AT Command Set For Nokia CDMA Products

Version 1.1; March 14, 2005

Messaging

NOKIA

Contents

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Change History

June 28, 2004	Version 1.0	Initial document release
March 14, 2005	Version 1.1	Sections 2.1, 2.2, 2.3, 5.17, 7.14, 9.2, 10.1, 10.3, 12.3, and Appendix A updated. Sections 10.2, 10.5, 13.7, and Chapter 11 added.

attention (AT) commands...

1 Introduction

1.1 Description

This document lists the attention (AT) commands that can be used with Nokia CDMA products available after spring 2004. These products are the Nokia 3105, Nokia 3125, Nokia 3152, Nokia 3155, Nokia 3155i, Nokia 3205, Nokia 3585i, Nokia 3586, Nokia 3586i, Nokia 3587, Nokia 3587i, Nokia 6012, Nokia 6015, Nokia 6015i, Nokia 6155, Nokia 6155i, Nokia 6225, 6235, Nokia 6235i Nokia 6585, and Nokia 6255 devices.

Figure 1.1: Nokia 6585, Nokia 3205, and Nokia 6255 devices

A short description, the syntax, and the possible setting values are presented for each AT command. The syntax for the AT commands listed in this document conforms with the industry-wide notation. Commands can be given as single commands (for example, AT+CRM=1) or concatenated in a string of commands (for example, AT+CRM=1;+CSO=33). For commands with more than one parameter (for example, AT+FIS=n,n,n,n,n,n,n,n), a comma can be used to skip over a parameter so that its value is not changed. For instance, if +FIS is initially 0,0,0,0,0,0,0,0, issuing "AT+FIS=,,1,,,,,7" changes +FIS to 0,0,1,0,0,0,0,7.

Computers use AT commands to communicate with modems. Most communications applications, however, have a user interface that hides the AT commands from the user. AT commands can be issued via a communications application. When the software in the Nokia product has received an AT command, it responds with a message that is displayed on the screen of the used device, which can also be the mobile device.

The AT commands listed in this document are supported by all Nokia products and all operators.

1.2 AT Command Syntax

The **"AT"** or **"at "** prefix must be added to the beginning of each command line. Several AT commands can be typed on the same line, and in such cases the "**AT**" or "**at**" prefix is needed only once, at the beginning of the command line.

The marking **n** used in the command syntax is the setting value typed in as a part of the command. If the value is optional, it is indicated in the Syntax column of the tables. When a setting value is set with an AT command, the setting is valid until you change it or reboot the device.

1.2.1 Basic commands

A basic command has no '+' prefix. If there is no default value, the setting of that command is not stored in the non-volatile memory.

1.2.2 S-register commands

The existence and values of an S-register command can be queried by giving the command with a question mark (for example, ATS3?).

1.2.3 Extended commands

Extended command have a '**+**' prefix.

Some extended commands take more than one value (for example, AT+DS=n,n,n,n), and some extended commands take character strings as values instead of numbers (for example AT+MA=<string>).

1.2.4 Command line

A command line consists of the Attention code, followed by one or more commands, followed by the end of line code. The Attention code is the character pair "AT" or "at." By default, the end of line character is the ASCII CR character (decimal 13), unless it is changed by the S3 command. The basic and S-register commands can follow each other on the command line. An extended command must be terminated with a semicolon (;) if another command follows it on a single command line. A semicolon is not required after the last command on the line.

See Figure 1.2 for a basic structure of a command line.
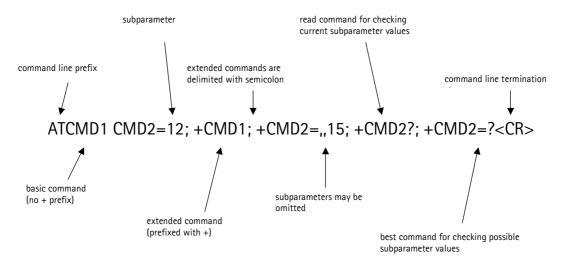
Figure 1.2: Basic structure of a command line

Almost all extended commands have a test command (=?) for testing the existence of the command and to give information about the type of its subparameters. Almost all parameter type commands also have a read command (?) to check the current values of subparameters. Action type commands do not store the values of any of their possible subparameters, and therefore they do not have a read command.

If verbose responses are enabled with the `ATV1` command and all commands in a command line have been successfully performed, the result code `<CR><LF>OK<CR><LF>` is sent from the terminal adaptor to the terminal equipment. If numeric responses are enabled with the `ATV0` command, the result code `0<CR>` is sent instead.

If the command syntax is incorrect, an ERROR string is returned.

1.2.5 Information responses and result codes

The terminal adaptor response for the example command line in Figure 1.2 could be as shown in Figure 1.3. In this example, the verbose response format is enabled with the `ATV1` command. If the numeric format `ATV0` would have been used, `<CR><LF>` headers of information responses would have been left out and the final result code changed to `0<CR>`.
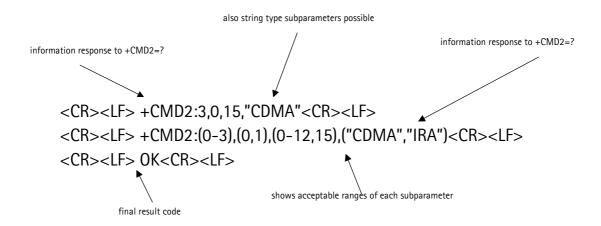
Figure 1.3: Response to a command line

So-called intermediate result codes inform about the progress of the terminal adaptor operation (for example, connection establishment CONNECT), and so-called unsolicited result codes indicate the occurrence of an event that is not directly associated with the issuance of a command from the terminal equipment (for example, ring indication RING).

2 Basic Commands

For more information about the basic AT commands and basic AT parameters, see Section 7.1 and 7.1.1 of TIA/EIA/IS-707-A.3 /2/.

2.1   ATE Command Echo

Controls the command character echo in offline command state or online command state.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATEn	0, 1: 0 OFF 1 ON	0	Remote	C [1]/O [2]	N/A

Table 2.1: ATE

2.2   ATL Modem Speaker Volume

Controls the modem speaker volume loudness.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATLn	0-3: 0 Low 1 Low 2 Medium 3 High	0	Local	N/A	N/A

Table 2.2: ATL

2.3   ATM Monitor Modem Speaker Mode

Controls whether the modem speaker is off/on until carrier reported.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATMn	0, 1: 0 OFF 1 ON	0	Remote	N/A	N/A

Table 2.3: ATM

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[1] The abbreviation C is used in the tables to denote "Support during command mode."

[2] The abbreviation O is used in the tables to denote "Support during online command mode."

2.4 ATQ Result Code Suppression

Determines whether result codes are returned.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATQn	0, 1: 0 No return 1 Return	0	Remote	C/0	C/0

Table 2.4: ATQ

2.5 ATV Result Code Format

Determines whether the result codes are sent as numbers or words.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATVn	0, 1: 0 Number 1 Words	1	Remote	C/0	C/0

Table 2.5: ATV

2.6 ATX Response Range Selection

Controls the amount of information in the results code.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATXn	1-4: 1 Enable additional result code `CONNECT <rate>`. Disable dial tone and busy detection.[3] 2 Enable additional result codes `CONNECT <rate>` and `NO DIALTONE`. Disable busy detection. Enable dial tone detection.[3] 3 Enable additional result codes `CONNECT <rate>` and `BUSY`. Enable busy detection. Disable dial tone detection.[3] 4 Enable additional result codes `CONNECT <rate>`, `BUSY`, and `NO DIALTONE`. Enable busy and dial tone detection.[3]	4	Remote	N/A	N/A

Table 2.6: ATX

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[3] For async data or fax settings, the dial tone detection settings do not apply.

2.7 ATZ Reset to Default Configuration

Restore the default configuration. The optional parameter "n" is 32 bits.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATZn (n is optional)	0 – 4294967295 (if included): Since only one configuration is supported, this command always resets back to this default configuration, regardless of the value given.	0	Local & Remote	C (packet only)	C

Table 2.7: ATZ

2.8 AT&C Control Carrier Detect Circuit 109 (CF)

Controls the Carrier Detect circuit 109 (CF).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT&Cn	0, 1: 0 Circuit 109 (CF) always ON. 1 Circuit 109 (CF) ON in accordance with the specified service.	1	Local	C	C

Table 2.8: AT&C

2.9 AT&D Control Data Terminal Ready Circuit 108/2

Controls the Data Terminal Ready circuit 108/2.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT&Dn	0-2: 0 Ignore circuit 108/2 (CD). 1 Enter online command state following ON-to-OFF transition of circuit 108/2. See service specific AT command processing for service state transitions. 2 Enter command state following ON-to-OFF transition of circuit 108/2. See service specific AT command processing for service state processing requirements.	2	Local	C	C

Table 2.9: AT&D

2.10 ATT Select Tone Dialing

Selects tone dialing.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATT	N/A	N/A	Remote	N/A	N/A

Table 2.10: ATT

2.11 ATP Select Pulse Dialing

Selects pulse dialing.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATP	N/A	N/A	Remote	N/A	N/A

Table 2.11: ATP

2.12 AT&F Restore to Factory-Defined Configuration

Restores to factory-defined configuration "n," where n is 32 bits. The effect is implementation dependent.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT&Fn (n is optional)	0 – 4294967295 (if included): Since only one configuration is supported, this command always restores back to this factory-defined configuration, regardless of the value given.	0	Local	C (packet only)	N/A

Table 2.12: AT&F

3 Basic S-Registers

For more information about the basic S-registers, see Section 7.1.2 of TIA/EIA/IS-707-A.3 /2/.

3.1 ATS0 Disable/Enable Automatic Answering

Sets the number of rings before automatic answering. [Enable automatic answering after (Value - 1) x 6 seconds.]

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS0=? ATS0? ATS0=n	0-10: 0 Manual answer, automatic answering disabled. 1-10 Automatic answering enabled using this value.	0	Local	N/A	N/A

Table 3.1: ATS0

3.2 ATS2 Escape Code Character

Stores the code for the Escape code character.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS2=? ATS2? ATS2=n	0-127	43 or '+'	Local	C/0	C/0

Table 3.2: ATS2

3.3 ATS3 Carriage Return Character

Stores the code for the Carriage Return character.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS3=? ATS3? ATS3=n	0-127	13	Remote	C/0	C/0

Table 3.3: ATS3

3.4 ATS4 Line Feed Character

Stores the code for the Line Feed character.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS4=? ATS4? ATS4=n	0-127	10	Remote	C/0	C/0

Table 3.4: ATS4

3.5 ATS5 Backspace Character

Stores the code for the Backspace character.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS5=? ATS5? ATS5=n	0-127	8	Remote	C/0	C/0

Table 3.5: ATS5

3.6 ATS6 Pause before Blind Dialing

Sets the number of seconds for the pause before blind dialing.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS6=? ATS6? ATS6=n	2-10	2	Remote	N/A	N/A

Table 3.6: ATS6

3.7 ATS7 Set the Time to Establish an End-to-End Data Connection

Sets the number of seconds to establish an end-to-end data connection.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS7=? ATS7? ATS7=n	1-255	50	Remote	C/0	C/0

Table 3.7: ATS7

3.8 ATS8 Pause Time for the Comma Dial Modifier

Sets number of seconds to pause when a "," is encountered in the dial string.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS8=? ATS8? ATS8=n	0-255	2	Remote	N/A	N/A

Table 3.8: ATS8

3.9 ATS9 Carrier Detect Threshold

Sets the carrier detect threshold in increments of 0.1 seconds.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS9=? ATS9? ATS9=n	0-255	6	Remote	N/A	N/A

Table 3.9: ATS9

3.10 ATS10 Number of Tenths of a Second from Carrier Loss

Sets the number of tenths of a second from carrier loss to disconnect.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS10=? ATS10? ATS10=n	1-255: 1-254 Enabled, using this value. 255 Disable carrier detect.	14	Remote	N/A	N/A

Table 3.10: ATS10

3.11 ATS11 DTMF Tone Duration and Spacing

Sets DTMF tone duration and spacing in milliseconds.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS11=? ATS11? ATS11=n	50-255	95	Remote	N/A	N/A

Table 3.11: ATS11

3.12 ATS12 Escape Code Guard Time

Sets the duration of guard time for the escape code sequence in increments of 0.2 seconds.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATS12=? ATS12? ATS12=n	0-255	50	Local	C/0	C/0

Table 3.12: ATS12

4 Basic Action Commands

For more information about the basic action commands, see Section 7.1.3 of TIA/EIA/IS-707-A.3 /2/. See also Section 4.2.3 of IS-707.3 for more detailed information about processing.

4.1 A/ Re-execute Previous Command

Re-executes the previous command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
A/	N/A	N/A	Local/ Remote	C	C

Table 4.1: A/

4.2 A Enter the Online State

Enters the online state. See service specific processing for further details.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
A	N/A	N/A	Local/ Remote	C	C

Table 4.2: A

4.3 D Dialing

Causes the Mobile Terminal 2 (MT2) to transition from the command state to the online state. The <dial string> is optional. For circuit switched data services, the dial string can contain the following characters: Digits 0 to 9, *, #, A, B, C, and D. The dial string can contain the following dial modifiers:

- `T` Tone dialing [ignored]
- `P` Pulse dialing [ignored]
- `,` Pause during dialing
- `W` Wait for dial tone
- `@` Wait for quiet answer
- `!` Hook flash
- `[$]` Wait for billing tone (for credit card calls)
- `;` After dialing, the IWF enters the online command state and maintains the connection

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
D<dial string> (<dial string> is optional)	N/A	N/A	Local/ Remote	C	C

Table 4.3: D

4.4 H Return to Command State

Causes the MT2 to transition from online command state to command state. Use of the digit '0' is optional (see EIA/TIA-602 /7/).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
H0 ('0' is optional)	0 (if included)	0	Remote	C/0	C/0

Table 4.4: H

4.5 O Return to Online State

Causes the MT2 to transition from online command state to online state. Use of the digit '0' is optional (see EIA/TIA-602 /7/).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
O0 ('0' is optional)	0 (if included)	0	Remote	0	0

Table 4.5: O

5 Extended AT Configuration Commands

Extended AT commands are specified in Section 7.2 of TIA/EIA/IS-707-A.3 /2/ and their values in TIA/EIA/IS-131 /8/.

5.1 AT+DR Data Compression Reporting

This extended format numeric parameter controls whether the extended-format "+DR:" intermediate result code is transmitted from the IWF over the Um interface.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+DR? AT+DR=n	0,1: 0 Data compression reporting disabled. 1 Data compression reporting enabled.	0	Remote	N/A	N/A

Table 5.1: AT+DR

5.2 AT+DS Data Compression

This extended-format compound parameter controls the V.42bis data compression function on the PSTN link if provided in the IWF.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+DS? AT+DS=n,n,n,n	0-3, 0-1, 512-65535, 6-250: Direction (0-3): 0 No compression. 1 Transmit only. 2 Receive only. 3 Both direction. Negotiation (0-1): 0 Do not disconnect if V.42bis is not negotiated. 1 Disconnect if V.42bis is not negotiated. Dictionary (512-65535): Maximum number of dictionary entries. String (6-250): Maximum string length for dictionary entry.	3, 0, 2048, 6	Remote	N/A	N/A

Table 5.2: AT+DS

5.3 AT+EB Break Handling in Error Control Operation

This extended-format compound parameter is used to control the manner of V.42 operation on the PSTN link (if present in the IWF).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+EB? AT+EB=n,n,n	0-3, 0-1, 0-254: Break (0-3): 0 Ignore break. 1 Non-expedited, non-destructive. 2 Expedited, non-destructive. 3 Expedited, destructive. Negotiation (0-1): 0 Any transmitted V.42 L-Signal will not indicate break signal length. 1 Any transmitted V.42 L-Signal will indicate break signal length. Time (0-254): Length of time a break should be signaled (tens of milliseconds).	1, 0, 30	Remote	N/A	N/A

Table 5.3: AT+EB

5.4 AT+EFCS 32-Bit Frame Check Sequence

This extended-format numeric parameter controls the use of the 32-bit frame check sequence option in V.42 on the PSTN link (if present in the IWF).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+EFCS? AT+EFCS=n	0-2: 0 Use 16-bit FCS. 1 Use 32-bit FCS if available, otherwise use 16-bit FCS. 2 Use 32-bit FCS if available, otherwise disconnect.	1	Remote	N/A	N/A

Table 5.4: AT+EFCS

5.5 AT+ER Error Control Reporting

This extended-format numeric parameter controls whether the extended-format "+ER:" intermediate result code is transmitted from the IWF over the Um interface.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+ER? AT+ER=n	0-1: 0 Disabled 1 Enabled	0	Remote	N/A	N/A

Table 5.5: AT+ER

5.6 AT+ES Error Control Selection

This extended-format compound parameter is used to control the manner of operation of the V.42 protocol on the PSTN link (if present in the IWF).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+ES? AT+ES=n,n,n	0-4, 0-4, 0-6: Originator request: 0-4 Specifies the initial requested mode when initiated as originator (3: initiate V.42 with detection phase). Originator fallback: 0-4 Specifies the acceptable fallback when initiated as originator. Answerer fallback: 0-6 Specifies the initial requested mode when initiated as originator.	3, 0, 2	Remote	N/A	N/A

Table 5.6: AT+ES

5.7 AT+ESR Selective Repeat

This extended-format numeric parameter controls the use of the selective repeat (SREJ) option in V.42 on the PSTN link (if present in the IWF).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+ESR? AT+ESR=n	0-2: 0 Do not use SREJ. 1 Use SREJ if available, continue if not available. 2 Use SREJ if available, disconnect if not available.	1	Remote	N/A	N/A

Table 5.7: AT+ESR

5.8 AT+ETBM Call Termination Buffer Management

This extended-format compound parameter controls the handling of data remaining in IWF buffers upon service termination.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+ETBM? AT+ETBM=n,n,n	0-2, 0-2, 0-30: Local terminates call: 0-2 Control how data buffers are handled when local terminates calls. Remote terminates call: 0-2 Control how data buffers are handled when local terminates calls. Timer (0-30): Maximum time limit to attempt to deliver buffered data.	1, 1, 20	Remote	N/A	N/A

Table 5.8: AT+ETBM

5.9 AT+GCAP Request Complete Capabilities List

This is a read-only command.

This extended-format command causes the MT2 to transmit one or more lines of information text in a specific format. The content is a list of additional capabilities command +<name>s, which is intended to permit the user of the MT2 to identify the minimum capabilities of the MT2. AT+GCAP is optional in Packet data.

An MT2 conforming to the TIA/EIA/IS-707.3 standard will include the following items, as a minimum, in the result code for the +GCAP command: +CIS707, +MS, +ES, +DS, +FCLASS. The response can also be +CIS707-A if the PRI (516, PRI_RESP_AT_GCAP_COMM) field is turned on. This is due to the fact that a DUN application program (QuickLink Mobile) that Verizon operator uses requires the response for the AT+GCAP to have a "+CIS707-A" response from all 1xRTT capable devices. This feature was made PRI configurable (516) to avoid confusion for the other operators.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+GCAP	N/A	(varies depending on the device)	Local	N/A	N/A

Table 5.9: AT+GCAP

5.10 AT+GMI Request Manufacturer Identification

This is a read-only command.

This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 to identify the manufacturer. Typically, the text will consist of a single line containing the name of the manufacturer, but manufacturers can choose to provide more information if desired (for example, address or telephone number for customer service).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+GMI	N/A	"Nokia Mobile Phones"	Local	C	C

Table 5.10: AT+GMI

5.11   AT+GMM Request Model Identification

This is a read-only command.

This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 to identify the specific model of the device. Typically, the text will consist of a single line containing the name of the product, but manufacturers can choose to provide any information desired.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+GMM	N/A	(varies depending on the device)	Local	C	C

Table 5.11: AT+GMM

5.12   AT+GMR Request Revision Identification

This is a read-only command.

This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 to identify the version, revision level or date, or other pertinent information of the device. Typically, the text will consist of a single line containing the version of the product, but manufacturers can choose to provide any information desired.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+GMR	N/A	(varies depending on the device)	Local	C	C

Table 5.12: AT+GMR

5.13 AT+GSN Request Product Serial Number Identification

This is a read-only command.

This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 to identify the individual device. Typically, the text will consist of a single line containing a manufacturer determined alphanumeric string, but manufacturers can choose to provide any information desired.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+GSN	N/A	(varies depending on the device)	Local	C	C

Table 5.13: AT+GSN

5.14 AT+ICF TE2-MT2 Character Framing

This extended-format compound parameter is used to determine the local serial port start-stop (asynchronous) character framing that the MT2 will use while accepting Terminal Equipment 2 (TE2) commands and while transmitting information text and result codes to the TE2, if this is not automatically determined (see Section 5.17, "AT+IPR Fixed Rm Rate").

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+ICF=? AT+ICF? AT+ICF=n,n	0 or 3-5, 0-3: Data Format (0, 3-5): 0 Automatically detect start, data, parity, and stop bits. 3 8 Data 1 Stop 4 7 Data 2 Stop 5 7 Data 1 Parity 1 Stop Parity (0-3): 0 Odd 1 Even 2 Mark 3 Space	0, 3	Local	C	C

Table 5.14: AT+ICF

5.15   AT+IFC TE2-MT2 Local Flow Control

This extended-format compound parameter is used to control the operation of local flow control between the TE2 and MT2.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+IFC=? AT+IFC? AT+IFC=n,n	0-2, 0-2: Data Terminal Equipment (DTE) control (0-2): 0 Disable local flow control. 1 Interpret XON and XOFF characters on circuit 103 as flow control. 2 Interpret circuit 133 (Ready for Receiving) as flow control. Data Circuit-Terminating Equipment (DCE) control (0-2): 0 Disable local flow control. 1 Interpret XON and XOFF characters on circuit 103 as flow control. 2 Interpret circuit 106 (Clear To Send) as flow control.	2, 2	Local	C	C

Table 5.15: AT+IFC

1. See TIA/EIA/IS-707A-3, Table 7.2-1

5.16   AT+ILRR TE2-MT2 Local Rate Reporting

This extended-format numeric parameter controls whether the extended-format +ILPR:<rate> information text is transmitted from the MT2 to the TE2.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+ILRR=? AT+ILRR? AT+ILRR=n	0-1: 0 Disabled 1 Enabled	0	Local	C	C

Table 5.16: AT+ILRR

5.17   AT+IPR Fixed Rm Rate

This numeric extended-format parameter specifies the data rate at which the MT2 accepts commands. It can be used to select operation at rates at which the MT2 is not capable of automatically detecting the data rate being used by the TE2.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+IPR=? AT+IPR? AT+IPR=n	When a cable is used: 0 (autobaud), 9600, 14400, 19200, 28800, 38400, 57600, 115200, 230400 When IrDA or Bluetooth used[4]: 0 (autobaud)	0	Local	C	C

Table 5.17: AT+IPR

5.18   AT+MA Modulation Automode Control

This extended-format compound parameter is a list of modulations that the base station can use to connect with the remote DCE in Automode operation, for answering or originating data calls, as additional alternatives to the modulation specified in the +MS command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+MA? AT+MA=<string>	N/A	N/A	Remote	N/A	N/A

Table 5.18: AT+MA

5.19   AT+MR Modulation Reporting Control

This extended-format numeric parameter controls whether the extended-format +MCR:<carrier> and +MRR:<rate> intermediate result codes are transmitted from the IWF to the mobile station.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+MR? AT+MR=n	0-1: 0 Disabled 1 Enabled	0	Remote	N/A	N/A

Table 5.19: AT+MR

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[4] Support for IrDA or Bluetooth varies from device model to device model.

5.20 AT+MS Modulation Selection

This extended-format compound parameter is used to control the manner of operation of the modulation capabilities in the IWF.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+MS? AT+MS=<string>,n, n,n,n,n	<string>, (0-1), (0-230400), (0-230400), (0-230400), (0-230400) Carrier <string>: Prefered modem carrier, IWF specific. Automode (0-1): 0 Disable automatic modulation negotiation. 1 Enable automatic modulation negotiation. Min_rate (0-230400) Max_rate (0-230400) Min_rx_rate (0-230400) Max_rx_rate (0-230400)	<string>, 1,0,0,0,0	Remote	N/A	N/A

Table 5.20: AT+MS

5.21 AT+MV18R V.18 Reporting Control

This extended-format numeric parameter controls whether the extended-format "+MV18R:" result code is transmitted from the IWF to the mobile station.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+MV18R? AT+MV18R=n	0-1: 0 Disabled 1 Enabled	0	Remote	N/A	N/A

Table 5.21: AT+MV18R

5.22 AT+MV18S V.18 Selection

This extended-format compound parameter is used to control the manner of operation of the V.18 capabilities (if present in the IWF).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+MV18S? AT+MV18S=n,n,n	0-7, 0-4, 0-1: Mode (0-7): 0 Disable V.18 operation. 1-7 V.18 operation modes. Dflt (0-4): 0 Disable V.18 operation. 1-4 V.18 operation modes. Fallback (0-1): 0 Disable V.18 operation. 1 V.18 operation modes.	0, 0, 0	Remote	N/A	N/A

Table 5.22: AT+MV18S

6 Facsimile Service Class 2.0 AT Commands

Facsimile service class 2.0 AT commands are specified in Section 7.3 of TIA/EIA/IS-707-A.3 /2/. For more information, refer to EIA/TIA-592 /9/, TIA/EIA/IS-134 /10/, and Section 4.3.1.2.5 of IS-707.3 /1/.

6.1 AT+FAA Adaptive Answer Parameter

See also command +FCLASS in Section 6.7, "AT+FCLASS Service Class Selection Parameter."

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FAA=? AT+FAA? AT+FAA=n	0-1: 0 IWF will answer only as a class 2.0 facsimile device. 1 IWF will answer and automatically determine whether to answer as facsimile device or data modem.	0	Remote	N/A	N/A

Table 6.1:AT +FAA

6.2 AT+FAP Addressing and Polling Capabilities Parameter

Indicates the addressing and polling capabilities.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FAP=? AT+FAP? AT+FAP=n,n,n	0-1, 0-1, 0-1: Subaddressing (0-1): 0 Disable frames. 1 Enable frames. Selective Polling (0-1): 0 Disable polling. 1 Enable polling. Passwords (0-1): 0 Disable passwords. 1 Enable passwords.	0, 0, 0	Remote	N/A	N/A

Table 6.2: AT+FAP

6.3 AT+FBO Phase-C Data Bit Order Parameter

Sets the bit transmission order.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FBO=? AT+FBO? AT+FBO=n	0-3: 0 Select direct bit order for both phase C and B/D data. 1 Select reversed bit order for phase C and direct bit order for phase B/D data. 2 Select direct bit order for phase C and reversed bit order for phase B/D data. 3 Select reversed bit order for both phase C and B/D data.	0	Remote	N/A	N/A

Table 6.3: AT+FBO

6.4 AT+FBS Buffer Size Parameter

This is a read-only command.

This command allows the MS to report the size of the MS's data buffers. The value is in hexadecimal and represents the buffer size in bytes. The MS provides sufficient receive buffer to accommodate three seconds of flow control off at the maximum receive speed; at 9600 bit/s, this is E10h bytes (3600 decimal). The TIA/EIA-592 standard does not mandate a minimum transmit buffer size.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FBS?	(4092), (4092): Transmit buffer size (4092). Receive buffer size (4092).	4092, 4092	Local	N/A	N/A

Table 6.4: AT+FBS

6.5 AT+FBU HDLC Frame Reporting Parameter

Determines whether to enable or disable HDLC frame reporting.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FBU=? AT+FBU? AT+FBU=n	0-1: 0 Disable HDLC frame reporting. 1 Enable HDLC frame reporting.	0	Remote	N/A	N/A

Table 6.5: AT+FBU

6.6 AT+FCC DCE Capabilities Parameters

Sets the DCE capabilities.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FCC=? AT+FCC? AT+FCC=n,n,n,n,n,n, n,n	0-1, 0-5, 0-4, 0-2, 0, 0, 0, 0-7: Vertical-resolution (VR) (0-1): 0 Normal 1 Fine Bit Rate (BR) (0-5): 0 2400 bits/sec 1 4800 bits/sec 2 7200 bits/sec 3 9600 bits/sec 4 12000 bits/sec 5 14400 bits/sec Page width (WD) (0-4): 0 1728 pixels in 215 mm 1 2048 pixels 2 2432 pixels 3 1216 pixels 4 864 pixels Page length (LN) (0-2): 0 A4, 297 mm 1 B4, 364 mm 2 Unlimited length Data compression format (DF) (0): 0 Modified huffman Error-correction (EC) (0): 0 Disable ECM Binary file transfer (BF) (0): 0 Disable BFT Scan time per line (ST) (0-7): (VR = 0) (VR > 0) 0 0 ms 0 ms 1 5 ms 5 ms 2 10 ms 5 ms 3 10 ms 10 ms 4 20 ms 10 ms 5 20 ms 20 ms 6 40 ms 20 ms 7 40 ms 40 ms	0, 0, 0, 0, 0, 0, 0, 0	Remote	N/A	N/A

Table 6.6: AT+FCC

6.7 AT+FCLASS Service Class Selection Parameter

Class 1 is not supported.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FCLASS=? AT+FCLASS? AT+FCLASS=n	0, 2.0: 0 Class-0 2.0 Class-2.0 fax service (EIA/TIA-592)	0	Remote	N/A	N/A

Table 6.7: AT+FCLASS

6.8 AT+FCQ Copy Quality Checking Parameter

Controls the copy quality checking.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FCQ=? AT+FCQ? AT+FCQ=n,n	0-2, 0-2: Receive quality checking (0-2): 0 Disable 1-2 Receive quality Transmit quality checking (0-2): 0 Disable 1-2 Transmit quality	1, 0	Remote	N/A	N/A

Table 6.8: AT+FCQ

6.9 AT+FCR Capability to Receive Parameter

Determines whether to enable or disable message data reception and remote device polling.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FCR=? AT+FCR? AT+FCR=n	0-1: 0 Disable message data reception and remote device polling. 1 Enable message data reception.	0	Remote	N/A	N/A

Table 6.9: AT+FCR

6.10 AT+FCS Current Session Results Parameters

This is a read-only command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FCS?	0-1, 0-5, 0-4, 0-2, 0, 0, 0, 0-7: Vertical resolution (VR) (0-1): 0 Normal 1 Fine Bit Rate (BR) (0-5): 0 2400 bits/sec 1 4800 bits/sec 2 7200 bits/sec 3 9600 bits/sec 4 12000 bits/sec 5 14400 bits/sec Page width (WD) (0-4): 0 1728 pixels in 215 mm 1 2048 pixels 2 2432 pixels 3 1216 pixels 4 864 pixels Page length (LN) (0-2): 0 A4, 297 mm 1 B4, 364 mm 2 Unlimited length Data compression format (DF) (0): 0 Modified huffman Error correction (EC) (0): 0 Disable ECM Binary file transfer (BF) (0): 0 Disable BFT Scan time per line (ST) (0-7): (VR = 0) (VR > 0) 0 0 ms 0 ms 1 5 ms 5 ms 2 10 ms 5 ms 3 10 ms 10 ms 4 20 ms 10 ms 5 20 ms 20 ms 6 40 ms 20 ms 7 40 ms 40 ms	N/A	Remote	N/A	N/A

Table 6.10: AT+FCS

6.11 AT+FCT DTE Phase-C Timeout Parameter

Determines DTE Phase-C timeout in seconds.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FCT=? AT+FCT? AT+FCT=n	0-255	30	Remote	N/A	N/A

Table 6.11: AT+FCT

6.12 AT+FEA Phase-C Received EOL Alignment Parameter

Determines byte-alignment of EOL in received T.4 data streams.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FEA=? AT+FEA? AT+FEA=n	0-1: 0 Determine that T.4 EOL patterns are bit aligned. 1 Determine that the last received bits of T.4 EOL pattern are byte aligned.	0	Remote	N/A	N/A

Table 6.12: AT+FEA

6.13 AT+FFC Format Conversion Parameter

Enables and disables mismatch-checking and conversion of transmitted fax data.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FFC=? AT+FFC? AT+FFC=n,n,n,n	0-3, 0-2, 0-3, 0-2: 0 Vertical resolution (0-3): 1 Codes ignored 2 Checking enabled 3 Conversion enabled for 1-D data 4 Conversion enabled for 2-D data Data format (0-2): 0 Codes ignored 1 Checking enabled 2 Conversion enabled Page length (0-3): 0 Codes ignored 1 Checking enabled 2 Conversion enabled for 1-D data 3 Conversion enabled for 2-D data Page width (0-2): 0 Codes ignored 1 Checking enabled 2 Conversion enabled	0, 0, 0, 0	Remote	N/A	N/A

Table 6.13: AT+FFC

6.14   AT+FHS Call Termination Status Parameter

Sets the call termination status.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FHS?	0-255: 0 Normal connection termination. 1-255 Hangup status.	0	Remote	N/A	N/A

Table 6.14: AT+FHS

6.15   AT+FIE Procedure Interrupt Enable Parameter

Determines whether to ignore or accept remote procedure interrupts.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FIE=? AT+FIE? AT+FIE=n	0-1: 0 Ignore remote procedure interrupts. 1 Accept remote procedure interrupts.	0	Remote	N/A	N/A

Table 6.15: AT+FIE

6.16   AT+FIS Current Session Negotiation Parameters

Sets parameters for the current session.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FIS? AT+FIS=0,0,0,0,0,0,0,0	0-1, 0-5, 0-4, 0-2, 0, 0, 0, 0-7: Vertical resolution (VR) (0-1): 0 Normal 1 Fine Bit Rate (BR) (0-5): 0 2400 bits/sec 1 4800 bits/sec 2 7200 bits/sec 3 9600 bits/sec 4 12000 bits/sec 5 14400 bits/sec Page width (WD) (0-4): 0 1728 pixels in 215 mm 1 2048 pixels 2 2432 pixels 3 1216 pixels 4 864 pixels Page length (LN) (0-2): 0 A4, 297 mm 1 B4, 364 mm 2 Unlimited length Data compression format (DF) (0): 0 Modified huffman Error correction (EC) (0): 0 Disable ECM Binary file transfer (BF) (0): 0 Disable BFT Scan time per line (ST) (0-7): (VR = 0) (VR > 0) 0 0 ms 0 ms 1 5 ms 5 ms 2 10 ms 5 ms 3 10 ms 10 ms 4 20 ms 10 ms 5 20 ms 20 ms 6 40 ms 20 ms 7 40 ms 40 ms	0, 0, 0, 0, 0, 0, 0, 0	Remote	N/A	N/A

Table 6.16: AT+FIS

6.17   AT+FLI Local ID String Parameter

This command is used for TSI or CSI.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FLI? AT+FLI=<string>	N/A	N/A	Remote	N/A	N/A

Table 6.17: AT+FLI

6.18   AT+FLO Flow Control Select Parameter

Selects the flow control option.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FLO=? AT+FLO? AT+FLO=n	0-2: 0 No flow control. 1 Software flow control (XON/XOFF). 2 Hardware Flow control.	2	Local	N/A	N/A

Table 6.18: AT+FLO

6.19   AT+FLP Indicate Document to Poll Parameter

Indicates whether the DTE has a document to poll.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FLP=? AT+FLP? AT+FLP=n	0-1: 0 Indicate that the DTE has no document to poll. 1 Indicate that the DTE has a document ready to poll.	0	Remote	N/A	N/A

Table 6.19: AT+FLP

6.20 AT+FMS Minimum Phase-C Speed Parameter

Sets the minimum phase-C speed.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FMS=? AT+FMS? AT+FMS=n	0-5: 0 2400 bit/sec 1 4800 bit/sec 2 7200 bit/sec 3 9600 bit/sec 4 12000 bit/sec 5 14400 bit/sec	0	Remote	N/A	N/A

Table 6.20: AT+FMS

6.21 AT+FNR Negotiation Message Reporting Control Parameters

Controls the negotiation message reporting.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FNR=? AT+FNR? AT+FNR=n,n,n,n	0-1, 0-1, 0-1, 0-1: Receive parameter reporting (0-1): 0 Receive parameters are not reported. 1 Receive parameters are reported. Transmitter parameter reporting (0-1): 0 Transmit parameters are not reported. 1 Transmit parameters are reported. ID string reporting (0-1): 0 ID strings are not reported. 1 ID strings are reported. Non-standard frames reporting (0-1): 0 Non-standard frames are not reported. 1 Non-standard frames are reported.	0, 0, 0, 0	Remote	N/A	N/A

Table 6.21: AT+FNR

6.22 AT+FNS Non-standard Frame FIF Parameter

Sets the non-standard frame FIF.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FNS? AT+FNS=<string>	N/A	N/A	Remote	N/A	N/A

Table 6.22: AT+FNS

6.23 AT+FPA Selective Polling Address Parameter

Sets the selective polling address sent to the remote fax machine.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FPA? AT+FPA=<string>	N/A	N/A	Remote	N/A	N/A

Table 6.23: AT+FPA

6.24 AT+FPI Local Polling ID String Parameter

Sets the local polling ID.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FPI? AT+FPI=<string>	N/A	N/A	Remote	N/A	N/A

Table 6.24: AT+FPI

6.25 AT+FPP Packet Protocol Control Parameter

This is a read-only command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FPP?	0,1: 0 Disable 1 Enable	0	Local	N/A	N/A

Table 6.25: +FPP

6.26   AT+FPR Serial Port Rate Control Parameter

Controls the serial port rate.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FPR=? AT+FPR? AT+FPR=n	0, 1, 2, 4, 6, 8: 0 0 (autobaud) 1 2400 2 4800 4 9600 6 14400 8 19200	0	Local	N/A	N/A

Table 6.26: AT+FPR

6.27   AT+FPS Page Status Parameter

Sets the page status.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FPS=? AT+FPS? AT+FPS=n	1-5: 1 Page good. 2 Page bad, retrain requested. 3 Page good, retrain requested. 4 Page bad, interrupt requested. 5 Page good, interrupt requested.	1	Remote	N/A	N/A

Table 6.27: AT+FPS

6.28   AT+FPW Password Parameter

This command is used for sending or polling.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FPW? AT+FPW=<string>	N/A	N/A	Remote	N/A	N/A

Table 6.28: AT+FPW

6.29 AT+FRQ Receive Quality Threshold Parameters

The first parameter specifies the percentage of good lines and the second parameter specifies the maximum tolerable number of consecutive bad lines.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FRQ=? AT+FRQ? AT+FRQ=n,n	0-100, 0-255: Percentage of good lines (0-100). Maximum number of consecutive bad lines (0-255).	0, 0	Remote	N/A	N/A

Table 6.29: AT+FRQ

6.30 AT+FRY ECM Retry Value Parameter

Defined in units of four retries.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FRY=? AT+FRY? AT+FRY=n	0-255	0 (page good)	Remote	N/A	N/A

Table 6.30: AT+FRY

6.31 AT+FSA Subaddress Parameter

Sets the destination subaddress sent to the remote fax machine.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FSA? AT+FSA=<string>	N/A	N/A	Remote	N/A	N/A

Table 6.31: AT+FSA

6.32 AT+FSP Request to Poll Parameter

Indicates whether the DTE wants to allow polling.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FSP=? AT+FSP? AT+FSP=n	0-1: 0 Indicate that the DTE does not want to poll. 1 Indicate that the DTE can receive a polled document.	0	Remote	N/A	N/A

Table 6.32: AT+FSP

6.33 AT+FDR Receive Phase-C Data

Initiates transition to Phase-C data reception.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FDR	N/A	N/A	Remote	N/A	N/A

Table 6.33: AT+FDR

6.34 AT+FDT Transmit Phase-C Data

Requests the DCE to transmit Phase-C data.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FDT	N/A	N/A	Remote	N/A	N/A

Table 6.34: AT+FDT

6.35 AT+FIP Initialize Facsimile Parameters

Causes the DCE to initialize all the parameters to the default settings.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FIP=n (n is optional)	0	0	Remote	N/A	N/A

Table 6.35: AT+FIP

6.36 AT+FKS Terminate Session

Terminates the session.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+FKS	N/A	N/A	Remote	N/A	N/A

Table 6.36: AT+FKS

7 CDMA AT Parameter Commands

These cellular extensions AT commands are specified in Section 7.4 of TIA/EIA/IS-707-A.3 /2/.

7.1 AT+CXT Cellular Extension

Defines what is to be done with unrecognized AT commands.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CXT=? AT+CXT? AT+CXT=n	0-1: 0 Do not pass unrecognized commands to the IWF. 1 When detecting an unrecognized AT command, open transport layer connection and pass the unrecognized command to the IWF.	0	Local	N/A	N/A

Table 7.1: AT+CXT

7.2 AT+CFG Configuration String

The string (up to and including the termination character) will be stored by the MT2 and sent to the base station prior to dialing. Each transmission of an AT+CFG command from the TE2 replaces the contents of the previous string. The string can be up to 248 characters.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CFG? AT+CFG=<string>	N/A	N/A	Local	N/A	N/A

Table 7.2: AT+CFG

7.3 AT+CAD Query Analog or Digital Service

This is a read-only command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CAD?	0-255: 0 If no service is available. 1 If CDMA Digital service available. 2 If TDMA Digital service available. 3 If Analog service is available. (values 4-255 reserved)	N/A	Local	C	C

Table 7.3: AT+CAD

7.4 AT+CDR Um Interface Data Compression Reporting

This extended-format numeric parameter controls whether the extended-format "+CDR:" intermediate result code is transmitted by the MT2. The result code is the same as for the TIA/EIA/IS-131 +DR result code.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CDR=? AT+CDR? AT+CDR=n	0-1: 0 Disable data compression reporting. Do not issue +CDR result codes. 1 Enable data compression reporting. Issue +CDR.	0	Local	N/A	N/A

Table 7.4: AT+CDR

7.5 AT+CDS Um Interface Data Compression

This extended-format compound parameter controls the V.42bis data compression function on the Um interface. The command format is the same as for the TIA/EIA/IS-131 +DS command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CDS=? AT+CDS? AT+CDS=n,n,n,n	0-3, 0-1, 512-32768, 6-250: Direction (0-3): 0 Disable compression (V.42 bis). 1 If the MS supports data compression, enable compression MS to BMI DCE. 2 If the MS supports data compression, enable compression BMI DCE to MS. 3 If the MS supports data compression, enable compression in both directions between MS and DCE. Negotiation (0-1): 0 If compression direction is not as requested, do not disconnect. 1 If compression direction is not as requested, disconnect. Max_dict (512-32768): Maximum size of dictionary in octets (V.42 bis P_1). <max_dict> applies between BMI DCE and far-end DCE. Max_string (6-250): Maximum number of characters that can be compressed into one word (V.42 bis P_2). <max_string> applies between BMI DCE and far-end DCE.	0, 0, 512, 32	Local	N/A	N/A

Table 7.5: AT+CDS

7.6 AT+CRM Set Rm Interface Protocol

See reference /1/ for a description of the +CSO, +CRM, +CMUX, and +CPS AT commands' interaction.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CRM=? AT+CRM? AT+CRM=n	0-2: 0 Asynchronous Data or Fax. 1 Packet data service, relay model. 2 Packet data service, network model.	0	Local	C	C

Table 7.6: AT+CRM

7.7 AT+CBC Battery Charge

This is a read-only command.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CBC?	0-3, 0-100: Battery charge status (BCS) (0-3): 0 MT2 powered by battery, BCL = charge level. 1 MT2 connected to external power. 2 Battery status not available. 3 Recognized power fault. Calls inhibited. Battery charge level (BCL) (0-100): 0-100 Battery capacity range is 0-100%	N/A	Local	C	C

Table 7.7: AT+CBC

7.8 AT+CQD Command State Inactivity Timer

Sets the number of seconds after which a call will be released if there is no activity.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CQD? AT+CQD=n	0-255: 0 Ignored 1-255 Release call after 5x<value> seconds have elapsed without activity.	10 (50 s)	Remote	N/A	N/A

Table 7.8: AT+CQD

7.9 AT+CRC Cellular Result Codes

Determines whether to enable or disable cellular result codes.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CRC? AT+CRC=n	0-1: 0 Disable 1 Enable	0	Remote	N/A	N/A

Table 7.9: AT+CRC

7.10 AT+CMIP Mobile Station IP Address

This is a read-only command.

Returns the mobile station's temporary IP address.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CMIP?	N/A	N/A	Local	N/A	N/A

Table 7.10: AT+CMIP

7.11 AT+CBIP Base Station IP Address

This is a read-only command.

Returns the base station's IP address.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CBIP?	N/A	N/A	Local	N/A	N/A

Table 7.11: AT+CBIP

7.12 AT+CSS Serving System

This is a read-only command.

> **Note:** P_REV_IN_USE is added per 3GPP2 contribution. It is not required for release 0 but it is preferred to adopt in release 0. It's also required by some carriers, see "*Adding a PREV field in the +CSS? AT command*" /6/.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CSS?	0-2,<Band>,<SID>,<P_REV_IN_USE> Band Class (0-2): 0 The current band class is unsupported by this command. 1 Band Class 0 (e.g. 800 MHz Cellular) is supported. 2 Band Class 1 (e.g. 1900 MHz PCS) is supported. Band: A-F If the band is x, the mobile station is registered with an x-band system under the band class specified in <Band Class>. Z The mobile station is not registered. SID: 0-16383 The mobile station is registered with the system indicated. 99999 The mobile station is not registered. P_REV_IN_USE: [5] 0 For unrecognized system or Non-CDMA systems 1 IS-95 or J-STD-008 2 IS-95-A 3 IS-95-A + TSB74 4 TIA/EIA-95-B 5 TIA/EIA-95-B 6 IS-2000 7 IS-2000-A 8 IS-2000-B 9 IS-2000-C 10 IS-2000-C	N/A	Local	C	C

Table 7.12: AT+CSS

7.13   AT+CSQ Query Received Signal Quality

This is a read-only command.

Returns the Signal Quality Measure <SQM> and the Frame Error Rate <FER>.

---

[5] The values are as defined in the *Adding a PREV field in the +CSS? AT command* document /6/.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CSQ?	0-31 or 99, 0-7 or 99 Signal Quality Measure (SQM) (0-31 or 99): 0-31 Signal Quality Measurement[6] 99 SQM is not known or is not detectable. All other values are reserved. Frame Error Rate (FER) (0-7 or 99): 0 <0.01% 1 0.01% to less than 0.1% 2 0.1% to less than 0.5% 3 0.5% to less than 1.0% 4 1.0% to less than 2.0% 5 2.0% to less than 4.0% 6 4.0% to less than 8.0% 7 ≥8.0% 99 FER is not known or is not detectable. All other values are reserved.	N/A	Local	C	C

Table 7.13: AT+CSQ

7.14   AT+CSO Service Option

The values for this field vary depending on the value of +CRM. (See reference /1/ for a description of the +CSO, +CRM, +CMUX, and +CPS AT commands' interaction.)

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CSO=? AT+CSO? AT+CSO=n	If +CRM=0, then +CSO can be: 4,5,12,13,4100,4101. If +CRM=1 or 2, then +CSO can be: 7,15,33,4103.	12, if +CRM=0 33, if +CRM=1	Local	C	C

Table 7.14: AT+CSO

7.15   AT+CMUX Multiplex Option

For circuit switch data (+CRM=0), one value represents the MUX option. For packet data (+CRM=1 or 2), there are two MUX options, forward and reverse. The forward and reverse MUX options are assigned values separately. If the reverse MUX option value is omitted, it is assigned the same value as the forward MUX option. In this case, there must a comma after the specified forward MUX option. (See reference /1/ for a description of the +CSO, +CRM, +CMUX, and +CPS AT commands' interaction.)

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[6] The exact meaning of the Signal Quality Measure is defined by the manufacturer, with the value 0 representing the lowest quality and the value 31 representing the highest quality.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CMUX=? AT+CMUX? AT+CMUX=n (if +CRM=0) or AT+CMUX=n,n (if +CRM=1 or 2)	Refer to Appendix A, "Multiplex Options."	Refer to Appendix A, "Multiplex Options."	Local	C	C

Table 7.15: AT+CMUX

7.16   AT+CFC Um Interface Fax Compression

Sets the form of compression.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CFC=? AT+CFC? AT+CFC=n	0-1: 0 No compression. 1 V.42bis compression with parameters as set by the +CDS command.	0	Local	N/A	N/A

Table 7.16: AT+CFC

8 Cellular Identification AT Command Extensions

These cellular identification at command extensions are specified in Section 7.4 of TIA/EIA/IS-707-A.3 /2/ and their values in TIA/EIA/IS-131 /8/.

8.1 AT+CGCAP IWF Content List

This extended-format command causes the IWF to transmit one or more lines of information text in a specific format. The content is a list of additional capabilities command +<name>s, which is intended to permit the user of the IWF to identify the minimum capabilities of the IWF. IWFs conforming to the TIA/EIA/IS-707.3 standard will include the following items, as a minimum, in the result code for the +CGCAP command: +CIS707, +MS, +ES, +DS, and +FCLASS.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CGCAP	N/A	N/A	Remote	N/A	N/A

Table 8.1: AT+CGCAP

8.2 AT+CGMI Request Manufacturer Identification

This command causes the IWF to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the IWF to identify the manufacturer. Typically, the text will consist of a single line containing the name of the manufacturer, but manufacturers can choose to provide more information if desired (for example,, address or telephone number for customer service).

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CGMI	N/A	N/A	Remote	N/A	N/A

Table 8.2: AT+CGMI

8.3 AT+CGMM Request Model Identification

This command causes the IWF to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the IWF to identify the specific model of the device. Typically, the text will consist of a single line containing the name of the product, but manufacturers can choose to provide any information desired.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CGMM	N/A	N/A	Remote	N/A	N/A

Table 8.3: AT+CGMM

8.4 AT+CGMR Request Revision Identification

This command causes the IWF to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the IWF to identify the version, revision level or date, or other pertinent information of the device. Typically, the text will consist of a single line containing the version of the product, but manufacturers can choose to provide any information desired.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CGMR	N/A	N/A	Remote	N/A	N/A

Table 8.4: AT+CGMR

8.5 AT+CGOI Request IWF Device Identification

This command causes the IWF to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the IWF to identify the device, based on the ISO system for registering unique object identifiers. Typically, the text will consist of a single line containing numeric strings delimited by period characters.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CGOI	N/A	N/A	Remote	N/A	N/A

Table 8.5: AT+CGOI

8.6 AT+CGSN Request Serial Number Identification

This command causes the IWF to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the IWF to identify the individual device. Typically, the text will consist of a single line containing an alphanumeric string defined by the manufacturer, but manufacturers can choose to provide any information desired.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CGSN	N/A	N/A	Remote	N/A	N/A

Table 8.6: AT+CGSN

9 Cellular AT Commands for Packet Data Services

These cellular AT commands for packet data services are specified in Section 7.4 of TIA/EIA/IS-707-A.3 /2/.

9.1 AT+CTA Set/Read/Test Um Packet Data Inactivity Timer

Sets the time for observed inactivity in a packet data connection before release of the traffic channel.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CTA=? AT+CTA? AT+CTA=n	0, 20-255: 0 Traffic Channel not released during inactivity periods. 20-255 Release the Traffic Channel after <value> 1-second intervals have elapsed since last sending or receiving Radio Link Protocol (RLP) data frames on the Um interface.	20	N/A	C	C

Table 9.1: AT+CTA

9.2 AT+CPS Select the Service Option for Packet Data Service

Values are as specified in TSB58 /11/. (See reference /1/ for a description of the +CSO, +CRM, +CMUX, and +CPS AT commands' interaction.)

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CPS=? AT+CPS? AT+CPS=n	15, 7, 4103, 33	33	N/A	C	C

Table 9.2: AT+CPS

9.3 AT+CPSR Enable/Disable Packet Call State Reporting

Determines whether to enable or disable packet call state reporting.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CPSR=? AT+CPSR? AT+CPSR=n	0-1: 0 Disables call state reporting. 1 Enables call state reporting.	0	N/A	C	C

Table 9.3: AT+CPSR

9.4 AT+CPTC Control Traffic Channel State

Controls the Traffic Channel state without affecting the IWF Link Layer connection.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CPTC=? AT+CPTC? AT+CPTC=n	0-1: 0 Release Traffic Channel. 1 Originate Traffic Channel.	0	N/A	C	C

Table 9.4: AT+CPTC

9.5 AT+CPER Enable/Disable Packet Call Event Reporting

Determines whether to enable or disable packet call event reporting.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CPER=? AT+CPER? AT+CPER=n	0-1: 0 Disables call event reporting. 1 Enables call event reporting.	0	N/A	C	C

Table 9.5: AT+CPER

10 Nokia Implementation Specific AT Commands

10.1 AT+CSP Arrange Mobile Terminated Async Data/Fax Call Service Option

Determines how the mobile station interprets the incoming call.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CSP=? AT+CSP? AT+CSP=n	0-2: 0 Do not reinterpret the incoming call, let the call proceed as normal. 1 Interpret the incoming call as a Async Data call. 2 Interpret the incoming call as a Fax call.	0	Local	N/A	N/A

Table 10.1: AT+CSP

10.2 ATB Communication Protocol

No actions are associated with the implementation of this command. This command just returns OK.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATBn	N/A	N/A	Local	C	C

Table 10.2: ATB

10.3 ATI Request Product Identification Information

Requests product identification information.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
ATIn	0, 2, 3, 4, 9: 0 Manufacturer Information 2 Revision Information 3 Product Name 4 Software Version 9 Plug and Play Information	For ATI0: "Nokia" For other values, return values vary depending on the device model	Local	C	C

Table 10.3: ATI

10.4 AT&K Select Flow Control

No actions are associated with the implementation of this command. This command just returns OK.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT&K	N/A	N/A	Local	C	C

Table 10.4: AT&K

10.5 AT&S Data Set Ready Control

No actions are associated with the implementation of this command. This command just returns OK.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT&S	N/A	N/A	Local	C	C

Table 10.5: AT&S

11 AT Commands for Java™ SMS

11.1 AT+CMGS Send an SMS Message

This command is used to send an SMS message. The following parameters are used:

- <dest_num_len>: destination phone number length (1 byte)
- <dest_num>: destination phone number
- <encoding>: message encoding type (1 byte)
- <user_data_len>: user data length (1 byte)
- <user_data>: user data (Java SMS tag "`wma://`" should be part of user data if you wish Java SMS application to receive the SMS)

All the above parameters are in HEX. For example:
AT+CMGS=0A3835383833313535353502054455354. The destination phone number is: 8588315555 and the user data is: TEST.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CMGS=<dest_num_len><dest_num><encoding><user_data_len><user_data><cr>	The total length of the command should not exceed the maximum command line length defined in the code (currently 300 bytes).	N/A	Local	N/A	N/A

Table 11.1: AT+CMGS

11.2 AT+CMGL Read SMS Messages from Inbox of the SMS_MEMORY Server

This command is used to read SMS messages from Inbox of the SMS_MEMORY server.

<stat>: read/unread status of an SMS in Inbox.

The command returns an SMS message with the following format: +CMGL:<index>,<stat>,<length>

<sender_num_len><sender_num><timestamp><encoding><user_data_len><user_data>

- <index>: message index in Inbox
- <stat>: message read/unread state
- <length>: total message length starting from <sender_num_len>
- <sender_num_len>: sender phone number length (1 byte)
- <sender_num>: sender phone number
- <timestamp>: timestamp from Message Center (6 bytes)
- <encoding>: message encoding type (1 byte)
- <user_data_len>: user data length (2 bytes)
- <user_data>: user data

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CMGL=? AT+CMGL=<stat>	0 unread 1 read	N/A	Local	N/A	N/A

Table 11.2: AT+CMGL

11.3   AT+CMGD Delete an SMS Message from Inbox of the SMS_MEMORY Server

This command deletes an SMS message from Inbox of the SMS_MEMORY server.

<index>: message index in Inbox of the SMS_MEMORY server.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+CMGD=<index>	0x10 to 0xFFFF	N/A	Local	N/A	N/A

Table 11.3: AT+CMGD

12 AT Commands for Mobile IP

This set of AT commands will be used by the Sprint PCS 3G1X Connection Manager Software /5/, which is the 3G equivalent of the 2G Dialer software that enables subscribers to use their mobile devices as wireless modems. These commands have been defined to address the requirement related to the Network Access Identifier (NAI) and Mobile IP.

Note: These Mobile IP commands can only be available after AT+CRM=2 is executed.

12.1 AT$QCMIP Mobile IP Preferences

Specifies the behavior of the device with respect to Mobile IP.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIP=? AT$QCMIP? AT$QCMIP=n	0-2: 0 Mobile IP disabled, Simple IP only. 1 Mobile IP Preferred. 2 Mobile IP only.	0	N/A	N/A	C/0

Table 12.1: AT$QCMIP

12.2 AT$QCMIPP MIP User Profile Selection

Selects one of the MIP user profiles to be the current active profile. The command takes a profile number between 0 and 5.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPP=? AT$QCMIPP? AT$QCMIPP=n	0-5	0	N/A	N/A	C/0

Table 12.2: AT$QCMIPP

12.3 AT$QCMIPGETP Return Profile Information

Returns all of the currently written Mobile IP profiles, both enabled and disabled.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPGETP=? AT$QCMIPGETP?	N/A	N/A	N/A	N/A	C/0

Table 12.3: AT$QCMIPGETP

12.4　AT$QCMIPNAI Set NAI for Active Profile

Sets the NAI for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPNAI=? AT$QCMIPNAI? AT$QCMIPNAI=<string>,n	<string>, 0-1: NAI to be stored: <string> Storage action (0-1): 0　　Do not commit to Non-Volatile Data (NVD). 1　　Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.4: AT$QCMIPNAI

12.5　AT$QCMIPMASS Set MN-AAA Shared Secrets

Sets the MN-AAA shared secrets for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPMASS=? AT$QCMIPMASS? AT$QCMIPMASS=<string>,n	<string>, 0-1: MN_AAA secrets to be stored: <string> Storage action (0-1): 0　　Do not commit to NVD. 1　　Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.5: AT$QCMIPMASS

12.6　AT$QCMIPMHSS Set MN-HA Shared Secrets

Sets the MN-HA shared secrets for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPMHSS=? AT$QCMIPMHSS? AT$QCMIPMHSS=<string>,n	<string>, 0-1: MN_HA secrets to be stored: <string> Storage action (0-1): 0　　Do not commit to NVD. 1　　Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.6: AT$QCMIPMHSS

12.7   AT$QCMIPRT Set Reverse Tunneling

Sets the reverse tunneling of the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPRT=? AT$QCMIPRT? AT$QCMIPRT=n,n	0-1, 0-1: Request Reverse Tunneling (0-1): 0 Do not request. 1 Do request. Storage action (0-1): 0 Do not commit to NVD. 1 Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.7: AT$QCMIPRT

12.8   AT$QCMIPMASPI Set MN-AAA

Sets the MN-AAA for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPMASPI=? AT$QCMIPMASPI? AT$QCMIPMASPI=n,n	0-4294967295, 0-1: SPI value (0-4294967295) Storage action (0-1): 0 Do not commit to NVD. 1 Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.8: AT$QCMIPMASPI

12.9   AT$QCMIPMHSPI Set MN-HA

Sets the MN-HA for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPMHSPI=? AT$QCMIPMHSPI? AT$QCMIPMHSPI=n,n	0-4294967295, 0-1: SPI value (0-4294967295) Storage action (0-1): 0 Do not commit to NVD. 1 Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.9: AT$QCMIPMHSPI

12.10   AT$QCMIPPHA Set the IP Address of the Primary HA

Sets the IP Address of the primary HA for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPPHA=? AT$QCMIPPHA? AT$QCMIPPHA=<string>,n	<string>, (0-1): IP address of the primary HA <string> Storage action (0-1): 0 Do not commit to NVD. 1 Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.10: AT$QCMIPPHA

12.11   AT$QCMIPSHA Set the IP Address of the Secondary HA

Sets the IP Address of the secondary HA for the currently active profile.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPSHA=? AT$QCMIPSHA? AT$QCMIPSHA=<string>,n	<string>, (0-1): IP address of the secondary HA <string> Storage action (0-1): 0 Do not commit to NVD. 1 Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.11: AT$QCMIPSHA

12.12   AT$QCMIPHA Set the Mobile Home Address

Sets the mobile home address.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$QCMIPHA=? AT$QCMIPHA? AT$QCMIPHA=<string>,n	<string>, (0-1): IP address of the HA <string> Storage action (0-1): 0 Do not commit to NVD. 1 Commit to NVD.	N/A	N/A	N/A	C/0

Table 12.12: AT$QCMIPHA

12.13   AT+PZID Packet Zone Identification

Determines whether the mobile device is operating in a CDMA network capable of supporting SO33 packet data.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+PZID?	0,1: 0 The device is roaming on an analog network, or the packet zone ID is set to zero in the Extended System Parameter Message. 1 The Extended System Parameter Message is reporting a non-zero packet zone ID.	N/A	N/A	N/A	C/0

Table 12.13: AT+PZID

12.14   AT$SPNAI Network Access Identifier

Interaction between mobile devices and future versions of the connection manager software.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$SPNAI?	0,1: 0 The device does not support the ability to enter up to six different NAI profiles through the user interface. 1 The device supports the ability to enter a NAI profile through the user interface of the device. It also supports the ability to enter up to six different NAI profiles through the user interface.	N/A	N/A	N/A	C/0

Table 12.14: AT$SPNAI

13 Nokia Proprietary AT Commands

13.1 AT*T1 Test Mode 1

A test mode where data sent to the media module handler is echoed back.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT*T1	N/A	N/A	C	N/A	N/A

Table 13.1: AT*T1

13.2 AT*T2 Test Mode 2

A test mode where data sent to the ITP is echoed back. A special ITP script is needed to be able to run this test mode.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT*T2	N/A	N/A	C	N/A	N/A

Table 13.2: AT*T2

13.3 AT*G Life Data Counter Value

This command returns the Life Data Counter value in Kbytes.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT*G	N/A	N/A	C	C	C

Table 13.3: AT*G

13.4 AT*NOKIAFBUS Activate FBUS

Activates FBUS.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT*NOKIAFBUS	N/A	N/A	C	C	C

Table 13.4: AT*NOKIAFBUS

13.5 AT+WS45 DTE-Side Stack Selection

Note: This is not a valid CDMA AT command.

This parameter indicates the DTE-Side Stack to be used the next time DCE enters online data state.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+WS45=? AT+WS45? AT+WS45=n	0 Transparent Character Stream	0	Local	N/A	N/A

Table 13.5: AT+WS45

13.6 AT+WS46 WDE-Side Stack Selection

Note: This is not a valid CDMA AT command.

This parameter indicates the WDE-Side Stack to be used by the DCE in all operating states.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT+WS46=? AT+WS46? AT+WS46=n	13 CDMA Digital Cellular	13	Local	N/A	N/A

Table 13.6: AT+WS46

13.7 AT$BREW Request Transfer of TE2-MT2 Connection Control to the BREW SIO Command Processor

An external device may send this command to establish communication with a BREW application via the Brew IPort interface.

Syntax	Value range	Default value	Async & Fax	Packet & QNC	HSD
AT$BREW	N/A	N/A	Local	C	C

Table 13.7: AT$BREW

14 Terms and Abbreviations

Term or abbreviation	Meaning
3GPP2	3rd Generation Partnership Project 2
AT command	Any of the commands in the command set interface between DTE and DCE
C	Support during command mode
C/O	Support during command mode / Support during online command mode
DCE	Data Circuit-Terminating Equipment
DTE	Data Terminal Equipment
HSD	High Speed Data
IWF	Interworking function
Local	Local AT Command
n	Numeric value
MS	Mobile Station
MT2	Mobile Terminal 2. A mobile termination that provides a non-ISDN (Rm) user interface.
N/A	Not Applicable
NAI	Network Access Identifier
NVD	Non-Volatile Data
O	Support during online command mode
PSTN	Public switched telephone network
QNC	Quick Net Connect
Remote	Remote AT Command
RLP	Radio Link Protocol
String	Alphanumeric string value
TE2	Terminal Equipment 2. A data terminal that provides a non-ISDN (Rm) user-network interface

15 References

/1/ TIA/EIA/IS-707.3, "Data Service Options for Wideband Spread Spectrum Systems: AT Command Processing and the Rm Interface," 1997.

/2/ TIA/EIA/IS-707-A.3, "Data Service Options for Wideband Spread Spectrum Systems: AT Command Processing and the Rm Interface," 1999.

/3/ TIA/EIA/IS-707-A-2.3, "Data Service Options for Wideband Spread Spectrum Systems: AT Command Processing and the Rm Interface," January, 2000.

/4/ HD980 CDMA Data Design, Appendix A: AT Commands, Dean Berhman, 07 April 1999.

/5/ Sprint PCS 3G1X Connection Manager, "Functional Product Specification," Version 1.1, 11 March 2002.

/6/ Adding a PREV field in the +CSS? AT command, 3GPP2-C13-20020722-002, July 22, 2002.

/7/ EIA/TIA-602, "Serial Asynchronous Automatic Dialing and Control."

/8/ TIA/EIA/IS-131, "Data Transmission Systems and Equipment – Extensions to Serial Asynchronous Dialing and Control."

/9/ EIA/TIA-592, "Asynchronous Facsimile DCE control Standard – Service Class 2.0."

/10/ TIA/EIA/IS-134, "Amendments to TIA-592 to Support T.30-1993."

/11/ TSB58, "Administration of Parameter Value Assignments for TIA/EIA Wideband Spread Spectrum Standards."

Appendix A Multiplex Options

Valid multiplex option values vary depending on the +CRM and +CSO setting. Table 15.1 lists all the available values for the various settings. Note that the multiplex options 0xF00 and 0xF20 are only supported in IS-2000 Revision C (EV-DV) and above; they are not supported in prior revisions of IS-2000. The default multiplex options are given in **boldface**.

+CRM	+CSO	Multiplex Options
0	4, 5	**0x01**
	12, 13	0x01, **0x02**
	4100, 4101	**0x01**, 0x02
1, 2	7	Forward and Reverse: **0x01**
	15	Forward: 0x01, **0x02** Reverse: 0x01, **0x02**
	33	Forward: 0x01, 0x02, 0x03, 0x809, 0x811, 0x821, 0x905, 0x909, 0x911, **0x921**, 0xF00[7] Reverse: 0x01, 0x02, 0x03, 0x809, 0x811, 0x821, 0x905, 0x909, 0x911, **0x921**, 0xF20[8]
	4103	Forward: **0x01**, 0x02 Reverse: **0x01**, 0x02

Table 15.1: Supported Multiplex Option

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[7] Forward multiplex option 0xF00 is supported in IS-2000 Revision C and above.

[8] Reverse multiplex option 0xF20 is supported in IS-2000 Revision C and above.

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