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Report On

FCC Testing of the Sharp Quad-band LTE (B1/ B3/ B17/ B26), Dual-band WCDMA (FDD I / V) , Quad-band GSM (850/900/1800/1900) & WiMAX2+ (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD(NFC,FeliCa) and GPS in accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 (WCDMA FDD V)

COMMERCIAL-IN-CONFIDENCE

FCC ID: APYHRO00243

Document 75935599 Report 13 Issue 1

September 2016



Product Service

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COMMERCIAL-IN-CONFIDENCE

REPORT ON

FCC Testing of the Sharp Quad-band LTE (B1/ B3/ B17/ B26), Dual-band WCDMA (FDD I / V) , Quad-band GSM (850/900/1800/1900) & WiMAX2+ (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD(NFC,FeliCa) and GPS in accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 (WCDMA FDD V)

Document 75935599 Report 13 Issue 1

September 2016

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DATED

22 September 2016

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

G Lawler

D Ralley



M Russell



Product Service

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SECTION 1

REPORT SUMMARY

FCC Testing of the
Sharp Quad-band LTE (B1/ B3/ B17/ B26), Dual-band WCDMA (FDD I / V) , Quad-band GSM
(850/900/1800/1900) & WiMAX2+ (TDD41) multi mode Smart phone with Bluetooth, WLAN,
SRD(NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 (WCDMA FDD V)



Product Service

1.1 INTRODUCTION

The information contained in this report is intended to show the verification of FCC Testing of the Sharp Quad-band LTE (B1/ B3/ B17/ B26), Dual-band WCDMA (FDD I / V) , Quad-band GSM (850/900/1800/1900) & WiMAX2+ (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD(NFC,FeliCa) and GPS to the requirements of FCC 47 CFR Part 22 and FCC 47 CFR Part 2.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Sharp Corporation
Serial Number(s)	IMEI 004401115905164 IMEI 004401115905347
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 22 (2015) FCC 47 CFR Part 2 (2015)
Disposal	Held Pending Disposal
Reference Number	Not Applicable
Date	Not Applicable
Order Number	10879
Date	18 July 2016
Start of Test	10 August 2016
Finish of Test	6 September 2016
Name of Engineer(s)	G Lawler D Ralley M Russell
Related Document(s)	ANSI C63.4 (2014) ANSI TIA-603-C (2004) ANSI C63.26 (2015) KDB 971168 v02r02



1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 is shown below.

Section	Specification Clause		Test Description	Result	Comments/Base Standard
	Part 22	Part 2			
WCDMA FDD V					
2.1	22.355	2.1055	Frequency Tolerance	Pass	
2.2	22.905	2.1051	Spurious Emissions at Band Edge	Pass	
2.3	22.913 (a)	2.1046	Maximum Conducted Output Power	Pass	
2.4	22.917	-	Emission Limitations for Cellular Equipment	Pass	
2.5	22.917 (a)	2.1051	Spurious Emissions at Antenna Terminals	Pass	
2.6	22.917 (b)	2.1049 (h)	26 dB Bandwidth	Pass	
2.7	-	2.1047 (d)	Modulation Characteristics	-	Customer Declaration



Product Service

1.3 PRODUCT TECHNICAL DESCRIPTION

Refer to Model Description APYHRO00243 Rev 4.0 document.

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Sharp Quad-band LTE (B1/ B3/ B17/ B26), Dual-band WCDMA (FDD I / V) , Quad-band GSM (850/900/1800/1900) & WiMAX2+ (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD(NFC,FeliCa) and GPS. A full technical description can be found in the manufacturer's documentation.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure.

The EUT was powered from a 4.0 V DC supply.

FCC Measurement Facility Registration Number
90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standard were made during testing.

1.7 MODIFICATION RECORD

Modification 0 - No modifications were made to the test sample during testing.



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SECTION 2

TEST DETAILS

FCC Testing of the
Sharp Quad-band LTE (B1/ B3/ B17/ B26), Dual-band WCDMA (FDD I / V) , Quad-band GSM
(850/900/1800/1900) & WiMAX2+ (TDD41) multi mode Smart phone with Bluetooth, WLAN,
SRD(NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 (WCDMA FDD V)



Product Service

2.1 FREQUENCY TOLERANCE

2.1.1 Specification Reference

FCC 47 CFR Part 22, Clause 22.355
FCC 47 CFR Part 2, Clause 2.1055

2.1.2 Equipment Under Test and Modification State

S/N: IMEI 004401115905164 - Modification State 0

2.1.3 Date of Test

6 September 2016

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Procedure

This test was performed in accordance with FCC 47 CFR Part 2, clause 2.1055.

Remarks

A radio communications test set frequency measurement function was used to measure the frequency error. The radio communications test set was configured for an uplink frequency of 835.0 MHz and the frequency reference was set to an external 10MHz rubidium frequency standard.

2.1.6 Environmental Conditions

Ambient Temperature	23.8°C
Relative Humidity	64.3%



Product Service

2.1.7 Test Results

4.0 V DC Supply

WCDMA FDD V, 835.00 MHz, RMC - 12.2 kbps, QPSK, Frequency Tolerance Under Temperature Variations Results

Temperature	Fundamental Frequency Deviation (ppm)
-30 °C	-0.00838
-20 °C	0.00958
-10 °C	0.01078
0 °C	0.00838
+10 °C	0.00719
+20 °C	0.00599
+30 °C	-0.00599
+40 °C	-0.00599
+50 °C	-0.00719

FCC 47 CFR Part 22, Limit Clause 22.355

Frequency Range (MHz)	Base, Fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20	20	50
50 to 450	5	5	50
450 to 512	2.5	5	5
821 to 896	1.5	2.5	2.5
928 to 929	5.0	-	-
929 to 960	1.5	-	-
2110 to 2220	10	-	-



Product Service

2.2 SPURIOUS EMISSIONS AT BAND EDGE

2.2.1 Specification Reference

FCC 47 CFR Part 22, Clause 22.905
FCC 47 CFR Part 2, Clause 2.1051

2.2.2 Equipment Under Test and Modification State

S/N: IMEI 004401115905164 - Modification State 0

2.2.3 Date of Test

6 September 2016

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Procedure

The test was performed in accordance with KDB 971168 v02r02, clause 6.

2.2.6 Environmental Conditions

Ambient Temperature	24.8°C
Relative Humidity	59.0%



Product Service

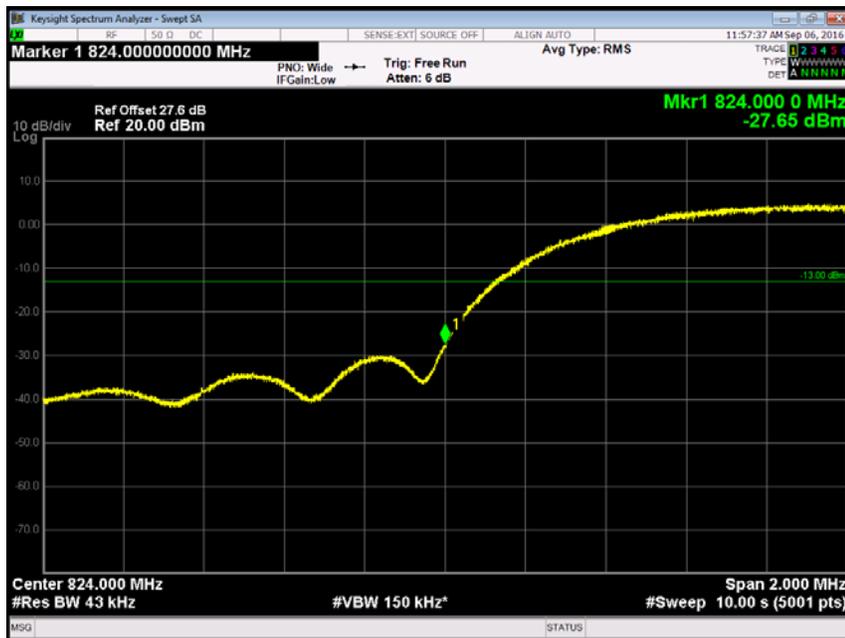
2.2.7 Test Results

4.0 V DC Supply

WCDMA FDD V, RMC - 12.2 kbps, QPSK, Spurious Emissions at Band Edge Results

Block Edge	Frequency Block (MHz)	
		A :824.0 MHz – 835.0 MHz
Lower	Channel: 4132 826.4 MHz	-
Upper	-	Channel: 4233 846.6 MHz

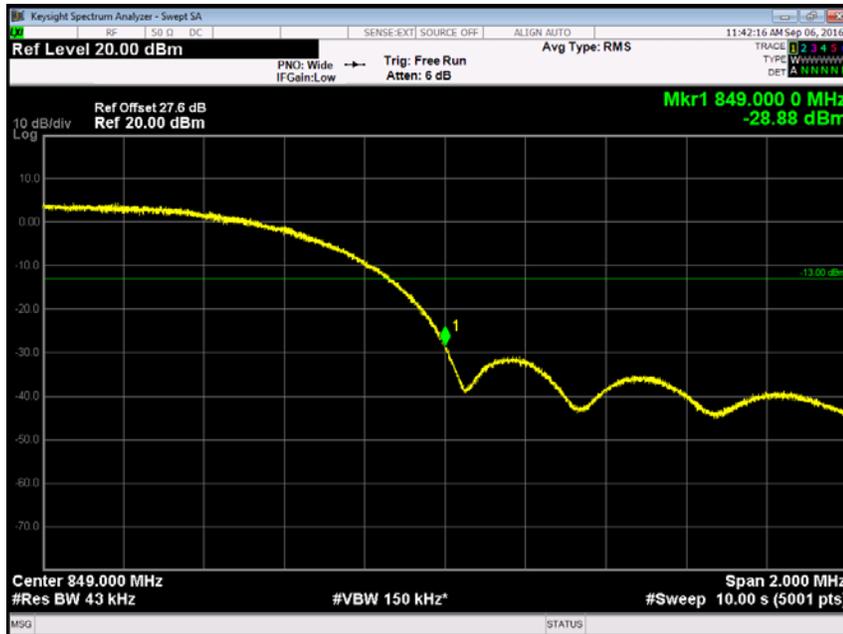
WCDMA FDD V, RMC - 12.2 kbps, QPSK, Frequency Block A, Spurious Emissions at Band Edge Plot





Product Service

WCDMA FDD V, RMC - 12.2 kbps, QPSK, Frequency Block B, Spurious Emissions at Band Edge Plot



FCC 47 CFR Part 22, Limit Clause 22.905 and 22.917

-13 dBm at block edge.



Product Service

2.3 MAXIMUM CONDUCTED OUTPUT POWER

2.3.1 Specification Reference

FCC 47 CFR Part 22, Clause 22.913 (a)
FCC 47 CFR Part 2, Clause 2.1046

2.3.2 Equipment Under Test and Modification State

S/N: IMEI 004401115905164 - Modification State 0

2.3.3 Date of Test

10 August 2016

2.3.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.5 Test Procedure

The test was performed in accordance with FCC KDB 971168 D01 v02r02, clause 5.1.2.

Remarks

The antenna gain was declared by the manufacturer as 2.0 dBi. The ERP result was calculated using the formula below:

$$\text{ERP (dBm)} = \text{Pout (dBm)} + \text{Antenna Gain (dBi)} - 2.15 \text{ dB.}$$

2.3.6 Environmental Conditions

Ambient Temperature	22.3°C
Relative Humidity	61.7%



Product Service

2.3.7 Test Results

4.0 V DC Supply

WCDMA FDD V, RMC - 12.2 kbps, Maximum Conducted Output Power Results

Frequency	Conducted Power (dBm)	Antenna Gain	EIRP (dBm)	EIRP (W)
826.40 MHz	26.93	2.0 dBi	26.78	0.48
835.00 MHz	26.97	2.0 dBi	26.82	0.48
846.60 MHz	26.95	2.0 dBi	26.80	0.48

FCC 47 CFR Part 22, Limit Clause 22.913 (a)(2)

Mobile Transmitters: 7 W or 38.45 dBm



Product Service

2.4 EMISSION LIMITATIONS FOR CELLULAR EQUIPMENT

2.4.1 Specification Reference

FCC 47 CFR Part 22, Clause 22.917

2.4.2 Equipment Under Test and Modification State

S/N: IMEI 004401115905347 - Modification State 0

2.4.3 Date of Test

29 August 2016

2.4.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.5 Test Procedure

Testing was performed in accordance with ANSI C63.26, clause 5.5.

2.4.6 Environmental Conditions

Ambient Temperature	21.5°C
Relative Humidity	61.0%



Product Service

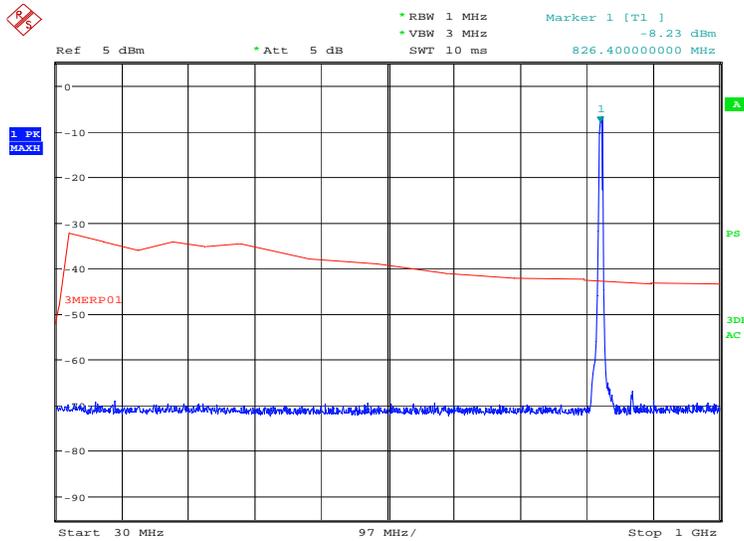
2.4.7 Test Results

WCDMA FDD V, 826.40 MHz, Emission Limitations for Cellular Equipment Results

Frequency (MHz)	Emission Results (dBm)
*	

*No emissions were detected within 10 dB of the limit.

WCDMA FDD V, 826.40 MHz, 30 MHz to 1 GHz, Emission Limitations for Cellular Equipment Plot

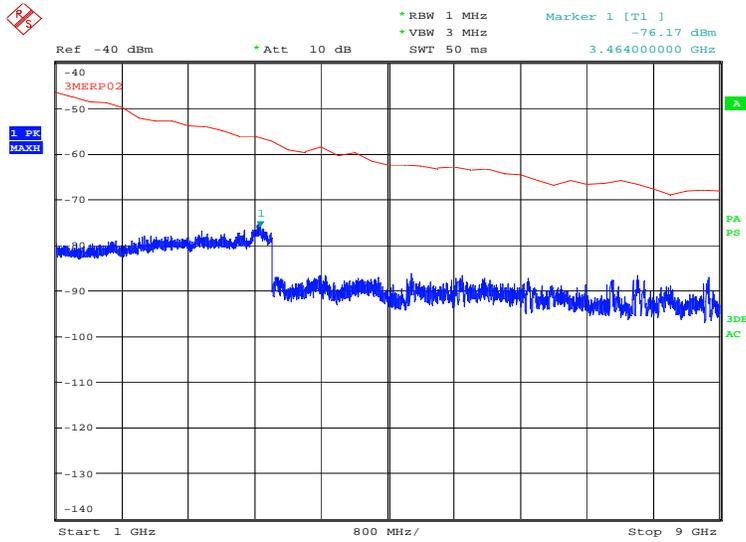


Date: 29.AUG.2016 10:49:01



Product Service

WCDMA FDD V, 826.40 MHz, 1 GHz to 9 GHz, Emission Limitations for Cellular Equipment Plot



Date: 29.AUG.2016 09:41:51



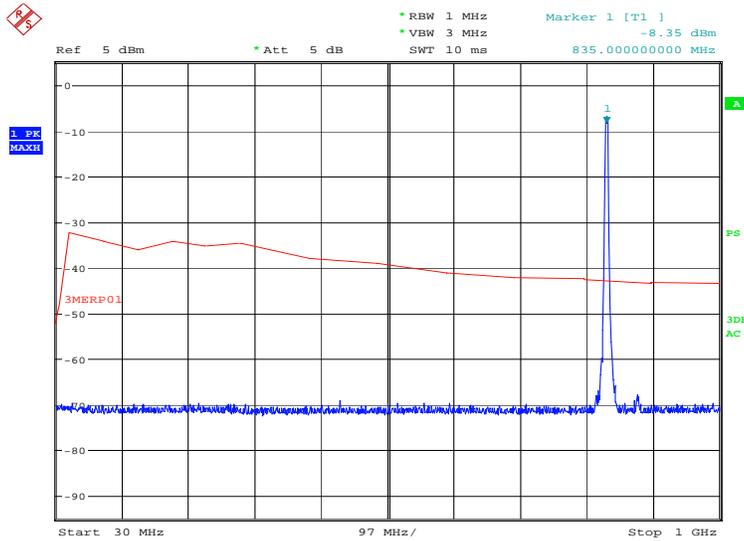
Product Service

WCDMA FDD V, 835.00 MHz, Emission Limitations for Cellular Equipment Results

Frequency (MHz)	Emission Results (dBm)
*	

*No emissions were detected within 10 dB of the limit.

WCDMA FDD V, 835.00 MHz, 30 MHz to 1 GHz, Emission Limitations for Cellular Equipment Plot

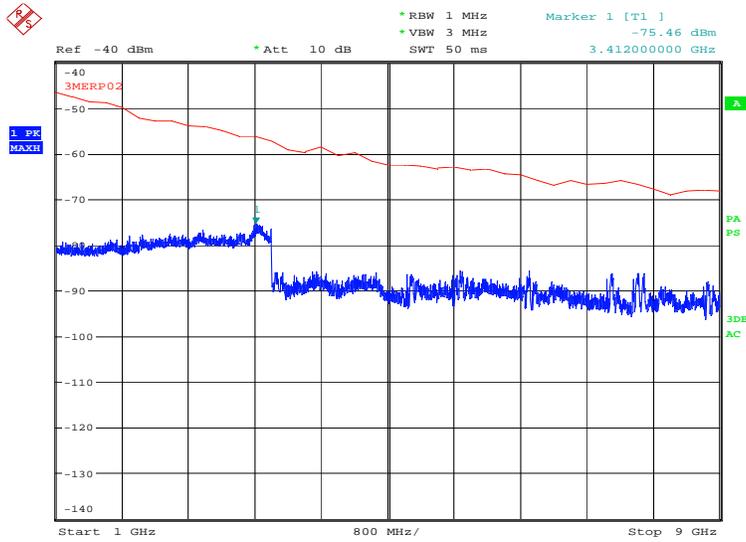


Date: 29.AUG.2016 10:46:31



Product Service

WCDMA FDD V, 835.00 MHz, 1 GHz to 9 GHz, Emission Limitations for Cellular Equipment Plot



Date: 29.AUG.2016 09:35:09



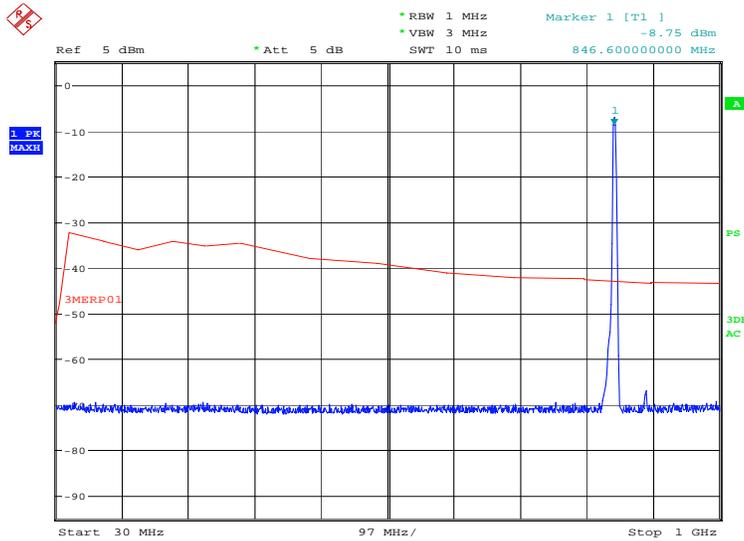
Product Service

WCDMA FDD V, 846.60 MHz, Emission Limitations for Cellular Equipment Results

Frequency (MHz)	Emission Results (dBm)
*	

*No emissions were detected within 10 dB of the limit.

WCDMA FDD V, 846.60 MHz, 30 MHz to 1 GHz, Emission Limitations for Cellular Equipment Plot

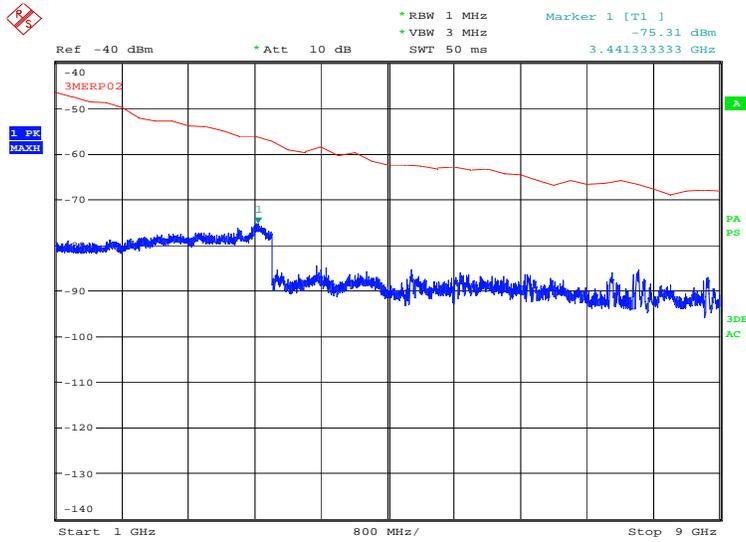


Date: 29.AUG.2016 10:44:30



Product Service

WCDMA FDD V, 846.60 MHz, 1 GHz to 9 GHz, Emission Limitations for Cellular Equipment Plot



Date: 29.AUG.2016 09:49:59

FCC 47 CFR Part 22, Limit Clause 22.917 (a)

43+10log(P) or -13 dBm



Product Service

2.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

2.5.1 Specification Reference

FCC 47 CFR Part 22, Clause 22.917 (a)
FCC 47 CFR Part 2, Clause 2.1051

2.5.2 Equipment Under Test and Modification State

S/N: IMEI 004401115905164 - Modification State 0

2.5.3 Date of Test

6 September 2016

2.5.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.5.5 Test Procedure

The test was performed in accordance with KDB 971168 v02r02, clause 6.

2.5.6 Environmental Conditions

Ambient Temperature	24.9°C
Relative Humidity	59.0%



Product Service

2.5.7 Test Results

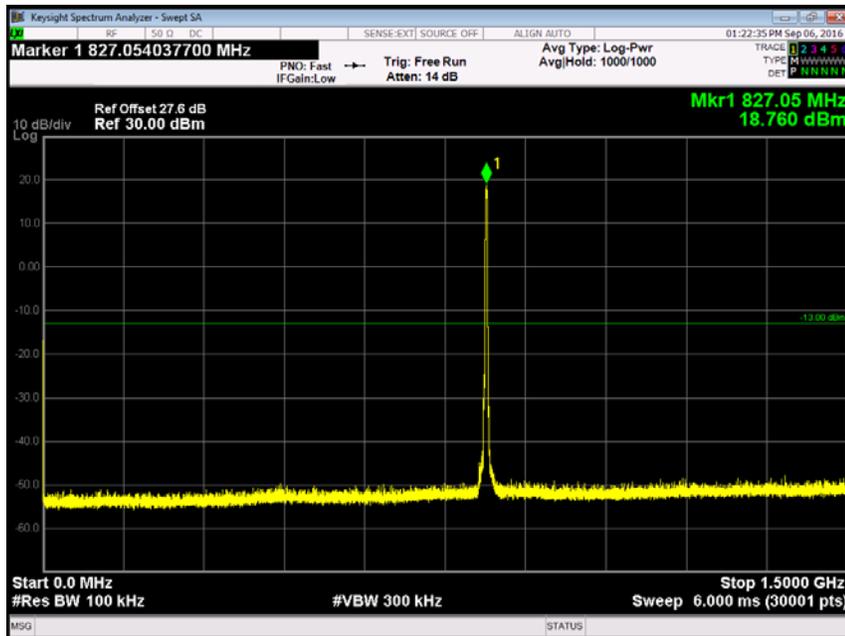
4.0 V DC Supply

WCDMA FDD V, 826.40 MHz, Spurious Emissions at Antenna Terminals Results

Frequency (MHz)	Emission Results (dBm)
*	

*No emissions were detected within 20 dB of the limit.

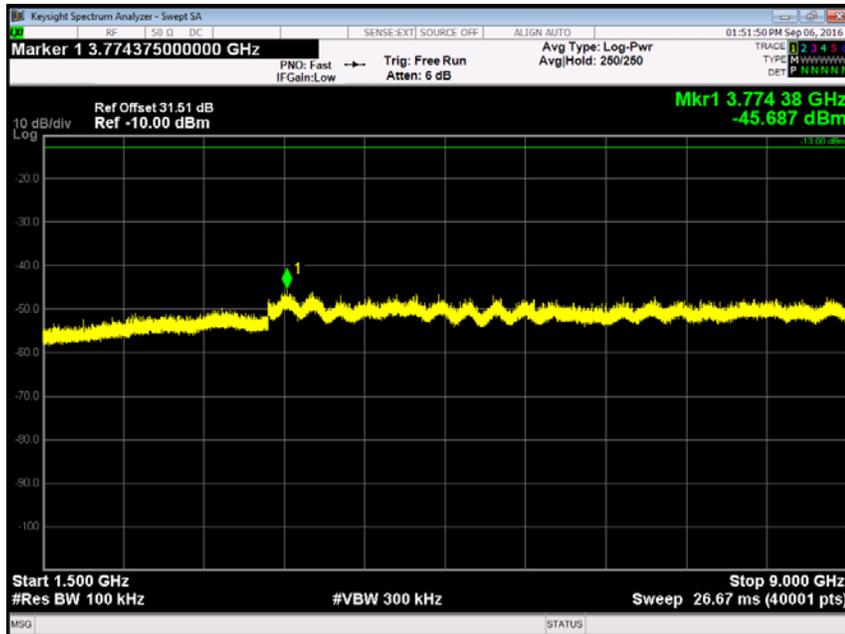
WCDMA FDD V, 826.40 MHz, 9 kHz to 1.5 GHz, Spurious Emissions at Antenna Terminals Plot





Product Service

WCDMA FDD V, 826.40 MHz, 1.5 GHz to 9 GHz, Spurious Emissions at Antenna Terminals Plot





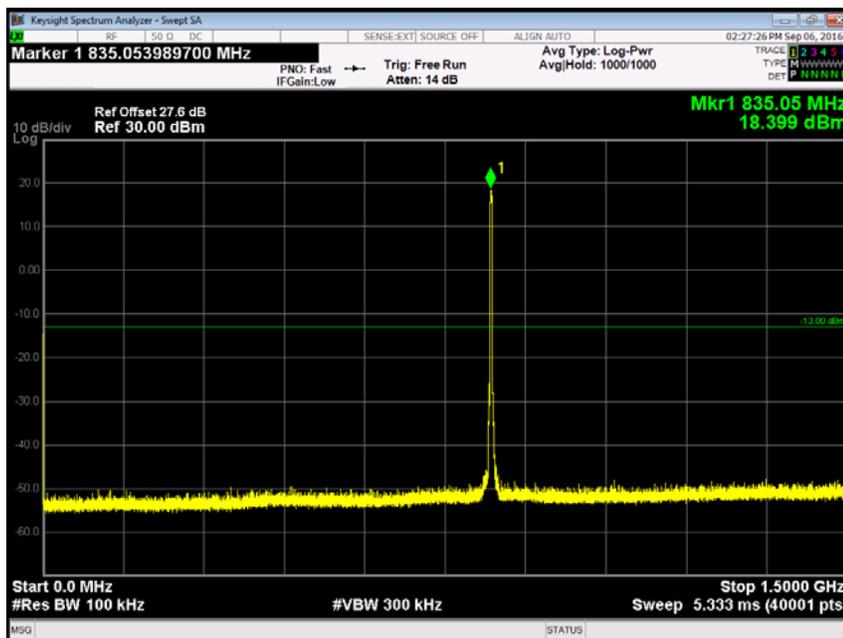
Product Service

WCDMA FDD V, 835.00 MHz, Spurious Emissions at Antenna Terminals Results

Frequency (MHz)	Emission Results (dBm)
*	

*No emissions were detected within 20 dB of the limit.

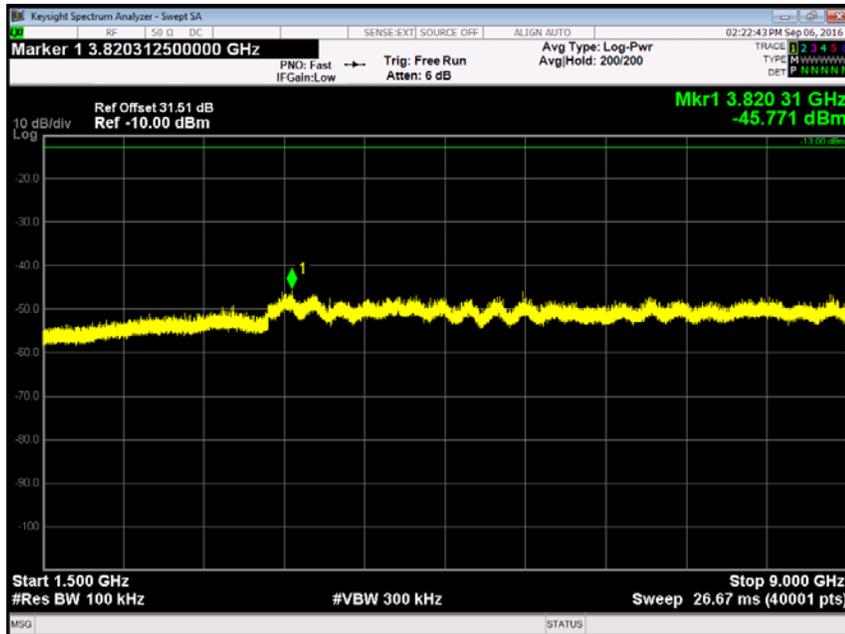
WCDMA FDD V, 835.00 MHz, 9 kHz to 1.5 GHz, Spurious Emissions at Antenna Terminals Plot





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WCDMA FDD V, 835.00 MHz, 1.5 GHz to 9 GHz, Spurious Emissions at Antenna Terminals Plot





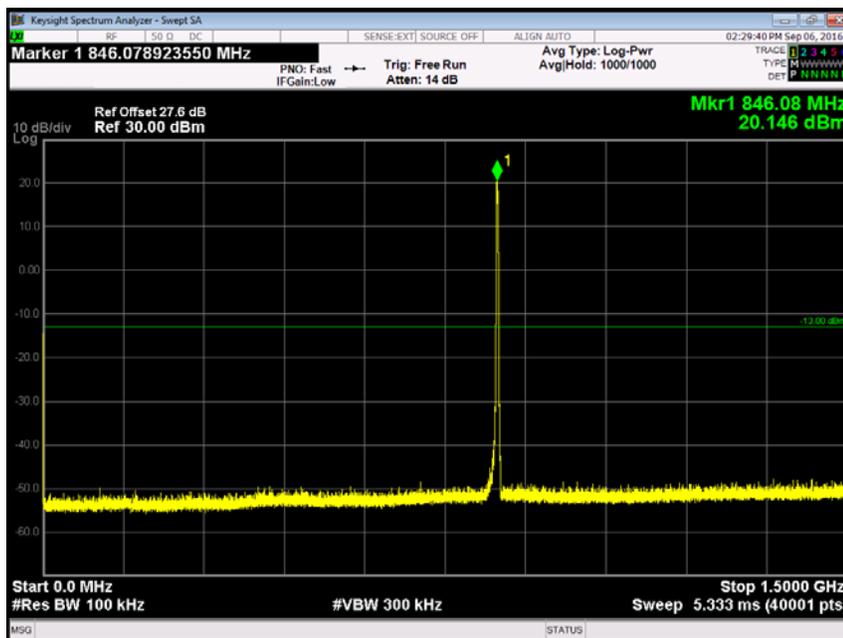
Product Service

WCDMA FDD V, 846.60 MHz, Spurious Emissions at Antenna Terminals Results

Frequency (MHz)	Emission Results (dBm)
*	

*No emissions were detected within 20 dB of the limit.

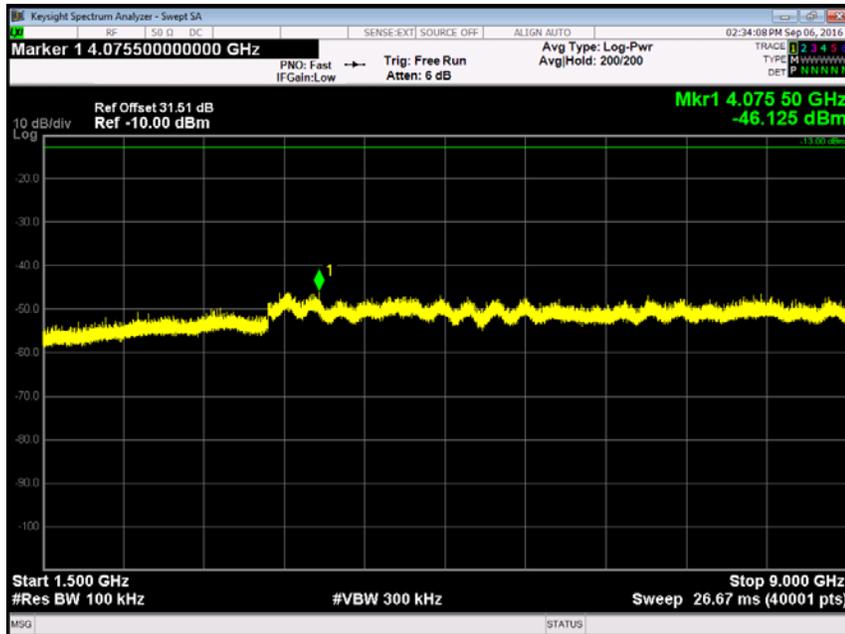
WCDMA FDD V, 846.60 MHz, 9 kHz to 1.5 GHz, Spurious Emissions at Antenna Terminals Plot





Product Service

WCDMA FDD V, 846.60 MHz, 1.5 GHz to 9 GHz, Spurious Emissions at Antenna Terminals Plot



FCC 47 CFR Part 22, Limit Clause 22.917 (a)

43+10log(P) or -13 dBm



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2.6 26 dB BANDWIDTH**2.6.1 Specification Reference**

FCC 47 CFR Part 22, Clause 22.917 (b)
FCC 47 CFR Part 2, Clause 2.1049 (h)

2.6.2 Equipment Under Test and Modification State

S/N: IMEI 004401115905164 - Modification State 0

2.6.3 Date of Test

30 August 2016

2.6.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.6.5 Test Procedure

The test was performed in accordance with KDB 971168, v02r02, Clause 4.2.

2.6.6 Environmental Conditions

Ambient Temperature	23.1°C
Relative Humidity	48.8%



Product Service

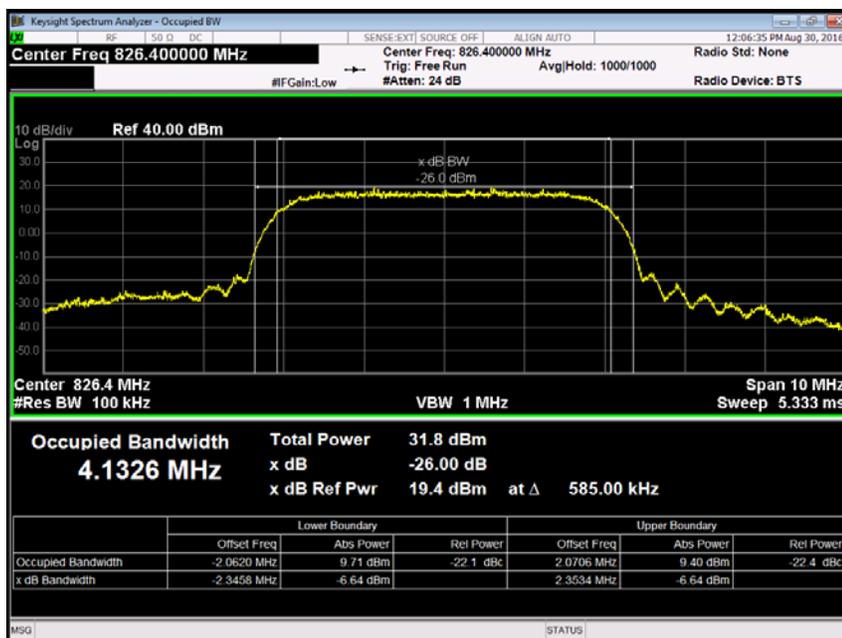
2.6.7 Test Results

4.0 V DC Supply

WCDMA FDD V, QPSK, 26 dB Bandwidth Results

826.40 MHz	835.00 MHz	846.60 MHz
kHz	kHz	kHz
4699.2	4694.8	4683.8

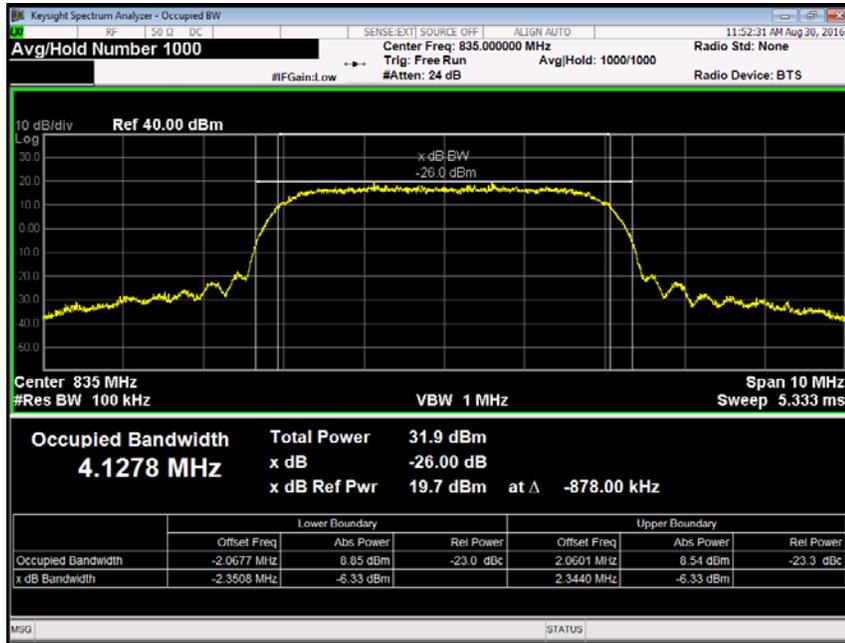
WCDMA FDD V, 826.40 MHz, QPSK, 26 dB Bandwidth Plot



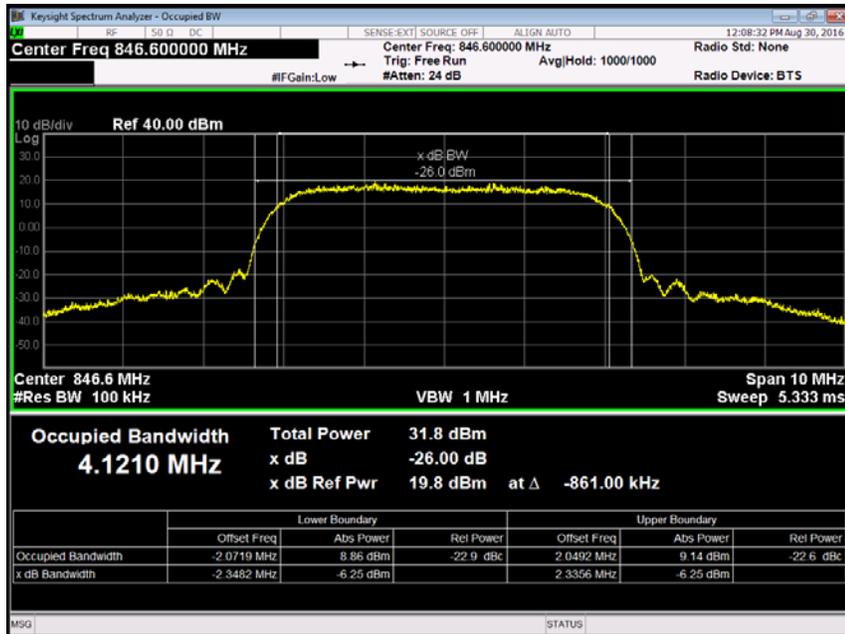


Product Service

WCDMA FDD V, 835.00 MHz, QPSK, 26 dB Bandwidth Plot



WCDMA FDD V, 846.60 MHz, QPSK, 26 dB Bandwidth Plot



FCC 47 CFR Part 22, Limit Clause

None specified.



2.7 MODULATION CHARACTERISTICS

2.7.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1047 (d)

2.7.2 Test Results

WCDMA FDD V, Modulation Characteristics, Customer Description

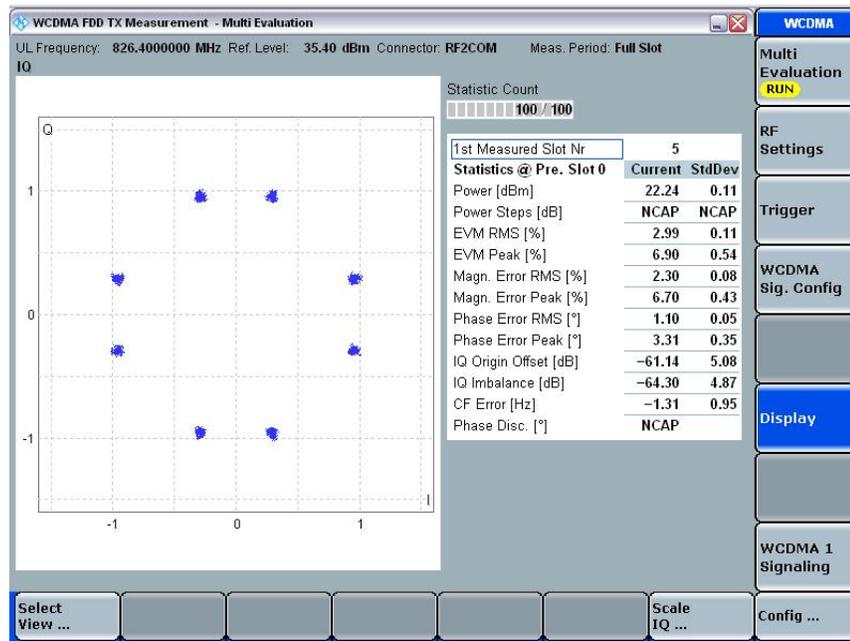
For the period of test the EUT met the requirements of FCC CFR 47 Part 2 for Modulation Characteristics.

The test results are shown below.

4.0 V DC Supply

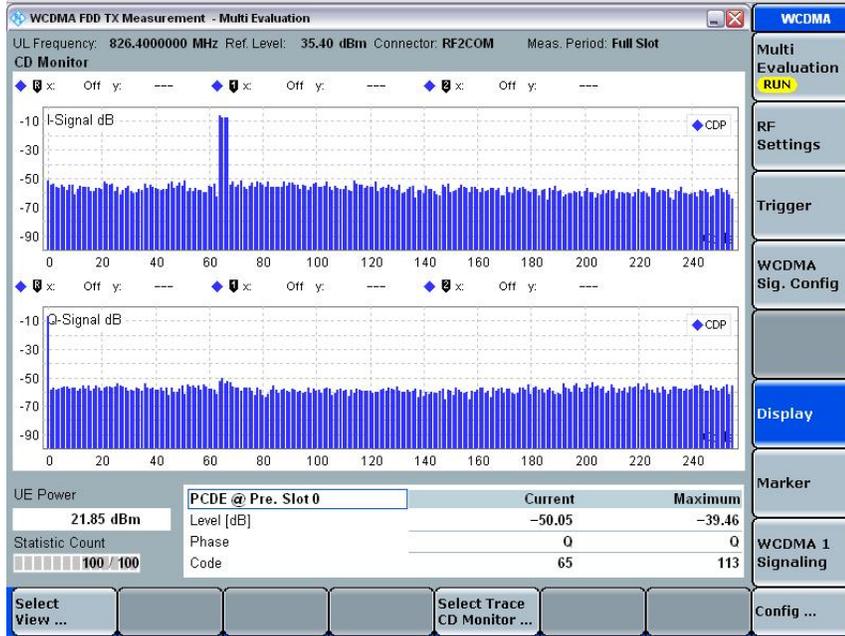
QPSK

Constellation Diagram

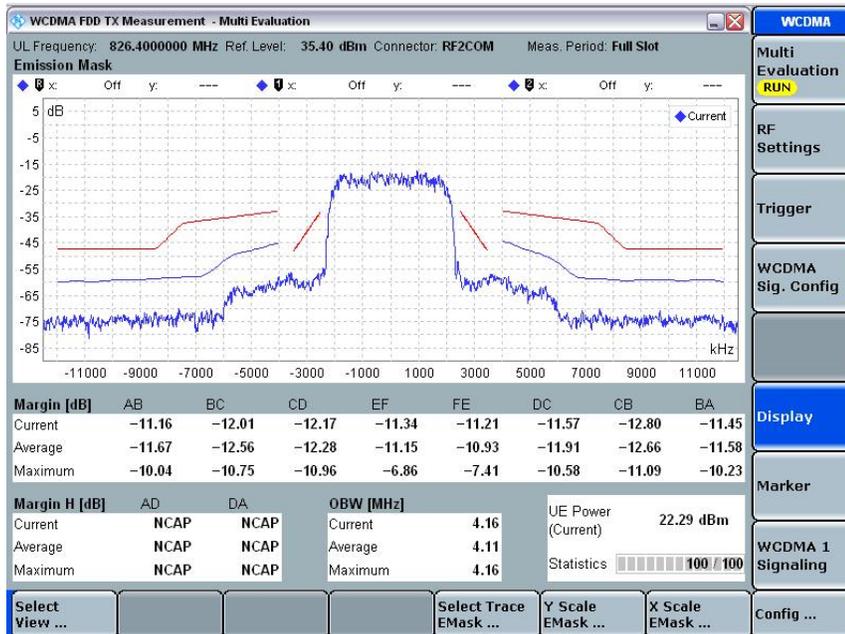




I and Q Code Domain



Spectrum Emission Mask



FCC 47 CFR Part 2, Limit Clause 2.1047 (d)

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.



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SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.1 - Frequency Tolerance					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	442	12	18-Jan-2017
Attenuator (20dB/ 2W)	Pasternack	PE7004-20	489	12	30-Oct-2016
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	5-Mar-2017
Radio Communications Test Set	Rohde & Schwarz	CMU 200	2809	12	19-Jul-2017
Climatic Chamber	TAS	Micro 225	2892	-	O/P Mon
Thermocouple Thermometer	Fluke	51	3174	12	9-Dec-2016
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Power Divider	Weinschel	1506A	3345	12	7-Jun-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	5-Mar-2017
Hygropalm Temperature and Humidity Meter	Rotronic	HP21	4410	12	27-Apr-2017
2 metre SMA Cable	Florida Labs	SMS-235SP-78.8-SMS	4518	12	16-Feb-2017
1 metre K-Type Cable	Florida Labs	KMS-180SP-39.4-KMS	4519	12	16-Feb-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	8-Oct-2016
2 Channel PSU	Rohde & Schwarz	HMP2020	4735	-	TU
Section 2.2 - Spurious Emissions at Band Edge					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	442	12	18-Jan-2017
Multimeter	Fluke	75 Mk3	455	12	10-Sep-2016
20dB/2W Attenuator	Narda	4772-20	462	-	TU
Attenuator (20dB/ 2W)	Pasternack	PE7004-20	489	12	30-Oct-2016
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	5-Mar-2017
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Power Divider	Weinschel	1506A	3345	12	7-Jun-2017
Combiner/Splitter	Weinschel	1506A	3878	12	7-Jun-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	7-Sep-2016
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	5-Mar-2017
PXA Signal Analyser	Agilent Technologies	N9030A PXA	4409	12	8-Mar-2017
Digital Multi-meter	Iso-tech	IDM93N	4435	12	25-Aug-2017
2 metre SMA Cable	Florida Labs	SMS-235SP-78.8-SMS	4518	12	16-Feb-2017
1 metre K-Type Cable	Florida Labs	KMS-180SP-39.4-KMS	4519	12	16-Feb-2017
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	3-Feb-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	8-Oct-2016
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	8-Oct-2016
2 Channel PSU	Rohde & Schwarz	HMP2020	4735	-	TU



Product Service

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.3 - Maximum Conducted Output Power					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	442	12	18-Jan-2017
Multimeter	Fluke	75 Mk3	455	12	10-Sep-2016
20dB/2W Attenuator	Narda	4772-20	462	-	TU
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	3-Sep-2016
Hygrometer	Rotronic	I-1000	3220	12	19-Aug-2016
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	2-Sep-2016
Combiner/Splitter	Weinschel	1506A	3878	12	7-Jun-2017
P-Series Power Meter	Agilent Technologies	N1911A	3980	12	25-Sep-2016
50 MHz-18 GHz Wideband Power Sensor	Agilent Technologies	N1921A	3982	12	25-Sep-2016
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	7-Sep-2016
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	3-Sep-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	3-Feb-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	8-Oct-2016
2 Channel PSU	Rohde & Schwarz	HMP2020	4735	-	TU
Section 2.4 - Emission Limitations for Cellular Equipment					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	442	12	18-Jan-2017
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	11-Jun-2017
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	2-Nov-2016
9m RF Cable (N Type)	Rhophase	NPS-2303-9000-NPS	3791	-	TU
Tilt Antenna Mast	matur GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	matur GmbH	NCD	3917	-	TU
Digital thermo Hygrometer	Radio Spares	1260	4300	12	23-Aug-2017
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	-	TU
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	29-Dec-2016
Section 2.5 - Spurious Emissions at Antenna Terminals					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	442	12	18-Jan-2017
Multimeter	Fluke	75 Mk3	455	12	10-Sep-2016
20dB/2W Attenuator	Narda	4772-20	462	-	TU
Attenuator (20dB/ 2W)	Pasternack	PE7004-20	489	12	30-Oct-2016
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	5-Mar-2017
Filter	Daden Anthony Ass	MH-1500-7SS	2778	12	5-Feb-2017
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Power Divider	Weinschel	1506A	3345	12	7-Jun-2017
High Pass Filter (3GHz)	RLC Electronics	F-100-3000-5-R	3349	12	1-Jun-2017
Signal Generator: 10MHz to 20GHz	Rohde & Schwarz	SMR20	3475	12	26-Feb-2017
Combiner/Splitter	Weinschel	1506A	3878	12	7-Jun-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	7-Sep-2016
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	5-Mar-2017
PXA Signal Analyser	Agilent Technologies	N9030A PXA	4409	12	8-Mar-2017
Digital Multi-meter	Iso-tech	IDM93N	4435	12	25-Aug-2017
2 metre SMA Cable	Florida Labs	SMS-235SP-78.8-SMS	4518	12	16-Feb-2017
1 metre K-Type Cable	Florida Labs	KMS-180SP-39.4-KMS	4519	12	16-Feb-2017
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	3-Feb-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	8-Oct-2016
2 Channel PSU	Rohde & Schwarz	HMP2020	4735	-	TU



Product Service

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.6 - 26 dB Bandwidth					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	442	12	18-Jan-2017
Multimeter	Fluke	75 Mk3	455	12	10-Sep-2016
20dB/2W Attenuator	Narda	4772-20	462	-	TU
Attenuator (20dB/ 2W)	Pasternack	PE7004-20	489	12	30-Oct-2016
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	5-Mar-2017
Radio Communications Test Set	Rohde & Schwarz	CMU 200	2809	12	19-Jul-2017
Climatic Chamber	TAS	Micro 225	2892	-	O/P Mon
Radio Communications Test Set	Rohde & Schwarz	CMU 200	3035	12	16-Nov-2016
Thermocouple Thermometer	Fluke	51	3174	12	9-Dec-2016
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Power Divider	Weinschel	1506A	3345	12	7-Jun-2017
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	2-Sep-2016
Combiner/Splitter	Weinschel	1506A	3878	12	7-Jun-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	7-Sep-2016
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	5-Mar-2017
PXA Signal Analyser	Agilent Technologies	N9030A PXA	4409	12	8-Mar-2017
Hygropalm Temperature and Humidity Meter	Rotronic	HP21	4410	12	27-Apr-2017
2 metre SMA Cable	Florida Labs	SMS-235SP-78.8-SMS	4518	12	16-Feb-2017
1 metre K-Type Cable	Florida Labs	KMS-180SP-39.4-KMS	4519	12	16-Feb-2017
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	3-Feb-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	8-Oct-2016
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	8-Oct-2016
2 Channel PSU	Rohde & Schwarz	HMP2020	4735	-	TU

TU – Traceability Unscheduled

O/P MON – Output Monitored with Calibrated Equipment



Product Service

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	MU
Frequency Tolerance	± 46.70 Hz
Modulation Characteristics	-
Maximum Conducted Output Power	± 0.70 dB
Spurious Emissions at Antenna Terminals	± 3.454 dB
Emission Limitations for Cellular Equipment	30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB
26 dB Bandwidth	± 16.74 kHz
Spurious Emissions at Band Edge	± 3.454 dB



Product Service

SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



Product Service

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

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