameters. (DCONTENT)
- Added support for content status code parameter. (DCONTENT)
- Added support for DC-HSUPA. (PCHI, PLAIU, MACERATE, SGRANT, AGRANT, EDCHI)
- Added support for radio switch off detach cause. (GAF, GAD)
- Added support for eMBMS scanning. (OFDMSCAN, SCANCONFIG)
- Added support for RAB allocation. (RABA, RABF, RABC, RABD)
- Added support for test system failure status with SIP server deregistration. (SIPREGF, SIPREGD)
- Added support for SIP server re-registration. (SIPREGRE)
- Added support for uplink jitter and packet error rate. (RTPJITTERU)
- Added support for WLAN state information. (WLANCHI)
- Added support for WLAN OFDM and band scanning. (SCANCONFIG, OFDMSCAN)
- Removed Kodiak type parameter from the Kodiak info event to match implementation. (#KODIAK)

2 INTRODUCTION

You should read the following chapters carefully before you start analyzing your measurement files.

This document is a description of the Anite Finland Ltd's open non-proprietary ASCII file format. All Nemo tools produce this type of measurement files and the files can be viewed and analyzed using various methods or tools; e.g., Nemo Outdoor playback functions, Nemo Analyze, or a text editor.

The file format description includes events and event-related parameters for all network technologies that can be measured with the Nemo tools.

2.1 HOW TO READ THIS DOCUMENT

This document is organized in such a manner that it is easy to locate specific events and parameters. From the **Table of Contents**, you will find all events organized in specific groups; e.g., Handover/Handoff events, GPRS Related events, and Call events. All events and event parameters are listed in the **Index** table. The events are also categorized according to different technologies. In other words, if you are looking for all CDMA events, go to the Index (at the end of this document) and find the keyword CDMA events. Under that keyword are listed all CDMA related events and the page where that event can be found.

All events and their parameters are presented in table format.

5.1.2 **INCOMING CALL (CAI)**

Heading

Event Info table

Event ID	CAI
Cellular systems	All
Mode	Voice call, data call
Recorded	Idle Recorded when setup message has arrived from the network. Setup is used instead of paging request, because the information of the call type (voice or data; voice is only acceptable here) is first available in the setup messaging.
Nemo Tools	Nemo Outdoor, Nemo Indoor

Parameters

Parameters table

Name	Type	Description
Call type	Integer	Call type 1 = Voice call 2 = Markov call (CDMA) 3 = Data call 4 = Fax call 7 = Video call 8 = POC call
#MTC	Integer	Number of mobile terminated calls during session The ordinal number of the calls terminated during a measurement session
Number	String	Calling number Phone number from which the call is originated.

Example:

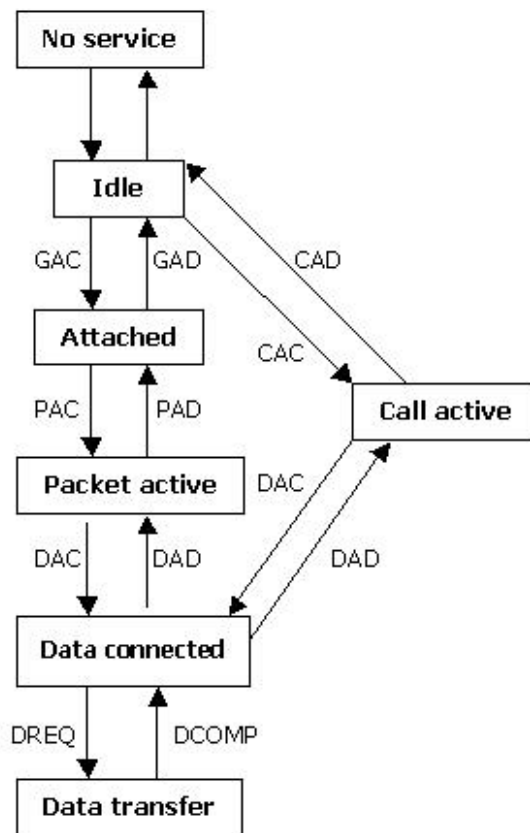
CAI +32.123456 +64.654321 55 1234 1 8 99 12:13:14.156 1 23 12345678

The **Heading** displays the event name and event ID. In measurement files, the events are marked with the event ID only.

The **Event Info** table presents general information of this event; for example, the cellular system where this event may occur and the Nemo tools which produce this event. All the events produced by Nemo tools are listed in this document with the respective parameters.

The following information is given for each event:

- **Event ID**
- **Cellular systems:** refers to the networks in which the event is used.
- **Recorded:** describes the state in which the event is recorded. For voice calls the alternatives are idle and call active. For circuit switched data calls the alternatives are idle, call active, and data transfer. For PS data calls (GPRS) the alternatives are idle, attach, packet active, and data transfer. For GSM the state is idle if the phone is on a control channel and call active if the phone is on a traffic channel. The diagram below describes the different recording states and the events that initiate the state transitions.



- **Nemo Tools:** refers to the Nemo tools that produce the event.

The following information is given for all parameters:

- **Name** defines the short parameter name displayed, for example, in Nemo Outdoor windows.
- **Type:** defines the parameter type. The alternatives are integer, string, hex(adecimal data), and float.
- **Description** of the parameter and possible limits and alternatives. On the first line of this field is stated the long parameter name. This name is used when selecting parameters to be displayed in the Nemo Outdoor windows.

Only the event specific parameters are listed here. However, each event also has the time and location information. But to save space, the time and location parameters are explained only once in chapter 3.3 Event Structure. The event specific parameters are marked with bold type in the event examples.

The **Parameters table** lists all the parameters that belong to this specific event. The number of parameters differs from one event to another: while one event may have only one parameter, another event may have as many as ten. Furthermore, the same parameter can appear in several events. For each parameter are displayed the parameter name, type, and a description of the parameter. If the parameter has been shaded, it means that this parameter is repeated. In other words, there may appear several of these parameters in one event.

Finally, an example of how the event might look like in the actual measurement file is given. For example, this is how you would interpret the example above:

LLCSM,12:13:14.156,,1,1,"UI-CMD","PACCH","01C00B"

The first two parameters after the event ID are common to all events. For more information on these common events, see chapter 3.3 Event Structure.

- LLCSM = event ID; i.e., this is a LLC layer signaling event.
- 12:13:14:156 = time in the following format [Hour]:[Min]:[Sec].[thousands of seconds]
- Empty parameter = Number of context IDs is zero since LLC signaling event does not use context IDs.

The events that come after the time are event specific parameters. Only these parameters are explained in the Parameters table after each event. In the examples, the event specific parameters are marked with **bold** type to

distinguish them from the common parameters.

- 1 = Measured system (GSM)
- 1 = Message direction (uplink)
- UI-CMD = LLC message name
- PACCH = Sub channel name
- 01C00B = Content of the LLC message

3 DESCRIPTION OF THE FILE FORMAT

An event is an ASCII string that has an unspecified length. All events are separated from each other with the ?new line? character. Different fields in each event are separated from each other by the comma character. If a value is not available (n/a), the value is omitted from the ASCII string and the omission indicated by two consecutive commas. This document describes the initial set of events and their parameters. However, new events or event parameters can be added to the file format later on.

[event ID],[time],[number of context IDs],[context ID1],[context ID2],...,[event parameters]

Example:

[event ID]	[time]	[number of context IDs]	[id1]	[event parameters]
CAA,	01:11:46.120,	1,	30,	1,1,"1234567"

3.1 EVENT ID

The event ID is unique identifier for each measurement event. The event ID defines the meaning for context IDs and for the parameters. An event ID is a string of characters without double quotes.

3.2 TIME

Time is presented in the following format:

[Hour]:[Min]:[Sec].[thousands of seconds]

3.3 CONTEXT IDS

Contexts are used in identifying measurement events written during simultaneous ?sessions?. For example, when there are two simultaneous data transfers, both data transfers use a different context ID value. Context ID values are unique only within the scope of each context ID type contained in a single measurement file, i.e. different context ID types can use the same value. In each measurement event there can be an arbitrary number of context IDs for different purposes. The event definition specifies the meaning of each context ID. If a measurement event does not contain any context IDs, number of context IDs is omitted and the omission indicated by two consecutive commas. Note also that the context ID number defines the number of context IDs in a particular measurement event, i.e. the context ID number does not refer to the number of simultaneously active ?sessions?. The context information is presented in the following format:

[number of context IDs],[id1],[id2],[id3],...

Since the idea of context IDs is quite complex, some common usage examples are provided below. In each example, irrelevant event parameters are expressed using three dots. As timestamp information is not relevant either, the text 'timestamp' is used in place of the timestamp.

Example 1

PAA,timestamp,1,100,...

The PAA measurement event starts a new packet session (in 3GPP systems this is the same as PDP context). The event contains only one context ID value, the value 100. The PAA measurement event specification defines that the first and the only context ID is the same as Packet session context ID. Other measurement events can use the Packet session context ID value 100 to refer to this particular packet session.

Example 2

PAC,timestamp,1,100,...

The PAC measurement event is written when a packet session is connected. The event contains only one context ID value, the value 100. Based on the event specification, the type of the context ID is Packet session context ID, i.e. the same as with the PAA measurement event. This packet session connection is intended to be paired with the PAA measurement event in Example 1. If there are multiple simultaneous packet session attempts, the context ID value indicates which of the packet sessions is connected.

Example 3

DAA,timestamp,3,150,100,...

The DAA measurement event is written for each data connection attempt, e.g. when FTP logon is started. The measurement event contains three context ID values, the values 150, 100, and n/a. Based on the event specification, the first context ID is Data connection context ID. As with the PAA measurement event, other measurement events can use the Data connection context ID value 150 to refer to this particular data connection.

The type of the second context ID is packet session context ID with the context ID value 100. Again, this context ID refers to the packet session started in Example 1. The type of the last context ID is Call context ID without context ID value. The DAA measurement event does not refer to any circuit-switched data as there is no context ID value. This behaviour is normal and due to a situation where the event is already associated with some packet session. Data connection can be established using either a packet connection or a circuit-switched connection, but not both. Thus, only one of the context IDs can have a valid value.

Example 4

MSGa,timestamp,1,100,1,1,...

The MSGa measurement event is used in indicating SMS or MMS message sending. The event contains only one context ID value, the value 100. As the MSGa event specification defines two different context types, the use of the parameter Message type is necessary for deducing the correct context type. In this particular example, the Message type value is 1 (=SMS message), reflecting the fact that the event contains an SMS context ID.

Note also that even though the SMS context ID value is 100, i.e. the same as the Packet session context ID in the PAA measurement event in Example 1, these two are not related in any way as they differ in their context type. Within the scope of a single measurement file, the context ID values are unique only within each context type.

3.4 EVENT PARAMETERS

An event specifies what parameters or values are presented in each specific case. The parameter field should stay unchanged but new parameters can be added such that backward compatibility is maintained. In practice this means that new parameters can be added to the end of the measurement event or to the middle of the measurement event if event structure supports that kind of additions and normally Number of Parameters -field indicates that.

Example:

Old event CAA,[time],[cellular system],[call type],[phone number]

New event CAA,[time],[cellular system],[call type],[phone number],[new parameter]

Parameter can have one of the following types:

Type	Syntax
Integer	Contains only characters ?-0123456789?, e.g. 593.
Float	Contains always one dot and characters ?-0123456789?, e.g. -30.63.
String	UTF8 string surrounded by double quotes, e.g. "Good measurement!".

4 MEASUREMENT FILE NAMING

Measurement files are named in following format:

[filename].[device ID].nmf

Filename is defined by user or auto-generated by measurement tool.

Device ID is used to separate simultaneous measurement files when multiple devices are used simultaneously.

5 EVENTS

Antenna gain (#AG)

Event ID	#AG
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
AG	Float	Antenna gain Signal gain achieved by using an external antenna attached to a mobile phone. Value is obtained from the antenna specifications. Unit: dBi

BTS filename (#BF)

Event ID	#BF
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
BTS file	String	BTS filename File containing base station location information. The file extension is NBF.

Cell whitelist (#CELLWHITELIST)

Event ID	#CELLWHITELIST
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
BTS whitelist	String	BTS whitelist filename File containing a list of whitelisted base stations.

Conversion info (#CI)

Event ID	#CI
Cellular systems	All

Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

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Name	Type	Description
Converter name	String	Converter name
Converter version	String	Converter version
Converted file	String	Converted filename

Cable loss (#CL)

Event ID	#CL
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

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Name	Type	Description
CL	Float	Cable loss Signal loss due to the antenna cable when using external antenna attached to a mobile phone. Value is obtained from the cable specifications. Unit: dBm

Device label (#DL)

Event ID	#DL
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Name	Type	Description
Device label	String	Device label Short textual description of the device. For example, this could contain information about the usage of the device.

Device name (#DN)

Event ID	#DN
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

Parameters |

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Name	Type	Description
Device name	String	Device name Describes the type of mobile phone used in measurements.

Device system (#DS)

Event ID	#DS
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

Parameters |

Parameters |Top|

Name	Type	Description
Number of supported systems	Integer	Number of supported systems
Supported systems	Integer	Supported systems Supported systems. Depends on the measurement tool and device capabilities. With fixed-line measurement tools, it is also possible to use PSTN and ISDN values. 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD

		8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
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Device type (#DT)

Event ID	#DT
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters [|Top](#)

Name	Type	Description
Device type	Integer	Device type 1 = Phone 2 = Scanner

Device configuration (#DC)

Event ID	#DC
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log the static device configuration, e.g. supported down converters or front ends etc.
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
Device configuration	String	Device configuration At the moment this is only used to define supported down converters with FSR1 scanner.

EVRC info (#EVRC)

Event ID	#EVRC
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor

|Parameters |

Parameters |Top|

Name	Type	Description
EVRC status	Integer	EVRC status 0 = Off 1 = On

File format (#FF)

Event ID	#FF
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

|Parameters |

Parameters |Top|

Name	Type	Description
File format version	String	File format version

Floorplan information (#FLOORPLAN)

Event ID	#FLOORPLAN
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor

Parameters |

Parameters [|Top](#)

Name	Type	Description
Floorplan file name	String	Floorplan file name
Floorplan coordinate system	Integer	Floorplan coordinate system 1 = GPS 2 = Metric 3 = UTM Universal Transverse Mercator coordinates. See more http://en.wikipedia.org/wiki/Universal_Transverse_Mercator_coordinate_system .
iBwave file name	String	iBwave file name
Venue name	String	Venue name Venue or address of the building.
Building name	String	Building name
Floor name	String	Floor name

Equipment identity (#EI)

Event ID	#EI
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

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Name	Type	Description
Device identity	String	Device identity This value is unique for each piece of equipment. For GSM and UMTS systems this is the same as IMEI (International Mobile Equipment Identity).

Handler version (#HV)

Event ID	#HV
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
Handler version	String	Handler version Defines the handler version that was used when generating the file.

Device hardware version (#HW)

Event ID	#HW
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

Parameters |

Parameters |Top|

Name	Type	Description
Hardware version	String	Hardware version
Manufacturer	String	Manufacturer
Model	String	Model

Measurement ID (#ID)

Event ID	#ID
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

[Parameters](#) |

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Name	Type	Description
Measurement ID	String	Measurement ID The identification tag is generated by using Microsoft Windows GUID functions. It is used to identify all simultaneously generated measurement files made by one measurement tool.

Server information (#SERVER)

Event ID	#SERVER
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for Invex](#) |

Parameters [|Top](#)

Name	Type	Description
Server HW type	Integer	Server hardware type 1 = Invex I 2 = Invex II

Parameters for Invex [|Top](#)

Name	Type	Description
Invex Host	String	Invex host address
Invex Connector	Integer	Invex device connector 1 = USB 1 2 = USB 2 3 = USB 3 Only with Invex II. 4 = USB 4 Only with Invex II. 5 = USB 5 Only with Invex II. 6 = USB 6 Only with Invex II.

Server hardware information (#SERVERHW)

Event ID	#SERVERHW
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor

Parameters | Parameters for Outdoor | Parameters for Invex |

Parameters [\[Top\]](#)

Name	Type	Description
Server HW type	Integer	Server hardware type 0 = Outdoor 1 = Invex I 2 = Invex II

Parameters for Outdoor [\[Top\]](#)

Name	Type	Description
Invex HIM model	String	Invex handset isolation module model
Invex HIM HW	String	Invex handset isolation module hardware version
Invex HIM SW	String	Invex handset isolation module serial number
Invex HIM SW	String	Invex handset isolation module software version
Invex HIM device ID	String	Invex handset isolation module device ID
Invex CPU model	String	Invex CPU model

Parameters for Invex [\[Top\]](#)

Name	Type	Description
Invex UIC model	String	Invex UIC model
Invex UIC HW	String	Invex UIC hardware version
Invex UIC SN	String	Invex UIC serial number
Invex UIC SW	String	Invex UIC software version
Invex BP model	String	Invex backplane model
Invex BP HW	String	Invex backplane hardware version
Invex BP SW	String	Invex backplane serial number
Invex BP SW	String	Invex backplane software version
Invex HIM model	String	Invex handset isolation module model
Invex HIM HW	String	Invex handset isolation module hardware version
Invex HIM SW	String	Invex handset isolation module serial number
Invex HIM SW	String	Invex handset isolation module software version
Invex HIM device ID	String	Invex handset isolation module device ID
Invex CPU model	String	Invex CPU model
Invex chassis number	Integer	Invex chassis number
Invex slot number	Integer	Invex slot number

License information (#LICENSE)

Event ID	#LICENSE
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log license information.
Tools	Nemo Outdoor

Parameters | Parameters for HASP |

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Name	Type	Description
License type	Integer	License type 1 = HASP

Parameters for HASP |Top|

Name	Type	Description
License serial number	String	License serial number
License expiration date	String	License expiration date Date in format dd.mm.yyyy, where dd is the day of the month, mm is the month of the year and yyyy is the year. Empty string when expiration date is not defined.
TS expiration date	String	Technical support expiration date Date in format dd.mm.yyyy, where dd is the day of the month, mm is the month of the year and yyyy is the year. Empty string when expiration date is not defined.

License region information (#LICENSEREGION)

Event ID	#LICENSEREGION
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log license region information.
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
#Countries	Integer	Number of countries
#Params/Country	Integer	Number of parameters per country
MCC	Integer	Mobile country code

		See ITU-T recommendation E.212. Range: 0 – 999
#Operators	Integer	Number of operators
#Params/Operator	Integer	Number of parameters per operator
MNC/SID	Integer	MNC/SID This is MNC for 3GPP systems and SID for 3GPP2 systems. Range: 0 – 32767

Map filename (#MF)

Event ID	#MF
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
Map file	String	Map filename Defines the map file used during measurement.

Measurement label (#ML)

Event ID	#ML
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Parameters |Top|

Name	Type	Description
Measurement label	String	Measurement label Short textual description of the measurement.

NMR information (#NMR)

Event ID	#NMR
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor

|Parameters |

Parameters |Top|

Name	Type	Description
NMR version	String	NMR version
NMR features	String	NMR features This is list of supported NMR features, e.g. 'FTP,HTTP,VQ'.

Network name (#NN)

Event ID	#NN
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

|Parameters |

Parameters |Top|

Name	Type	Description
Network name	String	Network name Specifies the name of the measured network, given by the user in the configuration file.

Packet capture state (#PC)

Event ID	#PC
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Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
Packet capture state	Integer	Packet capture state Defines if packet capturing is enabled or disabled. Log file is stored in the same directory as the measurement file and the log file name is the same as the measurement file with the appendix '.pcap'. For example measurement.nemo -> measurement.nemo.pcap. 0 = Disabled 1 = Enabled

Product information (#PRODUCT)

Event ID	#PRODUCT
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

Parameters |

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Name	Type	Description
Product name	String	Product name
Product version	String	Product version

Operating system information (#OS)

Event ID	#OS
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log information about running operating system.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

[Parameters](#)**Parameters** [|Top](#)

Name	Type	Description
Operating system	String	Operating system The operating system name and the version.

Subscriber identity (#SI)

Event ID	#SI
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

[Parameters](#)**Parameters** [|Top](#)

Name	Type	Description
Subscriber identity	String	Subscriber identity This value is unique for each user. For GSM, UMTS, and LTE systems this is the same as IMSI (International Mobile Subscriber Identity).

Subscriber phone number (#SP)

Event ID	#SP
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

[Parameters](#)**Parameters** [|Top](#)

Name	Type	Description
Subscriber phone number	String	Subscriber phone number Same as phone number of the caller for originated calls.

Device software version (#SW)

Event ID	#SW
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

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Name	Type	Description
Device software version	String	Device software version

Test script (#TS)

Event ID	#TS
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Name	Type	Description
Test script file	String	Test script filename Defines the test script that was used during measurements.

Gap to UTC (#UT)

Event ID	#UT
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.

Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q
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Name	Type	Description
UTC to local	Integer	UTC to local time difference Defines the time difference in minutes from UTC time to local time. This is the same as the timezone but it is adjusted by daylight saving. Unit: minute
UTC to timestamp	Integer	UTC to timestamp time difference Defines the time difference in minutes from UTC time to event timestamps. Unit: minute

Unit ID (#UNITID)

Event ID	#UNITID
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Name	Type	Description
Unit ID	String	Unit ID Unique identifier for the measurement unit.

Voice quality version (#VQ)

Event ID	#VQ
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to log static measurement settings.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Server

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Name	Type	Description
VQ type	Integer	Voice quality type Defines what kind of voice quality hardware is used for the voice quality measurements. 0 = Disabled 1 = EVOQ 2 = Soundcard based 3 = Psytechnics PSM 4 = Fixed line 5 = Invex 6 = Nemo media router
VQ version	String	Voice quality version Defines the voice quality hardware version.
VQ device	String	Voice quality device With sound card based voice quality tests, the parameter contains the name of the driver and the number of the channel.

Kodiak info (#KODIAK)

Event ID	#KODIAK
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

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Name	Type	Description
Kodiak version	String	Kodiak version

Start measurement (#START)

Event ID	#START
Cellular systems	All
Record state	Start of the measurement
Description	Recorded at the beginning of the measurement file to indicate the start of the measurement, i.e. the point after which events with measurement information are recorded.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

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Name	Type	Description
Date	String	Date Date in format dd.mm.yyyy, where dd is the day of the month, mm is the month of the year and yyyy is the year.

Stop measurement (#STOP)

Event ID	#STOP
Cellular systems	All
Record state	End of the measurement
Description	Recorded at the end of the measurement file to indicate the end of the measurement, i.e. the point after which events with measurement information are no longer recorded.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

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Name	Type	Description
Date	String	Date Date in format dd.mm.yyyy, where dd is the day of the month, mm is the month of the year and yyyy is the year.

Hash code (#HASH)

Event ID	#HASH
Cellular systems	All
Record state	End of the measurement
Description	Recorded at the end of the measurement (after #STOP measurement event). Contains the hash code that is calculated over the measurement.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q, Nemo Server

Parameters |Parameters for MD5 |

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Name	Type	Description
HASH code type	Integer	HASH code type Defines the type of checksum used for the measurement. 1 = MD5

Parameters for MD5 |Top|

Name	Type	Description
HASH	String (hex)	HASH code Contains MD5 (Message-Digest algorithm 5) hash code calculated over the measurement in hex format. More information about MD5 can be found in http://en.wikipedia.org/wiki/Md5 .

Call attempt (CAA)

Event ID	CAA
Cellular systems	All
Record state	Idle state
Description	Recorded for an originated call when the user has pressed the SEND key. If this is not known (e.g. call activation is done using the keypad of the mobile station), the point in time when the SETUP NAS signaling message or INVITE SIP message (or related when INVITE is lost) is sent to the network. In case of incoming calls, the point in time when the SETUP NAS message or INVITE SIP message (or related when INVITE is lost) is received. Setup is used instead of paging request, because information on the call type (voice or data; voice is only acceptable here) is first available in setup messaging. The CAA measurement event begins the call attempt state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Name	Type	Description
Call context ID	Context	Call context ID
Measured sys.	Integer	Measured system For the incoming call this is the system where the call indication was received. For example for LTE CSFB call the logged system is LTE since the first indication about the incoming call was received in LTE even though the CAA measurement event is logged during GSM/UMTS when the SETUP L3 signaling message was received. 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
Call type	Integer	Call type

		<p>Sometimes the exact call type is not known when SEND key is pressed and in these cases the value of this parameter is either voice (1) or video call (7). The actual established call type is logged to the CAC measurement event.</p> <p>1 = Voice call 2 = Markov call 3 = Data call 4 = Fax call 5 = Dial-up based data call 6 = Loopback call (CDMA) 7 = Video call 8 = Push-to-talk 9 = Push-to-talk between mobiles (TETRA) 10 = VoIP 11 = Skype 12 = QChat 13 = Kodiak 14 = LTE IMS voice 15 = iDEN push-to-talk 16 = LTE IMS video</p> <p>It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video.</p> <p>17 = WLAN IMS voice 18 = WLAN IMS video</p> <p>It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video.</p>
Call direction	Integer	<p>Call direction</p> <p>1 = Originated call The test system makes the call to the other end.</p> <p>2 = Terminated call The test system receives the call from the other end.</p>
Phone number	String	<p>Phone number</p> <p>This is always the remote identity. For originated calls, this is the phone number where the calls are made to and for terminated calls this is the number from which the call is made from. For the VoIP calls the SIP URI format is used.</p>
Own phone number	String	<p>Own phone number</p> <p>This is always the own identity. For originated calls this is the phone number of the caller and for incoming calls this is the own phone number. For the VoIP calls the SIP URI format is used. Currently this parameter is only implemented for the VoIP calls.</p>
Call timeout	Integer	<p>Call timeout</p> <p>The timeout value from call attempt (CAA) to the dedicated channel allocation (CAC 1). If call has not been established during this time the CAF measurement event is recorded.</p> <p>Unit: ms</p>
Unique ID	String	<p>Unique ID</p> <p>This parameter is unique for each call, even between measurement files, and it can be used in post-processing to match originated and terminated calls. The value of the parameter is meaningless and it should only be used for the matching.</p>
CAA time correction	Integer	<p>CAA time correction</p> <p>In some cases the CAA measurement event is logged later than the real call attempt. For example, for incoming calls, the CAA measurement event is logged when the SETUP signaling message is received and not to the paging request. This parameter defines the time difference between the first indication about a call and the CAA measurement event. Currently it has only been implemented for incoming voice and video calls.</p> <p>Unit: ms</p>

Call connect success (CAC)

Event ID	CAC
Cellular systems	All
Record state	Call attempt state
Description	Recorded in different stages of call establishment. This measurement event begins the call connection state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM | Parameters for TETRA |

Parameters [|Top|](#)

Name	Type	Description
Call context ID	Context	Call context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
Call type	Integer	Call type 1 = Voice call 2 = Markov call 3 = Data call 4 = Fax call 5 = Dial-up based data call 6 = Loopback call (CDMA) 7 = Video call 8 = Push-to-talk 9 = Push-to-talk between mobiles (TETRA) 10 = VoIP 11 = Skype 12 = QChat 13 = Kodiak 14 = LTE IMS voice 15 = iDEN push-to-talk 16 = LTE IMS video It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video.

		17 = WLAN IMS voice 18 = WLAN IMS video It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video.
Call connection status	Integer	Call connection status 1 = Traffic channel allocated With GSM after traffic channel is allocated. With UMTS after DCH radio bearer is allocated. With IMS based calls after PRACK related SIP message is sent or received. 2 = Alerting With GSM and UMTS after ALERTING NAS signaling message is sent or received. With IMS based calls after 180 ringing SIP message is sent or received. 3 = Connected With GSM and UMTS after CONNECT is received or CONNECT_ACKNOWLEDGE NAS signaling message is sent or received. With IMS based calls after 200 OK for INVITE or ACK SIP message is sent or received. 4 = Dial-up connection established
#Parameters	Integer	Number of system specific parameters

Parameters for GSM [\[Top\]](#)

Name	Type	Description
TSL	Integer	Timeslot number In case of HSCSD data test call, used timeslots are listed in a DCHI event. Range: 0 – 7

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
TSL	Integer	Timeslot number Range: 1 – 4

Call failed (CAF)

Event ID	CAF
Cellular systems	All
Record state	Call attempt state
Description	Recorded when there is a timeout or a call release before dedicated radio resource allocation for the call. Recorded on timeout after CAA event when no service available. With IMS based calls logged when any BYE related SIP message is sent or received, or if 300 or higher SIP response code is sent or received for INVITE, PRACK, or ACK. The CAF measurement event ends call attempt state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

[Parameters](#) | [Parameters for non-VoIP GSM, UMTS FDD, UMTS TD-SCDMA, and GAN WLAN](#) | [Parameters for non-VoIP TETRA](#) | [Parameters for non-VoIP cdmaOne, CDMA 1x, and EVDO](#) | [Parameters for iDEN](#) | [Parameters for VoIP](#) | [Parameters for Skype](#) | [Parameters for QChat](#) | [Parameters for Kodiak](#)
[Parameters for IMS-based calls](#) | [Parameters for iDEN push-to-talk](#)

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Name	Type	Description
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Call context ID	Context	Call context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
Call type	Integer	Call type 1 = Voice call 2 = Markov call 3 = Data call 4 = Fax call 5 = Dial-up based data call 6 = Loopback call (CDMA) 7 = Video call 8 = Push-to-talk 9 = Push-to-talk between mobiles (TETRA) 10 = VoIP 11 = Skype 12 = QChat 13 = Kodiak 14 = LTE IMS voice 15 = iDEN push-to-talk 16 = LTE IMS video It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video. 17 = WLAN IMS voice 18 = WLAN IMS video It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video.
CS fail. status	Integer	CS call attempt failure status 1 = Timeout before connection Recorded for other than GSM and UMTS systems when call has failed after timeout. With the Nemo Handy this is also recorded when call attempt is aborted after timeout in the call script. 2 = Call was released before connection The caller or the network releases the call attempt before the connection is received. Normally this happens when CM_SERVICE_ABORT layer 3 message is sent or CM_SERVICE_REJECT layer 3 message is received. 3 = Service not available Recorded for call failure when mobile is not in service. 4 = Incoming call rejected Recorded when B party rejects the call. Realization of this is the disconnect signaling message received from the network with CC cause value 16 (user disconnect). 5 = Test system failure The call is considered as a test system failure when any call associated signaling (etc. cm service request, immediate

		<p>assignment, setup, etc.) is not received after the call attempt command has been sent to the mobile. Another reason for this failure cause is when the called phone number is blacklisted or delayed based on country specific telecommunication regulations. Also this failure cause is recorded if called phone number differs in the setup signaling message from the one defined by user to the user interface.</p> <p>6 = SDCCH blocking Recorded for GSM when call fails because SDCCH channel cannot be allocated.</p> <p>7 = TCH blocking Recorded for GSM when call fails because TCH channel cannot be allocated.</p> <p>8 = RRC connection failed Recorded for UMTS when RRC connection cannot be established for the call.</p> <p>9 = Radio bearer setup failed Recorded for UMTS when radio bearer configuration fails or when there is no attempt to allocate radio bearer after RRC connection is established.</p> <p>10 = SDCCH release Recorded for GSM when network releases the SDCCH channel before TCH assignment attempt.</p> <p>11 = SDCCH drop Recorded for GSM when call drops after SDCCH assignment, the SETUP signaling message is received, and before TCH is assigned.</p> <p>12 = TCH assignment failure Recorded for GSM when TCH assignment fails.</p> <p>13 = Incoming call not received Recorded when the incoming call was expected but not received. To be able to log this status code the measurement system must have knowledge about the incoming call.</p> <p>14 = User busy Recorded when B party is busy and cannot answer. Realization of this is the disconnect signaling message received from the network with CC cause value 17 (user busy).</p> <p>20 = PPP error Recorded for circuit-switched data call when PPP layer (MS Windows RAS) has failed to establish PPP connection to the dial-up server. The cause value contains returned RAS error value.</p>
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Parameters for non-VoIP GSM, UMTS FDD, UMTS TD-SCDMA, and GAN WLAN [\[Top\]](#)

Name	Type	Description
CS disc. cause	Integer	<p>CS call disconnect cause If call is dropped due to a dial-up connection error (status code 20), the value is an OS RAS cause. Otherwise CC cause code.</p> <p>1 = Unassigned (unallocated number) 3 = No route to destination 6 = Channel unacceptable 8 = Operator determined barring 16 = Normal clearing 17 = User busy 18 = No user responding 19 = User alerting, no answer 21 = Call rejected 22 = Number changed 25 = Pre-emption 26 = Non selected user clearing 27 = Destination out of order 28 = Invalid number format (incomplete number) 29 = Facility rejected 30 = Response to STATUS ENQUIRY 31 = Normal, unspecified 34 = No circuit/channel available 38 = Network out of order</p>

41 = Temporary failure
42 = Switching equipment congestion
43 = Access information discarded
44 = Requested circuit/Channel not available
47 = Resources unavailable, unspecified
49 = Quality of service unavailable
50 = Requested facility not subscribed
55 = Incoming calls barred within the CUG
57 = Bearer capability not authorized
58 = Bearer capability not presently available
63 = Service or option not available, unspecified
65 = Bearer service not implemented
68 = ACM equal to or greater than ACMmax
69 = Requested facility not implemented
70 = Only restricted digital information bearer capability is available
79 = Service or option not implemented, unspecified
81 = Invalid transaction identifier value
87 = User not member of CUG
88 = Incompatible destination
91 = Invalid transit network selection
95 = Semantically incorrect message
96 = Invalid mandatory information
97 = Message type not non-existent
98 = Message type not compatible with protocol state
99 = Information element non-existent or not implemented
100 = Conditional IE error
101 = Message not compatible with protocol state
102 = Recovery on timer expiry
111 = Protocol error, unspecified
127 = Interworking, unspecified
600 = An operation is pending.
601 = An invalid port handle was detected.
602 = The specified port is already open.
603 = The caller's buffer is too small.
604 = Incorrect information was specified.
605 = The port information cannot be set.
606 = The specified port is not connected.
607 = An invalid event was detected.
608 = A device was specified that does not exist.
609 = A device type was specified that does not exist.
610 = An invalid buffer was specified.
611 = A route was specified that is not available.
612 = A route was specified that is not allocated.
613 = An invalid compression was specified.
614 = There were insufficient buffers available.
615 = The specified port was not found.
616 = An asynchronous request is pending.
617 = The modem (or other connecting device) is already disconnecting.
618 = The specified port is not open.
619 = The specified port is not connected.
620 = No endpoints could be determined.
621 = The system could not open the phone book file.
622 = The system could not load the phone book file.
623 = The system could not find the phone book entry for this connection.
624 = The system could not update the phone book file.
625 = The system found invalid information in the phone book file.
626 = A string could not be loaded.
627 = A key could not be found.
628 = The connection was closed.
629 = The connection was closed by the remote computer.
630 = The modem (or other connecting device) was disconnected due to hardware failure.
631 = The user disconnected the modem (or other connecting device).
632 = An incorrect structure size was detected.
633 = The modem (or other connecting device) is already in use or is not configured properly.
634 = Your computer could not be registered on the remote

network.

635 = There was an unknown error.

636 = The device attached to the port is not the one expected.

637 = A string was detected that could not be converted.

638 = The request has timed out.

639 = No asynchronous net is available.

640 = An error has occurred involving NetBIOS.

641 = The server cannot allocate NetBIOS resources needed to support the client.

642 = One of your computer's NetBIOS names is already registered on the remote network.

643 = A network adapter at the server failed.

644 = You will not receive network message popups.

645 = There was an internal authentication error.

646 = The account is not permitted to log on at this time of day.

647 = The account is disabled.

648 = The password for this account has expired.

649 = The account does not have permission to dial in.

650 = The remote access server is not responding.

651 = The modem (or other connecting device) has reported an error.

652 = There was an unrecognized response from the modem (or other connecting device).

653 = A macro required by the modem (or other connecting device) was not found in the device.INF file.

654 = A command or response in the device.INF file section refers to an undefined macro.

655 = The macro was not found in the device.INF file section.

656 = The macro in the device.INF file section contains an undefined macro.

657 = The device.INF file could not be opened.

658 = The device name in the device.INF or media.INI file is too long.

659 = The media.INI file refers to an unknown device name.

660 = The device.INF file contains no responses for the command.

661 = The device.INF file is missing a command.

662 = There was an attempt to set a macro not listed in device.INF file section.

663 = The media.INI file refers to an unknown device type.

664 = The system has run out of memory.

665 = The modem (or other connecting device) is not properly configured.

666 = The modem (or other connecting device) is not functioning.

667 = The system was unable to read the media.INI file.

668 = The connection was terminated.

669 = The usage parameter in the media.INI file is invalid.

670 = The system was unable to read the section name from the media.INI file.

671 = The system was unable to read the device type from the media.INI file.

672 = The system was unable to read the device name from the media.INI file.

673 = The system was unable to read the usage from the media.INI file.

674 = The system was unable to read the maximum connection BPS rate from the media.INI file.

675 = The system was unable to read the maximum carrier connection speed from the media.INI file.

676 = The phone line is busy.

677 = A person answered instead of a modem (or other connecting device).

678 = There was no answer.

679 = The system could not detect the carrier.

680 = There was no dial tone.

681 = The modem (or other connecting device) reported a general error.

682 = There was an error in writing the section name.

683 = There was an error in writing the device type.

684 = There was an error in writing the device name.

685 = There was an error in writing the maximum connection

speed.

686 = There was an error in writing the maximum carrier speed.

687 = There was an error in writing the usage.

688 = There was an error in writing the default-off.

689 = There was an error in reading the default-off.

690 = ERROR_EMPTY_INI_FILE

691 = Access was denied because the username and/or password was invalid on the domain.

692 = There was a hardware failure in the modem (or other connecting device).

693 = ERROR_NOT_BINARY_MACRO

694 = ERROR_DCB_NOT_FOUND

695 = The state machines are not started.

696 = The state machines are already started.

697 = The response looping did not complete.

698 = A response keyname in the device.INF file is not in the expected format.

699 = The modem (or other connecting device) response caused a buffer overflow.

700 = The expanded command in the device.INF file is too long.

701 = The modem moved to a connection speed not supported by the COM driver.

702 = Device response received when none expected.

703 = The connection needs information from you, but the application does not allow user interaction.

704 = The callback number is invalid.

705 = The authorization state is invalid.

706 = ERROR_WRITING_INITBPS

707 = There was an error related to the X.25 protocol.

708 = The account has expired.

709 = There was an error changing the password on the domain. The password might have been too short or might have matched a previously used password.

710 = Serial overrun errors were detected while communicating with the modem.

711 = The Remote Access Service Manager could not start. Additional information is provided in the event log.

712 = The two-way port is initializing. Wait a few seconds and redial.

713 = No active ISDN lines are available.

714 = No ISDN channels are available to make the call.

715 = Too many errors occurred because of poor phone line quality.

716 = The Remote Access Service IP configuration is unusable.

717 = No IP addresses are available in the static pool of Remote Access Service IP addresses.

718 = The connection timed out waiting for a valid response from the remote computer.

719 = The connection was terminated by the remote computer.

720 = The connection attempt failed because your computer and the remote computer could not agree on PPP control protocols.

721 = The remote computer is not responding.

722 = Invalid data was received from the remote computer. This data was ignored.

723 = The phone number, including prefix and suffix, is too long.

724 = The IPX protocol cannot dial out on the modem (or other connecting device) because this computer is not configured for dialing out (it is an IPX router).

725 = The IPX protocol cannot dial in on the modem (or other connecting device) because this computer is not configured for dialing in (the IPX router is not installed).

726 = The IPX protocol cannot be used for dialing out on more than one modem (or other connecting device) at a time.

727 = Cannot access TCPCFG.DLL.

728 = The system cannot find an IP adapter.

729 = SLIP cannot be used unless the IP protocol is installed.

730 = Computer registration is not complete.

731 = The protocol is not configured.

732 = Your computer and the remote computer could not agree on PPP control protocols.

733 = Your computer and the remote computer could not agree on PPP control protocols.
734 = The PPP link control protocol was terminated.
735 = The requested address was rejected by the server.
736 = The remote computer terminated the control protocol.
737 = Loopback was detected.
738 = The server did not assign an address.
739 = The authentication protocol required by the remote server cannot use the stored password. Redial, entering the password explicitly.
740 = An invalid dialing rule was detected.
741 = The local computer does not support the required data encryption type.
742 = The remote computer does not support the required data encryption type.
743 = The remote computer requires data encryption.
744 = The system cannot use the IPX network number assigned by the remote computer. Additional information is provided in the event log.
745 = ERROR_INVALID_SMM
746 = ERROR_SMM_UNINITIALIZED
747 = ERROR_NO_MAC_FOR_PORT
748 = ERROR_SMM_TIMEOUT
749 = ERROR_BAD_PHONE_NUMBER
750 = ERROR_WRONG_MODULE
751 = The callback number contains an invalid character. Only the following 18 characters are allowed: 0 to 9, T, P, W, (,), -, @, and space.
752 = A syntax error was encountered while processing a script.
753 = The connection could not be disconnected because it was created by the multi-protocol router.
754 = The system could not find the multi-link bundle.
755 = The system cannot perform automated dial because this connection has a custom dialer specified.
756 = This connection is already being dialed.
757 = Remote Access Services could not be started automatically. Additional information is provided in the event log.
758 = Internet Connection Sharing is already enabled on the connection.
759 = An error occurred while the existing Internet Connection Sharing settings were being changed.
760 = An error occurred while routing capabilities were being enabled.
761 = An error occurred while Internet Connection Sharing was being enabled for the connection.
762 = An error occurred while the local network was being configured for sharing.
763 = Internet Connection Sharing cannot be enabled. There is more than one LAN connection other than the connection to be shared.
764 = No smart card reader is installed.
765 = Internet Connection Sharing cannot be enabled. A LAN connection is already configured with the IP address that is required for automatic IP addressing.
766 = A certificate could not be found. Connections that use the L2TP protocol over IPsec require the installation of a machine certificate, also known as a computer certificate.
767 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network has more than one IP address configured. Please reconfigure the LAN connection with a single IP address before enabling Internet Connection Sharing.
768 = The connection attempt failed because of failure to encrypt data.
769 = The specified destination is not reachable.
770 = The remote computer rejected the connection attempt.
771 = The connection attempt failed because the network is busy.
772 = The remote computer's network hardware is incompatible with the type of call requested.

773 = The connection attempt failed because the destination number has changed.
 774 = The connection attempt failed because of a temporary failure. Try connecting again.
 775 = The call was blocked by the remote computer.
 776 = The call could not be connected because the remote computer has invoked the Do Not Disturb feature.
 777 = The connection attempt failed because the modem (or other connecting device) on the remote computer is out of order.
 778 = It was not possible to verify the identity of the server.
 779 = To dial out using this connection you must use a smart card.
 780 = An attempted function is not valid for this connection.
 781 = The encryption attempt failed because no valid certificate was found.
 782 = Connection Sharing (NAT) is currently installed as a routing protocol, and must be removed before enabling Internet Connection Sharing.
 783 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network is either not present, or is disconnected from the network. Please ensure that the LAN adapter is connected before enabling Internet Connection Sharing.
 784 = You cannot dial using this connection at logon time, because it is configured to use a user name different than the one on the smart card. If you want to use it at logon time, you must configure it to use the user name on the smart card.
 785 = You cannot dial using this connection at logon time, because it is not configured to use a smart card. If you want to use it at logon time, you must edit the properties of this connection so that it uses a smart card.
 786 = The L2TP connection attempt failed because there is no valid machine certificate on your computer for security authentication.
 787 = The L2TP connection attempt failed because the security layer could not authenticate the remote computer.
 788 = The L2TP connection attempt failed because the security layer could not negotiate compatible parameters with the remote computer.
 789 = The L2TP connection attempt failed because the security layer encountered a processing error during initial negotiations with the remote computer.
 790 = The L2TP connection attempt failed because certificate validation on the remote computer failed.
 791 = The L2TP connection attempt failed because security policy for the connection was not found.
 792 = The L2TP connection attempt failed because security negotiation timed out.
 793 = The L2TP connection attempt failed because an error occurred while negotiating security.
 794 = The Framed Protocol RADIUS attribute for this user is not PPP.
 795 = The Tunnel Type RADIUS attribute for this user is not correct.
 796 = The Service Type RADIUS attribute for this user is neither Framed nor Callback Framed.
 797 = The connection failed because the modem (or other connecting device) was not found. Please make sure that the modem or other connecting device is installed.
 798 = A certificate could not be found that can be used with this Extensible Authentication Protocol.
 799 = Not available

Parameters for non-VoIP TETRA [\[Top\]](#)

Name	Type	Description
CS disc. cause	Integer	CS call disconnect cause 0 = Cause not defined or unknown 1 = User requested disconnect 2 = Called party busy

		3 = Called party not reachable 4 = Called party does not support encryption 5 = Congestion in infrastructure 6 = Not allowed traffic case 7 = Incompatible traffic case 8 = Requested service not available 9 = Pre-emptive use of resource 10 = Invalid call identifier 11 = Call rejected by the called party 12 = No idle CC entity 13 = Expiry of timer 14 = SwMI requested disconnection 15 = Acknowledged service not completed
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Parameters for non-VolP cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
CS disc. cause	Integer	CS call disconnect cause 0 = Phone is offline 20 = Phone is CDMA-locked until power cycle CDMA only. 21 = Phone has no service 22 = Call has ended abnormally CDMA only. 23 = Received intercept from BS Origination and CDMA only. 24 = Received reorder from BS Origination and CDMA only. 25 = Received release from BS 26 = Received release from BS SO reject, CDMA only. 27 = Received incoming call from BS 28 = Received alert stop from BS Incoming and CDMA only. 29 = Client ended call 30 = Received end activation OTASP call and CDMA only. 31 = MC aborted origination/conversation CDMA only. 32 = Maximum access probes transmitted CDMA only. 33 = Persistence test failure JCDMA and CDMA only. 34 = R-UIM not present 35 = Access attempt already in progress 36 = Access failure for reason other than the above 37 = Received retry order Origination IS-2000 and CDMA only. 38 = Concurrent service not supported by BS 39 = No response received from BS 40 = Call rejected by BS CDMA only. 41 = Concurrent services requested not compatible CDMA only. 42 = Access is blocked by BS CDMA only. 43 = Corresponds to CM_CALL_ORIG_ERR_ALREADY_IN_TC 44 = Call is ending due to emergency call that is flashed over this call CDMA only. 45 = CM is ending GPS call in favor of a user call 46 = CM is ending SMS call in favor of a user call 47 = CM is ending data call in favor of an emergency call 48 = Call rejected because of redirection or handoff

Parameters for iDEN [\[Top\]](#)

Name	Type	Description

CS cause	Integer	Call failure cause 0 = FNE Denies Request 1 = Target Acknowledges Alert 2 = Target Does Not Acknowledge Alert 3 = User Cancelled 4 = Radio Time-out 5 = Radio Denies Request 6 = Normal Termination 7 = Channel Failed 8 = System Busy 9 = Access Failed 10 = Target Not Responding 11 = Target Non-Existent 12 = Unanswered Call
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Parameters for VoIP [\[Top\]](#)

Name	Type	Description
SIP cause	Integer	SIP cause 100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response. 180 = Ringing 181 = Call is being forwarded 182 = Queued 183 = Session progress 199 = Early dialog terminated 200 = OK 202 = Accepted The request has been understood but cannot be processed. 204 = No notification 300 = Multiple choices 301 = Moved permanently 302 = Moved temporarily 305 = Use proxy 380 = Alternative service 400 = Bad request 401 = Unauthorized Used only by registrars or user agents. Proxies should use proxy authorization 407. 402 = Payment required 403 = Forbidden 404 = Not found User not found. 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout (could not find the user in time) 409 = Conflict 410 = Gone The user existed once, but is not available here any more. 411 = Length required 412 = Conditional request failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Unsupported URI scheme 417 = Unknown resource priority 420 = Bad extension Bad SIP protocol extension used, not understood by the server. 421 = Extension required 422 = Session interval too small 423 = Interval too brief 424 = Bad location information 428 = Use identity header 429 = Provide referrer identity 430 = Flow failed 433 = Anonymity disallowed 436 = Bad identity-info 437 = Unsupported certificate

438 = Invalid identity header
 439 = First hop lacks outbound support
 470 = Consent needed
 480 = Temporarily unavailable
 481 = Call/transaction does not exist
 482 = Loop detected
 483 = Too many hops
 484 = Address incomplete
 485 = Ambiguous
 486 = Busy here
 487 = Request terminated
 488 = Not acceptable here
 489 = Bad event
 491 = Request pending
 493 = Undecipherable
 Could not decrypt S/MIME body part.
 494 = Security agreement required
 500 = Server internal error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Server time-out
 505 = Version not supported
 513 = Message too large
 580 = Precondition failure
 600 = Busy everywhere
 603 = Decline
 604 = Does not exist anywhere
 606 = Not acceptable

Parameters for Skype [\[Top\]](#)

Name	Type	Description
Skype cause	Integer	Skype cause Currently this is always n/a.

Parameters for QChat [\[Top\]](#)

Name	Type	Description
QChat cause	Integer	QChat cause 1 = Unsupported 2 = No targets available 3 = No reply 4 = All targets reject 5 = Unknown user 6 = Invalid conference ID 7 = Invalid address 8 = Unknown call 9 = Network delay/timeout 10 = No privilege 11 = Vocoder incompatible 12 = Version not supported 13 = No resources available 14 = Invalid opcode 15 = Bad syntax 16 = Unexpected message 17 = Busy 18 = Call not running 19 = No targets registered 20 = Not a member 21 = Limits exceeded 22 = Insufficient resources for QoS 23 = Foreign dispatch targets 24 = No call type capability 25 = Alert successful 26 = System error 27 = Already a member 28 = Talk group permission denied 29 = No multicast resources

		30 = Insufficient bandwidth 100 = Hangtime timer expired on the MCU 101 = No participants All the participants have left the call. 102 = Server Abort 103 = Unresponsive The server has not been receiving responses from the client. 104 = Originator advanced termination The originator has chosen to tear down the call.
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Parameters for Kodiak [\[Top\]](#)

Name	Type	Description
Kodiak cause	Integer	Kodiak cause 1001 = ACK missing 1101 = ACK failure 1102 = UI input missing 1103 = UI not ready 1104 = API request not expected/applicable

Parameters for IMS-based calls [\[Top\]](#)

Name	Type	Description
VoLTE cause	Integer	VoLTE cause 100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response. 180 = Ringing 181 = Call is being forwarded 182 = Queued 183 = Session progress 199 = Early dialog terminated 200 = OK 202 = Accepted The request has been understood but cannot be processed. 204 = No notification 300 = Multiple choices 301 = Moved permanently 302 = Moved temporarily 305 = Use proxy 380 = Alternative service 400 = Bad request 401 = Unauthorized Used only by registrars or user agents. Proxies should use proxy authorization 407. 402 = Payment required 403 = Forbidden 404 = Not found User not found. 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout (could not find the user in time) 409 = Conflict 410 = Gone The user existed once, but is not available here any more. 411 = Length required 412 = Conditional request failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Unsupported URI scheme 417 = Unknown resource priority 420 = Bad extension Bad SIP protocol extension used, not understood by the server. 421 = Extension required 422 = Session interval too small

423 = Interval too brief
 424 = Bad location information
 428 = Use identity header
 429 = Provide referrer identity
 430 = Flow failed
 433 = Anonymity disallowed
 436 = Bad identity-info
 437 = Unsupported certificate
 438 = Invalid identity header
 439 = First hop lacks outbound support
 470 = Consent needed
 480 = Temporarily unavailable
 481 = Call/transaction does not exist
 482 = Loop detected
 483 = Too many hops
 484 = Address incomplete
 485 = Ambiguous
 486 = Busy here
 487 = Request terminated
 488 = Not acceptable here
 489 = Bad event
 491 = Request pending
 493 = Undecipherable
 Could not decrypt S/MIME body part.
 494 = Security agreement required
 500 = Server internal error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Server time-out
 505 = Version not supported
 513 = Message too large
 580 = Precondition failure
 600 = Busy everywhere
 603 = Decline
 604 = Does not exist anywhere
 606 = Not acceptable

Parameters for iDEN push-to-talk [\[Top\]](#)

Name	Type	Description
CS cause	Integer	Call failure cause 0 = FNE Denies Request 1 = Target Acknowledges Alert 2 = Target Does Not Acknowledge Alert 3 = User Cancelled 4 = Radio Time-out 5 = Radio Denies Request 6 = Normal Termination 7 = Channel Failed 8 = System Busy 9 = Access Failed 10 = Target Not Responding 11 = Target Non-Existent 12 = Unanswered Call

Call disconnect (CAD)

Event ID	CAD
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Cellular systems	All
Record state	Call connection state
Description	Recorded when call has ended and upper layer (call control layer with GSM and UMTS) signaling has released the call. With IMS based calls logged when any BYE related SIP message is sent or received, or if 300 or higher SIP response code is sent or received for INVITE, PRACK, or ACK. The CAD measurement event ends call connection state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for non-VoIP GSM, UMTS FDD, UMTS TD-SCDMA, and GAN WLAN | Parameters for non-VoIP TETRA | Parameters for non-VoIP cdmaOne, CDMA 1x, and EVDO | Parameters for iDEN | Parameters for VoIP | Parameters for Skype | Parameters for QChat | Parameters for Kodiak | Parameters for IMS-based calls | Parameters for iDEN push-to-talk |

Parameters [|Top|](#)

Name	Type	Description
Call context ID	Context	Call context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
Call type	Integer	Call type 1 = Voice call 2 = Markov call 3 = Data call 4 = Fax call 5 = Dial-up based data call 6 = Loopback call (CDMA) 7 = Video call 8 = Push-to-talk 9 = Push-to-talk between mobiles (TETRA) 10 = VoIP 11 = Skype 12 = QChat 13 = Kodiak 14 = LTE IMS voice 15 = iDEN push-to-talk 16 = LTE IMS video It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video. 17 = WLAN IMS voice 18 = WLAN IMS video It is possible to have IMS video call with voice only. In these cases the call type is still IMS video and video codec parameter in the VOIPI measurement event defines the existence of the video.
CS disc. status	Integer	CS call disconnect status 1 = Normal disconnect

		<p>Recorded when the call does NOT end abnormally, i.e. the call is assumed to end successfully. Occurs when the user requests call disconnection or the B party terminates the voice call.</p> <p>2 = Dropped call This status value is used when there is no better description for the dropped call.</p> <p>3 = Dropped out of service Recorded when the call is terminated because of missing service.</p> <p>4 = Dropped during handover/handoff/hard handover</p> <p>5 = Test system failure Currently this status value is never logged but it would be used when an abnormal call ending was caused by the measurement tool.</p> <p>6 = Timeout Logged when the call timeout happens between the dedicated channel allocation (CAC 1) and alerting (CAC 2).</p> <p>11 = Voice quality synchronization lost The call was terminated because voice quality synchronization could not be achieved or it was lost.</p> <p>12 = TCH assignment failure Recorded for GSM when TCH channel assignment fails. Typically this occurs when the late assignment configuration is used or when the terminal's attempt to send ASSIGNMENT COMPLETE signaling message to the network fails.</p> <p>13 = Early release The received call was terminated normally before the predefined call duration was reached. Early release is not logged if user terminates the call.</p> <p>14 = User busy Recorded when B party is busy and cannot answer. Realization of this is the disconnect signaling message received from the network with CC cause value 17 (user busy).</p> <p>20 = PPP error The call was terminated because of RAS failure. The RAS error value is stored in the cause value parameter.</p>
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Parameters for non-VoIP GSM, UMTS FDD, UMTS TD-SCDMA, and GAN WLAN [\[Top\]](#)

Name	Type	Description
CS disc. cause	Integer	<p>CS call disconnect cause</p> <p>If call is dropped due to a dial-up connection error (status code 20), the value is an OS RAS cause. Otherwise CC cause code.</p> <p>1 = Unassigned (unallocated number)</p> <p>3 = No route to destination</p> <p>6 = Channel unacceptable</p> <p>8 = Operator determined barring</p> <p>16 = Normal clearing</p> <p>17 = User busy</p> <p>18 = No user responding</p> <p>19 = User alerting, no answer</p> <p>21 = Call rejected</p> <p>22 = Number changed</p> <p>25 = Pre-emption</p> <p>26 = Non selected user clearing</p> <p>27 = Destination out of order</p> <p>28 = Invalid number format (incomplete number)</p> <p>29 = Facility rejected</p> <p>30 = Response to STATUS ENQUIRY</p> <p>31 = Normal, unspecified</p> <p>34 = No circuit/channel available</p> <p>38 = Network out of order</p> <p>41 = Temporary failure</p> <p>42 = Switching equipment congestion</p> <p>43 = Access information discarded</p> <p>44 = Requested circuit/Channel not available</p> <p>47 = Resources unavailable, unspecified</p> <p>49 = Quality of service unavailable</p>

50 = Requested facility not subscribed
 55 = Incoming calls barred within the CUG
 57 = Bearer capability not authorized
 58 = Bearer capability not presently available
 63 = Service or option not available, unspecified
 65 = Bearer service not implemented
 68 = ACM equal to or greater than ACMmax
 69 = Requested facility not implemented
 70 = Only restricted digital information bearer capability is available
 79 = Service or option not implemented, unspecified
 81 = Invalid transaction identifier value
 87 = User not member of CUG
 88 = Incompatible destination
 91 = Invalid transit network selection
 95 = Semantically incorrect message
 96 = Invalid mandatory information
 97 = Message type not non-existent
 98 = Message type not compatible with protocol state
 99 = Information element non-existent or not implemented
 100 = Conditional IE error
 101 = Message not compatible with protocol state
 102 = Recovery on timer expiry
 111 = Protocol error, unspecified
 127 = Interworking, unspecified
 600 = An operation is pending.
 601 = An invalid port handle was detected.
 602 = The specified port is already open.
 603 = The caller's buffer is too small.
 604 = Incorrect information was specified.
 605 = The port information cannot be set.
 606 = The specified port is not connected.
 607 = An invalid event was detected.
 608 = A device was specified that does not exist.
 609 = A device type was specified that does not exist.
 610 = An invalid buffer was specified.
 611 = A route was specified that is not available.
 612 = A route was specified that is not allocated.
 613 = An invalid compression was specified.
 614 = There were insufficient buffers available.
 615 = The specified port was not found.
 616 = An asynchronous request is pending.
 617 = The modem (or other connecting device) is already disconnecting.
 618 = The specified port is not open.
 619 = The specified port is not connected.
 620 = No endpoints could be determined.
 621 = The system could not open the phone book file.
 622 = The system could not load the phone book file.
 623 = The system could not find the phone book entry for this connection.
 624 = The system could not update the phone book file.
 625 = The system found invalid information in the phone book file.
 626 = A string could not be loaded.
 627 = A key could not be found.
 628 = The connection was closed.
 629 = The connection was closed by the remote computer.
 630 = The modem (or other connecting device) was disconnected due to hardware failure.
 631 = The user disconnected the modem (or other connecting device).
 632 = An incorrect structure size was detected.
 633 = The modem (or other connecting device) is already in use or is not configured properly.
 634 = Your computer could not be registered on the remote network.
 635 = There was an unknown error.
 636 = The device attached to the port is not the one expected.
 637 = A string was detected that could not be converted.
 638 = The request has timed out.
 639 = No asynchronous net is available.

640 = An error has occurred involving NetBIOS.
641 = The server cannot allocate NetBIOS resources needed to support the client.
642 = One of your computer's NetBIOS names is already registered on the remote network.
643 = A network adapter at the server failed.
644 = You will not receive network message popups.
645 = There was an internal authentication error.
646 = The account is not permitted to log on at this time of day.
647 = The account is disabled.
648 = The password for this account has expired.
649 = The account does not have permission to dial in.
650 = The remote access server is not responding.
651 = The modem (or other connecting device) has reported an error.
652 = There was an unrecognized response from the modem (or other connecting device).
653 = A macro required by the modem (or other connecting device) was not found in the device.INF file.
654 = A command or response in the device.INF file section refers to an undefined macro.
655 = The macro was not found in the device.INF file section.
656 = The macro in the device.INF file section contains an undefined macro.
657 = The device.INF file could not be opened.
658 = The device name in the device.INF or media.INI file is too long.
659 = The media.INI file refers to an unknown device name.
660 = The device.INF file contains no responses for the command.
661 = The device.INF file is missing a command.
662 = There was an attempt to set a macro not listed in device.INF file section.
663 = The media.INI file refers to an unknown device type.
664 = The system has run out of memory.
665 = The modem (or other connecting device) is not properly configured.
666 = The modem (or other connecting device) is not functioning.
667 = The system was unable to read the media.INI file.
668 = The connection was terminated.
669 = The usage parameter in the media.INI file is invalid.
670 = The system was unable to read the section name from the media.INI file.
671 = The system was unable to read the device type from the media.INI file.
672 = The system was unable to read the device name from the media.INI file.
673 = The system was unable to read the usage from the media.INI file.
674 = The system was unable to read the maximum connection BPS rate from the media.INI file.
675 = The system was unable to read the maximum carrier connection speed from the media.INI file.
676 = The phone line is busy.
677 = A person answered instead of a modem (or other connecting device).
678 = There was no answer.
679 = The system could not detect the carrier.
680 = There was no dial tone.
681 = The modem (or other connecting device) reported a general error.
682 = There was an error in writing the section name.
683 = There was an error in writing the device type.
684 = There was an error in writing the device name.
685 = There was an error in writing the maximum connection speed.
686 = There was an error in writing the maximum carrier speed.
687 = There was an error in writing the usage.
688 = There was an error in writing the default-off.
689 = There was an error in reading the default-off.
690 = ERROR_EMPTY_INI_FILE

691 = Access was denied because the username and/or password was invalid on the domain.
692 = There was a hardware failure in the modem (or other connecting device).
693 = ERROR_NOT_BINARY_MACRO
694 = ERROR_DCB_NOT_FOUND
695 = The state machines are not started.
696 = The state machines are already started.
697 = The response looping did not complete.
698 = A response keyname in the device.INF file is not in the expected format.
699 = The modem (or other connecting device) response caused a buffer overflow.
700 = The expanded command in the device.INF file is too long.
701 = The modem moved to a connection speed not supported by the COM driver.
702 = Device response received when none expected.
703 = The connection needs information from you, but the application does not allow user interaction.
704 = The callback number is invalid.
705 = The authorization state is invalid.
706 = ERROR_WRITING_INITBPS
707 = There was an error related to the X.25 protocol.
708 = The account has expired.
709 = There was an error changing the password on the domain. The password might have been too short or might have matched a previously used password.
710 = Serial overrun errors were detected while communicating with the modem.
711 = The Remote Access Service Manager could not start. Additional information is provided in the event log.
712 = The two-way port is initializing. Wait a few seconds and redial.
713 = No active ISDN lines are available.
714 = No ISDN channels are available to make the call.
715 = Too many errors occurred because of poor phone line quality.
716 = The Remote Access Service IP configuration is unusable.
717 = No IP addresses are available in the static pool of Remote Access Service IP addresses.
718 = The connection timed out waiting for a valid response from the remote computer.
719 = The connection was terminated by the remote computer.
720 = The connection attempt failed because your computer and the remote computer could not agree on PPP control protocols.
721 = The remote computer is not responding.
722 = Invalid data was received from the remote computer. This data was ignored.
723 = The phone number, including prefix and suffix, is too long.
724 = The IPX protocol cannot dial out on the modem (or other connecting device) because this computer is not configured for dialing out (it is an IPX router).
725 = The IPX protocol cannot dial in on the modem (or other connecting device) because this computer is not configured for dialing in (the IPX router is not installed).
726 = The IPX protocol cannot be used for dialing out on more than one modem (or other connecting device) at a time.
727 = Cannot access TCPCFG.DLL.
728 = The system cannot find an IP adapter.
729 = SLIP cannot be used unless the IP protocol is installed.
730 = Computer registration is not complete.
731 = The protocol is not configured.
732 = Your computer and the remote computer could not agree on PPP control protocols.
733 = Your computer and the remote computer could not agree on PPP control protocols.
734 = The PPP link control protocol was terminated.
735 = The requested address was rejected by the server.
736 = The remote computer terminated the control protocol.
737 = Loopback was detected.

738 = The server did not assign an address.
739 = The authentication protocol required by the remote server cannot use the stored password. Redial, entering the password explicitly.
740 = An invalid dialing rule was detected.
741 = The local computer does not support the required data encryption type.
742 = The remote computer does not support the required data encryption type.
743 = The remote computer requires data encryption.
744 = The system cannot use the IPX network number assigned by the remote computer. Additional information is provided in the event log.
745 = ERROR_INVALID_SMM
746 = ERROR_SMM_UNINITIALIZED
747 = ERROR_NO_MAC_FOR_PORT
748 = ERROR_SMM_TIMEOUT
749 = ERROR_BAD_PHONE_NUMBER
750 = ERROR_WRONG_MODULE
751 = The callback number contains an invalid character. Only the following 18 characters are allowed: 0 to 9, T, P, W, (,), -, @, and space.
752 = A syntax error was encountered while processing a script.
753 = The connection could not be disconnected because it was created by the multi-protocol router.
754 = The system could not find the multi-link bundle.
755 = The system cannot perform automated dial because this connection has a custom dialer specified.
756 = This connection is already being dialed.
757 = Remote Access Services could not be started automatically. Additional information is provided in the event log.
758 = Internet Connection Sharing is already enabled on the connection.
759 = An error occurred while the existing Internet Connection Sharing settings were being changed.
760 = An error occurred while routing capabilities were being enabled.
761 = An error occurred while Internet Connection Sharing was being enabled for the connection.
762 = An error occurred while the local network was being configured for sharing.
763 = Internet Connection Sharing cannot be enabled. There is more than one LAN connection other than the connection to be shared.
764 = No smart card reader is installed.
765 = Internet Connection Sharing cannot be enabled. A LAN connection is already configured with the IP address that is required for automatic IP addressing.
766 = A certificate could not be found. Connections that use the L2TP protocol over IPSec require the installation of a machine certificate, also known as a computer certificate.
767 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network has more than one IP address configured. Please reconfigure the LAN connection with a single IP address before enabling Internet Connection Sharing.
768 = The connection attempt failed because of failure to encrypt data.
769 = The specified destination is not reachable.
770 = The remote computer rejected the connection attempt.
771 = The connection attempt failed because the network is busy.
772 = The remote computer's network hardware is incompatible with the type of call requested.
773 = The connection attempt failed because the destination number has changed.
774 = The connection attempt failed because of a temporary failure. Try connecting again.
775 = The call was blocked by the remote computer.
776 = The call could not be connected because the remote

computer has invoked the Do Not Disturb feature.
 777 = The connection attempt failed because the modem (or other connecting device) on the remote computer is out of order.
 778 = It was not possible to verify the identity of the server.
 779 = To dial out using this connection you must use a smart card.
 780 = An attempted function is not valid for this connection.
 781 = The encryption attempt failed because no valid certificate was found.
 782 = Connection Sharing (NAT) is currently installed as a routing protocol, and must be removed before enabling Internet Connection Sharing.
 783 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network is either not present, or is disconnected from the network. Please ensure that the LAN adapter is connected before enabling Internet Connection Sharing.
 784 = You cannot dial using this connection at logon time, because it is configured to use a user name different than the one on the smart card. If you want to use it at logon time, you must configure it to use the user name on the smart card.
 785 = You cannot dial using this connection at logon time, because it is not configured to use a smart card. If you want to use it at logon time, you must edit the properties of this connection so that it uses a smart card.
 786 = The L2TP connection attempt failed because there is no valid machine certificate on your computer for security authentication.
 787 = The L2TP connection attempt failed because the security layer could not authenticate the remote computer.
 788 = The L2TP connection attempt failed because the security layer could not negotiate compatible parameters with the remote computer.
 789 = The L2TP connection attempt failed because the security layer encountered a processing error during initial negotiations with the remote computer.
 790 = The L2TP connection attempt failed because certificate validation on the remote computer failed.
 791 = The L2TP connection attempt failed because security policy for the connection was not found.
 792 = The L2TP connection attempt failed because security negotiation timed out.
 793 = The L2TP connection attempt failed because an error occurred while negotiating security.
 794 = The Framed Protocol RADIUS attribute for this user is not PPP.
 795 = The Tunnel Type RADIUS attribute for this user is not correct.
 796 = The Service Type RADIUS attribute for this user is neither Framed nor Callback Framed.
 797 = The connection failed because the modem (or other connecting device) was not found. Please make sure that the modem or other connecting device is installed.
 798 = A certificate could not be found that can be used with this Extensible Authentication Protocol.
 799 = Not available

Parameters for non-VoIP TETRA [\[Top\]](#)

Name	Type	Description
CS disc. cause	Integer	CS call disconnect cause 0 = Cause not defined or unknown 1 = User requested disconnect 2 = Called party busy 3 = Called party not reachable 4 = Called party does not support encryption 5 = Congestion in infrastructure 6 = Not allowed traffic case 7 = Incompatible traffic case 8 = Requested service not available

9 = Pre-emptive use of resource
 10 = Invalid call identifier
 11 = Call rejected by the called party
 12 = No idle CC entity
 13 = Expiry of timer
 14 = SwMI requested disconnection
 15 = Acknowledged service not completed

Parameters for non-VolP cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
CS disc. cause	Integer	CS call disconnect cause 0 = Phone is offline 20 = Phone is CDMA-locked until power cycle CDMA only. 21 = Phone has no service 22 = Call has ended abnormally CDMA only. 23 = Received intercept from BS Origination and CDMA only. 24 = Received reorder from BS Origination and CDMA only. 25 = Received release from BS 26 = Received release from BS SO reject, CDMA only. 27 = Received incoming call from BS 28 = Received alert stop from BS Incoming and CDMA only. 29 = Client ended call 30 = Received end activation OTASP call and CDMA only. 31 = MC aborted origination/conversation CDMA only. 32 = Maximum access probes transmitted CDMA only. 33 = Persistence test failure JCDMA and CDMA only. 34 = R-UIM not present 35 = Access attempt already in progress 36 = Access failure for reason other than the above 37 = Received retry order Origination IS-2000 and CDMA only. 38 = Concurrent service not supported by BS 39 = No response received from BS 40 = Call rejected by BS CDMA only. 41 = Concurrent services requested not compatible CDMA only. 42 = Access is blocked by BS CDMA only. 43 = Corresponds to CM_CALL_ORIG_ERR_ ALREADY_IN_TC 44 = Call is ending due to emergency call that is flashed over this call CDMA only. 45 = CM is ending GPS call in favor of a user call 46 = CM is ending SMS call in favor of a user call 47 = CM is ending data call in favor of an emergency call 48 = Call rejected because of redirection or handoff

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
CS cause	Integer	Call failure cause 0 = FNE Denies Request 1 = Target Acknowledges Alert 2 = Target Does Not Acknowledge Alert 3 = User Cancelled 4 = Radio Time-out

5 = Radio Denies Request
 6 = Normal Termination
 7 = Channel Failed
 8 = System Busy
 9 = Access Failed
 10 = Target Not Responding
 11 = Target Non-Existent
 12 = Unanswered Call

Parameters for VoIP [\[Top\]](#)

Name	Type	Description
SIP cause	Integer	<p>SIP cause</p> <p>100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response.</p> <p>180 = Ringing 181 = Call is being forwarded 182 = Queued 183 = Session progress 199 = Early dialog terminated 200 = OK 202 = Accepted The request has been understood but cannot be processed.</p> <p>204 = No notification 300 = Multiple choices 301 = Moved permanently 302 = Moved temporarily 305 = Use proxy 380 = Alternative service 400 = Bad request 401 = Unauthorized Used only by registrars or user agents. Proxies should use proxy authorization 407.</p> <p>402 = Payment required 403 = Forbidden 404 = Not found User not found.</p> <p>405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout (could not find the user in time) 409 = Conflict 410 = Gone The user existed once, but is not available here any more.</p> <p>411 = Length required 412 = Conditional request failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Unsupported URI scheme 417 = Unknown resource priority 420 = Bad extension Bad SIP protocol extension used, not understood by the server.</p> <p>421 = Extension required 422 = Session interval too small 423 = Interval too brief 424 = Bad location information 428 = Use identity header 429 = Provide referrer identity 430 = Flow failed 433 = Anonymity disallowed 436 = Bad identity-info 437 = Unsupported certificate 438 = Invalid identity header 439 = First hop lacks outbound support 470 = Consent needed 480 = Temporarily unavailable 481 = Call/transaction does not exist 482 = Loop detected</p>

483 = Too many hops
 484 = Address incomplete
 485 = Ambiguous
 486 = Busy here
 487 = Request terminated
 488 = Not acceptable here
 489 = Bad event
 491 = Request pending
 493 = Undecipherable
 Could not decrypt S/MIME body part.
 494 = Security agreement required
 500 = Server internal error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Server time-out
 505 = Version not supported
 513 = Message too large
 580 = Precondition failure
 600 = Busy everywhere
 603 = Decline
 604 = Does not exist anywhere
 606 = Not acceptable

Parameters for Skype [\[Top\]](#)

Name	Type	Description
Skype cause	Integer	Skype cause Currently this is always n/a.

Parameters for QChat [\[Top\]](#)

Name	Type	Description
QChat cause	Integer	QChat cause 1 = Unsupported 2 = No targets available 3 = No reply 4 = All targets reject 5 = Unknown user 6 = Invalid conference ID 7 = Invalid address 8 = Unknown call 9 = Network delay/timeout 10 = No privilege 11 = Vocoder incompatible 12 = Version not supported 13 = No resources available 14 = Invalid opcode 15 = Bad syntax 16 = Unexpected message 17 = Busy 18 = Call not running 19 = No targets registered 20 = Not a member 21 = Limits exceeded 22 = Insufficient resources for QoS 23 = Foreign dispatch targets 24 = No call type capability 25 = Alert successful 26 = System error 27 = Already a member 28 = Talk group permission denied 29 = No multicast resources 30 = Insufficient bandwidth 100 = Hangtime timer expired on the MCU 101 = No participants All the participants have left the call. 102 = Server Abort 103 = Unresponsive

The server has not been receiving responses from the client.
 104 = Originator advanced termination
 The originator has chosen to tear down the call.

Parameters for Kodiak [\[Top\]](#)

Name	Type	Description
Kodiak cause	Integer	Kodiak cause 1001 = ACK missing 1101 = ACK failure 1102 = UI input missing 1103 = UI not ready 1104 = API request not expected/applicable

Parameters for IMS-based calls [\[Top\]](#)

Name	Type	Description
VoLTE cause	Integer	VoLTE cause 100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response. 180 = Ringing 181 = Call is being forwarded 182 = Queued 183 = Session progress 199 = Early dialog terminated 200 = OK 202 = Accepted The request has been understood but cannot be processed. 204 = No notification 300 = Multiple choices 301 = Moved permanently 302 = Moved temporarily 305 = Use proxy 380 = Alternative service 400 = Bad request 401 = Unauthorized Used only by registrars or user agents. Proxies should use proxy authorization 407. 402 = Payment required 403 = Forbidden 404 = Not found User not found. 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout (could not find the user in time) 409 = Conflict 410 = Gone The user existed once, but is not available here any more. 411 = Length required 412 = Conditional request failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Unsupported URI scheme 417 = Unknown resource priority 420 = Bad extension Bad SIP protocol extension used, not understood by the server. 421 = Extension required 422 = Session interval too small 423 = Interval too brief 424 = Bad location information 428 = Use identity header 429 = Provide referrer identity 430 = Flow failed 433 = Anonymity disallowed

436 = Bad identity-info
 437 = Unsupported certificate
 438 = Invalid identity header
 439 = First hop lacks outbound support
 470 = Consent needed
 480 = Temporarily unavailable
 481 = Call/transaction does not exist
 482 = Loop detected
 483 = Too many hops
 484 = Address incomplete
 485 = Ambiguous
 486 = Busy here
 487 = Request terminated
 488 = Not acceptable here
 489 = Bad event
 491 = Request pending
 493 = Undecipherable
 Could not decrypt S/MIME body part.
 494 = Security agreement required
 500 = Server internal error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Server time-out
 505 = Version not supported
 513 = Message too large
 580 = Precondition failure
 600 = Busy everywhere
 603 = Decline
 604 = Does not exist anywhere
 606 = Not acceptable

Parameters for iDEN push-to-talk [\[Top\]](#)

Name	Type	Description
CS cause	Integer	Call failure cause 0 = FNE Denies Request 1 = Target Acknowledges Alert 2 = Target Does Not Acknowledge Alert 3 = User Cancelled 4 = Radio Time-out 5 = Radio Denies Request 6 = Normal Termination 7 = Channel Failed 8 = System Busy 9 = Access Failed 10 = Target Not Responding 11 = Target Non-Existent 12 = Unanswered Call

Call modification indication (CALLMODI)

Event ID	CALLMODI
Cellular systems	All
Record state	Call connection state
Description	Recorded when call type is modified
Tools	Nemo Outdoor,Nemo Handy

Parameters

Parameters [\[Top\]](#)

Name	Type	Description
Call context ID	Context	Call context ID
Call modification type	Integer	Call modification type 101 = LTE IMS voice -> GSM voice 102 = LTE IMS voice -> UMTS voice 103 = LTE IMS voice -> CDMA voice 110 = LTE IMS voice -> LTE IMS video 130 = LTE IMS voice -> WLAN IMS voice 140 = LTE IMS voice -> WLAN IMS video 201 = LTE IMS video -> GSM voice 202 = LTE IMS video -> UMTS voice 203 = LTE IMS video -> CDMA voice 210 = LTE IMS video -> LTE IMS voice 230 = LTE IMS video -> WLAN IMS voice 240 = LTE IMS video -> WLAN IMS video 310 = WLAN IMS voice -> LTE IMS voice 320 = WLAN IMS voice -> LTE IMS video 340 = WLAN IMS voice -> WLAN IMS video 410 = WLAN IMS video -> LTE IMS voice 420 = WLAN IMS video -> LTE IMS video 430 = WLAN IMS video -> WLAN IMS voice
Call modification result	Integer	Call modification result 1 = Success

VoIP information (VOIPI)

Event ID	VOIPI
Cellular systems	All
Record state	Call connection state
Description	Recorded when VoIP information changes.
Tools	Nemo Outdoor

Parameters [Parameters for VoIP](#) [Parameters for IMS calls](#)**Parameters** [\[Top\]](#)

Name	Type	Description
Call context ID	Context	Call context ID
VoIP type	Integer	VoIP type 1 = VoIP 3 = IMS voice 4 = IMS video
#Params	Integer	Number of type specific parameters.

Parameters for VoIP [\[Top\]](#)

Name	Type	Description
VoIP codec	String	VoIP codec Currently used VoIP codec that can change during the VoIP call. This is

	the same as what is configured as audio media (m=audio) in the SDP part of the SIP message. See more RFC 4566.
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Parameters for IMS calls [|Top](#)

Name	Type	Description
VoIP codec	String	VoIP codec Currently used VoIP codec that can change during the VoIP call. This is the same as what is configured as audio media (m=audio) in the SDP part of the SIP message. See more RFC 4566.
SIP handshake time	Integer	SIP handshake time Time from SIP INVITE to 100 Trying message. Minimum value: 0 Unit: ms
VoIP video codec	String	VoIP video codec Currently used VoIP video codec that can change during the VoIP call. The parameter is empty for audio only IMS video calls. This is the same as what is configured as video media (m=video) in the SDP part of the SIP message. See more RFC 4566.

Voice channel information (VCHI)

Event ID	VCHI
Cellular systems	TETRA,GSM,UMTS FDD,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO,iDEN
Record state	Call connection state
Description	Recorded when voice call configuration or state changes.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for TETRA](#) |
 [System specific parameters](#) |
 [Call type specific parameters.](#) |
 [Parameters for push-to-talk](#) |
 [Parameters for QChat](#) |
 [Parameters for Kodiak](#) |
 [Parameters for iDEN push-to-talk](#) |

Parameters [|Top](#)

Name	Type	Description
Call context ID	Context	Call context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for TETRA [|Top](#)

Name	Type	Description
PTT state	Integer	Push-to-talk state 1 = Idle 2 = Receiving 3 = Preparing to transmit 4 = Transmitting
PTT comm.	Integer	Push-to-talk communication type

type		0 = Point-to-point 1 = Point-to-multipoint 2 = Point-to-multipoint acknowledged 3 = Broadcast
PTT user identity	String	Push-to-talk user identity

System specific parameters [\[Top\]](#)

Name	Type	Description
#System parameters	Integer	Number of system specific parameters Currently this is always 0. The previous TETRA parameters are not counted for this.

Call type specific parameters. [\[Top\]](#)

Name	Type	Description
Call type	Integer	Call type 8 = Push-to-talk 12 = QChat 13 = Kodiak 15 = iDEN push-to-talk
#Call type parameters	Integer	Number of call type specific parameters

Parameters for push-to-talk [\[Top\]](#)

Name	Type	Description
PTT state	Integer	Push-to-talk state 1 = Idle 2 = Receiving 3 = Preparing to transmit 4 = Transmitting

Parameters for QChat [\[Top\]](#)

Name	Type	Description
PTT state	Integer	Push-to-talk state 1 = Idle 2 = Receiving 3 = Preparing to transmit 4 = Transmitting

Parameters for Kodiak [\[Top\]](#)

Name	Type	Description
PTT state	Integer	Push-to-talk state 1 = Idle 2 = Receiving 3 = Preparing to transmit 4 = Transmitting

Parameters for iDEN push-to-talk [\[Top\]](#)

Name	Type	Description
PTT state	Integer	Push-to-talk state 1 = Idle 2 = Receiving 3 = Preparing to transmit 4 = Transmitting

Call re-establishment (CARE)

Event ID	CARE
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA
Record state	Call state
Description	Recorded when call re-establishment fails or is completed. This measurement event is not recorded if no clear indication of call re-establishment attempt is received. This requires CM Re-establishment Request L3 signaling message with GSM and Cell Update RRC signaling message with UMTS FDD. Also note that only one measurement event is written per radio link failure even when multiple separate re-establishment attempts have been performed to different cells. Call re-establishment is considered successful if traffic channel allocation succeeded with GSM or RRC reconfiguration completed successfully with UMTS.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM, UMTS FDD, and UMTS TD-SCDMA |

Parameters [\[Top\]](#)

Name	Type	Description
Call context ID	Context	Call context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA

Parameters for GSM, UMTS FDD, and UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Re-est status	Integer	CS call re-establishment status 1 = Re-establishment succeeded 2 = Re-establishment failed
Re-est duration	Integer	CS call re-establishment duration This is the time that expires between a radio link failure and the moment when the call is active again. For failed call re-establishments this information is not available. Unit: ms

Data connection attempt (DAA)

Event ID	DAA
Cellular systems	All
Record state	Data call connection and packet active state
Description	Recorded when data connection is attempted to the server. For TCP based protocols, this is recorded when socket connection is attempted. For UDP protocols, when the first UDP packet is sent. The measurement event begins the data connection attempt state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

Parameters

Parameters [\[Top\]](#)

Name	Type	Description
Data connection context ID	Context	Data connection context ID
Packet session context ID	Context	Packet session context ID
Call context ID	Context	Call context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 12 = ICMP ping 13 = IPerf over TCP 14 = IPerf over UDP 15 = Trace route 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox
Host address	String	Data transfer host address Connection address. With MMS this is the MMS service center address.
Host port	Integer	Data transfer host port IP port.
Connection timeout	Integer	Data transfer connection timeout The timeout value from data connection attempt (DAA) to the data connection (DAC). If the data connection has not been established during this time the DAF measurement event is recorded. Unit: ms
Security protocol	Integer	Data transfer security protocol 0 = None 1 = SSL 2 = SSH
Authentication scheme	Integer	Data transfer authentication scheme 0 = Basic 1 = Digest 3 = None 4 = NTLM 5 = Negotiate

Data connection success (DAC)

Event ID	DAC
Cellular systems	All
Record state	Data connection attempt state
Description	Recorded when data connection received from the server. For non-connection TCP-based protocols (e.g. HTTP), this is recorded when the socket connection is established. This measurement event begins the data connection state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

Parameters |

Parameters |Top|

Name	Type	Description
Data connection context ID	Context	Data connection context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 12 = ICMP ping 13 = IPerf over TCP 14 = IPerf over UDP 15 = Trace route 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox

Data connection failed (DAF)

Event ID	DAF
Cellular systems	All
Record state	Data connection attempt state
Description	Recorded after DAA measurement event after connection attempt to server has failed. For connection-based protocols, the logging to the server has failed, and for non-connection based TCP protocols, the socket connection cannot be established. This measurement event ends the data connection attempt state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

Parameters |Parameters for succesful transfer |Parameters for socket errors |Parameters for Nemo protocol errors |Parameters for FTP and SFTP protocol errors |Parameters for HTTP protocol errors |Parameters for SMTP protocol errors |Parameters for POP3 protocol errors |Parameters for WAP and MMS protocol errors |Parameters for streaming protocol errors |Parameters for HTTP browsing errors |Parameters for ICMP ping errors |Parameters for IPerf protocol errors |Parameters for trace route errors |Parameters for IMAP protocol errors |Parameters for Facebook protocol errors |Parameters for

Twitter protocol errors | Parameters for Instagram protocol errors | Parameters for LinkedIn protocol errors | Parameters for PEVQ-S errors | Parameters for Dropbox errors | Parameters for test system failure |

Parameters [|Top|](#)

Name	Type	Description
Data connection context ID	Context	Data connection context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 12 = ICMP ping 13 = IPerf over TCP 14 = IPerf over UDP 15 = Trace route 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox
Data fail. status	Integer	Data connection failure status 1 = User abort 2 = Socket error 3 = Protocol error or timeout 4 = Test system failure

Parameters for succesful transfer [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved Always n/a.

Parameters for socket errors [|Top|](#)

Name	Type	Description
Socket cause	Integer	Socket cause 10004 = A blocking operation was interrupted by a call to WSACancelBlockingCall. 10009 = The file handle supplied is not valid. 10013 = An attempt was made to access a socket in a way forbidden by its access permissions. 10014 = The system detected an invalid pointer address in attempting to use a pointer argument in a call. 10022 = An invalid argument was supplied. 10024 = Too many open sockets. 10035 = A non-blocking socket operation could not be completed immediately. 10036 = A blocking operation is currently executing. 10037 = An operation was attempted on a non-blocking socket that already had an operation in progress. 10038 = An operation was attempted on something that is not a socket. 10039 = A required address was omitted from an operation on a socket. 10040 = A message sent on a datagram socket was larger than

the internal message buffer or some other network limit, or the buffer used to receive a datagram into was smaller than the datagram itself.

10041 = A protocol was specified in the socket function call that does not support the semantics of the socket type requested.

10042 = An unknown, invalid, or unsupported option or level was specified in a getsockopt or setsockopt call.

10043 = The requested protocol has not been configured into the system, or no implementation for it exists.

10044 = The support for the specified socket type does not exist in this address family.

10045 = The attempted operation is not supported for the type of object referenced.

10046 = The protocol family has not been configured into the system or no implementation for it exists.

10047 = An address incompatible with the requested protocol was used.

10048 = Only one usage of each socket address (protocol/network address/port) is normally permitted.

10049 = The requested address is not valid in its context.

10050 = A socket operation encountered a dead network.

10051 = A socket operation was attempted to an unreachable network.

10052 = The connection has been broken due to keep-alive activity detecting a failure while the operation was in progress.

10053 = An established connection was aborted by the software in your host machine.

10054 = An existing connection was forcibly closed by the remote host.

10055 = An operation on a socket could not be performed because the system lacked sufficient buffer space or because a queue was full.

10056 = A connect request was made on an already connected socket.

10057 = A request to send or receive data was disallowed because the socket is not connected and (when sending on a datagram socket using a sendto call) no address was supplied.

10058 = A request to send or receive data was disallowed because the socket had already been shut down in that direction with a previous shutdown call.

10059 = Too many references to some kernel object.

10060 = A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.

10061 = No connection could be made because the target machine actively refused it.

10062 = Cannot translate name.

10063 = Name component or name was too long.

10064 = A socket operation failed because the destination host was down.

10065 = A socket operation was attempted to an unreachable host.

10066 = Cannot remove a directory that is not empty.

10067 = A Windows Sockets implementation may have a limit on the number of applications that may use it simultaneously.

10068 = Ran out of quota.

10069 = Ran out of disk quota.

10070 = File handle reference is no longer available.

10071 = Item is not available locally.

10091 = WSASStartup cannot function at this time because the underlying system it uses to provide network services is currently unavailable.

10092 = The Windows Sockets version requested is not supported.

10093 = Either the application has not called WSASStartup, or WSASStartup failed.

10101 = Returned by WSARecv or WSARecvFrom to indicate the remote party has initiated a graceful shutdown sequence.

10102 = No more results can be returned by WSALookupServiceNext.

10103 = A call to WSALookupServiceEnd was made while this

call was still processing. The call has been canceled.
 10104 = The procedure call table is invalid.
 10105 = The requested service provider is invalid.
 10106 = The requested service provider could not be loaded or initialized.
 10107 = A system call that should never fail has failed.
 10108 = No such service is known. The service cannot be found in the specified name space.
 10109 = The specified class was not found.
 10110 = No more results can be returned by WSALookupServiceNext.
 10111 = A call to WSALookupServiceEnd was made while this call was still processing. The call has been canceled.
 10112 = A database query failed because it was actively refused.
 11001 = No such host is known.
 11002 = This is usually a temporary error during hostname resolution and means that the local server did not receive a response from an authoritative server.
 11003 = A non-recoverable error occurred during a database lookup.
 11004 = The requested name is valid and was found in the database, but it does not have the correct associated data being resolved for.
 11005 = At least one reserve has arrived.
 11006 = At least one path has arrived.
 11007 = There are no senders.
 11008 = There are no receivers.
 11009 = Reserve has been confirmed.
 11010 = Error due to lack of resources.
 11011 = Rejected for administrative reasons - bad credentials.
 11012 = Unknown or conflicting style.
 11013 = Problem with some part of the filterspec or providerspecific buffer in general.
 11014 = Problem with some part of the flowspec.
 11015 = General QOS error.
 11016 = An invalid or unrecognized service type was found in the flowspec.
 11017 = An invalid or inconsistent flowspec was found in the QOS structure.
 11018 = Invalid QOS provider-specific buffer.
 11019 = An invalid QOS filter style was used.
 11020 = An invalid QOS filter type was used.
 11021 = An incorrect number of QOS FILTERSPECS were specified in the FLOWDESCRIPTOR.
 11022 = An object with an invalid ObjectLength field was specified in the QOS provider-specific buffer.
 11023 = An incorrect number of flow descriptors was specified in the QOS structure.
 11024 = An unrecognized object was found in the QOS provider-specific buffer.
 11025 = An invalid policy object was found in the QOS provider-specific buffer.
 11026 = An invalid QOS flow descriptor was found in the flow descriptor list.
 11027 = An invalid or inconsistent flowspec was found in the QOS provider-specific buffer.
 11028 = An invalid FILTERSPEC was found in the QOS provider-specific buffer.
 11029 = An invalid shape discard mode object was found in the QOS provider-specific buffer.
 11030 = An invalid shaping rate object was found in the QOS provider-specific buffer.
 11031 = A reserved policy element was found in the QOS provider-specific buffer.

Parameters for Nemo protocol errors [\[Top\]](#)

Name	Type	Description
Data transfer cause	Integer	Data transfer cause 1 = Timeout

2 = Invalid remote address
4 = Invalid remote file.

Parameters for FTP and SFTP protocol errors [Top](#)

Name	Type	Description
FTP cause	Integer	FTP cause 1 = Timeout 2 = Invalid remote address 3 = Invalid username/password 4 = Invalid remote file 5 = Invalid local file 104 = Already connected 116 = Remote port cannot be zero 118 = Firewall error 120 = Service ready in nnn minutes 135 = Operation would block 141 = Unspecified FTP protocol error 202 = Command not implemented, superfluous at this site 211 = Action impossible in control's present state 212 = Action impossible while connected 213 = Action impossible while listening 421 = Service not available, closing control connection 425 = Cannot open data connection 426 = Connection closed, transfer aborted 434 = Requested host unavailable 450 = Requested file action not taken. File unavailable (e.g., file busy) 451 = Requested action aborted, local error in processing 452 = Requested action not taken. Insufficient storage space in system 500 = Syntax error, command unrecognized. This may include errors such as command line too long 501 = Syntax error in parameters or arguments 502 = Command not implemented 503 = Bad sequence of commands 504 = Command not implemented for that parameter 530 = User not logged in 532 = Need account for storing files 550 = Requested action not taken, file unavailable (e.g., file not found, no access) 552 = Requested file action aborted, storage allocation exceeded 553 = Requested action not taken, illegal file name 1032 = Password authentication failed SFTP only. 1102 = Unrecognized remote SSH version string format SFTP only. 1103 = SFTP command failed SFTP only. 1105 = Already connecting, close the current connection first SFTP only. 1120 = Connection dropped by remote host SFTP only.

Parameters for HTTP protocol errors [Top](#)

Name	Type	Description
HTTP cause	Integer	HTTP cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted

203 = Non-authoritative information
 204 = No content
 205 = Reset content
 206 = Partial content
 208 = Already reported
 300 = Multiple choices
 301 = Moved permanently
 302 = Found
 In some cases this can be same as moved temporarily.
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 308 = Permanent redirect
 400 = Bad request
 Server could not understand request.
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden
 Operation is understood but refused.
 404 = Not Found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host

Parameters for SMTP protocol errors [\[Top\]](#)

Name	Type	Description
SMTP cause	Integer	SMTP cause 1 = Timeout 2 = Invalid remote address 5 = Invalid local file 102 = Invalid remote address 421 = Service not available, closing transmission channel 450 = Requested mail action not taken: mailbox unavailable 451 = Requested action aborted: local error in processing 452 = Requested action not taken: insufficient system storage 500 = Syntax error, command unrecognized 501 = Syntax error in parameters or arguments 502 = Command not implemented 503 = Bad sequence of commands 504 = Command parameter not implemented 535 = Incorrect password or account name 550 = Requested action not taken: mailbox unavailable 551 = User not local 552 = Requested mail action aborted: exceeded storage

allocation
553 = Requested action not taken: mailbox name not allowed
554 = Transaction failed
1120 = Connection dropped by remote host

Parameters for POP3 protocol errors [\[Top\]](#)

Name	Type	Description
POP3 cause	Integer	POP3 cause 1 = Timeout 2 = Invalid remote address 6 = Incorrect index 118 = Firewall error 172 = Error communicating with server 174 = Busy executing current method 1120 = Connection dropped by remote host

Parameters for WAP and MMS protocol errors [\[Top\]](#)

Name	Type	Description
WAP and MMS cause	Integer	WAP and MMS cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 50 = Unknown Only used with the MMS protocol. 51 = Protocol error Only used with the MMS protocol. 52 = Invalid TID Only used with the MMS protocol. 53 = Not implemented class 2 Only used with the MMS protocol. 54 = Not implemented SAR Only used with the MMS protocol. 55 = Not implemented user acknowledgement Only used with the MMS protocol. 56 = WTP version zero Only used with the MMS protocol. 57 = Capacity temporarily exceeded Only used with the MMS protocol. 58 = No response Only used with the MMS protocol. 59 = Message too large Only used with the MMS protocol. 100 = Continue 101 = Switching Protocols 129 = Unspecified Only used with the MMS protocol. 130 = Service denied Only used with the MMS protocol. 131 = Message format corrupt Only used with the MMS protocol. 132 = Sending address unresolved Only used with the MMS protocol. 133 = Message not found Only used with the MMS protocol. 134 = Network problem Only used with the MMS protocol. 135 = Content not accepted Only used with the MMS protocol. 136 = Unsupported message Only used with the MMS protocol. 200 = OK, success 201 = Created 202 = Accepted 203 = Non-Authoritative information 204 = No content 205 = Reset content

206 = Partial content
 300 = Multiple choices
 301 = Moved permanently
 302 = Moved temporarily
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 400 = Bad request - server could not understand request
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden - operation is understood but refused
 404 = Not found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too large
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported

Parameters for streaming protocol errors [\[Top\]](#)

Name	Type	Description
Streaming cause	Integer	Streaming cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 64413 = Audio stream config not available 64414 = Video stream config not available 64415 = Dx add filter failed 64416 = Com create failed 64417 = Audio cap create failed 64418 = Video cap create failed 64419 = Audio device lost 64420 = Video device lost 64421 = Find filter failed 64422 = Insert filter failed 64423 = No audio track present 64424 = No video track present 64425 = User authentication failed 64426 = Media not seekable 64427 = Media handler create failed 64428 = Streaming error 64429 = Get image failed 64430 = Extract buffering status failed 64431 = Audio conversion failed 64432 = Video conversion failed 64433 = Convert to pcm failed 64434 = Wave writer save failed 64435 = Mixer init failed 64436 = Get image bits failed 64437 = Get bitmap info failed 64438 = Get save video sample filename failed 64439 = Get audio sample filename failed 64440 = Get last video image failed 64441 = Get media info failed 64442 = Get parent hwnd failed

	64443 = Tick counter failed	
	64444 = Destroy media handler failed	
	64445 = Init dll failed	
	64446 = Media wrapper library not available	
	64447 = Wrapper library not loaded	
	64448 = Lib proc not found	
	64449 = Unknown media action	
	64450 = Failed to reload media file	
	64451 = Failed to seek media file	
	64452 = Failed to pause media file	
	64453 = Failed to stop media file	
	64454 = Failed to play media file	
	64455 = Video writer init failed	
	64456 = Audio writer init failed	
	64457 = Video analyzer init failed	
	64458 = Audio analyzer init failed	
	64459 = Player not available	
	64460 = Media wrapper create failed	
	64461 = Get pin failed	
	64462 = Render output failed	
	64463 = Add key provider failed	
	64464 = Set media type failed	
	64465 = Get shell command failed	
	64466 = Dx filter pin access failed	
	64467 = Launch web browser failed	
	64468 = Monitor license acquisition failed	
	64469 = Failed to acquire license	
	64470 = Drm authentication failed	
	64471 = Open movie file failed	
	64472 = New movie failed	
	64473 = Get dib failed	
	64474 = Empty bitmap	
	64475 = Unknown media type	
	64476 = New gworld failed	
	64477 = New call back failed	
	64478 = New movie controller failed	
	64479 = Audio player create failed	
	64480 = Player init failed	
	64481 = Create player failed	
	64482 = Create client engine failed	
	64483 = Incomplete action in progress	
	64484 = No media loaded	
	64485 = Load media file failed	
	64486 = Unsupported media type	
	64487 = Unsupported writer format	
	64488 = Handler specific	
	64489 = High resolution counter unavailable	
	64490 = Mixer select recorder failed	
	64491 = Mixer get control detail failed	
	64492 = Unrecognized mixer component type	
	64493 = Empty mixer item	
	64494 = Mixer get line controls failed	
	64495 = Mixer get line info failed	
	64496 = Mixer close failed	
	64497 = Mixer get caps failed	
	64498 = Mixer open failed	
	64499 = Wave in start failed	
	64500 = Wave in stop failed	
	64501 = Wave in add buffer failed	
	64502 = Wave in prepare header failed	
	64503 = Wave in open failed	
	64504 = Mono line index read failed	
	64505 = Stereo line index read failed	
	64506 = Mixer index read failed	
	64507 = Invalid media handler	
	64508 = Avi write frame failed	
	64509 = Avi stream format failed	
	64510 = Avi stream create failed	
	64511 = Avi file create failed	
	65016 = Video image req failed	
	65017 = Video alignment out of range	
	65018 = Video alignment out of bound	

65019 = Video analyzer pause failed
65020 = Video analyzer stop failed
65021 = Video analyzer start failed
65022 = Video analyzer load failed
65023 = Video analysis failed
65246 = Duration diff
65247 = Duration too diff
65248 = Duration too long
65249 = Incompatible sampling rate
65250 = Sut high sampling rate
65251 = Ref duration too short
65252 = Sut duration too short
65253 = Data end not found
65254 = Data begin not found
65255 = Get data buffer failed
65256 = Unmatched sample width
65257 = Corr too low
65258 = Upsampling failed
65259 = Merge data failed
65260 = Unsupport sampling rate
65261 = Unsupport sample width
65262 = Unsupport channel count
65263 = Unmatched channel count
65264 = Unmatched sampling rate
65265 = Level too diff
65266 = Replace data chunk failed
65267 = Split data failed
65268 = Fft failed
65269 = Audio analyzer pause failed
65270 = Audio analyzer stop failed
65271 = Audio analyzer start failed
65272 = Audio analyzer load failed
65273 = Audio analysis failed
65274 = Invalid audio sample width
65275 = Uninit audio mean mos table
65276 = Resampling failed
65277 = Access pass end of data
65278 = Fixed bit rate only
65279 = Invalid audio codec type
65489 = Unlock application failed
65490 = No file loaded
65491 = Empty file
65492 = Invalid sample width
65493 = Invalid channel count
65494 = Invalid data format
65495 = Invalid chunk data
65496 = Invalid riff header
65497 = Unexpected eof
65498 = Invalid analyzer type
65499 = Mixer recorder volume unavailable
65500 = No mixer available
65501 = Invalid command
65502 = Command parser error
65503 = Invalid command type
65504 = Analysis result create failed
65505 = Analyzer compute metrics failed
65506 = Analyzer prepare attribute failed
65507 = Analyzer create failed
65508 = Analyzer load failed
65509 = Analyzer pause failed
65510 = Analyzer stop failed
65511 = Analyzer start failed
65512 = Analyzer destroy failed
65513 = Analyzer library not available
65514 = Analyzer library not loaded
65515 = Open dib failed
65516 = Create window failed
65517 = Draw dib failed
65518 = Register wnd class failed
65519 = Dll interface specific
65520 = Init com failed
65521 = Registry query failed

65522 = Query interface failed
65523 = Generate temp file failed
65524 = Thread create failed
65525 = Wait timeout
65526 = Unsupported feature
65527 = Create process failed
65528 = File not exist
65529 = File open failed
65530 = Registry open failed
65531 = Invalid parameter
65532 = Uninitialized object
65533 = User interrupted
65534 = Out of memory
65535 = Unknown error
262148 = Invalid operation
262149 = Invalid version
262150 = Invalid revision
262151 = Not initialized
262152 = Doc missing
262153 = Unexpected
262156 = Incomplete
262157 = Buffer too small
262158 = Unsupported video
262159 = Unsupported audio
262160 = Invalid bandwidth
262161 = No renderer
262162 = Element not found
262163 = No class
262164 = Class no aggregation
262165 = Not licensed
262166 = No file system
262167 = Request upgrade
262168 = Awaiting license
262208 = Buffering
262209 = Paused
262210 = No data
262211 = Net socket invalid
262212 = Net connect
262213 = Bind
262214 = Socket create
262215 = Invalid host
262216 = Net read
262217 = Net write
262218 = Net UDP
262219 = Retry
262220 = Server timeout
262221 = Server disconnected
262222 = Would block
262223 = General nonet
262224 = Block canceled
262225 = Multicast join
262226 = General multicast
262227 = Multicast UDP
262228 = At interrupt
262229 = Msg too large
262230 = Net TCP
262231 = Try auto config
262232 = Not enough bandwidth
262233 = HTTP connect
262234 = Port in use
262235 = Load test not supported
262272 = At end
262273 = Invalid file
262274 = Invalid path
262275 = Record
262276 = Record write
262277 = Temp file
262278 = Already open
262279 = Seek pending
262280 = Cancelled
262281 = File not found
262282 = Write error

	262283 = File exists	
	262285 = Advise prefer linear	
	262286 = Parse error	
	262336 = Bad server	
	262337 = Advanced server	
	262338 = Old server	
	262339 = Redirection	
	262340 = Server alert	
	262341 = Proxy	
	262342 = Proxy response	
	262343 = Advanced proxy	
	262344 = Old proxy	
	262345 = Invalid protocol	
	262346 = Invalid url option	
	262347 = Invalid url host	
	262348 = Invalid url path	
	262349 = HTTP content not found	
	262350 = Not authorized	
	262351 = Unexpected msg	
	262352 = Bad transport	
	262353 = No session id	
	262354 = Proxy dnr	
	262355 = Proxy net connect	
	262400 = Audio driver	
	262401 = Late packet	
	262402 = Overlapped packet	
	262403 = Out of order packet	
	262404 = Non contiguous packet	
	262464 = Open not processed	
	262528 = Expired	
	262593 = Could not init core	
	262594 = Perfectplay not supported	
	262595 = No live perfectplay	
	262596 = Perfectplay not allowed	
	262597 = No codecs	
	262598 = Slow machine	
	262599 = Force perfectplay	
	262600 = Invalid HTTP proxy host	
	262601 = Invalid metafile	
	262602 = Browser launch	
	262603 = View source noclip	
	262604 = View source dissabled	
	262656 = Decoder initied	
	262657 = Decoder not found	
	262658 = Decoder invalid	
	262659 = Decoder type mismatch	
	262660 = Decoder init failed	
	262661 = Decoder not initied	
	262662 = Decoder decompress	
	262663 = Obsolete version	
	262720 = Encoder file too small	
	262721 = Encoder unknown file	
	262722 = Encoder bad channels	
	262723 = Encoder bad sampsize	
	262724 = Encoder bad samprate	
	262725 = Encoder invalid	
	262726 = Encoder no output file	
	262727 = Encoder no input file	
	262728 = Encoder no output permissions	
	262729 = Encoder bad file type	
	262730 = Encoder invalid video	
	262731 = Encoder invalid audio	
	262732 = Encoder no video capture	
	262733 = Encoder invalid video capture	
	262734 = Encoder no audio capture	
	262735 = Encoder invalid audio capture	
	262736 = Encoder too slow for live	
	262737 = Encoder engine not initialized	
	262738 = Encoder coDecoder not found	
	262739 = Encoder coDecoder not initialized	
	262740 = Encoder invalid input dimensions	
	262741 = Encoder message ignored	

262742	= Encoder no settings
262743	= Encoder no output types
262744	= Encoder improper state
262745	= Encoder invalid server
262746	= Encoder invalid temp path
262747	= Encoder merge fail
262748	= Bin data not found
262749	= Bin end of data
262750	= Bin data purged
262751	= Bin full
262752	= Bin offset past end
262753	= Encoder no encoded data
262754	= Encoder invalid dll
262755	= Not indexable
262756	= Encoder no browser
262757	= Encoder no file to server
262758	= Encoder insufficient disk space
262785	= Prop not found
262786	= Prop not composite
262787	= Prop duplicate
262788	= Prop type mismatch
262789	= Prop active
262790	= Prop inactive
262848	= Ppv no user
262849	= Ppv guid read only
262850	= Ppv guid collision
262851	= Register guid exists
262852	= Ppv authorization failed
262853	= Ppv old player
262854	= Ppv account locked
262856	= Ppv dbaccess error
262857	= Ppv user already exists
262914	= Resource not found
262915	= Resource close file first
262916	= Resource nodata
262917	= Resource badfile
262918	= Resource partial copy
262976	= Upg auth failed
262977	= Upg cert auth failed
262978	= Upg cert expired
262979	= Upg cert revoked
262980	= Upg rup bad
263105	= Rmt usage error
263106	= Rmt invalid end time
263107	= Rmt missing input file
263108	= Rmt missing output file
263109	= Rmt input equals output file
263110	= Rmt unsupported audio version
263111	= Rmt different audio
263112	= Rmt different video
263113	= Rmt paste missing stream
263114	= Rmt end of stream
263115	= Rmt image map parse error
263116	= Rmt invalid image map file
263117	= Rmt event parse error
263118	= Rmt invalid event file
263119	= Rmt invalid output file
263120	= Rmt invalid duration
263121	= Rmt no dump files
263122	= Rmt no event dump file
263123	= Rmt no imap dump file
263124	= Rmt no data
263125	= Rmt empty stream
263126	= Rmt read only file
263127	= Rmt paste missing audio stream
263128	= Rmt paste missing video stream
263168	= Autocfg success
263169	= Autocfg failed
263170	= Autocfg abort
266176	= Invalid inter leaver
266177	= Bad format
266178	= Chunk missing

266179 = Invalid stream
 266180 = Dnr
 266181 = Open driver
 266182 = Upgrade
 266183 = Notification
 266184 = Not notified
 266185 = Stopped
 266186 = Closed
 266187 = Invalid wav file
 266188 = No seek

Parameters for HTTP browsing errors [|Top|](#)

Name	Type	Description
HTTP browsing cause	Integer	<p>HTTP browsing cause</p> <p>1 = Timeout</p> <p>2 = Invalid remote address</p> <p>4 = Invalid remote file</p> <p>5 = Invalid local file</p> <p>100 = Continue</p> <p>101 = Switching protocols</p> <p>102 = Processing</p> <p>200 = OK, success</p> <p>201 = Created</p> <p>202 = Accepted</p> <p>203 = Non-authoritative information</p> <p>204 = No content</p> <p>205 = Reset content</p> <p>206 = Partial content</p> <p>208 = Already reported</p> <p>300 = Multiple choices</p> <p>301 = Moved permanently</p> <p>302 = Found</p> <p>In some cases this can be same as moved temporarily.</p> <p>303 = See other</p> <p>304 = Not modified</p> <p>305 = Use proxy</p> <p>306 = Reserved</p> <p>307 = Temporary redirect</p> <p>308 = Permanent redirect</p> <p>400 = Bad request</p> <p>Server could not understand request.</p> <p>401 = Unauthorized</p> <p>402 = Payment required</p> <p>403 = Forbidden</p> <p>Operation is understood but refused.</p> <p>404 = Not Found</p> <p>405 = Method not allowed</p> <p>406 = Not acceptable</p> <p>407 = Proxy authentication required</p> <p>408 = Request timeout</p> <p>409 = Conflict</p> <p>410 = Gone</p> <p>411 = Length Required</p> <p>412 = Precondition failed</p> <p>413 = Request entity too large</p> <p>414 = Request-URI too long</p> <p>415 = Unsupported media type</p> <p>416 = Requested range not satisfiable</p> <p>417 = Expectation failed</p> <p>422 = Unprocessable entity</p> <p>423 = Locked</p> <p>424 = Failed dependency</p> <p>426 = Upgrade required</p> <p>428 = Precondition required</p> <p>429 = Too many requests</p> <p>431 = Request header fields too large</p> <p>500 = Internal server error</p> <p>501 = Not implemented</p> <p>502 = Bad gateway</p> <p>503 = Service unavailable</p>

			504 = Gateway timeout
			505 = HTTP version not supported
			1120 = Connection dropped by remote host
			2002 = Failed
			2003 = Aborted
			2004 = Invalid argument
			2005 = Invalid handle
			2006 = File not found
			2007 = Timed out
			2008 = File too big
			2009 = Unexpected error
			2010 = Access denied
			2011 = Not implemented
			2100 = Connection closed
			2101 = Connection reset
			2102 = Connection refused
			2103 = Connection aborted
			2104 = Connection failed
			2105 = Name not resolved
			2106 = Internet disconnected
			2107 = SSL protocol error
			2108 = Invalid address
			2109 = Address unreachable
			2110 = SSL authentication certification needed
			2111 = Tunnel connection failed
			2112 = No SSL versions enabled
			2113 = SSL version or cipher mismatch
			2114 = SSL renegotiation requested
			2115 = Unsupported proxy authentication method
			2116 = SSL renegotiation error
			2117 = Bad or missing SSL client certificate
			2118 = Connection timeout
			2119 = Too many pending DNS resolves
			2120 = Failed to connect SOCKS proxy
			2121 = SOCKS proxy server failed to establish connection to the target host
			2122 = The request to negotiate an alternate protocol failed
			2123 = The peer sent an SSL no_renegotiation alert message
			2124 = Winsock reported unexpected written bytes
			2125 = SSL decompression failure
			2126 = SSL bad record MAC alert
			2127 = The proxy requested authentication for tunnel establishment
			2128 = A known TLS strict server didn't offer the renegotiation extension
			2129 = The SSL server attempted to use a weak ephemeral Diffie-Hellman key
			2130 = Could not connect to proxy server
			2131 = Snap start NPN misprection
			2132 = ESET anti-virus SSL interception
			2133 = Preconnect socket limit reached
			2134 = The permission to use the SSL client certificate's private key was denied
			2135 = The SSL client certificate has no private key
			2136 = The certificate presented by the HTTPS Proxy was invalid
			2137 = An error occurred when trying to do a name resolution (DNS)
			2138 = Permission to access the network was denied
			2139 = The request throttler module cancelled this request to avoid DDOS
			2140 = SSL tunnel connection through HTTPS proxy failed
			2200 = SSL certification invalid common name
			2201 = SSL certification invalid date
			2202 = SSL certification invalid authority
			2203 = SSL certification contains errors
			2204 = SSL certification has no revocation mechanism
			2205 = Unable to the revocation for SSL certification
			2206 = SSL certification revoked
			2207 = SSL certification is invalid
			2208 = SSL certification end
			2300 = Invalid URL

		2301 = Disallowed URL scheme 2302 = Unknown URL scheme 2310 = Too many redirects 2311 = Unsafe redirect 2312 = Unsafe port 2320 = Invalid response 2321 = Invalid chunked encoding 2322 = Method not supported 2323 = Unexpected proxy authentication 2324 = Empty response 2325 = Response headers are too big 2400 = Cache miss 2501 = Insecure response
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Parameters for ICMP ping errors [\[Top\]](#)

Name	Type	Description
ICMP ping cause	Integer	ICMP ping cause 2 = Invalid remote address 119 = Message too short

Parameters for IPerf protocol errors [\[Top\]](#)

Name	Type	Description
Data transfer cause	Integer	Data transfer cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file.

Parameters for trace route errors [\[Top\]](#)

Name	Type	Description
Trace route cause	Integer	Trace route cause 1 = Timeout 2 = Invalid remote address 119 = Message too short 131 = Request queue is full 132 = Message for unknown request 159 = Invalid hop index (out of range) 312 = Busy performing current trace

Parameters for IMAP protocol errors [\[Top\]](#)

Name	Type	Description
IMAP cause	Integer	IMAP cause 1 = Timeout 2 = Invalid remote address 6 = Incorrect index 116 = RemotePort cannot be zero. Please specify a valid service port number 118 = Firewall error 270 = Cannot load specified security library 271 = Cannot open certificate store 272 = Cannot find specified certificate 273 = Cannot acquire security credentials 274 = Cannot find certificate chain 275 = Cannot verify certificate chain 276 = Error during handshake 280 = Error verifying certificate 281 = Could not find client certificate 282 = Could not find server certificate 283 = Error encrypting data 284 = Error decrypting data 315 = Invalid argument 317 = Unknown content encoding 1117 = You need to connect first. 1120 = Connection dropped by remote host

Parameters for Facebook protocol errors [\[Top\]](#)

Name	Type	Description
Facebook cause	Integer	<p>Facebook cause</p> <p>1 = Timeout</p> <p>2 = Invalid remote address</p> <p>4 = Invalid remote file</p> <p>5 = Invalid local file</p> <p>100 = Continue</p> <p>101 = Switching protocols</p> <p>102 = Processing</p> <p>200 = OK, success</p> <p>201 = Created</p> <p>202 = Accepted</p> <p>203 = Non-authoritative information</p> <p>204 = No content</p> <p>205 = Reset content</p> <p>206 = Partial content</p> <p>208 = Already reported</p> <p>300 = Multiple choices</p> <p>301 = Moved permanently</p> <p>302 = Found</p> <p> In some cases this can be same as moved temporarily.</p> <p>303 = See other</p> <p>304 = Not modified</p> <p>305 = Use proxy</p> <p>306 = Reserved</p> <p>307 = Temporary redirect</p> <p>308 = Permanent redirect</p> <p>400 = Bad request</p> <p> Server could not understand request.</p> <p>401 = Unauthorized</p> <p>402 = Payment required</p> <p>403 = Forbidden</p> <p> Operation is understood but refused.</p> <p>404 = Not Found</p> <p>405 = Method not allowed</p> <p>406 = Not acceptable</p> <p>407 = Proxy authentication required</p> <p>408 = Request timeout</p> <p>409 = Conflict</p> <p>410 = Gone</p> <p>411 = Length Required</p> <p>412 = Precondition failed</p> <p>413 = Request entity too large</p> <p>414 = Request-URI too long</p> <p>415 = Unsupported media type</p> <p>416 = Requested range not satisfiable</p> <p>417 = Expectation failed</p> <p>422 = Unprocessable entity</p> <p>423 = Locked</p> <p>424 = Failed dependency</p> <p>426 = Upgrade required</p> <p>428 = Precondition required</p> <p>429 = Too many requests</p> <p>431 = Request header fields too large</p> <p>500 = Internal server error</p> <p>501 = Not implemented</p> <p>502 = Bad gateway</p> <p>503 = Service unavailable</p> <p>504 = Gateway timeout</p> <p>505 = HTTP version not supported</p> <p>1120 = Connection dropped by remote host</p> <p>10231 = Unbalanced element tag</p> <p>10232 = Invalid JSON markup</p> <p>10233 = Invalid XPath</p> <p>10234 = DOM tree unavailable</p> <p>20000 = Invalid access token</p> <p>20001 = An unknown error occurred</p> <p>20002 = Service temporarily unavailable</p>

20003 = Unknown method
 20004 = Application request limit reached
 20009 = User is performing too many actions
 20011 = This method is deprecated
 20013 = FQL query error
 20015 = This method call must be signed with the application secret
 20017 = User request limit reached
 20100 = Invalid parameter
 20101 = Invalid API key
 20102 = Session key invalid or no longer valid
 20105 = Too many parameters
 20110 = Invalid user id
 20113 = Invalid email
 20200 = Permissions error
 20210 = User not visible
 20211 = Application has no developers
 20250 = Updating status requires the extended permission status_update
 20321 = Album is full
 20324 = Missing or invalid image file
 20325 = Too many unapproved photos pending
 20340 = Feed publication request limit reached
 20341 = Feed action request limit reached
 20343 = The story title is too long
 20345 = Feed story title rendered as blank
 20346 = Feed story body is too long
 20347 = Feed story photo could not be accessed or proxied
 20348 = Feed story photo link invalid
 20362 = Feed story body_data argument was not a valid JSON-encoded array
 20370 = The email address is not valid
 20371 = The email address belongs to an existing account
 20400 = Invalid email address
 20401 = Invalid username or password
 20402 = Invalid application auth sig
 20403 = Invalid timestamp for authentication
 20450 = Session key specified has passed its expiration time
 20451 = Session key specified cannot be used to call this method
 20452 = Invalid session key
 20453 = A session key is required for calling this method
 20454 = A session key must be specified when request is signed with a session secret
 20455 = A session secret is not permitted to be used with this type of session key
 20500 = Message contains banned content
 20501 = Missing message body
 20502 = Message is too long
 20503 = User has sent too many messages
 20504 = Invalid reply thread id
 20505 = Invalid message recipient
 20506 = Duplicate status message
 20803 = Invalid user id

Parameters for Twitter protocol errors [|Top|](#)

Name	Type	Description
Twitter cause	Integer	Twitter cause 1 = Timeout 200 = OK, success 20032 = Could not authenticate Call could not be completed as dialed. 20034 = Page does not exist Page does not exist. Corresponds with an HTTP 404 - the specified resource was not found. 20064 = Account suspended Account is suspended and is not permitted to access this feature. 20068 = Depreciated API

		<p>The Twitter REST API v1 is no longer active. Please migrate to API v1.1.</p> <p>20088 = Rate limit exceeded The request limit for this resource has been reached for the current rate limit window.</p> <p>20089 = Access token incorrect or expired Use API v1.1.</p> <p>20092 = SSL is required Only SSL connections are allowed in the API, you should update your request to a secure connection.</p> <p>20130 = Service unavailable Corresponds with an HTTP 503 - Twitter is temporarily over capacity.</p> <p>20131 = Internal server error Corresponds with an HTTP 500 - An unknown internal error occurred.</p> <p>20135 = Could not authenticate</p> <p>20161 = Unable to follow more people at this time</p> <p>20179 = Not authorized to see this status</p> <p>20185 = User is over daily status update limit</p> <p>20187 = Status is a duplicate</p> <p>20189 = Error creating status</p> <p>20215 = Bad authentication data Typically sent with 1.1 responses with HTTP code 400.</p> <p>20226 = Spam This request looks like it might be automated. To protect users from spam and other malicious activity, can not complete this action right now.</p> <p>20231 = User must verify login</p> <p>20251 = This endpoint has been retired Corresponds to a HTTP request to a retired URL.</p> <p>20261 = Application cannot perform write actions</p>
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Parameters for Instagram protocol errors [\[Top\]](#)

Name	Type	Description
Instagram cause	Integer	<p>Instagram cause</p> <p>1 = Timeout</p> <p>2 = Invalid remote address</p> <p>4 = Invalid remote file</p> <p>5 = Invalid local file</p> <p>100 = Continue</p> <p>101 = Switching protocols</p> <p>102 = Processing</p> <p>200 = OK, success</p> <p>201 = Created</p> <p>202 = Accepted</p> <p>203 = Non-authoritative information</p> <p>204 = No content</p> <p>205 = Reset content</p> <p>206 = Partial content</p> <p>208 = Already reported</p> <p>300 = Multiple choices</p> <p>301 = Moved permanently</p> <p>302 = Found In some cases this can be same as moved temporarily.</p> <p>303 = See other</p> <p>304 = Not modified</p> <p>305 = Use proxy</p> <p>306 = Reserved</p> <p>307 = Temporary redirect</p> <p>308 = Permanent redirect</p> <p>400 = Bad request Server could not understand request.</p> <p>401 = Unauthorized</p> <p>402 = Payment required</p> <p>403 = Forbidden Operation is understood but refused.</p> <p>404 = Not Found</p> <p>405 = Method not allowed</p> <p>406 = Not acceptable</p>

407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host
 20001 = Image download failed
 20002 = Invalid user
 20400 = Invalid user or Access Token
 20429 = The maximum number of requests per hour has been exceeded
 20503 = too many requests

Parameters for LinkedIn protocol errors [\[Top\]](#)

Name	Type	Description
LinkedIn cause	Integer	LinkedIn cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily. 303 = See other 304 = Not modified 305 = Use proxy 306 = Reserved 307 = Temporary redirect 308 = Permanent redirect 400 = Bad request Server could not understand request. 401 = Unauthorized 402 = Payment required 403 = Forbidden Operation is understood but refused. 404 = Not Found 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required

408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host
 20001 = Image download failed
 20003 = JSON error

Parameters for PEVQ-S errors [\[Top\]](#)

Name	Type	Description
PEVQ-S cause	Integer	PEVQ-S cause 1 = Timeout 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 12 = Invalid PEVQS handle 13 = Handle was already setup or used in another measurement 14 = Error with license 15 = Error with license info generation 16 = Out of Memory 17 = Packet drop in packet capture detected 18 = Network error 19 = Error with packet source 20 = Video is transported over HTTPS 21 = Could not open database 22 = Database does not match measured video stream 23 = Database version does not match PEVQ-S probe version 24 = Unspecific SQL error 25 = Could not open or parse SSL log file 26 = Error in player simulation 27 = Player signaled error 28 = The player end message is missing but end of video was detected 29 = General error 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily.

303 = See other
304 = Not modified
305 = Use proxy
306 = Reserved
307 = Temporary redirect
308 = Permanent redirect
400 = Bad request
 Server could not understand request.
401 = Unauthorized
402 = Payment required
403 = Forbidden
 Operation is understood but refused.
404 = Not Found
405 = Method not allowed
406 = Not acceptable
407 = Proxy authentication required
408 = Request timeout
409 = Conflict
410 = Gone
411 = Length Required
412 = Precondition failed
413 = Request entity too large
414 = Request-URI too long
415 = Unsupported media type
416 = Requested range not satisfiable
417 = Expectation failed
422 = Unprocessable entity
423 = Locked
424 = Failed dependency
426 = Upgrade required
428 = Precondition required
429 = Too many requests
431 = Request header fields too large
500 = Internal server error
501 = Not implemented
502 = Bad gateway
503 = Service unavailable
504 = Gateway timeout
505 = HTTP version not supported
1120 = Connection dropped by remote host
2002 = Failed
2003 = Aborted
2004 = Invalid argument
2005 = Invalid handle
2006 = File not found
2007 = Timed out
2008 = File too big
2009 = Unexpected error
2010 = Access denied
2011 = Not implemented
2100 = Connection closed
2101 = Connection reset
2102 = Connection refused
2103 = Connection aborted
2104 = Connection failed
2105 = Name not resolved
2106 = Internet disconnected
2107 = SSL protocol error
2108 = Invalid address
2109 = Address unreachable
2110 = SSL authentication certification needed
2111 = Tunnel connection failed
2112 = No SSL versions enabled
2113 = SSL version or cipher mismatch
2114 = SSL renegotiation requested
2115 = Unsupported proxy authentication method
2116 = SSL renegotiation error
2117 = Bad or missing SSL client certificate
2118 = Connection timeout
2119 = Too many pending DNS resolves
2120 = Failed to connect SOCKS proxy
2121 = SOCKS proxy server failed to establish connection to

		the target host 2122 = The request to negotiate an alternate protocol failed 2123 = The peer sent an SSL no_renegotiation alert message 2124 = Winsock reported unexpected written bytes 2125 = SSL decompression failure 2126 = SSL bad record MAC alert 2127 = The proxy requested authentication for tunnel establishment 2128 = A known TLS strict server didn't offer the renegotiation extension 2129 = The SSL server attempted to use a weak ephemeral Diffie-Hellman key 2130 = Could not connect to proxy server 2131 = Snap start NPN misprection 2132 = ESET anti-virus SSL interception 2133 = Preconnect socket limit reached 2134 = The permission to use the SSL client certificate's private key was denied 2135 = The SSL client certificate has no private key 2136 = The certificate presented by the HTTPS Proxy was invalid 2137 = An error occurred when trying to do a name resolution (DNS) 2138 = Permission to access the network was denied 2139 = The request throttler module cancelled this request to avoid DDOS 2140 = SSL tunnel connection through HTTPS proxy failed 2200 = SSL certification invalid common name 2201 = SSL certification invalid date 2202 = SSL certification invalid authority 2203 = SSL certification contains errors 2204 = SSL certification has no revocation mechanism 2205 = Unable to the revocation for SSL certification 2206 = SSL certification revoked 2207 = SSL certification is invalid 2208 = SSL certification end 2300 = Invalid URL 2301 = Disallowed URL scheme 2302 = Unknown URL scheme 2310 = Too many redirects 2311 = Unsafe redirect 2312 = Unsafe port 2320 = Invalid response 2321 = Invalid chunked encoding 2322 = Method not supported 2323 = Unexpected proxy authentication 2324 = Empty response 2325 = Response headers are too big 2400 = Cache miss 2501 = Insecure response
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Parameters for Dropbox errors [\[Top\]](#)

Name	Type	Description
Dropbox cause	Integer	Dropbox cause 4 = Invalid remote file 5 = Invalid local file 421 = Service not available 425 = Cannot open connection

Parameters for test system failure [\[Top\]](#)

Name	Type	Description
Reserved	Integer	Reserved Always n/a.

Data disconnect (DAD)

Event ID	DAD
Cellular systems	All
Record state	Data connection state
Description	Recorded when the connection to the server is disconnected. For TCP-based protocols this means that the socket connection has been terminated. The measurement event ends the data connection state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

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Name	Type	Description
Data connection context ID	Context	Data connection context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 12 = ICMP ping 13 = IPerf over TCP 14 = IPerf over UDP 15 = Trace route 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox
Data disc. status	Integer	Data disconnect status 1 = Normal data disconnect 2 = Socket error 3 = Protocol error or timeout 4 = Test system failure

Parameters for succesful transfer [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved Always n/a.

Parameters for socket errors [\[Top\]](#)

Name	Type	Description
Socket cause	Integer	<p>Socket cause</p> <p>10004 = A blocking operation was interrupted by a call to <code>WSACancelBlockingCall</code>.</p> <p>10009 = The file handle supplied is not valid.</p> <p>10013 = An attempt was made to access a socket in a way forbidden by its access permissions.</p> <p>10014 = The system detected an invalid pointer address in attempting to use a pointer argument in a call.</p> <p>10022 = An invalid argument was supplied.</p> <p>10024 = Too many open sockets.</p> <p>10035 = A non-blocking socket operation could not be completed immediately.</p> <p>10036 = A blocking operation is currently executing.</p> <p>10037 = An operation was attempted on a non-blocking socket that already had an operation in progress.</p> <p>10038 = An operation was attempted on something that is not a socket.</p> <p>10039 = A required address was omitted from an operation on a socket.</p> <p>10040 = A message sent on a datagram socket was larger than the internal message buffer or some other network limit, or the buffer used to receive a datagram into was smaller than the datagram itself.</p> <p>10041 = A protocol was specified in the socket function call that does not support the semantics of the socket type requested.</p> <p>10042 = An unknown, invalid, or unsupported option or level was specified in a <code>getsockopt</code> or <code>setsockopt</code> call.</p> <p>10043 = The requested protocol has not been configured into the system, or no implementation for it exists.</p> <p>10044 = The support for the specified socket type does not exist in this address family.</p> <p>10045 = The attempted operation is not supported for the type of object referenced.</p> <p>10046 = The protocol family has not been configured into the system or no implementation for it exists.</p> <p>10047 = An address incompatible with the requested protocol was used.</p> <p>10048 = Only one usage of each socket address (protocol/network address/port) is normally permitted.</p> <p>10049 = The requested address is not valid in its context.</p> <p>10050 = A socket operation encountered a dead network.</p> <p>10051 = A socket operation was attempted to an unreachable network.</p> <p>10052 = The connection has been broken due to keep-alive activity detecting a failure while the operation was in progress.</p> <p>10053 = An established connection was aborted by the software in your host machine.</p> <p>10054 = An existing connection was forcibly closed by the remote host.</p> <p>10055 = An operation on a socket could not be performed because the system lacked sufficient buffer space or because a queue was full.</p> <p>10056 = A connect request was made on an already connected socket.</p> <p>10057 = A request to send or receive data was disallowed because the socket is not connected and (when sending on a datagram socket using a <code>sendto</code> call) no address was supplied.</p> <p>10058 = A request to send or receive data was disallowed because the socket had already been shut down in that direction with a previous shutdown call.</p> <p>10059 = Too many references to some kernel object.</p> <p>10060 = A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.</p> <p>10061 = No connection could be made because the target machine actively refused it.</p> <p>10062 = Cannot translate name.</p>

10063 = Name component or name was too long.
 10064 = A socket operation failed because the destination host was down.
 10065 = A socket operation was attempted to an unreachable host.
 10066 = Cannot remove a directory that is not empty.
 10067 = A Windows Sockets implementation may have a limit on the number of applications that may use it simultaneously.
 10068 = Ran out of quota.
 10069 = Ran out of disk quota.
 10070 = File handle reference is no longer available.
 10071 = Item is not available locally.
 10091 = WSASStartup cannot function at this time because the underlying system it uses to provide network services is currently unavailable.
 10092 = The Windows Sockets version requested is not supported.
 10093 = Either the application has not called WSASStartup, or WSASStartup failed.
 10101 = Returned by WSAREcv or WSAREcvFrom to indicate the remote party has initiated a graceful shutdown sequence.
 10102 = No more results can be returned by WSALookupServiceNext.
 10103 = A call to WSALookupServiceEnd was made while this call was still processing. The call has been canceled.
 10104 = The procedure call table is invalid.
 10105 = The requested service provider is invalid.
 10106 = The requested service provider could not be loaded or initialized.
 10107 = A system call that should never fail has failed.
 10108 = No such service is known. The service cannot be found in the specified name space.
 10109 = The specified class was not found.
 10110 = No more results can be returned by WSALookupServiceNext.
 10111 = A call to WSALookupServiceEnd was made while this call was still processing. The call has been canceled.
 10112 = A database query failed because it was actively refused.
 11001 = No such host is known.
 11002 = This is usually a temporary error during hostname resolution and means that the local server did not receive a response from an authoritative server.
 11003 = A non-recoverable error occurred during a database lookup.
 11004 = The requested name is valid and was found in the database, but it does not have the correct associated data being resolved for.
 11005 = At least one reserve has arrived.
 11006 = At least one path has arrived.
 11007 = There are no senders.
 11008 = There are no receivers.
 11009 = Reserve has been confirmed.
 11010 = Error due to lack of resources.
 11011 = Rejected for administrative reasons - bad credentials.
 11012 = Unknown or conflicting style.
 11013 = Problem with some part of the filterspec or providerspecific buffer in general.
 11014 = Problem with some part of the flowspec.
 11015 = General QOS error.
 11016 = An invalid or unrecognized service type was found in the flowspec.
 11017 = An invalid or inconsistent flowspec was found in the QOS structure.
 11018 = Invalid QOS provider-specific buffer.
 11019 = An invalid QOS filter style was used.
 11020 = An invalid QOS filter type was used.
 11021 = An incorrect number of QOS FILTERSPECs were specified in the FLOWDESCRIPTOR.
 11022 = An object with an invalid ObjectLength field was specified in the QOS provider-specific buffer.
 11023 = An incorrect number of flow descriptors was specified

in the QOS structure.
 11024 = An unrecognized object was found in the QOS provider-specific buffer.
 11025 = An invalid policy object was found in the QOS provider-specific buffer.
 11026 = An invalid QOS flow descriptor was found in the flow descriptor list.
 11027 = An invalid or inconsistent flowspec was found in the QOS provider-specific buffer.
 11028 = An invalid FILTERSPEC was found in the QOS provider-specific buffer.
 11029 = An invalid shape discard mode object was found in the QOS provider-specific buffer.
 11030 = An invalid shaping rate object was found in the QOS provider-specific buffer.
 11031 = A reserved policy element was found in the QOS provider-specific buffer.

Parameters for Nemo protocol errors [\[Top\]](#)

Name	Type	Description
Data transfer cause	Integer	Data transfer cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file.

Parameters for FTP and SFTP protocol errors [\[Top\]](#)

Name	Type	Description
FTP cause	Integer	FTP cause 1 = Timeout 2 = Invalid remote address 3 = Invalid username/password 4 = Invalid remote file 5 = Invalid local file 104 = Already connected 116 = Remote port cannot be zero 118 = Firewall error 120 = Service ready in nnn minutes 135 = Operation would block 141 = Unspecified FTP protocol error 202 = Command not implemented, superfluous at this site 211 = Action impossible in control's present state 212 = Action impossible while connected 213 = Action impossible while listening 421 = Service not available, closing control connection 425 = Cannot open data connection 426 = Connection closed, transfer aborted 434 = Requested host unavailable 450 = Requested file action not taken. File unavailable (e.g., file busy) 451 = Requested action aborted, local error in processing 452 = Requested action not taken. Insufficient storage space in system 500 = Syntax error, command unrecognized. This may include errors such as command line too long 501 = Syntax error in parameters or arguments 502 = Command not implemented 503 = Bad sequence of commands 504 = Command not implemented for that parameter 530 = User not logged in 532 = Need account for storing files 550 = Requested action not taken, file unavailable (e.g., file not found, no access) 552 = Requested file action aborted, storage allocation exceeded 553 = Requested action not taken, illegal file name 1032 = Password authentication failed SFTP only.

		1102 = Unrecognized remote SSH version string format SFTP only. 1103 = SFTP command failed SFTP only. 1105 = Already connecting, close the current connection first SFTP only. 1120 = Connection dropped by remote host SFTP only.
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Parameters for HTTP protocol errors [\[Top\]](#)

Name	Type	Description
HTTP cause	Integer	HTTP cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily. 303 = See other 304 = Not modified 305 = Use proxy 306 = Reserved 307 = Temporary redirect 308 = Permanent redirect 400 = Bad request Server could not understand request. 401 = Unauthorized 402 = Payment required 403 = Forbidden Operation is understood but refused. 404 = Not Found 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout 409 = Conflict 410 = Gone 411 = Length Required 412 = Precondition failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Requested range not satisfiable 417 = Expectation failed 422 = Unprocessable entity 423 = Locked 424 = Failed dependency 426 = Upgrade required 428 = Precondition required 429 = Too many requests 431 = Request header fields too large 500 = Internal server error 501 = Not implemented 502 = Bad gateway 503 = Service unavailable 504 = Gateway timeout

		505 = HTTP version not supported 1120 = Connection dropped by remote host
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Parameters for SMTP protocol errors [\[Top\]](#)

Name	Type	Description
SMTP cause	Integer	SMTP cause 1 = Timeout 2 = Invalid remote address 5 = Invalid local file 102 = Invalid remote address 421 = Service not available, closing transmission channel 450 = Requested mail action not taken: mailbox unavailable 451 = Requested action aborted: local error in processing 452 = Requested action not taken: insufficient system storage 500 = Syntax error, command unrecognized 501 = Syntax error in parameters or arguments 502 = Command not implemented 503 = Bad sequence of commands 504 = Command parameter not implemented 535 = Incorrect password or account name 550 = Requested action not taken: mailbox unavailable 551 = User not local 552 = Requested mail action aborted: exceeded storage allocation 553 = Requested action not taken: mailbox name not allowed 554 = Transaction failed 1120 = Connection dropped by remote host

Parameters for POP3 protocol errors [\[Top\]](#)

Name	Type	Description
POP3 cause	Integer	POP3 cause 1 = Timeout 2 = Invalid remote address 6 = Incorrect index 118 = Firewall error 172 = Error communicating with server 174 = Busy executing current method 1120 = Connection dropped by remote host

Parameters for WAP and MMS protocol errors [\[Top\]](#)

Name	Type	Description
WAP and MMS cause	Integer	WAP and MMS cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 50 = Unknown Only used with the MMS protocol. 51 = Protocol error Only used with the MMS protocol. 52 = Invalid TID Only used with the MMS protocol. 53 = Not implemented class 2 Only used with the MMS protocol. 54 = Not implemented SAR Only used with the MMS protocol. 55 = Not implemented user acknowledgement Only used with the MMS protocol. 56 = WTP version zero Only used with the MMS protocol. 57 = Capacity temporarily exceeded Only used with the MMS protocol. 58 = No response Only used with the MMS protocol. 59 = Message too large

Only used with the MMS protocol.
 100 = Continue
 101 = Switching Protocols
 129 = Unspecified
 Only used with the MMS protocol.
 130 = Service denied
 Only used with the MMS protocol.
 131 = Message format corrupt
 Only used with the MMS protocol.
 132 = Sending address unresolved
 Only used with the MMS protocol.
 133 = Message not found
 Only used with the MMS protocol.
 134 = Network problem
 Only used with the MMS protocol.
 135 = Content not accepted
 Only used with the MMS protocol.
 136 = Unsupported message
 Only used with the MMS protocol.
 200 = OK, success
 201 = Created
 202 = Accepted
 203 = Non-Authoritative information
 204 = No content
 205 = Reset content
 206 = Partial content
 300 = Multiple choices
 301 = Moved permanently
 302 = Moved temporarily
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 400 = Bad request - server could not understand request
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden - operation is understood but refused
 404 = Not found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too large
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported

Parameters for streaming protocol errors [\[Top\]](#)

Name	Type	Description
Streaming cause	Integer	Streaming cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 64413 = Audio stream config not available 64414 = Video stream config not available 64415 = Dx add filter failed 64416 = Com create failed 64417 = Audio cap create failed

64418 = Video cap create failed
64419 = Audio device lost
64420 = Video device lost
64421 = Find filter failed
64422 = Insert filter failed
64423 = No audio track present
64424 = No video track present
64425 = User authentication failed
64426 = Media not seekable
64427 = Media handler create failed
64428 = Streaming error
64429 = Get image failed
64430 = Extract buffering status failed
64431 = Audio conversion failed
64432 = Video conversion failed
64433 = Convert to pcm failed
64434 = Wave writer save failed
64435 = Mixer init failed
64436 = Get image bits failed
64437 = Get bitmap info failed
64438 = Get save video sample filename failed
64439 = Get audio sample filename failed
64440 = Get last video image failed
64441 = Get media info failed
64442 = Get parent hwnd failed
64443 = Tick counter failed
64444 = Destroy media handler failed
64445 = Init dll failed
64446 = Media wrapper library not available
64447 = Wrapper library not loaded
64448 = Lib proc not found
64449 = Unknown media action
64450 = Failed to reload media file
64451 = Failed to seek media file
64452 = Failed to pause media file
64453 = Failed to stop media file
64454 = Failed to play media file
64455 = Video writer init failed
64456 = Audio writer init failed
64457 = Video analyzer init failed
64458 = Audio analyzer init failed
64459 = Player not available
64460 = Media wrapper create failed
64461 = Get pin failed
64462 = Render output failed
64463 = Add key provider failed
64464 = Set media type failed
64465 = Get shell command failed
64466 = Dx filter pin access failed
64467 = Launch web browser failed
64468 = Monitor license acquisition failed
64469 = Failed to acquire license
64470 = Drm authentication failed
64471 = Open movie file failed
64472 = New movie failed
64473 = Get dib failed
64474 = Empty bitmap
64475 = Unknown media type
64476 = New gworld failed
64477 = New call back failed
64478 = New movie controller failed
64479 = Audio player create failed
64480 = Player init failed
64481 = Create player failed
64482 = Create client engine failed
64483 = Incomplete action in progress
64484 = No media loaded
64485 = Load media file failed
64486 = Unsupported media type
64487 = Unsupported writer format
64488 = Handler specific
64489 = High resolution counter unavailable

64490 = Mixer select recorder failed
64491 = Mixer get control detail failed
64492 = Unrecognized mixer component type
64493 = Empty mixer item
64494 = Mixer get line controls failed
64495 = Mixer get line info failed
64496 = Mixer close failed
64497 = Mixer get caps failed
64498 = Mixer open failed
64499 = Wave in start failed
64500 = Wave in stop failed
64501 = Wave in add buffer failed
64502 = Wave in prepare header failed
64503 = Wave in open failed
64504 = Mono line index read failed
64505 = Stereo line index read failed
64506 = Mixer index read failed
64507 = Invalid media handler
64508 = Avi write frame failed
64509 = Avi stream format failed
64510 = Avi stream create failed
64511 = Avi file create failed
65016 = Video image req failed
65017 = Video alignment out of range
65018 = Video alignment out of bound
65019 = Video analyzer pause failed
65020 = Video analyzer stop failed
65021 = Video analyzer start failed
65022 = Video analyzer load failed
65023 = Video analysis failed
65246 = Duration diff
65247 = Duration too diff
65248 = Duration too long
65249 = Incompatible sampling rate
65250 = Sut high sampling rate
65251 = Ref duration too short
65252 = Sut duration too short
65253 = Data end not found
65254 = Data begin not found
65255 = Get data buffer failed
65256 = Unmatched sample width
65257 = Corr too low
65258 = Upsampling failed
65259 = Merge data failed
65260 = Unsupport sampling rate
65261 = Unsupport sample width
65262 = Unsupport channel count
65263 = Unmatched channel count
65264 = Unmatched sampling rate
65265 = Level too diff
65266 = Replace data chunk failed
65267 = Split data failed
65268 = Fft failed
65269 = Audio analyzer pause failed
65270 = Audio analyzer stop failed
65271 = Audio analyzer start failed
65272 = Audio analyzer load failed
65273 = Audio analysis failed
65274 = Invalid audio sample width
65275 = Uninit audio mean mos table
65276 = Resampling failed
65277 = Access pass end of data
65278 = Fixed bit rate only
65279 = Invalid audio codec type
65489 = Unlock application failed
65490 = No file loaded
65491 = Empty file
65492 = Invalid sample width
65493 = Invalid channel count
65494 = Invalid data format
65495 = Invalid chunk data
65496 = Invalid riff header

65497 = Unexpected eof
65498 = Invalid analyzer type
65499 = Mixer recorder volume unavailable
65500 = No mixer available
65501 = Invalid command
65502 = Command parser error
65503 = Invalid command type
65504 = Analysis result create failed
65505 = Analyzer compute metrics failed
65506 = Analyzer prepare attribute failed
65507 = Analyzer create failed
65508 = Analyzer load failed
65509 = Analyzer pause failed
65510 = Analyzer stop failed
65511 = Analyzer start failed
65512 = Analyzer destroy failed
65513 = Analyzer library not available
65514 = Analyzer library not loaded
65515 = Open dib failed
65516 = Create window failed
65517 = Draw dib failed
65518 = Register wnd class failed
65519 = DLL interface specific
65520 = Init com failed
65521 = Registry query failed
65522 = Query interface failed
65523 = Generate temp file failed
65524 = Thread create failed
65525 = Wait timeout
65526 = Unsupported feature
65527 = Create process failed
65528 = File not exist
65529 = File open failed
65530 = Registry open failed
65531 = Invalid parameter
65532 = Uninitialized object
65533 = User interrupted
65534 = Out of memory
65535 = Unknown error
262148 = Invalid operation
262149 = Invalid version
262150 = Invalid revision
262151 = Not initialized
262152 = Doc missing
262153 = Unexpected
262156 = Incomplete
262157 = Buffer too small
262158 = Unsupported video
262159 = Unsupported audio
262160 = Invalid bandwidth
262161 = No renderer
262162 = Element not found
262163 = No class
262164 = Class no aggregation
262165 = Not licensed
262166 = No file system
262167 = Request upgrade
262168 = Awaiting license
262208 = Buffering
262209 = Paused
262210 = No data
262211 = Net socket invalid
262212 = Net connect
262213 = Bind
262214 = Socket create
262215 = Invalid host
262216 = Net read
262217 = Net write
262218 = Net UDP
262219 = Retry
262220 = Server timeout
262221 = Server disconnected

	262222 = Would block	
	262223 = General nonet	
	262224 = Block canceled	
	262225 = Multicast join	
	262226 = General multicast	
	262227 = Multicast UDP	
	262228 = At interrupt	
	262229 = Msg too large	
	262230 = Net TCP	
	262231 = Try auto config	
	262232 = Not enough bandwidth	
	262233 = HTTP connect	
	262234 = Port in use	
	262235 = Load test not supported	
	262272 = At end	
	262273 = Invalid file	
	262274 = Invalid path	
	262275 = Record	
	262276 = Record write	
	262277 = Temp file	
	262278 = Already open	
	262279 = Seek pending	
	262280 = Cancelled	
	262281 = File not found	
	262282 = Write error	
	262283 = File exists	
	262285 = Advise prefer linear	
	262286 = Parse error	
	262336 = Bad server	
	262337 = Advanced server	
	262338 = Old server	
	262339 = Redirection	
	262340 = Server alert	
	262341 = Proxy	
	262342 = Proxy response	
	262343 = Advanced proxy	
	262344 = Old proxy	
	262345 = Invalid protocol	
	262346 = Invalid url option	
	262347 = Invalid url host	
	262348 = Invalid url path	
	262349 = HTTP content not found	
	262350 = Not authorized	
	262351 = Unexpected msg	
	262352 = Bad transport	
	262353 = No session id	
	262354 = Proxy dnr	
	262355 = Proxy net connect	
	262400 = Audio driver	
	262401 = Late packet	
	262402 = Overlapped packet	
	262403 = Out of order packet	
	262404 = Non contiguous packet	
	262464 = Open not processed	
	262528 = Expired	
	262593 = Could not init core	
	262594 = Perfectplay not supported	
	262595 = No live perfectplay	
	262596 = Perfectplay not allowed	
	262597 = No codecs	
	262598 = Slow machine	
	262599 = Force perfectplay	
	262600 = Invalid HTTP proxy host	
	262601 = Invalid metafile	
	262602 = Browser launch	
	262603 = View source noclip	
	262604 = View source dissabled	
	262656 = Decoder initied	
	262657 = Decoder not found	
	262658 = Decoder invalid	
	262659 = Decoder type mismatch	
	262660 = Decoder init failed	

262661	= Decoder not initied
262662	= Decoder decompress
262663	= Obsolete version
262720	= Encoder file too small
262721	= Encoder unknown file
262722	= Encoder bad channels
262723	= Encoder bad sampsize
262724	= Encoder bad samprate
262725	= Encoder invalid
262726	= Encoder no output file
262727	= Encoder no input file
262728	= Encoder no output permissions
262729	= Encoder bad file type
262730	= Encoder invalid video
262731	= Encoder invalid audio
262732	= Encoder no video capture
262733	= Encoder invalid video capture
262734	= Encoder no audio capture
262735	= Encoder invalid audio capture
262736	= Encoder too slow for live
262737	= Encoder engine not initialized
262738	= Encoder coDecoder not found
262739	= Encoder coDecoder not initialized
262740	= Encoder invalid input dimensions
262741	= Encoder message ignored
262742	= Encoder no settings
262743	= Encoder no output types
262744	= Encoder improper state
262745	= Encoder invalid server
262746	= Encoder invalid temp path
262747	= Encoder merge fail
262748	= Bin data not found
262749	= Bin end of data
262750	= Bin data purged
262751	= Bin full
262752	= Bin offset past end
262753	= Encoder no encoded data
262754	= Encoder invalid dll
262755	= Not indexable
262756	= Encoder no browser
262757	= Encoder no file to server
262758	= Encoder insufficient disk space
262785	= Prop not found
262786	= Prop not composite
262787	= Prop duplicate
262788	= Prop type mismatch
262789	= Prop active
262790	= Prop inactive
262848	= Ppv no user
262849	= Ppv guid read only
262850	= Ppv guid collision
262851	= Register guid exists
262852	= Ppv authorization failed
262853	= Ppv old player
262854	= Ppv account locked
262856	= Ppv dbaccess error
262857	= Ppv user already exists
262914	= Resource not found
262915	= Resource close file first
262916	= Resource nodata
262917	= Resource badfile
262918	= Resource partial copy
262976	= Upg auth failed
262977	= Upg cert auth failed
262978	= Upg cert expired
262979	= Upg cert revoked
262980	= Upg rup bad
263105	= Rmt usage error
263106	= Rmt invalid end time
263107	= Rmt missing input file
263108	= Rmt missing output file
263109	= Rmt input equals output file

263110 = Rmt unsupported audio version
 263111 = Rmt different audio
 263112 = Rmt different video
 263113 = Rmt paste missing stream
 263114 = Rmt end of stream
 263115 = Rmt image map parse error
 263116 = Rmt invalid image map file
 263117 = Rmt event parse error
 263118 = Rmt invalid event file
 263119 = Rmt invalid output file
 263120 = Rmt invalid duration
 263121 = Rmt no dump files
 263122 = Rmt no event dump file
 263123 = Rmt no imap dump file
 263124 = Rmt no data
 263125 = Rmt empty stream
 263126 = Rmt read only file
 263127 = Rmt paste missing audio stream
 263128 = Rmt paste missing video stream
 263168 = Autocfg success
 263169 = Autocfg failed
 263170 = Autocfg abort
 266176 = Invalid inter leaver
 266177 = Bad format
 266178 = Chunk missing
 266179 = Invalid stream
 266180 = Dnr
 266181 = Open driver
 266182 = Upgrade
 266183 = Notification
 266184 = Not notified
 266185 = Stopped
 266186 = Closed
 266187 = Invalid wav file
 266188 = No seek

Parameters for HTTP browsing errors | [Top](#)

Name	Type	Description
HTTP browsing cause	Integer	HTTP browsing cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily. 303 = See other 304 = Not modified 305 = Use proxy 306 = Reserved 307 = Temporary redirect 308 = Permanent redirect 400 = Bad request Server could not understand request. 401 = Unauthorized 402 = Payment required 403 = Forbidden Operation is understood but refused.

404 = Not Found
405 = Method not allowed
406 = Not acceptable
407 = Proxy authentication required
408 = Request timeout
409 = Conflict
410 = Gone
411 = Length Required
412 = Precondition failed
413 = Request entity too large
414 = Request-URI too long
415 = Unsupported media type
416 = Requested range not satisfiable
417 = Expectation failed
422 = Unprocessable entity
423 = Locked
424 = Failed dependency
426 = Upgrade required
428 = Precondition required
429 = Too many requests
431 = Request header fields too large
500 = Internal server error
501 = Not implemented
502 = Bad gateway
503 = Service unavailable
504 = Gateway timeout
505 = HTTP version not supported
1120 = Connection dropped by remote host
2002 = Failed
2003 = Aborted
2004 = Invalid argument
2005 = Invalid handle
2006 = File not found
2007 = Timed out
2008 = File too big
2009 = Unexpected error
2010 = Access denied
2011 = Not implemented
2100 = Connection closed
2101 = Connection reset
2102 = Connection refused
2103 = Connection aborted
2104 = Connection failed
2105 = Name not resolved
2106 = Internet disconnected
2107 = SSL protocol error
2108 = Invalid address
2109 = Address unreachable
2110 = SSL authentication certification needed
2111 = Tunnel connection failed
2112 = No SSL versions enabled
2113 = SSL version or cipher mismatch
2114 = SSL renegotiation requested
2115 = Unsupported proxy authentication method
2116 = SSL renegotiation error
2117 = Bad or missing SSL client certificate
2118 = Connection timeout
2119 = Too many pending DNS resolves
2120 = Failed to connect SOCKS proxy
2121 = SOCKS proxy server failed to establish connection to the target host
2122 = The request to negotiate an alternate protocol failed
2123 = The peer sent an SSL no_renegotiation alert message
2124 = Winsock reported unexpected written bytes
2125 = SSL decompression failure
2126 = SSL bad record MAC alert
2127 = The proxy requested authentication for tunnel establishment
2128 = A known TLS strict server didn't offer the renegotiation extension
2129 = The SSL server attempted to use a weak ephemeral Diffie-Hellman key

		2130 = Could not connect to proxy server 2131 = Snap start NPN misprection 2132 = ESET anti-virus SSL interception 2133 = Preconnect socket limit reached 2134 = The permission to use the SSL client certificate's private key was denied 2135 = The SSL client certificate has no private key 2136 = The certificate presented by the HTTPS Proxy was invalid 2137 = An error occurred when trying to do a name resolution (DNS) 2138 = Permission to access the network was denied 2139 = The request throttler module cancelled this request to avoid DDOS 2140 = SSL tunnel connection through HTTPS proxy failed 2200 = SSL certification invalid common name 2201 = SSL certification invalid date 2202 = SSL certification invalid authority 2203 = SSL certification contains errors 2204 = SSL certification has no revocation mechanism 2205 = Unable to the revocation for SSL certification 2206 = SSL certification revoked 2207 = SSL certification is invalid 2208 = SSL certification end 2300 = Invalid URL 2301 = Disallowed URL scheme 2302 = Unknown URL scheme 2310 = Too many redirects 2311 = Unsafe redirect 2312 = Unsafe port 2320 = Invalid response 2321 = Invalid chunked encoding 2322 = Method not supported 2323 = Unexpected proxy authentication 2324 = Empty response 2325 = Response headers are too big 2400 = Cache miss 2501 = Insecure response
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Parameters for ICMP ping errors [|Top|](#)

Name	Type	Description
ICMP ping cause	Integer	ICMP ping cause 2 = Invalid remote address 119 = Message too short

Parameters for IPerf protocol errors [|Top|](#)

Name	Type	Description
Data transfer cause	Integer	Data transfer cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file.

Parameters for trace route errors [|Top|](#)

Name	Type	Description
Trace route cause	Integer	Trace route cause 1 = Timeout 2 = Invalid remote address 119 = Message too short 131 = Request queue is full 132 = Message for unknown request 159 = Invalid hop index (out of range) 312 = Busy performing current trace

Parameters for IMAP protocol errors [|Top|](#)

Name	Type	Description
IMAP cause	Integer	IMAP cause 1 = Timeout 2 = Invalid remote address 6 = Incorrect index 116 = RemotePort cannot be zero. Please specify a valid service port number 118 = Firewall error 270 = Cannot load specified security library 271 = Cannot open certificate store 272 = Cannot find specified certificate 273 = Cannot acquire security credentials 274 = Cannot find certificate chain 275 = Cannot verify certificate chain 276 = Error during handshake 280 = Error verifying certificate 281 = Could not find client certificate 282 = Could not find server certificate 283 = Error encrypting data 284 = Error decrypting data 315 = Invalid argument 317 = Unknown content encoding 1117 = You need to connect first. 1120 = Connection dropped by remote host

Parameters for Facebook protocol errors [|Top|](#)

Name	Type	Description
Facebook cause	Integer	Facebook cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily. 303 = See other 304 = Not modified 305 = Use proxy 306 = Reserved 307 = Temporary redirect 308 = Permanent redirect 400 = Bad request Server could not understand request. 401 = Unauthorized 402 = Payment required 403 = Forbidden Operation is understood but refused. 404 = Not Found 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout 409 = Conflict 410 = Gone 411 = Length Required 412 = Precondition failed 413 = Request entity too large

			414 = Request-URI too long	
			415 = Unsupported media type	
			416 = Requested range not satisfiable	
			417 = Expectation failed	
			422 = Unprocessable entity	
			423 = Locked	
			424 = Failed dependency	
			426 = Upgrade required	
			428 = Precondition required	
			429 = Too many requests	
			431 = Request header fields too large	
			500 = Internal server error	
			501 = Not implemented	
			502 = Bad gateway	
			503 = Service unavailable	
			504 = Gateway timeout	
			505 = HTTP version not supported	
			1120 = Connection dropped by remote host	
			10231 = Unbalanced element tag	
			10232 = Invalid JSON markup	
			10233 = Invalid XPath	
			10234 = DOM tree unavailable	
			20000 = Invalid access token	
			20001 = An unknown error occurred	
			20002 = Service temporarily unavailable	
			20003 = Unknown method	
			20004 = Application request limit reached	
			20009 = User is performing too many actions	
			20011 = This method is deprecated	
			20013 = FQL query error	
			20015 = This method call must be signed with the application secret	
			20017 = User request limit reached	
			20100 = Invalid parameter	
			20101 = Invalid API key	
			20102 = Session key invalid or no longer valid	
			20105 = Too many parameters	
			20110 = Invalid user id	
			20113 = Invalid email	
			20200 = Permissions error	
			20210 = User not visible	
			20211 = Application has no developers	
			20250 = Updating status requires the extended permission status_update	
			20321 = Album is full	
			20324 = Missing or invalid image file	
			20325 = Too many unapproved photos pending	
			20340 = Feed publication request limit reached	
			20341 = Feed action request limit reached	
			20343 = The story title is too long	
			20345 = Feed story title rendered as blank	
			20346 = Feed story body is too long	
			20347 = Feed story photo could not be accessed or proxied	
			20348 = Feed story photo link invalid	
			20362 = Feed story body_data argument was not a valid JSON-encoded array	
			20370 = The email address is not valid	
			20371 = The email address belongs to an existing account	
			20400 = Invalid email address	
			20401 = Invalid username or password	
			20402 = Invalid application auth sig	
			20403 = Invalid timestamp for authentication	
			20450 = Session key specified has passed its expiration time	
			20451 = Session key specified cannot be used to call this method	
			20452 = Invalid session key	
			20453 = A session key is required for calling this method	
			20454 = A session key must be specified when request is signed with a session secret	
			20455 = A session secret is not permitted to be used with this type of session key	
			20500 = Message contains banned content	

20501 = Missing message body
 20502 = Message is too long
 20503 = User has sent too many messages
 20504 = Invalid reply thread id
 20505 = Invalid message recipient
 20506 = Duplicate status message
 20803 = Invalid user id

Parameters for Twitter protocol errors [\[Top\]](#)

Name	Type	Description
Twitter cause	Integer	<p>Twitter cause</p> <p>1 = Timeout</p> <p>200 = OK, success</p> <p>20032 = Could not authenticate Call could not be completed as dialed.</p> <p>20034 = Page does not exist Page does not exist. Corresponds with an HTTP 404 - the specified resource was not found.</p> <p>20064 = Account suspended Account is suspended and is not permitted to access this feature.</p> <p>20068 = Depracated API The Twitter REST API v1 is no longer active. Please migrate to API v1.1.</p> <p>20088 = Rate limit exceeded The request limit for this resource has been reached for the current rate limit window.</p> <p>20089 = Access token incorrect or expired Use API v1.1.</p> <p>20092 = SSL is required Only SSL connections are allowed in the API, you should update your request to a secure connection.</p> <p>20130 = Service unavailable Corresponds with an HTTP 503 - Twitter is temporarily over capacity.</p> <p>20131 = Internal server error Corresponds with an HTTP 500 - An unknown internal error occurred.</p> <p>20135 = Could not authenticate</p> <p>20161 = Unable to follow more people at this time</p> <p>20179 = Not authorized to see this status</p> <p>20185 = User is over daily status update limit</p> <p>20187 = Status is a duplicate</p> <p>20189 = Error creating status</p> <p>20215 = Bad authentication data Typically sent with 1.1 responses with HTTP code 400.</p> <p>20226 = Spam This request looks like it might be automated. To protect users from spam and other malicious activity, can not complete this action right now.</p> <p>20231 = User must verify login</p> <p>20251 = This endpoint has been retired Corresponds to a HTTP request to a retired URL.</p> <p>20261 = Application cannot perform write actions</p>

Parameters for Instagram protocol errors [\[Top\]](#)

Name	Type	Description
Instagram cause	Integer	<p>Instagram cause</p> <p>1 = Timeout</p> <p>2 = Invalid remote address</p> <p>4 = Invalid remote file</p> <p>5 = Invalid local file</p> <p>100 = Continue</p> <p>101 = Switching protocols</p> <p>102 = Processing</p> <p>200 = OK, success</p> <p>201 = Created</p>

202 = Accepted
 203 = Non-authoritative information
 204 = No content
 205 = Reset content
 206 = Partial content
 208 = Already reported
 300 = Multiple choices
 301 = Moved permanently
 302 = Found
 In some cases this can be same as moved temporarily.
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 308 = Permanent redirect
 400 = Bad request
 Server could not understand request.
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden
 Operation is understood but refused.
 404 = Not Found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host
 20001 = Image download failed
 20002 = Invalid user
 20400 = Invalid user or Access Token
 20429 = The maximum number of requests per hour has been exceeded
 20503 = too many requests

Parameters for LinkedIn protocol errors [\[Top\]](#)

Name	Type	Description
LinkedIn cause	Integer	LinkedIn cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted

203 = Non-authoritative information
 204 = No content
 205 = Reset content
 206 = Partial content
 208 = Already reported
 300 = Multiple choices
 301 = Moved permanently
 302 = Found
 In some cases this can be same as moved temporarily.
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 308 = Permanent redirect
 400 = Bad request
 Server could not understand request.
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden
 Operation is understood but refused.
 404 = Not Found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host
 20001 = Image download failed
 20003 = JSON error

Parameters for PEVQ-S errors [Top](#)

Name	Type	Description
PEVQ-S cause	Integer	PEVQ-S cause 1 = Timeout 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 12 = Invalid PEVQS handle 13 = Handle was already setup or used in another measurement 14 = Error with license 15 = Error with license info generation 16 = Out of Memory 17 = Packet drop in packet capture detected 18 = Network error 19 = Error with packet source 20 = Video is transported over HTTPS

21 = Could not open database
22 = Database does not match measured video stream
23 = Database version does not match PEVQ-S probe version
24 = Unspecific SQL error
25 = Could not open or parse SSL log file
26 = Error in player simulation
27 = Player signaled error
28 = The player end message is missing but end of video was detected
29 = General error
100 = Continue
101 = Switching protocols
102 = Processing
200 = OK, success
201 = Created
202 = Accepted
203 = Non-authoritative information
204 = No content
205 = Reset content
206 = Partial content
208 = Already reported
300 = Multiple choices
301 = Moved permanently
302 = Found
 In some cases this can be same as moved temporarily.
303 = See other
304 = Not modified
305 = Use proxy
306 = Reserved
307 = Temporary redirect
308 = Permanent redirect
400 = Bad request
 Server could not understand request.
401 = Unauthorized
402 = Payment required
403 = Forbidden
 Operation is understood but refused.
404 = Not Found
405 = Method not allowed
406 = Not acceptable
407 = Proxy authentication required
408 = Request timeout
409 = Conflict
410 = Gone
411 = Length Required
412 = Precondition failed
413 = Request entity too large
414 = Request-URI too long
415 = Unsupported media type
416 = Requested range not satisfiable
417 = Expectation failed
422 = Unprocessable entity
423 = Locked
424 = Failed dependency
426 = Upgrade required
428 = Precondition required
429 = Too many requests
431 = Request header fields too large
500 = Internal server error
501 = Not implemented
502 = Bad gateway
503 = Service unavailable
504 = Gateway timeout
505 = HTTP version not supported
1120 = Connection dropped by remote host
2002 = Failed
2003 = Aborted
2004 = Invalid argument
2005 = Invalid handle
2006 = File not found
2007 = Timed out
2008 = File too big

2009 = Unexpected error
2010 = Access denied
2011 = Not implemented
2100 = Connection closed
2101 = Connection reset
2102 = Connection refused
2103 = Connection aborted
2104 = Connection failed
2105 = Name not resolved
2106 = Internet disconnected
2107 = SSL protocol error
2108 = Invalid address
2109 = Address unreachable
2110 = SSL authentication certification needed
2111 = Tunnel connection failed
2112 = No SSL versions enabled
2113 = SSL version or cipher mismatch
2114 = SSL renegotiation requested
2115 = Unsupported proxy authentication method
2116 = SSL renegotiation error
2117 = Bad or missing SSL client certificate
2118 = Connection timeout
2119 = Too many pending DNS resolves
2120 = Failed to connect SOCKS proxy
2121 = SOCKS proxy server failed to establish connection to the target host
2122 = The request to negotiate an alternate protocol failed
2123 = The peer sent an SSL no_renegotiation alert message
2124 = Winsock reported unexpected written bytes
2125 = SSL decompression failure
2126 = SSL bad record MAC alert
2127 = The proxy requested authentication for tunnel establishment
2128 = A known TLS strict server didn't offer the renegotiation extension
2129 = The SSL server attempted to use a weak ephemeral Diffie-Hellman key
2130 = Could not connect to proxy server
2131 = Snap start NPN misprection
2132 = ESET anti-virus SSL interception
2133 = Preconnect socket limit reached
2134 = The permission to use the SSL client certificate's private key was denied
2135 = The SSL client certificate has no private key
2136 = The certificate presented by the HTTPS Proxy was invalid
2137 = An error occurred when trying to do a name resolution (DNS)
2138 = Permission to access the network was denied
2139 = The request throttler module cancelled this request to avoid DDOS
2140 = SSL tunnel connection through HTTPS proxy failed
2200 = SSL certification invalid common name
2201 = SSL certification invalid date
2202 = SSL certification invalid authority
2203 = SSL certification contains errors
2204 = SSL certification has no revocation mechanism
2205 = Unable to the revocation for SSL certification
2206 = SSL certification revoked
2207 = SSL certification is invalid
2208 = SSL certification end
2300 = Invalid URL
2301 = Disallowed URL scheme
2302 = Unknown URL scheme
2310 = Too many redirects
2311 = Unsafe redirect
2312 = Unsafe port
2320 = Invalid response
2321 = Invalid chunked encoding
2322 = Method not supported
2323 = Unexpected proxy authentication
2324 = Empty response

		2325 = Response headers are too big 2400 = Cache miss 2501 = Insecure response
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Parameters for Dropbox errors [|Top|](#)

Name	Type	Description
Dropbox cause	Integer	Dropbox cause 4 = Invalid remote file 5 = Invalid local file 421 = Service not available 425 = Cannot open connection

Parameters for test system failure [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved Always n/a.

Data transfer request (DREQ)

Event ID	DREQ
Cellular systems	All
Record state	Data connection state
Description	Recorded when data transfer is requested to or from the server. Begins the data transfer state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

[Parameters](#) | [Parameters for Nemo test protocol](#) | [Parameters for FTP and SFTP](#) | [Parameters for HTTP](#) | [Parameters for SMTP](#) | [Parameters for POP3](#)
[Parameters for MMS](#) | [Parameters for WAP 1.0 and 2.0](#) | [Parameters for Streaming](#) | [Parameters for HTTP browsing](#) | [Parameters for ICMP ping](#)
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Parameters [|Top|](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Data connection context ID	Context	Data connection context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 12 = ICMP ping 13 = IPerf over TCP 14 = IPerf over UDP

		15 = Trace route 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox
Transf. dir.	Integer	Data transfer direction 1 = Uplink 2 = Downlink 3 = Uplink and downlink

Parameters for Nemo test protocol [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Packet size	Integer	Data transfer packet size Packet size used in data transfer. Unit: byte
Rate limit	Integer	Data transfer bitrate limit Transfer rate limit used in the transfer.
Ping size	Integer	Ping packet size Ping packet size is the size of the ping packet. The value also determines the size of the reply packet. Unit: byte
Ping rate	Integer	Ping rate Ping rate determines the delay between two consecutive ping requests. Unit: ms
Ping timeout	Integer	Ping timeout Ping timeout determines the maximum time between a ping request and the reply. If this time is exceeded, ping measurement event is created using the timeout parameter. Unit: ms

Parameters for FTP and SFTP [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Filename	String	Data transfer filename
Transf. att. #	Integer	Data transfer attempt number
Threads	Integer	Data transfer threads Number of concurrent data transfers.
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for HTTP [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Filename	String	Data transfer filename
Transf. att. #	Integer	Data transfer attempt number

Threads	Integer	Data transfer threads Number of concurrent data transfers.
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for SMTP [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for POP3 [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for MMS [\[Top\]](#)

Name	Type	Description
MMS file size	Integer	MMS file size Amount of data to be transferred. Unit: byte
MMS filename	String	MMS filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for WAP 1.0 and 2.0 [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for Streaming [\[Top\]](#)

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte

Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for HTTP browsing [\[Top\]](#)

Name	Type	Description
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for ICMP ping [\[Top\]](#)

Name	Type	Description
Ping size	Integer	Ping packet size Ping packet size is the size of the ping packet. The value also determines the size of the reply packet. Unit: byte
Ping rate	Integer	Ping rate Ping rate determines the delay between two consecutive ping requests. Unit: ms
Ping timeout	Integer	Ping timeout Ping timeout determines the maximum time between a ping request and the reply. If this time is exceeded, ping measurement event is created using the timeout parameter. Unit: ms
Data connection context ID	Context	Data connection context ID

Parameters for IPerf over TCP [\[Top\]](#)

Name	Type	Description
Data size	Integer	Data size Amount of data to be transferred. For time based transfers this information is not available. Unit: byte
Threads	Integer	Data transfer threads Number of concurrent data transfers.
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for IPerf over UDP [\[Top\]](#)

Name	Type	Description
Data size	Integer	Data size Amount of data to be transferred. For time based transfers this information is not available. Unit: byte
Threads	Integer	Data transfer threads Number of concurrent data transfers.
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for trace route |Top|

Name	Type	Description
Packet size	Integer	Trace route packet size Currently not available. Unit: byte
Timeout	Integer	Trace route total timeout If the whole path to the destination has not been traced during the timeout period the trace route is recorded as failed. Unit: ms
TTL	Integer	Trace route time to live Maximum number of hops before failure.
Hop timeout	Integer	Trace route hop timeout Minimum value: 0 Unit: ms

Parameters for IMAP |Top|

Name	Type	Description
File size	Integer	File size Amount of data to be transferred. Unit: byte
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for Facebook |Top|

Name	Type	Description
Facebook operation	Integer	Facebook operation 1 = Get user feed 2 = Get friend list 3 = Post a status update 4 = Post an image
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for Twitter |Top|

Name	Type	Description
Twitter operation	Integer	Twitter operation 1 = Load home page 2 = Load profile 3 = Follow Twitter feed 4 = Text tweet 5 = Photo tweet
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for Instagram |Top|

Name	Type	Description
Instagram operation	Integer	Instagram operation 1 = Load user feed 2 = Load self feed 3 = Load popular feed 4 = Search media with a tag

Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms
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Parameters for LinkedIn [\[Top\]](#)

Name	Type	Description
LinkedIn operation	Integer	LinkedIn operation 1 = Load self feed 2 = Load profile from contact list 3 = Load profile using public URL 4 = Share text and URL 5 = Load my info
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for PEVQ-S [\[Top\]](#)

Name	Type	Description
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms

Parameters for Dropbox [\[Top\]](#)

Name	Type	Description
Dropbox operation	Integer	Dropbox operation 1 = Upload 2 = Download
Filename	String	Data transfer filename
Timeout	Integer	Data transfer timeout If no data has been transferred during the timeout period, the data transfer is terminated with the timeout result. Unit: ms
File size	Integer	File size Amount of data to be transferred. Unit: byte

Data transfer completed (DCOMP)

Event ID	DCOMP
Cellular systems	All
Record state	Data transfer state
Description	Recorded when data transfer is stopped. For TCP based protocols when the socket connection to the server is terminated. The measurement event ends the data transfer state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

[Parameters](#) | [Parameters for succesful transfer](#) | [Parameters for socket errors](#) | [Parameters for Nemo protocol errors](#) | [Parameters for FTP and SFTP protocol errors](#) | [Parameters for HTTP protocol errors](#) | [Parameters for SMTP protocol errors](#) | [Parameters for POP3 protocol errors](#) | [Parameters for WAP and MMS protocol errors](#) | [Parameters for streaming protocol errors](#) | [Parameters for HTTP browsing errors](#) | [Parameters for ICMP ping errors](#) | [Parameters for IPerf protocol errors](#) | [Parameters for trace route errors](#) | [Parameters for IMAP protocol errors](#) | [Parameters for Facebook protocol errors](#) | [Parameters for Twitter protocol errors](#) | [Parameters for Instagram protocol errors](#) | [Parameters for LinkedIn protocol errors](#) | [Parameters for PEVQ-S protocol errors](#) | [Parameters for Dropbox protocol errors](#) | [Parameters for aborted transfer](#) | [Parameters for ICMP ping](#) | [Parameters for all protocols](#) |

Parameters [|Top|](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 12 = ICMP ping 12 = ICMP ping 13 = IPerf over TCP 14 = IPerf over UDP 15 = Trace route 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox
Transf. status	Integer	Data transfer status 1 = Successful 2 = Socket error 3 = Protocol error or timeout 5 = User abort

Parameters for succesful transfer [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved Always n/a.

Parameters for socket errors [|Top|](#)

Name	Type	Description
Socket cause	Integer	Socket cause 10004 = A blocking operation was interrupted by a call to WSACancelBlockingCall. 10009 = The file handle supplied is not valid. 10013 = An attempt was made to access a socket in a way forbidden by its access permissions. 10014 = The system detected an invalid pointer address in attempting to use a pointer argument in a call. 10022 = An invalid argument was supplied. 10024 = Too many open sockets. 10035 = A non-blocking socket operation could not be completed immediately. 10036 = A blocking operation is currently executing. 10037 = An operation was attempted on a non-blocking socket

that already had an operation in progress.

10038 = An operation was attempted on something that is not a socket.

10039 = A required address was omitted from an operation on a socket.

10040 = A message sent on a datagram socket was larger than the internal message buffer or some other network limit, or the buffer used to receive a datagram into was smaller than the datagram itself.

10041 = A protocol was specified in the socket function call that does not support the semantics of the socket type requested.

10042 = An unknown, invalid, or unsupported option or level was specified in a getsockopt or setsockopt call.

10043 = The requested protocol has not been configured into the system, or no implementation for it exists.

10044 = The support for the specified socket type does not exist in this address family.

10045 = The attempted operation is not supported for the type of object referenced.

10046 = The protocol family has not been configured into the system or no implementation for it exists.

10047 = An address incompatible with the requested protocol was used.

10048 = Only one usage of each socket address (protocol/network address/port) is normally permitted.

10049 = The requested address is not valid in its context.

10050 = A socket operation encountered a dead network.

10051 = A socket operation was attempted to an unreachable network.

10052 = The connection has been broken due to keep-alive activity detecting a failure while the operation was in progress.

10053 = An established connection was aborted by the software in your host machine.

10054 = An existing connection was forcibly closed by the remote host.

10055 = An operation on a socket could not be performed because the system lacked sufficient buffer space or because a queue was full.

10056 = A connect request was made on an already connected socket.

10057 = A request to send or receive data was disallowed because the socket is not connected and (when sending on a datagram socket using a sendto call) no address was supplied.

10058 = A request to send or receive data was disallowed because the socket had already been shut down in that direction with a previous shutdown call.

10059 = Too many references to some kernel object.

10060 = A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.

10061 = No connection could be made because the target machine actively refused it.

10062 = Cannot translate name.

10063 = Name component or name was too long.

10064 = A socket operation failed because the destination host was down.

10065 = A socket operation was attempted to an unreachable host.

10066 = Cannot remove a directory that is not empty.

10067 = A Windows Sockets implementation may have a limit on the number of applications that may use it simultaneously.

10068 = Ran out of quota.

10069 = Ran out of disk quota.

10070 = File handle reference is no longer available.

10071 = Item is not available locally.

10091 = WSASStartup cannot function at this time because the underlying system it uses to provide network services is currently unavailable.

10092 = The Windows Sockets version requested is not supported.

10093 = Either the application has not called WSASStartup, or

WSAStartup failed.

10101 = Returned by WSAREcv or WSAREcvFrom to indicate the remote party has initiated a graceful shutdown sequence.

10102 = No more results can be returned by WSALookupServiceNext.

10103 = A call to WSALookupServiceEnd was made while this call was still processing. The call has been canceled.

10104 = The procedure call table is invalid.

10105 = The requested service provider is invalid.

10106 = The requested service provider could not be loaded or initialized.

10107 = A system call that should never fail has failed.

10108 = No such service is known. The service cannot be found in the specified name space.

10109 = The specified class was not found.

10110 = No more results can be returned by WSALookupServiceNext.

10111 = A call to WSALookupServiceEnd was made while this call was still processing. The call has been canceled.

10112 = A database query failed because it was actively refused.

11001 = No such host is known.

11002 = This is usually a temporary error during hostname resolution and means that the local server did not receive a response from an authoritative server.

11003 = A non-recoverable error occurred during a database lookup.

11004 = The requested name is valid and was found in the database, but it does not have the correct associated data being resolved for.

11005 = At least one reserve has arrived.

11006 = At least one path has arrived.

11007 = There are no senders.

11008 = There are no receivers.

11009 = Reserve has been confirmed.

11010 = Error due to lack of resources.

11011 = Rejected for administrative reasons - bad credentials.

11012 = Unknown or conflicting style.

11013 = Problem with some part of the filterspec or providerspecific buffer in general.

11014 = Problem with some part of the flowspec.

11015 = General QOS error.

11016 = An invalid or unrecognized service type was found in the flowspec.

11017 = An invalid or inconsistent flowspec was found in the QOS structure.

11018 = Invalid QOS provider-specific buffer.

11019 = An invalid QOS filter style was used.

11020 = An invalid QOS filter type was used.

11021 = An incorrect number of QOS FILTERSPECS were specified in the FLOWDESCRIPTOR.

11022 = An object with an invalid ObjectLength field was specified in the QOS provider-specific buffer.

11023 = An incorrect number of flow descriptors was specified in the QOS structure.

11024 = An unrecognized object was found in the QOS provider-specific buffer.

11025 = An invalid policy object was found in the QOS provider-specific buffer.

11026 = An invalid QOS flow descriptor was found in the flow descriptor list.

11027 = An invalid or inconsistent flowspec was found in the QOS provider-specific buffer.

11028 = An invalid FILTERSPEC was found in the QOS provider-specific buffer.

11029 = An invalid shape discard mode object was found in the QOS provider-specific buffer.

11030 = An invalid shaping rate object was found in the QOS provider-specific buffer.

11031 = A reserved policy element was found in the QOS provider-specific buffer.

Parameters for Nemo protocol errors [\[Top\]](#)

Name	Type	Description
Data transfer cause	Integer	Data transfer cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file.

Parameters for FTP and SFTP protocol errors [\[Top\]](#)

Name	Type	Description
FTP cause	Integer	FTP cause 1 = Timeout 2 = Invalid remote address 3 = Invalid username/password 4 = Invalid remote file 5 = Invalid local file 104 = Already connected 116 = Remote port cannot be zero 118 = Firewall error 120 = Service ready in nnn minutes 135 = Operation would block 141 = Unspecified FTP protocol error 202 = Command not implemented, superfluous at this site 211 = Action impossible in control's present state 212 = Action impossible while connected 213 = Action impossible while listening 421 = Service not available, closing control connection 425 = Cannot open data connection 426 = Connection closed, transfer aborted 434 = Requested host unavailable 450 = Requested file action not taken. File unavailable (e.g., file busy) 451 = Requested action aborted, local error in processing 452 = Requested action not taken. Insufficient storage space in system 500 = Syntax error, command unrecognized. This may include errors such as command line too long 501 = Syntax error in parameters or arguments 502 = Command not implemented 503 = Bad sequence of commands 504 = Command not implemented for that parameter 530 = User not logged in 532 = Need account for storing files 550 = Requested action not taken, file unavailable (e.g., file not found, no access) 552 = Requested file action aborted, storage allocation exceeded 553 = Requested action not taken, illegal file name 1032 = Password authentication failed SFTP only. 1102 = Unrecognized remote SSH version string format SFTP only. 1103 = SFTP command failed SFTP only. 1105 = Already connecting, close the current connection first SFTP only. 1120 = Connection dropped by remote host SFTP only.

Parameters for HTTP protocol errors [\[Top\]](#)

Name	Type	Description
HTTP cause	Integer	HTTP cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file

100 = Continue
 101 = Switching protocols
 102 = Processing
 200 = OK, success
 201 = Created
 202 = Accepted
 203 = Non-authoritative information
 204 = No content
 205 = Reset content
 206 = Partial content
 208 = Already reported
 300 = Multiple choices
 301 = Moved permanently
 302 = Found
 In some cases this can be same as moved temporarily.
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 308 = Permanent redirect
 400 = Bad request
 Server could not understand request.
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden
 Operation is understood but refused.
 404 = Not Found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host

Parameters for SMTP protocol errors [\[Top\]](#)

Name	Type	Description
SMTP cause	Integer	SMTP cause 1 = Timeout 2 = Invalid remote address 5 = Invalid local file 102 = Invalid remote address 421 = Service not available, closing transmission channel 450 = Requested mail action not taken: mailbox unavailable 451 = Requested action aborted: local error in processing 452 = Requested action not taken: insufficient system storage 500 = Syntax error, command unrecognized 501 = Syntax error in parameters or arguments 502 = Command not implemented

503 = Bad sequence of commands
504 = Command parameter not implemented
535 = Incorrect password or account name
550 = Requested action not taken: mailbox unavailable
551 = User not local
552 = Requested mail action aborted: exceeded storage allocation
553 = Requested action not taken: mailbox name not allowed
554 = Transaction failed
1120 = Connection dropped by remote host

Parameters for POP3 protocol errors [\[Top\]](#)

Name	Type	Description
POP3 cause	Integer	POP3 cause 1 = Timeout 2 = Invalid remote address 6 = Incorrect index 118 = Firewall error 172 = Error communicating with server 174 = Busy executing current method 1120 = Connection dropped by remote host

Parameters for WAP and MMS protocol errors [\[Top\]](#)

Name	Type	Description
WAP and MMS cause	Integer	WAP and MMS cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 50 = Unknown Only used with the MMS protocol. 51 = Protocol error Only used with the MMS protocol. 52 = Invalid TID Only used with the MMS protocol. 53 = Not implemented class 2 Only used with the MMS protocol. 54 = Not implemented SAR Only used with the MMS protocol. 55 = Not implemented user acknowledgement Only used with the MMS protocol. 56 = WTP version zero Only used with the MMS protocol. 57 = Capacity temporarily exceeded Only used with the MMS protocol. 58 = No response Only used with the MMS protocol. 59 = Message too large Only used with the MMS protocol. 100 = Continue 101 = Switching Protocols 129 = Unspecified Only used with the MMS protocol. 130 = Service denied Only used with the MMS protocol. 131 = Message format corrupt Only used with the MMS protocol. 132 = Sending address unresolved Only used with the MMS protocol. 133 = Message not found Only used with the MMS protocol. 134 = Network problem Only used with the MMS protocol. 135 = Content not accepted Only used with the MMS protocol. 136 = Unsupported message Only used with the MMS protocol.

200 = OK, success
 201 = Created
 202 = Accepted
 203 = Non-Authoritative information
 204 = No content
 205 = Reset content
 206 = Partial content
 300 = Multiple choices
 301 = Moved permanently
 302 = Moved temporarily
 303 = See other
 304 = Not modified
 305 = Use proxy
 306 = Reserved
 307 = Temporary redirect
 400 = Bad request - server could not understand request
 401 = Unauthorized
 402 = Payment required
 403 = Forbidden - operation is understood but refused
 404 = Not found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too large
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported

Parameters for streaming protocol errors [\[Top\]](#)

Name	Type	Description
Streaming cause	Integer	Streaming cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 64413 = Audio stream config not available 64414 = Video stream config not available 64415 = Dx add filter failed 64416 = Com create failed 64417 = Audio cap create failed 64418 = Video cap create failed 64419 = Audio device lost 64420 = Video device lost 64421 = Find filter failed 64422 = Insert filter failed 64423 = No audio track present 64424 = No video track present 64425 = User authentication failed 64426 = Media not seekable 64427 = Media handler create failed 64428 = Streaming error 64429 = Get image failed 64430 = Extract buffering status failed 64431 = Audio conversion failed 64432 = Video conversion failed 64433 = Convert to pcm failed 64434 = Wave writer save failed 64435 = Mixer init failed 64436 = Get image bits failed

	64437 = Get bitmap info failed
	64438 = Get save video sample filename failed
	64439 = Get audio sample filename failed
	64440 = Get last video image failed
	64441 = Get media info failed
	64442 = Get parent hwnd failed
	64443 = Tick counter failed
	64444 = Destroy media handler failed
	64445 = Init dll failed
	64446 = Media wrapper library not available
	64447 = Wrapper library not loaded
	64448 = Lib proc not found
	64449 = Unknown media action
	64450 = Failed to reload media file
	64451 = Failed to seek media file
	64452 = Failed to pause media file
	64453 = Failed to stop media file
	64454 = Failed to play media file
	64455 = Video writer init failed
	64456 = Audio writer init failed
	64457 = Video analyzer init failed
	64458 = Audio analyzer init failed
	64459 = Player not available
	64460 = Media wrapper create failed
	64461 = Get pin failed
	64462 = Render output failed
	64463 = Add key provider failed
	64464 = Set media type failed
	64465 = Get shell command failed
	64466 = Dx filter pin access failed
	64467 = Launch web browser failed
	64468 = Monitor license acquisition failed
	64469 = Failed to acquire license
	64470 = Drm authentication failed
	64471 = Open movie file failed
	64472 = New movie failed
	64473 = Get dib failed
	64474 = Empty bitmap
	64475 = Unknown media type
	64476 = New gworld failed
	64477 = New call back failed
	64478 = New movie controller failed
	64479 = Audio player create failed
	64480 = Player init failed
	64481 = Create player failed
	64482 = Create client engine failed
	64483 = Incomplete action in progress
	64484 = No media loaded
	64485 = Load media file failed
	64486 = Unsupported media type
	64487 = Unsupported writer format
	64488 = Handler specific
	64489 = High resolution counter unavailable
	64490 = Mixer select recorder failed
	64491 = Mixer get control detail failed
	64492 = Unrecognized mixer component type
	64493 = Empty mixer item
	64494 = Mixer get line controls failed
	64495 = Mixer get line info failed
	64496 = Mixer close failed
	64497 = Mixer get caps failed
	64498 = Mixer open failed
	64499 = Wave in start failed
	64500 = Wave in stop failed
	64501 = Wave in add buffer failed
	64502 = Wave in prepare header failed
	64503 = Wave in open failed
	64504 = Mono line index read failed
	64505 = Stereo line index read failed
	64506 = Mixer index read failed
	64507 = Invalid media handler
	64508 = Avi write frame failed

64509 = Avi stream format failed
64510 = Avi stream create failed
64511 = Avi file create failed
65016 = Video image req failed
65017 = Video alignment out of range
65018 = Video alignment out of bound
65019 = Video analyzer pause failed
65020 = Video analyzer stop failed
65021 = Video analyzer start failed
65022 = Video analyzer load failed
65023 = Video analysis failed
65246 = Duration diff
65247 = Duration too diff
65248 = Duration too long
65249 = Incompatible sampling rate
65250 = Sut high sampling rate
65251 = Ref duration too short
65252 = Sut duration too short
65253 = Data end not found
65254 = Data begin not found
65255 = Get data buffer failed
65256 = Unmatched sample width
65257 = Corr too low
65258 = Upsampling failed
65259 = Merge data failed
65260 = Unsupport sampling rate
65261 = Unsupport sample width
65262 = Unsupport channel count
65263 = Unmatched channel count
65264 = Unmatched sampling rate
65265 = Level too diff
65266 = Replace data chunk failed
65267 = Split data failed
65268 = Fft failed
65269 = Audio analyzer pause failed
65270 = Audio analyzer stop failed
65271 = Audio analyzer start failed
65272 = Audio analyzer load failed
65273 = Audio analysis failed
65274 = Invalid audio sample width
65275 = Uninit audio mean mos table
65276 = Resampling failed
65277 = Access pass end of data
65278 = Fixed bit rate only
65279 = Invalid audio codec type
65489 = Unlock application failed
65490 = No file loaded
65491 = Empty file
65492 = Invalid sample width
65493 = Invalid channel count
65494 = Invalid data format
65495 = Invalid chunk data
65496 = Invalid riff header
65497 = Unexpected eof
65498 = Invalid analyzer type
65499 = Mixer recorder volume unavailable
65500 = No mixer available
65501 = Invalid command
65502 = Command parser error
65503 = Invalid command type
65504 = Analysis result create failed
65505 = Analyzer compute metrics failed
65506 = Analyzer prepare attribute failed
65507 = Analyzer create failed
65508 = Analyzer load failed
65509 = Analyzer pause failed
65510 = Analyzer stop failed
65511 = Analyzer start failed
65512 = Analyzer destroy failed
65513 = Analyzer library not available
65514 = Analyzer library not loaded
65515 = Open dib failed

	65516 = Create window failed	
	65517 = Draw dib failed	
	65518 = Register wnd class failed	
	65519 = Dll interface specific	
	65520 = Init com failed	
	65521 = Registry query failed	
	65522 = Query interface failed	
	65523 = Generate temp file failed	
	65524 = Thread create failed	
	65525 = Wait timeout	
	65526 = Unsupported feature	
	65527 = Create process failed	
	65528 = File not exist	
	65529 = File open failed	
	65530 = Registry open failed	
	65531 = Invalid parameter	
	65532 = Uninitialized object	
	65533 = User interrupted	
	65534 = Out of memory	
	65535 = Unknown error	
	262148 = Invalid operation	
	262149 = Invalid version	
	262150 = Invalid revision	
	262151 = Not initialized	
	262152 = Doc missing	
	262153 = Unexpected	
	262156 = Incomplete	
	262157 = Buffer too small	
	262158 = Unsupported video	
	262159 = Unsupported audio	
	262160 = Invalid bandwidth	
	262161 = No renderer	
	262162 = Element not found	
	262163 = No class	
	262164 = Class no aggregation	
	262165 = Not licensed	
	262166 = No file system	
	262167 = Request upgrade	
	262168 = Awaiting license	
	262208 = Buffering	
	262209 = Paused	
	262210 = No data	
	262211 = Net socket invalid	
	262212 = Net connect	
	262213 = Bind	
	262214 = Socket create	
	262215 = Invalid host	
	262216 = Net read	
	262217 = Net write	
	262218 = Net UDP	
	262219 = Retry	
	262220 = Server timeout	
	262221 = Server disconnected	
	262222 = Would block	
	262223 = General nonet	
	262224 = Block canceled	
	262225 = Multicast join	
	262226 = General multicast	
	262227 = Multicast UDP	
	262228 = At interrupt	
	262229 = Msg too large	
	262230 = Net TCP	
	262231 = Try auto config	
	262232 = Not enough bandwidth	
	262233 = HTTP connect	
	262234 = Port in use	
	262235 = Load test not supported	
	262272 = At end	
	262273 = Invalid file	
	262274 = Invalid path	
	262275 = Record	
	262276 = Record write	

262277 = Temp file
262278 = Already open
262279 = Seek pending
262280 = Cancelled
262281 = File not found
262282 = Write error
262283 = File exists
262285 = Advise prefer linear
262286 = Parse error
262336 = Bad server
262337 = Advanced server
262338 = Old server
262339 = Redirection
262340 = Server alert
262341 = Proxy
262342 = Proxy response
262343 = Advanced proxy
262344 = Old proxy
262345 = Invalid protocol
262346 = Invalid url option
262347 = Invalid url host
262348 = Invalid url path
262349 = HTTP content not found
262350 = Not authorized
262351 = Unexpected msg
262352 = Bad transport
262353 = No session id
262354 = Proxy dnr
262355 = Proxy net connect
262400 = Audio driver
262401 = Late packet
262402 = Overlapped packet
262403 = Out of order packet
262404 = Non contiguous packet
262464 = Open not processed
262528 = Expired
262593 = Could not init core
262594 = Perfectplay not supported
262595 = No live perfectplay
262596 = Perfectplay not allowed
262597 = No codecs
262598 = Slow machine
262599 = Force perfectplay
262600 = Invalid HTTP proxy host
262601 = Invalid metafile
262602 = Browser launch
262603 = View source noclip
262604 = View source dissabled
262656 = Decoder initied
262657 = Decoder not found
262658 = Decoder invalid
262659 = Decoder type mismatch
262660 = Decoder init failed
262661 = Decoder not initied
262662 = Decoder decompress
262663 = Obsolete version
262720 = Encoder file too small
262721 = Encoder unknown file
262722 = Encoder bad channels
262723 = Encoder bad sampsize
262724 = Encoder bad samprate
262725 = Encoder invalid
262726 = Encoder no output file
262727 = Encoder no input file
262728 = Encoder no output permissions
262729 = Encoder bad file type
262730 = Encoder invalid video
262731 = Encoder invalid audio
262732 = Encoder no video capture
262733 = Encoder invalid video capture
262734 = Encoder no audio capture
262735 = Encoder invalid audio capture

262736	= Encoder too slow for live
262737	= Encoder engine not initialized
262738	= Encoder coDecoder not found
262739	= Encoder coDecoder not initialized
262740	= Encoder invalid input dimensions
262741	= Encoder message ignored
262742	= Encoder no settings
262743	= Encoder no output types
262744	= Encoder improper state
262745	= Encoder invalid server
262746	= Encoder invalid temp path
262747	= Encoder merge fail
262748	= Bin data not found
262749	= Bin end of data
262750	= Bin data purged
262751	= Bin full
262752	= Bin offset past end
262753	= Encoder no encoded data
262754	= Encoder invalid dll
262755	= Not indexable
262756	= Encoder no browser
262757	= Encoder no file to server
262758	= Encoder insufficient disk space
262785	= Prop not found
262786	= Prop not composite
262787	= Prop duplicate
262788	= Prop type mismatch
262789	= Prop active
262790	= Prop inactive
262848	= Ppv no user
262849	= Ppv guid read only
262850	= Ppv guid collision
262851	= Register guid exists
262852	= Ppv authorization failed
262853	= Ppv old player
262854	= Ppv account locked
262856	= Ppv dbaccess error
262857	= Ppv user already exists
262914	= Resource not found
262915	= Resource close file first
262916	= Resource nodata
262917	= Resource badfile
262918	= Resource partial copy
262976	= Upg auth failed
262977	= Upg cert auth failed
262978	= Upg cert expired
262979	= Upg cert revoked
262980	= Upg rup bad
263105	= Rmt usage error
263106	= Rmt invalid end time
263107	= Rmt missing input file
263108	= Rmt missing output file
263109	= Rmt input equals output file
263110	= Rmt unsupported audio version
263111	= Rmt different audio
263112	= Rmt different video
263113	= Rmt paste missing stream
263114	= Rmt end of stream
263115	= Rmt image map parse error
263116	= Rmt invalid image map file
263117	= Rmt event parse error
263118	= Rmt invalid event file
263119	= Rmt invalid output file
263120	= Rmt invalid duration
263121	= Rmt no dump files
263122	= Rmt no event dump file
263123	= Rmt no imap dump file
263124	= Rmt no data
263125	= Rmt empty stream
263126	= Rmt read only file
263127	= Rmt paste missing audio stream
263128	= Rmt paste missing video stream

263168 = Autocfg success
263169 = Autocfg failed
263170 = Autocfg abort
266176 = Invalid inter leaver
266177 = Bad format
266178 = Chunk missing
266179 = Invalid stream
266180 = Dnr
266181 = Open driver
266182 = Upgrade
266183 = Notification
266184 = Not notified
266185 = Stopped
266186 = Closed
266187 = Invalid wav file
266188 = No seek

Parameters for HTTP browsing errors [|Top|](#)

Name	Type	Description
HTTP browsing cause	Integer	<p>HTTP browsing cause</p> <p>1 = Timeout</p> <p>2 = Invalid remote address</p> <p>4 = Invalid remote file</p> <p>5 = Invalid local file</p> <p>100 = Continue</p> <p>101 = Switching protocols</p> <p>102 = Processing</p> <p>200 = OK, success</p> <p>201 = Created</p> <p>202 = Accepted</p> <p>203 = Non-authoritative information</p> <p>204 = No content</p> <p>205 = Reset content</p> <p>206 = Partial content</p> <p>208 = Already reported</p> <p>300 = Multiple choices</p> <p>301 = Moved permanently</p> <p>302 = Found</p> <p>In some cases this can be same as moved temporarily.</p> <p>303 = See other</p> <p>304 = Not modified</p> <p>305 = Use proxy</p> <p>306 = Reserved</p> <p>307 = Temporary redirect</p> <p>308 = Permanent redirect</p> <p>400 = Bad request</p> <p>Server could not understand request.</p> <p>401 = Unauthorized</p> <p>402 = Payment required</p> <p>403 = Forbidden</p> <p>Operation is understood but refused.</p> <p>404 = Not Found</p> <p>405 = Method not allowed</p> <p>406 = Not acceptable</p> <p>407 = Proxy authentication required</p> <p>408 = Request timeout</p> <p>409 = Conflict</p> <p>410 = Gone</p> <p>411 = Length Required</p> <p>412 = Precondition failed</p> <p>413 = Request entity too large</p> <p>414 = Request-URI too long</p> <p>415 = Unsupported media type</p> <p>416 = Requested range not satisfiable</p> <p>417 = Expectation failed</p> <p>422 = Unprocessable entity</p> <p>423 = Locked</p> <p>424 = Failed dependency</p> <p>426 = Upgrade required</p> <p>428 = Precondition required</p>

429 = Too many requests
431 = Request header fields too large
500 = Internal server error
501 = Not implemented
502 = Bad gateway
503 = Service unavailable
504 = Gateway timeout
505 = HTTP version not supported
1120 = Connection dropped by remote host
2002 = Failed
2003 = Aborted
2004 = Invalid argument
2005 = Invalid handle
2006 = File not found
2007 = Timed out
2008 = File too big
2009 = Unexpected error
2010 = Access denied
2011 = Not implemented
2100 = Connection closed
2101 = Connection reset
2102 = Connection refused
2103 = Connection aborted
2104 = Connection failed
2105 = Name not resolved
2106 = Internet disconnected
2107 = SSL protocol error
2108 = Invalid address
2109 = Address unreachable
2110 = SSL authentication certification needed
2111 = Tunnel connection failed
2112 = No SSL versions enabled
2113 = SSL version or cipher mismatch
2114 = SSL renegotiation requested
2115 = Unsupported proxy authentication method
2116 = SSL renegotiation error
2117 = Bad or missing SSL client certificate
2118 = Connection timeout
2119 = Too many pending DNS resolves
2120 = Failed to connect SOCKS proxy
2121 = SOCKS proxy server failed to establish connection to the target host
2122 = The request to negotiate an alternate protocol failed
2123 = The peer sent an SSL no_renegotiation alert message
2124 = Winsock reported unexpected written bytes
2125 = SSL decompression failure
2126 = SSL bad record MAC alert
2127 = The proxy requested authentication for tunnel establishment
2128 = A known TLS strict server didn't offer the renegotiation extension
2129 = The SSL server attempted to use a weak ephemeral Diffie-Hellman key
2130 = Could not connect to proxy server
2131 = Snap start NPN misprection
2132 = ESET anti-virus SSL interception
2133 = Preconnect socket limit reached
2134 = The permission to use the SSL client certificate's private key was denied
2135 = The SSL client certificate has no private key
2136 = The certificate presented by the HTTPS Proxy was invalid
2137 = An error occurred when trying to do a name resolution (DNS)
2138 = Permission to access the network was denied
2139 = The request throttler module cancelled this request to avoid DDOS
2140 = SSL tunnel connection through HTTPS proxy failed
2200 = SSL certification invalid common name
2201 = SSL certification invalid date
2202 = SSL certification invalid authority
2203 = SSL certification contains errors

2204 = SSL certification has no revocation mechanism
2205 = Unable to the revocation for SSL certification
2206 = SSL certification revoked
2207 = SSL certification is invalid
2208 = SSL certification end
2300 = Invalid URL
2301 = Disallowed URL scheme
2302 = Unknown URL scheme
2310 = Too many redirects
2311 = Unsafe redirect
2312 = Unsafe port
2320 = Invalid response
2321 = Invalid chunked encoding
2322 = Method not supported
2323 = Unexpected proxy authentication
2324 = Empty response
2325 = Response headers are too big
2400 = Cache miss
2501 = Insecure response

Parameters for ICMP ping errors [|Top|](#)

Name	Type	Description
ICMP ping cause	Integer	ICMP ping cause 2 = Invalid remote address 119 = Message too short

Parameters for IPerf protocol errors [|Top|](#)

Name	Type	Description
Data transfer cause	Integer	Data transfer cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file.

Parameters for trace route errors [|Top|](#)

Name	Type	Description
Trace route cause	Integer	Trace route cause 1 = Timeout 2 = Invalid remote address 119 = Message too short 131 = Request queue is full 132 = Message for unknown request 159 = Invalid hop index (out of range) 312 = Busy performing current trace

Parameters for IMAP protocol errors [|Top|](#)

Name	Type	Description
IMAP cause	Integer	IMAP cause 1 = Timeout 2 = Invalid remote address 6 = Incorrect index 116 = RemotePort cannot be zero. Please specify a valid service port number 118 = Firewall error 270 = Cannot load specified security library 271 = Cannot open certificate store 272 = Cannot find specified certificate 273 = Cannot acquire security credentials 274 = Cannot find certificate chain 275 = Cannot verify certificate chain 276 = Error during handshake 280 = Error verifying certificate 281 = Could not find client certificate 282 = Could not find server certificate

283 = Error encrypting data
 284 = Error decrypting data
 315 = Invalid argument
 317 = Unknown content encoding
 1117 = You need to connect first.
 1120 = Connection dropped by remote host

Parameters for Facebook protocol errors [|Top|](#)

Name	Type	Description
Facebook cause	Integer	Facebook cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily. 303 = See other 304 = Not modified 305 = Use proxy 306 = Reserved 307 = Temporary redirect 308 = Permanent redirect 400 = Bad request Server could not understand request. 401 = Unauthorized 402 = Payment required 403 = Forbidden Operation is understood but refused. 404 = Not Found 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout 409 = Conflict 410 = Gone 411 = Length Required 412 = Precondition failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Requested range not satisfiable 417 = Expectation failed 422 = Unprocessable entity 423 = Locked 424 = Failed dependency 426 = Upgrade required 428 = Precondition required 429 = Too many requests 431 = Request header fields too large 500 = Internal server error 501 = Not implemented 502 = Bad gateway 503 = Service unavailable 504 = Gateway timeout 505 = HTTP version not supported 1120 = Connection dropped by remote host 10231 = Unbalanced element tag

10232 = Invalid JSON markup
 10233 = Invalid XPath
 10234 = DOM tree unavailable
 20000 = Invalid access token
 20001 = An unknown error occurred
 20002 = Service temporarily unavailable
 20003 = Unknown method
 20004 = Application request limit reached
 20009 = User is performing too many actions
 20011 = This method is deprecated
 20013 = FQL query error
 20015 = This method call must be signed with the application secret
 20017 = User request limit reached
 20100 = Invalid parameter
 20101 = Invalid API key
 20102 = Session key invalid or no longer valid
 20105 = Too many parameters
 20110 = Invalid user id
 20113 = Invalid email
 20200 = Permissions error
 20210 = User not visible
 20211 = Application has no developers
 20250 = Updating status requires the extended permission status_update
 20321 = Album is full
 20324 = Missing or invalid image file
 20325 = Too many unapproved photos pending
 20340 = Feed publication request limit reached
 20341 = Feed action request limit reached
 20343 = The story title is too long
 20345 = Feed story title rendered as blank
 20346 = Feed story body is too long
 20347 = Feed story photo could not be accessed or proxied
 20348 = Feed story photo link invalid
 20362 = Feed story body_data argument was not a valid JSON-encoded array
 20370 = The email address is not valid
 20371 = The email address belongs to an existing account
 20400 = Invalid email address
 20401 = Invalid username or password
 20402 = Invalid application auth sig
 20403 = Invalid timestamp for authentication
 20450 = Session key specified has passed its expiration time
 20451 = Session key specified cannot be used to call this method
 20452 = Invalid session key
 20453 = A session key is required for calling this method
 20454 = A session key must be specified when request is signed with a session secret
 20455 = A session secret is not permitted to be used with this type of session key
 20500 = Message contains banned content
 20501 = Missing message body
 20502 = Message is too long
 20503 = User has sent too many messages
 20504 = Invalid reply thread id
 20505 = Invalid message recipient
 20506 = Duplicate status message
 20803 = Invalid user id

Parameters for Twitter protocol errors [|Top](#)

Name	Type	Description
Twitter cause	Integer	Twitter cause 1 = Timeout 200 = OK, success 20032 = Could not authenticate Call could not be completed as dialed. 20034 = Page does not exist

		<p>Page does not exist. Corresponds with an HTTP 404 - the specified resource was not found.</p> <p>20064 = Account suspended Account is suspended and is not permitted to access this feature.</p> <p>20068 = Depreciated API The Twitter REST API v1 is no longer active. Please migrate to API v1.1.</p> <p>20088 = Rate limit exceeded The request limit for this resource has been reached for the current rate limit window.</p> <p>20089 = Access token incorrect or expired Use API v1.1.</p> <p>20092 = SSL is required Only SSL connections are allowed in the API, you should update your request to a secure connection.</p> <p>20130 = Service unavailable Corresponds with an HTTP 503 - Twitter is temporarily over capacity.</p> <p>20131 = Internal server error Corresponds with an HTTP 500 - An unknown internal error occurred.</p> <p>20135 = Could not authenticate</p> <p>20161 = Unable to follow more people at this time</p> <p>20179 = Not authorized to see this status</p> <p>20185 = User is over daily status update limit</p> <p>20187 = Status is a duplicate</p> <p>20189 = Error creating status</p> <p>20215 = Bad authentication data Typically sent with 1.1 responses with HTTP code 400.</p> <p>20226 = Spam This request looks like it might be automated. To protect users from spam and other malicious activity, can not complete this action right now.</p> <p>20231 = User must verify login</p> <p>20251 = This endpoint has been retired Corresponds to a HTTP request to a retired URL.</p> <p>20261 = Application cannot perform write actions</p>
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Parameters for Instagram protocol errors [|Top|](#)

Name	Type	Description
Instagram cause	Integer	<p>Instagram cause</p> <p>1 = Timeout</p> <p>2 = Invalid remote address</p> <p>4 = Invalid remote file</p> <p>5 = Invalid local file</p> <p>100 = Continue</p> <p>101 = Switching protocols</p> <p>102 = Processing</p> <p>200 = OK, success</p> <p>201 = Created</p> <p>202 = Accepted</p> <p>203 = Non-authoritative information</p> <p>204 = No content</p> <p>205 = Reset content</p> <p>206 = Partial content</p> <p>208 = Already reported</p> <p>300 = Multiple choices</p> <p>301 = Moved permanently</p> <p>302 = Found In some cases this can be same as moved temporarily.</p> <p>303 = See other</p> <p>304 = Not modified</p> <p>305 = Use proxy</p> <p>306 = Reserved</p> <p>307 = Temporary redirect</p> <p>308 = Permanent redirect</p> <p>400 = Bad request Server could not understand request.</p>

401 = Unauthorized
 402 = Payment required
 403 = Forbidden
 Operation is understood but refused.
 404 = Not Found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host
 20001 = Image download failed
 20002 = Invalid user
 20400 = Invalid user or Access Token
 20429 = The maximum number of requests per hour has been exceeded
 20503 = too many requests

Parameters for LinkedIn protocol errors [\[Top\]](#)

Name	Type	Description
LinkedIn cause	Integer	LinkedIn cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information 204 = No content 205 = Reset content 206 = Partial content 208 = Already reported 300 = Multiple choices 301 = Moved permanently 302 = Found In some cases this can be same as moved temporarily. 303 = See other 304 = Not modified 305 = Use proxy 306 = Reserved 307 = Temporary redirect 308 = Permanent redirect 400 = Bad request Server could not understand request.

401 = Unauthorized
 402 = Payment required
 403 = Forbidden
 Operation is understood but refused.
 404 = Not Found
 405 = Method not allowed
 406 = Not acceptable
 407 = Proxy authentication required
 408 = Request timeout
 409 = Conflict
 410 = Gone
 411 = Length Required
 412 = Precondition failed
 413 = Request entity too large
 414 = Request-URI too long
 415 = Unsupported media type
 416 = Requested range not satisfiable
 417 = Expectation failed
 422 = Unprocessable entity
 423 = Locked
 424 = Failed dependency
 426 = Upgrade required
 428 = Precondition required
 429 = Too many requests
 431 = Request header fields too large
 500 = Internal server error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Gateway timeout
 505 = HTTP version not supported
 1120 = Connection dropped by remote host
 20001 = Image download failed
 20003 = JSON error

Parameters for PEVQ-S protocol errors [|Top|](#)

Name	Type	Description
PEVQ-S cause	Integer	PEVQ-S cause 1 = Timeout 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 12 = Invalid PEVQS handle 13 = Handle was already setup or used in another measurement 14 = Error with license 15 = Error with license info generation 16 = Out of Memory 17 = Packet drop in packet capture detected 18 = Network error 19 = Error with packet source 20 = Video is transported over HTTPS 21 = Could not open database 22 = Database does not match measured video stream 23 = Database version does not match PEVQ-S probe version 24 = Unspecific SQL error 25 = Could not open or parse SSL log file 26 = Error in player simulation 27 = Player signaled error 28 = The player end message is missing but end of video was detected 29 = General error 100 = Continue 101 = Switching protocols 102 = Processing 200 = OK, success 201 = Created 202 = Accepted 203 = Non-authoritative information

204 = No content
205 = Reset content
206 = Partial content
208 = Already reported
300 = Multiple choices
301 = Moved permanently
302 = Found
 In some cases this can be same as moved temporarily.
303 = See other
304 = Not modified
305 = Use proxy
306 = Reserved
307 = Temporary redirect
308 = Permanent redirect
400 = Bad request
 Server could not understand request.
401 = Unauthorized
402 = Payment required
403 = Forbidden
 Operation is understood but refused.
404 = Not Found
405 = Method not allowed
406 = Not acceptable
407 = Proxy authentication required
408 = Request timeout
409 = Conflict
410 = Gone
411 = Length Required
412 = Precondition failed
413 = Request entity too large
414 = Request-URI too long
415 = Unsupported media type
416 = Requested range not satisfiable
417 = Expectation failed
422 = Unprocessable entity
423 = Locked
424 = Failed dependency
426 = Upgrade required
428 = Precondition required
429 = Too many requests
431 = Request header fields too large
500 = Internal server error
501 = Not implemented
502 = Bad gateway
503 = Service unavailable
504 = Gateway timeout
505 = HTTP version not supported
1120 = Connection dropped by remote host
2002 = Failed
2003 = Aborted
2004 = Invalid argument
2005 = Invalid handle
2006 = File not found
2007 = Timed out
2008 = File too big
2009 = Unexpected error
2010 = Access denied
2011 = Not implemented
2100 = Connection closed
2101 = Connection reset
2102 = Connection refused
2103 = Connection aborted
2104 = Connection failed
2105 = Name not resolved
2106 = Internet disconnected
2107 = SSL protocol error
2108 = Invalid address
2109 = Address unreachable
2110 = SSL authentication certification needed
2111 = Tunnel connection failed
2112 = No SSL versions enabled
2113 = SSL version or cipher mismatch

2114 = SSL renegotiation requested
 2115 = Unsupported proxy authentication method
 2116 = SSL renegotiation error
 2117 = Bad or missing SSL client certificate
 2118 = Connection timeout
 2119 = Too many pending DNS resolves
 2120 = Failed to connect SOCKS proxy
 2121 = SOCKS proxy server failed to establish connection to the target host
 2122 = The request to negotiate an alternate protocol failed
 2123 = The peer sent an SSL no_renegotiation alert message
 2124 = Winsock reported unexpected written bytes
 2125 = SSL decompression failure
 2126 = SSL bad record MAC alert
 2127 = The proxy requested authentication for tunnel establishment
 2128 = A known TLS strict server didn't offer the renegotiation extension
 2129 = The SSL server attempted to use a weak ephemeral Diffie-Hellman key
 2130 = Could not connect to proxy server
 2131 = Snap start NPN misprection
 2132 = ESET anti-virus SSL interception
 2133 = Preconnect socket limit reached
 2134 = The permission to use the SSL client certificate's private key was denied
 2135 = The SSL client certificate has no private key
 2136 = The certificate presented by the HTTPS Proxy was invalid
 2137 = An error occurred when trying to do a name resolution (DNS)
 2138 = Permission to access the network was denied
 2139 = The request throttler module cancelled this request to avoid DDOS
 2140 = SSL tunnel connection through HTTPS proxy failed
 2200 = SSL certification invalid common name
 2201 = SSL certification invalid date
 2202 = SSL certification invalid authority
 2203 = SSL certification contains errors
 2204 = SSL certification has no revocation mechanism
 2205 = Unable to the revocation for SSL certification
 2206 = SSL certification revoked
 2207 = SSL certification is invalid
 2208 = SSL certification end
 2300 = Invalid URL
 2301 = Disallowed URL scheme
 2302 = Unknown URL scheme
 2310 = Too many redirects
 2311 = Unsafe redirect
 2312 = Unsafe port
 2320 = Invalid response
 2321 = Invalid chunked encoding
 2322 = Method not supported
 2323 = Unexpected proxy authentication
 2324 = Empty response
 2325 = Response headers are too big
 2400 = Cache miss
 2501 = Insecure response

Parameters for Dropbox protocol errors [\[Top\]](#)

Name	Type	Description
Dropbox cause	Integer	Dropbox cause 4 = Invalid remote file 5 = Invalid local file 421 = Service not available 425 = Cannot open connection

Parameters for aborted transfer [\[Top\]](#)

Name	Type	Description
Reserved	Integer	Reserved Always n/a.

Parameters for ICMP ping [\[Top\]](#)

Name	Type	Description
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Parameters for all protocols [\[Top\]](#)

Name	Type	Description
IP access time	Integer	Data transfer IP service access time Time from DREQ to moment when socket connection has been established and first data packet is send. Minimum value: 0 Unit: ms
IP term. time	Integer	Data transfer IP termination time Time from last data packet to the DCOMP when all connections has been terminated and data transfer is finished. Minimum value: 0 Unit: ms
Bytes UL	Integer	Transferred bytes uplink This is a cumulative byte count from the beginning of the transfer. Minimum value: 0 Unit: byte
Bytes DL	Integer	Transferred bytes downlink This is a cumulative byte count from the beginning of the transfer. Minimum value: 0 Unit: byte
Header transfer time	Integer	Header transfer time Currently this parameter is only logged for POP3 and IMAP protocols. Minimum value: 0 Unit: ms
TCP connection time	Integer	TCP connection establishment time Delay of TCP handshake when opening a socket and connecting to a server. Minimum value: 0 Unit: ms
Redirect address	String	Redirect address This is the address where the transfer was redirected.

Data throughput (DRATE)

Event ID	DRATE
Cellular systems	All
Record state	Data transfer state
Description	Recorded semi-periodically when application layer data is transferred to or received from the server. Minimum time period between two measurement events is one second; the maximum is ten seconds (zero values are recorded when data has not been transferred at a point in time).
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous

[Parameters](#) | [Parameters for application protocols](#) |

Parameters [\[Top\]](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 13 = IPerf over TCP 14 = IPerf over UDP 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox

Parameters for application protocols [\[Top\]](#)

Name	Type	Description
App. rate UL	Integer	Application throughput uplink The value of this parameter is calculated based on the SDUs that are successfully transferred through the application layer. Missing and erroneous application layer data is excluded from the throughput calculation. Note that with TCP/IP-based application protocols, the TCP/IP headers are not taken into account when calculating the throughput. Minimum value: 0 Unit: bit/s
App. rate DL	Integer	Application throughput downlink The value of this parameter is calculated based on the SDUs that are successfully transferred through the application layer. Missing and erroneous application layer data is excluded from the throughput calculation. Note that with TCP/IP-based application protocols, the TCP/IP headers are not taken into account when calculating the throughput. Minimum value: 0 Unit: bit/s
Bytes UL	Integer	Transferred bytes uplink This is a cumulative byte count from the beginning of the transfer. Minimum value: 0 Unit: byte
Bytes DL	Integer	Transferred bytes downlink This is a cumulative byte count from the beginning of the transfer. Minimum value: 0 Unit: byte

Packet error rate (PER)

Event ID	PER
Cellular systems	All
Record state	Data transfer state
Description	Recorded semi-periodically when application layer data is transferred to or received from the server. The measurement event is written simultaneously with the DRATE measurement event for the documented UDP-based protocols.
Tools	Nemo Outdoor

Parameters | Parameters for streaming and IPerf over UDP protocols |

Parameters | [Top](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Application protocol	Integer	Application protocol 9 = Streaming 14 = IPerf over UDP

Parameters for streaming and IPerf over UDP protocols | [Top](#)

Name	Type	Description
PER UL	Float	Packet error rate uplink The ratio of erroneously transferred packets to total number of transferred packets. Range: 0 – 100 Unit: %
PER DL	Float	Packet error rate downlink The ratio of erroneously received packets to total number of received packets. Range: 0 – 100 Unit: %
Packets UL	Integer	Transferred packets uplink
Packets DL	Integer	Transferred packets downlink
Errors UL	Integer	Erroneous packets uplink
Errors DL	Integer	Erroneous packets downlink

Round trip time (RTT)

Event ID	RTT
Cellular systems	All
Record state	Data transfer state
Description	Recorded for each ICMP ping packet separately.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for ICMP ping |

Parameters [|Top](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Application protocol	Integer	Application protocol 12 = ICMP ping

Parameters for ICMP ping [|Top](#)

Name	Type	Description
Ping size	Integer	Ping packet size Ping packet size is the size of the ping packet. The value also determines the size of the reply packet. Unit: byte
Ping RTT	Integer	Ping round trip time Unit: ms

Jitter (JITTER)

Event ID	JITTER
Cellular systems	All
Record state	Data transfer state
Description	Recorded semi-periodically when application layer data is transferred to or received from the server. The measurement event is written simultaneously with the DRATE measurement.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for IPerf over UDP](#) |

Parameters [|Top](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Application protocol	Integer	Application protocol 14 = IPerf over UDP

Parameters for IPerf over UDP [|Top](#)

Name	Type	Description
Jitter UL	Integer	Packet jitter uplink Unit: ms
Jitter DL	Integer	Packet jitter downlink Unit: ms

Data stream status (DSS)

Event ID	DSS
Cellular systems	All
Record state	Data transfer state
Description	Recorded when the data stream state changes.
Tools	Nemo Outdoor

Parameters | Parameters for Streaming |

Parameters [|Top|](#)

Name	Type	Description
Application protocol	Integer	Application protocol 9 = Streaming 22 = PEVQ-S

Parameters for Streaming [|Top|](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Stream state	Integer	Data transfer stream state 0 = Uninitialized 1 = Stopped 2 = Buffering 3 = Streaming
Stream bandwidth	Integer	Data transfer stream bandwidth Non-measured stream throughput that have to be used to be able to receive data stream without breaks. Minimum value: 0 Unit: bit/s
Stream resolution	String	Data transfer stream resolution The string format is XxY, e.g. 1920x1080.
Stream duration	Integer	Data transfer stream total duration Minimum value: 0 Unit: ms
Stream position	Integer	Data transfer stream playback position Minimum value: 0 Unit: ms
Stream content type	String	Data transfer stream content type
Stream video codec	String	Data transfer stream video codec
Stream audio codec	String	Data transfer stream audio codec
File size	Integer	File size Amount of data to be transferred. Unit: byte

Data content (DCONTENT)

Event ID	DCONTENT
Cellular systems	All
Record state	Data transfer state

Description	Recorded after data transfer has been completed and WAP/HTML content has been parsed.
Tools	Nemo Outdoor

Parameters | Parameters for WAP 1.0 and 2.0 | Parameters for HTTP browsing, Facebook, Twitter, Instagram, and LinkedIn |

Parameters [\[Top\]](#)

Name	Type	Description
Application protocol	Integer	Application protocol 8 = WAP 1.0 10 = WAP 2.0 11 = HTTP browsing 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn

Parameters for WAP 1.0 and 2.0 [\[Top\]](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Number of content elements	Integer	Number of content elements
Number of parameters per content	Integer	Number of parameters per content
Content	String	Content For text this is the content itself and for the other content types the URL to the resource.
Type	Integer	Content type 1 = File 2 = Image 3 = Link 4 = Text
Size	Integer	Content size Unit: byte
Encoding	String	Content encoding

Parameters for HTTP browsing, Facebook, Twitter, Instagram, and LinkedIn [\[Top\]](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Number of content elements	Integer	Number of content elements
Number of parameters per content	Integer	Number of parameters per content
Content	String	Content For text this is the content itself and for the other content types the URL to the resource.
Type	Integer	Content type 1 = File 2 = Image 3 = Link 4 = Text
Size	Integer	Content size Unit: byte

Encoding	String	Content encoding
Download duration	Integer	Content download duration Unit: ms
Start time	String	Content download start time
Reply	Integer	Content reply status code
Content-Type	String	Content HTTP Content-Type

Trace route (DTRACE)

Event ID	DTRACE
Cellular systems	All
Record state	Data transfer state
Description	One measurement event is recorded for each trace route host.
Tools	Nemo Outdoor

Parameters | Parameters for trace route |

Parameters |Top|

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
Application protocol	Integer	Application protocol 15 = Trace route

Parameters for trace route |Top|

Name	Type	Description
Host	String	Destination address
Trace hop count	Integer	Trace hop count
Ping RTT	Integer	Ping round trip time Unit: ms

DNS query (DNSQUERY)

Event ID	DNSQUERY
Cellular systems	All
Record state	Always
Description	Recorded after DNS query.
Tools	Nemo Outdoor

Parameters |

Parameters [\[Top\]](#)

Name	Type	Description
DNS query address	String	DNS query address This is the domain name in human friendly format and this is translated to the IP address using DNS.
DNS query latency	Integer	DNS host name resolution time See 3GPP TS 102.25 subclause 5.11. Unit: ms
DNS query result	Integer	DNS query result 0 = Success 1460 = Timeout 9001 = DNS server unable to interpret format. 9002 = DNS server failure. 9003 = DNS name does not exist. 9004 = DNS request not supported by name server. 9005 = DNS operation refused. 9006 = DNS name that ought not exist, does exist. 9007 = DNS RR set that ought not exist, does exist. 9008 = DNS RR set that ought to exist, does not exist. 9009 = DNS server not authoritative for zone. 9010 = DNS name in update or prereq is not in zone. 9016 = DNS signature failed to verify. 9017 = DNS bad key. 9018 = DNS signature validity expired. 9501 = No records found for given DNS query. 9502 = Bad DNS packet. 9503 = No DNS packet. 9504 = DNS error, check rcode. 9505 = Unsecured DNS packet. 9551 = Invalid DNS type. 9552 = Invalid IP address. 9553 = Invalid property. 9554 = Try DNS operation again later. 9555 = Record for given name and type is not unique. 9556 = DNS name does not comply with RFC specifications. 9557 = DNS name is a fully-qualified DNS name. 9558 = DNS name is dotted (multi-label). 9559 = DNS name is a single-part name. 9560 = DNS name contains an invalid character. 9561 = DNS name is entirely numeric. 9562 = The operation requested is not permitted on a DNS root server. 9563 = The record could not be created because this part of the DNS namespace has been delegated to another server. 9564 = The DNS server could not find a set of root hints. 9565 = The DNS server found root hints but they were not consistent across all adapters. 9566 = The specified value is too small for this parameter. 9567 = The specified value is too large for this parameter. 9568 = This operation is not allowed while the DNS server is loading zones in the background. Please try again later. 9569 = The operation requested is not permitted on against a DNS server running on a read-only DC. 9570 = No data is allowed to exist underneath a DNAME record. 9571 = This operation requires credentials delegation. 9601 = DNS zone does not exist. 9602 = DNS zone information not available. 9603 = Invalid operation for DNS zone. 9604 = Invalid DNS zone configuration. 9605 = DNS zone has no start of authority (SOA) record. 9606 = DNS zone has no Name Server (NS) record. 9607 = DNS zone is locked. 9608 = DNS zone creation failed. 9609 = DNS zone already exists. 9610 = DNS automatic zone already exists. 9611 = Invalid DNS zone type. 9612 = Secondary DNS zone requires master IP address. 9613 = DNS zone not secondary. 9614 = Need secondary IP address. 9615 = WINS initialization failed.

9616 = Need WINS servers.
9617 = NBTSTAT initialization call failed.
9618 = Invalid delete of start of authority (SOA)
9619 = A conditional forwarding zone already exists for that name.
9620 = This zone must be configured with one or more master DNS server IP addresses.
9621 = The operation cannot be performed because this zone is shutdown.
9651 = Primary DNS zone requires datafile.
9652 = Invalid datafile name for DNS zone.
9653 = Failed to open datafile for DNS zone.
9654 = Failed to write datafile for DNS zone.
9655 = Failure while reading datafile for DNS zone.
9701 = DNS record does not exist.
9702 = DNS record format error.
9703 = Node creation failure in DNS.
9704 = Unknown DNS record type.
9705 = DNS record timed out.
9706 = Name not in DNS zone.
9707 = CNAME loop detected.
9708 = Node is a CNAME DNS record.
9709 = A CNAME record already exists for given name.
9710 = Record only at DNS zone root.
9711 = DNS record already exists.
9712 = Secondary DNS zone data error.
9713 = Could not create DNS cache data.
9714 = DNS name does not exist.
9715 = Could not create pointer (PTR) record.
9716 = DNS domain was undeleted.
9717 = The directory service is unavailable.
9718 = DNS zone already exists in the directory service.
9719 = DNS server not creating or reading the boot file for the directory service integrated DNS zone.
9720 = Node is a DNAME DNS record.
9721 = A DNAME record already exists for given name.
9722 = An alias loop has been detected with either CNAME or DNAME records.
9751 = DNS AXFR (zone transfer) complete.
9752 = DNS zone transfer failed.
9753 = Added local WINS server.
9801 = Secure update call needs to continue update request.
9851 = TCP/IP network protocol not installed.
9852 = No DNS servers configured for local system.
9901 = The specified directory partition does not exist.
9902 = The specified directory partition already exists.
9903 = This DNS server is not enlisted in the specified directory partition.
9904 = This DNS server is already enlisted in the specified directory partition.
9905 = The directory partition is not available at this time. Please wait a few minutes and try again.
9906 = The application directory partition operation failed.
10004 = A blocking operation was interrupted by a call to WSACancelBlockingCall.
10009 = The file handle supplied is not valid.
10013 = An attempt was made to access a socket in a way forbidden by its access permissions.
10014 = The system detected an invalid pointer address in attempting to use a pointer argument in a call.
10022 = An invalid argument was supplied.
10024 = Too many open sockets.
10035 = A non-blocking socket operation could not be completed immediately.
10036 = A blocking operation is currently executing.
10037 = An operation was attempted on a non-blocking socket that already had an operation in progress.
10038 = An operation was attempted on something that is not a socket.
10039 = A required address was omitted from an operation on a socket.
10040 = A message sent on a datagram socket was larger than the internal message buffer or some other network limit, or the buffer used to receive a datagram into was smaller than the datagram itself.

10041 = A protocol was specified in the socket function call that does not support the semantics of the socket type requested.

10042 = An unknown, invalid, or unsupported option or level was specified in a getsockopt or setsockopt call.

10043 = The requested protocol has not been configured into the system, or no implementation for it exists.

10044 = The support for the specified socket type does not exist in this address family.

10045 = The attempted operation is not supported for the type of object referenced.

10046 = The protocol family has not been configured into the system or no implementation for it exists.

10047 = An address incompatible with the requested protocol was used.

10048 = Only one usage of each socket address (protocol/network address/port) is normally permitted.

10049 = The requested address is not valid in its context.

10050 = A socket operation encountered a dead network.

10051 = A socket operation was attempted to an unreachable network.

10052 = The connection has been broken due to keep-alive activity detecting a failure while the operation was in progress.

10053 = An established connection was aborted by the software in your host machine.

10054 = An existing connection was forcibly closed by the remote host.

10055 = An operation on a socket could not be performed because the system lacked sufficient buffer space or because a queue was full.

10056 = A connect request was made on an already connected socket.

10057 = A request to send or receive data was disallowed because the socket is not connected and (when sending on a datagram socket using a sendto call) no address was supplied.

10058 = A request to send or receive data was disallowed because the socket had already been shut down in that direction with a previous shutdown call.

10059 = Too many references to some kernel object.

10060 = A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.

10061 = No connection could be made because the target machine actively refused it.

10062 = Cannot translate name.

10063 = Name component or name was too long.

10064 = A socket operation failed because the destination host was down.

10065 = A socket operation was attempted to an unreachable host.

10066 = Cannot remove a directory that is not empty.

10067 = A Windows Sockets implementation may have a limit on the number of applications that may use it simultaneously.

10068 = Ran out of quota.

10069 = Ran out of disk quota.

10070 = File handle reference is no longer available.

10071 = Item is not available locally.

10091 = WSASStartup cannot function at this time because the underlying system it uses to provide network services is currently unavailable.

10092 = The Windows Sockets version requested is not supported.

10093 = Either the application has not called WSASStartup, or WSASStartup failed.

10101 = Returned by WSARecv or WSARecvFrom to indicate the remote party has initiated a graceful shutdown sequence.

10102 = No more results can be returned by WSALookupServiceNext.

10103 = A call to WSALookupServiceEnd was made while this call was still processing. The call has been canceled.

10104 = The procedure call table is invalid.

10105 = The requested service provider is invalid.

10106 = The requested service provider could not be loaded or initialized.

10107 = A system call that should never fail has failed.

10108 = No such service is known. The service cannot be found in the specified name space.

10109 = The specified class was not found.

10110 = No more results can be returned by WSALookupServiceNext.

10111 = A call to WSALookupServiceEnd was made while this call was

		<p>still processing. The call has been canceled.</p> <p>10112 = A database query failed because it was actively refused.</p> <p>11001 = No such host is known.</p> <p>11002 = This is usually a temporary error during hostname resolution and means that the local server did not receive a response from an authoritative server.</p> <p>11003 = A non-recoverable error occurred during a database lookup.</p> <p>11004 = The requested name is valid and was found in the database, but it does not have the correct associated data being resolved for.</p> <p>11005 = At least one reserve has arrived.</p> <p>11006 = At least one path has arrived.</p> <p>11007 = There are no senders.</p> <p>11008 = There are no receivers.</p> <p>11009 = Reserve has been confirmed.</p> <p>11010 = Error due to lack of resources.</p> <p>11011 = Rejected for administrative reasons - bad credentials.</p> <p>11012 = Unknown or conflicting style.</p> <p>11013 = Problem with some part of the filterspec or providerspecific buffer in general.</p> <p>11014 = Problem with some part of the flowspec.</p> <p>11015 = General QOS error.</p> <p>11016 = An invalid or unrecognized service type was found in the flowspec.</p> <p>11017 = An invalid or inconsistent flowspec was found in the QOS structure.</p> <p>11018 = Invalid QOS provider-specific buffer.</p> <p>11019 = An invalid QOS filter style was used.</p> <p>11020 = An invalid QOS filter type was used.</p> <p>11021 = An incorrect number of QOS FILTERSPECS were specified in the FLOWDESCRIPTOR.</p> <p>11022 = An object with an invalid ObjectLength field was specified in the QOS provider-specific buffer.</p> <p>11023 = An incorrect number of flow descriptors was specified in the QOS structure.</p> <p>11024 = An unrecognized object was found in the QOS provider-specific buffer.</p> <p>11025 = An invalid policy object was found in the QOS provider-specific buffer.</p> <p>11026 = An invalid QOS flow descriptor was found in the flow descriptor list.</p> <p>11027 = An invalid or inconsistent flowspec was found in the QOS provider-specific buffer.</p> <p>11028 = An invalid FILTERSPEC was found in the QOS provider-specific buffer.</p> <p>11029 = An invalid shape discard mode object was found in the QOS provider-specific buffer.</p> <p>11030 = An invalid shaping rate object was found in the QOS provider-specific buffer.</p> <p>11031 = A reserved policy element was found in the QOS provider-specific buffer.</p>
#Results	Integer	Number of resolved DNS results
#Params/result	Integer	Number of parameters per resolved DNS result
DNS address	String	<p>DNS resolved address</p> <p>The DNS query result in the IP format. When multiple IP addresses is received for the domain name the first recorded IP address is used by the recording tool.</p>
DNS cache	Integer	<p>DNS query cache status</p> <p>Defines if IP address was received from the client side DNS cache or requested from the DNS server.</p> <p>0 = Non-cached</p> <p>1 = Cached</p>

TCP Statistics (TCPSTAT)

Event ID	TCPSTAT
Cellular systems	All
Record state	Data transfer state
Description	Recorded once a second.
Tools	Nemo Outdoor

Parameters | Parameters for application protocols |

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Name	Type	Description
Application protocol	Integer	Application protocol 0 = Nemo protocol using modem connection 1 = Nemo protocol using TCP 2 = Nemo protocol using UDP 3 = FTP 4 = HTTP 5 = SMTP 6 = POP3 7 = MMS 8 = WAP 1.0 9 = Streaming 10 = WAP 2.0 11 = HTTP browsing 13 = IPPerf over TCP 14 = IPPerf over UDP 16 = SFTP 17 = IMAP 18 = Facebook 19 = Twitter 20 = Instagram 21 = LinkedIn 22 = PEVQ-S 23 = Dropbox

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Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
TCP RWIN	Integer	TCP receive window size See http://en.wikipedia.org/wiki/TCP_tuning . Minimum value: 0 Unit: byte
TCP send window size	Integer	TCP send window size Minimum value: 0 Unit: byte
TCP RTP	Integer	TCP round-trip time TCP round-trip time is counted from the moment a data packet has been sent to a moment when a server has been responded with an ACK. This calculation is based on the packet timestamps, not the time the packet is sent and ACK is received at local time. SRTT (Smoothed Round-Trip Time) is an averaged estimation of the current RTT. The calculation formula is: $SRTT = (0.9 * \text{previous_SRTT}) + (0.1 * \text{current_RTT})$. See http://tools.ietf.org/html/rfc6298 . Minimum value: 0 Unit: ms
TCP UL BIF	Integer	TCP uplink bytes in flight This parameter shows how much data has been sent or

		received, but has not been confirmed by an ACK packet. If there is a problem with the network or multiple packets are lost or retransmitted, the value increases until it has been confirmed. The calculation of this parameters differs from the way Wireshark does it. In Wireshark, BIF can be quite high if an Out Of Order packet arrives to the data stream because Wireshark identifies BIF by sequence numbers. In Outdoor this is always calculated by inspecting the payload length of non-sent or non-received packets. Minimum value: 0 Unit: byte
TCP throughput downlink	Integer	TCP throughput downlink Minimum value: 0 Unit: bit/s
TCP throughput uplink	Integer	TCP throughput uplink Minimum value: 0 Unit: bit/s
TCP UL retr.	Integer	TCP uplink retransmission rate Minimum value: 0
TCP DUP ACKs	Integer	TCP duplicate ACKs Duplicate ACK is an ACK packet where all the sequence numbers are identical to the previous ACK. It is caused by a missing packet from the server side we try to get the server to send again. Minimum value: 0
TCP OoOs	Integer	TCP out-of-order packets Out Of Order is a packet that arrives in the middle of data sequence. Minimum value: 0
TCP RSTs	Integer	TCP reset packets RST packets are an indication about TCP connection that is only half open and one side has stopped sending information for some reason and connection has to be closed. Often RST packet is a response to receiving a packet for a socket that is already closed. Minimum value: 0

Cell measurement (CELLMEAS)

Event ID	CELLMEAS
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO,WLAN,GAN WLAN,WiMAX,AMPS,DAMPS,NAMPS,iDEN
Record state	Always
Description	Recorded when parameter sample is received from the device. Note that not necessarily all received samples are recorded and currently the recording frequency is about twice per second in connected state. Separate measurement event is logged for each system.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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 [Parameters for UMTS TD-SCDMA](#) |
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 [Parameters for EVDO](#) |
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 [Parameters for AMPS and NAMPS](#) |
 [Parameters for DAMPS](#) |
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Name	Type	Description

Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 51 = AMPS 52 = NAMPS 53 = DAMPS 55 = iDEN
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Parameters for GSM [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
ARFCN	Integer	Channel number During the active state this is the TCH channel number. If hopping is enabled the first hopping channel is reported.
BSIC	Integer	Base station identification code Range: 0 – 63
RxLev full	Float	RX level full The received signal level of all TDMA frames. See 3GPP TS 145.008 subclause 8.4. Range: -120 – -10 Unit: dBm
RxLev sub	Float	RX level sub The received signal level of the subset of the TDMA frames. See 3GPP TS 145.008 subclause 8.4. Range: -120 – -10 Unit: dBm
C1	Float	C1 criterion Path loss criterion parameter C1 is used for cell selection and reselection. See 3GPP TS 145.008 subclause 6.4 (with GPRS, also subclause 10.1.2). Unit: dB
C2	Float	C2 criterion The reselection criterion C2 is used for cell reselection. This parameter is used for cell reselection when the value of the path loss criterion C1 is over zero. See 3GPP TS 145.008 subclause 6.4. Unit: dB
C31	Float	C31 criterion The signal level threshold criterion parameter C31 is used to determine whether prioritized hierarchical GPRS and LSA cell re-selection shall apply. See 3GPP TS 145.008 subclause 10.1.2.
C32	Float	C32 criterion

		The cell ranking criterion C32 is used in selecting cells from cells that have the same priority. See 3GPP TS 145.008 subclause 10.1.2.
HCS priority	Integer	HCS priority class Defines the cell re-selection order of the cells. See 3GPP TS 145.008 subclause 10.1.3. Range: 0 – 7
HCS thr.	Float	HCS threshold See 3GPP TS 145.008 subclause 10.1.2. Range: -48 – -110 Unit: dBm
Cell ID	Integer	Cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 65535
LAC	Integer	Location area code Range: 0 – 65535
RAC	Integer	Routing area code
Srxlev	Float	Neighbor Srxlev criterion Cell selection criterion S based on RX level. This value is only available during the UMTS mode. See 3GPP TS 25.304 subclause 5.2.3 cell selection process. Range: -107 – 90 Unit: dBm

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 20001 = TETRA band 1 20002 = TETRA band 2 20003 = TETRA band 3 20004 = TETRA band 4 20005 = TETRA band 5 20006 = TETRA band 6 20007 = TETRA band 7 20008 = TETRA band 8 20009 = TETRA band 9 20010 = TETRA band 10 20011 = TETRA band 11 20012 = TETRA band 12 20013 = TETRA band 13 20014 = TETRA band 14 20015 = TETRA band 15 29999 = TETRA
ARFCN	Integer	Channel number
LAC	Integer	Location area code Range: 0 – 65535
RSSI	Float	RSSI Range: -111 – -10 Unit: dBm
C1	Float	C1 criterion Path loss criterion parameter C1 is used for cell selection and reselection. See 3GPP TS 145.008 subclause 6.4 (with GPRS, also subclause 10.1.2). Unit: dB

C2	Float	C2 criterion The reselection criterion C2 is used for cell reselection. This parameter is used for cell reselection when the value of the path loss criterion C1 is over zero. See 3GPP TS 145.008 subclause 6.4. Unit: dB
CC	Integer	Color code Range: 0 – 63

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Active The Node-B the UE is connected to (i.e., the UTRA cells currently assigning a downlink DPCH to the UE constitute the active set). 1 = Monitored The Node-B that is included in the neighbor list but not in the active set. 2 = Detected The Node-B that is detected by the UE but is not included in the neighbor list. Reporting of the measurements of the detected set is only applicable to intra-frequency measurements made by UEs in CELL_DCH state. 3 = Undetected
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800.

		50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Ch	Integer	Channel number
SC	Integer	Scrambling code Range: 0 – 511
Ec/N0	Float	Ec/N0 The received energy per chip divided by the power density of the band measured on the primary CPICH. See 3GPP TS 125.215 subclause 5.1.5. Range: -30 – 0 Unit: dB
STTD	Integer	STTD status 0 = STTD not active on PCCPCH 1 = STTD active on PCCPCH
RSCP	Float	RSCP The received signal code power of a single code measured on the primary CPICH. See 3GPP TS 125.215 subclause 5.1.1. Range: -150 – -20 Unit: dBm
Secondary SC	Integer	Secondary scrambling code Range: 0 – 15
Squal	Float	Squal criterion Cell selection criterion S based on Ec/N0. Valid only for UMTS FDD cells. See 3GPP TS 25.304 subclause 5.2.3 cell selection process. Range: -24 – 24
Srxlev	Float	Srxlev criterion Cell selection criterion S based on RSCP. See 3GPP TS 25.304 subclause 5.2.3 cell selection process. Range: -107 – 90
Hqual	Float	Hqual criterion Hierarchical cell criterion H based on Ec/N0. Valid only for UMTS FDD cells. See 3GPP TS 25.304 subclause 5.2.6 cell reselection evaluation process. Range: -32 – 24
Hrxlev	Float	Hrxlev criterion Hierarchical cell criterion H based on RSCP. See 3GPP TS 25.304 subclause 5.2.6 cell reselection evaluation process. Range: -115 – 90
Rqual	Float	Rqual criterion Cell ranking criterion R based on Ec/N0. Valid only for UMTS FDD cells. See 3GPP TS 25.304 subclause 5.2.6 cell reselection evaluation process. Range: -200 – 50
Rrxlev	Float	Rrxlev criterion Cell ranking criterion R based on RSCP. See 3GPP TS 25.304 subclause 5.2.6 cell reselection evaluation process. Range: -191 – 25
OFF	Integer	SFN-CFN difference frames Range: 0 – 255 Unit: frame
Tm	Float	SFN-CFN difference chips

		Range: 0 – 38400 Unit: chip
Pathloss	Float	Pathloss The reduction of the power density from the base station to the mobile station. Range: 40 – 170 Unit: dB

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
Ch	Integer	Channel number
Cell params ID	Integer	Cell parameters ID Range: 0 – 127
RSCP	Float	PCCPCH RSCP The received signal code power of a single code measured on PCCPCH. See 3GPP TS 5.1.2 subclause 5.1.2. Range: -116 – -20 Unit: dBm
Srxlev	Float	Srxlev criterion Cell selection criterion S based on RSCP. See 3GPP TS 25.304 subclause 5.2.3 cell selection process. Range: -107 – 90
Hrxlev	Float	Hrxlev criterion Hierarchical cell criterion H based on RSCP. See 3GPP TS 25.304 subclause 5.2.6 cell reselection evaluation process. Range: -115 – 90
Rrxlev	Float	Rrxlev criterion Cell ranking criterion R based on RSCP. See 3GPP TS 25.304 subclause 5.2.6 cell reselection evaluation process. Range: -191 – 25
Pathloss	Float	Pathloss

Range: 46 – 148
Unit: dB

Parameters for LTE [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Serving 1 = Listed 2 = Detected 10 = SCell 0 The first secondary serving cell. 11 = SCell 1
Band	Integer	Band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37 80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43

		80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD
Ch	Integer	Channel number
PCI	Integer	Physical cell identity Range: 0 – 503
RSSI	Float	E-UTRAN carrier RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
RSRP	Float	RSRP Reference signal received power is the linear average of the power contributions of the resource elements that carry cell-specific reference signals within the considered measurement frequency. 3GPP TS 36.214 subclause 5.1.1. Range: -140 – 0 Unit: dBm
RSRQ	Float	RSRQ Reference signal received quality is the ratio $N * RSRP / E-UTRA$ carrier RSSI, where N is the number of resource blocks of the E-UTRA carrier RSSI measurement bandwidth. The measurements in the numerator and denominator are made over the same set of resource blocks. 3GPP TS 36.214 subclause 5.1.3. Range: -30 – 0 Unit: dB
Timing	Integer	Cell frame timing The unit of this parameter is Ts and one Ts is 1/30720000 seconds. Range: 0 – 307199
Pathloss	Float	Pathloss The reduction of the power density from the base station to the mobile station. Range: 0 – 170 Unit: dB

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Band	Integer	Band 100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band. 100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band. 100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 100007 = cdmaOne 700 band 7

		<p>North American cellular 700 MHz band. 100008 = cdmaOne 1800 band 8 1800 MHz band. 100009 = cdmaOne 900 band 9 900 MHz band. 100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band. 100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band. 100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension. 100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz. 100015 = cdmaOne 2100 AWS band 15 100016 = cdmaOne 2500 band 16 US 2.5 GHz. 100018 = cdmaOne 700 public safety band 18 100019 = cdmaOne 700 lower band 19 100020 = cdmaOne 1500 L-band band 20 100021 = cdmaOne 2000 S-band band 21 109999 = cdmaOne 110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band. 110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band. 110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band. 110008 = CDMA 1x 1800 band 8 1800 MHz band. 110009 = CDMA 1x 900 band 9 900 MHz band. 110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band. 110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band. 110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension. 110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz. 110015 = CDMA 1x 2100 AWS band 15 110016 = CDMA 1x 2500 band 16 US 2.5 GHz. 110018 = CDMA 1x 700 public safety band 18 110019 = CDMA 1x 700 lower band 19 110020 = CDMA 1x 1500 L-band band 20 110021 = CDMA 1x 2000 S-band band 21 119999 = CDMA 1x</p>
Ch	Integer	Channel number
RX power	Float	RX power Range: -120 – 30 Unit: dBm
RX0 power	Float	RX power antenna 0 Range: -120 – 30 Unit: dBm
RX1 power	Float	RX power antenna 1

		Range: -120 – 30 Unit: dBm
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Set	Integer	Set information 0 = Active 1 = Candidate 2 = Neighbor 3 = Remainder
Band	Integer	Band 100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band. 100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band. 100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 100007 = cdmaOne 700 band 7 North American cellular 700 MHz band. 100008 = cdmaOne 1800 band 8 1800 MHz band. 100009 = cdmaOne 900 band 9 900 MHz band. 100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band. 100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band. 100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension. 100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz. 100015 = cdmaOne 2100 AWS band 15 100016 = cdmaOne 2500 band 16 US 2.5 GHz. 100018 = cdmaOne 700 public safety band 18 100019 = cdmaOne 700 lower band 19 100020 = cdmaOne 1500 L-band band 20 100021 = cdmaOne 2000 S-band band 21 109999 = cdmaOne 110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band. 110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band. 110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band. 110008 = CDMA 1x 1800 band 8 1800 MHz band. 110009 = CDMA 1x 900 band 9 900 MHz band.

		110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band. 110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band. 110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension. 110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz. 110015 = CDMA 1x 2100 AWS band 15 110016 = CDMA 1x 2500 band 16 US 2.5 GHz. 110018 = CDMA 1x 700 public safety band 18 110019 = CDMA 1x 700 lower band 19 110020 = CDMA 1x 1500 L-band band 20 110021 = CDMA 1x 2000 S-band band 21 119999 = CDMA 1x
Ch	Integer	Channel number
PN	Integer	Pilot number Range: 0 – 511
Ec/I0	Float	Ec/I0 Range: -50 – 0 Unit: dB
Walsh	Integer	Walsh code Walsh code used, available only for active set.
RSCP	Float	RSCP The received signal code power of a single code. Range: -150 – -20 Unit: dBm

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13

		2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Ch	Integer	Channel number
RX power	Float	RX power Range: -120 – 30 Unit: dBm
RX0 power	Float	RX power antenna 0 Range: -120 – 30 Unit: dBm
RX1 power	Float	RX power antenna 1 Range: -120 – 30 Unit: dBm
Ch ID	Integer	Channel ID Range: 0 – 7
#Chs	Integer	Number of channels
#Params/Cell	Integer	Number of parameters per cell
Set	Integer	Set information 0 = Active 1 = Candidate 2 = Neighbor 3 = Remainder
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19

		120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Ch	Integer	Channel number
PN	Integer	Pilot number Range: 0 – 511
Ec/I0	Float	Ec/I0 Range: -50 – 0 Unit: dB
RSCP	Float	RSCP The received signal code power of a single code. Range: -150 – 0 Unit: dBm
Reportable	Integer	Reportable This parameter is only valid for EVDO Rev B active set cells. 0 = No 1 = Yes
Scheduler tag	Integer	Scheduler tag This parameter is only valid for EVDO Rev B active set cells. Range: 0 – 7

Parameters for WLAN [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	WLAN band 200001 = WLAN 2.4 GHz 200002 = WLAN 3.6 GHz 200003 = WLAN 4.9 GHz 200004 = WLAN 5.0 GHz 209999 = WLAN
Quality	Float	WLAN quality Range: 0 – 100 Unit: %
Channel	Integer	WLAN channel number
RSSI	Float	WLAN RSSI Range: -110 – 20 Unit: dBm
SSID	String	WLAN service set identifier
BSSID	String	WLAN BSSID This is same as MAC address. Logged format is hexadecimal bytes separated by colon, for example 01:23:45:67:89:ab.
Security	Integer	WLAN security mode 0 = Open 1 = 802.1x 2 = WEP 3 = WPA-EAP 4 = WPA-PSK 5 = WPA2-EAP 6 = WPA2-PSK
Link speed	Integer	WLAN link speed Unit: Mbit/s
IP	String	WLAN IP address The IP address for the WLAN access point.

Parameters for GAN WLAN [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	WLAN band 219999 = GAN WLAN
Quality	Float	WLAN quality Range: 0 – 100 Unit: %
Channel	Integer	WLAN channel number
RSSI	Float	WLAN RSSI Range: -110 – 20 Unit: dBm
SSID	String	WLAN service set identifier
BSSID	String	WLAN BSSID This is same as MAC address. Logged format is hexadecimal bytes separated by colon, for example 01:23:45:67:89:ab.

Parameters for WiMAX [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 259999 = WiMAX
Frequency	Float	WiMAX frequency Unit: MHz
Preamble index	Integer	WiMAX preamble index Range: 0 – 113
BS ID	String	WiMAX base station ID Six colon separated hex values.
RSSI	Float	WiMAX RSSI Signal strength. Range: -120 – 20 Unit: dBm
RSSI dev	Float	WiMAX RSSI deviation Range: 0 – 50 Unit: dB
CINR	Float	WiMAX CINR Channel to interference-noise ratio. Range: -32 – 40 Unit: dB
CINR dev	Float	WiMAX CINR deviation Channel to interference-noise ratio deviation. Range: 0 – 40 Unit: dB

Parameters for AMPS and NAMPS [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 510800 = AMPS 800 519999 = AMPS 520800 = NAMPS 800 529999 = NAMPS
Ch	Integer	Channel number
SAT	Integer	Setup audio tone Range: 0 – 6
RxLev	Float	RX level Range: -120 – -10 Unit: dBm

Parameters for DAMPS [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 530800 = DAMPS 800 531900 = DAMPS 1900 539999 = DAMPS
Ch	Integer	Channel number
DCC	Integer	Digital color code Range: 0 – 255
RxLev	Float	RX level Range: -120 – -10 Unit: dBm

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Cell type	Integer	Cell type 0 = Neighbor 1 = Serving
Band	Integer	Band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN

Ch	Integer	Channel number
CC	Integer	Color code Range: 0 – 15
Sync count	Integer	Sync count Minimum value: 0
RxLev	Float	RX level Range: -130 – -30 Unit: dBm
SQE	Float	SQE Range: 0 – 50 Unit: dB
Foreground	Integer	Foreground 0 = No 1 = Yes

MIMO measurement (MIMOMEAS)

Event ID	MIMOMEAS
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	Always
Description	Currently the recording interval is about two times per second. This measurement event is currently only logged for serving cells.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for LTE FDD and LTE TDD |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Measurements	Integer	Number of measurements
#Params/measurement	Integer	Number of parameters per measurement
Band	Integer	MIMO band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11

		50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Ch	Integer	MIMO channel
SC	Integer	MIMO scrambling code Range: 0 – 511
Antenna	Integer	MIMO antenna port Range: 0 – 1
Cell type	Integer	Cell type 0 = Active The Node-B the UE is connected to (i.e., the UTRA cells currently assigning a downlink DPCH to the UE constitute the active set). 1 = Monitored The Node-B that is included in the neighbor list but not in the active set. 2 = Detected The Node-B that is detected by the UE but is not included in the neighbor list. Reporting of the measurements of the detected set is only applicable to intra-frequency measurements made by UEs in CELL_DCH state. 3 = Undetected
RSSI	Float	MIMO RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
Ec/N0	Float	MIMO Ec/N0 The received energy per chip divided by the power density of the band. Range: -30 – 0 Unit: dB
RSCP	Float	MIMO RSCP The received signal code power of a single code. Range: -150 – -20 Unit: dBm

Parameters for LTE FDD and LTE TDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Measurements	Integer	Number of measurements
#Params/measurement	Integer	Number of parameters per measurement
Band	Integer	MIMO band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17

		<p>70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37 80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43 80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD</p>
Ch	Integer	MIMO channel
PCI	Integer	Physical cell identity Range: 0 – 503
Port	Integer	<p>Antenna port 0 = Port 0 This is the same as TX0. 1 = Port 1 This is the same as TX1. 2 = Port 2 This is the same as TX2. 3 = Port 3 This is the same as TX3. 100 = TX0-RX0 channel 101 = TX0-RX1 channel 102 = TX0-RX2 channel 103 = TX0-RX3 channel 110 = TX1-RX0 channel 111 = TX1-RX1 channel 112 = TX1-RX2 channel 113 = TX1-RX3 channel 120 = TX2-RX0 channel 121 = TX2-RX1 channel 122 = TX2-RX2 channel 123 = TX2-RX3 channel</p>

		130 = TX3-RX0 channel 131 = TX3-RX1 channel 132 = TX3-RX2 channel 133 = TX3-RX3 channel
Cell type	Integer	MIMO cell type 0 = Serving 10 = SCell 0 11 = SCell 1
RSSI/P	Float	E-UTRAN carrier RSSI/Antenna port Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
RSRQ/P	Float	RSRQ/Antenna port Reference signal received quality is the ratio $N * RSRP / E\text{-UTRA carrier RSSI}$, where N is the number of resource blocks of the E-UTRA carrier RSSI measurement bandwidth. The measurements in the numerator and denominator are made over the same set of resource blocks. 3GPP TS 36.214 subclause 5.1.3. Range: -30 – 0 Unit: dB
RSRP/P	Float	RSRP/Antenna port Reference signal received power is the linear average of the power contributions of the resource elements that carry cell-specific reference signals within the considered measurement frequency. 3GPP TS 36.214 subclause 5.1.1. Range: -140 – 0 Unit: dBm
Timing/P	Integer	Cell frame timing/Antenna port The unit of this parameter is Ts and one Ts is 1/30720000 seconds. Range: 0 – 307199

Adjacent Channel Measurement (ADJMEAS)

Event ID	ADJMEAS
Cellular systems	GSM
Record state	Always
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for GSM |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels

#Params/Ch	Integer	Number of parameters per channel
C/A ch	Integer	C/A center channel
C/A minimum	Float	C/A minimum Carrier to adjacent channel ratio between center channel and the strongest adjacent channel. Range: -100 – 100 Unit: dB
RSSI	Float	C/A measurement RSSI Signal strength for center channel. Range: -120 – -10 Unit: dBm
C/A -1	Float	C/A -1 The value of C/A -1 parameter is the ratio between center channel RSSI and adjacent channel RSSI. The adjacent channel frequency is 200 kHz lower than the frequency of the center channel. Range: -100 – 100 Unit: dB
RSSI -1	Float	C/A measurement RSSI -1 The RSSI value of the adjacent channel. The adjacent channel is 200 kHz lower than the frequency of the center channel. Range: -120 – -10 Unit: dBm
C/A +1	Float	C/A +1 The value of C/A +1 parameter is the ratio between center channel RSSI and adjacent channel RSSI. The adjacent channel frequency is 200 kHz higher than the frequency of the center channel. Range: -100 – 100 Unit: dB
RSSI +1	Float	C/A measurement RSSI +1 The RSSI value of the adjacent channel. The adjacent channel is 200 kHz higher than the frequency of the center channel. Range: -120 – -10 Unit: dBm
C/A -2	Float	C/A -2 The value of C/A -2 parameter is the ratio between center channel RSSI and adjacent channel RSSI. The adjacent channel frequency is 400 kHz lower than the frequency of the center channel. Range: -100 – 100 Unit: dB
RSSI -2	Float	C/A measurement RSSI -2 The RSSI value of the adjacent channel. The adjacent channel is 400 kHz lower than the frequency of the center channel. Range: -120 – -10 Unit: dBm
C/A +2	Float	C/A +2 The value of C/A +2 parameter is the ratio between center channel RSSI and adjacent channel RSSI. The adjacent channel frequency is 400 kHz higher than the frequency of the center channel. Range: -100 – 100 Unit: dB
RSSI +2	Float	C/A measurement RSSI +2 The RSSI value of the adjacent channel. The adjacent channel is 400 kHz higher than the frequency of the center channel. Range: -120 – -10 Unit: dBm

RX quality (RXQ)

Event ID	RXQ
Cellular systems	GSM,DAMPS
Record state	Call attempt and connection state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result. Currently the maximum update frequency is about twice per second.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM | Parameters for DAMPS |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 53 = DAMPS

Parameters for GSM [|Top|](#)

Name	Type	Description
RXQ full	Integer	RX quality full Quality value measured on every TDMA frame. Use this value when DTX is inactive. See 3GPP TS 145.008 subclause 8.4.
RXQ sub	Integer	RX quality sub Quality value measured over the subset of every TDMA frame. Use this value when DTX is active. See 3GPP TS 145.008 subclause 8.4.

Parameters for DAMPS [|Top|](#)

Name	Type	Description
BER class	Integer	BER class BER class value reported by mobile. Range: 0 – 7

Packet channel RX quality (PRXQ)

Event ID	PRXQ
Cellular systems	GSM
Record state	Attach and packet active state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for GSM |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system

1 = GSM

Parameters for GSM |Top|

Name	Type	Description
RXQ	Integer	Packet RX quality See 3GPP TS 145.008 subclause 8.2.3.1. This parameter is only recorded for GPRS. Range: 0 – 7
C value	Float	C value Received signal level of each paging block monitored by the MS according to its current DRX mode and its paging group. See 3GPP TS 145.008 subclause 10.2.3.1. This parameter is only recorded for GPRS. Range: –120 – –48 Unit: dBm
SIGN_VAR	Float	Signal variance Average variance of signal level (C value). See 3GPP TS 145.008 subclause 10.2.3.1. This parameter is only recorded for GPRS. Range: 0 – 16 Unit: dBm2
#TSL results	Integer	Number of timeslot C/I results
TSL interf.	Float	Timeslot interference Timeslot interference level relative to C value. See 3GPP TS 145.008 subclause 10.3. This parameter is only recorded for GPRS. Range: –28 – 0

Frame error rate (FER)

Event ID	FER
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,cdmaOne,CDMA 1x
Record state	Call connection state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor, Nemo Handy

[Parameters](#) | [Parameters for GSM](#) | [Parameters for UMTS FDD](#) | [Parameters for UMTS TD-SCDMA](#) | [Parameters for cdmaOne and CDMA 1x](#) |
Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 10 = cdmaOne 11 = CDMA 1x

Parameters for GSM |Top|

Name	Type	Description
FER full	Float	Frame error rate full

		This calculation assumes all 25 frames of the SACCH multiframe have been sent. Just like RXQual Full, when DL DTX is on, FER FULL will become invalid. This is because only 2 or 3 frames are sent when DL DTX is on. Range: 0 – 100 Unit: %
FER sub	Float	Frame error rate sub FER Sub is calculated as the ratio of erroneous frames to number of sent frames. With EFR speech, only 2 out of the 25 are sent when DL DTX is on. With AMR speech, either 2 or 3 frames will be sent. Range: 0 – 100 Unit: %
FER TCH	Float	Frame error rate TCH This calculation concentrates only on TCH frames. It is also more robust when DL DTX is changing. This is because it concentrates on the ratio of TCH frame errors to TCH frames sent. Range: 0 – 100 Unit: %
DTX DL	Integer	DTX downlink Defines if the DTX is used during the previous reporting period. 0 = DTX not in use 1 = DTX in use

Parameters for UMTS FDD [|Top](#)

Name	Type	Description
FER	Float	Frame error rate Calculated from the speech frames. Range: 0 – 100 Unit: %

Parameters for UMTS TD-SCDMA [|Top](#)

Name	Type	Description
FER	Float	Frame error rate Range: 0 – 100 Unit: %

Parameters for cdmaOne and CDMA 1x [|Top](#)

Name	Type	Description
FER (dec)	Float	FER Total (fundamental channel + supplemental channel) frame error rate value reported by mobile. Range: 0 – 100 Unit: %
FER F-FCH target	Float	FER F-FCH target Range: 0 – 100
FER F-SCH0 target	Float	FER F-SCH0 target Range: 0 – 100
FER F-DCCH target	Float	FER F-DCCH target Range: 0 – 100
FER F-FCH	Float	FER F-FCH Range: 0 – 100
FER F-SCH0	Float	FER F-SCH0 Range: 0 – 100
FER F-DCCH	Float	FER F-DCCH Range: 0 – 100

MS power (MSP)

Event ID	MSP
Cellular systems	GSM,DAMPS,AMPS
Record state	Call connection and packet active state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM | Parameters for AMPS and NAMPS | Parameters for DAMPS |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 51 = AMPS 52 = NAMPS 53 = DAMPS

Parameters for GSM [\[Top\]](#)

Name	Type	Description
MSP	Integer	MS power level Reported mobile station power level class. See 3GPP TS 45.005 subclause 4.1. Range: 0 – 32
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for AMPS and NAMPS [\[Top\]](#)

Name	Type	Description
MSP	Integer	MS power level Reported mobile station power level class. See 3GPP TS 45.005 subclause 4.1. Range: 0 – 32

Parameters for DAMPS [\[Top\]](#)

Name	Type	Description
MSP	Integer	MS power level Reported mobile station power level class. See 3GPP TS 45.005 subclause 4.1. Range: 0 – 32

Radio link timeout (RLT)

Event ID	RLT
Cellular systems	GSM
Record state	Call connection state
Description	Recorded when the radio link timeout changes.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM |Top|

Name	Type	Description
RLT	Integer	Radiolink timeout The counter used in determining when the radio link failure condition is declared. The value of the counter is decreased by one when SACCH message decoding fails. When decoding succeeds, it is increased by two. If the value of the counter drops to zero, the radio link failure condition is declared. See 3GPP TS 145.008 subclause 5. Range: 0 – 64

Timing advance (TAD)

Event ID	TAD
Cellular systems	GSM,UMTS TD-SCDMA,LTE FDD,LTE TDD,DAMPS
Record state	Always
Description	Recorded when timing advance changes.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for DAMPS |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 53 = DAMPS

Parameters for GSM |Top|

Name	Type	Description
TA	Integer	Timing advance Reported timing advance. Range: 0 – 63

Parameters for UMTS TD-SCDMA [|Top|](#)

Name	Type	Description
TA	Float	Timing advance Range: –16 – 240 Unit: chip

Parameters for LTE [|Top|](#)

Name	Type	Description
TA	Integer	Timing advance Timing advance is used to adjust uplink transmission timing in a way that allows node B to receive transmissions from all UEs simultaneously. The timing advance is relative to downlink radio frame received by UE. This parameter is the same as N_TA parameter divided by 16. See 3GPP TS 36.213 subclause 4.2.3 and 3GPP TS 36.211 subclause 8. Range: 0 – 1282

Parameters for DAMPS [|Top|](#)

Name	Type	Description
TAL	Integer	Timing alignment Reported timing alignment. Range: 0 – 30

Downlink signaling counter (DSC)

Event ID	DSC
Cellular systems	GSM
Record state	Packet active state
Description	Recorded when downlink signaling counter value changes.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

[Parameters](#) | [Parameters for GSM](#) |
Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM [|Top|](#)

Name	Type	Description
DSC current	Integer	Downlink signaling counter current The counter used in determining when the downlink signaling failure condition is declared. Whenever the message is decoded in the paging subchannel; if the message decoding is

		successful, the DSC counter is increased by one; if the message decoding fails, the DSC counter is decreased by four. The downlink signaling failure condition is declared if the DSC counter drops to zero or below. See 3GPP TS 145.008 subclause 6.5. Range: 0 – 45
DSC max	Integer	Downlink signaling counter maximum The maximum value of the DSC counter. Range: 0 – 45

Bit error probability (BEP)

Event ID	BEP
Cellular systems	GSM
Record state	Attach and packet active state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result. Recorded only when EGPRS is used.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for GSM |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM |Top|

Name	Type	Description
GMSK MEAN_BEP	Integer	BEP mean class GMSK See 3GPP TS 145.008 subclause 8.2.3.2. Range: 0 – 31
GMSK CV_BEP	Integer	BEP CV class GMSK See 3GPP TS 145.008 subclause 8.2.3.2. Range: 0 – 7
8-PSK MEAN_BEP	Integer	BEP mean class 8-PSK See 3GPP TS 145.008 subclause 8.2.3.2. Range: 0 – 31
8-PSK CV_BEP	Integer	BEP CV class 8-PSK See 3GPP TS 145.008 subclause 8.2.3.2. Range: 0 – 7

Carrier per interference (CI)

Event ID	CI
Cellular systems	GSM,UMTS TD-SCDMA,LTE FDD,LTE TDD,EVDO
Record state	Always
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for GSM | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 12 = EVDO

Parameters for GSM [|Top|](#)

Name	Type	Description
C/I	Float	C/I average C/I average is calculated over the reporting period. The C/I average is the average of all C/I values per hopping channel (and timeslot with GPRS) when this information is available. If C/I per hopping channel or per timeslot is not available, the C/I average calculation method is vendor specific. Range: -10 – 40 Unit: dB
#TSL results	Integer	Number of timeslot C/I results
C/I per TSL	Float	C/I per timeslot Separate C/I result for each dedicated GRPS timeslot. C/I calculation method is vendor specific. Range: -10 – 40 Unit: dB
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
ARFCN	Integer	Channel number
C/I	Float	C/I per hopping channel Separate C/I result for each hopping channel. C/I calculation method is vendor specific. Range: -10 – 40 Unit: dB
RSSI	Float	RSSI per hopping channel Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm

Parameters for UMTS TD-SCDMA [|Top|](#)

Name	Type	Description
C/I	Float	PCCPCH C/I Range: -45 – 40 Unit: dB

Parameters for LTE [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
SNR	Float	RS SNR The calculation method for this parameter is device specific and can change between the devices.

		Range: -40 – 50 Unit: dB
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 0 = PCell Primary serving cell. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1
#Antennas	Integer	Number of antennas
#Params/antenna	Integer	Parameters per antenna
SNR/P	Float	RS SNR/Antenna port The calculation method for this parameter is device specific and can change between the devices. Range: -40 – 50 Unit: dB
Port	Integer	Antenna port or channel 0 = Port 0 This is the same as TX0. 1 = Port 1 This is the same as TX1. 2 = Port 2 This is the same as TX2. 3 = Port 3 This is the same as TX3. 100 = TX0-RX0 channel 101 = TX0-RX1 channel 102 = TX0-RX2 channel 103 = TX0-RX3 channel 110 = TX1-RX0 channel 111 = TX1-RX1 channel 112 = TX1-RX2 channel 113 = TX1-RX3 channel 120 = TX2-RX0 channel 121 = TX2-RX1 channel 122 = TX2-RX2 channel 123 = TX2-RX3 channel 130 = TX3-RX0 channel 131 = TX3-RX1 channel 132 = TX3-RX2 channel 133 = TX3-RX3 channel

Parameters for EVDO [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Act set PNs	Integer	Number of pilots in active set
Params/pilot	Integer	Number of parameters per pilot
PN	Integer	Pilot number Range: 0 – 511
SINR	Float	Signal-to-interference and noise ratio Range: -28 – 15 Unit: dB
MAC Index	Integer	MAC index Range: 0 – 255
DRC cover	Integer	DRC cover Cover used to transmit DRC. Range: 0 – 7
RPC cell index	Integer	RPC cell index Range: 0 – 15
DRC Lock	Integer	DRC lock 0 = Unlocked 1 = Locked
RAB	Integer	Reverse activity bit

		Range: 0 – 1
Ch	Integer	Channel number
Slot FRAB	Integer	Slot FRAB Slot fast reverse activity bit.
Slot QRAB	Integer	Slot QRAB Slot quick reverse activity bit. 0 = Unloaded 1 = Loaded

TX power control (TXPC)

Event ID	TXPC
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO,TETRA,WiMAX
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for TETRA | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for cdmaOne and CDMA 1x | Parameters for EVDO | Parameters for WiMAX |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 25 = WiMAX

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
TX power	Float	TX power MS transit power. Range: 15 – 45 Unit: dBm
Pwr ctrl alg.	Integer	TX power control algorithm Range: 0 – 1
TX power change	Float	TX power change Range: -30 – 30 Unit: dBm

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
TX power	Float	TX power The total UE transmitted power on one carrier. See 3GPP TS 125.215

		subclause 5.1.7. Range: -120 – 30 Unit: dBm
Pwr ctrl alg.	Integer	TX power control algorithm 0 = Power control algorithm 0 1 = Power control algorithm 1
Pwr ctrl step	Float	TX power control step size Range: 1 – 2 Unit: dB
Compr. mode	Integer	Compressed mode 0 = No compressed mode 1 = Compressed mode
#UL pwr up	Integer	Number of "UL power up" commands Number of received "UL power up" commands (BTS to mobile).
#UL pwr down	Integer	Number of "UL power down" commands Number of received "UL power down" commands (BTS to mobile).
UL pwr up %	Float	Percentage of "UL power up" commands In percentage the number of "UL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
TX power	Float	TX power Range: -99 – 99 Unit: dBm
Pwr ctrl step	Float	TX power control step size Range: 1 – 3 Unit: dB
#UL pwr up	Integer	Number of "UL power up" commands Number of received "UL power up" commands (BTS to mobile).
#UL pwr down	Integer	Number of "UL power down" commands Number of received "UL power down" commands (BTS to mobile).
UL pwr up %	Float	Percentage of "UL power up" commands In percentage the number of "UL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100

Parameters for LTE [\[Top\]](#)

Name	Type	Description
PUSCH TX power	Float	TX power PUSCH The average transmit power for PUSCH calculated over the reporting period. See 3GPP TS 36.213 subclause 5.1.1.1. Range: -41 – 40 Unit: dBm
PUCCH TX power	Float	TX power PUCCH The average transmit power for PUCCH calculated over the reporting period. See 3GPP TS 36.213 subclause 5.1.2.1. Range: -41 – 40 Unit: dBm
PH	Float	TX power headroom (PUSCH) The average UE power headroom reported from the same reporting period as PUSCH TX power. See 3GPP TS 36.213 subclause 5.1.1.2. Range: -23 – 40 Unit: dB
f(i)	Float	TX power PUSCH adjustment The average PUSCH power control adjustment during the last reporting period. Same as f(i) parameter in 3GPP TS 36.213

		subclause 5.1.1.1. Unit: dB
g(i)	Float	TX power PUCCH adjustment The average PUCCH power control adjustment during the last reporting period. Same as g(i) parameter in 3GPP TS 36.213 subclause 5.1.2.1. Unit: dB
#PUSCH TPCs	Integer	Number of PUSCH TPCs
#Params/PUSCH TPC	Integer	Number of parameters per PUSCH TPC
#PUSCH TPC	Integer	PUSCH TPC count The number of times this TPC command is received since the previous report. Minimum value: 0
PUSCH TPC	Float	PUSCH TPC This is the same as delta_PUSCH. See 3GPP TS 136.213 subclause 5.1.1. Range: -4 – 4 Unit: dB
#PUCCH TPCs	Integer	Number of PUCCH TPCs
#Params/PUCCH TPC	Integer	Number of parameters per PUCCH TPC
#PUCCH TPC	Integer	PUCCH TPC count The number of times this TPC command is received since the previous report. Minimum value: 0
PUCCH TPC	Float	PUCCH TPC This is the same as delta_PUCCH. See 3GPP TS 136.123 subclause 5.1.2. Range: -1 – 3 Unit: dB
SRS TX power	Float	TX power SRS The average transmit power for SRS calculated over the reporting period. See 3GPP TS 36.211 subclause 5.5.3 and 36.213 subclause 5.1.3. Range: -41 – 40
M_SRS	Integer	SRS TX bandwidth Bandwidth of sounding reference signal (SRS) in physical resource blocks. This is same as M_SRS parameter. See 3GPP TS 36.211 subclause 5.5.3 and 36.213 subclause 5.1.3. Range: 4 – 96

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
TX power	Float	TX power Range: -99 – 99 Unit: dBm
Pwr ctrl step	Integer	TX power control step size 0 = 1.0 1 = 0.5 2 = 0.25 Unit: dB
#UL pwr up	Integer	Number of "UL power up" commands Number of received "UL power up" commands (BTS to mobile).
#UL pwr down	Integer	Number of "UL power down" commands Number of received "UL power down" commands (BTS to mobile).
UL pwr up %	Float	Percentage of "UL power up" commands In percentage the number of "UL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100
TX adjust	Float	Closed loop adjustment

		Unit: dB
TX pwr limit	Float	Upper limit on TX power Unit: dBm
Max power limited	Integer	Max power limited Reports whether max power protection is in effect. 0 = Not applicable 1 = Not in effect 2 = In effect
R-FCH/R-PICH	Float	R-FCH to pilot ratio Unit: dB
R-SCH0/R-PICH	Float	R-SCH0 to pilot ratio Unit: dB
R-SCH1/R-PICH	Float	R-SCH1 to pilot ratio Unit: dB
R-DCCH/R-PICH	Float	R-DCCH to pilot ratio Unit: dB

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
TX power	Float	TX power Range: -99 – 99 Unit: dBm
#UL pwr up	Integer	Number of "UL power up" commands Number of received "UL power up" commands (BTS to mobile).
#UL pwr hold	Integer	Number of "UL power hold" commands Number of received "UL power hold" commands (BTS to mobile).
#UL pwr down	Integer	Number of "UL power down" commands Number of received "UL power down" commands (BTS to mobile).
UL pwr up %	Float	Percentage of "UL power up" commands In percentage the number of "UL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100
TX adjust	Float	Closed loop adjustment Unit: dB
TX Pilot	Float	TX pilot power Range: -99 – 99 Unit: dBm
TX open loop power	Float	TX open loop power TX power determined by the open loop adjust mechanism Range: -99 – 99 Unit: dBm
DRC/Pilot	Float	DRC channel to pilot ratio Unit: dB
ACK/Pilot	Float	ACK channel to pilot ratio Unit: dB
Data/Pilot	Float	Data channel to pilot ratio Unit: dB
PA max	Float	PA max Maximum recommended headroom available (Rev A). The mobile station indicates the available Power Amplifier (PA) headroom to the access network. The access network can assign carriers based on the mobile stations available power amplifier headroom. Unit: dB
DRC lock period	Integer	DRC lock period DRC lock period indicates which RPC bits are 'hold' (Rel 0). 8 = 8 slots 16 = 16 slots
TX throttle	Float	TX throttle TX throttle indicates how often TX channel gains are being throttled

		during the previous reporting period (Rev A). Range: 0 – 100 Unit: %
TX max power usage	Float	TX max power usage Indicates how often TX AGC was at maximum power during the previous reporting period. Range: 0 – 100 Unit: %
TX min power usage	Float	TX min power usage Indicates how often TX AGC was at minimum power during the previous reporting period. Range: 0 – 100 Unit: %
Transmission mode	Integer	Transmission mode Indicates the transmission mode of the data packets being transmitted (Rev A). 0 = HiCap 1 = LoLat
PS	Integer	Physical layer packet size Minimum value: 0 Unit: bit
RRI/Pilot	Float	RRI channel to pilot ratio (Rev A). Unit: dB
DSC/Pilot	Float	DSC channel to pilot ratio (Rev A). Unit: dB
AUX/Data	Float	AUX channel to data channel ratio Unit: dB
#Carriers	Integer	Number of EVDO carriers
#Params/Carrier	Integer	Number of parameters per EVDO carrier
Ch	Integer	Channel number
TX power/Ch	Float	TX power/Channel Range: -99 – 99 Unit: dBm
TX Pilot/Ch	Float	TX pilot power/Channel Range: -99 – 99 Unit: dBm
TX adjust/Ch	Float	Closed loop adjustment/Channel Unit: dB
Power limited/Ch	Integer	Power limited/Channel 0 = No 1 = Yes
Power amplifier/Ch	Integer	Power amplifier/Channel 0 = Off 1 = On
TX OL power/Ch	Float	TX open loop power/Channel Range: -128 – 127 Unit: dBm
TX T2P	Float	TX T2P Range: -100 – 100 Unit: dB

Parameters for WiMAX [\[Top\]](#)

Name	Type	Description
TX power	Float	WiMAX TX power MS transmit power. Range: -99 – 99 Unit: dBm
TX ref. power	Float	WiMAX TX reference power Range: -99 – 99 Unit: dBm

TX power headroom	Float	WiMAX TX power headroom Range: 0 – 99 Unit: dBm
TX power BS offset	Float	WiMAX TX power BS offset Range: –99 – 99 Unit: dB
TX power IrMax	Float	WiMAX initial ranging max TX power Range: –99 – 99 Unit: dBm
BS EIRP	Float	WiMAX BS EIRP Base station effective isotropic radiated power. Range: –99 – 99 Unit: dBm
BS N+I	Float	WiMAX BS noise + interference level Range: –128 – –1 Unit: dBm

RX power control (RXPC)

Event ID	RXPC
Cellular systems	UMTS FDD,UMTS TD-SCDMA,cdmaOne,CDMA 1x
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for cdmaOne and CDMA 1x |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 10 = cdmaOne 11 = CDMA 1x

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
SIR target	Float	Signal-to-interference ratio target Current target SIR at update time. Range: –32 – 30 Unit: dB
SIR	Float	Signal-to-interference ratio See 3GPP TS 125.215 subclause 5.2.2. Range: –32 – 30 Unit: dB
BS div. state	Integer	BS diversity state Base Station TX closed loop diversity state. 0 = Not active 1 = Closed loop mode 1 2 = Closed loop mode 2
#DL pwr up	Integer	Number of "DL power up" commands

		Number of sent "DL power up" commands (mobile to BTS).
#DL pwr down	Integer	Number of "DL power down" commands Number of sent "DL power down" commands (mobile to BTS).
DL pwr up %	Float	Percentage of "DL power up" commands In percentage the number of "DL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100
DPC mode	Integer	DL Power control mode 0 = Unique TPC command in each slot 1 = Same TPC command repeated over three slots

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
SIR target	Float	Signal-to-interference ratio target Current target SIR at update time. Range: -32 – 30 Unit: dB
SIR	Float	Signal-to-interference ratio See 3GPP TS 125.215 subclause 5.2.2. Range: -32 – 30 Unit: dB
#DL pwr up	Integer	Number of "DL power up" commands Number of sent "DL power up" commands (mobile to BTS).
#DL pwr down	Integer	Number of "DL power down" commands Number of sent "DL power down" commands (mobile to BTS).
DL pwr up %	Float	Percentage of "DL power up" commands In percentage the number of "DL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100
#Timeslots	Integer	Number of timeslots
#Params/TSL	Integer	Number of parameters per timeslot
TSL	Integer	Timeslot Range: 0 – 6
ISCP	Float	Timeslot ISCP Interference signal code power. Range: -116 – -25 Unit: dB
RSCP	Float	DPCH RSCP DPCH received signal code power. Range: -116 – -25 Unit: dB
SIR	Float	DPCH SIR DPCH Signal-to-interference ratio. Range: -35 – 40 Unit: dB

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
FPC mode	Integer	Forward power control operation mode indicator Forward Power Control (FPC) is used by the Mobile Station (MS) to control the power levels on a traffic channel to optimize the Frame Error Rate (FER). There are several different FPC modes explained in 3GPP2 C.S0011-E. Range: 0 – 7
FPC subchannel	Integer	Forward power control subchannel indicator Subchannel indicator is set by the BTS to indicate to a MS if the primary

		inner loop estimation should be performed on the received F-FCH or F-DCH. 0 = F-FCH setpoint 1 = F-DCCH setpoint
FPC gain	Float	Forward power control subchannel gain See 3GPP2 C.S0005-F subclause 3.7.2.3.2.21. Unit: dB
#DL pwr up	Integer	Number of "DL power up" commands Number of sent "DL power up" commands (mobile to BTS).
#DL pwr down	Integer	Number of "DL power down" commands Number of sent "DL power down" commands (mobile to BTS).
DL pwr up %	Float	Percentage of "DL power up" commands In percentage the number of "DL power up" commands from all commands. If this value is 100%, all commands request to increase power. Range: 0 – 100
F-FCH cur. sp	Float	F-FCH current setpoint Unit: dB
F-FCH min. sp	Float	F-FCH minimum setpoint Unit: dB
F-FCH max. sp	Float	F-FCH maximum setpoint Unit: dB
F-SCH0 cur. sp	Float	F-SCH0 current setpoint Unit: dB
F-SCH0 min. sp	Float	F-SCH0 minimum setpoint Unit: dB
F-SCH0 max. sp	Float	F-SCH0 maximum setpoint Unit: dB
F-SCH1 cur. sp	Float	F-SCH1 current setpoint Unit: dB
F-SCH1 min. sp	Float	F-SCH1 minimum setpoint Unit: dB
F-SCH1 max. sp	Float	F-SCH1 maximum setpoint Unit: dB
F-DCCH cur. sp	Float	F-DCCH current setpoint Unit: dB
F-DCCH min. sp	Float	F-DCCH minimum setpoint Unit: dB
F-DCCH max. sp	Float	F-DCCH maximum setpoint Unit: dB

Bit error rate (BER)

Event ID	BER
Cellular systems	TETRA,UMTS FDD
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for TETRA | Parameters for UMTS FDD |

Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 2 = TETRA 5 = UMTS FDD

Parameters for TETRA [|Top](#)

Name	Type	Description
BER	Float	BER Bit error rate that is calculated with training sequence algorithm. Range: 0 – 100 Unit: %

Parameters for UMTS FDD [|Top](#)

Name	Type	Description
Pilot BER	Float	BER pilot bit Bit error rate of downlink DPCCH (dedicated physical control channel) pilot bits. Range: 0 – 100 Unit: %
TFCI BER	Float	BER TFCI Estimated raw BER before channel coding based on TFCI bits. Range: 0 – 100 Unit: %

Physical channel throughput (PHRATE)

Event ID	PHRATE
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result. Separate measurement event is logged for each serving cell with LTE.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for UMTS FDD and UMTS TD-SCDMA](#) |
 [Parameters for LTE](#) |
 [Parameters for LTE PBCH](#) |
 [Parameters for LTE PDSCH](#) |
 [Parameters for LTE PUSCH](#) |
 [Parameters for EVDO](#) |

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 12 = EVDO

Parameters for UMTS FDD and UMTS TD-SCDMA [|Top](#)

Name	Type	Description
DPDCH rate UL	Integer	Uplink DPDCH bitrate Minimum value: 0 Unit: bit/s

Parameters for LTE [|Top](#)

Name	Type	Description
Ph. ch. type	Integer	Physical channel type 1 = PBCH 2 = PDSCH 3 = PUSCH

Parameters for LTE PBCH [|Top](#)

Name	Type	Description
PBCH block rate	Integer	PBCH block rate Minimum value: 0
PBCH BLER	Float	PBCH BLER Physical Downlink Shared Channel (PDSCH) block error rate. Block error rate (BLER) is the number of received erroneous blocks per total number of sent blocks. Erroneous blocks are found with the cyclic redundancy check (CRC), see 3GPP TS 34.121-1 subclause F.6.1.1. Range: 0 – 100 Unit: %
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 0 = PCell Primary serving cell. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1

Parameters for LTE PDSCH [|Top](#)

Name	Type	Description
PDSCH bitrate 0	Integer	PDSCH throughput for codeword 0 Minimum value: 0 Unit: bit/s
PDSCH bitrate 1	Integer	PDSCH throughput for codeword 1 Minimum value: 0 Unit: bit/s
PDSCH block rate	Integer	PDSCH block rate The number of received transport blocks since the last report including TBs with CRC failure. Minimum value: 0
PDSCH BLER	Float	PDSCH BLER The ratio of transport blocks with CRC check accepted to all received TBs. Range: 0 – 100 Unit: %
Sch bitrate/PRB	Integer	PDSCH scheduled throughput/PRB Scheduled throughput per PRB is the average throughput per PRB over the TTIs where PRB resources are allocated. This is calculated by summing PDSCH throughput per PRB during the reporting period and this is divided by number of allocated PRBs during the reporting period. Minimum value: 0 Unit: bit/s
PDSCH bitrate	Integer	PDSCH throughput The throughput is calculated from all received transport blocks including TBs with CRC failure. Minimum value: 0 Unit: bit/s

PDCCH BLER est.	Float	PDCCH BLER estimation This parameter estimates PDCCH BLER by calculating number of undetected and missed downlink grants. The parameter does not contain all possible PDCCH errors so it is more of an indicative rather than an absolute ratio of errors in the PDCCH channel. Note that the exact calculation method of the parameter can change in the future. Range: 0 – 100 Unit: %
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 0 = PCell Primary serving cell. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1
CFI 1	Float	PDCCH CFI 1 percentage Defines how many percent of subframes are using CFI 1 meaning that 1 symbol (2 when 1.4 MHz bandwidth) is allocated for PDCCH. See 3GPP TS 36.212 subclause 5.3.4. Range: 0 – 100 Unit: %
CFI 2	Float	PDCCH CFI 2 percentage Defines how many percent of subframes are using CFI 2 meaning that 2 symbols (3 when 1.4 MHz bandwidth) are allocated for PDCCH. See 3GPP TS 36.212 subclause 5.3.4. Range: 0 – 100 Unit: %
CFI 3	Float	PDCCH CFI 3 percentage Defines how many percent of subframes are using CFI 3 meaning that 3 symbols (4 when 1.4 MHz bandwidth) are allocated for PDCCH. See 3GPP TS 36.212 subclause 5.3.4. Range: 0 – 100 Unit: %
PDSCH BLER 0	Float	PDSCH BLER for codeword 0 Range: 0 – 100 Unit: %
PDSCH BLER 1	Float	PDSCH BLER for codeword 1 Range: 0 – 100 Unit: %
#PDCCH channel formats	Integer	Number of PDCCH channel formats
#Params/PDCCH channel format	Integer	Number of parameters per PDCCH channel format
PDCCH format count	Integer	PDCCH format count Defines how many times PDCCH format has been used during the previous reporting period.
PDCCH format	Integer	PDCCH format PDCCH format defines how much resources are allocated for PDCCH channel. See more 3GPP TS 36.211 subclause 6.8.1. 0 = PDCCH format 0 Same as aggregation level 1. 1 = PDCCH format 1 Same as aggregation level 2. 2 = PDCCH format 2 Same as aggregation level 4. 3 = PDCCH format 3 Same as aggregation level 8.

Parameters for LTE PUSCH [\[Top\]](#)

Name	Type	Description
PUSCH bitrate	Integer	PUSCH throughput This is calculated from all transmitted transport blocks including TBs that are not delivered successfully or are delivered redundantly.

		Minimum value: 0 Unit: bit/s
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 0 = PCell Primary serving cell. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1

Parameters for EVDO |[Top](#)

Name	Type	Description
Ph rate UL	Integer	Physical layer throughput UL Minimum value: 0 Unit: bit/s
Ph rate DL	Integer	Physical layer throughput DL Minimum value: 0 Unit: bit/s
SU rate DL	Integer	Single-user throughput DL Minimum value: 0 Unit: bit/s
MU rate DL	Integer	Multi-user throughput DL Minimum value: 0 Unit: bit/s
PER SU	Float	PER single-user Range: 0 – 100 Unit: %
PER MU	Float	PER multi-user Range: 0 – 100 Unit: %
PER	Float	PER reverse Range: 0 – 100 Unit: %
#Carriers	Integer	Number of EVDO carriers
#Params/Carrier	Integer	Number of parameters per EVDO carrier
Ch	Integer	Channel number
Ph rate UL/Ch	Integer	Physical layer throughput UL per carrier Minimum value: 0 Unit: bit/s
Ph rate DL/Ch	Integer	Physical layer throughput DL per carrier Minimum value: 0 Unit: bit/s
SU rate DL/Ch	Integer	Single-user throughput DL per carrier Minimum value: 0 Unit: bit/s
MU rate DL/Ch	Integer	Multi-user throughput DL per carrier Minimum value: 0 Unit: bit/s

WLAN throughput (WLANRATE)

Event ID	WLANRATE
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Cellular systems	GAN WLAN
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

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Name	Type	Description
Measured sys.	Integer	Measured system 21 = GAN WLAN
WLAN rate UL	Integer	WLAN throughput uplink
WLAN rate DL	Integer	WLAN throughput downlink

PPP layer throughput (PPPRATE)

Event ID	PPPRATE
Cellular systems	All
Record state	Packet active
Description	Recorded when PPP layer data is received or transmitted based on operating system services. Currently minimum time interval between two measurement events is one second. If data has not been transmitted or received in two seconds, a zero-value measurement event is recorded.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
PPP rate UL	Integer	PPP throughput uplink The value of this parameter is calculated based on the SDUs that are successfully transferred through the PPP layer. Missing and erroneous PPP packets are excluded from the throughput calculation. With Nemo Handy, the PPP layer is not used and the reported value is TCP/IP throughput instead. With Nemo Outdoor, the PPP layer carries the IP layer in order to produce a good approximation of TCP/IP throughput. However, this approximation is not exact. Also note that with Nemo Outdoor the PPP throughput is only reported when the packet session is activated using the dialup interface. Minimum value: 0 Unit: bit/s
PPP rate DL	Integer	PPP throughput downlink The value of this parameter is calculated based on the SDUs that are successfully transferred through the PPP layer. Missing and erroneous PPP packets are excluded from the throughput calculation. With Nemo Handy, the PPP layer is not used and the reported value is TCP/IP throughput instead. With Nemo Outdoor, the PPP layer carries the IP layer in order to produce a good approximation of TCP/IP throughput. However, this approximation is not exact. Also note that with Nemo Outdoor the PPP throughput is only reported when the packet session is

		activated using the dialup interface. Minimum value: 0 Unit: bit/s
Sent PPP bytes	Integer	Transferred PPP bytes uplink Cumulative amount of data transferred in uplink direction during the packet session. Unit: byte
Recv. PPP bytes	Integer	Transferred PPP bytes downlink Cumulative amount of data transferred in downlink direction during the packet session. Unit: byte

RLP layer throughput (RLPRATE)

Event ID	RLPRATE
Cellular systems	cdmaOne,CDMA 1x,EVDO
Record state	Packet active
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

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Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x 12 = EVDO
RLP rev. rate	Integer	RLP reverse user throughput Minimum value: 0 Unit: bit/s
RLP for. rate	Integer	RLP forward user throughput Minimum value: 0 Unit: bit/s
RLP rev. retr. rate	Float	RLP reverse retransmission rate Range: 0 – 100 Unit: %
RLP fwd. retr. rate	Float	RLP forward retransmission rate Range: 0 – 100 Unit: %
RLP err. UL	Float	RLP error rate uplink Range: 0 – 100 Unit: %
RLP err. DL	Float	RLP error rate downlink Range: 0 – 100 Unit: %

RLP statistics (RLPSTATISTICS)

Event ID	RLPSTATISTICS
Cellular systems	cdmaOne,CDMA 1x,EVDO
Record state	Packet active
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor

Parameters | Parameters for cdmaOne and CDMA 1x | Parameters for EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for cdmaOne and CDMA 1x [|Top|](#)

Name	Type	Description
Service ID	Integer	Service ID
Resets	Integer	Number of resets
Aborts	Integer	Number of NAK aborts
Last RTT	Integer	Last RTT Number of 20-ms time frames for the last round-trip time measurement. Unit: frame
Block of bytes used	Integer	Block of bytes used 0 = Not received 1 = Specified NAK scheme 2 = Specified RTT 3 = Specified RTT and NAK scheme
RX NAKs	Integer	Received NAKs Total number of negative acknowledgement frames received. Unit: frame
Largest Con. Erasures	Integer	Largest block of consecutive erasures
Retrans. not found	Integer	Number of retransmitted frames not found Unit: frame
RX retrans. frames	Integer	Received retransmitted frames Unit: frame
RX idle frames	Integer	Received idle frames Unit: frame
RX fill frames	Integer	Received fill frames Unit: frame
RX blank frames	Integer	Received blank frames Unit: frame
RX null frames	Integer	Received null frames Unit: frame
RX new frames	Integer	Received new data frames Unit: frame
RX fund. frames	Integer	Received fundamental data frames Unit: frame
RX bytes	Integer	Received bytes Unit: byte

RX RLP erasures	Integer	Received RLP erasures Unit: frame
RX MUX erasures	Integer	Received multiplexer erasures Unit: frame
TX NAKs	Integer	Transmitted NAKs Unit: frame
TX retrans. frames	Integer	Transmitted retransmitted frames Unit: frame
TX idle frames	Integer	Transmitted idle frames Unit: frame
TX new frames	Integer	Transmitted new data frames Unit: frame
TX fund. frames	Integer	Transmitted fundamental data frames Unit: frame
TX bytes	Integer	Transmitted bytes Unit: byte

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
Service ID	Integer	Service ID Identifies RLP service.
RX NAKs	Integer	Received NAKs
RX NAKs in bytes	Integer	Received NAKs in bytes
Retrans. not found	Integer	Number of retransmitted frames not found
RX dup. bytes	Integer	Received duplice bytes
ReRX bytes	Integer	Received retransmitted bytes
RX new bytes	Integer	Received new data bytes
RX bytes	Integer	Received bytes
TX NAKs	Integer	Transmitted NAKs
TX NAKs in bytes	Integer	Transmitted NAKs in bytes
ReTX bytes	Integer	Retransmitted bytes
TX new bytes	Integer	Transmitted new data bytes
TX bytes	Integer	Transmitted bytes
NAK timeouts	Integer	NAK timeouts Contains NAK timeouts and aborts.
Reset count	Integer	Reset count Total resets that have occurred, initiated either by the AN or the AT.
AT reset request count	Integer	Resets requested by the AT
AN reset ack count	Integer	Reset ACKs received from the AN
AN reset request count	Integer	Resets requested by the AN
RX frames	Integer	Received frames
RX new frames	Integer	Received new frames
ReRX frames	Integer	Received retransmitted frames
RX frames first	Integer	Received frames with first data unit
RX frames last	Integer	Received frames with last data unit
TX frames	Integer	Transmitted frames
TX new frames	Integer	Transmitted new frames
ReTX frames	Integer	Retransmitted frames
TX frames first	Integer	Transmitted frames with first data unit
TX frames last	Integer	Transmitted frames with last data unit
Link flow ID	Integer	Link flow ID

Route number	Integer	Route number
Flow protocol	Integer	Flow protocol
Route protocol	Integer	Route protocol
Packet stream	Integer	Packet stream Whether link flow is packet-based. 0 = Non-packet based 1 = Packet based
Sequence type	Integer	Sequence type Whether link flow is doing segment-based sequencing. 0 = Non-segment based sequencing 1 = Segment based sequencing

Measurement event information (MEI)

Event ID	MEI
Cellular systems	UMTS FDD,UMTS TD-SCDMA
Record state	Always
Description	Recorded when a UMTS measurement event is transmitted to the network based on signaling messages.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE |

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD |Top|

Name	Type	Description
Measurement event	Integer	Measurement event 1 = Event 1A A primary CPICH enters the Reporting Range (FDD only). 2 = Event 1B A primary CPICH leaves the Reporting Range (FDD only). 3 = Event 1C A non-active Primary CPICH becomes better than an active Primary CPICH (FDD only). 4 = Event 1D Change of best cell (FDD only). 5 = Event 1E A primary CPICH becomes better than an absolute threshold (FDD only). 6 = Event 1F A primary CPICH becomes worse than an absolute threshold (FDD only). 7 = Event 1G Change of best cell (TDD only). 8 = Event 1H Timeslot ISCP below a certain threshold (TDD only).

- 9 = Event 11
Timeslot ISCP above a certain threshold (TDD only).
- 10 = Event 1J
A non-active E-DCH but active DCH Primary CPICH becomes better than an active E-DCH Primary CPICH (FDD only).
- 21 = Event 2A
Change of best frequency.
- 22 = Event 2B
The estimated quality of the currently used frequency is below a certain threshold and the estimated quality of a non-used frequency is above a certain threshold.
- 23 = Event 2C
The estimated quality of a non-used frequency is above a certain threshold.
- 24 = Event 2D
The estimated quality of the currently used frequency is below a certain threshold.
- 25 = Event 2E
The estimated quality of a non-used frequency is below a certain threshold.
- 26 = Event 2F
The estimated quality of the currently used frequency is above a certain threshold.
- 31 = Event 3A
The estimated quality of the currently used UTRAN frequency is below a certain threshold and the estimated quality of the other system is above a certain threshold.
- 32 = Event 3B
The estimated quality of other system is below a certain threshold.
- 33 = Event 3C
The estimated quality of other system is above a certain threshold.
- 34 = Event 3D
Change of best cell in other system.
- 41 = Event 4A
Transport Channel Traffic Volume (3GPP TS 25.321) exceeds an absolute threshold.
- 42 = Event 4B
Transport Channel Traffic Volume (3GPP TS 25.321) becomes smaller than an absolute threshold.
- 51 = Event 5A
Number of bad CRCs on a certain transport channel exceeds a threshold.
- 61 = Event 6A
The UE Transmitted Power becomes larger than an absolute threshold.
- 62 = Event 6B
The UE Transmitted Power becomes less than an absolute threshold.
- 63 = Event 6C
The UE Transmitted Power reaches its minimum value.
- 64 = Event 6D
The UE Transmitted Power reaches its maximum value.
- 65 = Event 6E
The UE RSSI reaches the UEs dynamic receiver range.
- 66 = Event 6F
The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold (FDD only). The time difference indicated by T_{ADV} becomes larger than an absolute threshold (TD-SCDMA only).
- 67 = Event 6G
The UE Rx-Tx time difference for a RL included in the active set becomes less than an absolute threshold.
- 71 = Event 7A
The UE position changes more than an absolute threshold.
- 72 = Event 7B
SFN-SFN measurement changes more than an absolute threshold.
- 73 = Event 7C

GPS time and SFN time have drifted apart more than an absolute threshold.

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Measurement event	Integer	<p>Measurement event</p> <p>1 = Event 1A A primary CPICH enters the Reporting Range (FDD only).</p> <p>2 = Event 1B A primary CPICH leaves the Reporting Range (FDD only).</p> <p>3 = Event 1C A non-active Primary CPICH becomes better than an active Primary CPICH (FDD only).</p> <p>4 = Event 1D Change of best cell (FDD only).</p> <p>5 = Event 1E A primary CPICH becomes better than an absolute threshold (FDD only).</p> <p>6 = Event 1F A primary CPICH becomes worse than an absolute threshold (FDD only).</p> <p>7 = Event 1G Change of best cell (TDD only).</p> <p>8 = Event 1H Timeslot ISCP below a certain threshold (TDD only).</p> <p>9 = Event 1I Timeslot ISCP above a certain threshold (TDD only).</p> <p>10 = Event 1J A non-active E-DCH but active DCH Primary CPICH becomes better than an active E-DCH Primary CPICH (FDD only).</p> <p>21 = Event 2A Change of best frequency.</p> <p>22 = Event 2B The estimated quality of the currently used frequency is below a certain threshold and the estimated quality of a non-used frequency is above a certain threshold.</p> <p>23 = Event 2C The estimated quality of a non-used frequency is above a certain threshold.</p> <p>24 = Event 2D The estimated quality of the currently used frequency is below a certain threshold.</p> <p>25 = Event 2E The estimated quality of a non-used frequency is below a certain threshold.</p> <p>26 = Event 2F The estimated quality of the currently used frequency is above a certain threshold.</p> <p>31 = Event 3A The estimated quality of the currently used UTRAN frequency is below a certain threshold and the estimated quality of the other system is above a certain threshold.</p> <p>32 = Event 3B The estimated quality of other system is below a certain threshold.</p> <p>33 = Event 3C The estimated quality of other system is above a certain threshold.</p> <p>34 = Event 3D Change of best cell in other system.</p> <p>41 = Event 4A Transport Channel Traffic Volume (3GPP TS 25.321) exceeds an absolute threshold.</p> <p>42 = Event 4B Transport Channel Traffic Volume (3GPP TS 25.321) becomes smaller than an absolute threshold.</p> <p>51 = Event 5A Number of bad CRCs on a certain transport channel exceeds a threshold.</p>

		<p>61 = Event 6A The UE Transmitted Power becomes larger than an absolute threshold.</p> <p>62 = Event 6B The UE Transmitted Power becomes less than an absolute threshold.</p> <p>63 = Event 6C The UE Transmitted Power reaches its minimum value.</p> <p>64 = Event 6D The UE Transmitted Power reaches its maximum value.</p> <p>65 = Event 6E The UE RSSI reaches the UEs dynamic receiver range.</p> <p>66 = Event 6F The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold (FDD only). The time difference indicated by T_ADV becomes larger than an absolute threshold (TD-SCDMA only).</p> <p>67 = Event 6G The UE Rx-Tx time difference for a RL included in the active set becomes less than an absolute threshold.</p> <p>71 = Event 7A The UE position changes more than an absolute threshold.</p> <p>72 = Event 7B SFN-SFN measurement changes more than an absolute threshold.</p> <p>73 = Event 7C GPS time and SFN time have drifted apart more than an absolute threshold.</p>
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Parameters for LTE [|Top|](#)

Name	Type	Description
Measurement event	Integer	<p>Measurement event See 3GPP TS 136.331 subclause 5.5.4.</p> <p>1 = Event A1 Serving becomes better than threshold.</p> <p>2 = Event A2 Serving becomes worse than threshold.</p> <p>3 = Event A3 Neighbor becomes offset better than PCell.</p> <p>4 = Event A4 Neighbor becomes better than threshold.</p> <p>5 = Event A5 PCell becomes worse than threshold 1 and neighbor becomes better than threshold 2.</p> <p>6 = Event A6 Neighbor becomes offset better than SCell.</p> <p>21 = Event B1 Inter RAT neighbor becomes better than threshold.</p> <p>22 = Event B2 PCell becomes worse than threshold 1 and inter RAT neighbor becomes better than threshold 2.</p>
Measurement ID	Integer	<p>Measurement ID See 3GPP TS 136.331 subclause 5.5. Range: 1 – 32</p>

Position report information (POSI)

Event ID	POSI
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Cellular systems	GSM,UMTS FDD,LTE FDD,LTE TDD
Record state	Always
Description	Recorded when a position information is reported from mobile to the network. This information is decoded from the signaling messages.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD
Position report type	Integer	Position report type See 3GPP TS 123.271, 125.305, 136.305, 136.355, and 144.031. 1 = UE-based A-GNSS Assisted-global navigation satellite system. 2 = NW-based OTDOA Observed time difference of arrival. When this method is used the network calculates UE's position based on known nodeB coordinates, and signal reception times measured and reported by UE. 3 = UE-based E-OTD Enhanced observed time difference. This is similar with OTDOA but it is only used with GSM. 4 = NW-based ECID Enhanced cell ID positioning method where network calculates mobile's position using RX/TX measurements done by mobile. When this positioning method is used the longitude and latitude parameters are n/a.
Result	Integer	Position report result 1 = Success 2 = Undefined failure 3 = Not supported 4 = Request denied 50 = Assistance data not supported by server 51 = Assistance data not available 52 = Assistance data partly not supported or not available 100 = Not enough satellites 101 = Not all requested measurements are possible 200 = Unable to measure reference cell 201 = Unable to measure any neighbor cell 202 = Unable to measure some neighbor cells 300 = Not enough base stations
Lon.	Float	Position report longitude Longitude of the measured position.
Lat.	Float	Position report latitude Latitude of the measured position.
Height	Integer	Position report height Unit: m
Confidence	Float	Position report confidence Range: 0 – 100 Unit: %

MBMS information (MBMSI)

Event ID	MBMSI
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when MBMS allocation changes.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
#Services	Integer	Number of MBMS services
#Params/service	Integer	Number of parameters per MBMS service
MCC	Integer	MBMS service MCC See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	MBMS service MNC Range: 0 – 999
Service ID	Integer	MBMS service ID Uniquely identifies the identity of an MBMS service within a PLMN. See more 3GPP TS 136.331 subclause 6.3.7. Range: 0 – 16777215
Session ID	Integer	MBMS session ID Range: 0 – 255
Area ID	Integer	MBSFN area ID Multi broadcast single frequency network area identity. See more 3GPP TS 136.211 subclause 6.10.2.1. Range: 0 – 255
Data MCS	Integer	MBMS data MCS Defines the modulation and the amount of coding used. See 3GPP TS 36.213 subclause 7.1.7. Range: 0 – 31
State	Integer	MBMS service state 1 = Active 2 = Available

Physical channel throughput broadcast (PHRATEB)

Event ID	PHRATEB
Cellular systems	LTE FDD,LTE TDD
Record state	Always

Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
PMCH throughput	Integer	PMCH throughput Physical layer PMCH throughput is sum of all transport blocks received from the PMCH disregarding CRC result. Minimum value: 0 Unit: bit/s
PMCH SNR	Float	PMCH SNR Mobile vendor specific signal-to-noise-ratio for PMCH. Unit: dB

MAC layer throughput broadcast (MACRATEB)

Event ID	MACRATEB
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when measurement sample is received from the device and the received sample differs from the previous result. This UMTS measurement event is recorded simultaneously with the PLAID measurement event and only during HSDPA session.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
MCH throughput	Integer	MCH throughput MAC layer MCH throughput is sum of transport blocks with correct CRC. With some implementations it is possible that MCH throughput does not contain MAC layer headers and overhead. Minimum value: 0 Unit: bit/s

MCH block rate	Integer	MCH block rate Number of received transport blocks since last report. Minimum value: 0
MCH BLER	Float	MCH BLER Ratio of correct and incorrect transport blocks since the last report. The number of the incorrect transport blocks is Block Rate times BLER divided by 100. Range: 0 – 100 Unit: %

RLC layer throughput broadcast (RLCRATEB)

Event ID	RLCRATEB
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
MTCH throughput	Integer	MTCH throughput RLC layer MTCH throughput is bit rate calculated from the RLC layer data SDUs. Minimum value: 0 Unit: bit/s
#MRBs	Integer	Number of MBMS radio bearers
#Params/MRB	Integer	Number of parameters per MBMS radio bearer
Area ID/MRB	Integer	MBSFN area ID per MRB Multi broadcast single frequency network area identity. See more 3GPP TS 136.211 subclause 6.10.2.1. Range: 0 – 255
PMCH ID/MRB	Integer	PMCH ID per MRB Range: 0 – 15
Bitrate/MRB	Integer	MTCH throughput per MRB Minimum value: 0 Unit: bit/s
Block rate/MRB	Integer	MTCH block rate per MRB Minimum value: 0

Channel quality indicator (CQI)

Event ID	CQI
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	Packet active state
Description	Recorded every 200 milliseconds to indicate distribution of HSDPA Channel Quality Indications (CQI) transmitted to the network. The measurement event is recorded simultaneously with the PLAID measurement event. One measurement event is logged for all serving cells with HSDPA. Separate measurement event is logged for each serving cell with LTE.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample dur.	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
Ph req. rate	Integer	HSDPA physical layer requested throughput Computational throughput based on the transport block sizes indicated by the CQI values. In MIMO mode, only CQI type A is used for the calculation. This is the throughput that would have been achieved if the network had sent the link adaptation parameters defined by the CQI. Minimum value: 0 Unit: bit/s
CQI repetitions	Integer	HSDPA CQI repetition factor Controls how often the UE repeats CQI information on the uplink. See 3GPP TS 25.214 subclause 6A.1.2. Range: 1 – 4
CQI cycle	Integer	HSDPA CQI feedback cycle Controls how often the UE transmits new CQI information on the uplink. See 3GPP TS 25.214 subclause 6A.1.2. Range: 0 – 160 Unit: ms
MIMO R2 req. %	Float	HSDPA MIMO rank 2 request ratio Defines the percentage of time MIMO was requested using CQI values. This is the ratio of double CQI values to total of type A CQI values. This parameter is also known as rank indicator. Range: 0 – 100 Unit: %
#CQI values	Integer	Number of CQI values
#Params/CQI value	Integer	Number of parameters per CQI value
Percentage	Float	HSDPA CQI percentage Percentage of this CQI value from the total sampling duration. Note

		that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %
CQI	Integer	HSDPA CQI An estimate of the link adaptation (transport block size, the modulation type, the number of parallel codes, and the spreading factor) required to enable correct reception with reasonable block error rate. The measured value is reported periodically to the network. This information can be used for data scheduling and link adaptation. When the secondary CQI has a valid value, the range of the parameter is limited to values 0-14. See 3GPP TS 125.214 subclause 6A.2. Range: 0 – 30
CQI type	Integer	HSDPA CQI type See 3GPP TS 125.214 subclause 6A.1.2.2. 1 = CQI type A 2 = CQI type B This type is used when MIMO is not configured.
CQI 2	Integer	HSDPA CQI 2 An estimate of the link adaptation (transport block size, the modulation type, the number of parallel codes, and the spreading factor) required to enable correct reception with reasonable block error rate. The measured value is reported periodically to the network. This information can be used for data scheduling and link adaptation. This parameter is always n/a when CQI type B is used. See 3GPP TS 125.214 subclause 6A.2. Range: 0 – 14
Cell type	Integer	HSDPA cell type 1 = Primary 2 = Secondary

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Params	Integer	Number of parameters
Sample dur.	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
Ph req. rate	Integer	HSDPA physical layer requested throughput Computational throughput based on the transport block sizes indicated by the CQI values. In MIMO mode, only CQI type A is used for the calculation. This is the throughput that would have been achieved if the network had sent the link adaptation parameters defined by the CQI. Minimum value: 0 Unit: bit/s
#CQI values	Integer	Number of CQI values
#Params/CQI value	Integer	Number of parameters per CQI value
Percentage	Float	HSDPA CQI percentage Percentage of this CQI value from the total sampling duration. Note that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %
CQI	Integer	HSDPA CQI An estimate of the link adaptation (transport block size, the modulation type, the number of parallel codes, and the spreading factor) required to enable correct reception with reasonable block error rate. The measured value is reported periodically to the network. This information can be used for data scheduling and link adaptation. See 3GPP TS 125.224 subclause 4.11.2. Range: 0 – 127

Parameters for LTE [\[Top\]](#)

Name	Type	Description
#Params	Integer	Number of parameters
Sample dur.	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
Req. rate	Integer	Requested throughput Computational throughput based on the transport block sizes indicated by the wideband CQI values. It is assumed that all eNodeB resources are available for the device, three PDCCH symbols are allocated for each subframe, no PRBs are allocated for PBCH, P-SCH, or S-SCH physical channels, and BLER is zero. In situations where rank 2 or rank 4 reception would have been possible, wideband CQI values of both codewords are used in the throughput calculation. This is the estimation of throughput that would have been achieved if the network had used the link adaptation parameters defined by the CQI. This estimation may be overestimation because of zero BLER hypothesis and since no PRBs are allocated for other physical channels or it can be underestimation since for PDCCH three symbols are always reserved. Minimum value: 0 Unit: bit/s
WB CQI 0	Integer	Wideband CQI for codeword 0 This is the average wideband CQI calculated over the reporting period. See 3GPP TS 36.213 subclause 7.2. Range: 0 – 15
WB CQI 1	Integer	Wideband CQI for codeword 1 This is the average wideband CQI calculated over the reporting period. See 3GPP TS 36.213 subclause 7.2. Range: 0 – 15
SB CQI 0	Integer	Subband CQI for codeword 0 The subband CQI is the average calculated over the subbands defined by higher layer or selected by mobile. This reported subband CQI value is furthermore averaged over the reporting period before it is logged to the measurement event. More information about CQI see 3GPP TS 36.213 subclause 7.2. Range: 0 – 15
SB CQI 1	Integer	Subband CQI for codeword 1 The subband CQI is the average calculated over the subbands defined by higher layer or selected by mobile. This reported subband CQI value is furthermore averaged over the reporting period before it is logged to the measurement event. More information about CQI see 3GPP TS 36.213 subclause 7.2. Range: 0 – 15
WB PMI	Integer	Wideband PMI The logged value is the most commonly used value during the reporting period. A user equipment uses Precoding Matrix Indicator (PMI) to inform the eNodeB which precoding matrix should be used for downlink transmission according to the rank indication. See 3GPP TS 36.213 subclause 7.2.4.
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 0 = PCell Primary serving cell. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1
#Ranks	Integer	Number of ranks The first requested rank value defines the ratio of rank one, the second rank value defines the ratio of rank two, etc.
#Params/rank	Integer	Parameters per rank
Req. rank	Float	Requested rank Defines based on RI reports the ratio of time when the mobile would have been able to receive data using defined rank. This is the report from the device to the network how many simultaneous data streams

		(or layers) it can receive when spatial multiplexing transmission scheme is used. Range: 0 – 100 Unit: %
Rank	Integer	Rank Range: 1 – 4
#CQI subbands	Integer	Number of CQI subbands
#Params/Subband	Integer	Number of parameters per CQI subband
SB index	Integer	CQI subband index Subband Channel Quality Indication (CQI) reports the quality on a selected set of preferred subbands by the UE. The selected set can also be configured from a higher layer. See 3GPP TS 36.213 subclause 7.2.
CQI 0/SB	Integer	CQI for codeword 0 per subband The average channel quality index value over the reporting period for defined subband. Not available when the best M select mode is used. More information about CQI see 3GPP TS 36.213 subclause 7.2. Range: 0 – 15
CQI 1/SB	Integer	CQI for codeword 1 per subband The average channel quality index value over the reporting period for defined subband. Not available when the best M select mode is used. More information about CQI see 3GPP TS 36.213 subclause 7.2. Range: 0 – 15

HARQI process information (HARQI)

Event ID	HARQI
Cellular systems	UMTS FDD,UMTS TD-SCDMA
Record state	Packet active state
Description	Recorded every 200 milliseconds to indicate HSDPA HARQ throughput based on the trace messages of the mobile. This measurement event is recorded simultaneously with the PLAID measurement event.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for UMTS FDD](#) | [Parameters for UMTS TD-SCDMA](#) |

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#HARQ processes	Integer	Number of HARQ processes
#Params/HARQ	Integer	Number of parameters per HARQ process.
HARQ ID	Integer	HSDPA HARQ process Identifier Range: 0 – 15

HARQ dir.	Integer	HSDPA HARQ process direction 1 = Uplink 2 = Downlink
HARQ Rate	Integer	HSDPA HARQ process throughput The value of the parameter is calculated from the transport block sizes for each HARQ process separately. Minimum value: 0 Unit: bit/s
#HARQ packets	Integer	HSDPA HARQ process block rate The number of MAC-hs PDUs transferred per HARQ process.
HARQ BLER	Float	HSDPA HARQ process BLER The ratio of erroneously received MAC-hs PDUs to all received MAC-hs PDUs for each HARQ process separately. Range: 0 – 100 Unit: %
Cell type	Integer	HSDPA cell type 1 = Primary 2 = Secondary

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#HARQ processes	Integer	Number of HARQ processes
#Params/HARQ	Integer	Number of parameters per HARQ process.
HARQ ID	Integer	HSDPA HARQ process Identifier Range: 0 – 15
HARQ dir.	Integer	HSDPA HARQ process direction 1 = Uplink 2 = Downlink
HARQ Rate	Integer	HSDPA HARQ process throughput The value of the parameter is calculated from the transport block sizes for each HARQ process separately. Minimum value: 0 Unit: bit/s
#HARQ packets	Integer	HSDPA HARQ process block rate The number of MAC-hs PDUs transferred per HARQ process.
HARQ BLER	Float	HSDPA HARQ process BLER The ratio of erroneously received MAC-hs PDUs to all received MAC-hs PDUs for each HARQ process separately. Range: 0 – 100 Unit: %

HS-SCCH channel information (HSSCCHI)

Event ID	HSSCCHI
Cellular systems	UMTS FDD,UMTS TD-SCDMA
Record state	Packet active state
Description	Recorded every 200 milliseconds to indicate HS-SCCH channel usage based on the trace messages of the mobile. This measurement event is recorded simultaneously with the PLAID measurement event.

Tools	Nemo Outdoor	
Parameters	Parameters for UMTS FDD	Parameters for UMTS TD-SCDMA

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
HS-SCCH code	Integer	HSDPA HS-SCCH channelisation code Range: 0 – 127
HS-SCCH usage	Float	HSDPA HS-SCCH usage Defines the ratio of TTIs when new or retransmitted data is indicated using this HS-SCCH channelisation code. Note that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %
Cell type	Integer	HSDPA cell type 1 = Primary 2 = Secondary

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
HS-SCCH 1st code	Integer	HSDPA HS-SCCH first channelisation code Range: 0 – 15
HS-SCCH 2nd code	Integer	HSDPA HS-SCCH second channelisation code Range: 0 – 15
HS-SCCH usage	Float	HSDPA HS-SCCH usage Defines the ratio of TTIs when new or retransmitted data is indicated using this HS-SCCH channelisation code. Note that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %

Packet link adaptation info for downlink (PLAID)

Event ID	PLAID
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Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,WiMAX
Record state	Packet active state
Description	The measurement event contains statistical information on the usage of the downlink link adaptation based on the trace messages of the mobile. Currently recorded at a 200 millisecond interval with HSDPA. Only one measurement event is logged for all serving cells with HSDPA. Separate measurement event is logged for each serving cell with LTE.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for WiMAX |

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 25 = WiMAX

Parameters for UMTS FDD | [Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample duration	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
HS-PDSCH rate	Integer	HSDPA HS-PDSCH throughput High-Speed Physical Downlink Shared Channel throughput is calculated from all (also retransmitted) transport blocks received from the HS-DSCH transport channel and divided by sample duration. This parameter is also known as HSDPA physical channel throughput or served throughput. Minimum value: 0 Unit: bit/s
MIMO usage	Float	HSDPA MIMO usage ratio The percentage of TTIs during the reporting period when dual stream transfer is used. This value displays the exact amount of MIMO used with HSDPA. Range: 0 – 100 Unit: %
Scheduled rate	Integer	HSDPA HS-PDSCH scheduled throughput High-Speed Physical Downlink Shared Channel scheduled throughput is calculated from all (also retransmitted) transport blocks received from the HS-DSCH transport channel and divided by time when data is received from the network (idle time is not calculated). With DC-HSDPA the scheduled throughput is calculated separately for each cell and then the received values are summed up to get the total scheduled throughput. Minimum value: 0 Unit: bit/s
#PLA sets	Integer	Number of packet link adaptation sets
#Params/PLA set	Integer	Number of parameters per packet link adaptation set
Percentage	Float	HSDPA percentage Percentage of this set from the total sample duration. Note that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %
Modulation	Integer	HSDPA modulation 1 = QPSK 2 = 16QAM 3 = 64QAM

Effective coding	Float	HSDPA effective coding Effective coding is transport block size divided by bits per TTI per physical channel (=U), where U is 960 bits for QPSK, 1920 bits for 16QAM, and 2880 bits for 64QAM. Range: 0 – 1
TB size	Integer	HSDPA transport block size Unit: bit
1st code	Integer	HSDPA first channelisation code Range: 0 – 15
#codes	Integer	HSDPA number of used channelisation codes Range: 1 – 15
BLER	Float	HSDPA MAC-hs BLER The ratio of erroneously received MAC-hs PDUs to all MAC-hs PDUs with this link adaptation configuration. Range: 0 – 100 Unit: %
HS-SCCH type	Integer	HSDPA HS-SCCH type See 3GPP TS 125.212 subclause 4.6. 0 = No data 1 = HS-SCCH type 1 2 = HS-SCCH type 2 3 = HS-SCCH type 3 10 = No data (DRX) 100 = RX and TX order, disable HS-SCCH-less mode 101 = DRX and TX order, disable HS-SCCH-less mode 102 = RX and DTX order, disable HS-SCCH-less mode 103 = DRX and DTX order, disable HS-SCCH-less mode 104 = RX and TX order, enable HS-SCCH-less mode 105 = DRX and TX order, enable HS-SCCH-less mode 106 = RX and DTX order, enable HS-SCCH-less mode 107 = DRX and DTX order, enable HS-SCCH-less mode 110 = Secondary serving HS-DSCH deactivation order 111 = Secondary serving HS-DSCH activation order
Modulation 2	Integer	HSDPA modulation for secondary stream 1 = QPSK 2 = 16QAM 3 = 64QAM
Effective coding 2	Float	HSDPA effective coding for secondary stream Range: 0 – 1
TB size 2	Integer	HSDPA transport block size for secondary stream Unit: bit
BLER 2	Float	HSDPA MAC-hs BLER for secondary stream Range: 0 – 100 Unit: %
Cell type	Integer	HSDPA cell type 1 = Primary 2 = Secondary

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample duration	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
HS-PDSCH rate	Integer	HSDPA HS-PDSCH throughput High-Speed Physical Downlink Shared Channel throughput is calculated from all (also retransmitted) transport blocks received from the HS-DSCH transport channel and divided by sample duration. This parameter is also known as HSDPA physical channel throughput or served throughput. Minimum value: 0 Unit: bit/s
#PLA sets	Integer	Number of packet link adaptation sets

#Params/PLA set	Integer	Number of parameters per packet link adaptation set
Percentage	Float	HSDPA percentage Percentage of this set from the total sample duration. Note that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %
Modulation	Integer	HSDPA modulation 1 = QPSK 2 = 16QAM 3 = 64QAM
TB size	Integer	HSDPA transport block size Unit: bit
1st code	Integer	HSDPA first channelisation code Range: 0 – 15
#codes	Integer	HSDPA number of used channelisation codes Range: 1 – 15
BLER	Float	HSDPA MAC-hs BLER The ratio of erroneously received MAC-hs PDUs to all MAC-hs PDUs with this link adaptation configuration. Range: 0 – 100 Unit: %
SF	Integer	TD-SCDMA spreading factor Note that only valid values at the moment are 1 and 16. 1 = SF 1 2 = SF 2 4 = SF 4 8 = SF 8 16 = SF 16

Parameters for LTE [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample duration	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
PRB utilization DL	Float	PRB utilization DL Downlink PRB utilization proportional to bandwidth and reporting period. Range: 0 – 100 Unit: %
DL TBS	Integer	PDSCH average transport block size Minimum value: 0 Unit: bit
Max DL TBS	Integer	PDSCH maximum transport block size Minimum value: 0 Unit: bit
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 0 = PCell Primary serving cell. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1
#PLA sets	Integer	Number of packet link adaptation sets
#Params/PLA set	Integer	Number of parameters per packet link adaptation set
Percentage	Float	PDSCH modulation percentage Range: 0 – 100 Unit: %
Rank	Integer	PDSCH rank Defines how many data streams are used for the data transmission.

		When spatial multiplexing transmission scheme is used, the rank is the same as the number of used layers. The value of the parameter is zero when data is not received. Range: 0 – 4
Modulation 0	Integer	PDSCH modulation for codeword 0 This is the modulation order as defined by 3GPP TS 36.213 subclause 7.1.7. 1 = QPSK 2 = 16QAM 3 = 64QAM 4 = 256QAM
MCS 0	Integer	PDSCH MCS index for codeword 0 Defines the modulation and the amount of coding used. See 3GPP TS 36.213 subclause 7.1.7. Range: 0 – 31
Modulation 1	Integer	PDSCH modulation for codeword 1 This is the modulation order as defined by 3GPP TS 36.213 subclause 7.1.7. 1 = QPSK 2 = 16QAM 3 = 64QAM 4 = 256QAM
MCS 1	Integer	PDSCH MCS index for codeword 1 Defines the modulation and the amount of coding used. See 3GPP TS 36.213 subclause 7.1.7. Range: 0 – 31
#PRBs	Integer	Number of PRBs
#Params/PRB	Integer	Number of parameters per PRB
Percentage	Float	PDSCH PRB percentage Range: 0 – 100 Unit: %
PRBs	Integer	PDSCH PRBs Range: 0 – 100
#PRB indexes	Integer	Number of PRB indexes This is the same as the system bandwidth. Range: 0 – 100
#Params/PRB index	Integer	Number of parameters per PRB index
DL PRB %/i	Float	PRB utilization DL/Index Range: 0 – 100 Unit: %
PRB index	Integer	PRB index Range: 0 – 99

Parameters for WiMAX [\[Top\]](#)

Name	Type	Description
#PLA header parameters	Integer	Number of header parameters
Sample dur.	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
Burst count	Integer	WiMAX burst count Number of received or sent burst during reporting period.
#PLA sets	Integer	Number of packet link adaptation sets
#Params/PLA set	Integer	Number of parameters per packet link adaptation set
Percentage	Float	WiMAX percentage Ratio of burst that used this modulation and coding. Range: 0 – 100
Modulation	Integer	WiMAX modulation 1 = QPSK

		2 = 16QAM 3 = 64QAM
Coding rate	Integer	WiMAX coding rate 1 = 1 / 2 2 = 3 / 5 3 = 5 / 8 4 = 2 / 3 5 = 3 / 4 6 = 4 / 5 7 = 5 / 6
Coding type	Integer	WiMAX coding type 1 = Tail biting convolutional Code (CC) 2 = Block turbo code (BTC) 3 = Convolutional turbo code (CTC) 4 = Zero tail convolutional code (ZTCC)
Repetition coding	Integer	WiMAX repetition coding 1 = No repetition coding 2 = Repetition coding 2 4 = Repetition coding 4 6 = Repetition coding 6

Packet link adaptation info for uplink (PLAIU)

Event ID	PLAIU
Cellular systems	UMTS FDD,WiMAX,LTE FDD,LTE TDD
Record state	Packet active state
Description	The measurement event contains statistical information on the usage of the uplink link adaptation based on the trace messages of the mobile. Recorded every 200 milliseconds with Nokia-based mobiles and every 400 milliseconds with Qualcomm-based mobiles. Separate measurement event is logged for each serving cell with DC-HSUPA and LTE.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for UMTS FDD](#) | [Parameters for LTE](#) | [Parameters for WiMAX](#) |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD 25 = WiMAX

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample duration	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
E-DPDCH Rate	Integer	HSUPA E-DPDCH throughput E-DPDCH throughput is calculated from all (including retransmitted) transport blocks transmitted in the E-DCH transport channel. Minimum value: 0 Unit: bit/s

Lim. max power	Float	HSUPA E-TFC selection limited by max power percentage Percentage of frames when larger E-TFCI selection would cause exceeding of the maximum allowed TX power usage. Range: 0 – 100 Unit: %
Lim. grant	Float	HSUPA E-TFC selection limited by serving grant percentage Percentage of frames when larger E-TFCI cannot be selected since it would require more power than allowed by current serving grant. Range: 0 – 100 Unit: %
Lim. lack of data	Float	HSUPA E-TFC selection limited by lack of data percentage Percentage of frames when larger E-TFCI cannot be selected since mobile's output buffers doesn't contain enough data. Range: 0 – 100 Unit: %
Lim. by mux	Float	HSUPA E-TFC selection limited by mux restriction percentage Percentage of frames when larger E-TFCI cannot be selected since MAC-d flows containing data cannot be multiplexed together with currently selected MAC-d flow. Allowed multiplexing is defined by E-DCH MAC-d flow multiplexing list -parameter in 3GPP TS 125.331 subclause 10.3.5.1b. Range: 0 – 100 Unit: %
Lim. by HARQ	Float	HSUPA E-TFC selection limited by HARQ restriction percentage Percentage of frames when larger E-TFCI cannot be selected since certain MAC-d flows cannot be send using current used HARQ process. Allowed HARQ processes per MAC-d flow is controlled by 2ms non-scheduled transmission grant HARQ process allocation -parameter in 3GPP TS 125.331 subclause 10.3.5.1b. Non-zero only when 2ms subframes are used. Range: 0 – 100 Unit: %
Cell type	Integer	HSUPA cell type 1 = Primary 2 = Secondary
#PLA sets	Integer	Number of packet link adaptation sets
#Params/PLA set	Integer	Number of parameters per packet link adpatation set
Percentage	Float	HSUPA percentage Percentage of this set from the total sample duration. Note that the sum of the percentages is 200 when the measurement event contains information about primary and secondary HSDPA cells. Range: 0 – 100 Unit: %
Modulation	Integer	HSUPA modulation 1 = QPSK 2 = 16QAM
TB size	Integer	HSUPA transport block size Unit: bit
E-TFCI	Integer	HSUPA E-TFCI Range: 0 – 127
SFs	Integer	HSUPA spreading and channelisation codes 1 = SF 256 2 = SF 128 3 = SF 64 4 = SF 32 5 = SF 16 6 = SF 8 7 = SF 4 8 = 2 * SF 4 9 = 2 * SF 2 10 = 2 * SF 4 and 2 * SF 2
Retr.	Float	HSUPA retransmission rate per LA The ratio of erroneous MAC-e PDUs retransmitted using this link adaptation configuration.

		Range: 0 – 100 Unit: %
Avg. SG index	Integer	HSUPA average serving grant The most common value is reported. -1 = ZERO_GRANT 0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 8 = 8 9 = 9 10 = 10 11 = 11 12 = 12 13 = 13 14 = 14 15 = 15 16 = 16 17 = 17 18 = 18 19 = 19 20 = 20 21 = 21 22 = 22 23 = 23 24 = 24 25 = 25 26 = 26 27 = 27 28 = 28 29 = 29 30 = 30 31 = 31 32 = 32 33 = 33 34 = 34 35 = 35 36 = 36 37 = 37
Avg. SG	Float	HSUPA average serving grant power -10.0 if ZERO_GRANT. Range: -10 – 30 Unit: dB

Parameters for LTE [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample duration	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
PRB utilization UL	Float	PRB utilization UL Uplink PRB utilization proportional to bandwidth and reporting period. Range: 0 – 100 Unit: %
UL TBS	Integer	PUSCH average transport block size Minimum value: 0 Unit: bit
Max UL TBS	Integer	PUSCH maximum transport block size Minimum value: 0 Unit: bit
#PLA sets	Integer	Number of packet link adaptation sets
#Params/PLA	Integer	Number of parameters per packet link adaptation set

set		
Percentage	Float	PUSCH modulation percentage Range: 0 – 100 Unit: %
Rank	Integer	PUSCH rank Defines how many data streams are used for the data transmission. When spatial multiplexing transmission scheme is used, the rank is the same as the number of used layers. The value of the parameter is zero when data is not transmitted. Range: 0 – 1
Modulation 0	Integer	PUSCH modulation for codeword 0 The modulation order as defined by 3GPP TS 36.213 subclause 8.6. 1 = QPSK 2 = 16QAM 3 = 64QAM
MCS index 0	Integer	PUSCH MCS index for codeword 0 Defines the modulation and the amount of coding used for data transmission. In the case of retransmission the recorded value is the same as originally used for the data transmission (instead of values from 29 to 31 that are used to indicate redundancy version). See 3GPP TS 36.213 subclause 8.6. Range: 0 – 31
#PRBs	Integer	Number of PRBs
#Params/PRB	Integer	Number of parameters per PRB
Percentage	Float	PUSCH PRB percentage Range: 0 – 100 Unit: %
PRBs	Integer	PUSCH PRBs Range: 0 – 100
#PRB indexes	Integer	Number of PRB indexes This is the same as the system bandwidth. Range: 0 – 100
#Params/PRB index	Integer	Number of parameters per PRB index
UL PRB %/i	Float	PRB utilization UL/Index Range: 0 – 100 Unit: %
PRB index	Integer	PRB index Range: 0 – 99

Parameters for WiMAX [|Top|](#)

Name	Type	Description
#PLA header parameters	Integer	Number of header parameters
Sample dur.	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
Burst count	Integer	WiMAX burst count Number of received or sent burst during reporting period.
#PLA sets	Integer	Number of packet link adaptation sets
#Params/PLA set	Integer	Number of parameters per packet link adaptation set
Percentage	Float	WiMAX percentage Ratio of burst that used this modulation and coding. Range: 0 – 100
Modulation	Integer	WiMAX modulation 1 = QPSK 2 = 16QAM 3 = 64QAM
Coding rate	Integer	WiMAX coding rate

		1 = 1 / 2 2 = 3 / 5 3 = 5 / 8 4 = 2 / 3 5 = 3 / 4 6 = 4 / 5 7 = 5 / 6
Coding type	Integer	WiMAX coding type 1 = Tail biting convolutional Code (CC) 2 = Block turbo code (BTC) 3 = Convolutional turbo code (CTC) 4 = Zero tail convolutional code (ZTCC)
Repetition coding	Integer	WiMAX repetition coding 1 = No repetition coding 2 = Repetition coding 2 4 = Repetition coding 4 6 = Repetition coding 6

Happy bit indicator (HBI)

Event ID	HBI
Cellular systems	UMTS FDD
Record state	Packet active state
Description	The measurement event contains information on the state of the happy bit transmitted by the mobile to the network during an HSUPA session. The measurement event is recorded simultaneously with the PLAIU measurement event. The measurement event is logged only for primary serving cell with DC-HSUPA.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD |Top|

Name	Type	Description
Reporting interval	Integer	HSUPA happy bit reporting interval Defines how often HBI measurement event is reported during HSUPA transfer. Unit: ms
Happy bit	Float	HSUPA happy bit status percentage Defines how often happy bit status was set happy during previous reporting interval excluding DTX TTIs. Range: 0 – 100 Unit: %
DTX	Float	HSUPA happy bit DTX percentage How many TTIs DTX was used during previous reporting period. Range: 0 – 100 Unit: %

MAC-E layer throughput (MACERATE)

Event ID	MACERATE
Cellular systems	UMTS FDD
Record state	Packet active state
Description	The measurement event contains information on the MAC-e layer throughput based on the trace messages of the mobile. The measurement event is reported during an HSUPA session simultaneously with PLAIU measurement event. Separate measurement event is logged for each serving cell with DC-HSUPA.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
MAC-e bitrate	Integer	HSUPA MAC-e throughput The value of this parameter is calculated based on the SDUs that are successfully transferred through the MAC-e layer. Missing and erroneous MAC-e blocks are excluded from the throughput calculation. Approximation of MAC-e throughput is calculated from transport block sizes if real MAC-e throughput is not provided by diagnostic interface of the device. Approximation is a little bit higher than real MAC-e throughput since it contains MAC headers and padding. Minimum value: 0 Unit: bit/s
MAC-e block rate	Integer	HSUPA MAC-e block rate The total number of MAC-e PDUs transmitted during the reporting period.
MAC-e 1st retr.	Float	HSUPA MAC-e 1st retransmission rate The ratio of MAC-e PDUs retransmitted after the first transmission attempt. Range: 0 – 100 Unit: %
MAC-e 2nd retr.	Float	HSUPA MAC-e 2nd retransmission rate The ratio of MAC-e PDUs retransmitted after the second transmission attempt. Range: 0 – 100 Unit: %
MAC-e 3rd+ retr.	Float	HSUPA MAC-e 3rd+ retransmission rate The ratio of MAC-e PDUs retransmitted after the third or later transmission attempt. Range: 0 – 100 Unit: %
Cell type	Integer	HSUPA cell type 1 = Primary 2 = Secondary

Absolute Grant (AGRANT)

Event ID	AGRANT
Cellular systems	UMTS FDD
Record state	Packet active state
Description	Recorded when serving grant is modified using E-AGCH channel. Note that this measurement event is not necessarily recorded exactly with the correct timestamp because of limitations in the trace interface of the mobile. For the same reason, there can be multiple AGRANT measurement events with the same timestamp. In these cases, the order of the measurement events is the order of the E-AGCH modifications.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD |Top|

Name	Type	Description
AGCH index	Integer	HSUPA AGCH absolute grant index Absolute grant index provides the information of how much power a user equipment can use for transmission. See more 3GPP TS 125.321 subclause 9.2.5.2.2. Range: 0 – 31
AGCH grant	Float	HSUPA AGCH absolute grant power Absolute grant power level is issued to a user equipment (UE) by the network and is the maximum amount of power the UE is allowed to use for transmission. Power ratio between E-DPDCH and DPCCH channels. See more 3GPP TS 125.212 subclause 4.10.1A. Range: -10 – 35 Unit: dB
AGCH scope	Integer	HSUPA AGCH absolute grant scope See more 3GPP TS 125.321 subclause 9.2.5.2.2. -1 = All HARQ processes 0 = HARQ process ID 0 1 = HARQ process ID 1 2 = HARQ process ID 2 3 = HARQ process ID 3 4 = HARQ process ID 4 5 = HARQ process ID 5 6 = HARQ process ID 6 7 = HARQ process ID 7
AGCH selector	Integer	HSUPA AGCH absolute grant selector 1 = Primary 2 = Secondary
E-RNTI selector	Integer	HSUPA serving grant selector Defines currently selected E-RNTI. 1 = Primary 2 = Secondary

Cell type	Integer	HSUPA cell type 1 = Primary 2 = Secondary
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Serving Grant (SGRANT)

Event ID	SGRANT
Cellular systems	UMTS FDD
Record state	Packet active state
Description	The measurement event contains statistical information on the used serving grant based on the trace interface. The measurement event is reported during an HSUPA session simultaneously with the PLAIU measurement event. Separate measurement event is logged for each serving cell with DC-HSUPA.
Tools	Nemo Outdoor

Parameters [Parameters for UMTS FDD](#)

Parameters [Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD [Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample dur.	Integer	Sample duration The time from which samples are collected for the distribution. Unit: ms
Granted rate	Integer	HSUPA granted throughput The throughput that would have been achieved if all power defined by the serving grant had been used for the data transmission. Minimum value: 0 Unit: bit/s
SG utilization	Float	HSUPA serving grant utilization SG utilization is the total of all transferred scheduled bits divided by bits that could have been transferred if the appropriate serving grant index had been used. This is approximately the same as the ratio between transferred throughput and serving grant throughput. Range: 0 – 100 Unit: %
Cell type	Integer	HSUPA cell type 1 = Primary 2 = Secondary
#SG sets	Integer	Number of serving grant sets
#Params/SG set	Integer	Number of parameters per serving grant set
Distribution	Float	HSUPA serving grant distribution Range: 0 – 100 Unit: %
SG index	Integer	HSUPA serving grant index

		See more 3GPP TS 125.321 subclause 9.2.5.2.1. -1 = ZERO_GRANT 0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 8 = 8 9 = 9 10 = 10 11 = 11 12 = 12 13 = 13 14 = 14 15 = 15 16 = 16 17 = 17 18 = 18 19 = 19 20 = 20 21 = 21 22 = 22 23 = 23 24 = 24 25 = 25 26 = 26 27 = 27 28 = 28 29 = 29 30 = 30 31 = 31 32 = 32 33 = 33 34 = 34 35 = 35 36 = 36 37 = 37
Serving grant	Float	HSUPA serving grant power Power ratio between E-DPDCH and DPCCH channels. -10.0 if ZERO_GRANT. Range: -10 – 35 Unit: dB

E-DCH Information (EDCHI)

Event ID	EDCHI
Cellular systems	UMTS FDD
Record state	Packet active state
Description	The measurement event contains statistical information on the received relative grant indications based on the trace interface. The measurement event is reported during an HSUPA session simultaneously with the PLAUI measurement event. Separate measurement event is logged for each serving cell with DC-HSUPA.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
NS ACKs %	Float	HSUPA non-serving ACK percentage Defines how often only non-serving E-DCH cell has reported ACK. Non-transmitting frames are ignored. Range: 0 – 100 Unit: %
NS grant down %	Float	HSUPA non-serving grant down percentage Defines how often non-serving E-DCH cell has reported grant down even if serving E-DCH cell has reported grant up or hold. Non-transmitting frames are ignored. Range: 0 – 100 Unit: %
#Cells	Integer	Number of E-DCH cells
#Params/Cell	Integer	Number of parameters per cell
HSUPA channel	Integer	HSUPA channel
HSUPA SC	Integer	HSUPA scrambling code Range: 0 – 511
HSUPA RLS	Integer	HSUPA radio link set This parameter is the same as RG combination index defined in RRC protocol specification. Range: 0 – 5
ACK %	Float	HSUPA HICH ACK percentage Range: 0 – 100 Unit: %
NACK %	Float	HSUPA HICH NACK percentage Range: 0 – 100 Unit: %
DTX %	Float	HSUPA HICH DTX percentage Range: 0 – 100 Unit: %
Grant up %	Float	HSUPA RGCH grant up percentage Range: 0 – 100 Unit: %
Grant hold %	Float	HSUPA RGCH grant hold percentage Range: 0 – 100 Unit: %
Grant down %	Float	HSUPA RGCH grant down percentage Range: 0 – 100 Unit: %

HSUPA scheduling information (HSUPASI)

Event ID	HSUPASI
Cellular systems	UMTS FDD
Record state	Packet active state
Description	The measurement event contains statistical information on the transmitted Scheduling Information based on the trace interface. The measurement event is reported during an HSUPA session simultaneously with the PLAUI measurement event. The measurement event is logged only for primary serving cell with DC-HSUPA.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters | [Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD | [Top](#)

Name	Type	Description
Dur.	Integer	HSUPA Scheduling information sample duration The time from which samples are collected. Unit: ms
SI count	Integer	HSUPA scheduling information count Number of Scheduling Informations sent during reporting period.
HLID	Integer	HSUPA SI highest priority logical channel ID Range: 0 – 15
HLBS	Integer	HSUPA SI highest priority logical channel buffer status Range: 0 – 15
TEBS	Integer	HSUPA SI total E-DCH buffer status This is a mode of all E-DCH buffer status received during reporting period. Range: 0 – 31
TEBS min	Integer	HSUPA SI total E-DCH buffer status minimum This is a minimum of all E-DCH buffer status received during reporting period. Range: 0 – 31
TEBS max	Integer	HSUPA SI total E-DCH buffer status maximum This is a maximum of all E-DCH buffer status received during reporting period. Range: 0 – 31
UPH	Integer	HSUPA SI UE power headroom This is mode of all UE power headrooms received during reporting period. Range: 0 – 31
UPH min	Integer	HSUPA SI UE power headroom minimum This is minimum of all UE power headrooms received during reporting period. Range: 0 – 31
UPH max	Integer	HSUPA SI UE power headroom maximum This is maximum of all UE power headrooms received during reporting period. Range: 0 – 31

Data rate control info (DRCI)

Event ID	DRCI
Cellular systems	EVDO
Record state	Packet active state
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor

Parameters |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO
#Header params	Integer	Number of header parameters
Sample duration	Integer	DRC sets sample duration
#DRC sets	Integer	Number of DRC set
#Params/DRC set	Integer	Number of parameters per DRC set
Percentage	Float	DRC set percentage Range: 0 – 100 Unit: %
Requested rate	Integer	DRC set requested rate
Packet length	Integer	Packet link adaptation packet length 0 = Short 1 = Long

Reverse data rate control (RDRC)

Event ID	RDRC
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

Parameters |Parameters for EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [|Top|](#)

Name	Type	Description
TX rate limit	Integer	Reverse rate limit (Rev 0 only)

		Range: 0 – 153600
TX current rate	Integer	Current rate (Rev 0 only) Range: 0 – 153600
Comb. RAB	Integer	Combined busy bit (Rev 0 only) Reverse Activity Bit (RAB) is a control bit sent in regular intervals that indicates if the access network is busy or not. Range: 0 – 1
PA max	Integer	Maximum PA headroom available (Rev 0 only) Range: 0 – 153600 Unit: bit/s
Random variable	Integer	Random variable Random variable represents the random variable that was used to calculate the new reverse rate (Rev 0 only). Range: 0 – 255
Transition probability	Integer	Transition probability Transition probability that was used to calculate the new reverse rate (Rev 0 only).
Condition RRI	Integer	Condition RRI Condition reverse rate provides the reverse rate that was calculated based on the above factors (Rev 0 only). Range: 0 – 153600 Unit: bit/s
Actual RRI	Integer	Actual RRI Actual reverse rate. This should be less than condition RRI or there is not enough data to be sent (Rev 0 only). Range: 0 – 153600 Unit: bit/s
Padding bytes	Integer	Padding bytes Number of padding bytes included in the reverse link packets (Rev 0 only). Unit: byte
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Packet carrier	Integer	Packet carrier number
FRAB	Integer	FRAB Fast reverse activity bit soft decision max.
QRAB	Integer	QRAB Quick reverse activity bit hard decision. 0 = Unloaded 1 = Loaded
QRABps	Integer	QRABps Quick reverse activity bit value based on pilot strength. 0 = Unloaded 1 = Loaded

Forward data rate control (FDRC)

Event ID	FDRC
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.

Tools	Nemo Outdoor
Parameters	Parameters for EVDO

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO |Top|

Name	Type	Description
DRC index	Integer	DRC index Average over 16 samples.
DRC cover	Integer	DRC cover Cover used to transmit DRC. Range: 0 – 7
DSC value	Integer	DSC value Data source control value transmitted by the mobile (Rev A only). Range: 0 – 7
DRC boost	Integer	DRC gain boost 0 = Not applied 1 = Applied
DSC boost	Integer	DSC gain boost 0 = Not applied 1 = Applied
DRC lock upd. slot	Integer	Slot for DRC lock update
ACK channel status	Integer	ACK channel status 0 = Disabled 1 = Enabled
Forced ACK/NAK ratio	Float	Forced ACK/NAK ratio Represents the ratio of forced ACK/NAKs. Range: 0 – 100 Unit: %
ACK ratio	Float	ACK ratio Range: 0 – 100 Unit: %
Multiuser ACK ratio	Float	Multiuser ACK ratio Range: 0 – 100 Unit: %
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Packet carrier	Integer	Packet carrier number
DRC index/Ch	Integer	DRC index/Channel Average over 16 samples.

Physical FER (PHFER)

Event ID	PHFER
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Cellular systems	EVDO,WiMAX
Record state	Always
Description	Recorded when frame error rate reports are received from the device.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for EVDO | Parameters for WiMAX |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO 25 = WiMAX

Parameters for EVDO [|Top|](#)

Name	Type	Description
PER	Float	PER instantaneous Range: 0 – 100 Unit: %
PER short	Float	PER short Range: 0 – 100 Unit: %
PER long	Float	PER long Range: 0 – 100 Unit: %
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Packet carrier	Integer	Packet carrier number
PER/Ch	Float	PER instantaneous/Channel Range: 0 – 100 Unit: %
PER short/Ch	Float	PER short/Channel Range: 0 – 100 Unit: %
PER long/Ch	Float	PER long/Channel Range: 0 – 100 Unit: %

Parameters for WiMAX [|Top|](#)

Name	Type	Description
FER	Float	WiMAX frame lost ratio Range: 0 – 100 Unit: %

Markov mux information (MARKOVMUX)

Event ID	MARKOVMUX
Cellular systems	cdmaOne,CDMA 1x
Record state	Always

Description	Recorded when the mobile reports the information.
Tools	Nemo Outdoor

Parameters | Parameters for cdmaOne and CDMA 1x |

Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x

Parameters for cdmaOne and CDMA 1x [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters Number of parameters before message data.
#Frames	Integer	Number of frames
Params/frame	Integer	Number of parameters per frame
M expecteted mux	Integer	Markov expected mux 0 = 9600 markov 1 = 4800 markov 2 = 2400 markov 3 = 1200 markov 4 = 8 kbps non-markov 5 = 14400 markov 6 = 7200 markov 7 = 3600 markov 8 = 1800 markov 9 = 13 kbps non-markov
M actual mux	Integer	Markov actual mux 0 = 9600 primary 1 = 9600 1/2 primary + signaling 2 = 9600 1/4 primary + signaling 3 = 9600 1/8 primary + signaling 4 = 9600 signaling (B&B) 5 = 4800 primary 6 = 2400 primary 7 = 1200 primary 8 = Erased frame (poor quality) 9 = Frame quality insufficient to decide upon rate 10 = 9600 1/2 primary + secondary 11 = 9600 1/4 primary + secondary 12 = 9600 1/8 primary + secondary 13 = 9600 secondary (B&B) 14 = 14400 primary 15 = 14400 1/2 primary + signaling 16 = 14400 1/4 primary + signaling 17 = 14400 1/8 primary + signaling 18 = 14400 signaling (B&B) 19 = 14400 1/2 primary + secondary 20 = 14400 1/4 primary + secondary 21 = 14400 1/8 primary + secondary 22 = 14400 secondary (B&B) 23 = 14400 1/8 primary + signaling + secondary 24 = 7200 primary 25 = 7200 1/4 primary + signaling 26 = 7200 1/8 primary + signaling 27 = 7200 signaling (B&B) 28 = 7200 1/4 primary + secondary 29 = 7200 1/8 primary + secondary 30 = 7200 secondary (B&B) 31 = 7200 1/8 primary + signaling + secondary 32 = 3600 primary 33 = 3600 1/8 primary + signaling 34 = 3600 signaling (B&B) 35 = 3600 1/8 primary + secondary

		36 = 3600 secondary (B&B) 37 = 1800 primary 38 = 1800 secondary (B&B)
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MARKOV Statistics (MARKOVSTATS)

Event ID	MARKOVSTATS
Cellular systems	cdmaOne,CDMA 1x
Record state	Call connection state
Description	Recorded during a MARKOV call when parameter sample is received from the mobile.
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x
#Header params	Integer	Number of header parameters
M FER	Float	Markov frame error rate Range: 0 – 100 Unit: %
#Expected rates	Integer	Number of expected rates
#Params	Integer	Number of parameters
M expected	Integer	Markov expected rate 1 = One eighth rate 2 = Quarter rate 3 = Half rate 4 = Full rate
M 1/1	Integer	Markov full rate frames received
M 1/2	Integer	Markov half rate frames received
M 1/4	Integer	Markov quarter rate frames received
M 1/8	Integer	Markov one eighth rate frames received
M erasures	Integer	Markov erasures received

Multi carrier reverse link metrics (MCRLMETRICS)

Event ID	MCRLMETRICS
Cellular systems	EVDO

Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

Parameters | Parameters for EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Packet carrier	Integer	Packet carrier number
Unexpected P-ARQ NACKs	Integer	Unexpected P-ARQ NACKs Number of P-ARQ NACKs received after an H-ARQ ACK was already received for same packet.
#Channels and PSs	Integer	Number of channels and packet sizes
#Params/Channel and PS	Integer	Number of parameters per channel and packet size

Packet carrier	Integer	Packet carrier number
PS	Integer	Physical layer packet size Minimum value: 0 Unit: bit
HiCap Subpacket 0 ACKs	Integer	HiCap Subpacket 0 ACKs
HiCap Subpacket 1 ACKs	Integer	HiCap Subpacket 1 ACKs
HiCap Subpacket 2 ACKs	Integer	HiCap Subpacket 2 ACKs
HiCap Subpacket 3 ACKs	Integer	HiCap Subpacket 3 ACKs
HiCapp ARQ NACKs	Integer	HiCapp ARQ NACKs
LoLat Subpacket 0 ACKs	Integer	LoLat Subpacket 0 ACKs
LoLat Subpacket 1 ACKs	Integer	LoLat Subpacket 1 ACKs
LoLat Subpacket 2 ACKs	Integer	LoLat Subpacket 2 ACKs
LoLat Subpacket 3 ACKs	Integer	LoLat Subpacket 3 ACKs
LoLat P-ARQ NACKs	Integer	LoLat P-ARQ NACKs

Multi carrier forward link statistics (MCFLSTATS)

Event ID	MCFLSTATS
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

Parameters | Parameters for EVDO |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 120000 = EVDO 800 band 0

		<p>North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>120001 = EVDO 1900 band 1 North American PCS 1900 MHz band.</p> <p>120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>120007 = EVDO 700 band 7 North American cellular 700 MHz band.</p> <p>120008 = EVDO 1800 band 8 1800 MHz band.</p> <p>120009 = EVDO 900 band 9 900 MHz band.</p> <p>120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>120014 = EVDO 1900 band 14 US PCS 1.9 GHz.</p> <p>120015 = EVDO 2100 AWS band 15</p> <p>120016 = EVDO 2500 band 16 US 2.5 GHz.</p> <p>120018 = EVDO 700 public safety band 18</p> <p>120019 = EVDO 700 lower band 19</p> <p>120020 = EVDO 1500 L-band band 20</p> <p>120021 = EVDO 2000 S-band band 21</p> <p>129999 = EVDO</p>
Packet carrier	Integer	Packet carrier number
#DRC and PS types	Integer	Number of DRC and PS types
#Params/DRC and PS type	Integer	Number of parameters per DRC and PS type
DRC and PS type	Integer	<p>DRC and PS type</p> <p>0 = DRC 0, 128 bits</p> <p>1 = DRC 0, 256 bits</p> <p>2 = DRC 0, 512 bits</p> <p>3 = DRC 0, 1024 bits</p> <p>10 = DRC 1, 128 bits</p> <p>11 = DRC 1, 256 bits</p> <p>12 = DRC 1, 512 bits</p> <p>13 = DRC 1, 1024 bits</p> <p>20 = DRC 2, 128 bits</p> <p>21 = DRC 2, 256 bits</p> <p>22 = DRC 2, 512 bits</p> <p>23 = DRC 2, 1024 bits</p> <p>30 = DRC 3, 128 bits</p> <p>31 = DRC 3, 256 bits</p> <p>32 = DRC 3, 512 bits</p> <p>33 = DRC 3, 1024 bits</p> <p>40 = DRC 4, 128 bits</p> <p>41 = DRC 4, 256 bits</p> <p>42 = DRC 4, 512 bits</p> <p>43 = DRC 4, 1024 bits</p> <p>50 = DRC 5, 512 bits</p> <p>51 = DRC 5, 1024 bits</p> <p>52 = DRC 5, 2048 bits</p> <p>60 = DRC 6, 128 bits</p> <p>61 = DRC 6, 256 bits</p> <p>62 = DRC 6, 512 bits</p>

		63 = DRC 6, 1024 bits 70 = DRC 7, 512 bits 71 = DRC 7, 1024 bits 72 = DRC 7, 2048 bits 80 = DRC 8, 1024 bits 81 = DRC 8, 3072 bits 90 = DRC 9, 512 bits 91 = DRC 9, 1024 bits 92 = DRC 9, 2048 bits 100 = DRC 10, 4096 bits 110 = DRC 11, 1024 bits 111 = DRC 11, 3072 bits 120 = DRC 12, 4096 bits 130 = DRC 13, 5120 bits 140 = DRC 14, 5120 bits 1000 = Short CC, 128 bits 1001 = Short CC, 256 bits 1002 = Short CC, 512 bits 1010 = CC, 38400 bits 1011 = CC, 76800 bits
TC packets good	Integer	TC packets good
TC packes bad	Integer	TC packes bad
TC packets decoded in slot 1	Integer	TC packets decoded in slot 1
TC packets decoded in slot 2	Integer	TC packets decoded in slot 2
TC packets decoded in slot 3	Integer	TC packets decoded in slot 3
TC packets decoded in slot 4	Integer	TC packets decoded in slot 4
TC packets decoded in slot 5	Integer	TC packets decoded in slot 5
TC packets decoded in slot 6	Integer	TC packets decoded in slot 6
TC packets decoded in slot 7	Integer	TC packets decoded in slot 7
TC packets decoded in slot 8	Integer	TC packets decoded in slot 8
TC packets decoded in slot 9	Integer	TC packets decoded in slot 9
TC packets decoded in slot 10	Integer	TC packets decoded in slot 10
TC packets decoded in slot 11	Integer	TC packets decoded in slot 11
TC packets decoded in slot 12	Integer	TC packets decoded in slot 12
TC packets decoded in slot 13	Integer	TC packets decoded in slot 13
TC packets	Integer	TC packets decoded in slot 14

decoded in slot 14		
TC packets decoded in slot 15	Integer	TC packets decoded in slot 15
TC packets decoded in slot 16	Integer	TC packets decoded in slot 16

Multilink multi-flow RLP forward link statistics (MLMFRLPFLSTATS)

Event ID	MLMFRLPFLSTATS
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for EVDO](#) |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Link flow ID	Integer	Link flow ID
Route number	Integer	Route number
Flow protocol	Integer	Flow protocol
Route protocol	Integer	Route protocol
Packet stream	Integer	Packet stream Whether link flow is packet-based. 0 = Non-packet based 1 = Packet based
Sequence type	Integer	Sequence type Whether link flow is doing segment-based sequencing. 0 = Non-segment based sequencing 1 = Segment based sequencing
SAR sequence length	Integer	SAR sequence length
SAR sequence length short	Integer	SAR sequence length short
AT quick NACK indication count	Integer	AT quick NACK indication count Number of indicated Quick NAK records AT sent out.
AT quick NACK count	Integer	AT quick NACK count Number of Quick NAK records AT sent out.
AT delayed NACK unit	Integer	AT delayed NACK unit count Number of delayed NAK records AT sent out.

count		
AT delayed NACK data unit count	Integer	AT delayed NACK data unit count Number of bytes requested by AT delayed NAKs.
RX retransmitted bytes	Integer	RX retransmitted bytes Unit: byte
RX retransmitted frames	Integer	RX retransmitted frames
RX new data bytes	Integer	RX new data bytes Unit: byte
RX new data frames	Integer	RX new data frames
RX first data unit	Integer	RX first data unit Number of RLP frames received with First Data Unit flag on.
RX last data unit	Integer	RX last data unit Number of RLP frames received with Last Data Unit flag on.
RX duplicate data bytes	Integer	RX duplicate data bytes Unit: byte
RX duplicate data frames	Integer	RX duplicate data frames
Called NACK timeouts	Integer	Called NACK timeouts
NACK abort data unit approximation	Integer	NACK abort data unit approximation
Called reset count	Integer	Called reset count Initiated by either the AN or AT.
AT reset request count	Integer	AT reset request count
AN reset ACK count	Integer	AN reset ACK count
AN reset request count	Integer	AN reset request count
RX resequencing queue size	Integer	RX resequencing queue size
RX NACK abort queue size	Integer	RX NACK abort queue size
RX delayed NACK queue size	Integer	RX delayed NACK queue size
#QN instances	Integer	Number of QN instances
#Params/QN instance	Integer	Parameters per QN instance
Scheduler group ID	Integer	Scheduler group ID
Number of carriers in the QN instance	Integer	Number of carriers in the QN instance
QN ID	Integer	QN ID
RX new data bytes/QN	Integer	RX new data bytes/QN Unit: byte
RX new data frames/QN	Integer	RX new data frames/QN
Quick NACKs/QN	Integer	QN quick NACK indication count/QN

Multilink multi-flow RLP reverse link statistics (MLMFRLPRLSTATS)

Event ID	MLMFRLPRLSTATS
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

Parameters | Parameters for EVDO |

Parameters | [Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO | [Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Link flow ID	Integer	Link flow ID
Route number	Integer	Route number
Packet stream	Integer	Packet stream Whether link flow is packet-based. 0 = Non-packet based 1 = Packet based
Sequence type	Integer	Sequence type Whether link flow is doing segment-based sequencing. 0 = Non-segment based sequencing 1 = Segment based sequencing
Flow protocol	Integer	Flow protocol
Route protocol	Integer	Route protocol
SAR sequence length	Integer	SAR sequence length
TX new data bytes	Integer	TX new data bytes Unit: byte
TX new data units	Integer	TX new data units
TX first data unit frames	Integer	TX first data unit frames
TX last data unit frames	Integer	TX last data unit frames
PL NACK indications	Integer	PL NACK indications
New data units indicated by PL NACK indication	Integer	New data units indicated by PL NACK indication
Retransmitted data units	Integer	Retransmitted data units indicated by PL NACK indication

indicated by PL NACK indication		
Out-of-order transmissions	Integer	Out-of-order transmissions
Out-of-order bytes	Integer	Out-of-order bytes Unit: byte
HL packets dropped	Integer	HL packets dropped Number of higher layer packets dropped due to TransmitAbortTimer.
HL bytes dropped	Integer	HL bytes dropped
NACK records received	Integer	NACK records received
Requested data units	Integer	Requested data units
Retransmitted data units	Integer	Retransmitted data units
Retransmitted bytes	Integer	Retransmitted bytes Unit: byte
Retransmitted data units not found	Integer	Retransmitted data units not found
AT reset request count	Integer	AT reset request count
AN reset request count	Integer	AN reset request count
Max TX queue size	Integer	Max TX queue size
Max retransmission queue size	Integer	Max retransmission queue size
Max new data handles	Integer	Max new data handles Maximum number of new data handles used per slot within the logging interval.
Max retransmit data handles	Integer	Max retransmit data handles Maximum number of retransmit data handles used per slot within the logging interval.

Multilink multi-flow RLP RX processing (MMRLPRXPROCESSING)

Event ID	MMRLPRXPROCESSING
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

Parameters | Parameters for EVDO |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system

12 = EVDO

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
RLP event type	Integer	RLP event type 0 = Packet reception or forward link 1 = RLP reset 2 = Abort 3 = Flush message received
Link flow ID	Integer	Link flow ID
Route number	Integer	Route number
V(n) before	Integer	RLP V(n) before processing
V(n) after	Integer	RLP V(n) after processing
V(r) before	Integer	RLP V(r) before processing
V(r) after	Integer	RLP V(r) after processing
RLP link ID	Integer	RLP link ID
RLP scheduler group ID	Integer	RLP scheduler group ID
QN sequence number included	Integer	QN sequence number included
Data units	Integer	Data units
SAR sequence number	Integer	SAR sequence number
QN sequence number	Integer	QN sequence number
SAR sequence number short	Integer	SAR sequence number short

Multi carrier forward link packet header info (MCFLPACKETINFO)

Event ID	MCFLPACKETINFO
Cellular systems	EVDO
Record state	Always
Description	Recorded when parameters change.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for EVDO](#) |
Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system

12 = EVDO

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Packets	Integer	Number of packets
#Params/packet	Integer	Number of parameters per packet
Band	Integer	<p>Band</p> <p>120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>120001 = EVDO 1900 band 1 North American PCS 1900 MHz band.</p> <p>120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>120007 = EVDO 700 band 7 North American cellular 700 MHz band.</p> <p>120008 = EVDO 1800 band 8 1800 MHz band.</p> <p>120009 = EVDO 900 band 9 900 MHz band.</p> <p>120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>120014 = EVDO 1900 band 14 US PCS 1.9 GHz.</p> <p>120015 = EVDO 2100 AWS band 15</p> <p>120016 = EVDO 2500 band 16 US 2.5 GHz.</p> <p>120018 = EVDO 700 public safety band 18</p> <p>120019 = EVDO 700 lower band 19</p> <p>120020 = EVDO 1500 L-band band 20</p> <p>120021 = EVDO 2000 S-band band 21</p> <p>129999 = EVDO</p>
Packet carrier	Integer	Packet carrier number
Link ID	Integer	Link ID
Slot to decode	Integer	Slot to decode
CRC status	Integer	<p>CRC status</p> <p>0 = Failed</p> <p>1 = Passed</p> <p>2 = False pass</p>
CRC length	Integer	<p>CRC length</p> <p>0 = 16 bits</p> <p>1 = 24 bits</p>
Packet type	Integer	<p>Packet type</p> <p>0 = Unicast Sing user traffic channel packet.</p> <p>1 = Multicast 0 Multiuser Traffic Channel packet decoded at MAC index MUP_PREAMBLE_BASE.</p> <p>2 = Multicast 1</p>

		<p>Multiuser Traffic Channel packet decoded at MAC index MUP_PREAMBLE_BASE+1.</p> <p>3 = Multicast 2 Multiuser Traffic Channel packet decoded at MAC index MUP_PREAMBLE_BASE+2.</p> <p>4 = Multicast 3 Multiuser Traffic Channel packet decoded at MAC index MUP_PREAMBLE_BASE+3.</p> <p>5 = Multicast 4 Multiuser Traffic Channel packet decoded at MAC index MUP_PREAMBLE_BASE+4.</p> <p>6 = Control Rel 0 Release 0 (std) control channel packet.</p> <p>7 = Control Rel A Release A (short) control channel packet.</p> <p>8 = Control Rel A user defined Release A control channel packet received at user defined short packet MAC index.</p> <p>9 = Broadcast</p> <p>10 = Enhanced broadcast</p> <p>11 = Platinum broadcast</p>
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Searcher status (SEARCHERSTATUS)

Event ID	SEARCHERSTATUS
Cellular systems	cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor

Parameters | Parameters for cdmaOne and CDMA 1x | Parameters for EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for cdmaOne and CDMA 1x [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Searcher state	Integer	Searcher state 0 = Raw initialization state 1 = Deep sleep in start state 2 = Initial state for CDMA operation 3 = Acquisition of the pilot channel 4 = Reception of the sync channel 5 = Transition from sync to paging channel 6 = Operation on the paging channel 7 = Slotted mode sleep state 8 = Operation on the traffic channel 9 = Return from paging or traffic to sync channel 10 = Operation in PCG state 11 = Power up state

Queue	Integer	Searcher queue 0 = High priority queue 0 1 = Low priority queue 0 2 = High priority queue 1
Priority	Integer	Searcher priority
Freq. offset	Float	Searcher frequency offset Unit: Hz
#Pilots	Integer	Number of pilots
#Params/pilot	Integer	Number of parameters per pilot
PN	Integer	Pilot number Range: 0 – 511
Set	Integer	Searcher set information 0 = Active set 1 = Candidate set 2 = Neighbor set 3 = Remaining set 4 = Precandidate set
Ant. config	Integer	Searcher antenna configuration 0 = Antenna 0 1 = Antenna 1 2 = Dual antenna
Searcher QOF	Integer	Searcher QOF Range: 0 – 3
Coherent truncation control	Integer	Searcher coherent truncation control Range: 1 – 8 Unit: bit
Coherent integration length	Integer	Searcher coherent integration length Range: 0 – 4096 Unit: chip
Noncoherent integration length	Integer	Searcher noncoherent integration length Range: 0 – 128 Unit: chip
Pilot phase	Integer	Searcher pilot phase Range: 0 – 7
Walsh code	Integer	Searcher walsh code Range: 0 – 511
Window start	Float	Searcher pilot window start Range: 0 – 32767 Unit: chip
Window size	Float	Searcher pilot window size Range: 0 – 32767 Unit: chip
#Peaks	Integer	Number of peaks
#Params/peak	Integer	Number of parameters per peak
Position	Float	Searcher peak position Unit: chip
Energy	Float	Searcher peak energy Unit: dB

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Searcher state	Integer	Searcher state 0 = Start 1 = Acquisition 2 = Synchronization 3 = Idle 4 = Idle suspended 5 = Idle broadcast 6 = Idle OFS

		7 = Broadcast access 8 = Sleep 9 = Reacquisition 10 = Traffic 11 = Traffic suspended 12 = Traffic OFS
Searcher window size	Integer	Searcher window size
Ch	Integer	Channel number
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
MSTR	Integer	Searcher MSTR
Equalizer status	Integer	Searcher equalizer status 0 = Off 1 = On
#Pilots	Integer	Number of pilots
#Params/pilot	Integer	Number of parameters per pilot
PN	Integer	Pilot number Range: 0 – 511
Set	Integer	Searcher set information 0 = Active set 1 = Candidate set 2 = Neighbor set 3 = Remaining set 4 = Empty set
Ant. config	Integer	Searcher antenna configuration 0 = Antenna 0 1 = Antenna 1 2 = Dual antenna

Searcher window center	Float	Searcher window center Unit: chip
Searcher earliest peak	Float	Searcher earliest peak Unit: chip
#Peaks	Integer	Number of peaks
#Params/peak	Integer	Number of parameters per peak
Position	Float	Searcher peak position Unit: chip
C/I	Float	Searcher peak C/I Unit: dB

Message error rate (MER)

Event ID	MER
Cellular systems	TETRA
Record state	Call connection state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for TETRA](#) |

Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 2 = TETRA

Parameters for TETRA [|Top](#)

Name	Type	Description
MER	Float	Message error rate Range: 0 – 100 Unit: %

DVB information (DVBI)

Event ID	DVBI
Cellular systems	DVB-H
Record state	DVB-H state
Description	Recorded when DVB-H channel configuration changes.
Tools	Nemo Outdoor

Parameters Parameters for DVB-H

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 65 = DVB-H

Parameters for DVB-H [\[Top\]](#)

Name	Type	Description
Service state	Integer	DVB-H service state 1 = Locked 2 = Not locked
Frequency	Float	DVB-H frequency Unit: MHz
Bandwidth	Float	DVB-H bandwidth
Cell ID	Integer	DVB-H cell ID
Tx mode	Integer	DVB-H transmission mode Also known as OFDM mode or FFT length. 2 = 2k 4 = 4k 8 = 8k
Modulation	Integer	DVB-H modulation 1 = QPSK 2 = 16QAM 3 = 64QAM
Code rate LP	Integer	DVB-H code rate low priority 1 = 1/2 2 = 2/3 3 = 3/4 4 = 5/6 5 = 7/8
Code rate HP	Integer	DVB-H code rate high priority 0 = Not used 1 = 1/2 2 = 2/3 3 = 3/4 4 = 5/6 5 = 7/8
Guard time	Integer	DVB-H guard time 1 = 1/4 2 = 1/8 3 = 1/16 4 = 1/32
MPE-FEC code rate LP	Integer	DVB-H MPE-FEC code rate low priority 0 = Not used 1 = 1/2 2 = 2/3 3 = 3/4 4 = 5/6 5 = 7/8
MPE-FEC code rate HP	Integer	DVB-H MPE-FEC code rate high priority 0 = Not used 1 = 1/2 2 = 2/3 3 = 3/4 4 = 5/6 5 = 7/8
Hierarchy	Integer	DVB-H hierarchy 0 = Disabled 1 = Enabled

DVB frame error rate (DVBFER)

Event ID	DVBFER
Cellular systems	DVB-H
Record state	DVB-H state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for DVB-H |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 65 = DVB-H

Parameters for DVB-H |Top|

Name	Type	Description
FER	Float	DVB-H FER before FEC Range: 0 – 100 Unit: %
MFER	Float	DVB-H FER after FEC Range: 0 – 100 Unit: %
Frame count	Integer	DVB-H frame count

DVB bit error rate (DVBBER)

Event ID	DVBBER
Cellular systems	DVB-H
Record state	DVB-H state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for DVB-H |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system

65 = DVB-H

Parameters for DVB-H |Top|

Name	Type	Description
BER	Float	DVB-H BER before viterbi Range: 0 – 100 Unit: %
VBER	Float	DVB-H BER after viterbi Range: 0 – 100 Unit: %

DVB RX level (DVBRXL)

Event ID	DVBRXL
Cellular systems	DVB-H
Record state	DVB-H state
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor

Parameters |Parameters for DVB-H |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 65 = DVB-H

Parameters for DVB-H |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Frequency	Float	DVB-H frequency Unit: MHz
RxLev	Float	DVB-H Rx level Range: -111 – -10 Unit: dBm
C/N	Float	DVB-H carrier to noise ratio Range: 0 – 40 Unit: dB
Signal quality	Float	DVB-H signal quality Range: 0 – 100 Unit: %

DVB throughput (DVBRATE)

Event ID	DVBRATE
Cellular systems	DVB-H
Record state	DVB-H state
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Handy

Parameters | Parameters for DVB-H |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 65 = DVB-H

Parameters for DVB-H [|Top|](#)

Name	Type	Description
DVB-H rate	Integer	DVB-H throughput Minimum value: 0 Unit: bit/s

Start scanning (STARTSCAN)

Event ID	STARTSCAN
Cellular systems	All
Record state	Scanning state
Description	Recorded when a scanning session is begun and the scanning state initiated.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters [|Top|](#)

Name	Type	Description
Scanning context ID	Context	Scanning context ID

Stop scanning (STOPSCAN)

Event ID	STOPSCAN
Cellular systems	All
Record state	Scanning state
Description	Recorded when a scanning session is stopped and the scanning state terminated.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters |Top|

Name	Type	Description
Scanning context ID	Context	Scanning context ID

Scanning configuration (SCANCONFIG)

Event ID	SCANCONFIG
Cellular systems	All
Record state	Scanning state
Description	Recorded at the beginning of the scanning session. Defines scanning settings.
Tools	Nemo Outdoor, Nemo Handy

Parameters |Parameters for GSM frequency and band scanning |Parameters for UMTS frequency scanning |Parameters for LTE frequency scanning |Parameters for cdmaOne, CDMA 1x, and EVDO frequency scanning |Parameters for WiMAX frequency scanning |Parameters for iDEN frequency scanning |Parameters for UMTS pilot and band scanning |Parameters for cdmaOne, CDMA 1x, and EVDO pilot and band scanning |Parameters for LTE OFDM and band scanning |Parameters for WLAN OFDM and band scanning |Parameters for WiMAX scanning |Parameters for DVB-H scanning |Parameters for spectrum scanning |

Parameters |Top|

Name	Type	Description
Scanning context ID	Context	Scanning context ID
#Header params	Integer	Number of header parameters
Scanning sets	Integer	Scanning sets
#Params/set	Integer	Parameters per scanning set
Scanning type	Integer	Scanning type 1 = GSM frequency scanning 5 = UMTS FDD frequency scanning 6 = UMTS TD-SCDMA frequency scanning 7 = LTE FDD frequency scanning 8 = LTE TDD frequency scanning 10 = cdmaOne frequency scanning 11 = CDMA 1x frequency scanning 12 = EVDO frequency scanning 25 = WiMAX frequency scanning 55 = iDEN frequency scanning 105 = UMTS FDD pilot scanning 106 = UMTS TD-SCDMA pilot scanning 110 = cdmaOne pilot scanning 111 = CDMA 1x pilot scanning 112 = EVDO pilot scanning 207 = LTE FDD OFDM scanning 208 = LTE TDD OFDM scanning

		220 = WLAN OFDM scanning 225 = WiMAX OFDM scanning 265 = DVB-H OFDM scanning 300 = Spectrum scanning 10001 = GSM band scanning 10105 = UMTS FDD band scanning 10106 = UMTS TD-SCDMA band scanning 10110 = cdmaOne band scanning 10111 = CDMA 1x band scanning 10112 = EVDO band scanning 10207 = LTE FDD band scanning 10208 = LTE TDD band scanning 10220 = WLAN band scanning
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Parameters for GSM frequency and band scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
Channels	String	Channels Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None 1 = BSIC decoding 2 = Cell information decoding 1024 = C/I, SIR, or CINR
Bandwidth	Integer	Channel bandwidth Unit: Hz
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
BSIC decoding threshold	Float	BSIC decoding threshold This threshold has to be exceeded before BSIC decoding is attempted. Unit: dBm
Dwelling time	Integer	Dwelling time (GSM) Defines for how long BCCH channel is attempted to be decoded. Minimum value: 0 Unit: frame

Parameters for UMTS frequency scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA</p>
Channels	String	<p>Channels</p> <p>Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.</p>
Scanning options	Integer	<p>Scanning options</p> <p>Note that this parameter is bitfield. 0 = None</p>
Bandwidth	Integer	<p>Channel bandwidth</p> <p>Unit: Hz</p>
Measurement period	Integer	<p>Measurement period</p> <p>Unit: ms</p>
Filter mode	Integer	<p>Filter mode</p> <p>Defines the method that is used for sample filtering.</p> <p>1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile</p>
Filter samples	Integer	<p>Filter samples</p> <p>Defines how many samples are filtered per reported measurement result.</p>
Sampling ratio	Integer	<p>Sampling ratio</p> <p>Defines every Nth measurement result that is reported.</p>
Top N	Integer	<p>Top N</p> <p>Only the best top N parameters are reported.</p>

Parameters for LTE frequency scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37 80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43 80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD</p>
Channels	String	<p>Channels</p> <p>Defines the measured channels. In the format comma separates</p>

		different values and hyphen can be used to mark the range, e.g. 10,11,50-100.
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Bandwidth	Integer	Channel bandwidth Not defined when scanned channel bandwidth is selected automatically based on scanned channel. Unit: Hz
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.

Parameters for cdmaOne, CDMA 1x, and EVDO frequency scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14</p>

US PCS 1.9 GHz.
 100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 120007 = EVDO 700 band 7
 North American cellular 700 MHz band.
 120008 = EVDO 1800 band 8
 1800 MHz band.
 120009 = EVDO 900 band 9
 900 MHz band.
 120010 = EVDO 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 120011 = EVDO 400 PAMR band 11

		European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Channels	String	Channels Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Bandwidth	Integer	Channel bandwidth Unit: Hz
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.

Parameters for WiMAX frequency scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 259999 = WiMAX
Frequencies	String	Frequencies Defines the measured frequencies. In the format comma separates different values, hyphen can be used to mark the range and dot is used for decimal numbers, e.g. 1800000000.0-1900000000.0. Unit: Hz
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Bandwidth	Integer	Channel bandwidth Unit: Hz
Measurement period	Integer	Measurement period Unit: ms

Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.

Parameters for iDEN frequency scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN
Channels	String	Channels Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.

Parameters for UMTS pilot and band scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d

		60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
Channels	String	Channels Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None 2 = Cell information decoding 4 = SI or overhead decoding 8 = Neighbor list decoding 16 = Missing neighbor detection 1024 = C/I, SIR, or CINR 2048 = Finger 4096 = P-SCH 8192 = S-SCH 65536 = Delay Preamble delay, time of arrival, or time offset. 131072 = Delay spread 262144 = Delay profile
Reserved	Integer	Reserved
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
Ec/N0 threshold	Float	Ec/N0 threshold This threshold has to be exceeded before Ec/N0 result is reported. Unit: dB
Finger combining mode	Integer	Finger combining mode Defines the method that is used to combine measured finger results to one measurement result. 1 = Peak 2 = Aggregate
Pilot measurement mode	Integer	Pilot measurement mode 1 = High speed 2 = High dynamic
Dwelling time	Integer	Dwelling time (UMTS) Defines for how long BCH channel is attempted to be decoded. Minimum value: 0 Unit: ms

Parameters for cdmaOne, CDMA 1x, and EVDO pilot and band scanning [\[Top\]](#)

Name	Type	Description
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Band	Integer	Band
		100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.
		100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.
		100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.
		100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).
		100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.
		100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.
		100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.
		100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.
		100008 = cdmaOne 1800 band 8 1800 MHz band.
		100009 = cdmaOne 900 band 9 900 MHz band.
		100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.
		100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.
		100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.
		100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.
		100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.
		100015 = cdmaOne 2100 AWS band 15
		100016 = cdmaOne 2500 band 16 US 2.5 GHz.
		100018 = cdmaOne 700 public safety band 18
		100019 = cdmaOne 700 lower band 19
		100020 = cdmaOne 1500 L-band band 20
		100021 = cdmaOne 2000 S-band band 21
		109999 = cdmaOne
		110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.
		110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band.
		110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band.
		110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).
		110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band.
		110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.
		110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.
		110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band.
		110008 = CDMA 1x 1800 band 8 1800 MHz band.
		110009 = CDMA 1x 900 band 9 900 MHz band.
		110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.
		110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band.
		110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band.
		110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension.
		110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz.

		<p>110015 = CDMA 1x 2100 AWS band 15</p> <p>110016 = CDMA 1x 2500 band 16 US 2.5 GHz.</p> <p>110018 = CDMA 1x 700 public safety band 18</p> <p>110019 = CDMA 1x 700 lower band 19</p> <p>110020 = CDMA 1x 1500 L-band band 20</p> <p>110021 = CDMA 1x 2000 S-band band 21</p> <p>119999 = CDMA 1x</p> <p>120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>120001 = EVDO 1900 band 1 North American PCS 1900 MHz band.</p> <p>120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>120007 = EVDO 700 band 7 North American cellular 700 MHz band.</p> <p>120008 = EVDO 1800 band 8 1800 MHz band.</p> <p>120009 = EVDO 900 band 9 900 MHz band.</p> <p>120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>120014 = EVDO 1900 band 14 US PCS 1.9 GHz.</p> <p>120015 = EVDO 2100 AWS band 15</p> <p>120016 = EVDO 2500 band 16 US 2.5 GHz.</p> <p>120018 = EVDO 700 public safety band 18</p> <p>120019 = EVDO 700 lower band 19</p> <p>120020 = EVDO 1500 L-band band 20</p> <p>120021 = EVDO 2000 S-band band 21</p> <p>129999 = EVDO</p>
Channels	String	<p>Channels</p> <p>Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.</p>
Scanning options	Integer	<p>Scanning options</p> <p>Note that this parameter is bitfield.</p> <p>0 = None</p> <p>4 = SI or overhead decoding</p> <p>65536 = Delay Preamble delay, time of arrival, or time offset.</p> <p>131072 = Delay spread</p>
Reserved	Integer	Reserved
Measurement period	Integer	<p>Measurement period</p> <p>Unit: ms</p>
Filter mode	Integer	<p>Filter mode</p> <p>Defines the method that is used for sample filtering.</p> <p>1 = Average</p> <p>2 = Maximum</p> <p>3 = Minimum</p> <p>110 = 10 percentile</p> <p>120 = 20 percentile</p> <p>130 = 30 percentile</p>

		140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
Ec/I0 threshold	Float	Ec/I0 threshold This threshold has to be exceeded before Ec/I0 result is reported. Unit: dB
Finger combining mode	Integer	Finger combining mode Defines the method that is used to combine measured finger results to one measurement result. 1 = Peak 2 = Aggregate
Pilot search mode	Integer	Pilot search mode 1 = Standard 2 = Wide 3 = Very wide
Pilot window mode	Integer	Pilot window mode 1 = Offset 2 = Centered 3 = Edge
Correlator	Integer	Correlator
Pilot increment	Integer	Pilot increment

Parameters for LTE OFDM and band scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band.

		<p>70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37 80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43 80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD</p>
Channels	String	<p>Channels Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.</p>
Scanning options	Integer	<p>Scanning options Note that this parameter is bitfield. 0 = None 2 = Cell information decoding 4 = SI or overhead decoding 1024 = C/I, SIR, or CINR 16384 = Sync signal 32768 = Reference signal 65536 = Delay Preamble delay, time of arrival, or time offset. 131072 = Delay spread 524288 = MIMO scanning 1048576 = Narrow band The scanning is done from the RS signals transmitted during the PBCH transmission. 2097152 = PRB scanning 4194304 = eMBMS scanning</p>
Bandwidth	Integer	<p>Channel bandwidth Not defined when scanned channel bandwidth is selected automatically based on scanned channel. Unit: Hz</p>
Measurement period	Integer	<p>Measurement period Unit: ms</p>
Filter mode	Integer	<p>Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile</p>

		150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
RSSI threshold	Float	RSSI threshold This threshold has to be exceeded before the RSSI result is reported. Unit: dBm
CP	Integer	Cyclic prefix 0 = Auto detect 1 = Normal 15 kHz 2 = Extended 15 kHz 3 = Extended 7.5 kHz
Antenna ports	Integer	Antenna ports 1 = Port 0 2 = Port 0-1 4 = Port 0-3
UL/DL config	Integer	TDD UL/DL configuration 0 = Config 0 Allocated uplink subframes are: 2, 3, 4, 7, 8, 9. 1 = Config 1 Allocated uplink subframes are: 2, 3, 7, 8. 2 = Config 2 Allocated uplink subframes are: 2, 7. 3 = Config 3 Allocated uplink subframes are: 2, 3, 4. 4 = Config 4 Allocated uplink subframes are: 2, 3. 5 = Config 5 Allocated uplink subframe is: 2. 6 = Config 6 Allocated uplink subframes are: 2, 3, 4, 7, 8.
Pilot measurement mode	Integer	Pilot measurement mode 1 = High speed 2 = High dynamic

Parameters for WLAN OFDM and band scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 200001 = WLAN 2.4 GHz 200002 = WLAN 3.6 GHz 200003 = WLAN 4.9 GHz 200004 = WLAN 5.0 GHz 209999 = WLAN
Channels	String	Channels Defines the measured channels. In the format comma separates different values and hyphen can be used to mark the range, e.g. 10,11,50-100.
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Resolution bandwidth	Integer	Resolution bandwidth To be able to scan large bandwidth spectrums, the total sweep bandwidth must be divided into smaller parts. The resolution bandwidth defines the size of the smaller parts, each of which is scanned separately. Unit: Hz

Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
Reuse factor	Integer	Reuse factor 1 = Reuse factor 1 3 = Reuse factor 3
Pilot measurement mode	Integer	Pilot measurement mode 1 = High speed 2 = High dynamic

Parameters for WiMAX scanning [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 259999 = WiMAX
Frequencies	String	Frequencies Defines the measured frequencies. In the format comma separates different values, hyphen can be used to mark the range and dot is used for decimal numbers, e.g. 1800000000.0-1900000000.0. Unit: Hz
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Resolution bandwidth	Integer	Resolution bandwidth To be able to scan large bandwidth spectrums, the total sweep bandwidth must be divided into smaller parts. The resolution bandwidth defines the size of the smaller parts, each of which is scanned separately. Unit: Hz
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile

Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
Reuse factor	Integer	Reuse factor 1 = Reuse factor 1 3 = Reuse factor 3
Pilot measurement mode	Integer	Pilot measurement mode 1 = High speed 2 = High dynamic

Parameters for DVB-H scanning [\[Top\]](#)

Name	Type	Description
Frequencies	String	Frequencies Defines the measured frequencies. In the format comma separates different values, hyphen can be used to mark the range and dot is used for decimal numbers, e.g. 1800000000.0-1900000000.0. Unit: Hz
Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Resolution bandwidth	Integer	Resolution bandwidth To be able to scan large bandwidth spectrums, the total sweep bandwidth must be divided into smaller parts. The resolution bandwidth defines the size of the smaller parts, each of which is scanned separately. Unit: Hz
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.

Parameters for spectrum scanning [\[Top\]](#)

Name	Type	Description
Frequencies	String	Frequencies Defines the measured frequencies. In the format comma separates different values, hyphen can be used to mark the range and dot is used for decimal numbers, e.g. 1800000000.0-1900000000.0. Unit: Hz

Scanning options	Integer	Scanning options Note that this parameter is bitfield. 0 = None
Resolution bandwidth	Integer	Resolution bandwidth To be able to scan large bandwidth spectrums, the total sweep bandwidth must be divided into smaller parts. The resolution bandwidth defines the size of the smaller parts, each of which is scanned separately. Unit: Hz
Measurement period	Integer	Measurement period Unit: ms
Filter mode	Integer	Filter mode Defines the method that is used for sample filtering. 1 = Average 2 = Maximum 3 = Minimum 110 = 10 percentile 120 = 20 percentile 130 = 30 percentile 140 = 40 percentile 150 = 50 percentile 160 = 60 percentile 170 = 70 percentile 180 = 80 percentile 190 = 90 percentile
Filter samples	Integer	Filter samples Defines how many samples are filtered per reported measurement result.
Sampling ratio	Integer	Sampling ratio Defines every Nth measurement result that is reported.
Top N	Integer	Top N Only the best top N parameters are reported.
Resolution samples	Integer	Resolution samples To be able to scan large bandwidth spectrums, the total sweep bandwidth must be divided into smaller parts. The resolution samples defines the number of samples size, each of which is scanned separately.

Frequency scanning results (FREQSCAN)

Event ID	FREQSCAN
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO,AMPS,NAMPS,DAMPS,WiMAX,iDEN
Record state	Scanning state
Description	Recorded when parameter sample is received from the device.
Tools	Nemo Outdoor, Nemo Handy

[Parameters](#) |
 [Parameters for GSM](#) |
 [Parameters for UMTS FDD](#) |
 [Parameters for UMTS TD-SCDMA](#) |
 [Parameters for LTE](#) |
 [Parameters for cdmaOne and CDMA 1x](#) |
 [Parameters for EVDO](#) |
 [Parameters for WiMAX](#) |
 [Parameters for AMPS and NAMPS](#) |
 [Parameters for DAMPS](#) |
 [Parameters for iDEN](#)

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

5 = UMTS FDD
 6 = UMTS TD-SCDMA
 7 = LTE FDD
 7 = LTE FDD
 8 = LTE TDD
 8 = LTE TDD
 10 = cdmaOne
 10 = cdmaOne
 11 = CDMA 1x
 11 = CDMA 1x
 12 = EVDO
 25 = WiMAX
 51 = AMPS
 52 = NAMPS
 53 = DAMPS
 55 = iDEN

Parameters for GSM [Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
ARFCN	Integer	Channel number
BSIC	Integer	Base station identification code Range: 0 – 63
RX level	Float	RX level Range: -140 – -10 Unit: dBm
C/I	Float	C/I Range: -10 – 40 Unit: dB
SCH RX level	Float	SCH RX level Range: -140 – -10 Unit: dBm

Parameters for UMTS FDD [Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14

		50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI (frequency scanning mode) Carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – -10 Unit: dBm

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI (frequency scanning mode) Carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – -10 Unit: dBm

Parameters for LTE [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI (frequency scanning mode) Carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – -10 Unit: dBm

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band
#Chs	Integer	Number of channels

#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
RSSI	Float	RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – 0 Unit: dBm

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
RSSI	Float	RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – 0 Unit: dBm

Parameters for WiMAX [\[Top\]](#)

Name	Type	Description
#Header	Integer	Number of header parameters

params		
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Frequency	Float	WiMAX frequency Unit: MHz
RSSI	Float	Carrier RSSI (frequency scanning mode) Wide-band power of all subcarriers including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm

Parameters for AMPS and NAMPS [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
SAT	Integer	Setup audio tone Range: 0 – 6
RX level	Float	RX level Range: -140 – -10 Unit: dBm

Parameters for DAMPS [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Ch	Integer	Channel number
DCC	Integer	Digital color code Range: 0 – 255
RX level	Float	RX level Range: -140 – -10 Unit: dBm

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Ch	Integer	Channel number
CC	Integer	Color code Range: 0 – 15
RxLev	Float	RX level Range: -130 – -30 Unit: dBm
SQE	Float	SQE Range: 0 – 50 Unit: dB
N+I	Float	Noise + interference level Range: -130 – 30 Unit: dBm

Spectrum scanning result (SPECTRUMSCAN)

Event ID	SPECTRUMSCAN
Cellular systems	All
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. Separate measurement event is logged for each scanning mode, bandwidth, and frequency.
Tools	Nemo Outdoor

Parameters | Parameters for spectrum scanning |

Parameters [|Top|](#)

Name	Type	Description
Scanning mode	Integer	Scanning mode 1 = Spectrum scanning

Parameters for spectrum scanning [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Bandwidth	Float	Resolution bandwidth To be able to scan large bandwidth spectrums, the total sweep bandwidth must be divided into smaller parts. The resolution bandwidth defines the size of the smaller parts, each of which is scanned separately. Unit: Hz
Sweep bandwidth	Float	Sweep bandwidth The total scanned bandwidth that is divided into smaller parts before the scanning. Unit: MHz
Sweep frequency	Float	Sweep center frequency Unit: MHz
Sweep average RX level	Float	Sweep average RX level The linear average of RX levels measured over bandwidth of 'resolution bandwidth'. Range: -160 – -10 Unit: dBm
Sweep minimum RX level	Float	Sweep minimum RX level Minimum RX levels measured over bandwidth of 'resolution bandwidth'. Range: -160 – -10 Unit: dBm
Sweep maximum RX level	Float	Sweep maximum RX level Maximum RX levels measured over bandwidth of 'resolution bandwidth'. Range: -160 – -10 Unit: dBm
#Frequencies	Integer	Number of frequencies
#Params/frequency	Integer	#Params/frequency
Frequency	Float	Frequency Center frequency of the measured sample.

		Unit: MHz
RX level	Float	RX level Range: -160 – -10 Unit: dBm

Pilot scanning results (PILOTSCAN)

Event ID	PILOTSCAN
Cellular systems	UMTS FDD,UMTS TD-SCDMA,cdmaOne,CDMA 1x,EVDO
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. Separate measurement event is logged for each system, channel number, and channel type.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for cdmaOne and CDMA 1x | Parameters for EVDO |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 10 = cdmaOne 10 = cdmaOne 11 = CDMA 1x 11 = CDMA 1x 12 = EVDO

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Ch	Integer	Channel number
Ch type	Integer	UMTS channel type 1 = CPICH 2 = P SCH 3 = S SCH 4 = CPICH (TX diversity) 5 = PPCH
RSSI	Float	Carrier RSSI (pilot scanning mode) Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – -10 Unit: dBm
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8

		50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
SC	Integer	Scrambling code Range: 0 – 511
Ec/N0	Float	Ec/N0 The average received chip power to noise ratio of the channel specified by the Ch type parameter. Range: -30 – 0 Unit: dB
RSCP	Float	RSCP The received signal code power of the channel specified by the Ch type parameter. Range: -150 – -20 Unit: dBm
SIR	Float	Signal-to-interference ratio CPICH Range: 0 – 30
Delay	Float	Delay The time difference between actual received signal and expected point in time derived from the GPS time (when available). This parameter is also known as time offset. Range: 0 – 38400 Unit: chip
Delay spread	Float	Delay spread Time between first and last pilot Ec/N0 peak above the PN threshold of the channel specified by the Ch type parameter. Unit: chip

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Channel type	Integer	Channel type 1 = PCCPCH 2 = Sync DL
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Ch	Integer	Channel number
Cell params ID	Integer	Cell parameters ID Range: 0 – 127
Ec/I0	Float	Ec/I0 The received energy per chip divided by the relevant measured power

		density (noise and signal) in the wide band. Range: -30 – 0 Unit: dB
Time offset	Float	Time offset Position of a selected pilot. Range: 0 – 6500 Unit: chip
SIR	Float	SIR Range: -30 – 25 Unit: dB
RSCP	Float	RSCP The received signal code power of a single code. Range: -116 – -20 Unit: dB
RSSI	Float	Carrier RSSI (pilot scanning mode) Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – -10 Unit: dBm

Parameters for cdmaOne and CDMA 1x [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI (pilot scanning mode) Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – -10 Unit: dBm
Band	Integer	Band
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
PN	Integer	Pilot number Range: 0 – 511
Ec/I0	Float	Ec/I0 Range: -35 – 3 Unit: dB
Delay	Float	Delay The time difference between actual received signal and expected point in time derived from the GPS time. This parameter is also known as time offset. Unit: chip
RSCP	Float	RSCP The received signal code power of single code. Unit: dBm
Delay spread	Float	Delay spread The time between the first and the last multi-path peak component inside the search window above the PN threshold. Unit: chip

Parameters for EVDO [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Ch	Integer	Channel number
RSSI	Float	Carrier RSSI (pilot scanning mode) Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver.

		Range: -140 – -10 Unit: dBm
Band	Integer	<p>Band</p> <p>120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>120001 = EVDO 1900 band 1 North American PCS 1900 MHz band.</p> <p>120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>120007 = EVDO 700 band 7 North American cellular 700 MHz band.</p> <p>120008 = EVDO 1800 band 8 1800 MHz band.</p> <p>120009 = EVDO 900 band 9 900 MHz band.</p> <p>120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>120014 = EVDO 1900 band 14 US PCS 1.9 GHz.</p> <p>120015 = EVDO 2100 AWS band 15</p> <p>120016 = EVDO 2500 band 16 US 2.5 GHz.</p> <p>120018 = EVDO 700 public safety band 18</p> <p>120019 = EVDO 700 lower band 19</p> <p>120020 = EVDO 1500 L-band band 20</p> <p>120021 = EVDO 2000 S-band band 21</p> <p>129999 = EVDO</p>
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
PN	Integer	Pilot number Range: 0 – 511
Ec/I0	Float	Ec/I0 Range: -35 – 3 Unit: dB
Delay	Float	Delay The time difference between actual received signal and expected point in time derived from the GPS time. This parameter is also known as time offset. Unit: chip
RSCP	Float	RSCP The received signal code power of single code. Unit: dBm
Delay spread	Float	Delay spread The time between the first and the last multi-path peak component inside the search window above the PN threshold. Unit: chip

OFDM scanning results (OFDMSCAN)

Event ID	OFDMSCAN
Cellular systems	WiMAX,DVB-H,LTE FDD,LTE TDD,WLAN
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. Separate measurement event is logged for each system, band, channel number, and channel type.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for LTE](#) |
 [Parameters for LTE RS](#) |
 [Parameters for LTE SCH](#) |
 [Parameters for LTE PBCH](#) |
 [Parameters for LTE PMCH](#) |
 [Parameters for WLAN](#) |
 [Parameters for WiMAX](#) |
 [Parameters for DVB-H](#) |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 7 = LTE FDD 8 = LTE TDD 8 = LTE TDD 20 = WLAN 25 = WiMAX 65 = DVB-H

Parameters for LTE [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Ch	Integer	Channel number
Ph. ch type	Integer	Physical channel or signal type 1 = RS 2 = SCH 3 = PBCH 4 = PMCH
DL bandwidth	Integer	DL bandwidth This is the scanned bandwidth when the scanned bandwidth differs from the system bandwidth. 6 = 1.4 MHz 15 = 3 MHz 25 = 5 MHz 50 = 10 MHz 75 = 15 MHz 100 = 20 MHz
RSSI	Float	Carrier RSSI Wide-band power of all subcarriers including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. For the reference signal scanning this is the same as E-UTRAN carrier RSSI. See 3GPP TS 136.214 subclause 5.1.5. Unit: dBm
Band	Integer	Band

Parameters for LTE RS [\[Top\]](#)

Name	Type	Description
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
PCI	Integer	Physical cell identity Range: 0 – 503

CP	Integer	Cyclic prefix DL 1 = Normal 15 kHz 2 = Extended 15 kHz 3 = Extended 7.5 kHz
Antenna ports	Integer	Detected TX antenna ports 0 = Port 0 1 = Ports 0-1 3 = Ports 0-3
RSRP	Float	RSRP Reference signal received power is the linear average of the power contributions of the resource elements that carry cell-specific reference signals within the considered measurement frequency. 3GPP TS 36.214 subclause 5.1.1. Range: -140 – 0 Unit: dBm
RSRQ	Float	RSRQ Reference signal received quality is the ratio $N * RSRP / E-UTRA$ carrier RSSI, where N is the number of resource blocks of the E-UTRA carrier RSSI measurement bandwidth. The measurements in the numerator and denominator are made over the same set of resource blocks. 3GPP TS 36.214 subclause 5.1.3. Range: -30 – 0 Unit: dB
CINR	Float	CINR Ratio between the reference signal received power (RSRP) and the interference and noise from the same reference signal set. Range: -40 – 50 Unit: dB
Time offset	Integer	Time offset The time difference between actual received P-SCH primary synchronization signal and expected point in time derived from GPS reference time. The unit of the parameter is 32.552ns that is the same as the Ts parameter defined by 3GPP TS 136.211 subclause 4. Range: 0 – 307199
Delay spread	Integer	Delay spread The unit of the parameter is 32.552ns that is the same as the Ts parameter defined by 3GPP TS 136.211 subclause 4. Range: 0 – 1023 Unit: Ts
Indication	Integer	Scanning result indication The parameter contains the status of the measurement result. This is a bit field so the value of the parameter is the sum of all simultaneous measurement statuses, e.g. if the antenna power imbalance and frequency offset too large conditions happen simultaneously the recorded value would be three. 1 = Antenna power imbalance Indicates if difference in received reference signal power between antennas is greater than or equal to 15 dB when at least one of received signal power is greater than or equal to -90 dBm. 2 = Frequency offset too large Indicates if frequency offset is greater than or equal to 1 kHz.
MIMO mode	Integer	MIMO mode information The parameter indicates the current MIMO mode of each LTE PCI. The value of the parameter specifies the received TX-RX port configuration in the following format: [number of TX ports used] x [number of RX ports used]. 11 = 1x1 1 TX port and 1 RX port used. 12 = 1x2 1 TX port and 2 RX ports used. 14 = 1x4 1 TX port and 4 RX ports used. 21 = 2x1 2 TX ports and 1 RX port used. 22 = 2x2 2 TX ports and 2 RX ports used.

		<p>24 = 2x4 2 TX ports and 4 RX ports used.</p> <p>41 = 4x1 4 TX ports and 1 RX port used.</p> <p>42 = 4x2 4 TX ports and 2 RX ports used.</p> <p>44 = 4x4 4 TX ports and 4 RX ports used.</p>
#Ports	Integer	<p>Number of measurement results per antenna port</p> <p>For example if there are two physical cell identities and four antenna ports per cell identity the value of the parameter would be eight. The first four blocks would contain measurement results per antenna port for the first cell and next four blocks would contain results for the second cell.</p>
#Params/port	Integer	Number of parameters per measurement result
PCI	Integer	<p>Physical cell identity</p> <p>Range: 0 – 503</p>
Antenna port	Integer	<p>Antenna port</p> <p>0 = Port 0 This is the same as TX0.</p> <p>1 = Port 1 This is the same as TX1.</p> <p>2 = Port 2 This is the same as TX2.</p> <p>3 = Port 3 This is the same as TX3.</p> <p>100 = TX0-RX0 channel 101 = TX0-RX1 channel 102 = TX0-RX2 channel 103 = TX0-RX3 channel 110 = TX1-RX0 channel 111 = TX1-RX1 channel 112 = TX1-RX2 channel 113 = TX1-RX3 channel 120 = TX2-RX0 channel 121 = TX2-RX1 channel 122 = TX2-RX2 channel 123 = TX2-RX3 channel 130 = TX3-RX0 channel 131 = TX3-RX1 channel 132 = TX3-RX2 channel 133 = TX3-RX3 channel</p>
RSRP/P	Float	<p>RSRP/Antenna port</p> <p>Reference signal received power is the linear average of the power contributions of the resource elements that carry cell-specific reference signals within the considered measurement frequency. 3GPP TS 36.214 subclause 5.1.1.</p> <p>Range: -140 – 0</p> <p>Unit: dBm</p>
RSRQ/P	Float	<p>RSRQ/Antenna port</p> <p>Reference signal received quality is the ratio $N * RSRP / E-UTRA$ carrier RSSI, where N is the number of resource blocks of the E-UTRA carrier RSSI measurement bandwidth. The measurements in the numerator and denominator are made over the same set of resource blocks. 3GPP TS 36.214 subclause 5.1.3.</p> <p>Range: -30 – 0</p> <p>Unit: dB</p>
CINR/P	Float	<p>CINR/Antenna port</p> <p>Ratio between the reference signal received power (RSRP) and the interference and noise from the same reference signal set.</p> <p>Range: -40 – 50</p> <p>Unit: dB</p>
RSSI/P	Float	<p>E-UTRAN carrier RSSI/Antenna port</p> <p>Wideband power of all subcarriers including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. See 3GPP TS 36.214 subclause 5.1.5.</p> <p>Unit: dBm</p>

Parameters for LTE SCH [\[Top\]](#)

Name	Type	Description
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
P-SCH PCI	Integer	P-SCH physical cell identity Range: 0 – 503
Cyclic prefix	Integer	P-SCH cyclic prefix 1 = Normal 15 kHz 2 = Extended 15 kHz 3 = Extended 7.5 kHz
P-SCH RSRP	Float	P-SCH RSRP Linear average over the power contributions of the resource elements that carry primary synchronization signal. Range: -140 – 0 Unit: dBm
P-SCH RSRQ	Float	P-SCH RSRQ The ratio between P-SCH reference power (P-SCH RP) and linear average of total received power measured over OFDM symbols and resource blocks, including primary synchronization (P-SCH) signal. The measurements in the numerator and denominator are made over the same set of resource blocks. Range: -30 – 0 Unit: dB
S-SCH RSRP	Float	S-SCH RSRP Linear average over the power contributions of the resource elements that carry secondary synchronization signal. Range: -140 – 0 Unit: dBm
S-SCH RSRQ	Float	S-SCH RSRQ The ratio between S-SCH reference power (S-SCH RP) and linear average of total received power measured over OFDM symbols and resource blocks, including secondary synchronization (S-SCH) signal. The measurements in the numerator and denominator are made over the same set of resource blocks. Range: -30 – 0 Unit: dB
S-SCH CINR	Float	S-SCH CINR The ratio between synchronization channel received power and interference and noise from the same synchronization signal set. Range: -40 – 50 Unit: dB
Time offset	Integer	P-SCH time offset The time difference between actual received P-SCH primary synchronization signal and expected point in time derived from GPS reference time. The unit of the parameter is 32.552ns that is the same as the Ts parameter defined by 3GPP TS 136.211 subclause 4. Range: 0 – 307199
P-SCH CINR	Float	P-SCH CINR The ratio between synchronization channel received power and interference and noise from the same synchronization signal set. Range: -40 – 50 Unit: dB

Parameters for LTE PBCH [\[Top\]](#)

Name	Type	Description
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
PBCH PCI	Integer	PBCH physical cell identity Range: 0 – 503

Cyclic prefix	Integer	PBCH cyclic prefix 1 = Normal 15 kHz 2 = Extended 15 kHz 3 = Extended 7.5 kHz
PBCH RSRP	Float	PBCH RSRP Currently support for this parameter has not been implemented. Range: -140 – 0 Unit: dBm
PBCH RSRQ	Float	PBCH RSRQ Currently support for this parameter has not been implemented. Range: -30 – 0 Unit: dB
PBCH CINR	Float	PBCH CINR Currently support for this parameter has not been implemented. Range: -40 – 50 Unit: dB
Time offset	Integer	PBCH time offset The time difference between actual received P-SCH primary synchronization signal and expected point in time derived from GPS reference time. The unit of the parameter is 32.552ns that is the same as the Ts parameter defined by 3GPP TS 136.211 subclause 4. Range: 0 – 307199

Parameters for LTE PMCH [|Top|](#)

Name	Type	Description
#MBSFN areas	Integer	Number of MBSFN areas
#Params/MBSFN area	Integer	Number of parameters per MBSFN area
Area ID	Integer	MBSFN area ID Multi broadcast single frequency network area identity. See more 3GPP TS 136.211 subclause 6.10.2.1. Range: 0 – 255
PMCH RSRP	Float	PMCH RSRP Range: -140 – 0 Unit: dBm
PMCH RSRQ	Float	PMCH RSRQ Range: -30 – 0 Unit: dB
PMCH CINR	Float	PMCH CINR Range: -40 – 50 Unit: dB
PMCH RSSI	Float	PMCH RSSI Range: -120 – 30 Unit: dBm
#Cells	Integer	Number of cells These are the cells that have been detected to broadcast listed MBSFN area ID based on system information blocks. The list is not necessarily complete.
#Params/Cell	Integer	Number of parameters per cell
Area ID	Integer	MBSFN area ID Multi broadcast single frequency network area identity. See more 3GPP TS 136.211 subclause 6.10.2.1. Range: 0 – 255
PCI	Integer	Physical cell identity Range: 0 – 503
Cell ID	Integer	Cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 268435455

Parameters for WLAN [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	WLAN band 200001 = WLAN 2.4 GHz 200002 = WLAN 3.6 GHz 200003 = WLAN 4.9 GHz 200004 = WLAN 5.0 GHz 209999 = WLAN
Channel	Integer	WLAN channel number
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Protocol	Integer	WLAN protocol 1 = 802.11a 2 = 802.11b 3 = 802.11g 4 = 802.11n 5 = 802.11ac 6 = 802.11ad 7 = 802.11ah 8 = 802.11aj 9 = 802.11ax 10 = 802.11ay
BSSID	String	WLAN BSSID This is same as MAC address. Logged format is hexadecimal bytes separated by colon, for example 01:23:45:67:89:ab.
Name	String	WLAN cell name
SSID	String	WLAN service set identifier
RSSI	Float	WLAN RSSI Range: -110 – 20 Unit: dBm
Noise level	Float	WLAN noise level Range: -150 – -70 Unit: dBm
CINR	Float	WLAN CINR Unit: dB
Security	Integer	WLAN security mode 0 = Open 1 = 802.1x 2 = WEP 3 = WPA-EAP 4 = WPA-PSK 5 = WPA2-EAP 6 = WPA2-PSK
Beacon interval	Integer	WLAN beacon interval Unit: ms
Utilization	Float	WLAN channel utilization Defines the percentage of time channel has been detected to be busy. Range: 0 – 100 Unit: %

Parameters for WiMAX [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Frequencies	Integer	Number of frequencies
#Params/frequency	Integer	#Params/frequency
Frequency	Float	Frequency Unit: MHz

RSSI	Float	Carrier RSSI (OFDM scanning mode) Wide-band power of all subcarriers including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
#Preambles	Integer	Number of preambles
#Params/preamble	Integer	Number of parameters per preamble
Frequency	Float	WiMAX frequency Unit: MHz
Preamble index	Integer	WiMAX preamble index Range: 0 – 113
Preamble RSSI	Float	WiMAX preamble RSSI Range: -120 – 0 Unit: dBm
CINR	Float	WiMAX CINR Channel to interference-noise ratio. Range: -32 – 40 Unit: dB
Delay	Float	WiMAX preamble delay Range: 0 – 1055

Parameters for DVB-H |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
#Frequencies	Integer	Number of frequencies
#Params/frequency	Integer	#Params/frequency
Frequency	Float	Frequency Unit: MHz
RSSI	Float	Carrier RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Unit: dBm
MER	Float	DVB-H MER Range: 0 – 60 Unit: dB

Physical resource block scanning results (PRBSCAN)

Event ID	PRBSCAN
Cellular systems	LTE FDD
Record state	Scanning state
Description	This measurement event is logged for each cell separately and contains scanning results per physical resource block. Recorded when measurement sample is received from the device. Currently logged about once per second with Rohde&Schwarz scanners.
Tools	Nemo Outdoor

|Parameters |Parameters for LTE Rohde&Schwarz |Parameters for LTE PCTel |Parameters for LTE Nemo FSR1 |

Parameters |Top|

Name	Type	Description
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Measured sys.	Integer	Measured system 7 = LTE FDD
Scanner type	Integer	Scanner type 1 = Rohde&Schwarz 2 = PCTel 3 = Nemo FSR1
#System and device specific parameters	Integer	Number of system and device specific parameters

Parameters for LTE Rohde&Schwarz [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD
Ch	Integer	Channel number
PCI	Integer	Physical cell identity Range: 0 – 503
#PRB indexes	Integer	Number of PRB indexes This is the same as the system bandwidth. Range: 0 – 100
#Params/PRB index	Integer	Number of parameters per PRB index
PRB index	Integer	PRB index Range: 0 – 99

2x2 rank	Integer	2x2 MIMO rank estimation/PRB Minimum value: 0
2x2 K	Float	2x2 MIMO condition number/PRB Minimum value: 0 Unit: dB
2x4 rank	Integer	2x4 MIMO rank estimation/PRB Minimum value: 0
2x4 K	Float	2x4 MIMO condition number/PRB Minimum value: 0 Unit: dB

Parameters for LTE PCTel [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	<p>Band</p> <p>70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD</p>
Ch	Integer	Channel number
#Cells	Integer	Number of cells
#Params/cell	Integer	Number of parameters per cell
PCI	Integer	Physical cell identity Range: 0 – 503
2x2 K	Float	2x2 MIMO condition number Minimum value: 0 Unit: dB
OLSM CQI	Integer	Single layer open-loop CQI

		Range: 0 – 15
OLSM rate	Integer	Single layer open-loop throughput Minimum value: 0 Unit: bit/s
CLSM CQI	Integer	Single layer closed-loop CQI Range: 0 – 15
CLSM rate	Integer	Single layer closed-loop throughput Minimum value: 0 Unit: bit/s
OLSM CQI 0	Integer	Dual layer open-loop CQI 0 Range: 0 – 15
OLSM rate 0	Integer	Dual layer open-loop throughput 0 Minimum value: 0 Unit: bit/s
OLSM CQI 1	Integer	Dual layer open-loop CQI 1 Range: 0 – 15
OLSM rate 1	Integer	Dual layer open-loop throughput 1 Minimum value: 0 Unit: bit/s
CLSM CQI 0	Integer	Dual layer closed-loop SM CQI 0 Range: 0 – 15
CLSM rate 0	Integer	Dual layer closed-loop throughput 0 Minimum value: 0 Unit: bit/s
CLSM CQI 1	Integer	Dual layer closed-loop SM CQI 1 Range: 0 – 15
CLSM rate 1	Integer	Dual layer closed-loop throughput 1 Minimum value: 0 Unit: bit/s

Parameters for LTE Nemo FSR1 [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band.

		70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD
Ch	Integer	Channel number
PCI	Integer	Physical cell identity Range: 0 – 503
#PRB indexes	Integer	Number of PRB indexes This is the same as the system bandwidth. Range: 0 – 100
#Params/PRB index	Integer	Number of parameters per PRB index
PRB index	Integer	PRB index Range: 0 – 99
2x2 rank	Integer	2x2 MIMO rank estimation/PRB Minimum value: 0
2x2 K	Float	2x2 MIMO condition number/PRB Minimum value: 0 Unit: dB
2x4 rank	Integer	2x4 MIMO rank estimation/PRB Minimum value: 0
2x4 K	Float	2x4 MIMO condition number/PRB Minimum value: 0 Unit: dB
RSRP	Float	RSRP/PRB Reference signal received power is the linear average of the power contributions of the resource elements that carry cell-specific reference signals within the considered measurement frequency. 3GPP TS 36.214 subclause 5.1.1. Range: -140 – 0 Unit: dBm
CINR	Float	CINR/PRB Ratio between the reference signal received power (RSRP) and the interference and noise from the same reference signal set. Range: -40 – 50 Unit: dB

Timing profile scanning result (TPROFSCAN)

Event ID	TPROFSCAN
Cellular systems	UMTS FDD
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. Separate measurement event is logged for each channel and channel type.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
Ch	Integer	Channel number
RSSI	Float	RSSI Wide-band carrier power including thermal noise, co-carrier and adjacent carrier interference, and noise generated in the receiver. Range: -140 – 0 Unit: dBm
Ch type	Integer	UMTS channel type 1 = CPICH 2 = P SCH 3 = S SCH 4 = CPICH (TX diversity) 5 = PPCH
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Params/Sample	Integer	Number of parameters per sample
#Samples	Integer	Number of samples
Chip	Integer	Chip number
Ec/N0	Float	Chip Ec/N0 The received energy per chip divided by the power density of the band. Range: -30 – 0 Unit: dB

Delay profile scanning result (DPROFSCAN)

Event ID	DPROFSCAN
Cellular systems	UMTS FDD,cdmaOne,CDMA 1x
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. Separate measurement event is logged for each system and channel.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for cdmaOne, CDMA 1x, and EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Ch	Integer	Channel number
SC	Integer	Scrambling code Range: 0 – 511
Ch type	Integer	UMTS channel type 1 = CPICH 2 = P SCH 3 = S SCH 4 = CPICH (TX diversity) 5 = PPCH
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Params/Sample	Integer	Number of parameters per sample
#Samples	Integer	Number of samples
Sample offset	Float	Delay profile sample offset Delay in 0.5 chip resolution. Range: -550 – 550 Unit: chip
Sample	Float	Delay profile sample

Parameters for cdmaOne, CDMA 1x, and EVDO [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	<p>Band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.</p> <p>100015 = cdmaOne 2100 AWS band 15</p> <p>100016 = cdmaOne 2500 band 16 US 2.5 GHz.</p> <p>100018 = cdmaOne 700 public safety band 18</p> <p>100019 = cdmaOne 700 lower band 19</p> <p>100020 = cdmaOne 1500 L-band band 20</p> <p>100021 = cdmaOne 2000 S-band band 21</p> <p>109999 = cdmaOne</p> <p>110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band.</p> <p>110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band.</p> <p>110008 = CDMA 1x 1800 band 8 1800 MHz band.</p> <p>110009 = CDMA 1x 900 band 9 900 MHz band.</p> <p>110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>110013 = CDMA 1x 2500 band 13</p>

		2.5 GHz IMT-2000 extension. 110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz. 110015 = CDMA 1x 2100 AWS band 15 110016 = CDMA 1x 2500 band 16 US 2.5 GHz. 110018 = CDMA 1x 700 public safety band 18 110019 = CDMA 1x 700 lower band 19 110020 = CDMA 1x 1500 L-band band 20 110021 = CDMA 1x 2000 S-band band 21 119999 = CDMA 1x 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Ch	Integer	Channel number
#Params/Sample	Integer	Number of parameters per sample
#Samples	Integer	Number of samples
Sample offset	Integer	Delay profile sample absolute offset Delay profile sample offset. Range: 0 – 32768 Unit: chip
Sample energy	Float	Delay profile sample energy Range: -35 – 3 Unit: dB

Rake finger allocation (FINGER)

Event ID	FINGER
Cellular systems	UMTS FDD,cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded when parameter sample is received from the device. Currently this information is only logged for serving cells.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for cdmaOne and CDMA 1x | Parameters for EVDO |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Fingers	Integer	Number of fingers
#Params/Finger	Integer	Number of parameters per finger
Ch	Integer	Channel number
SC	Integer	Scrambling code Range: 0 – 511
Secondary SC	Integer	Secondary scrambling code Range: 0 – 15
Ec/N0	Float	Finger Ec/N0 The received energy per chip divided by the power density of the band. Range: -30 – 0 Unit: dB
Finger abs. offset	Float	Absolute finger offset Note that the accuracy can be greater than one chip. Unit: chip
Finger rel. offset	Float	Finger offset relative to strongest peak Finger offset to the strongest peak. Note that the accuracy can be greater than one chip. Unit: chip
Finger RSCP	Float	Finger RSCP The received signal code power of single code. Unit: dBm

Parameters for cdmaOne and CDMA 1x [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Agg. Ec/I0	Float	Aggregate Ec/I0 Summary of the Ec/I0 of the fingers. At least one finger has to be locked. Range: -50 – 0 Unit: dB
Ant. config	Integer	Antenna configuration 0 = RX0 1 = RX1 2 = Diversity enabled

		3 = Simultaneous mode RX0 4 = Simultaneous mode RX1
#Fingers	Integer	Number of fingers
#Params/Finger	Integer	Number of parameters per finger
PN	Integer	Pilot number Range: 0 – 511
Finger abs. offset	Float	Absolute finger offset Note that the accuracy can be greater than one chip. Unit: chip
Finger locked	Integer	Finger locked 0 = No 1 = Yes
Ec/I0	Float	Ec/I0 If antenna configuration is 2, then this represents Ec/I0 for the paired fingers. Range: -30 – 30 Unit: dB
Ref. finger	Integer	Reference finger 0 = No 1 = Yes
Assigned finger	Integer	Assigned finger 0 = No 1 = Yes
TD mode	Integer	Transmit diversity mode 0 = None 1 = Reserver I 2 = OTD 3 = STS
TD power	Float	Transmit diversity power level Range: -9 – 0
Subchannel	Integer	Subchannel 1 = PCH 2 = Primary BCCH 4 = Secondary BCCH 1 8 = Secondary BCCH 2 16 = Secondary BCCH 3 32 = Secondary BCCH 4 64 = Secondary BCCH 5 128 = Secondary BCCH 6 256 = Secondary BCCH 7 512 = FCCCH 1024 = QPCH 2048 = FCH 4096 = DCCH 8192 = SCCH 16384 = SCH 32768 = PDCCH 65536 = GCH 0 131072 = GCH 1 262144 = RCCH 524288 = ACKCH 1048576 = CPCCH 2097152 = CACH
Locked antennas	Integer	Locked antennas 0 = RX0 1 = RX1
RX0 Ec/I0	Float	Ec/I0 antenna 0 Ec/I0 for finger tracking RX0. Range: -30 – 30 Unit: dB
RX1 Ec/I0	Float	Ec/I0 antenna 1 Ec/I0 for finger tracking RX1. Range: -30 – 30 Unit: dB

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Searcher state	Integer	Searcher state 0 = Start (inactive) 1 = Acquisition 2 = Synchronization 3 = Idle 4 = Idle suspended 5 = Idle broadcast 6 = Idle off-frequency searching 7 = Broadcast access 8 = Sleep 9 = Reacquisition 10 = Traffic 11 = Traffic suspended 12 = Traffic off-frequency searching
MSTR	Integer	Mobile station time reference Relative to the RTC timebase. Unit: chip
MSTR error	Integer	Mobile station time reference error Relative to the earliest arriving in-lock and enabled active set pilot. Unit: chip
MSTR PN	Integer	Mobile station PN offset Pilot PN of the finger which the MSTR is tracking. Typically the earliest arriving finger. Range: 0 – 511
Ant. config	Integer	Antenna configuration 0 = RX0 1 = RX1 2 = Diversity enabled 3 = Simultaneous mode RX0 4 = Simultaneous mode RX1
#Fingers	Integer	Number of fingers
#Params/Finger	Integer	Number of parameters per finger
PN	Integer	Pilot number Range: 0 – 511
Finger index	Integer	Finger index Index of the demodulator finger. Range: 0 – 11
RPC cell index	Integer	RPC cell index Value/index assigned to a cell by AT. Range: 0 – 6
ASP index	Integer	ASP index Value/index assigned to a sector by AT. Range: 0 – 6
Ec/I0	Float	Ec/I0 If antenna configuration is 2, then this represents Ec/I0 for the paired fingers. Range: –30 – 30 Unit: dB
RX0 Ec/I0	Float	Ec/I0 antenna 0 Ec/I0 for finger tracking RX0. Range: –30 – 30 Unit: dB
RX1 Ec/I0	Float	Ec/I0 antenna 1 Ec/I0 for finger tracking RX1. Range: –30 – 30 Unit: dB
Finger locked	Integer	Finger locked 0 = No

		1 = Yes
Finger abs. offset	Float	Absolute finger offset Note that the accuracy can be greater than one chip. Unit: chip
Packet carrier	Integer	Packet carrier number

Uplink interference scanning results (UISCAN)

Event ID	UISCAN
Cellular systems	UMTS FDD
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. Separate measurement event is logged for each channel.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Params/Cell	Integer	Number of parameters per cell
#Cells	Integer	Number of scanned cells
ARFCN	Integer	Channel number

SC	Integer	Scrambling code Range: 0 – 511
UL interf.	Float	Uplink interference Uplink Interference is measured by the NodeB and broadcasted by the NodeB in SIB7. This is used by the UE to in setting the initial TX power for the first PRACH preamble. The Uplink Interference value in SIB7 uses 1 dB step. More information can be found in 3GPP TS 25.133 and 25.215 (information about SIB7 in 3GPP TS 25.331), where the Uplink Interference is referred as "Received total wide band power". Range: -110 – -52 Unit: dBm

Cell scanning results (CELLSCAN)

Event ID	CELLSCAN
Cellular systems	GSM,UMTS FDD,LTE FDD,LTE TDD
Record state	Scanning state
Description	Recorded when parameter sample is received from the device. With GSM the system information messages, and with UMTS and LTE the system information blocks, are decoded to produce the information required for this measurement event.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for UMTS FDD | Parameters for LTE |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 7 = LTE FDD 7 = LTE FDD 8 = LTE TDD 8 = LTE TDD

Parameters for GSM [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
ARFCN	Integer	Scanned channel number
BSIC	Integer	Scanned base station identification code Range: 0 – 63
MCC	Integer	Scanned MCC See ITU-T recommendation E.212.

		Range: 0 – 999
MNC	Integer	Scanned MNC Range: 0 – 999
LAC	Integer	Scanned LAC Range: 0 – 65535
Cell ID	Integer	Scanned cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 65535

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
UARFCN	Integer	Scanned channel number
SC	Integer	Scanned scrambling code Range: 0 – 511
MCC	Integer	Scanned MCC See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	Scanned MNC Range: 0 – 999
LAC	Integer	Scanned LAC Range: 0 – 65535
Cell ID	Integer	Scanned cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 268435455

Parameters for LTE [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Band	Integer	Band

#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
EARFCN	Integer	Scanned channel number
PCI	Integer	Scanned physical cell identity Range: 0 – 503
MCC	Integer	Scanned MCC See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	Scanned MNC Range: 0 – 999
TAC	Integer	Scanned TAC Range: 0 – 65535
Cell ID	Integer	Scanned cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 268435455

Handover/handoff attempt (HOA)

Event ID	HOA
Cellular systems	All
Record state	Always
Description	Recorded when handover attempt is initiated based on signaling. For GSM, RR layer3 signaling is used. For UMTS, RRC signaling is used. Note that this measurement event is not recorded with GSM when the first TCH allocation is done. Instead, after a successful TCH assignment, a CAC measurement event is recorded. The measurement event begins the handover attempt state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Current system parameters | Parameters for GSM | Parameters for TETRA | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for cdmaOne, CDMA 1x, and EVDO | Parameters for GAN WLAN | Parameters for WiMAX | Parameters for DAMPS | Parameters for iDEN | Attempted system parameters | Parameters for GSM | Parameters for TETRA | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for cdmaOne, CDMA 1x, and EVDO | Parameters for GAN WLAN | Parameters for WiMAX | Parameters for DAMPS | Parameters for iDEN |

Parameters |Top|

Name	Type	Description
Handover context ID	Context	Handover context ID
#Header params	Integer	Number of header parameters
HOA type	Integer	Handover/handoff attempt type 101 = GSM internal handover 102 = GSM handover between cells 103 = GSM handover between systems 104 = GSM handover between bands 105 = GSM internal handover between bands 201 = DAMPS handoff between sectors or handoff to small diameter cell (SBI = 00) 202 = DAMPS handoff to small diameter cell or handoff to large diameter cell (SBI = 01 or SBI = 10)

		203 = DAMPS handoff between systems 301 = CDMA hard handoff 303 = CDMA handoff between systems 401 = UMTS FDD hard handover 403 = UMTS FDD handover between systems 501 = TD-SCDMA hard inter-frequency handover 502 = TD-SCDMA hard intra-frequency handover 503 = TD-SCDMA handover between systems 504 = TD-SCDMA baton inter-frequency handover 505 = TD-SCDMA baton intra-frequency handover 600 = TETRA announced cell reselection type 1 601 = TETRA announced cell reselection type 2 602 = TETRA announced cell reselection type 3 703 = GAN WLAN handover between systems 801 = WiMAX handover between cells 901 = LTE handover between cells 902 = LTE handover between frequencies 903 = LTE handover between bands 904 = LTE handover between systems 1001 = iDEN intra-cell 1002 = iDEN inter-cell
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Current system parameters [\[Top\]](#)

Name	Type	Description
Current system	Integer	Current cellular system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 25 = WiMAX 53 = DAMPS 55 = iDEN
Number of current system parameters	Integer	Number of current system parameters

Parameters for GSM [\[Top\]](#)

Name	Type	Description
Ch number	Integer	Channel number If the current cell does not have hopping, the value is the currently used channel number. If hopping is in use, the value is the BCCH channel number of the serving cell.
TSL	Integer	Timeslot Range: 0 – 7
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
Ch number	Integer	Channel number
TSL	Integer	Timeslot Range: 0 – 7

Band	Integer	Band
		20001 = TETRA band 1
		20002 = TETRA band 2
		20003 = TETRA band 3
		20004 = TETRA band 4
		20005 = TETRA band 5
		20006 = TETRA band 6
		20007 = TETRA band 7
		20008 = TETRA band 8
		20009 = TETRA band 9
		20010 = TETRA band 10
		20011 = TETRA band 11
		20012 = TETRA band 12
		20013 = TETRA band 13
		20014 = TETRA band 14
		20015 = TETRA band 15
		29999 = TETRA

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
Ch number	Integer	Channel number
SC	Integer	Scrambling code Range: 0 – 511
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Ch number	Integer	Channel number
Cell params ID	Integer	Cell parameters ID Range: 0 – 127
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA

Parameters for LTE [\[Top\]](#)

Name	Type	Description
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Ch number	Integer	Channel number
PCI	Integer	Physical cell ID Range: 0 – 503
Band	Integer	Band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37 80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43 80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD

Parameters for cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
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Ch number	Integer	Channel number
Band	Integer	<p>Band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.</p> <p>100015 = cdmaOne 2100 AWS band 15</p> <p>100016 = cdmaOne 2500 band 16 US 2.5 GHz.</p> <p>100018 = cdmaOne 700 public safety band 18</p> <p>100019 = cdmaOne 700 lower band 19</p> <p>100020 = cdmaOne 1500 L-band band 20</p> <p>100021 = cdmaOne 2000 S-band band 21</p> <p>109999 = cdmaOne</p> <p>110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band.</p> <p>110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band.</p> <p>110008 = CDMA 1x 1800 band 8 1800 MHz band.</p> <p>110009 = CDMA 1x 900 band 9 900 MHz band.</p> <p>110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>110014 = CDMA 1x 1900 band 14</p>

US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 120007 = EVDO 700 band 7
 North American cellular 700 MHz band.
 120008 = EVDO 1800 band 8
 1800 MHz band.
 120009 = EVDO 900 band 9
 900 MHz band.
 120010 = EVDO 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 120011 = EVDO 400 PAMR band 11
 European PAMR 400 MHz band.
 120012 = EVDO 800 PAMR band 12
 European PAMR 800 MHz band.
 120013 = EVDO 2500 band 13
 2.5 GHz IMT-2000 extension.
 120014 = EVDO 1900 band 14
 US PCS 1.9 GHz.
 120015 = EVDO 2100 AWS band 15
 120016 = EVDO 2500 band 16
 US 2.5 GHz.
 120018 = EVDO 700 public safety band 18
 120019 = EVDO 700 lower band 19
 120020 = EVDO 1500 L-band band 20
 120021 = EVDO 2000 S-band band 21
 129999 = EVDO

Parameters for GAN WLAN [\[Top\]](#)

Name	Type	Description
Reserved	Integer	Reserved

Parameters for WiMAX [\[Top\]](#)

Name	Type	Description
BS ID	String	WiMAX base station ID Six colon separated hex values.
Preamble index	Integer	WiMAX preamble index Range: 0 – 113
Frequency	Float	WiMAX frequency Unit: MHz

Parameters for DAMPS [\[Top\]](#)

Name	Type	Description
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Ch number	Integer	Channel number
TSL	Integer	Timeslot Range: 0 – 7

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
Ch number	Integer	Channel number
CC	Integer	Color code Range: 0 – 15
Band	Integer	Band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN

Attempted system parameters [\[Top\]](#)

Name	Type	Description
Attempt. system	Integer	Attempted cellular system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 25 = WiMAX 53 = DAMPS 55 = iDEN
Number of attempted system parameters	Integer	Number of attempted system parameters

Parameters for GSM [\[Top\]](#)

Name	Type	Description
Att. ch	Integer	Attempted channel number If hopping flag is disable (see GSM 04.08 / 10.5.2.5) the value is the same as ARFCN. If hopping is enabled and assignment command was used, the value is the same as the serving cell BCCH. If hopping is enabled and handover command was used, the value is BCCH ARFCN (see GSM 04.08/ 10.5.2.2).
Att. TSL	Integer	Attempted timeslot Range: 0 – 7
Att. Band	Integer	Attempted band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
Att. ch	Integer	Attempted channel number
Att. TSL	Integer	Attempted timeslot

		Range: 0 – 7
Att. Band	Integer	Attempted band 20001 = TETRA band 1 20002 = TETRA band 2 20003 = TETRA band 3 20004 = TETRA band 4 20005 = TETRA band 5 20006 = TETRA band 6 20007 = TETRA band 7 20008 = TETRA band 8 20009 = TETRA band 9 20010 = TETRA band 10 20011 = TETRA band 11 20012 = TETRA band 12 20013 = TETRA band 13 20014 = TETRA band 14 20015 = TETRA band 15 29999 = TETRA

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
Att. ch	Integer	Attempted channel number
Att. SC	Integer	Attempted scrambling code Range: 0 – 511
Att. Band	Integer	Attempted band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Att. ch	Integer	Attempted channel number
Att. Cell params ID	Integer	Attempted cell parameters ID Range: 0 – 127
Att. Band	Integer	Attempted band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA

Parameters for LTE [\[Top\]](#)

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Name	Type	Description
Att. ch	Integer	Attempted channel number
Att. PCI	Integer	Attempted physical cell ID Range: 0 – 503
Att. Band	Integer	<p>Attempted band</p> <p>70001 = LTE FDD 2100 band 1</p> <p>70002 = LTE FDD 1900 band 2</p> <p>70003 = LTE FDD 1800 band 3</p> <p>70004 = LTE FDD 2100 AWS band 4</p> <p>70005 = LTE FDD 850 band 5</p> <p>Band 850 is also known as band 800.</p> <p>70006 = LTE FDD 850 band 6</p> <p>70007 = LTE FDD 2600 band 7</p> <p>70008 = LTE FDD 900 band 8</p> <p>70009 = LTE FDD 1800 band 9</p> <p>70010 = LTE FDD 2100 band 10</p> <p>70011 = LTE FDD 1400 band 11</p> <p>70012 = LTE FDD 700 band 12</p> <p>70013 = LTE FDD 700 band 13</p> <p>70014 = LTE FDD 700 band 14</p> <p>70017 = LTE FDD 700 band 17</p> <p>70018 = LTE FDD 850 band 18</p> <p>70019 = LTE FDD 850 band 19</p> <p>70020 = LTE FDD 800 band 20</p> <p>70021 = LTE FDD 1500 band 21</p> <p>70022 = LTE FDD 3500 band 22</p> <p>70023 = LTE FDD 2200 band 23</p> <p>70024 = LTE FDD 1500 band 24</p> <p>70025 = LTE FDD 1900 band 25</p> <p>70026 = LTE FDD 850 band 26</p> <p>70027 = LTE FDD 800 band 27</p> <p>70028 = LTE FDD 700 band 28</p> <p>70029 = LTE FDD 700 band 29</p> <p>This is downlink only band.</p> <p>70030 = LTE FDD 2350 band 30</p> <p>70031 = LTE FDD 450 band 31</p> <p>70032 = LTE FDD 1500 L-band</p> <p>This is downlink only band.</p> <p>70064 = LTE FDD 390-470 band 64</p> <p>This is a non-standard LTE FDD band.</p> <p>70065 = LTE FDD 2100 band 65</p> <p>70066 = LTE FDD AWS-3 2100 band 66</p> <p>70067 = LTE FDD 700 EU band 67</p> <p>This is downlink only band.</p> <p>79999 = LTE FDD</p> <p>80033 = LTE TDD 1900-1920 band 33</p> <p>80034 = LTE TDD 2010-2025 band 34</p> <p>80035 = LTE TDD 1850-1910 band 35</p> <p>80036 = LTE TDD 1930-1990 band 36</p> <p>80037 = LTE TDD 1910-1930 band 37</p> <p>80038 = LTE TDD 2570-2620 band 38</p> <p>80039 = LTE TDD 1880-1920 band 39</p> <p>80040 = LTE TDD 2300-2400 band 40</p> <p>80041 = LTE TDD 2496-2690 band 41</p> <p>80042 = LTE TDD 3400-3600 band 42</p> <p>80043 = LTE TDD 3600-3800 band 43</p> <p>80044 = LTE TDD 703-803 band 44</p> <p>80045 = LTE TDD 1447-1467 band 45</p> <p>80061 = LTE TDD 1447-1467 band 61</p> <p>This is a non-standard LTE TDD band.</p> <p>80062 = LTE TDD 1785-1805 band 62</p> <p>This is a non-standard LTE TDD band.</p> <p>80087 = LTE TDD 1447-1467 band 87</p> <p>This is a non-standard LTE TDD band.</p> <p>80088 = LTE TDD 1785-1805 band 88</p> <p>This is a non-standard LTE TDD band.</p> <p>89999 = LTE TDD</p>

Name	Type	Description
Att. ch	Integer	Attempted channel number
Att. Band	Integer	<p>Attempted band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.</p> <p>100015 = cdmaOne 2100 AWS band 15</p> <p>100016 = cdmaOne 2500 band 16 US 2.5 GHz.</p> <p>100018 = cdmaOne 700 public safety band 18</p> <p>100019 = cdmaOne 700 lower band 19</p> <p>100020 = cdmaOne 1500 L-band band 20</p> <p>100021 = cdmaOne 2000 S-band band 21</p> <p>109999 = cdmaOne</p> <p>110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band.</p> <p>110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band.</p> <p>110008 = CDMA 1x 1800 band 8 1800 MHz band.</p> <p>110009 = CDMA 1x 900 band 9 900 MHz band.</p> <p>110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension.</p>

110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 120007 = EVDO 700 band 7
 North American cellular 700 MHz band.
 120008 = EVDO 1800 band 8
 1800 MHz band.
 120009 = EVDO 900 band 9
 900 MHz band.
 120010 = EVDO 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 120011 = EVDO 400 PAMR band 11
 European PAMR 400 MHz band.
 120012 = EVDO 800 PAMR band 12
 European PAMR 800 MHz band.
 120013 = EVDO 2500 band 13
 2.5 GHz IMT-2000 extension.
 120014 = EVDO 1900 band 14
 US PCS 1.9 GHz.
 120015 = EVDO 2100 AWS band 15
 120016 = EVDO 2500 band 16
 US 2.5 GHz.
 120018 = EVDO 700 public safety band 18
 120019 = EVDO 700 lower band 19
 120020 = EVDO 1500 L-band band 20
 120021 = EVDO 2000 S-band band 21
 129999 = EVDO

Parameters for GAN WLAN [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved

Parameters for WiMAX [|Top|](#)

Name	Type	Description
Att. BS ID	String	Attempted WiMAX base station ID Six colon separated hex values.
Att. preamble index	Integer	Attempted WiMAX preamble index Range: 0 – 113
Att. frequency	Float	Attempted WiMAX frequency Unit: MHz

Parameters for DAMPS [|Top|](#)

Name	Type	Description
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Att. ch	Integer	Attempted channel number
Att. TSL	Integer	Attempted timeslot Range: 0 – 7

Parameters for iDEN |Top|

Name	Type	Description
Att. ch	Integer	Attempted channel number
Att. CC	Integer	Attempted color code Range: 0 – 15
Att. Band	Integer	Attempted band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN

Handover/handoff success (HOS)

Event ID	HOS
Cellular systems	All
Record state	Handover attempt state
Description	Recorded based on signaling when a handover is successful. This measurement event ends the handover attempt state.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters |Top|

Name	Type	Description
Handover context ID	Context	Handover context ID

Handover/handoff fail (HOF)

Event ID	HOF
Cellular systems	All
Record state	Handover attempt state
Description	Recorded based on signaling when a handover fails. This measurement event ends the handover attempt state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM and GAN WLAN | Parameters for TETRA, DAMPS, and CDMA | Parameters for UMTS hard handover and TD-SCDMA baton handover | Parameters for UMTS handover between systems | Parameters for WiMAX handover between cells | Parameters for LTE | Parameters for iDEN |

Parameters [|Top|](#)

Name	Type	Description
Handover context ID	Context	Handover context ID

Parameters for GSM and GAN WLAN [|Top|](#)

Name	Type	Description
RR cause	Integer	RR cause See 3GPP TS 144.018 subclause 10.5.2.31. 0 = Normal event 1 = Abnormal release, unspecified 2 = Abnormal release, channel unacceptable 3 = Abnormal release, timer expired 4 = Abnormal release, no activity on the radio path 5 = Pre-emptive release 6 = UTRAN configuration unknown 8 = Handover impossible, timing advance out of range 9 = Channel mode unacceptable 10 = Frequency not implemented 11 = Originator or talker leaving group call area 12 = Lower layer failure 65 = Call already cleared 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message type not compatible with protocol state 100 = Conditional IE error 101 = No cell allocation available 111 = Protocol error unspecified

Parameters for TETRA, DAMPS, and CDMA [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved

Parameters for UMTS hard handover and TD-SCDMA baton handover [|Top|](#)

Name	Type	Description
RRC cause	Integer	RRC cause This is the same as a failure cause defined by 3GPP TS 25.331 subclause 10.3.3.13. 0 = Configuration unsupported 1 = Physical channel failure 2 = Incompatible simultaneous reconfiguration 3 = Protocol error 4 = Compressed mode runtime error 5 = Cell update occurred 6 = Invalid configuration 7 = Configuration incomplete 8 = Unsupported measurement 9 = MBMS session already received correctly 10 = Lower priority MBMS service

Parameters for UMTS handover between systems [|Top|](#)

Name	Type	Description
Inter-RAT cause	Integer	Inter-RAT handover failure cause This is the same as a failure cause defined by 3GPP TS 25.331 subclause 10.3.8.6. 0 = Configuration unacceptable

1 = Physical channel failure
2 = Protocol error
3 = Inter-RAT protocol error
4 = Unspecified

Parameters for WiMAX handover between cells [|Top|](#)

Name	Type	Description
HO cause	Integer	WiMAX HO cause 1 = Dropped 101 = Mobile cancel 102 = Mobile reject 201 = Ranging failure 202 = Ranging abort

Parameters for LTE [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved

Parameters for iDEN [|Top|](#)

Name	Type	Description
Reserved	Integer	Reserved

Handover/handoff information (HOI)

Event ID	HOI
Cellular systems	UMTS FDD,LTE FDD,LTE TDD,WiMAX
Record state	Always
Description	Recorded when additional information is available on the handover.
Tools	Nemo Outdoor

Parameters |

Parameters [|Top|](#)

Name	Type	Description
Handover context ID	Context	Handover context ID
#Header params	Integer	Number of header parameters
HO duration	Integer	Handover duration With the LTE this defines the handover duration containing handover processing and interrupt time. Time from the handover initiating RRC signaling message to the successfully completed RACH procedure in the new cell. Minimum value: 0 Unit: ms
HO to preamble time	Integer	Handover to preamble time Time from handover attempt (RRC signaling message) to the first random access preamble (MSG1) in the target cell. Only support for LTE to LTE handovers.

		Minimum value: 0 Unit: ms
HO U-plane interruption	Integer	Handover U-plane interruption time Defines the time from the last packet in the old cell to the first packet in the new cell. Minimum value: 0 Unit: ms

Cell reselection (CREL)

Event ID	CREL
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO,GAN WLAN,iDEN
Record state	Always
Description	Recorded after cell reselection. With GSM and UMTS FDD, the measurement event is recorded based on cell ID change in non-TCH state with GSM and in non-CELL_DCH state with UMTS FDD.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Old system parameters | Parameters for GSM | Parameters for TETRA | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for cdmaOne, CDMA 1x, and EVDO | Parameters for GAN WLAN | Parameters for iDEN | Current system parameters | Parameters for GSM | Parameters for TETRA | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for cdmaOne, CDMA 1x, and EVDO | Parameters for GAN WLAN | Parameters for iDEN |

Parameters [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
CRS time	Integer	Cell reselection duration Indicates the duration of the cell reselection. Currently this parameter is only implemented for GSM. Unit: ms
CRS reason	Integer	Cell reselection reason Note that currently this parameter is only supported with iDEN. 1001 = iDEN comparison between serving cell and neighbor cell quality 1002 = iDEN serving cell becomes barred 1003 = iDEN serving cell failed

Old system parameters [|Top|](#)

Name	Type	Description
Old system	Integer	Old cellular system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 55 = iDEN
#Params	Integer	Number of parameters

Parameters for GSM [\[Top\]](#)

Name	Type	Description
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535
Old Cell ID	Integer	Old cell identification Cell identification of the old cell. Range: 0 – 268435455
Old band	Integer	Old band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535
Old Cell ID	Integer	Old cell identification Cell identification of the old cell. Range: 0 – 65535
Old band	Integer	Old band 20001 = TETRA band 1 20002 = TETRA band 2 20003 = TETRA band 3 20004 = TETRA band 4 20005 = TETRA band 5 20006 = TETRA band 6 20007 = TETRA band 7 20008 = TETRA band 8 20009 = TETRA band 9 20010 = TETRA band 10 20011 = TETRA band 11 20012 = TETRA band 12 20013 = TETRA band 13 20014 = TETRA band 14 20015 = TETRA band 15 29999 = TETRA

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535
Old Cell ID	Integer	Old cell identification Cell identification of the old cell. Range: 0 – 268435455
Old band	Integer	Old band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9

	50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
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Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535
Old Cell ID	Integer	Old cell identification Cell identification of the old cell. Range: 0 – 268435455
Old band	Integer	Old band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA

Parameters for LTE [\[Top\]](#)

Name	Type	Description
Old TAC	Integer	Old tracking area code Range: 0 – 65535
Old Cell ID	Integer	Old cell identification Cell identification of the old cell. Range: 0 – 268435455
Old band	Integer	Old band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27

70028 = LTE FDD 700 band 28
 70029 = LTE FDD 700 band 29
 This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD

Parameters for cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
Old band	Integer	<p>Old band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14</p>

US PCS 1.9 GHz.
 100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 120007 = EVDO 700 band 7
 North American cellular 700 MHz band.
 120008 = EVDO 1800 band 8
 1800 MHz band.
 120009 = EVDO 900 band 9
 900 MHz band.
 120010 = EVDO 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 120011 = EVDO 400 PAMR band 11

		European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Old ch	Integer	Old channel number Channel number of the old cell.
Old PN	Integer	Old pilot number Pilot number of the old cell. Range: 0 – 511

Parameters for GAN WLAN [\[Top\]](#)

Name	Type	Description
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535
Old Cell ID	Integer	Old cell identification Cell identification of the old cell. Range: 0 – 65535
Old band	Integer	Old band 219999 = GAN WLAN

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
Old band	Integer	Old band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN
Old ch	Integer	Old channel number Channel number of the old cell.
Old CC	Integer	Old color code Color code of the old cell. Range: 0 – 15

Current system parameters [\[Top\]](#)

Name	Type	Description
Serving sys.	Integer	Serving system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 55 = iDEN
#Params	Integer	Number of parameters

Parameters for GSM [\[Top\]](#)

Name	Type	Description
LAC	Integer	Location area code Location area code of the new cell. Range: 0 – 65535
Cell ID	Integer	Cell identification Cell identification of the new cell. Range: 0 – 268435455
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
LAC	Integer	Location area code Location area code of the new cell. Range: 0 – 65535
Cell ID	Integer	Cell identification Cell identification of the new cell. Range: 0 – 65535
Band	Integer	Band 20001 = TETRA band 1 20002 = TETRA band 2 20003 = TETRA band 3 20004 = TETRA band 4 20005 = TETRA band 5 20006 = TETRA band 6 20007 = TETRA band 7 20008 = TETRA band 8 20009 = TETRA band 9 20010 = TETRA band 10 20011 = TETRA band 11 20012 = TETRA band 12 20013 = TETRA band 13 20014 = TETRA band 14 20015 = TETRA band 15 29999 = TETRA

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
LAC	Integer	Location area code Location area code of the new cell. Range: 0 – 65535
Cell ID	Integer	Cell identification Cell identification of the new cell. Range: 0 – 268435455
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10

50011 = UMTS FDD 1400 band 11
50012 = UMTS FDD 700 band 12
50013 = UMTS FDD 700 band 13
50014 = UMTS FDD 700 band 14
50019 = UMTS FDD 850 band 19
50020 = UMTS FDD 800 band 20
50021 = UMTS FDD 1500 band 21
50022 = UMTS FDD 3500 band 22
50025 = UMTS FDD 1900 band 25
50026 = UMTS FDD 850 band 26
59999 = UMTS FDD

Parameters for UMTS TD-SCDMA |[Top](#)|

Name	Type	Description
LAC	Integer	Location area code Location area code of the new cell. Range: 0 – 65535
Cell ID	Integer	Cell identification Cell identification of the new cell. Range: 0 – 268435455
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA

Parameters for LTE |[Top](#)|

Name	Type	Description
New TAC	Integer	New tracking area code Range: 0 – 65535
Cell ID	Integer	Cell identification Cell identification of the new cell. Range: 0 – 268435455
Band	Integer	Band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29

This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD

Parameters for cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band. 100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band. 100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 100007 = cdmaOne 700 band 7 North American cellular 700 MHz band. 100008 = cdmaOne 1800 band 8 1800 MHz band. 100009 = cdmaOne 900 band 9 900 MHz band. 100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band. 100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band. 100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension. 100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.

100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 120007 = EVDO 700 band 7
 North American cellular 700 MHz band.
 120008 = EVDO 1800 band 8
 1800 MHz band.
 120009 = EVDO 900 band 9
 900 MHz band.
 120010 = EVDO 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 120011 = EVDO 400 PAMR band 11
 European PAMR 400 MHz band.

		120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Ch	Integer	Channel number Channel number of the new cell.
PN	Integer	Pilot number Pilot number of the new cell. Range: 0 – 511

Parameters for GAN WLAN [\[Top\]](#)

Name	Type	Description
LAC	Integer	Location area code Location area code of the new cell. Range: 0 – 65535
Cell ID	Integer	Cell identification Cell identification of the new cell. Range: 0 – 65535
Band	Integer	Band 219999 = GAN WLAN

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN
Ch	Integer	Channel number Channel number of the new cell.
CC	Integer	Color code Color code of the new cell. Range: 0 – 15

Cell reselection information (CRELI)

Event ID	CRELI
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	Always
Description	Recorded during the data transfer for LTE to LTE, LTE to HSPA, and HSPA to LTE cell

	reselection and redirection.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
CRS U-plane interruption	Integer	Cell reselection U-plane interruption time The time from the last packet in the old cell to the first packet in the new cell. This parameter is only recorded during the data transfer and only for LTE to LTE, LTE to HSPA, and HSPA to LTE cell reselections and redirections. Minimum value: 0 Unit: ms

Soft handover (SHO)

Event ID	SHO
Cellular systems	UMTS FDD,cdmaOne,CDMA 1x,EVDO
Record state	Call connection and packet active state
Description	Recorded when the active set changes. Event information is based on RRC signaling with UMTS FDD.
Tools	Nemo Outdoor

Parameters |Parameters for UMTS FDD |Parameters for cdmaOne, CDMA 1x, and EVDO |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for UMTS FDD |Top|

Name	Type	Description
SHO status	Integer	Soft handover status 1 = Successful handover 2 = Failed handover
RRC cause	Integer	RRC cause This is the same as a failure cause defined by 3GPP TS 25.331 subclause 10.3.3.13. 0 = Configuration unsupported 1 = Physical channel failure 2 = Incompatible simultaneous reconfiguration 3 = Protocol error 4 = Compressed mode runtime error 5 = Cell update occurred 6 = Invalid configuration 7 = Configuration incomplete 8 = Unsupported measurement

		9 = MBMS session already received correctly 10 = Lower priority MBMS service
#SCs added	Integer	Number of scrambling codes added
#SCs removed	Integer	Number of scrambling codes removed
Added SC	Integer	Added scrambling code number
Remove SC	Integer	Removed scrambling code number

Parameters for cdmaOne, CDMA 1x, and EVDO [|Top|](#)

Name	Type	Description
#Pilot added	Integer	Number of pilots added
#Pilot removed	Integer	Number of pilots removed
Added PN	Integer	Added pilot number
Remove PN	Integer	Removed pilot number
SHO status	Integer	Soft handover status 1 = Successful handover 2 = Failed handover
SHO type	Integer	Soft handover type 1 = Normal 2 = Virtual

Location area update attempt (LUA)

Event ID	LUA
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Always
Description	Recorded when the mobile starts location area update using MM layer3 signaling message. This measurement event begins the location area update state.
Tools	Nemo Outdoor, Nemo Handy

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Name	Type	Description
Location area update context ID	Context	Location area update context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN
LAU type	Integer	Location area update type 1 = Combined location and routing/tracking area update 2 = Normal location area update 3 = Periodic update 4 = IMSI/ITSI attach 5 = Roaming location updating (TETRA) 6 = Migrating location updating (TETRA) 7 = Call restoration roaming location updating (TETRA) 8 = Call restoration migrating location updating (TETRA)

9 = Demand location updating (TETRA) 10 = Disabled MS updating (TETRA)

Location area update successful (LUS)

Event ID	LUS
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Location area update state
Description	Recorded based on MM layer3 signaling when location area update has been successful. This measurement event terminates the location area update state.
Tools	Nemo Outdoor, Nemo Handy

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Name	Type	Description
Location area update context ID	Context	Location area update context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535
LAC	Integer	Location area code Location area code of the new cell. Range: 0 – 65535
MCC	Integer	Mobile country code See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	Mobile network code Range: 0 – 999

Location area update fail (LUF)

Event ID	LUF
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Location area update state
Description	Recorded based on MM layer3 signaling when location area update has failed. This measurement event terminates the location area update state.

Tools	Nemo Outdoor, Nemo Handy
Parameters	Parameters for GSM, UMTS, and GAN WLAN Parameters for TETRA

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Name	Type	Description
Location area update context ID	Context	Location area update context ID
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN
LUF status	Integer	Location update failure status 1 = Timeout 2 = Rejected by network 3 = Rejected by network after combined location and routing area update (cause value is GMM cause)
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535

Parameters for GSM, UMTS, and GAN WLAN |Top|

Name	Type	Description
MM cause	Integer	Mobility management cause 1 = Unallocated TMSI 2 = IMSI unknown HLR 3 = Illegal MS 4 = IMSI unknown in VLR 5 = IMEI not accepted 6 = Illegal ME 7 = GPRS services not allowed Combined LAU and RAU only. 8 = GPRS services and non-GPRS services not allowed Combined LAU and RAU only. 9 = MS identity cannot be derived by the network Combined LAU and RAU only. 10 = Implicitly detached Combined LAU and RAU only. 11 = PLMN not allowed 12 = Location Area not allowed 13 = National roaming not allowed in this location area 14 = GPRS services not allowed in this PLMN Combined LAU and RAU only. 15 = No suitable cells in location area 16 = MSC temporarily not reachable Combined LAU and RAU only. 17 = Network failure 20 = MAC failure 21 = Synch failure 22 = Congestion 23 = GSM authentication unacceptable 32 = Service option not supported 33 = Requested service option not subscribed 34 = Service option temporarily out of order 38 = Call cannot be identified 40 = No PDP context activated Combined LAU and RAU only. 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message type not compatible with the protocol state 99 = Information element non-existent or not implemented 100 = Conditional IE error 101 = Message not compatible with the protocol state 111 = Protocol error, unspecified

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
MM cause	Integer	Mobility management cause 1 = ITSI unknown 2 = Illegal MS 3 = LA not allowed 4 = LA unknown 5 = Network failure 6 = Congestion 7 = Service not supported 8 = Service not subscribed 9 = Mandatory element error 10 = Message consistency error 11 = Roaming not supported 12 = Migration not supported 13 = No cipher KSG 14 = Identified cipher KSG not supported 15 = Requested cipher key type not available 16 = Identified cipher key not available 17 = Incompatible service

Channel info (CHI)

Event ID	CHI
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO,GAN WLAN,WiMAX,AMPS,DAMPS,iDEN
Record state	Always
Description	Recorded when channel configuration information changes.
Tools	Nemo Outdoor, Nemo Handy

[Parameters](#) | [Parameters for GSM](#) | [Parameters for TETRA](#) | [Parameters for UMTS FDD](#) | [Parameters for UMTS TD-SCDMA](#) | [Parameters for LTE](#)
[Parameters for cdmaOne and CDMA 1x](#) | [Parameters for EVDO](#) | [Parameters for GAN WLAN](#) | [Parameters for WiMAX](#) | [Parameters for AMPS and NAMPS](#)
[Parameters for DAMPS](#) | [Parameters for iDEN](#) |

Parameters [\[Top\]](#)

Name	Type	Description
Serving sys.	Integer	Serving system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 25 = WiMAX 51 = AMPS 52 = NAMPS 53 = DAMPS 55 = iDEN

Parameters for GSM [|Top](#)

Name	Type	Description
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
Ch type	Integer	GSM channel type 1 = Control channel 2 = Traffic channel
Ch	Integer	Channel number During the active state this is the TCH channel number. If the hopping is enabled the first hopping channel is reported.
Cell ID	Integer	Cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 65535
LAC	Integer	Location area code Range: 0 – 65535
DTX UL	Integer	DTX uplink 0 = DTX not in use 1 = DTX in use
RLT max	Integer	Radiolink timeout maximum Defines the maximum value for the radio link timeout counter. Range: 4 – 64
Ext. ch type	Integer	Extended channel type 1 = BCCH 2 = CCCH 3 = CBCH 4 = SDCCH 5 = RACH 10 = TCH HR/0 TCH half rate, first half. 11 = TCH HR/1 TCH half rate, second half. 12 = TCH FR TCH full rate. 13 = TCH EFR TCH enhanced full rate. 14 = TCH FR 14.4 data TCH full rate, 14.4 kbs data. 15 = TCH FR 9.6 data 16 = TCH FR 7.2 data 17 = TCH FR 4.8 data 18 = TCH FR 2.4 data 19 = TCH HR/0 4.8 data 20 = TCH HR/1 4.8 data 21 = TCH HR/0 2.4 data 22 = TCH HR/1 2.4 data 23 = TCH FR FACCH 24 = TCH HR/0 FACCH 25 = TCH HR/1 FACCH 26 = AFS AMR adaptive full rate speech. 27 = AHS AMR adaptive half rate speech. 28 = WFS AMR adaptive full rate for wideband speech. 50 = PBCCCH 51 = PCCCH 60 = PDTCH
TSL	Integer	Timeslot number
BCCH ch	Integer	BCCH channel

BSIC	Integer	Base station identification code Range: 0 – 63
BCCH band	Integer	BCCH band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for TETRA [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 20001 = TETRA band 1 20002 = TETRA band 2 20003 = TETRA band 3 20004 = TETRA band 4 20005 = TETRA band 5 20006 = TETRA band 6 20007 = TETRA band 7 20008 = TETRA band 8 20009 = TETRA band 9 20010 = TETRA band 10 20011 = TETRA band 11 20012 = TETRA band 12 20013 = TETRA band 13 20014 = TETRA band 14 20015 = TETRA band 15 29999 = TETRA
Subchannel	Integer	Subchannel 1 = MCCH (main control channel) 2 = TCH (traffic channel)
Ch	Integer	Channel number
LAC	Integer	Location area code Range: 0 – 65535
Extended subchannel	Integer	Extended subchannel 0 = Speech, TCH / S 1 = Data, Unprotected TCH / 7.2 2 = Data, Low protection, TCH / 4.8, N=1 3 = Data, Low protection, TCH / 4.8, N=4 4 = Data, Low protection, TCH / 4.8, N=8 5 = Data, High protection, TCH / 2.4, N=1 6 = Data, High protection, TCH / 2.4, N=4 7 = Data, High protection, TCH / 2.4, N=8
Encryption	Integer	Encryption 0 = Clear mode 1 = End-to-end encryption
Slot number	Integer	Slot number Range: 1 – 4

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10

		50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
RRC state	Integer	RRC state 1 = Idle 2 = URA PCH 3 = Cell PCH 4 = Cell FACH 5 = Cell DCH
Ch	Integer	Channel number
Cell ID	Integer	Cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 268435455
LAC	Integer	Location area code Range: 0 – 65535
Addition window	Float	Addition window Addition window for event 1A. Cells within addition window range from the best serving CPICH will be added to the active set. The value is calculated using the following formula: $R1A - H1A / 2$ where R1A is reporting range constant for event 1A and H1A is hysteresis parameter for event 1A. See 3GPP TS 25.331. Range: -2 – 14 Unit: dB
Time to trigger 1A	Integer	Time to trigger 1A Indicates the period of time during which the event condition must be satisfied before sending a Measurement Report with event 1A. See 3GPP TS 25.331. Range: 0 – 5000 Unit: ms
Drop window	Float	Drop window Drop window for event 1B. Cell is removed from the active set if it falls below the drop window range from the best cell in the active set. The value is calculated using the following formula: $R1B + H1B / 2$ where R1B is reporting range constant for event 1B and H1B is hysteresis parameter for event 1B. See 3GPP TS 25.331. Range: 0 – 16 Unit: dB
Time to trigger 1B	Integer	Time to trigger 1B Indicates the period of time during which the event condition must be satisfied before sending a Measurement Report with event 1B. See 3GPP TS 25.331. Range: 0 – 5000 Unit: ms
Replacement window	Float	Replacement window If a monitored-set cell becomes better than a cell in the active set, the active set cell will be replaced with the better one. See 3GPP TS 25.331. Range: 0 – 2 Unit: dB
Time to trigger 1C	Integer	Time to trigger 1C Indicates the period of time during which the event condition must be satisfied before sending a Measurement Report with event 1C. See 3GPP TS 25.331. Range: 0 – 5000 Unit: ms
DL SF	Integer	Spreading factor downlink

		If multiple CCTrCh channels are used, the reported spreading factor is for CCTrCh with physical control channel. Range: 0 – 512
Min UL SF	Integer	Min spreading factor uplink Minimum allowed uplink spreading factor. Range: 4 – 256
DRX cycle	Integer	DRX cycle length Defines how often paging indications are monitored. Range: 0 – 512
Max TX power	Float	Max TX power Maximum allowed uplink power. Range: -50 – 40 Unit: dBm
Treselection	Integer	Treselection The time which the new cell has had to be ranked better than the old cell before cell reselection is possible. See 3GPP TS 25.304 subclause 5.2.6.1.4. Unit: s

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
RRC state	Integer	RRC state 1 = Idle 2 = URA PCH 3 = Cell PCH 4 = Cell FACH 5 = Cell DCH
Ch	Integer	Channel number
Cell params ID	Integer	Cell parameters ID Range: 0 – 127
Cell ID	Integer	Cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 268435455
LAC	Integer	Location area code Range: 0 – 65535
DRX cycle	Integer	DRX cycle length Defines how often paging indications are monitored. Range: 0 – 512
Max TX power	Float	Max TX power Maximum allowed uplink power. Range: -50 – 40 Unit: dBm
Treselection	Integer	Treselection The time which the new cell has had to be ranked better than the old cell before cell reselection is possible. See 3GPP TS 25.304 subclause 5.2.6.1.4. Unit: s

Parameters for LTE [\[Top\]](#)

Name	Type	Description
Band	Integer	Band

70001 = LTE FDD 2100 band 1
 70002 = LTE FDD 1900 band 2
 70003 = LTE FDD 1800 band 3
 70004 = LTE FDD 2100 AWS band 4
 70005 = LTE FDD 850 band 5
 Band 850 is also known as band 800.
 70006 = LTE FDD 850 band 6
 70007 = LTE FDD 2600 band 7
 70008 = LTE FDD 900 band 8
 70009 = LTE FDD 1800 band 9
 70010 = LTE FDD 2100 band 10
 70011 = LTE FDD 1400 band 11
 70012 = LTE FDD 700 band 12
 70013 = LTE FDD 700 band 13
 70014 = LTE FDD 700 band 14
 70017 = LTE FDD 700 band 17
 70018 = LTE FDD 850 band 18
 70019 = LTE FDD 850 band 19
 70020 = LTE FDD 800 band 20
 70021 = LTE FDD 1500 band 21
 70022 = LTE FDD 3500 band 22
 70023 = LTE FDD 2200 band 23
 70024 = LTE FDD 1500 band 24
 70025 = LTE FDD 1900 band 25
 70026 = LTE FDD 850 band 26
 70027 = LTE FDD 800 band 27
 70028 = LTE FDD 700 band 28
 70029 = LTE FDD 700 band 29
 This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD

RRC state	Integer	RRC state See 3GPP TS 136.331 subclause 4.2.1. 1 = Idle This is the same as E-UTRA RRC_IDLE state. 2 = Connected This is the same as E-UTRA RRC_CONNECTED state.
DL bandwidth	Integer	DL bandwidth 6 = 1.4 MHz 15 = 3 MHz

		25 = 5 MHz 50 = 10 MHz 75 = 15 MHz 100 = 20 MHz
Ch	Integer	Channel number
PCI	Integer	Physical cell identity Range: 0 – 503
Cell ID	Integer	Cell identification Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID). Range: 0 – 268435455
TAC	Integer	Tracking area code Tracking area code of the current serving cell. See 3GPP TS 124.301 subclause 9.9.3.32. Range: 0 – 65535
Max TX power	Float	Max TX power Maximum allowed uplink power. Range: -50 – 40 Unit: dBm
TM	Integer	Transmission mode See 3GPP TS 136.213 subclass 7.1. 1 = Single antenna (P0) Single-antenna port 0. Same as transmission mode 1. 2 = Transmit diversity Transmit diversity using SFBC. Same as transmission mode 2. 3 = Open SM Open-loop spatial multiplexing a.k.a. large delay cyclic delay diversity (CDD) or transmit diversity. Same as transmission mode 3. 4 = Closed SM Closed-loop spatial multiplexing or transmit diversity. Same as transmission mode 4. 5 = MU-MIMO Multi-user MIMO or transmit diversity. Same as transmission mode 5. 6 = Closed SM rank 1 Closed-loop spatial multiplexing using single transmission layer (similar with mode 5 with rank fixed to one). Same as transmission mode 6. 7 = Single antenna (P5) Single-antenna port 5, or port 0 (if one PBCH antenna port) or transmit diversity. Same as transmission mode 7. 8 = Dual-layer (P7, P8) Dual layer port 7 and 8 or single-antenna port 7 or 8 transmission. Same as transmission mode 8. 9 = 8 layer (P7-P14) Up to 8 layer transmission (P7-P14).
Antenna ports	Integer	Detected TX antenna ports 0 = Port 0 1 = Ports 0-1 3 = Ports 0-3
UL/DL config	Integer	TDD UL/DL configuration TDD UL/DL configuration defines the symbols that are allocated for uplink and downlink. See 3GPP 36.211 subclause 4.2. 0 = Config 0 Allocated uplink subframes are: 2, 3, 4, 7, 8, 9. 1 = Config 1 Allocated uplink subframes are: 2, 3, 7, 8. 2 = Config 2 Allocated uplink subframes are: 2, 7. 3 = Config 3 Allocated uplink subframes are: 2, 3, 4. 4 = Config 4 Allocated uplink subframes are: 2, 3. 5 = Config 5 Allocated uplink subframe is: 2. 6 = Config 6

		Allocated uplink subframes are: 2, 3, 4, 7, 8.
CP	Integer	Cyclic prefix UL This is uplink cyclic prefix. Extended cyclic prefix can reduce inter-symbol-interference when multipath components have significant arrival time deviation from each other. 1 = Normal 15 kHz 2 = Extended 15 kHz
Root sequence	Integer	RACH logical root sequence index Logical root Zadoff-Chu sequence order number. See 3GPP 136.211 subclause 5.7.2. Range: 0 – 837
C-RNTI	Integer	C-RNTI Cell Radio Network Temporary Identifier. A dynamic identity assigned by eNodeB and is valid as long as the UE is connected to that eNB.
#SCells	Integer	Number of secondary serving cells Range: 0 – 3
#Params/SCell	Integer	Number of parameters per secondary serving cell
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1
Band	Integer	SCell band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29 This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37

		80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43 80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD
Bandwidth	Integer	SCell bandwidth 6 = 1.4 MHz 15 = 3 MHz 25 = 5 MHz 50 = 10 MHz 75 = 15 MHz 100 = 20 MHz
Channel	Integer	SCell channel
PCI	Integer	SCell physical cell identity Range: 0 – 503
TM	Integer	SCell transmission mode See 3GPP TS 136.213 subclass 7.1. 1 = Single antenna (P0) Single-antenna port 0. Same as transmission mode 1. 2 = Transmit diversity Transmit diversity using SFBC. Same as transmission mode 2. 3 = Open SM Open-loop spatial multiplexing a.k.a. large delay cyclic delay diversity (CDD) or transmit diversity. Same as transmission mode 3. 4 = Closed SM Closed-loop spatial multiplexing or transmit diversity. Same as transmission mode 4. 5 = MU-MIMO Multi-user MIMO or transmit diversity. Same as transmission mode 5. 6 = Closed SM rank 1 Closed-loop spatial multiplexing using single transmission layer (similar with mode 5 with rank fixed to one). Same as transmission mode 6. 7 = Single antenna (P5) Single-antenna port 5, or port 0 (if one PBCH antenna port) or transmit diversity. Same as transmission mode 7. 8 = Dual-layer (P7, P8) Dual layer port 7 and 8 or single-antenna port 7 or 8 transmission. Same as transmission mode 8. 9 = 8 layer (P7-P14) Up to 8 layer transmission (P7-P14).
Antenna ports	Integer	SCell detected TX antenna ports 0 = Port 0 1 = Ports 0-1 3 = Ports 0-3
UL/DL config	Integer	SCell TDD UL/DL configuration TDD UL/DL configuration defines the symbols that are allocated for uplink and downlink. See 3GPP 36.211 subclause 4.2. 0 = Config 0 Allocated uplink subframes are: 2, 3, 4, 7, 8, 9. 1 = Config 1 Allocated uplink subframes are: 2, 3, 7, 8. 2 = Config 2 Allocated uplink subframes are: 2, 7. 3 = Config 3

		<p>Allocated uplink subframes are: 2, 3, 4.</p> <p>4 = Config 4</p> <p>Allocated uplink subframes are: 2, 3.</p> <p>5 = Config 5</p> <p>Allocated uplink subframe is: 2.</p> <p>6 = Config 6</p> <p>Allocated uplink subframes are: 2, 3, 4, 7, 8.</p>
CP	Integer	<p>SCell cyclic prefix</p> <p>This is uplink cyclic prefix. Extended cyclic prefix can reduce inter-symbol-interference when multipath components have significant arrival time deviation from each other.</p> <p>1 = Normal 15 kHz</p> <p>2 = Extended 15 kHz</p>
Special subframe config	Integer	<p>SCell TDD special subframe configuration</p> <p>This parameter defines the duration of special subframes between uplink and downlink switching. See 3GPP 136.211 subclause 4.2.</p> <p>0 = Config 0</p> <p>1 = Config 1</p> <p>2 = Config 2</p> <p>3 = Config 3</p> <p>4 = Config 4</p> <p>5 = Config 5</p> <p>6 = Config 6</p> <p>7 = Config 7</p> <p>8 = Config 8</p> <p>9 = Config 9</p>
EMM substate	Integer	<p>EMM substate</p> <p>See 3GPP 124.301 subclause 5.1.3.</p> <p>0 = Null</p> <p>100 = Deregistered, normal service</p> <p>101 = Deregistered, attempting to attach</p> <p>102 = Deregistered, limited service</p> <p>103 = Deregistered, PLMN search</p> <p>104 = Deregistered, attach needed</p> <p>105 = Deregistered, no cell available</p> <p>106 = Deregistered, no IMSI</p> <p>200 = Registered initiated</p> <p>201 = Registered initiated, waiting NW response</p> <p>202 = Registered initiated, waiting ESM response</p> <p>300 = Registered, normal service</p> <p>301 = Registered, attempting to update</p> <p>302 = Registered, limited service</p> <p>303 = Registered, PLMN search</p> <p>304 = Registered, update needed</p> <p>305 = Registered, no cell available</p> <p>306 = Registered, IMSI detach initiated</p> <p>307 = Registered, attempting to update MM</p> <p>400 = Deregistered initiated</p> <p>500 = TAU initiated, normal service</p> <p>Tracking area update initiated.</p> <p>501 = TAU initiated, attempting to update</p> <p>502 = TAU initiated, limited service</p> <p>503 = TAU initiated, PLMN search</p> <p>504 = TAU initiated, update needed</p> <p>505 = TAU initiated, no cell available</p> <p>506 = TAU initiated, IMSI detach initiated</p> <p>507 = TAU initiated, attempting to update MM</p> <p>600 = SR initiated, normal service</p> <p>Service request initiated.</p> <p>601 = SR initiated, attempting to update</p> <p>602 = SR initiated, limited service</p> <p>603 = SR initiated, PLMN search</p> <p>604 = SR initiated, update needed</p> <p>605 = SR initiated, no cell available</p> <p>606 = SR initiated, IMSI detach initiated</p> <p>607 = SR initiated, attempting to update MM</p>
Periodic RM	Integer	<p>CQI periodic reporting mode</p> <p>See 3GPP TS 136.213 subclause 7.2.2.</p> <p>1 = Mode 1-0</p>

		<p>Wideband CQI without PMI. Valid in transmission modes 1-3 and 7.</p> <p>2 = Mode 1-1 Wideband CQI with PMI. Valid in transmission modes 4-6.</p> <p>3 = Mode 2-0 UE selected CQI without PMI. Valid in transmission modes 1-3 and 7.</p> <p>4 = Mode 2-1 UE selected CQI with PMI. Valid in transmission modes 4-6.</p>
Aperiodic RM	Integer	<p>CQI aperiodic reporting mode This is the same as cqi-ReportModeAperiodic parameter in CQI-ReportConfig. More information see 3GPP TS 136.213 subclause 7.2.1.</p> <p>1 = Mode 1-2 Wideband CQI with multiple PMI. Valid in transmission modes 4 and 6.</p> <p>2 = Mode 2-0 UE selected CQI without PMI. Valid in transmission modes 1-3 and 7.</p> <p>3 = Mode 2-2 UE selected CQI with multiple PMI. Valid in transmission modes 4 and 6.</p> <p>4 = Mode 3-0 Higher layer-configured CQI without PMI. Valid in transmission modes 1-3 and 7.</p> <p>5 = Mode 3-1 Higher layer-configured CQI with single PMI. Valid in transmission modes 4-6.</p>
Special subframe config	Integer	<p>TDD special subframe configuration This parameter defines the duration of special subframes between uplink and downlink switching. See 3GPP 136.211 subclause 4.2.</p> <p>0 = Config 0 1 = Config 1 2 = Config 2 3 = Config 3 4 = Config 4 5 = Config 5 6 = Config 6 7 = Config 7 8 = Config 8 9 = Config 9</p>
TTI bundling	Integer	<p>TTI bundling See 3GPP TS 136.321 subclause 5.4.2.</p> <p>0 = Disabled 1 = Enabled</p>

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p>

		<p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.</p> <p>100015 = cdmaOne 2100 AWS band 15</p> <p>100016 = cdmaOne 2500 band 16 US 2.5 GHz.</p> <p>100018 = cdmaOne 700 public safety band 18</p> <p>100019 = cdmaOne 700 lower band 19</p> <p>100020 = cdmaOne 1500 L-band band 20</p> <p>100021 = cdmaOne 2000 S-band band 21</p> <p>109999 = cdmaOne</p> <p>110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band.</p> <p>110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band.</p> <p>110008 = CDMA 1x 1800 band 8 1800 MHz band.</p> <p>110009 = CDMA 1x 900 band 9 900 MHz band.</p> <p>110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz.</p> <p>110015 = CDMA 1x 2100 AWS band 15</p> <p>110016 = CDMA 1x 2500 band 16 US 2.5 GHz.</p> <p>110018 = CDMA 1x 700 public safety band 18</p> <p>110019 = CDMA 1x 700 lower band 19</p> <p>110020 = CDMA 1x 1500 L-band band 20</p> <p>110021 = CDMA 1x 2000 S-band band 21</p> <p>119999 = CDMA 1x</p>
Ch type	Integer	<p>CDMA channel type</p> <p>1 = Control channel</p> <p>2 = Traffic channel</p> <p>3 = Synch channel</p> <p>4 = Access channel</p>
Ch	Integer	Channel number
MCC (CDMA)	Integer	<p>MCC (CDMA)</p> <p>See ITU-T recommendation E.212.</p> <p>Range: 0 – 999</p>
SID (System ID)	Integer	<p>SID (System ID)</p> <p>Range: 0 – 32767</p>

NID (Network ID)	Integer	NID (Network ID)
Slotted mode	Integer	Slotted mode Slotted mode is used for power conservation while a mobile station is in idle mode. The MS monitors only selected time slots on the Paging Channel. 0 = Disabled 1 = Enabled
SEARCH_WIN_A	Integer	SEARCH_WIN_A (Size of active search window) Size of active search window. Searchers are used to find multipath signals to improve signal reception. Search_Win_A (active) is used to search active and candidate pilots. Active sets are channels that are associated with the forward channel traffic which are assigned to the mobile station. Candidate pilots are searched from additional multipaths in the same channels.
SEARCH_WIN_N	Integer	SEARCH_WIN_N (Size of neighbor search window) Size of neighbor search window. Searchers are used to find multipath signals to improve signal reception. Search_Win_N (neighbor) is used to search adjacent pilots. Candidate set of pilots received by the mobile station whose power exceeds a certain threshold and could be demodulated.
SEARCH_WIN_R	Integer	SEARCH_WIN_R (Size of remaining search window) Searchers are used to find multipath signals to improve signal reception. Search_Win_R (remaining) is used to search the remaining pilot set. Remaining set of all possible pilots in the system that are not currently assigned to any of the other sets.
T_ADD	Integer	T_ADD (Pilot detection threshold) To get the actual T_ADD value, divide the value by two and change the sign.
T_DROP	Integer	T_DROP (Pilot drop threshold) To get the actual T_ADD value, divide the value by two and change the sign.
T_TDROD	Integer	T_TDROD (Pilot drop timer threshold)
T_COMP	Integer	T_COMP (Comparison threshold) Active set versus candidate set comparison threshold (L3 value). To get the actual T_ADD value, divide the value by two and change the sign.
P_REV	Integer	P_REV (protocol revision level) 1 = J-STD-008 in PCS Band Only 2 = IS-95 in Cellular Band Only 3 = IS-95A + TSB74 4 = IS-95B Partial 5 = IS-95B Full 6 = IS-2000 Release 0 7 = IS-2000 Release A 8 = IS-2000 Release B Partial 9 = IS-2000 Release B Full 10 = IS-2000 Release C 11 = IS-2000 Release D (1xEV-DV)
MIN_P_REV	Integer	MIN_P_REV (Minimum protocol revision level) 1 = J-STD-008 in PCS Band Only 2 = IS-95 in Cellular Band Only 3 = IS-95A + TSB74 4 = IS-95B Partial 5 = IS-95B Full 6 = IS-2000 Release 0 7 = IS-2000 Release A 8 = IS-2000 Release B Partial 9 = IS-2000 Release B Full 10 = IS-2000 Release C 11 = IS-2000 Release D (1xEV-DV)
MNC (CDMA)	Integer	MNC (CDMA) Range: 0 – 999

Name	Type	Description
Band	Integer	<p>Band</p> <p>120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>120001 = EVDO 1900 band 1 North American PCS 1900 MHz band.</p> <p>120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>120007 = EVDO 700 band 7 North American cellular 700 MHz band.</p> <p>120008 = EVDO 1800 band 8 1800 MHz band.</p> <p>120009 = EVDO 900 band 9 900 MHz band.</p> <p>120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>120014 = EVDO 1900 band 14 US PCS 1.9 GHz.</p> <p>120015 = EVDO 2100 AWS band 15</p> <p>120016 = EVDO 2500 band 16 US 2.5 GHz.</p> <p>120018 = EVDO 700 public safety band 18</p> <p>120019 = EVDO 700 lower band 19</p> <p>120020 = EVDO 1500 L-band band 20</p> <p>120021 = EVDO 2000 S-band band 21</p> <p>129999 = EVDO</p>
SID (System ID)	Integer	<p>SID (System ID)</p> <p>Range: 0 – 32767</p>

Parameters for GAN WLAN [\[Top\]](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>219999 = GAN WLAN</p>
Cell ID	Integer	<p>Cell identification</p> <p>Cell identity of the current cell. For GSM this is 16 bit value, for UMTS this is 28 bit value (RNC ID + 16 bit cell ID), and for LTE this is 28 bit value (eNB ID + 8 bit cell ID).</p> <p>Range: 0 – 268435455</p>
LAC	Integer	<p>Location area code</p> <p>Range: 0 – 65535</p>

Parameters for WiMAX [\[Top\]](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>259999 = WiMAX</p>
MAC state	Integer	<p>WiMAX MAC state</p> <p>0 = Not initialized</p> <p>1 = Physical failure</p> <p>2 = MAC failure</p> <p>10 = Network entry initial synchronization</p>

		11 = Network entry initial DCD 12 = Network entry initial UCD 13 = Network entry initial ranging 14 = Network entry initial sign-on 15 = Network entry initial negotiation 16 = Network entry initial registration 17 = Network entry initial PKM 30 = Normal operation 31 = Sleep mode 40 = Handover periodic scan 41 = Handover transition 42 = Handover network entry 60 = Idle mode 61 = Idle mode location update 62 = Idle mode paging 63 = Idle mode network entry
Frequency	Float	WiMAX frequency Unit: MHz
BS ID	String	WiMAX base station ID Six colon separated hex values.
FFT Size	Integer	WiMAX FFT size
Bandwidth	Float	WiMAX bandwidth Unit: MHz
Frame ratio DL	Integer	WiMAX frame ratio downlink Range: 0 – 100
Frame ratio UL	Integer	WiMAX frame ratio uplink Range: 0 – 100
MAP coding	Integer	WiMAX coding type used on DL-MAP 1 = Tail biting convolutional code (CC) 2 = Block turbo code (BTC) 3 = Convolutional turbo code (CTC) 4 = Zero tail convolutional code (ZTCC) 5 = Low density parity check code (LDPC)
MAP repetition	Integer	WiMAX repetition coding used on DL-MAP 1 = No repetition 2 = Repetition coding 2 4 = Repetition coding 4 6 = Repetition coding 6

Parameters for AMPS and NAMPS [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 510800 = AMPS 800 519999 = AMPS 520800 = NAMPS 800 529999 = NAMPS
Ch type	Integer	AMPS channel type 1 = Analog control channel 2 = Analog traffic channel
Ch	Integer	Channel number

Parameters for DAMPS [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 530800 = DAMPS 800 531900 = DAMPS 1900 539999 = DAMPS
Ch type	Integer	TDMA channel type 1 = Digital control channel 2 = Digital traffic channel 3 = Data channel

Ch	Integer	Channel number
NW type	Integer	NW type
PSID1	Integer	PSID1 PSID (private system identification) value 1.
PSID2	Integer	PSID2 PSID (private system identification) value 2.
PSID3	Integer	PSID3 PSID (private system identification) value 3.
PSID4	Integer	PSID4 PSID (private system identification) value 4.
LAREG	Integer	LAREG Range: 0 – 1
RNUM	Integer	RNUM If LAREG parameter has the value of 1, RNUM parameter will have a value.
REG PERIOD	Integer	REG PERIOD If not available, set to -1.

Parameters for iDEN [|Top](#)

Name	Type	Description
Band	Integer	Band 550001 = iDEN proprietary 550002 = iDEN 800 standard 550003 = iDEN 800 extended 550004 = iDEN 900 550005 = iDEN 1500 559999 = iDEN
Ch	Integer	Channel number
CC	Integer	Color code Range: 0 – 15
Frequency	Integer	Frequency Unit: Hz
Cell ID	Integer	Cell identifier Range: 0 – 65535
Adaptation rate	Integer	Adaptation rate Range: 0 – 4
Cutback level	Float	Cutback level Range: 0 – -100 Unit: dB
Monitor all flag	Integer	Monitor all flag Range: 0 – 255
Monitor paging subchannel	Integer	Monitor paging subchannel Range: 0 – 255
Interconnect paging subchannel	Integer	Interconnect paging subchannel Range: 0 – 255
Packet data paging subchannel	Integer	Packet data paging subchannel Range: 0 – 255
Dispatch paging subchannel	Integer	Dispatch paging subchannel Range: 0 – 255
Interleave	Integer	Interleave Range: 0 – 255
Offset	Integer	Offset Range: 0 – 255
Subslot	Integer	Subslot 0 = Subslot A 1 = Subslot B
Extended color code	Integer	Extended color code Range: 0 – 15

Secondary system channel info (SCHI)

Event ID	SCHI
Cellular systems	cdmaOne, CDMA 1x, EVDO
Record state	Always
Description	Recorded for the secondary system with dual-radio devices when the information changes.
Tools	Nemo Outdoor, Nemo Handy

[Parameters](#) | [Parameters for cdmaOne and CDMA 1x](#) |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x

Parameters for cdmaOne and CDMA 1x [|Top|](#)

Name	Type	Description
Band	Integer	<p>Band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.</p> <p>100015 = cdmaOne 2100 AWS band 15</p> <p>100016 = cdmaOne 2500 band 16 US 2.5 GHz.</p>

		<p>100018 = cdmaOne 700 public safety band 18 100019 = cdmaOne 700 lower band 19 100020 = cdmaOne 1500 L-band band 20 100021 = cdmaOne 2000 S-band band 21 109999 = cdmaOne 110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band. 110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band. 110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band. 110008 = CDMA 1x 1800 band 8 1800 MHz band. 110009 = CDMA 1x 900 band 9 900 MHz band. 110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band. 110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band. 110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension. 110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz. 110015 = CDMA 1x 2100 AWS band 15 110016 = CDMA 1x 2500 band 16 US 2.5 GHz. 110018 = CDMA 1x 700 public safety band 18 110019 = CDMA 1x 700 lower band 19 110020 = CDMA 1x 1500 L-band band 20 110021 = CDMA 1x 2000 S-band band 21 119999 = CDMA 1x</p>
Ch type	Integer	<p>CDMA channel type 1 = Control channel 2 = Traffic channel 3 = Synch channel 4 = Access channel</p>
S.Ch	Integer	Secondary channel number
MCC (CDMA)	Integer	<p>MCC (CDMA) See ITU-T recommendation E.212. Range: 0 – 999</p>
SID (System ID)	Integer	<p>SID (System ID) Range: 0 – 32767</p>
NID (Network ID)	Integer	NID (Network ID)
Slotted mode	Integer	<p>Slotted mode Slotted mode is used for power conservation while a mobile station is in idle mode. The MS monitors only selected time slots on the Paging Channel. 0 = Disabled 1 = Enabled</p>
SEARCH_WIN_A	Integer	<p>SEARCH_WIN_A (Size of active search window) Size of active search window. Searchers are used to find multipath signals to improve signal reception. Search_Win_A (active) is used to search active and candidate pilots. Active sets are channels that are associated with the forward channel</p>

		traffic which are assigned to the mobile station. Candidate pilots are searched from additional multipaths in the same channels.
SEARCH_WIN_N	Integer	SEARCH_WIN_N (Size of neighbor search window) Size of neighbor search window. Searchers are used to find multipath signals to improve signal reception. Search_Win_N (neighbor) is used to search adjacent pilots. Candidate set of pilots received by the mobile station whose power exceeds a certain threshold and could be demodulated.
SEARCH_WIN_R	Integer	SEARCH_WIN_R (Size of remaining search window) Searchers are used to find multipath signals to improve signal reception. Search_Win_R (remaining) is used to search the remaining pilot set. Remaining set of all possible pilots in the system that are not currently assigned to any of the other sets.
T_ADD	Integer	T_ADD (Pilot detection threshold) To get the actual T_ADD value, divide the value by two and change the sign.
T_DROP	Integer	T_DROP (Pilot drop threshold) To get the actual T_ADD value, divide the value by two and change the sign.
T_TDROD	Integer	T_TDROD (Pilot drop timer threshold)
T_COMP	Integer	T_COMP (Comparison threshold) Active set versus candidate set comparison threshold (L3 value). To get the actual T_ADD value, divide the value by two and change the sign.
P_REV	Integer	P_REV (protocol revision level) 1 = J-STD-008 in PCS Band Only 2 = IS-95 in Cellular Band Only 3 = IS-95A + TSB74 4 = IS-95B Partial 5 = IS-95B Full 6 = IS-2000 Release 0 7 = IS-2000 Release A 8 = IS-2000 Release B Partial 9 = IS-2000 Release B Full 10 = IS-2000 Release C 11 = IS-2000 Release D (1xEV-DV)
MIN_P_REV	Integer	MIN_P_REV (Minimum protocol revision level) 1 = J-STD-008 in PCS Band Only 2 = IS-95 in Cellular Band Only 3 = IS-95A + TSB74 4 = IS-95B Partial 5 = IS-95B Full 6 = IS-2000 Release 0 7 = IS-2000 Release A 8 = IS-2000 Release B Partial 9 = IS-2000 Release B Full 10 = IS-2000 Release C 11 = IS-2000 Release D (1xEV-DV)
MNC (CDMA)	Integer	MNC (CDMA) Range: 0 – 999

WLAN channel info (WLANCHI)

Event ID	WLANCHI
Cellular systems	WLAN
Record state	Always

Description	Recorded when WLAN state changes.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for WLAN |

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Name	Type	Description
Measured sys.	Integer	Measured system 20 = WLAN

Parameters for WLAN |Top|

Name	Type	Description
WLAN state	Integer	WLAN state 0 = Disabled 1 = Enabled Note that in the future there can be other non-zero enabled-states.

GAN Channel info (GANCHI)

Event ID	GANCHI
Cellular systems	GAN WLAN
Record state	Always
Description	Recorded when GAN-specific channel information changes.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for GAN WLAN |

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Name	Type	Description
Measured sys.	Integer	Measured system 21 = GAN WLAN

Parameters for GAN WLAN |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
GAN state	Integer	GAN state 1 = Deregistered 2 = Registered 3 = Idle 4 = Dedicated
GAN channel	Integer	GAN channel number Range: 0 – 1023
GAN BSIC	Integer	GAN base station identification code Range: 0 – 63
GAN CI	Integer	GAN cell identification Range: 0 – 65535
GAN LAC	Integer	GAN location area code

		Range: 0 – 65535
GANC IP	String	GANC IP address
SEGW IP	String	GANC security gateway IP address

Service information (SEI)

Event ID	SEI
Cellular systems	All
Record state	Always
Description	Recorded when service state or mobility information changes.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for GSM, UMTS, and LTE | Parameters for iDEN |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 55 = iDEN
Service status	Integer	Service info status 1 = Service received 2 = Service dropped

Parameters for GSM, UMTS, and LTE |Top|

Name	Type	Description
LAC	Integer	Location area code If the service is not available this is the last known LAC value when the service was available. Range: 0 – 65535
MCC	Integer	Mobile country code If the service is not available this is the last known MCC value when the service was available. Range: 0 – 999
MNC	Integer	Mobile network code If the service is not available this is the last known MNC value when the service was available. Range: 0 – 999
TMSI	String (hex)	TMSI Temporary mobile subscriber identity. See 3GPP TS 124.008 subclause 10.5.1.4 and 3GPP TS 123.003 subclause 2.4.
P-TMSI	String (hex)	P-TMSI Packet temporary mobile subscriber identity. See 3GPP TS 124.008 subclause 10.5.1.4 and 3GPP TS 123.003 subclause 2.7.
MME group ID	Integer	MME group ID Mobility Management Entity (MME) group identification is used to differentiate between pools of MMEs. See 3GPP TS 123.003.

MME code	Integer	MME code Identifies Mobility Management Entities (MME) within the MME pool areas. See 3GPP TS 123.003.
M-TMSI	String (hex)	M-TMSI M-Temporary Mobile subscriber Identity. See 3GPP TS 123.003.

Parameters for IDEN |Top|

Name	Type	Description
Domain status	Integer	Domain status 0 = Radio is in its dispatch domain 1 = Radio is not in its dispatch domain

Roaming information (ROAM)

Event ID	ROAM
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	Always
Description	Recorded when roaming state information changes.
Tools	Nemo Outdoor,Nemo Handy

Parameters |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD
Roaming status	Integer	Roaming status 1 = Roaming 2 = Not roaming

Data channel request (DCHR)

Event ID	DCHR
Cellular systems	GSM,UMTS FDD
Record state	Data call connection state
Description	Indicates the requested data call resources. Recorded when data call is initiated or reconfigured.

Tools	Nemo Outdoor		
Parameters	Parameters for GSM	Parameters for UMTS FDD and UMTS TD-SCDMA	

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD

Parameters for GSM [\[Top\]](#)

Name	Type	Description
Initiator	Integer	Initiator 1 = Mobile station initiated 2 = Network station initiated
Requested coding	Integer	Requested channel coding 1 = 9.6 2 = 14.4
Requested data mode	Integer	Requested CS data mode 0 = Non-transparent 1 = Transparent
Requested #TSL UL	Integer	Requested number of UL timeslots Number of CS data timeslots uplink.
Requested #TSL DL	Integer	Requested number of DL timeslots Number of CS data timeslots downlink.
Modem type	Integer	Modem type 0 = Analog 1 = ISDN V.110 2 = ISDN V.120
Compression	Integer	Data compression 0 = Off 1 = On (manufacturer preferred compression) 2 = V.42bis 3 = V.44

Parameters for UMTS FDD and UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Initiator	Integer	Initiator 1 = Mobile station initiated 2 = Network station initiated
Req. CS rate	Integer	Requested CS bitrate
Requested data mode	Integer	Requested CS data mode 0 = Non-transparent 1 = Transparent
Modem type	Integer	Modem type 0 = Analog 1 = ISDN V.110 2 = ISDN V.120
Compression	Integer	Data compression 0 = Off 1 = On (manufacturer preferred compression) 2 = V.42bis 3 = V.44

Data channel info (DCHI)

Event ID	DCHI
Cellular systems	GSM
Record state	Data call connection state
Description	Recorded when data call resources have changed.
Tools	Nemo Outdoor

Parameters | Parameters for GSM |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM [|Top|](#)

Name	Type	Description
Coding	Integer	Channel coding 1 = 9.6 2 = 14.4
Data mode	Integer	CS data mode 0 = Non-transparent 1 = Transparent
#CS TSL UL	Integer	Number of UL timeslots Number of CS data timeslots uplink.
#CS TSL DL	Integer	Number of DL timeslots Number of CS data timeslots downlink.
CS UL TSLs	Integer	CS data timeslots uplink Allocated uplink timeslots. The number of timeslot parameters in the event is indicated by the number of CS data timeslots uplink parameter. The first timeslot in the event is the main timeslot. Range: 0 – 7
CS DL TSLs	Integer	CS data timeslots downlink Allocated downlink timeslots. The number of timeslot parameters in the event is indicated by the number of CS data timeslots downlink parameter. The first timeslot in the event is the main timeslot. Range: 0 – 7

Frequency hopping status (HOP)

Event ID	HOP
Cellular systems	GSM
Record state	Call connection and packet active state
Description	Recorded when GSM hopping channel list is modified. If hopping is not used, the single dedicated channel is recorded. Recorded based on layer3 and RLC/MAC signaling.

Tools	Nemo Outdoor, Nemo Handy
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Parameters | Parameters for GSM | Parameters for hopping on state | Parameters for hopping off state |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM |Top|

Name	Type	Description
Hopping	Integer	Hopping status 1 = On 2 = Off

Parameters for hopping on state |Top|

Name	Type	Description
HSN	Integer	HSN Hopping sequence number. See 3GPP TS 144.018 subclause 10.5.2.5.
MAIO	Integer	MAIO Mobile allocation index offset. See 3GPP TS 144.018 subclause 10.5.2.5.
#Hopping Chs	Integer	Number of hopping channels
Channel(s)	Integer	Hopping channels

Parameters for hopping off state |Top|

Name	Type	Description
Channel(s)	Integer	Hopping channels

Cell information (CELLINFO)

Event ID	CELLINFO
Cellular systems	UMTS TD-SCDMA
Record state	Always
Description	The measurement event contains semi-static cell information that is not recorded to the CELLMEAS measurement event. Recorded when the mobile reports the information.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS TD-SCDMA |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 6 = UMTS TD-SCDMA

Parameters for UMTS TD-SCDMA |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
Ch	Integer	Channel number
Cell params ID	Integer	Cell parameters ID Range: 0 – 127
#URA IDs	Integer	Number of ura IDs
URA ID	Integer	URA identity Range: 0 – 65535

Neighbor list (NLIST)

Event ID	NLIST
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA
Record state	Always
Description	Recorded when signaling-based neighbor list changes. With UMTS, when the mobile is in the soft handover state, the neighbor lists of all active set cells are combined and reported in this measurement event.
Tools	Nemo Outdoor

Parameters | Parameters for GSM source cell | Parameters for UMTS FDD source cell | Parameters for UMTS TD-SCDMA source cell | Neighbor list parameters | Parameters for GSM | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA |

Parameters [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Source system	Integer	Source system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA

Parameters for GSM source cell [\[Top\]](#)

Name	Type	Description
Source band	Integer	Source band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800

		11900 = GSM 1900 19999 = GSM
Source ch	Integer	Source channel number
Source BSIC	Integer	Source BSIC Range: 0 – 63

Parameters for UMTS FDD source cell |Top|

Name	Type	Description
Source band	Integer	Source band This information is not recorded during soft handover. 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Source ch	Integer	Source channel number This information is not recorded during soft handover.
Source SC	Integer	Source scrambling code This information is not recorded during soft handover. Range: 0 – 511

Parameters for UMTS TD-SCDMA source cell |Top|

Name	Type	Description
Source band	Integer	Source band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
Source ch	Integer	Source channel number
Source params ID	Integer	Source cell parameters id Range: 0 – 127

Neighbor list parameters |Top|

Name	Type	Description
#nChs	Integer	Number of neighbor channels
#Params	Integer	Number of parameters
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA

Parameters for GSM [\[Top\]](#)

Name	Type	Description
ARFCN	Integer	Neighbor channel number (GSM)
BSIC	Integer	Neighbor BSIC Range: 0 – 63
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Cell index	Integer	Cell index (GSM)

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
UARFCN	Integer	Neighbor channel number (UMTS)
SC	Integer	Neighbor scrambling code Range: 0 – 511
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20

		50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Cell index	Integer	Cell index (UMTS)

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
UARFCN	Integer	Neighbor channel number
Params ID	Integer	Neighbor cell parameters ID Range: 0 – 127
Band	Integer	Band 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA
Cell index	Integer	Cell index

Possible missing neighbor (NMISS)

Event ID	NMISS
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded when there are possible missing neighbors. Missing neighbor detection is based on neighbor list and scanning results. Possible missing neighbor is a cell which is detected (measured) by the scanner but is not included in the neighbor list of the mobile at a given time.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for GSM source cell](#) |
 [Parameters for UMTS FDD source cell](#) |
 [Parameters for cdmaOne, CDMA 1x, and EVDO source cells](#)
[Missing neighbor parameters](#) |
 [Parameters for GSM](#) |
 [Parameters for UMTS FDD](#) |
 [Parameters for cdmaOne and CDMA 1x](#) |
 [Parameters for EVDO](#) |

Parameters [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Source system	Integer	Source system 1 = GSM 5 = UMTS FDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for GSM source cell [\[Top\]](#)

Name	Type	Description
Source band	Integer	Source band 10850 = GSM 850

		Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
Source ch	Integer	Source channel number
Source BSIC	Integer	Source BSIC Range: 0 – 63

Parameters for UMTS FDD source cell [\[Top\]](#)

Name	Type	Description
Source band	Integer	Source band This information is not recorded during soft handover. 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Source ch	Integer	Source channel number This information is not recorded during soft handover.
Source SC	Integer	Source scrambling code This information is not recorded during soft handover. Range: 0 – 511

Parameters for cdmaOne, CDMA 1x, and EVDO source cells [\[Top\]](#)

Name	Type	Description
Source band	Integer	Source band This information is not recorded during soft handover. 100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band. 100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band. 100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 100007 = cdmaOne 700 band 7 North American cellular 700 MHz band. 100008 = cdmaOne 1800 band 8 1800 MHz band. 100009 = cdmaOne 900 band 9

900 MHz band.
 100010 = cdmaOne 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 100011 = cdmaOne 400 PAMR band 11
 European PAMR 400 MHz band.
 100012 = cdmaOne 800 PAMR band 12
 European PAMR 800 MHz band.
 100013 = cdmaOne 2500 band 13
 2.5 GHz IMT-2000 extension.
 100014 = cdmaOne 1900 band 14
 US PCS 1.9 GHz.
 100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6

		IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Source ch	Integer	Source channel number This information is not recorded during soft handover.
Source PN	Integer	Source pilot number This information is not recorded during soft handover. Range: 0 – 511

Missing neighbor parameters [\[Top\]](#)

Name	Type	Description
#Miss. neighbors	Integer	Number of missing neighbors Number of detected possible missing neighbor cells.
#Params	Integer	Number of parameters
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for GSM [\[Top\]](#)

Name	Type	Description
ARFCN	Integer	Missing neighbor channel number
BSIC	Integer	Missing neighbor BSIC Range: 0 – 63
RxLev	Float	Missing neighbor RX level Range: –120 – –10 Unit: dBm
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
ARFCN	Integer	Missing neighbor channel number

SC	Integer	Missing neighbor scrambling code Range: 0 – 511
Ec/N0	Float	Missing neighbor Ec/N0 The received energy per chip divided by the power density of the band measured on the primary CPICH. See 3GPP TS 125.215 subclause 5.1.5. Range: –30 – 0 Unit: dB
RSCP	Float	Missing neighbor RSCP The received signal code power of a single code measured on the primary CPICH. See 3GPP TS 125.215 subclause 5.1.1. Range: –150 – –20 Unit: dBm
Diff. to str.	Float	Missing neighbor difference to strongest pilot Power difference from strongest cell in active or monitored set to detected missing neighbor cell. Range: –26 – 26 Unit: dB
Band	Integer	Band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
Ch	Integer	Missing neighbor channel number
PN	Integer	Missing neighbor pilot number Range: 0 – 511
Ec/I0	Float	Missing neighbor Ec/I0 Range: –50 – 0 Unit: dB
RSCP	Float	Missing neighbor RSCP The received signal code power of a single code. Range: –150 – –20 Unit: dBm
Diff. to str.	Float	Missing neighbor difference to strongest pilot Power difference from strongest cell in active, candidate, or neighbor set to detected missing neighbor cell. Range: –26 – 26 Unit: dB
Band	Integer	Band 100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others. 100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.

100002 = cdmaOne 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 100003 = cdmaOne 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 100004 = cdmaOne 1800 Korean band 4
 Korean PCS 1800 MHz band.
 100005 = cdmaOne 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 100006 = cdmaOne 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 100007 = cdmaOne 700 band 7
 North American cellular 700 MHz band.
 100008 = cdmaOne 1800 band 8
 1800 MHz band.
 100009 = cdmaOne 900 band 9
 900 MHz band.
 100010 = cdmaOne 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 100011 = cdmaOne 400 PAMR band 11
 European PAMR 400 MHz band.
 100012 = cdmaOne 800 PAMR band 12
 European PAMR 800 MHz band.
 100013 = cdmaOne 2500 band 13
 2.5 GHz IMT-2000 extension.
 100014 = cdmaOne 1900 band 14
 US PCS 1.9 GHz.
 100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20

110021 = CDMA 1x 2000 S-band band 21
119999 = CDMA 1x

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
Ch	Integer	Missing neighbor channel number
PN	Integer	Missing neighbor pilot number Range: 0 – 511
Ec/I0	Float	Missing neighbor Ec/I0 Range: –50 – 0 Unit: dB
RSCP	Float	Missing neighbor RSCP The received signal code power of a single code. Range: –150 – 0 Unit: dBm
Diff. to str.	Float	Missing neighbor difference to strongest pilot Power difference from strongest cell in active, candidate, or neighbor set to detected missing neighbor cell. Range: –26 – 26 Unit: dB
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO

Automatic neighbor relation information (ANRI)

Event ID	ANRI
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when the CGI is configured to measure or reported by the mobile.
Tools	Nemo Outdoor

Parameters | Parameters for CGI measurement configuration and report |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD
ANR type	Integer	ANR type 1 = CGI measurement configuration 2 = CGI measurement report
#Params/ANR type	Integer	Number of ANR type parameters

Parameters for CGI measurement configuration and report [\[Top\]](#)

Name	Type	Description
Band	Integer	Band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA 70001 = LTE FDD 2100 band 1

70002 = LTE FDD 1900 band 2
 70003 = LTE FDD 1800 band 3
 70004 = LTE FDD 2100 AWS band 4
 70005 = LTE FDD 850 band 5
 Band 850 is also known as band 800.
 70006 = LTE FDD 850 band 6
 70007 = LTE FDD 2600 band 7
 70008 = LTE FDD 900 band 8
 70009 = LTE FDD 1800 band 9
 70010 = LTE FDD 2100 band 10
 70011 = LTE FDD 1400 band 11
 70012 = LTE FDD 700 band 12
 70013 = LTE FDD 700 band 13
 70014 = LTE FDD 700 band 14
 70017 = LTE FDD 700 band 17
 70018 = LTE FDD 850 band 18
 70019 = LTE FDD 850 band 19
 70020 = LTE FDD 800 band 20
 70021 = LTE FDD 1500 band 21
 70022 = LTE FDD 3500 band 22
 70023 = LTE FDD 2200 band 23
 70024 = LTE FDD 1500 band 24
 70025 = LTE FDD 1900 band 25
 70026 = LTE FDD 850 band 26
 70027 = LTE FDD 800 band 27
 70028 = LTE FDD 700 band 28
 70029 = LTE FDD 700 band 29
 This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD

Ch	Integer	Channel number
Phys. cell ID	Integer	Physical cell ID With GSM this is the BSIC with range from 0 to 63. With UMTS FDD this is the scrambling code with range from 0 to 511. With UMTS TD-SCDMA this is the cell parameters ID with range from 0 to 127. With LTE this is the physical cell ID with range from 0 to 503.
Cell ID	Integer	Cell identification Range: 0 – 268435455
LAC/TAC	Integer	Location or tracking area code

		With GSM and UMTS this is the LAC value. With LTE this is the TAC value. Range: 0 – 65535
MCC	Integer	Mobile country code See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	Mobile network code Range: 0 – 999

Cell pollution (CELLPOLLUTION)

Event ID	CELLPOLLUTION
Cellular systems	UMTS FDD,cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded when possible cell pollution is detected by comparing scanning results to the user defined threshold.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for cdmaOne,CDMA 1x, and EVDO | Parameters for UMTS FDD | Parameters for cdmaOne, CDMA 1x, and EVDO |

Parameters [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Source system	Integer	Source system 5 = UMTS FDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
Source band	Integer	Source band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25

		50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
Source ch	Integer	Source channel number

Parameters for cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
Source band	Integer	<p>Source band</p> <p>100000 = cdmaOne 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>100001 = cdmaOne 1900 band 1 North American PCS 1900 MHz band.</p> <p>100002 = cdmaOne 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>100003 = cdmaOne 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>100004 = cdmaOne 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>100005 = cdmaOne 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>100006 = cdmaOne 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>100007 = cdmaOne 700 band 7 North American cellular 700 MHz band.</p> <p>100008 = cdmaOne 1800 band 8 1800 MHz band.</p> <p>100009 = cdmaOne 900 band 9 900 MHz band.</p> <p>100010 = cdmaOne 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p> <p>100011 = cdmaOne 400 PAMR band 11 European PAMR 400 MHz band.</p> <p>100012 = cdmaOne 800 PAMR band 12 European PAMR 800 MHz band.</p> <p>100013 = cdmaOne 2500 band 13 2.5 GHz IMT-2000 extension.</p> <p>100014 = cdmaOne 1900 band 14 US PCS 1.9 GHz.</p> <p>100015 = cdmaOne 2100 AWS band 15</p> <p>100016 = cdmaOne 2500 band 16 US 2.5 GHz.</p> <p>100018 = cdmaOne 700 public safety band 18</p> <p>100019 = cdmaOne 700 lower band 19</p> <p>100020 = cdmaOne 1500 L-band band 20</p> <p>100021 = cdmaOne 2000 S-band band 21</p> <p>109999 = cdmaOne</p> <p>110000 = CDMA 1x 800 band 0 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.</p> <p>110001 = CDMA 1x 1900 band 1 North American PCS 1900 MHz band.</p> <p>110002 = CDMA 1x 900 TACS band 2 Total access communication system (TACS) 900 MHz band.</p> <p>110003 = CDMA 1x 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed).</p> <p>110004 = CDMA 1x 1800 Korean band 4 Korean PCS 1800 MHz band.</p> <p>110005 = CDMA 1x 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band.</p> <p>110006 = CDMA 1x 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band.</p> <p>110007 = CDMA 1x 700 band 7 North American cellular 700 MHz band.</p> <p>110008 = CDMA 1x 1800 band 8 1800 MHz band.</p> <p>110009 = CDMA 1x 900 band 9 900 MHz band.</p> <p>110010 = CDMA 1x 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band.</p>

		110011 = CDMA 1x 400 PAMR band 11 European PAMR 400 MHz band. 110012 = CDMA 1x 800 PAMR band 12 European PAMR 800 MHz band. 110013 = CDMA 1x 2500 band 13 2.5 GHz IMT-2000 extension. 110014 = CDMA 1x 1900 band 14 US PCS 1.9 GHz. 110015 = CDMA 1x 2100 AWS band 15 110016 = CDMA 1x 2500 band 16 US 2.5 GHz. 110018 = CDMA 1x 700 public safety band 18 110019 = CDMA 1x 700 lower band 19 110020 = CDMA 1x 1500 L-band band 20 110021 = CDMA 1x 2000 S-band band 21 119999 = CDMA 1x 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2 Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Source ch	Integer	Source channel number

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
SC	Integer	Pilot pollution scrambling code Range: 0 – 511
Ec/N0	Float	Pilot pollution Ec/N0 The received energy per chip divided by the power density of the band measured on the primary CPICH. See 3GPP TS 125.215 subclause 5.1.5.

		Range: -30 – 0 Unit: dB
RSCP	Float	Pilot pollution RSCP The received signal code power of single code measured on the primary CPICH. See 3GPP TS 125.215 subclause 5.1.1. Range: -150 – -20 Unit: dBm

Parameters for cdmaOne, CDMA 1x, and EVDO [\[Top\]](#)

Name	Type	Description
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
PN	Integer	Pilot pollution pilot number Range: 0 – 511
Ec/I0	Float	Pilot pollution Ec/I0 Range: -50 – 0 Unit: dB
RSCP	Float	Pilot pollution RSCP The received signal code power of single code. Unit: dBm

Interference analysis (IANALYSIS)

Event ID	IANALYSIS
Cellular systems	GSM
Record state	Always
Description	Recorded when interference analysis is enabled in Nemo Outdoor. The logged information is based on the channels used by the mobile and to the scanning results received from the scanner.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for GSM](#) | [Parameters for GSM](#) |

Parameters [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Source system	Integer	Source system 1 = GSM

Parameters for GSM [\[Top\]](#)

Name	Type	Description
Band	Integer	Interference analysis band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM

Parameters for GSM [|Top](#)

Name	Type	Description
#Chs	Integer	Number of channels
#Params/Ch	Integer	Number of parameters per channel
Type	Integer	Interference analysis channel type 1 = Serving channel This is the BCCH channel during the idle state and the TCH channel(s) during the active state. 2 = Co-channel Contains co-channel interfere. This is only recorded when scanner decodes different BSIC than the mobile. This indicates that there are two interfering cells using the same channel. 3 = Adj-channel This is the channel adjacent to the serving channel. Adjacent channel can cause interference to the serving channel.
Ch	Integer	Interference analysis channel number
BSIC	Integer	Interference analysis BSIC Range: 0 – 63
RxLev	Float	Interference analysis RX level Range: –120 – –10 Unit: dBm

Cell load (CELLLOAD)

Event ID	CELLLOAD
Cellular systems	EVDO
Record state	Always
Description	Recorded when cell load information is received from the network.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for EVDO](#) |
Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Cells	Integer	Number of cells
#Params/Cell	Integer	Number of parameters per cell
Band	Integer	Band 120000 = EVDO 800 band 0 North American cellular 800 MHz band. Also in Korea, Australia, Hong Kong, China, Taiwan, and others. 120001 = EVDO 1900 band 1 North American PCS 1900 MHz band. 120002 = EVDO 900 TACS band 2

		Total access communication system (TACS) 900 MHz band. 120003 = EVDO 800 JTACS band 3 JTACS 800 MHz band (Japanese 800 MHz reversed). 120004 = EVDO 1800 Korean band 4 Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
Ch	Integer	Channel number
PN	Integer	Pilot number Range: 0 – 511
Active users	Integer	Active users

Service configuration (SERVCONF)

Event ID	SERVCONF
Cellular systems	cdmaOne, CDMA 1x
Record state	Call connection and packet active state
Description	Recorded when configuration changes.
Tools	Nemo Outdoor

Parameters | Parameters for cdmaOne and CDMA 1x |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x

Parameters for cdmaOne and CDMA 1x |Top|

Name	Type	Description
SO	Integer	Service option See more 3GPP2 C.S0014.
FT type	Integer	Forward traffic type 0 = Service option connection does not use forward traffic channel traffic. 1 = Service option connection uses primary traffic on the forward traffic channel. 2 = Service option connection uses secondary traffic on the forward traffic channel.
RT type	Integer	Reverse traffic type 0 = Service option connection does not use reverse traffic channel traffic 1 = Service option connection uses primary traffic on the reverse traffic channel 2 = Service option connection uses secondary traffic on the reverse traffic channel
Encryption mode	Integer	Encryption mode 0 = Off 1 = On
F-FCH MUX	Integer	F-FCH and F-DCCH multiplex option
R-FCH MUX	Integer	R-FCH and R-DCCH multiplex option
F-FCH bit/frame	Integer	F-FCH bits per frame
R-FCH bit/frame	Integer	R-FCH bits per frame
F-FCH RC	Integer	F-FCH radio configuration Range: 1 – 10
R-FCH RC	Integer	R-FCH radio configuration Range: 1 – 10
F-DCCH RC	Integer	F-DCCH radio configuration Range: 1 – 10
R-DCCH RC	Integer	R-DCCH radio configuration Range: 1 – 10
F-SCH MUX	Integer	F-SCH multiplex option
F-SCH RC	Integer	F-SCH radio configuration Range: 1 – 10
F-SCH coding	Integer	F-SCH coding 0 = Convolutional 1 = Turbo
F-SCH frame size	Integer	F-SCH frame size 0 = 40ms frames 1 = 80ms frames 2 = 40ms and 80ms frames
F-SCH frame offset	Integer	F-SCH frame offset
F-SCH max rate	Integer	F-SCH maximum rate 1 = 1X 2 = 2X 4 = 4X 8 = 8X 16 = 16X 32 = 32X
R-SCH MUX	Integer	R-SCH multiplex option
R-SCH RC	Integer	R-SCH radio configuration
R-SCH coding	Integer	R-SCH coding 0 = Convolutional 1 = Turbo
R-SCH frame size	Integer	R-SCH frame size 0 = 40ms frames 1 = 80ms frames 2 = 40ms and 80ms frames
R-SCH frame offset	Integer	R-SCH frame offset

R-SCH max rate	Integer	R-SCH maximum rate 1 = 1X 2 = 2X 4 = 4X 8 = 8X 16 = 16X 32 = 32X
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Random access channel information (RACHI)

Event ID	RACHI
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded after random access to the network has been attempted. With UMTS FDD, a RACHI measurement event is recorded for each random access procedure.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for cdmaOne and CDMA 1x | Parameters for EVDO |

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
Init TX power	Float	RACH initial TX power TX power Initial transmission power. Range: -99 – 99 Unit: dBm
Preamble step	Float	RACH preamble step Preamble step size. Range: 1 – 8 Unit: dB
Preamble count	Integer	RACH preamble count Transmitted preamble transmission count. Range: 0 – 65
RACH TX power	Float	RACH TX power Total transmission power used in RACH message part (control + data). Range: -99 – 99 Unit: dBm
Max preamble	Integer	RACH maximum preamble count This is the same as 'Preamble Retrans Max' parameter signaled by network in RRC layer and it defines the maximum

		number of preamble attempts. Range: 0 – 64
UL interf.	Float	UL interference Uplink Interference is measured by the NodeB and broadcasted by the NodeB in SIB7. The UE uses this to set the initial TX power for the first PRACH preamble. The Uplink Interference value in SIB7 uses 1 dB steps. More information can be found in 3GPP TS 25.133 and 25.215 (information about SIB7 in 3GPP TS 25.331), where the Uplink Interference is referred to as "Received total wide band power". Range: -110 – -70 Unit: dBm
AICH status	Integer	RACH AICH status 0 = No ACK 1 = NACK 2 = ACK
Data gain	Integer	RACH data channel gain Range: 0 – 15
Ctrl gain	Integer	RACH control channel gain Range: 0 – 15
Power offset	Float	RACH power offset This is the same as Pp-m parameter in RRC specification. Power offset between the last transmitted preamble and the control part of the message. Range: -5 – 10
Message length	Integer	RACH message length Range: 5 – 20 Unit: ms
Preamble cycles	Integer	RACH max preamble cycles Maximum number of preamble cycles. Range: 1 – 32

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
SYNC UL Init. pwr.	Float	RACH SYNC UL initial TX power Initial transmission power. Range: -99 – 99 Unit: dBm
SYNC UL step	Float	RACH SYNC UL step Range: 0 – 3 Unit: dB
SYNC UL count	Integer	RACH SYNC UL count Transmitted preamble transmission count. Range: 1 – 8
Max SYNC UL count	Integer	RACH SYNC UL maximum count Valid values are 1, 2, 4, and 8. This is the same as _Max SYNC_UL Transmissions_ parameter signaled by network in RRC layer and it defines the maximum number of preamble attempts. Range: 1 – 8
SYNC UL power	Float	RACH SYNC UL power Power of last SYNC UL. Range: -99 – 99 Unit: dBm
RACH TX power	Float	RACH TX power Total transmission power used in RACH message part (control + data). Range: -99 – 99 Unit: dBm
PCCPCH pathloss	Float	RACH PCCPCH pathloss Range: 46 – 158 Unit: dB
RACH status	Integer	RACH FPACH status

		0 = No ACK 1 = NACK 2 = ACK
Desired UpPCH RX power	Float	RACH desired UpPCH RX power Range: -120 – -58 Unit: dBm
Desired UpRACH RX power	Float	RACH desired UpRACH RX power Range: -120 – -58 Unit: dBm
Message length	Integer	RACH message length Range: 5 – 20 Unit: ms
Preamble cycles	Integer	RACH max preamble cycles Maximum number of preamble cycles. Range: 1 – 32

Parameters for LTE [\[Top\]](#)

Name	Type	Description
RACH type	Integer	RACH type More information about RACH procedure in LTE see 3GPP TS 36.213 subclause 6 and 3GPP TS 36.321 subclause 5.1. 1 = Contention based 2 = Non-contention based
RACH reason	Integer	RACH reason Reason for the RACH procedure. 1 = Channel request 2 = Radio link timeout 3 = UL data 4 = No PUCCH Recorded when scheduling request is not possible because there are no PUCCH resources available. See 3GPP TS 36.321 subclause 5.4.4. 5 = Max SR Recorded when maximum number of scheduling requests has been sent to the network without uplink resources. See 3GPP TS 36.321 subclause 5.4.4. 6 = Handover RACH procedure after handover. 7 = DL data This type is used when UE is not synchronized and downlink data is received.
RACH result	Integer	RACH result 1 = Succeeded 2 = Aborted 3 = Failed
Max preambles	Integer	RACH maximum preamble count This is the same as preambleTransMax. See 3GPP TS 36.133 subclause 6.3.2 and 36.321 subclause 5.1. Range: 3 – 200
Preambles	Integer	RACH preamble count Defines the number of preambles that were sent during the RACH procedure. This is the same as PREAMBLE_TRANSMISSION_COUNTER after end of the RACH procedure.
Preambles failures	Integer	RACH preamble responses with backoff time
Preambles successes	Integer	RACH preamble responses with PUSCH resource
RACH cont. failures	Integer	RACH contention resolution failures
Pathloss	Float	RACH pathloss An estimate of the radio condition for the RACH procedure. Pathloss is used for initial TX power. See 3GPP TS 36.213 subclause 6.1. Range: 0 – 170 Unit: dB

Init TX power	Float	RACH preamble initial TX power TX power used for the first preamble. See 3GPP TS 36.321 subclause 5.1.3. Range: -41 – 40 Unit: dBm
Preamble step	Float	RACH preamble step This parameter is the same as power ramping step. 3GPP TS 36.321 subclause 5.1. Range: 0 – 6 Unit: dB
PUSCH power	Float	RACH PUSCH power For successful RACH procedures this contains the TX power used for message sending in PUSCH. Range: -41 – 40 Unit: dBm
RACH preamble index	Integer	RACH preamble index The preamble index of the last successfully transmitted preamble. This is only valid for successful RACH procedures. This parameter is same as preamble sequence or random access preamble ID (RAPID). See 3GPP TS 36.321 subclause 5. Range: 0 – 63
Access delay	Integer	RACH access delay Time from initial MSG1 to MSG2 for non-contention based RACH procedures and time from initial MSG1 to MSG4 for contention based RACH procedures. Valid only for successful RACH procedures. Unit: ms
RA-RNTI	Integer	RACH RA-RNTI RNTI that is used on the PDCCH when random access responses are transmitted. See 3GPP TS 36.321 subclause 5.1. Range: 0 – 65535
Response window size	Integer	RACH response window size This is same as ra-ResponseWindowSize. Defines how long random access response (MSG2) is monitored after preamble is transmitted. See 3GPP TS 36.321 subclause 5.1.
TA	Integer	RACH timing advance Timing advance command received in random access response (MSG2). See 3GPP TS 36.321 subclause 5.2. Range: 0 – 1282

Parameters for cdmaOne and CDMA 1x [\[Top\]](#)

Name	Type	Description
NOM_PWR	Integer	Access nominal transmit power offset Nominal transmit power offset is a correction factor used by mobile stations in open-loop power estimation.
INIT_PWR	Integer	INIT_PWR (access probe initial power) Initial power is a correction factor used by mobile stations in open-loop power estimation for initial transmission on an Access Channel.
PWR_STEP	Integer	PWR_STEP (access probe power step) Mobile stations increase the transmission power in an access probe sequence.
NUM_STEP	Integer	NUM_STEP (access probe number of steps) Access probes consist of a preamble and a message for channel access. Access probes are sent in a sequence of one or more access probes. Transmitted power is incremented in each probe. Note that the parameter value is one less than the actual maximum number of steps.
TX level	Float	Probe TX level
Probe count	Integer	Probe count
Probe seq. count	Integer	Probe seq. count

		Access probe sequence count.
Access ch number	Integer	Access channel number
Random delay	Integer	PN randomization delay
Access RX level	Float	RX level Unit: dB
Psist	Integer	Number of persistence tests performed Persistence is a probability measurement done by the mobile station to determine if it should transmit on a given access channel. Range: 0 – 255
Seq. backoff	Integer	Sequence backoff Time between access probe sequences. Range: 0 – 255
Prob. backoff	Integer	Probe backoff Time between access probes. Range: 0 – 255
Inter. corr.	Integer	Interference correction Interference correction is calculated from the Ec/I0 of the strongest active set pilot and from the interference correction threshold. Range: 0 – 255
Access TX adj.	Float	Transmit gain adjust

Parameters for EVDO [|Top|](#)

Name	Type	Description
Max #Probes	Integer	Number of probes per probe sequence
Max #Probe seqs	Integer	Maximum number of probe sequences
Result	Integer	Probe sequence result 0 = ACAck not received 1 = ACAck received 2 = TCA message received 3 = Probe interrupted
#Probes	Integer	Number of probes sent in last probe sequence
#Probe seqs	Integer	Number of probe sequences sent for this access attempt
Duration	Integer	Time to complete the attempt Unit: slot
Access PN	Integer	Access PN PN of the sector that sends the ACAck or the TCA message.
Access sector ID	Integer	Access sector ID Sector ID on which the access probe was sent. Range: 0 – 16777215
Access color code	Integer	Access color code Color code on which the access probe was sent. Range: 0 – 255

Vocoder status (VOCS)

Event ID	VOCS
Cellular systems	cdmaOne,CDMA 1x
Record state	Call connection state

Description	Recorded when vocoder rate changes.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
Measured sys.	Integer	Measured system 10 = cdmaOne 11 = CDMA 1x
Voc. rate For.	Integer	Vocoder rate forward 0 = Full 1 = Half 2 = Quarter 3 = Eighth 4 = Blank 5 = Erasure 6 = Invalid data
Voc. rate Rev.	Integer	Vocoder rate reverse 0 = Full 1 = Half 2 = Quarter 3 = Eighth 4 = Blank 5 = Erasure 6 = Invalid data 7 = Quarter (non-critical)
SO	Integer	Service option See more 3GPP2 C.S0014.

Physical channel information (PHCHI)

Event ID	PHCHI
Cellular systems	UMTS TD-SCDMA,cdmaOne,CDMA 1x
Record state	Always
Description	Recorded when the information is received from the device.
Tools	Nemo Outdoor

Parameters |Parameters for UMTS TD-SCDMA |Parameters for cdmaOne and CDMA 1x |

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Name	Type	Description
Measured sys.	Integer	Measured system 6 = UMTS TD-SCDMA 10 = cdmaOne 11 = CDMA 1x

Parameters for UMTS TD-SCDMA |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters

DPCH ch	Integer	DPCH channel number
UL repetition length	Integer	TD-SCDMA uplink repetition length
UL repetition period	Integer	TD-SCDMA uplink repetition period Valid values are 1, 2, 4, 8, 16, 32, and 64. Range: 1 – 64
DL repetition length	Integer	TD-SCDMA downlink repetition length
DL repetition period	Integer	TD-SCDMA downlink repetition period Valid values are 1, 2, 4, 8, 16, 32, and 64. Range: 1 – 64
#Physical channels	Integer	Number of physical channels
#Params/Ch	Integer	Number of parameters per physical channel
Ph. ch type	Integer	TD-SCDMA physical channel type 1 = DPCH 2 = HS-SCCH 3 = HS-SICH 4 = HS-PDSCH
Direction	Integer	Physical channel direction 1 = Uplink 2 = Downlink 3 = Uplink and downlink
TSL	Integer	Timeslot Range: 0 – 6
SF	Integer	TD-SCDMA spreading factor 1 = SF 1 2 = SF 2 4 = SF 4 8 = SF 8 16 = SF 16
Ch. code	Integer	TD-SCDMA channelisation code Range: 0 – 15
Midamble config	Integer	Midamble configuration Valid values are 2, 4, 6, 8, 10, 12, 14, and 16. Range: 2 – 16
Midamble alloc.	Integer	Midamble allocation mode and shift -2 = Default -1 = Common 0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 8 = 8 9 = 9 10 = 10 11 = 11 12 = 12 13 = 13 14 = 14 15 = 15

Parameters for cdmaOne and CDMA 1x [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#Physical channels	Integer	Number of physical channels

#Params/Ch	Integer	Number of parameters per physical channel
Ph. type	Integer	Physical channel type 0 = SCH0 1 = SCH1 2 = FCH 3 = DCCH
Direction	Integer	Physical channel direction 1 = Uplink 2 = Downlink 3 = Uplink and downlink
PN	Integer	Physical channel pilot number Range: 0 – 511
Walsh code	Integer	Physical channel walsh code Range: 0 – 127
Ph. rate	Integer	Physical channel rate 0 = 1x 1 = 2x 2 = 4x 3 = 8x 4 = 16x
QOF mask id	Integer	Quasiorthogonal function index Range: 0 – 3

Quick paging channel information (QPCHI)

Event ID	QPCHI
Cellular systems	CDMA 1x
Record state	Idle state
Description	Recorded when values are received from the mobile in slotted mode.
Tools	Nemo Outdoor

Parameters | Parameters for CDMA 1x |

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Name	Type	Description
Measured sys.	Integer	Measured system 11 = CDMA 1x

Parameters for CDMA 1x [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Rate	Integer	QPCH paging indicator rate Data rate. Currently valid values are 4800 and 9600. Range: 4800 – 9600 Unit: bit/s
Slot number	Integer	Paging slot number Range: 0 – 2047
Transfer reason	Integer	Transfer reason 0 = No XFER 1 = Slot imminent 2 = MC not valid

		3 = Channel estimation bad signal 4 = XFER broadcast data 5 = BP and PG 6 = BP not supported 7 = RWUP 8 = PI1 PI2 on 9 = BI1 BI2 on 10 = Next slot not supported 11 = CCI handoff 12 = CCI on 13 = Disable BIO switch
#Configurations	Integer	Number of configurations
#Params/configuration	Integer	Number of parameters per configuration
PN	Integer	Pilot number Range: 0 – 511
PI walsh	Integer	Walsh code for paging indicators Range: 0 – 128
PI power offset	Float	Paging indicator power offset Power difference between paging indicator and pilot channel. Unit: dB
BI supported	Integer	Broadcast indicator support 0 = Not supported 1 = Supported
BI walsh	Integer	Broadcast indicator walsh code Range: 0 – 128
BI pwr lvl	Float	Broadcast indicator power level Unit: dB
CCI supported	Integer	Configuration change indicator support 0 = Not supported 1 = Supported
CCI walsh	Integer	Configuration change walsh code Range: 0 – 128
CCI pwr lvl	Float	Configuration change power level Unit: dB
#Indicators	Integer	Number of indicators
#Params/indicator	Integer	Number of parameters per indicator
Status	Integer	Indicator demodulation result 0 = Not applicable 1 = Not detected 2 = Detected 3 = Erasure 4 = Missed
Type	Integer	Indicator type 0 = Paging indicator #1 1 = Paging indicator #2 2 = Configuration change indicator #1 3 = Configuration change indicator #2 4 = Broadcast indicator #1 5 = Broadcast indicator #2
THB	Integer	THB threshold for paging indicator Range: 0 – 255
THI	Integer	THI threshold for paging indicator Range: 0 – 255
Position	Integer	Indicator position Range: 0 – 768
Ind. I amp.	Integer	Indicator amplitude on I channel
Ind. Q amp.	Integer	Indicator amplitude on Q channel
Com. pilot energy	Float	Common pilot energy Range: -35 – 3 Unit: dB
Div. pilot energy	Float	Diversity pilot energy

Range: -35 – 3
Unit: dB

FCH packets (FCHPACKETS)

Event ID	FCHPACKETS
Cellular systems	EVDO
Record state	Always
Description	Recorded when information is received from the mobile.
Tools	Nemo Outdoor

Parameters | Parameters for EVDO |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO |Top|

Name	Type	Description
CC38400 Good	Integer	CC38400 Good Counter for 38.4 k control channel packets with good CRC.
CC38400 Bad	Integer	CC38400 Bad Counter for 38.4 k control channel packets with bad CRC.
CC76800 Good	Integer	CC76800 Good Counter for 76.8 k control channel packets with good CRC.
CC76800 Bad	Integer	CC76800 Bad Counter for 76.8 k control channel packets with bad CRC.
TC38400 Good	Integer	TC38400 Good Counter for 38.4 k traffic channel packets with good CRC.
TC38400 Bad	Integer	TC38400 Bad Counter for 38.4 k traffic channel packets with bad CRC.
TC76800 Good	Integer	TC76800 Good Counter for 76.8 k traffic channel packets with good CRC.
TC76800 Bad	Integer	TC76800 Bad Counter for 76.8 k traffic channel packets with bad CRC.
TC153600 Good	Integer	TC153600 Good Counter for 156.6 k traffic channel packets with good CRC.
TC153600 Bad	Integer	TC153600 Bad Counter for 156.6 k traffic channel packets with bad CRC.
TC307200Short Good	Integer	TC307200Short Good Counter for 302.2 (short) traffic channel packets with good CRC.
TC307200Short Bad	Integer	TC307200Short Bad Counter for 302.2 (short) traffic channel packets with bad CRC.
TC307200Long Good	Integer	TC307200Long Good Counter for 307.2 (long) traffic channel packets with good CRC.
TC307200Long Bad	Integer	TC307200Long Bad Counter for 307.2 (long) traffic channel packets with bad CRC.

TC614400Short Good	Integer	TC614400Short Good Counter for 614.4 k (short) traffic channel packets with good CRC.
TC614400Short Bad	Integer	TC614400Short Bad Counter for 614.4 k (short) traffic channel packets with bad CRC.
TC614400Long Good	Integer	TC614400Long Good Counter for 614.4 k (long) traffic channel packets with good CRC.
TC614400Long Bad	Integer	TC614400Long Bad Counter for 614.4 k (long) packets decoded in 2 slots.
TC921600 Good	Integer	TC921600 Good Counter for 921.6 k traffic channel packets with good CRC.
TC921600 Bad	Integer	TC921600 Bad Counter for 921.6 k traffic channel packets decoded with bad CRC.
TC1228800Short Good	Integer	TC1228800Short Good Counter for 1228.8 k (short) traffic channel packets with good CRC.
TC1228800Short Bad	Integer	TC1228800Short Bad Counter for 1228.8 k (short) traffic channel packets with bad.
TC1228800Long Good	Integer	TC1228800Long Good Counter for 1228.8 (long) traffic channel packets with good CRC.
TC1228800Long Bad	Integer	TC1228800Long Bad Counter for 1228.8 (long) traffic channel packets with bad CRC.
TC1843200 Good	Integer	TC1843200 Good Counter for 1843.2 k traffic channel packets with good CRC.
TC1843200 Bad	Integer	TC1843200 Bad Counter for 1843.2 k traffic channel packets with bad CRC.
TC2457600 Good	Integer	TC2457600 Good Counter for 2457 k traffic channel packets with good CRC.
TC2457600 Bad	Integer	TC2457600 Bad Counter for 2457 k traffic channel packets with bad CRC.

Connection layer connection (CONNECTIONC)

Event ID	CONNECTIONC
Cellular systems	EVDO
Record state	Always
Description	Recorded when connection layer is connected.
Tools	Nemo Outdoor

Parameters | Parameters for EVDO |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
Transaction ID	Integer	Connection attempt transaction ID Transaction ID associated with the ConnectionDeny message; if there is no response from the AN or a ConnectionDeny message is not received, this field represents the TransactionId that was used to send the ConnectionRequest message.
Message seq.	Integer	Connection attempt message sequence Represents message sequence present in the TCA message received; valid only if a TCA message is received.
Connection result	Integer	Connection attempt result 0 = Connection deny received with deny reason general 1 = Connection deny received with deny reason network busy 2 = Connection deny received with deny reason authentication or billing failure 3 = Maximum access probes 4 = System lost (supervision failures) 5 = Not preferred (SD told OVHD to switch systems, QC redirect, access network id) 6 = Redirect (ALMP received a redirect message) 7 = Connection setup timeout 8 = Power down received 9 = Offline received 10 = NAM change received 11 = User abort 12 = Access handoff 13 = Success
Rec. status	Integer	Connection reception status 0 = Not received either TCA or RTCACK message 1 = Received TCA message but not received RTCACK message 2 = Received both TCA and RTCACK messages
Duration	Integer	Connection attempt duration Time in slots taken to complete the attempt. Unit: slot
PN	Integer	Connection attempt PN offset Range: 0 – 511
Sector ID	Integer	Connection attempt sector ID
CC	Integer	Connection attempt color code Range: 0 – 255
#PN changes	Integer	Connection attempt pilot changes Defines how many times the active set pilot changed during the connection attempt.
Direction	Integer	Connection attempt direction 1 = Access Network 2 = Access Terminal

Connection layer release (CONNECTIOND)

Event ID	CONNECTIOND
Cellular systems	EVDO
Record state	Always
Description	Recorded when connection layer is released.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for EVDO](#) |
Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
Reason	Integer	Connection release reason 0 = AN connection close 1 = AT connection close 2 = System lost (supervision failures, TCA message rejected) 3 = Not preferred (SD told OVHD to switch systems, QC redirect, access network ID) 4 = Redirect (ALMP received a redirect message) 5 = Power down received 6 = Offline received 7 = NAM change received 8 = Page message received 9 = Unspecified (ALMP rude close)

Session layer connection (SESSIONC)

Event ID	SESSIONC
Cellular systems	EVDO
Record state	Always
Description	Recorded when session layer is connected.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for EVDO](#) |
Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [\[Top\]](#)

Name	Type	Description
Transaction ID	Integer	Session attempt transaction ID
Result	Integer	Session attempt result 0 = Received UATI assignment message 1 = Did not receive UATI assignment message
RATI	Integer	Session attempt RATI RATI used for opening a session.
Duration	Integer	Session attempt duration Time in slots taken to complete the attempt. Unit: slot
PN	Integer	Session attempt PN offset

		Pilot number of the sector that sent the UATI assignment message. Range: 0 – 511
CC	Integer	Session attempt color code Range: 0 – 255
Full UATI	String	Session attempt full UATI Full UATI as part of the UATI assignment message.

Radio bearer information (RBI)

Event ID	RBI
Cellular systems	UMTS FDD,UMTS TD-SCDMA
Record state	Always
Description	Recorded when UMTS radio bearer allocation is modified. Currently based on information received from the trace interface of the device.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA
#Header params	Integer	Number of header parameters
#Params/RB	Integer	Number of parameters per radio bearer
#RBs	Integer	Number of radio bearers

Parameters for UMTS FDD |Top|

Name	Type	Description
RB ID	Integer	Radio bearer ID Range: 0 – 32
RLC ID	Integer	Radio bearer RLC ID Same as logical channel ID. Range: 0 – 20
TrCh ID	Integer	Radio bearer transport channel ID Range: 0 – 32
Direction	Integer	Radio bearer direction 0 = Uplink 1 = Downlink
Logical Ch	Integer	Radio bearer logical channel type Logical channel type for this radio bearer. 0 = BCCH 1 = PCCH 2 = CCCH 3 = DCCH 4 = CTCH 5 = DTCH 6 = SHCCH

RLC mode	Integer	Radio bearer RLC mode 0 = TM 1 = UM 2 = AM
Radio bearer ciphering	Integer	Radio bearer ciphering 0 = Disabled 1 = Enabled
TrCh type	Integer	Radio bearer transport channel type 0 = BCH 1 = CPCH 2 = DCH 3 = HS-DSCH 4 = PCH 5 = FACH 6 = RACH 7 = E-DCH

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
RB ID	Integer	Radio bearer ID Range: 0 – 32
RLC ID	Integer	Radio bearer RLC ID Same as logical channel ID. Range: 0 – 20
TrCh ID	Integer	Radio bearer transport channel ID Range: 0 – 32
Direction	Integer	Radio bearer direction 0 = Uplink 1 = Downlink
Logical Ch	Integer	Radio bearer logical channel type Logical channel type for this radio bearer. 0 = BCCH 1 = PCCH 2 = CCCH 3 = DCCH 4 = CTCH 5 = DTCH 6 = SHCCH
RLC mode	Integer	Radio bearer RLC mode 0 = TM 1 = UM 2 = AM
Radio bearer ciphering	Integer	Radio bearer ciphering 0 = Disabled 1 = Enabled
TrCh type	Integer	Radio bearer transport channel type 0 = BCH 1 = CPCH 2 = DCH 3 = HS-DSCH 4 = PCH 5 = FACH 6 = RACH 7 = E-DCH

Transport channel information (TRCHI)

Event ID	TRCHI
Cellular systems	UMTS FDD,UMTS TD-SCDMA
Record state	Always
Description	Recorded when UMTS transport channel allocation is modified. Currently based on information received from the trace interface of the device.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA
#Header params	Integer	Number of header parameters
#Params/TrCh	Integer	Number of parameters per transport channel
#TrChs	Integer	Number of transport channels Range: 0 – 32

Parameters for UMTS FDD |Top|

Name	Type	Description
TrCh ID	Integer	Transport channel ID Range: 0 – 32
CCTrCh ID	Integer	Coded composite transport channel ID Range: 0 – 5
Direction	Integer	Direction Transport channel direction. 0 = Uplink 1 = Downlink 2 = Relay-link (control)
TrCh type	Integer	Transport channel type MAC PDUs are delivered using this channel. 0 = BCH 1 = CPCH 2 = DCH 3 = HS-DSCH 4 = PCH 5 = FACH 6 = RACH 7 = E-DCH
TrCh coding	Integer	Transport channel coding 0 = 1/2 and convolutional 1 = 1/3 and convolutional 2 = 1/3 and turbo 3 = No coding
CRC length	Integer	CRC length Range: 0 – 24
TTI	Integer	Transmission time interval Range: 0 – 80 Unit: ms
Rate-m. attr.	Integer	Rate-matching attribute Range: 1 – 256

Parameters for UMTS TD-SCDMA |Top|

Name	Type	Description
TrCh ID	Integer	Transport channel ID

		Range: 0 – 32
CCTrCh ID	Integer	Coded composite transport channel ID Range: 0 – 5
Direction	Integer	Direction Transport channel direction. 0 = Uplink 1 = Downlink 2 = Relay-link (control)
TrCh type	Integer	Transport channel type MAC PDUs are delivered using this channel. 0 = BCH 1 = CPCH 2 = DCH 3 = HS-DSCH 4 = PCH 5 = FACH 6 = RACH 7 = E-DCH
TrCh coding	Integer	Transport channel coding 0 = 1/2 and convolutional 1 = 1/3 and convolutional 2 = 1/3 and turbo 3 = No coding
CRC length	Integer	CRC length Range: 0 – 24
TTI	Integer	Transmission time interval Range: 0 – 80 Unit: ms
Rate-m. attr.	Integer	Rate-matching attribute Range: 1 – 256

Radio resource connection attempt (RRA)

Event ID	RRA
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	Always
Description	Recorded based on RRC signaling when RRC connection is attempted. This measurement event begins the RRC connection attempt state.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD and UMTS TD-SCDMA | Parameters for LTE |

Parameters |Top|

Name	Type	Description
RRC context ID	Context	RRC context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and UMTS TD-SCDMA |Top|

Name	Type	Description
RRC est. cause	Integer	RRC establishment cause 0 = Originating conversation call 1 = Originating streaming call 2 = Originating interactive call 3 = Originating background call 4 = Originating subscribed traffic call 5 = Terminating conversational call 6 = Terminating streaming call 7 = Terminating interactive call 8 = Terminating background call 9 = Emergency call 10 = Inter-RAT cell reselection 11 = Inter-RAT cell change order 12 = Registration 13 = Detach 14 = Originating high priority signaling 15 = Originating low priority signaling 16 = Call re-establishment 17 = Terminating high priority signaling 18 = Terminating low priority signaling 19 = Terminating - cause unknown

Parameters for LTE [|Top|](#)

Name	Type	Description
Est. cause	Integer	RRC establishment cause See 3GPP TS 136.331 subclause 6.2.2 RRCConnectionRequest. 0 = Emergency 1 = High priority access 2 = Mobile terminating access 3 = Mobile originating signaling 4 = Mobile originating data

Radio resource connection success (RRC)

Event ID	RRC
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	RRC connection attempt state
Description	Recorded based on RRC signaling when RRC connection is established. This measurement event begins the RRC connection state.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for UMTS FDD and UMTS TD-SCDMA](#) |
 [Parameters for LTE](#) |

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Name	Type	Description
RRC context ID	Context	RRC context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#RRC requests	Integer	Number of RRC requests Number of RRC connection attempts before the RRC connection.

Parameters for LTE [\[Top\]](#)

Name	Type	Description
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Radio resource connection failure (RRF)

Event ID	RRF
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	RRC connection attempt state
Description	Recorded based on RRC signaling when RRC connection attempt fails. This measurement event terminates the RRC connection attempt state.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for UMTS FDD and UMTS TD-SCDMA](#) |
 [Parameters for LTE](#) |

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Name	Type	Description
RRC context ID	Context	RRC context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#RRC request before abort	Integer	Number of RRC requests before abort
RRC rej. status	Integer	RRC rejection status 1 = Network reject
RRC rej. cause	Integer	RRC rejection cause This is the same as a rejection cause in 3GPP TS 125.331 subclause 10.3.3.31. 0 = Congestion 1 = Unspecified

Parameters for LTE [\[Top\]](#)

Name	Type	Description
RRC rej. status	Integer	RRC rejection status See 3GPP TS 36.331 subclause 6.2.2 RRCConnectionReject. 1 = Network reject

Radio resource connection release (RRD)

Event ID	RRD
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	RRC connection state
Description	Recorded based on RRC signaling when RRC connection is released. This measurement event terminates the RRC connection state.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD and UMTS TD-SCDMA | Parameters for LTE |

Parameters [\[Top\]](#)

Name	Type	Description
RRC context ID	Context	RRC context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
RRC rel. status	Integer	RRC release status 1 = Normal release 2 = Dropped RRC connection
RRC rel. cause	Integer	RRC release cause This is the same as a release cause in 3GPP TS 125.331 subclause 10.3.3.32. 0 = Normal event 1 = Unspecified 2 = Pre-emptive release 3 = Congestion 4 = Re-establishment reject 5 = Directed signaling connection re-establishment 6 = User inactivity 1000 = T313 expired

Parameters for LTE [\[Top\]](#)

Name	Type	Description
RRC rel. status	Integer	RRC release status Normal/Dropped. See 3GPP TS 36.331 subclause 6.2.2 RRCConnectionRelease. 1 = Normal release 2 = Dropped RRC connection
RRC rel. cause	Integer	RRC release cause See 3GPP TS 36.331 subclause 6.2.2 RRCConnectionRelease. 0 = Load balancing TAU required 1 = Other

Radio resource connection re-establishment (RRRE)

Event ID	RRRE
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded based on RRC signaling after successful or failed RRC connection re-establishment.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

Parameters |Top|

Name	Type	Description
RRC context ID	Context	RRC context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
Re-est status	Integer	RRC re-establishment status Success/Failed/Rejected. See 3GPP TS 36.331 subclause 6.2.2 RRCConnectionReestablishment. 1 = Succeeded 2 = Failed 3 = Rejected
Re-est cause	Integer	RRC re-establishment cause See 3GPP TS 36.331 subclause 6.2.2 RRCConnectionReestablishment. 0 = Reconfiguration failure 1 = Handover failure 2 = Other failure

RAB allocation attempt (RABA)

Event ID	RABA
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	Always
Description	Recorded when radio access bearer allocation is attempted. This is based on the RRC signaling or information received from the trace interface. Also this can be logged to the beginning of the measurement file to indicate already established RAB.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for UMTS FDD and LTE |

Parameters [|Top](#)

Name	Type	Description
RAB context ID	Context	RAB context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and LTE [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
RAB type	Integer	RAB type 1 = CS 2 = PS
RAB ID	Integer	RAB ID
#RAB RBs	Integer	Number of RAB RBs
#Params/RAB RB	Integer	Number of parameters per RAB RB
RAB RB ID	Integer	RAB RB ID

RAB allocation success (RABC)

Event ID	RABC
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	RAB allocated attempt
Description	Recorded when radio access bearer allocation succeeded. This is based on RRC signaling or information received from the trace interface. Also this can be logged to the beginning of the measurement file to indicate already established RAB.
Tools	Nemo Outdoor, Nemo Handy

[|Parameters](#) [|Parameters for UMTS FDD and LTE](#) [|](#)

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Name	Type	Description
RAB context ID	Context	RAB context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and LTE [|Top](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
RAB type	Integer	RAB type 1 = CS 2 = PS

RAB ID	Integer	RAB ID
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RAB allocation failure (RABF)

Event ID	RABF
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	RAB allocation attempt state
Description	Recorded when radio access bearer allocation is failed. This is based on RRC signaling or information received from the trace interface.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for UMTS FDD and LTE | Parameters for LTE re-establishment cause | Parameters for UMTS failure cause | Parameters for UMTS ISHO failure cause | Parameters for GSM RR cause |

Parameters [\[Top\]](#)

Name	Type	Description
RAB context ID	Context	RAB context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD and LTE [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
RAB type	Integer	RAB type 1 = CS 2 = PS
RAB ID	Integer	RAB ID
RAB fail. type	Integer	RAB failure cause type 1 = LTE re-establishment cause 2 = UMTS failure cause 3 = UMTS ISHO failure cause 4 = GSM RR cause

Parameters for LTE re-establishment cause [\[Top\]](#)

Name	Type	Description
Re-est cause	Integer	RRC re-establishment cause See 3GPP TS 36.331 subclause 6.2.2 RRCConnectionReestablishment. 0 = Reconfiguration failure 1 = Handover failure 2 = Other failure

Parameters for UMTS failure cause [\[Top\]](#)

Name	Type	Description
RRC cause	Integer	RRC cause This is the same as a failure cause defined by 3GPP TS 25.331 subclause 10.3.3.13.

0 = Configuration unsupported
1 = Physical channel failure
2 = Incompatible simultaneous reconfiguration
3 = Protocol error
4 = Compressed mode runtime error
5 = Cell update occurred
6 = Invalid configuration
7 = Configuration incomplete
8 = Unsupported measurement
9 = MBMS session already received correctly
10 = Lower priority MBMS service

Parameters for UMTS ISHO failure cause |Top|

Name	Type	Description
Inter-RAT cause	Integer	Inter-RAT handover failure cause This is the same as a failure cause defined by 3GPP TS 25.331 subclause 10.3.8.6. 0 = Configuration unacceptable 1 = Physical channel failure 2 = Protocol error 3 = Inter-RAT protocol error 4 = Unspecified

Parameters for GSM RR cause |Top|

Name	Type	Description
RR cause	Integer	RR cause See 3GPP TS 144.018 subclause 10.5.2.31. 0 = Normal event 1 = Abnormal release, unspecified 2 = Abnormal release, channel unacceptable 3 = Abnormal release, timer expired 4 = Abnormal release, no activity on the radio path 5 = Pre-emptive release 6 = UTRAN configuration unknown 8 = Handover impossible, timing advance out of range 9 = Channel mode unacceptable 10 = Frequency not implemented 11 = Originator or talker leaving group call area 12 = Lower layer failure 65 = Call already cleared 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message type not compatible with protocol state 100 = Conditional IE error 101 = No cell allocation available 111 = Protocol error unspecified

RAB release (RABD)

Event ID	RABD
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	RAB allocated state
Description	Recorded when radio access bearer is deallocated. This is based on RRC signaling or information received from the trace interface.

Tools	Nemo Outdoor, Nemo Handy
Parameters	Parameters for UMTS FDD, and LTE

Parameters |Top|

Name	Type	Description
RAB context ID	Context	RAB context ID
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD, and LTE |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
RAB type	Integer	RAB type 1 = CS 2 = PS
RAB ID	Integer	RAB ID
RAB release type	Integer	RAB release type 1 = Network release 2 = UE release

Packet bearer allocation attempt (PBA)

Event ID	PBA
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when the EPS bearer allocation is attempted. This is based on the NAS signaling or information received from the trace interface. Also this can be logged to the beginning of the measurement file to indicate already established EPS bearer.
Tools	Nemo Outdoor

Parameters |Parameters for LTE |

Parameters |Top|

Name	Type	Description
Packet bearer context ID	Context	Packet bearer context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
PB type	Integer	Packet bearer type 1 = Default 2 = Dedicated

Packet bearer allocation success (PBC)

Event ID	PBC
Cellular systems	LTE FDD,LTE TDD
Record state	Packet bearer allocation attempt state
Description	Recorded when the EPS bearer allocation succeeded. This is based on NAS signaling or information received from the trace interface. Also this can be logged to the beginning of the measurement file to indicate already established EPS bearer.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for LTE](#) |

Parameters [|Top](#)

Name	Type	Description
Packet bearer context ID	Context	Packet bearer context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE [|Top](#)

Name	Type	Description
PB ID	Integer	Packet bearer identity With the LTE this is the same as the EPS bearer ID. See 3GPP TS 125.007 subclause 11.2.3.1.5. Range: 5 – 15
Linked PB ID	Integer	Packet bearer identity (linked) Defines the default bearer ID for the dedicated bearer. Range: 5 – 15

Packet bearer allocation failure (PBF)

Event ID	PBF
Cellular systems	LTE FDD,LTE TDD
Record state	Packet bearer allocation attempt state
Description	Recorded when the EPS bearer allocation failed. This is based on NAS signaling or information received from the trace interface.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for LTE](#) |

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Name	Type	Description
Packet bearer context ID	Context	Packet bearer context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
ESM cause	Integer	EPS bearer reject cause 8 = Operator determined barring 24 = MBMS bearer capabilities insufficient for the service 25 = LLC or SMDCP failure (A/Gb mode only) 26 = Insufficient resources 27 = Missing or unknown APN 28 = Unknown PDP address or PDP type 29 = User authentication failed 30 = Activation rejected by GGSN, serving GW, or PDN GW 31 = Activation rejected, unspecified 32 = Service option not supported 33 = Requested service option not subscribed 34 = Service option temporarily out of order 35 = NSAPI/PTI already used 36 = Regular deactivation 37 = QoS not accepted 38 = Network failure 39 = Reactivation requested 40 = Feature not supported 41 = Semantic error in the TFT operation 42 = Syntactical error in the TFT operation 43 = Unknown PDP context or bearer identity 44 = Semantic errors in packet filter(s) 45 = Syntactical errors in packet filter(s) 46 = PDP context without TFT already activated 47 = Multicast group membership time-out or PTI mismatch 49 = Last PDN disconnection not allowed 50 = PDN type IPv4 only allowed 51 = PDN type IPv6 only allowed 52 = Single address bearers only allowed 53 = ESM information not received 54 = PDN connection does not exist 55 = Multiple PDN connections for a given APN not allowed 56 = Collision with network initiated request 59 = Unsupported QCI value 81 = Invalid transaction identifier or PTI value 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message not compatible with protocol state. 99 = Information element non-existent or not implemented 100 = Conditional IE error 101 = Message not compatible with protocol state 111 = Protocol error, unspecified 112 = APN restriction value incompatible with active PDP context

Packet bearer release (PBD)

Event ID	PBD
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Cellular systems	LTE FDD,LTE TDD
Record state	Packet bearer allocated state
Description	Recorded when the EPS bearer is released. This is based on NAS signaling or information received from the trace interface.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

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Name	Type	Description
Packet bearer context ID	Context	Packet bearer context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE |Top|

Name	Type	Description
ESM cause	Integer	EPS bearer release cause 8 = Operator determined barring 24 = MBMS bearer capabilities insufficient for the service 25 = LLC or SMDCP failure (A/Gb mode only) 26 = Insufficient resources 27 = Missing or unknown APN 28 = Unknown PDP address or PDP type 29 = User authentication failed 30 = Activation rejected by GGSN, serving GW, or PDN GW 31 = Activation rejected, unspecified 32 = Service option not supported 33 = Requested service option not subscribed 34 = Service option temporarily out of order 35 = NSAPI/PTI already used 36 = Regular deactivation 37 = QoS not accepted 38 = Network failure 39 = Reactivation requested 40 = Feature not supported 41 = Semantic error in the TFT operation 42 = Syntactical error in the TFT operation 43 = Unknown PDP context or bearer identity 44 = Semantic errors in packet filter(s) 45 = Syntactical errors in packet filter(s) 46 = PDP context without TFT already activated 47 = Multicast group membership time-out or PTI mismatch 49 = Last PDN disconnection not allowed 50 = PDN type IPv4 only allowed 51 = PDN type IPv6 only allowed 52 = Single address bearers only allowed 53 = ESM information not received 54 = PDN connection does not exist 55 = Multiple PDN connections for a given APN not allowed 56 = Collision with network initiated request 59 = Unsupported QCI value 81 = Invalid transaction identifier or PTI value 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message not compatible with protocol state. 99 = Information element non-existent or not implemented 100 = Conditional IE error 101 = Message not compatible with protocol state 111 = Protocol error, unspecified 112 = APN restriction value incompatible with active PDP context

Ciphering info (CIPI)

Event ID	CIPI
Cellular systems	TETRA
Record state	Always
Description	Recorded when ciphering information is modified.
Tools	Nemo Outdoor

Parameters | Parameters for TETRA |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 2 = TETRA

Parameters for TETRA |Top|

Name	Type	Description
Air encryption	Integer	Air interface encryption 0 = Disabled 1 = SCK 2 = DCK
KSG	String	Ciphering KSG
SCK	String	Ciphering SCK

Layer 3 signaling message (L3SM)

Event ID	L3SM
Cellular systems	GSM,TETRA,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,GAN WLAN,AMPS,DAMPS,iDEN
Record state	Always
Description	Recorded when a Layer 3 or an NAS signaling message is sent or received.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM | Parameters for TETRA | Parameters for UMTS and LTE | Parameters for cdmaOne and CDMA 1x | Parameters for GAN WLAN | Parameters for AMPS and DAMPS | Parameters for iDEN |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA

		7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 21 = GAN WLAN 51 = AMPS 52 = NAMPS 53 = DAMPS 55 = iDEN
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Parameters for GSM [|Top|](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
Subchannel	String	Layer3 subchannel The subchannel name that was used for signaling in GSM. If the specific channel name is unknown, the channel group name; e.g., BCH or CCCH, is written in file. BCH channels (FCCH, SCH, BCCH) CCCH channels (PCH, RACH, AGCH) DCCH channels (SDCCH, SACCH, FACCH) TCH channels (TCH) Packet channels (PACCH, PDTCH).
Channel	Integer	Layer3 channel
BSIC	Integer	Layer3 BSIC Range: 0 – 63
Type	Integer	Layer3 message type 1 = Normal 2 = Short L2 header 3 = 8 bit access burst 4 = 11 bit access burst 5 = 11 bit EGRPS access burst 6 = Message without header
L3 data	String (hex)	Layer3 data

Parameters for TETRA [|Top|](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
Subchannel	String	Layer3 subchannel The channel type: MCCH, TCH.
L3 data	String (hex)	Layer3 data

Parameters for UMTS and LTE [|Top|](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
Subchannel	String	Layer3 subchannel
Channel	Integer	Layer3 channel
SC	Integer	Layer3 scrambling code Scrambling code for UMTS FDD, cell parameters ID for UMTS TD-SCDMA, and physical cell id for LTE. Range: 0 – 511
L3 data	String (hex)	Layer3 data

Parameters for cdmaOne and CDMA 1x [|Top](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
Channel type	String	Layer3 channel type The channel type: SCH, DPCH, DACH, DTCH, FDTCH, RDTCH, and GCSNA.
P_REV	Integer	Layer3 P_REV 1 = J-STD-008 in PCS Band Only 2 = IS-95 in Cellular Band Only 3 = IS-95A + TSB74 4 = IS-95B Partial 5 = IS-95B Full 6 = IS-2000 Release 0 7 = IS-2000 Release A 8 = IS-2000 Release B Partial 9 = IS-2000 Release B Full 10 = IS-2000 Release C 11 = IS-2000 Release D (1xEV-DV)
L3 data	String (hex)	Layer3 data

Parameters for GAN WLAN [|Top](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
L3 data	String (hex)	Layer3 data

Parameters for AMPS and DAMPS [|Top](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
Channel type	String	Layer3 channel type The channel type: ACC, AVC, DCCH, DTC, SCH, DPCH, DACH, DTCH.
L3 data	String (hex)	Layer3 data

Parameters for iDEN [|Top](#)

Name	Type	Description
Direction	Integer	Layer3 direction 1 = Uplink 2 = Downlink
L3 msg	String	Layer3 message
Subchannel	String	Layer3 subchannel Possible channel types are BCCH, CCCH, TCCH, RACH, DCCH, PCH, PBCH.
L3 data	String (hex)	Layer3 data

Layer 2 signaling message (L2SM)

Event ID	L2SM
Cellular systems	GSM
Record state	Always
Description	Recorded when a Layer 3 or an NAS signaling message is sent or received.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

[Parameters](#) | [Parameters for GSM](#) |

Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM

Parameters for GSM [|Top](#)

Name	Type	Description
Direction	Integer	Layer2 direction 1 = Uplink 2 = Downlink
L2 msg	String	Layer2 message
Subchannel	String	Layer2 subchannel The subchannel name that was used for signaling in GSM. If the specific channel name is unknown, the channel group name; e.g., BCH or CCCH, is written in file. BCH channels (FCCH, SCH, BCCH) CCCH channels (PCH, RACH, AGCH) DCCH channels (SDCCH, SACCH, FACCH) TCH channels (TCH) Packet channels (PACCH, PDTCH).
ARFCN	Integer	Layer2 channel
BSIC	Integer	Layer2 BSIC Range: 0 – 63
Type	Integer	Layer2 message type 1 = Normal 2 = Short L2 header 3 = 8 bit access burst 4 = 11 bit access burst 5 = 11 bit EGRPS access burst 6 = Message without header
L2 data	String (hex)	Layer2 data

RRC signaling message (RRCSM)

Event ID	RRCSM
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD

Record state	Always
Description	Recorded when an RRC signaling message is sent or received.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for UMTS | Parameters for LTE |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS [|Top|](#)

Name	Type	Description
Direction	Integer	RRC direction 1 = Uplink 2 = Downlink
RRC msg	String	RRC message name
Subchannel	String	RRC subchannel Defines the used logical channel or combination of logical and transport channel. Possible values are DCCH, CCCH, PCCH, BCCH, BCCH_BCH, BCCH_FACH, and MCCH.
UARFCN	Integer	RRC channel
SC	Integer	RRC scrambling code Range: 0 – 511
RRC data	String (hex)	RRC data

Parameters for LTE [|Top|](#)

Name	Type	Description
Direction	Integer	RRC direction 1 = Uplink 2 = Downlink
RRC msg	String	RRC message name
Subchannel	String	RRC subchannel Defines the used logical channel or combination of logical and transport channel. Possible values are DCCH, CCCH, PCCH, BCCH-SCH, BCCH-BCH, and MCCH.
EARFCN	Integer	RRC channel
PCI	Integer	RRC physical channel cell ID Range: 0 – 503
RRC data	String (hex)	RRC data

RLC signaling message (RLCSM)

Event ID	RLCSM
Cellular systems	UMTS FDD

Record state	Always
Description	Recorded when an RLC signaling message is sent or received.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for UMTS FDD |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
Direction	Integer	RLC direction 1 = Uplink 2 = Downlink
RLC msg	String	RLC message
Subchannel	String	RLC subchannel The subchannel that was used for signaling in UMTS. For system information messages, the subchannel is a combination of the logical channel and the transport channel (CCCH, DCCH, BCCH, PCCH, SHCCH).
RB	Integer	RLC radio bearer Range: 0 – 32
RLC mode	Integer	RLC mode 0 = TM 1 = UM 2 = AM
Length indicator	Integer	RLC length indicator size Defines the size of the RLC length indicator field. Valid values are 0, 7, and 15. Range: 0 – 15 Unit: bit
RLC data	String (hex)	RLC data

MAC signaling message (MACSM)

Event ID	MACSM
Cellular systems	GSM,WiMAX
Record state	Always
Description	Recorded when an MAC signaling message is sent or received.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for GSM | Parameters for WiMAX |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 25 = WiMAX

Parameters for GSM |Top|

Name	Type	Description
Direction	Integer	RLC/MAC direction 1 = Uplink 2 = Downlink
RLC/MAC msg	String	RLC/MAC message
Subchannel	String	RLC/MAC subchannel The subchannel name that was used for signaling (PRACH, PTCCH, PCCCH, PACCH or PDTCH).
Type	Integer	RLC/MAC message type 1 = Normal 2 = Short L2 header 3 = 8 bit access burst 4 = 11 bit access burst 5 = 11 bit EGRPS access burst 6 = Message without header
RLC/MAC data	String (hex)	RLC/MAC data

Parameters for WiMAX |Top|

Name	Type	Description
Direction	Integer	MAC direction 1 = Uplink 2 = Downlink
MAC msg.	String	MAC message
Frame number	Integer	MAC frame number
MAC data	String (hex)	MAC data Contents of the signaling message in hexadecimal values.
MAC ver	Integer	WiMAX MAC version 5 = 802.16e-2005 6 = 802.16/cor2-2007

LLC signaling message (LLCSM)

Event ID	LLCSM
Cellular systems	GSM,TETRA
Record state	Always
Description	Recorded when an LLC signaling message is sent or received.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

|Parameters |Parameters for GSM |Parameters for TETRA |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA

Parameters for GSM [|Top|](#)

Name	Type	Description
Direction	Integer	LLC direction 1 = Uplink 2 = Downlink
LLC msg	String	LLC message The LLC message name in text format.
LLC data	String (hex)	LLC data Contents of the LLC message in hexadecimal values.

Parameters for TETRA [|Top|](#)

Name	Type	Description
Direction	Integer	LLC direction 1 = Uplink 2 = Downlink
LLC msg	String	LLC message The LLC message name in text format.
LLC data	String (hex)	LLC data Contents of the LLC message in hexadecimal values.

SNP signaling message (SNPSM)

Event ID	SNPSM
Cellular systems	EVDO
Record state	Always
Description	Recorded when an SNP signaling message is sent or received.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for EVDO](#) |
Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 12 = EVDO

Parameters for EVDO [|Top|](#)

Name	Type	Description
Direction	Integer	SNP direction 1 = Uplink 2 = Downlink
SNP msg. name	String	SNP message name
SNP ch type	String	SNP channel type
SNP layer	String	SNP layer
Protocol subtype	Integer	SNP protocol subtype
SNP data	String (hex)	SNP data

RRLP signaling message (RRLPSM)

Event ID	RRLPSM
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Always
Description	Recorded when an RRLP signaling message is sent or received.
Tools	Nemo Outdoor

Parameters | Parameters for GSM, UMTS FDD, UMTS TD-SCDMA, and GAN WLAN |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN

Parameters for GSM, UMTS FDD, UMTS TD-SCDMA, and GAN WLAN |Top|

Name	Type	Description
Direction	Integer	RRLP direction 1 = Uplink 2 = Downlink
RRLP msg	String	RRLP message
Subchannel	String	RRLP subchannel
RRLP data	String (hex)	RRLP data Contents of the RRLP message in hexadecimal values.

LPP signaling message (LPPSM)

Event ID	LPPSM
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when a LTE positioning protocol signaling message is sent or received.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD

8 = LTE TDD

Parameters for LTE [|Top|](#)

Name	Type	Description
Direction	Integer	LPP direction 1 = Uplink 2 = Downlink
LPP msg	String	LPP message
LPP data	String (hex)	LPP data Contents of the LTE positioning protocol message in hexadecimal values.

GAN signaling message (GANSM)

Event ID	GANSM
Cellular systems	GAN WLAN
Record state	Always
Description	Recorded when a GAN signaling message is sent or received.
Tools	Nemo Outdoor

[Parameters](#) [|Parameters for GAN WLAN](#)**Parameters** [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 21 = GAN WLAN

Parameters for GAN WLAN [|Top|](#)

Name	Type	Description
Direction	Integer	GAN direction 1 = Uplink 2 = Downlink
GAN msg.	String	GAN message
Subchannel	String	GAN subchannel
GAN msg. data	String (hex)	GAN message data

SIP signaling message (SIPSM)

Event ID	SIPSM
Cellular systems	All

Record state	Always
Description	Recorded when an SIP signaling message is sent or received.
Tools	Nemo Outdoor

Parameters |

Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
Direction	Integer	SIP direction 1 = Uplink 2 = Downlink
SIP name	String	SIP message
SIP data	String (hex)	SIP data Contents of the SIP message in hexadecimal values.

RTP signaling message (RTPSM)

Event ID	RTPSM
Cellular systems	All
Record state	Always
Description	Recorded when an RTP signaling message is sent or received.
Tools	Nemo Outdoor

Parameters |

Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD

		6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN 25 = WiMAX 50 = NMT 51 = AMPS 52 = NAMPS 53 = DAMPS 54 = ETACS 55 = iDEN 60 = PSTN 61 = ISDN 65 = DVB-H
Direction	Integer	RTP direction 1 = Uplink 2 = Downlink
RTP message	String	RTP message
RTP msg. nr.	Integer	RTP message sequence number Range: 0 – 65535
RTP data	String (hex)	RTP data

Packet session activation attempt (PAA)

Event ID	PAA
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,CDMA 1x,EVDO,GAN WLAN,WiMAX,iDEN
Record state	Idle state
Description	Recorded when the user initiates the packet session activation attempt. If this information is not available, the measurement event is recorded with both GSM and UMTS when ACTIVATE_PDP_CONTEXT_REQUEST signaling message is sent to the network. Note that PAA, PAC, PAF, and PAD measurement events are not an exact match with the PDP context in GSM and UMTS but are instead used to describe "general" packet session. E.g. some modem initialization or attach can be done before the PDP CONTEXT REQUEST signaling message is sent to the network. If the packet session is active in the beginning of the measurement, the PAA and PAC pair is recorded immediately at the beginning of the measurement. This measurement event begins the packet activation attempt state.
Tools	Nemo Outdoor

Parameters | Parameters for GSM, UMTS, and LTE | Parameters for CDMA 1x and EVDO | Parameters for iDEN |

Parameters [\[Top\]](#)

Name	Type	Description
Packet session context ID	Context	Packet session context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

11 = CDMA 1x
12 = EVDO
55 = iDEN

Parameters for GSM, UMTS, and LTE [\[Top\]](#)

Name	Type	Description
Initiator	Integer	Initiator 1 = Mobile station initiated 2 = Network station initiated
Protocol type	Integer	Packet protocol type 1 = IP
APN	String	Access point name
Static IP	String	Requested packet protocol address If static IP address is used, this is own IP address in string format between quotes. If dynamic IP allocation is used, IP address is 0.0.0.0.
Header compr.	Integer	Header compression 0 = Off 1 = On (manufacturer preferred compression) 2 = RFC1144 (VanJacobsen) 3 = RFC2507 (Degermark) 4 = RFC3095 (RoHC)
Compression	Integer	Data compression 0 = Off 1 = On (manufacturer preferred compression) 2 = V.42bis 3 = V.44

Parameters for CDMA 1x and EVDO [\[Top\]](#)

Name	Type	Description
Initiator	Integer	Initiator 1 = Mobile station initiated 2 = Network station initiated
Protocol type	Integer	Packet protocol type 1 = IP

Parameters for iDEN [\[Top\]](#)

Name	Type	Description
Initiator	Integer	Initiator 1 = Mobile station initiated 2 = Network station initiated
Protocol type	Integer	Packet protocol type 1 = IP

Packet session activation failed (PAF)

Event ID	PAF
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,CDMA 1x,EVDO,GAN WLAN,WiMAX,iDEN
Record state	Packet activation attempt state

Description	Recorded when packet session activation attempt fails. The failure can be based on signaling, trace interface, or Microsoft Windows Operating System RAS causes. This measurement event terminates the packet activation attempt state.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
Packet session context ID	Context	Packet session context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 25 = WiMAX 55 = iDEN
Fail status	Integer	Packet session connection failure status 1 = User abort 2 = Network reject (SM cause) 3 = Mobile reject (SM cause) 4 = Timeout 5 = PPP error (OS RAS cause) 6 = Test system failure (OS RAS cause) 7 = No service
Deact. cause	Integer	Packet session deactivation cause 8 = Operator determined barring 24 = MBMS bearer capabilities insufficient for the service 25 = LLC or SMDCP failure (A/Gb mode only) 26 = Insufficient resources 27 = Missing or unknown APN 28 = Unknown PDP address or PDP type 29 = User authentication failed 30 = Activation rejected by GGSN, serving GW, or PDN GW 31 = Activation rejected, unspecified 32 = Service option not supported 33 = Requested service option not subscribed 34 = Service option temporarily out of order 35 = NSAPI/PTI already used 36 = Regular deactivation 37 = QoS not accepted 38 = Network failure 39 = Reactivation requested 40 = Feature not supported 41 = Semantic error in the TFT operation 42 = Syntactical error in the TFT operation 43 = Unknown PDP context or bearer identity 44 = Semantic errors in packet filter(s) 45 = Syntactical errors in packet filter(s) 46 = PDP context without TFT already activated 47 = Multicast group membership time-out or PTI mismatch 49 = Last PDN disconnection not allowed 50 = PDN type IPv4 only allowed 51 = PDN type IPv6 only allowed 52 = Single address bearers only allowed 53 = ESM information not received 54 = PDN connection does not exist 55 = Multiple PDN connections for a given APN not allowed 56 = Collision with network initiated request 59 = Unsupported QCI value 81 = Invalid transaction identifier or PTI value 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented

98 = Message not compatible with protocol state.
99 = Information element non-existent or not implemented
100 = Conditional IE error
101 = Message not compatible with protocol state
111 = Protocol error, unspecified
112 = APN restriction value incompatible with active PDP context
600 = An operation is pending.
601 = An invalid port handle was detected.
602 = The specified port is already open.
603 = The caller's buffer is too small.
604 = Incorrect information was specified.
605 = The port information cannot be set.
606 = The specified port is not connected.
607 = An invalid event was detected.
608 = A device was specified that does not exist.
609 = A device type was specified that does not exist.
610 = An invalid buffer was specified.
611 = A route was specified that is not available.
612 = A route was specified that is not allocated.
613 = An invalid compression was specified.
614 = There were insufficient buffers available.
615 = The specified port was not found.
616 = An asynchronous request is pending.
617 = The modem (or other connecting device) is already disconnecting.
618 = The specified port is not open.
619 = The specified port is not connected.
620 = No endpoints could be determined.
621 = The system could not open the phone book file.
622 = The system could not load the phone book file.
623 = The system could not find the phone book entry for this connection.
624 = The system could not update the phone book file.
625 = The system found invalid information in the phone book file.
626 = A string could not be loaded.
627 = A key could not be found.
628 = The connection was closed.
629 = The connection was closed by the remote computer.
630 = The modem (or other connecting device) was disconnected due to hardware failure.
631 = The user disconnected the modem (or other connecting device).
632 = An incorrect structure size was detected.
633 = The modem (or other connecting device) is already in use or is not configured properly.
634 = Your computer could not be registered on the remote network.
635 = There was an unknown error.
636 = The device attached to the port is not the one expected.
637 = A string was detected that could not be converted.
638 = The request has timed out.
639 = No asynchronous net is available.
640 = An error has occurred involving NetBIOS.
641 = The server cannot allocate NetBIOS resources needed to support the client.
642 = One of your computer's NetBIOS names is already registered on the remote network.
643 = A network adapter at the server failed.
644 = You will not receive network message popups.
645 = There was an internal authentication error.
646 = The account is not permitted to log on at this time of day.
647 = The account is disabled.
648 = The password for this account has expired.
649 = The account does not have permission to dial in.
650 = The remote access server is not responding.
651 = The modem (or other connecting device) has reported an error.
652 = There was an unrecognized response from the modem (or other connecting device).
653 = A macro required by the modem (or other connecting

device) was not found in the device.INF file.
 654 = A command or response in the device.INF file section refers to an undefined macro.
 655 = The macro was not found in the device.INF file section.
 656 = The macro in the device.INF file section contains an undefined macro.
 657 = The device.INF file could not be opened.
 658 = The device name in the device.INF or media.INI file is too long.
 659 = The media.INI file refers to an unknown device name.
 660 = The device.INF file contains no responses for the command.
 661 = The device.INF file is missing a command.
 662 = There was an attempt to set a macro not listed in device.INF file section.
 663 = The media.INI file refers to an unknown device type.
 664 = The system has run out of memory.
 665 = The modem (or other connecting device) is not properly configured.
 666 = The modem (or other connecting device) is not functioning.
 667 = The system was unable to read the media.INI file.
 668 = The connection was terminated.
 669 = The usage parameter in the media.INI file is invalid.
 670 = The system was unable to read the section name from the media.INI file.
 671 = The system was unable to read the device type from the media.INI file.
 672 = The system was unable to read the device name from the media.INI file.
 673 = The system was unable to read the usage from the media.INI file.
 674 = The system was unable to read the maximum connection BPS rate from the media.INI file.
 675 = The system was unable to read the maximum carrier connection speed from the media.INI file.
 676 = The phone line is busy.
 677 = A person answered instead of a modem (or other connecting device).
 678 = There was no answer.
 679 = The system could not detect the carrier.
 680 = There was no dial tone.
 681 = The modem (or other connecting device) reported a general error.
 682 = There was an error in writing the section name.
 683 = There was an error in writing the device type.
 684 = There was an error in writing the device name.
 685 = There was an error in writing the maximum connection speed.
 686 = There was an error in writing the maximum carrier speed.
 687 = There was an error in writing the usage.
 688 = There was an error in writing the default-off.
 689 = There was an error in reading the default-off.
 690 = ERROR_EMPTY_INI_FILE
 691 = Access was denied because the username and/or password was invalid on the domain.
 692 = There was a hardware failure in the modem (or other connecting device).
 693 = ERROR_NOT_BINARY_MACRO
 694 = ERROR_DCB_NOT_FOUND
 695 = The state machines are not started.
 696 = The state machines are already started.
 697 = The response looping did not complete.
 698 = A response keyname in the device.INF file is not in the expected format.
 699 = The modem (or other connecting device) response caused a buffer overflow.
 700 = The expanded command in the device.INF file is too long.
 701 = The modem moved to a connection speed not supported by the COM driver.
 702 = Device response received when none expected.
 703 = The connection needs information from you, but the

application does not allow user interaction.
704 = The callback number is invalid.
705 = The authorization state is invalid.
706 = ERROR_WRITING_INITBPS
707 = There was an error related to the X.25 protocol.
708 = The account has expired.
709 = There was an error changing the password on the domain. The password might have been too short or might have matched a previously used password.
710 = Serial overrun errors were detected while communicating with the modem.
711 = The Remote Access Service Manager could not start. Additional information is provided in the event log.
712 = The two-way port is initializing. Wait a few seconds and redial.
713 = No active ISDN lines are available.
714 = No ISDN channels are available to make the call.
715 = Too many errors occurred because of poor phone line quality.
716 = The Remote Access Service IP configuration is unusable.
717 = No IP addresses are available in the static pool of Remote Access Service IP addresses.
718 = The connection timed out waiting for a valid response from the remote computer.
719 = The connection was terminated by the remote computer.
720 = The connection attempt failed because your computer and the remote computer could not agree on PPP control protocols.
721 = The remote computer is not responding.
722 = Invalid data was received from the remote computer. This data was ignored.
723 = The phone number, including prefix and suffix, is too long.
724 = The IPX protocol cannot dial out on the modem (or other connecting device) because this computer is not configured for dialing out (it is an IPX router).
725 = The IPX protocol cannot dial in on the modem (or other connecting device) because this computer is not configured for dialing in (the IPX router is not installed).
726 = The IPX protocol cannot be used for dialing out on more than one modem (or other connecting device) at a time.
727 = Cannot access TCPCFG.DLL.
728 = The system cannot find an IP adapter.
729 = SLIP cannot be used unless the IP protocol is installed.
730 = Computer registration is not complete.
731 = The protocol is not configured.
732 = Your computer and the remote computer could not agree on PPP control protocols.
733 = Your computer and the remote computer could not agree on PPP control protocols.
734 = The PPP link control protocol was terminated.
735 = The requested address was rejected by the server.
736 = The remote computer terminated the control protocol.
737 = Loopback was detected.
738 = The server did not assign an address.
739 = The authentication protocol required by the remote server cannot use the stored password. Redial, entering the password explicitly.
740 = An invalid dialing rule was detected.
741 = The local computer does not support the required data encryption type.
742 = The remote computer does not support the required data encryption type.
743 = The remote computer requires data encryption.
744 = The system cannot use the IPX network number assigned by the remote computer. Additional information is provided in the event log.
745 = ERROR_INVALID_SMM
746 = ERROR_SMM_UNINITIALIZED
747 = ERROR_NO_MAC_FOR_PORT
748 = ERROR_SMM_TIMEOUT
749 = ERROR_BAD_PHONE_NUMBER

750 = ERROR_WRONG_MODULE

751 = The callback number contains an invalid character. Only the following 18 characters are allowed: 0 to 9, T, P, W, (,), -, @, and space.

752 = A syntax error was encountered while processing a script.

753 = The connection could not be disconnected because it was created by the multi-protocol router.

754 = The system could not find the multi-link bundle.

755 = The system cannot perform automated dial because this connection has a custom dialer specified.

756 = This connection is already being dialed.

757 = Remote Access Services could not be started automatically. Additional information is provided in the event log.

758 = Internet Connection Sharing is already enabled on the connection.

759 = An error occurred while the existing Internet Connection Sharing settings were being changed.

760 = An error occurred while routing capabilities were being enabled.

761 = An error occurred while Internet Connection Sharing was being enabled for the connection.

762 = An error occurred while the local network was being configured for sharing.

763 = Internet Connection Sharing cannot be enabled. There is more than one LAN connection other than the connection to be shared.

764 = No smart card reader is installed.

765 = Internet Connection Sharing cannot be enabled. A LAN connection is already configured with the IP address that is required for automatic IP addressing.

766 = A certificate could not be found. Connections that use the L2TP protocol over IPSec require the installation of a machine certificate, also known as a computer certificate.

767 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network has more than one IP address configured. Please reconfigure the LAN connection with a single IP address before enabling Internet Connection Sharing.

768 = The connection attempt failed because of failure to encrypt data.

769 = The specified destination is not reachable.

770 = The remote computer rejected the connection attempt.

771 = The connection attempt failed because the network is busy.

772 = The remote computer's network hardware is incompatible with the type of call requested.

773 = The connection attempt failed because the destination number has changed.

774 = The connection attempt failed because of a temporary failure. Try connecting again.

775 = The call was blocked by the remote computer.

776 = The call could not be connected because the remote computer has invoked the Do Not Disturb feature.

777 = The connection attempt failed because the modem (or other connecting device) on the remote computer is out of order.

778 = It was not possible to verify the identity of the server.

779 = To dial out using this connection you must use a smart card.

780 = An attempted function is not valid for this connection.

781 = The encryption attempt failed because no valid certificate was found.

782 = Connection Sharing (NAT) is currently installed as a routing protocol, and must be removed before enabling Internet Connection Sharing.

783 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network is either not present, or is disconnected from the network. Please ensure that the LAN adapter is connected before enabling Internet Connection Sharing.

784 = You cannot dial using this connection at logon time, because it is configured to use a user name different than the one on the smart card. If you want to use it at logon time, you must configure it to use the user name on the smart card.

785 = You cannot dial using this connection at logon time, because it is not configured to use a smart card. If you want to use it at logon time, you must edit the properties of this connection so that it uses a smart card.

786 = The L2TP connection attempt failed because there is no valid machine certificate on your computer for security authentication.

787 = The L2TP connection attempt failed because the security layer could not authenticate the remote computer.

788 = The L2TP connection attempt failed because the security layer could not negotiate compatible parameters with the remote computer.

789 = The L2TP connection attempt failed because the security layer encountered a processing error during initial negotiations with the remote computer.

790 = The L2TP connection attempt failed because certificate validation on the remote computer failed.

791 = The L2TP connection attempt failed because security policy for the connection was not found.

792 = The L2TP connection attempt failed because security negotiation timed out.

793 = The L2TP connection attempt failed because an error occurred while negotiating security.

794 = The Framed Protocol RADIUS attribute for this user is not PPP.

795 = The Tunnel Type RADIUS attribute for this user is not correct.

796 = The Service Type RADIUS attribute for this user is neither Framed nor Callback Framed.

797 = The connection failed because the modem (or other connecting device) was not found. Please make sure that the modem or other connecting device is installed.

798 = A certificate could not be found that can be used with this Extensible Authentication Protocol.

799 = Not available

Packet session activated (PAC)

Event ID	PAC
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,CDMA 1x,EVDO,GAN WLAN,WiMAX,iDEN
Record state	Packet activation attempt state
Description	Recorded when packet session activation is successful on NAS layer. Normally this is based on signaling messages but there can be other basis as well (e.g. if packet session is active when measurement is started, the measurement event is recorded immediately). This measurement event starts the packet active state.
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Name	Type	Description
Packet session context ID	Context	Packet session context ID

Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 25 = WiMAX 55 = iDEN
Packet act. state	Integer	Packet session activation state 1 = Air interface connected (in session management layer) 2 = Packet session activated
IP	String	Packet protocol address Received IP address.

Packet session deactivated (PAD)

Event ID	PAD
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,CDMA 1x,EVDO,GAN WLAN,WiMAX,iDEN
Record state	Packet active state
Description	Recorded when packet session is terminated. The measurement event is not recorded before the packet session has been terminated by BOTH the NAS signaling layer AND the possible operating system-based services used for the connection (e.g. with the Microsoft Windows, the RAS has terminated the connection). This measurement event terminates the packet active state.
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Name	Type	Description
Packet session context ID	Context	Packet session context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 11 = CDMA 1x 12 = EVDO 21 = GAN WLAN 25 = WiMAX 55 = iDEN
Deact. status	Integer	Packet session deactivation status 1 = Normal deactivation 2 = Network deactivation (SM cause) 3 = Mobile deactivation (SM cause) 4 = Timeout 5 = PPP error (OS RAS cause) 6 = Test system failure (OS RAS cause)
Deact. cause	Integer	Packet session deactivation cause 8 = Operator determined barring

24 = MBMS bearer capabilities insufficient for the service
 25 = LLC or SMDCP failure (A/Gb mode only)
 26 = Insufficient resources
 27 = Missing or unknown APN
 28 = Unknown PDP address or PDP type
 29 = User authentication failed
 30 = Activation rejected by GGSN, serving GW, or PDN GW
 31 = Activation rejected, unspecified
 32 = Service option not supported
 33 = Requested service option not subscribed
 34 = Service option temporarily out of order
 35 = NSAPI/PTI already used
 36 = Regular deactivation
 37 = QoS not accepted
 38 = Network failure
 39 = Reactivation requested
 40 = Feature not supported
 41 = Semantic error in the TFT operation
 42 = Syntactical error in the TFT operation
 43 = Unknown PDP context or bearer identity
 44 = Semantic errors in packet filter(s)
 45 = Syntactical errors in packet filter(s)
 46 = PDP context without TFT already activated
 47 = Multicast group membership time-out or PTI mismatch
 49 = Last PDN disconnection not allowed
 50 = PDN type IPv4 only allowed
 51 = PDN type IPv6 only allowed
 52 = Single address bearers only allowed
 53 = ESM information not received
 54 = PDN connection does not exist
 55 = Multiple PDN connections for a given APN not allowed
 56 = Collision with network initiated request
 59 = Unsupported QCI value
 81 = Invalid transaction identifier or PTI value
 95 = Semantically incorrect message
 96 = Invalid mandatory information
 97 = Message type non-existent or not implemented
 98 = Message not compatible with protocol state.
 99 = Information element non-existent or not implemented
 100 = Conditional IE error
 101 = Message not compatible with protocol state
 111 = Protocol error, unspecified
 112 = APN restriction value incompatible with active PDP context
 600 = An operation is pending.
 601 = An invalid port handle was detected.
 602 = The specified port is already open.
 603 = The caller's buffer is too small.
 604 = Incorrect information was specified.
 605 = The port information cannot be set.
 606 = The specified port is not connected.
 607 = An invalid event was detected.
 608 = A device was specified that does not exist.
 609 = A device type was specified that does not exist.
 610 = An invalid buffer was specified.
 611 = A route was specified that is not available.
 612 = A route was specified that is not allocated.
 613 = An invalid compression was specified.
 614 = There were insufficient buffers available.
 615 = The specified port was not found.
 616 = An asynchronous request is pending.
 617 = The modem (or other connecting device) is already disconnecting.
 618 = The specified port is not open.
 619 = The specified port is not connected.
 620 = No endpoints could be determined.
 621 = The system could not open the phone book file.
 622 = The system could not load the phone book file.
 623 = The system could not find the phone book entry for this connection.
 624 = The system could not update the phone book file.
 625 = The system found invalid information in the phone book

file.
626 = A string could not be loaded.
627 = A key could not be found.
628 = The connection was closed.
629 = The connection was closed by the remote computer.
630 = The modem (or other connecting device) was disconnected due to hardware failure.
631 = The user disconnected the modem (or other connecting device).
632 = An incorrect structure size was detected.
633 = The modem (or other connecting device) is already in use or is not configured properly.
634 = Your computer could not be registered on the remote network.
635 = There was an unknown error.
636 = The device attached to the port is not the one expected.
637 = A string was detected that could not be converted.
638 = The request has timed out.
639 = No asynchronous net is available.
640 = An error has occurred involving NetBIOS.
641 = The server cannot allocate NetBIOS resources needed to support the client.
642 = One of your computer's NetBIOS names is already registered on the remote network.
643 = A network adapter at the server failed.
644 = You will not receive network message popups.
645 = There was an internal authentication error.
646 = The account is not permitted to log on at this time of day.
647 = The account is disabled.
648 = The password for this account has expired.
649 = The account does not have permission to dial in.
650 = The remote access server is not responding.
651 = The modem (or other connecting device) has reported an error.
652 = There was an unrecognized response from the modem (or other connecting device).
653 = A macro required by the modem (or other connecting device) was not found in the device.INF file.
654 = A command or response in the device.INF file section refers to an undefined macro.
655 = The macro was not found in the device.INF file section.
656 = The macro in the device.INF file section contains an undefined macro.
657 = The device.INF file could not be opened.
658 = The device name in the device.INF or media.INI file is too long.
659 = The media.INI file refers to an unknown device name.
660 = The device.INF file contains no responses for the command.
661 = The device.INF file is missing a command.
662 = There was an attempt to set a macro not listed in device.INF file section.
663 = The media.INI file refers to an unknown device type.
664 = The system has run out of memory.
665 = The modem (or other connecting device) is not properly configured.
666 = The modem (or other connecting device) is not functioning.
667 = The system was unable to read the media.INI file.
668 = The connection was terminated.
669 = The usage parameter in the media.INI file is invalid.
670 = The system was unable to read the section name from the media.INI file.
671 = The system was unable to read the device type from the media.INI file.
672 = The system was unable to read the device name from the media.INI file.
673 = The system was unable to read the usage from the media.INI file.
674 = The system was unable to read the maximum connection BPS rate from the media.INI file.
675 = The system was unable to read the maximum carrier

connection speed from the media.INI file.
676 = The phone line is busy.
677 = A person answered instead of a modem (or other connecting device).
678 = There was no answer.
679 = The system could not detect the carrier.
680 = There was no dial tone.
681 = The modem (or other connecting device) reported a general error.
682 = There was an error in writing the section name.
683 = There was an error in writing the device type.
684 = There was an error in writing the device name.
685 = There was an error in writing the maximum connection speed.
686 = There was an error in writing the maximum carrier speed.
687 = There was an error in writing the usage.
688 = There was an error in writing the default-off.
689 = There was an error in reading the default-off.
690 = ERROR_EMPTY_INI_FILE
691 = Access was denied because the username and/or password was invalid on the domain.
692 = There was a hardware failure in the modem (or other connecting device).
693 = ERROR_NOT_BINARY_MACRO
694 = ERROR_DCB_NOT_FOUND
695 = The state machines are not started.
696 = The state machines are already started.
697 = The response looping did not complete.
698 = A response keyname in the device.INF file is not in the expected format.
699 = The modem (or other connecting device) response caused a buffer overflow.
700 = The expanded command in the device.INF file is too long.
701 = The modem moved to a connection speed not supported by the COM driver.
702 = Device response received when none expected.
703 = The connection needs information from you, but the application does not allow user interaction.
704 = The callback number is invalid.
705 = The authorization state is invalid.
706 = ERROR_WRITING_INITBPS
707 = There was an error related to the X.25 protocol.
708 = The account has expired.
709 = There was an error changing the password on the domain. The password might have been too short or might have matched a previously used password.
710 = Serial overrun errors were detected while communicating with the modem.
711 = The Remote Access Service Manager could not start. Additional information is provided in the event log.
712 = The two-way port is initializing. Wait a few seconds and redial.
713 = No active ISDN lines are available.
714 = No ISDN channels are available to make the call.
715 = Too many errors occurred because of poor phone line quality.
716 = The Remote Access Service IP configuration is unusable.
717 = No IP addresses are available in the static pool of Remote Access Service IP addresses.
718 = The connection timed out waiting for a valid response from the remote computer.
719 = The connection was terminated by the remote computer.
720 = The connection attempt failed because your computer and the remote computer could not agree on PPP control protocols.
721 = The remote computer is not responding.
722 = Invalid data was received from the remote computer. This data was ignored.
723 = The phone number, including prefix and suffix, is too long.
724 = The IPX protocol cannot dial out on the modem (or other connecting device) because this computer is not configured for

dialing out (it is an IPX router).

725 = The IPX protocol cannot dial in on the modem (or other connecting device) because this computer is not configured for dialing in (the IPX router is not installed).

726 = The IPX protocol cannot be used for dialing out on more than one modem (or other connecting device) at a time.

727 = Cannot access TCPCFG.DLL.

728 = The system cannot find an IP adapter.

729 = SLIP cannot be used unless the IP protocol is installed.

730 = Computer registration is not complete.

731 = The protocol is not configured.

732 = Your computer and the remote computer could not agree on PPP control protocols.

733 = Your computer and the remote computer could not agree on PPP control protocols.

734 = The PPP link control protocol was terminated.

735 = The requested address was rejected by the server.

736 = The remote computer terminated the control protocol.

737 = Loopback was detected.

738 = The server did not assign an address.

739 = The authentication protocol required by the remote server cannot use the stored password. Redial, entering the password explicitly.

740 = An invalid dialing rule was detected.

741 = The local computer does not support the required data encryption type.

742 = The remote computer does not support the required data encryption type.

743 = The remote computer requires data encryption.

744 = The system cannot use the IPX network number assigned by the remote computer. Additional information is provided in the event log.

745 = ERROR_INVALID_SMM

746 = ERROR_SMM_UNINITIALIZED

747 = ERROR_NO_MAC_FOR_PORT

748 = ERROR_SMM_TIMEOUT

749 = ERROR_BAD_PHONE_NUMBER

750 = ERROR_WRONG_MODULE

751 = The callback number contains an invalid character. Only the following 18 characters are allowed: 0 to 9, T, P, W, (,), -, @, and space.

752 = A syntax error was encountered while processing a script.

753 = The connection could not be disconnected because it was created by the multi-protocol router.

754 = The system could not find the multi-link bundle.

755 = The system cannot perform automated dial because this connection has a custom dialer specified.

756 = This connection is already being dialed.

757 = Remote Access Services could not be started automatically. Additional information is provided in the event log.

758 = Internet Connection Sharing is already enabled on the connection.

759 = An error occurred while the existing Internet Connection Sharing settings were being changed.

760 = An error occurred while routing capabilities were being enabled.

761 = An error occurred while Internet Connection Sharing was being enabled for the connection.

762 = An error occurred while the local network was being configured for sharing.

763 = Internet Connection Sharing cannot be enabled. There is more than one LAN connection other than the connection to be shared.

764 = No smart card reader is installed.

765 = Internet Connection Sharing cannot be enabled. A LAN connection is already configured with the IP address that is required for automatic IP addressing.

766 = A certificate could not be found. Connections that use the L2TP protocol over IPsec require the installation of a machine certificate, also known as a computer certificate.

767 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network has more than one IP address configured. Please reconfigure the LAN connection with a single IP address before enabling Internet Connection Sharing.

768 = The connection attempt failed because of failure to encrypt data.

769 = The specified destination is not reachable.

770 = The remote computer rejected the connection attempt.

771 = The connection attempt failed because the network is busy.

772 = The remote computer's network hardware is incompatible with the type of call requested.

773 = The connection attempt failed because the destination number has changed.

774 = The connection attempt failed because of a temporary failure. Try connecting again.

775 = The call was blocked by the remote computer.

776 = The call could not be connected because the remote computer has invoked the Do Not Disturb feature.

777 = The connection attempt failed because the modem (or other connecting device) on the remote computer is out of order.

778 = It was not possible to verify the identity of the server.

779 = To dial out using this connection you must use a smart card.

780 = An attempted function is not valid for this connection.

781 = The encryption attempt failed because no valid certificate was found.

782 = Connection Sharing (NAT) is currently installed as a routing protocol, and must be removed before enabling Internet Connection Sharing.

783 = Internet Connection Sharing cannot be enabled. The LAN connection selected as the private network is either not present, or is disconnected from the network. Please ensure that the LAN adapter is connected before enabling Internet Connection Sharing.

784 = You cannot dial using this connection at logon time, because it is configured to use a user name different than the one on the smart card. If you want to use it at logon time, you must configure it to use the user name on the smart card.

785 = You cannot dial using this connection at logon time, because it is not configured to use a smart card. If you want to use it at logon time, you must edit the properties of this connection so that it uses a smart card.

786 = The L2TP connection attempt failed because there is no valid machine certificate on your computer for security authentication.

787 = The L2TP connection attempt failed because the security layer could not authenticate the remote computer.

788 = The L2TP connection attempt failed because the security layer could not negotiate compatible parameters with the remote computer.

789 = The L2TP connection attempt failed because the security layer encountered a processing error during initial negotiations with the remote computer.

790 = The L2TP connection attempt failed because certificate validation on the remote computer failed.

791 = The L2TP connection attempt failed because security policy for the connection was not found.

792 = The L2TP connection attempt failed because security negotiation timed out.

793 = The L2TP connection attempt failed because an error occurred while negotiating security.

794 = The Framed Protocol RADIUS attribute for this user is not PPP.

795 = The Tunnel Type RADIUS attribute for this user is not correct.

796 = The Service Type RADIUS attribute for this user is neither Framed nor Callback Framed.

797 = The connection failed because the modem (or other connecting device) was not found. Please make sure that the

		modem or other connecting device is installed. 798 = A certificate could not be found that can be used with this Extensible Authentication Protocol. 799 = Not available
Deact. time	Integer	Packet session deactivation time Unit: ms

Quality of service profile request (QSPR)

Event ID	QSPR
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,GAN WLAN
Record state	Packet activation attempt and packet active state
Description	Recorded when new QoS profile is requested or reconfigured. Information is based on configured QoS settings and NAS signaling.
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Name	Type	Description
Packet session context ID	Context	Packet session context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN
Req. avg. TPut class	Integer	Requested average throughput class Average transfer rate at which data is transferred across the network. 0 = Subscribed value 1 = Up to 0.22 bit/s 2 = Up to 0.44 bit/s 3 = Up to 1.11 bit/s 4 = Up to 2.2 bit/s 5 = Up to 4.4 bit/s 6 = Up to 11.1 bit/s 7 = Up to 22 bit/s 8 = Up to 44 bit/s 9 = Up to 111 bit/s 10 = Up to 0.22 kbit/s 11 = Up to 0.44 kbit/s 12 = Up to 1.11 kbit/s 13 = Up to 2.2 kbit/s 14 = Up to 4.4 kbit/s 15 = Up to 11.1 kbit/s 16 = Up to 22 kbit/s 17 = Up to 44 kbit/s 18 = Up to 111 kbit/s 31 = Best effort
Req. peak TPut class	Integer	Requested peak throughput class The maximum transfer rate at which data is transferred across the network. 0 = Subscribed value 1 = Up to 8 kbit/s

		2 = Up to 16 kbit/s 3 = Up to 32 kbit/s 4 = Up to 64 kbit/s 5 = Up to 128 kbit/s 6 = Up to 256 kbit/s 7 = Up to 512 kbit/s 8 = Up to 1024 kbit/s 9 = Up to 2048 kbit/s
Req. delay class	Integer	Requested delay class 0 = Subscribed value 1 = Less than 0.5 seconds 2 = Less than 5 seconds 3 = Less than 50 seconds 4 = Best effort
Req. priority class	Integer	Requested priority class 0 = Subscribed value 1 = High 2 = Normal 3 = Low
Req. reliab. class	Integer	Requested reliability class 0 = Subscribed value 1 = Like X.25 2 = Like IP 3 = For signaling 4 = For text TV style application 5 = For video
Min avg. TPut class	Integer	Minimum accepted average throughput class 0 = Accept all 1 = Up to 0.22 bit/s 2 = Up to 0.44 bit/s 3 = Up to 1.11 bit/s 4 = Up to 2.2 bit/s 5 = Up to 4.4 bit/s 6 = Up to 11.1 bit/s 7 = Up to 22 bit/s 8 = Up to 44 bit/s 9 = Up to 111 bit/s 10 = Up to 0.22 kbit/s 11 = Up to 0.44 kbit/s 12 = Up to 1.11 kbit/s 13 = Up to 2.2 kbit/s 14 = Up to 4.4 kbit/s 15 = Up to 11.1 kbit/s 16 = Up to 22 kbit/s 17 = Up to 44 kbit/s 18 = Up to 111 kbit/s 31 = Best effort
Min peak TPut class	Integer	Minimum accepted peak throughput class 0 = Accept all 1 = Up to 8 kbit/s 2 = Up to 16 kbit/s 3 = Up to 32 kbit/s 4 = Up to 64 kbit/s 5 = Up to 128 kbit/s 6 = Up to 256 kbit/s 7 = Up to 512 kbit/s 8 = Up to 1024 kbit/s 9 = Up to 2048 kbit/s
Min delay class	Integer	Minimum accepted delay class 0 = Accept all 1 = Less than 0.5 seconds 2 = Less than 5 seconds 3 = Less than 50 seconds 4 = Lest effort
Min priority class	Integer	Minimum accepted priority class 0 = Accept all 1 = High

		2 = Normal 3 = Low
Min reliab. class	Integer	Minimum accepted reliability class 0 = Accept all 1 = Like X.25 2 = Like IP 3 = For signaling 4 = For text TV style application 5 = For video
Req. traffic class	Integer	Requested traffic class 0 = Conversational 1 = Streaming 2 = Interactive 3 = Background 4 = Subscribed value
Req. max UL TPut	Integer	Requested maximum uplink bitrate 0 = Subscribed value Minimum value: 0 Unit: kbit/s
Req. max DL TPut	Integer	Requested maximum downlink bitrate 0 = Subscribed value Minimum value: 0 Unit: kbit/s
Req. gr. UL TPut	Integer	Requested guaranteed uplink bitrate 0 = Subscribed value Minimum value: 0 Unit: kbit/s
Req. gr. DL TPut	Integer	Requested guaranteed downlink bitrate 0 = Subscribed value Minimum value: 0 Unit: kbit/s
Req. deliv. order	Integer	Requested delivery order 0 = No 1 = Yes 2 = Subscribed value
Req. max SDU size	Integer	Requested maximum SDU size 0 = Subscribed value Range: 0 – 1500 Unit: byte
Req. SDU err. ratio	String	Requested SDU error ratio E0E is subscribed value.
Req. resid. BER	String	Requested residual bit error ratio E0E is subscribed value.
Req. deliv. err. SDU	Integer	Requested delivery of erroneous SDUs 0 = No 1 = Yes 2 = No detect 3 = Subscribed value
Req. transfer delay	Integer	Requested transfer delay 0 = Subscribed value Range: 0 – 4100 Unit: ms
Req. THP	Integer	Requested traffic handling priority 1 is the highest priority. 0 = Subscribed value Range: 0 – 3
Min traffic class	Integer	Minimum accepted traffic class 0 = Conversational 1 = Streaming 2 = Interactive 3 = Background 4 = Accept all
Min max UL TPut	Integer	Minimum accepted maximum uplink bitrate 0 = Accept all

		Minimum value: 0 Unit: kbit/s
Min max DL TPut	Integer	Minimum accepted maximum downlink bitrate 0 = Accept all Minimum value: 0 Unit: kbit/s
Min gr. UL TPut	Integer	Minimum accepted guaranteed uplink bitrate 0 = Accept all Minimum value: 0 Unit: kbit/s
Min gr. DL TPut	Integer	Minimum accepted guaranteed downlink bitrate 0 = Accept all Minimum value: 0 Unit: kbit/s
Min deliv. order	Integer	Minimum accepted delivery order 0 = No 1 = Yes 2 = Accept all
Min max SDU size	Integer	Minimum accepted maximum SDU size 0 = Accept all Range: 0 – 1500 Unit: byte
Min SDU err.	String	Minimum accepted SDU error ratio
Min resid. BER	String	Minimum accepted residual bit error ratio
Min del. err. SDU	Integer	Minimum accepted delivery of erroneous SDUs 0 = No 1 = Yes 2 = No detect 3 = Accept all
Min tranfer delay	Integer	Minimum accepted transfer delay 0 = Accept all Range: 0 – 4100 Unit: ms
Min THP	Integer	Minimum accepted traffic handling priority 1 is the highest priority. 0 = Accept all Range: 0 – 3
Req. QCI	Integer	Requested EPS QoS class identifier See 3GPP TS 23.203 subclause 6.1.7. 0 = Subscribed value 1 = QCI 1 Conversational voice. GBR, priority 2, delay 100 ms, PER 10E-2. 2 = QCI 2 Conversational video. GBR, priority 4, delay 150 ms, PER 10E-3. 3 = QCI 3 Real time gaming. GBR, priority 3, delay 50 ms, PER 10E-3. 4 = QCI 4 Non-conversational video (buffered streaming). GBR, priority 5, delay 300 ms, PER 10E-6. 5 = QCI 5 IMS signaling. Non-GBR, priority 1, delay 100 ms, PER 10E-6. 6 = QCI 6 Video (buffered streaming), TCP-based application protocols. Non-GBR, priority 6, delay 300 ms, PER 10E-6. 7 = QCI 7 Voice, live streaming, interactive gaming. Non-GBR, priority 7, delay 100 ms, PER 10E-3. 8 = QCI 8 Video (buffered streaming), TCB-based application protocols. Non-GBR, priority 8, delay 300 ms, PER 10E-6. 9 = QCI 9

		Video (buffered streaming), TCB-based application protocols. Non-GBR, priority 9, delay 300 ms, PER 10E-6. Range: 0 – 255
Req. EPS max UL TPut	Integer	Requested EPS maximum uplink bitrate Minimum value: 0 Unit: kbit/s
Req. EPS max DL TPut	Integer	Requested EPS maximum downlink bitrate Minimum value: 0 Unit: kbit/s
Req. EPS gr. UL TPut	Integer	Requested EPS guaranteed uplink bitrate Minimum value: 0 Unit: kbit/s
Req. EPS gr. DL TPut	Integer	Requested EPS guaranteed downlink bitrate Minimum value: 0 Unit: kbit/s

Quality of service profile negotiated (QSPN)

Event ID	QSPN
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,GAN WLAN
Record state	Packet active state
Description	Recorded when the first QoS configuration is received or the current one is reconfigured. This information is based on NAS signaling.
Tools	Nemo Outdoor

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Name	Type	Description
Packet session context ID	Context	Packet session context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN
Avg TPut class	Integer	Negotiated average throughput class Average transfer rate at which data is transferred across the network. 1 = Up to 0.22 bit/s 2 = Up to 0.44 bit/s 3 = Up to 1.11 bit/s 4 = Up to 2.2 bit/s 5 = Up to 4.4 bit/s 6 = Up to 11.1 bit/s 7 = Up to 22 bit/s 8 = Up to 44 bit/s 9 = Up to 111 bit/s 10 = Up to 0.22 kbit/s 11 = Up to 0.44 kbit/s 12 = Up to 1.11 kbit/s 13 = Up to 2.2 kbit/s 14 = Up to 4.4 kbit/s 15 = Up to 11.1 kbit/s

		16 = Up to 22 kbit/s 17 = Up to 44 kbit/s 18 = Up to 111 kbit/s 31 = Best effort
Peak TPut class	Integer	Negotiated peak throughput class 1 = Up to 8 bit/s 2 = Up to 16 kbit/s 3 = Up to 32 kbit/s 4 = Up to 64 kbit/s 5 = Up to 128 kbit/s 6 = Up to 256 kbit/s 7 = Up to 512 kbit/s 8 = Up to 1024 kbit/s 9 = Up to 2048 kbit/s
Delay class	Integer	Negotiated delay class 1 = Less than 0.5 seconds 2 = Less than 5 seconds 3 = Less than 50 seconds 4 = Best effort
Priority class	Integer	Negotiated priority class 1 = High 2 = Normal 3 = Low
Reliab. class	Integer	Negotiated reliability class 1 = Like X.25 2 = Like IP 3 = For signaling 4 = For text TV style application 5 = For video
Traffic class	Integer	Negotiated traffic class 0 = Conversational 1 = Streaming 2 = Interactive 3 = Background
Max UL TPut	Integer	Negotiated maximum uplink bitrate Minimum value: 0 Unit: kbit/s
Max DL TPut	Integer	Negotiated maximum downlink bitrate Minimum value: 0 Unit: kbit/s
Gr. UL TPut	Integer	Negotiated guaranteed uplink bitrate Minimum value: 0 Unit: kbit/s
Gr. DL TPut	Integer	Negotiated guaranteed downlink bitrate Minimum value: 0 Unit: kbit/s
Deliv. order	Integer	Negotiated delivery order 0 = No 1 = Yes
Max SDU size	Integer	Negotiated maximum SDU size Negotiated maximum service data unit (SDU) size. Range: 0 – 1500 Unit: byte
SDU err. ratio	String	Negotiated SDU error ratio
Resid. BER	String	Negotiated residual bit error ratio
Deliv. err. SDU	Integer	Negotiated delivery of erroneous SDUs 0 = No 1 = Yes 2 = No detect
Transf. delay	Integer	Negotiated transfer delay Range: 0 – 4100 Unit: ms
THP	Integer	Negotiated traffic handling priority 1 is the highest priority.

		Range: 0 – 3
QCI	Integer	Negotiated EPS QoS class identifier See 3GPP TS 23.203 subclause 6.1.7. 1 = QCI 1 Conversational voice. GBR, priority 2, delay 100 ms, PER 10E-2. 2 = QCI 2 Conversational video. GBR, priority 4, delay 150 ms, PER 10E-3. 3 = QCI 3 Real time gaming. GBR, priority 3, delay 50 ms, PER 10E-3. 4 = QCI 4 Non-conversational video (buffered streaming). GBR, priority 5, delay 300 ms, PER 10E-6. 5 = QCI 5 IMS signaling. Non-GBR, priority 1, delay 100 ms, PER 10E-6. 6 = QCI 6 Video (buffered streaming), TCP-based application protocols. Non-GBR, priority 6, delay 300 ms, PER 10E-6. 7 = QCI 7 Voice, live streaming, interactive gaming. Non-GBR, priority 7, delay 100 ms, PER 10E-3. 8 = QCI 8 Video (buffered streaming), TCB-based application protocols. Non-GBR, priority 8, delay 300 ms, PER 10E-6. 9 = QCI 9 Video (buffered streaming), TCB-based application protocols. Non-GBR, priority 9, delay 300 ms, PER 10E-6. Range: 0 – 255
EPS max UL TPut	Integer	Negotiated EPS maximum uplink bitrate Minimum value: 0 Unit: kbit/s
EPS max DL TPut	Integer	Negotiated EPS maximum downlink bitrate Minimum value: 0 Unit: kbit/s
EPS gr. UL TPut	Integer	Negotiated EPS guaranteed uplink bitrate Minimum value: 0 Unit: kbit/s
EPS gr. DL TPut	Integer	Negotiated EPS guaranteed downlink bitrate Minimum value: 0 Unit: kbit/s

Packet channel info (PCHI)

Event ID	PCHI
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,CDMA 1x,EVDO,WLAN,GAN WLAN
Record state	Always
Description	Recorded when packet session information is modified.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for LTE | Parameters for CDMA 1x
 Parameters for EVDO | Parameters for WLAN | Parameters for GAN WLAN |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 11 = CDMA 1x 12 = EVDO 20 = WLAN 21 = GAN WLAN

Parameters for GSM [|Top](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 1 = GPRS 2 = EGPRS 101 = GPRS + WLAN 102 = EGPRS + WLAN
Packet state	Integer	Packet state 0 = No GPRS available 1 = Detached 2 = Attached 3 = Standby 4 = Packet session active 5 = Suspended
RAC	Integer	Routing area code
Radio priority	Integer	Radio priority The RLC/MAC radio priority level for uplink user data transmission.
Prior. acc. th.	Integer	Priority access THR Priority access threshold. Range: 0 – 7
Split PG cycle	Integer	Split PG cycle The split PG cycle parameter defines the DRX period. Unit: s
PS coding UL	Integer	Packet channel coding uplink 1 = MCS-1 CS-1 with GPRS. 2 = MCS-2 CS-2 with GPRS. 3 = MCS-3 CS-3 with GPRS. 4 = MCS-4 CS-4 with GPRS. 5 = MCS-5 6 = MCS-6 7 = MCS-7 8 = MCS-8 9 = MCS-9
PS coding DL	Integer	Packet channel coding downlink 1 = MCS-1 CS-1 with GPRS. 2 = MCS-2 CS-2 with GPRS. 3 = MCS-3 CS-3 with GPRS. 4 = MCS-4 CS-4 with GPRS. 5 = MCS-5 6 = MCS-6 7 = MCS-7 8 = MCS-8 9 = MCS-9
#PS TSL UL	Integer	Number of packet timeslots uplink

#PS TSL DL	Integer	Number of packet timeslots downlink
PS TSL	Integer	Packet timeslot Allocated uplink timeslots. Number of timeslots in list is indicated by previous parameter.
PS TSL	Integer	Packet timeslot Allocated downlink timeslots. Number of timeslots in list is indicated by previous parameter.
NMO	Integer	Network mode of operation 1 = NMO1 Combined routing area and location area update is done through PPCH (PBCCH is present). Paging messages can be sent through PCH or PPCH. Gs interface between SGSN and MSC is present. 2 = NMO2 Separate routing area and location area update is done through PCH (no PBCCH). All paging on PCH. Gs interface between SGSN and MSC is not present. 3 = NMO3 Separate routing area and location area update. CS paging is done on PCH and PS paging is done on PPCH (PBCCH is present). Gs interface between SGSN and MSC is not present.
NCO	Integer	Network control order 0 = NC0 Mobile controlled cell re-selection without measurement reports. 1 = NC1 Mobile controlled cell re-selection with measurement reports. 2 = NC2 Network controlled cell re-selection with measurement reports.
IR status UL	Integer	Incremental redundancy status uplink This is same as resegment bit in RLC/MAC signaling messages and also known as ARQ mode. See 3GPP TS 144.060 subclause 8.1.1. 0 = Disabled Type 1 ARQ. 1 = Enabled Type 2 ARQ.
PBCCH	Integer	PBCCH status 0 = Disabled 1 = Enabled
CLRS hyst.	Float	GPRS cell reselection hysteresis Range: 0 – 14 Unit: dB
CLRS time	Integer	GPRS cell reselection penalty time Range: 0 – 300 Unit: ms

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 3 = UMTS FDD 5 = HSDPA Used when HS_DSCH_RECEPTION variable is true (3GPP TS 125.331). 10 = HSPA Used when both HS_DSCH_RECEPTION and E_DCH_TRANSMISSION variables are true (3GPP TS 125.331). 18 = DC-HSDPA Before version 2.21 this was logged as HSPA (10). This is DC-HSDPA and SC-HSUPA. 20 = DC-HSUPA DC-HSDPA is configured simultaneously. 103 = UMTS FDD + WLAN 105 = HSDPA + WLAN 110 = HSPA + WLAN 118 = DC-HSDPA + WLAN DC-HSDPA, SC-HSUPA, and WLAN.

		120 = DC-HSUPA + WLAN DC-HSDPA is configured simultaneously.
Packet state	Integer	Packet state 0 = No GPRS available 1 = Detached 2 = Attached 3 = Standby 4 = Packet session active 5 = Suspended
RAC	Integer	Routing area code
NMO	Integer	Network mode of operation 1 = NMO1 Combined routing area and location area update is done through PPCH (PBCCH is present). Paging messages can be sent through PCH or PPCH. Gs interface between SGSN and MSC is present. 2 = NMO2 Separate routing area and location area update is done through PCH (no PBCCH). All paging on PCH. Gs interface between SGSN and MSC is not present. 3 = NMO3 Separate routing area and location area update. CS paging is done on PCH and PS paging is done on PPCH (PBCCH is present). Gs interface between SGSN and MSC is not present.
HSDPA category	Integer	HSDPA used UE category Defines the current maximum possible HSDPA UE category. This is limited by cell configuration and UE capabilities. The value can be smaller than the maximum UE category supported by the mobile if for example the currently used cell is restricting the UE category (either MAC-e/h or dual cell mode is not supported). Range: 1 – 24
HS-DSCH SC	Integer	HSDPA serving HS-DSCH scrambling code Range: 0 – 511
#HS-SCCHs	Integer	HSDPA #HS-SCCHs Range: 1 – 4
Pwr. offset	Float	HSDPA HS-DSCH measurement power offset Measurement power offset. This parameter is configured in RRC layer. Range: -6 – 13 Unit: dB
ACK/NACK repetitions	Integer	HSDPA ACK/NACK repetition factor Controls how often the UE repeats each ACK or NACK. See 3GPP TS 25.214 subclause 6A.1.1. Range: 1 – 4
HSDPA H-RNTI	Integer	HSDPA H-RNTI Range: 0 – 65535
HSUPA UE categ.	Integer	HSUPA UE category Defines the current maximum possible HSUPA UE category. This is limited by cell configuration and UE capabilities. Range: 1 – 12
TTI	Integer	HSUPA TTI HSUPA transmission time interval. Range: 2 – 10 Unit: ms
PLnon-max	Float	HSUPA PLnon-max Puncturing limit used to determine the combination of SF and number of codes that are used for transmitting E-DCH with certain data rate. Range: 0.44 – 1
Rate matching	Integer	HSUPA rate matching mode Defines how retransmitted data is combined. 1 = Chase combining (CC) 2 = Incremental redundancy (IR)
Primary E-RNTI	Integer	HSUPA primary E-RNTI Range: 0 – 65535

Secondary E-RNTI	Integer	HSUPA secondary E-RNTI Range: 0 – 65535
E-DPCCH power offset	Float	HSUPA E-DPCCH/DPCCH power offset Range: 0 – 6 Unit: dBm
Happy bit delay cond.	Integer	HSUPA happy bit delay condition Range: 2 – 1000 Unit: ms
AGCH OVSF	Integer	HSUPA AGCH channelisation code Range: 0 – 255
E-TFCI table	Integer	HSUPA E-TFCI table index Range: 0 – 4
HSDPA 64QAM	Integer	HSDPA 64QAM 0 = Disabled 1 = Enabled
HSDPA MIMO	Integer	HSDPA MIMO 0 = Disabled 1 = Enabled
HSDPA MAC header type	Integer	HSDPA MAC header type Defines what kind of MAC header is used for HSDPA. 0 = MAC-hs Bit aligned. See 3GPP TS 125.308 subclause 6.2.3. 1 = MAC-ehs Octet aligned. See 3GPP TS 125.308 subclause 6.2.4.
#HSDPA cells	Integer	Number of secondary HSDPA cells Range: 0 – 1
#Params/HSDPA cell	Integer	Number of parameters per secondary HSDPA cell
HSPA Ch 2	Integer	HSPA serving channel (secondary)
HSPA SC 2	Integer	HSPA serving scrambling code (secondary) Range: 0 – 511
H-RNTI 2	Integer	HSDPA H-RNTI (secondary) Range: 0 – 65535
#HS-SCCHs 2	Integer	HSDPA #HS-SCCHs (secondary) Range: 1 – 4
Pwr. offset 2	Float	HSDPA HS-DSCH measurement power offset (secondary) Measurement power offset. This parameter is configured in RRC layer. Range: -6 – 13 Unit: dB
HSDPA 64QAM 2	Integer	HSDPA 64QAM (secondary) 0 = Disabled 1 = Enabled
HSDPA MAC type 2	Integer	HSDPA MAC header type (secondary) Defines what kind of MAC header is used for HSDPA. 0 = MAC-hs Bit aligned. See 3GPP TS 125.308 subclause 6.2.3. 1 = MAC-ehs Octet aligned. See 3GPP TS 125.308 subclause 6.2.4.
Primary E-RNTI 2	Integer	HSUPA primary E-RNTI (secondary) Range: 0 – 65535
Secondary E-RNTI 2	Integer	HSUPA secondary E-RNTI (secondary) Range: 0 – 65535
AGCH OVSF 2	Integer	HSUPA AGCH channelisation code (secondary) Range: 0 – 255

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 11 = TD-SCDMA

		13 = TD-HSDPA
Packet state	Integer	Packet state 0 = No GPRS available 1 = Detached 2 = Attached 3 = Standby 4 = Packet session active 5 = Suspended
RAC	Integer	Routing area code
NMO	Integer	Network mode of operation 1 = NMO1 Combined routing area and location area update is done through PPCH (PBCCH is present). Paging messages can be sent through PCH or PPCH. Gs interface between SGSN and MSC is present. 2 = NMO2 Separate routing area and location area update is done through PCH (no PBCCH). All paging on PCH. Gs interface between SGSN and MSC is not present. 3 = NMO3 Separate routing area and location area update. CS paging is done on PCH and PS paging is done on PPCH (PBCCH is present). Gs interface between SGSN and MSC is not present.
HSDPA UE categ.	Integer	HSDPA UE category Defines the current maximum possible HSDPA UE category. This is limited by cell configuration and UE capabilities. Range: 1 – 15
HSDPA H-RNTI	Integer	HSDPA H-RNTI Range: 0 – 65535

Parameters for LTE [|Top](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 14 = LTE FDD 16 = LTE TDD 19 = LTE CA Before version 2.21 this was logged as LTE FDD (14) or LTE TDD (16). 114 = LTE FDD + WLAN 116 = LTE TDD + WLAN 119 = LTE CA + WLAN
Packet state	Integer	Packet state 0 = No GPRS available 1 = Detached 2 = Attached 3 = Standby 4 = Packet session active 5 = Suspended

Parameters for CDMA 1x [|Top](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 4 = CDMA 1x
Packet state	Integer	Packet state (CDMA 1x) 0 = Null 1 = Init 2 = Connected 3 = Dormant 4 = Reconnect

Parameters for EVDO [|Top](#)

Name	Type	Description
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Packet tech.	Integer	Packet technology 6 = EVDO rel 0 7 = EVDO rev A 15 = EVDO rev B
Access state	Integer	Access terminal state 0 = Inactivity AT switched to 1X or is in deep sleep. 1 = Acquisition 2 = Sync 3 = Idle 4 = Access 5 = Connected
Packet ch type	Integer	Packet channel type 1 = Access channel 2 = Reverse traffic channel 3 = Control channel 4 = Forward traffic channel
Packet carrier	Integer	Packet carrier number
Sector ID	String	Sector ID 128-bit sector address of the serving sector.
Subnet Mask	Integer	Sector subnet identifier Range: 0 – 255
CC	Integer	Color code Range: 0 – 255
Hybrid Mode	Integer	Hybrid mode 0 = Off 1 = On
Session state	Integer	Session state Summary session layer states. 0 = Closed 1 = AMP setup 2 = AT-initiated negotiation 3 = AN-initiated negotiation 4 = Open 5 = Closing
ALMP state	Integer	ALMP state 0 = Inactive 1 = Initialization 2 = Idle 3 = Connected
Init state	Integer	Initialization protocol state 0 = Inactive 1 = Network detection 2 = Pilot acquisition 3 = Sync
Idle state	Integer	Idle protocol state 0 = Inactive 1 = Monitor 2 = Sleep 3 = Connection setup 4 = Suspend
Connected state	Integer	Connected protocol state 0 = Inactive 1 = Open
Route update state	Integer	Route update protocol state 0 = Inactive 1 = Idle 2 = Connection setup 3 = Connected 4 = Synchronize connection
Overhead msg. state	Integer	Overhead message protocol state 0 = Inactive 1 = Process all messages 2 = Sleep 3 = Frequency change in progress

		4 = Access handoff in progress 5 = Wait for link
EVDO MCC	Integer	EVDO MCC See ITU-T recommendation E.212. Range: 0 – 999
EVDO MNC	Integer	EVDO MNC Range: 0 – 999
Window A	Integer	Search window activate set
Window C	Integer	Search window candidate set
Window N	Integer	Search window neighbor set
Pilot add	Float	Pilot add Unit: dB
Pilot drop	Float	Pilot drop Unit: dB
Pilot compare	Float	Pilot compare Unit: dB
Pilot drop timer	Integer	Pilot drop timer Unit: ms
Soft slope	Integer	Soft slope Inequality criterion for adding or dropping a pilot from the active set.
Add intercept	Float	Add intercept Unit: dB
Drop intercept	Float	Drop intercept Unit: dB
Set maximum age	Integer	Set maximum age

Parameters for WLAN [|Top|](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 17 = WLAN
Packet state	Integer	Packet state 1 = Detached 4 = Packet session active

Parameters for GAN WLAN [|Top|](#)

Name	Type	Description
Packet tech.	Integer	Packet technology 8 = GAN
Packet state	Integer	Packet state 0 = No GPRS available 1 = Detached 2 = Attached 3 = Standby 4 = Packet session active 5 = Suspended
RAC	Integer	Routing area code

Attach attempt (GAA)

Event ID	GAA
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN,LTE FDD,LTE TDD
Record state	Idle state
Description	Recorded based on signaling when attach is attempted. This measurement event begins the attach attempt state.
Tools	Nemo Outdoor

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Name	Type	Description
Attach context ID	Context	Attach context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN

Attach failed (GAF)

Event ID	GAF
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN,LTE FDD,LTE TDD
Record state	Attach attempt state
Description	Recorded based on signaling when attach attempt fails. This measurement event terminates the attach attempt state.
Tools	Nemo Outdoor

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Name	Type	Description
Attach context ID	Context	Attach context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN
Attach fail	Integer	Attach failure status This is same as GMM cause value. Note that 'PPP error'-value is deprecated and it is not used anymore. 1 = User abort 2 = Network reject 3 = Mobile reject 4 = Timeout 5 = PPP error (OS RAS cause) (not used anymore) Deprecated. This value is not logged anymore. 6 = Test system failure (OS RAS cause)
Att. fail. cause	Integer	Attach failure cause

2 = IMSI unknown in HLR/HSS
 3 = Illegal MS
 5 = IMEI not accepted
 6 = Illegal ME
 7 = GPRS/EPS services not allowed
 8 = GPRS/EPS services and non-GPRS/non-EPS services not allowed
 9 = MS identity cannot be derived by the network
 10 = Implicitly detached
 11 = PLMN not allowed
 12 = Location/tracking area not allowed
 13 = Roaming not allowed in this location area
 14 = GPRS/EPS services not allowed in this PLMN
 15 = No suitable cells in location/tracking area
 16 = MSC temporarily not reachable
 17 = Network failure
 18 = CS domain not available
 LTE only.
 19 = ESM failure
 LTE only.
 20 = MAC failure
 21 = Synch failure
 22 = Congestion
 23 = MS security capabilities mismatch
 24 = Security mode rejected, unspecified
 25 = Not authorized for this CSG
 LTE only.
 26 = Non-EPS authentication unacceptable
 LTE only.
 39 = CS domain temporarily not available
 LTE only.
 40 = No PDP/EPS bearer context activated
 95 = Semantically incorrect message
 96 = Invalid mandatory information
 97 = Message type non-existent or not implemented
 98 = Message type not compatible with the protocol state
 99 = Information element non-existent or not implemented
 100 = Conditional IE error
 101 = Message not compatible with the protocol state
 111 = Protocol error, unspecified
 1000 = Radio switch off

Attach connected (GAC)

Event ID	GAC
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN,LTE FDD,LTE TDD
Record state	Attach attempt state
Description	Recorded based on signaling when attach attempt is successful. This measurement event begins the attach state.
Tools	Nemo Outdoor

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Name	Type	Description
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Name	Type	Description
Attach context ID	Context	Attach context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN

Detach (GAD)

Event ID	GAD
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN,LTE FDD,LTE TDD
Record state	Attach state
Description	Recorded when detach is completed. This measurement event terminates the attach state.
Tools	Nemo Outdoor

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Name	Type	Description
Attach context ID	Context	Attach context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN
Detach status	Integer	GPRS detach status 1 = User detach 2 = Network detach (GMM cause) 3 = Mobile detach (GMM cause) 6 = Test system failure
Detach cause	Integer	Detach cause With GSM and UMTS see 3GPP TS 124.008 subclause 10.5.5.14. With LTE see 3GPP TS 124.301 9.9.3.9. 2 = IMSI unknown in HLR/HSS 3 = Illegal MS 5 = IMEI not accepted 6 = Illegal ME 7 = GPRS/EPS services not allowed 8 = GPRS/EPS services and non-GPRS/non-EPS services not allowed 9 = MS identity cannot be derived by the network 10 = Implicitly detached 11 = PLMN not allowed 12 = Location/tracking area not allowed 13 = Roaming not allowed in this location area 14 = GPRS/EPS services not allowed in this PLMN 15 = No suitable cells in location/tracking area 16 = MSC temporarily not reachable

		17 = Network failure 18 = CS domain not available LTE only. 19 = ESM failure LTE only. 20 = MAC failure 21 = Synch failure 22 = Congestion 23 = MS security capabilities mismatch 24 = Security mode rejected, unspecified 25 = Not authorized for this CSG LTE only. 26 = Non-EPS authentication unacceptable LTE only. 39 = CS domain temporarily not available LTE only. 40 = No PDP/EPS bearer context activated 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message type not compatible with the protocol state 99 = Information element non-existent or not implemented 100 = Conditional IE error 101 = Message not compatible with the protocol state 111 = Protocol error, unspecified 1000 = Radio switch off
Detach time	Integer	Detach time Time from detach attempt to detach. Unit: ms

Packet RX power control (PRXPC)

Event ID	PRXPC
Cellular systems	UMTS TD-SCDMA
Record state	Packet active state
Description	Recorded when the information is received from the device.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS TD-SCDMA |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 6 = UMTS TD-SCDMA

Parameters for UMTS TD-SCDMA [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
HS-SCCH SIR	Float	HSDPA HS-SCCH SIR Range: -30 – 25 Unit: dB
HS-SCCH ISCP	Float	HSDPA HS-SCCH ISCP Range: -116 – -25

		Unit: dB
HS-SCCH RSCP	Float	HSDPA HS-SCCH RSCP Range: -116 – -25 Unit: dB
HS-SCCH C/I	Float	HSDPA HS-SCCH C/I Range: -30 – 40 Unit: dB
HS-PDSCH SIR	Float	HSDPA HS-PDSCH SIR Range: -30 – 25 Unit: dB
#Timeslots	Integer	Number of timeslots
#Params/TSL	Integer	Number of parameters per timeslot
TSL	Integer	Timeslot Range: 0 – 6
HS-PDSCH ISCP	Float	HSDPA HS-PDSCH ISCP Range: -116 – -25 Unit: dB
HS-PDSCH RSCP	Float	HSDPA HS-PDSCH RSCP Range: -116 – -25 Unit: dB
HS-PDSCH C/I	Float	HSDPA HS-PDSCH C/I Range: -30 – 40 Unit: dB

RLC block error rate (RLCBLER)

Event ID	RLCBLER
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA
Record state	Call connection, attach, and packet active state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA

Parameters for GSM [|Top|](#)

Name	Type	Description
BLER	Float	BLER DL This information is only recorded with (E)GPRS. Range: 0 – 100 Unit: %
#RLC blocks	Integer	RLC blocks total The total number of received RLC layer PDUs.

#RLC errors	Integer	RLC blocks erroneous The number of erroneously received RLC layer PDUs.
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Parameters for UMTS FDD |Top|

Name	Type	Description
BLER	Float	BLER DL The average RLC layer block error rate is calculated from the transport blocks. Range: 0 – 100 Unit: %
#TrCh blocks	Integer	TrCh blocks received total The total number of received transport blocks.
#TrCh errors	Integer	TrCh blocks received erroneously total The number of erroneously received transport blocks.
TrChs	Integer	Number of transport channels
#Params/TrCh	Integer	Number of parameters per transport channel
TrCh ID	Integer	Transport channel ID Range: 0 – 32
BLER/TrCh	Float	BLER per transport channel The ratio of erroneously received transport blocks to total number of received transport blocks for the defined transport channel. Range: 0 – 100 Unit: %
#Blocks/TrCh	Integer	TrCh blocks received per TrCh The number of received transport blocks for the defined transport channel.
#Errors/TrCh	Integer	TrCh blocks received erroneously per TrCh The number of erroneously received transport blocks for the defined transport channel.

Parameters for UMTS TD-SCDMA |Top|

Name	Type	Description
BLER	Float	BLER DL The average RLC layer block error rate is calculated from the transport blocks. Range: 0 – 100 Unit: %
#TrCh blocks	Integer	TrCh blocks received total The total number of received transport blocks.
#TrCh errors	Integer	TrCh blocks received erroneously total The number of erroneously received transport blocks.
TrChs	Integer	Number of transport channels
#Params/TrCh	Integer	Number of parameters per transport channel
TrCh ID	Integer	Transport channel ID Range: 0 – 32
BLER/TrCh	Float	BLER per transport channel The ratio of erroneously received transport blocks to total number of received transport blocks for the defined transport channel. Range: 0 – 100 Unit: %
#Blocks/TrCh	Integer	TrCh blocks received per TrCh The number of received transport blocks for the defined transport channel.
#Errors/TrCh	Integer	TrCh blocks received erroneously per TrCh The number of erroneously received transport blocks for the defined transport channel.

RLC layer throughput (RLCRATE)

Event ID	RLCRATE
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for UMTS | Parameters for LTE |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD

Parameters for GSM [|Top|](#)

Name	Type	Description
RLC rate UL	Integer	RLC throughput uplink The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC rate DL	Integer	RLC throughput downlink The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC retr. UL	Float	RLC retransmission rate uplink Range: 0 – 100 Unit: %

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Name	Type	Description
RLC rate UL	Integer	RLC throughput uplink The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC rate DL	Integer	RLC throughput downlink The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC retr. UL	Float	RLC retransmission rate uplink Range: 0 – 100

		Unit: %
#RBs	Integer	Number of radio bearers
Params/RB	Integer	Number of parameters per radio bearer
RB ID	Integer	Radio bearer ID Range: 0 – 32
RLC rate UL	Integer	RLC throughput uplink per radio bearer Uplink RLC throughput for specified radio bearer. Minimum value: 0 Unit: bit/s
RLC rate DL	Integer	RLC throughput downlink per radio bearer Downlink RLC throughput for specified radio bearer. Minimum value: 0 Unit: bit/s
RLC retr. UL	Float	RLC retransmission rate uplink per radio bearer Range: 0 – 100

Parameters for LTE |[Top](#)|

Name	Type	Description
#Header params	Integer	Number of header parameters
RLC DL bitrate	Integer	RLC downlink throughput Total downlink RLC throughput is calculated over all radio bearers. The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC DL block rate	Integer	RLC downlink block rate Total number of correctly or incorrectly received RLC PDUs calculated from all active radio bearers. Minimum value: 0
RLC DL BLER	Float	RLC downlink BLER Total downlink RLC BLER calculated from all activate radio bearers. Range: 0 – 100 Unit: %
#RBs	Integer	Number of radio bearers
Params/RB	Integer	Number of parameters per radio bearer
RB ID	Integer	Radio bearer ID Range: 0 – 34
RLC DL bitrate/RB	Integer	RLC downlink throughput per RB The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC DL block rate/RB	Integer	RLC downlink block rate per RB The number of correctly or incorrectly received RLC PDUs from the defined radio bearer. Minimum value: 0
RLC DL BLER/RB	Float	RLC downlink BLER per RB Range: 0 – 100 Unit: %

RLC layer throughput uplink (RLCRATEU)

Event ID	RLCRATEU
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

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Name	Type	Description
#Header params	Integer	Number of header parameters
RLC UL bitrate	Integer	RLC uplink throughput Total uplink RLC throughput. The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC UL block rate	Integer	RLC uplink block rate Total number of correctly or incorrectly transmitted RLC PDUs calculated from all active radio bearers. Minimum value: 0
RLC UL retr.	Float	RLC uplink retransmission rate Total uplink RLC retransmission rate calculated from all active radio bearers. Range: 0 – 100 Unit: %
#RBs	Integer	Number of radio bearers
Params/RB	Integer	Number of parameters per radio bearer
RB ID	Integer	Radio bearer ID Range: 0 – 34
RLC UL bitrate/RB	Integer	RLC uplink throughput per RB The value of this parameter is calculated based on the SDUs that are successfully transferred through the RLC layer. Missing and erroneous RLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
RLC UL block rate/RB	Integer	RLC uplink block rate per RB The number of correctly or incorrectly transmitted RLC PDUs from the defined radio bearer. Minimum value: 0
RLC UL retr./RB	Float	RLC uplink retransmission rate per RB Range: 0 – 100 Unit: %

PDCP layer throughput downlink (PDCPRATED)

Event ID	PDCPRATED
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

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Name	Type	Description
#Header params	Integer	Number of header parameters
PDCP DL bitrate	Integer	PDCP downlink throughput Total downlink PDCP throughput is calculated over all radio bearers. The value of this parameter is calculated based on the SDUs that are successfully transferred through the PDCP layer. Missing and erroneous PDCP blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
PDCP DL block rate	Integer	PDCP downlink block rate Total number of correctly or incorrectly received PDCP PDUs calculated from all active radio bearers. Minimum value: 0
#RBs	Integer	Number of radio bearers
Params/RB	Integer	Number of parameters per radio bearer
RB ID	Integer	Radio bearer ID Range: 0 – 34
PDCP DL bitrate/RB	Integer	PDCP downlink throughput per RB The value of this parameter is calculated based on the SDUs that are successfully transferred through the PDCP layer. Missing and erroneous PDCP blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
PDCP DL block rate/RB	Integer	PDCP downlink block rate per RB The number of correctly or incorrectly received PDCP PDUs from the defined radio bearer. Minimum value: 0

PDCP layer throughput uplink (PDCPRATEU)

Event ID	PDCPRATEU
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for LTE |

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
PDCP UL bitrate	Integer	PDCP uplink throughput Total uplink PDCP throughput. The value of this parameter is calculated based on the SDUs that are successfully transferred through the PDCP layer. Missing and erroneous PDCP blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
PDCP UL block rate	Integer	PDCP uplink block rate Total number of correctly or incorrectly transmitted PDCP PDUs calculated from all active radio bearers. Minimum value: 0
#RBs	Integer	Number of radio bearers
Params/RB	Integer	Number of parameters per radio bearer
RB ID	Integer	Radio bearer ID Range: 0 – 34
PDCP UL bitrate/RB	Integer	PDCP uplink throughput per RB The value of this parameter is calculated based on the SDUs that are successfully transferred through the PDCP layer. Missing and erroneous PDCP blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
PDCP UL block rate/RB	Integer	PDCP uplink block rate per RB The number of correctly or incorrectly transmitted PDCP PDUs from the defined radio bearer. Minimum value: 0

LLC layer throughput (LLCRATE)

Event ID	LLCRATE
Cellular systems	GSM,GAN WLAN
Record state	Attach and packet active state

Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for GAN WLAN |

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 21 = GAN WLAN

Parameters for GSM [|Top|](#)

Name	Type	Description
LLC rate UL	Integer	LLC throughput uplink The value of this parameter is calculated based on the SDUs that are transferred through the LLC layer. Missing and erroneous LLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
LLC rate DL	Integer	LLC throughput downlink The value of this parameter is calculated based on the SDUs that are successfully transferred through the LLC layer. Missing and erroneous LLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
LLC retrans. UL	Float	LLC retransmission rate uplink Range: 0 – 100 Unit: %

Parameters for GAN WLAN [|Top|](#)

Name	Type	Description
LLC rate UL	Integer	LLC throughput uplink The value of this parameter is calculated based on the SDUs that are transferred through the LLC layer. Missing and erroneous LLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
LLC rate DL	Integer	LLC throughput downlink The value of this parameter is calculated based on the SDUs that are successfully transferred through the LLC layer. Missing and erroneous LLC blocks are excluded from the throughput calculation. Minimum value: 0 Unit: bit/s
LLC retrans. UL	Float	LLC retransmission rate uplink Range: 0 – 100 Unit: %

Routing area update attempt (RUA)

Event ID	RUA
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Attach state
Description	Recorded based on GMM signaling when routing area update is attempted. This measurement event begins the routing area update attempt state.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
Routing area update context ID	Context	Routing area update context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN
RAU type	Integer	Routing area update type 1 = Routing area update 2 = Combined routing area and location area update 3 = Combined routing area and location area update with IMSI attach 4 = Periodic update

Routing area update successful (RUS)

Event ID	RUS
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Routing area update attempt state
Description	Recorded based on GMM signaling when routing area update is successful. This measurement event terminates the routing area update attempt state.
Tools	Nemo Outdoor

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Name	Type	Description
Routing area update context ID	Context	Routing area update context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN
Old RAC	Integer	Old RAC Routing area code of the old cell. Range: 0 – 255
Old LAC	Integer	Old location area code Location area code of the old cell. Range: 0 – 65535

RAC	Integer	Routing area code
LAC	Integer	Location area code Range: 0 – 65535

Routing area update fail (RUF)

Event ID	RUF
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,GAN WLAN
Record state	Routing area update attempt state
Description	Recorded based on GMM signaling when routing area update is successful. This measurement event terminates the routing area update attempt state.
Tools	Nemo Outdoor

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Name	Type	Description
Routing area update context ID	Context	Routing area update context ID
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 21 = GAN WLAN
Att. RAC	Integer	Attempted RAC Attempted routing area code Routing area code of the attempted cell. Range: 0 – 255
Att. LAC	Integer	Attempted LAC Attempted location area code Location area code of the attempted cell. Range: 0 – 65535
GMM cause	Integer	Routing area update failure cause With GSM and UMTS see 3GPP TS 124.008 subclause 10.5.5.14. With LTE see 3GPP TS 124.301 9.9.3.9. 2 = IMSI unknown in HLR/HSS 3 = Illegal MS 5 = IMEI not accepted 6 = Illegal ME 7 = GPRS/EPS services not allowed 8 = GPRS/EPS services and non-GPRS/non-EPS services not allowed 9 = MS identity cannot be derived by the network 10 = Implicitly detached 11 = PLMN not allowed 12 = Location/tracking area not allowed 13 = Roaming not allowed in this location area 14 = GPRS/EPS services not allowed in this PLMN 15 = No suitable cells in location/tracking area 16 = MSC temporarily not reachable 17 = Network failure 18 = CS domain not available LTE only. 19 = ESM failure LTE only.

		20 = MAC failure 21 = Synch failure 22 = Congestion 23 = MS security capabilities mismatch 24 = Security mode rejected, unspecified 25 = Not authorized for this CSG LTE only. 26 = Non-EPS authentication unacceptable LTE only. 39 = CS domain temporarily not available LTE only. 40 = No PDP/EPS bearer context activated 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message type not compatible with the protocol state 99 = Information element non-existent or not implemented 100 = Conditional IE error 101 = Message not compatible with the protocol state 111 = Protocol error, unspecified 1000 = Radio switch off
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Tracking area update attempt (TUA)

Event ID	TUA
Cellular systems	LTE FDD,LTE TDD
Record state	Idle
Description	Recorded based on EMM signaling when tracking area update is attempted. For more information about the tracking area update procedure, see 3GPP TS 124.301 subclause 5.5.3. This measurement event begins the tracking area update attempt state.
Tools	Nemo Outdoor

Parameters |

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Name	Type	Description
Tracking area update context ID	Context	Tracking area update context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD
TAU type	Integer	Tracking area update type This is the same as EPS update type parameter in 3GPP TS 124.301 subclause 9.9.3.14. 0 = TA updating 1 = Combined TA/LA updating 2 = Combined TA/LA updating with IMSI attach 3 = Periodic updating

Tracking area update successful (TUS)

Event ID	TUS
Cellular systems	LTE FDD,LTE TDD
Record state	Tracking area update attempt state
Description	Recorded based on EMM signaling when tracking area update is successful. For more information about the tracking area update procedure, see 3GPP TS 124.301 subclause 5.5.3. This measurement event terminates the tracking area update attempt state.
Tools	Nemo Outdoor

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Name	Type	Description
Tracking area update context ID	Context	Tracking area update context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD
#TACs	Integer	Number of tracking area identities
#Params/TAC	Integer	Number of parameters per tracking area identity
MCC	Integer	Mobile country code See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	Mobile network code Range: 0 – 999
TAC	Integer	Tracking area code The tracking area code in the tracking area identity list. See 3GPP TS 124.301 subclause 9.9.3.33. Range: 0 – 65535

Tracking area update fail (TUF)

Event ID	TUF
Cellular systems	LTE FDD,LTE TDD
Record state	Tracking area update attempt state
Description	Recorded based on EMM signaling when tracking area update is successful. For more information about the tracking area update procedure, see 3GPP TS 124.301 subclause 5.5.3. This measurement event terminates the routing area update attempt state.
Tools	Nemo Outdoor

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Name	Type	Description

Tracking area update context ID	Context	Tracking area update context ID
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD
EMM cause	Integer	Tracking area update failure cause Tracking area update rejection events see 3GPP TS 24.301 subclause 8.2.28. 2 = IMSI unknown in HLR/HSS 3 = Illegal MS 5 = IMEI not accepted 6 = Illegal ME 7 = GPRS/EPS services not allowed 8 = GPRS/EPS services and non-GPRS/non-EPS services not allowed 9 = MS identity cannot be derived by the network 10 = Implicitly detached 11 = PLMN not allowed 12 = Location/tracking area not allowed 13 = Roaming not allowed in this location area 14 = GPRS/EPS services not allowed in this PLMN 15 = No suitable cells in location/tracking area 16 = MSC temporarily not reachable 17 = Network failure 18 = CS domain not available LTE only. 19 = ESM failure LTE only. 20 = MAC failure 21 = Synch failure 22 = Congestion 23 = MS security capabilities mismatch 24 = Security mode rejected, unspecified 25 = Not authorized for this CSG LTE only. 26 = Non-EPS authentication unacceptable LTE only. 39 = CS domain temporarily not available LTE only. 40 = No PDP/EPS bearer context activated 95 = Semantically incorrect message 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message type not compatible with the protocol state 99 = Information element non-existent or not implemented 100 = Conditional IE error 101 = Message not compatible with the protocol state 111 = Protocol error, unspecified 1000 = Radio switch off

TBF information (TBFI)

Event ID	TBFI
Cellular systems	GSM
Record state	Attach and packet active state
Description	Recorded when TBF allocation is modified. This information can be based on RLC/MAC and layer3 signaling, or on trace messages received from the device.
Tools	Nemo Outdoor

Parameters

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM
#Header params	Integer	Number of header parameters
TLLI	String	Temporary logical link identity
#Params/TBF	Integer	Number of parameters per TBF
#UL TBFs	Integer	Number of uplink TBFs
TFI	Integer	TFI Temporary flow identity. Range: 0 – 31
RLC win.	Integer	RLC window size RLC layer send buffer size. Range: 64 – 1024
#DL TBFs	Integer	Number of downlink TBFs
TFI	Integer	TFI Temporary flow identity. Range: 0 – 31
RLC win.	Integer	RLC window size RLC layer send buffer size. Range: 64 – 1024

TBF uplink establishment (TBFULE)

Event ID	TBFULE
Cellular systems	GSM
Record state	Attach and packet active state
Description	Recorded after TBF uplink establishment attempt. The recorded information is based on RLC/MAC and layer3 signaling messages.
Tools	Nemo Outdoor

Parameters

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Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM
UL TBF est. cause	Integer	Uplink TBF establishment cause 1 = One phase access in channel request 2 = Single block or two phase access in channel request 11 = One phase access in packet channel request 12 = Two phase access in packet channel request 13 = Page response in packet channel request 14 = Cell update in packet channel request 15 = MM procedure in packet channel request 16 = Single block without TBF establishment in packet channel request 17 = One phase access in RLC unack mode in packet channel

		request 21 = One phase access in EGPRS packet channel request 22 = Two phase access in EGPRS packet channel request 23 = Signalling in EGPRS packet channel request 24 = One phase access in RLC unack mode in EGPRS packet channel request 31 = Channel request in packet downlink ack/nack 32 = Channel request in EGPRS packet downlink ack/nack 51 = User data in DTM request 52 = Page response in DTM request 53 = Cell update in DTM request 54 = MM procedure in DTM request
UL TBF est. type	Integer	Uplink TBF establishment type 1 = One phase access 2 = Two phase access 3 = Single block or multi block access 4 = (EGPRS) Packet downlink ACK/NACK channel request 5 = DTM request
UL TBF est. status	Integer	Uplink TBF establishment status 1 = Succeeded 2 = Failed 3 = Rejected 4 = Aborted (e.g. Downlink TBF assignment)
#UL TBF est. req	Integer	Uplink TBF establishment request count

MAC layer info (MACI)

Event ID	MACI
Cellular systems	UMTS FDD,LTE FDD,LTE TDD
Record state	Always
Description	Recorded when L1/MAC layer information changes.
Tools	Nemo Outdoor

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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 7 = LTE FDD 8 = LTE TDD

Parameters for UMTS FDD [\[Top\]](#)

Name	Type	Description
#Serving cells	Integer	Number of serving cells
#Params/serving cell	Integer	Number of parameters per serving cell
Cell type	Integer	HSDPA cell type 2 = Secondary
Cell state	Integer	HSDPA cell state Defines if the cell is activated or deactivated in the physical/MAC layer.

0 = Deactive 1 = Active

Parameters for LTE [|Top|](#)

Name	Type	Description
#Serving cells	Integer	Number of serving cells
#Params/serving cell	Integer	Number of parameters per serving cell
Cell type	Integer	Serving cell type The value of this parameter is the same as the serving cell index. 1 = SCell 0 The first secondary serving cell. 2 = SCell 1
Cell state	Integer	SCell state Defines if the cell is activated or deactivated in the physical/MAC layer. 0 = Deactive 1 = Active

MAC layer throughput (MACRATE)

Event ID	MACRATE
Cellular systems	UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,WiMAX
Record state	Always
Description	Recorded when measurement sample is received from the device and the received sample differs from the previous result. This UMTS measurement event is recorded simultaneously with the PLAID measurement event and only during HSDPA session. Separate measurement event is logged for each serving cell with LTE.
Tools	Nemo Outdoor

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 [Parameters for UMTS TD-SCDMA](#) |
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Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 25 = WiMAX

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#TrCh	Integer	Number of transport channels
#Params/TrCh	Integer	Number of parameters per transport channel
TrCh ID	Integer	Transport channel ID Range: 0 – 32
TrCh type	Integer	Transport channel type 3 = HS-DSCH

MAC-hs bitrate	Integer	HSDPA MAC-hs throughput The value of this parameter is calculated based on the SDUs that are successfully received through the MAC-hs layer. Missing and erroneous MAC-hs blocks are excluded from the throughput calculation. When exact MAC-hs SDUs are not available the approximation of the MAC-hs throughput is calculated based on transport block sizes ignoring incorrect or duplicated transport blocks. This causes a minor error between reported throughput and real MAC-hs throughput but it still provides a very good approximation of the real MAC-hs throughput. Minimum value: 0 Unit: bit/s
MAC-hs block rate	Integer	HSDPA MAC-hs block rate The total number of MAC-hs PDUs received during the reporting interval.
MAC-hs 1st retr.	Float	HSDPA MAC-hs 1st retransmission rate The ratio of MAC-hs PDUs retransmitted after the first transmission attempt. Range: 0 – 100 Unit: %
MAC-hs 2nd retr.	Float	HSDPA MAC-hs 2nd retransmission rate The ratio of MAC-hs PDUs retransmitted after the second transmission attempt. Range: 0 – 100 Unit: %
MAC-hs 3rd+ retr.	Float	HSDPA MAC-hs 3rd+ retransmission rate The ratio of MAC-hs PDUs retransmitted after the third or later transmission attempt. Range: 0 – 100 Unit: %
MAC-hs redundant retr.	Float	HSDPA MAC-hs redundant retransmission rate The ratio of MAC-hs PDUs that has already been correctly received and has unnecessarily been retransmitted (duplicated transmission). This happens when the ACK message sent by the mobile is decoded or received incorrectly, or not received at all, by the the base station. Range: 0 – 100 Unit: %
Cell type	Integer	HSDPA cell type 1 = Primary 2 = Secondary

Parameters for UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
#TrCh	Integer	Number of transport channels
#Params/TrCh	Integer	Number of parameters per transport channel
TrCh ID	Integer	Transport channel ID Range: 0 – 32
TrCh type	Integer	Transport channel type 3 = HS-DSCH
MAC-hs bitrate	Integer	HSDPA MAC-hs throughput The value of this parameter is calculated based on the SDUs that are successfully received through the MAC-hs layer. Missing and erroneous MAC-hs blocks are excluded from the throughput calculation. When exact MAC-hs SDUs are not available the approximation of the MAC-hs throughput is calculated based on transport block sizes ignoring incorrect or duplicated transport blocks. This causes a minor error between reported throughput and real MAC-hs throughput but it still provides a very good approximation of the real MAC-hs throughput. Minimum value: 0 Unit: bit/s
MAC-hs block rate	Integer	HSDPA MAC-hs block rate The total number of MAC-hs PDUs received during the reporting interval.

MAC-hs 1st retransmission rate	Float	HSDPA MAC-hs 1st retransmission rate Number of blocks retransmitted after the first transmission attempt. Range: 0 – 100 Unit: %
MAC-hs 2nd retransmission rate	Float	HSDPA MAC-hs 2nd retransmission rate Number of blocks retransmitted after the second transmission attempt. Range: 0 – 100 Unit: %
MAC-hs 3rd+ retransmission rate	Float	HSDPA MAC-hs 3rd+ retransmission rate Number of blocks retransmitted after the third or later transmission attempt. Range: 0 – 100 Unit: %

Parameters for LTE [\[Top\]](#)

Name	Type	Description
MAC DL bitrate	Integer	MAC downlink throughput MAC throughput that is calculated from successfully received SDUs. With the devices that do not support MAC throughput parameter the estimation of MAC throughput is calculated from successfully received transport blocks. The estimation is a little bit higher than the real MAC throughput since it includes MAC header, MAC control data, and padding to the throughput. Minimum value: 0 Unit: bit/s
MAC DL block rate	Integer	MAC downlink block rate Number of successfully received transport blocks excluding redundant TBs. Minimum value: 0
MAC DL BLER	Float	MAC downlink BLER The ratio of erroneously received transport blocks to all received transport blocks. Range: 0 – 100 Unit: %
MAC DL BLER 1st	Float	MAC downlink BLER 1st The ratio of 1st retransmissions to all received TBs. Range: 0 – 100 Unit: %
MAC DL BLER 2nd	Float	MAC downlink BLER 2nd The ratio of 2nd retransmissions to all received TBs. Range: 0 – 100 Unit: %
MAC DL BLER 3rd+	Float	MAC downlink BLER 3rd+ The ratio of 3rd or more retransmission to all received TBs. Range: 0 – 100 Unit: %
MAC DL residual BLER	Float	MAC downlink residual BLER Defines the ratio of transport blocks that HARQ was not able to correct and RLC layer has to fix. The ratio of HARQ failed transport blocks to new transmissions. Range: 0 – 100 Unit: %
MAC DL new	Integer	MAC downlink new blocks The number of received new (1st attempt) transport blocks since the last report. Minimum value: 0
MAC DL redundant retransmission	Float	MAC downlink redundant retransmission The ratio of transport blocks that were already correctly received and have unnecessarily been retransmitted (duplicated transmission). This happens when the ACK message sent by the mobile is decoded or received incorrectly, or not received at all, by the the base station. Range: 0 – 100 Unit: %
Cell type	Integer	Serving cell type

		<p>The value of this parameter is the same as the serving cell index.</p> <p>0 = PCell Primary serving cell.</p> <p>1 = SCell 0 The first secondary serving cell.</p> <p>2 = SCell 1</p>
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Parameters for WiMAX [|Top|](#)

Name	Type	Description
#MAC header params	Integer	Number of header parameters
MAC rate UL	Integer	WiMAX MAC throughput uplink Minimum value: 0 Unit: bit/s
MAC rate DL	Integer	WiMAX MAC throughput downlink Minimum value: 0 Unit: bit/s
MAC packet rate UL	Integer	WiMAX MAC packet rate uplink
MAC packet rate DL	Integer	WiMAX MAC packet rate downlink

MAC layer throughput uplink (MACRATEU)

Event ID	MACRATEU
Cellular systems	LTE FDD,LTE TDD
Record state	Always
Description	Recorded when measurement sample is received from the device.
Tools	Nemo Outdoor

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Name	Type	Description
Measured sys.	Integer	Measured system 7 = LTE FDD 8 = LTE TDD

Parameters for LTE [|Top|](#)

Name	Type	Description
MAC UL bitrate	Integer	MAC uplink throughput The throughput that is calculated from successfully transmitted MAC SDUs. With the devices that do not support MAC throughput parameter the estimation of MAC throughput is calculated from successfully delivered transport blocks. The estimation is a little bit higher than the real MAC throughput since it includes MAC headers, MAC control data, and padding. Minimum value: 0 Unit: bit/s
MAC UL block rate	Integer	MAC uplink block rate The number of successfully transmitted transport blocks since

		previous report. Minimum value: 0
MAC UL retr.	Float	MAC uplink retransmission rate The ratio of retransmitted transport blocks to all transmitted TBs. Range: 0 – 100 Unit: %
MAC UL retr. 1st	Float	MAC uplink retransmission rate 1st The ratio of 1st retransmissions to all transmitted TBs. Range: 0 – 100 Unit: %
MAC UL retr. 2nd	Float	MAC uplink retransmission rate 2nd The ratio of 2nd retransmissions to all transmitted TBs. Range: 0 – 100 Unit: %
MAC UL retr. 3rd+	Float	MAC uplink retransmission rate 3rd+ The ratio of 3rd or more retransmissions to all transmitted TBs. Range: 0 – 100 Unit: %
MAC UL residual BLER	Float	MAC uplink residual BLER Defines the ratio of transport blocks that HARQ was not able to correct and RLC layer have to fix. The ratio of HARQ failed transport blocks to new transmissions. Range: 0 – 100 Unit: %
MAC UL new	Integer	MAC uplink new blocks The number of transmitted new (1st attempt) transport blocks since the last report. Minimum value: 0

MAC layer block error rate (MACBLER)

Event ID	MACBLER
Cellular systems	UMTS FDD,UMTS TD-SCDMA,WiMAX
Record state	Always
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result. This UMTS measurement event is recorded simultaneously with the PLAID measurement event and only during HSDPA session.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD | Parameters for UMTS TD-SCDMA | Parameters for WiMAX |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD 6 = UMTS TD-SCDMA 25 = WiMAX

Parameters for UMTS FDD [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters

#TrCh	Integer	Number of transport channels
#Params/TrCh	Integer	Number of parameters per transport channel
TrCh ID	Integer	Transport channel ID Transport channel ID is always n/a for HS-DSCH transport channel type. Range: 0 – 32
TrCh type	Integer	Transport channel type 3 = HS-DSCH
#ACK/NACK	Integer	HSDPA MAC-hs ACK/NACK count The total number of ACK and NACK status messages sent to the uplink by MAC-hs layer.
MAC-hs BLER	Float	HSDPA MAC-hs block error rate The ratio of erroneously received MAC-hs PDUs to all received MAC-hs PDUs. Range: 0 – 100 Unit: %
#Data blocks	Integer	HSDPA MAC-hs data blocks The total number of data blocks transferred during the reporting period.
MAC-hs residual BLER	Float	HSDPA MAC-hs residual block error rate The ratio of transport blocks that have not been fixed by HARQ (in the MAC-hs layer) to all 'new data' indicated transport blocks (= first attempts). Range: 0 – 100 Unit: %
Cell type	Integer	HSDPA cell type 1 = Primary 2 = Secondary

Parameters for UMTS TD-SCDMA |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
#TrCh	Integer	Number of transport channels
#Params/TrCh	Integer	Number of parameters per transport channel
TrCh ID	Integer	Transport channel ID Transport channel ID is always n/a for HS-DSCH transport channel type. Range: 0 – 32
TrCh type	Integer	Transport channel type 3 = HS-DSCH
#ACK/NACK	Integer	HSDPA MAC-hs ACK/NACK count The total number of ACK and NACK status messages sent to the uplink by MAC-hs layer.
MAC-hs BLER	Float	HSDPA MAC-hs block error rate The ratio of erroneously received MAC-hs PDUs to all received MAC-hs PDUs. Range: 0 – 100 Unit: %
#Data blocks	Integer	HSDPA MAC-hs data blocks The total number of data blocks transferred during the reporting period.
MAC-hs residual BLER	Float	HSDPA MAC-hs residual block error rate The ratio of transport blocks that have not been fixed by HARQ (in the MAC-hs layer) to all 'new data' indicated transport blocks (= first attempts). Range: 0 – 100 Unit: %

Parameters for WiMAX |Top|

Name	Type	Description
PER	Float	WiMAX PER

		Range: 0 – 100 Unit: %
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AMR information (AMRI)

Event ID	AMRI
Cellular systems	GSM,GAN WLAN
Record state	Call connection state
Description	Recorded when AMR information is modified based on the trace messages of the device.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for GAN WLAN |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 21 = GAN WLAN

Parameters for GSM |Top|

Name	Type	Description
AMR init. mode	Integer	AMR initial codec mode 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR ICMI	Integer	AMR initial codec mode indicator 0 = Implicit rule 1 = RATSCCH/L3
AMR TH1	Float	AMR first threshold Range: 0 – 32 Unit: dB
AMR HYS1	Float	AMR first hysteresis Range: 0 – 8 Unit: dB
AMR TH2	Float	AMR second threshold Range: 0 – 32 Unit: dB
AMR HYS2	Float	AMR second hysteresis Range: 0 – 8

		Unit: dB
AMR TH3	Float	AMR third threshold Range: 0 – 32 Unit: dB
AMR HYS3	Float	AMR third hysteresis Range: 0 – 8 Unit: dB
#Active codecs	Integer	AMR number of active codecs
AMR codecs	Integer	AMR active codecs 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85

Parameters for GAN WLAN [|Top|](#)

Name	Type	Description
AMR init. mode	Integer	AMR initial codec mode 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR ICMI	Integer	AMR initial codec mode indicator 0 = Implicit rule 1 = RATSCCH/L3
AMR TH1	Float	AMR first threshold Range: 0 – 50 Unit: %
AMR HYS1	Float	AMR first hysteresis Range: 0 – 17 Unit: %
AMR TH2	Float	AMR second threshold Range: 0 – 50 Unit: %
AMR HYS2	Float	AMR second hysteresis Range: 0 – 17 Unit: %
AMR TH3	Float	AMR third threshold Range: 0 – 50 Unit: %

AMR HYS3	Float	AMR third hysteresis Range: 0 – 17 Unit: %
#Active codecs	Integer	AMR number of active codecs
AMR codecs	Integer	AMR active codecs 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85

AMR status (AMRS)

Event ID	AMRS
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,GAN WLAN
Record state	Call connection state
Description	Recorded when AMR information is modified based on the trace messages of the device.
Tools	Nemo Outdoor

Parameters | Parameters for GSM | Parameters for UMTS FDD and UMTS TD-SCDMA | Parameters for LTE | Parameters for GAN WLAN |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 21 = GAN WLAN

Parameters for GSM |Top|

Name	Type	Description
AMR mode UL	Integer	AMR mode uplink Current UL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2

		7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode DL	Integer	AMR mode downlink Current DL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode cmd.	Integer	AMR last mode command Last mode command within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode req.	Integer	AMR last mode request Last mode request within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR channel type	Integer	AMR channel type 1 = Half rate

2 = Full rate
3 = Wideband rate

Parameters for UMTS FDD and UMTS TD-SCDMA [\[Top\]](#)

Name	Type	Description
AMR mode UL	Integer	AMR mode uplink Current UL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode DL	Integer	AMR mode downlink Current DL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85

Parameters for LTE [\[Top\]](#)

Name	Type	Description
AMR mode UL	Integer	AMR mode uplink Current UL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode DL	Integer	AMR mode downlink

Current DL mode within mode set.

0 = NB 4.75
 1 = NB 5.15
 2 = NB 5.9
 3 = NB 6.7
 4 = NB 7.4
 5 = NB 7.95
 6 = NB 10.2
 7 = NB 12.2
 100 = WB 6.6
 101 = WB 8.85
 102 = WB 12.65
 103 = WB 14.25
 104 = WB 15.85
 105 = WB 18.25
 106 = WB 19.85
 107 = WB 23.05
 108 = WB 23.85

Parameters for GAN WLAN [\[Top\]](#)

Name	Type	Description
AMR mode UL	Integer	AMR mode uplink Current UL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode DL	Integer	AMR mode downlink Current DL mode within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode cmd.	Integer	AMR last mode command Last mode command within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2

		100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR mode req.	Integer	AMR last mode request Last mode request within mode set. 0 = NB 4.75 1 = NB 5.15 2 = NB 5.9 3 = NB 6.7 4 = NB 7.4 5 = NB 7.95 6 = NB 10.2 7 = NB 12.2 100 = WB 6.6 101 = WB 8.85 102 = WB 12.65 103 = WB 14.25 104 = WB 15.85 105 = WB 18.25 106 = WB 19.85 107 = WB 23.05 108 = WB 23.85
AMR channel type	Integer	AMR channel type 1 = Half rate 2 = Full rate 3 = Wideband rate

AMR link quality estimate (AMRQ)

Event ID	AMRQ
Cellular systems	GSM
Record state	Call connection state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters |

Parameters [\[Top\]](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM
AMR C/I	Float	AMR link quality estimate With AMR calls, Link Quality Estimation is reported normally. Codec mode adaptation is based on a normalized, one-dimensional measure of the channel quality, called the Quality Indicator. For reference purposes, the Quality Indicator is defined as an equivalent carrier to interferer ratio, C/I _{norm} . The reference channel conditions for the normalized Quality Indicator C/I _{norm} shall be Typical Urban 3 km/h with ideal

		<p>frequency hopping at 900 MHz. The corresponding reference receiver performance is specified as the minimum performance requirement in 3GPP TS 05.05. The MS and BSSs shall continuously update the Quality Indicator estimates. The Quality Indicator may be derived from an estimate of the current carrier to interferer ratio, C/I_{est}, or from an estimate of the current raw bit error rate (BER_{est}). A normalization factor >0 dB may be applied between the estimate (C/I_{est} or BER_{est}) and the Quality Indicator to compensate for higher receiver performance than the minimum performance requirement in 3GPP TS 05.05. This normalization factor may be dependent on the C/I at the antenna connector. The MS shall apply a second normalization factor to be applied to normalize the estimate with respect to different channel types, such that, with given C/I_{norm} and given codec mode, the FER after channel decoding becomes independent of the channel type. Based on the LQE estimation terminal sent the codec mode request to network requesting correct AMR codecs. Therefore during the AMR calls the LQE can be used with confidence instead of C/I. See 3GPP TS 145.009 Annex A.</p> <p>Range: 0 – 40 Unit: dB</p>
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Audio quality uplink (AQUL)

Event ID	AQUL
Cellular systems	All
Record state	Call connection state
Description	Recorded after voice quality sample is received and the MOS score of the sample is calculated. This measurement event is recorded only during voice quality measurements.
Tools	Nemo Outdoor, Nemo Handy, Nemo Server

Parameters |

Parameters |Top|

Name	Type	Description
AQ type UL	Integer	<p>Audio quality type UL</p> <p>1 = EMOS</p> <p>2 = PESQ NB This is the same as P.862.1 standard.</p> <p>3 = 3SQM</p> <p>6 = PESQ WB This is the same as P.862.2 standard.</p> <p>7 = POLQA NB This is the same as ITU-T P.863 standard.</p> <p>8 = POLQA SWB This is the same as ITU-T P.863 standard.</p> <p>9 = Sevana AQUA NB</p> <p>10 = Sevana AQUA WB</p>
AQ MOS	Float	<p>Audio quality MOS UL</p> <p>Audio quality mean Average quality value during one audio sample.</p> <p>Range: 0 – 5 Unit: MOS</p>
AQ sample file	String	Audio quality sample filename UL
AQ ref. file	String	Audio quality reference sample filename UL

AQ timestamp	String	Audio quality timestamp UL Timestamp written when the audio sample analyzed is fully received. This is needed since it can take a little while before measurement event is written after voice quality sample is received.
AQ sample duration UL	Integer	Audio sample duration UL Unit: ms
AQ activity	Float	Audio quality speech activity P.862 states that the speech activity in a test signal reference and the degraded sample used with PESQ should be between 40% and 80%. A low speech activity could cause the PESQ score to be inaccurate. Although the typical speech activity for a test signal can vary depending on the language used in the signal. If the activity ratio is above 85%, it is likely that there is background noise, etc. If the activity ratio is below 35%, it is likely that the call is silent or audio information has been lost. Muting of a signal typically occurs when an error concealment algorithm at the receiver has insufficient information to replace missing or corrupted data audio quality mean delay. Range: 0 – 100 Unit: %
AQ delay	Float	Audio quality delay mean Frame-by-frame delay is the delay measure used in calculating the PESQ quality score. The delay is calculated for each 16 ms frame separately. Average, minimum, and maximum delay is reported. Delay changes are most likely to be caused by jitter buffer adaptation with VoIP. These adaptations occur when there is a large change in the jitter on an IP network. As jitter on the VoIP network increases, the delay measured by PESQ Tools will typically increase as the jitter buffer grows in size. As the jitter decreases, the delay measured will typically decrease as the jitter buffer decreases in size. Unit: ms
AQ min delay	Float	Audio quality delay min See description for audio quality delay mean -parameter. Unit: ms
AQ max delay	Float	Audio quality delay max See description for audio quality delay mean -parameter. Unit: ms
AQ stdev delay	Float	Audio quality delay std See description for audio quality delay mean -parameter. Unit: ms
AQ SNR	Float	Audio quality SNR Estimated signal-to-noise ratio. SNR measures the signal strength of the speech stream relative to background noise, i.e. the relative loudness of speech compared to noise. The higher the signal to noise ratio, the better the possible listening quality. An SNR value of 20 dB can begin to impair conversational quality. Typical value is 45dB. Range: 10 – 60 Unit: dB
AQ insertion gain	Float	Audio quality insertion gain Gain calculated for active signal in active periods. dB difference between active signal of reference and degraded signals (calculated as of degraded minus of reference signal). Typical value is 0 dB for digital signal. Unit: dB
AQ noise gain	Float	Audio quality noise gain Gain calculated for noise in silent periods. dB difference between mean noise level of reference and degraded signals. Calculated as of degraded minus of reference signal. Insertion / noise gain has typical range from -20 dB to 20 dB and typical value of -6 dB. Gain statistics provide information on the active speech level difference between the reference and the degraded signal as well as on the amount of background noise in the degraded signal. For example, if the system being tested introduces background noise, the PESQ scores for this system

will be lower than those of systems that do not introduce noise. The value of the parameter "noise gain" indicates the presence of background noise, making it unnecessary to listen to the samples in order to find out the reason for the low score. Unit: dB

Audio quality downlink (AQDL)

Event ID	AQDL
Cellular systems	All
Record state	Call connection state
Description	Recorded after voice quality sample is received and the MOS score of the sample is calculated. This measurement event is recorded only during voice quality measurements.
Tools	Nemo Outdoor, Nemo Handy

[Parameters](#) | [Parameters for EMOS, PESQ, 3SQM, and POLQA](#) | [Parameters for Streaming Quality](#) | [Parameters for NiQA-DSP-LQ](#) |

Parameters [\[Top\]](#)

Name	Type	Description
AQ type DL	Integer	Audio quality type DL 1 = EMOS 2 = PESQ NB This is the same as P.862.1 standard. 3 = 3SQM 4 = Streaming quality 5 = NiQA-DSP-LQ This is also known as PSM. 6 = PESQ WB This is the same as P.862.2 standard. 7 = POLQA NB This is the same as ITU-T P.863 standard. 8 = POLQA SWB This is the same as ITU-T P.863 standard.

Parameters for EMOS, PESQ, 3SQM, and POLQA [\[Top\]](#)

Name	Type	Description
AQ MOS	Float	Audio quality MOS DL Average quality value during one audio sample. Range: 0 – 5 Unit: MOS
AQ sample file	String	Audio quality sample filename DL Name of the audio sample file stored on disk during measurement. Empty if the file is not saved.
AQ ref. file	String	Audio quality reference sample filename DL
AQ timestamp	String	Audio quality timestamp DL Timestamp written when the audio sample analyzed is fully received. This is needed since it can take a little while before AQDL event is written after voice quality sample is received.
AQ sample duration	Integer	Audio quality sample duration DL Unit: ms
AQ activity	Float	Audio quality speech activity P.862 states that the speech activity in a test signal reference and the degraded sample used with PESQ should be between

		40% and 80%. A low speech activity could cause the PESQ score to be inaccurate. Although the typical speech activity for a test signal can vary depending on the language used in the signal. If the activity ratio is above 85%, it is likely that there is background noise, etc. If the activity ratio is below 35%, it is likely that the call is silent or audio information has been lost. Muting of a signal typically occurs when an error concealment algorithm at the receiver has insufficient information to replace missing or corrupted data audio quality mean delay. Range: 0 – 100 Unit: %
AQ delay	Float	Audio quality delay mean Frame-by-frame delay is the delay measure used in calculating the PESQ quality score. The delay is calculated for each 16 ms frame separately. Average, minimum, and maximum delay is reported. Delay changes are most likely to be caused by jitter buffer adaptation with VoIP. These adaptations occur when there is a large change in the jitter on an IP network. As jitter on the VoIP network increases, the delay measured by PESQ Tools will typically increase as the jitter buffer grows in size. As the jitter decreases, the delay measured will typically decrease as the jitter buffer decreases in size. Unit: ms
AQ min delay	Float	Audio quality delay min See description for audio quality delay mean -parameter. Unit: ms
AQ max delay	Float	Audio quality delay max See description for audio quality delay mean -parameter. Unit: ms
AQ stdev delay	Float	Audio quality delay std See description for audio quality delay mean -parameter. Unit: ms
AQ SNR	Float	Audio quality SNR Estimated signal-to-noise ratio. SNR measures the signal strength of the speech stream relative to background noise, i.e. the relative loudness of speech compared to noise. The higher the signal to noise ratio, the better the possible listening quality. An SNR value of 20 dB can begin to impair conversational quality. Typical value is 45dB. Range: 10 – 60 Unit: dB
AQ insertion gain	Float	Audio quality insertion gain Gain calculated for active signal in active periods. dB difference between active signal of reference and degraded signals (calculated as of degraded minus of reference signal). Typical value is 0 dB for digital signal. Unit: dB
AQ noise gain	Float	Audio quality noise gain Gain calculated for noise in silent periods. dB difference between mean noise level of reference and degraded signals. Calculated as of degraded minus of reference signal. Insertion / noise gain has typical range from -20 dB to 20 dB and typical value of -6 dB. Gain statistics provide information on the active speech level difference between the reference and the degraded signal as well as on the amount of background noise in the degraded signal. For example, if the system being tested introduces background noise, the PESQ scores for this system will be lower than those of systems that do not introduce noise. The value of the parameter "noise gain" indicates the presence of background noise, making it unnecessary to listen to the samples in order to find out the reason for the low score. Unit: dB

Parameters for Streaming Quality [\[Top\]](#)

Name	Type	Description
AQ MOS streaming	Float	Audio quality MOS streaming

		Average quality value during one audio sample. Range: 1 – 5 Unit: MOS
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Parameters for NiQA-DSP-LQ [|Top|](#)

Name	Type	Description
AQ MOS DL	Float	Audio quality MOS DL (Nemo Handy only) Average quality value during one audio sample. Range: 0 – 5 Unit: MOS

Audio quality echo (AQECHO)

Event ID	AQECHO
Cellular systems	All
Record state	Call connection state
Description	Recorded after voice quality sample is transmitted and the echo of the sample is calculated. This measurement event is recorded only during voice quality measurements.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for Opticom advanced echo model](#) |

Parameters [|Top|](#)

Name	Type	Description
AQ echo type	Integer	Audio quality echo type 1 = Opticom advanced echo model

Parameters for Opticom advanced echo model [|Top|](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
Sample type	Integer	Audio quality echo sample type 1 = Transmitted sample
#Echo samples	Integer	Number of echo samples
#Params/Echo sample	Integer	Number of parameters per echo sample
#AQ echo annoyance	Integer	Audio quality echo annoyance 1 = Acceptable 2 = Unacceptable 3 = Sidetone
ERL	Float	Audio quality echo level This is same as echo return loss parameter. Range: 0 – 60 Unit: dB
Echo delay	Integer	Audio quality echo delay Range: 0 – 1000 Unit: ms
Echo occurrence	Float	Audio quality echo occurrence Defines the ratio of echo in the reported echo sample. Range: 0 – 100 Unit: %

Echo diff to tol.	Float	Audio quality diff to tolerance Defines the measured echo level difference to the tolerance curve defined by ITU-T record G.131. Unit: dB
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Audio reception state (AQRX)

Event ID	AQRX
Cellular systems	All
Record state	Call connection state
Description	Recorded during audio reception.
Tools	Nemo Outdoor, Nemo Handy

Parameters | Parameters for mute detection |

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Name	Type	Description
AQ RX type	Integer	Audio RX detection type 1 = Mute detection

Parameters for mute detection | [Top](#)

Name	Type	Description
AQ RX state	Integer	Audio RX state 1 = Audio off 2 = Audio on

Audio quality info (AQI)

Event ID	AQI
Cellular systems	All
Record state	Call connection state
Description	Recorded when the measurement tool achieves synchronization with the transferred voice quality sample. This measurement event is recorded only during voice quality measurements.
Tools	Nemo Outdoor, Nemo Server

Parameters |

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Name	Type	Description
AQ type DL	Integer	Audio quality type DL

		1 = EMOS 2 = PESQ NB This is the same as P.862.1 standard. 3 = 3SQM 4 = Streaming quality 5 = NiQA-DSP-LQ This is also known as PSM. 6 = PESQ WB This is the same as P.862.2 standard. 7 = POLQA NB This is the same as ITU-T P.863 standard. 8 = POLQA SWB This is the same as ITU-T P.863 standard.
AQ type	Integer	Audio quality test type 1 = Loop-back 2 = Uplink 3 = Downlink 4 = Uplink/downlink 5 = Off
AQ signal	Integer	Audio quality signal status This parameter has never been logged and it is deprecated. 1 = Not detected 2 = Detected
AQ synch.	Integer	Audio quality synchronization status 0 = No synchronization 1 = Synchronized

Downlink video quality (VQDL)

Event ID	VQDL
Cellular systems	All
Record state	Data transfer state
Description	Recorded semi-periodically when application layer data is received from the server. The measurement event is written simultaneously with the DRATE measurement.
Tools	Nemo Outdoor, Nemo Handy

[Parameters](#) |
[Parameters for Streaming Quality](#) |
[Parameters for Psytechnics PVI mobile streaming quality](#) |
[Parameters for Psytechnics PVI streaming quality](#) |
[Parameters for Opticom PEVQ-S streaming quality](#)

Parameters [\[Top\]](#)

Name	Type	Description
Data transfer context ID	Context	Data transfer context ID
VQ type	Integer	Video quality type 1 = Genista streaming quality 2 = Psytechnics PVI mobile streaming quality 3 = Psytechnics PVI streaming quality 4 = Opticom PEVQ-S streaming quality

Parameters for Streaming Quality [\[Top\]](#)

Name	Type	Description
VQ MOS	Float	Video quality MOS Video quality is measured passively from media streams carried over packet-based networks. Factors that affect quality include

		delay variations, packet losses and other distortions which may be visible in the video. Also factors such as the video codec itself are included in the final result. However, end-to-end and round-trip delays are not taken into account. Video quality is normally displayed as MOS (Mean Opinion Score), which is expressed as a single number. The range varies from 1 to 5, where 1 is poor quality and 5 is perfect. Usually the MOS value does not reach 5, the practical maximum being most commonly between the values 3 and 4. Range: 0 – 5 Unit: MOS
VQ blockiness	Float	Video quality blockiness Perceptual measure of the extent blocky, patchy images. Cause is compression, bit errors, packet loss and high motion. Unit: %
VQ blurriness	Float	Video quality blurriness Perceptual measure of the loss of fine detail and the smearing of edges. Cause is compression, bit errors, packet loss and low-pass filtering. Unit: %
VQ jerkiness	Float	Video quality jerkiness Perceptual measure of frozen pictures or motion that does not look smooth. Cause is network congestion, packet loss, frames dropped by the encoder, reduced frame rate. Unit: %

Parameters for Psytechnics PVI mobile streaming quality [\[Top\]](#)

Name	Type	Description
VQ MOS	Float	Video quality MOS Video quality is measured passively from media streams carried over packet-based networks. Factors that affect quality include delay variations, packet losses and other distortions which may be visible in the video. Also factors such as the video codec itself are included in the final result. However, end-to-end and round-trip delays are not taken into account. Video quality is normally displayed as MOS (Mean Opinion Score), which is expressed as a single number. The range varies from 1 to 5, where 1 is poor quality and 5 is perfect. Usually the MOS value does not reach 5, the practical maximum being most commonly between the values 3 and 4. Range: 0 – 5 Unit: MOS
VQ jitter	Integer	Video quality jitter Jitter is the delay variation of the streaming process. It records the delay of received UDP datagrams carrying the video data. If the delay is too large, video will not play seamlessly. Unit: ms
VQ PER	Float	Video quality packet error rate Displays the rate of lost packets between the last and the current request. The UDP protocol does not require all packets to arrive to the client. This is why some packets might be lost during the transfer due to bad network or long delay variations (jitter). Unit: %

Parameters for Psytechnics PVI streaming quality [\[Top\]](#)

Name	Type	Description
VQ MOS	Float	Video quality MOS Video quality is measured passively from media streams carried over packet-based networks. Factors that affect quality include delay variations, packet losses and other distortions which may be visible in the video. Also factors such as the video codec itself are included in the final result. However, end-to-end and round-trip delays are not taken into account. Video quality is normally displayed as MOS (Mean Opinion Score), which is

		expressed as a single number. The range varies from 1 to 5, where 1 is poor quality and 5 is perfect. Usually the MOS value does not reach 5, the practical maximum being most commonly between the values 3 and 4. Range: 0 – 5 Unit: MOS
VQ jitter	Integer	Video quality jitter Jitter is the delay variation of the streaming process. It records the delay of received UDP datagrams carrying the video data. If the delay is too large, video will not play seamlessly. Unit: ms
VQ PER	Float	Video quality packet error rate Displays the rate of lost packets between the last and the current request. The UDP protocol does not require all packets to arrive to the client. This is why some packets might be lost during the transfer due to bad network or long delay variations (jitter). Unit: %
MOS degradation	Float	Video quality MOS degradation This is the current video quality difference compared to a 'perfect network'. Range: 0 – 5 Unit: MOS
Deg. due PER	Float	Video quality degradation due to packet errors The current proportion of current quality degradation that is due to packet loss. Shows the extent to which packet loss has contributed to the current quality loss. Range: 0 – 100 Unit: %
Deg. due compress	Float	Video quality degradation due to compression The proportion of current quality degradation that is due to video compression. Shows the extent to which video compression has contributed to the current quality loss. Range: 0 – 100 Unit: %
Video frame rate	Float	Video frame rate Defines the number of picture frames displayed during one second. The result is equivalent to FPS (frames per second), which is usually around 10 with mobile content. For example, when viewing a normal DVD, the FPS is 23.976 with NTSC and 25 with PAL. Range: 0 – 50 Unit: frame
Video protocol	String	Video protocol Defines the protocol used to transfer the file through the network. This version of PVI is calibrated with RealPlayer and supports mostly RTP (Real Time Protocol). RDT streams can be played back but diagnostics are not available. Streams with RDT protocol are displayed as "Unknown/Not supported".
Video codec	String	Video codec Defines the video codec used in the container format. Usually this is H.263, H.263+, H.264 (MPEG4 Part 10) or MPEG4 Visual (MPEG4 Part 2) when streaming mobile content.

Parameters for Opticom PEVQ-S streaming quality [\[Top\]](#)

Name	Type	Description
VQ MOS	Float	Video quality MOS Video quality is measured passively from media streams carried over packet-based networks. Factors that affect quality include delay variations, packet losses and other distortions which may be visible in the video. Also factors such as the video codec itself are included in the final result. However, end-to-end and round-trip delays are not taken into account. Video quality is normally displayed as MOS (Mean Opinion Score), which is expressed as a single number. The range varies from 1 to 5, where 1 is poor quality and 5 is perfect. Usually the MOS value

		does not reach 5, the practical maximum being most commonly between the values 3 and 4. Range: 0 – 5 Unit: MOS
VQ MOS BVQA	Float	Video quality MOS BVQA Best video quality MOS available at the current point. Range: 0 – 5 Unit: MOS
Video frame rate	Float	Video frame rate Defines the number of picture frames displayed during one second. The result is equivalent to FPS (frames per second), which is usually around 10 with mobile content. For example, when viewing a normal DVD, the FPS is 23.976 with NTSC and 25 with PAL. Range: 0 – 50 Unit: frame
VQ bitrate	Integer	Video quality average bitrate Minimum value: 0 Unit: bit/s
VQ buffer fill	Float	Video quality buffer fill The number of frames in the buffer per second.
VQ timestamp	String	Video quality timestamp Timestamp written when the video quality MOS analyzed is fully received. This is needed since it can take a little while before VQDL event is written after MOS is received.

Video throughput (VRATE)

Event ID	VRATE
Cellular systems	UMTS FDD
Record state	Call connection state
Description	Recorded for video call when parameter sample is received from the device and the received sample differs from the previous result.
Tools	Nemo Outdoor

Parameters | Parameters for UMTS FDD |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 5 = UMTS FDD

Parameters for UMTS FDD |Top|

Name	Type	Description
Video protocol	Integer	Video protocol 1 = HDLC
Video rate UL	Integer	Video rate uplink Minimum value: 0 Unit: bit/s
Video rate DL	Integer	Video rate downlink Minimum value: 0 Unit: bit/s

Video frame rate UL	Integer	Video frame rate uplink
Video frame rate DL	Integer	Video frame rate downlink
Video FER	Float	Video FER Number of erroneous frames received. Unit: %
VQI	Float	Video call quality index Range: 1 – 5

Message sending/receiving attempt (MSGGA)

Event ID	MSGGA
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,iDEN
Record state	Always
Description	Recorded when SMS, MMS, or USSD message sending is attempted or a message is received. This measurement event begins the SMS, MMS, and USSD transmission state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters | Parameters for SMS and IMS SMS message | Parameters for MMS message | Parameters for CDMA SMS message | Parameters for USSD message | Parameters for Kodiak IPA | Parameters for USSD message sequence |

Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 55 = iDEN
Message type	Integer	Message type 1 = SMS 2 = MMS 3 = CDMA SMS 4 = USSD 5 = Kodiak IPA Kodiak instant private alert. 6 = USSD sequence Logged to indicate the beginning and ending of sending multiple separate USSD messages. 7 = IMS SMS

Parameters for SMS and IMS SMS message [|Top|](#)

Name	Type	Description
SMS context ID	Context	SMS context ID
SMS msg. type	Integer	SMS message type 1 = Receive 2 = Send 3 = Status report 4 = Command 5 = Broadcast

SMS number	String	SMS phone number
SMSC	String	SMS service center address
SMS coding scheme	Integer	SMS data coding scheme GSM 03.38 defines the meaning of this parameter. Range: 0 – 255
SMS data	String (hex)	SMS message data SMS data in hexadecimal values.
SMS timeout	Integer	SMS timeout The timeout value from SMS send attempt (MSG_A) to success (MSG_S). If SMS has not been sent during this time the MSGF measurement event is recorded. Unit: ms

Parameters for MMS message [|Top|](#)

Name	Type	Description
MMS context ID	Context	MMS context ID
MMS msg. type	Integer	MMS message type 1 = Send 2 = Retrieve 3 = Notification 4 = Delivery report
MMS ser. center	String	MMS service center
MMS tr. protocol	Integer	MMS transport protocol 1 = WAP 1.0 2 = SMS 3 = WAP 2.0
#MMS files	Integer	Number of MMS files
MMS filename	String	MMS filename For send MMS message type this is a name of the MMS message file. For retrieved and notification MMS types this a MMS message reference (that is in a practice a content location in a URI form).
MMS timeout	Integer	MMS timeout The timeout value from MMS send attempt (MSG_A) to success (MSG_S). If MMS has not been sent during this time the MSGF measurement event is recorded. Unit: ms

Parameters for CDMA SMS message [|Top|](#)

Name	Type	Description
SMS context ID	Context	SMS context ID
SMS msg. type	Integer	SMS message type 1 = Receive 2 = Send 3 = Status report 4 = Command 5 = Broadcast
SMS number	String	SMS phone number
SMS data	String (hex)	SMS message data SMS data in hexadecimal values.
SMS timeout	Integer	SMS timeout The timeout value from SMS send attempt (MSG_A) to success (MSG_S). If SMS has not been sent during this time the MSGF measurement event is recorded. Unit: ms

Parameters for USSD message [|Top|](#)

Name	Type	Description

USSD context ID	Context	USSD context ID
USSD sequence context ID	Context	USSD sequence context ID
USSD type	Integer	USSD message type See 3GPP TS 123.090. 1 = Mobile request Mobile originated request to the network for which the mobile station waits for the answer. 2 = Mobile response Mobile originated response to the network request. 3 = Network request Network originated request of information for the mobile station. 4 = Network response Network originated response to the request received from the mobile station. 5 = Network notification Network originated notification that does not require further action from the mobile station.
USSD gateway	String	USSD gateway
USSD data	String (hex)	USSD message data

Parameters for Kodiak IPA [\[Top\]](#)

Name	Type	Description
Kodiak IPA context ID	Context	Kodiak IPA context ID
IPA type	Integer	Kodiak IPA message type 1 = Send 2 = Receive
IPA address	String	Kodiak IPA address This is the address where the IPA is received or where it is sent.

Parameters for USSD message sequence [\[Top\]](#)

Name	Type	Description
USSD sequence context ID	Context	USSD sequence context ID
USSD gateway	String	USSD gateway
USSD data	String (hex)	USSD message data This parameter contains all USSD messages that are transmitted in this session. Different messages are separated using semicolon.

Message sending/receiving success (MSGs)

Event ID	MSGs
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,iDEN
Record state	SMS, MMS, and USSD transmission state
Description	Recorded when SMS, MMS, or USSD message is sent or received successfully. The SMS message is considered successfully received when the response from the SMS server is received. Terminates the SMS, MMS, and USSD transmission state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Parameters [|Top](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 55 = iDEN
Message type	Integer	Message type 1 = SMS 2 = MMS 3 = CDMA SMS 4 = USSD 5 = Kodiak IPA Kodiak instant private alert. 6 = USSD sequence Logged to indicate the beginning and ending of sending multiple separate USSD messages. 7 = IMS SMS

Parameters for SMS and IMS SMS message [|Top](#)

Name	Type	Description
SMS context ID	Context	SMS context ID
Ref. number	Integer	SMS reference number Reference number for sent SMS message.
SMS msg. type	Integer	SMS message type 1 = Receive 2 = Send 3 = Status report 4 = Command 5 = Broadcast

Parameters for MMS message [|Top](#)

Name	Type	Description
MMS context ID	Context	MMS context ID
MMS msg. ID	String	MMS message ID
MMS msg. type	Integer	MMS message type 1 = Send 2 = Retrieve 3 = Notification 4 = Delivery report

Parameters for CDMA SMS message [|Top](#)

Name	Type	Description
SMS context ID	Context	SMS context ID
SMS duration	Integer	SMS transmission duration Defines how long the SMS transmission has taken. Calculated from origination or paging message to the SMS acknowledgement message. Unit: ms

Parameters for USSD message [|Top](#)

Name	Type	Description
USSD context ID	Context	USSD context ID

USSD type	Integer	USSD message type See 3GPP TS 123.090. 1 = Mobile request Mobile originated request to the network for which the mobile station waits for the answer. 2 = Mobile response Mobile originated response to the network request. 3 = Network request Network originated request of information for the mobile station. 4 = Network response Network originated response to the request received from the mobile station. 5 = Network notification Network originated notification that does not require further action from the mobile station.
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Parameters for Kodiak IPA [|Top|](#)

Name	Type	Description
Kodiak IPA context ID	Context	Kodiak IPA context ID
IPA type	Integer	Kodiak IPA message type 1 = Send 2 = Receive

Parameters for USSD message sequence [|Top|](#)

Name	Type	Description
USSD sequence context ID	Context	USSD sequence context ID

Message sending/receiving failed (MSGF)

Event ID	MSGF
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,iDEN
Record state	SMS, MMS, and USSD transmission state
Description	Recorded when SMS, MMS, or USSD message sending fails. This measurement event terminates the SMS, MMS, and USSD transmission state.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

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Parameters [|Top|](#)

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 55 = iDEN
Message type	Integer	Message type

1 = SMS
 2 = MMS
 3 = CDMA SMS
 4 = USSD
 5 = Kodiak IPA
 Kodiak instant private alert.
 6 = USSD sequence
 Logged to indicate the beginning and ending of sending
 multiple separate USSD messages.
 7 = IMS SMS

Parameters for SMS and IMS SMS message [\[Top\]](#)

Name	Type	Description
SMS context ID	Context	SMS context ID
SMS cause	Integer	SMS cause 1 = Unassigned (unallocated) number 8 = Operator determined barring 10 = Call barred 21 = Short message transfer rejected 27 = Destination out of service 28 = Unidentified subscriber 29 = Facility rejected 30 = Unknown subscriber 38 = Network out of order 41 = Temporary failure 42 = Congestion 47 = Resources unavailable, unspecified 50 = Requested facility not subscribed 69 = Requested facility not implemented 81 = Invalid short message transfer referencevalue 95 = Invalid message, unspecified 96 = Invalid mandatory information 97 = Message type non-existent or not implemented 98 = Message not compatible with short message protocol state 99 = Information element non-existent or notimplemented 111 = Protocol error, unspecified 127 = Interworking, unspecified 128 = Telematic interworking not supported 129 = Short message Type 0 not supported 130 = Cannot replace short message 143 = Unspecified TP-PID error 144 = Data coding scheme (alphabet) not supported 145 = Message class not supported 159 = Unspecified TP-DCS error 160 = Command cannot be actioned 161 = Command unsupported 175 = Unspecified TP-Command error 176 = TPDU not supported 192 = SC busy 193 = No SC subscription 194 = SC system failure 195 = Invalid SME address 196 = Destination SME barred 197 = SM Rejected-Duplicate SM 198 = TP-VPF not supported 199 = TP-VP not supported 208 = SIM SMS storage full 209 = No SMS storage capability in SIM 210 = Error in MS 211 = Memory Capacity Exceeded 212 = SIM Application Toolkit Busy 255 = Unspecified error cause 300 = ME failure 301 = SMS service of ME reserved 302 = Operation not allowed 303 = Operation not supported 304 = Invalid PDU mode parameter 305 = Invalid text mode parameter 310 = SIM not inserted

		311 = SIM PIN required 312 = PH-SIM PIN required 313 = SIM failure 314 = SIM busy 315 = SIM wrong 316 = SIM PUK required 317 = SIM PIN2 required 318 = SIM PUK2 required 320 = Memory failure 321 = invalid memory index 322 = memory full 330 = SMSC address unknown 331 = no network service 332 = network timeout 340 = No +CNMA acknowledgement expected 500 = Unknown error 512 = Manufacturer specific
SMS msg. type	Integer	SMS message type 1 = Receive 2 = Send 3 = Status report 4 = Command 5 = Broadcast

Parameters for MMS message [Top](#)

Name	Type	Description
MMS context ID	Context	MMS context ID
MMS cause	Integer	MMS cause 1 = Timeout 2 = Invalid remote address 4 = Invalid remote file 5 = Invalid local file 50 = Unknown Only used with the MMS protocol. 51 = Protocol error Only used with the MMS protocol. 52 = Invalid TID Only used with the MMS protocol. 53 = Not implemented class 2 Only used with the MMS protocol. 54 = Not implemented SAR Only used with the MMS protocol. 55 = Not implemented user acknowledgement Only used with the MMS protocol. 56 = WTP version zero Only used with the MMS protocol. 57 = Capacity temporarily exceeded Only used with the MMS protocol. 58 = No response Only used with the MMS protocol. 59 = Message too large Only used with the MMS protocol. 100 = Continue 101 = Switching Protocols 129 = Unspecified Only used with the MMS protocol. 130 = Service denied Only used with the MMS protocol. 131 = Message format corrupt Only used with the MMS protocol. 132 = Sending address unresolved Only used with the MMS protocol. 133 = Message not found Only used with the MMS protocol. 134 = Network problem Only used with the MMS protocol. 135 = Content not accepted Only used with the MMS protocol. 136 = Unsupported message

		<p>Only used with the MMS protocol.</p> <p>200 = OK, success</p> <p>201 = Created</p> <p>202 = Accepted</p> <p>203 = Non-Authoritative information</p> <p>204 = No content</p> <p>205 = Reset content</p> <p>206 = Partial content</p> <p>300 = Multiple choices</p> <p>301 = Moved permanently</p> <p>302 = Moved temporarily</p> <p>303 = See other</p> <p>304 = Not modified</p> <p>305 = Use proxy</p> <p>306 = Reserved</p> <p>307 = Temporary redirect</p> <p>400 = Bad request - server could not understand request</p> <p>401 = Unauthorized</p> <p>402 = Payment required</p> <p>403 = Forbidden - operation is understood but refused</p> <p>404 = Not found</p> <p>405 = Method not allowed</p> <p>406 = Not acceptable</p> <p>407 = Proxy authentication required</p> <p>408 = Request timeout</p> <p>409 = Conflict</p> <p>410 = Gone</p> <p>411 = Length required</p> <p>412 = Precondition failed</p> <p>413 = Request entity too large</p> <p>414 = Request-URI too large</p> <p>415 = Unsupported media type</p> <p>416 = Requested range not satisfiable</p> <p>417 = Expectation failed</p> <p>500 = Internal server error</p> <p>501 = Not implemented</p> <p>502 = Bad gateway</p> <p>503 = Service unavailable</p> <p>504 = Gateway timeout</p> <p>505 = HTTP version not supported</p>
MMS msg. type	Integer	<p>MMS message type</p> <p>1 = Send</p> <p>2 = Retrieve</p> <p>3 = Notification</p> <p>4 = Delivery report</p>

Parameters for CDMA SMS message [|Top|](#)

Name	Type	Description
SMS context ID	Context	SMS context ID
SMS cause	Integer	<p>SMS cause</p> <p>1 = Unassigned (unallocated) number</p> <p>8 = Operator determined barring</p> <p>10 = Call barred</p> <p>21 = Short message transfer rejected</p> <p>27 = Destination out of service</p> <p>28 = Unidentified subscriber</p> <p>29 = Facility rejected</p> <p>30 = Unknown subscriber</p> <p>38 = Network out of order</p> <p>41 = Temporary failure</p> <p>42 = Congestion</p> <p>47 = Resources unavailable, unspecified</p> <p>50 = Requested facility not subscribed</p> <p>69 = Requested facility not implemented</p> <p>81 = Invalid short message transfer referencevalue</p> <p>95 = Invalid message, unspecified</p> <p>96 = Invalid mandatory information</p> <p>97 = Message type non-existent or not implemented</p> <p>98 = Message not compatible with short message protocol state</p>

99 = Information element non-existent or not implemented
 111 = Protocol error, unspecified
 127 = Interworking, unspecified
 128 = Telematic interworking not supported
 129 = Short message Type 0 not supported
 130 = Cannot replace short message
 143 = Unspecified TP-PID error
 144 = Data coding scheme (alphabet) not supported
 145 = Message class not supported
 159 = Unspecified TP-DCS error
 160 = Command cannot be actioned
 161 = Command unsupported
 175 = Unspecified TP-Command error
 176 = TPDU not supported
 192 = SC busy
 193 = No SC subscription
 194 = SC system failure
 195 = Invalid SME address
 196 = Destination SME barred
 197 = SM Rejected-Duplicate SM
 198 = TP-VPF not supported
 199 = TP-VP not supported
 208 = SIM SMS storage full
 209 = No SMS storage capability in SIM
 210 = Error in MS
 211 = Memory Capacity Exceeded
 212 = SIM Application Toolkit Busy
 255 = Unspecified error cause
 300 = ME failure
 301 = SMS service of ME reserved
 302 = Operation not allowed
 303 = Operation not supported
 304 = Invalid PDU mode parameter
 305 = Invalid text mode parameter
 310 = SIM not inserted
 311 = SIM PIN required
 312 = PH-SIM PIN required
 313 = SIM failure
 314 = SIM busy
 315 = SIM wrong
 316 = SIM PUK required
 317 = SIM PIN2 required
 318 = SIM PUK2 required
 320 = Memory failure
 321 = invalid memory index
 322 = memory full
 330 = SMSC address unknown
 331 = no network service
 332 = network timeout
 340 = No +CNMA acknowledgement expected
 500 = Unknown error
 512 = Manufacturer specific

Parameters for USSD message [\[Top\]](#)

Name	Type	Description
USSD context ID	Context	USSD context ID
USSD type	Integer	USSD message type See 3GPP TS 123.090. 1 = Mobile request Mobile originated request to the network for which the mobile station waits for the answer. 2 = Mobile response Mobile originated response to the network request. 3 = Network request Network originated request of information for the mobile station. 4 = Network response Network originated response to the request received from the mobile station.

		5 = Network notification Network originated notification that does not require further action from the mobile station.
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Parameters for Kodiak IPA [|Top|](#)

Name	Type	Description
Kodiak IPA context ID	Context	Kodiak IPA context ID
IPA type	Integer	Kodiak IPA message type 1 = Send 2 = Receive

Parameters for USSD message sequence [|Top|](#)

Name	Type	Description
USSD context ID	Context	USSD context ID

SIP server registration attempt (SIPREGA)

Event ID	SIPREGA
Cellular systems	All
Record state	Packet active state
Description	Recorded when the user initiates the SIP server (or similar) registration attempt. This measurement event begins the SIP server registration attempt state.
Tools	Nemo Outdoor

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 [Parameters for SIP server registration](#) |
 [Parameters for Skype server registration](#) |
 [Parameters for IMS SIP server registration](#) |
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Name	Type	Description
SIP server registration type	Integer	SIP server registration type 1 = SIP server registration 2 = Skype server registration 3 = LTE IMS SIP server registration 4 = Kodiak server registration 5 = WLAN IMS SIP server registration

Parameters for SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Packet session context ID	Context	Packet session context ID
SIP server	String	SIP server address SIP server address is recorded in URI format.

Parameters for Skype server registration [|Top|](#)

Name	Type	Description
Skype server context ID	Context	Skype server context ID
Packet session context ID	Context	Packet session context ID

Skype server username	String	Skype server username
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Parameters for IMS SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Packet session context ID	Context	Packet session context ID
SIP server	String	SIP server address SIP server address is recorded in URI format.

Parameters for Kodiak server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Packet session context ID	Context	Packet session context ID
SIP server	String	SIP server address SIP server address is recorded in URI format.

SIP server registration failed (SIPREGF)

Event ID	SIPREGF
Cellular systems	All
Record state	SIP server registration attempt state
Description	Recorded when registration to the SIP server (or similar) fails. This measurement event terminates the SIP server registration attempt state.
Tools	Nemo Outdoor

[Parameters](#) |
 [Parameters for SIP server registration](#) |
 [Parameters for Skype server registration](#) |
 [Parameters for IMS SIP server registration](#) |
 [Parameters for Kodiak server registration](#)

Parameters [|Top|](#)

Name	Type	Description
SIP server registration type	Integer	SIP server registration type 1 = SIP server registration 2 = Skype server registration 3 = LTE IMS SIP server registration 4 = Kodiak server registration 5 = WLAN IMS SIP server registration

Parameters for SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Fail. status	Integer	SIP server failure status 1 = User abort 2 = Server reject 3 = Mobile reject 4 = Timeout 5 = Test system failure
Fail. cause	Integer	SIP server failure cause 100 = Trying

Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response.

180 = Ringing

181 = Call is being forwarded

182 = Queued

183 = Session progress

199 = Early dialog terminated

200 = OK

202 = Accepted

The request has been understood but cannot be processed.

204 = No notification

300 = Multiple choices

301 = Moved permanently

302 = Moved temporarily

305 = Use proxy

380 = Alternative service

400 = Bad request

401 = Unauthorized

Used only by registrars or user agents. Proxies should use proxy authorization 407.

402 = Payment required

403 = Forbidden

404 = Not found

User not found.

405 = Method not allowed

406 = Not acceptable

407 = Proxy authentication required

408 = Request timeout (could not find the user in time)

409 = Conflict

410 = Gone

The user existed once, but is not available here any more.

411 = Length required

412 = Conditional request failed

413 = Request entity too large

414 = Request-URI too long

415 = Unsupported media type

416 = Unsupported URI scheme

417 = Unknown resource priority

420 = Bad extension

Bad SIP protocol extension used, not understood by the server.

421 = Extension required

422 = Session interval too small

423 = Interval too brief

424 = Bad location information

428 = Use identity header

429 = Provide referrer identity

430 = Flow failed

433 = Anonymity disallowed

436 = Bad identity-info

437 = Unsupported certificate

438 = Invalid identity header

439 = First hop lacks outbound support

470 = Consent needed

480 = Temporarily unavailable

481 = Call/transaction does not exist

482 = Loop detected

483 = Too many hops

484 = Address incomplete

485 = Ambiguous

486 = Busy here

487 = Request terminated

488 = Not acceptable here

489 = Bad event

491 = Request pending

493 = Undecipherable

Could not decrypt S/MIME body part.

494 = Security agreement required

500 = Server internal error

501 = Not implemented

502 = Bad gateway

503 = Service unavailable

		504 = Server time-out 505 = Version not supported 513 = Message too large 580 = Precondition failure 600 = Busy everywhere 603 = Decline 604 = Does not exist anywhere 606 = Not acceptable
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Parameters for Skype server registration |Top|

Name	Type	Description
Skype server context ID	Context	Skype server context ID
Fail. status	Integer	Skype server failure status 1 = User abort 2 = Server reject 3 = Mobile reject 4 = Timeout
Fail. cause	Integer	Skype server failure cause Currently this is always n/a.

Parameters for IMS SIP server registration |Top|

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Fail. status	Integer	SIP server failure status 1 = User abort 2 = Server reject 3 = Mobile reject 4 = Timeout 5 = Test system failure
Fail. cause	Integer	SIP server failure cause 100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response. 180 = Ringing 181 = Call is being forwarded 182 = Queued 183 = Session progress 199 = Early dialog terminated 200 = OK 202 = Accepted The request has been understood but cannot be processed. 204 = No notification 300 = Multiple choices 301 = Moved permanently 302 = Moved temporarily 305 = Use proxy 380 = Alternative service 400 = Bad request 401 = Unauthorized Used only by registrars or user agents. Proxies should use proxy authorization 407. 402 = Payment required 403 = Forbidden 404 = Not found User not found. 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout (could not find the user in time) 409 = Conflict 410 = Gone The user existed once, but is not available here any more. 411 = Length required 412 = Conditional request failed 413 = Request entity too large

414 = Request-URI too long
 415 = Unsupported media type
 416 = Unsupported URI scheme
 417 = Unknown resource priority
 420 = Bad extension
 Bad SIP protocol extension used, not understood by the server.
 421 = Extension required
 422 = Session interval too small
 423 = Interval too brief
 424 = Bad location information
 428 = Use identity header
 429 = Provide referrer identity
 430 = Flow failed
 433 = Anonymity disallowed
 436 = Bad identity-info
 437 = Unsupported certificate
 438 = Invalid identity header
 439 = First hop lacks outbound support
 470 = Consent needed
 480 = Temporarily unavailable
 481 = Call/transaction does not exist
 482 = Loop detected
 483 = Too many hops
 484 = Address incomplete
 485 = Ambiguous
 486 = Busy here
 487 = Request terminated
 488 = Not acceptable here
 489 = Bad event
 491 = Request pending
 493 = Undecipherable
 Could not decrypt S/MIME body part.
 494 = Security agreement required
 500 = Server internal error
 501 = Not implemented
 502 = Bad gateway
 503 = Service unavailable
 504 = Server time-out
 505 = Version not supported
 513 = Message too large
 580 = Precondition failure
 600 = Busy everywhere
 603 = Decline
 604 = Does not exist anywhere
 606 = Not acceptable

Parameters for Kodiak server registration [\[Top\]](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Fail. status	Integer	SIP server failure status 1 = User abort 2 = Server reject 3 = Mobile reject 4 = Timeout 5 = Test system failure
Fail. cause	Integer	SIP server failure cause Currently this is always n/a.

SIP server registration completed (SIPREGC)

Event ID	SIPREGC
Cellular systems	All
Record state	SIP registration attempt state
Description	Recorded when registration to the SIP server (or similar) succeeded and the connection is now established to the SIP server. This measurement event begins the SIP server registration state.
Tools	Nemo Outdoor

Parameters | Parameters for SIP server registration | Parameters for Skype server registration | Parameters for IMS SIP server registration | Parameters for Kodiak server registration |

Parameters [|Top|](#)

Name	Type	Description
SIP server registration type	Integer	SIP server registration type 1 = SIP server registration 2 = Skype server registration 3 = LTE IMS SIP server registration 4 = Kodiak server registration 5 = WLAN IMS SIP server registration

Parameters for SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID

Parameters for Skype server registration [|Top|](#)

Name	Type	Description
Skype server context ID	Context	Skype server context ID

Parameters for IMS SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID

Parameters for Kodiak server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID

SIP server deregistered (SIPREGD)

Event ID	SIPREGD
Cellular systems	All
Record state	SIP server registration
Description	Recorded when the device is deregistered from the SIP server (or similar). This measurement event terminates the SIP server registration state.
Tools	Nemo Outdoor

Parameters | Parameters for SIP server registration | Parameters for Skype server registration | Parameters for IMS SIP server registration | Parameters for Kodiak server registration |

Parameters [|Top|](#)

Name	Type	Description
SIP server registration type	Integer	SIP server registration type 1 = SIP server registration 2 = Skype server registration 3 = LTE IMS SIP server registration 4 = Kodiak server registration 5 = WLAN IMS SIP server registration

Parameters for SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Deact. status	Integer	SIP server deactivation status 1 = Normal disconnect 2 = Server initiated disconnect 3 = Abnormal release 5 = Test system failure
Deact. cause	Integer	SIP server deactivation cause 100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response. 180 = Ringing 181 = Call is being forwarded 182 = Queued 183 = Session progress 199 = Early dialog terminated 200 = OK 202 = Accepted The request has been understood but cannot be processed. 204 = No notification 300 = Multiple choices 301 = Moved permanently 302 = Moved temporarily 305 = Use proxy 380 = Alternative service 400 = Bad request 401 = Unauthorized Used only by registrars or user agents. Proxies should use proxy authorization 407. 402 = Payment required 403 = Forbidden 404 = Not found User not found. 405 = Method not allowed 406 = Not acceptable 407 = Proxy authentication required 408 = Request timeout (could not find the user in time) 409 = Conflict 410 = Gone The user existed once, but is not available here any more. 411 = Length required 412 = Conditional request failed 413 = Request entity too large 414 = Request-URI too long 415 = Unsupported media type 416 = Unsupported URI scheme 417 = Unknown resource priority 420 = Bad extension Bad SIP protocol extension used, not understood by the server. 421 = Extension required 422 = Session interval too small 423 = Interval too brief

		424 = Bad location information 428 = Use identity header 429 = Provide referrer identity 430 = Flow failed 433 = Anonymity disallowed 436 = Bad identity-info 437 = Unsupported certificate 438 = Invalid identity header 439 = First hop lacks outbound support 470 = Consent needed 480 = Temporarily unavailable 481 = Call/transaction does not exist 482 = Loop detected 483 = Too many hops 484 = Address incomplete 485 = Ambiguous 486 = Busy here 487 = Request terminated 488 = Not acceptable here 489 = Bad event 491 = Request pending 493 = Undecipherable Could not decrypt S/MIME body part. 494 = Security agreement required 500 = Server internal error 501 = Not implemented 502 = Bad gateway 503 = Service unavailable 504 = Server time-out 505 = Version not supported 513 = Message too large 580 = Precondition failure 600 = Busy everywhere 603 = Decline 604 = Does not exist anywhere 606 = Not acceptable
Deact. time	Integer	SIP server deactivation time Unit: ms

Parameters for Skype server registration [|Top|](#)

Name	Type	Description
Skype server context ID	Context	Skype server context ID
Deact. status	Integer	Skype server deactivation status 1 = Normal disconnect 2 = Server initiated disconnect 3 = Abnormal release
Deact. cause	Integer	Skype server deactivation cause Currently this is always n/a.
Deact. time	Integer	Skype server deactivation time Unit: ms

Parameters for IMS SIP server registration [|Top|](#)

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Deact. status	Integer	SIP server deactivation status 1 = Normal disconnect 2 = Server initiated disconnect 3 = Abnormal release 5 = Test system failure
Deact. cause	Integer	SIP server deactivation cause 100 = Trying Extended search being performed may take a significant time so a forking proxy must send a 100 Trying response.

180 = Ringing
181 = Call is being forwarded
182 = Queued
183 = Session progress
199 = Early dialog terminated
200 = OK
202 = Accepted
 The request has been understood but cannot be processed.
204 = No notification
300 = Multiple choices
301 = Moved permanently
302 = Moved temporarily
305 = Use proxy
380 = Alternative service
400 = Bad request
401 = Unauthorized
 Used only by registrars or user agents. Proxies should use proxy authorization 407.
402 = Payment required
403 = Forbidden
404 = Not found
 User not found.
405 = Method not allowed
406 = Not acceptable
407 = Proxy authentication required
408 = Request timeout (could not find the user in time)
409 = Conflict
410 = Gone
 The user existed once, but is not available here any more.
411 = Length required
412 = Conditional request failed
413 = Request entity too large
414 = Request-URI too long
415 = Unsupported media type
416 = Unsupported URI scheme
417 = Unknown resource priority
420 = Bad extension
 Bad SIP protocol extension used, not understood by the server.
421 = Extension required
422 = Session interval too small
423 = Interval too brief
424 = Bad location information
428 = Use identity header
429 = Provide referrer identity
430 = Flow failed
433 = Anonymity disallowed
436 = Bad identity-info
437 = Unsupported certificate
438 = Invalid identity header
439 = First hop lacks outbound support
470 = Consent needed
480 = Temporarily unavailable
481 = Call/transaction does not exist
482 = Loop detected
483 = Too many hops
484 = Address incomplete
485 = Ambiguous
486 = Busy here
487 = Request terminated
488 = Not acceptable here
489 = Bad event
491 = Request pending
493 = Undecipherable
 Could not decrypt S/MIME body part.
494 = Security agreement required
500 = Server internal error
501 = Not implemented
502 = Bad gateway
503 = Service unavailable
504 = Server time-out
505 = Version not supported

		513 = Message too large 580 = Precondition failure 600 = Busy everywhere 603 = Decline 604 = Does not exist anywhere 606 = Not acceptable
Deact. time	Integer	SIP server deactivation time Unit: ms

Parameters for Kodiak server registration |Top|

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Deact. status	Integer	SIP server deactivation status 1 = Normal disconnect 2 = Server initiated disconnect 3 = Abnormal release 5 = Test system failure
Deact. cause	Integer	SIP server deactivation cause Currently this is always n/a.
Deact. time	Integer	SIP server deactivation time Unit: ms

SIP server re-registration (SIPREGRE)

Event ID	SIPREGRE
Cellular systems	All
Record state	Packet active state
Description	Recorded after successful or failed SIP server re-registration attempt.
Tools	Nemo Outdoor

Parameters |Parameters for IMS SIP server re-registration |

Parameters |Top|

Name	Type	Description
SIP server registration type	Integer	SIP server registration type 3 = LTE IMS SIP server registration 5 = WLAN IMS SIP server registration

Parameters for IMS SIP server re-registration |Top|

Name	Type	Description
SIP server context ID	Context	SIP server context ID
Re-reg. result	Integer	SIP server re-registration result 1 = Success 2 = Rejected 3 = Failed 4 = Timeout
SIP server	String	Attempted SIP server address Attempted SIP server address is recorded in URI format.

Push-to-talk information (PTTI)

Event ID	PTTI
Cellular systems	UMTS FDD,UMTS TD-SCDMA,GSM,TETRA
Record state	Packet active state
Description	Recorded when the push-to-talk state changes.
Tools	Nemo Outdoor

Parameters | Parameters for POC |

Parameters |Top|

Name	Type	Description
Measured sys.	Integer	Measured system 1 = GSM 2 = TETRA 5 = UMTS FDD 6 = UMTS TD-SCDMA
PTT tech.	Integer	Push-to-talk technology 1 = POC

Parameters for POC |Top|

Name	Type	Description
POC context ID	Context	POC context ID
PTT state	Integer	Push-to-talk state 1 = Idle 2 = Receiving 3 = Preparing to transmit 4 = Transmitting
PTT user identity	String	Push-to-talk user identity
PTT status	Integer	Push-to-Talk status -1 = Not available or PTT state not changed 1 = User attempt 2 = Attempt succeeded 11 = Stream start 12 = Stream continue 13 = Stream start during transmit 21 = Normal end 22 = Server initiated end 23 = Abnormal end 24 = User abort

RTP jitter (RTPJITTER)

Event ID	RTPJITTER
Cellular systems	All

Record state	Packet active state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result. Sampling period is approximately about 500ms.
Tools	Nemo Outdoor

Parameters | Parameters for POC | Parameters for VoIP | Parameters for IMS voice | Parameters for IMS video |

Parameters [|Top|](#)

Name	Type	Description
RTP jitter type	Integer	RTP jitter type 1 = POC 2 = VoIP 3 = IMS voice 4 = IMS video

Parameters for POC [|Top|](#)

Name	Type	Description
Jitter	Integer	RTP jitter downlink Minimum value: 0 Unit: ms
RTP jitter UL	Integer	RTP jitter uplink Minimum value: 0 Unit: ms
IAT DL	Integer	RTP interarrival time downlink During the reporting period the maximum duration between two received voice RTP packets. Minimum value: 0 Unit: ms
IAT UL	Integer	RTP interarrival time uplink Minimum value: 0 Unit: ms

Parameters for VoIP [|Top|](#)

Name	Type	Description
Jitter	Integer	RTP jitter downlink Minimum value: 0 Unit: ms
RTP RTT	Integer	RTP round-trip-time Minimum value: 0 Unit: ms
RTP PER	Float	RTP packet error rate Ratio of missing RTP packets to all RTP packets that should have been received during the reporting period. Number of lost and total number of RTP packets are derived from RTP sequence number (packets are either lost or arrive too late). Range: 0 – 100 Unit: %

Parameters for IMS voice [|Top|](#)

Name	Type	Description
Jitter	Integer	RTP jitter downlink This is average packet delay variation during the reporting period based on RFC 5481 subclause 4.2. $PDV = (R_i - R_{min}) - (S_i - S_{min}) = (R_i - S_i) - (R_{min} - S_{min})$, where R is receive time and S is sent time based on RTP timestamps. Minimum value: 0 Unit: ms
RTP PER	Float	RTP packet error rate Ratio of missing RTP packets to all RTP packets that should have been received during the reporting period. Number of lost

		and total number of RTP packets are derived from RTP sequence number (packets are either lost or arrive too late). Range: 0 – 100 Unit: %
IAT DL	Integer	RTP interarrival time downlink During the reporting period the maximum duration between two received voice RTP packets. Minimum value: 0 Unit: ms
RTP DL bytes	Integer	RTP bytes downlink Number of RTP downlink bytes transferred after last update. Minimum value: 0
RTP DL packets	Integer	RTP packets downlink Number of RTP downlink packets transferred after last update. Minimum value: 0
RTP UL bytes	Integer	RTP bytes uplink Number of RTP uplink bytes transferred after last update. Minimum value: 0
RTP UL packets	Integer	RTP packets uplink Number of RTP uplink packets transferred after last update. Minimum value: 0

Parameters for IMS video [\[Top\]](#)

Name	Type	Description
Video jitter	Integer	RTP video jitter downlink This parameter is not logged currently. Minimum value: 0 Unit: ms
Video RTP PER	Float	RTP video packet error rate Range: 0 – 100 Unit: %
Video IAT DL	Integer	RTP video interarrival time downlink During the reporting period the maximum duration between two received video RTP packets. Minimum value: 0 Unit: ms
Video RTP DL bytes	Integer	RTP video bytes downlink Number of video RTP downlink bytes transferred after last update. Minimum value: 0
Video RTP DL packets	Integer	RTP video packets downlink Number of video RTP downlink packets transferred after last update. Minimum value: 0
Video RTP UL bytes	Integer	RTP video bytes uplink Number of video RTP uplink bytes transferred after last update. Minimum value: 0
Video RTP UL packets	Integer	RTP video packets uplink Number of video RTP uplink packets transferred for after last update. Minimum value: 0

RTP jitter uplink (RTPJITTERU)

Event ID	RTPJITTERU
Cellular systems	All
Record state	Packet active state
Description	Recorded when INFO SIP message contains the logged parameters.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for IMS](#) |

Parameters [|Top|](#)

Name	Type	Description
RTP jitter type	Integer	RTP jitter type 3 = IMS

Parameters for IMS [|Top|](#)

Name	Type	Description
RTP jitter UL	Float	RTP jitter uplink Minimum value: 0 Unit: ms
RTP PER UL	Float	RTP packet error rate uplink Range: 0 – 100 Unit: %

RTP buffer status (RTPBUFFER)

Event ID	RTPBUFFER
Cellular systems	All
Record state	Packet active state
Description	Recorded when parameter sample is received from the device and the received sample differs from the previous result. Sampling period is approximately 500ms.
Tools	Nemo Outdoor

[Parameters](#) | [Parameters for IMS voice](#) |

Parameters [|Top|](#)

Name	Type	Description
RTP buffer type	Integer	RTP buffer type 3 = IMS voice

Parameters for IMS voice [|Top|](#)

Name	Type	Description
Talk rate	Float	Talk rate Ratio of talk frames to all frames. Range: 0 – 100
Dequeue underflow	Integer	Dequeue underflow The number of the audio frames that have not been available in the de-jitter buffer during the playback. Minimum value: 0
Consecutive dequeue	Integer	Consecutive dequeue underflow

underflow		The longest consecutive missed audio frames during the playback. The audio interruption time is this parameter multiplied by frame length that is currently 20 ms. Minimum value: 0
Q size	Integer	Queue size (talk) The maximum size of the dejitter buffer during the reporting period. Minimum value: 0 Unit: ms
Q size (silence)	Integer	Queue size (silence) The maximum size of the dejitter buffer during the reporting period. Minimum value: 0 Unit: ms
Frame delay	Integer	Frame delay (talk) During the reporting period the maximum duration the RTP packet has been in the dejitter buffer before the usage. Minimum value: 0 Unit: ms
Frame delay (silence)	Integer	Frame delay (silence) During the reporting period the maximum duration the RTP packet has been in the dejitter buffer before the usage. Minimum value: 0 Unit: ms

Robust header compression (ROHC)

Event ID	ROHC
Cellular systems	All
Record state	Packet active state
Description	Recorded to collect robust header compression (ROHC) IP header compression algorithm usage statistics during IMS based calls.
Tools	Nemo Outdoor

Parameters | Parameters for ROHC |

Parameters [\[Top\]](#)

Name	Type	Description
IP header compression type	Integer	IP header compression type Sometimes transmitted/received application layer payload size is relatively small compared to TCP/IP header size. This is especially true with IMS based voice services where audio packet size can be one fifth or even less compared to TCP/IP headers. To optimize network resource usage various algorithms have been developed to compress and to remove redundant parts of the TCP/IP header. 1 = ROHC Robust header compression. See more RFC 3095 and RFC 4995.

Parameters for ROHC [\[Top\]](#)

Name	Type	Description
#Header params	Integer	Number of header parameters
ROHC CR UL	Float	ROHC compression rate UL This is the ratio of transmitted compressed bytes to uncompressed

		bytes. In some cases (especially at the beginning of the session) this ratio can be higher than 100% meaning that compressed result is larger than uncompressed data. Range: 0 – 110 Unit: %
ROHC CR DL	Float	ROHC compression rate DL This is the ratio of received compressed bytes to uncompressed bytes. In some cases (especially at the beginning of the session) this ratio can be higher than 100% meaning that compressed data is larger than uncompressed result. Sometimes this parameter is called decompression rate. Range: 0 – 110 Unit: %
#ROHC profiles	Integer	Number of ROHC profiles
#Params/ROHC profile	Integer	Number of parameters per ROHC profile
ROHC profile	Integer	ROHC profile ROHC IP header compression standard defines multiple different header compression schemes for different purposes. This section defines each compression profile its own separate compression statistic. See more about compression profiles in RFC 4995. 0 = Uncompressed See more RFC 4995. 1 = RTP See more RFC 3095. 2 = UDP See more RFC 3095. 3 = ESP See more RFC 3095. 4 = IP See more RFC 3843. 5 = LLA See more RFC 3242. 6 = TCP See more RFC 4996. 7 = RTP/UDP-lite See more RFC 3408. 8 = UDP-lite See more RFC 4019. 261 = LLA R-mode See more RFC 4019.
ROHC CR UL/profile	Float	ROHC compression ratio UL/profile This is the ratio of transmitted compressed bytes to uncompressed bytes. In some cases (especially at the beginning of the session) this ratio can be higher than 100% meaning that compressed result is larger than uncompressed data. Range: 0 – 110 Unit: %
ROHC CR DL/profile	Float	ROHC compression ratio DL/profile This is the ratio of received compressed bytes to uncompressed bytes. In some cases (especially at the beginning of the session) this ratio can be higher than 100% meaning that compressed data is larger than uncompressed result. Sometimes this parameter is called decompression rate. Range: 0 – 110 Unit: %

GPS information (GPS)

Event ID	GPS
Cellular systems	All
Record state	Always
Description	Recorded when GPS information is received from the device.
Tools	Nemo Outdoor, Nemo Handy, Nemo Autonomous, Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
Lon.	Float	Longitude Longitude of the measured position.
Lat.	Float	Latitude Latitude of the measured position.
Height	Integer	Height Unit: m
Distance	Integer	Distance Unit: m
Quality	Integer	GPS fix quality -1 = Simulated GPS fix 0 = No fix 1 = GPS fix 2 = DGPS fix 3 = DR in use 4 = GPS estimation 5 = GPS fix with DR 6 = DGPS fix with DR 11 = Glonass fix 21 = GPS + Glonass fix
Satellites	Integer	GPS satellites
Velocity	Integer	Velocity Unit: km/h
PDOP	Float	Position dilution of precision See http://en.wikipedia.org/wiki/PDOP .
HDOP	Float	Horizontal dilution of precision See http://en.wikipedia.org/wiki/PDOP .
VDOP	Float	Vertical dilution of precision See http://en.wikipedia.org/wiki/PDOP .
Status	Integer	GPS status 0 = No fix 1 = Fix The normal state. 2 = Time drift GPS time drift is detected. 3 = Stale position GPS position has been the same over a predefined time period.

Textual user note (TNOTE)

Event ID	TNOTE
Cellular systems	All

Record state	Always
Description	Recorded when textual note is recorded by the user.
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
TNote	String	Textual note

Service quality note (QNOTE)

Event ID	QNOTE
Cellular systems	All
Record state	Always
Description	Recorded when a service quality note is recorded by the user. This is an answer to a predefined question presented to the user.
Tools	Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
ID	Integer	Service quality ID This value uniquely identifies each service quality question in the measurement.
Parent ID	Integer	Service quality parent ID Identifier of the parent question. -1 if this is a root question.
Question	String	Service quality question Question in double quotes.
Answer	String	Service quality answer Predefined answer in double quotes.
Description	String	Service quality description Additional user written information for the question in double quotes. It is also possible that Answer field is for example _Other_ and this field explains exactly what happened.

Service trigger note (QTRIGGER)

Event ID	QTRIGGER
Cellular systems	All

Record state	Always
Description	Recorded to indicate service trigger description.
Tools	Nemo Q

Parameters |

Parameters |Top|

Name	Type	Description
Description	String	Service trigger description

User marker (MARK)

Event ID	MARK
Cellular systems	All
Record state	Always
Description	Recorded when the user adds a marker to the measurement.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters |Top|

Name	Type	Description
Marker seq.#	Integer	Marker sequence number The ordinal number of the marker during measurement session.
Marker#	Integer	Marker number Marker identification number for measuring location. Range: 0 – 9

Textual error note (ERR)

Event ID	ERR
Cellular systems	All
Record state	Always
Description	Recorded when critical measurement tool or device errors occur (e.g. connection to the device trace interface is lost).
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
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Error	String	Error text
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Change of day (DATE)

Event ID	DATE
Cellular systems	All
Record state	Always
Description	Recorded when data changes.
Tools	Nemo Outdoor, Nemo Handy

Parameters

Parameters [\[Top\]](#)

Name	Type	Description
Date	String	Date Date in format dd.mm.yyyy, where dd is the day of the month, mm is the month of the year and yyyy is the year.

Pause (PAUSE)

Event ID	PAUSE
Cellular systems	All
Record state	Always
Description	Recorded when the measurement is paused by the user.
Tools	Nemo Outdoor

Parameters

Parameters [\[Top\]](#)

Name	Type	Description
Pause context ID	Context	Pause context ID

Resume (RESUME)

Event ID	RESUME
Cellular systems	All
Record state	Always
Description	Recorded when the paused measurement is resumed. If the measurement is stopped during the paused state, the RESUME measurement event is recorded before the #STOP measurement event.
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
Pause context ID	Context	Pause context ID

External application launch (APP)

Event ID	APP
Cellular systems	All
Record state	Always
Description	Recorded when an external application is launched by a script.
Tools	Nemo Outdoor

Parameters |

Parameters |Top|

Name	Type	Description
Ext. app. state	Integer	External application state 1 = Started asynchronously 2 = Started synchronously 3 = Stopped
#Ext. app. launch	Integer	Number of external application launches This counter is incremented everytime external application is launched. When external application is stopped the same number is used as the one what was used when application was started.
Ext. app. name	String	External application name
Ext. app. params	String	External application parameters

Application list (APPLIST)

Event ID	APPLIST
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Cellular systems	All
Record state	Always
Description	Recorded to indicate a snapshot of the currently running applications.
Tools	CEM

Parameters |

Parameters [|Top|](#)

Name	Type	Description
#Apps	Integer	Running applications
#Params/app	Integer	Number of parameters per running application
App name	String	Running application name
App component	String	Running component name This is the name of the launched component in Android.
App version	String	Running application version
App state	Integer	Running application state 1 = Foreground 2 = Visible 3 = Perceptible 4 = Service 5 = Background 6 = Empty

Modem message (MODEM)

Event ID	MODEM
Cellular systems	All
Record state	Always
Description	Recorded when modem message is sent to or received from the device. At the moment this message is only logged when Send Modem Message functionality is used from Nemo Outdoor.
Tools	Nemo Outdoor

Parameters |Parameters for modem message |

Parameters [|Top|](#)

Name	Type	Description
Modem message type	Integer	Modem message type 1 = Modem

Parameters for modem message [|Top|](#)

Name	Type	Description
Direction	Integer	Modem message direction 1 = Send 2 = Receive
Modem message	String (hex)	Modem message

Script information (SCRIPT)

Event ID	SCRIPT
Cellular systems	All
Record state	Always
Description	Recorded when the script engine is started to indicate used script.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters |Top|

Name	Type	Description
#Header params	Integer	Number of header parameters
Test script file	String	Test script filename Defines the test script that was used during measurements.
Test script version	String	Test script version
#Repeats	Integer	Test script repeats
#Test script lines	Integer	Number of commands in test script
#Params/test script line	Integer	Number of parameters per test script command
Cmd index	Integer	Test script command index
Cmd	String	Test script command name Name of the command that is executed, e.g. MakeVoiceCall or StartFTPTransfer.
Cmd arguments	String	Test script command arguments Defines the arguments that are given to the command, e.g. number=123456, timeout=30s.

Command request (CMDREQ)

Event ID	CMDREQ
Cellular systems	All
Record state	Always
Description	Recorded when the script engine executes a new line from the script.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters |Top|

Name	Type	Description
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Script CMD context ID	Context	Script CMD context ID
Cmd index	Integer	Test script command index
Cmd	String	Test script command name Name of the command that is executed, e.g. MakeVoiceCall or StartFTPTransfer.
Cmd arguments	String	Test script command arguments Defines the arguments that are given to the command, e.g. number=123456, timeout=30s.

Command completed (CMDCOMP)

Event ID	CMDCOMP
Cellular systems	All
Record state	Always
Description	Recorded when the executed command is completed and there is a result for it.
Tools	Nemo Outdoor, Nemo Handy

Parameters |

Parameters [|Top](#)

Name	Type	Description
Script CMD context ID	Context	Script CMD context ID
Cmd index	Integer	Test script command index
Cmd result	Integer	Test script command result 1 = Succeeded 2 = Failed 3 = Skipped 4 = User abort

Lock info (LOCK)

Event ID	LOCK
Cellular systems	GSM,UMTS FDD,UMTS TD-SCDMA,LTE FDD,LTE TDD,cdmaOne,CDMA 1x,EVDO
Record state	Always
Description	Recorded when any forcing function is activated or deactivated. This measurement event is also written at the beginning of the measurement.
Tools	Nemo Outdoor, Nemo Handy

Parameters |Parameters for channel lock |Parameters for UMTS sector lock |Parameters for system lock |Parameters for band lock |Parameters for cell barring |Parameters for handover suppression |Parameters for GSM handover forcing |Parameters for UMTS FDD handover forcing |Parameters for radio state off |Parameters for LTE sector lock |Parameters for LTE handover forcing |Parameters for PLMN lock |

Parameters [\[Top\]](#)

Name	Type	Description
#Forcings	Integer	Number of active forcings
Lock type	Integer	Lock type 1 = Channel lock 2 = UMTS sector lock This type is also used for UMTS carrier lock. 3 = System lock 4 = Band lock 5 = Cell barring 6 = Handover suppression 7 = GSM handover forcing 8 = UMTS FDD handover forcing 9 = Radio state off 10 = LTE sector lock 11 = LTE handover forcing 12 = PLMN lock
#Params	Integer	Number of parameters

Parameters for channel lock [\[Top\]](#)

Name	Type	Description
Locked channel	Integer	Locked channel
Locked band	Integer	Locked band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800.

70006 = LTE FDD 850 band 6
 70007 = LTE FDD 2600 band 7
 70008 = LTE FDD 900 band 8
 70009 = LTE FDD 1800 band 9
 70010 = LTE FDD 2100 band 10
 70011 = LTE FDD 1400 band 11
 70012 = LTE FDD 700 band 12
 70013 = LTE FDD 700 band 13
 70014 = LTE FDD 700 band 14
 70017 = LTE FDD 700 band 17
 70018 = LTE FDD 850 band 18
 70019 = LTE FDD 850 band 19
 70020 = LTE FDD 800 band 20
 70021 = LTE FDD 1500 band 21
 70022 = LTE FDD 3500 band 22
 70023 = LTE FDD 2200 band 23
 70024 = LTE FDD 1500 band 24
 70025 = LTE FDD 1900 band 25
 70026 = LTE FDD 850 band 26
 70027 = LTE FDD 800 band 27
 70028 = LTE FDD 700 band 28
 70029 = LTE FDD 700 band 29
 This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD
 100000 = cdmaOne 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.
 100001 = cdmaOne 1900 band 1
 North American PCS 1900 MHz band.
 100002 = cdmaOne 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 100003 = cdmaOne 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 100004 = cdmaOne 1800 Korean band 4
 Korean PCS 1800 MHz band.
 100005 = cdmaOne 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 100006 = cdmaOne 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 100007 = cdmaOne 700 band 7

North American cellular 700 MHz band.
 100008 = cdmaOne 1800 band 8
 1800 MHz band.
 100009 = cdmaOne 900 band 9
 900 MHz band.
 100010 = cdmaOne 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 100011 = cdmaOne 400 PAMR band 11
 European PAMR 400 MHz band.
 100012 = cdmaOne 800 PAMR band 12
 European PAMR 800 MHz band.
 100013 = cdmaOne 2500 band 13
 2.5 GHz IMT-2000 extension.
 100014 = cdmaOne 1900 band 14
 US PCS 1.9 GHz.
 100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4

		Korean PCS 1800 MHz band. 120005 = EVDO 450 NMT band 5 Nordic mobile telephone (NMT) 450 MHz band. 120006 = EVDO 1900-2100 IMT band 6 IMT-2000 1900-2100 MHz band. 120007 = EVDO 700 band 7 North American cellular 700 MHz band. 120008 = EVDO 1800 band 8 1800 MHz band. 120009 = EVDO 900 band 9 900 MHz band. 120010 = EVDO 800 SMR band 10 Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
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Parameters for UMTS sector lock [\[Top\]](#)

Name	Type	Description
Locked scr.	Integer	Locked scrambling code This parameter is n/a for UMTS carrier lock. Range: 0 – 511
Locked channel	Integer	Locked channel
Locked band	Integer	Locked band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA

Parameters for system lock [\[Top\]](#)

Name	Type	Description
Locked system	Integer	Locked system 1 = GSM 5 = UMTS FDD 6 = UMTS TD-SCDMA 7 = LTE FDD 8 = LTE TDD 10 = cdmaOne 11 = CDMA 1x 12 = EVDO

Parameters for band lock [\[Top\]](#)

Name	Type	Description
Band	Integer	Locked band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800. 50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD 60001 = UMTS TD-SCDMA 2000 band a 60002 = UMTS TD-SCDMA 1900 band b 60003 = UMTS TD-SCDMA 1900 band c 60004 = UMTS TD-SCDMA 2600 band d 60005 = UMTS TD-SCDMA 1900 band e 60006 = UMTS TD-SCDMA 2300 band f 69999 = UMTS TD-SCDMA 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19

70020 = LTE FDD 800 band 20
 70021 = LTE FDD 1500 band 21
 70022 = LTE FDD 3500 band 22
 70023 = LTE FDD 2200 band 23
 70024 = LTE FDD 1500 band 24
 70025 = LTE FDD 1900 band 25
 70026 = LTE FDD 850 band 26
 70027 = LTE FDD 800 band 27
 70028 = LTE FDD 700 band 28
 70029 = LTE FDD 700 band 29
 This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD
 100000 = cdmaOne 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia, Hong Kong, China, Taiwan, and others.
 100001 = cdmaOne 1900 band 1
 North American PCS 1900 MHz band.
 100002 = cdmaOne 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 100003 = cdmaOne 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 100004 = cdmaOne 1800 Korean band 4
 Korean PCS 1800 MHz band.
 100005 = cdmaOne 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 100006 = cdmaOne 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 100007 = cdmaOne 700 band 7
 North American cellular 700 MHz band.
 100008 = cdmaOne 1800 band 8
 1800 MHz band.
 100009 = cdmaOne 900 band 9
 900 MHz band.
 100010 = cdmaOne 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 100011 = cdmaOne 400 PAMR band 11
 European PAMR 400 MHz band.
 100012 = cdmaOne 800 PAMR band 12
 European PAMR 800 MHz band.
 100013 = cdmaOne 2500 band 13

2.5 GHz IMT-2000 extension.
 100014 = cdmaOne 1900 band 14
 US PCS 1.9 GHz.
 100015 = cdmaOne 2100 AWS band 15
 100016 = cdmaOne 2500 band 16
 US 2.5 GHz.
 100018 = cdmaOne 700 public safety band 18
 100019 = cdmaOne 700 lower band 19
 100020 = cdmaOne 1500 L-band band 20
 100021 = cdmaOne 2000 S-band band 21
 109999 = cdmaOne
 110000 = CDMA 1x 800 band 0
 North American cellular 800 MHz band, also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 110001 = CDMA 1x 1900 band 1
 North American PCS 1900 MHz band.
 110002 = CDMA 1x 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 110003 = CDMA 1x 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 110004 = CDMA 1x 1800 Korean band 4
 Korean PCS 1800 MHz band.
 110005 = CDMA 1x 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 110006 = CDMA 1x 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 110007 = CDMA 1x 700 band 7
 North American cellular 700 MHz band.
 110008 = CDMA 1x 1800 band 8
 1800 MHz band.
 110009 = CDMA 1x 900 band 9
 900 MHz band.
 110010 = CDMA 1x 800 SMR band 10
 Specialized mobile radio (SMR) 800 MHz band.
 110011 = CDMA 1x 400 PAMR band 11
 European PAMR 400 MHz band.
 110012 = CDMA 1x 800 PAMR band 12
 European PAMR 800 MHz band.
 110013 = CDMA 1x 2500 band 13
 2.5 GHz IMT-2000 extension.
 110014 = CDMA 1x 1900 band 14
 US PCS 1.9 GHz.
 110015 = CDMA 1x 2100 AWS band 15
 110016 = CDMA 1x 2500 band 16
 US 2.5 GHz.
 110018 = CDMA 1x 700 public safety band 18
 110019 = CDMA 1x 700 lower band 19
 110020 = CDMA 1x 1500 L-band band 20
 110021 = CDMA 1x 2000 S-band band 21
 119999 = CDMA 1x
 120000 = EVDO 800 band 0
 North American cellular 800 MHz band. Also in Korea, Australia,
 Hong Kong, China, Taiwan, and others.
 120001 = EVDO 1900 band 1
 North American PCS 1900 MHz band.
 120002 = EVDO 900 TACS band 2
 Total access communication system (TACS) 900 MHz band.
 120003 = EVDO 800 JTACS band 3
 JTACS 800 MHz band (Japanese 800 MHz reversed).
 120004 = EVDO 1800 Korean band 4
 Korean PCS 1800 MHz band.
 120005 = EVDO 450 NMT band 5
 Nordic mobile telephone (NMT) 450 MHz band.
 120006 = EVDO 1900-2100 IMT band 6
 IMT-2000 1900-2100 MHz band.
 120007 = EVDO 700 band 7
 North American cellular 700 MHz band.
 120008 = EVDO 1800 band 8
 1800 MHz band.
 120009 = EVDO 900 band 9
 900 MHz band.
 120010 = EVDO 800 SMR band 10

		Specialized mobile radio (SMR) 800 MHz band. 120011 = EVDO 400 PAMR band 11 European PAMR 400 MHz band. 120012 = EVDO 800 PAMR band 12 European PAMR 800 MHz band. 120013 = EVDO 2500 band 13 2.5 GHz IMT-2000 extension. 120014 = EVDO 1900 band 14 US PCS 1.9 GHz. 120015 = EVDO 2100 AWS band 15 120016 = EVDO 2500 band 16 US 2.5 GHz. 120018 = EVDO 700 public safety band 18 120019 = EVDO 700 lower band 19 120020 = EVDO 1500 L-band band 20 120021 = EVDO 2000 S-band band 21 129999 = EVDO
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Parameters for cell barring [\[Top\]](#)

Name	Type	Description
Cell barring state	Integer	Cell barring state 1 = Normal 2 = Ignored 3 = Reversed

Parameters for handover suppression [\[Top\]](#)

Name	Type	Description
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Parameters for GSM handover forcing [\[Top\]](#)

Name	Type	Description
HO forcing band	Integer	HO forcing target band 10850 = GSM 850 Band 850 is also known as band 800. 10900 = GSM 900 11800 = GSM 1800 11900 = GSM 1900 19999 = GSM
HO forcing channel	Integer	HO forcing target channel
HO forcing BSIC	Integer	HO forcing target BSIC This is the BSIC of the target cell. Range: 0 – 63
Target RXL bias	Float	HO forcing target RX level bias Unit: dBm
Target RXQ bias	Integer	HO forcing target quality bias
Non-target RXL bias	Float	HO forcing non-target RX level bias Unit: dBm
Non-target RXQ bias	Integer	HO forcing non-target quality bias

Parameters for UMTS FDD handover forcing [\[Top\]](#)

Name	Type	Description
HO forcing band	Integer	HO forcing target band 50001 = UMTS FDD 2100 band 1 50002 = UMTS FDD 1900 band 2 50003 = UMTS FDD 1800 band 3 50004 = UMTS FDD 2100 AWS band 4 50005 = UMTS FDD 850 band 5 Band 850 is also known as band 800.

		50006 = UMTS FDD 850 band 6 50007 = UMTS FDD 2600 band 7 50008 = UMTS FDD 900 band 8 50009 = UMTS FDD 1800 band 9 50010 = UMTS FDD 2100 band 10 50011 = UMTS FDD 1400 band 11 50012 = UMTS FDD 700 band 12 50013 = UMTS FDD 700 band 13 50014 = UMTS FDD 700 band 14 50019 = UMTS FDD 850 band 19 50020 = UMTS FDD 800 band 20 50021 = UMTS FDD 1500 band 21 50022 = UMTS FDD 3500 band 22 50025 = UMTS FDD 1900 band 25 50026 = UMTS FDD 850 band 26 59999 = UMTS FDD
HO forcing channel	Integer	HO forcing target channel
HO forcing SC	Integer	HO forcing target scrambling code This is the scrambling code of the target cell. Range: 0 – 511
Target RSCP bias	Float	HO forcing target RSCP bias Unit: dBm
Target Ec/N0 bias	Float	HO forcing target Ec/N0 bias Unit: dB
Non-target RSCP bias	Float	HO forcing non-target RSCP bias Unit: dBm
Non-target Ec/N0 bias	Float	HO forcing non-target Ec/N0 bias Unit: dB

Parameters for radio state off [|Top|](#)

Name	Type	Description
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Parameters for LTE sector lock [|Top|](#)

Name	Type	Description
Locked PCI	Integer	Locked physical cell identity Range: 0 – 503
Locked channel	Integer	Locked channel
Locked band	Integer	Locked band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25

70026 = LTE FDD 850 band 26
 70027 = LTE FDD 800 band 27
 70028 = LTE FDD 700 band 28
 70029 = LTE FDD 700 band 29
 This is downlink only band.
 70030 = LTE FDD 2350 band 30
 70031 = LTE FDD 450 band 31
 70032 = LTE FDD 1500 L-band
 This is downlink only band.
 70064 = LTE FDD 390-470 band 64
 This is a non-standard LTE FDD band.
 70065 = LTE FDD 2100 band 65
 70066 = LTE FDD AWS-3 2100 band 66
 70067 = LTE FDD 700 EU band 67
 This is downlink only band.
 79999 = LTE FDD
 80033 = LTE TDD 1900-1920 band 33
 80034 = LTE TDD 2010-2025 band 34
 80035 = LTE TDD 1850-1910 band 35
 80036 = LTE TDD 1930-1990 band 36
 80037 = LTE TDD 1910-1930 band 37
 80038 = LTE TDD 2570-2620 band 38
 80039 = LTE TDD 1880-1920 band 39
 80040 = LTE TDD 2300-2400 band 40
 80041 = LTE TDD 2496-2690 band 41
 80042 = LTE TDD 3400-3600 band 42
 80043 = LTE TDD 3600-3800 band 43
 80044 = LTE TDD 703-803 band 44
 80045 = LTE TDD 1447-1467 band 45
 80061 = LTE TDD 1447-1467 band 61
 This is a non-standard LTE TDD band.
 80062 = LTE TDD 1785-1805 band 62
 This is a non-standard LTE TDD band.
 80087 = LTE TDD 1447-1467 band 87
 This is a non-standard LTE TDD band.
 80088 = LTE TDD 1785-1805 band 88
 This is a non-standard LTE TDD band.
 89999 = LTE TDD

Parameters for LTE handover forcing [Top](#)

Name	Type	Description
HO forcing band	Integer	HO forcing target band 70001 = LTE FDD 2100 band 1 70002 = LTE FDD 1900 band 2 70003 = LTE FDD 1800 band 3 70004 = LTE FDD 2100 AWS band 4 70005 = LTE FDD 850 band 5 Band 850 is also known as band 800. 70006 = LTE FDD 850 band 6 70007 = LTE FDD 2600 band 7 70008 = LTE FDD 900 band 8 70009 = LTE FDD 1800 band 9 70010 = LTE FDD 2100 band 10 70011 = LTE FDD 1400 band 11 70012 = LTE FDD 700 band 12 70013 = LTE FDD 700 band 13 70014 = LTE FDD 700 band 14 70017 = LTE FDD 700 band 17 70018 = LTE FDD 850 band 18 70019 = LTE FDD 850 band 19 70020 = LTE FDD 800 band 20 70021 = LTE FDD 1500 band 21 70022 = LTE FDD 3500 band 22 70023 = LTE FDD 2200 band 23 70024 = LTE FDD 1500 band 24 70025 = LTE FDD 1900 band 25 70026 = LTE FDD 850 band 26 70027 = LTE FDD 800 band 27 70028 = LTE FDD 700 band 28 70029 = LTE FDD 700 band 29

		<p>This is downlink only band. 70030 = LTE FDD 2350 band 30 70031 = LTE FDD 450 band 31 70032 = LTE FDD 1500 L-band This is downlink only band. 70064 = LTE FDD 390-470 band 64 This is a non-standard LTE FDD band. 70065 = LTE FDD 2100 band 65 70066 = LTE FDD AWS-3 2100 band 66 70067 = LTE FDD 700 EU band 67 This is downlink only band. 79999 = LTE FDD 80033 = LTE TDD 1900-1920 band 33 80034 = LTE TDD 2010-2025 band 34 80035 = LTE TDD 1850-1910 band 35 80036 = LTE TDD 1930-1990 band 36 80037 = LTE TDD 1910-1930 band 37 80038 = LTE TDD 2570-2620 band 38 80039 = LTE TDD 1880-1920 band 39 80040 = LTE TDD 2300-2400 band 40 80041 = LTE TDD 2496-2690 band 41 80042 = LTE TDD 3400-3600 band 42 80043 = LTE TDD 3600-3800 band 43 80044 = LTE TDD 703-803 band 44 80045 = LTE TDD 1447-1467 band 45 80061 = LTE TDD 1447-1467 band 61 This is a non-standard LTE TDD band. 80062 = LTE TDD 1785-1805 band 62 This is a non-standard LTE TDD band. 80087 = LTE TDD 1447-1467 band 87 This is a non-standard LTE TDD band. 80088 = LTE TDD 1785-1805 band 88 This is a non-standard LTE TDD band. 89999 = LTE TDD</p>
HO forcing channel	Integer	HO forcing target channel
HO forcing PCI	Integer	HO forcing target physical cell identity Range: 0 – 503

Parameters for PLMN lock [\[Top\]](#)

Name	Type	Description
PLMN selection mode	Integer	PLMN selection mode 1 = Manual 2 = Deregistered
MCC	Integer	Mobile country code See ITU-T recommendation E.212. Range: 0 – 999
MNC	Integer	Mobile network code Range: 0 – 999

Device information (DEVI)

Event ID	DEVI
Cellular systems	All
Record state	Always
Description	Recorded when device information changes.

Tools	Nemo Handy
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Parameters |

Parameters [\[Top\]](#)

Name	Type	Description
Battery temp	Float	Battery temperature Battery temperature in degree Celsius. Unit: C
Battery charge	Float	Battery charge Battery charge state in percents. Range: 0 – 100 Unit: %
Battery status	Integer	Battery status 1 = Full 2 = Charging 3 = Not charging 4 = Discharging 5 = Failure

Invex health information (IHI)

Event ID	IHI
Cellular systems	All
Record state	Always
Description	Recorded when Invex health information changes.
Tools	Nemo Outdoor

Parameters | Parameters for Invex I and II backplane. | Parameters for Invex I and II UIC. | Parameters for Invex II HIM. |

Parameters [\[Top\]](#)

Name	Type	Description
Invex module type	Integer	Invex module type 10 = Invex I backplane 11 = Invex I UIC 20 = Invex II backplane 21 = Invex II UIC 22 = Invex II HIM
#Params/module type	Integer	Number of parameters per module type

Parameters for Invex I and II backplane. [\[Top\]](#)

Name	Type	Description
Invex chassis number	Integer	Invex chassis number
Invex backplane voltage	Float	Invex backplane voltage Unit: V
Invex backplane current	Float	Invex backplane current Unit: A
Invex backplane	Float	Invex backplane temperature

temperature		Temperature is displayed in Celsius degrees. Unit: C
Invex battery voltage	Float	Invex battery voltage Unit: V
Invex battery current	Float	Invex battery current Unit: A
Invex battery charge	Float	Invex battery charge Range: 0 – 100 Unit: %
Invex battery status	Integer	Invex battery status 0 = Not used 4 = Discharging

Parameters for Invex I and II UIC. [\[Top\]](#)

Name	Type	Description
Invex chassis number	Integer	Invex chassis number
UIC slot number	Integer	UIC slot number
Invex UIC voltage	Float	Invex UIC voltage Unit: V
Invex UIC current	Float	Invex UIC current Unit: A
Invex UIC temperature	Float	Invex UIC temperature Temperature is displayed in Celsius degrees. Unit: C

Parameters for Invex II HIM. [\[Top\]](#)

Name	Type	Description
Invex chassis number	Integer	Invex chassis number
HIM slot number	Integer	HIM slot number
Invex HIM voltage	Float	Invex HIM voltage Unit: V
UE current	Float	UE current Unit: A
Invex HIM temperature	Float	Invex HIM temperature Temperature is displayed in Celsius degrees. Unit: C