Variant FCC RF Test Report

APPLICANT	:	Acer Incorporated
EQUIPMENT	:	Smart HandHeld
BRAND NAME	:	Acer
MODEL NAME	:	S57
MARKETING NAME	:	Liquid Jade Z
FCC ID	:	HLZDMS57
STANDARD	:	47 CFR Part 2, 24(E), 27(L), 27(M), 27(H)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

This is a variant report which is only valid together with the original test report. The product was received on Jan. 13, 2015 and testing was completed on Mar. 04, 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

Testing Laboratory 2627

SPORTON INTERNATIONAL (KUNSHAN) INC.
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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG511349B	Rev. 01	This is a variant report for S57. The difference between previous and current is as following: 1. changed Model name from “S56” to “S57”, 2. changed marketing name from “Liquid Jade S” to “Liquid Jade Z” 3. changed CPU from “MT6752M” to “MT6732” 4. changed earphone from model name “HF-AC09W-02” to “HC.00211.008”. Based on the similarity between two models, only the conducted power and Conducted Spurious Emission test for middle channel were verified, all other test datas are leverage from original test report (Sporton Report Number FG492402B with FCC ID: HLZDMS56).	Mar. 10, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-Gen(4.8) RSS-130(4.4) RSS-133 (6.4) RSS-139 (6.4) RSS-199 (4.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§2.1051 §24.238(a) §27.53(g) §27.53(h)	RSS-GEN(4.9) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Conducted Spurious Emission (Band 2) (Band 4) (Band 17)	< $43+10\log_{10}$(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Conducted Spurious Emission (Band 7)	< 55+10log10(P[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	S57
Marketing Name	Liquid Jade Z
FCC ID	HLZDMS57
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/ LTE/WLAN 2.4GHz 802.11b/g/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
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 17 : 706.5 MHz ~ 713.5 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 17 : 736.5 MHz ~ 743.5 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 17 : 5MHz / 10MHz
Antenna Type	PIFA Antenna
Type of Modulation	QPSK / 16QAM

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.**	**FCC/IC Registration No.**
	TH01-KS	149928/4086E-1

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 v02r01
- IC RSS-130 Issue1
- IC RSS-133 Issue 6
- IC RSS-139 Issue 2
- IC RSS-199 Issue 1
- NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

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	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	
	17	-	-	v	v	-	-	v	v	v	v	v		v	
Conducted Spurious Emission	2	v						v	v	v			v	v	v
	4				v			v	v	v			v	v	v
	7	-	-			v		v	v	v			v	v	v
	17	-	-	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

2.3 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 5.5 dB.

Example :

Offset(dB) = RF cable loss(dB) = 5.5 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

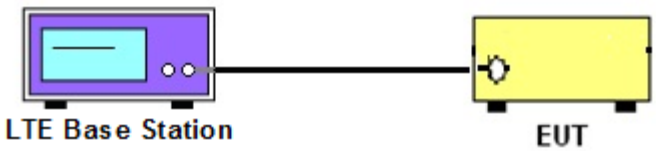
3.1.2 Measuring Instruments

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 LTE base station.
2. Set EUT at maximum power through the LTE base station.
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 2 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				**18900**
Frequency (MHz)				**1880**
20	QPSK	1	0	21.29
20	QPSK	1	49	21.11
20	QPSK	1	99	21.22
20	QPSK	50	0	21.26
20	QPSK	50	24	21.23
20	QPSK	50	49	21.24
20	QPSK	100	0	21.21
20	16QAM	1	0	20.77
20	16QAM	1	49	20.81
20	16QAM	1	99	20.65
20	16QAM	50	0	19.26
20	16QAM	50	24	19.31
20	16QAM	50	49	19.28
20	16QAM	100	0	19.26
Channel				**18900**
Frequency (MHz)				**1880**
15	QPSK	1	0	21.23
15	QPSK	1	37	21.28
15	QPSK	1	74	21.15
15	QPSK	36	0	21.27
15	QPSK	36	18	21.28
15	QPSK	36	37	21.26
15	QPSK	75	0	21.23
15	16QAM	1	0	20.28
15	16QAM	1	37	20.52
15	16QAM	1	74	20.39
15	16QAM	36	0	19.36
15	16QAM	36	18	19.28
15	16QAM	36	37	19.32
15	16QAM	75	0	19.30

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				18900
Frequency (MHz)				1880
10	QPSK	1	0	21.24
10	QPSK	1	24	21.24
10	QPSK	1	49	21.16
10	QPSK	25	0	21.23
10	QPSK	25	12	21.24
10	QPSK	25	24	21.23
10	QPSK	50	0	21.25
10	16QAM	1	0	20.66
10	16QAM	1	24	20.42
10	16QAM	1	49	20.26
10	16QAM	25	0	19.21
10	16QAM	25	12	19.31
10	16QAM	25	24	19.30
10	16QAM	50	0	19.25
Channel				18900
Frequency (MHz)				1880
5	QPSK	1	0	21.19
5	QPSK	1	12	21.14
5	QPSK	1	24	21.28
5	QPSK	12	0	21.25
5	QPSK	12	6	21.26
5	QPSK	12	11	21.26
5	QPSK	25	0	21.20
5	16QAM	1	0	20.17
5	16QAM	1	12	20.81
5	16QAM	1	24	20.38
5	16QAM	12	0	19.30
5	16QAM	12	6	19.31
5	16QAM	12	11	19.34
5	16QAM	25	0	19.29

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				18900
Frequency (MHz)				1880
3	QPSK	1	0	21.07
3	QPSK	1	7	21.15
3	QPSK	1	14	21.20
3	QPSK	8	0	21.22
3	QPSK	8	4	21.26
3	QPSK	8	7	21.24
3	QPSK	15	0	21.19
3	16QAM	1	0	20.40
3	16QAM	1	7	20.43
3	16QAM	1	14	20.72
3	16QAM	8	0	19.37
3	16QAM	8	4	19.34
3	16QAM	8	7	19.38
3	16QAM	15	0	19.34
Channel				18900
Frequency (MHz)				1880
1.4	QPSK	1	0	21.20
1.4	QPSK	1	2	21.26
1.4	QPSK	1	5	21.17
1.4	QPSK	3	0	21.15
1.4	QPSK	3	1	21.21
1.4	QPSK	3	2	21.23
1.4	QPSK	6	0	21.22
1.4	16QAM	1	0	20.15
1.4	16QAM	1	2	20.81
1.4	16QAM	1	5	20.23
1.4	16QAM	3	0	20.30
1.4	16QAM	3	1	20.33
1.4	16QAM	3	2	20.30
1.4	16QAM	6	0	19.43

<LTE Band 4 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				**20175**
Frequency (MHz)				**1732.5**
20	QPSK	1	0	21.48
20	QPSK	1	49	21.31
20	QPSK	1	99	21.16
20	QPSK	50	0	21.43
20	QPSK	50	24	21.41
20	QPSK	50	49	21.40
20	QPSK	100	0	21.42
20	16QAM	1	0	20.41
20	16QAM	1	49	20.98
20	16QAM	1	99	20.45
20	16QAM	50	0	19.46
20	16QAM	50	24	19.41
20	16QAM	50	49	19.35
20	16QAM	100	0	19.39
Channel				**20175**
Frequency (MHz)				**1732.5**
15	QPSK	1	0	21.42
15	QPSK	1	37	21.30
15	QPSK	1	74	21.33
15	QPSK	36	0	21.51
15	QPSK	36	18	21.42
15	QPSK	36	37	21.43
15	QPSK	75	0	21.44
15	16QAM	1	0	20.90
15	16QAM	1	37	20.93
15	16QAM	1	74	20.36
15	16QAM	36	0	19.50
15	16QAM	36	18	19.42
15	16QAM	36	37	19.41
15	16QAM	75	0	19.45

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				20175
Frequency (MHz)				1732.5
10	QPSK	1	0	21.46
10	QPSK	1	24	21.36
10	QPSK	1	49	21.24
10	QPSK	25	0	21.42
10	QPSK	25	12	21.37
10	QPSK	25	24	21.35
10	QPSK	50	0	21.41
10	16QAM	1	0	20.70
10	16QAM	1	24	20.46
10	16QAM	1	49	20.81
10	16QAM	25	0	19.40
10	16QAM	25	12	19.38
10	16QAM	25	24	19.43
10	16QAM	50	0	19.43
Channel				20175
Frequency (MHz)				1732.5
5	QPSK	1	0	21.45
5	QPSK	1	12	21.32
5	QPSK	1	24	21.39
5	QPSK	12	0	21.42
5	QPSK	12	6	21.39
5	QPSK	12	11	21.43
5	QPSK	25	0	21.39
5	16QAM	1	0	20.83
5	16QAM	1	12	20.59
5	16QAM	1	24	20.92
5	16QAM	12	0	19.44
5	16QAM	12	6	19.45
5	16QAM	12	11	19.41
5	16QAM	25	0	19.34

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				20175
Frequency (MHz)				1732.5
3	QPSK	1	0	21.32
3	QPSK	1	7	21.36
3	QPSK	1	14	21.21
3	QPSK	8	0	21.41
3	QPSK	8	4	21.42
3	QPSK	8	7	21.38
3	QPSK	15	0	21.39
3	16QAM	1	0	20.77
3	16QAM	1	7	20.27
3	16QAM	1	14	20.86
3	16QAM	8	0	19.45
3	16QAM	8	4	19.54
3	16QAM	8	7	19.47
3	16QAM	15	0	19.41
Channel				20175
Frequency (MHz)				1732.5
1.4	QPSK	1	0	21.36
1.4	QPSK	1	2	21.38
1.4	QPSK	1	5	21.36
1.4	QPSK	3	0	21.36
1.4	QPSK	3	1	21.41
1.4	QPSK	3	2	21.35
1.4	QPSK	6	0	21.39
1.4	16QAM	1	0	20.64
1.4	16QAM	1	2	20.99
1.4	16QAM	1	5	20.52
1.4	16QAM	3	0	20.45
1.4	16QAM	3	1	20.42
1.4	16QAM	3	2	20.36
1.4	16QAM	6	0	19.44

<LTE Band 7 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				**21100**
Frequency (MHz)				**2535**
20	QPSK	1	0	21.26
20	QPSK	1	49	21.77
20	QPSK	1	99	21.74
20	QPSK	50	0	21.09
20	QPSK	50	24	21.07
20	QPSK	50	49	21.08
20	QPSK	100	0	21.27
20	16QAM	1	0	20.62
20	16QAM	1	49	20.72
20	16QAM	1	99	20.85
20	16QAM	50	0	20.18
20	16QAM	50	24	20.43
20	16QAM	50	49	20.60
20	16QAM	100	0	20.30
Channel				**21100**
Frequency (MHz)				**2535**
15	QPSK	1	0	21.22
15	QPSK	1	37	21.11
15	QPSK	1	74	21.05
15	QPSK	36	0	21.27
15	QPSK	36	18	21.36
15	QPSK	36	37	21.33
15	QPSK	75	0	21.34
15	16QAM	1	0	20.59
15	16QAM	1	37	20.51
15	16QAM	1	74	20.46
15	16QAM	36	0	19.56
15	16QAM	36	18	19.96
15	16QAM	36	37	20.45
15	16QAM	75	0	20.42

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				21100
Frequency (MHz)				2535
10	QPSK	1	0	21.30
10	QPSK	1	24	21.28
10	QPSK	1	49	21.29
10	QPSK	25	0	21.33
10	QPSK	25	12	21.31
10	QPSK	25	24	21.31
10	QPSK	50	0	21.32
10	16QAM	1	0	20.54
10	16QAM	1	24	20.52
10	16QAM	1	49	20.51
10	16QAM	25	0	19.63
10	16QAM	25	12	19.61
10	16QAM	25	24	19.62
10	16QAM	50	0	19.75
Channel				21100
Frequency (MHz)				2535
5	QPSK	1	0	21.29
5	QPSK	1	12	21.29
5	QPSK	1	24	21.27
5	QPSK	12	0	21.35
5	QPSK	12	6	21.31
5	QPSK	12	11	21.32
5	QPSK	25	0	21.29
5	16QAM	1	0	20.53
5	16QAM	1	12	20.56
5	16QAM	1	24	20.52
5	16QAM	12	0	19.66
5	16QAM	12	6	19.63
5	16QAM	12	11	19.62
5	16QAM	25	0	19.60

<LTE Band 17 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Middle Ch. / Freq.
Channel				**23790**
Frequency (MHz)				**710**
10	QPSK	1	0	21.57
10	QPSK	1	24	21.40
10	QPSK	1	49	21.41
10	QPSK	25	0	21.49
10	QPSK	25	12	21.51
10	QPSK	25	24	21.51
10	QPSK	50	0	21.34
10	16QAM	1	0	21.04
10	16QAM	1	24	20.73
10	16QAM	1	49	20.80
10	16QAM	25	0	19.58
10	16QAM	25	12	19.50
10	16QAM	25	24	19.50
10	16QAM	50	0	19.59
Channel				**23790**
Frequency (MHz)				**710**
5	QPSK	1	0	21.45
5	QPSK	1	12	21.39
5	QPSK	1	24	21.43
5	QPSK	12	0	21.55
5	QPSK	12	6	21.54
5	QPSK	12	11	21.54
5	QPSK	25	0	21.51
5	16QAM	1	0	20.78
5	16QAM	1	12	20.96
5	16QAM	1	24	20.92
5	16QAM	12	0	19.71
5	16QAM	12	6	19.69
5	16QAM	12	11	19.65
5	16QAM	25	0	19.60

3.2 Conducted Spurious Emission Measurement

3.2.1 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 9 kHz up to a frequency including its 10th harmonic.

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 LTE base station 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.

   For Band 7

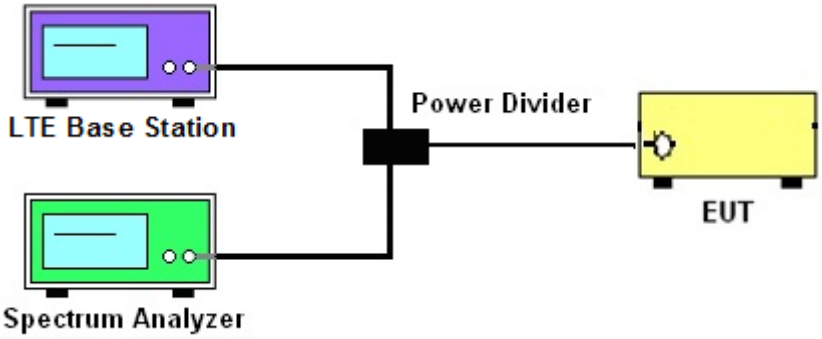
   The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

   = P(W)- [55 + 10log(P)] (dB)

   = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)

   = -25dBm.

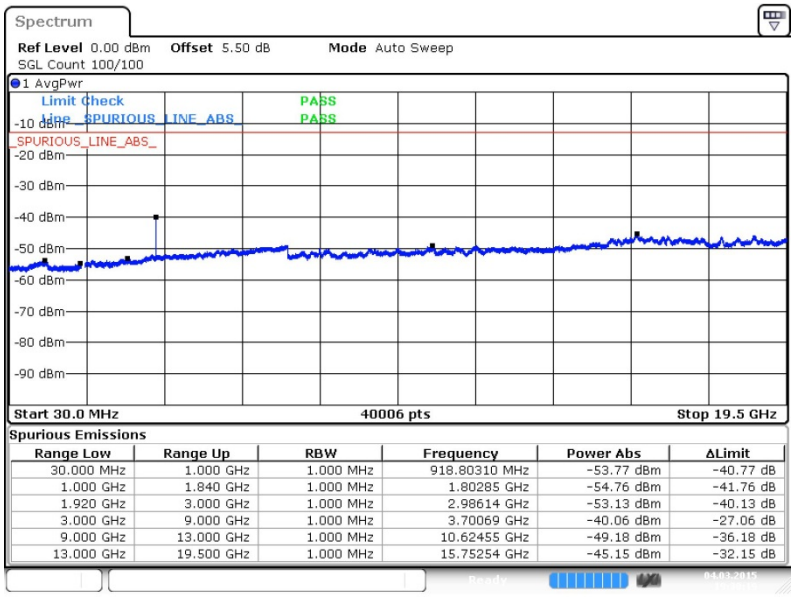
3.2.4 Test Setup



3.2.5 Test Result (Plots) of Conducted Spurious Emission

Band :	LTE Band 2	Channel :	CH18607 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

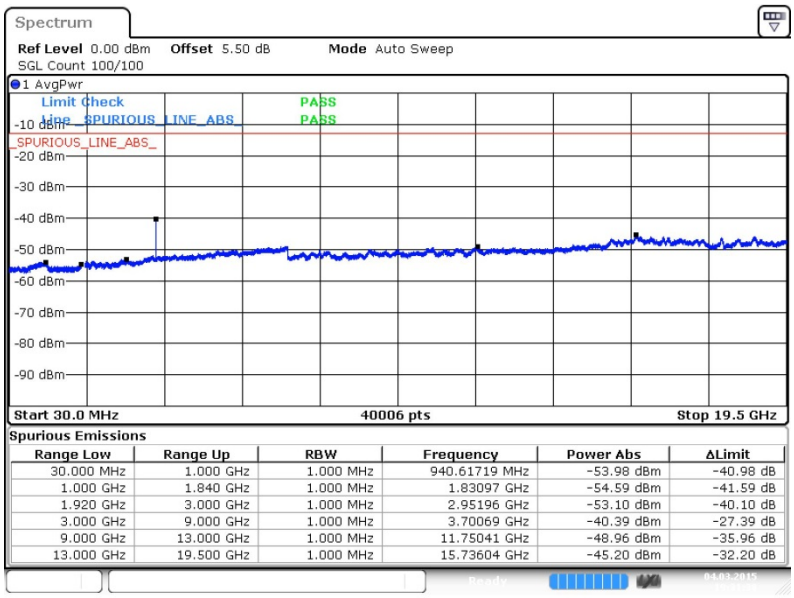


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	918.80310 MHz	-53.77 dBm	-40.77 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80285 GHz	-54.76 dBm	-41.76 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98614 GHz	-53.13 dBm	-40.13 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-40.06 dBm	-27.06 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.62455 GHz	-49.18 dBm	-36.18 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.75254 GHz	-45.15 dBm	-32.15 dB

Date: 4.MAR.2015 19:30:19

16QAM (RB Size 1, RB Offset 0)



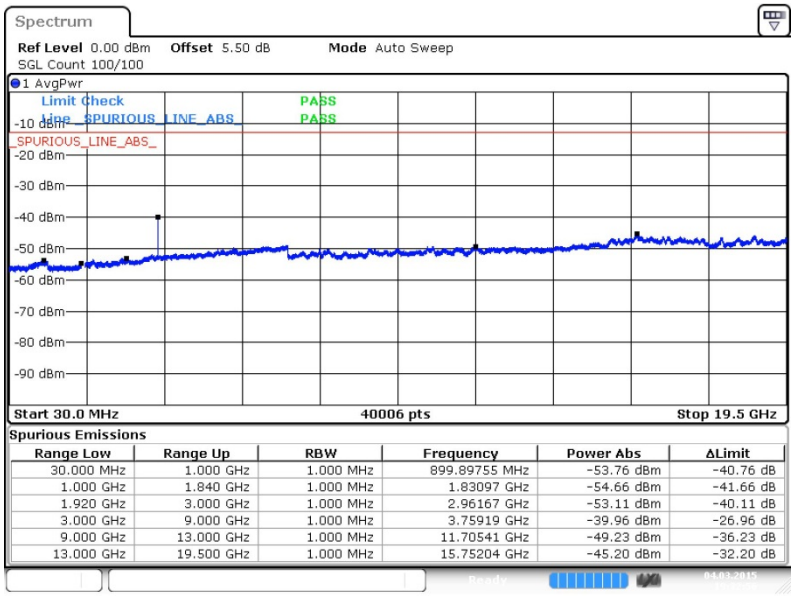
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	940.61719 MHz	-53.98 dBm	-40.98 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83097 GHz	-54.59 dBm	-41.59 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.95196 GHz	-53.10 dBm	-40.10 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-40.39 dBm	-27.39 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.75041 GHz	-48.96 dBm	-35.96 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.73604 GHz	-45.20 dBm	-32.20 dB

Date: 4.MAR.2015 19:31:37

Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

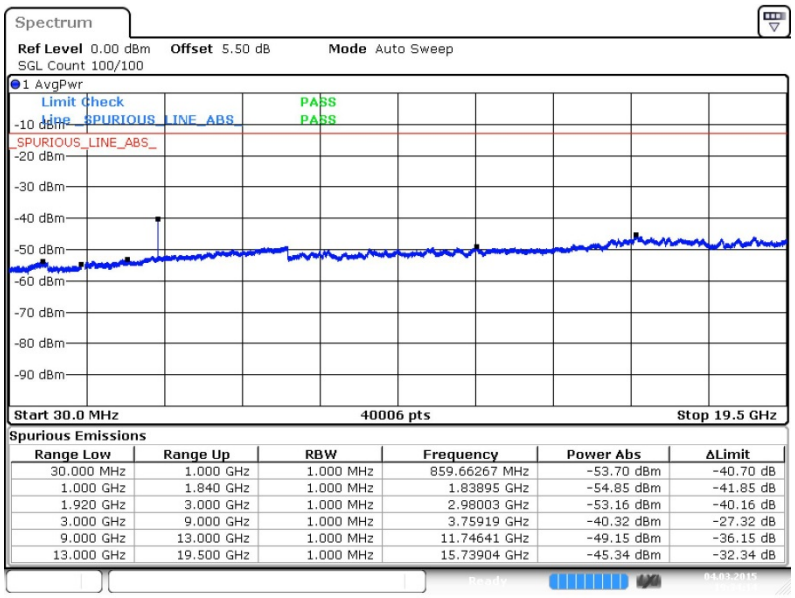


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	899.89755 MHz	-53.76 dBm	-40.76 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83097 GHz	-54.66 dBm	-41.66 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96167 GHz	-53.11 dBm	-40.11 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75919 GHz	-39.96 dBm	-26.96 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.70541 GHz	-49.23 dBm	-36.23 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.75204 GHz	-45.20 dBm	-32.20 dB

Date: 4.MAR.2015 19:32:56

16QAM (RB Size 1, RB Offset 0)



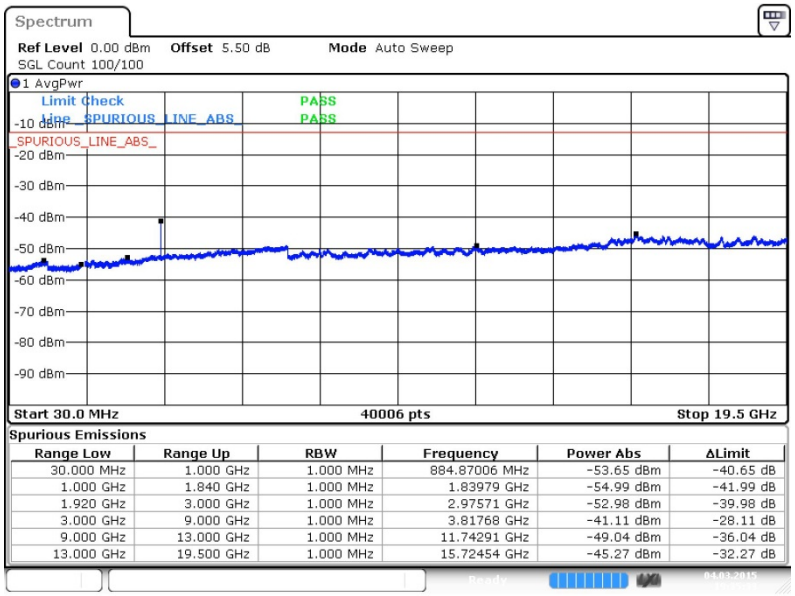
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	859.66267 MHz	-53.70 dBm	-40.70 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83895 GHz	-54.85 dBm	-41.85 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98003 GHz	-53.16 dBm	-40.16 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75919 GHz	-40.32 dBm	-27.32 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.74641 GHz	-49.15 dBm	-36.15 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.73904 GHz	-45.34 dBm	-32.34 dB

Date: 4.MAR.2015 19:34:14

Band :	LTE Band 2	Channel :	CH19193 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

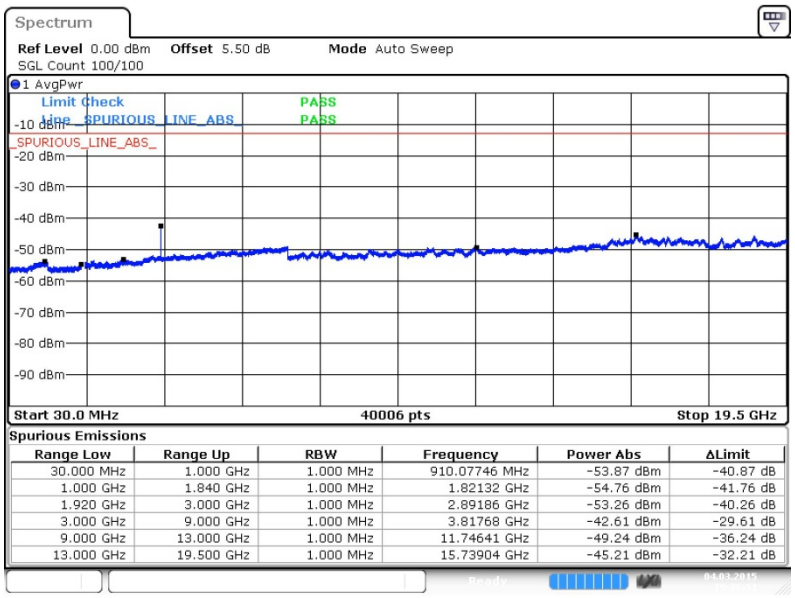


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	884.87006 MHz	-53.65 dBm	-40.65 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-54.99 dBm	-41.99 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97571 GHz	-52.98 dBm	-39.98 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81768 GHz	-41.11 dBm	-28.11 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.74291 GHz	-49.04 dBm	-36.04 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.72454 GHz	-45.27 dBm	-32.27 dB

Date: 4.MAR.2015 19:35:33

16QAM (RB Size 1, RB Offset 0)



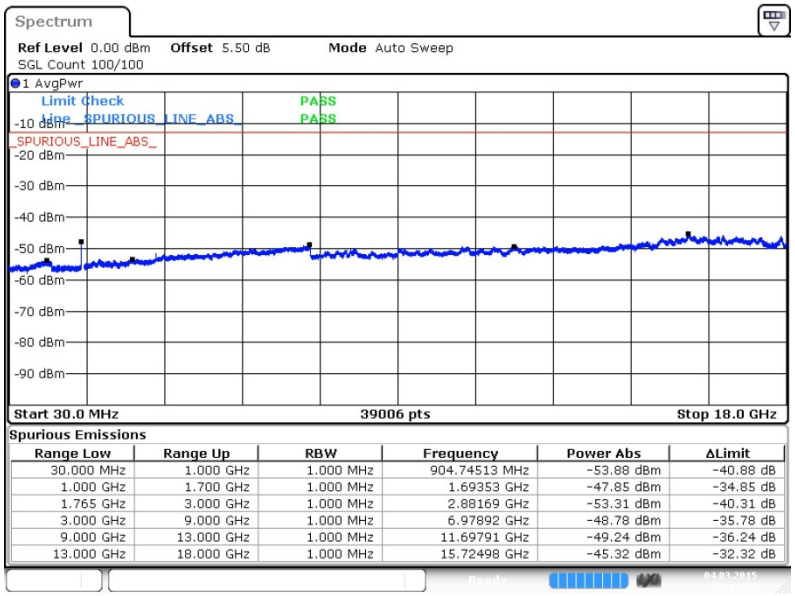
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	910.07746 MHz	-53.87 dBm	-40.87 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82132 GHz	-54.76 dBm	-41.76 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.89186 GHz	-53.26 dBm	-40.26 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81768 GHz	-42.61 dBm	-29.61 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.74641 GHz	-49.24 dBm	-36.24 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.73904 GHz	-45.21 dBm	-32.21 dB

Date: 4.MAR.2015 19:36:51

Band :	LTE Band 4	**Channel :**	CH20000 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

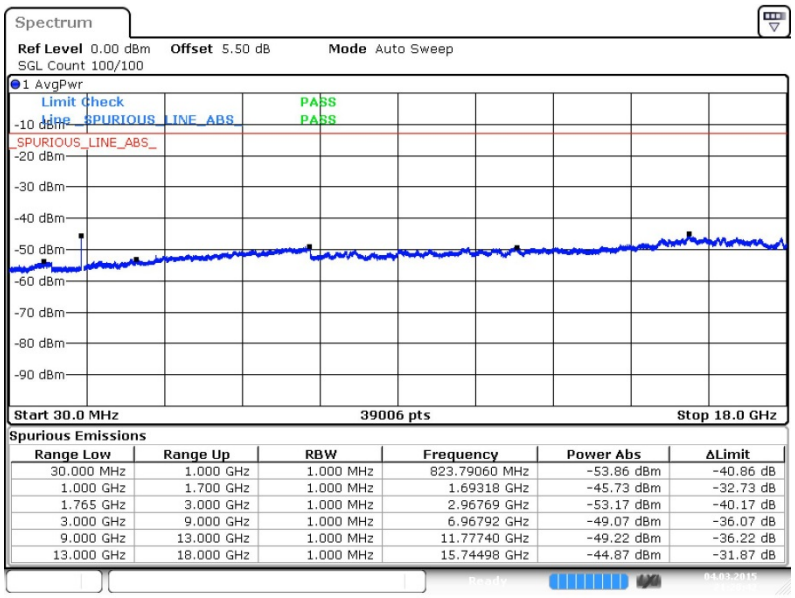


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	904.74513 MHz	-53.88 dBm	-40.88 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69353 GHz	-47.85 dBm	-34.85 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.88169 GHz	-53.31 dBm	-40.31 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.97892 GHz	-48.78 dBm	-35.78 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.69791 GHz	-49.24 dBm	-36.24 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.72498 GHz	-45.32 dBm	-32.32 dB

Date: 4.MAR.2015 21:19:55

16QAM (RB Size 1, RB Offset 0)



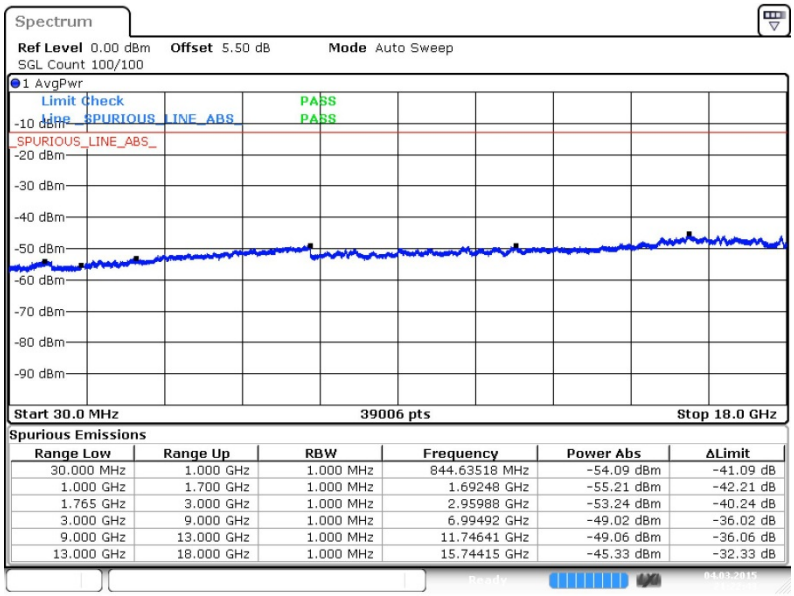
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	823.79060 MHz	-53.86 dBm	-40.86 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69318 GHz	-45.73 dBm	-32.73 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.96769 GHz	-53.17 dBm	-40.17 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.96792 GHz	-49.07 dBm	-36.07 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.77740 GHz	-49.22 dBm	-36.22 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.74498 GHz	-44.87 dBm	-31.87 dB

Date: 4.MAR.2015 21:20:42

Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

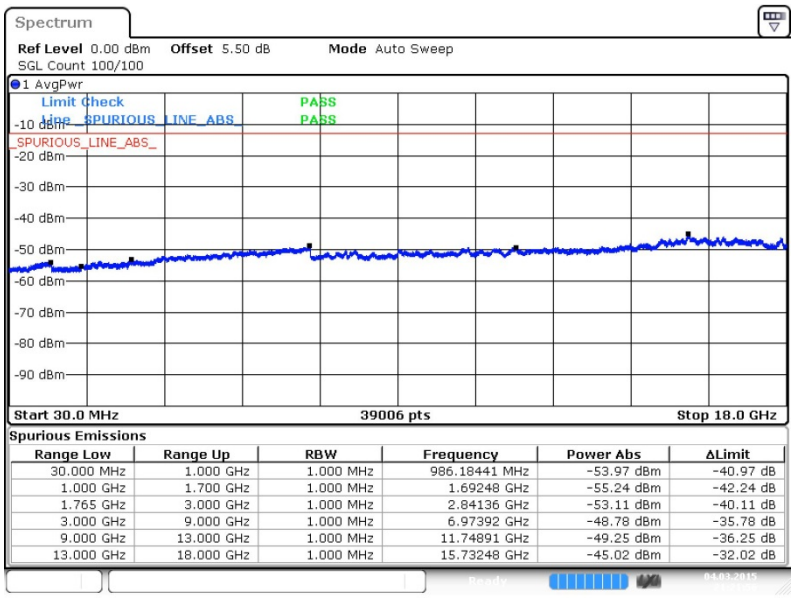


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	844.63518 MHz	-54.09 dBm	-41.09 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69248 GHz	-55.21 dBm	-42.21 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.95988 GHz	-53.24 dBm	-40.24 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99492 GHz	-49.02 dBm	-36.02 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.74641 GHz	-49.06 dBm	-36.06 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.74415 GHz	-45.33 dBm	-32.33 dB

Date: 4.MAR.2015 21:22:43

16QAM (RB Size 1, RB Offset 0)



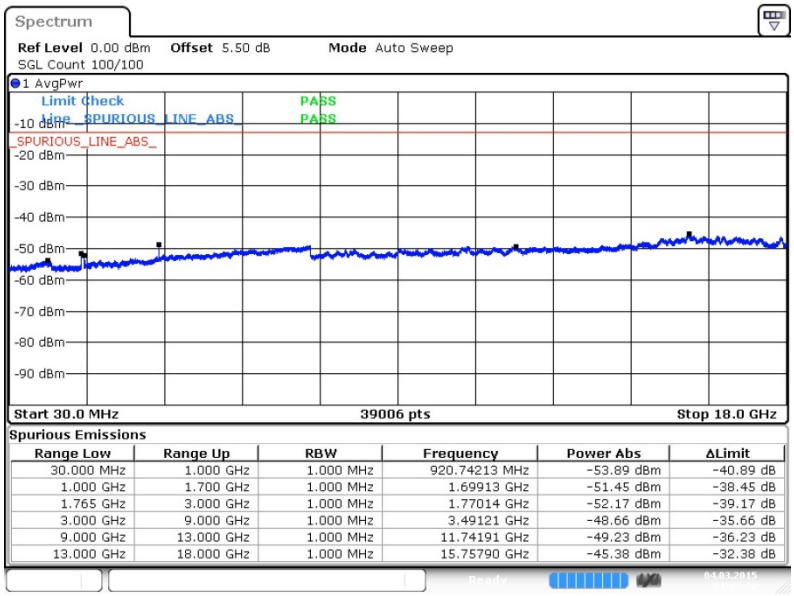
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	986.18441 MHz	-53.97 dBm	-40.97 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69248 GHz	-55.24 dBm	-42.24 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.84136 GHz	-53.11 dBm	-40.11 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.97392 GHz	-48.78 dBm	-35.78 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.74891 GHz	-49.25 dBm	-36.25 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.73248 GHz	-45.02 dBm	-32.02 dB

Date: 4.MAR.2015 21:21:57

Band :	LTE Band 4	Channel :	CH20350 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

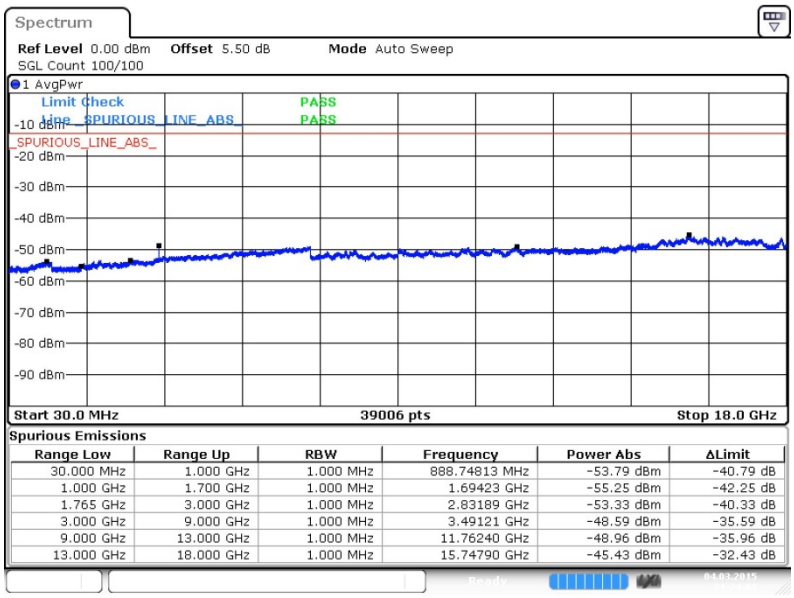


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	920.74213 MHz	-53.89 dBm	-40.89 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69913 GHz	-51.45 dBm	-38.45 dB
1.765 GHz	3.000 GHz	1.000 MHz	1.77014 GHz	-52.17 dBm	-39.17 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.49121 GHz	-48.66 dBm	-35.66 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.74191 GHz	-49.23 dBm	-36.23 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.75790 GHz	-45.38 dBm	-32.38 dB

Date: 4.MAR.2015 21:23:26

16QAM (RB Size 1, RB Offset 0)



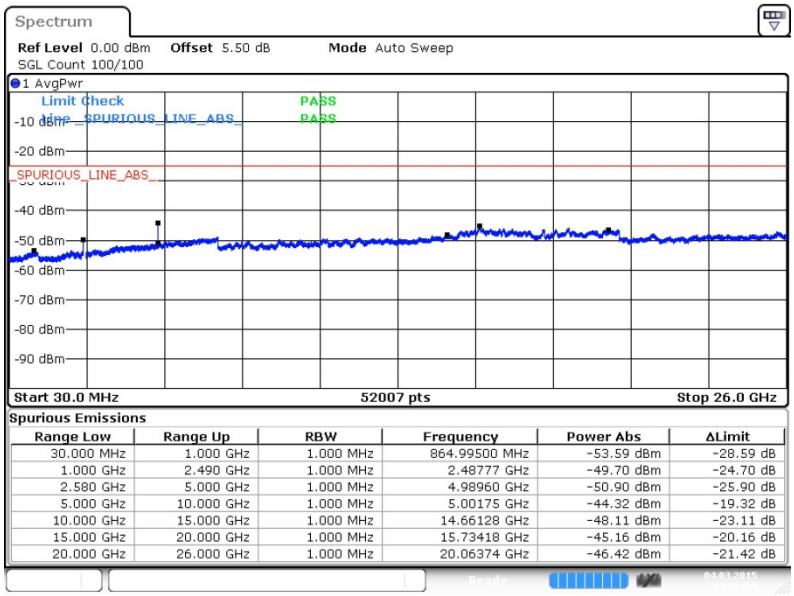
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	888.74813 MHz	-53.79 dBm	-40.79 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69423 GHz	-55.25 dBm	-42.25 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.83189 GHz	-53.33 dBm	-40.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.49121 GHz	-48.59 dBm	-35.59 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.76240 GHz	-48.96 dBm	-35.96 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.74790 GHz	-45.43 dBm	-32.43 dB

Date: 4.MAR.2015 21:24:03

Band :	LTE Band 7	Channel :	CH20825 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

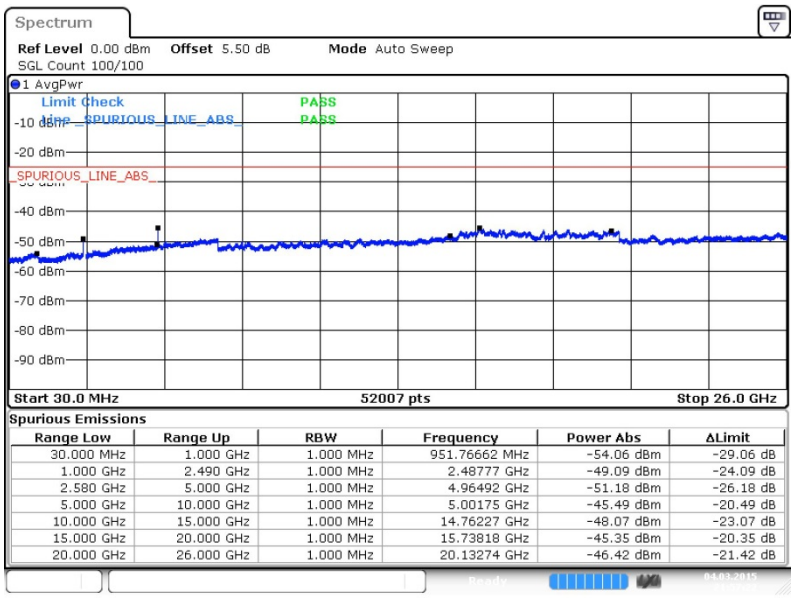


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	864.99500 MHz	-53.59 dBm	-28.59 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48777 GHz	-49.70 dBm	-24.70 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98960 GHz	-50.90 dBm	-25.90 dB
5.000 GHz	10.000 GHz	1.000 MHz	5.00175 GHz	-44.32 dBm	-19.32 dB
10.000 GHz	15.000 GHz	1.000 MHz	14.66128 GHz	-48.11 dBm	-23.11 dB
15.000 GHz	20.000 GHz	1.000 MHz	15.73418 GHz	-45.16 dBm	-20.16 dB
20.000 GHz	26.000 GHz	1.000 MHz	20.06374 GHz	-46.42 dBm	-21.42 dB

Date: 4.MAR.2015 21:56:03

16QAM (RB Size 1, RB Offset 0)



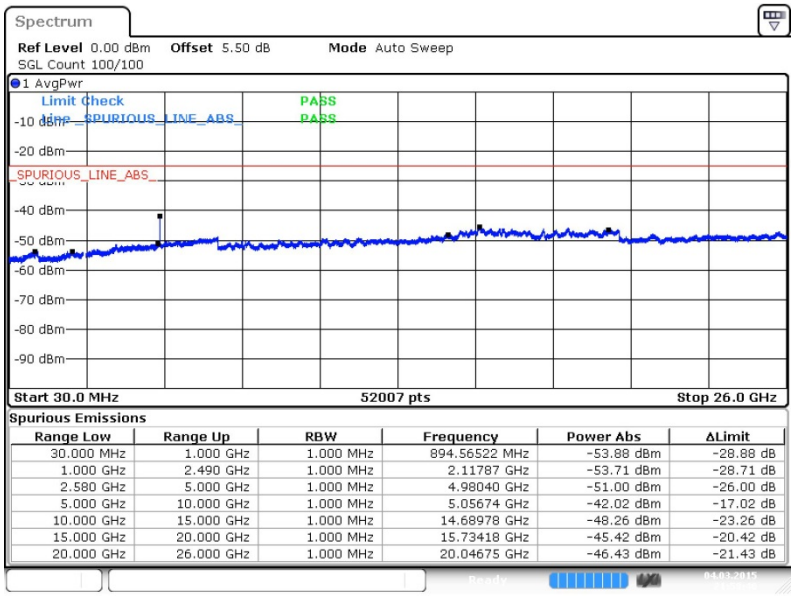
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.76662 MHz	-54.06 dBm	-29.06 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48777 GHz	-49.09 dBm	-24.09 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.96492 GHz	-51.18 dBm	-26.18 dB
5.000 GHz	10.000 GHz	1.000 MHz	5.00175 GHz	-45.49 dBm	-20.49 dB
10.000 GHz	15.000 GHz	1.000 MHz	14.76227 GHz	-48.07 dBm	-23.07 dB
15.000 GHz	20.000 GHz	1.000 MHz	15.73818 GHz	-45.35 dBm	-20.35 dB
20.000 GHz	26.000 GHz	1.000 MHz	20.13274 GHz	-46.42 dBm	-21.42 dB

Date: 4.MAR.2015 21:57:21

Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

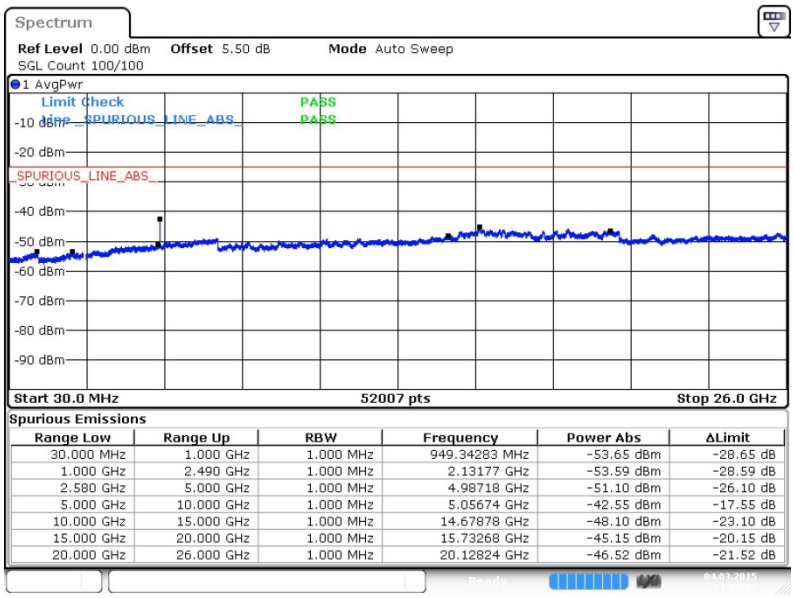


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	894.56522 MHz	-53.88 dBm	-28.88 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.11787 GHz	-53.71 dBm	-28.71 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98040 GHz	-51.00 dBm	-26.00 dB
5.000 GHz	10.000 GHz	1.000 MHz	5.05674 GHz	-42.02 dBm	-17.02 dB
10.000 GHz	15.000 GHz	1.000 MHz	14.68978 GHz	-48.26 dBm	-23.26 dB
15.000 GHz	20.000 GHz	1.000 MHz	15.73418 GHz	-45.42 dBm	-20.42 dB
20.000 GHz	26.000 GHz	1.000 MHz	20.04675 GHz	-46.43 dBm	-21.43 dB

Date: 4.MAR.2015 21:58:40

16QAM (RB Size 1, RB Offset 0)



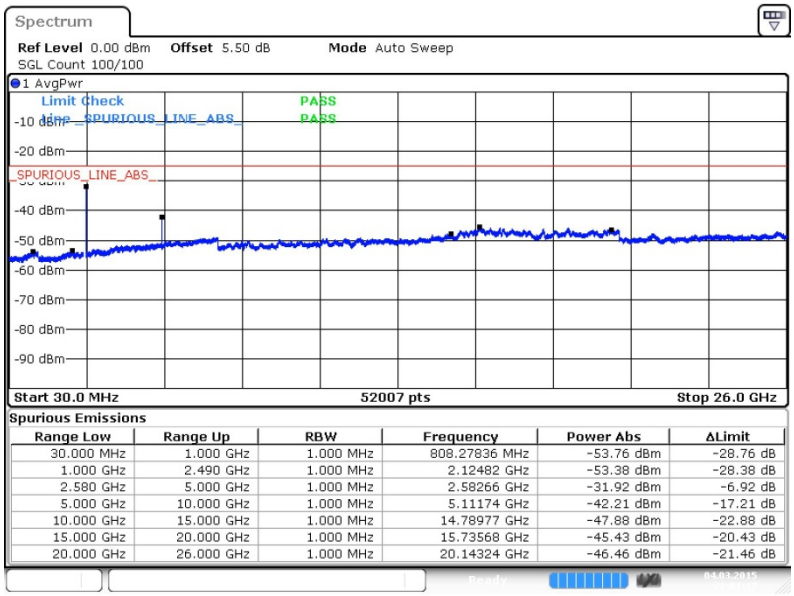
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	949.34283 MHz	-53.65 dBm	-28.65 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.13177 GHz	-53.59 dBm	-28.59 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98718 GHz	-51.10 dBm	-26.10 dB
5.000 GHz	10.000 GHz	1.000 MHz	5.05674 GHz	-42.55 dBm	-17.55 dB
10.000 GHz	15.000 GHz	1.000 MHz	14.67878 GHz	-48.10 dBm	-23.10 dB
15.000 GHz	20.000 GHz	1.000 MHz	15.73268 GHz	-45.15 dBm	-20.15 dB
20.000 GHz	26.000 GHz	1.000 MHz	20.12824 GHz	-46.52 dBm	-21.52 dB

Date: 4.MAR.2015 21:59:58

Band :	LTE Band 7	Channel :	CH21375 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

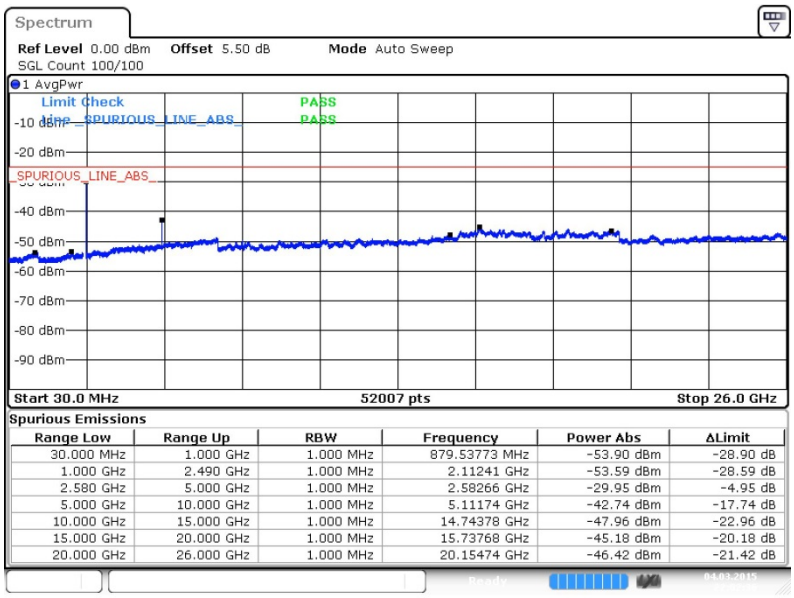


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	808.27836 MHz	-53.76 dBm	-28.76 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.12482 GHz	-53.38 dBm	-28.38 dB
2.580 GHz	5.000 GHz	1.000 MHz	2.58266 GHz	-31.92 dBm	-6.92 dB
5.000 GHz	10.000 GHz	1.000 MHz	5.11174 GHz	-42.21 dBm	-17.21 dB
10.000 GHz	15.000 GHz	1.000 MHz	14.78977 GHz	-47.88 dBm	-22.88 dB
15.000 GHz	20.000 GHz	1.000 MHz	15.73568 GHz	-45.43 dBm	-20.43 dB
20.000 GHz	26.000 GHz	1.000 MHz	20.14324 GHz	-46.46 dBm	-21.46 dB

Date: 4.MAR.2015 22:01:17

16QAM (RB Size 1, RB Offset 0)



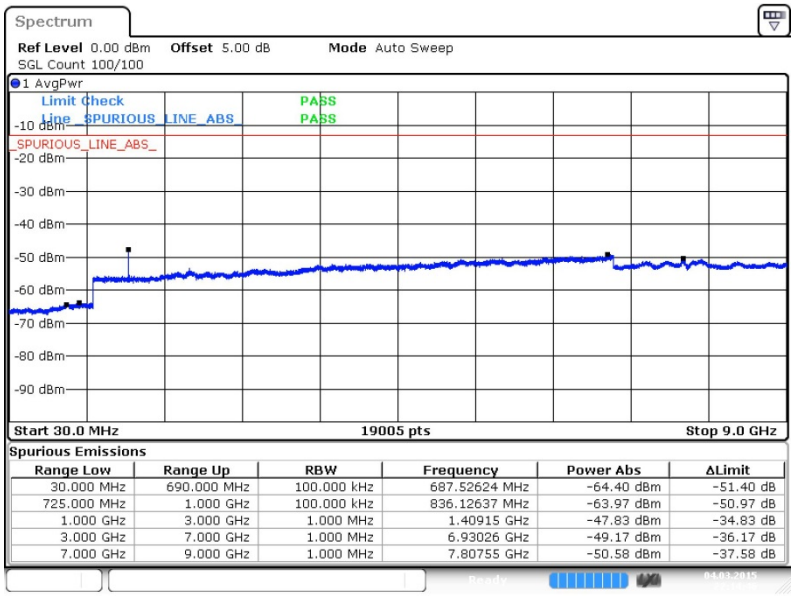
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	879.53773 MHz	-53.90 dBm	-28.90 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.11241 GHz	-53.59 dBm	-28.59 dB
2.580 GHz	5.000 GHz	1.000 MHz	2.58266 GHz	-29.95 dBm	-4.95 dB
5.000 GHz	10.000 GHz	1.000 MHz	5.11174 GHz	-42.74 dBm	-17.74 dB
10.000 GHz	15.000 GHz	1.000 MHz	14.74378 GHz	-47.96 dBm	-22.96 dB
15.000 GHz	20.000 GHz	1.000 MHz	15.73768 GHz	-45.18 dBm	-20.18 dB
20.000 GHz	26.000 GHz	1.000 MHz	20.15474 GHz	-46.42 dBm	-21.42 dB

Date: 4.MAR.2015 22:02:36

Band :	LTE Band 17	Channel :	CH23755 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

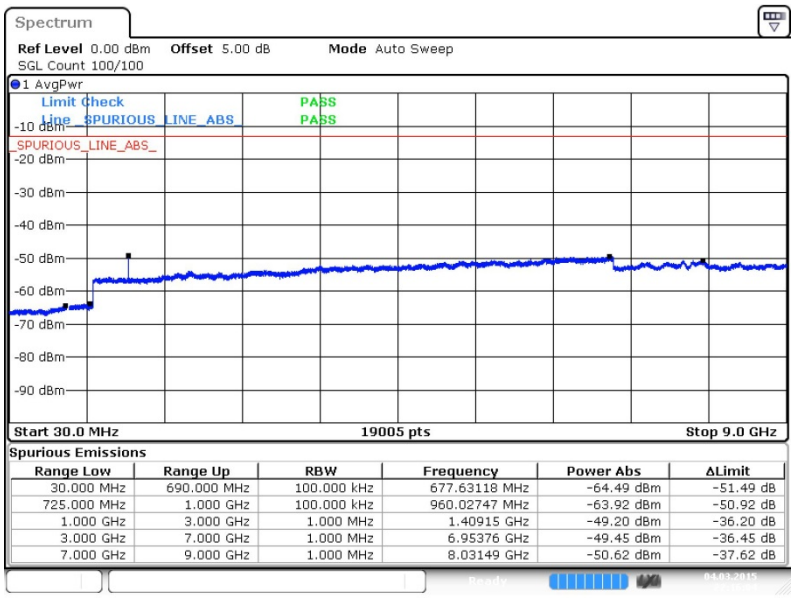


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	687.52624 MHz	-64.40 dBm	-51.40 dB
725.000 MHz	1.000 GHz	100.000 kHz	836.12637 MHz	-63.97 dBm	-50.97 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.40915 GHz	-47.83 dBm	-34.83 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93026 GHz	-49.17 dBm	-36.17 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.80755 GHz	-50.58 dBm	-37.58 dB

Date: 4.MAR.2015 22:14:47

16QAM (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	677.63118 MHz	-64.49 dBm	-51.49 dB
725.000 MHz	1.000 GHz	100.000 kHz	960.02747 MHz	-63.92 dBm	-50.92 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.40915 GHz	-49.20 dBm	-36.20 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95376 GHz	-49.45 dBm	-36.45 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.03149 GHz	-50.62 dBm	-37.62 dB

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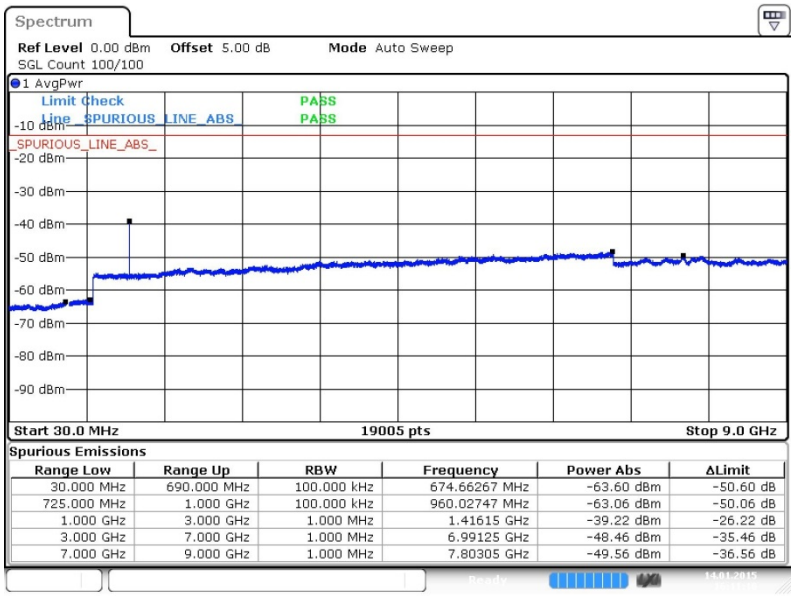
Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	674.66267 MHz	-63.60 dBm	-50.60 dB
725.000 MHz	1.000 GHz	100.000 kHz	960.02747 MHz	-63.06 dBm	-50.06 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.41615 GHz	-39.22 dBm	-26.22 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99125 GHz	-48.46 dBm	-35.46 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.80305 GHz	-49.56 dBm	-36.56 dB

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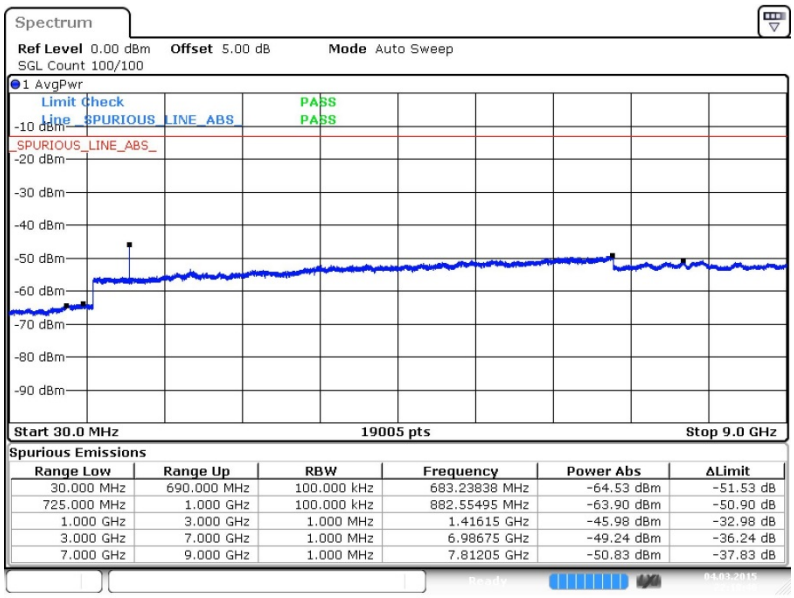
16QAM (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	683.23838 MHz	-64.53 dBm	-51.53 dB
725.000 MHz	1.000 GHz	100.000 kHz	882.55495 MHz	-63.90 dBm	-50.90 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.41615 GHz	-45.98 dBm	-32.98 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98675 GHz	-49.24 dBm	-36.24 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.81205 GHz	-50.83 dBm	-37.83 dB

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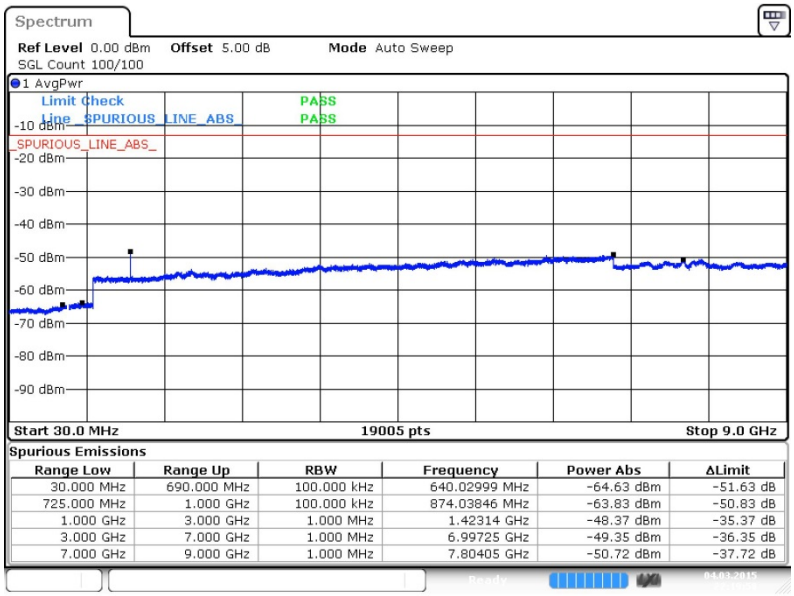
Band :	LTE Band 17	Channel :	CH23825 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	640.02999 MHz	-64.63 dBm	-51.63 dB
725.000 MHz	1.000 GHz	100.000 kHz	874.03846 MHz	-63.83 dBm	-50.83 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.42314 GHz	-48.37 dBm	-35.37 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99725 GHz	-49.35 dBm	-36.35 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.80405 GHz	-50.72 dBm	-37.72 dB

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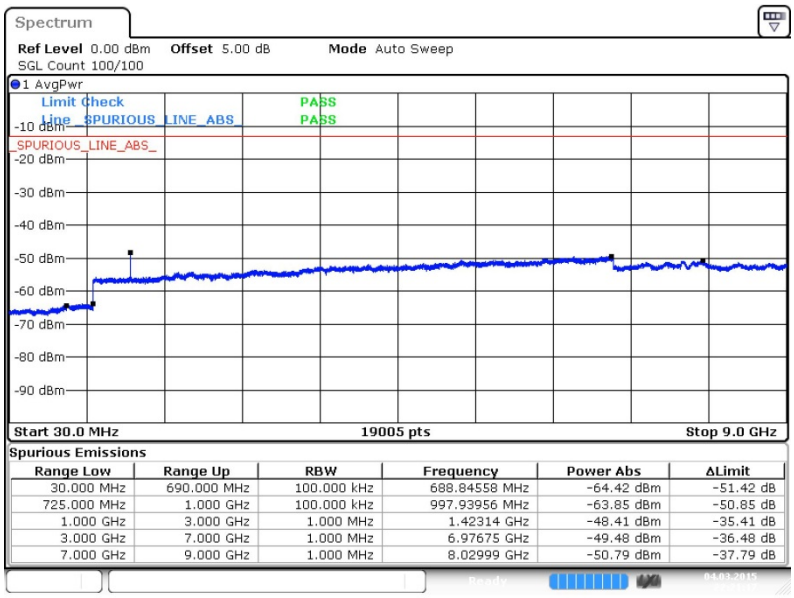
16QAM (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	688.84558 MHz	-64.42 dBm	-51.42 dB
725.000 MHz	1.000 GHz	100.000 kHz	997.93956 MHz	-63.85 dBm	-50.85 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.42314 GHz	-48.41 dBm	-35.41 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97675 GHz	-49.48 dBm	-36.48 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.02999 GHz	-50.79 dBm	-37.79 dB

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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, 2014	Mar. 04, 2015	May 03, 2015	Conducted (TH01-KS)