FCC RF Test Report

APPLICANT	**:**	**Motorola Mobility, LLC**
EQUIPMENT	**:**	**Mobile Cellular Phone**
BRAND NAME	**:**	**Motorola Mobility, LLC**
MODEL NAME	**:**	**3606**
FCC ID	**:**	**IHDT56QA3**
STANDARD	**:**	**FCC 47 CFR Part 2, and 90(S)**
CLASSIFICATION	**:**	**PCS Licensed Transmitter Held to Ear (PCE)**

The product was received on May 30, 2014 and testing was completed on Jul. 08, 2014. 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: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

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
FW453017B	Rev. 01	Initial issue of report	Jul. 24, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	N/A , Reporting only	PASS	-
3.2	§2.1049 §90.209	Occupied Bandwidth and 26dB Bandwidth	N/A (Reporting only)	PASS	-
3.3	§2.1051 §90.691	Emission masks – In-band emissions	< $50+10\log_{10}$(P[Watts])	PASS	-
3.4	§2.1051 §90.691	Emission masks – Out of band emissions	< $43+10\log_{10}$(P[Watts])	PASS	-
3.5	§2.1053 §90.691	Field Strength of Spurious Radiation	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 38.52 dB at 3256.000 MHz
3.6	§2.1055 §90.213	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

Motorola Mobility, LLC
222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

1.2 Manufacturer

Motorola Mobility, LLC
222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola Mobility, LLC
Model Name	3606
FCC ID	IHDT56QA3
IMEI Code	990004980031375
EUT supports Radios application	GSM/EGPRS/CDMA/EV-DO/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR Bluetooth v4.0 - LE
HW Version	P2
SW Version	KXE21.116-VICTARA-SHA1
EUT Stage	Identical Prototype

Accessory List	
AC Adapter	Brand Name : Motorola
	Model Name : SPN5788A
Earphone	Brand Name : Motorola
	Model Name : SJYN1305A

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	814.7 ~ 823.3 MHz
Rx Frequency	859.7 ~ 868.3 MHz
Bandwidth	1.4MHz / 3MHz / 5MHz / 10MHz
Maximum Output Power to Antenna	23.06 dBm
Antenna Type	Fixed Internal Antenna
Type of Modulation	QPSK / 16QAM

Remark: This test report recorded only product characteristics and test results of PCS Licensed Transmitter Held to Ear (PCE).

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum Frequency Tolerance and Emission Designator

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance (ppm)
Part 90S	LTE Band 26	QPSK	1.4 MHz	1M09G7D	-
Part 90S	LTE Band 26	16QAM	1.4 MHz	1M10D7W	-
Part 90S	LTE Band 26	QPSK	3 MHz	2M68G7D	-
Part 90S	LTE Band 26	16QAM	3 MHz	2M68D7W	-
Part 90S	LTE Band 26	QPSK	5 MHz	4M50G7D	-
Part 90S	LTE Band 26	16QAM	5 MHz	4M52D7W	-
Part 90S	LTE Band 26	QPSK	10 MHz	8M97G7D	0.0100 ppm
Part 90S	LTE Band 26	16QAM	10 MHz	8M97D7W	-

1.7 Testing Site

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

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.**	
	TH02-HY	03CH07-HY

1.8 Applied Standards

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

- FCC 47 CFR Part 2, 90
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01

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.

2 Test Configuration of Equipment Under Test

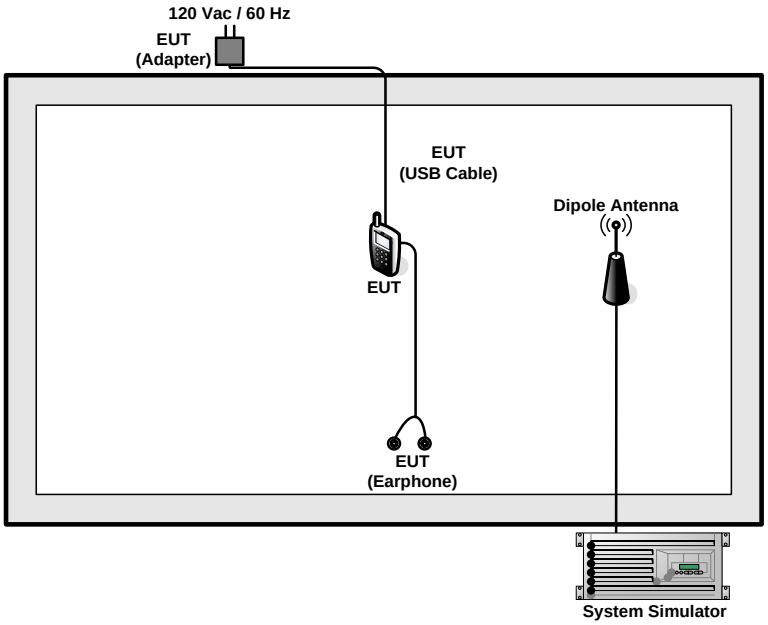
2.1 Test Mode

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, and EUT is rotated on three test planes to find out the worst emission.

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	26	v	v	v	v	-	-	v	v	v	v	v	v	v	v
26dB and 99% Bandwidth	26	v	v	v	v	-	-	v	v			v	v	v	v
Emission masks In-band emissions	26	v	v	v	v	-	-	v	v	v		v	v		v
Emission masks – Out of band emissions	26	v	v	v	v	-	-	v	v	v			v	v	v
Frequency Stability	26				v	-	-	v				v		v	
Radiated Spurious Emission	26	v	v	v	v	-	-	v		v			v	v	v
Note	1. The mark "v " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported.														

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

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

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

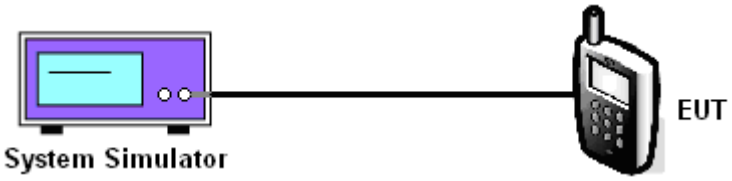
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

<LTE Band 26 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel					26740	
Frequency (MHz)					819	
10	QPSK	1	0		**23.06**	
10	QPSK	1	24		23.03	
10	QPSK	1	49		22.92	
10	QPSK	25	0		22.00	
10	QPSK	25	12		21.99	
10	QPSK	25	24		21.98	
10	QPSK	50	0		21.95	
10	16QAM	1	0		21.93	
10	16QAM	1	24		**21.96**	
10	16QAM	1	49		21.91	
10	16QAM	25	0		21.08	
10	16QAM	25	12		21.09	
10	16QAM	25	24		21.21	
10	16QAM	50	0		21.25	
Channel				26715	26740	26765
Frequency (MHz)				816.5	819	821.5
5	QPSK	1	0	22.99	22.99	**23.00**
5	QPSK	1	12	22.93	22.98	22.87
5	QPSK	1	24	22.91	22.96	22.90
5	QPSK	12	0	22.00	22.06	22.04
5	QPSK	12	6	22.00	22.05	21.91
5	QPSK	12	11	21.99	22.08	21.95
5	QPSK	25	0	22.02	22.05	21.99
5	16QAM	1	0	21.96	21.98	**21.99**
5	16QAM	1	12	21.92	21.94	21.81
5	16QAM	1	24	21.85	21.89	21.85
5	16QAM	12	0	21.06	21.05	21.09
5	16QAM	12	6	21.05	21.06	20.97
5	16QAM	12	11	21.07	21.08	20.97
5	16QAM	25	0	21.06	21.04	21.01

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**26705**	**26740**	**26775**
Frequency (MHz)				**815.5**	**819**	**822.5**
3	QPSK	1	0	**23.00**	22.99	22.95
3	QPSK	1	7	22.90	22.97	22.83
3	QPSK	1	14	22.86	22.96	22.92
3	QPSK	8	0	21.99	22.04	21.90
3	QPSK	8	4	22.01	22.02	21.92
3	QPSK	8	7	22.06	22.01	21.98
3	QPSK	15	0	22.05	21.99	21.92
3	16QAM	1	0	**21.97**	**21.97**	21.95
3	16QAM	1	7	21.89	21.91	21.81
3	16QAM	1	14	21.87	21.93	21.89
3	16QAM	8	0	21.07	21.07	20.98
3	16QAM	8	4	21.02	21.05	20.99
3	16QAM	8	7	21.08	21.06	20.95
3	16QAM	15	0	21.02	21.04	20.93
Channel				**26697**	**26740**	**26783**
Frequency (MHz)				**814.7**	**819**	**823.3**
1.4	QPSK	1	0	**22.99**	22.98	22.96
1.4	QPSK	1	2	22.94	22.92	22.88
1.4	QPSK	1	5	22.88	22.90	22.86
1.4	QPSK	3	0	22.87	22.89	22.81
1.4	QPSK	3	1	22.86	22.88	22.79
1.4	QPSK	3	2	22.85	22.84	22.74
1.4	QPSK	6	0	22.02	22.04	21.96
1.4	16QAM	1	0	21.98	**22.03**	21.93
1.4	16QAM	1	2	21.99	21.98	21.89
1.4	16QAM	1	5	21.97	21.98	21.92
1.4	16QAM	3	0	21.96	21.89	21.91
1.4	16QAM	3	1	21.95	22.00	21.91
1.4	16QAM	3	2	21.89	21.98	21.92
1.4	16QAM	6	0	20.97	20.95	20.85

Note: Maximum average power for LTE.

3.2 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.2.1 Description of (Occupied) Bandwidth Limitations Measurement

The 99% 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.

The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

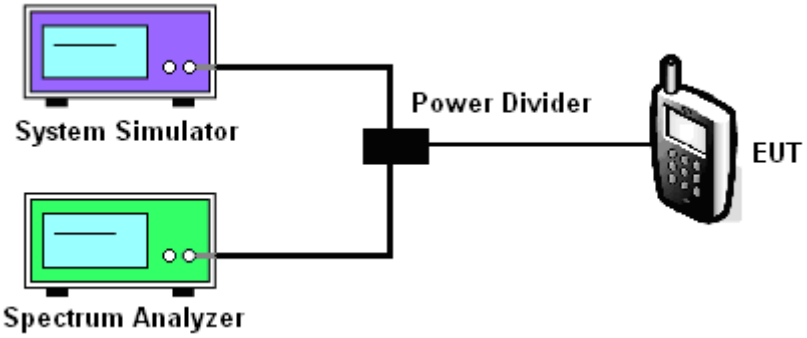
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

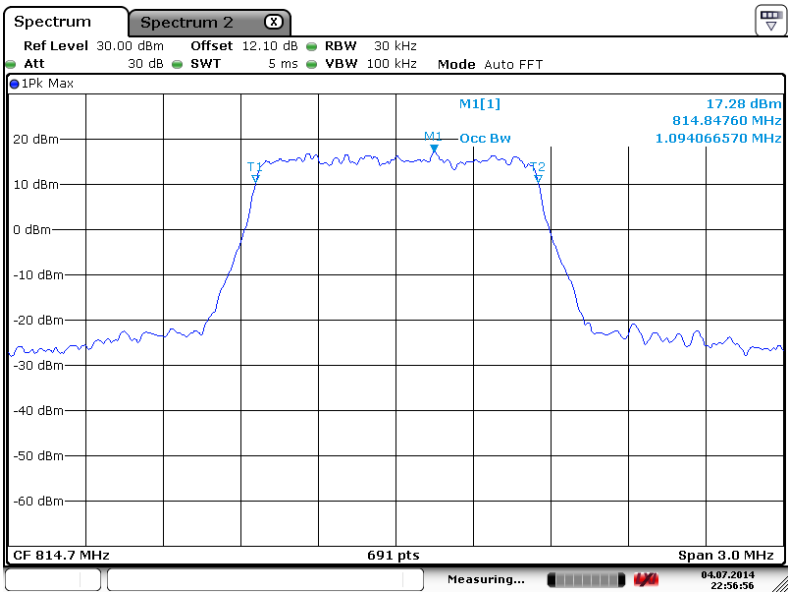
3.2.4 Test Setup



3.2.5 Test Result of 99% Occupied Bandwidth and 26dB Bandwidth

Band :	LTE Band 26	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26697



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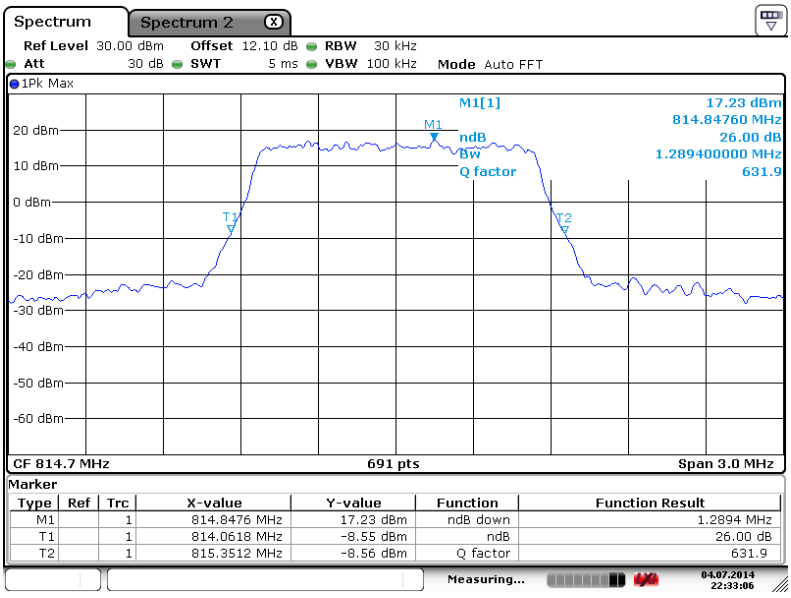
26dB Bandwidth Plot on Channel 26697



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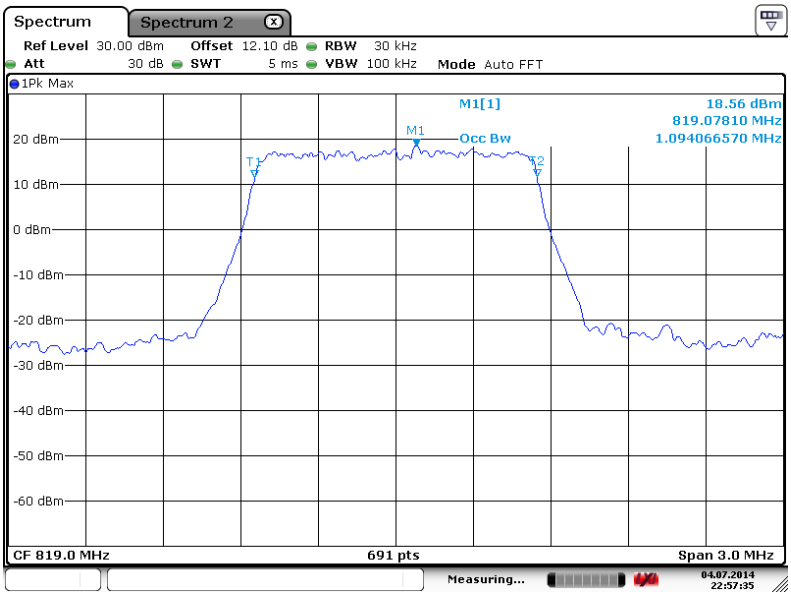
Band :	LTE Band 26	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26740



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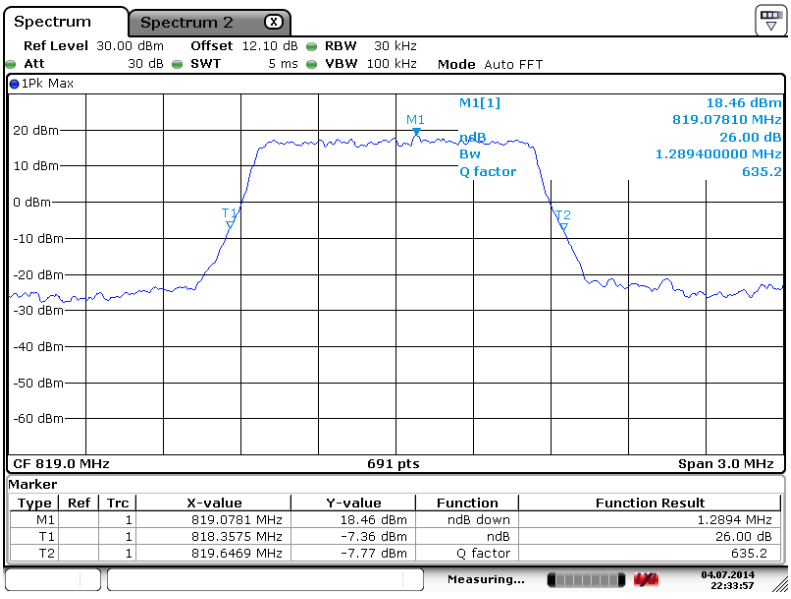
26dB Bandwidth Plot on Channel 26740



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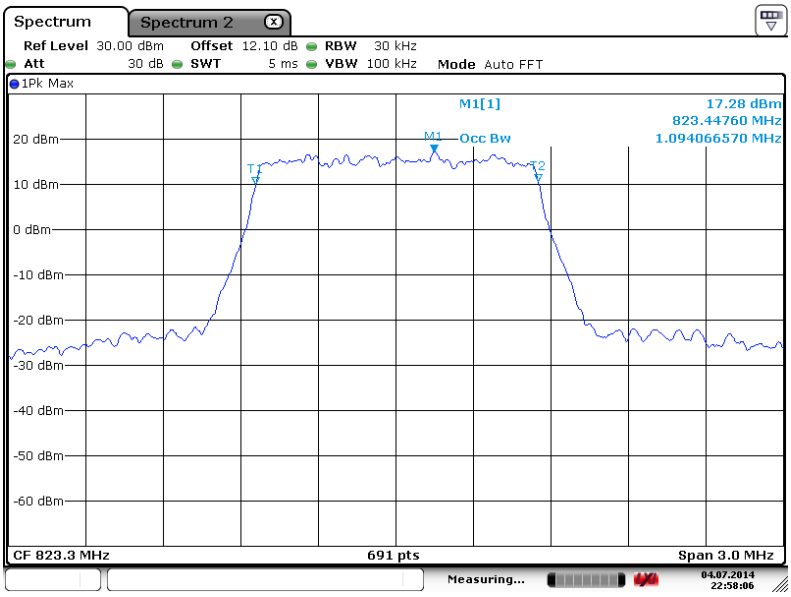
Band :	LTE Band 26	BW / Mod. :	1.4MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26783



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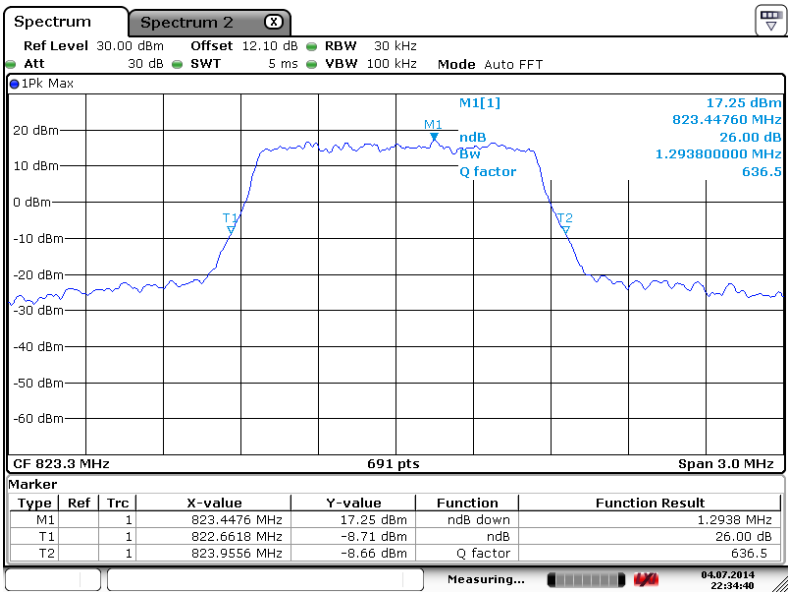
26dB Bandwidth Plot on Channel 26783



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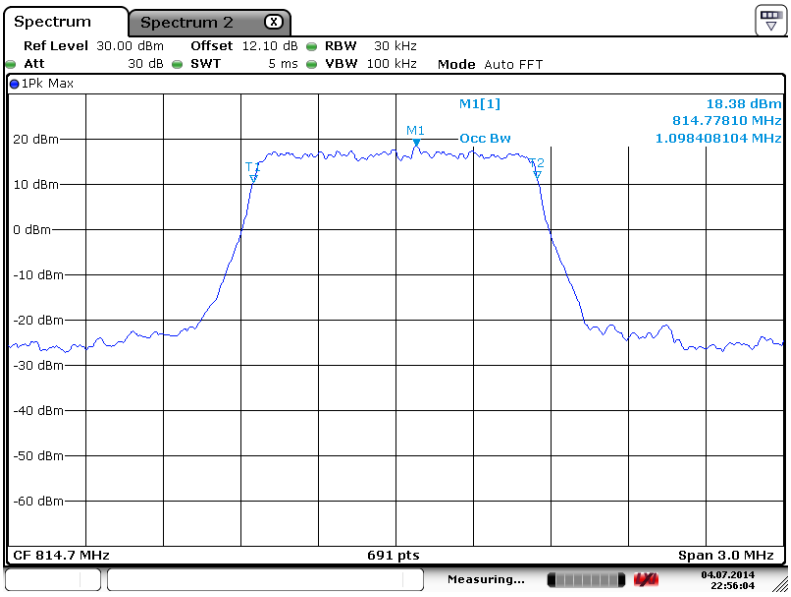
Band :	LTE Band 26	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26697



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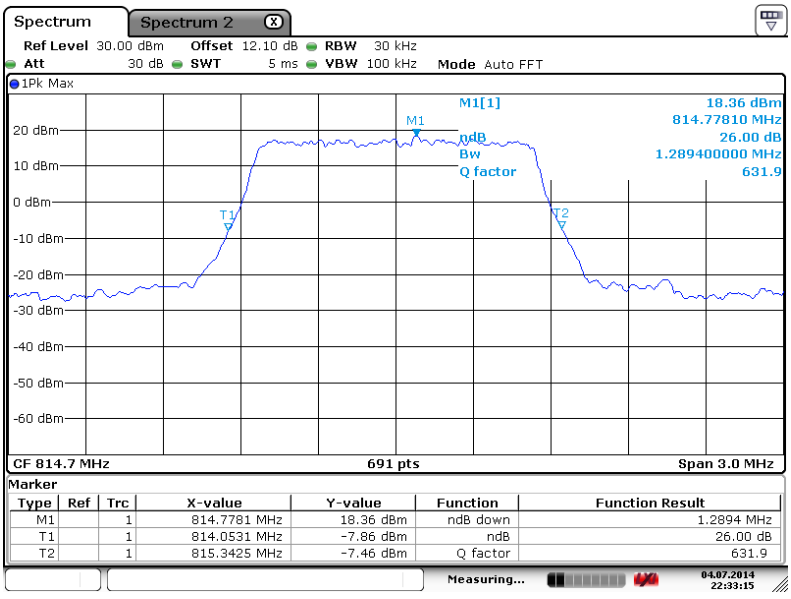
26dB Bandwidth Plot on Channel 26697



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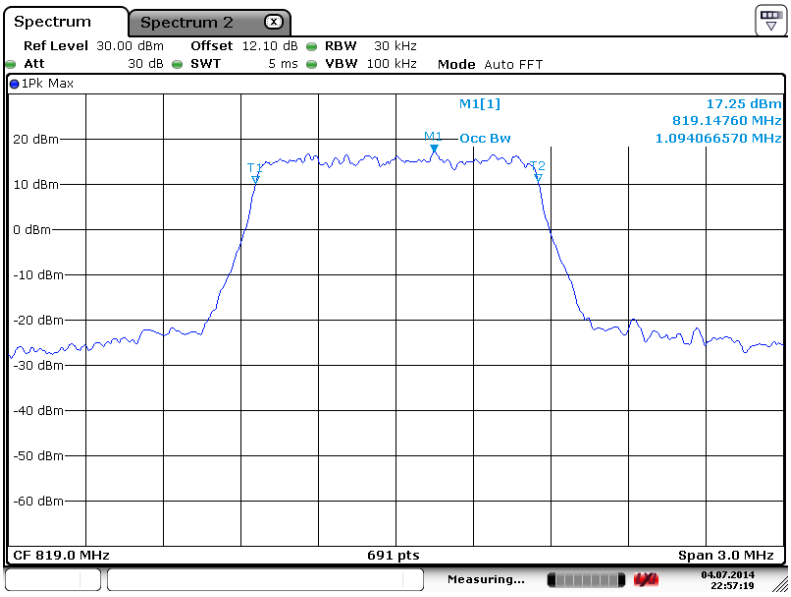
Band :	LTE Band 26	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26740



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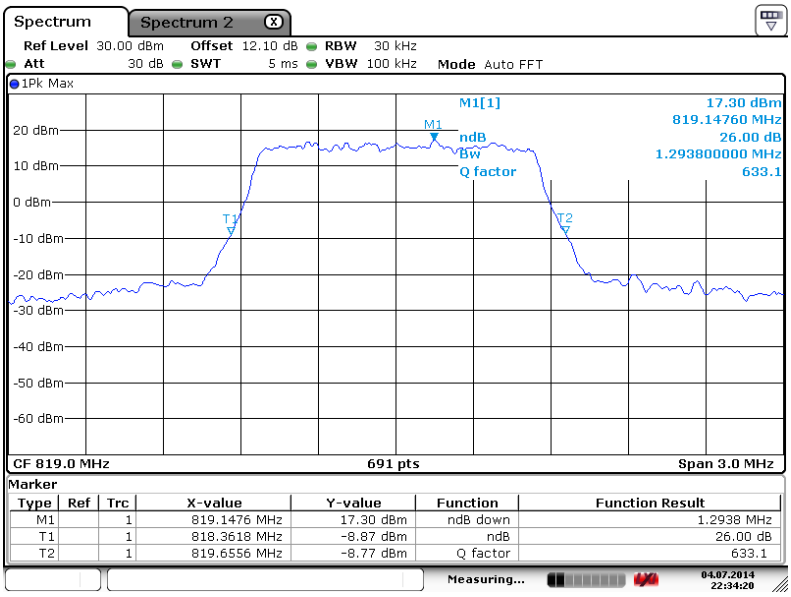
26dB Bandwidth Plot on Channel 26740



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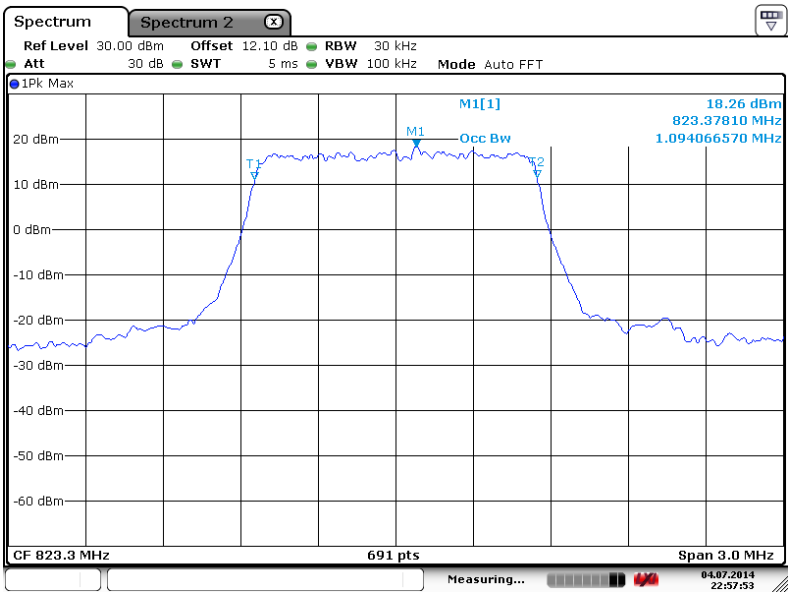
Band :	LTE Band 26	BW / Mod. :	1.4MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26783



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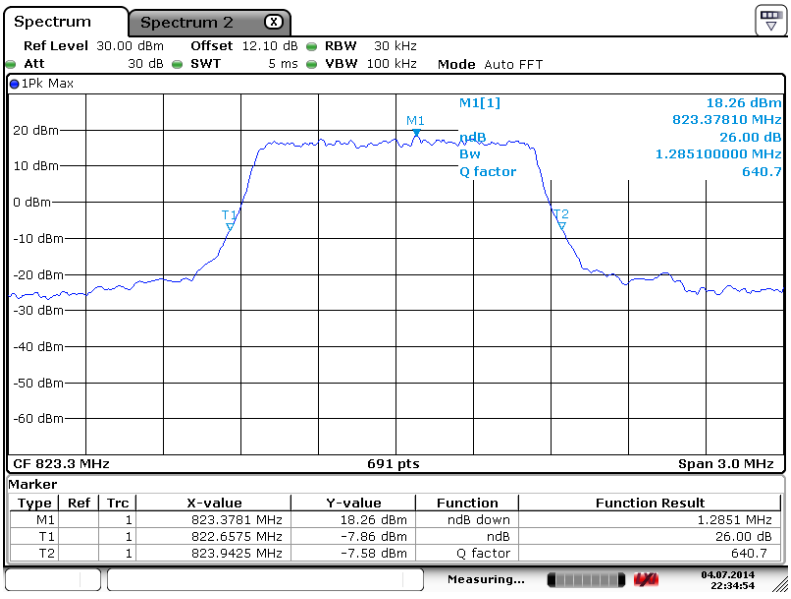
26dB Bandwidth Plot on Channel 26783



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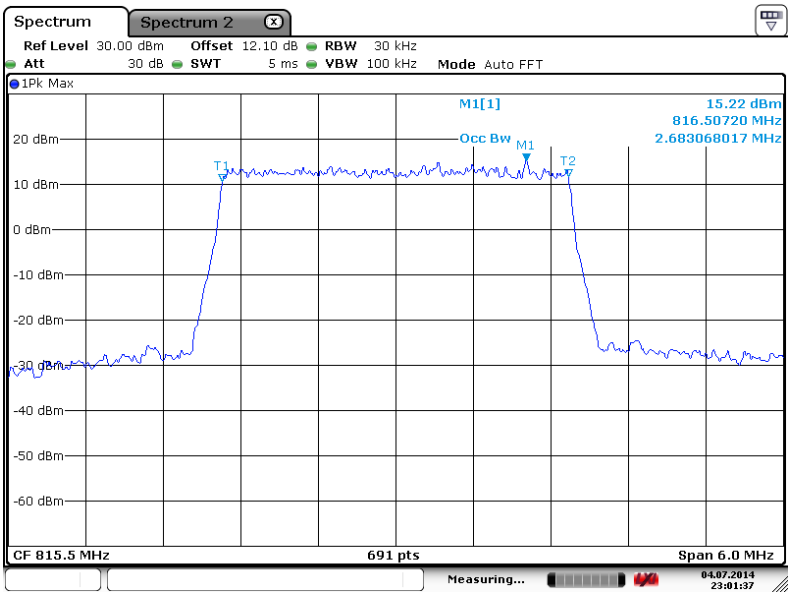
Band :	LTE Band 26	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26705



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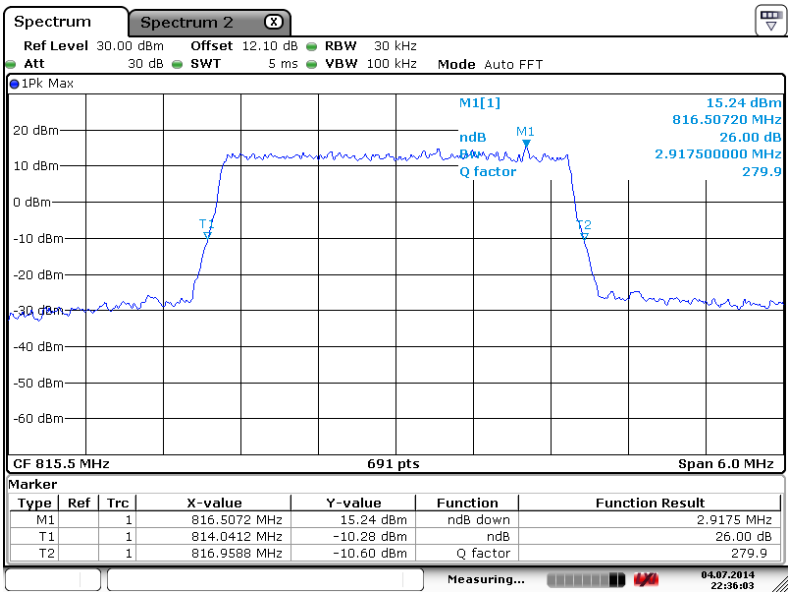
26dB Bandwidth Plot on Channel 26705



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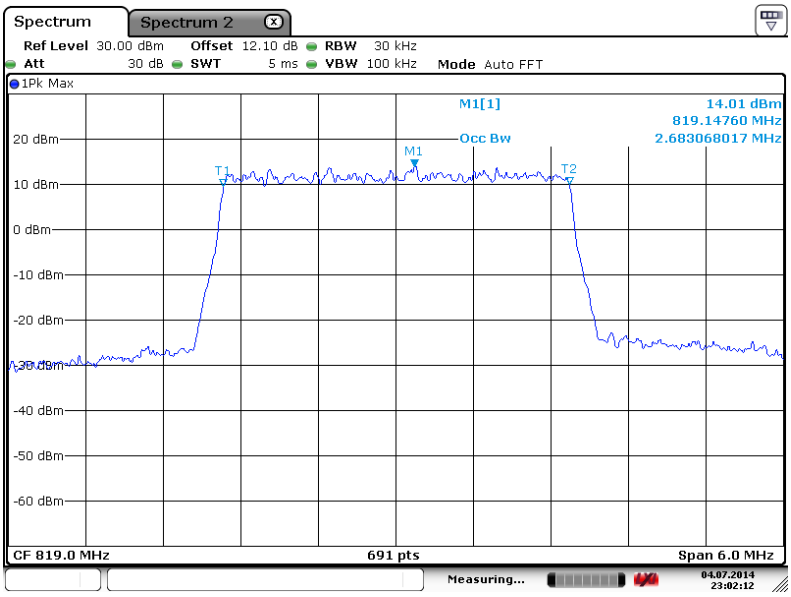
Band :	LTE Band 26	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26740



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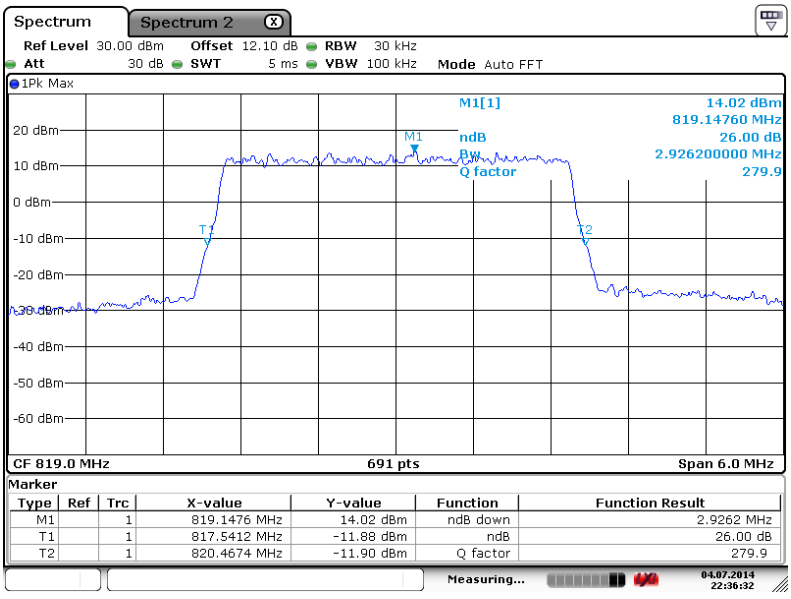
26dB Bandwidth Plot on Channel 26740



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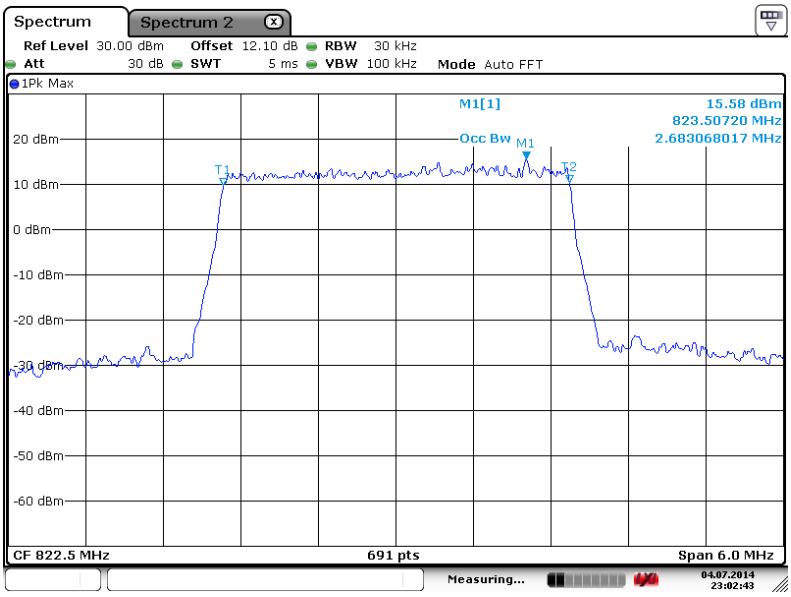
Band :	LTE Band 26	BW / Mod. :	3MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26775



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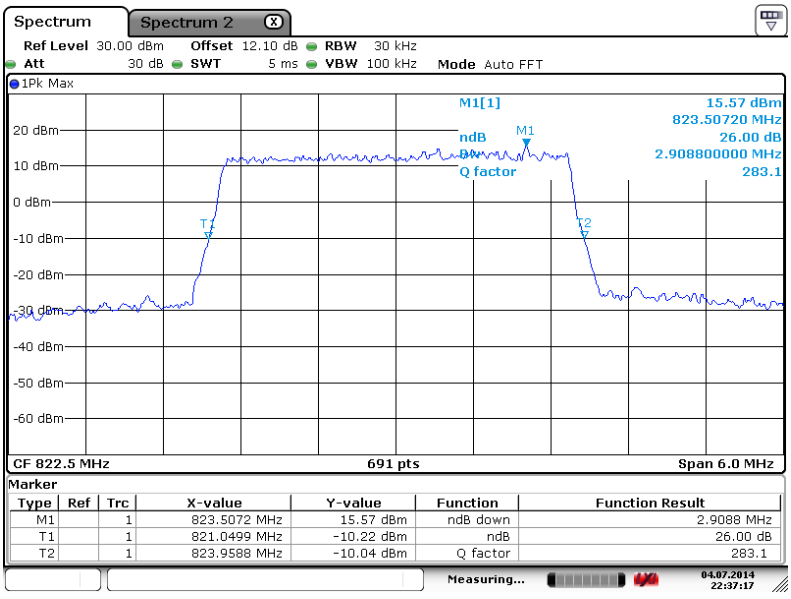
26dB Bandwidth Plot on Channel 26775



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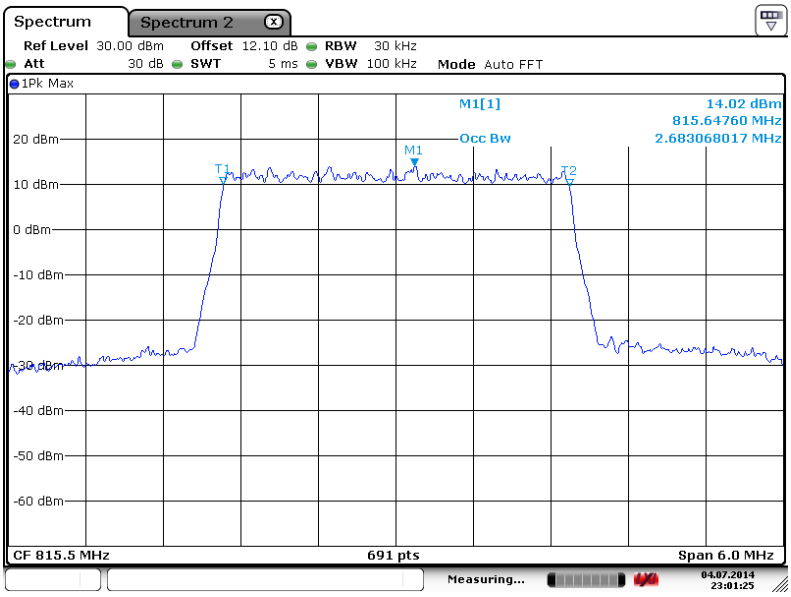
Band :	LTE Band 26	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26705



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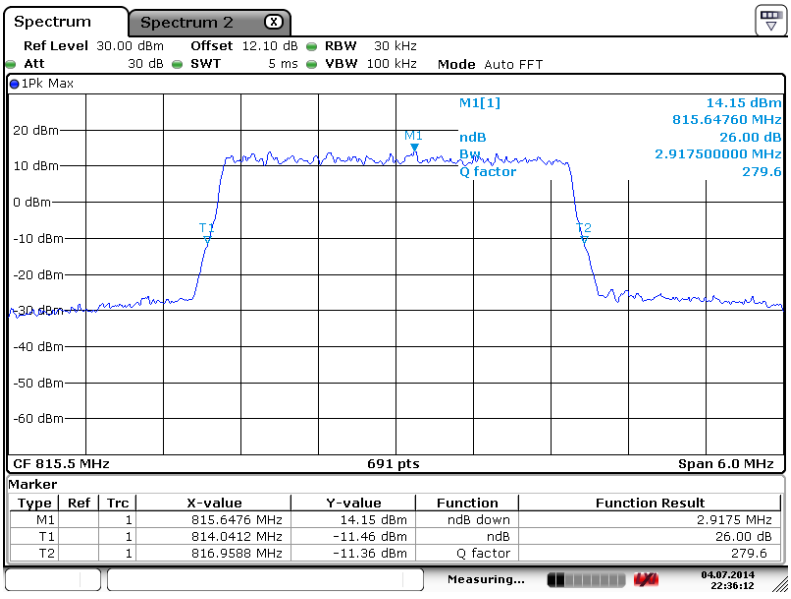
26dB Bandwidth Plot on Channel 26705



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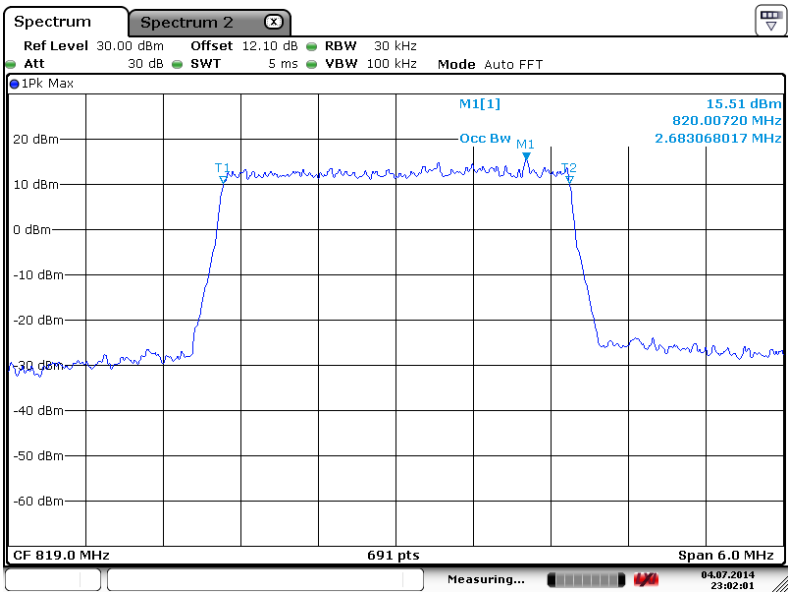
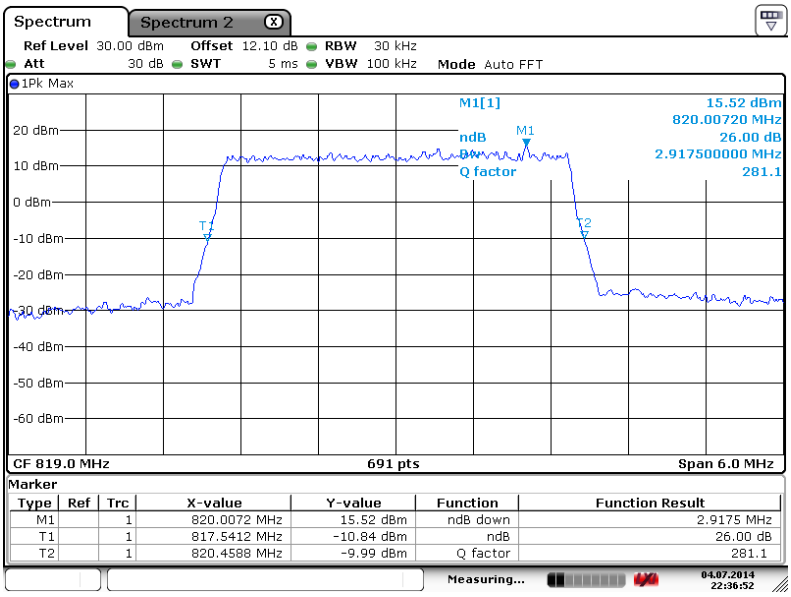
Band :	LTE Band 26	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 23:02:01

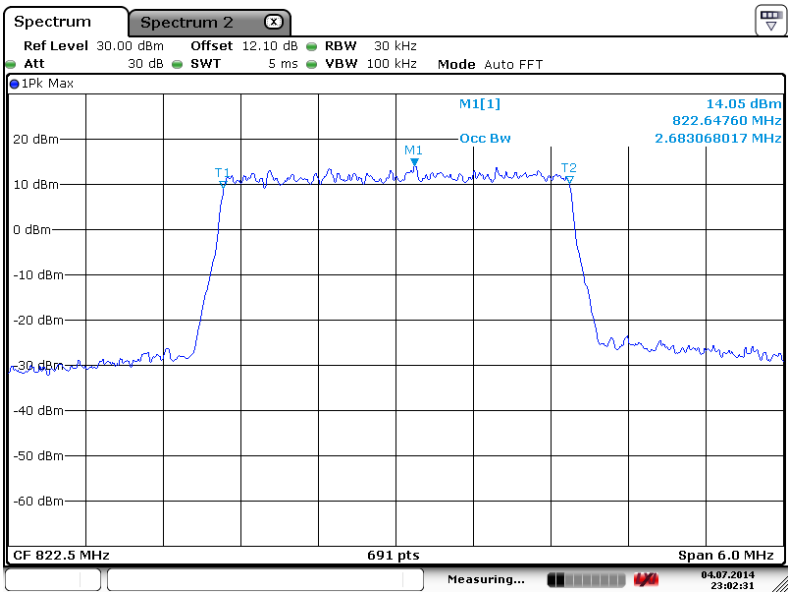
26dB Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 22:36:52

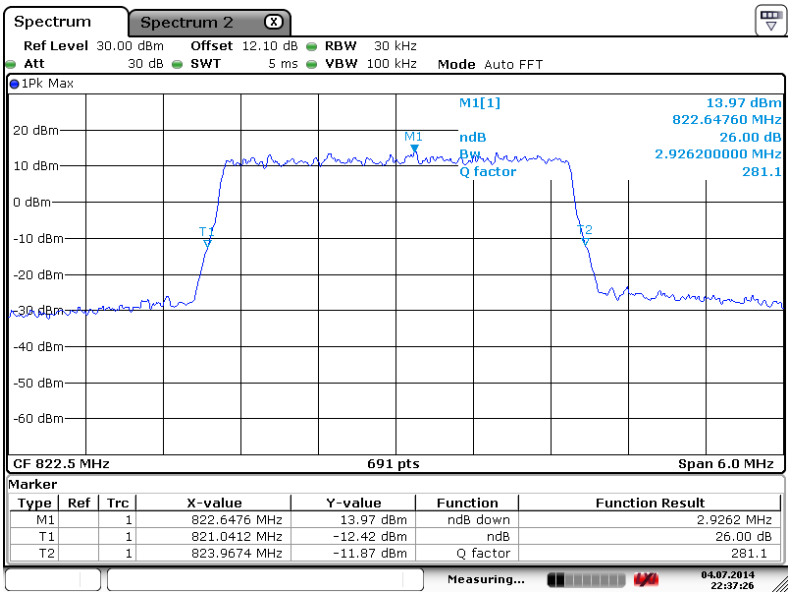
Band :	LTE Band 26	BW / Mod. :	3MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26775



Date: 4.JUL.2014 23:02:31

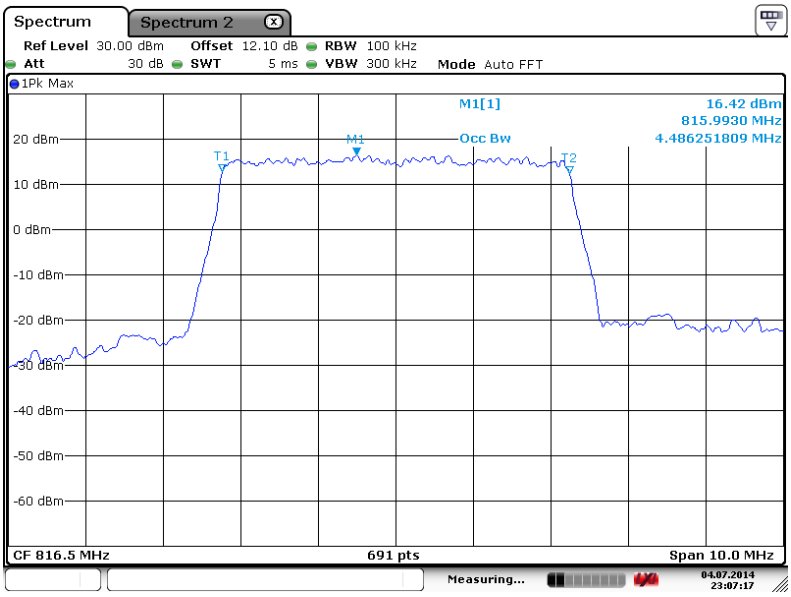
26dB Bandwidth Plot on Channel 26775



Date: 4.JUL.2014 22:37:26

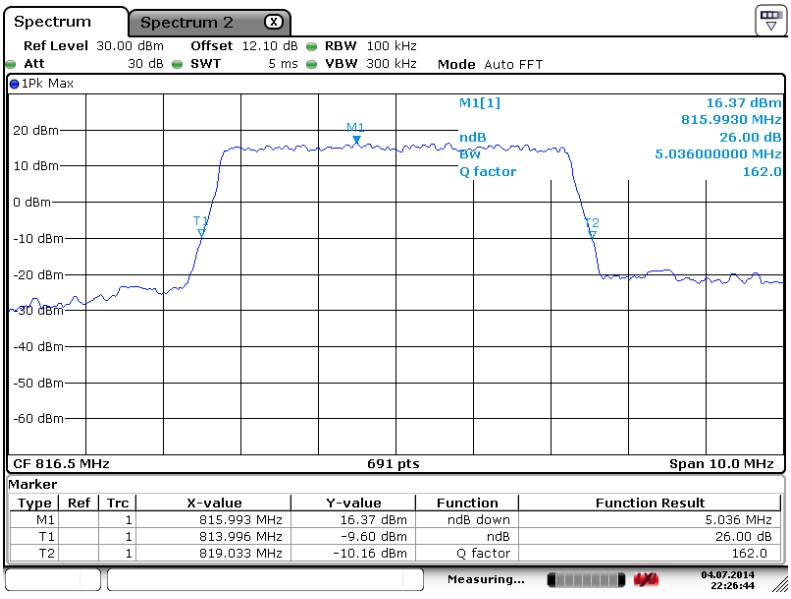
Band :	LTE Band 26	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26715



Date: 4.JUL.2014 23:07:17

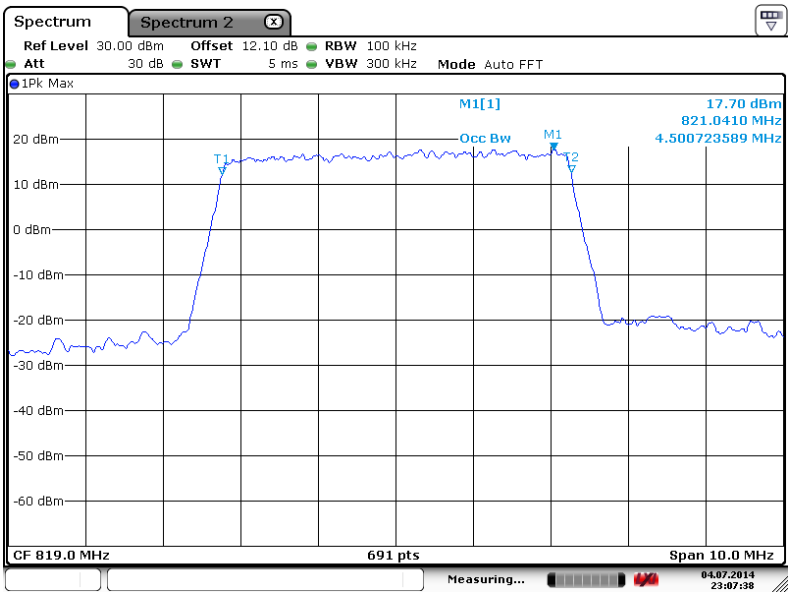
26dB Bandwidth Plot on Channel 26715



Date: 4.JUL.2014 22:26:44

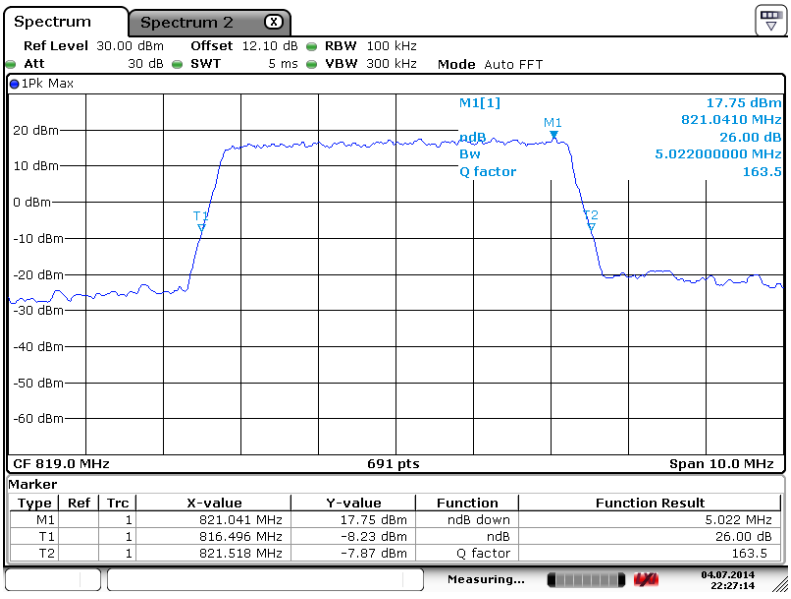
Band :	LTE Band 26	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 23:07:39

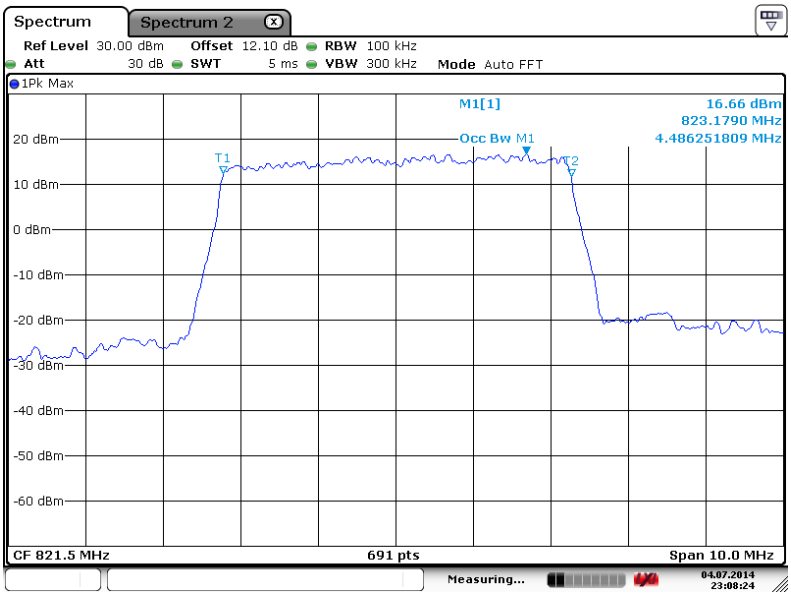
26dB Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 22:27:14

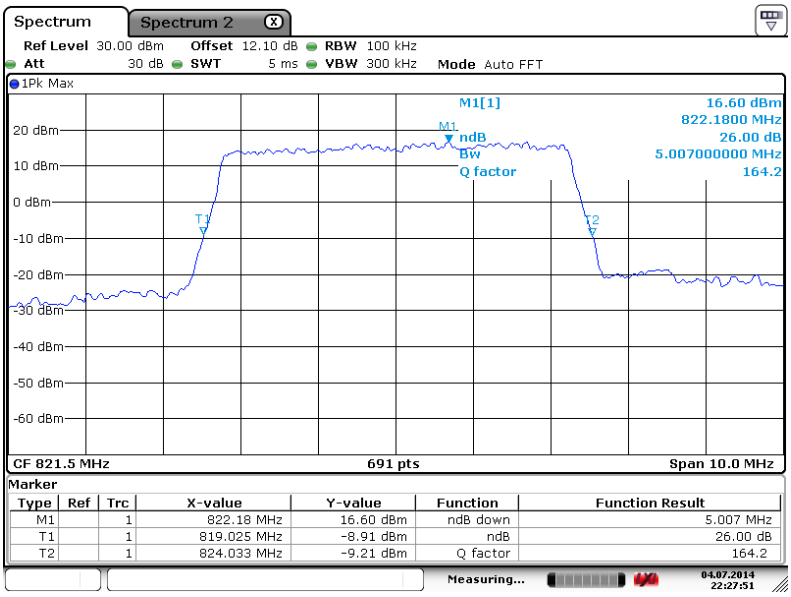
Band :	LTE Band 26	BW / Mod. :	5MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26765



Date: 4.JUL.2014 23:08:24

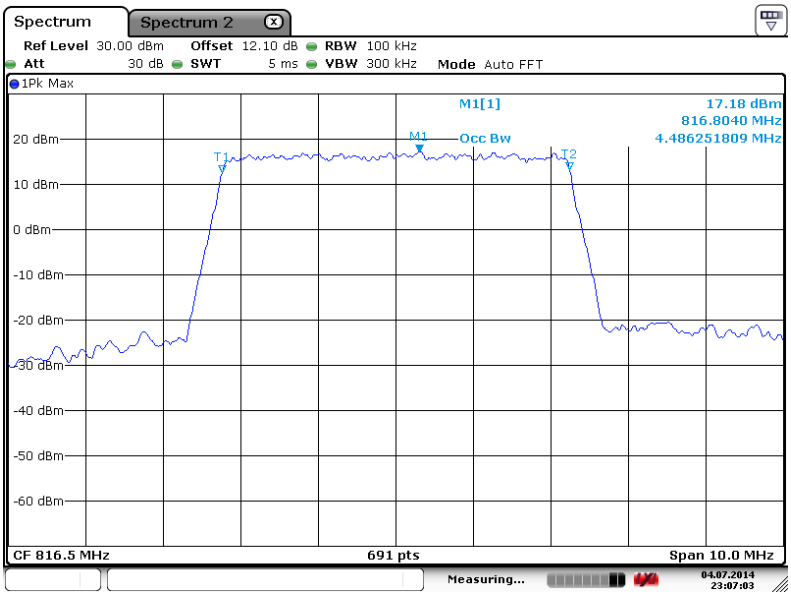
26dB Bandwidth Plot on Channel 26765



Date: 4.JUL.2014 22:27:51

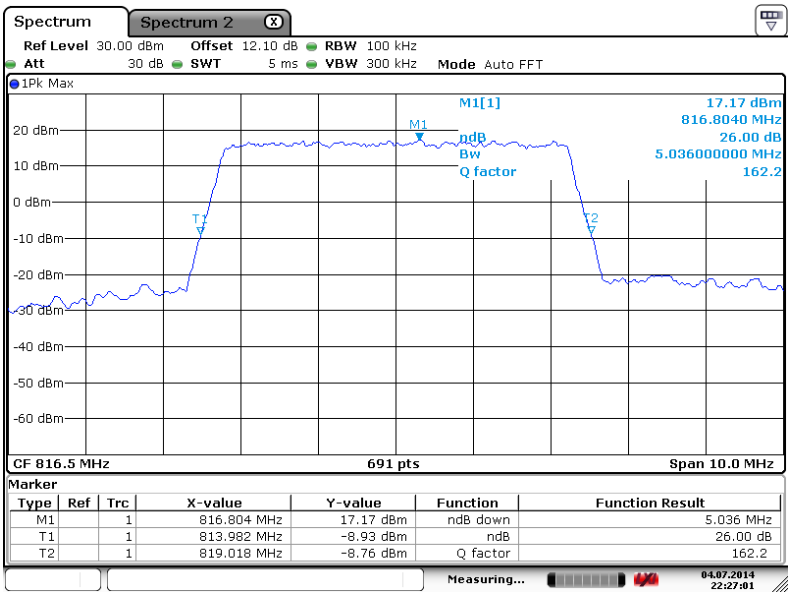
Band :	LTE Band 26	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26715



Date: 4.JUL.2014 23:07:03

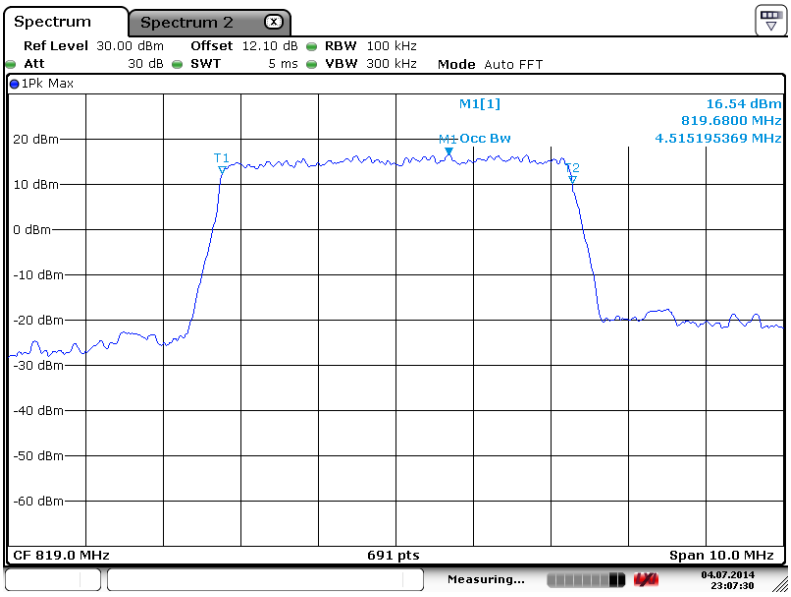
26dB Bandwidth Plot on Channel 26715



Date: 4.JUL.2014 22:27:02

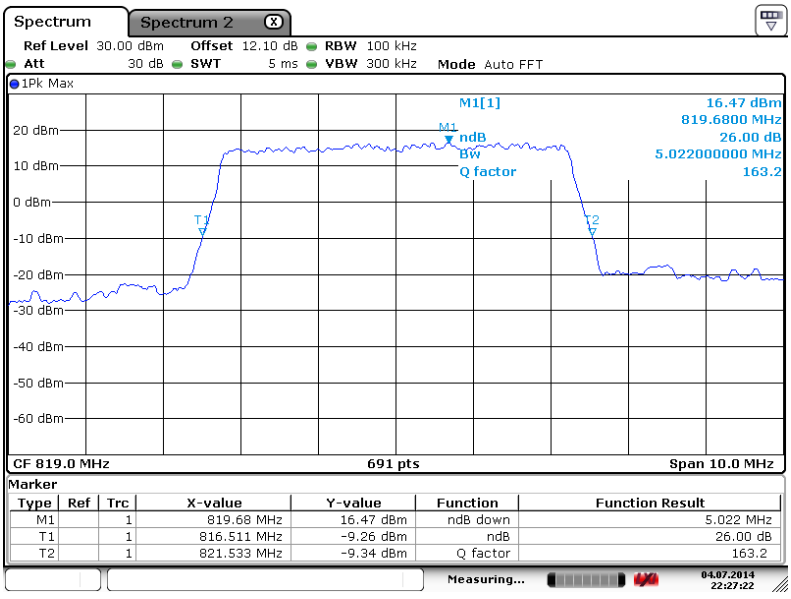
Band :	LTE Band 26	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 23:07:30

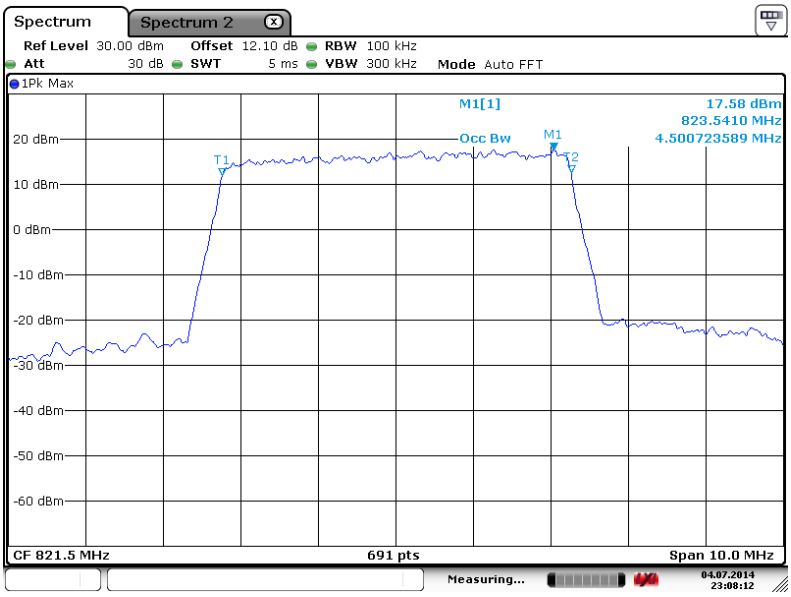
26dB Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 22:27:23

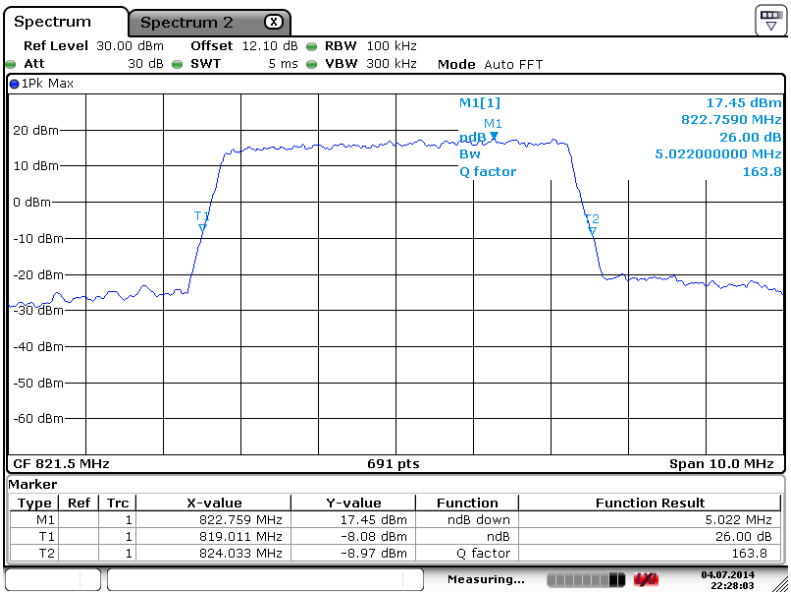
Band :	LTE Band 26	BW / Mod. :	5MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26765



Date: 4.JUL.2014 23:08:12

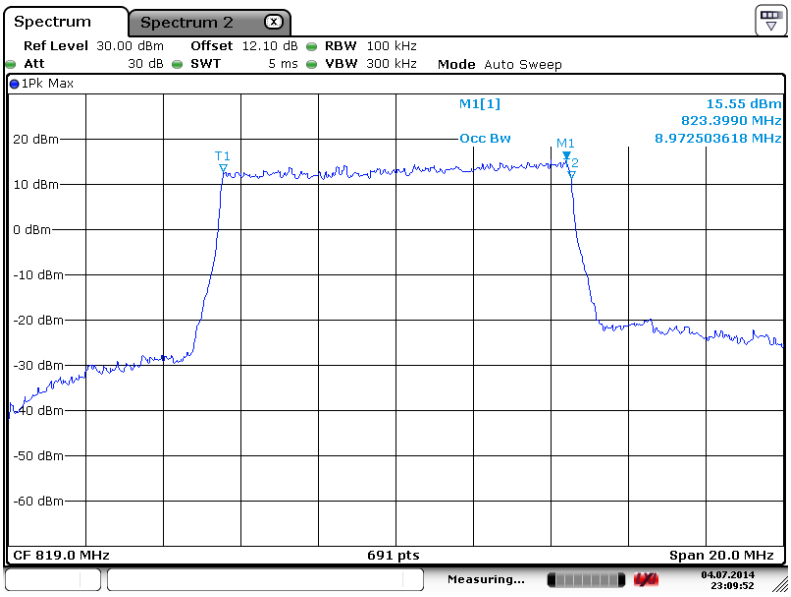
26dB Bandwidth Plot on Channel 26765



Date: 4.JUL.2014 22:28:03

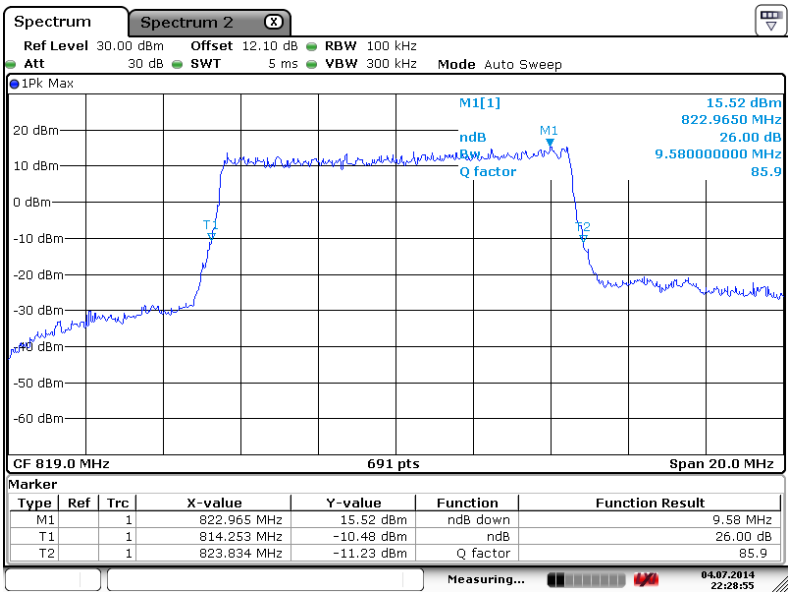
Band :	LTE Band 26	BW / Mod. :	10MHz / QPSK

99% Occupied Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 23:09:52

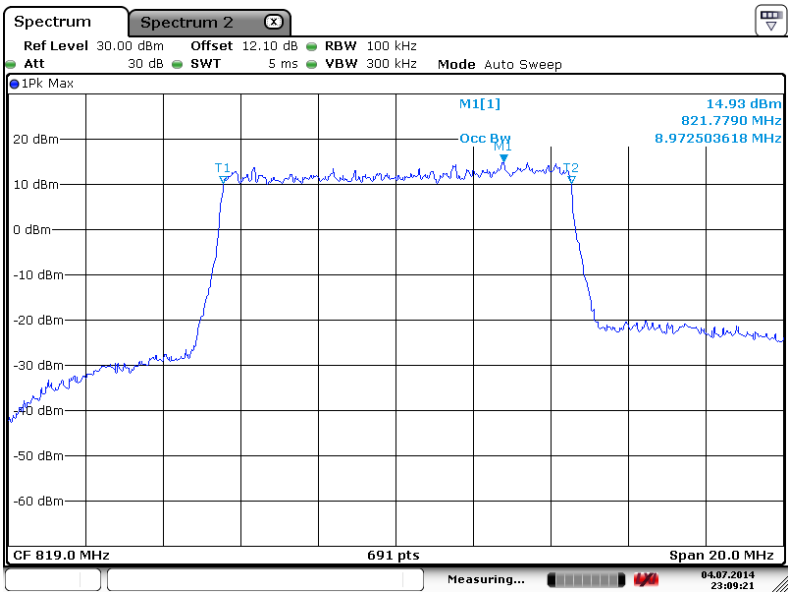
26dB Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 22:28:55

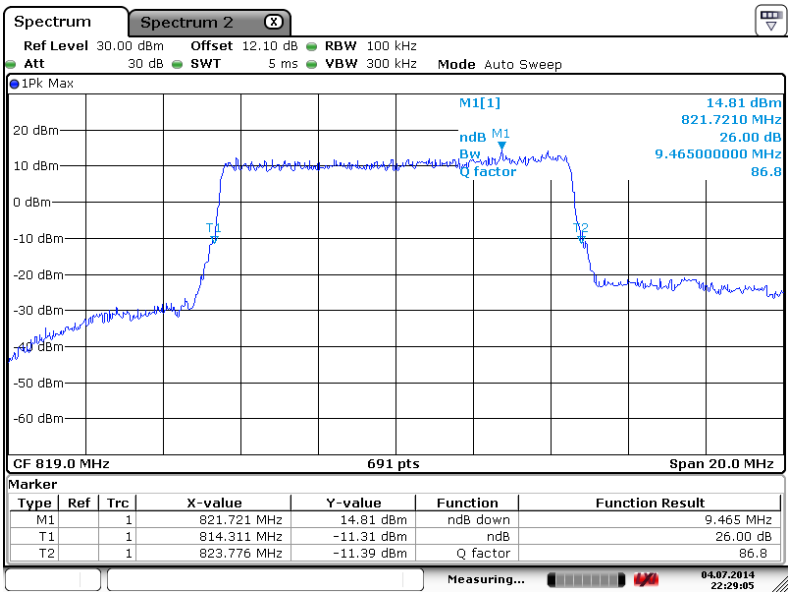
Band :	LTE Band 26	BW / Mod. :	10MHz / 16QAM

99% Occupied Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 23:09:21

26dB Bandwidth Plot on Channel 26740



Date: 4.JUL.2014 22:29:05

3.3 Emissions Mask Measurement

3.3.1 Description of Emissions Mask Measurement

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691.(a)

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log_{10}(f/6.1) decibels or 50 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

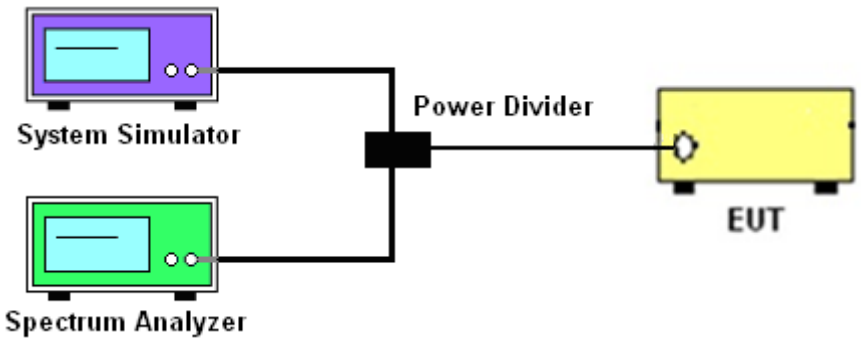
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The emissions mask of low and high channels for the highest RF powers were measured.
3. The measured RBW and the VBW set 3 times of RBW are then set in spectrum analyzer, and the RBW correction factor 10log (1% of OBW/measured RBW)(dB) was compensated, if required.
4. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

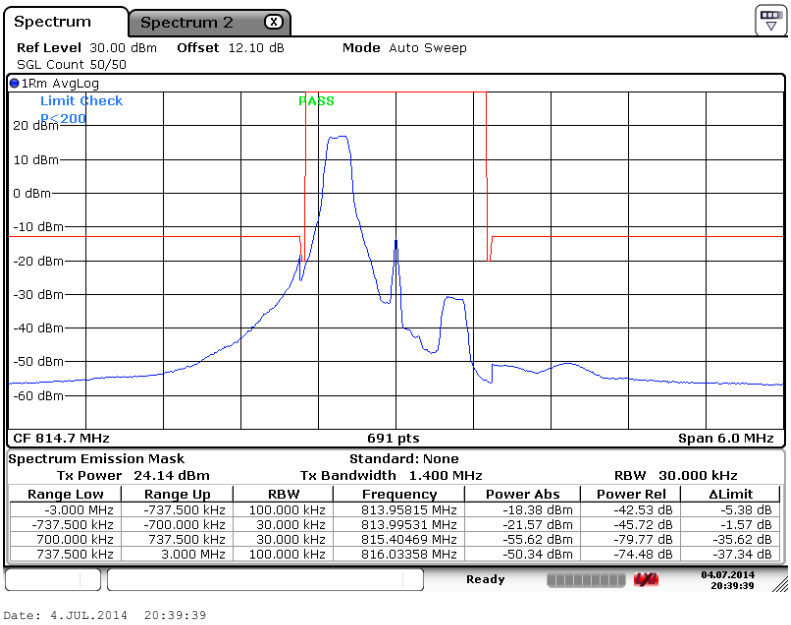
3.3.4 Test Setup



3.3.5 Test Result (Plots) of Conducted Emissions Mask

Band :	LTE Band 26	Band Width :	1.4MHz / QPSK

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



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

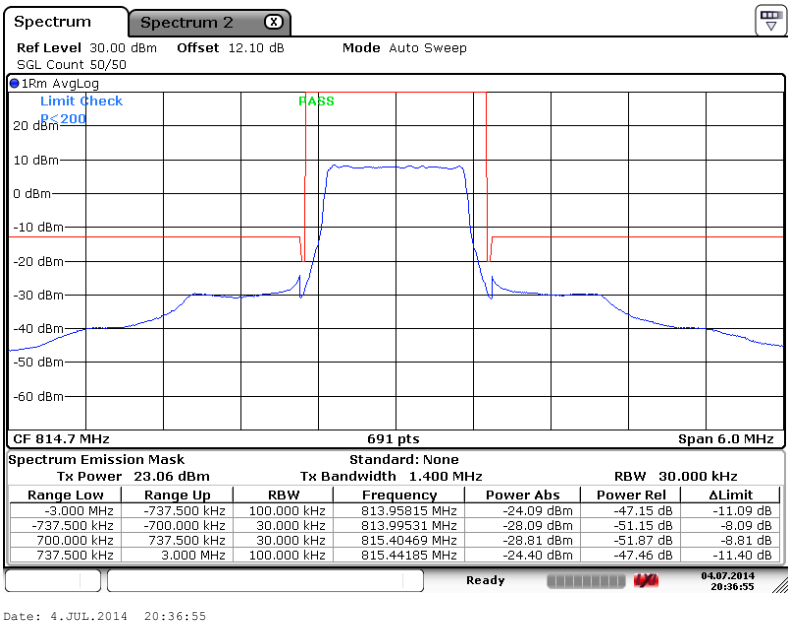
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99531MHz: - 21.57(dBm) + 0.97(dB)= -20.60 (dBm)

<2> Test result of 815.40469MHz: - 55.62(dBm) + 0.97(dB)= -54.65 (dBm)

Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

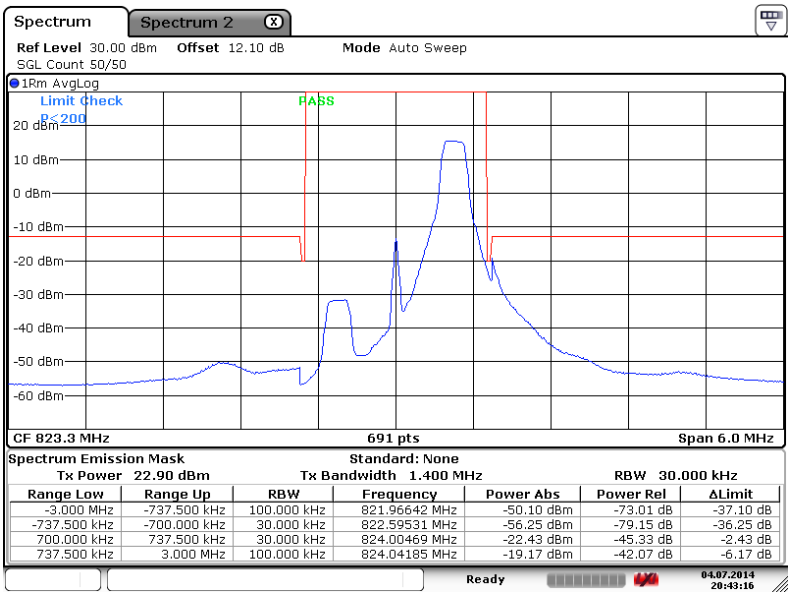
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99531MHz: - 28.09(dBm) + 0.97(dB)= -27.12 (dBm)

<2> Test result of 815.40469MHz: - 28.81(dBm) + 0.97(dB)= -27.84 (dBm)

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

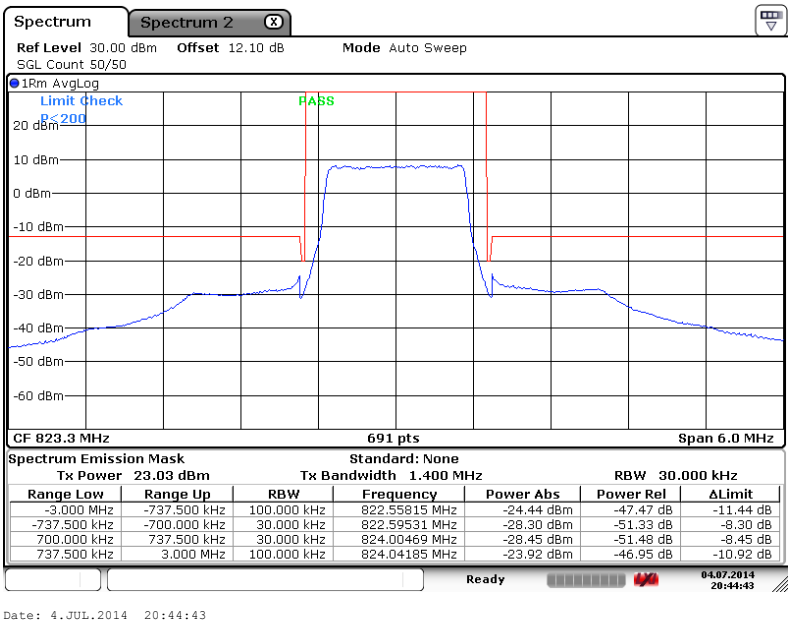
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 822.59531MHz: - 56.25(dBm) + 0.97(dB)= -55.28 (dBm)

<2> Test result of 824.00469MHz: - 22.43(dBm) + 0.97(dB)= -21.46 (dBm)

Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

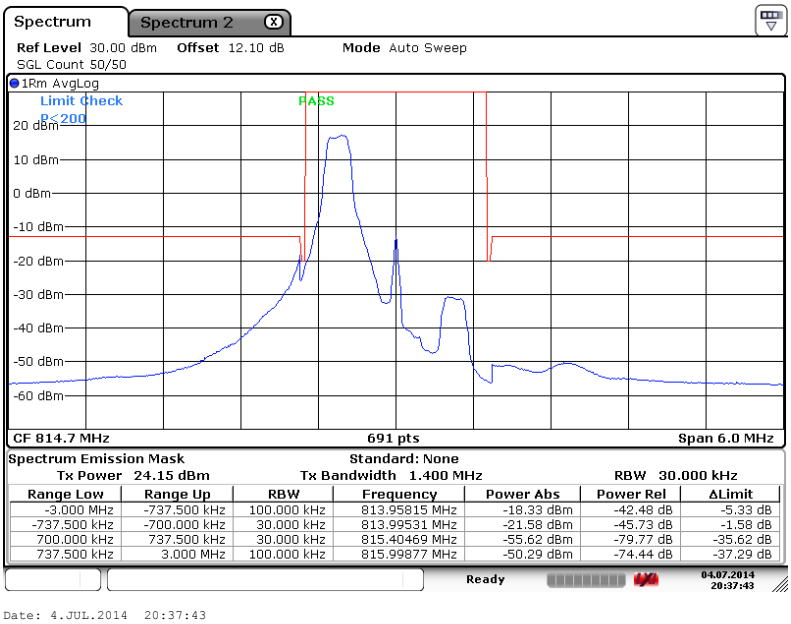
= Power Abs (dBm) +0.97 (dB)

<1> Test result of 822.59531MHz: - 28.30(dBm) + 0.97(dB)= -27.33 (dBm)

<2> Test result of 824.00469MHz: - 28.45(dBm) + 0.97(dB)= -27.48 (dBm)

Band :	LTE Band 26	Band Width :	1.4MHz / 16QAM

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



Date: 4.JUL.2014 20:37:43

Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

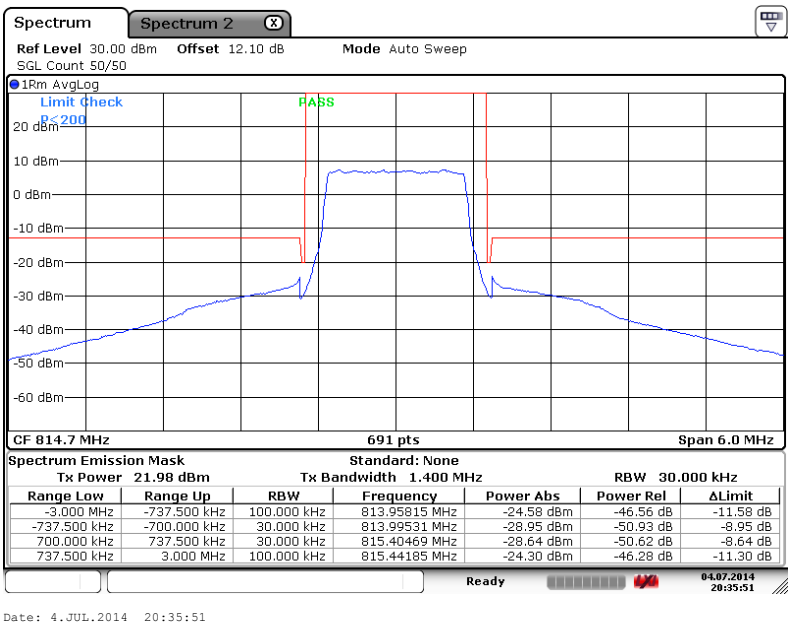
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99531MHz: - 21.58(dBm) + 0.97(dB)= -20.61 (dBm)

<2> Test result of 815.40469MHz: - 55.62(dBm) + 0.97(dB)= -54.65 (dBm)

Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

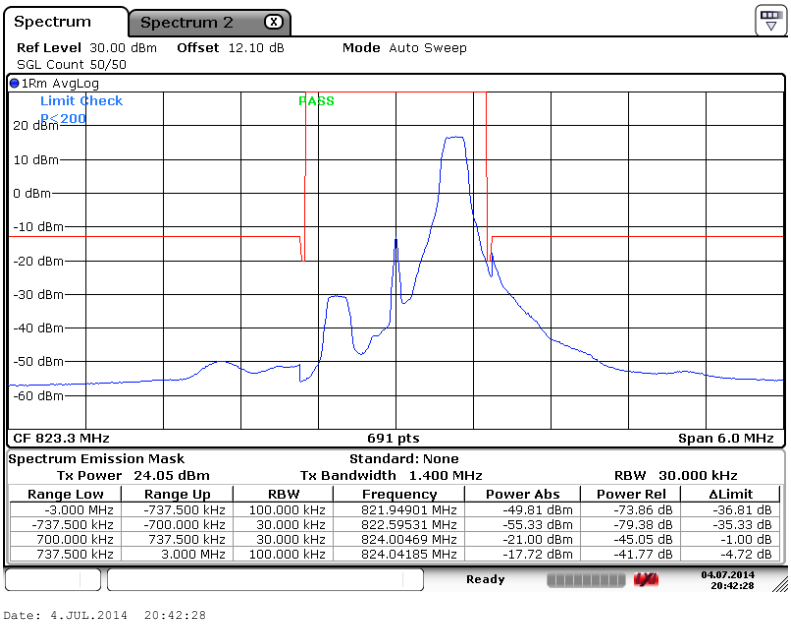
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99531MHz: - 28.95(dBm) + 0.97(dB)= -27.98 (dBm)

<2> Test result of 815.40469MHz: - 28.64(dBm) + 0.97(dB)= -27.67 (dBm)

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

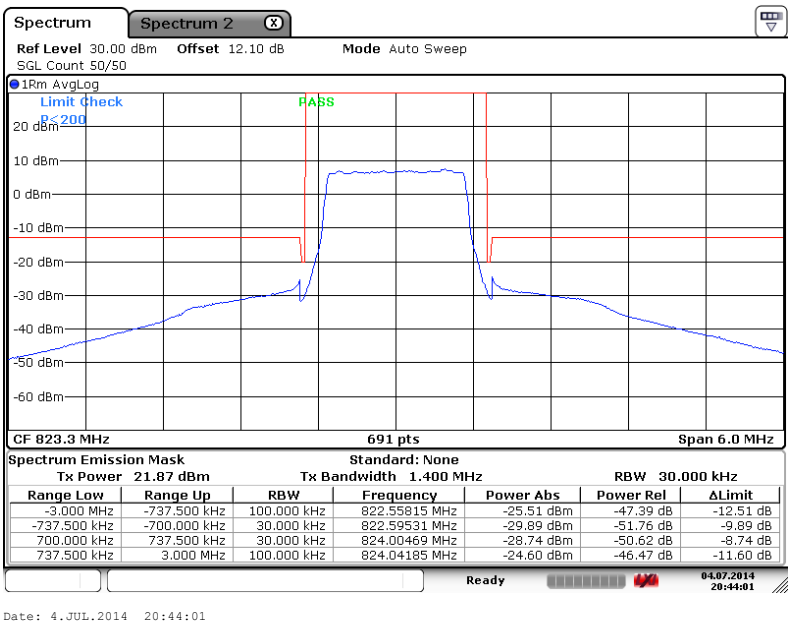
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 822.59531MHz: - 55.33(dBm) + 0.97(dB)= -54.36 (dBm)

<2> Test result of 824.00469MHz: -21.00(dBm) + 0.97(dB)= -20.03 (dBm)

Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

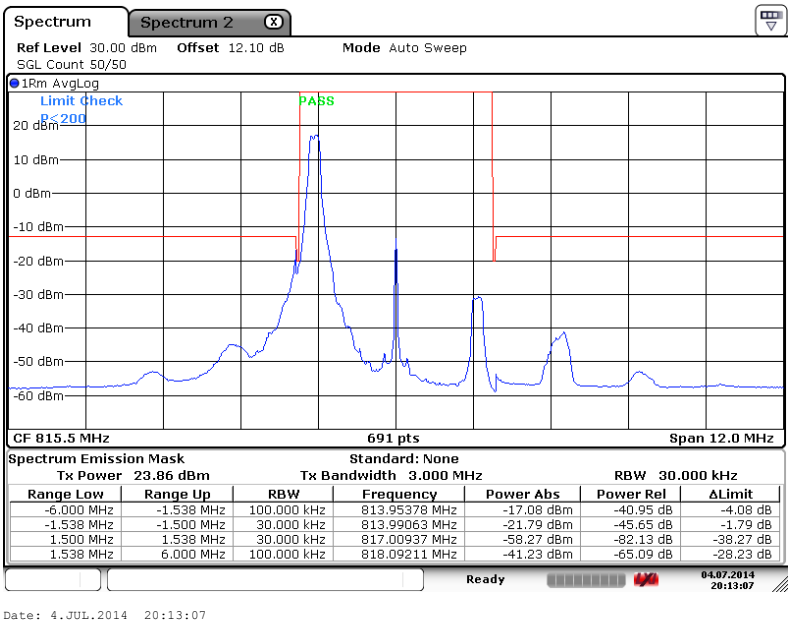
= Power Abs (dBm) +0.97 (dB)

<1> Test result of 822.59531MHz: - 29.89(dBm) + 0.97(dB)= -28.92 (dBm)

<2> Test result of 824.00469MHz: - 28.74(dBm) + 0.97(dB)= -27.77 (dBm)

Band :	LTE Band 26	Band Width :	3MHz / QPSK

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



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

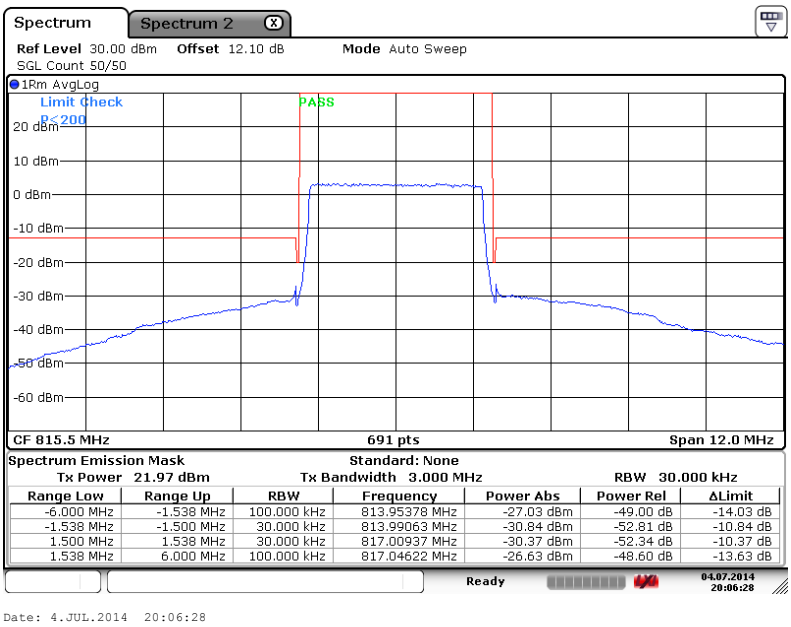
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99063MHz: - 21.79(dBm) + 0.97(dB)= -20.82 (dBm)

<2> Test result of 817.00937MHz: - 58.27(dBm) + 0.97(dB)= -57.30 (dBm)

Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

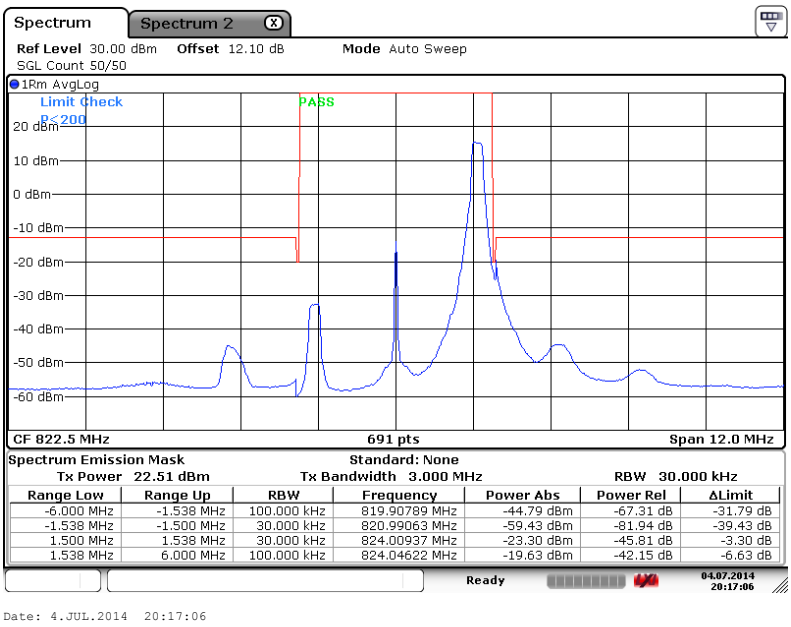
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99063MHz: - 30.84(dBm) + 0.97(dB)= -29.87 (dBm)

<2> Test result of 817.00937MHz: -30.37(dBm) + 0.97(dB)= -29.40 (dBm)

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 14



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

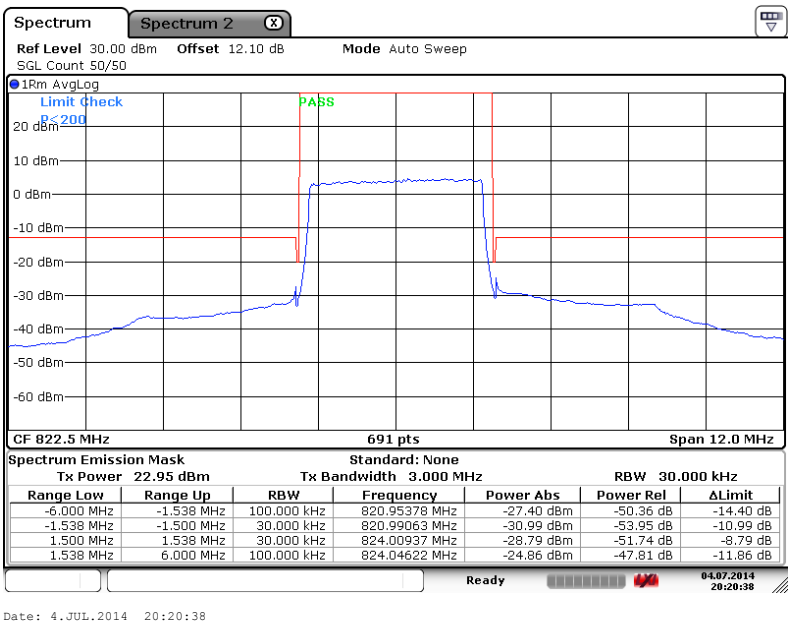
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 820.99063MHz: - 59.43(dBm) + 0.97(dB)= -58.46 (dBm)

<2> Test result of 824.00937MHz: - 23.30(dBm) + 0.97(dB)= -22.33 (dBm)

Higher Band Edge Plot for QPSK-RB Size 15, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

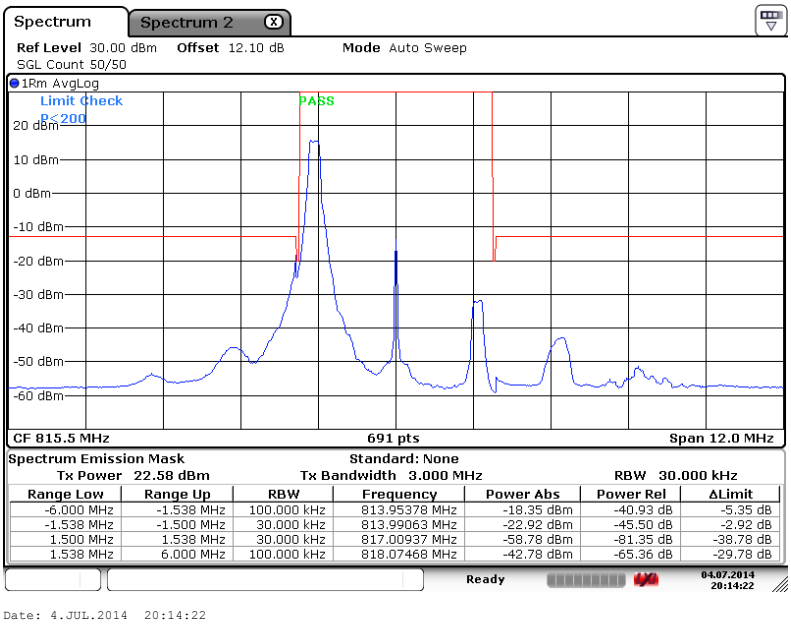
= Power Abs (dBm) +0.97 (dB)

<1> Test result of 820.99063MHz: - 30.99(dBm) + 0.97(dB)= -30.02 (dBm)

<2> Test result of 824.00937MHz: - 28.79(dBm) + 0.97(dB)= -27.82 (dBm)

Band :	LTE Band 26	Band Width :	3MHz / 16QAM

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



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

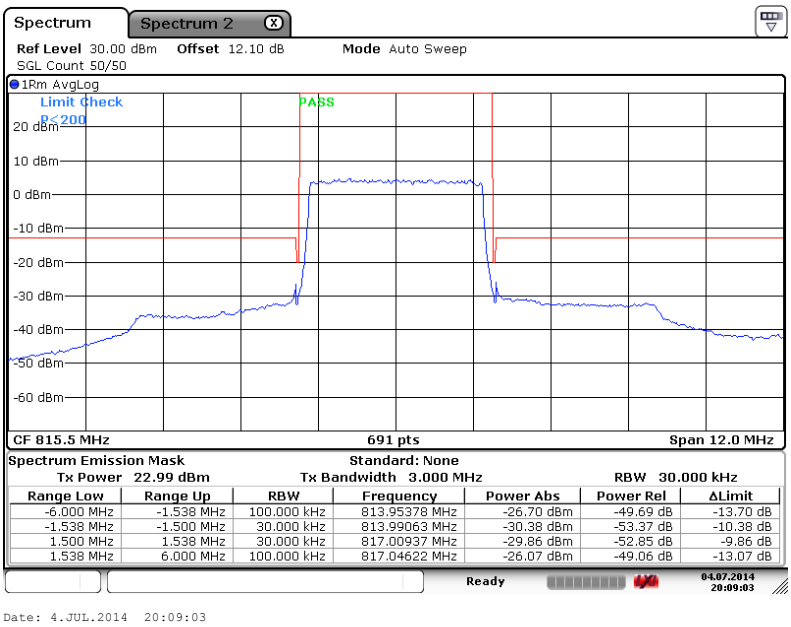
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99063MHz: - 22.92(dBm) + 0.97(dB)= -21.95 (dBm)

<2> Test result of 817.00937MHz: - 58.78(dBm) + 0.97(dB)= -57.81 (dBm)

Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

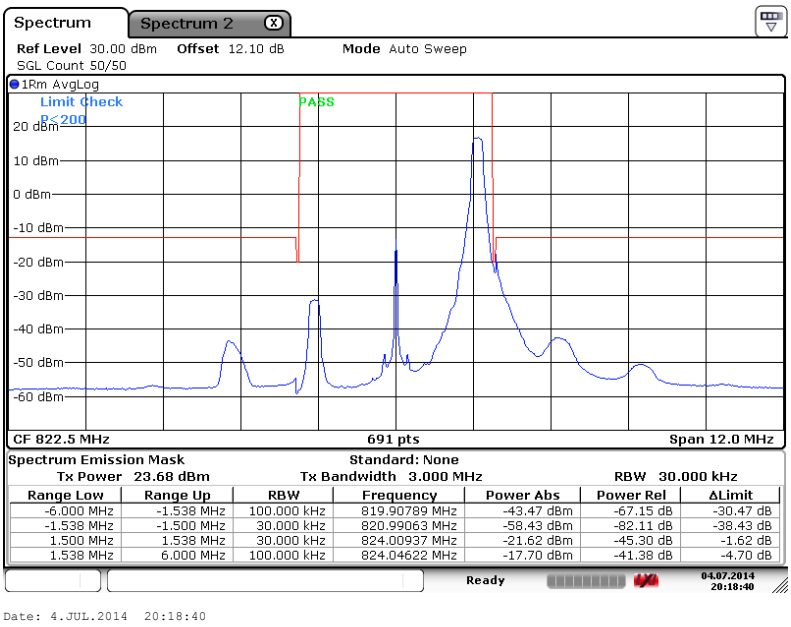
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 813.99063MHz: -30.38(dBm) + 0.97(dB)= -29.41 (dBm)

<2> Test result of 817.00937MHz: - 29.86(dBm) + 0.97(dB)= -28.89 (dBm)

Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14



Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

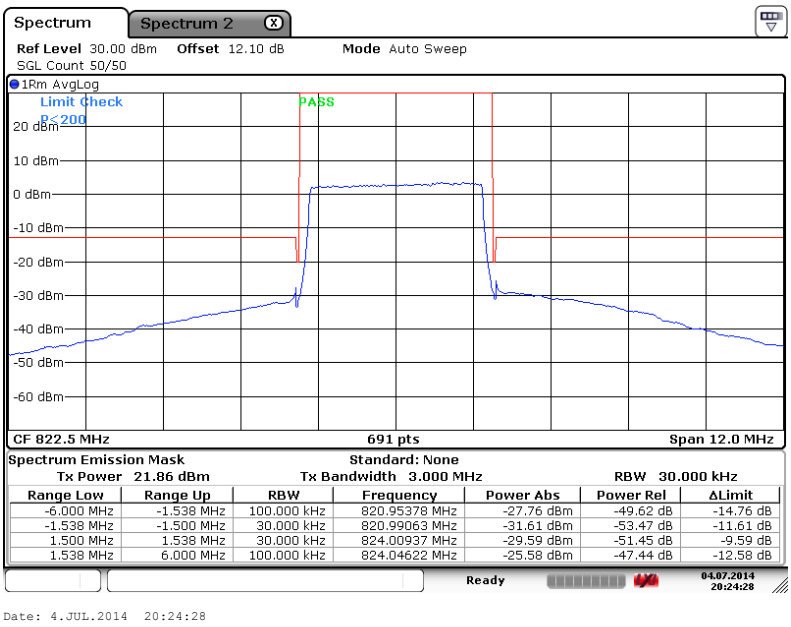
= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

= Power Abs (dBm) +0.97 (dB)

<1> Test result of 820.99063MHz: - 58.43(dBm) + 0.97(dB)= -57.46 (dBm)

<2> Test result of 824.00937MHz: - 21.62(dBm) + 0.97(dB)= -20.65 (dBm)

Higher Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



Date: 4.JUL.2014 20:24:28

Remark:

Test Result(dBm) = Power Abs(dBm) + (1% of OBW/measured RBW) (dB)

= Power Abs (dBm) +10*LOG(37.5kHz/30kHz)(dB)

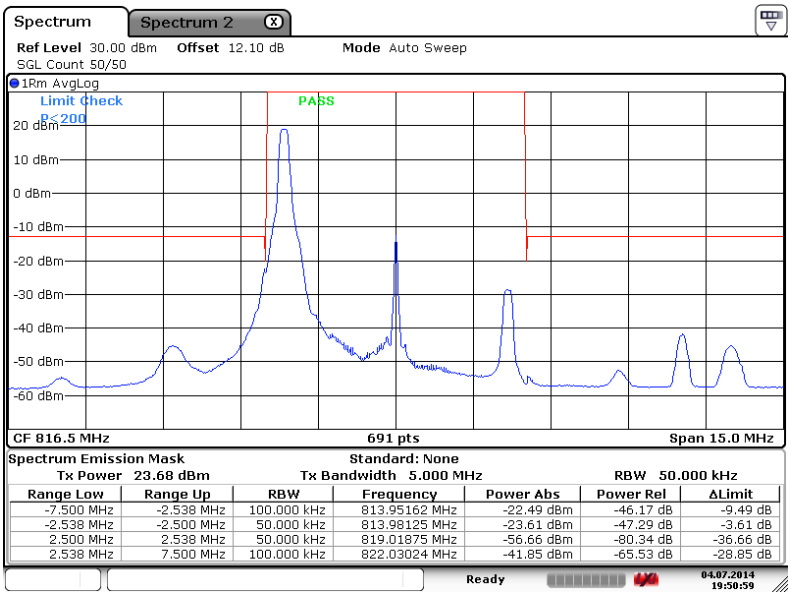
= Power Abs (dBm) +0.97 (dB)

<1> Test result of 820.99063MHz: - 31.61(dBm) + 0.97(dB)= -30.64 (dBm)

<2> Test result of 824.00937MHz: - 29.59(dBm) + 0.97(dB)= -28.62 (dBm)

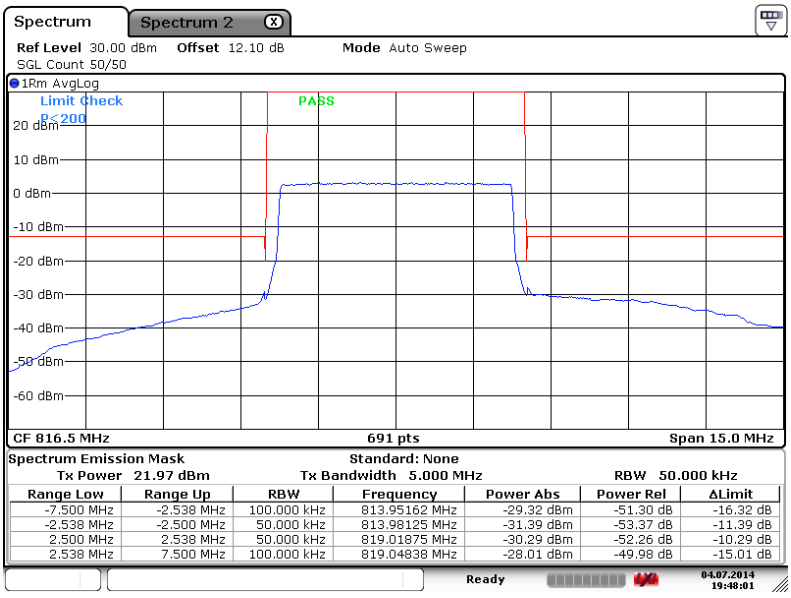
Band :	LTE Band 26	Band Width :	5MHz / QPSK

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



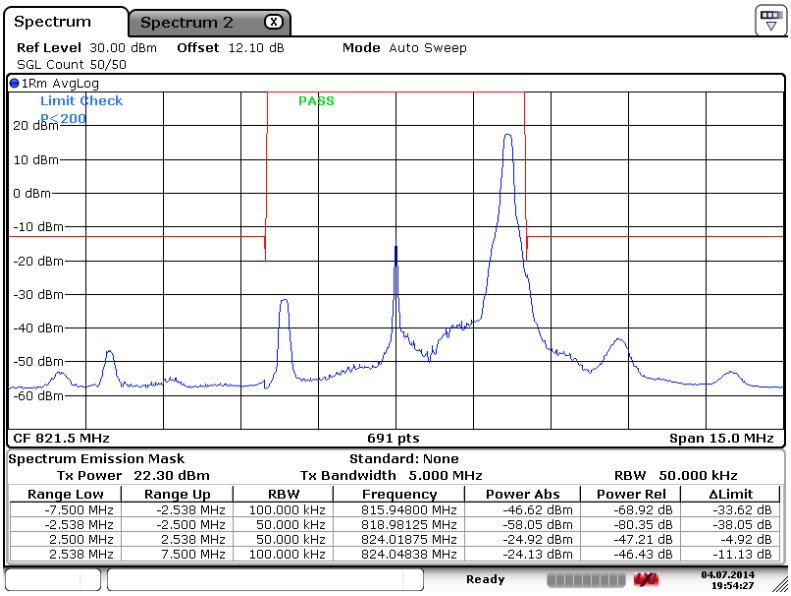
Date: 4.JUL.2014 19:50:59

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



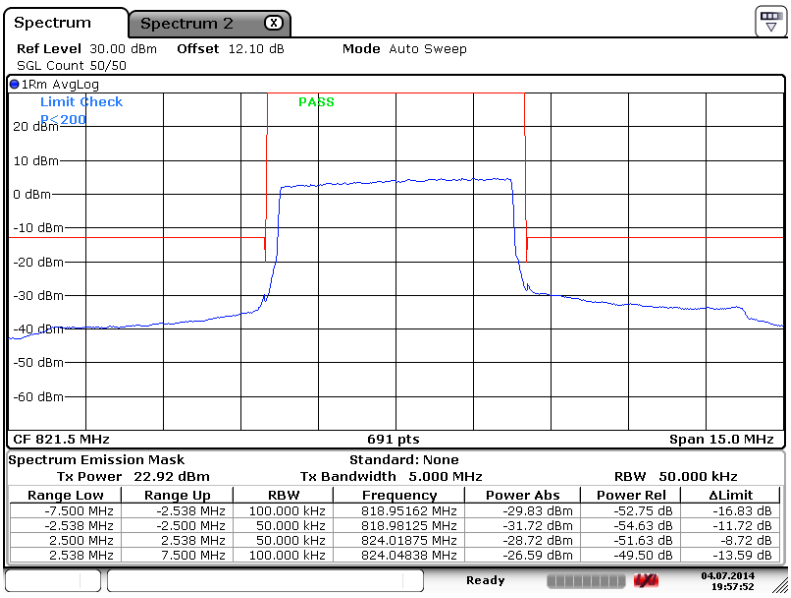
Date: 4.JUL.2014 19:48:01

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



Date: 4.JUL.2014 19:54:27

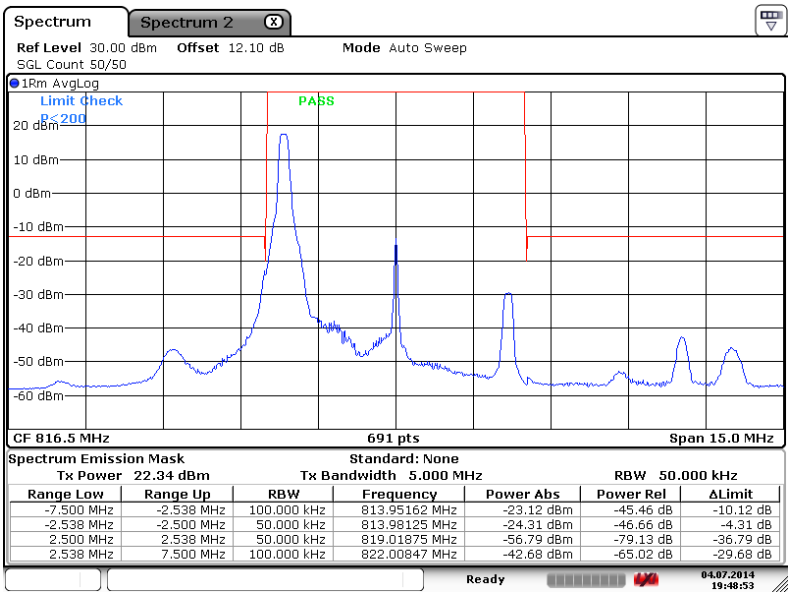
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 4.JUL.2014 19:57:52

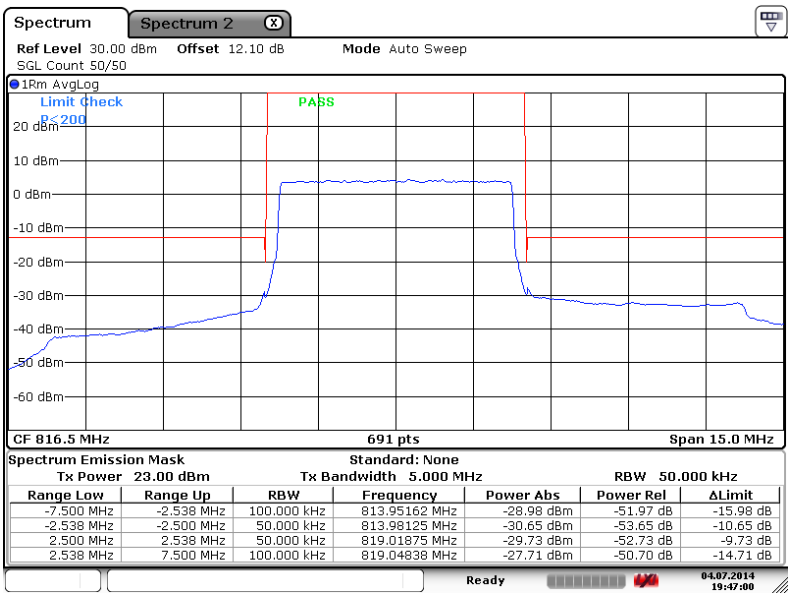
Band :	LTE Band 26	Band Width :	5MHz / 16QAM

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



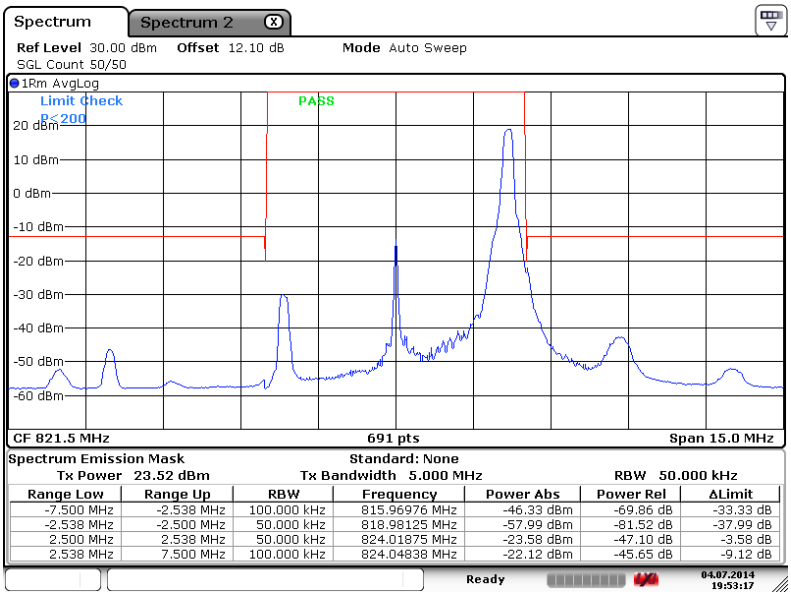
Date: 4.JUL.2014 19:48:53

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



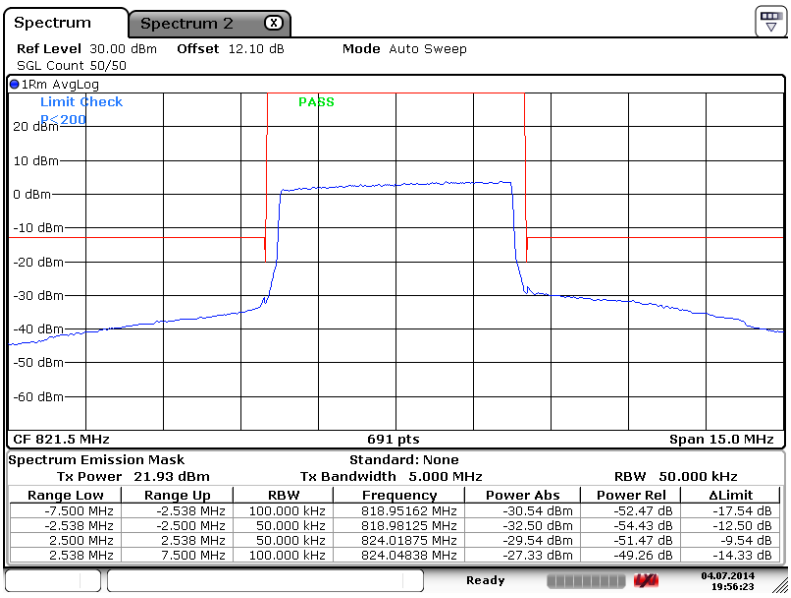
Date: 4.JUL.2014 19:47:00

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



Date: 4.JUL.2014 19:53:17

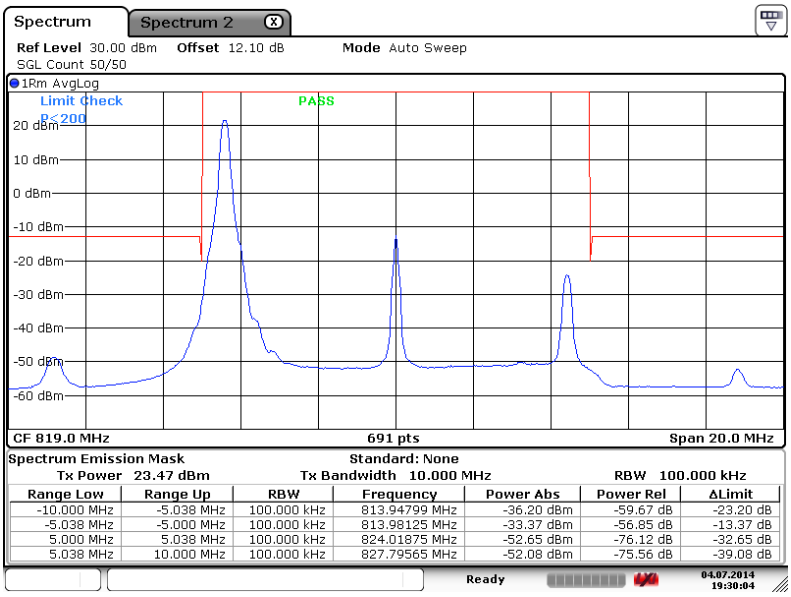
Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 4.JUL.2014 19:56:23

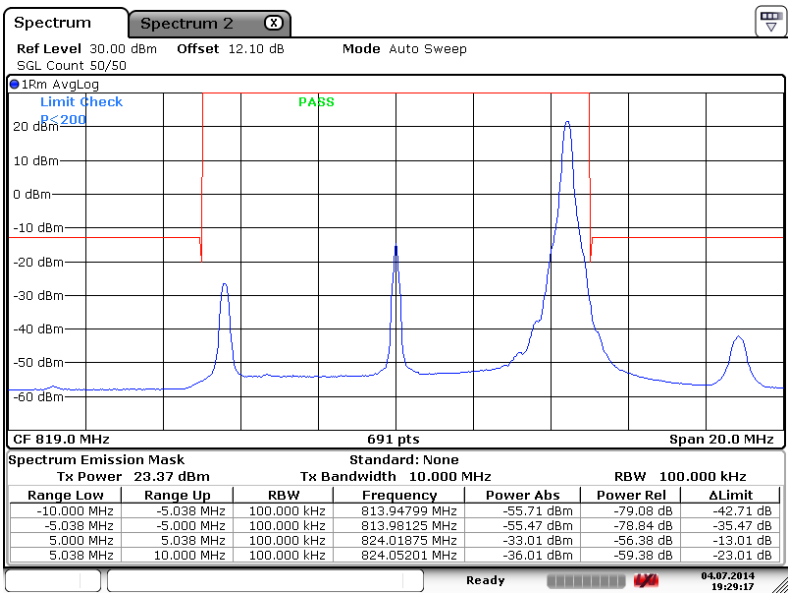
Band :	LTE Band 26	Band Width :	10MHz / QPSK

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



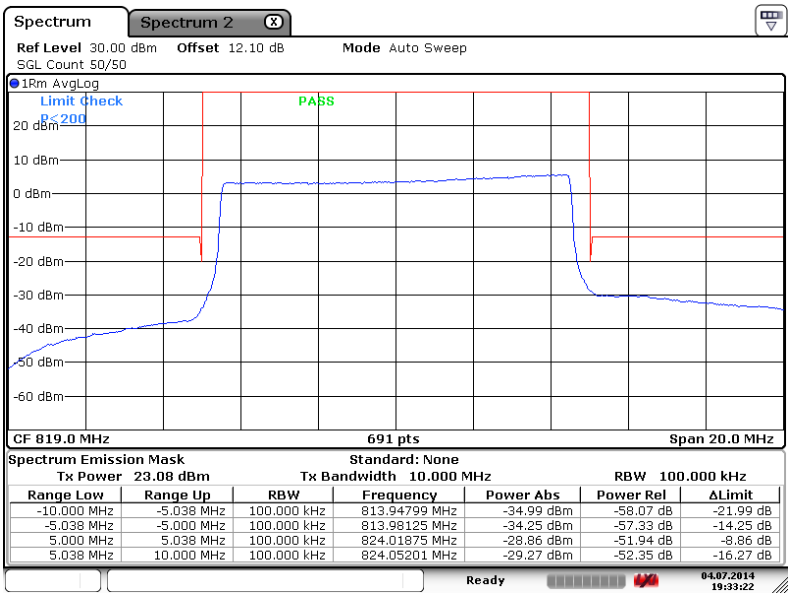
Date: 4.JUL.2014 19:30:04

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



Date: 4.JUL.2014 19:29:17

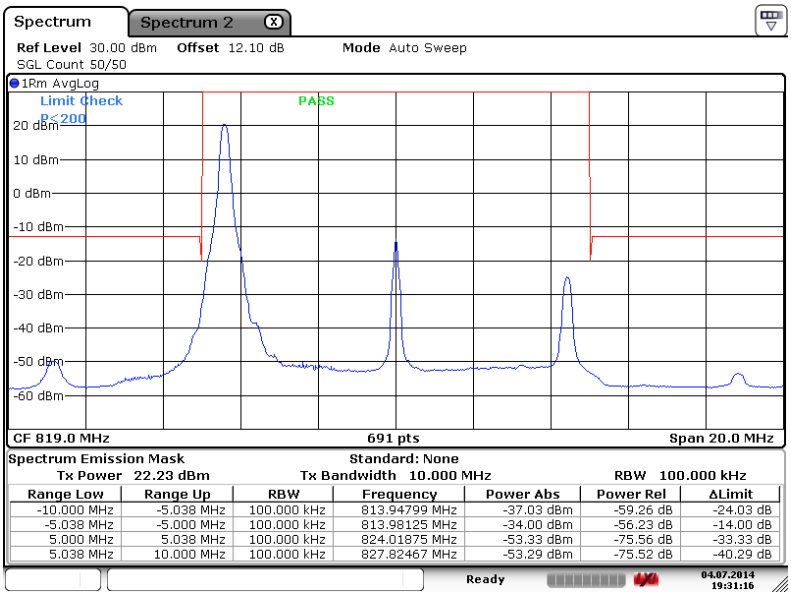
Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 4.JUL.2014 19:33:22

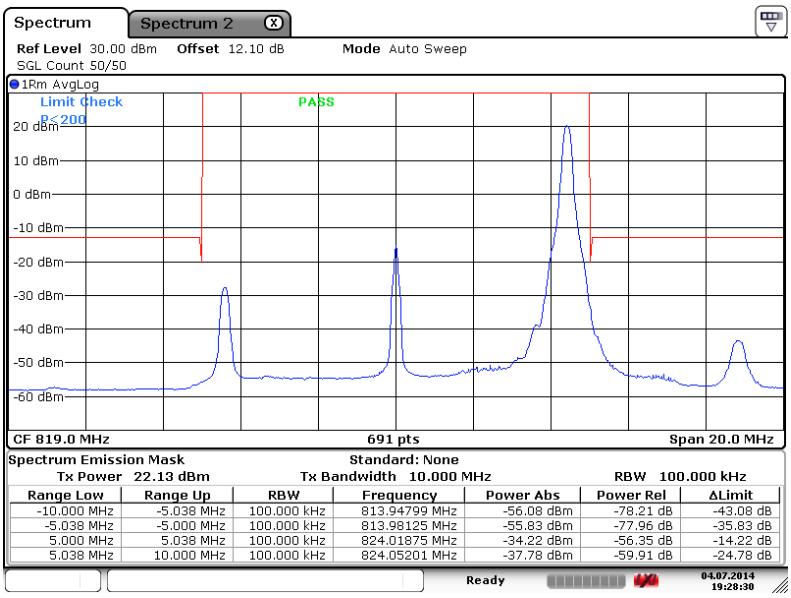
Band :	LTE Band 26	Band Width :	10MHz / 16QAM

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



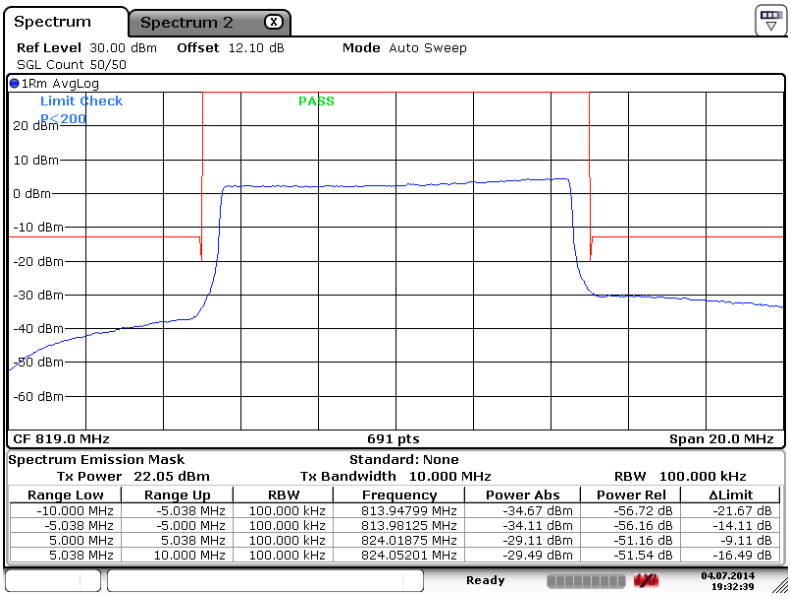
Date: 4.JUL.2014 19:31:16

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



Date: 4.JUL.2014 19:28:30

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



Date: 4.JUL.2014 19:32:39

3.4 Emissions Mask – Out Of Band Emissions Measurement

3.4.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 10 log (P) dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

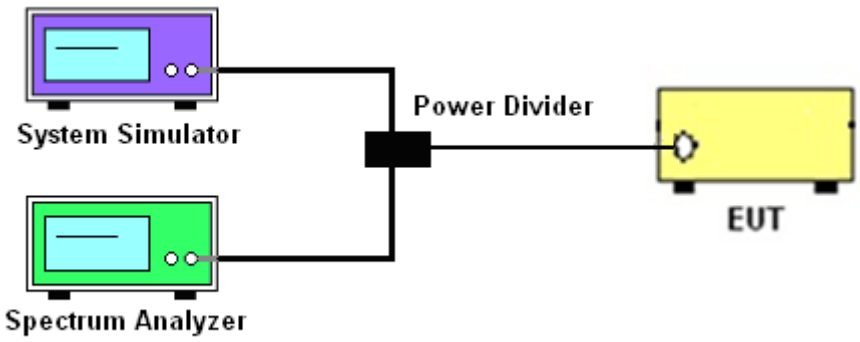
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a 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.

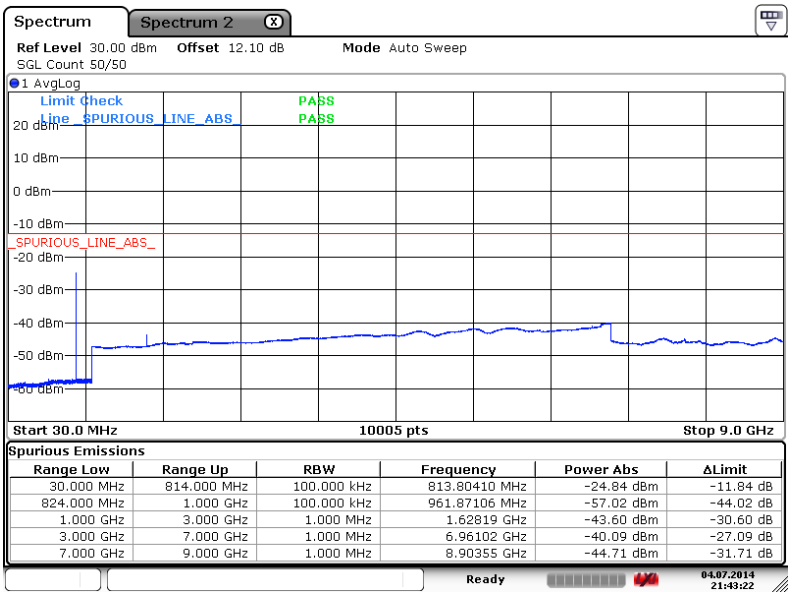
3.4.4 Test Setup



3.4.5 Test Result (Plots) of Conducted Emission

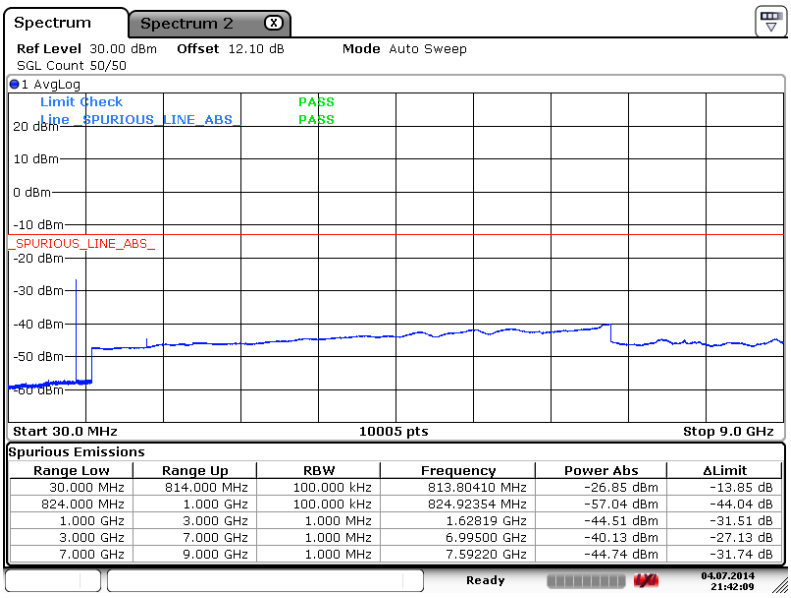
Band :	LTE Band 26	Channel :	CH26697 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:43:22

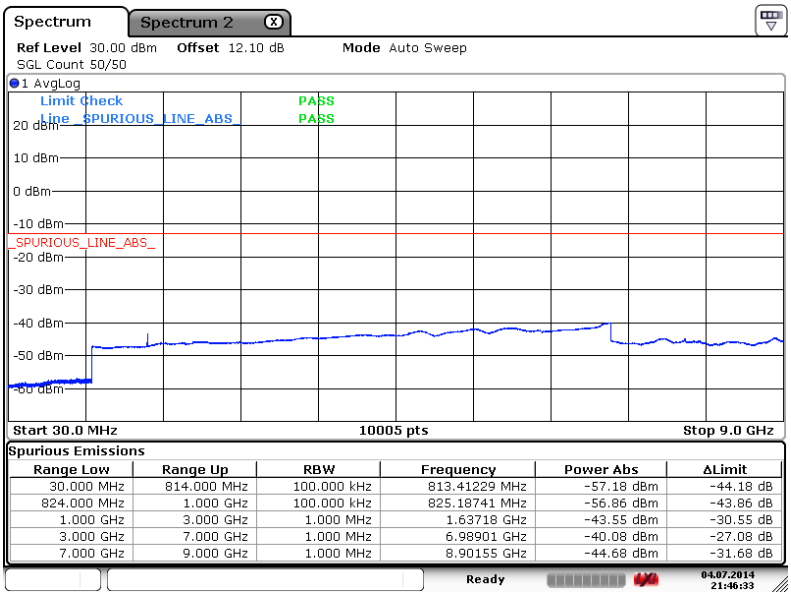
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:42:08

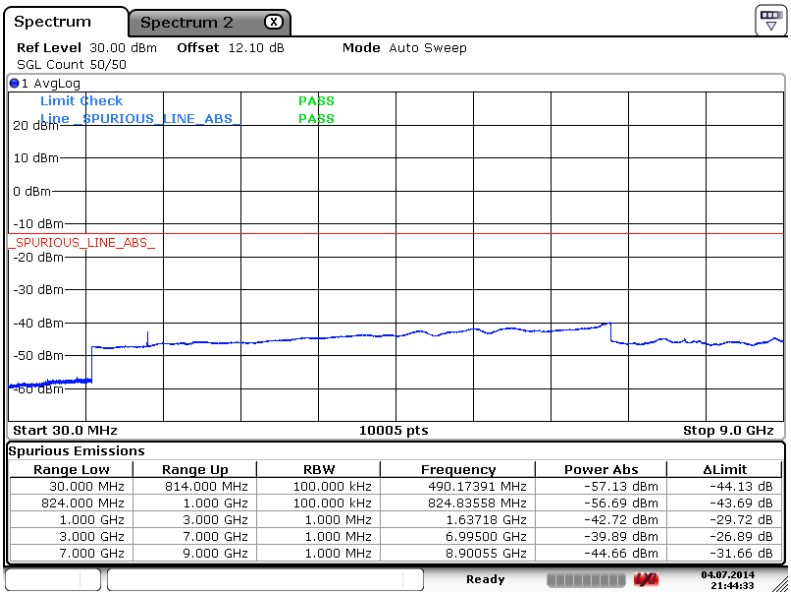
Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:46:33

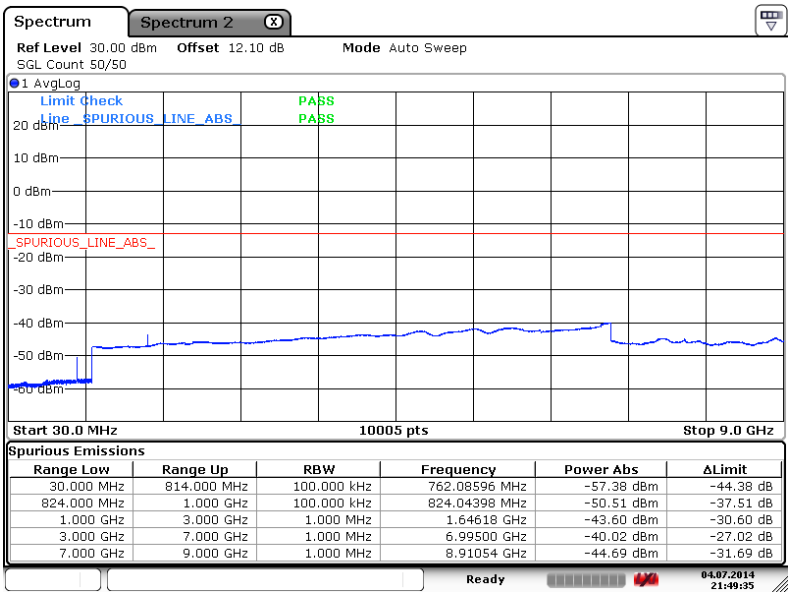
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:44:33

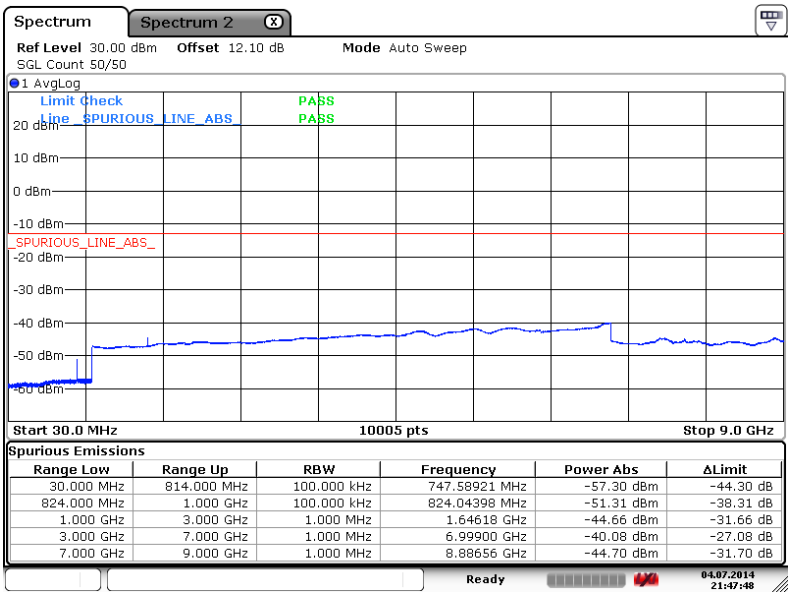
Band :	LTE Band 26	Channel :	CH26783 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:49:35

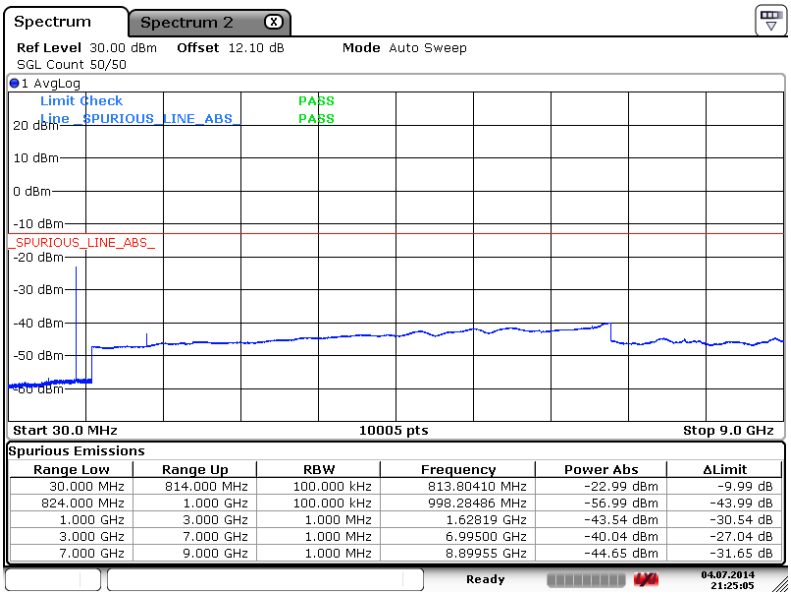
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:47:48

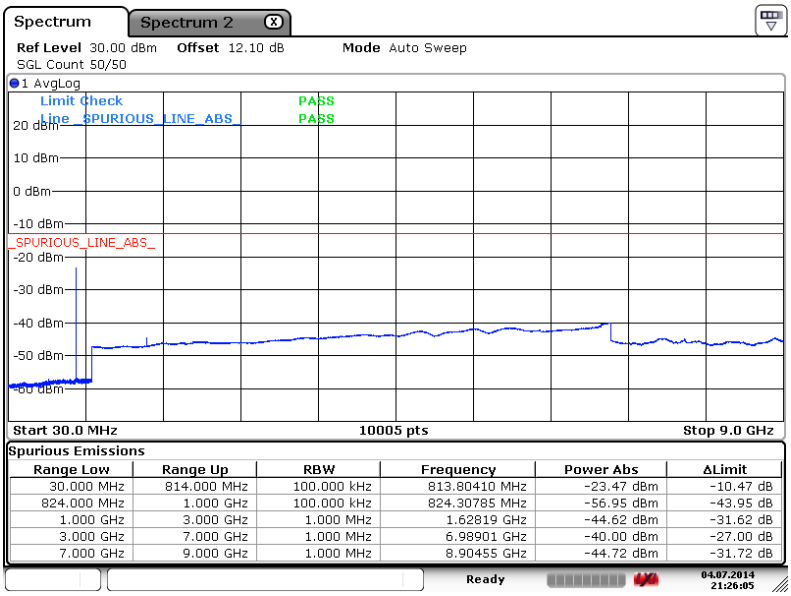
Band :	LTE Band 26	Channel :	CH26705 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:25:05

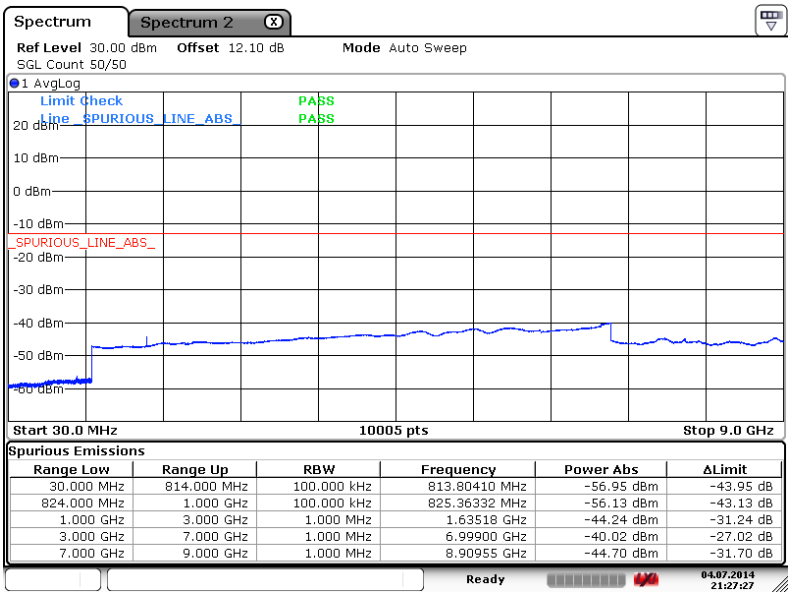
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:26:05

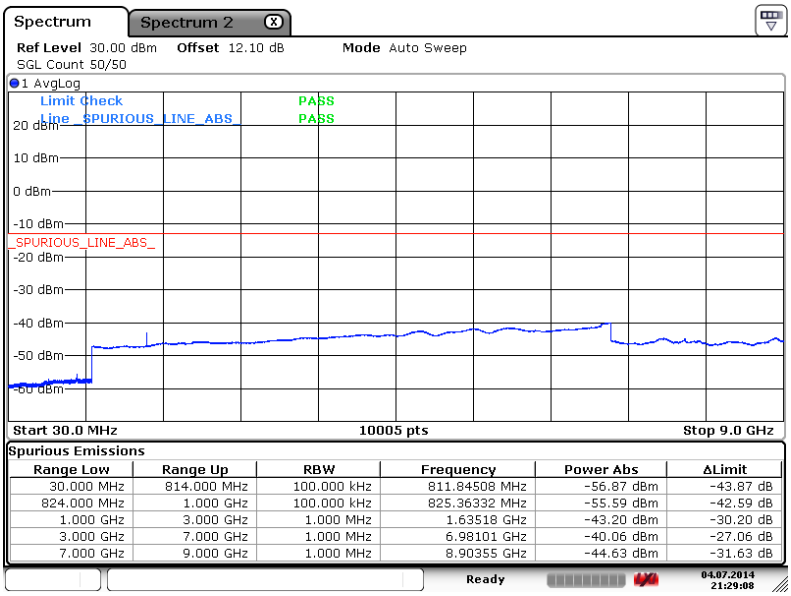
Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:27:27

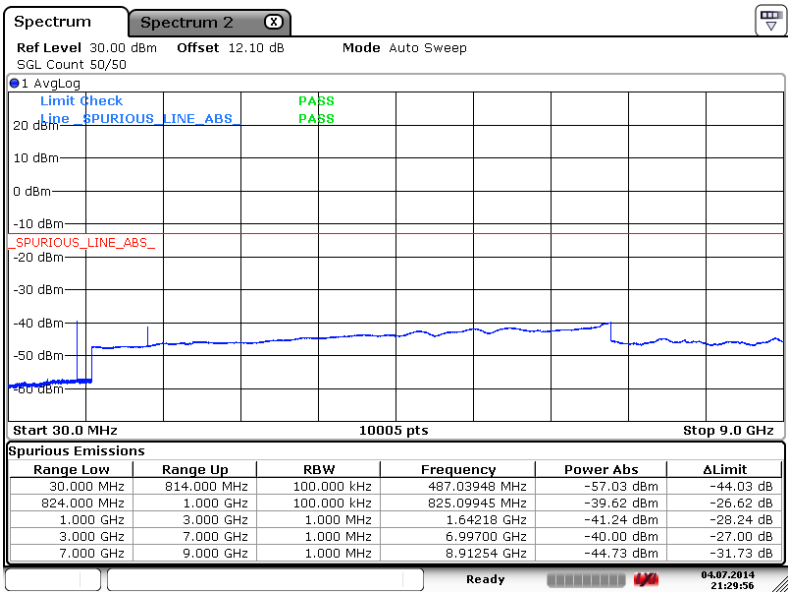
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:29:07

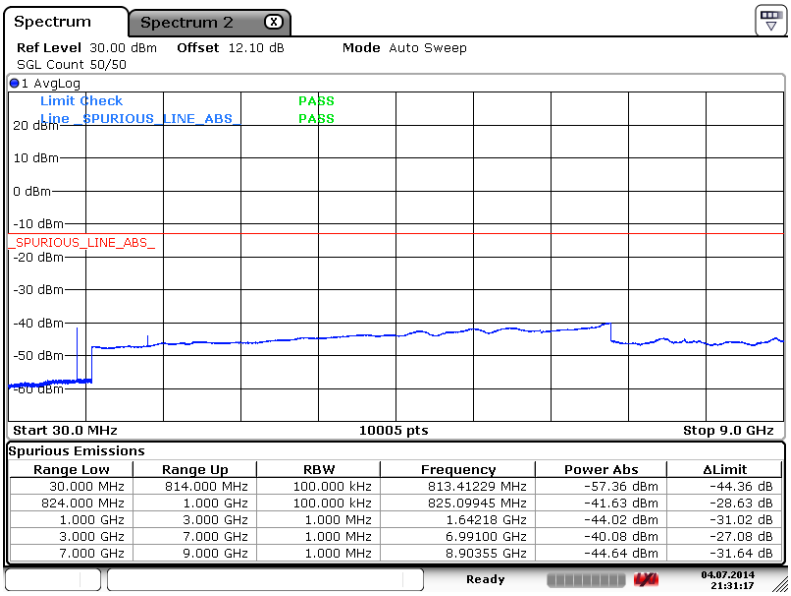
Band :	LTE Band 26	Channel :	CH26775 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:29:56

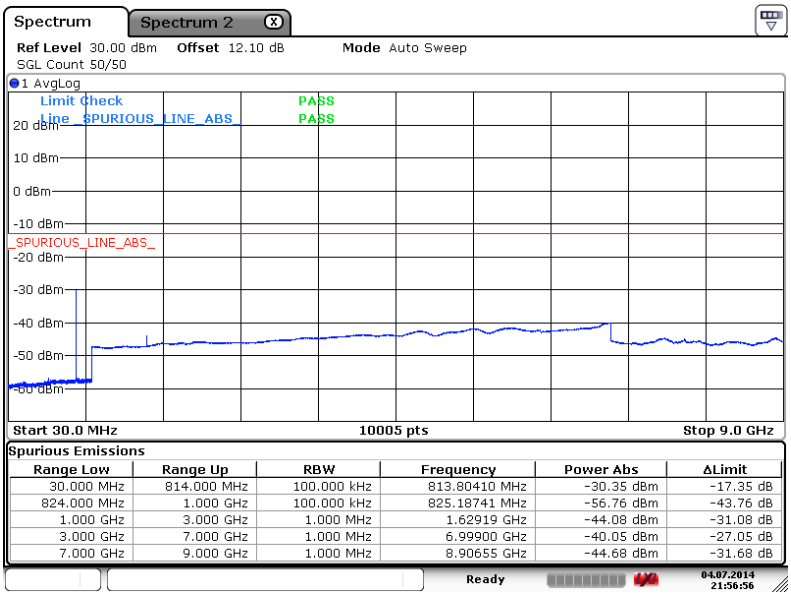
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:31:17

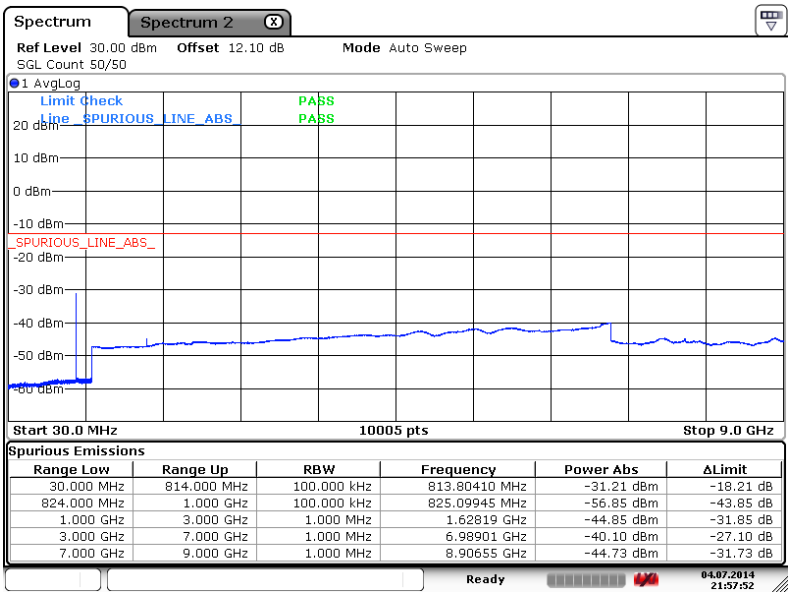
Band :	LTE Band 26	Channel :	CH26715 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:56:56

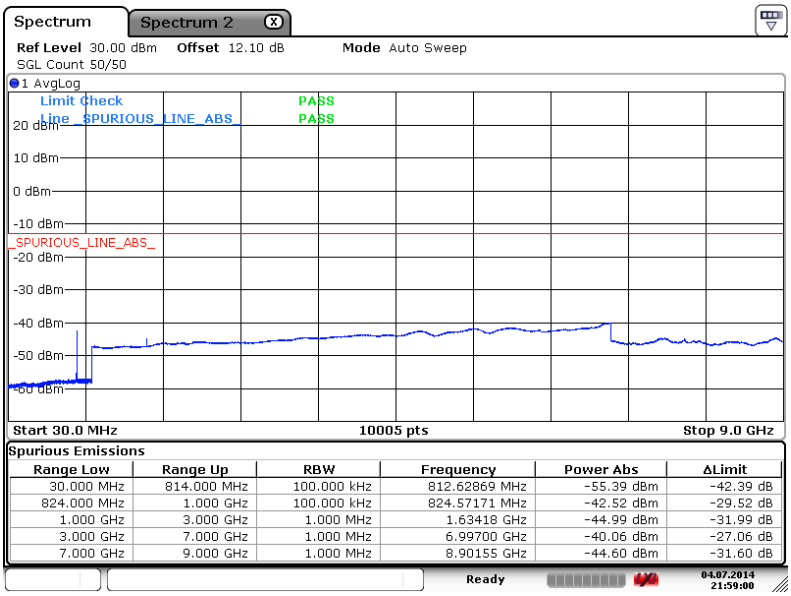
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:57:52

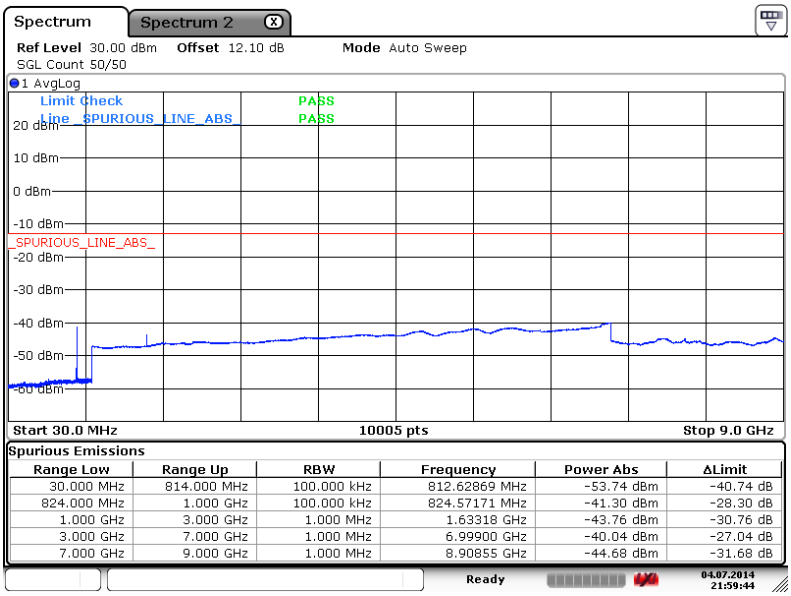
Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:59:00

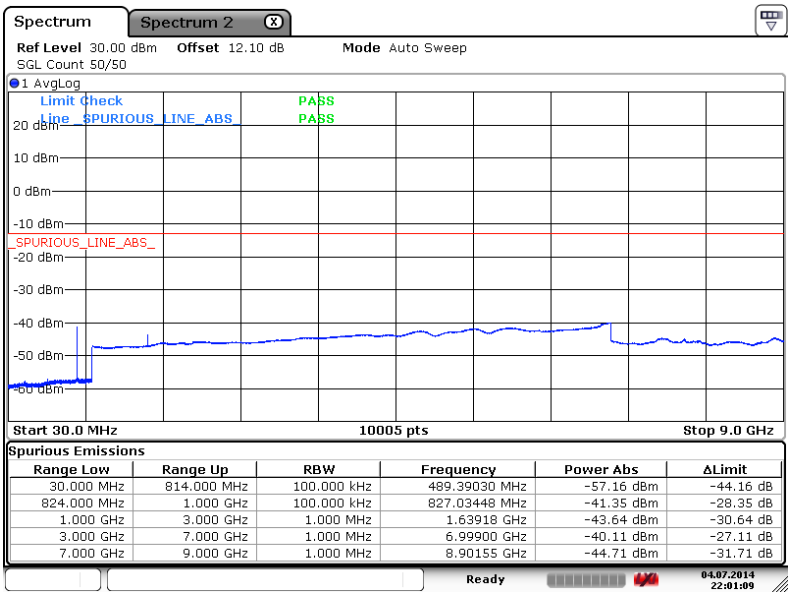
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 21:59:44

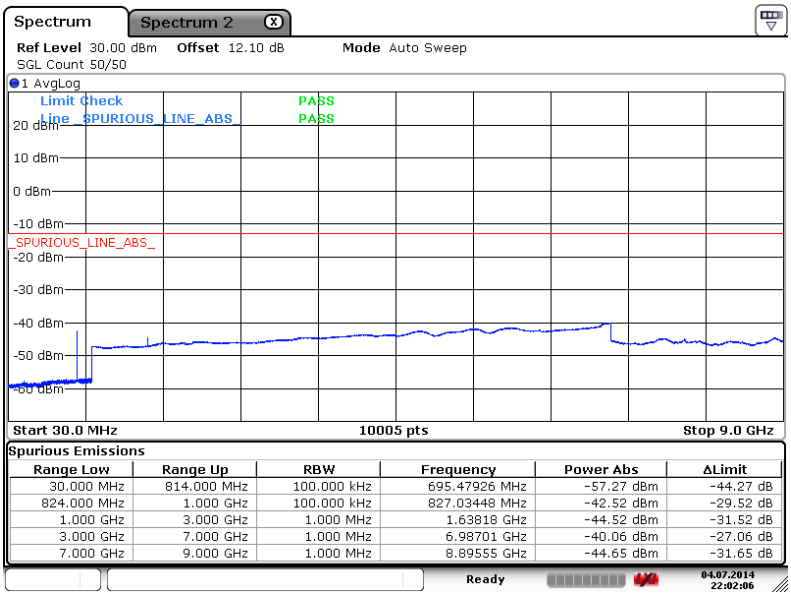
Band :	LTE Band 26	Channel :	CH26765 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 22:01:09

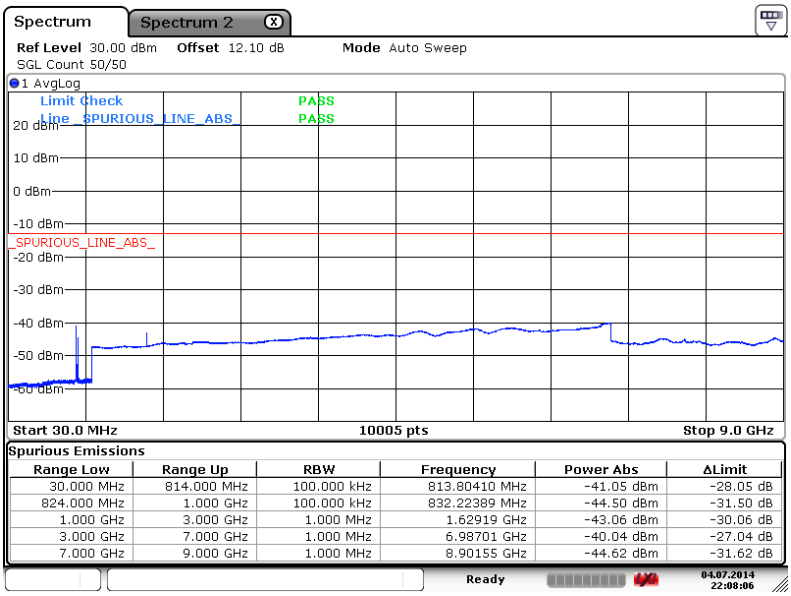
16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 22:02:06

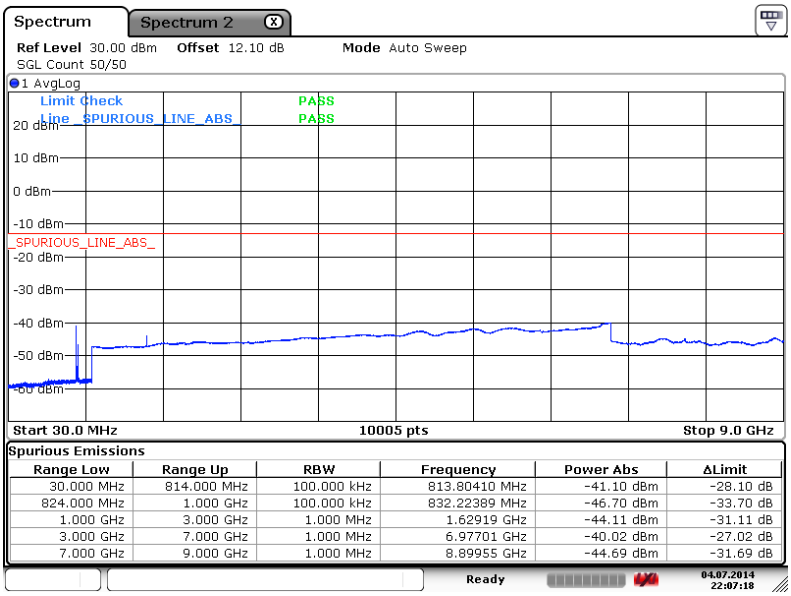
Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 22:08:06

16QAM (RB Size 1, RB Offset 0)



Date: 4.JUL.2014 22:07:18

3.5 Field Strength of Spurious Radiation Measurement

3.5.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

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 $43+10\log_{10}(P[Watts])$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

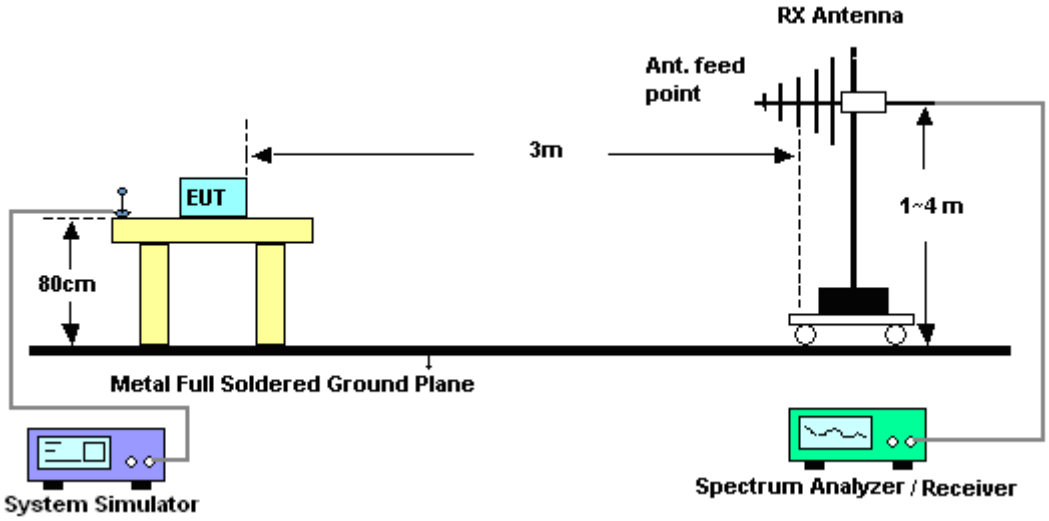
3.5.2 Measuring Instruments

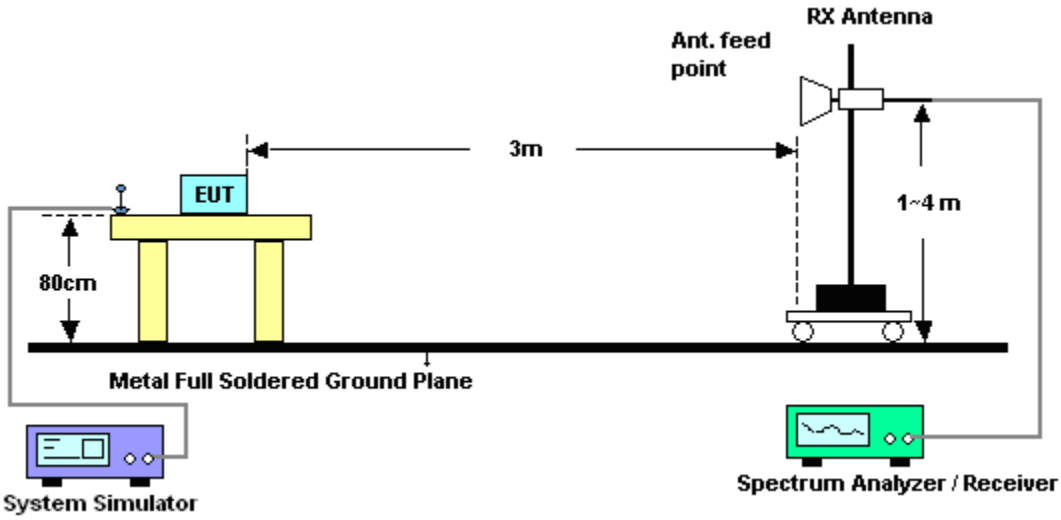
The measuring equipment is listed in the section 4 of this test report.

3.5.3 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. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. 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 of Field Strength of Spurious Radiated

<Low Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-57.07	-13	-44.07	-65.58	-60.8	1.48	5.21	H	Pass
2442	-54.04	-13	-41.04	-66.76	-58.1	1.98	6.04	H	Pass
3256	-53.42	-13	-40.42	-66.98	-58.5	2.88	7.96	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-55.17	-13	-42.17	-65.87	-58.9	1.48	5.21	V	Pass
2442	-53.84	-13	-40.84	-67.13	-57.9	1.98	6.04	V	Pass
3256	-51.52	-13	-38.52	-66.95	-56.6	2.88	7.96	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1637	-57.37	-13	-44.37	-65.91	-61.2	1.56	5.39	H	Pass
2455	-53.23	-13	-40.23	-66.45	-57.4	2.02	6.19	H	Pass
3273	-52.90	-13	-39.90	-67.02	-57.9	3.01	8.01	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1637	-57.07	-13	-44.07	-67.98	-60.9	1.56	5.39	V	Pass
2455	-54.33	-13	-41.33	-67.72	-58.5	2.02	6.19	V	Pass
3273	-53.10	-13	-40.10	-68.77	-58.1	3.01	8.01	V	Pass

<High Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1645	-57.11	-13	-44.11	-65.83	-60.9	1.62	5.41	H	Pass
2468	-53.80	-13	-40.80	-66.76	-57.9	2.13	6.23	H	Pass
3290	-53.15	-13	-40.15	-67.13	-58.1	3.14	8.09	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1645	-54.91	-13	-41.91	-65.76	-58.7	1.62	5.41	V	Pass
2468	-53.80	-13	-40.80	-67.1	-57.9	2.13	6.23	V	Pass
3290	-52.05	-13	-39.05	-67.36	-57	3.14	8.09	V	Pass

<Low Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-56.67	-13	-43.67	-65.19	-60.4	1.45	5.18	H	Pass
2442	-54.25	-13	-41.25	-67.17	-58.3	1.96	6.01	H	Pass
3256	-53.28	-13	-40.28	-67.05	-58.3	2.81	7.83	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-55.37	-13	-42.37	-66.02	-59.1	1.45	5.18	V	Pass
2442	-53.65	-13	-40.65	-67.15	-57.7	1.96	6.01	V	Pass
3256	-51.78	-13	-38.78	-67	-56.8	2.81	7.83	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1635	-57.97	-13	-44.97	-66.53	-61.8	1.56	5.39	H	Pass
2453	-53.63	-13	-40.63	-66.7	-57.8	2.02	6.19	H	Pass
3270	-53.50	-13	-40.50	-67.62	-58.5	3.01	8.01	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1635	-55.77	-13	-42.77	-66.62	-59.6	1.56	5.39	V	Pass
2453	-53.53	-13	-40.53	-66.79	-57.7	2.02	6.19	V	Pass
3270	-52.10	-13	-39.10	-67.51	-57.1	3.01	8.01	V	Pass

<High Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1642	-56.91	-13	-43.91	-65.58	-60.7	1.61	5.40	H	Pass
2463	-53.70	-13	-40.70	-66.62	-57.8	2.12	6.22	H	Pass
3284	-54.35	-13	-41.35	-67.98	-59.3	3.13	8.08	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1642	-55.51	-13	-42.51	-66.29	-59.3	1.61	5.40	V	Pass
2463	-53.40	-13	-40.40	-66.63	-57.5	2.12	6.22	V	Pass
3284	-52.15	-13	-39.15	-67.5	-57.1	3.13	8.08	V	Pass

<Low Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-57.07	-13	-44.07	-65.47	-60.8	1.48	5.21	H	Pass
2442	-54.06	-13	-41.06	-66.77	-58.1	1.99	6.03	H	Pass
3256	-53.56	-13	-40.56	-66.99	-58.6	2.82	7.86	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-55.17	-13	-42.17	-65.86	-58.9	1.48	5.21	V	Pass
2442	-53.46	-13	-40.46	-66.79	-57.5	1.99	6.03	V	Pass
3256	-52.36	-13	-39.36	-67.65	-57.4	2.82	7.86	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1633	-57.47	-13	-44.47	-66.02	-61.3	1.56	5.39	H	Pass
2450	-54.13	-13	-41.13	-66.91	-58.3	2.02	6.19	H	Pass
3266	-54.10	-13	-41.10	-67.87	-59.1	3.01	8.01	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1633	-55.77	-13	-42.77	-66.34	-59.6	1.56	5.39	V	Pass
2450	-53.63	-13	-40.63	-67	-57.8	2.02	6.19	V	Pass
3266	-52.80	-13	-39.80	-68.06	-57.8	3.01	8.01	V	Pass

<High Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1638	-57.21	-13	-44.21	-65.86	-61	1.59	5.38	H	Pass
2457	-53.49	-13	-40.49	-66.49	-57.6	2.08	6.19	H	Pass
3276	-53.12	-13	-40.12	-66.96	-58.1	3.08	8.06	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1638	-56.11	-13	-43.11	-66.71	-59.9	1.59	5.38	V	Pass
2457	-53.09	-13	-40.09	-66.69	-57.2	2.08	6.19	V	Pass
3276	-51.82	-13	-38.82	-67.17	-56.8	3.08	8.06	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-56.37	-13	-43.37	-64.66	-60.2	1.56	5.39	H	Pass
2442	-53.53	-13	-40.53	-66.21	-57.7	2.02	6.19	H	Pass
3256	-53.50	-13	-40.50	-66.97	-58.5	3.01	8.01	H	Pass

Band :	LTE Band 26	**Temperature :**	23~25°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	44~48%
Test Engineer :	Kai Wang, Stan Hsieh, and Ken Wu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (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
1628	-54.97	-13	-41.97	-65.67	-58.8	1.56	5.39	V	Pass
2442	-53.63	-13	-40.63	-67.03	-57.8	2.02	6.19	V	Pass
3256	-51.90	-13	-38.90	-67.27	-56.9	3.01	8.01	V	Pass

3.6 Frequency Stability Measurement

3.6.1 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 according to FCC Part 90.213.

3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

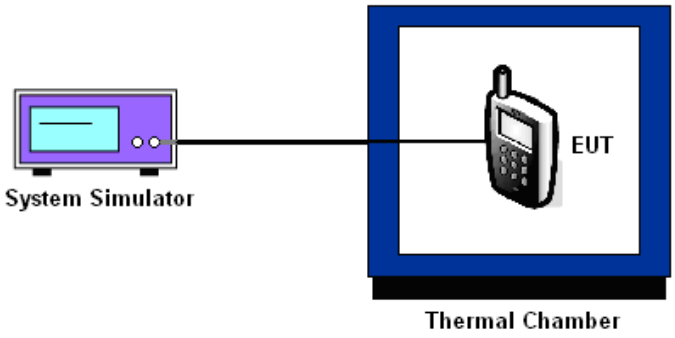
3.6.3 Test Procedures for Temperature Variation

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 for three hours. 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.

3.6.4 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 BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.6.5 Test Setup



3.6.6 Test Result of Temperature Variation

Band :	LTE Band 26 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 10MHz	Result
	Deviation (ppm)	
50	0.0096	PASS
40	0.0023	
30	0.0092	
20(Ref.)	0.0000	
10	0.0090	
0	0.0083	
-10	0.0094	
-20	0.0017	
-30	0.0002	

3.6.7 Test Result of Voltage Variation

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 26	10M	4.35	0.0100	2.5	PASS
		Normal	0.0092		
		3.4	0.0005		

Remark:

1. Normal Voltage = 3.9V.
2. The manufacturer declared that the EUT could work properly between voltage 3.4V ~ 4.35V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz	Jan. 07, 2014	Jul. 04, 2014	Jan. 06, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 09, 2014	Jul. 04, 2014	Jun. 08, 2015	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	Jul. 04, 2014	Jul. 18, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Jul. 08, 2014	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Jul. 08, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Jul. 08, 2014	Aug. 21, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00066583	1GHz~18GHz	Aug. 02, 2013	Jul. 08, 2014	Aug. 01, 2014	Radiation (03CH07-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 23, 2014	Jul. 08, 2014	May 22, 2015	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1GHz	Mar. 17, 2014	Jul. 08, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Nov. 29, 2013	Jul. 08, 2014	Nov. 28, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Jul. 08, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Jul. 08, 2014	N/A	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.50**