



Variant FCC RF Test Report

APPLICANT : Acer Incorporated
EQUIPMENT : Smart HandHeld
BRAND NAME : Acer
MODEL NAME : T04
MARKETING NAME : Liquid Z630S
FCC ID : HLZDMZ630S
STANDARD : 47 CFR Part 2, 24(E), 27(M), 27(L), 27(H)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Sep. 07, 2015 and completely tested on Sep. 16, 2015. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-C-2004 and the testing has shown the tested sample to be in 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1051 §24.238(a) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 12)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7)	$< 55+10\log_{10}(P[\text{Watts}])$		



1 General Description

1.1 Applicant

Acer Incorporated

8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22181, Taiwan (R.O.C)

1.2 Manufacturer

Shanghai Sunrise Simcom Limited

No. 888, Shengli Rd., Qingpu, Shanghai, P.R.China 201700

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart HandHeld
Brand Name	Acer
Model Name	T04
Marketing Name	Liquid Z630S
FCC ID	HLZDMZ630S
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+/DC-HSDPA/LTE WLAN2.4GHz 802.11b/g/n HT20/HT40 Bluetooth v3.0+EDR Bluetooth v4.0 LE
IMEI Code	Conducted: 354843070000000/354843070000067
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 12 : 699.7 MHz ~ 715.3 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz
Type of Modulation	QPSK / 16QAM / 64QAM(Downlink only)



1.5 Modification of EUT

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

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958
Test Site No.	Sporton Site No. TH01-KS

1.7 Applicable 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), 27(L), 27(M), 27(H)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

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

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v
	12	v	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 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTRON	GPD-2303S	N/A	N/A	Unshielded, 1.8 m

2.3 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 6.0 dB.

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 6.0 \text{ (dB)} \end{aligned}$$



3 Conducted Test Items

3.1 Conducted Spurious Emission

3.1.1 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.

For Band 7:

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 $55 + 10 \log (P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

3.1.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.
11. For Band 7
The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2015	Sep. 15, 2015~ Sep. 16, 2015	May 03, 2016	Conducted (TH01-KS)



Appendix A. Test Results of Conducted Test

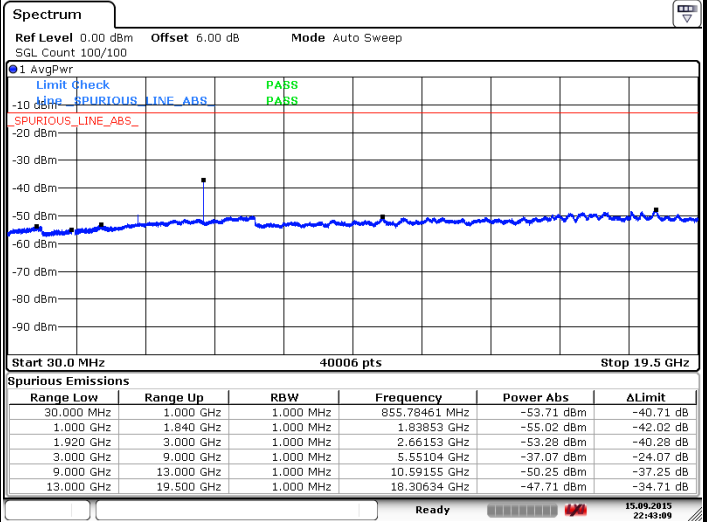
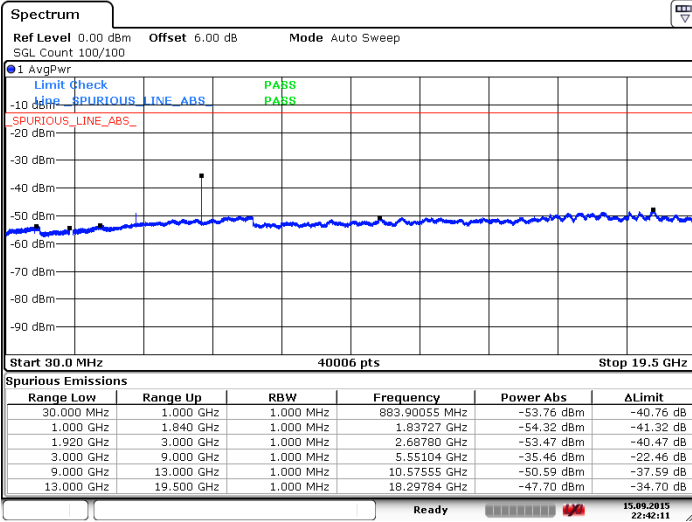
Conducted Spurious Emission



LTE Band 2 / 1.4MHz

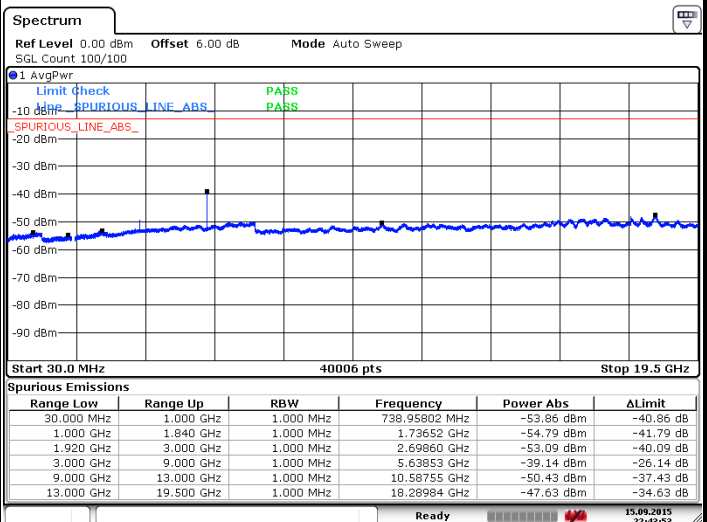
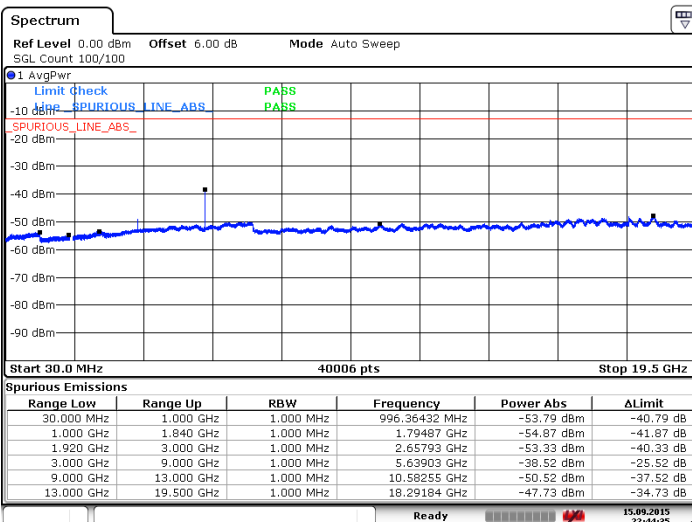
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

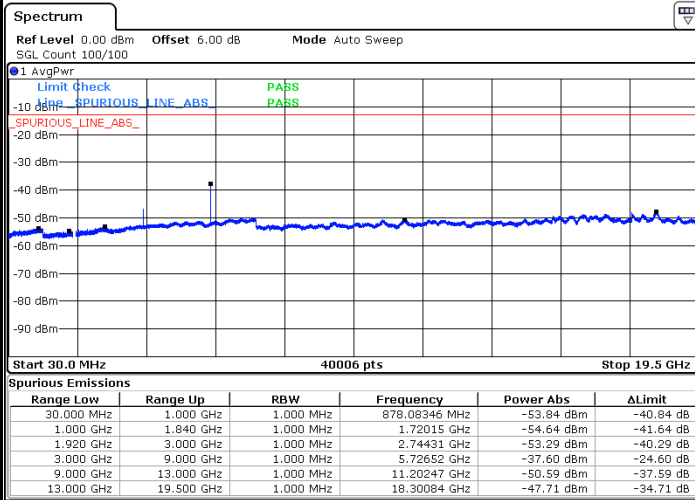
Middle Channel / 16QAM





LTE Band 2 / 1.4MHz

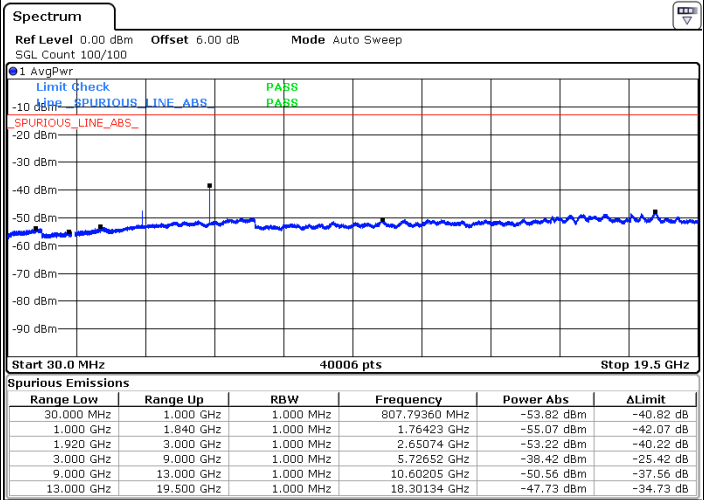
Highest Channel / QPSK



Ready 15.09.2015 22:45:26

Date: 15 SEP 2015 22:45:26

Highest Channel / 16QAM

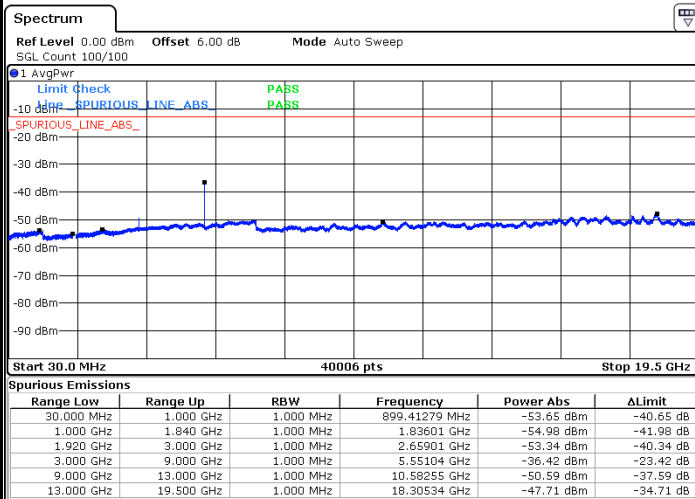


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LTE Band 2 / 3MHz

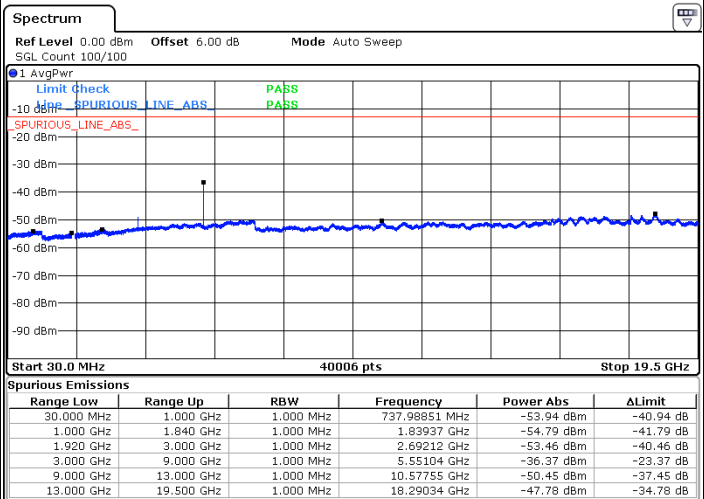
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Lowest Channel / 16QAM



Ready 15.09.2015 23:30:21

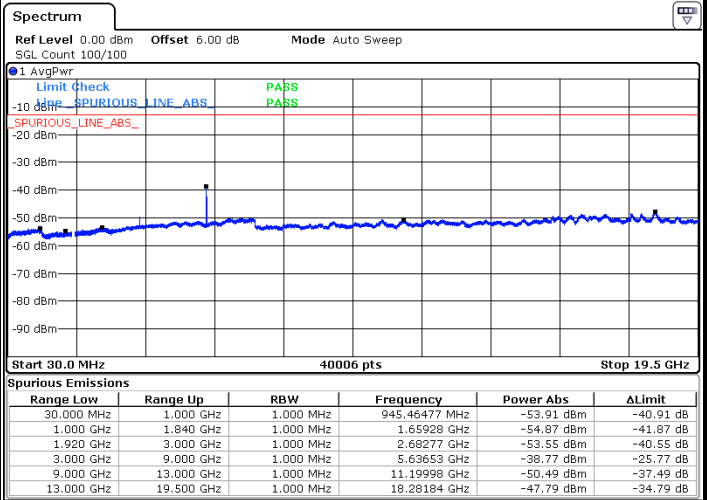
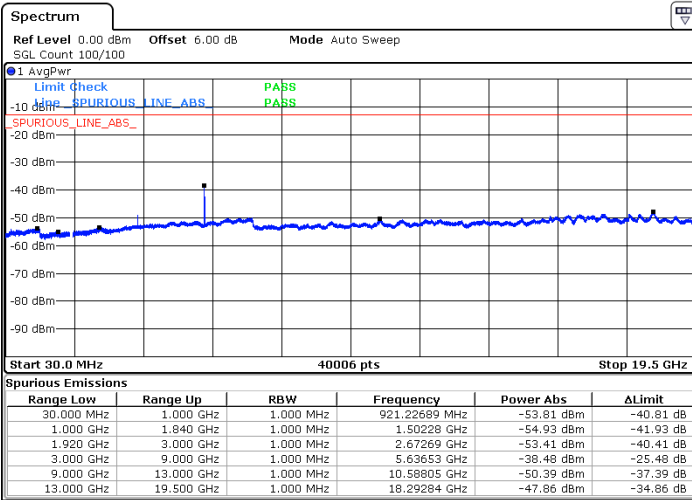
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LTE Band 2 / 3MHz

Middle Channel / QPSK

Middle Channel / 16QAM



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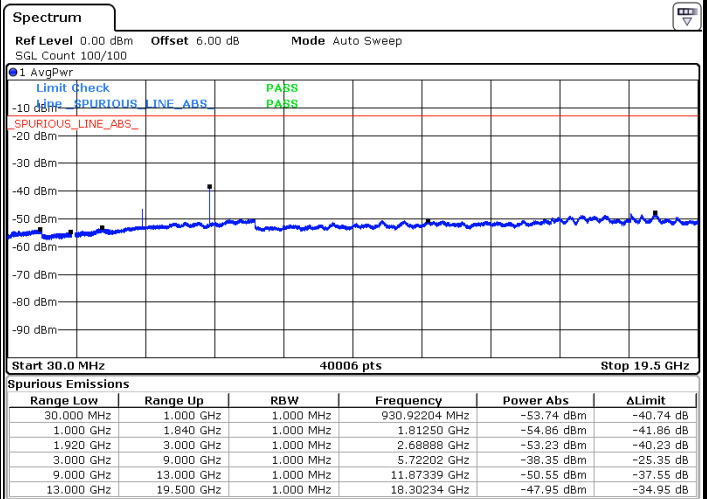
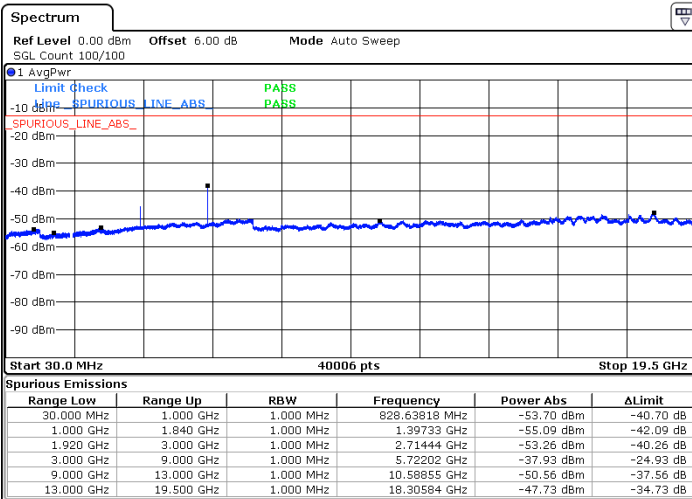
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Date: 15 SEP 2015 22:48:54

Date: 15 SEP 2015 22:49:55

Highest Channel / QPSK

Highest Channel / 16QAM



Ready 15.09.2015 22:51:36

Ready 15.09.2015 22:50:52

Date: 15 SEP 2015 22:51:36

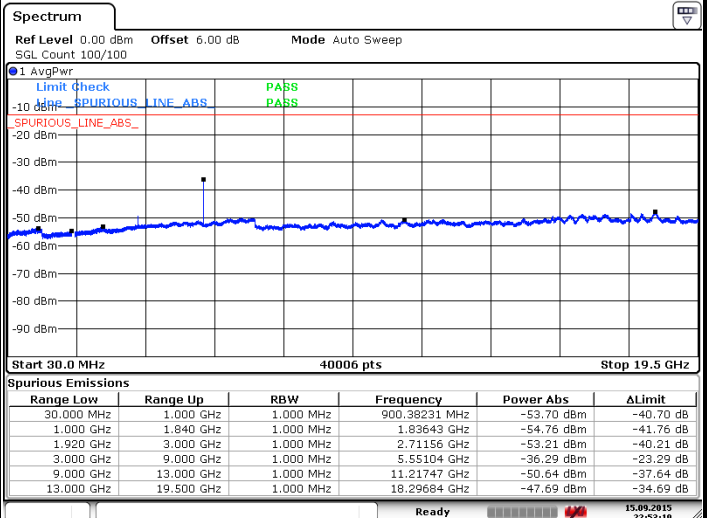
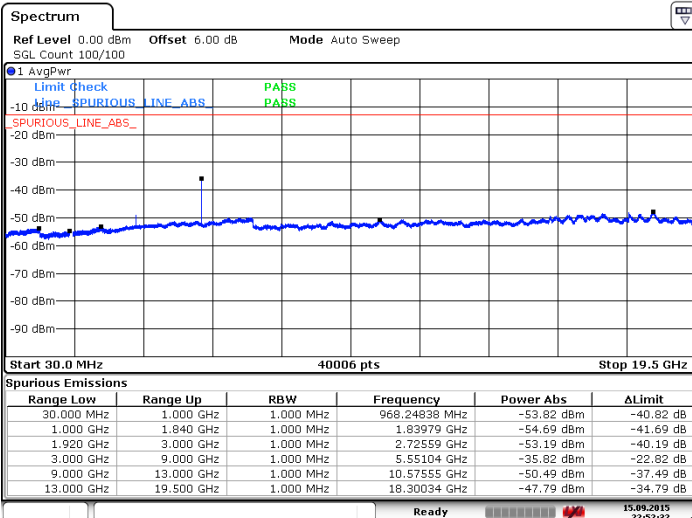
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LTE Band 2 / 5MHz

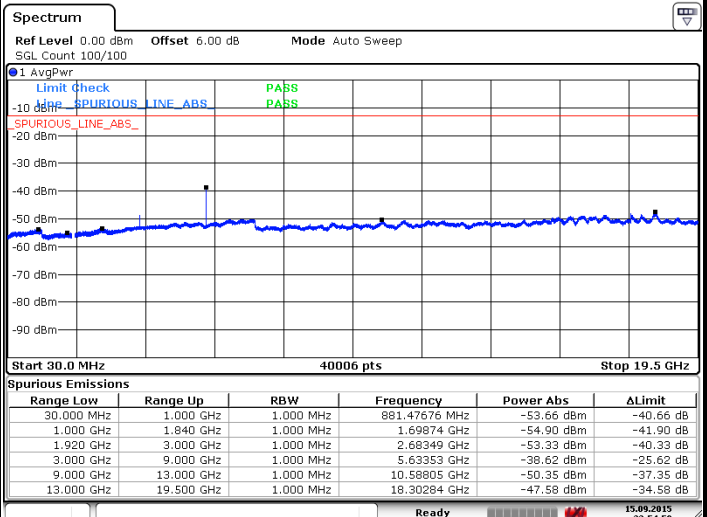
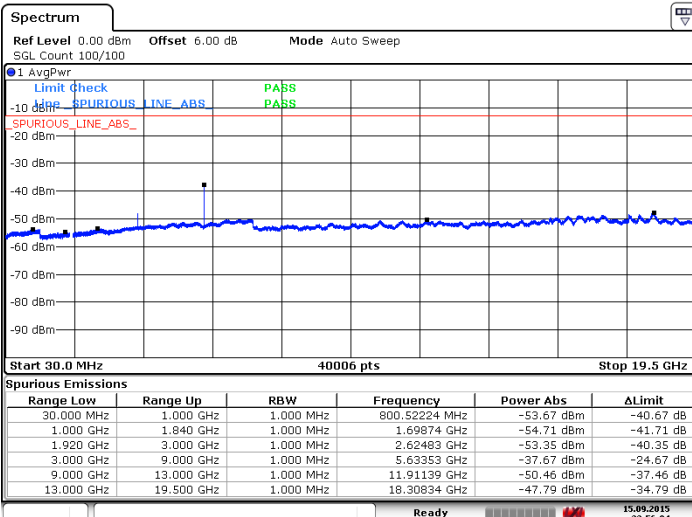
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

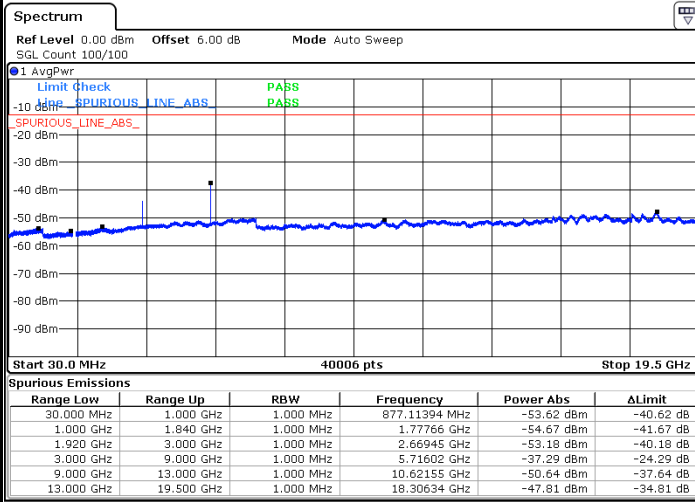
Middle Channel / 16QAM





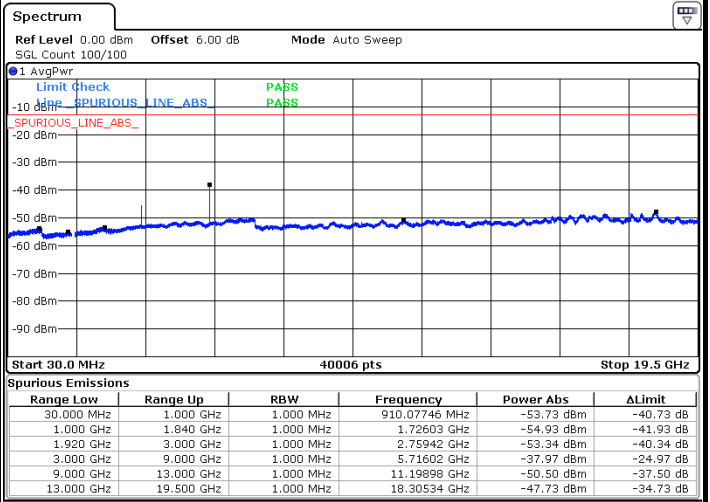
LTE Band 2 / 5MHz

Highest Channel / QPSK



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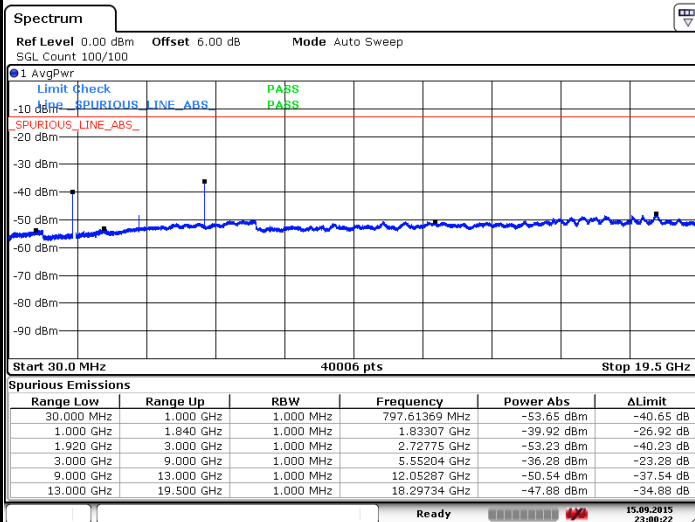
Highest Channel / 16QAM



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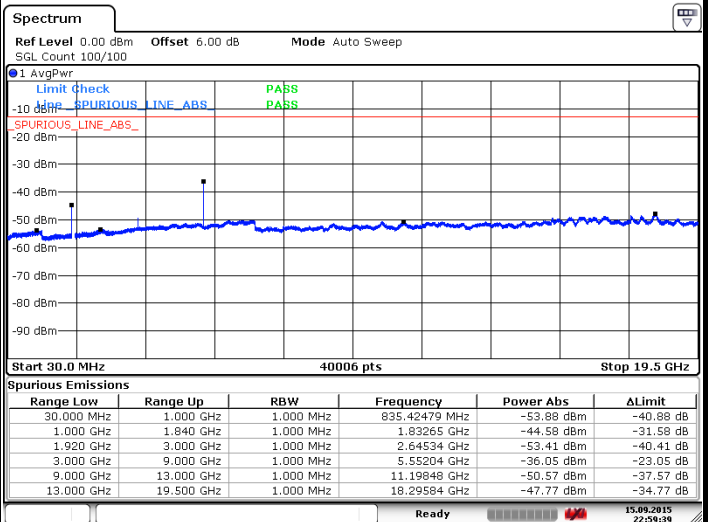
LTE Band 2 / 10MHz

Lowest Channel / QPSK



Date: 15 SEP 2015 23:00:22

Lowest Channel / 16QAM



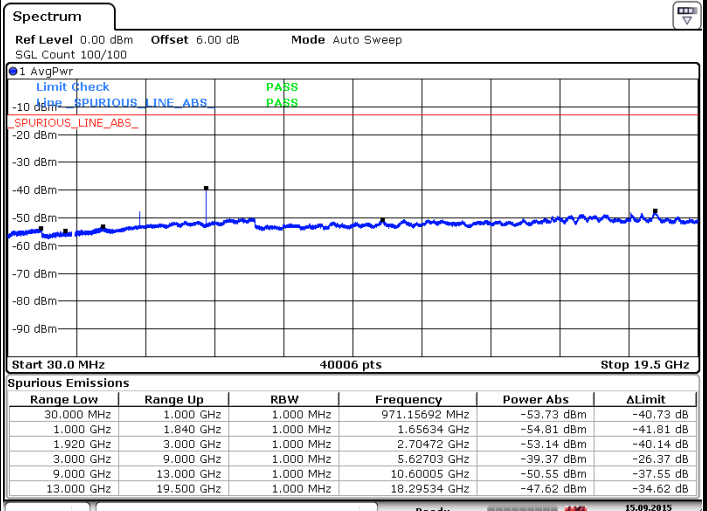
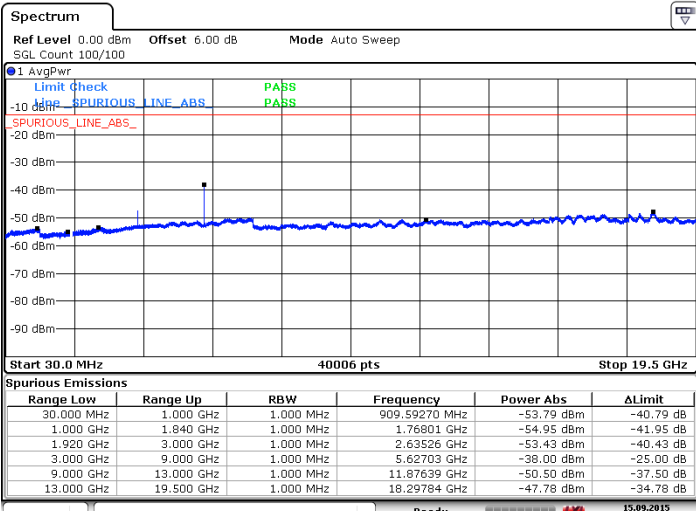
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LTE Band 2 / 10MHz

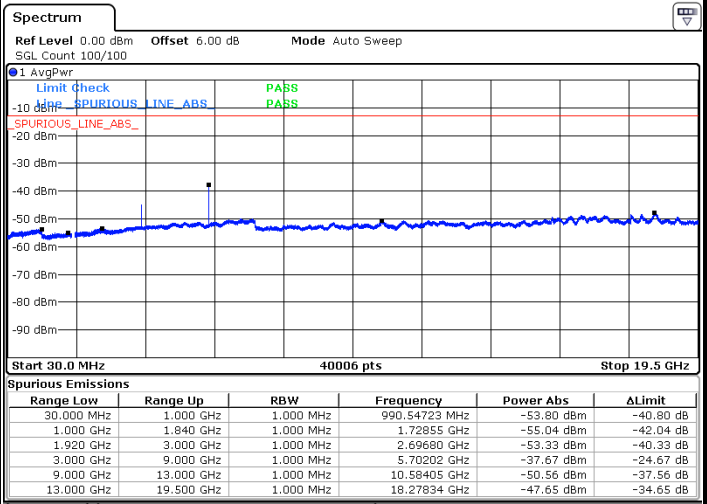
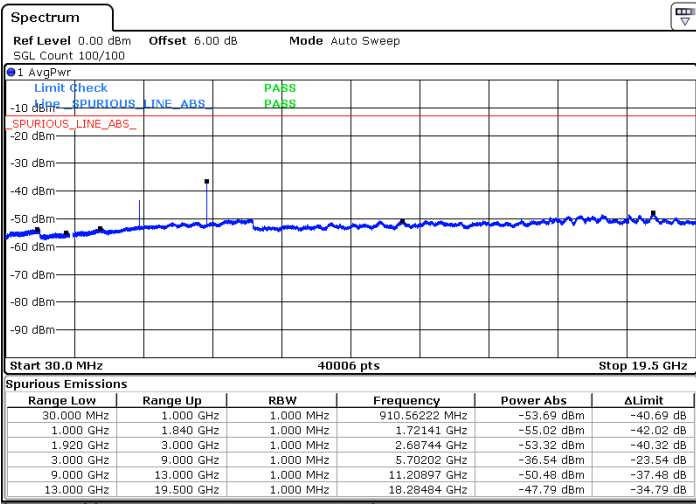
Middle Channel / QPSK

Middle Channel / 16QAM



Highest Channel / QPSK

Highest Channel / 16QAM

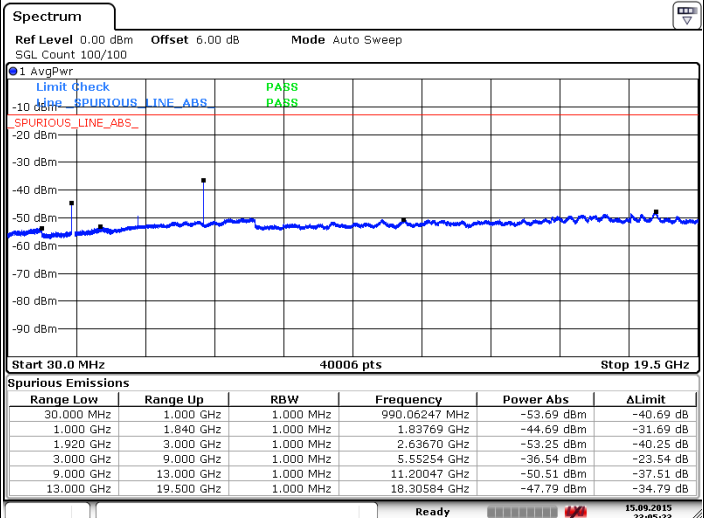
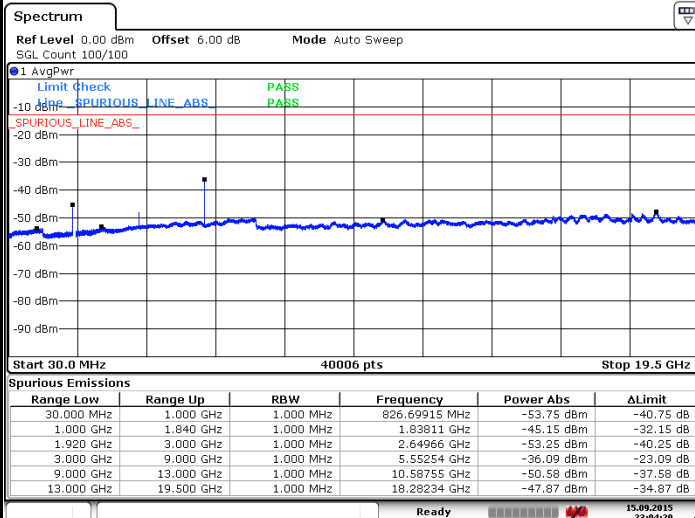




LTE Band 2 / 15MHz

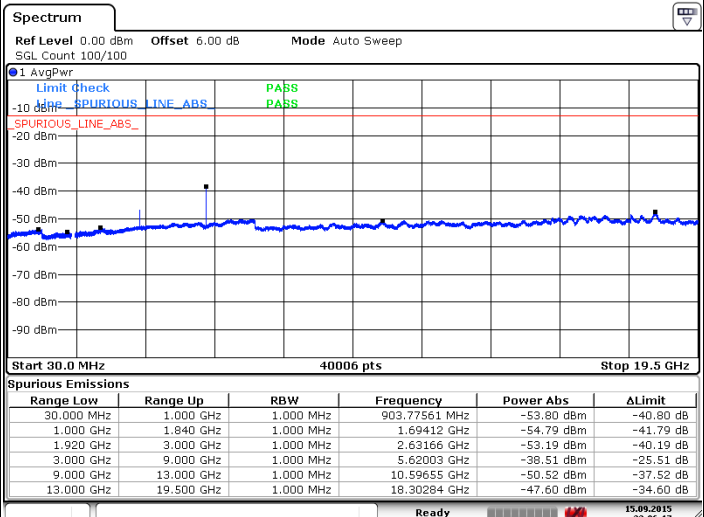
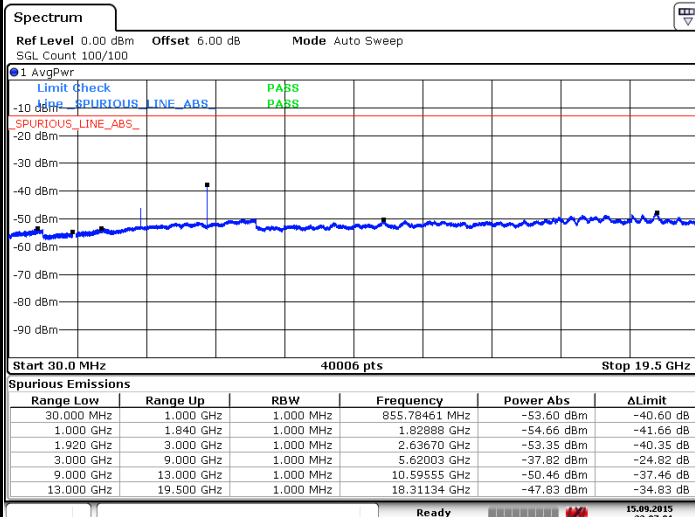
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

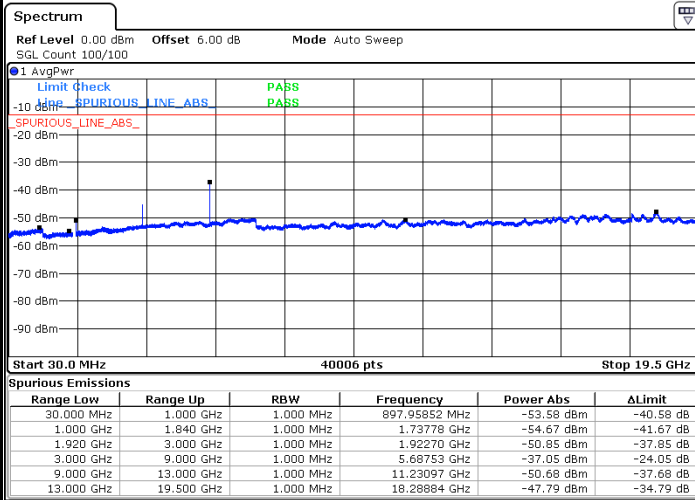
Middle Channel / 16QAM





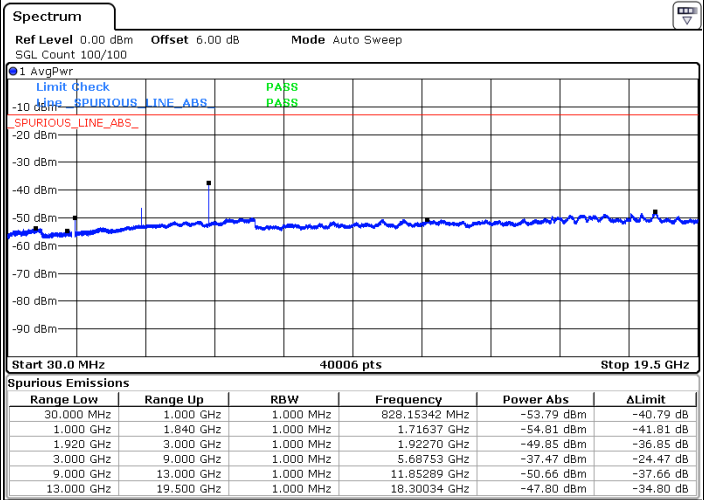
LTE Band 2 / 15MHz

Highest Channel / QPSK



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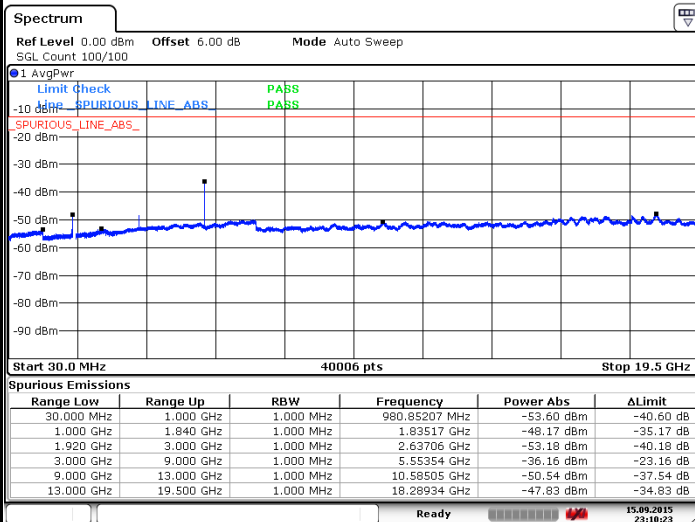
Highest Channel / 16QAM



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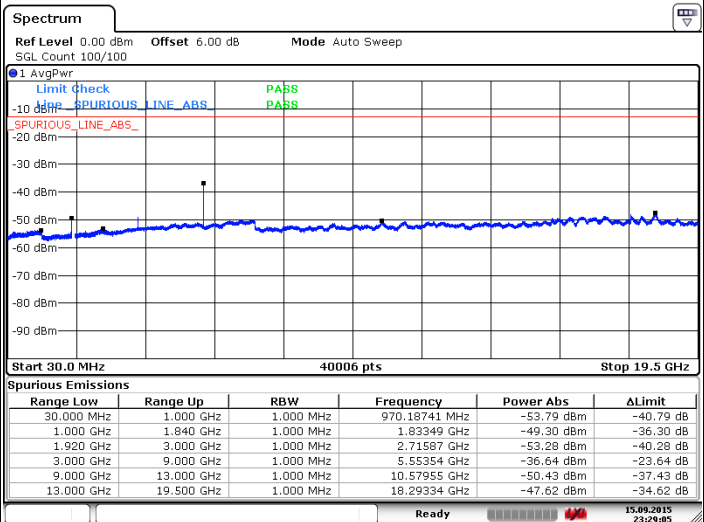
LTE Band 2 / 20MHz

Lowest Channel / QPSK



Date: 15 SEP 2015 23:10:23

Lowest Channel / 16QAM



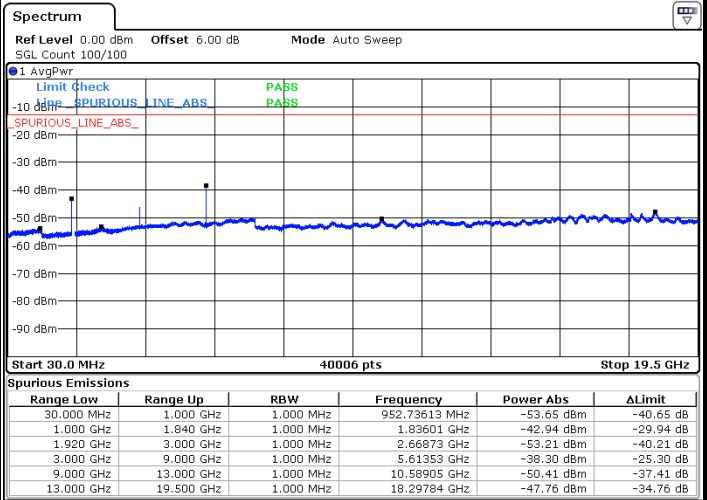
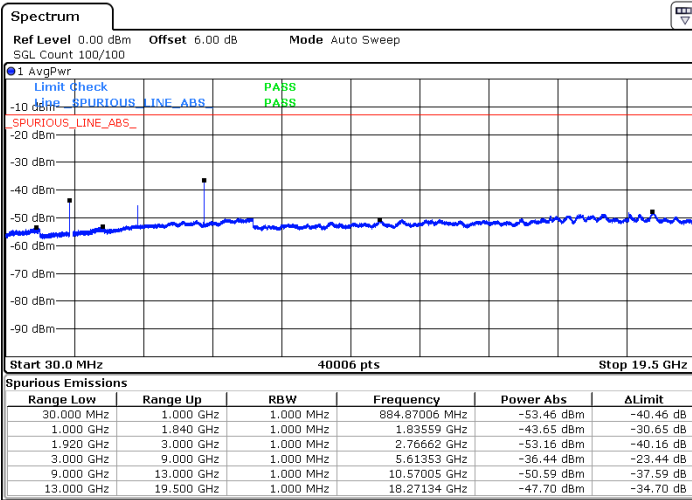
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LTE Band 2 / 20MHz

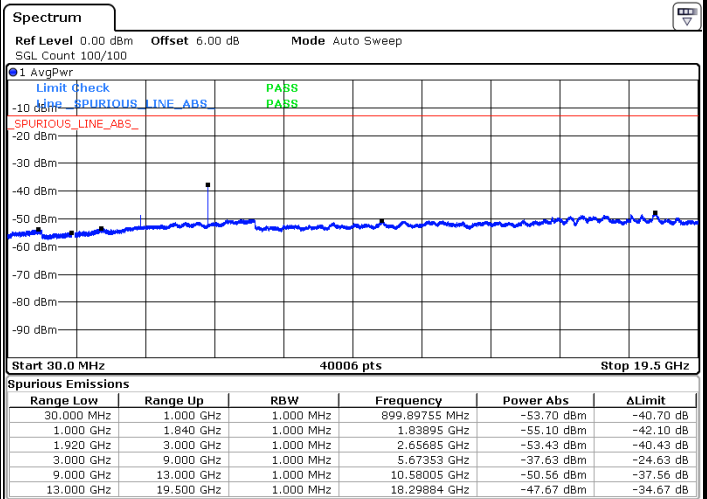
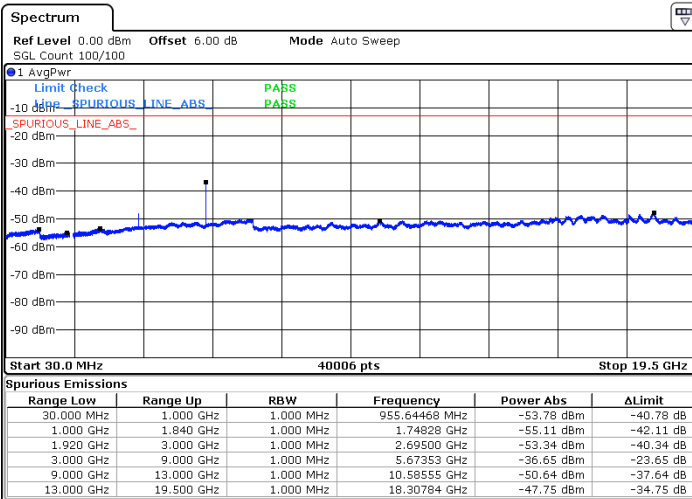
Middle Channel / QPSK

Middle Channel / 16QAM



Highest Channel / QPSK

Highest Channel / 16QAM

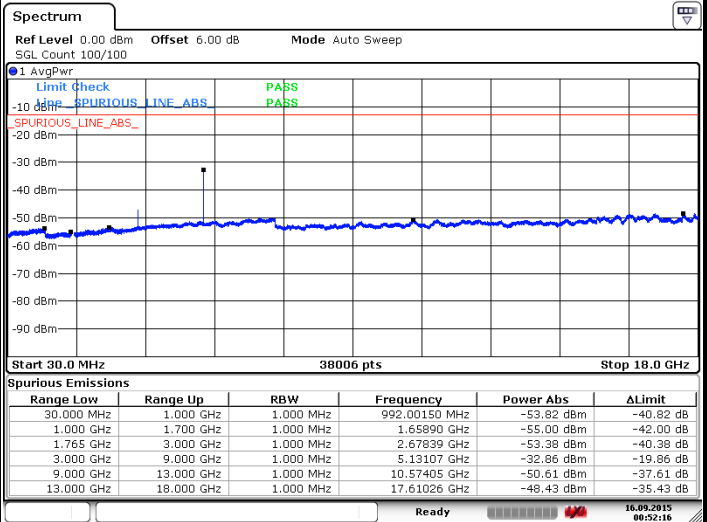
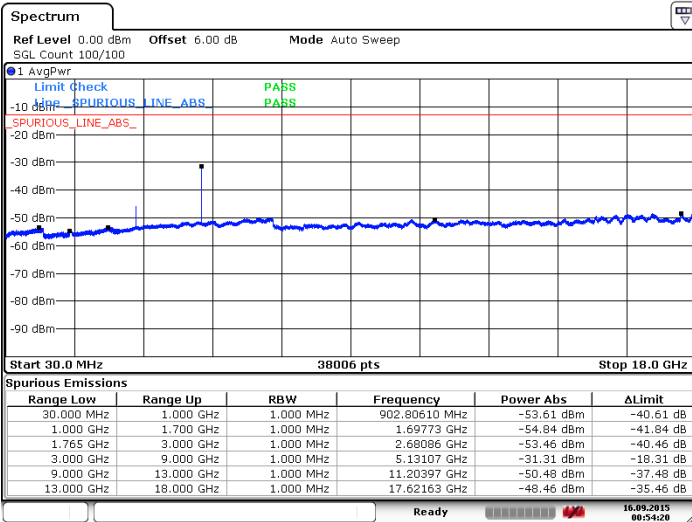




LTE Band 4 / 1.4MHz

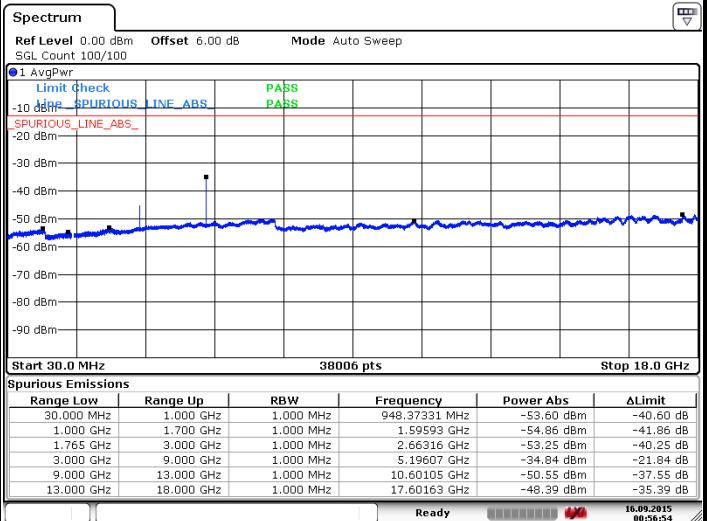
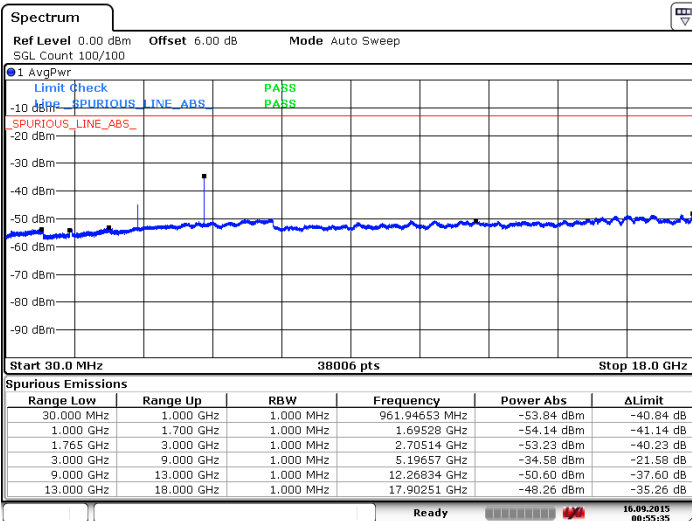
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

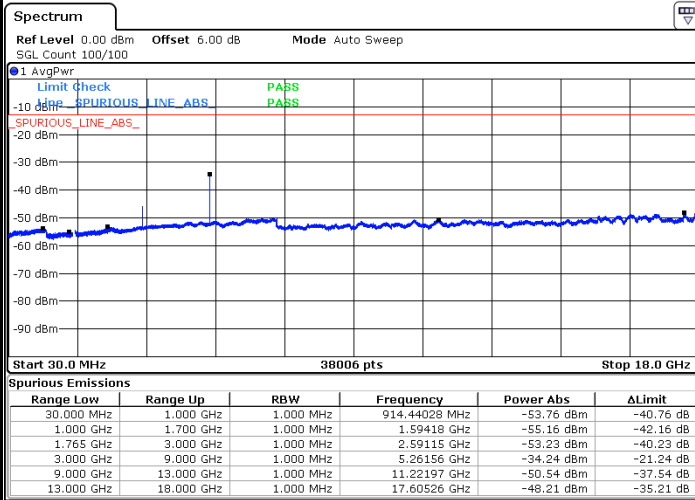
Middle Channel / 16QAM





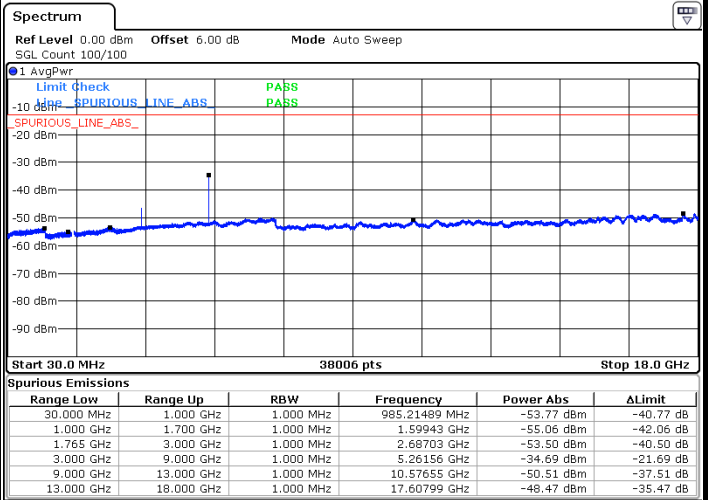
LTE Band 4 / 1.4MHz

Highest Channel / QPSK



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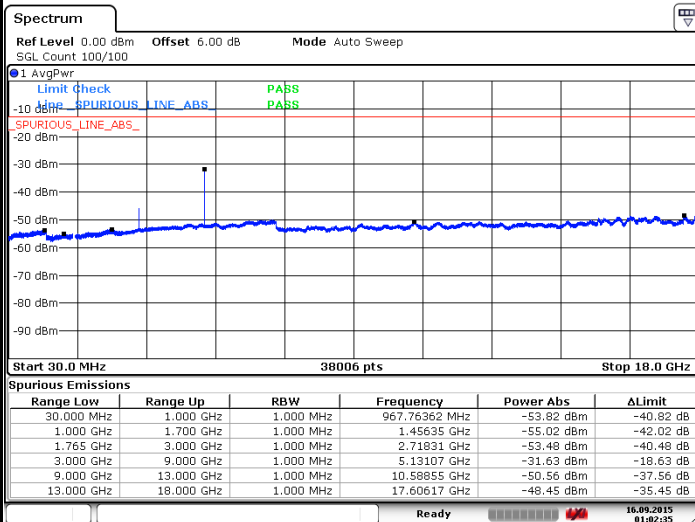
Highest Channel / 16QAM



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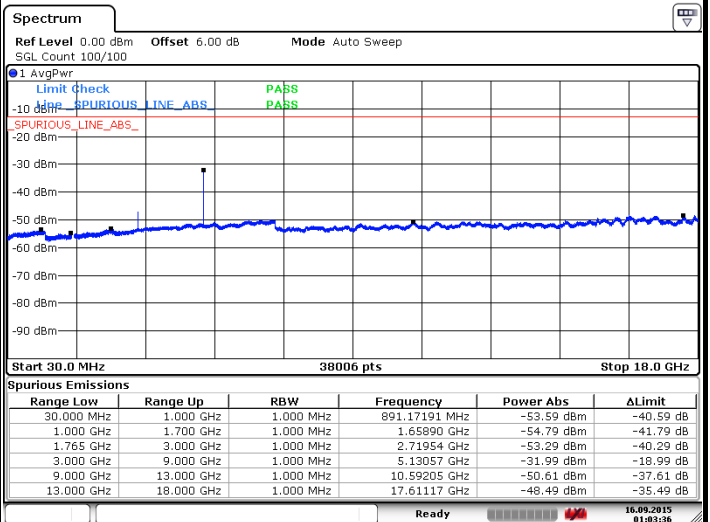
LTE Band 4 / 3MHz

Lowest Channel / QPSK



Date: 16 SEP 2015 01:02:35

Lowest Channel / 16QAM



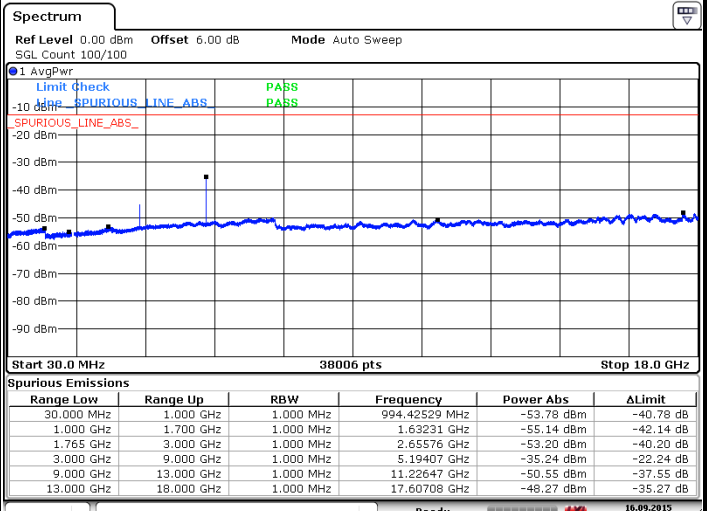
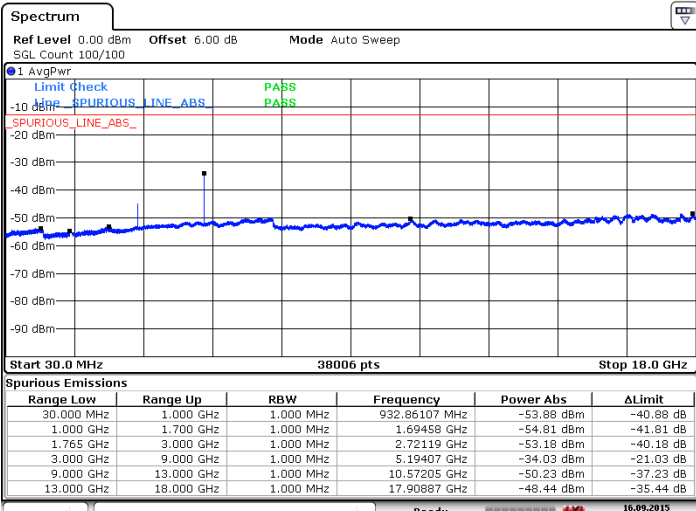
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LTE Band 4 / 3MHz

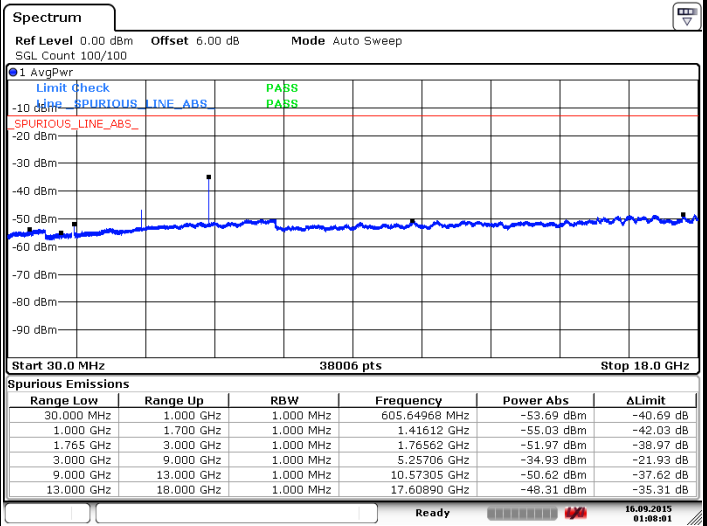
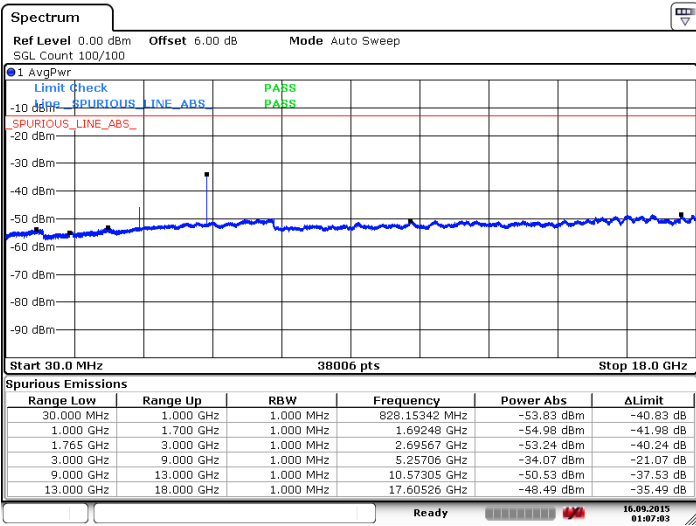
Middle Channel / QPSK

Middle Channel / 16QAM



Highest Channel / QPSK

Highest Channel / 16QAM

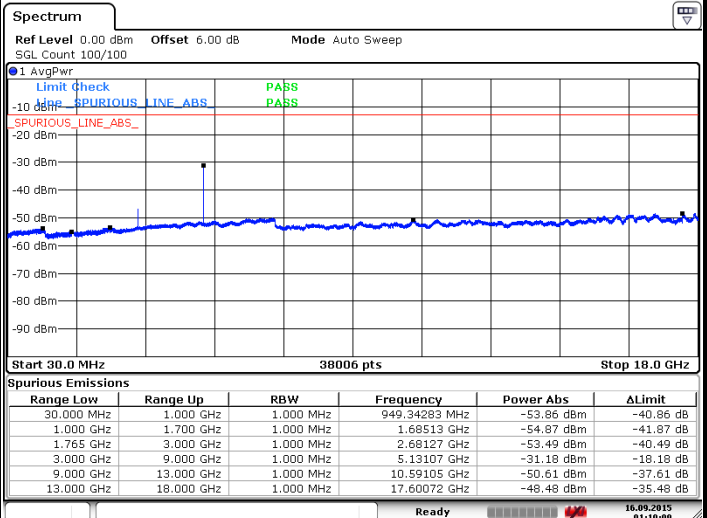
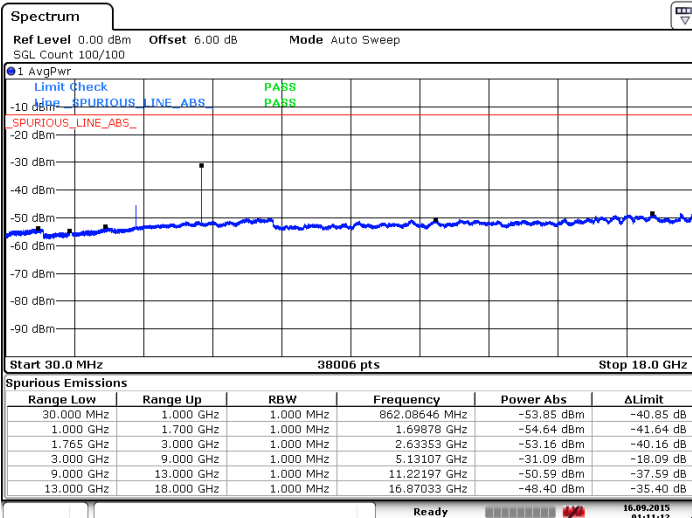




LTE Band 4 / 5MHz

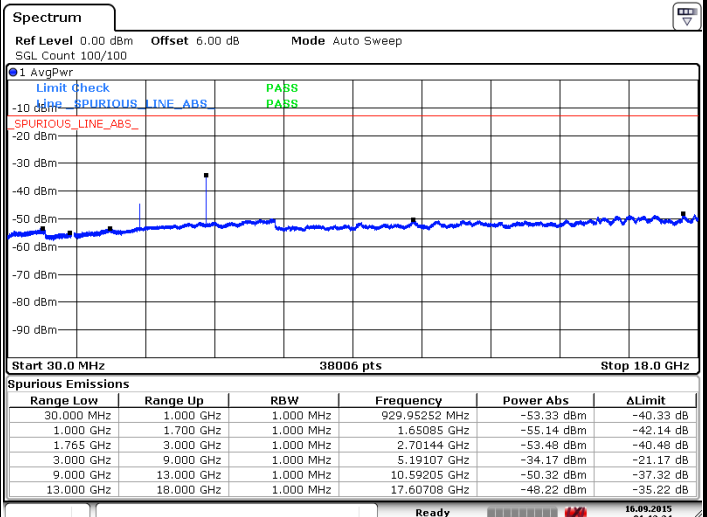
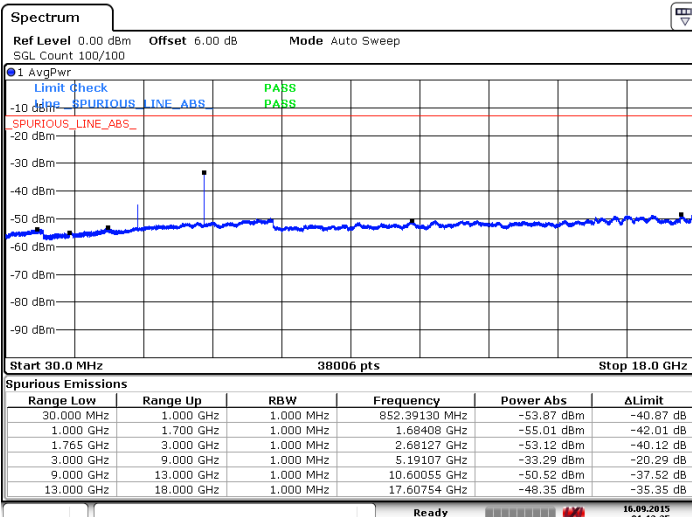
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

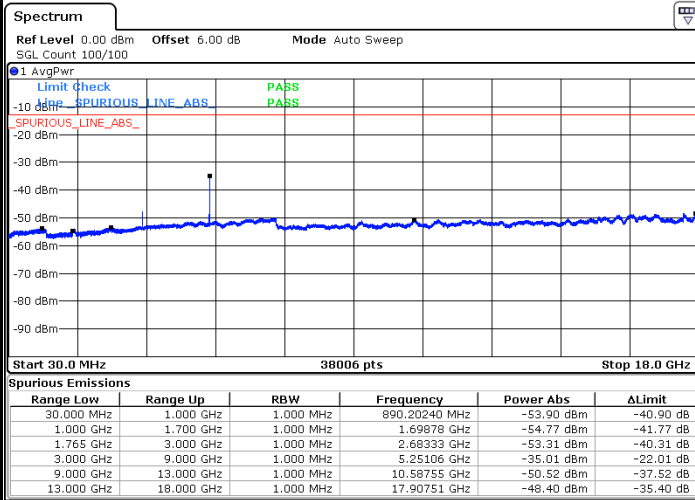
Middle Channel / 16QAM





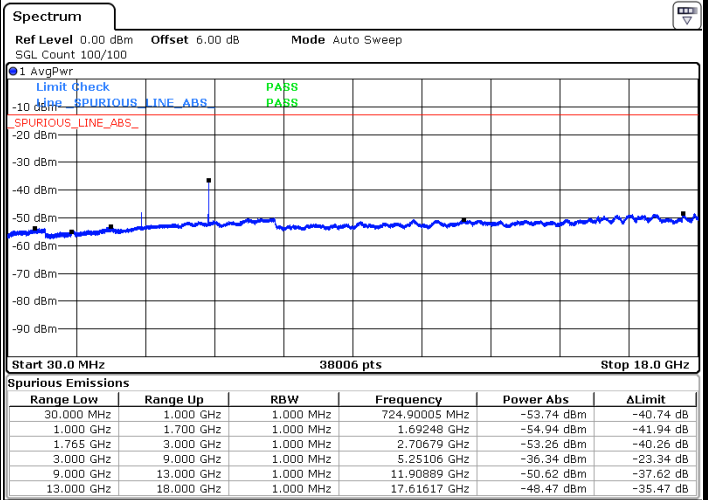
LTE Band 4 / 5MHz

Highest Channel / QPSK



Date: 16 SEP 2015 01:17:28

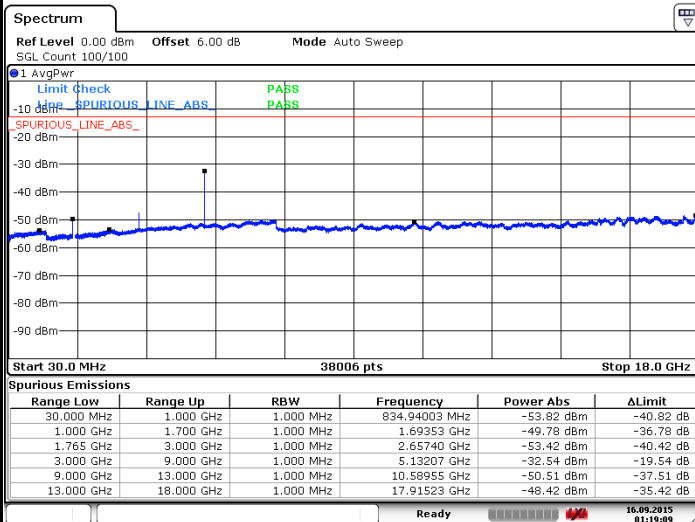
Highest Channel / 16QAM



Date: 16 SEP 2015 01:15:56

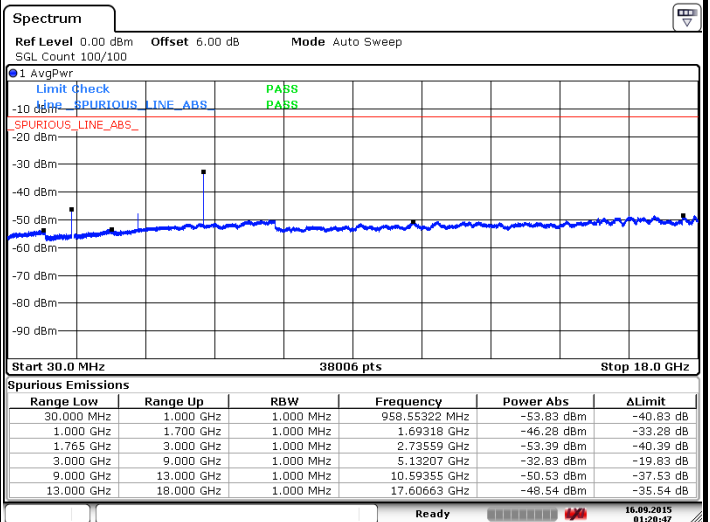
LTE Band 4 / 10MHz

Lowest Channel / QPSK



Date: 16 SEP 2015 01:19:09

Lowest Channel / 16QAM



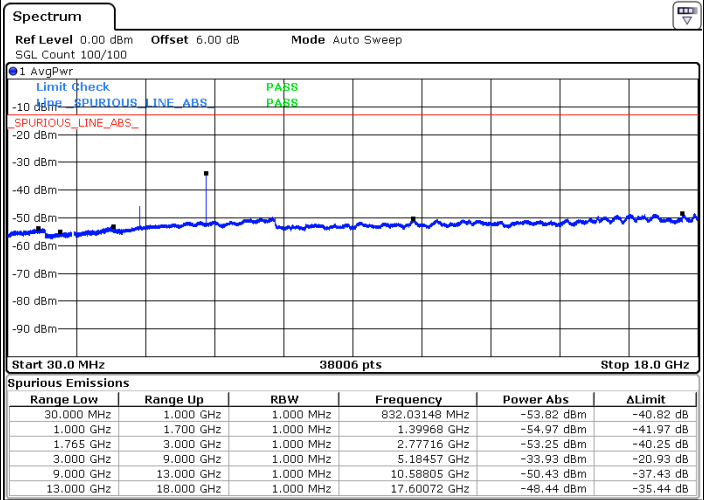
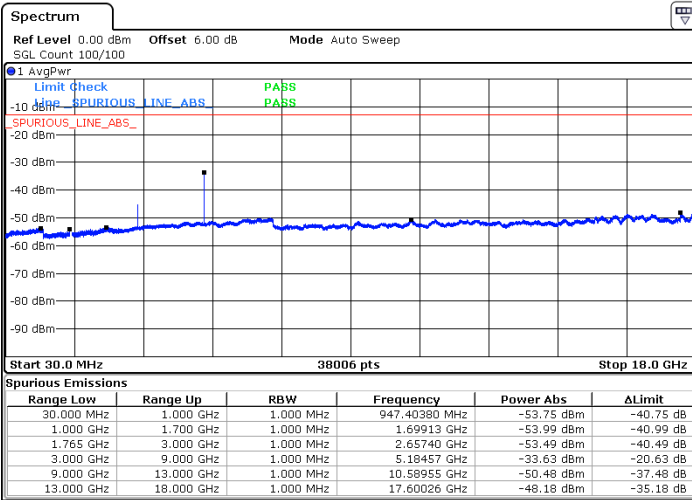
Date: 16 SEP 2015 01:20:47



LTE Band 4 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM



Ready 16.09.2015 01:22:57

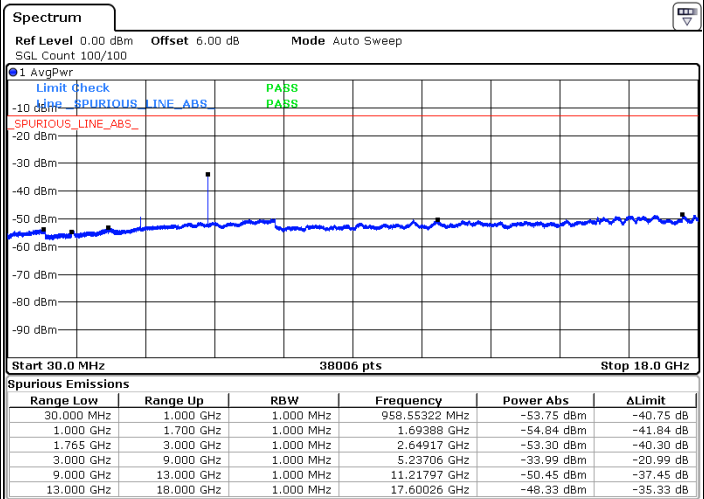
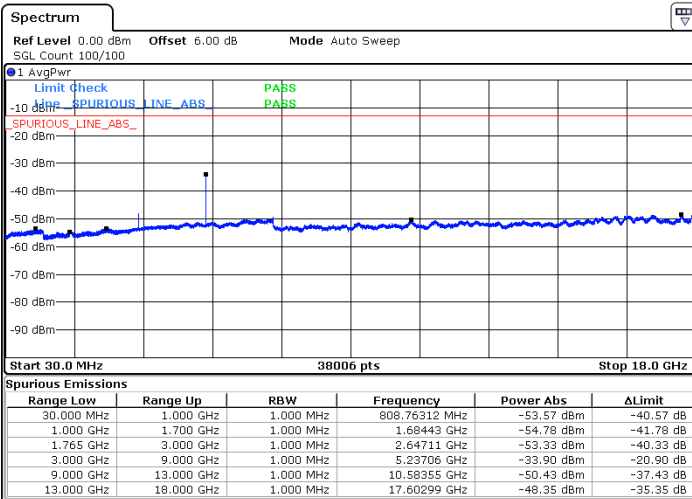
Ready 16.09.2015 01:22:00

Date: 16 SEP 2015 01:22:57

Date: 16 SEP 2015 01:22:00

Highest Channel / QPSK

Highest Channel / 16QAM



Ready 16.09.2015 01:24:03

Ready 16.09.2015 01:24:56

Date: 16 SEP 2015 01:24:03

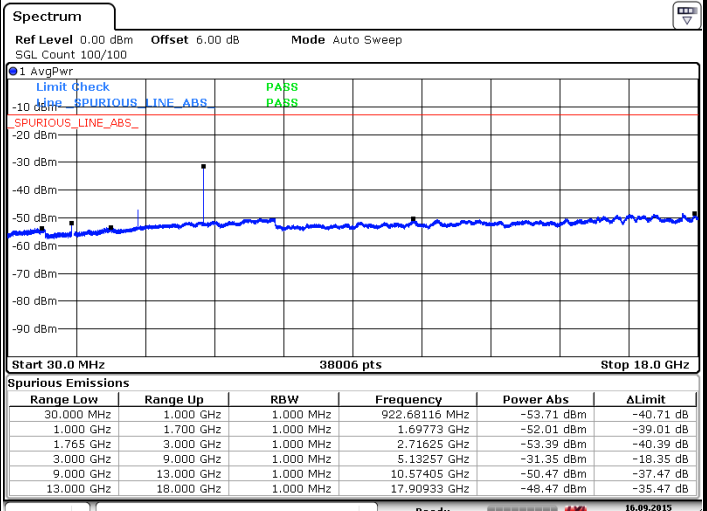
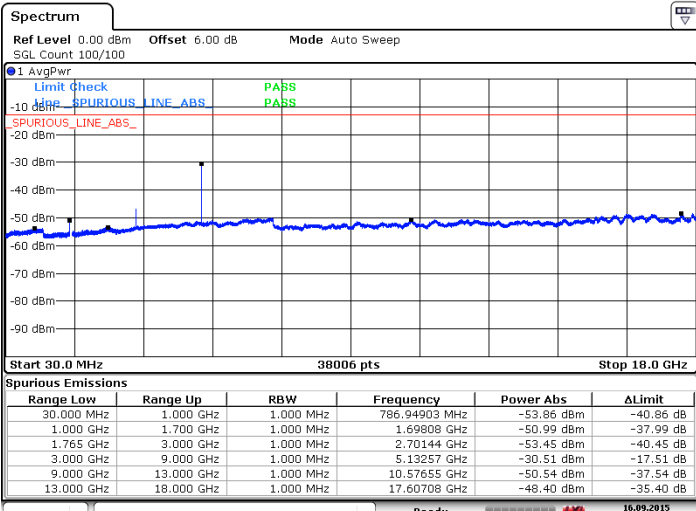
Date: 16 SEP 2015 01:24:56



LTE Band 4 / 15MHz

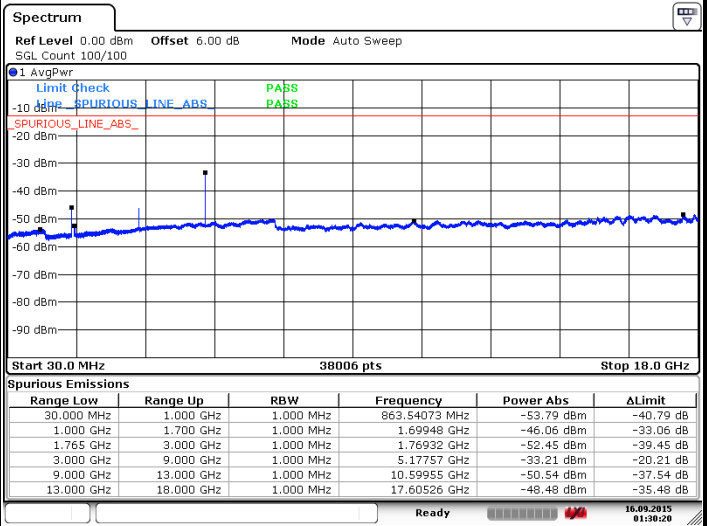
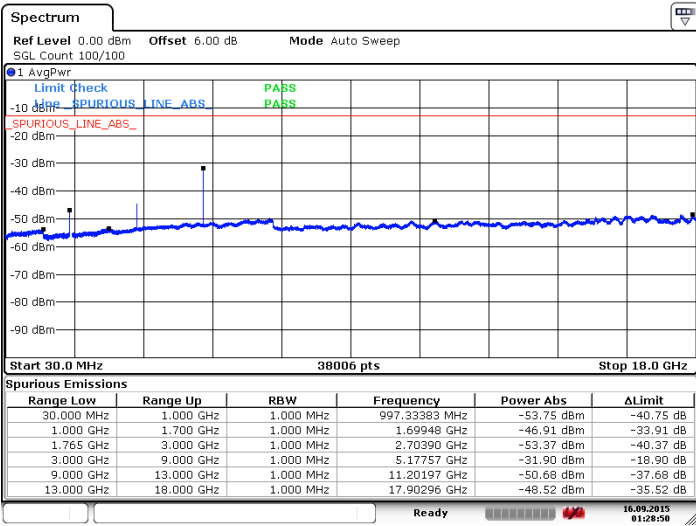
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

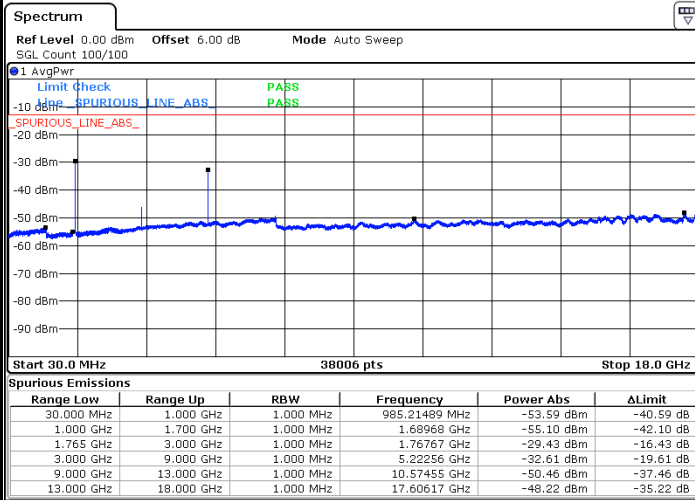
Middle Channel / 16QAM





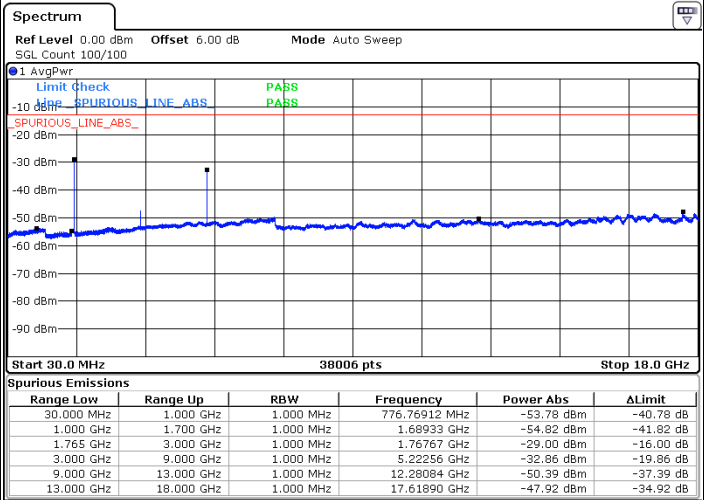
LTE Band 4 / 15MHz

Highest Channel / QPSK



Date: 16 SEP 2015 01:34:56

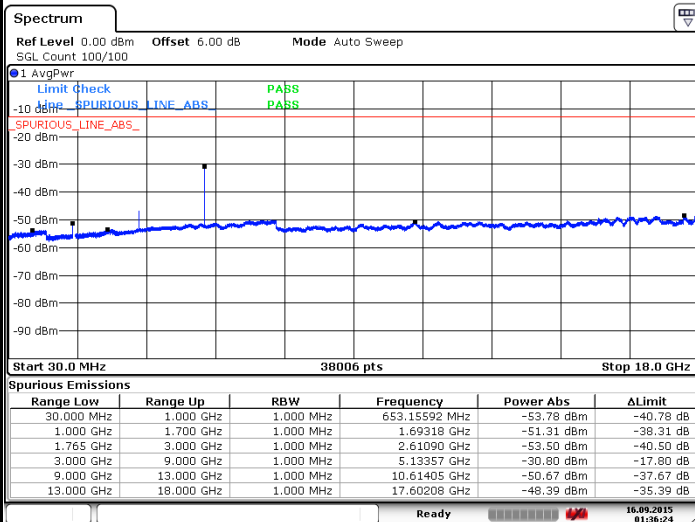
Highest Channel / 16QAM



Date: 16 SEP 2015 01:33:44

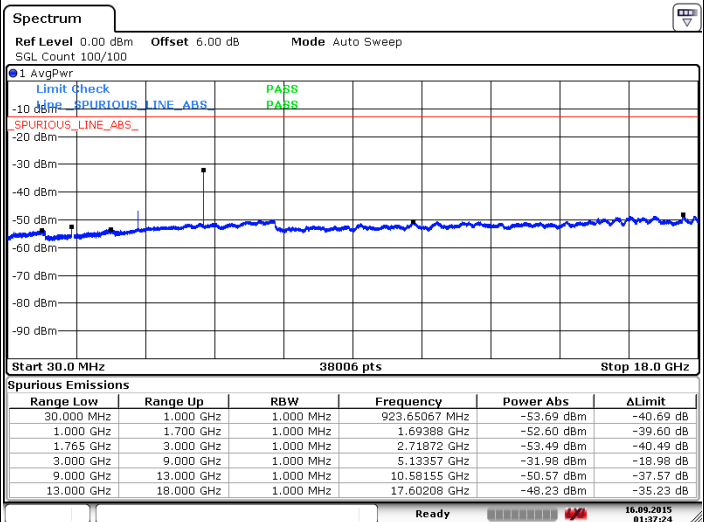
LTE Band 4 / 20MHz

Lowest Channel / QPSK



Date: 16 SEP 2015 01:36:24

Lowest Channel / 16QAM



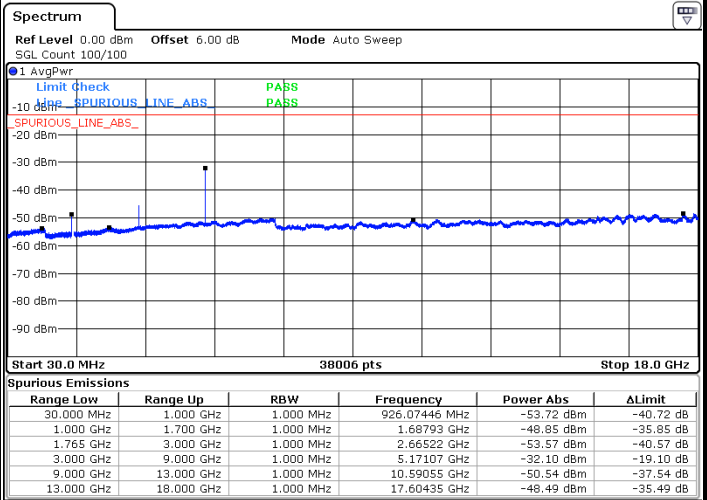
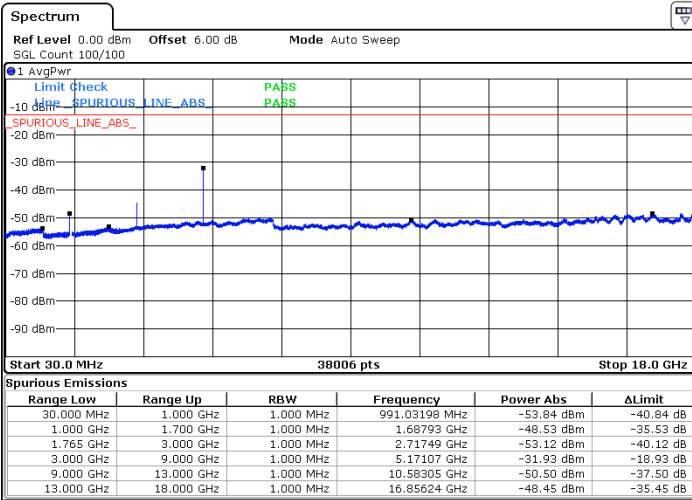
Date: 16 SEP 2015 01:37:24



LTE Band 4 / 20MHz

Middle Channel / QPSK

Middle Channel / 16QAM

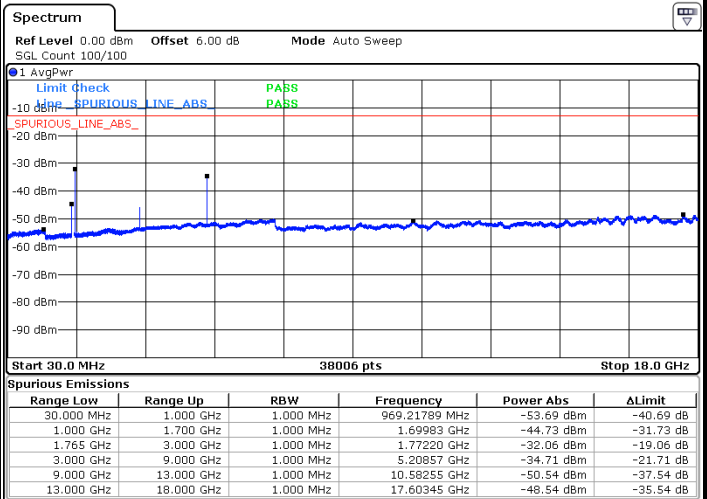
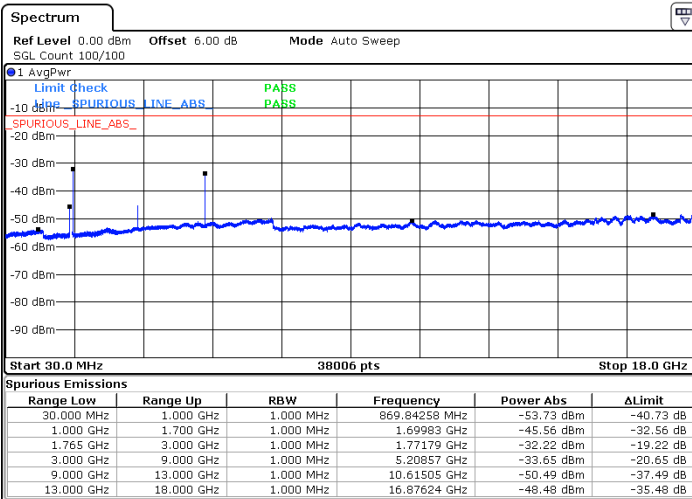


Date: 16 SEP 2015 01:39:41

Date: 16 SEP 2015 01:38:41

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 16 SEP 2015 01:40:40

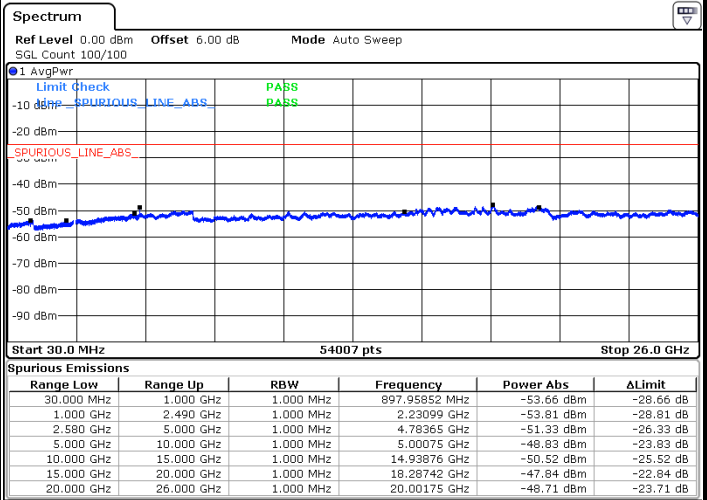
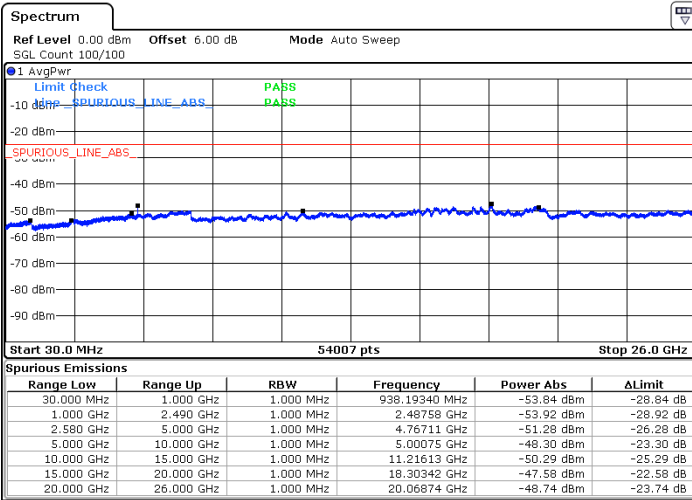
Date: 16 SEP 2015 01:41:33



LTE Band 7 / 5MHz

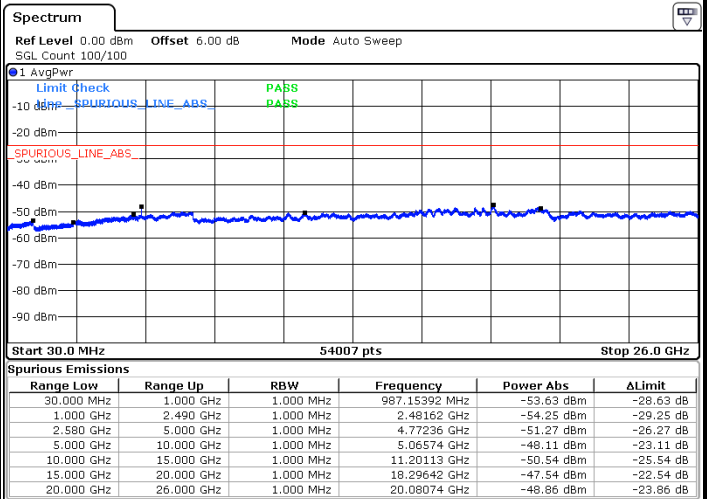
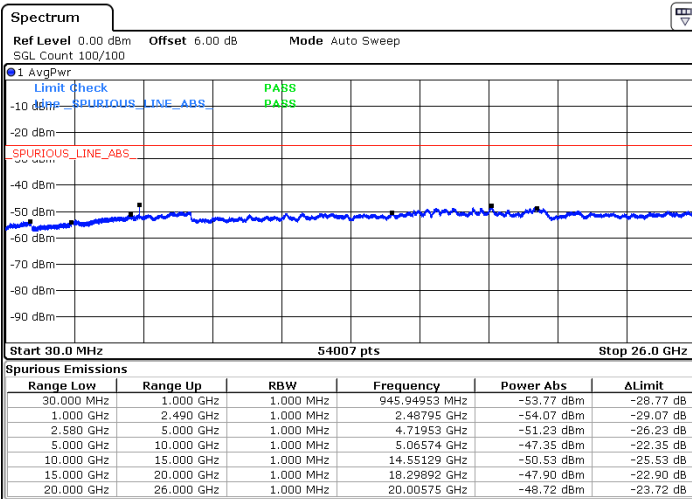
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

Middle Channel / 16QAM

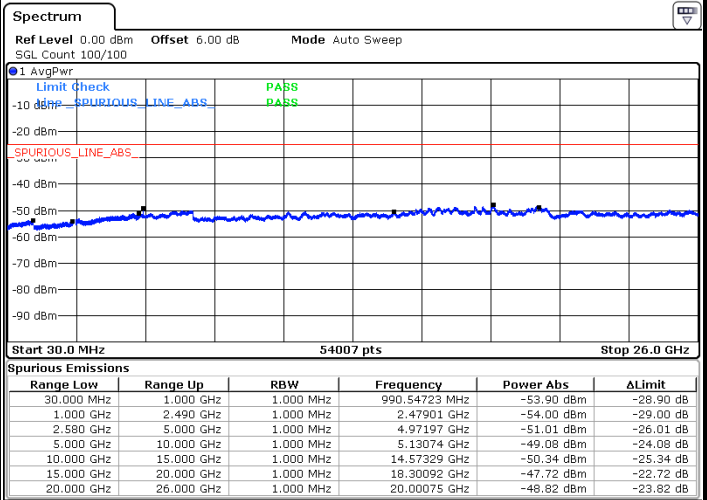
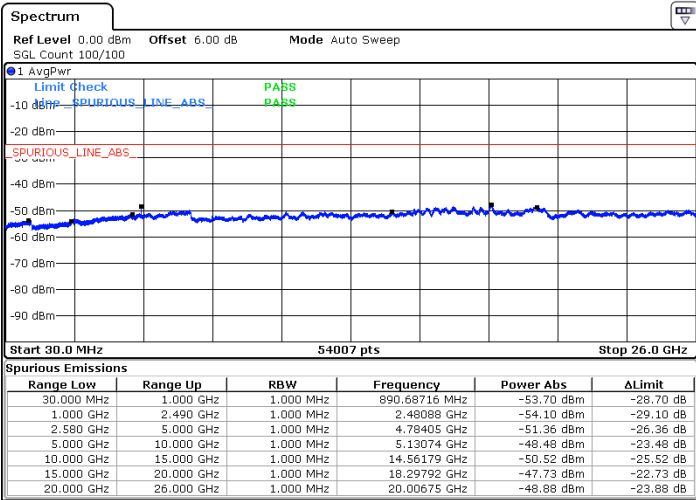




LTE Band 7 / 5MHz

Highest Channel / QPSK

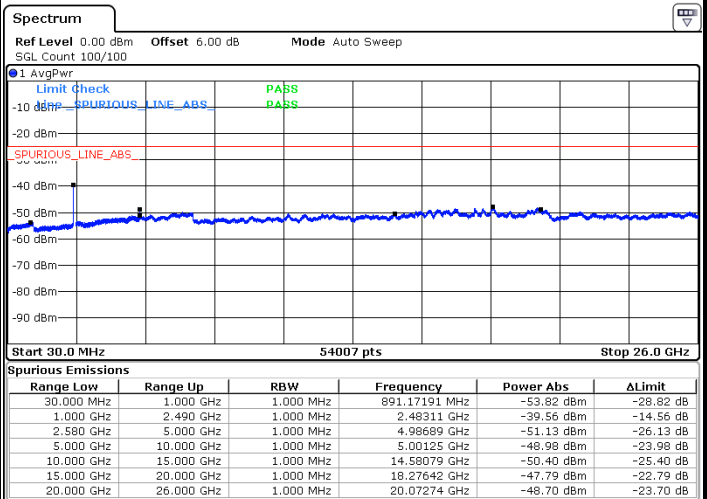
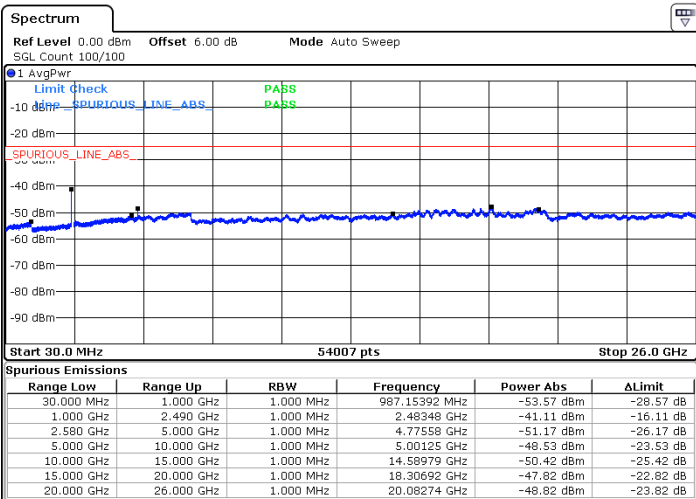
Highest Channel / 16QAM



LTE Band 7 / 10MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

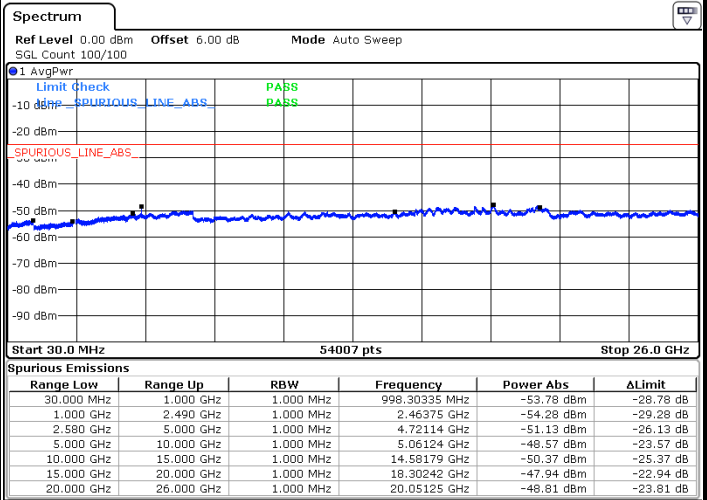
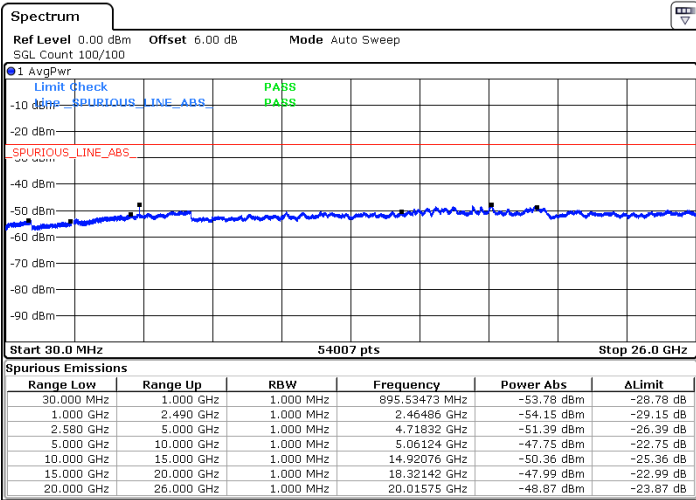




LTE Band 7 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM



Ready 16.09.2015 02:50:09

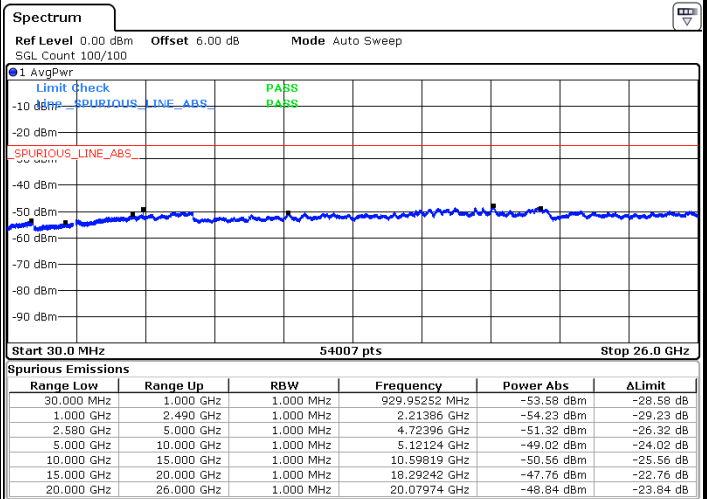
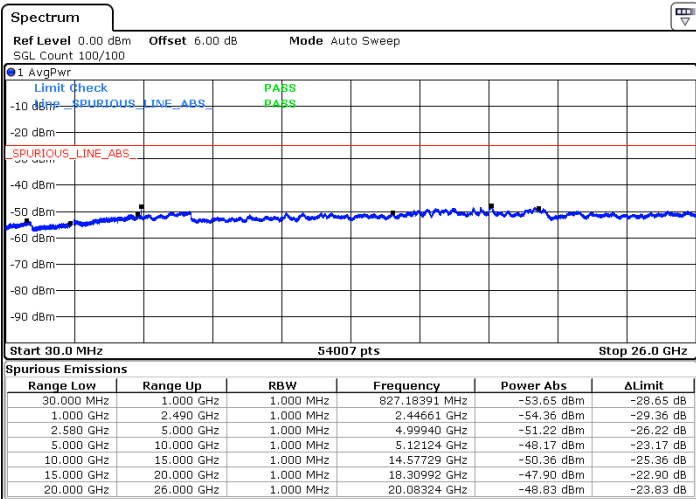
Ready 16.09.2015 02:51:05

Date: 16 SEP 2015 02:50:10

Date: 16 SEP 2015 02:51:05

Highest Channel / QPSK

Highest Channel / 16QAM



Ready 16.09.2015 02:55:38

Ready 16.09.2015 02:54:25

Date: 16 SEP 2015 02:55:38

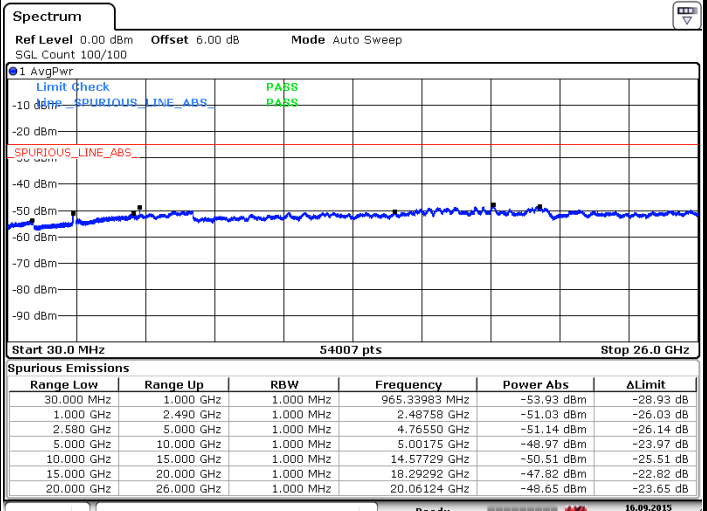
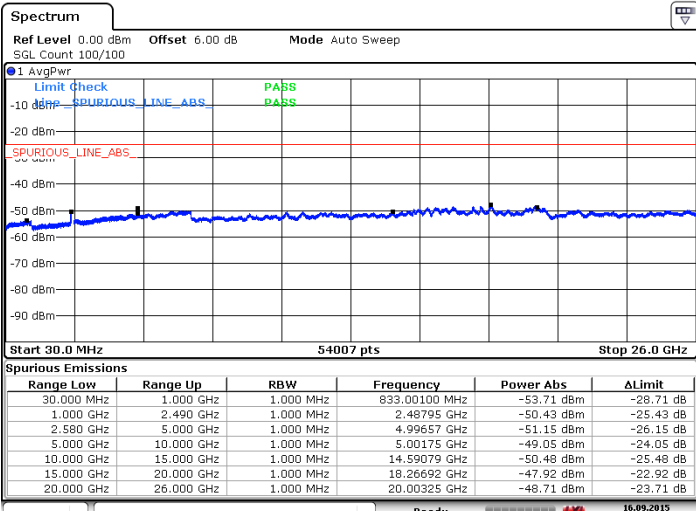
Date: 16 SEP 2015 02:54:25



LTE Band 7 / 15MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

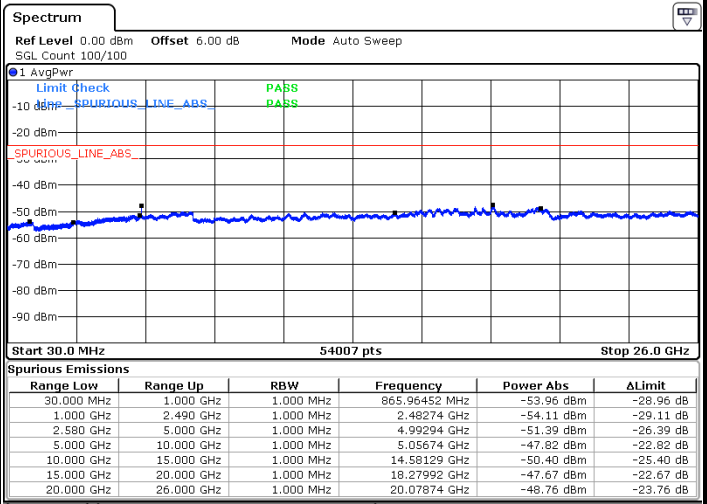
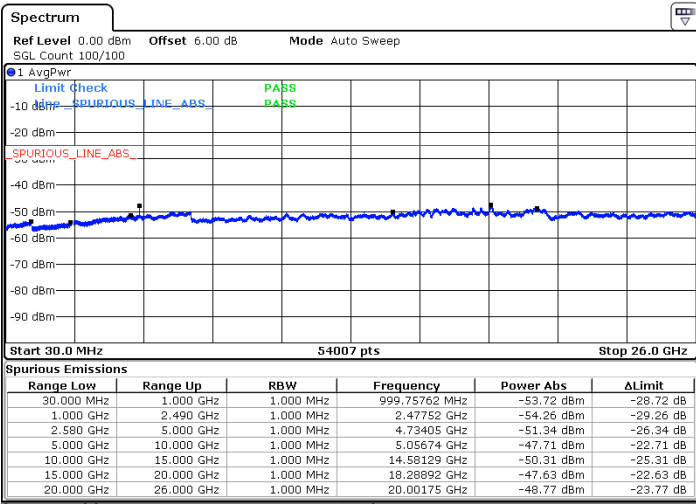


Date: 16 SEP 2015 02:57:36

Date: 16 SEP 2015 02:58:43

Middle Channel / QPSK

Middle Channel / 16QAM



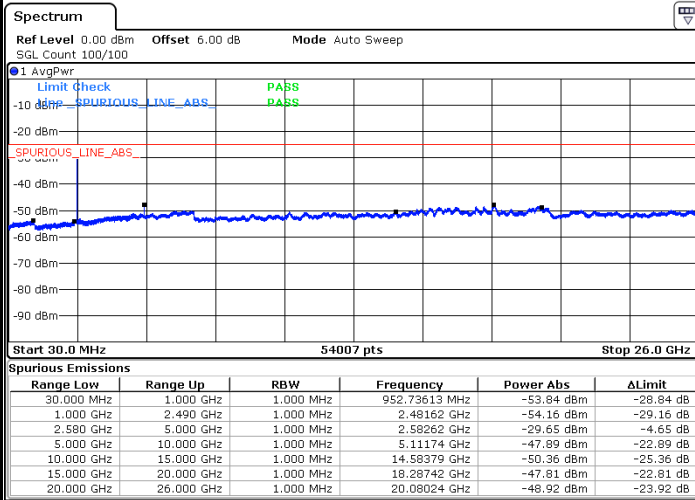
Date: 16 SEP 2015 03:01:56

Date: 16 SEP 2015 03:00:04



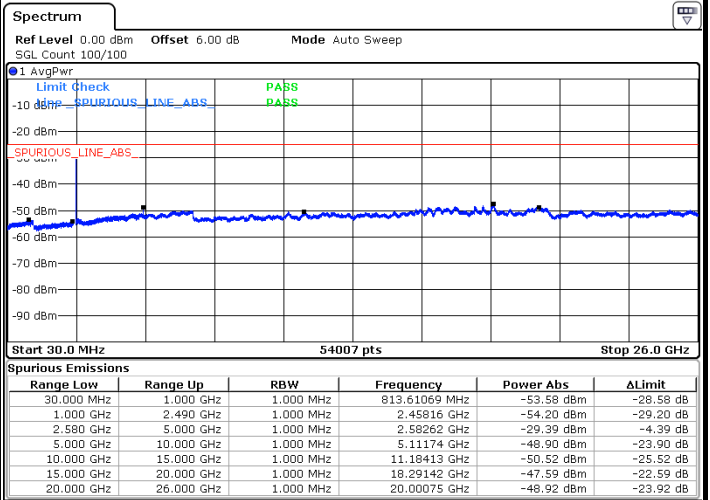
LTE Band7 / 15MHz

Highest Channel / QPSK



Date:16 SEP 2015 03:03:01

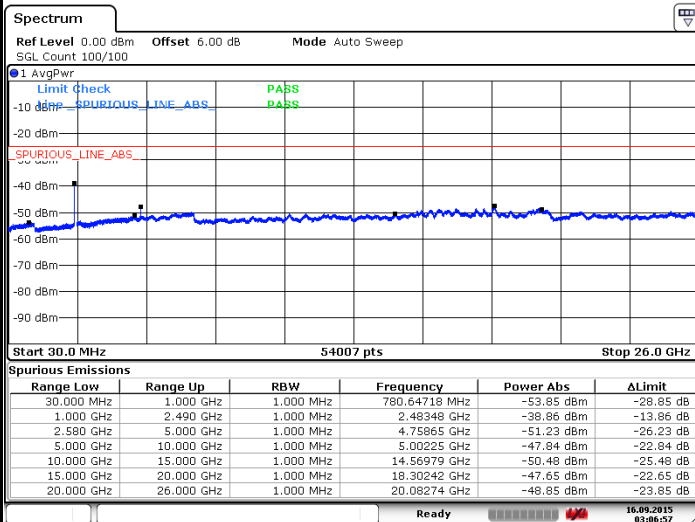
Highest Channel / 16QAM



Date:16 SEP 2015 03:04:02

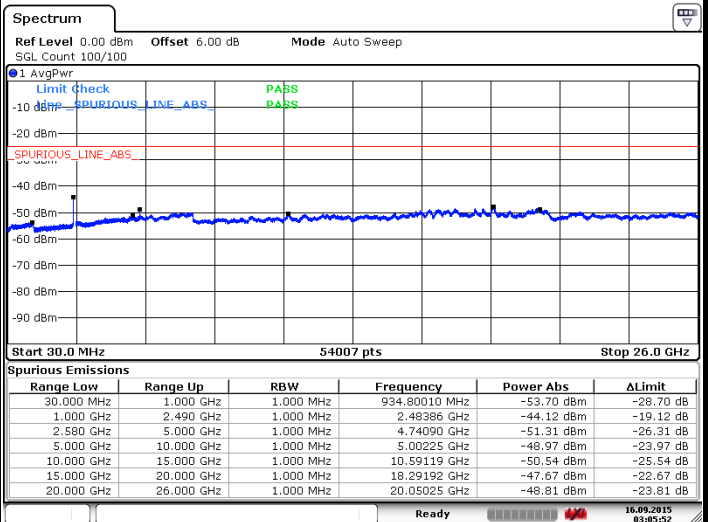
LTE Band 7 / 20MHz

Lowest Channel / QPSK



Date:16 SEP 2015 03:06:57

Lowest Channel / 16QAM



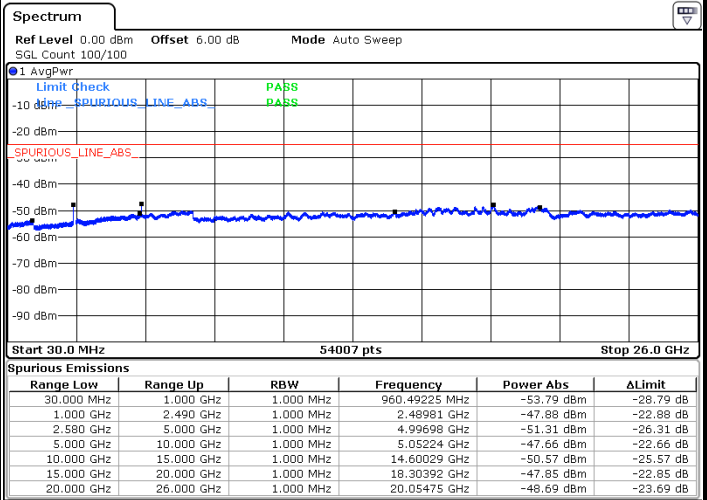
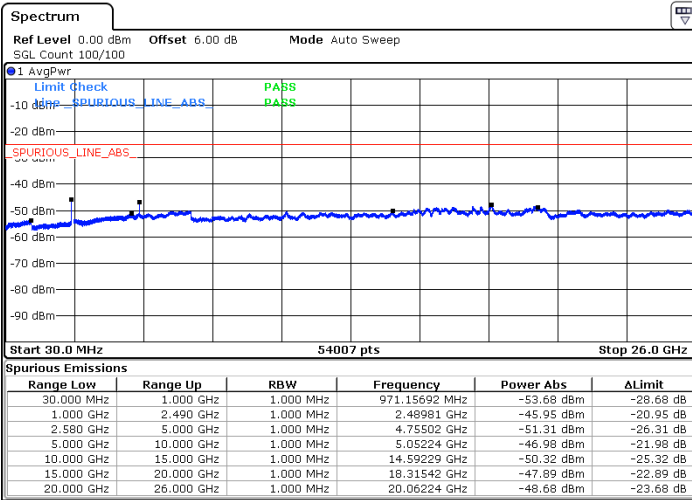
Date:16 SEP 2015 03:05:52



LTE Band 7 / 20MHz

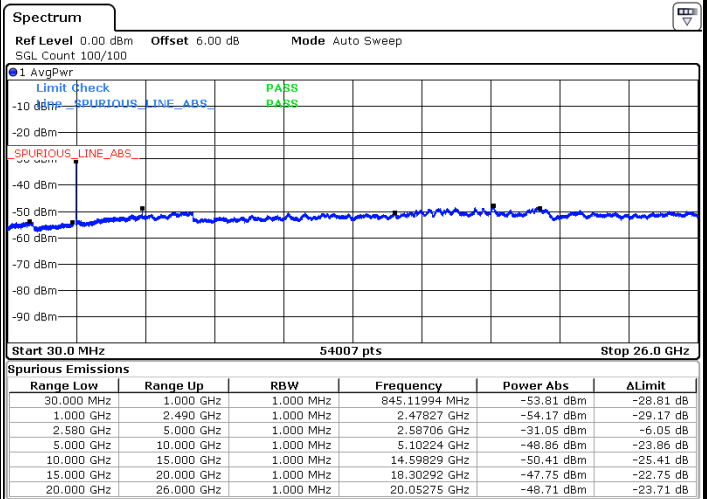
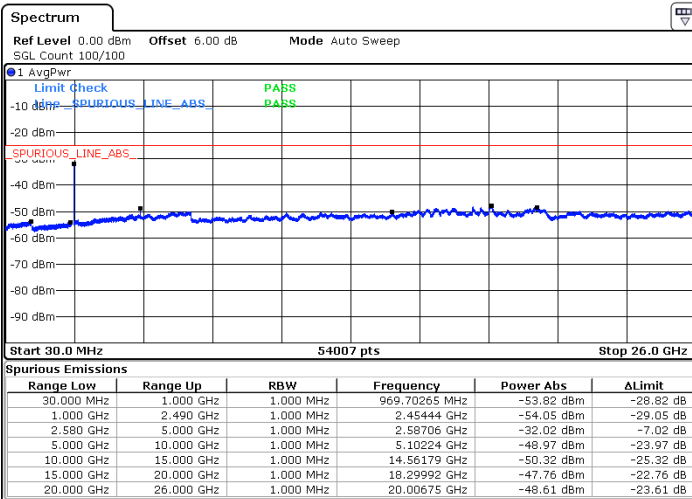
Middle Channel / QPSK

Middle Channel / 16QAM



Highest Channel / QPSK

Highest Channel / 16QAM

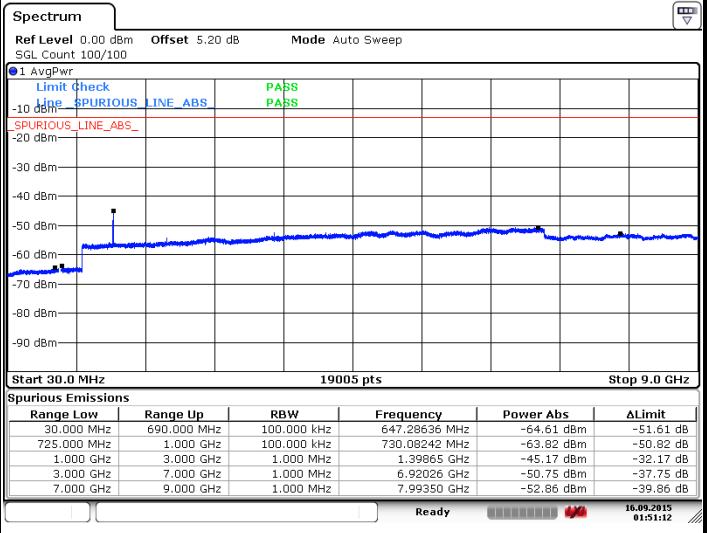
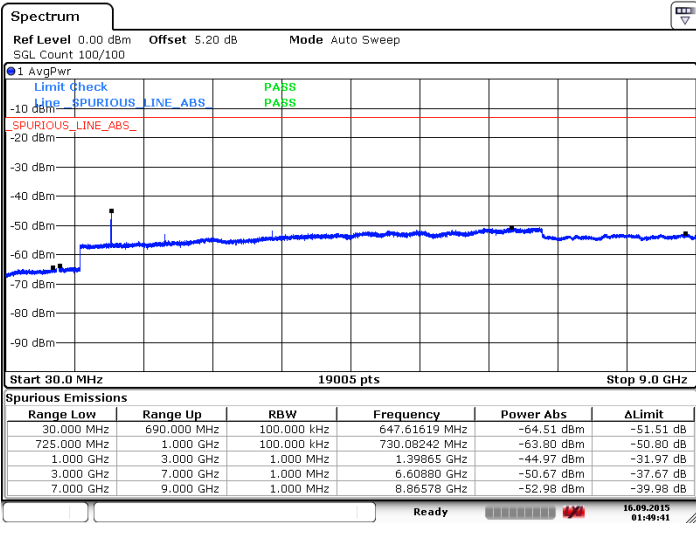




LTE Band 12 / 1.4MHz

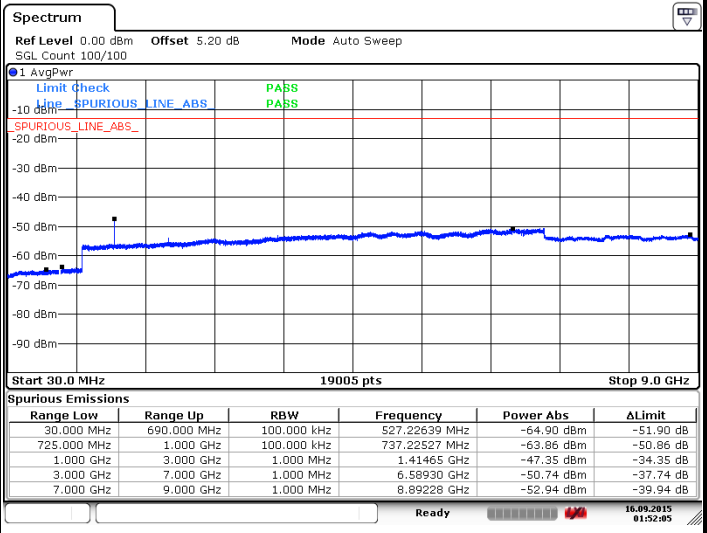
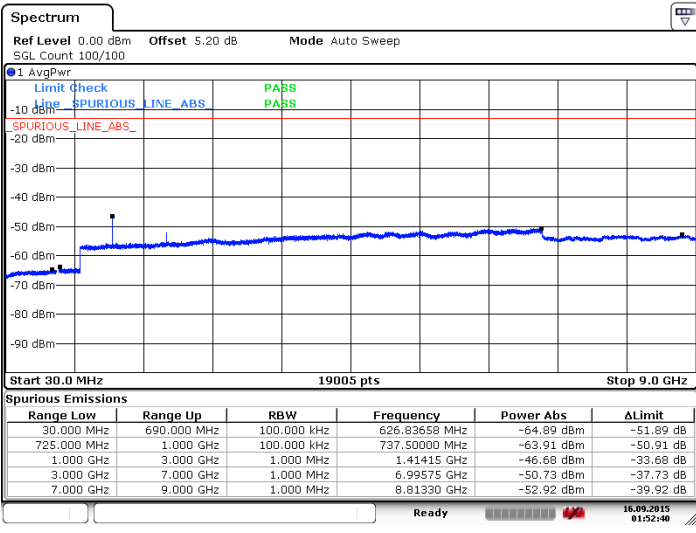
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

Middle Channel / 16QAM

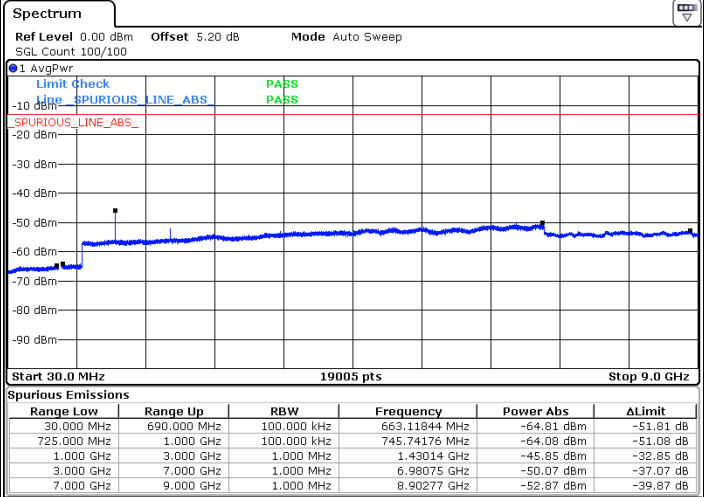
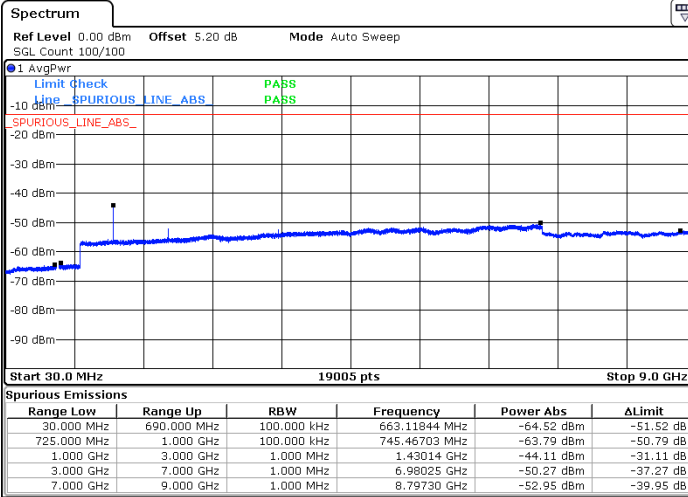




LTE Band 12 / 1.4MHz

Highest Channel / QPSK

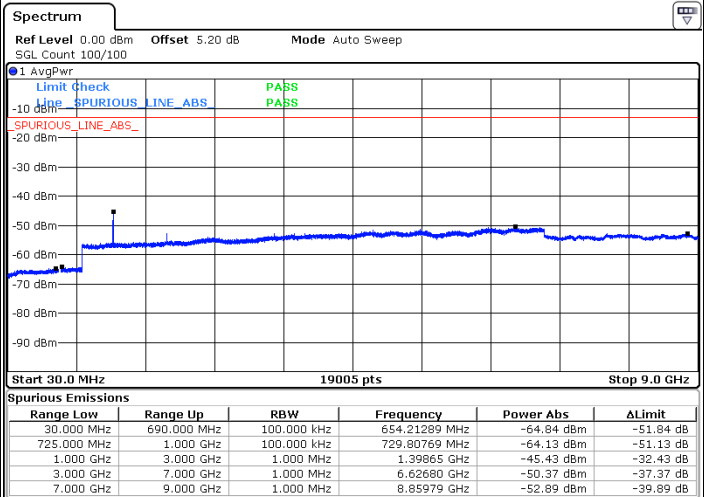
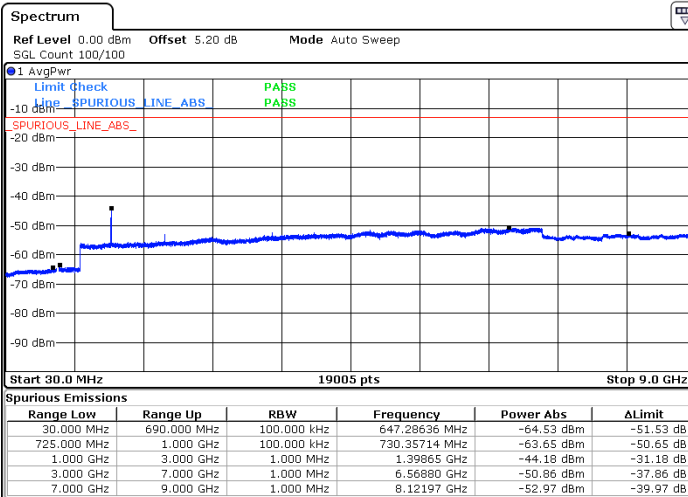
Highest Channel / 16QAM



LTE Band 12 / 3MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

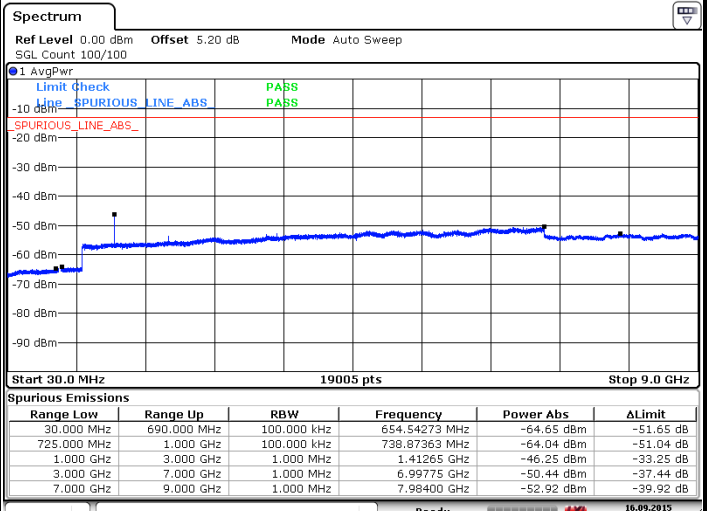
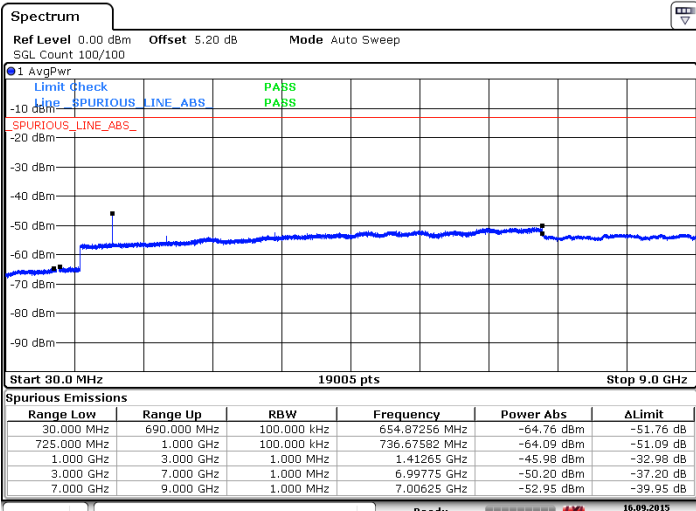




LTE Band 12 / 3MHz

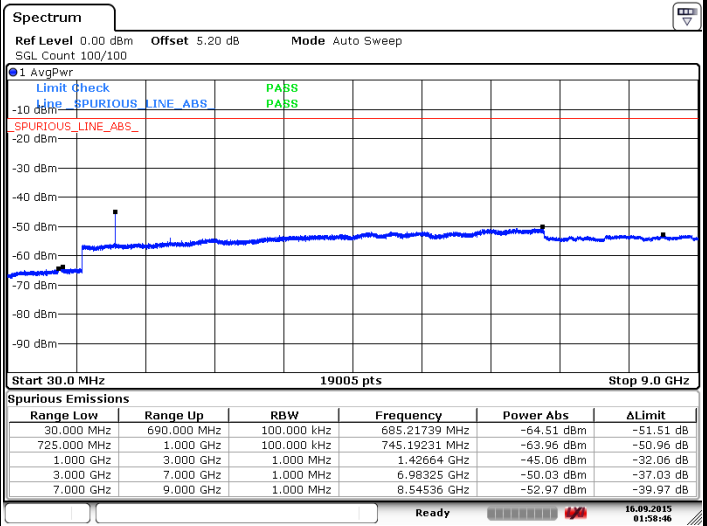
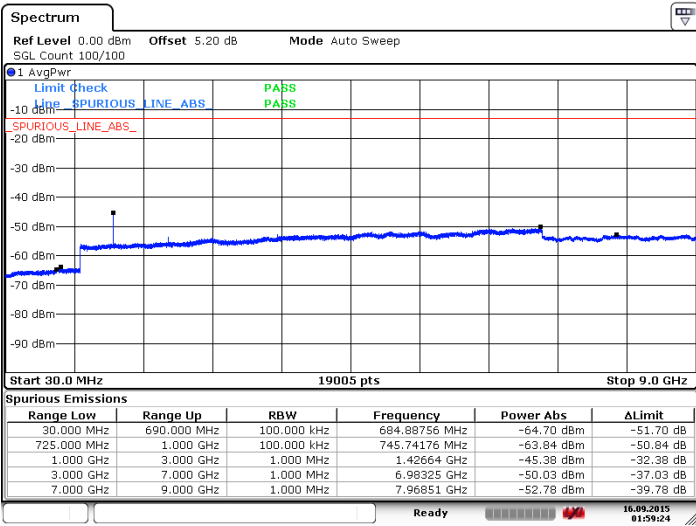
Middle Channel / QPSK

Middle Channel / 16QAM



Highest Channel / QPSK

Highest Channel / 16QAM

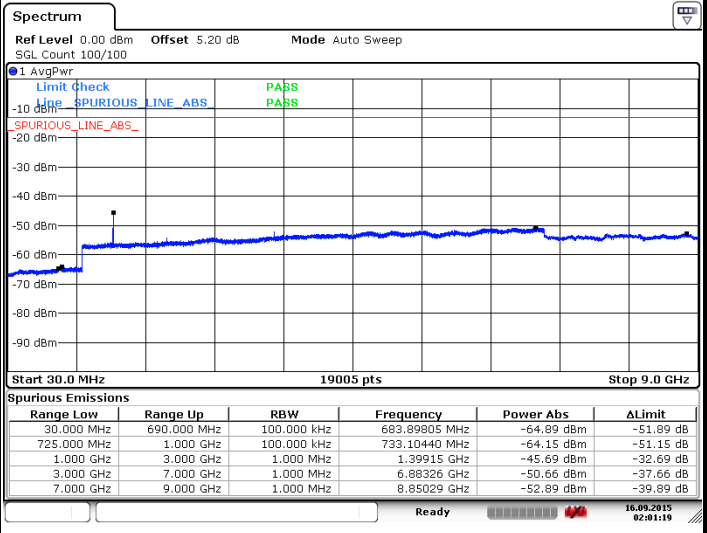
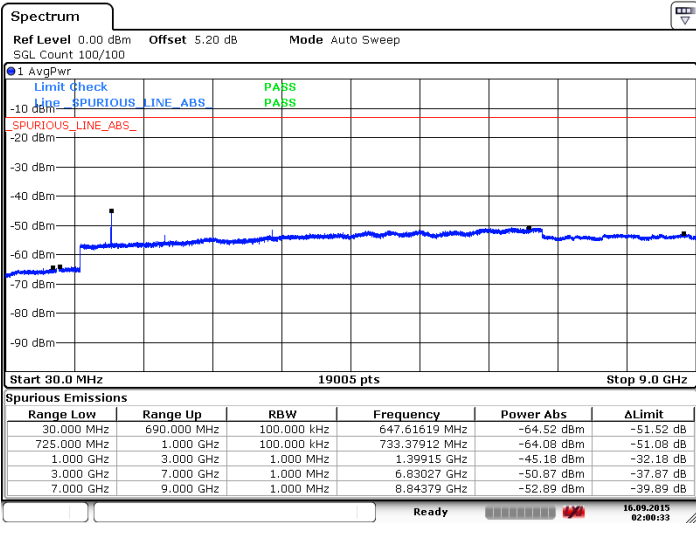




LTE Band 12 / 5MHz

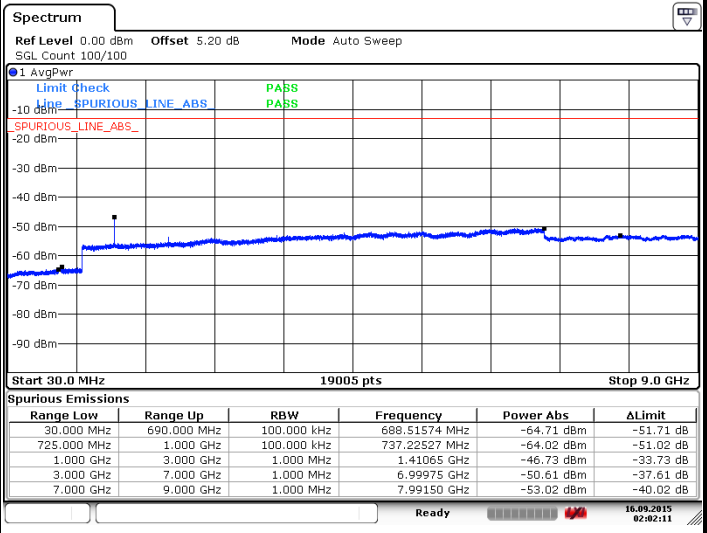
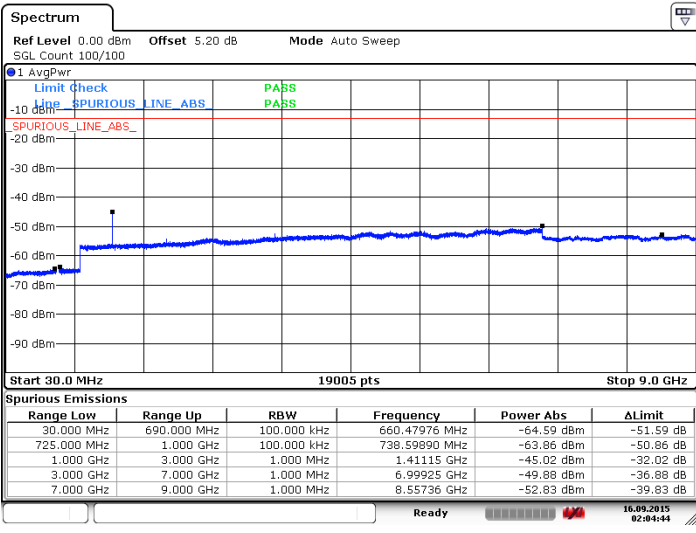
Lowest Channel / QPSK

Lowest Channel / 16QAM



Middle Channel / QPSK

Middle Channel / 16QAM

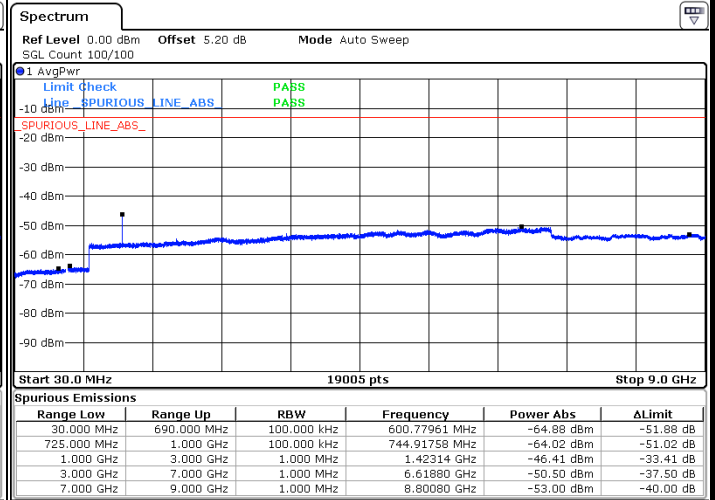
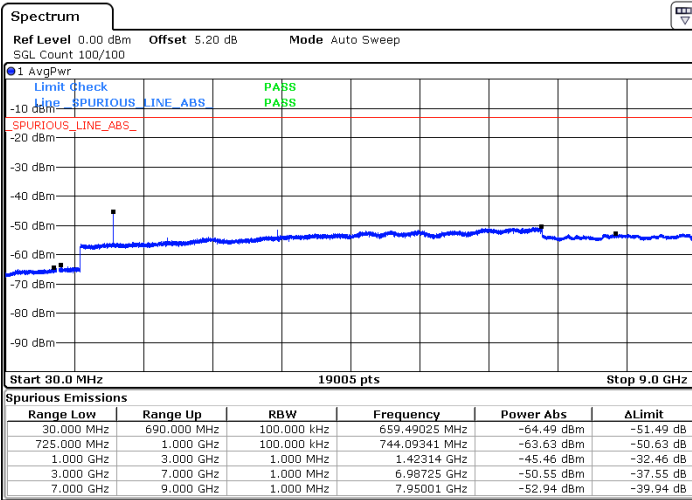




LTE Band 12 / 5MHz

Highest Channel / QPSK

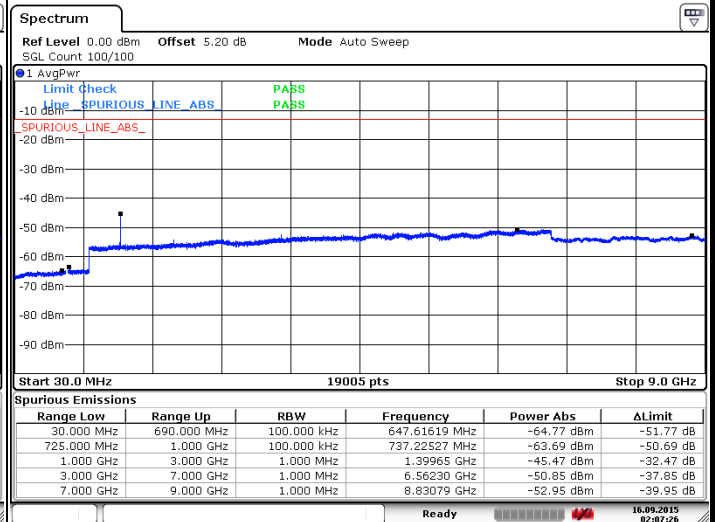
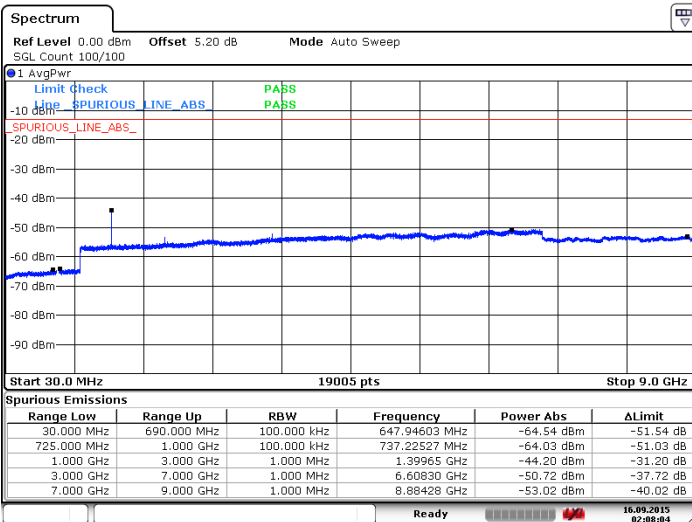
Highest Channel / 16QAM



LTE Band 12 / 10MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

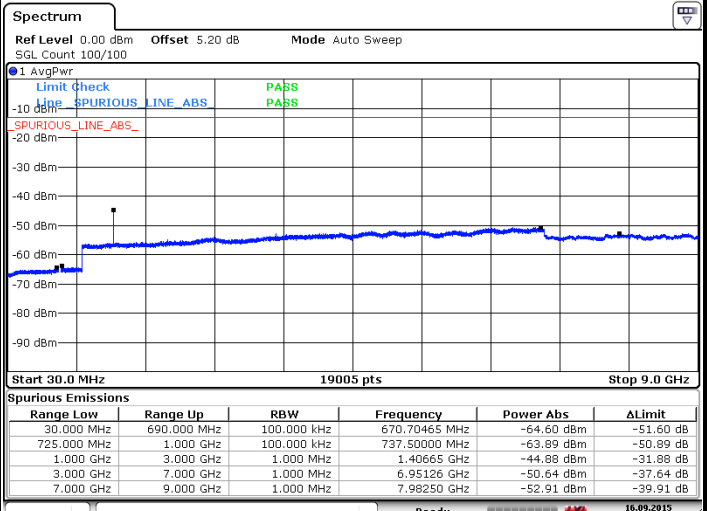
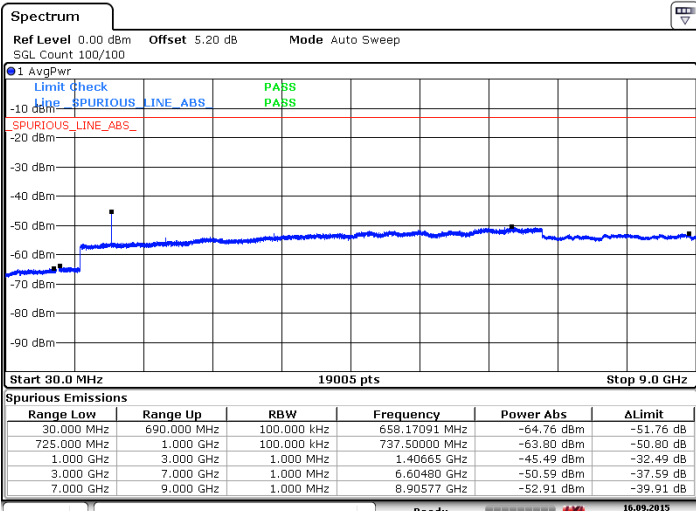




LTE Band 12 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM



Highest Channel / QPSK

Highest Channel / 16QAM

