Product Service

Choose certainty.
Add value.

Report On

FCC Testing of the Sharp SHF32 Quad-band GSM (850/900/1800/1900) & Dual-band UMTS (FDDI, FDDV) & Dual-band LTE (B1, B26) multi mode cellular phone with Bluetooth, WLAN, SRD(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: APYHRO00224

Document 75930192 Report 07 Issue 1 June 2015

TÜV SÜD Product Service, Octagon House, Concorde Way, Segensworth North,
Fareham, Hampshire, United Kingdom, PO15 5RL
Tel: +44 (0) 1489 558100. Website: www.tuv-sud.co.uk

REPORT ON

FCC Testing of the
Sharp SHF32 Quad-band GSM (850/900/1800/1900) & Dual-band UMTS (FDDI, FDDV) & Dual-band LTE (B1, B26) multi mode cellular phone with Bluetooth, WLAN, SRD(FeliCa) and GPS
In accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 (WCDMA FDD V)

Document 75930192 Report 07 Issue 1

June 2015

PREPARED FOR

Sharp Communication Compliance Ltd
Inspired
Easthampstead Road
Bracknell
Berkshire
RG12 1NS

PREPARED BY

Natalie Bennett
Senior Administrator, Project Support

APPROVED BY

Simon Bennett
Authorised Signatory

DATED 25 June 2015

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);

M Choudhury M Russell G Lawler

Product Service

CONTENTS

Product Service

SECTION 1

REPORT SUMMARY

FCC Testing of the
Sharp SHF32 Quad-band GSM (850/900/1800/1900) & Dual-band UMTS (FDDI, FDDV) & Dual-band LTE (B1, B26) multi mode cellular phone with Bluetooth, WLAN, SRD(FeliCa) and GPS
In accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 (WCDMA FDD V)

1.1 INTRODUCTION

The information contained in this report is intended to show the verification of FCC Testing of the Sharp SHF32 Quad-band GSM (850/900/1800/1900) & Dual-band UMTS (FDDI, FDDV) & Dual-band LTE (B1, B26) multi mode cellular phone with Bluetooth, WLAN, SRD(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
Model Number(s)	SHF32
Serial Number(s)	IMEI 004401115362523 IMEI 004401115362382
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 22 (2014) FCC 47 CFR Part 2 (2014)
Disposal Reference Number Date	Held Pending Disposal Not Applicable Not Applicable
Order Number Date	10534 17 April 2015
Start of Test	24 May 2015
Finish of Test	11 June 2015
Name of Engineer(s)	M Choudhury M Russell G Lawler R Henley
Related Document(s)	ANSI C63.4 (2009) ANSI TIA-603-C (2004)

Product Service

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 (b)	2.1049 (h)	26 dB Bandwidth	Pass	
2.6	-	2.1047 (d)	Modulation Characteristics	-	Customer Declaration

1.3 PRODUCT TECHNICAL DESCRIPTION

Please refer to the SHF32 Model Description Form.

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Sharp SHF32 Quad-band GSM (850/900/1800/1900) & Dual-band UMTS (FDDI, FDDV) & Dual-band LTE (B1, B26) multi mode cellular phone with Bluetooth, WLAN, SRD(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.

Product Service

SECTION 2

TEST DETAILS

FCC Testing of the
Sharp SHF32 Quad-band GSM (850/900/1800/1900) & Dual-band UMTS (FDDI, FDDV) & Dual-band LTE (B1, B26) multi mode cellular phone with Bluetooth, WLAN, SRD(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

SHF32 S/N: IMEI 004401115362523 - Modification State 0

2.1.3 Date of Test

8 June 2015 & 9 June 2015

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

The frequency measurement function on a CMU 200 was used to measure the frequency error. The CMU 200 was configured in RMC, 12.2 kbps at an uplink frequency of 835.0MHz.

2.1.6 Environmental Conditions

Ambient Temperature	21.4 - 24.9°C
Relative Humidity	30.9 - 33.6%

Product Service

2.1.7 Test Results

4.0 V DC Supply

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

Temperature	Fundamental Frequency Deviation (ppm)
-30 ºC	-0.008
-20 ºC	0.007
-10 ºC	-0.007
0 ºC	0.008
+10 ºC	-0.008
+20 ºC	0.008
+30 ºC	-0.008
+40 ºC	0.006
+50 ºC	0.007

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

Voltage	Fundamental Frequency Deviation (ppm)
4.0 V DC	-0.008
3.7 V DC	-0.008

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	-	-

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

SHF32 S/N: IMEI 004401115362523 - Modification State 0

2.2.3 Date of Test

29 May 2015

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

This test was performed in accordance with KDB 971168 D01 v02r02, clause 6.

Remarks

A Peak detector and Max hold trace were used as the worst case measurement settings.

2.2.6 Environmental Conditions

Ambient Temperature	24.0°C
Relative Humidity	39.1%

Product Service

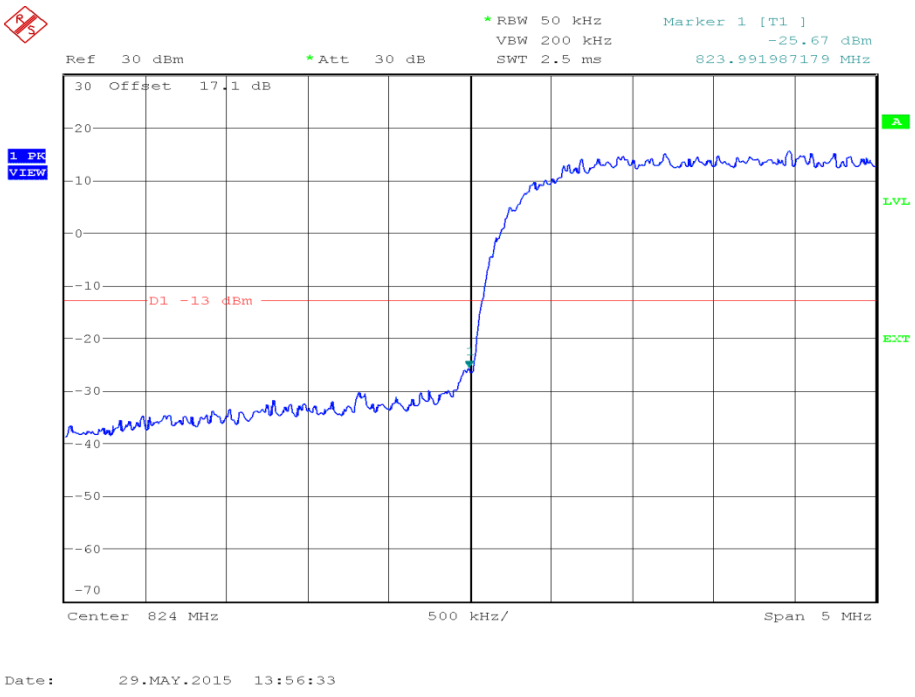
2.2.7 Test Results

4.0 V DC Supply

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

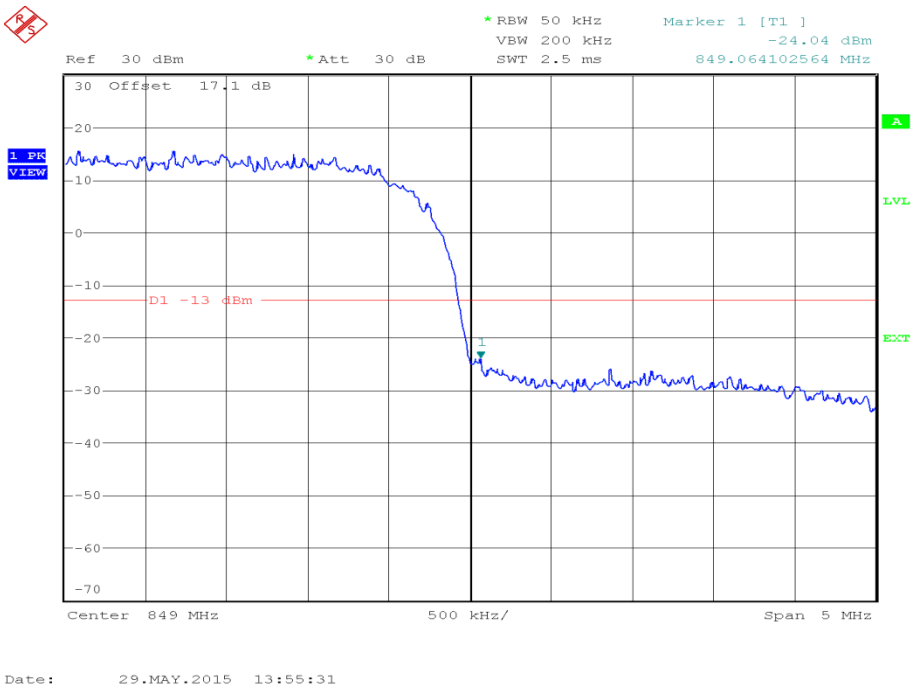
Block Edge	Frequency Block (MHz)	
	A :824.0 MHz – 835.0 MHz	B :846.5 MHz – 849.0 MHz
Lower	Channel: 4132 824.4 MHz	-
Upper	-	Channel: 4233 846.6 MHz

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



Product Service

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



FCC 47 CFR Part 22, Limit Clause 22.905 and 22.917(a)

-13 dBm at block edge.

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

SHF32 S/N: IMEI 004401115362523 - Modification State 0

2.3.3 Date of Test

29 May 2015

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

This test was performed in accordance with KDB 971168 D01 v02r02, clause 5.2.3.

Remarks

Results have been expressed in terms of ERP as per KDB 412172 D01 v01.

2.3.6 Environmental Conditions

Ambient Temperature	24.0°C
Relative Humidity	38.0%

2.3.7 Test Results

4.0 V DC Supply

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

Frequency	Conducted Power (dBm)	Antenna Gain	EIRP (dBm)	EIRP (W)
826.40 MHz	23.30	2.0 dBi	23.15	0.207
835.00 MHz	23.27	2.0 dBi	23.12	0.205
846.60 MHz	23.24	2.0 dBi	23.09	0.204

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

Mobile Transmitters: 7 W or 38.45 dBm

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

SHF32 S/N: IMEI 004401115362382 - Modification State 0

2.4.3 Date of Test

24 May 2015

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

The test was performed in accordance with KDB 971168 D01 v02r02, Clause 5.8 and 7 and ANSI TIA-603-C, Clause 2.2.12. The EUT was configured as defined in ANSI C63.4.

2.4.6 Environmental Conditions

Ambient Temperature	21.4°C
Relative Humidity	42.0%

Product Service

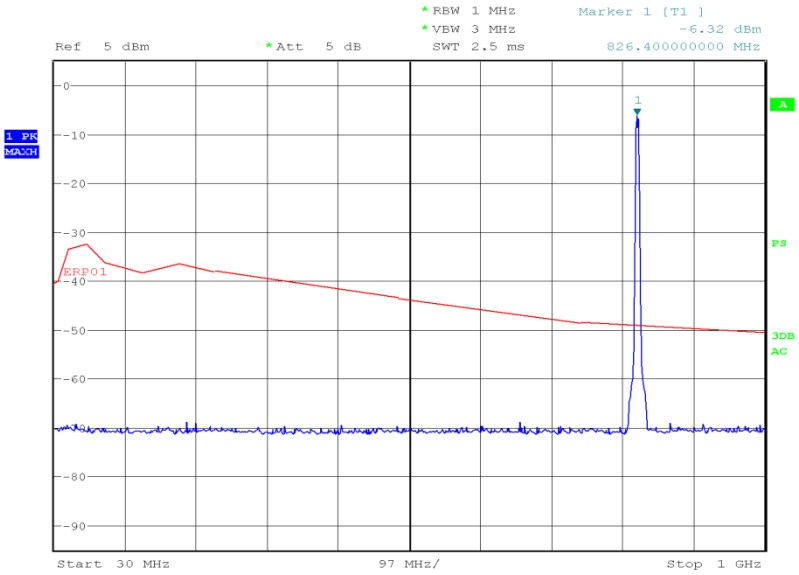
2.4.7 Test Results

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.

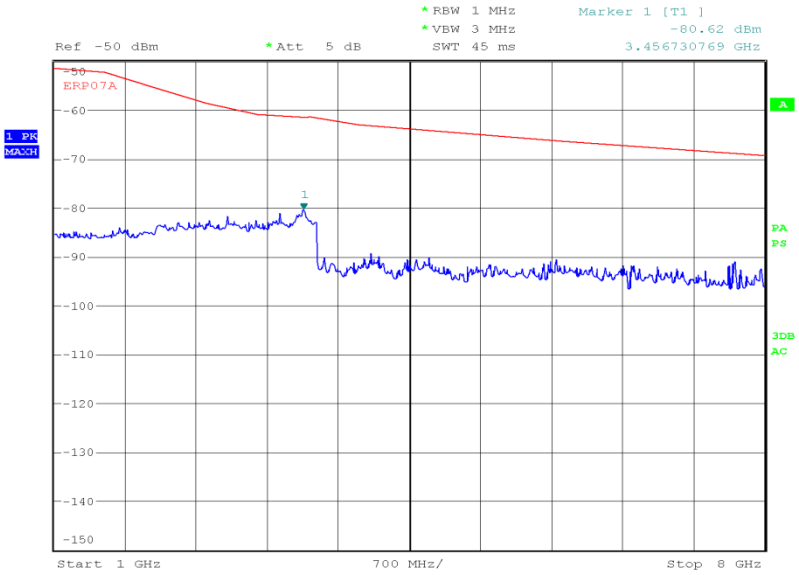
WCDMA FDD V, 826.40 MHz, 30 MHz to 1 GHz, Emission Limitations for Celluar Equipment Plot



Date: 24.MAY.2015 20:45:29

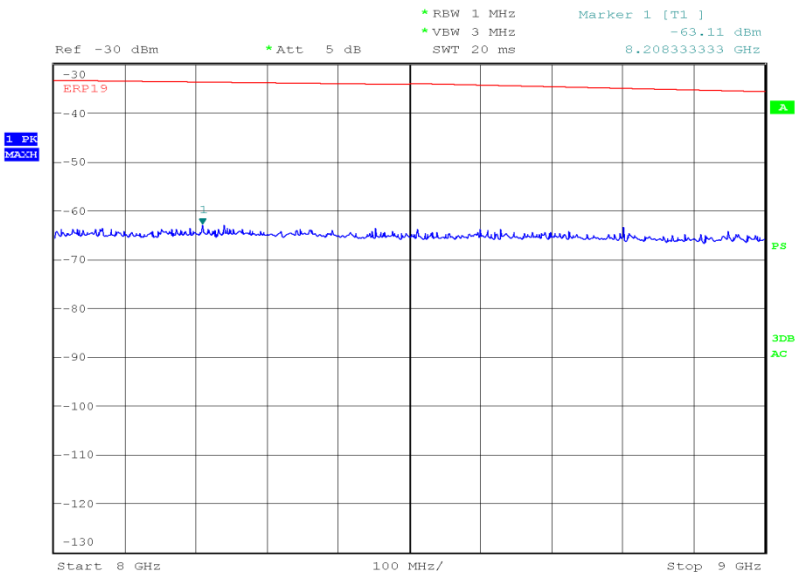
Product Service

WCDMA FDD V, 826.40 MHz, 1 GHz to 8 GHz, Emission Limitations for Celluar Equipment Plot



Date: 24.MAY.2015 22:49:31

WCDMA FDD V, 826.40 MHz, 8 GHz to 9 GHz, Emission Limitations for Celluar Equipment Plot



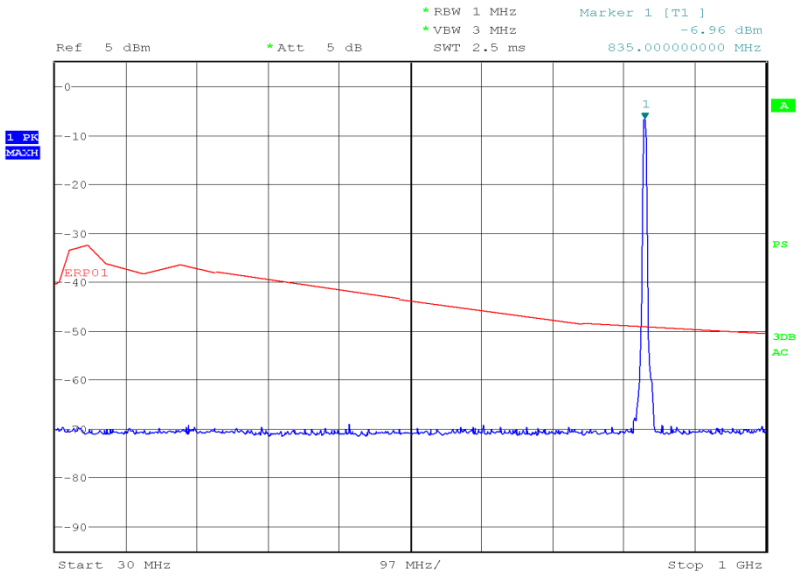
Date: 24.MAY.2015 21:21:24

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.

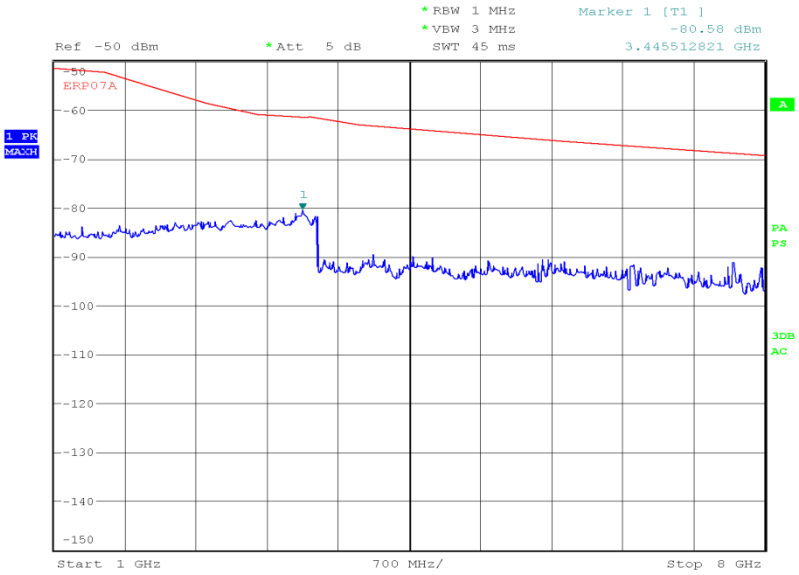
WCDMA FDD V, 835.00 MHz, 30 MHz to 1 GHz, Emission Limitations for Celluar Equipment Plot



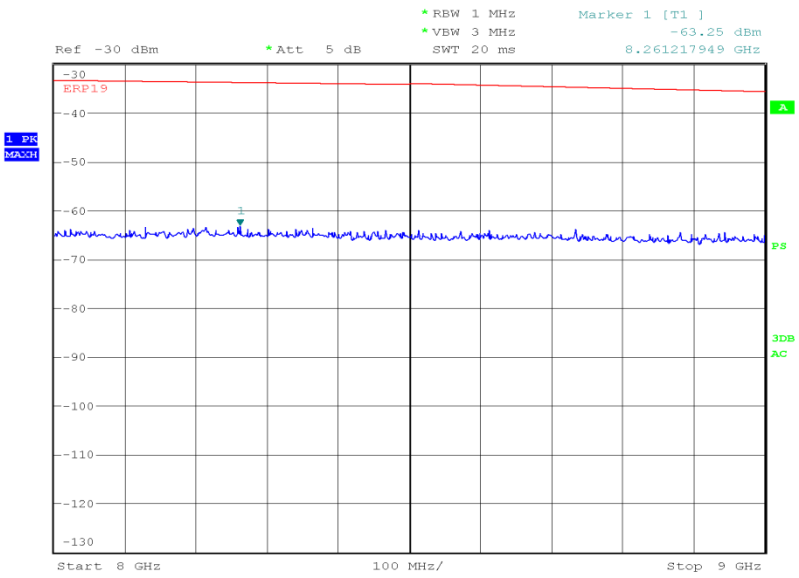
Date: 24.MAY.2015 20:48:13

Product Service

WCDMA FDD V, 835.00 MHz, 1 GHz to 8 GHz, Emission Limitations for Celluar Equipment Plot



WCDMA FDD V, 835.00 MHz, 8 GHz to 9 GHz, Emission Limitations for Celluar Equipment Plot



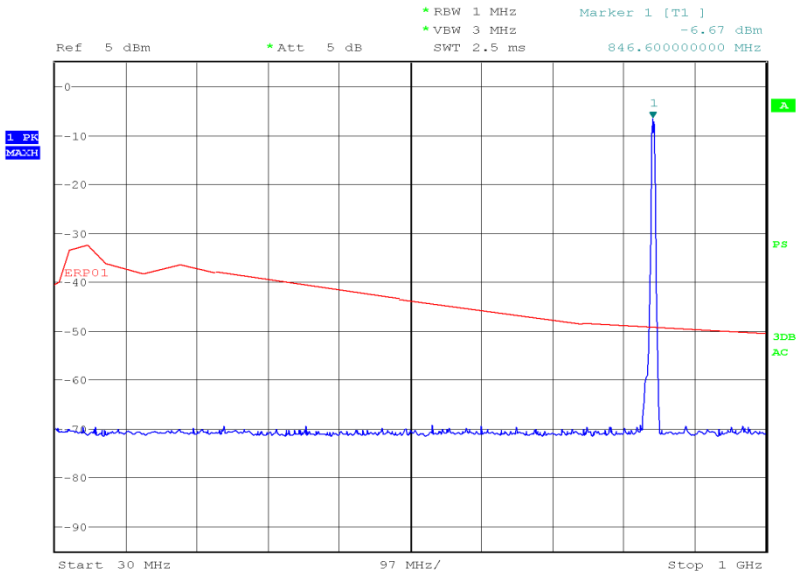
Product Service

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.

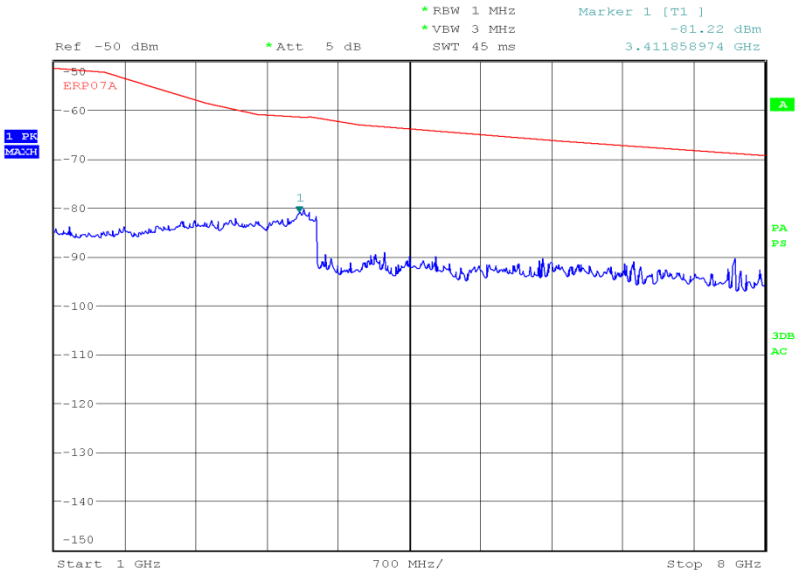
WCDMA FDD V, 846.60 MHz, 30 MHz to 1 GHz, Emission Limitations for Celluar Equipment Plot



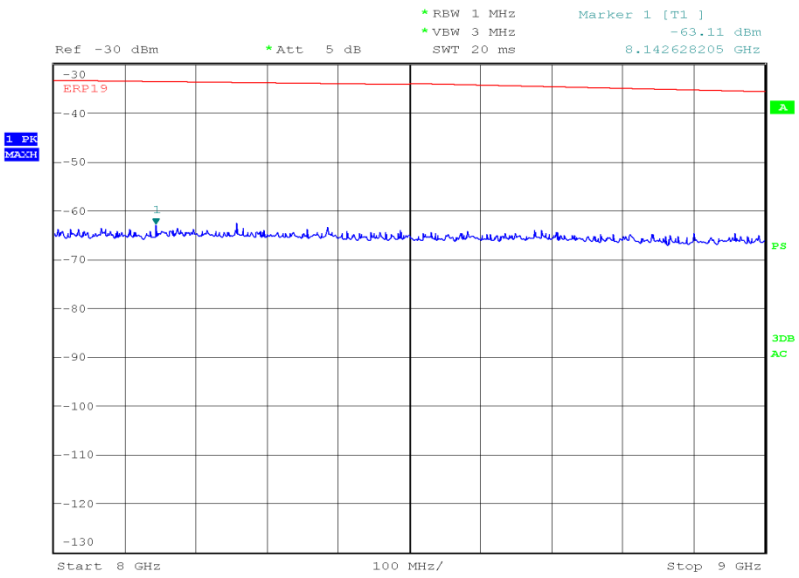
Date: 24.MAY.2015 20:50:13

Product Service

WCDMA FDD V, 846.60 MHz, 1 GHz to 8 GHz, Emission Limitations for Celluar Equipment Plot



WCDMA FDD V, 846.60 MHz, 8 GHz to 9 GHz, Emission Limitations for Celluar Equipment Plot



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

43+10log(P) or -13 dBm

2.5 26 dB BANDWIDTH

2.5.1 Specification Reference

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

2.5.2 Equipment Under Test and Modification State

SHF32 S/N: IMEI 004401115362523 - Modification State 0

2.5.3 Date of Test

29 May 2015

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

This test was performed in accordance with KDB 971168 D01 v02r02, clause 4.1.

2.5.6 Environmental Conditions

Ambient Temperature	24.0°C
Relative Humidity	38.8%

Product Service

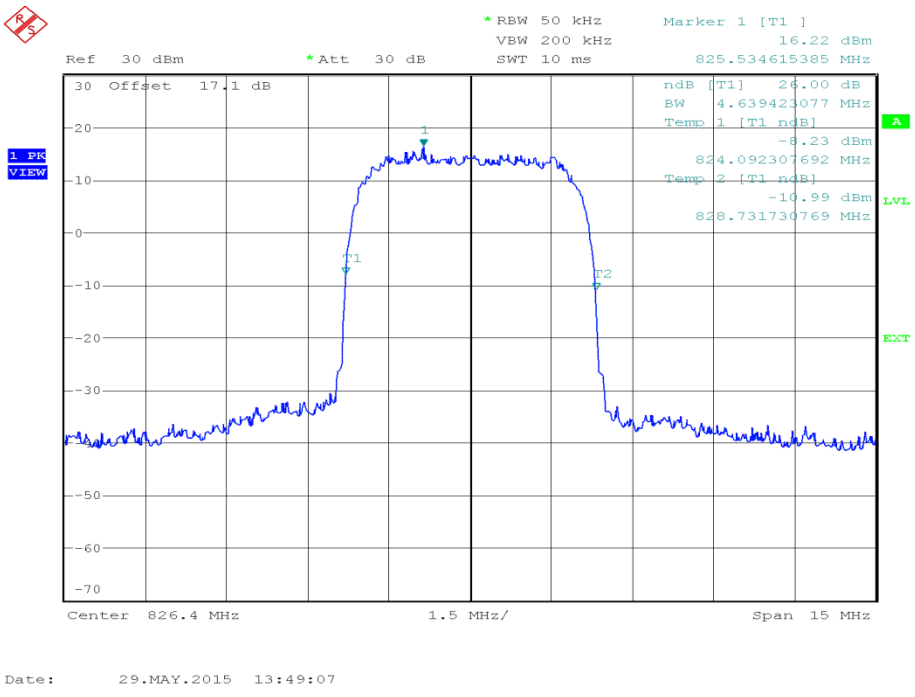
2.5.7 Test Results

4.0 V DC Supply

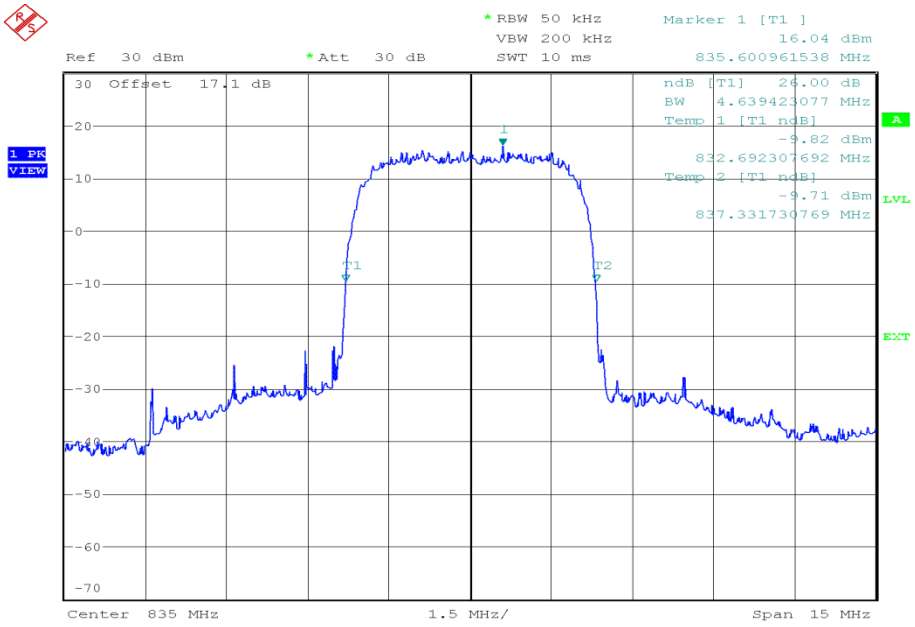
WCDMA FDD V, QPSK, 26 dB Bandwidth Results

826.40 MHz	835.00 MHz	846.60 MHz
kHz	kHz	kHz
4639.423	4639.423	4663.462

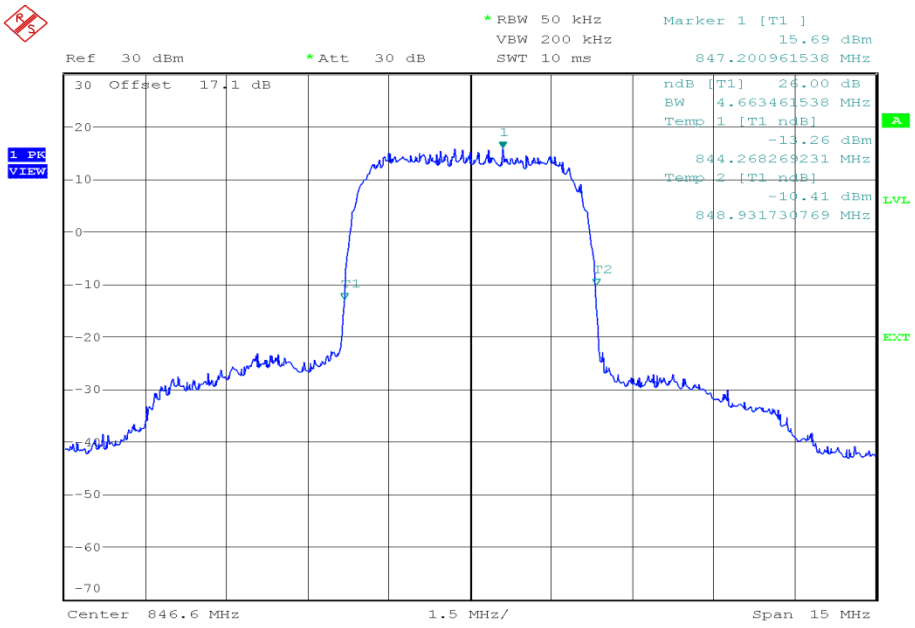
WCDMA FDD V, 826.40 MHz, QPSK, 26 dB Bandwidth Plot



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.

Product Service

2.6 MODULATION CHARACTERISTICS

2.6.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1047 (d)

2.6.2 Equipment Under Test

SHF32

2.6.3 Test Results

WCDMA FDD V, Modulation Characteristics, Customer Description

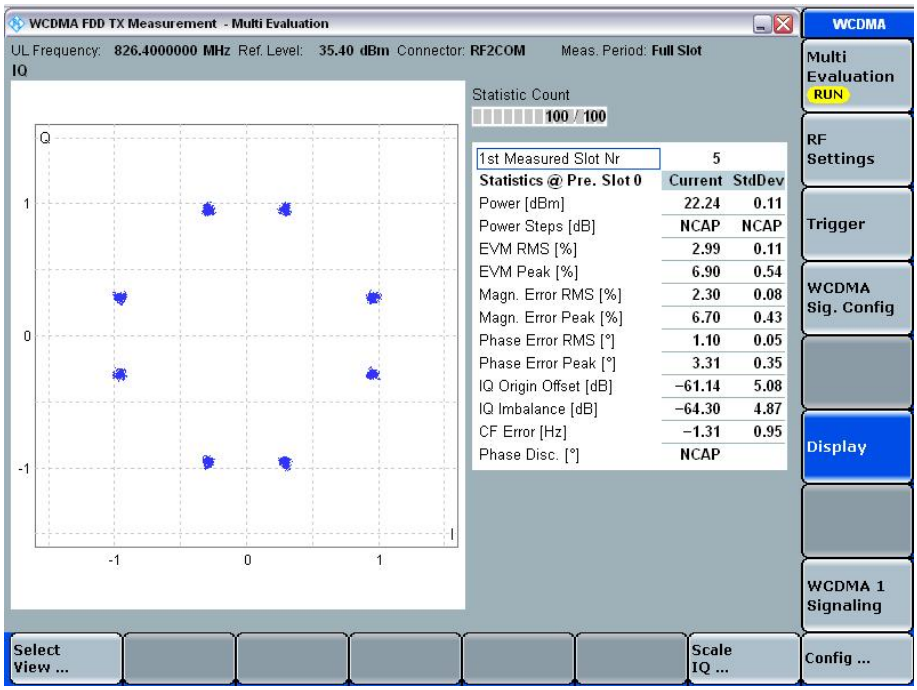
For the period of test the EUT met the requirements of FCC CFR 47 Part 2 for Modulation Characteristics.

The test results are shown below.

4.0 V DC Supply

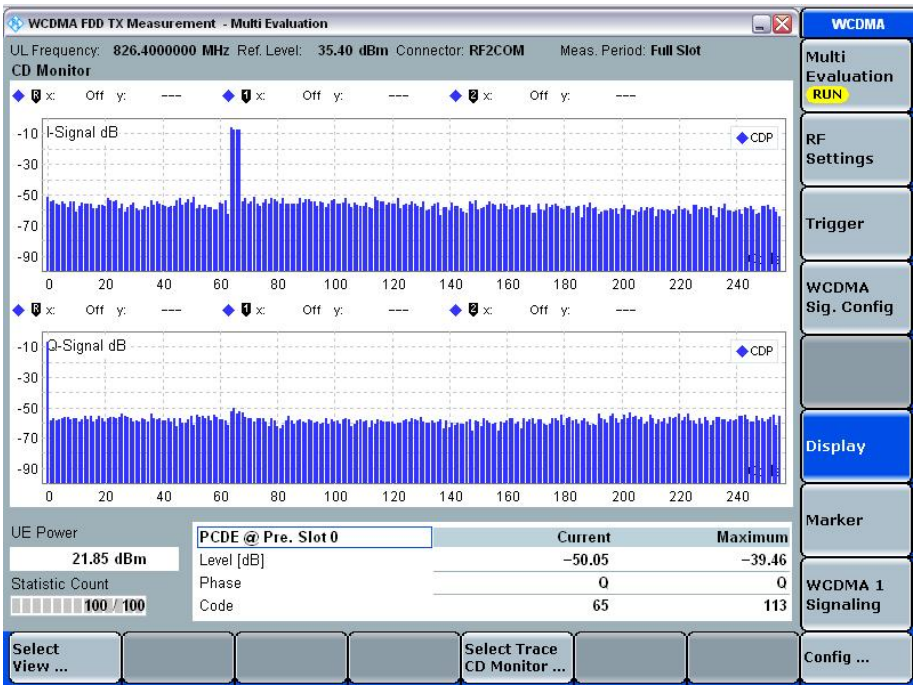
QPSK

Constellation Diagram

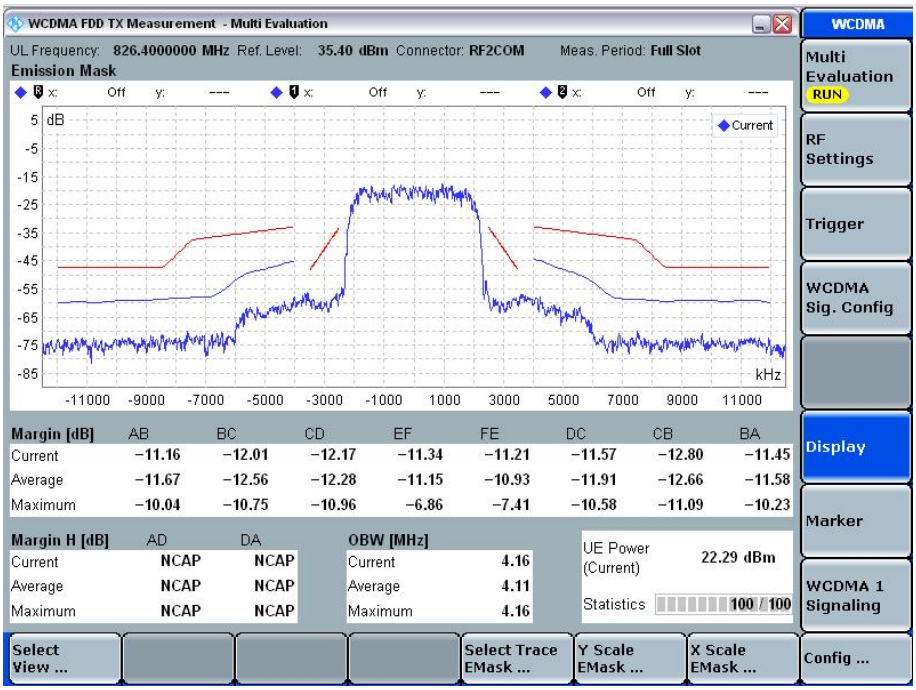


Product Service

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.

Product Service

SECTION 3

TEST EQUIPMENT USED

Product Service

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	39	12	15-Dec-2015
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Power Supply Unit	Farnell	H60-25	1092	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	28-Jul-2015
Multimeter	Iso-tech	IDM101	2419	12	7-Oct-2015
Digital Thermometer	Digitron	T208	2831	12	31-Jul-2015
Radio Communications Test Set	Rohde & Schwarz	CMU 200	3035	12	6-Nov-2015
Attenuator (30dB/50W)	Aeroflex / Weinschel	47-30-34	3164	12	12-Dec-2015
Thermocouple Thermometer	Fluke	51	3173	12	4-Dec-2015
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
MasterCard Reference Terminal	Sagem Monetel	EFT 30	3745	-	TU
DC - 12.4 GHz 10 dB Attenuator 1 W	Suhner	6810.17.A	3964	12	22-Oct-2015
DC - 12.4 GHz 10 dB Attenuator	Suhner	6810.17.A	3965	12	22-Oct-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	7-Nov-2015
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	28-Jul-2015
2 metre SMA Cable	IW Microwave	3PS-1806LC-788-3PS	4525	12	29-Jan-2016
Section 2.2 - Spurious Emissions at Band Edge					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	39	12	15-Dec-2015
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Attenuator (10dB)	Weinschel	47-10-34	481	12	1-Apr-2016
Power Splitter	Weinschel	1506A	606	12	24-Mar-2016
Power Supply Unit	Farnell	H60-25	1092	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	28-Jul-2015
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	12	20-Jan-2016
Hygrometer	Rotronic	I-1000	2891	12	16-Jul-2015
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	12	16-Sep-2015
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	6-Aug-2015
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	3-Sep-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator 1 W	Suhner	6810.17.A	3964	12	22-Oct-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	7-Nov-2015
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	24-Sep-2015
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	28-Jul-2015
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016

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	39	12	15-Dec-2015
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
20dB/2W Attenuator	Narda	4772-20	462	-	TU
Attenuator (10dB)	Weinschel	47-10-34	481	12	1-Apr-2016
Power Supply Unit	Farnell	H60-25	1092	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	28-Jul-2015
Multimeter	Iso-tech	IDM101	2419	12	7-Oct-2015
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	12	20-Jan-2016
Hygrometer	Rotronic	I-1000	2891	12	16-Jul-2015
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	12	16-Sep-2015
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	6-Aug-2015
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	3-Sep-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator 1 W	Suhner	6810.17.A	3964	12	22-Oct-2015
P-Series Power Meter	Agilent Technologies	N1911A	3980	12	22-Sep-2015
P-Series Power Meter	Agilent Technologies	N1911A	3981	12	22-Sep-2015
50 MHz-18 GHz Wideband Power Sensor	Agilent Technologies	N1921A	3982	12	22-Sep-2015
50 MHz-18 GHz Wideband Power Sensor	Agilent Technologies	N1921A	3983	12	22-Sep-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	7-Nov-2015
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	24-Sep-2015
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	28-Jul-2015
2 metre N-Type Cable	IW Microwave	NPS-1806LC-788-NPS	4503	12	20-May-2016
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016
Section 2.4 - Emission Limitations for Cellular Equipment					
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	29-Apr-2016
Dual Power Supply Unit	Thurlby	PL320	288	-	TU
Pre-Amplifier	Phase One	PS04-0086	1533	12	23-Dec-2015
Screened Room (5)	Rainford	Rainford	1545	24	26-Jun-2015
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Filter (Hi Pass)	Lorch	9HP7-7000-SR	2833	12	5-Feb-2016
Antenna (Bilog)	Chase	CBL6143	2904	24	10-Jun-2015
Radio Communications Test Set	Rohde & Schwarz	CMU 200	3035	12	6-Nov-2015
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	27-Oct-2015
9m RF Cable (N Type)	Rhophase	NPS-2303-9000-NPS	3791	-	TU
Tilt Antenna Mast	maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	maturo Gmbh	NCD	3917	-	TU
Hygropalm Temperature and Humidity Meter	Rotronic	HP21	4410	12	15-Apr-2016
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4411	12	24-Mar-2016
2m K-Type Cable (Rx)	Scott Cables	KPS-1501-2000-KPS	4527	6	29-Jul-2015
0.5m SMA Cable (Rx)	Scott Cables	SLSLL18-SMSM-00.50M	4528	6	29-Jul-2015
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.5 - 26 dB Bandwidth					
Radio Communications Test Set	Rohde & Schwarz	CMU 200	39	12	15-Dec-2015
Power Supply Unit	Hewlett Packard	6253A	441	-	O/P Mon
Attenuator (10dB)	Weinschel	47-10-34	481	12	1-Apr-2016
Power Splitter	Weinschel	1506A	606	12	24-Mar-2016
Power Supply Unit	Farnell	H60-25	1092	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	28-Jul-2015
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	12	20-Jan-2016
Hygrometer	Rotronic	I-1000	2891	12	16-Jul-2015
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	12	16-Sep-2015
Hygrometer	Rotronic	I-1000	3220	12	24-Jul-2015
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	12-Dec-2015
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	6-Aug-2015
Combiner/Splitter	Weinschel	1506A	3877	12	24-Mar-2016
DC - 12.4 GHz 10 dB Attenuator 1 W	Suhner	6810.17.A	3964	12	22-Oct-2015
True RMS Multimeter	Fluke	179	4007	12	31-Jul-2015
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	7-Nov-2015
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	28-Jul-2015
Wideband Radio Test Set	Rohde & Schwarz	CMW500	4546	12	23-Jan-2016

TU – Traceability Unscheduled
O/P MON – Output Monitored with Calibrated Equipment

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	MU
Modulation Characteristics	-
Frequency Tolerance	± 46.75 Hz
Maximum Conducted Output Power	± 0.70 dB
Emission Limitations for Cellular Equipment	30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB
Spurious Emissions at Band Edge	± 0.70 dB ± 50.71 kHz
26 dB Bandwidth	± 136.41 kHz

SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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).