FCC RF Test Report

APPLICANT	**:**	**HTC Corporation**
EQUIPMENT	**:**	**Smartphone**
MODEL NAME	**:**	**PL80110**
FCC ID	**:**	**NM8PL80110**
STANDARD	**:**	**47 CFR Part 2, 24**
CLASSIFICATION	**:**	**PCS Licensed Transmitter Held to Ear (PCE)**

The product was received on Oct. 26, 2012 and completely tested on Dec. 18, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai

Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG2O2633B	Rev. 01	Initial issue of report	Dec. 21, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-133 (4.1)	Conducted Output Power	NA	PASS	-
3.2	§24.232(d)	RSS-133(6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power (Band 25)	EIRP < 2Watt	PASS	-
3.4	§2.1049 §24.238(a)	RSS-GEN(4.6.1) RSS-133(6.5)	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1049 §24.238(a)	RSS-133 (6.5.1)	Conducted Band Edge Measurement	< $43+10\log_{10}(P[Watts])$	PASS	-
3.6	§2.1051 §24.238(a)	RSS-133 (6.5.1)	Conducted Spurious Emission	< $43+10\log_{10}(P[Watts])$	PASS	-
3.7	§2.1053 §24.238(a)	RSS-133 (6.5.1)	Radiated Spurious Emission	< $43+10\log_{10}(P[Watts])$	PASS	Under limit 9.79 dB at 15282.000 MHz
3.8	§2.1055 §24.235	RSS-133(6.3)	Frequency Stability Temperature & Voltage	< 2.5 ppm	PASS	

1 General Description

1.1 Applicant

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

1.2 Manufacturer

HTC Corporation

No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan.

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Smartphone
Model Name	PL80110
FCC ID	NM8PL80110
Sample 1	EUT with LCD Panel 1, Camera Front 1, and 2nd Camera 1
Sample 2	EUT with LCD Panel 2, Camera Front 2, and 2nd Camera 2
EUT supports Radios application	CDMA/EV-DO/LTE/ WLAN 11abgn / Bluetooth 3.0/4.0 / NFC
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	1852.5MHz ~ 1907.5 MHz
Rx Frequency	1932.5MHz ~ 1992.5 MHz
Bandwidth	5MHz/ 10MHz
Maximum Output Power to Antenna	22.86 dBm
Antenna Type	PIFA Antenna

1.5 Emission Designator

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance (%, Hz, ppm)	Maximum ERP/EIRP
Part 24	LTE Band 25	QPSK	5MHz	4M52G7D	0.030 ppm	0.0875 W
Part 24	LTE Band 25	16QAM	5MHz	4M52D7W	0.029 ppm	0.0671 W
Part 24	LTE Band 25	QPSK	10MHz	9M12G7D	0.030 ppm	0.1194 W
Part 24	LTE Band 25	16QAM	10MHz	9M12D7W	0.032 ppm	0.0883 W

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	**Sporton Site No.**		**FCC/IC Registration No.**
	TH02-HY	03CH07-HY	TW1022/4086B-1

1.7 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 24(E)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v01
- NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.

2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

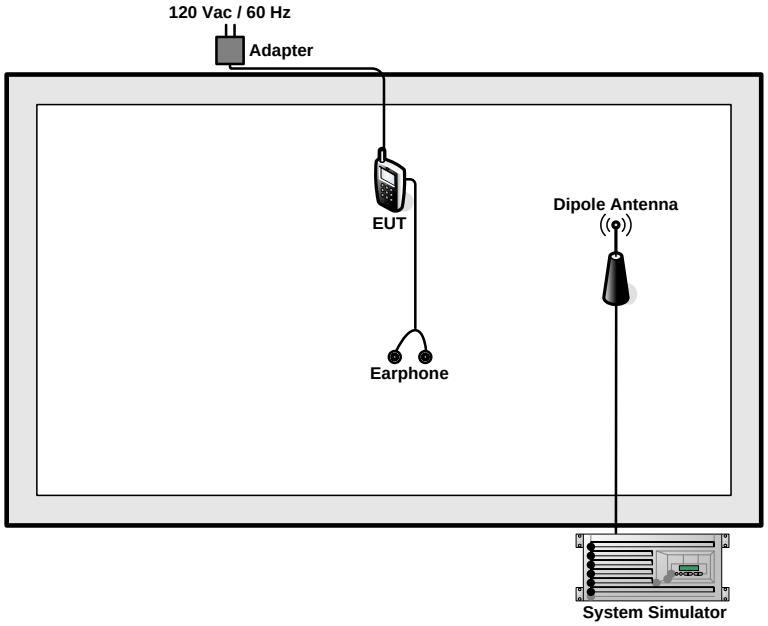
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.

Frequency range investigated for radiated emission: 30MHz to 10th harmonic.

Test Modes			
Band		**Radiated TCs**	**Conducted TCs**
LTE Band 25	**BW 5MHz**	■ LTE (RB Size 1, RB Offset 0) Link for Sample 1 ■ LTE (RB Size 1, RB Offset 0) Link for Sample 2	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 12) Link ■ LTE (RB Size 1, RB Offset 24) Link ■ LTE (RB Size12, RB Offset 0) Link ■ LTE (RB Size 12, RB Offset 6) Link ■ LTE (RB Size 12, RB Offset 11) Link ■ LTE (RB Size 25, RB Offset 0) Link
	BW 10MHz	■ LTE (RB Size 1, RB Offset 0) Link for Sample 1	■ LTE (RB Size 1, RB Offset 0) Link ■ LTE (RB Size 1, RB Offset 24) Link ■ LTE (RB Size 1, RB Offset 49) Link ■ LTE (RB Size 25, RB Offset 0) Link ■ LTE (RB Size 25, RB Offset 12) Link ■ LTE (RB Size 25, RB Offset 24) Link ■ LTE (RB Size 50, RB Offset 0) Link

Remark: For Radiated TCs, all test items were performance with Adapter 1, Earphone, Battery 2, and USB Cable 2.

2.2 Connection Diagram of Test System



2.3 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

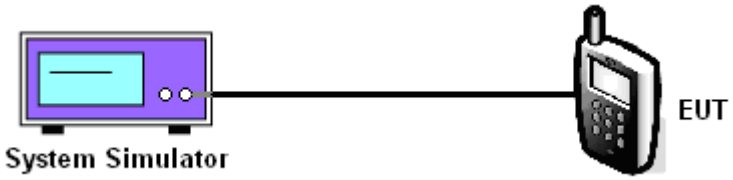
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Operation Band	Band Width	Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	PAPR (dB)	Mod / RB (Size – Offset)
LTE Band 25	5MHz	QPSK	**26065**	**1852.5**	22.72	0.19	4.96	QPSK 1-12
			26365	**1882.5**	22.61	0.18	4.96	QPSK 1-0
			26665	**1912.5**	22.80	0.19	4.96	QPSK 1-0
		16QAM	**26065**	**1852.5**	21.89	0.15	5.80	16QAM 1-0
			26365	**1882.5**	21.91	0.16	5.80	16QAM 1-0
			26665	**1912.5**	21.87	0.15	5.80	16QAM 1-0
	10MHz	QPSK	**26090**	**1855.0**	22.84	0.19	5.16	QPSK 1-0
			26365	**1882.5**	22.86	0.19	5.16	QPSK 1-0
			26640	**1910.0**	22.76	0.19	5.16	QPSK 1-0
		16QAM	**26090**	**1855.0**	21.92	0.16	6.12	16QAM 1-0
			26365	**1882.5**	21.94	0.16	6.12	16QAM 1-0
			26640	**1910.0**	21.85	0.15	6.12	16QAM 1-24

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

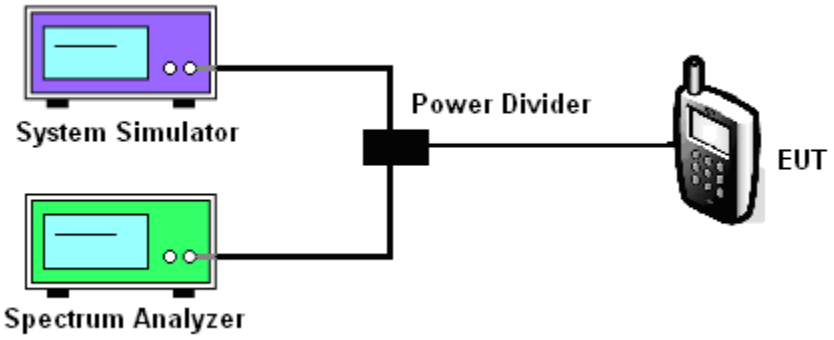
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. For GSM/EGPRS operating modes:
   a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
   b. Set EUT in maximum power output, and triggered the burst signal.
   c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
3. For UMTS operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

Modes	LTE Band 25			
BW / Mod.	5MHz / QPSK	5MHz / 16QAM	10MHz / QPSK	10MHz / 16QAM
Peak-to-Average Ratio (dB)	4.96	5.80	5.16	6.12

Note:

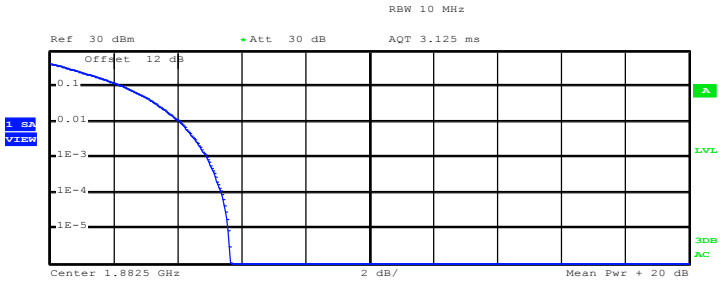
The maximum RB configurations of the PAPR summary as below:

BW5.0M RB setting：RB Size 25, RB offset 0

BW10M RB setting：RB Size 50, RB offset 0

3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 25 5MHz / QPSK



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.89 dBm
Peak	27.54 dBm
Crest	5.65 dB
10 %	2.40 dB
1 %	4.08 dB
.1 %	4.96 dB
.01 %	5.40 dB

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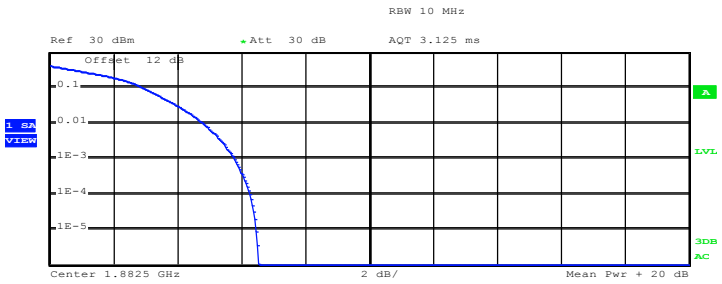
Peak-to-Average Ratio on LTE Band 25 5MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	20.94 dBm
Peak	27.47 dBm
Crest	6.53 dB
10 %	3.00 dB
1 %	4.84 dB
.1 %	5.80 dB
.01 %	6.28 dB

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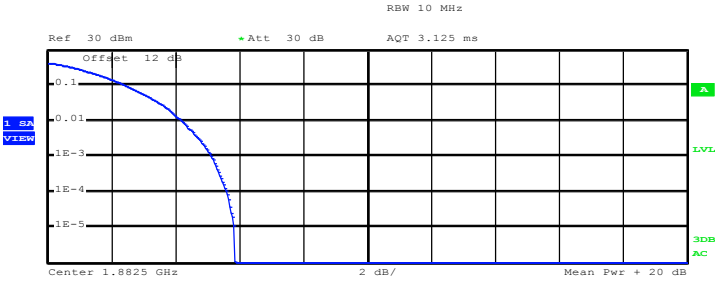
Peak-to-Average Ratio on LTE Band 25 10MHz / QPSK



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.60 dBm
Peak	27.47 dBm
Crest	5.87 dB
10 %	2.52 dB
1 %	4.20 dB
.1 %	5.16 dB
.01 %	5.60 dB

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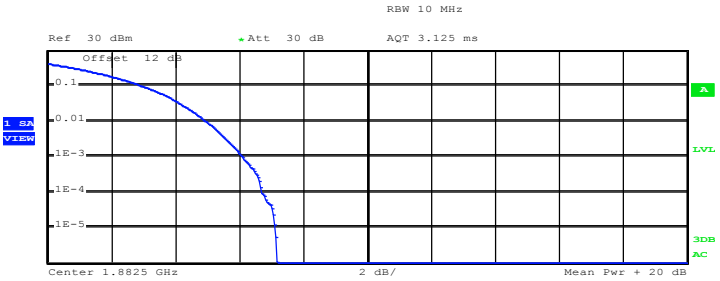
Peak-to-Average Ratio on LTE Band 25 10MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	20.64 dBm
Peak	27.83 dBm
Crest	7.19 dB
10 %	3.04 dB
1 %	4.96 dB
.1 %	6.12 dB
.01 %	6.72 dB

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3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 25.

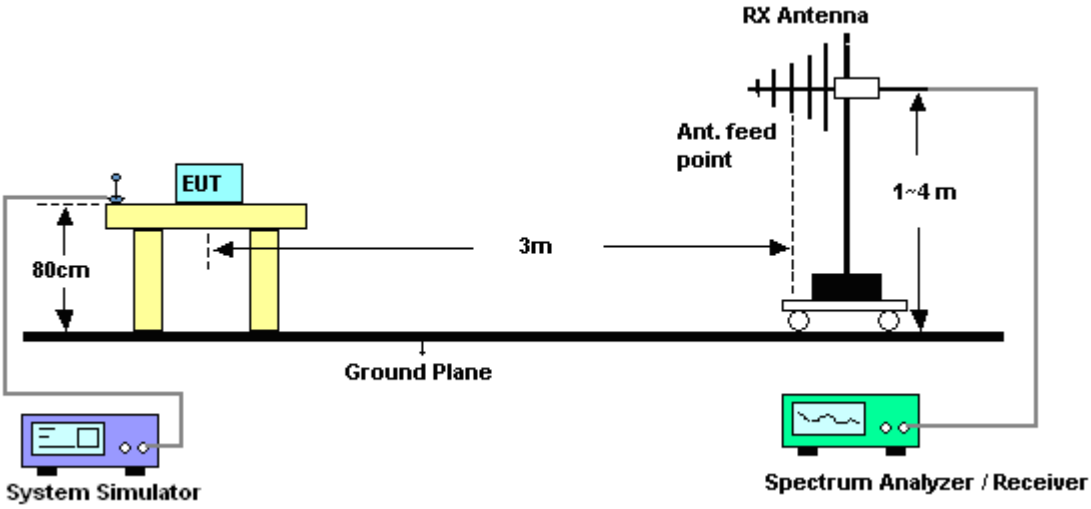
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The EUT was placed on a non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer which used a channel power option across EUT's signal bandwidth per section 4.0 of KDB 971168 D01.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP= LVL + Correction factor and ERP = EIRP – 2.15.

3.3.4 Test Setup



3.3.5 Test Result of EIRP

LTE Band 25 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1852.5	-25.25	43.69	18.44	0.0698
1882.5	-25.37	44.79	19.42	0.0875
1912.5	-25.66	43.59	17.93	0.0621
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1852.5	-31.05	45.72	14.67	0.0293
1882.5	-31.56	46.78	15.22	0.0333
1912.5	-30.93	46.77	15.84	0.0384

LTE Band 25 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1852.5	-25.88	43.69	17.81	0.0604
1882.5	-26.52	44.79	18.27	0.0671
1912.5	-26.32	43.59	17.27	0.0533
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1852.5	-32.26	45.72	13.46	0.0222
1882.5	-31.75	46.78	15.03	0.0318
1912.5	-32.94	46.77	13.83	0.0242

LTE Band 25 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1855.0	-25.59	43.69	18.10	0.0646
1882.5	-24.02	44.79	20.77	0.1194
1910.0	-25.59	43.59	18.00	0.0631
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1855.0	-30.17	45.72	15.55	0.0359
1882.5	-29.18	46.78	17.60	0.0575
1910.0	-30.71	46.77	16.06	0.0404

LTE Band 25 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1855.0	-26.23	43.69	17.46	0.0557
1882.5	-25.33	44.79	19.46	0.0883
1910.0	-26.20	43.59	17.39	0.0548
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
1855.0	-32.22	45.72	13.50	0.0224
1882.5	-33.09	46.78	13.69	0.0234
1910.0	-32.82	46.77	13.95	0.0248

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

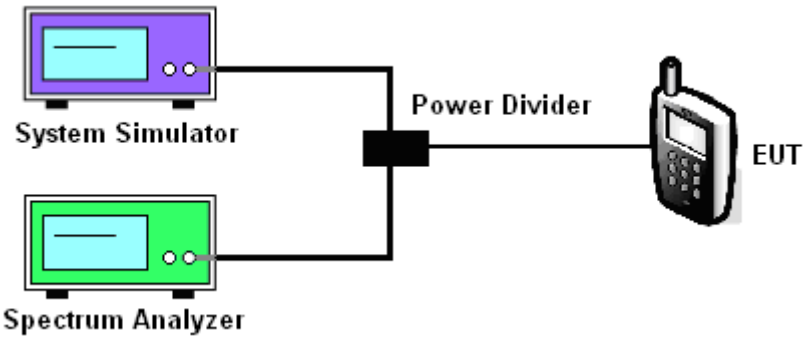
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

4. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
5. The 99% occupied bandwidth (BW) of the middle channel for the highest RF powers with full RB sizes were measured.

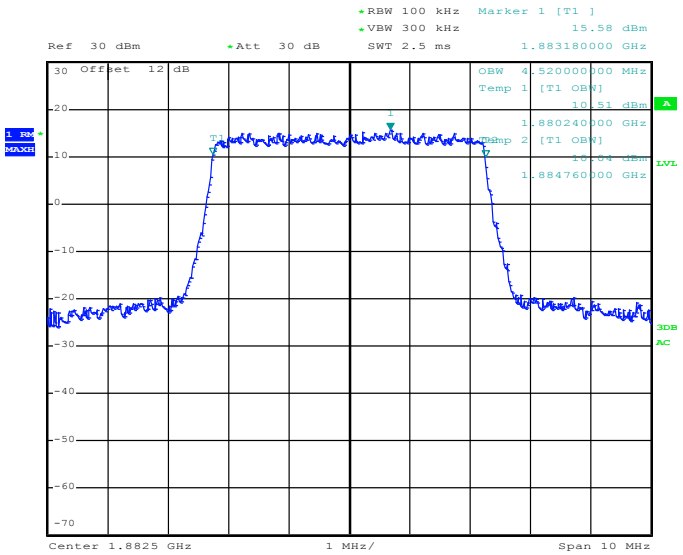
3.4.4 Test Setup



3.4.5 Test Result (Plots) of Occupied Bandwidth

Band :	LTE Band 25	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26365



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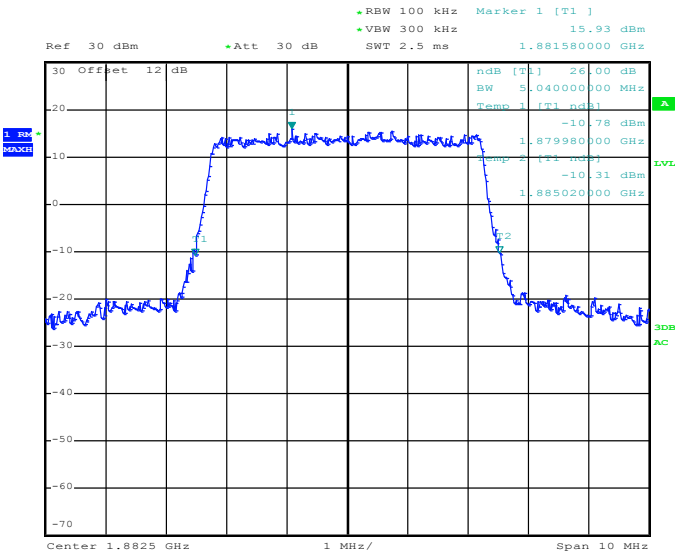
26dB Bandwidth Plot on Channel 26365



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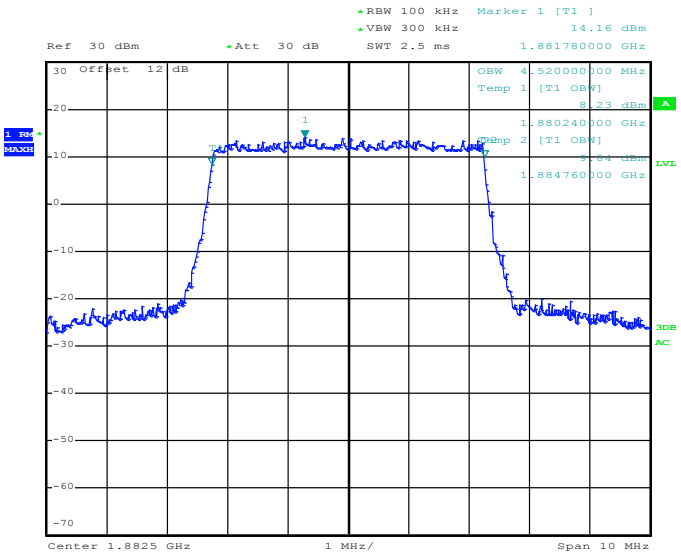
Band :	LTE Band 25	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26365



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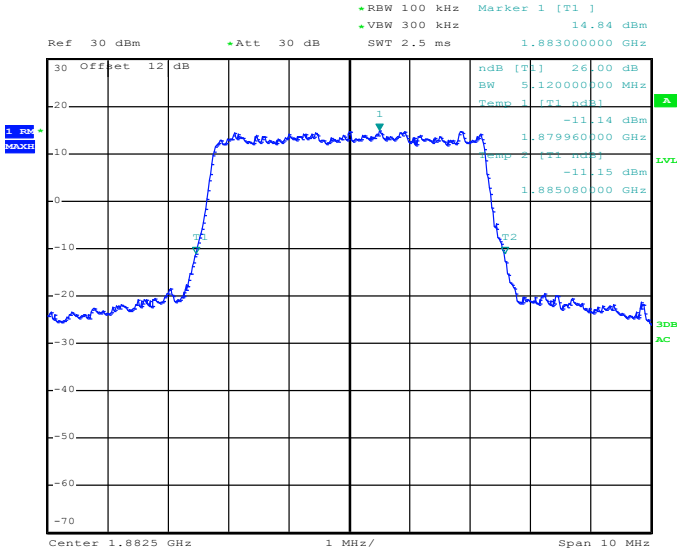
26dB Bandwidth Plot on Channel 26365



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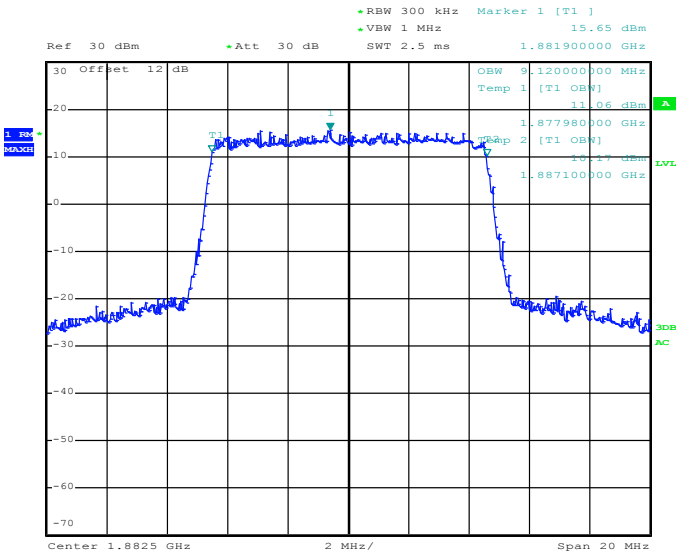
Band :	LTE Band 25	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26365



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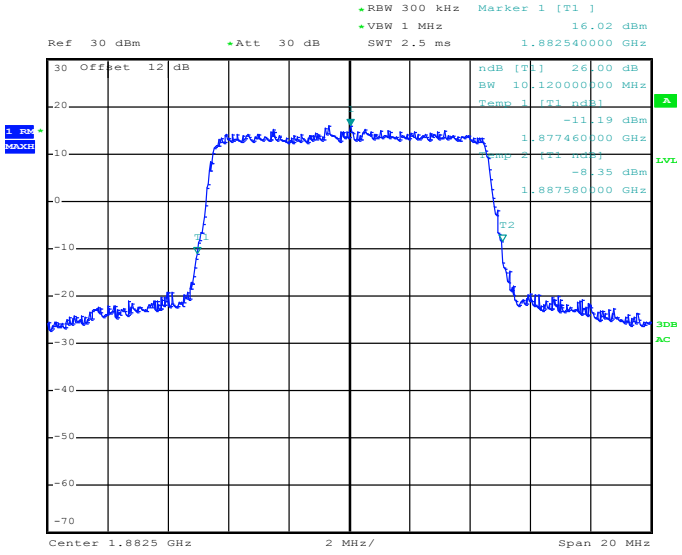
26dB Bandwidth Plot on Channel 26365



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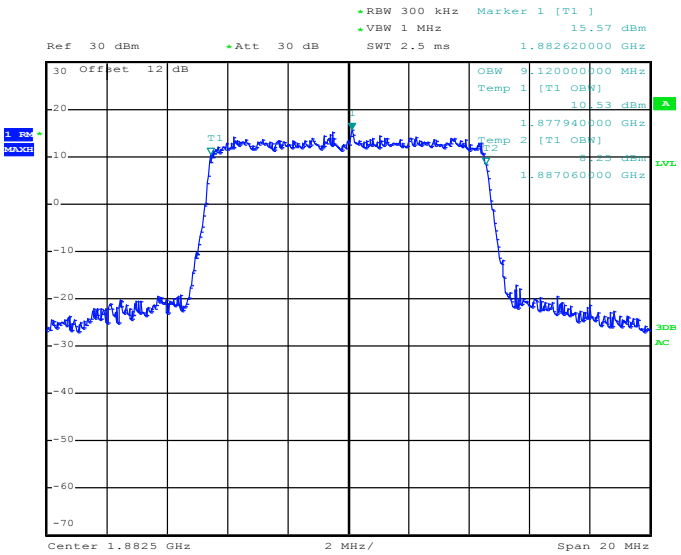
Band :	LTE Band 25	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26365



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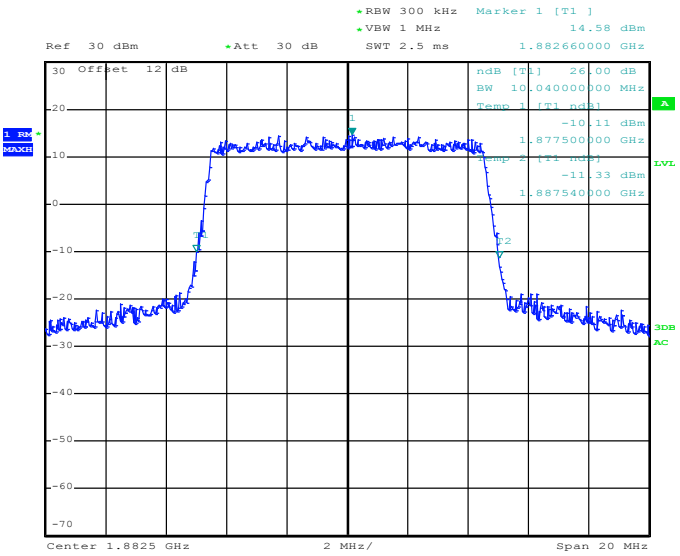
26dB Bandwidth Plot on Channel 26365



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3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

For operations in the 1850 - 1915 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

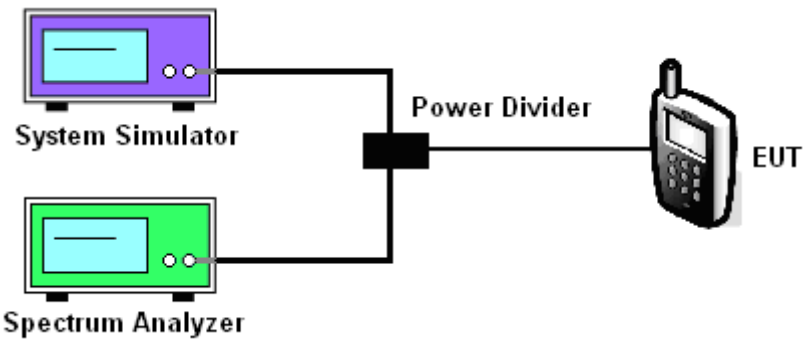
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. For LTE Band 25, the band edges of low and high channels for the highest RF powers were measured. In the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, RBW ≥ 1% EBW employed.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
4. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
   = P(W) - [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

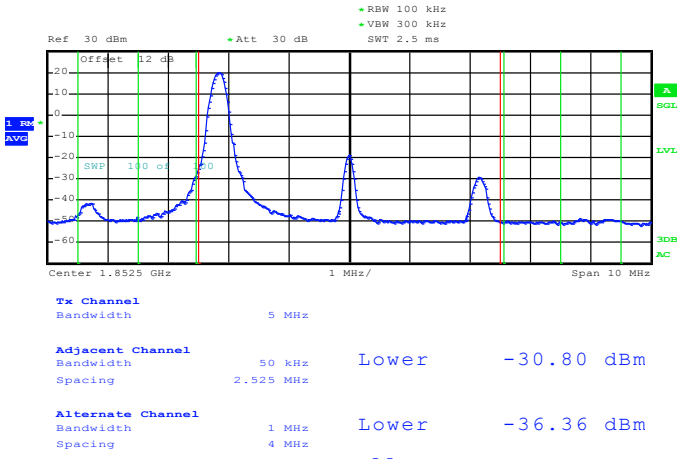
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

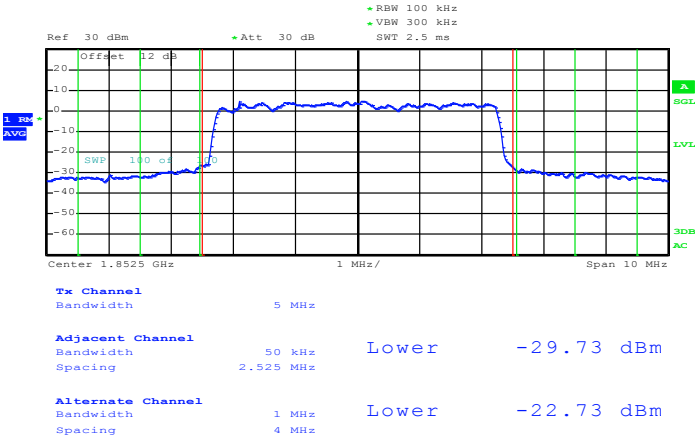
Band :	LTE Band 25	Band Width :	5MHz / QPSK

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



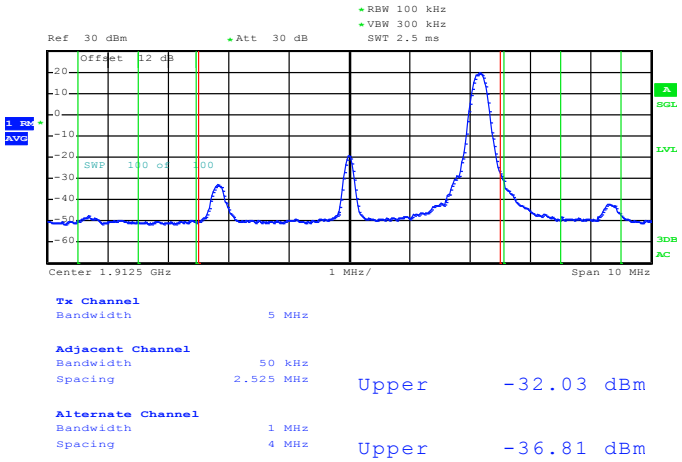
Date: 6.NOV.2012 23:45:06

Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



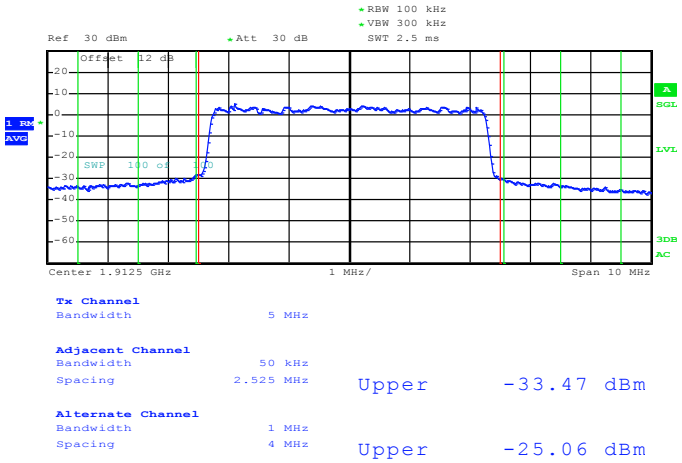
Date: 6.NOV.2012 23:43:49

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 6.NOV.2012 23:41:20

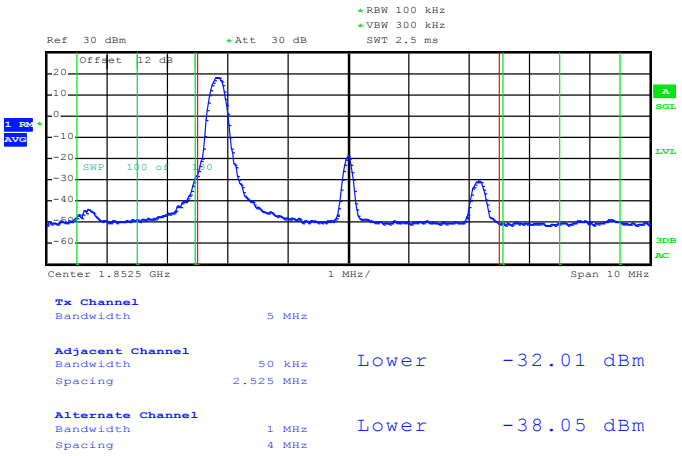
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 6.NOV.2012 23:38:01

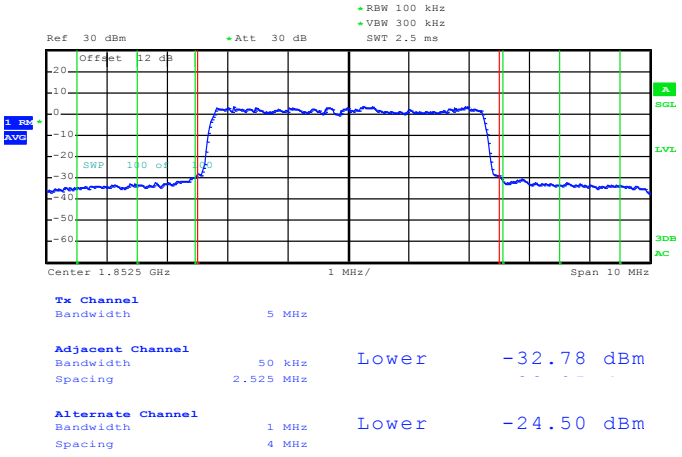
Band :	LTE Band 25	Band Width :	5MHz / 16QAM

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



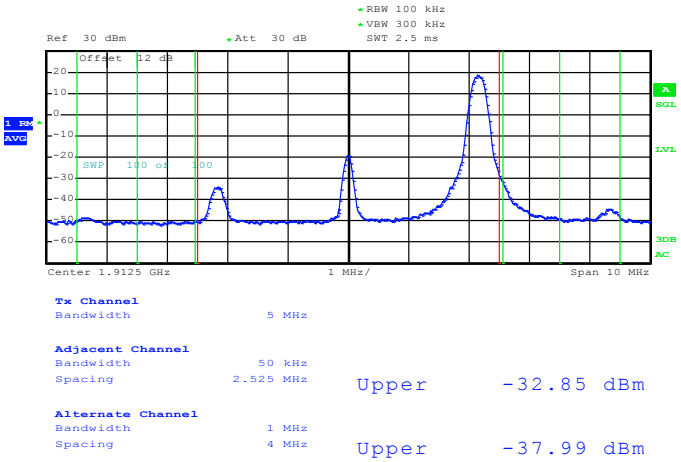
Date: 6.NOV.2012 23:45:26

Lower Band Edge Plot for 16QAM -RB Size 25, RB Offset 0



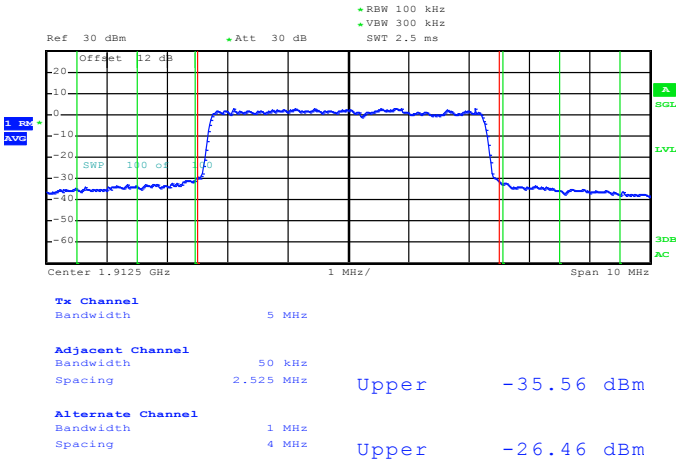
Date: 6.NOV.2012 23:44:09

Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 24



Date: 6.NOV.2012 23:41:37

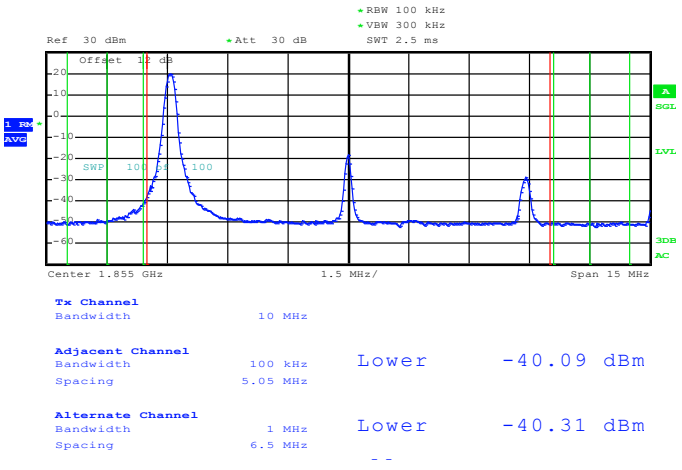
Higher Band Edge Plot for 16QAM -RB Size 25, RB Offset 0



Date: 6.NOV.2012 23:38:37

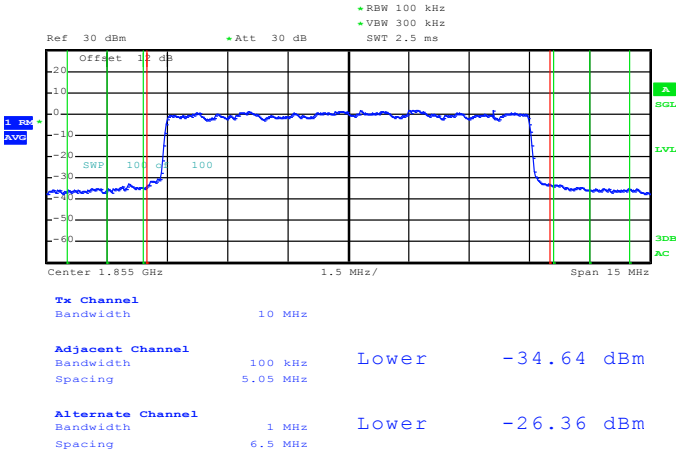
Band :	LTE Band 25	Band Width :	10MHz / QPSK

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



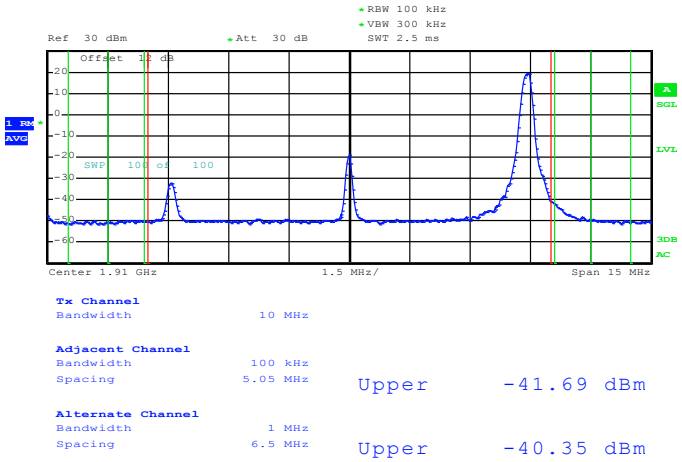
Date: 6.NOV.2012 23:31:18

Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



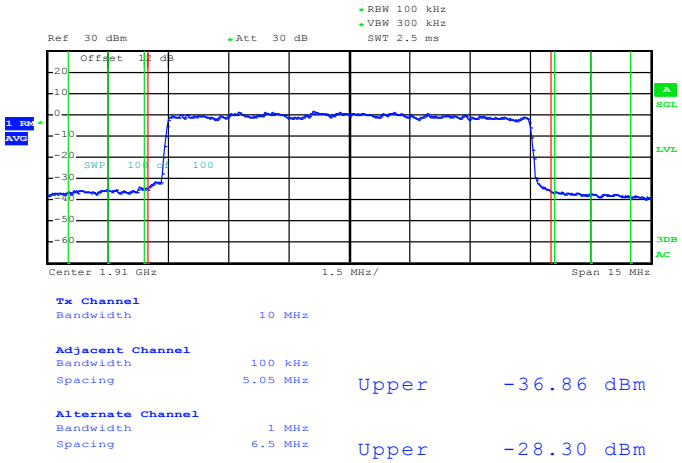
Date: 6.NOV.2012 23:30:04

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Date: 6.NOV.2012 23:34:25

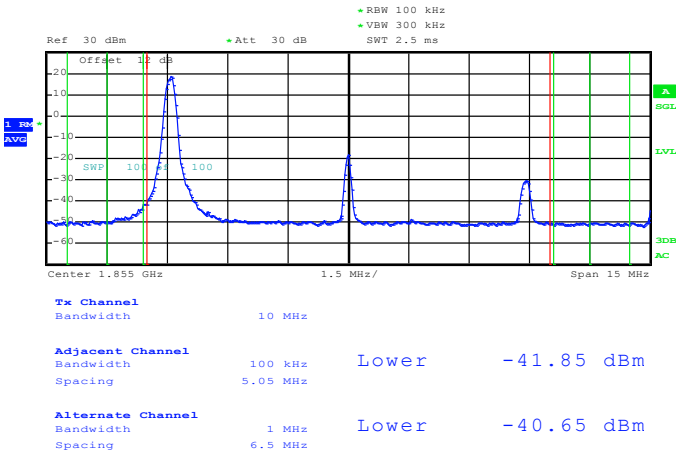
Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 6.NOV.2012 23:33:17

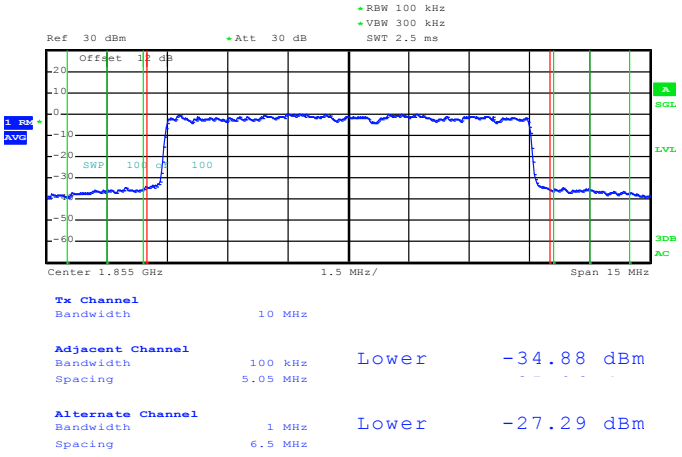
Band :	LTE Band 25	Band Width :	10MHz / 16QAM

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



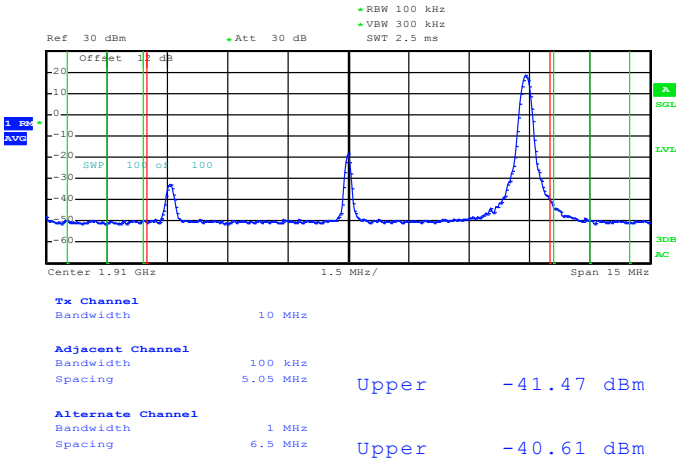
Date: 6.NOV.2012 23:32:12

Lower Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



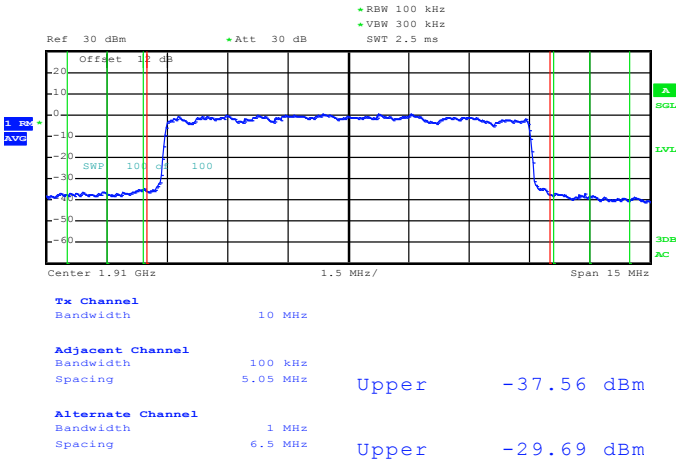
Date: 6.NOV.2012 23:30:53

Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 49



Date: 6.NOV.2012 23:34:43

Higher Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



Date: 6.NOV.2012 23:33:39

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 9 KHz up to a frequency including its 10^{th} harmonic.

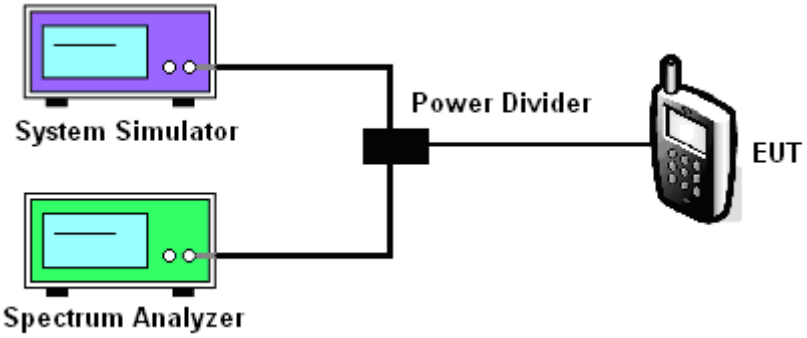
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
   = P(W) - [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

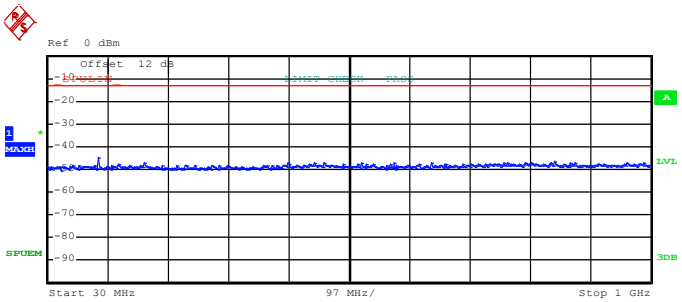
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

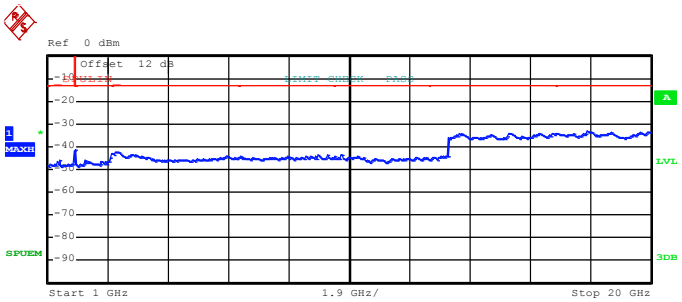
Band :	LTE Band 25	Channel :	CH26065 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	111.965000 M	-44.47	-31.47

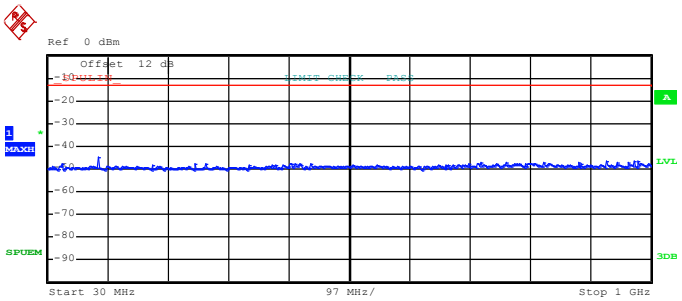
Date: 7.NOV.2012 00:48:18



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.840 G	1.00 M	1.838740 G	-41.57	-28.57
1.865 G	3.000 G	1.00 M	1.868405 G	-41.45	-28.45
3.000 G	7.000 G	1.00 M	3.162000 G	-42.19	-29.19
7.000 G	10.000 G	1.00 M	9.809500 G	-43.41	-30.41
10.000 G	13.000 G	1.00 M	10.255000 G	-43.47	-30.47
13.000 G	17.000 G	1.00 M	16.924000 G	-33.93	-20.93
17.000 G	20.000 G	1.00 M	17.973500 G	-33.05	-20.05

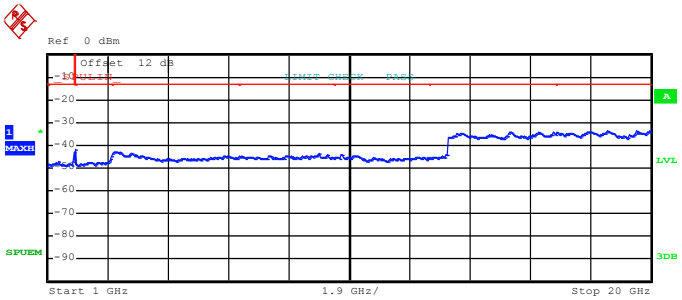
Date: 7.NOV.2012 01:00:45

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	111.965000 M	-44.54	-31.54

Date: 7.NOV.2012 00:48:36

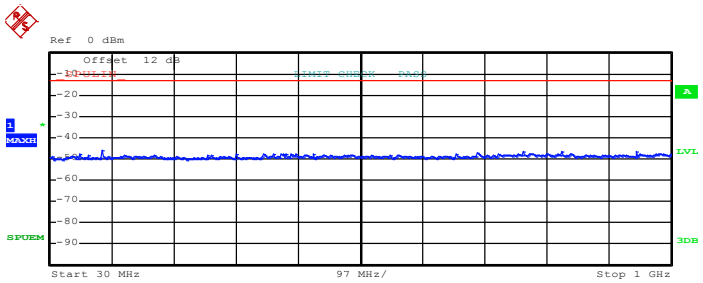


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.840 G	1.00 M	1.839160 G	-42.90	-29.90
1.865 G	3.000 G	1.00 M	1.868405 G	-41.71	-28.71
3.000 G	7.000 G	1.00 M	3.134000 G	-42.86	-29.86
7.000 G	10.000 G	1.00 M	9.532000 G	-43.61	-30.61
10.000 G	13.000 G	1.00 M	10.258000 G	-44.02	-31.02
13.000 G	17.000 G	1.00 M	16.926000 G	-34.11	-21.11
17.000 G	20.000 G	1.00 M	18.647000 G	-33.82	-20.82

Date: 7.NOV.2012 01:01:15

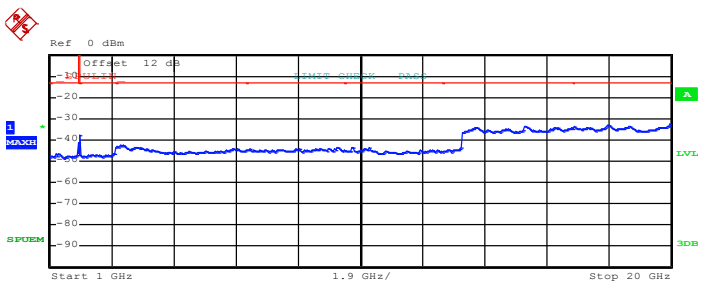
Band :	LTE Band 25	Channel :	CH26365 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	111.965000 M	-45.93	-32.93

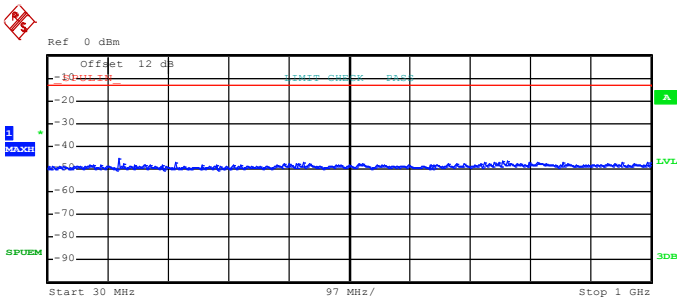
Date: 7.NOV.2012 00:54:34



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.870 G	1.00 M	1.866955 G	-41.04	-28.04
1.895 G	3.000 G	1.00 M	1.896658 G	-37.85	-24.85
3.000 G	7.000 G	1.00 M	3.146000 G	-42.28	-29.28
7.000 G	10.000 G	1.00 M	9.794500 G	-43.33	-30.33
10.000 G	13.000 G	1.00 M	10.249000 G	-43.32	-30.32
13.000 G	17.000 G	1.00 M	15.558000 G	-33.76	-20.76
17.000 G	20.000 G	1.00 M	19.976000 G	-32.73	-19.73

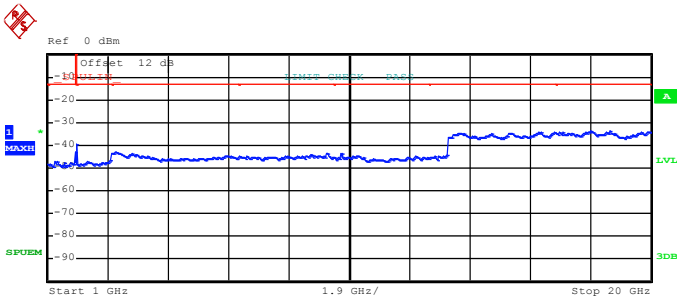
Date: 7.NOV.2012 00:59:07

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	144.460000 M	-45.55	-32.55

Date: 7.NOV.2012 01:04:00

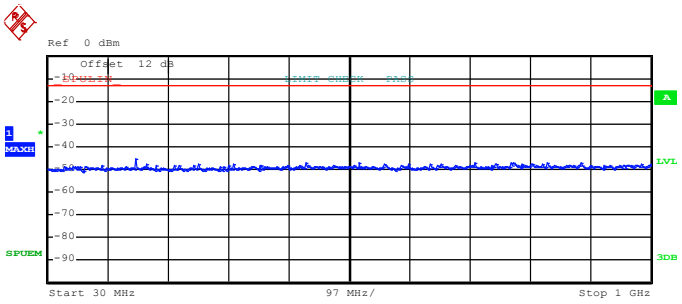


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.870 G	1.00 M	1.865215 G	-42.69	-29.69
1.895 G	3.000 G	1.00 M	1.895553 G	-41.32	-28.32
3.000 G	7.000 G	1.00 M	3.148000 G	-42.69	-29.69
7.000 G	10.000 G	1.00 M	9.793000 G	-43.47	-30.47
10.000 G	13.000 G	1.00 M	10.252000 G	-43.61	-30.61
13.000 G	17.000 G	1.00 M	16.532000 G	-34.26	-21.26
17.000 G	20.000 G	1.00 M	18.081500 G	-33.67	-20.67

Date: 7.NOV.2012 00:59:48

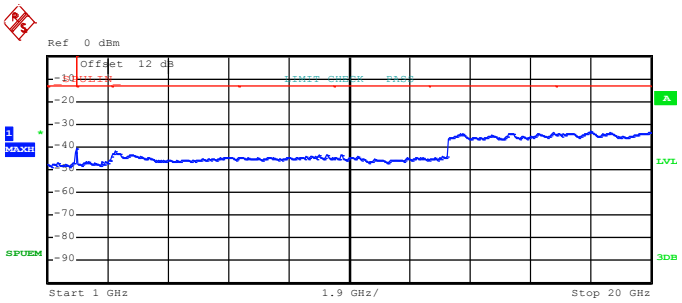
Band :	LTE Band 25	Channel :	CH26665 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	172.105000 M	-45.38	-32.38

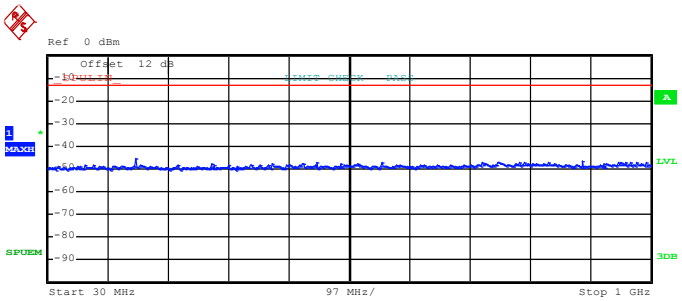
Date: 7.NOV.2012 00:55:53



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.900 G	1.00 M	1.898650 G	-40.92	-27.92
1.925 G	3.000 G	1.00 M	2.991938 G	-46.12	-33.12
3.000 G	7.000 G	1.00 M	3.108000 G	-42.08	-29.08
7.000 G	10.000 G	1.00 M	9.797500 G	-43.38	-30.38
10.000 G	13.000 G	1.00 M	10.252000 G	-43.44	-30.44
13.000 G	17.000 G	1.00 M	16.932000 G	-33.82	-20.82
17.000 G	20.000 G	1.00 M	18.084500 G	-33.29	-20.29

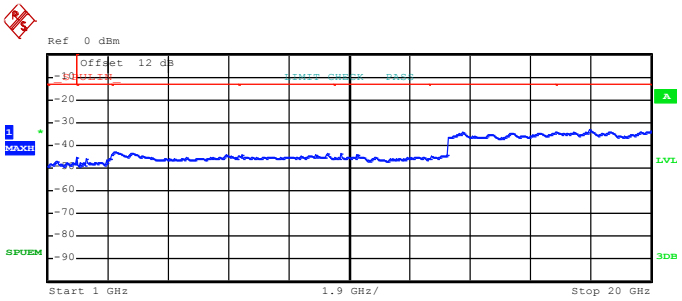
Date: 7.NOV.2012 00:57:34

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	172.105000 M	-45.39	-32.39

Date: 7.NOV.2012 00:56:18

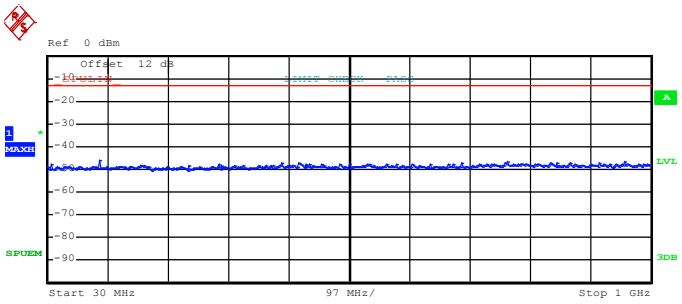


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.900 G	1.00 M	1.899550 G	-45.31	-32.31
1.925 G	3.000 G	1.00 M	2.953238 G	-45.79	-32.79
3.000 G	7.000 G	1.00 M	3.142000 G	-42.89	-29.89
7.000 G	10.000 G	1.00 M	9.800500 G	-43.72	-30.72
10.000 G	13.000 G	1.00 M	10.228000 G	-43.54	-30.54
13.000 G	17.000 G	1.00 M	14.072000 G	-34.49	-21.49
17.000 G	20.000 G	1.00 M	18.059000 G	-33.20	-20.20

Date: 7.NOV.2012 00:57:56

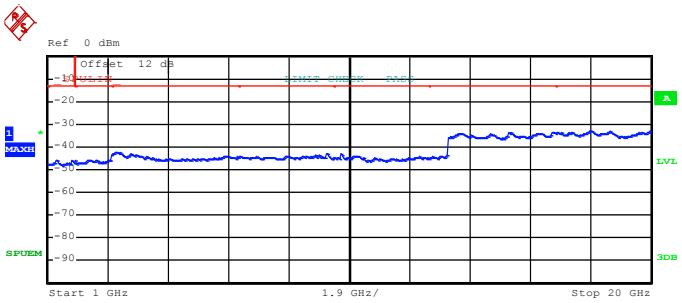
Band :	LTE Band 25	Channel :	CH26090 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	112.450000 M	-46.13	-33.13

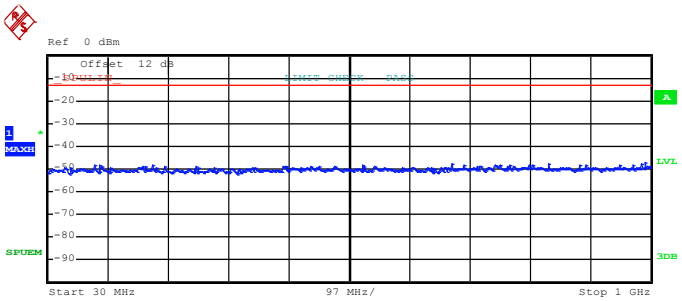
Date: 7.NOV.2012 00:47:11



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.835 G	1.00 M	1.299348 G	-45.86	-32.86
1.875 G	3.000 G	1.00 M	2.982000 G	-45.74	-32.74
3.000 G	7.000 G	1.00 M	3.154000 G	-42.21	-29.21
7.000 G	10.000 G	1.00 M	9.814000 G	-42.74	-29.74
10.000 G	13.000 G	1.00 M	10.240000 G	-43.12	-30.12
13.000 G	17.000 G	1.00 M	16.982000 G	-33.73	-20.73
17.000 G	20.000 G	1.00 M	18.095000 G	-32.77	-19.77

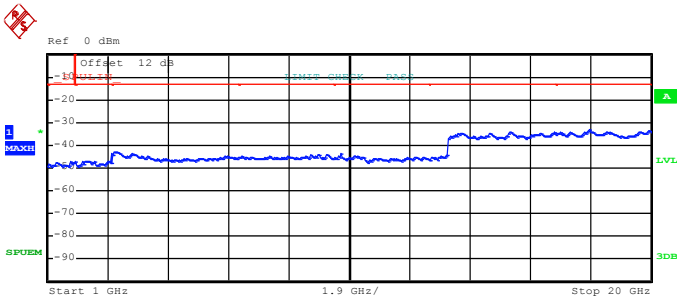
Date: 7.NOV.2012 00:37:07

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	989.815000 M	-47.36	-34.36

Date: 7.NOV.2012 00:47:26

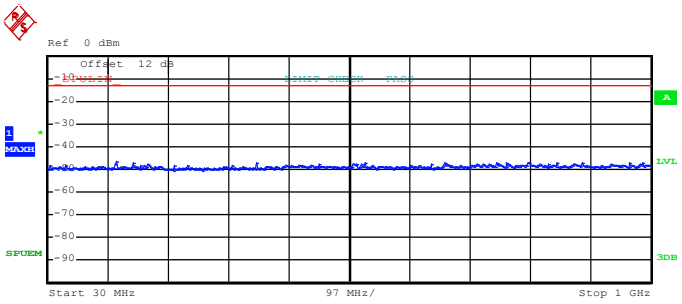


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.835 G	1.00 M	1.718935 G	-47.36	-34.36
1.875 G	3.000 G	1.00 M	2.467312 G	-46.86	-33.86
3.000 G	7.000 G	1.00 M	3.146000 G	-42.74	-29.74
7.000 G	10.000 G	1.00 M	9.805000 G	-43.92	-30.92
10.000 G	13.000 G	1.00 M	10.250500 G	-43.29	-30.29
13.000 G	17.000 G	1.00 M	15.594000 G	-33.94	-20.94
17.000 G	20.000 G	1.00 M	18.054500 G	-33.25	-20.25

Date: 7.NOV.2012 00:39:03

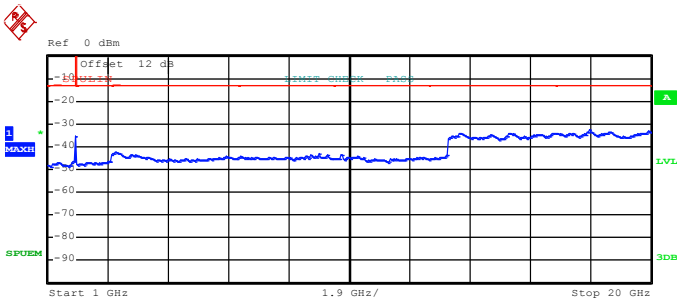
Band :	LTE Band 25	Channel :	CH26365 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	139.610000 M	-46.37	-33.37

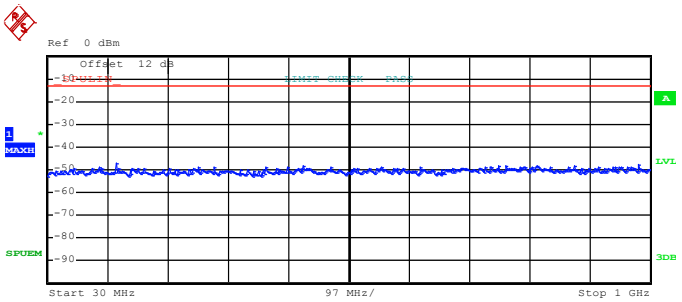
Date: 7.NOV.2012 00:46:17



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.863 G	1.00 M	1.859913 G	-35.35	-22.35
1.903 G	3.000 G	1.00 M	2.949515 G	-46.56	-33.56
3.000 G	7.000 G	1.00 M	3.132000 G	-42.27	-29.27
7.000 G	10.000 G	1.00 M	9.535000 G	-43.22	-30.22
10.000 G	13.000 G	1.00 M	10.256500 G	-43.51	-30.51
13.000 G	17.000 G	1.00 M	13.960000 G	-34.13	-21.13
17.000 G	20.000 G	1.00 M	18.051500 G	-32.68	-19.68

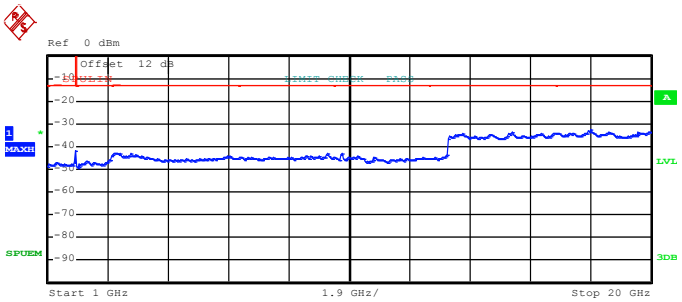
Date: 7.NOV.2012 00:40:07

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	139.610000 M	-47.25	-34.25

Date: 7.NOV.2012 00:46:32

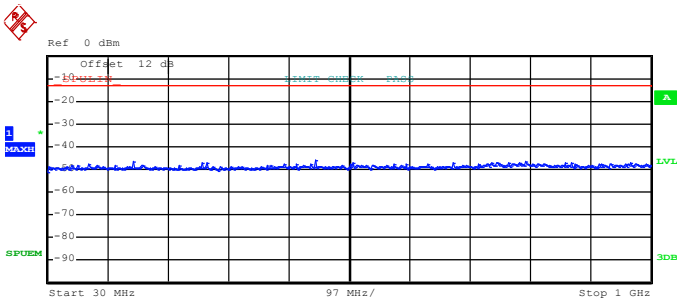


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.863 G	1.00 M	1.860344 G	-41.65	-28.65
1.903 G	3.000 G	1.00 M	2.985184 G	-45.85	-32.85
3.000 G	7.000 G	1.00 M	3.168000 G	-42.73	-29.73
7.000 G	10.000 G	1.00 M	9.829000 G	-43.27	-30.27
10.000 G	13.000 G	1.00 M	10.252000 G	-43.24	-30.24
13.000 G	17.000 G	1.00 M	15.628000 G	-33.81	-20.81
17.000 G	20.000 G	1.00 M	18.090500 G	-32.61	-19.61

Date: 7.NOV.2012 00:40:58

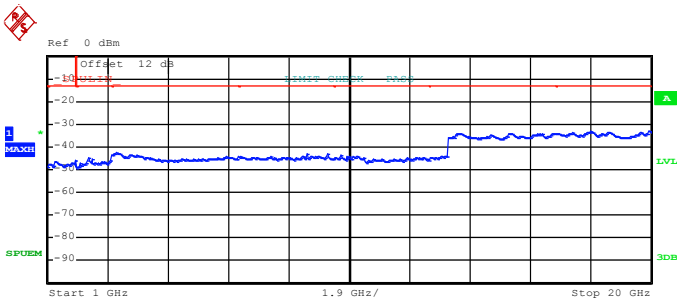
Band :	LTE Band 25	Channel :	CH26640 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	459.710000 M	-45.95	-32.95

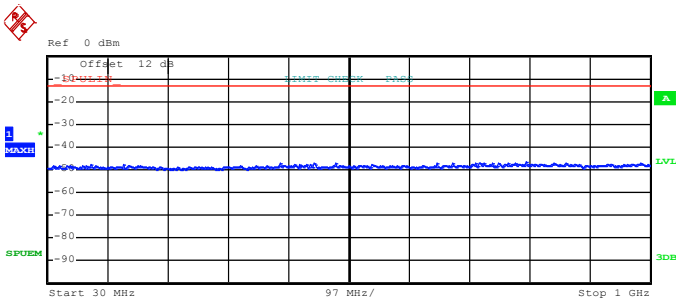
Date: 7.NOV.2012 00:45:41



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.890 G	1.00 M	1.885995 G	-45.90	-32.90
1.930 G	3.000 G	1.00 M	2.297545 G	-45.03	-32.03
3.000 G	7.000 G	1.00 M	3.172000 G	-42.31	-29.31
7.000 G	10.000 G	1.00 M	9.806500 G	-43.18	-30.18
10.000 G	13.000 G	1.00 M	10.241500 G	-43.58	-30.58
13.000 G	17.000 G	1.00 M	15.598000 G	-34.09	-21.09
17.000 G	20.000 G	1.00 M	19.956500 G	-33.04	-20.04

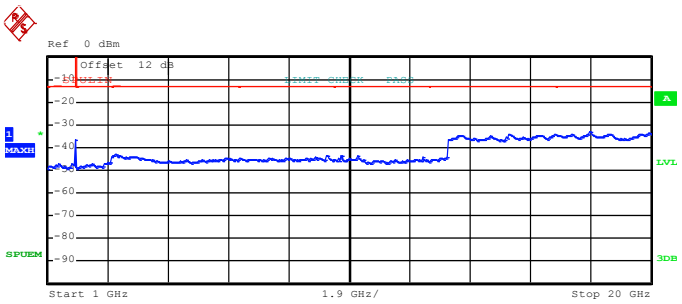
Date: 7.NOV.2012 00:42:01

16QAM (RB Size 1, RB Offset 0)



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	100.00 k	800.180000 M	-46.29	-33.29

Date: 7.NOV.2012 00:45:12



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.000 G	1.890 G	1.00 M	1.889555 G	-36.78	-23.78
1.930 G	3.000 G	1.00 M	2.896745 G	-46.40	-33.40
3.000 G	7.000 G	1.00 M	3.146000 G	-42.73	-29.73
7.000 G	10.000 G	1.00 M	9.803500 G	-43.35	-30.35
10.000 G	13.000 G	1.00 M	10.241500 G	-43.58	-30.58
13.000 G	17.000 G	1.00 M	15.548000 G	-34.36	-21.36
17.000 G	20.000 G	1.00 M	18.090500 G	-33.05	-20.05

Date: 7.NOV.2012 00:43:53

3.7 Radiated Spurious Emission Measurement

3.7.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.7.2 Measuring Instruments

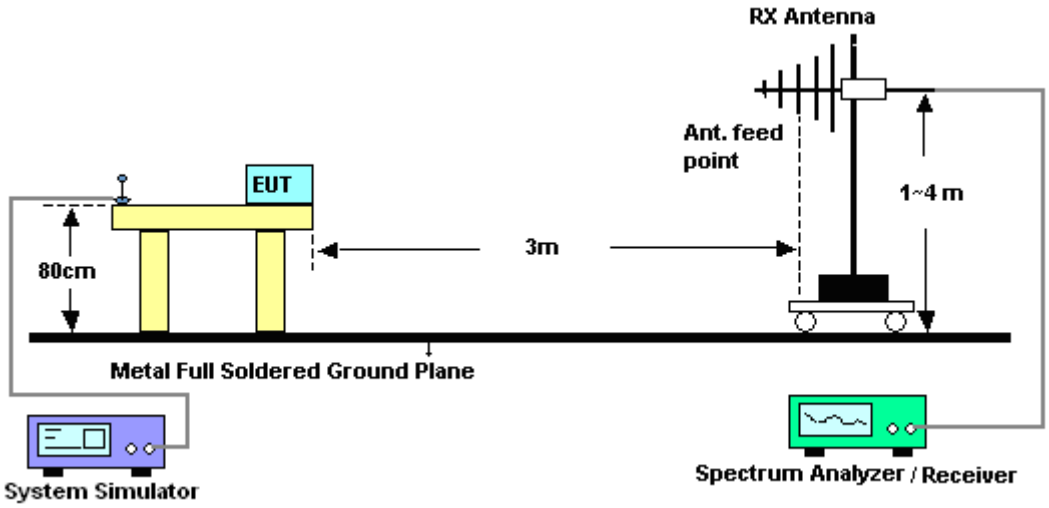
See list of measuring instruments of this test report.

3.7.3 Test Procedures

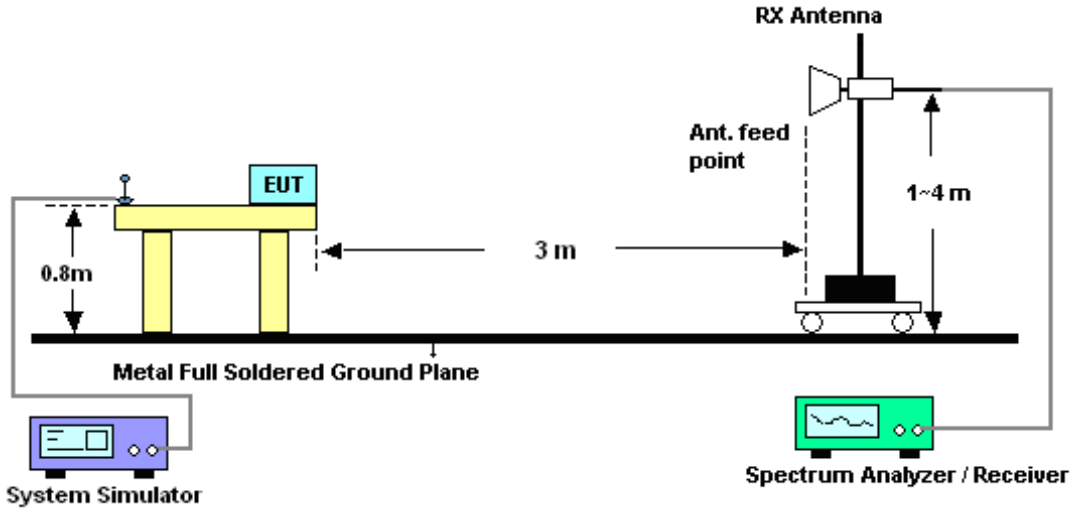
1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
    = P(W) - [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

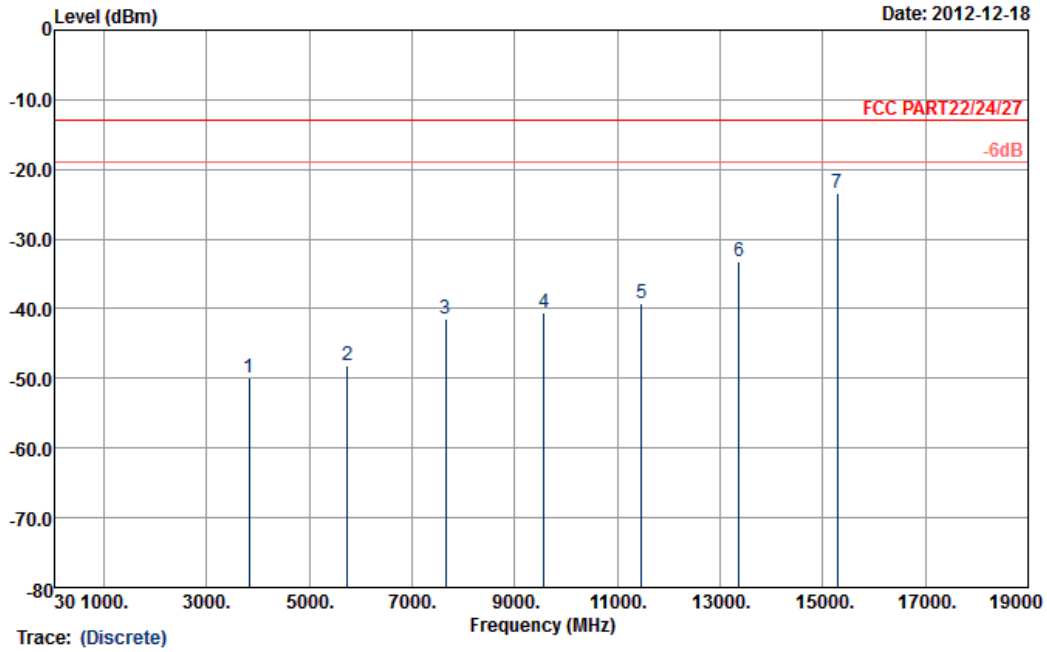


3.7.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

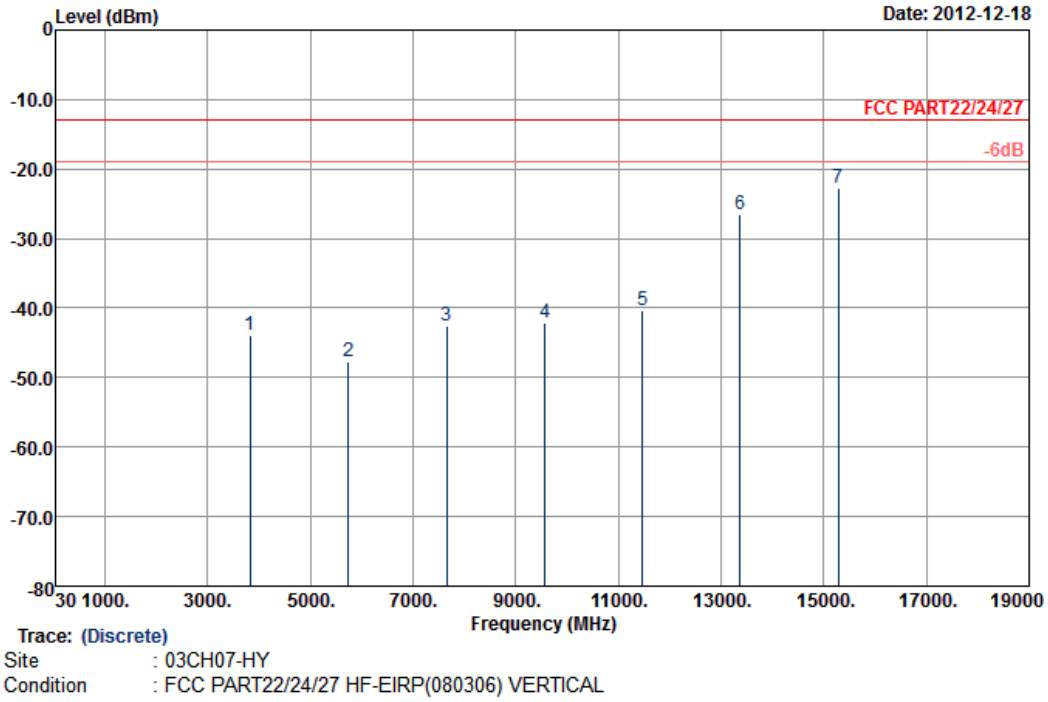
3.7.6 Test Result of Field Strength of Spurious Radiated

Band :	LTE Band 25	**Temperature :**	24~25°C
Test Mode :	5MHZ QPSK RB Size 1 for Sample 1	**Relative Humidity :**	42~43%
Test Engineer :	Gavin Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



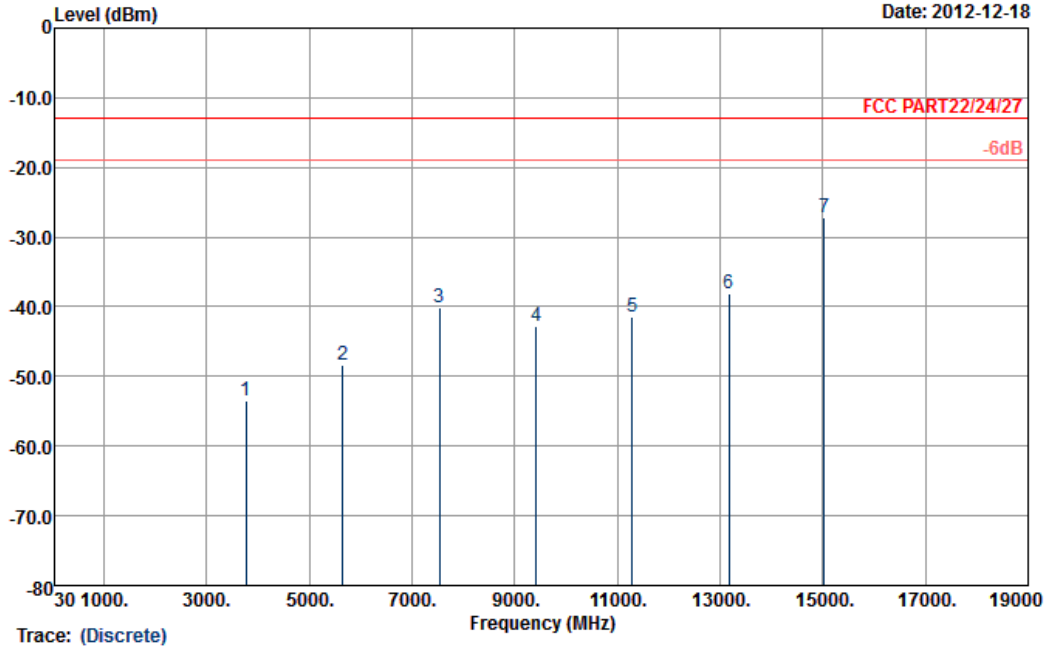
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3820	-49.83	-13	-36.83	-65.36	-56.24	2.47	8.88	H	Pass
5737	-48.07	-13	-35.07	-69.84	-55.77	3	10.70	H	Pass
7648	-41.46	-13	-28.46	-69.15	-50.24	3.43	12.21	H	Pass
9561	-40.56	-13	-27.56	-68.13	-49.77	3.99	13.20	H	Pass
11472	-39.30	-13	-26.30	-69.68	-48.24	4.44	13.38	H	Pass
13372	-33.22	-13	-20.22	-67.3	-42.57	4.68	14.03	H	Pass
15282	-23.38	-13	-10.38	-58.2	-32.24	5	13.86	H	Pass

Band :	LTE Band 25	Temperature :	24~25°C
Test Mode :	5MHZ QPSK RB Size 1 for Sample 1	Relative Humidity :	42~43%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



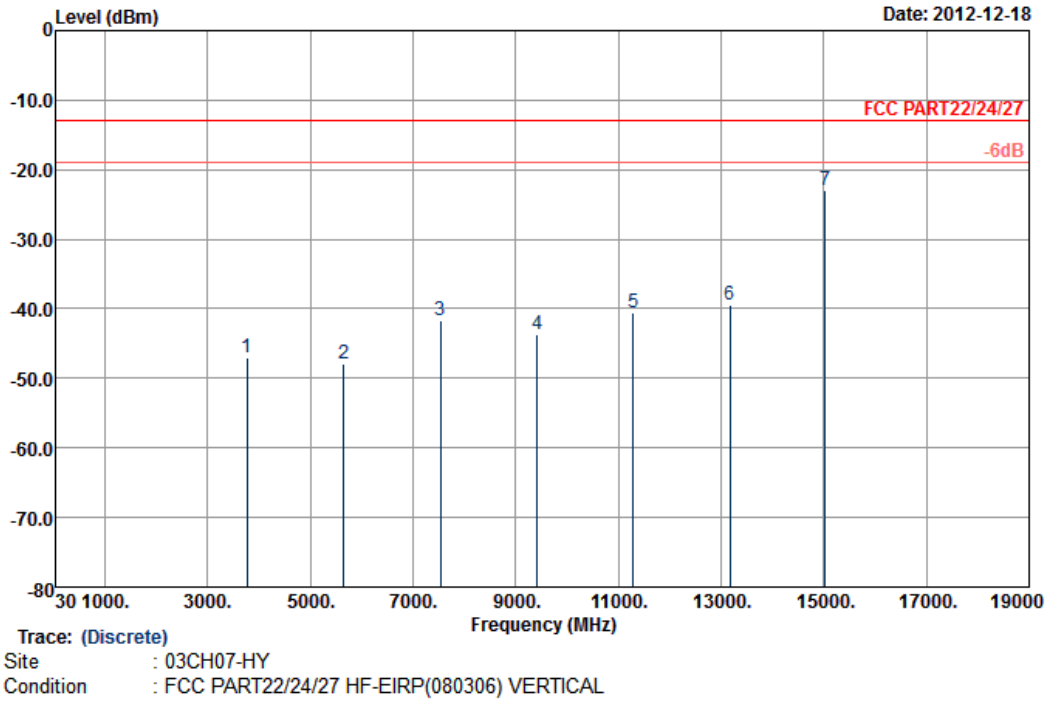
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3820	-43.85	-13	-30.85	-59.84	-50.26	2.47	8.88	V	Pass
5736	-47.77	-13	-34.77	-69.75	-55.47	3	10.70	V	Pass
7648	-42.46	-13	-29.46	-68.89	-51.24	3.43	12.21	V	Pass
9561	-42.04	-13	-29.04	-69.3	-51.25	3.99	13.20	V	Pass
11473	-40.30	-13	-27.30	-69.43	-49.24	4.44	13.38	V	Pass
13372	-26.50	-13	-13.50	-58.73	-35.85	4.68	14.03	V	Pass
15282	-22.79	-13	-9.79	-56.52	-31.65	5	13.86	V	Pass

Band :	LTE Band 25	Temperature :	24~25°C
Test Mode :	10MHZ QPSK RB Size 1 for Sample 1	Relative Humidity :	42~43%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



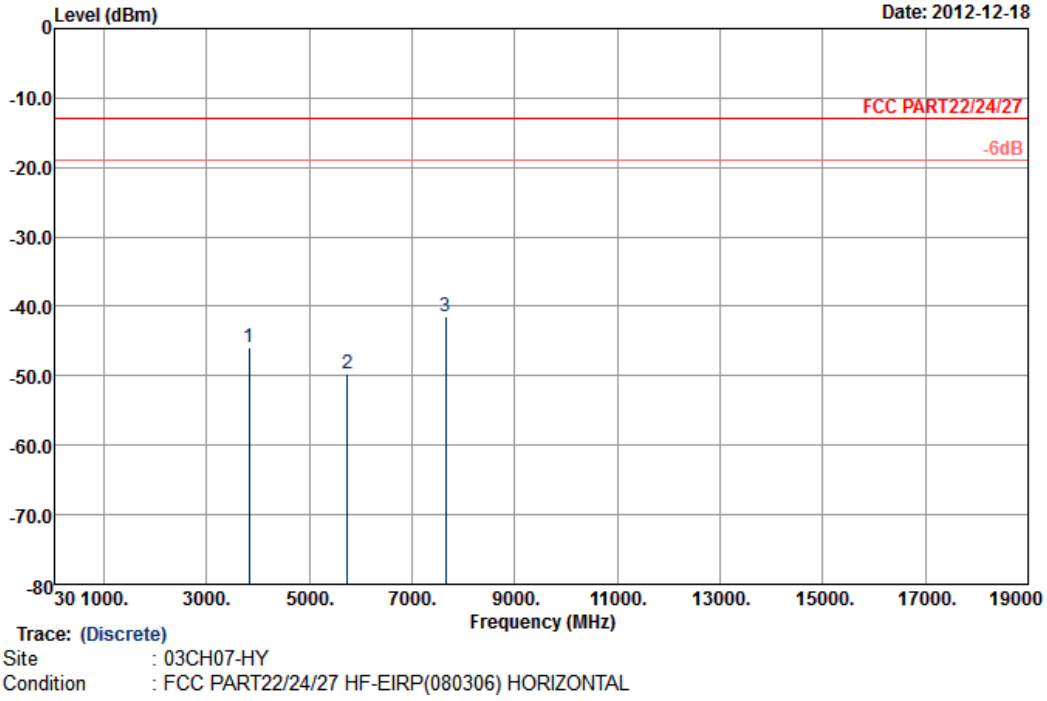
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3764	-53.59	-13	-40.59	-68.98	-59.89	2.51	8.81	H	Pass
5647	-48.28	-13	-35.28	-69.72	-55.99	2.99	10.70	H	Pass
7528	-40.03	-13	-27.03	-68.92	-48.56	3.59	12.12	H	Pass
9410	-42.68	-13	-29.68	-69.31	-51.78	4.1	13.20	H	Pass
11292	-41.43	-13	-28.43	-70.68	-50.47	4.27	13.31	H	Pass
13174	-38.16	-13	-25.16	-71.6	-47.68	4.27	13.79	H	Pass
15024	-27.17	-13	-14.17	-60.57	-36.14	4.75	13.72	H	Pass

Band :	LTE Band 25	Temperature :	24~25°C
Test Mode :	10MHZ QPSK RB Size 1 for Sample 1	Relative Humidity :	42~43%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



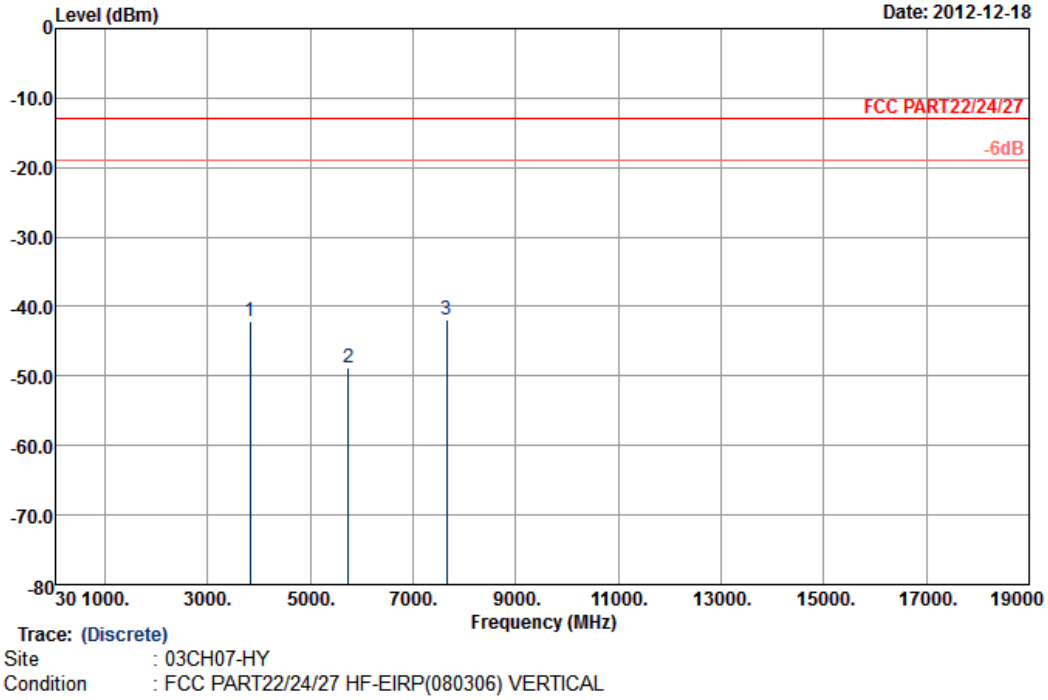
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3765	-46.94	-13	-33.94	-63.66	-53.24	2.51	8.81	V	Pass
5647	-47.96	-13	-34.96	-68.78	-55.67	2.99	10.70	V	Pass
7529	-41.58	-13	-28.58	-69.54	-50.11	3.59	12.12	V	Pass
9411	-43.77	-13	-30.77	-69.42	-52.87	4.1	13.20	V	Pass
11293	-40.52	-13	-27.52	-70.53	-49.56	4.27	13.31	V	Pass
13175	-39.36	-13	-26.36	-70.66	-48.88	4.27	13.79	V	Pass
15024	-22.90	-13	-9.90	-54.9	-31.87	4.75	13.72	V	Pass

Band :	LTE Band 25	Temperature :	24~25°C
Test Mode :	5MHZ QPSK RB Size 1 for Sample 2	Relative Humidity :	42~43%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3820	-45.83	-13	-32.83	-61.8	-52.24	2.47	8.88	H	Pass
5737	-49.77	-13	-36.77	-70.39	-57.47	3	10.70	H	Pass
7648	-41.46	-13	-28.46	-69.29	-50.24	3.43	12.21	H	Pass

Band :	LTE Band 25	Temperature :	24~25°C
Test Mode :	5MHZ QPSK RB Size 1 for Sample 2	Relative Humidity :	42~43%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3820	-42.07	-13	-29.07	-59.96	-48.48	2.47	8.88	V	Pass
5736	-48.78	-13	-35.78	-70.52	-56.48	3	10.70	V	Pass
7648	-42.00	-13	-29.00	-69.01	-50.78	3.43	12.21	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

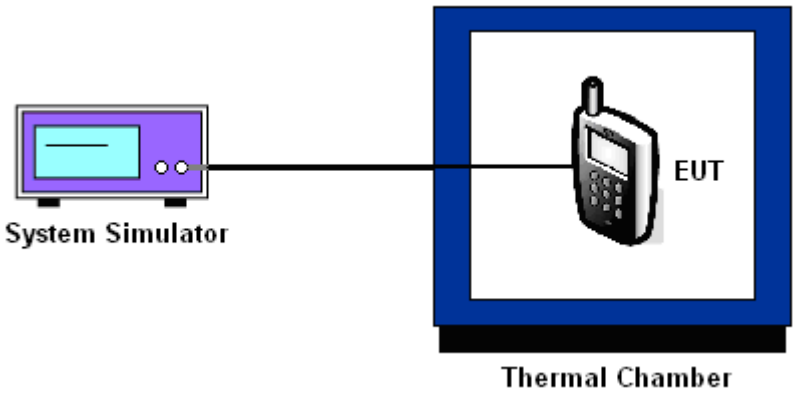
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
4. If the EUT can not be turned on at -30°C, the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

3.8.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation

Band :	LTE Band 25	Limit (ppm) :	2.5

Temperature (°C)	BW 5MHz				Result
	QPSK		16QAM		
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	N/A	N/A	PASS
-20	20.4	0.029	-15.2	-0.021	
-10	17.6	0.025	-14.6	-0.021	
0	-19.2	-0.027	19.0	0.027	
10	-18.5	-0.026	18.8	0.026	
20	-19.3	-0.027	18.0	0.025	
30	-20.1	-0.028	-19.5	-0.027	
40	21.2	0.030	-19.9	-0.028	
50	20.5	0.029	-20.0	-0.028	
55	N/A	N/A	N/A	N/A	

Temperature (°C)	BW 10MHz				Result
	QPSK		16QAM		
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	N/A	N/A	PASS
-20	-18.0	-0.025	-16.9	-0.024	
-10	18.4	0.026	-15.7	-0.022	
0	18.0	0.025	-17.9	-0.025	
10	20.1	0.028	-16.5	-0.023	
20	-17.6	-0.025	-14.6	-0.021	
30	-18.4	-0.026	-18.5	-0.026	
40	-19.1	-0.027	-20.2	-0.028	
50	-20.1	-0.028	-21.2	-0.030	
55	N/A	N/A	N/A	N/A	

3.8.7 Test Result of Voltage Variation

Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 25 / QPSK	5M	Normal	18.4	0.026	2.5	PASS
		3.6	12.6	0.018		
		4.2	-19.4	-0.027		
	10M	Normal	14.2	0.020		
		3.6	-20.0	-0.028		
		4.2	-21.1	-0.030		

Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 25 / 16QAM	5M	Normal	-20.6	-0.029	2.5	PASS
		3.6	-19.3	-0.027		
		4.2	-17.2	-0.024		
	10M	Normal	14.2	0.020		
		3.6	-20.0	-0.028		
		4.2	-22.9	-0.032		

Remark:

1. Normal Voltage = 3.8V.
2. The manufacturer declared that the EUT could work properly between voltage 3.6V ~ 4.2V.

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Nov. 06, 2012 ~ Nov. 07, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 23, 2012	Nov. 06, 2012 ~ Nov. 07, 2012	Jul. 22, 2013	Conducted (TH02-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde &	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Nov. 06, 2012 ~ Nov. 29, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 30, 2012	Nov. 30, 2012 ~ Dec. 18, 2012	Nov. 29, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Aug. 21, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Nov. 06, 2012 ~ Nov. 30, 2012	Dec. 04, 2012	Radiation (03CH07-HY
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 01, 2012	Dec. 01, 2012 ~ Dec. 18, 2012	Nov. 30, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-00 101800-30-1	159088	1GHz ~ 18GHz	Mar. 10, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz. 32dB.GAIN	Feb. 27, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Sep. 02, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Sep. 27, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Jul. 02, 2013	Radiation (03CH07-HY
LTE Base Station	Anritsu	MT8820C	6201074414	N/A	Jan. 05, 2012	Nov. 06, 2012 ~ Dec. 18, 2012	Jan. 04, 2013	-

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty Uc(y)	**1.27**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**		

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				