

PARTIAL TEST REPORT

Number: **MP_007032** - Date: **2018-01-04**

according to
GCF-CC (v3.61.1) and NAPRD03 (v5.30)

for

Netradyne

User Equipment Type:

DRI-128

Final Hardware Version: RevD

Final Software Version: 0.2.1

This test report consists of 10 pages and the following annexes:

Annex A - Accreditation Certificate	2 pages
Annex B - Test Equipment	3 pages
Annex C - ICS/IXIT Information	2 pages
Annex D - Photographs	2 pages
Annex E - Detailed Test Verdicts	7 pages

**CTS MC Inc. is accredited
according to
DIN EN ISO/IEC 17025 by:**



CTS MC Inc.
411 Dixon Landing Road ♦ Milpitas, CA 95035 ♦ USA
Phone: +1 408 586 6200 ♦ Fax: +1 408 586 6299 ♦
CTS MC Inc. is a Delaware Corporation with File Number: 6258788

Partial Test Report No. MP_007032

Date of Report: 2018-01-04

TOM 2.2.20.0

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Supported Bands

Technology	Bands		
UMTS FDD	FDD II	FDD IV	FDD V
LTE FDD	FDD 12 FDD 17	FDD 2 FDD 25	FDD 4 FDD 5

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1. Test Results

1.1. Summary of Test Results

The following table summarizes the final test results of the tested user equipment. Detailed test results for each test case including the used/subcontracted testing location (according to sec. 2.2) are documented in Annex E of this test report. An explanation of the terms used for each column in the table is given below.

Table 1: Summary of Test Results

Specification	Amount of Test Cases		
	PASS	FAIL	INC
ETSI TS 102 230-1	11	0	0
Total:	11	0	0

The following terms are used in the table above:

Specification:	Name/Identifier of the used test specification for testing.
PASS:	Amount of test cases which are conformant to the applied standards in the given Band.
FAIL:	Amount of test cases which are not conformant to the applied standards in the given Band.
INC:	Inconclusive: Amount of test cases with ambiguous results to the applied standards in the given Band.

1.2. Type of this CTS MC Test Report

This **PARTIAL** Test Report contains within Annex E only a subset of all test cases as referenced in the corresponding "Leading Reference Documents for Testing" (see table 2 in section 4.1). This subset of test cases has been requested by the client and/or has been deemed necessary by CTS MC after review of the performed product modifications.

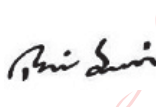
1.3. Documentation Received from the Client/Manufacturer

CTS MC has received the ICS/IXIT information for the equipment under test from the client and/or manufacturer (please refer to Annex C of this test report for details) which was the basis for accredited testing.

CTS MC has received sufficient documentation from the client and/or manufacturer to perform the tests as listed in Annex E of this report.

1.4. Validity of Test Results

The test results given in this test report only relate to the user equipment as specified in section 3.

 Digitally signed by Rami Saman
DN: cn=Rami Saman,
o=rami.saman@cts-mcs.com,
ou=CTS MC, email=rami.saman@cts-
mcs.com, c=US
Date: 2018.01.05 13:50:54 -0800
Adobe Acrobat version:
2018.009.20050

Rami Saman
Test Manager
(Author of the Test Report)

 Digitally signed by
Deepak Joshi
Date: 2018.01.05
13:54:35 -08'00'

Deepak Joshi
Deputy Test Manager
(Verification of the Test Report)

Dipl.-Ing. Adolfo Bayo
Test Lab Manager
(Authorization of the Test Report)

2. Administrative Data

2.1. Identification of the Responsible Testing Laboratory

Company Name:	CTS MC Inc.
Department:	Mobile Communications
Address:	411 Dixon Landing Road Milpitas, CA USA 95035
Telephone:	+1 408 586 6200
Fax:	+1 408 586 6299
Responsible Test Lab Managers:	Ulrich Gerdt Dipl.-Ing. Adolfo Bayo

2.2. Identification of the Testing Location(s)

Company Name:	CTS MC Inc.
Address:	411 Dixon Landing Road Milpitas, CA USA 95035

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Date of Report: 2018-01-04

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2.3. Organizational Items

CTS MC Reference No.:	MP_007032
CTS MC Order No.:	ACH Pay
CTS MC Test Manager:	Rami Saman
CTS MC Deputy Test Manager:	Deepak Joshi
Start of Testing:	2017-10-03
End of Testing:	2017-10-03

2.4. Identification of the Client

Company Name:	Netradyne, Inc.
Address:	4350 Executive Dr., Suite 150 San Diego, CA USA 92127
Contact Person:	David Julian
Telephone:	1-858-752-8914

Note: This data is based on the client's information.

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. Identification of the Equipment Under Test

Brand Name:	Netradyne
Type Name:	DRI-128
Marketing Name:	NetraDyne Driver-I DashCam
UMTS Frequency Bands:	FDD II FDD IV FDD V
LTE FDD / E-UTRA Frequency Bands:	FDD 12 FDD 2 FDD 4 FDD 17 FDD 25 FDD 5
FCC ID Number:	2AM8R-DRI128
Industry Canada ID:	23098_DRI128
Special Features / Comments:	Intelligent Driving Monitoring System Smart Connected Dash Cam

3.2. Front View of the Equipment Under Test



3.3. Identification of all Used Test Samples of the Equipment Under Test

EUT ID *	Serial Number	Hardware Version	Software Version	Test Lab internal ID
EUT1	16300054	RevD	0.2.1	a C01

*) The equipment under test identifier (EUT ID) is used to simplify the identification in this test report

3.4. Identification of the Ancillary Equipment

AE ID *	Description	Serial Number	HW Status	SW Status
AE1	Standard Laptop	--	--	--

*) The ancillary equipment identifier (AE ID) is used to simplify the identification in this test report

4. Applied Reference Documents

4.1. Leading Reference Documents for Testing

The equipment under test (EUT) has been tested at CTS MC's (own or subcontracted) laboratories according to the leading reference documents given in table 2 below:

Table 2: Leading Reference Documents

No.	Identity	Document Title	Version/Date
[1]	GCF-CC	Global Certification Forum - Certification Criteria	v3.61.1 (2016-02)
[2]	NAPRD03	GSM N.A. Permanent Reference Document	v5.30 (2016-12)

4.2. Specific Reference Documents for Testing

Table 3 summarizes specific reference documents such as harmonized standards or test specifications which were used for testing at CTS MC's (own or subcontracted) laboratories.

Table 3: Specific Reference Documents

No.	Identity	Document Title	Version/Date
[3]	ETSI TS 102 230-1	Smart Cards; UICC-Terminal interface; Physical, electrical and logical test specification; Part 1: Terminal features	v11.0.0 Release 11 (2016-06)

4.3. Additional Reference Documents for Testing

Table 4 summarizes additional reference documents which were used for testing at CTS MC's (own or subcontracted) laboratories.

Table 4: Additional Reference Documents

No.	Identity / Description	Valid Since
[4]	17701 Add exception for ETSI TS 120 230 test case 5.1.2.2 on TP13	2017-02-11
[5]	17702 Add exception for ETSI TS 120 230 test case 5.1.5.3 on TP13	2017-02-11
[6]	17703 Add exception for ETSI TS 120 230 test case 5.1.5.4 on TP13	2017-02-11
[7]	PVG49_2178 Inconsistency in Electrical Test Results on the Comprion IT3	2010-05-28
[8]	PVG50_2252 Revalidation of 3GPP R99+ UICC / USIM Conformance Test Cases on the COMPRION IT3 Test Platform	2010-06-23
[9]	PVG51_3178 5DR_RFT029_TP13_13-1_13-2_13-3_20101012_V4.7.0	2010-10-12
[10]	PVG53_3896 5DR_RFT029_TP13_13-1_13-2_13-3_20110420_V4.7.2	2011-04-28
[11]	PVG57_5969 5DR_RFT029_TP13_13-1_13-2_13-3_20120419_R4.9.2	2012-04-27
[12]	PVG58_6579 5DR_RFT029_TP13_13-1_13-2_13-3_20120702_R4.10.0	2012-07-10

PARTIAL TEST REPORT

Number: **MP_007032** - Date: **2018-01-04**

for

Netradyne

User Equipment Type:

DRI-128

Final Hardware Version: RevD

Final Software Version: 0.2.1

Annex A:
Accreditation Certificate

This annex consists of 2 pages

**CTS MC Inc. is accredited
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The annex pages of the certificate may be received from CTS MC on request.

PARTIAL TEST REPORT

Number: **MP_007032** - Date: **2018-01-04**

for

Netradyne

User Equipment Type:

DRI-128

Final Hardware Version: RevD

Final Software Version: 0.2.1

Annex B:
Test Equipment

This annex consists of 3 pages

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1. Test Equipment Location

Testing was performed at the following marked location:

1.1 Location "Milpitas, CA"

Address: CTS MC Inc.
411 Dixon Landing Road
Milpitas, CA
USA 95035



2. List of Test Equipment

2.1 COMPRION IT³ USIM Simulator

ID: COMPRION IT ³ [Mil 2]	
Location:	Milpitas, CA (1.1)
Serialnumber:	B1905-50154
Hardware:	IT ³ Analog Probe (IT ³ -APR) V1.2 (Digital Simulator) V1.2 (Analog Simulator)
Software version:	Base Software: IT ³ Network Simulation Controller version 6.0.0 IT ³ Test Platform version 6.0.0 Test Case Software: IT ³ ETSI TS 102 230 (analog) version 6.0.0
Ambient Conditions:	Temperature: 20°C - 26°C Rel. Humidity: 20% - 75%
Calibration:	Due date for the next test equipment calibration: 2018-02-08

PARTIAL TEST REPORT

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for

Netradyne

User Equipment Type:

DRI-128

Final Hardware Version: RevD

Final Software Version: 0.2.1

Annex C:

ICS/IXIT Information

The (P)ICS/(P)IXIT data given or referenced in this annex is based on the latest information received from the client or user equipment (UE) manufacturer, either verbally or in writing. Therefore, this given information has been used for testing at **CTS MC** for the above mentioned UE configuration. It is the responsibility of the legal owner of the tested UE (i.e. owner of the UE's brand name as given on the cover page of this report) to verify the correctness of the data on the following pages and to indicate any possible incorrectness to **CTS MC**.

This annex consists of 2 pages

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PICS – Protocol Implementation Conformance Statement

Netradyne

*Power Supply

Nominal testing voltage 12V [WP7504: 3.7V]

Minimal testing voltage 10.5V [WP7504: 3.66V]

Maximal testing voltage 14.5V [WP7504: 3.73V]

(P)ICS/(P)IXIT Information according to ETSI TS 102 230-1 V11.0.0 (2016-06) Rel-11

Table: A.1: Options

Item	Release	Options	Supported
A.1/4		Class B	Y
A.1/5		Class C	Y

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Netradyne

User Equipment Type:

DRI-128

Final Hardware Version: RevD

Final Software Version: 0.2.1

Annex D: Photographs

This annex consists of 2 pages

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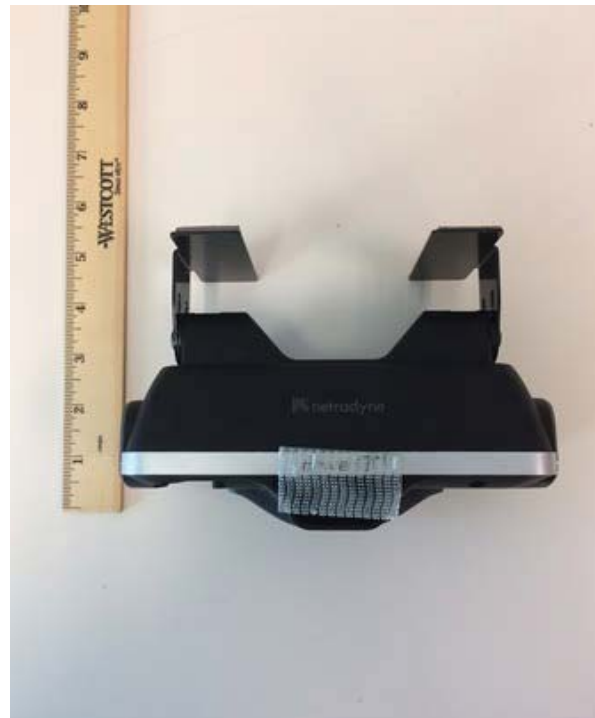
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1. Photographs of the Equipment Under Test

1.1 Front View of the EUT



1.2 Back View of the EUT



PARTIAL TEST REPORT

Number: **MP_007032** - Date: **2018-01-04**

for

Netradyne

User Equipment Type:

DRI-128

Final Hardware Version: RevD

Final Software Version: 0.2.1

Annex E: **Detailed Test Verdicts**

This annex consists of 7 pages

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1. General Description

This annex of the test report includes tables with detailed test results of the equipment under test (EUT).

2. Terms used in the detailed test result table

This section defines the terms which are used in the enclosed detailed test result tables.

2.1 Main Terms

The following main terms are used in the detailed test result tables:

Term	Explanation
Test Case	Test case identifier of the corresponding test specification as referenced in section 4 of this test report.
Test Description	Name of the test case as referenced in the corresponding test specification.
Cat	Category of the related test case in the related frequency band. The interpretation of the corresponding category is defined in the related Permanent Reference Document GCF-CC and/or NAPRD03.
Verdict	Verdict for each test case. See section 2.2 of this annex for detailed information.
Notes	Information about used test samples, special test situations, special test setups or special interpretations of the test results. See section 2.3 of this annex for detailed information.

2.2 Terms in column "Verdict"

The following terms are used in the detailed test result tables to identify the verdicts of each test case in the given frequency bands:

Verdict	Explanation
PASS	EUT has been tested at CTS MC's (own or subcontracted) laboratories and is conformant to the applied standards for this test case in the given Band.
FAIL	EUT has been tested at CTS MC's (own or subcontracted) laboratories but is not conformant to the applied standards for this test case in the given Band.
PASS/----	For not completely validated tests only the validated parts of the test are "PASS" as mentioned above.
INC.	"Inconclusive": EUT has been tested at CTS MC's (own or subcontracted) laboratories but the test verdict for this test case in the given Band is ambiguous. Detailed explanation is given in the note for the corresponding test case.
N/A	"Not Applicable": According to the client's and/or manufacturer's documentation (PICS/PIXIT) this test is not applicable in the given Band or the test case is not applicable according to an exception which is documented in the corresponding "Additional Reference Documents for Testing". (listed in test report section 2.3.2).
N/R	"Not Required": This test case is not required for conformance testing in the given frequency band due to special rules accepted in the corresponding certification regime. <u>Examples:</u> - Test case only needs to be tested in one single frequency band - Test case only needs to be tested with limited parameters or settings - Test case has exceptions (e.g. due to test specification or test platform faults) - Test case is waived by the certification committee
R	"Redundant": This test has not been performed in the given Band but the test requirement has been verified by means of another test case (e.g. in an other technology).
NO	This test has not been performed with the EUT in the given Band and/or with the given test parameter(s) although the test may be mandatory for conformance testing.
----	Test is not defined or not validated in the given frequency band or not used by the specific certification regime.

2.3 Terms in column "Notes"

2.3.1 Test samples used for testing

The detailed test result table contains **numerical notes** (e.g. "1,4,...") to identify the EUT test samples used for each performed test case.

These numerical notes directly refer to the corresponding EUT identifier defined in **section 3.3** of the test report (e.g. note "1,4" indicates that the given test case in the given Band has been tested with both user equipment test samples identified as EUT1 and EUT4).

2.3.2 Additional Reference Documents for Testing

The detailed test result table may also contain **numerical notes in brackets** (e.g. "[9],[14],..."). These notes directly refer to the corresponding "additional reference documents for testing" as listed in section 4.3 (table 4) of the Test Report. They indicate that these additional reference documents have been applied to the corresponding test case(s).

2.3.3 Special Test Situations, Test Setups and Verdict Interpretations

The detailed test result table may also contain **letter notes** (e.g. "A,C,...") to identify special test situations, special test setups or special interpretations for the given test case. The following letter notes are used:

Note	Explanation
---	no letter note used ---

3. General Notes

3.1 General Note GN1

Conformance testing was performed by using a terminal program (TeraTerm) and AT commands as provided by the manufacturer.

3.2 General Note GN2

IMEI SV was checked via CMW500 and verified to be 45.

3.3 General Note GN3

Driver-I DashCam is integrating Sierra Wireless WP7504 [HW: 1.0; SW: SWI9X15Y_07.12.09.00].

4. Detailed Test Result Table

The test result table in the following section includes detailed information for all performed test cases.

4.1 Test Results according to ETSI TS 102 230-1

Test Results of Netradyne DRI-128

ETSI TS 102 230-1	Band	Cat	Verdict	Notes
5.1.1 Phase preceding Terminal power on				
	NI	A	PASS	1
5.1.2.2 Phase during UICC power on, 1.8 V - 3 V				
	NI	A	PASS	1, [4]
5.1.3.2 Phase during Terminal power off, 1.8 V - 3 V				
	NI	A	PASS	1
5.1.5.3 Reaction of 1.8V technology Terminals on type recognition of 1.8V technology UICCs				
	NI	A	PASS	1, [5], [7], [8], [9], [10], [11], [12]
5.1.5.4 Reaction of 1.8V technology Terminals on type recognition of 3V technology UICCs				
	NI	A	PASS	1, [6], [7], [8], [9], [10], [11], [12]
5.1.5.6.2 Reaction of Terminals receiving no ATR, 1.8 V - 3 V				
	NI	A	PASS	1

Please refer to test report Annex E section 2 for detailed information of the used terms and notes.

Test Results of Netradyne DRI-128

ETSI TS 102 230-1	Band	Cat	Verdict	Notes
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5.2.2.3 Electrical tests on contact C1, Test 1: 1.8 V - 3 V				
	NI	A	PASS	1
5.2.2.4 Electrical tests on contact C1, Test 2: 1.8 V - 3 V				
	NI	A	PASS	1
5.2.3.2 Electrical tests on contact C2: 1.8 V - 3 V				
	NI	A	PASS	1
5.2.4.2 Electrical tests on contact C3: 1.8 V - 3 V				
	NI	A	PASS	1
5.2.5.3 Electrical tests on contact C7, Test 1: 1.8 V - 3 V				
	NI	A	PASS	1

Please refer to test report Annex E section 2 for detailed information of the used terms and notes.