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Report On

Application for Grant of Equipment Authorization of the
Motorola Solutions, Inc.
APX7000 LTE Multi-Band Portable Radio

FCC CFR 47 Part 2 and 90

Report No. SC1400580C Rev. 1 June 2014

REPORT ON	Radio Testing of the Motorola Solutions, Inc. Multi-Band Portable Radio
TEST REPORT NUMBER	SC1400580C Rev. 1
PREPARED FOR	Motorola Solutions, Inc. 8000 West Sunrise Blvd. Ft. Lauderdale, FL 33322
ATTESTATION	The EUT has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report. All instrumentations and accessories used to verify the EUT for compliance to the indicated standards are calibrated in accordance with ISO 17025:2005 requirements. I attest that the necessary measurements were made under my supervision.

Ferdinand S. Custodio
Name
Authorized Signatory
Title: EMC/Senior Wireless Test Engineer

APPROVED BY	Chip R. Fleury **Name** Authorized Signatory Title: EMC West General Manager
DATED	June 19, 2014

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

Revision History

SC1400580C Rev. 1 Motorola Solutions, Inc. APX7000 LTE Multi-Band Portable Radio					
DATE	OLD REVISION	NEW REVISION	REASON	PAGES AFFECTED	APPROVED BY
06/19/2014	Initial Release				Chip R. Fleury
07/15/2014	Initial Release	Rev. 1.0	Updated model number from H97TGD9PW1AN to NUR1065A, NUR1066A	6	Chip R. Fleury

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SECTION 1

REPORT SUMMARY

Radio Testing of the
Motorola Solutions, Inc.
Multi-Band Portable Radio

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Motorola Solutions, Inc. APX7000 LTE Multi-Band Portable Radio to the requirements of FCC CFR 47 Part 2 and 90.

Objective	To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Motorola Solutions, Inc.
Model Number(s)	NUR1065A, NUR1066A
FCC ID Number	AZ489FT7059
IC Number	N/A
Serial Number(s)	655CPX3214 (Conducted sample) , 655CPX1171 (Radiated sample)
Number of Samples Tested	2
Test Specification/Issue/Date	FCC CFR 47 Part 2 and 90 (October 1, 2013).
Start of Test	February 26, 2014
Finish of Test	March 14, 2014
Name of Engineer(s)	Ferdinand Custodio
Related Document(s)	• ANSI/TIA-603-C-2004 – Land Mobile FM or PM – Communications Equipment – Measurement and Performance Standards. • KDB971168 (D01 Power Meas License Digital Systems v02r01) Measurement Guidance for Certification of Licensed Digital Transmitters • KDB412172 D01 Determining ERP and EIRP v01 (Guidelines for Determining the Effective Radiated Power (ERP) and Equivalent Isotropically Radiated Power (EIRP) of a RF Transmitting System.

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC CFR 47 Part 2 and 90 is shown below:

Section	FCC Part Sections(s)	Test Description	Result
2.1	2.1046 and 90.542(a)(7)	Conducted RF Output Power	Compliant
2.2	2.1049	Occupied bandwidth	Compliant
2.3	90.210(b)	Emission Mask B	Compliant
2.4	90.543 (e)(2) and (4)	Conducted Spurious Emissions (Emissions in the 769-775 MHz and 799-805 MHz)	Compliant
2.5	90.543 (e)(3) and (5)	Conducted Spurious Emissions (Emissions in the 775-788 MHz, above 805 MHz, and below 758 MHz)	Compliant
2.6	90.543 (e)(3)(5) and (f)	Field Strength of Spurious Radiation	Compliant
2.7	90.542 (a)(7)	Broadband Transmitting Power Limits	Compliant
2.8	2.1055(a)(1) and (d)(1-2)	Frequency Stability	Compliant

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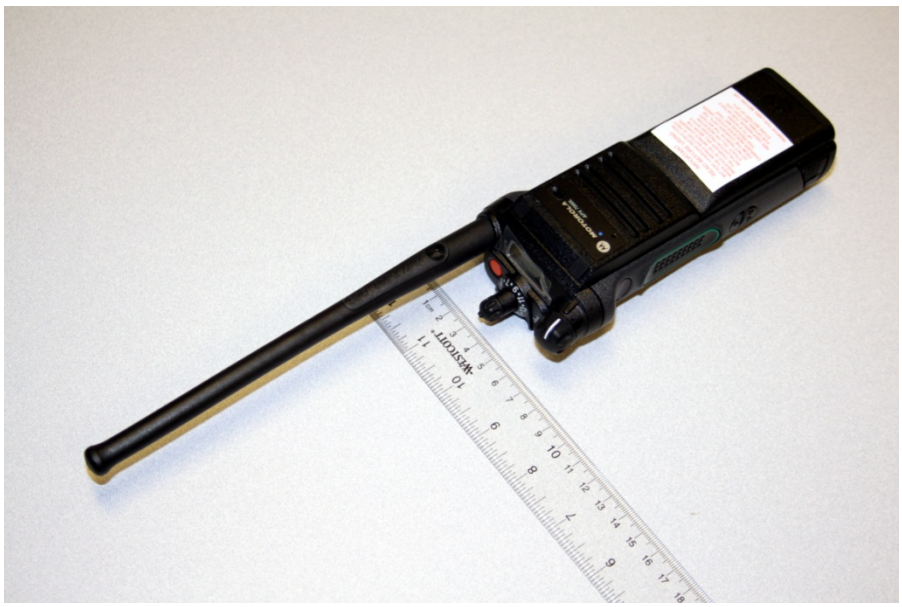
1.3 PRODUCT INFORMATION

1.3.1 EUT General Description

The Equipment Under Test (EUT) was a Motorola Solutions, Inc. APX7000 LTE Multi-Band Portable Radio as shown in the photograph below. The EUT is a licensed non-broadcast transmitter held to face (portable 2-way radio) originally under FCC ID AZ489FT7036. The EUT is being verified due to integration of an option board that includes a Bluetooth module and a LTE module. This test report covers verification of the LTE module (Band 14 Public Safety).



1.3.2 Technical Description

EUT Description	Multi-Band Portable Radio
Model Number(s)	APX7000 LTE
Rated Voltage	7.4 VDC Nominal voltage.
Mode Verified	4G-LTE Band 14 (Public Safety 793-798 MHz)
Capability	700-800/VHF, LTE Band 13, LTE Band 14(Public Safety) and Bluetooth (V2.0 + EDR)
Primary Unit (EUT)	☒ Production ☐ Pre-Production ☐ Engineering
Antenna Type	FICA, 4cm
Antenna Gain (Client declaration, max. antenna gain covered under this test report)	LTE Band 14 (788-798 MHz) = -4.8 dBi

1.3.3 Transmit Frequency Table

LTE Band 14 Public Safety				
Bandwidth (MHz)	**Tx Frequency (MHz)**	**Emission Designator**	**Max. Meas. Conducted Power (W)**	**Max.ERP Power (W)**
5.0	788-798	4M54G7D	0.238	0.0480
5.0	788-798	4M53W7D	0.251	0.0508
10.0	788-798	8M94G7D	0.209	0.0421
10.0	788-798	8M95W7D	0.252	0.0509

1.4 EUT TEST CONFIGURATION

1.4.1 Test Configuration Description

Test Configuration	Description
A	Antenna port conducted test configuration. EUT connected directly with the Wideband Radio Communication Tester. Radio functionality is directly controlled through the call box. USB programming cable is also connected to the EUT, prior to synching with the call box, the LTE module is enabled via Telnet and AT commands.
B	Radiated test configuration. The EUT is configured using the same method as Test Configuration A. The USB programming cable is removed prior testing. Fresh battery is installed before each test.

1.4.2 EUT Exercise Software

EUT is controlled by a CMW 500 Wideband Radio Communication Tester. Prior to synching with the CMW500, the LTE module is enabled via Telnet and AT commands through the optional USB programming cable.

1.4.3 Support Equipment and I/O cables

Manufacturer	Equipment/Cable	Description
Lenovo	Support Laptop	Model 2522-26U S/N R8-P39EN 11/02 Product ID:25226U
Motorola	USB programming cable	PMKN4012B Rev. B 15/12
Motorola	Adaptive Charger	Impres™ WPLN4114AR V3.40 Single Unit Charger S/N 0726 377673 7088MKF02

1.4.4 Worst Case Configuration

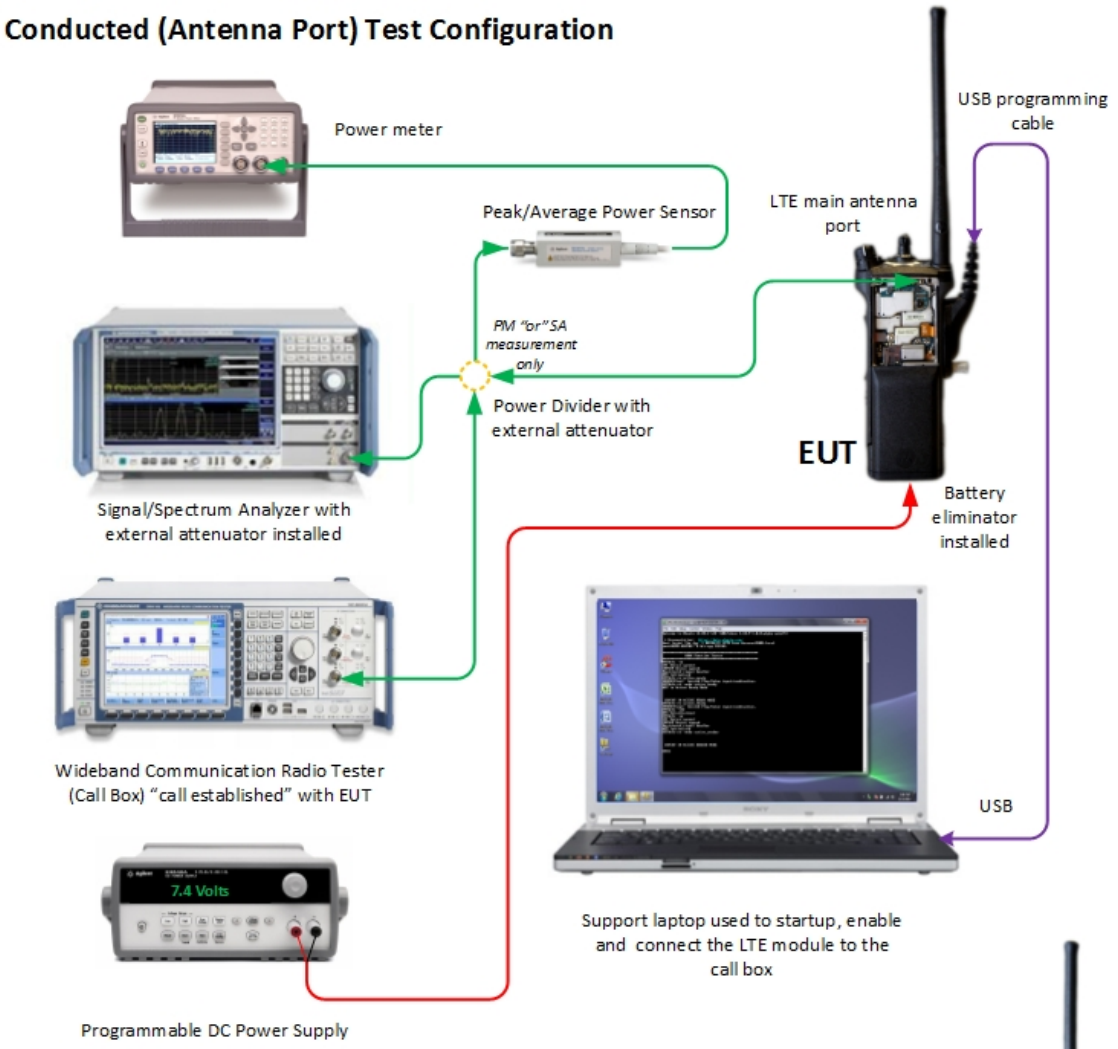
Worst-case configuration used in this test report as per output power measurements:

Band	Channel BW	Modulation	RB Size/Offset
LTE Band 14	5MHz	QPSK	1/24
LTE Band 14	10MHz	16QAM	1/49

For radiated spurious measurements X, Y and Z orientations were verified. There are no significant spurious emissions variations between the three axes. Radiated spurious emissions verifications performed in “X” configuration.

		
“X” Configuration	***“Y” Configuration***	***“Z” Configuration***

1.4.5 Simplified Test Configuration Diagram



1.5 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.6 MODIFICATION RECORD

Description of Modification	Modification Fitted By	Date Modification Fitted
Serial Number		
N/A		

The table above details modifications made to the EUT during the test programme. The modifications incorporated during each test (if relevant) are recorded on the appropriate test pages.

1.7 TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.
For conducted (if applicable) and radiated emissions the equipment under test (EUT) was configured to measure its highest possible emission level. This level was based on the maximized cable configuration from exploratory testing per ANSI C63.4-2009. The test modes were adapted according to the Operating Instructions provided by the manufacturer/client.

1.8 TEST FACILITY LOCATION

1.8.1 TÜV SÜD America Inc. (Mira Mesa)

10040 Mesa Rim Road, San Diego, CA 92121-2912 (32.901268,-117.177681). Phone: 858 678 1400 FAX: 858-546 0364

1.8.2 TÜV SÜD America Inc. (Rancho Bernardo)

Sony Electronics Inc., Building #8 16530 Via Esprillo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: 858 942 5542 FAX: 858-546 0364

1.9 TEST FACILITY REGISTRATION

1.9.1 FCC – Registration No.: US1146

TUV SUD America Inc. (San Diego), is an accredited test facility with the site description report on file and has met all the requirements specified in §2.948 of the FCC rules. The acceptance letter from the FCC is maintained in our files and the Registration is US1146.

1.9.2 Industry Canada (IC) Registration No.: 3067A

The 10m Semi-anechoic chamber of TUV SUD America Inc. (San Diego) has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No. 3067A.

1.10 SAMPLE CALCULATIONS

1.10.1 LTE Emission Designator (QPSK)

Emission Designator = 4M51G7D
G = Phase Modulation
7= Quantized/Digital Info
D = Data Transmission, telemetry, telecommand

1.10.2 LTE Emission Designator (16QAM)

Emission Designator = 4M50W7D
W = Frequency Modulation
7= Quantized/Digital Info
D = Data Transmission, telemetry, telecommand

1.10.3 Spurious Radiated Emission (below 1GHz)

Measuring equipment raw measurement (dbµV) @ 30 MHz			24.4
Correction Factor (dB)	Asset# 1066 (cable)	0.3	-12.6
	Asset# 1172 (cable)	0.3	
	Asset# 1016 (preamplifier)	-30.7	
	Asset# 1175(cable)	0.3	
	Asset# 1002 (antenna)	17.2	
Reported QuasiPeak Final Measurement (dbµV/m) @ 30MHz			**11.8**

1.10.4 Spurious Radiated Emission – Substitution Method

Example = 84dBµV/m @ 1413 MHz (numerical sample only)

The field strength reading of 84dBµV/m @ 1413 MHz (2nd Harmonic of 706.5 MHz) is the maximized measurement when the EUT is on the turntable measured at 3 meters. The gain of the substituted antenna is 7.8dBi while the transmit cable loss is 1.0 dB (cable between signal generator and the substituted antenna). The signal generator level is adjusted until the 84dBµV/m level at the receiving end is replicated (identical test setup, i.e. same antenna, cable/s and preamp). If the adjusted signal generator level is -18dBm, then we have the following for both EIRP and ERP as required:

P_{EIRP} = -18 dBm + 7.8 dBi – 1dB
= 11.2 dBm
P_{ERP} = P_{EIRP} – 2.15 dB
= 11.2 dBm – 2.15 dB
= 9.05 dBm

SECTION 2

TEST DETAILS

Radio Testing of the
Motorola Solutions, Inc.
Multi-Band Portable Radio

2.1 CONDUCTED RF OUTPUT POWER

2.1.1 Specification Reference

47 CFR §2.1046 and 90.542(a) (7)

2.1.2 Standard Applicable

(7) Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

2.1.3 Equipment Under Test and Modification State

Serial No: 655CPX3214 / Test Configuration A

2.1.4 Date of Test/Initial of test personnel who performed the test

March 10, 2014/FSC

2.1.5 Test Equipment Used

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

2.1.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.1°C
Relative Humidity	25.4%
ATM Pressure	99.4 kPa

2.1.7 Additional Observations

- This is a conducted test using a peak/average power meter.
- Test performed at the primary antenna only. Diversity antenna is RX only (MISO).
- A 36.52dB power meter offset was used for the power splitter, external attenuators and cables used.
- Only representative worst case RB size and RB offset presented. Verification done using both RMC (Reference Measurement Channel) and User Defined Channels options for scheduling (CMW500).

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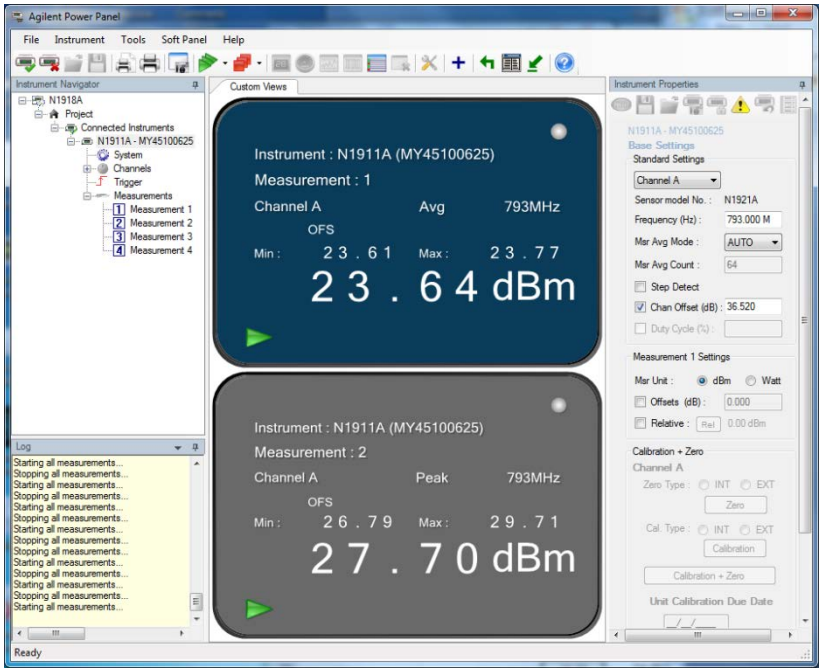
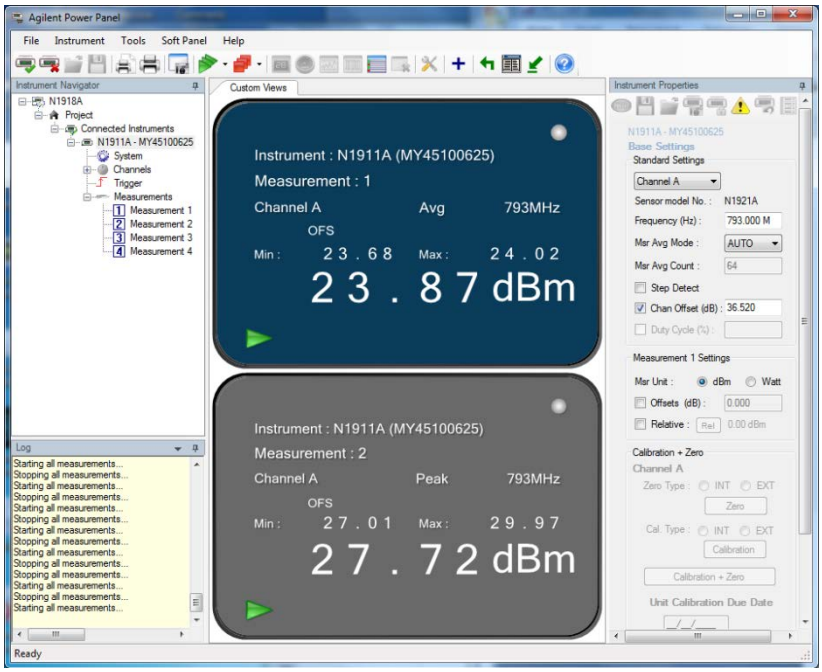
2.1.8 Test Results

Band	Modulation	Bandwidth	RB Size	RB Offset	Channel	Frequency	Power
14	QPSK	5.0 MHz	25	0	23305	790.5	23.19
					23330	793.0	22.79
					23355	795.5	23.09
			10	High	23305	790.5	23.41
					23330	793.0	22.78
					23355	795.5	23.21
			1	0	23305	790.5	23.44
					23330	793.0	22.73
					23355	795.5	23.24
			1	High	**23305**	**790.5**	**23.77**
					23330	793.0	22.85
					23355	795.5	23.58
		10.0 MHz	50	0	23330	793.0	22.62
			25	High	23330	793.0	22.55
			1	0	23330	793.0	22.76
			1	High	23330	793.0	23.20
	16-QAM	5.0 MHz	25	0	23305	790.5	23.04
					23330	793.0	22.94
					23355	795.5	22.84
			10	15	23305	790.5	23.00
					23330	793.0	22.89
					23355	795.5	23.72
			1	0	23305	790.5	23.96
					23330	793.0	23.54
					23355	795.5	23.79
			1	High	23305	790.5	24.01
					23330	793.0	23.35
					23355	795.5	24.00
		10.0 MHz	50	0	23330	793.0	22.71
			25	25	23330	793.0	22.86
			1	0	23330	793.0	23.66
			1	High	**23330**	**793.0**	**24.02**

2.1.9 Sample Test Measurement Screens



QPSK 5MHz 1/24 RB Size/RB Offset



16-QAM 10MHz 1/49 RB Size/RB Offset

2.2 OCCUPIED BANDWIDTH

2.2.1 Specification Reference

47 CFR §2.1049

2.2.2 Standard Applicable

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

2.2.3 Equipment Under Test and Modification State

Serial No: 655CPX3214 / Test Configuration A

2.2.4 Date of Test/Initial of test personnel who performed the test

March 10, 2014/FSC

2.2.5 Test Equipment Used

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

2.2.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.1°C
Relative Humidity	25.4%
ATM Pressure	99.4 kPa

2.2.7 Additional Observations

- This is a conducted test. Test procedure is per Section 4.0 of KDB971168 (D01 Power Meas License Digital Systems v02r01).
- Both relative OBW (-26dB BW) and 99% OBW presented.
- All channels in each channel bandwidth were verified. No significant difference observed. Only the worst channel presented.

2.2.8 Test Results

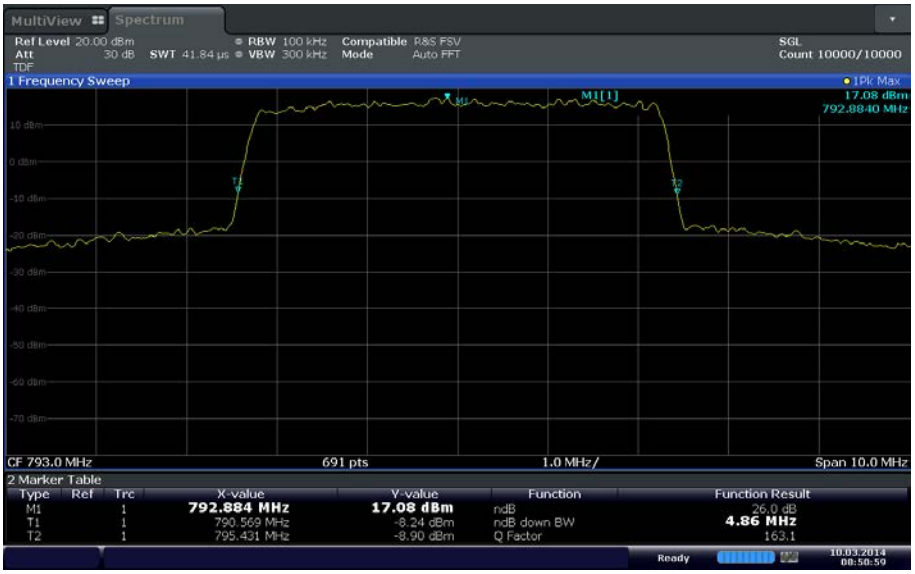
See attached table and plots.

LTE Band	Channel	Frequency (MHz)	BW (MHz)	Modulation	99% OBW (MHz)	-26dB BW (MHz)
14	23330	793.0	5.0	QPSK	4.5007	4.86
14	23330	793.0	5.0	16QAM	4.4863	4.86
14	23330	793.0	10.0	QPSK	9.0014	9.72
14	23330	793.0	10.0	16QAM	9.0014	9.72

LTE Band 14 793.0MHz (5 MHz BW) QPSK 99% OBW

Date: 10.MAR.2014 09:07:22

LTE Band 14 793.0MHz (5 MHz BW) QPSK -26dB OBW



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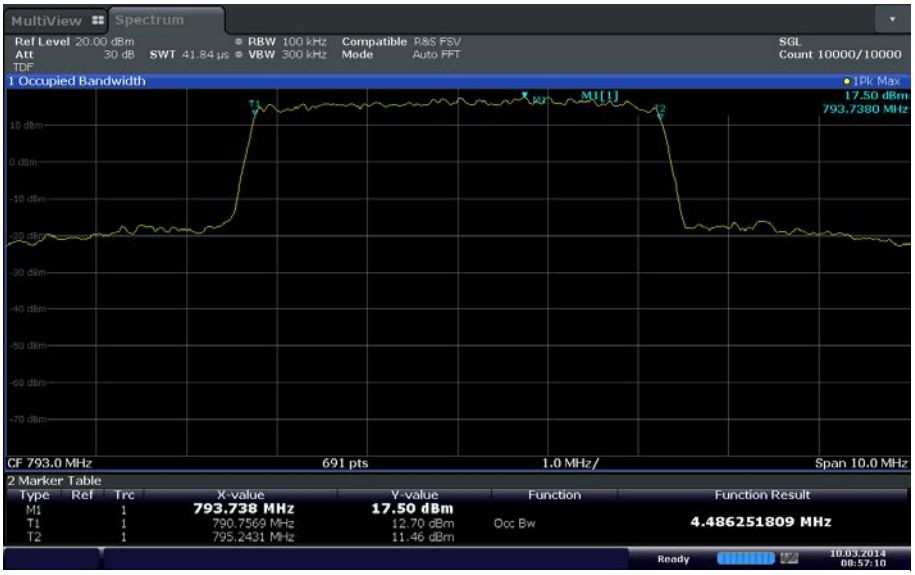
LTE Band 14 793.0MHz (5 MHz BW) 16QAM 99% OBW



Date: 10.MAR.2014 08:57:10

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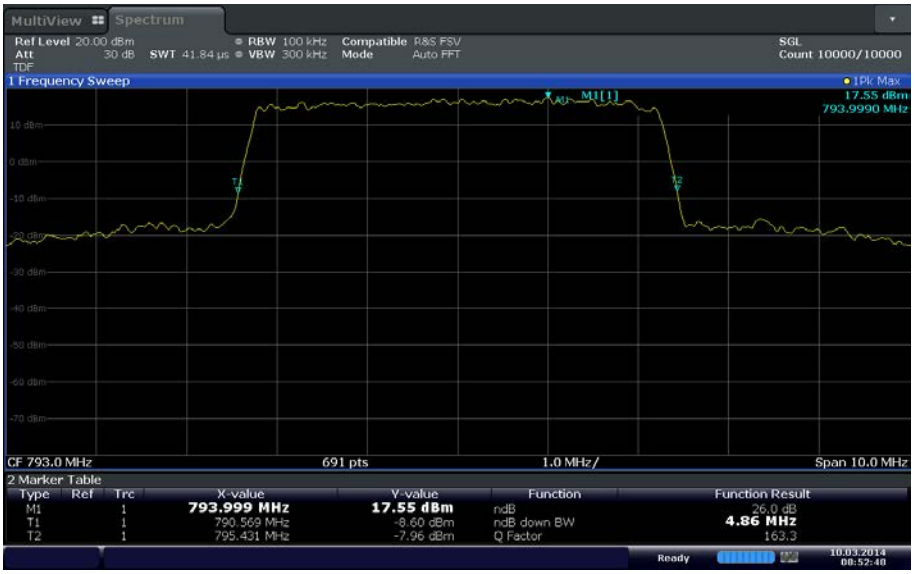
LTE Band 14 793.0MHz (5 MHz BW) 16QAM -26dB OBW



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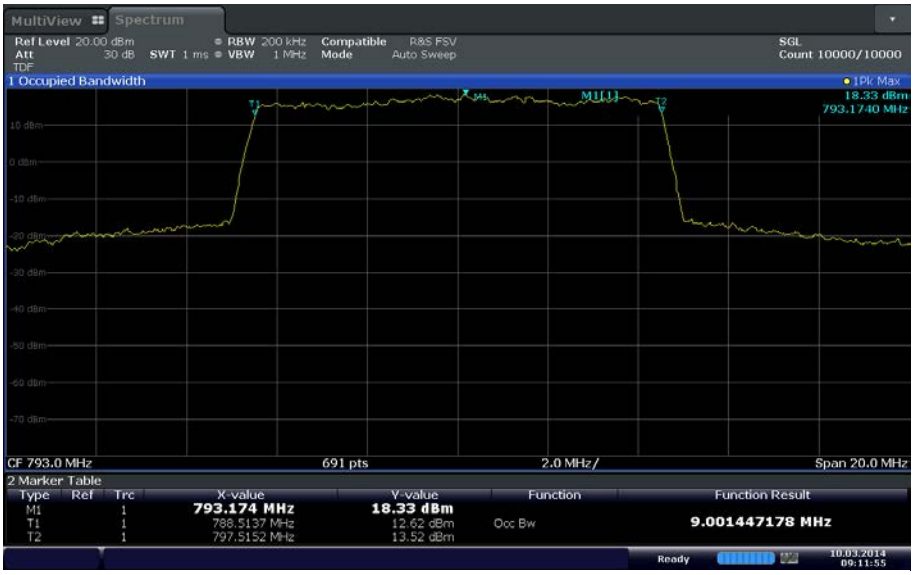
LTE Band 14 793.0MHz (10 MHz BW) QPSK 99% OBW



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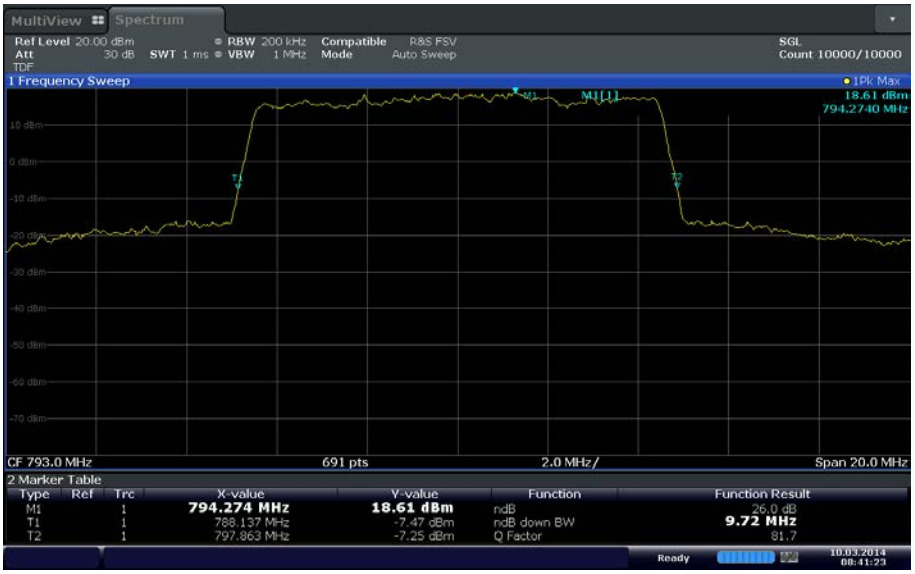
LTE Band 14 793.0MHz (10 MHz BW) QPSK -26dB OBW



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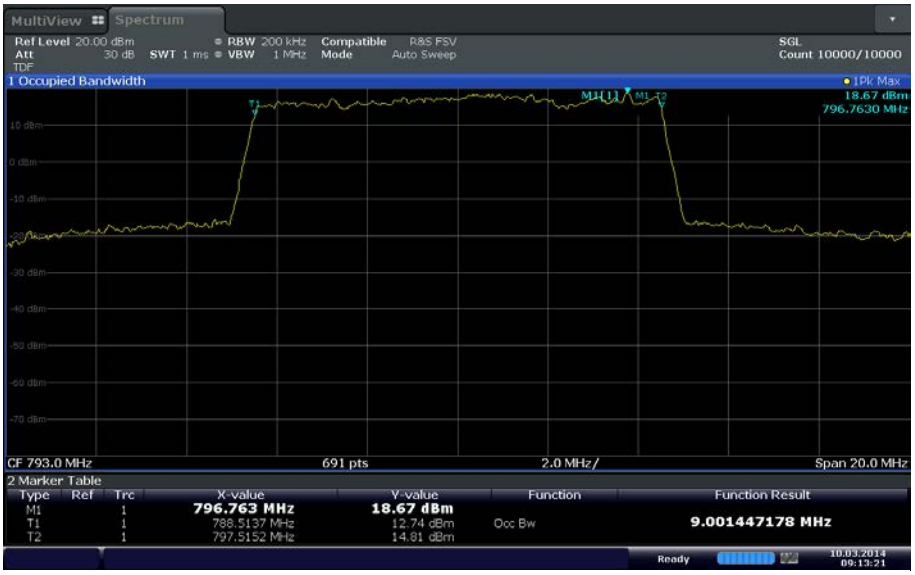
LTE Band 14 793.0MHz (10 MHz BW) 16QAM 99% OBW



Date: 10.MAR.2014 09:13:21

LTE Band 14 793.0MHz (10 MHz BW) 16QAM -26dB OBW

Date: 10.MAR.2014 08:34:56

2.3 EMISSION MASK B

2.3.1 Specification Reference

47 CFR §90.210(b)

2.3.2 Standard Applicable

Except as indicated elsewhere in this part, transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section. For transmitters that do not produce a full power unmodulated carrier, reference to the unmodulated transmitter carrier power refers to the total power contained in the channel bandwidth.

(b) Emission Mask B. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:
(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB

2.3.3 Equipment Under Test and Modification State

Serial No: 655CPX3214 / Test Configuration A

2.3.4 Date of Test/Initial of test personnel who performed the test

March 10 and 12, 2014/FSC

2.3.5 Test Equipment Used

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

2.3.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.1-23.0°C
Relative Humidity	25.4-44.1%
ATM Pressure	99.2-99.4 kPa

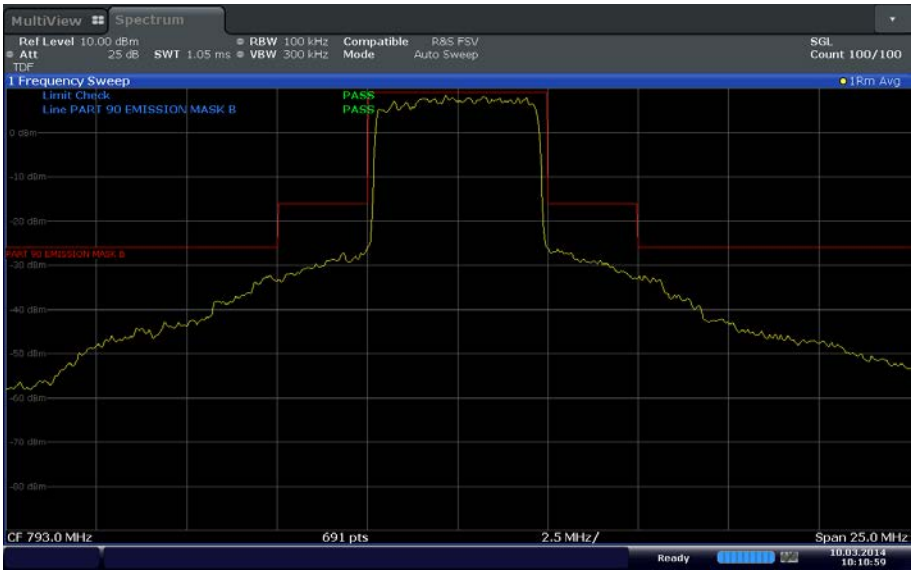
2.3.7 Additional Observations

- This is a conducted test.

- The Transducer Correction Factor (TDF) was used as an offset for the power splitter, external attenuators and cables used. At the measurement frequency (788-798MHz), this equal to approximately 36.52dB of loss.
- EUT is a Multi-Band Portable Radio with an audio low pass filter, Mask B applies.
- Mask was drawn base from the authorized bandwidth (10MHz and 5MHz).
- "Y" component of the mask was adjusted until the reference level of the mask (highest point) is identical to the highest emission of the signal.
- All combinations of RB size and offsets verified, only the worst observed configuration presented.
- Detector used is RMS. Trace is averaged 100 times (Power Averaging).

2.3.8 Test Results

LTE Band 14 793.0MHz (5 MHz BW) QPSK



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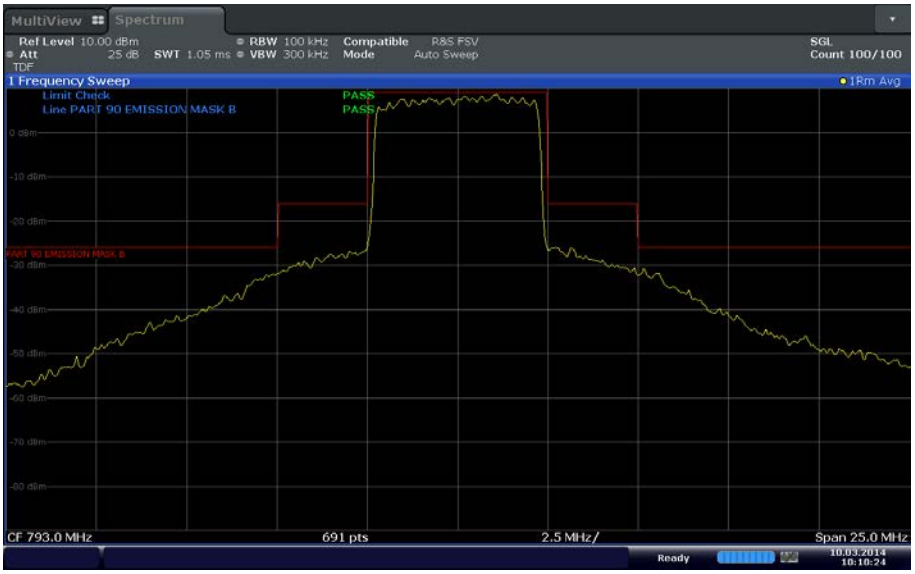
LTE Band 14 793.0MHz (5 MHz BW) 16-QAM



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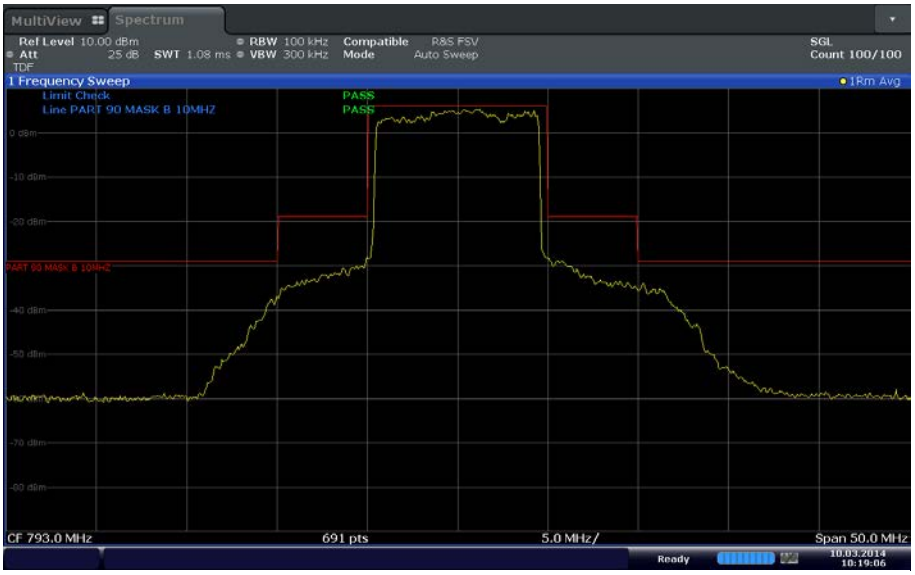
LTE Band 14 793.0MHz (10 MHz BW) QPSK



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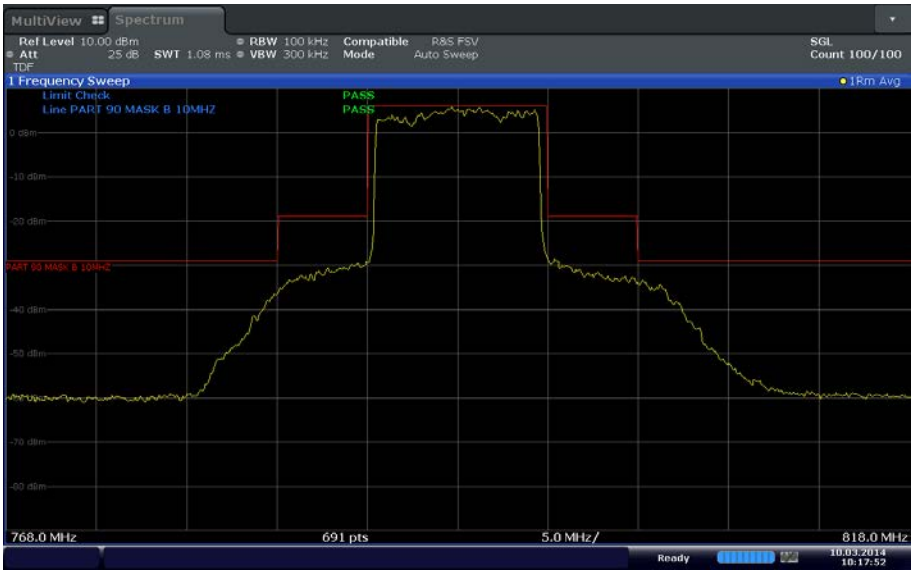
LTE Band 14 793.0MHz (10 MHz BW) 16-QAM



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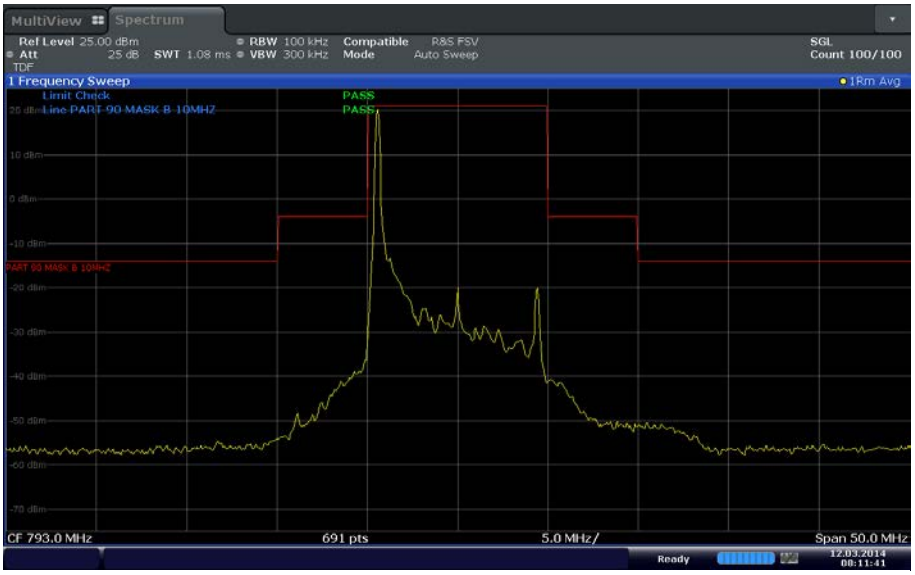
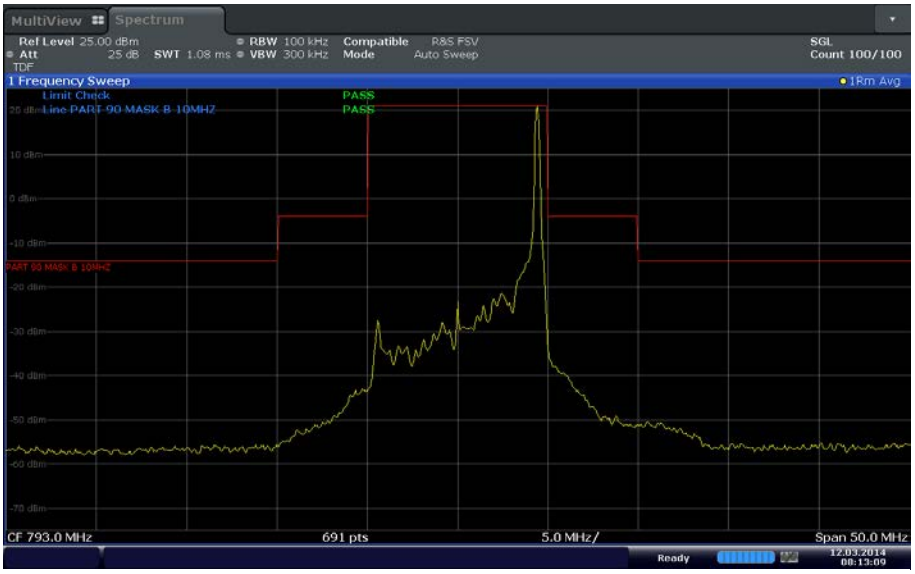
LTE Band 14 793.0MHz (10 MHz BW) QPSK 1/0 #RB/RB position



Date: 12.MAR.2014 08:11:40

LTE Band 14 793.0MHz (10 MHz BW) QPSK 1/49 #RB/RB position



Date: 12.MAR.2014 08:13:09

2.4 CONDUCTED SPURIOUS EMISSIONS (EMISSIONS IN THE 769-775 MHZ AND 799-805 MHZ)

2.4.1 Specification Reference

47 CFR §90.543(e) (2 and 4)

2.4.2 Standard Applicable

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

2.4.3 Equipment Under Test and Modification State

Serial No: 655CPX3214 / Test Configuration A

2.4.4 Date of Test/Initial of test personnel who performed the test

March 12, 2014/FSC

2.4.5 Test Equipment Used

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

2.4.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

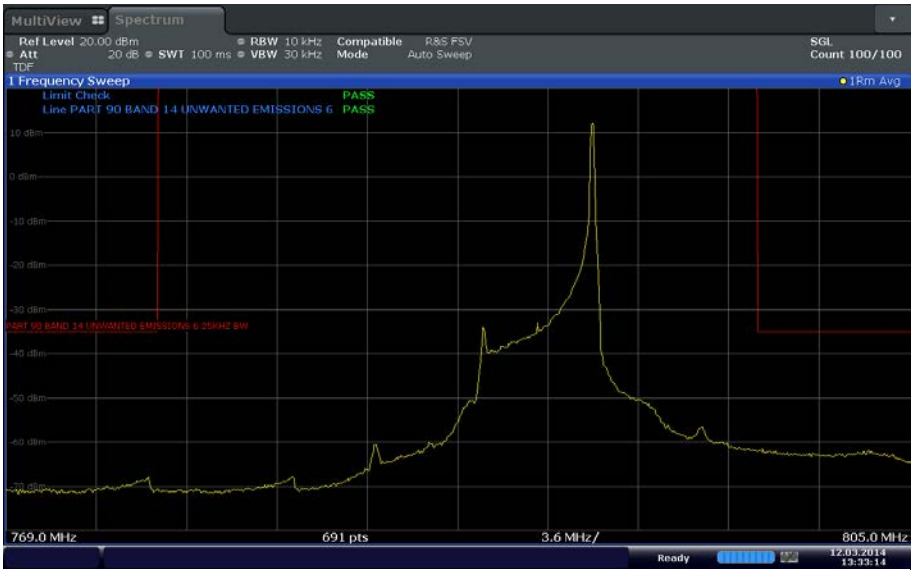
Ambient Temperature	25.3°C
Relative Humidity	36.6%
ATM Pressure	99.0 kPa

2.4.7 Additional Observations

- This is a conducted test. The transducer factor (TDF) used is from the power splitter, external attenuators and cables used.
- 10 kHz RBW was used (6.25 kHz required), VBW is 3X the RBW.
- Only worst case configuration presented.

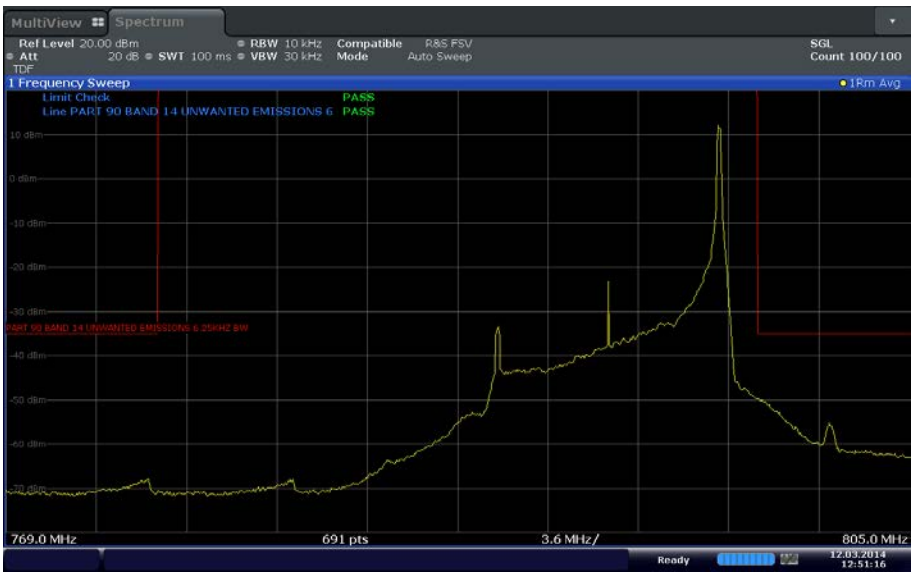
2.4.8 Test Results

LTE Band 14 790.5MHz (5 MHz BW) QPSK 1/24 #RB/RB position



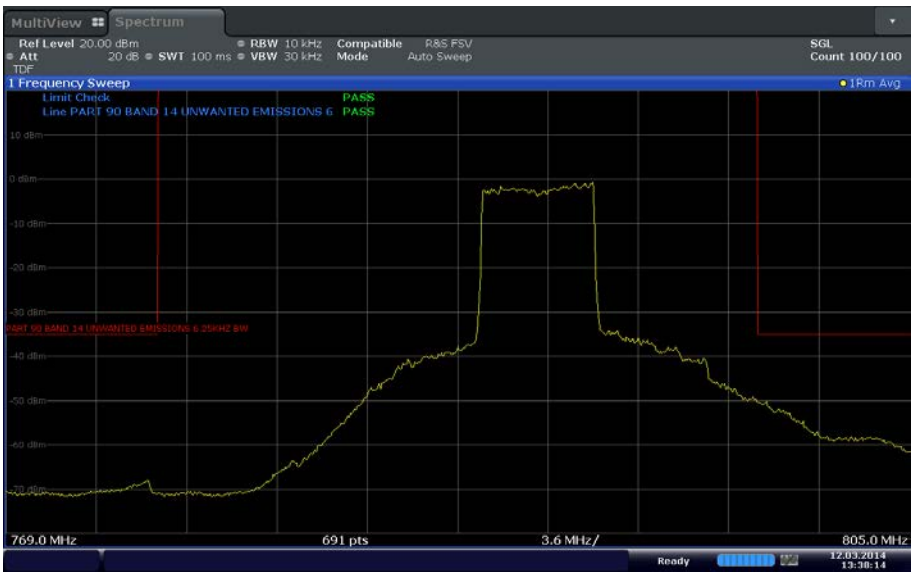
Date: 12.MAR.2014 13:33:14

LTE Band 14 793.0MHz (10 MHz BW) 16-QAM 1/49 #RB/RB position



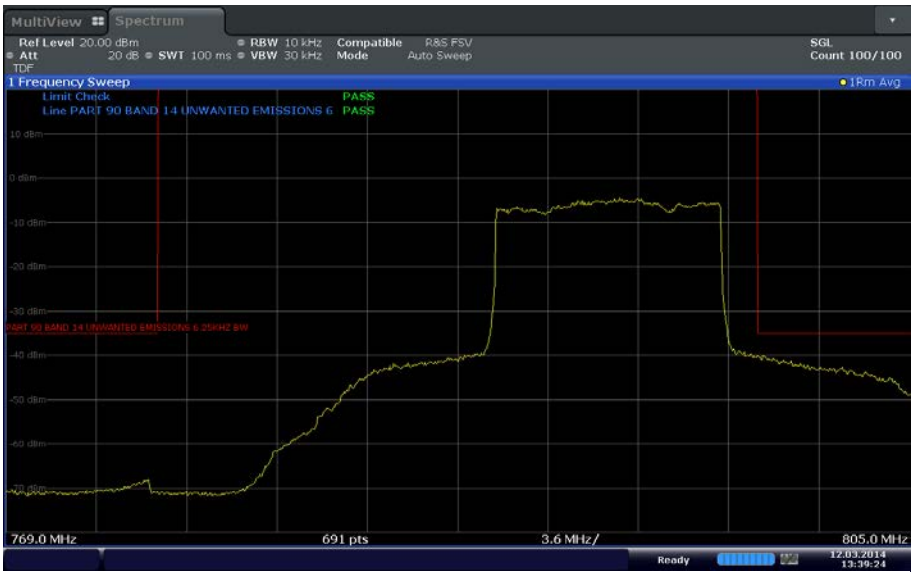
Date: 12.MAR.2014 12:51:15

LTE Band 14 790.5MHz (5 MHz BW) QPSK 25/0 #RB/RB position



Date: 12.MAR.2014 13:38:14

LTE Band 14 793.0MHz (10 MHz BW) 16-QAM 50/0 #RB/RB position



Date: 12.MAR.2014 13:39:24

2.5 CONDUCTED SPURIOUS EMISSIONS (EMISSIONS IN THE 775-788 MHZ, ABOVE 805 MHZ, AND BELOW 758 MHZ)

2.5.1 Specification Reference

47 CFR §90.543(e) (3 and 5)

2.5.2 Standard Applicable

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.
(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

2.5.3 Equipment Under Test and Modification State

Serial No: 655CPX3214 / Test Configuration A

2.5.4 Date of Test/Initial of test personnel who performed the test

March 12, 2014/FSC

2.5.5 Test Equipment Used

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

2.5.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

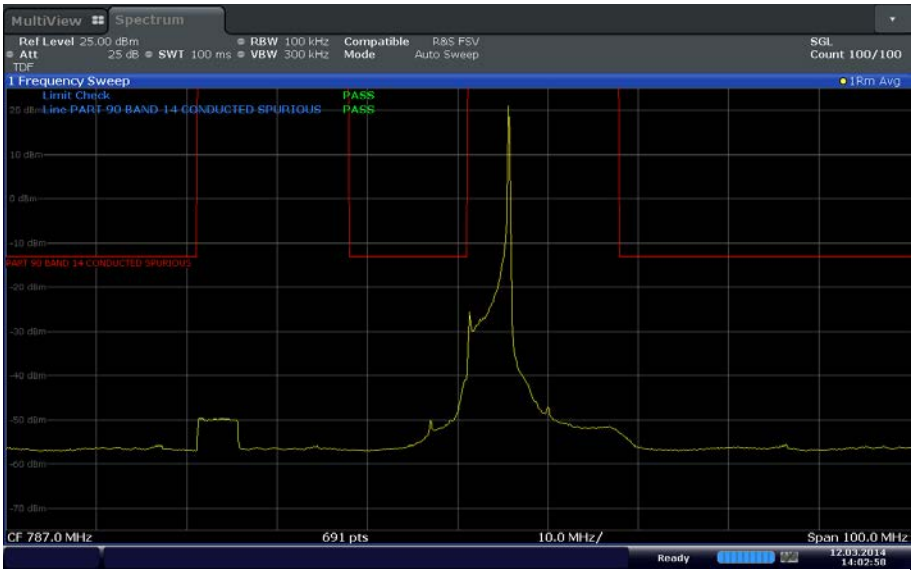
Ambient Temperature	25.3°C
Relative Humidity	36.6%
ATM Pressure	99.0 kPa

2.5.7 Additional Observations

- This is a conducted test. The transducer factor (TDF) used is from the power splitter, external attenuators and cables used.
- RBW is 100kHz while VBW is 3X the RBW.
- Only worst case configuration presented.
- For band edge measurements, only the worst RB size/offset presented.

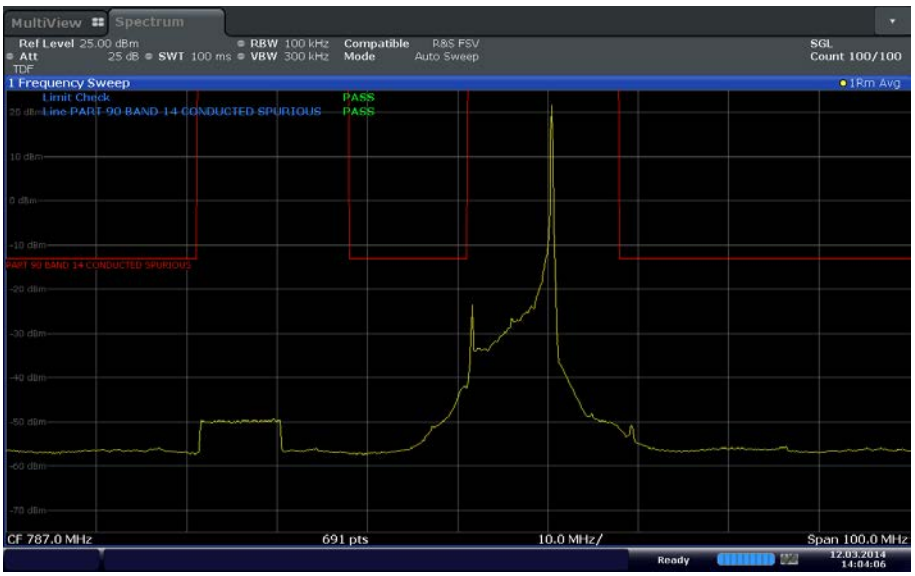
2.5.8 Test Results

LTE Band 14 790.5MHz (5 MHz BW) QPSK 1/24 #RB/RB position



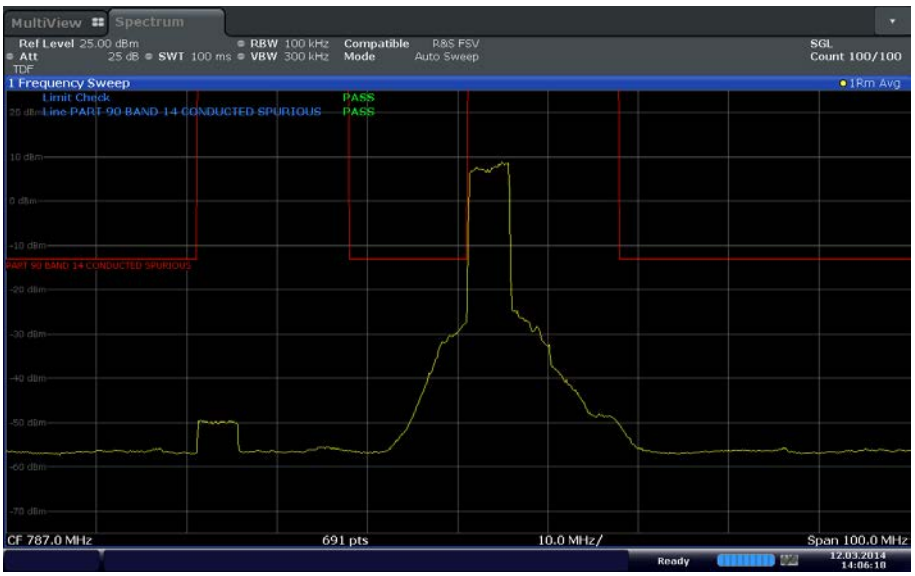
Date: 12.MAR.2014 14:02:58

LTE Band 14 793.0MHz (10 MHz BW) 16-QAM 1/49 #RB/RB position



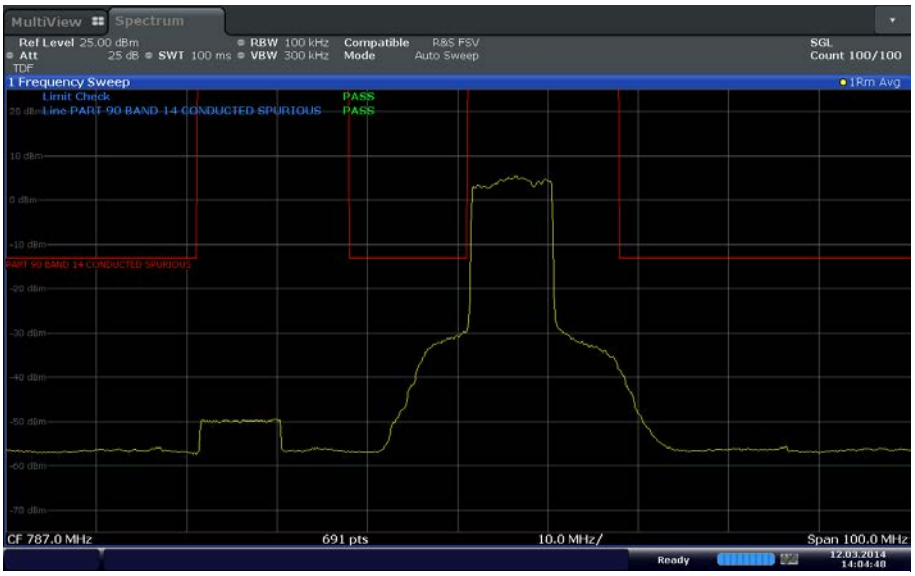
Date: 12.MAR.2014 14:04:06

LTE Band 14 790.5MHz (5 MHz BW) QPSK 25/0 #RB/RB position



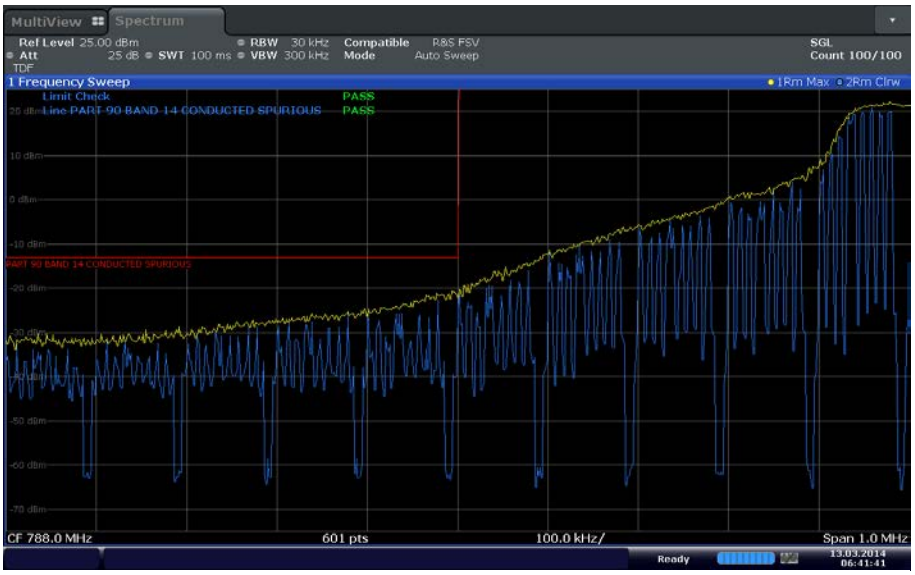
Date: 12.MAR.2014 14:06:18

LTE Band 14 793.0MHz (10 MHz BW) 16-QAM 50/0 #RB/RB position



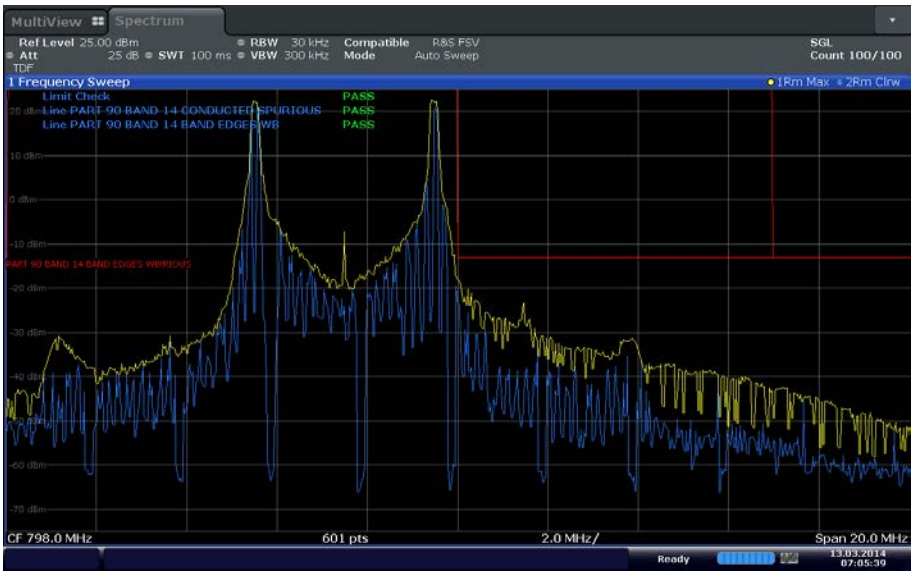
Date: 12.MAR.2014 14:04:49

LTE Band 14 790.5MHz (5 MHz BW Lower Band Edge Worst Case Configuration) QPSK 0/0 #RB/RB position



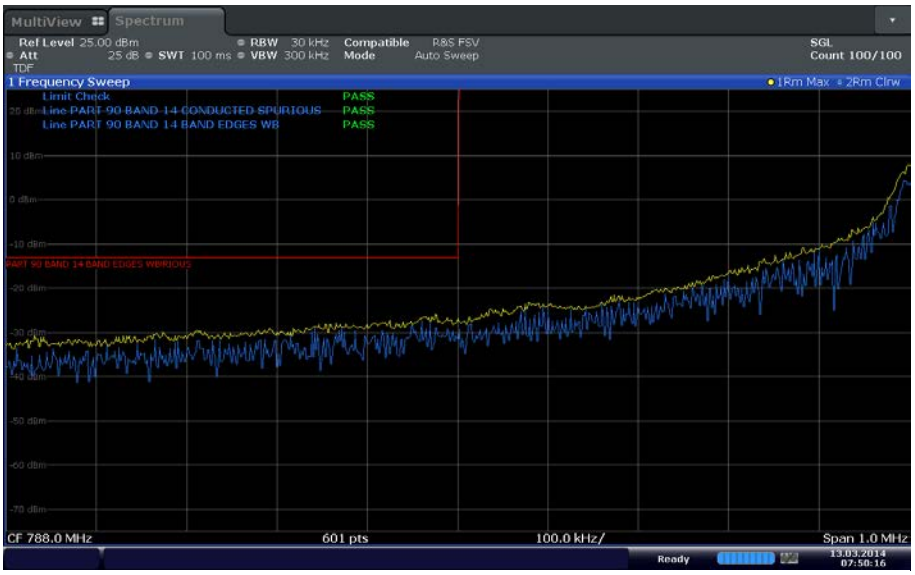
Date: 13.MAR.2014 06:41:41

LTE Band 14 795.5MHz (5 MHz BW Upper Band Edge Worst Case Configuration) QPSK 0/25 #RB/RB position



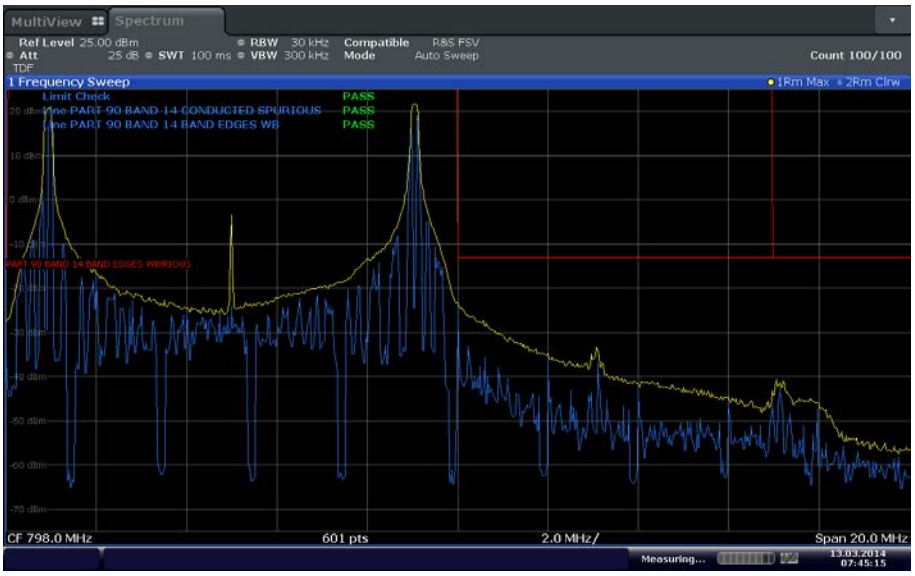
Date: 13.MAR.2014 07:05:40

LTE Band 14 793 MHz (10 MHz BW Lower Band Edge Worst Case Configuration) QPSK 6/0 #RB/RB position



Date: 13.MAR.2014 07:50:16

LTE Band 14 793 MHz (10 MHz BW Upper Band Edge Worst Case Configuration) QPSK 0/50 #RB/RB position



Date: 13.MAR.2014 07:45:15

LTE Band 14 790.5MHz (5 MHz BW) Worst Case Configuration

Date: 12.MAR.2014 14:16:46

LTE Band 14 793.0MHz (5 MHz BW) Worst Case Configuration

Date: 12.MAR.2014 14:17:59

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

LTE Band 14 795.5MHz (5 MHz BW) Worst Case Configuration

Date: 12.MAR.2014 14:18:47

LTE Band 14 793.0MHz (10 MHz BW) Worst Case Configuration

Date: 12.MAR.2014 14:19:43

2.6 FIELD STRENGTH OF SPURIOUS RADIATION

2.6.1 Specification Reference

47 CFR §90.543(e) (3) (5) and (f)

2.6.2 Standard Applicable

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.
(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

2.6.3 Equipment Under Test and Modification State

Serial No: 655CPX1171 / Test Configuration B

2.6.4 Date of Test/Initial of test personnel who performed the test

March 14, 2014/FSC

2.6.5 Test Equipment Used

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

2.6.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.7°C
Relative Humidity	42.8%
ATM Pressure	99.2 kPa

2.6.7 Additional Observations

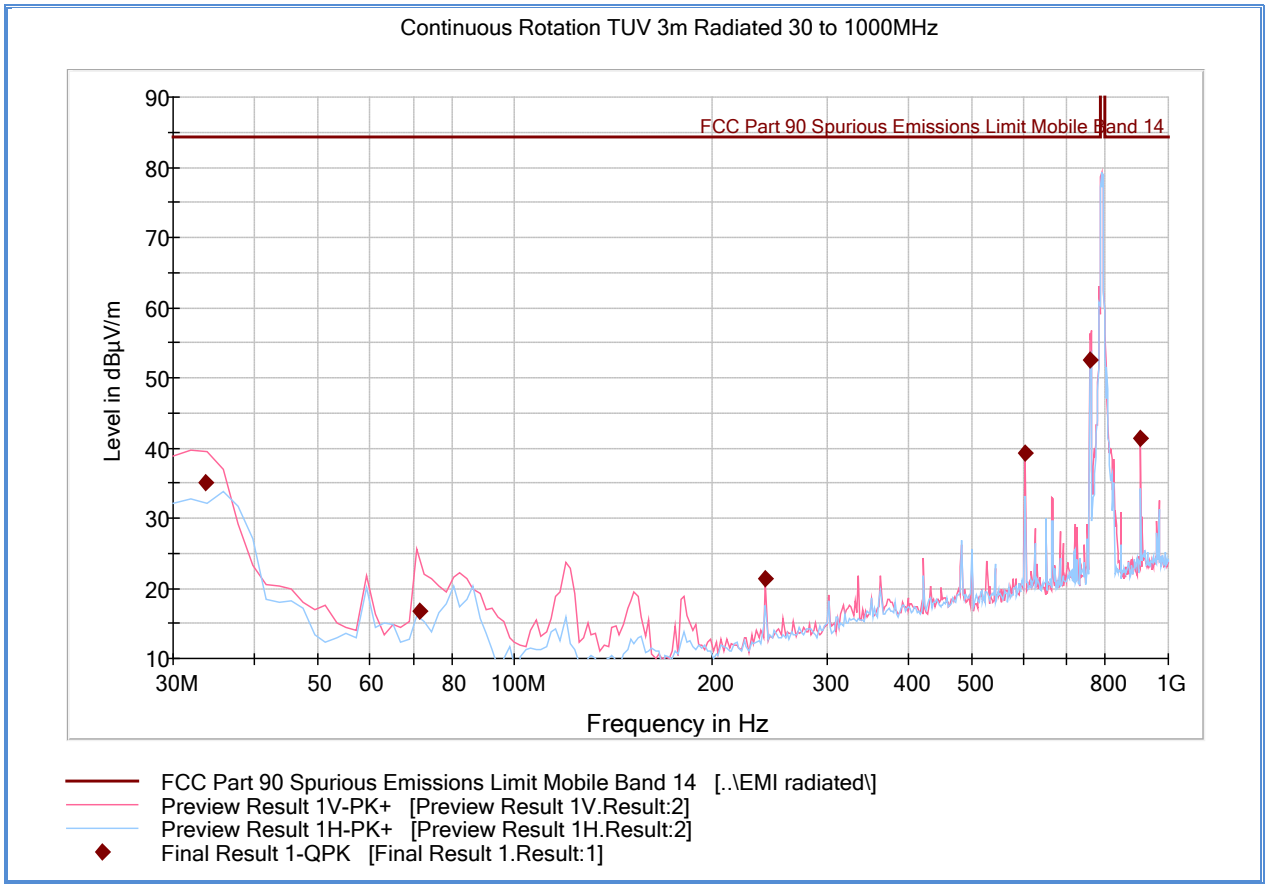
- This is a radiated test using substitution method as per Unwanted Emissions: Radiated Spurious method of measurement of ANSI/TIA/EIA-603-C 2004, August 17, 2004.

- Only the worst case configuration presented in this test report.
- The spectrum was searched from 30 MHz to 18 GHz (requirement is up to the 10th harmonic (≤8GHz)).
- There are no emissions found that doesn't comply with -70dBW/MHz limit (wideband) in the 1559-1610 MHz frequency range. This limit corresponds to 55.23 dBµV/m @ 3 meters using 1MHz RBW.
- Measurement was done using EMC32 V8.53 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only.

2.6.8 Test Results

See attached plots.

2.6.9 Test Results Below 1GHz-(Band 14 5MHz)

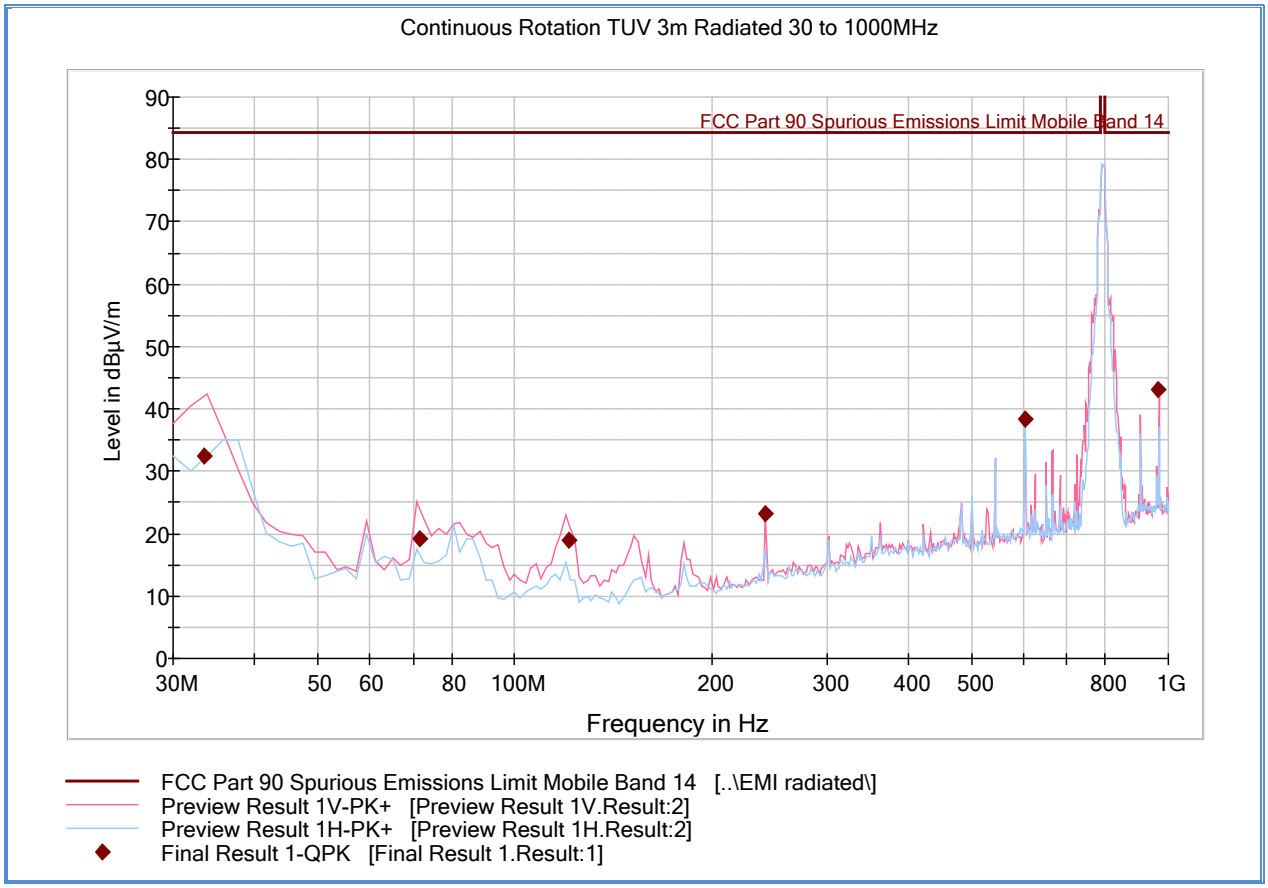


Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
33.720000	35.1	1000.0	120.000	100.0	V	334.0	-13.0	49.3	84.4
71.461643	16.8	1000.0	120.000	200.0	V	214.0	-22.1	67.6	84.4
241.443768	21.4	1000.0	120.000	100.0	V	154.0	-14.1	63.0	84.4
603.646894	39.3	1000.0	120.000	100.0	V	228.0	-3.2	45.1	84.4
760.885691	52.5	1000.0	120.000	100.0	V	-2.0	-1.0	31.9	84.4
905.453387	41.3	1000.0	120.000	100.0	V	263.0	2.0	43.1	84.4

Test Notes: Only worst case channel presented for spurious emissions below 1GHz. Emissions within 6dB of the Part 90 Subpart R §90.543(e) (3) limit are proven by substitution method. However no such emission observed. Part 90 Subpart R §90.543(e) (3) limit @ 3 meters is 82.23 dBµV/m.

2.6.10 Test Results Below 1GHz-(Band 14 10MHz)

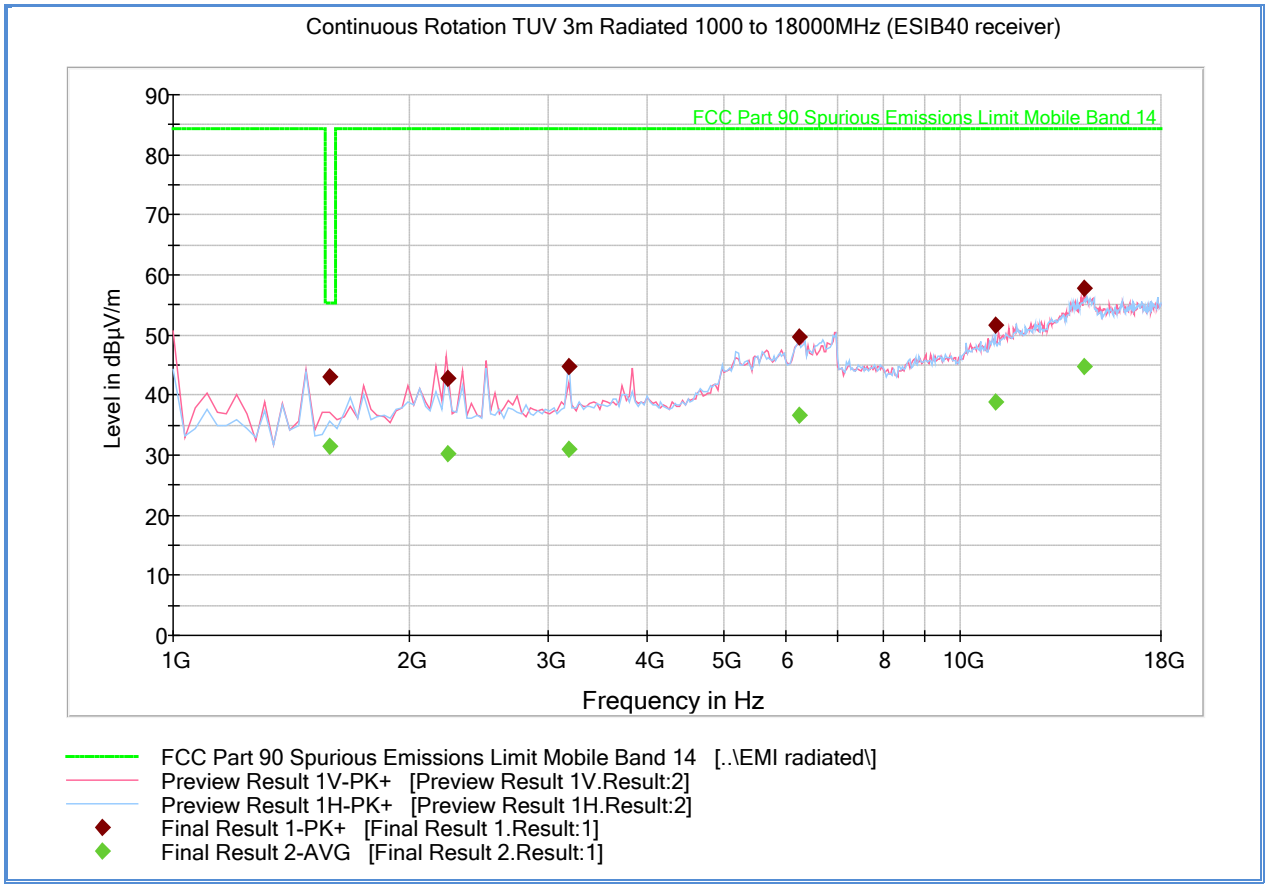


Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
33.527776	32.4	1000.0	120.000	150.0	V	72.0	-12.9	52.0	84.4
71.461643	19.2	1000.0	120.000	200.0	V	221.0	-22.1	65.2	84.4
120.738838	18.9	1000.0	120.000	106.0	V	120.0	-20.2	65.5	84.4
241.443768	23.2	1000.0	120.000	100.0	V	166.0	-14.1	61.2	84.4
603.646894	38.3	1000.0	120.000	196.0	H	193.0	-3.2	46.1	84.4
965.833908	43.0	1000.0	120.000	100.0	V	143.0	2.3	41.4	84.4

Test Notes: Emissions within 6dB of the Part 90 Subpart R §90.543(e) (3) limit are proven by substitution method. However no such emission observed. Part 90 Subpart R §90.543(e) (3) limit @ 3 meters is 82.23 dBµV/m.

2.6.11 Test Results Above 1GHz (Low Channel - Band 14 Worst Case Configuration 5MHz BW)



Peak Data

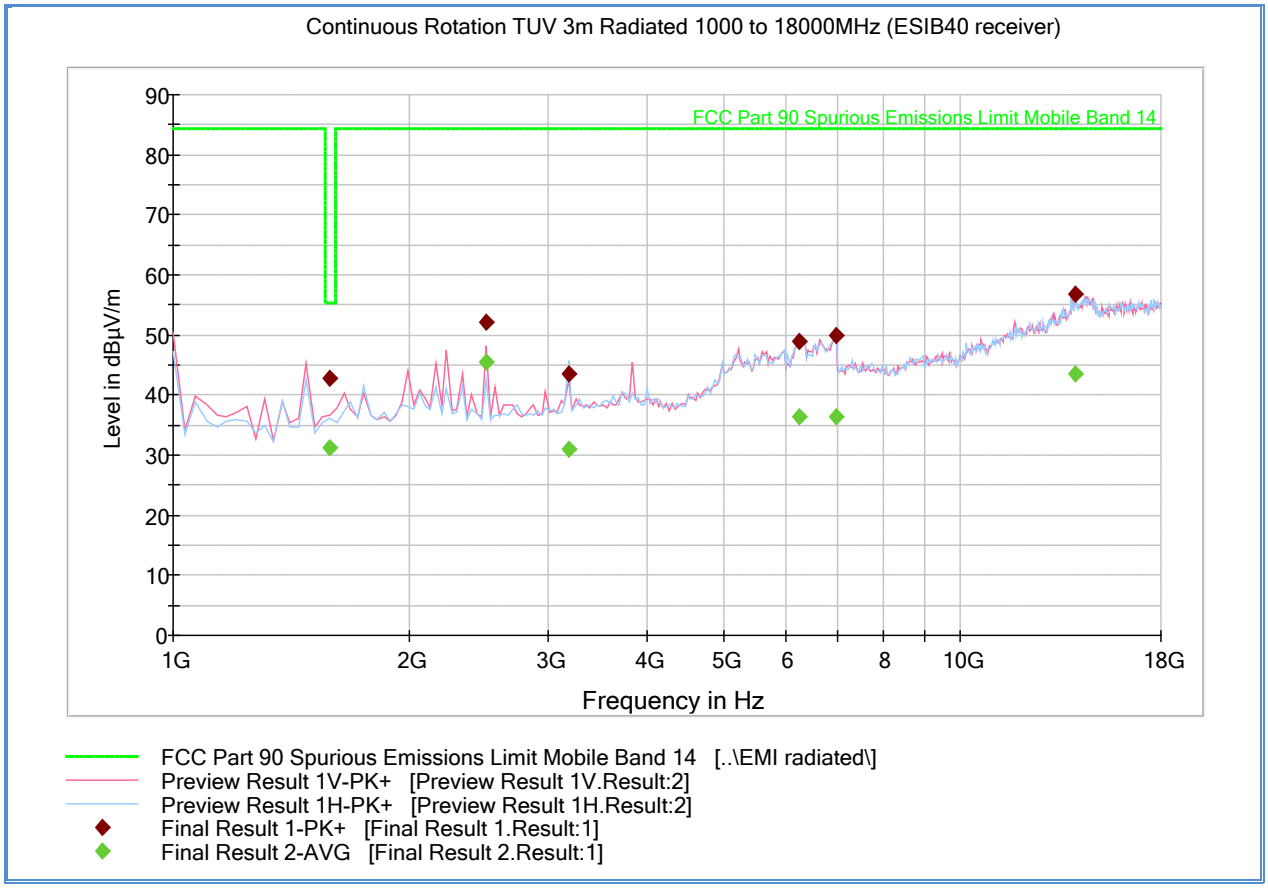
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1584.058317	42.9	1000.0	1000.000	99.6	V	301.0	-1.0	12.3	55.2
2229.752906	42.9	1000.0	1000.000	195.4	V	10.0	2.2	41.5	84.4
3183.460721	44.7	1000.0	1000.000	123.6	H	122.0	4.2	39.7	84.4
6239.792986	49.6	1000.0	1000.000	396.0	V	179.0	10.3	34.8	84.4
11088.268337	51.5	1000.0	1000.000	235.3	H	214.0	16.5	32.9	84.4
14357.009419	57.9	1000.0	1000.000	215.3	V	82.0	22.6	26.5	84.4

Substitution Data

Frequency (MHz)	Field Strength @ 3 meters (dbµV/m)	Cable Loss (dB)	Substitution Antenna Gain (dBi)	Signal Generator Level (dBm)	Substitution Data SGL+AG-CL (dBm)	Limit (dBm)	Compliance

Test Notes: Only worst case bandwidth/modulation presented for spurious emissions above 1GHz. Substitution data not performed (no emissions within 6dB of the limit using Peak detector).

2.6.12 Test Results Above 1GHz (Mid Channel - Band 14 Worst Case Configuration 5MHz BW)



Peak Data

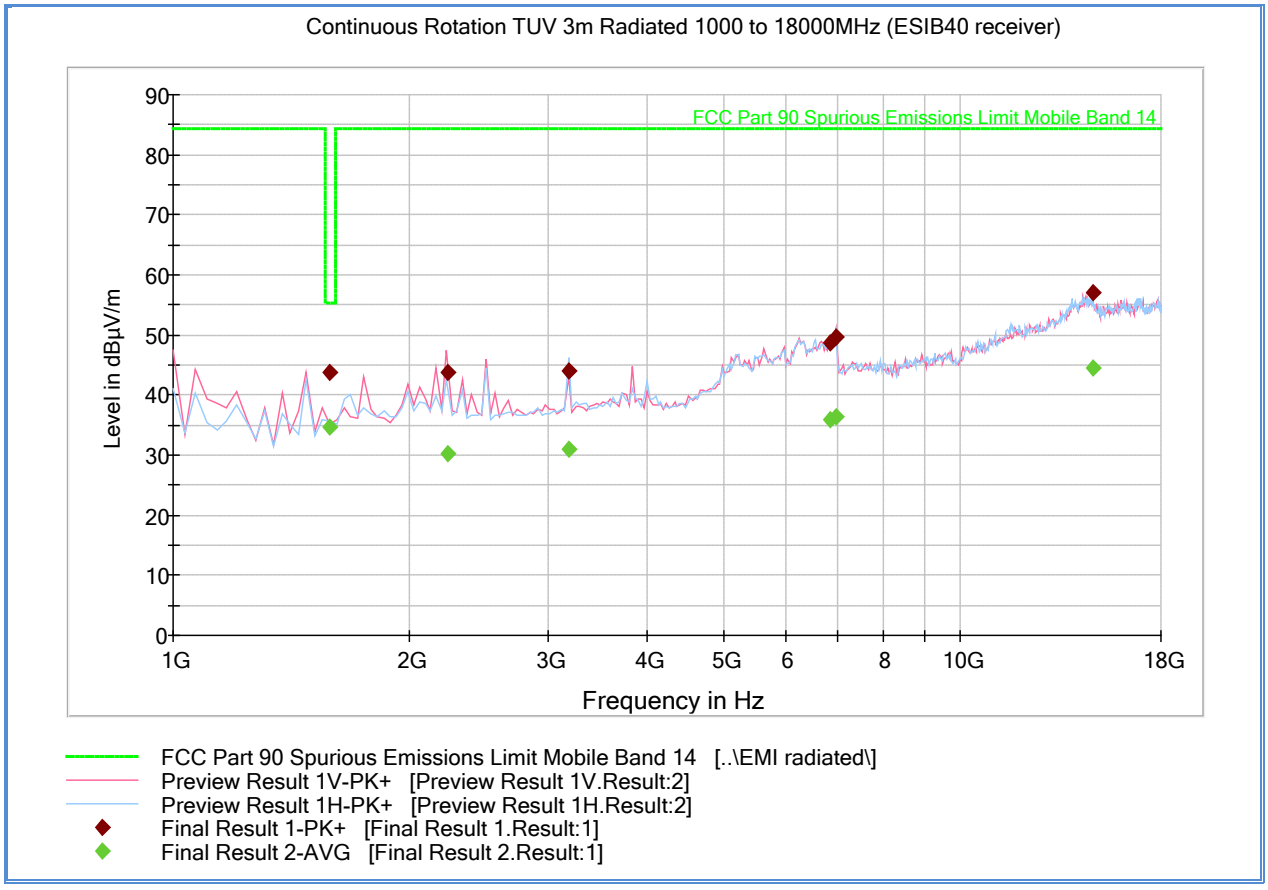
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1584.058317	42.7	1000.0	1000.000	152.3	V	328.0	-1.0	12.6	55.2
2499.897996	52.1	1000.0	1000.000	194.4	V	0.0	2.4	32.3	84.4
3179.260721	43.5	1000.0	1000.000	102.6	H	118.0	4.2	40.9	84.4
6247.792986	48.9	1000.0	1000.000	410.7	H	260.0	10.3	35.5	84.4
6968.823848	50.0	1000.0	1000.000	350.7	H	301.0	10.4	34.4	84.4
14010.928056	56.7	1000.0	1000.000	410.7	H	237.0	21.5	27.7	84.4

Substitution Data

Frequency (MHz)	Field Strength @ 3 meters (dbµV/m)	Cable Loss (dB)	Substitution Antenna Gain (dBi)	Signal Generator Level (dBm)	Substitution Data SGL+AG-CL (dBm)	Limit (dBm)	Compliance

Test Notes: Only worst case bandwidth/modulation presented for spurious emissions above 1GHz. Substitution data not performed (no emissions within 6dB of the limit using Peak detector).

2.6.13 Test Results Above 1GHz (High Channel - Band 14 Worst Case Configuration 5MHz BW)



Peak Data

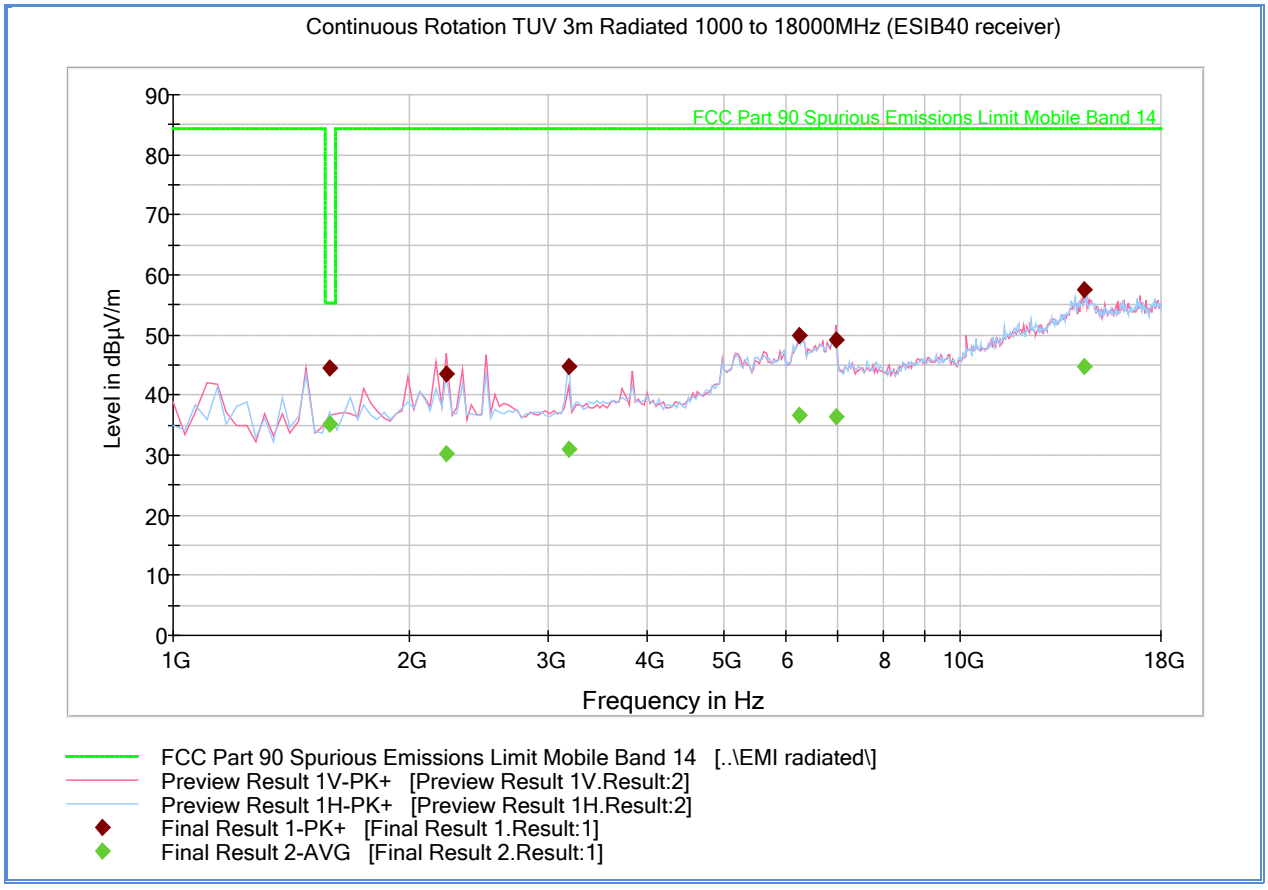
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1584.058317	43.9	1000.0	1000.000	338.1	H	319.0	-1.0	11.4	55.2
2230.152906	43.8	1000.0	1000.000	151.5	V	39.0	2.2	40.6	84.4
3177.660721	44.0	1000.0	1000.000	114.6	H	102.0	4.2	40.4	84.4
6853.019439	48.8	1000.0	1000.000	151.3	H	322.0	10.5	35.6	84.4
6960.023848	49.7	1000.0	1000.000	352.1	V	242.0	10.4	34.7	84.4
14731.158918	57.2	1000.0	1000.000	133.6	H	132.0	22.4	27.2	84.4

Substitution Data

Frequency (MHz)	Field Strength @ 3 meters (dbµV/m)	Cable Loss (dB)	Substitution Antenna Gain (dBi)	Signal Generator Level (dBm)	Substitution Data SGL+AG-CL (dBm)	Limit (dBm)	Compliance (Margin in dB)

Test Notes: Only worst case bandwidth/modulation presented for spurious emissions above 1GHz. Substitution data not performed (no emissions within 6dB of the limit using Peak detector).

2.6.14 Test Results Above 1GHz (Band 14 Worst Case Configuration 10MHz BW)



Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1584.058317	44.5	1000.0	1000.000	336.1	H	339.0	-1.0	10.7	55.2
2225.352906	43.5	1000.0	1000.000	250.5	V	20.0	2.2	40.9	84.4
3177.660721	44.9	1000.0	1000.000	99.6	H	118.0	4.2	39.5	84.4
6244.192986	49.9	1000.0	1000.000	123.6	H	281.0	10.3	34.5	84.4
6959.623848	49.1	1000.0	1000.000	103.6	V	129.0	10.4	35.3	84.4
14350.809419	57.6	1000.0	1000.000	245.3	V	4.0	22.6	26.8	84.4

Substitution Data

Frequency (MHz)	Field Strength @ 3 meters (dbµV/m)	Cable Loss (dB)	Substitution Antenna Gain (dBi)	Signal Generator Level (dBm)	Substitution Data SGL+AG-CL (dBm)	Limit (dBm)	Compliance (Margin in dB)

Test Notes: Only worst case bandwidth/modulation presented for spurious emissions above 1GHz. Substitution data not performed (no emissions within 6dB of the limit using Peak detector).

2.7 BROADBAND TRANSMITTING POWER LIMITS

2.7.1 Specification Reference

47 CFR §90.542(a) (7)

2.7.2 Standard Applicable

(a) The following power limits apply to the 758-768/788-798 MHz band:
(7) Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP

2.7.3 Equipment Under Test

Serial No: 655CPX3214, Test Configuration (N/A, calculation only)

2.7.4 Date of Verification/Initial of test personnel who performed the calculation

March 14, 2014/FSC

2.7.5 Additional Observations

- ERP was calculated as per Section 1.3.2 of KDB412172 D01 (Determining ERP and EIRP v01).
- Calculation formula in logarithmic terms:

$$ERP = P_T + G_T - L_C - 2.15dB$$

Where:

P_T = transmitter conducted output power dBm (Section 2.1 of this test report)
G_T = gain of the transmitting antenna, in dBi (EIRP - the -2.15 in the formula is to convert EIRP to ERP);
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB (Power measurement performed directly at the primary antenna port. The loss between the LTE module and the primary antenna port is considered negligible).

2.7.6 Test Results

Band 14 QPSK								
Bandwidth	**RB Size**	**RB Offset**	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Antenna Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
5.0 MHz	25	0	23305	790.5	23.19	-4.8	16.24	34.77
			23330	793.0	22.79	-4.8	15.84	34.77
			23355	795.5	23.09	-4.8	16.14	34.77
	10	High	23305	790.5	23.41	-4.8	16.46	34.77
			23330	793.0	22.78	-4.8	15.83	34.77

5.0 MHz			23355	795.5	23.21	-4.8	16.26	34.77
	1	0	23305	790.5	23.44	-4.8	16.49	34.77
			23330	793.0	22.73	-4.8	15.78	34.77
			23355	795.5	23.24	-4.8	16.29	34.77
	1	High	**23305**	**790.5**	**23.77**	**-4.8**	**16.82**	34.77
			23330	793.0	22.85	-4.8	15.9	34.77
			23355	795.5	23.58	-4.8	16.63	34.77
10.0 MHz	50	0	23330	793.0	22.62	-4.8	15.67	34.77
	25	High	23330	793.0	22.55	-4.8	15.6	34.77
	1	0	23330	793.0	22.76	-4.8	15.81	34.77
	1	High	23330	793.0	23.20	-4.8	16.25	34.77

Band 14 16-QAM

Bandwidth	RB Size	RB Offset	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	Limit (dBm)
5.0 MHz	25	0	23305	790.5	23.04	-4.8	16.09	34.77
			23330	793.0	22.94	-4.8	15.99	34.77
			23355	795.5	22.84	-4.8	15.89	34.77
	10	15	23305	790.5	23.00	-4.8	16.05	34.77
			23330	793.0	22.89	-4.8	15.94	34.77
			23355	795.5	23.72	-4.8	16.77	34.77
	1	0	23305	790.5	23.96	-4.8	17.01	34.77
			23330	793.0	23.54	-4.8	16.59	34.77
			23355	795.5	23.79	-4.8	16.84	34.77
	1	High	23305	790.5	24.01	-4.8	17.06	34.77
			23330	793.0	23.35	-4.8	16.4	34.77
			23355	795.5	24.00	-4.8	17.05	34.77
10.0 MHz	50	0	23330	793.0	22.71	-4.8	15.76	34.77
	25	25	23330	793.0	22.86	-4.8	15.91	34.77
	1	0	23330	793.0	23.66	-4.8	16.71	34.77
	1	High	**23330**	**793.0**	**24.02**	**-4.8**	**17.07**	34.77

2.8 FREQUENCY STABILITY

2.8.1 Specification Reference

47 CFR §2.1055(a) (1), (d) (1-2)

2.8.2 Standard Applicable

(a) The frequency stability shall be measured with variation of ambient temperature as follows:
(1) From −30° to +50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.
(d) The frequency stability shall be measured with variation of primary supply voltage as follows:
(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer

2.8.3 Equipment Under Test and Modification State

Serial No: 655CPX3214 / Test Configuration A

2.8.4 Date of Test/Initial of test personnel who performed the test

February 26, 2014/FSC

2.8.5 Test Equipment Used

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

2.8.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	23.3°C
Relative Humidity	43.6%
ATM Pressure	99.4 kPa

2.8.7 Additional Observations

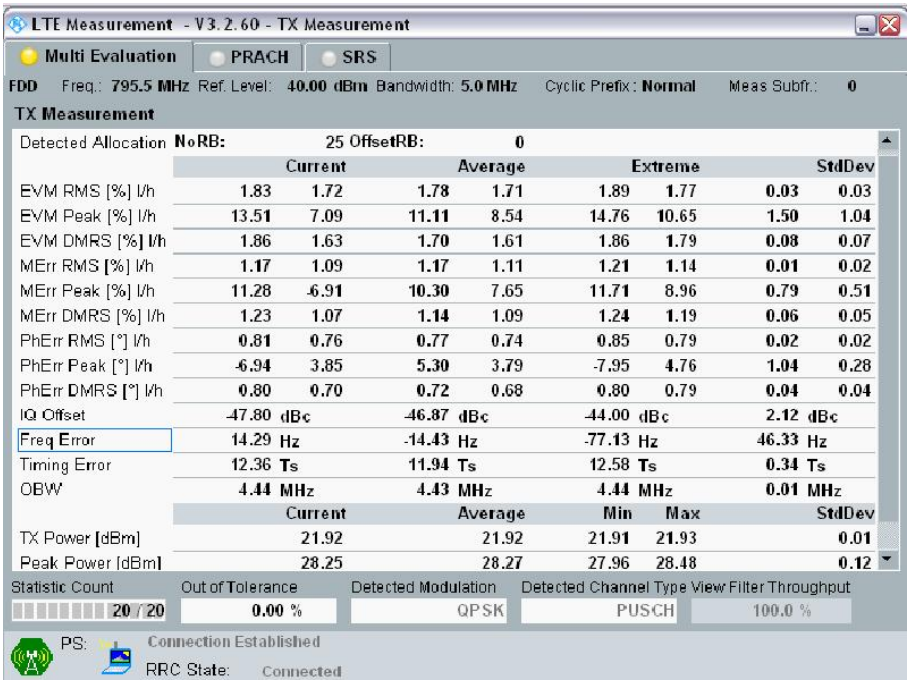
- This is a conducted test. The EUT was operated at 7.4VDC nominal voltage and was placed in the temperature chamber for this evaluation. The EUT was controlled by a CMW500 and the maximum frequency error was monitored through the Wideband Radio Communication Tester Frequency Error measurement function under LTE Tx Measurement.

- The Temperature was reduced to -30°C and allowed to sit for 1 hour to allow the equipment and chamber temperature to stabilize. The measurements were then performed. The temperature was then increased by 10°C steps and allowed to settle before taking the next set of measurements.
- Voltage variation was also performed at 85% and 115% of the nominal voltage.
- Verification performed on a representative channel only.
- There is no Frequency Stability requirement in the band 788-798MHz under Part 90, verification performed is for reporting purposes only.

2.8.8 Test Results Summary

LTE Band 14 – QPSK 5.0MHz - Channel 23355– Frequency 795.5MHz – RB 25/0				
Voltage (%)	***Power (VDC)***	***Temp (°C)***	***Frequency Deviation (Hz)***	***Deviation (ppm)***
100	7.500	-30	-48.54	-0.06
100		-20	-54.79	-0.07
100		-10	-55.17	-0.07
100		0	-55.17	-0.07
100		+10	-77.13	-0.10
100		+20	69.88	0.09
100		+30	-58.16	-0.07
100		+40	-67.86	-0.09
100		+50	71.01	0.09
115	8.625	+20	71.01	0.09
85	6.375	+20	55.26	0.07
TX Inhibit Voltage:	5.140			

2.8.9 Sample Test Plot



LTE Measurement - V3.2.60 - TX Measurement

Multi Evaluation | PRACH | SRS

FDD Freq.: 795.5 MHz Ref. Level: 40.00 dBm Bandwidth: 5.0 MHz Cyclic Prefix: Normal Meas Subfr.: 0

TX Measurement

Detected Allocation NoRB: 25 OffsetRB: 0

	Current		Average		Extreme		StdDev	
EVM RMS [%] l/h	1.83	1.72	1.78	1.71	1.89	1.77	0.03	0.03
EVM Peak [%] l/h	13.51	7.09	11.11	8.54	14.76	10.65	1.50	1.04
EVM DMRS [%] l/h	1.86	1.63	1.70	1.61	1.86	1.79	0.08	0.07
MErr RMS [%] l/h	1.17	1.09	1.17	1.11	1.21	1.14	0.01	0.02
MErr Peak [%] l/h	11.28	-6.91	10.30	7.65	11.71	8.96	0.79	0.51
MErr DMRS [%] l/h	1.23	1.07	1.14	1.09	1.24	1.19	0.06	0.05
PhErr RMS [°] l/h	0.81	0.76	0.77	0.74	0.85	0.79	0.02	0.02
PhErr Peak [°] l/h	-6.94	3.85	5.30	3.79	-7.95	4.76	1.04	0.28
PhErr DMRS [°] l/h	0.80	0.70	0.72	0.68	0.80	0.79	0.04	0.04
IQ Offset	-47.80 dBc		-46.87 dBc		-44.00 dBc		2.12 dBc	
Freq Error	14.29 Hz		-14.43 Hz		-77.13 Hz		46.33 Hz	
Timing Error	12.36 Ts		11.94 Ts		12.58 Ts		0.34 Ts	
OBW	4.44 MHz		4.43 MHz		4.44 MHz		0.01 MHz	

	Current	Average	Min	Max	StdDev
TX Power [dBm]	21.92	21.92	21.91	21.93	0.01
Peak Power [dBm]	28.25	28.27	27.96	28.48	0.12

Statistic Count	Out of Tolerance	Detected Modulation	Detected Channel Type	View Filter Throughput
20 / 20	0.00 %	QPSK	PUSCH	100.0 %

PS: Connection Established
RRC State: Connected

SECTION 3

TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

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

ID Number (SDGE/SDRB)	Test Equipment	Type	Serial Number	Manufacturer	Cal Date	Cal Due Date
Conducted Port Setup						
7569	Series Power Meter	N1911A P-	MY45100625	Agilent	04/15/13	04/15/14
7570	50MHz-18GHz Wideband Power Sensor	N1921A	MY45240588	Agilent	05/06/13	05/06/14
7562	Wideband Radio Communication Tester	CMW 500	1201.0002k50 /103829	Rhode & Schwarz	10/09/13	10/09/15
7582	Signal/Spectrum Analyzer	FSW26	101614	Rhode & Schwarz	11/19/13	11/19/14
7579	Temperature Chamber	Model 115	92009707	Test Equity	07/16/13	07/16/14
8825	20dB Attenuator	46-20-34	BK5773	Weinschel Corp.	Verified by 1003 and 7582	
8808	10dB Attenuator	ATX3396-10	N/A	RF Precision Cables	Verified by 1003 and 7582	
8799	Resistive Power Divider	1506A	RR001	Weinschel Corp.	Verified by 1003 and 7582	
Radiated Emissions						
1033	Bilog Antenna	3142C	00044556	EMCO	06/25/13	06/25/14
7575	Double-ridged waveguide horn antenna	3117	00155511	EMCO	03/25/13	03/25/14
8628	Pre-amplifier	QLJ 01182835-JO	8986002	QuinStar Technologies Inc.	09/03/13	09/03/14
1153	High-frequency cable	SucoFlex 100 SX	N/A	Suhner	09/03/13	09/03/14
1040	EMI Test Receiver	ESIB40	100292	Rhode & Schwarz	07/31/13	07/31/14
1049	EMI Test Receiver	ESU	100133	Rhode & Schwarz	07/24/13	07/24/14
1016	Pre-amplifier	PAM-0202	187	PAM	10/08/13	10/08/14
TUV777	900MHz High Pass Filter	FF6549-1	004	Sage	Verified by 1049 and 1003	
Miscellaneous						
1003	Signal Generator	SMR-40	1104.0002.40	Rhode & Schwarz	01/20/14	01/20/15
6452	Multimeter	3478A	2911A52177	Hewlett Packard	08/02/13	08/02/14
7560	Barometer/Temperature /Humidity Transmitter	iBTHX-W	1240476	Omega	01/30/14	01/30/15
1123	DC Power Supply	E3631A	N/A	Hewlett Packard	Verified by 6452	
7539	DC Power Supply	6434B	1140A01866	Hewlett Packard	Verified by 6452	
	Test Software	EMC32	V8.53	Rhode & Schwarz	N/A	

3.2 MEASUREMENT UNCERTAINTY

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

3.2.1 Radiated Emission Measurements (Below 1GHz)

	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.45	0.26	0.07
2	Cables	Rectangular	0.50	0.29	0.08
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.75	0.43	0.19
5	Site	Rectangular	3.89	2.25	5.04
6	EUT Setup	Rectangular	1.00	0.58	0.33
				Combined Uncertainty (u_c):	2.41
				Coverage Factor (k):	2
				Expanded Uncertainty:	4.82

3.2.2 Radiated Emission Measurements (Above 1GHz)

	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.57	0.33	0.11
2	Cables	Rectangular	0.70	0.40	0.16
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.37	0.21	0.05
5	Site	Rectangular	3.89	2.25	5.04
6	EUT Setup	Rectangular	1.00	0.58	0.33
				Combined Uncertainty (u_c):	2.40
				Coverage Factor (k):	2
				Expanded Uncertainty:	4.81

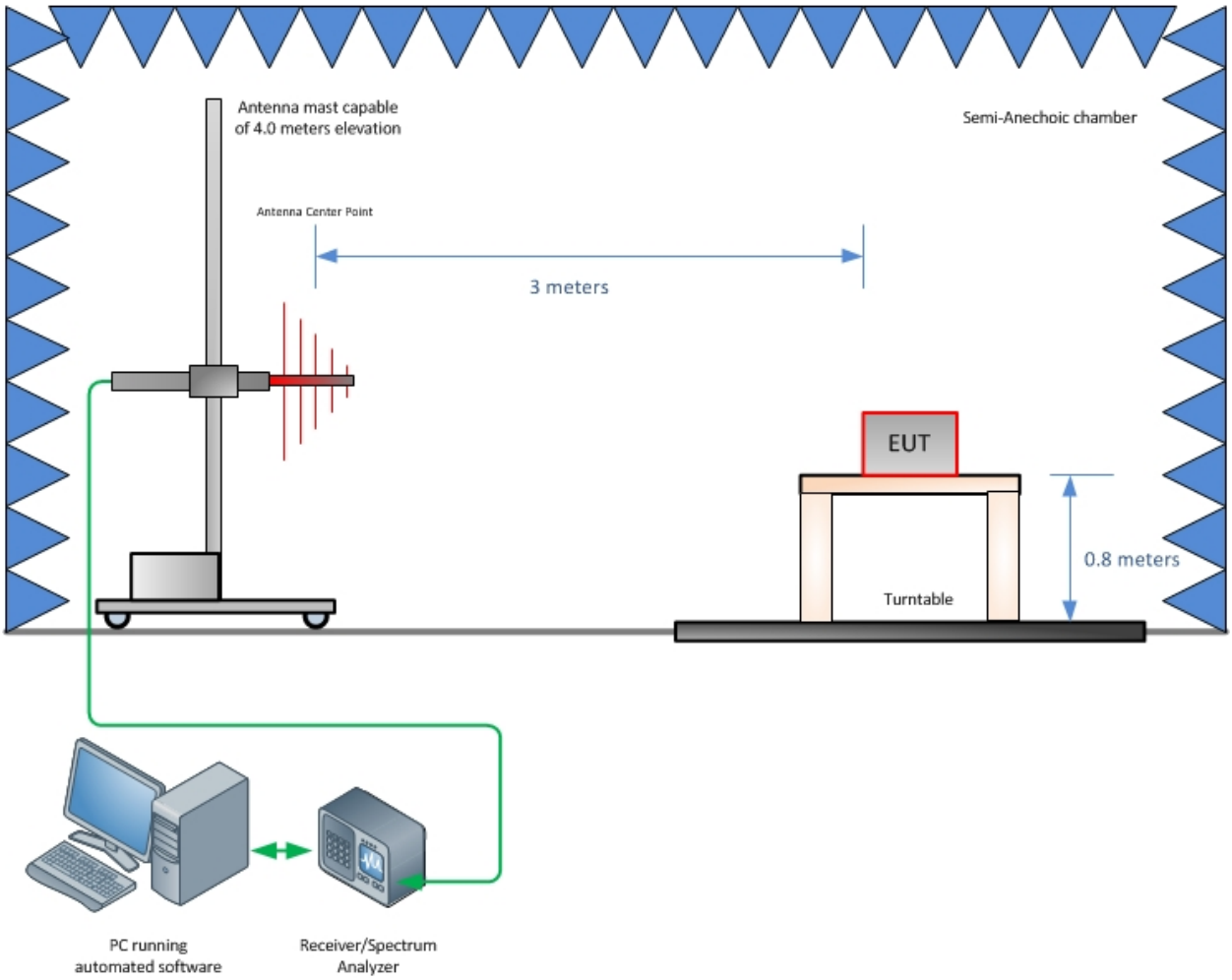
3.2.3 Conducted Antenna Port Measurement

	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.57	0.33	0.11
2	Cables	Rectangular	0.50	0.29	0.08
3	EUT Setup	Rectangular	1.00	0.58	0.33
				Combined Uncertainty (u_c):	0.72
				Coverage Factor (k):	2
				Expanded Uncertainty:	1.45

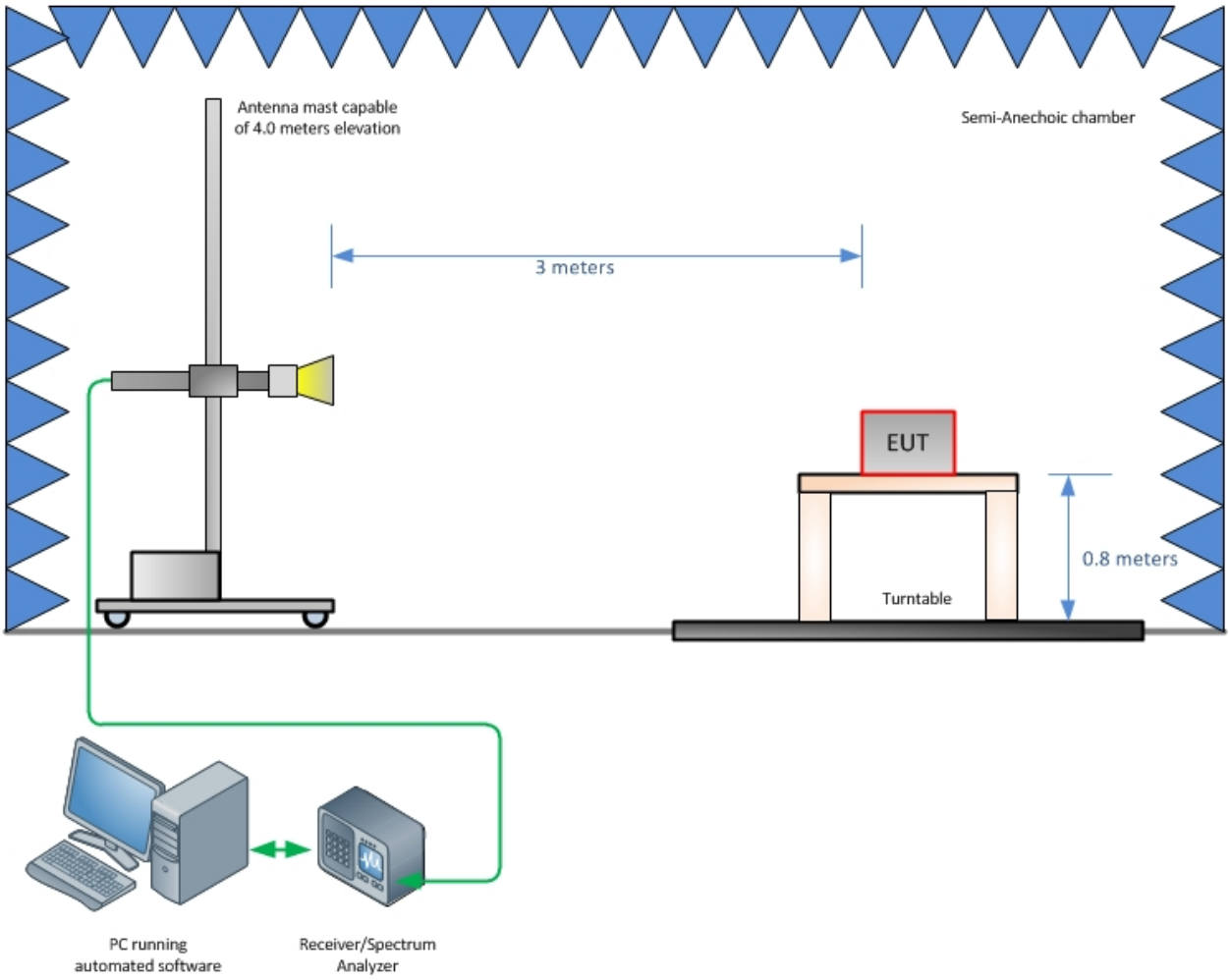
SECTION 4

DIAGRAM OF TEST SETUP

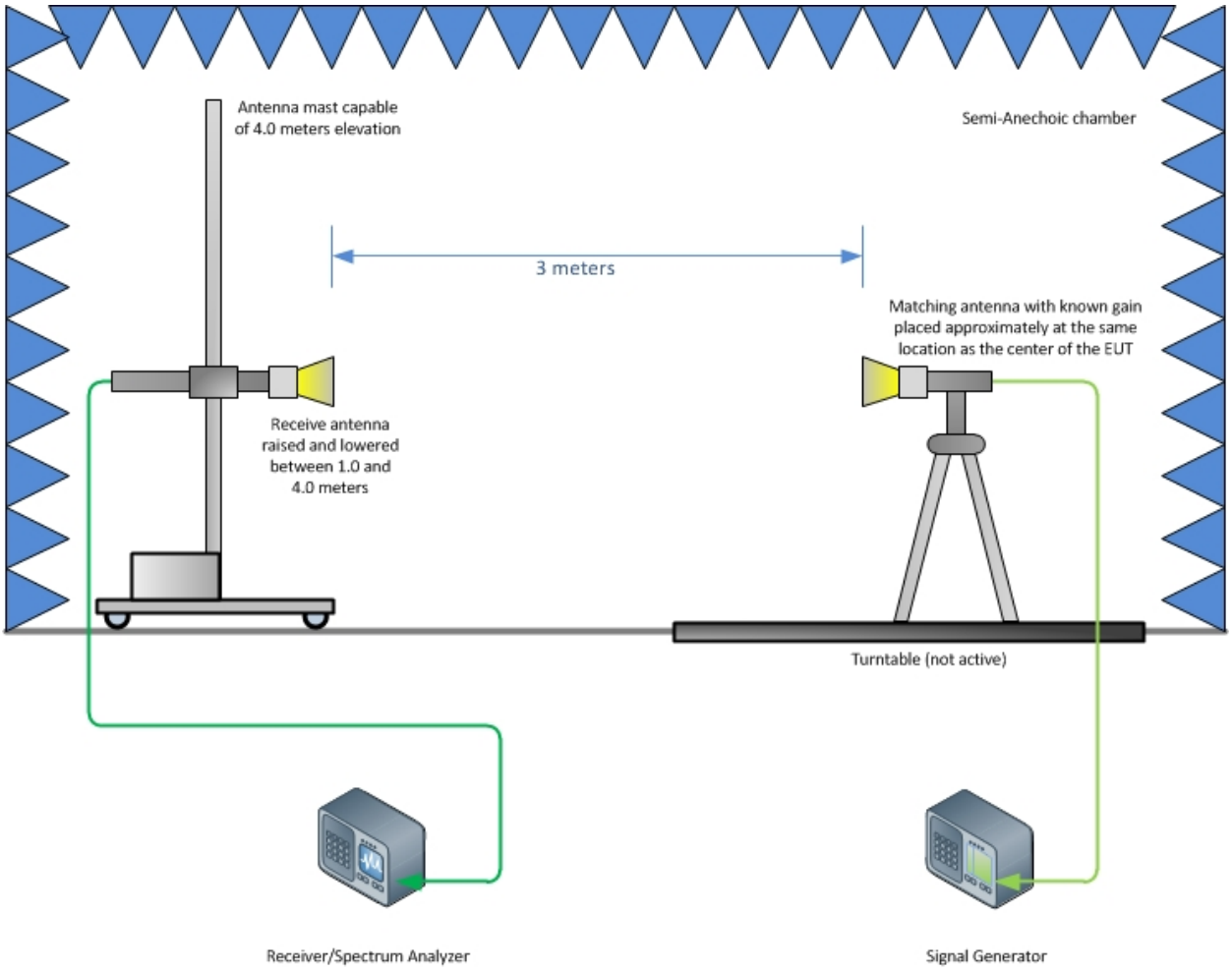
4.1 TEST SETUP DIAGRAM



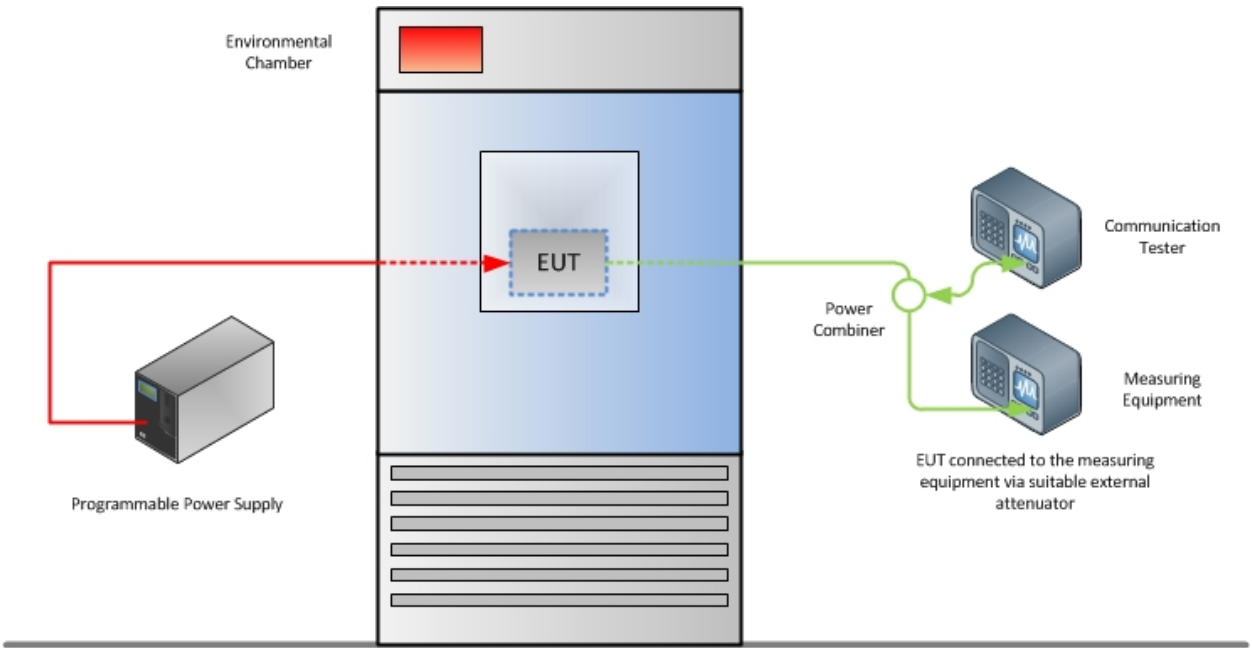
Radiated Emission Test Setup (Below 1GHz)



Radiated Emission Test Setup (Above 1GHz)



Substitution Test Method (Above 1GHz)



Frequency Stability Test Comfiguration

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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