FCC RF Test Report

APPLICANT	:	CT Asia (HK) Ltd.
EQUIPMENT	:	3G Carphone
BRAND NAME	:	BLU
MODEL NAME	:	ZOEY 3G
FCC ID	:	YHLBLUZOEY3G
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Aug. 27, 2015 and testing was completed on Sep. 19, 2015. We, SPORTON INTERNATIONAL (SHENZHEN) 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 has been 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 (SHENZHEN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
2353

SPORTON INTERNATIONAL (SHENZHEN) INC.

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APPENDIX A. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG582709	Rev. 01	Initial issue of report	Sep. 24, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-132 (5.4) RSS-133 (6.4)	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	RSS-132 (5.4) RSS-133(6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§22.913(a)(2)	RSS-132(5.4) SRSP-503(5.1.3)	Effective Radiated Power	< 7 Watts	PASS	-
	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.4	§2.1049	RSS-GEN(6.6) RSS-133(2.3)	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Band Edge Measurement	< $43+10\log_{10}$(P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Conducted Spurious Emission	< $43+10\log_{10}$(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Field Strength of Spurious Radiation	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 4.57 dB at 3815.200 MHz
3.8	§2.1055 §22.355	RSS-GEN(6.11) RSS-132 (5.3)	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22 Within Authorized Band	PASS	-
	§2.1055 §24.235	RSS-GEN(6.11) RSS-133 (6.3)				

1 General Description

1.1 Applicant

CT Asia (HK) Ltd.
Unit1309-11, 13th Floor 9 Wing Hong Street Cheung Sha Wan Kowloon, Hong Kong

1.2 Manufacturer

CT Asia (HK) Ltd.
Unit1309-11, 13th Floor 9 Wing Hong Street Cheung Sha Wan Kowloon, Hong Kong

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	3G Carphone
Brand Name	BLU
Model Name	ZOEY 3G
FCC ID	YHLBLUZOEY3G
EUT supports Radios application	GSM/GPRS/EGPRS(Downlink Only)//WCDMA/HSPA Bluetooth v2.1+EDR
IMEI Code	Conducted: 352273017386340/352751013152270 Radiation: 866313028488906/866313028488914
HW Version	3703-V0.1
SW Version	3703_01B_CFZZ_BLU_QQVGA_Y18_BT_FM_SC_V01_20150819_1314
EUT Stage	Pre-Production

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	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 31.83 dBm GSM1900 : 29.02 dBm WCDMA Band V : 22.32 dBm WCDMA Band II : 22.51 dBm
Antenna Type	PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK(Downlink Only) WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (ppm)	Emission Designator
Part 22	GSM850 GSM	GMSK	0.3819	0.0861 ppm	246KGXW
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.0369	0.0275 ppm	4M10F9W
Part 24	GSM1900 GSM	GMSK	1.2050	0.0372 ppm	245KGXW
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.2661	0.0229 ppm	4M11F9W

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	1F & 2F,Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
Test Site No.	**Sporton Site No.**	
	TH01-SZ	

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	**Sporton Site No.**	**FCC/IC Registration No.**
	03CH01-SZ	831040/4086F

Note: The test site complies with ANSI C63.4 2009 requirement.

1.8 Applicable Standards

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

- FCC 47 CFR Part 2, 22(H), 24(E)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- IC RSS-132 Issue 3
- IC RSS-133 Issue 6
- IC RSS-Gen Issue 4

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 were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

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

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 10th harmonic for GSM850 and WCDMA Band V.
2. 30 MHz to 10th harmonic for GSM1900 and WCDMA Band II.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
GSM 850	■ GSM Link	■ GSM Link
GSM 1900	■ GSM Link	■ GSM Link
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

Conducted Power Measurement Results:

SIM 1

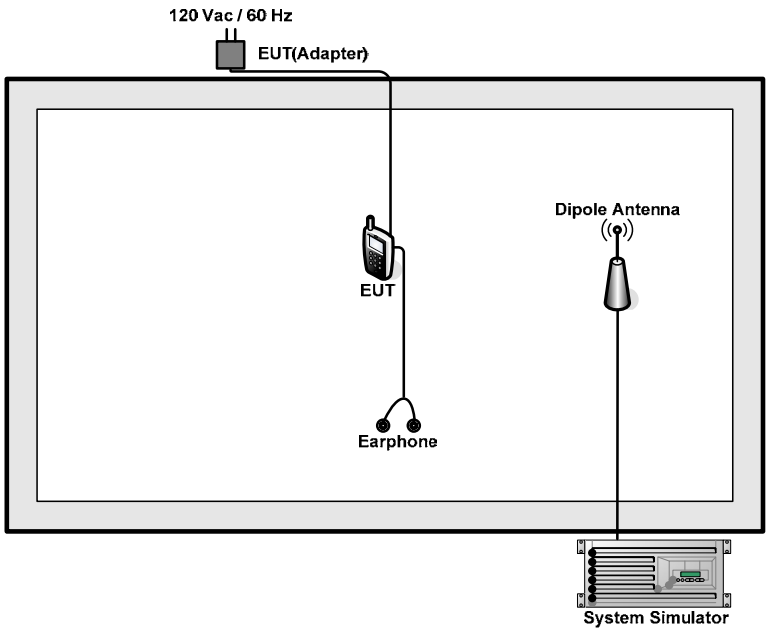
Conducted Power (*Unit: dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM	31.82	31.68	**31.83**	28.97	29.00	**29.02**
GPRS class 8	31.78	31.65	31.79	28.95	28.97	28.98
GPRS class 10	29.81	29.90	29.94	28.07	28.10	28.29
GPRS class 11	28.88	28.99	29.04	26.42	26.45	26.61
GPRS class 12	26.96	27.02	27.08	23.81	23.83	24.04

Conducted Power (*Unit: dBm)						
Band	**WCDMA Band V**			**WCDMA Band II**		
Channel	**4132**	**4182**	**4233**	**9262**	**9400**	**9538**
Frequency	**826.4**	**836.4**	**846.6**	**1852.4**	**1880.0**	**1907.6**
AMR 12.2K	22.20	22.08	22.30	22.40	22.00	22.50
RMC 12.2K	22.22	22.10	**22.32**	22.42	22.02	**22.51**
HSDPA Subtest-1	21.63	22.03	21.48	20.83	21.11	21.36
HSDPA Subtest-2	21.58	22.03	21.59	20.82	21.17	21.51
HSDPA Subtest-3	21.59	22.10	21.60	20.83	21.22	21.57
HSDPA Subtest-4	21.52	22.04	21.56	20.79	21.19	21.54
HSUPA Subtest-1	20.86	20.40	20.37	19.73	19.99	20.12
HSUPA Subtest-2	18.80	19.15	19.10	18.52	18.85	19.08
HSUPA Subtest-3	20.12	20.46	20.40	19.75	20.07	20.37
HSUPA Subtest-4	19.56	19.94	19.85	19.23	19.58	19.88
HSUPA Subtest-5	21.40	21.80	21.70	21.00	21.30	21.60

SIM 2

Conducted Power (*Unit: dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM	31.78	31.67	**31.80**	28.96	28.95	**28.97**
GPRS class 8	31.71	31.66	31.75	28.94	28.90	28.95
GPRS class 10	29.79	29.87	29.93	28.06	28.09	28.28
GPRS class 11	28.87	28.97	29.03	26.41	26.44	26.60
GPRS class 12	26.95	27.00	27.06	23.80	23.82	24.03

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	TOPWORD	3303DR	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Lenovo	SH100	N/A	N/A	N/A

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 4.5 dB and a 10dB attenuator.

Example :

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

= 4.5 + 10 = 14.5 (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.

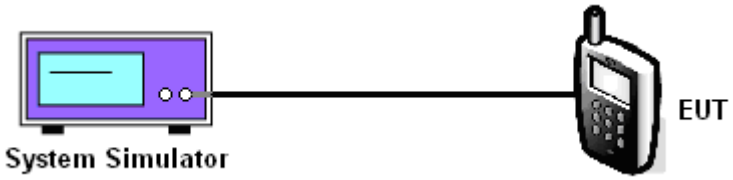
3.1.2 Measuring Instruments

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 the maximum burst average power for GSM and maximum average power for other modulation signal.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band						
Modes	GSM850 (GSM)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	31.82	31.68	31.83	22.22	22.10	22.32

PCS Band						
Modes	GSM1900 (GSM)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	28.97	29.00	29.02	22.42	22.02	22.51

Note: maximum burst average power for GSM, and maximum average power for WCDMA.

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

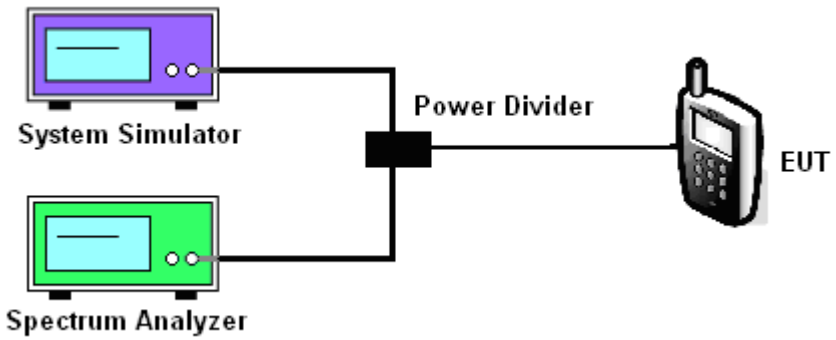
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. For GSM/EGPRS operating modes:
   a. Set EUT in maximum power output.
   b. Set the RBW = 1MHz, VBW = 3MHz, Peak detector on spectrum analyzer for first trace.
   c. Set the RBW = 1MHz, VBW = 3MHz, RMS detector on spectrum analyzer for second trace.
   d. The wanted burst signal is triggered by spectrum analyzer, and measured respectively the peak level and Mean level without burst-off time, after system simulator has synchronized with the spectrum analyzer.
4. For UMTS operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option on the spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

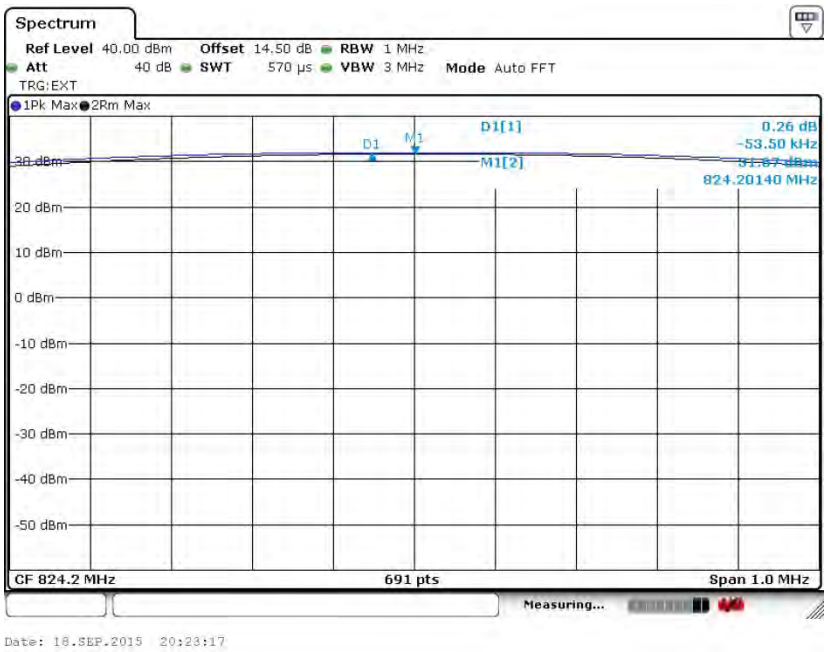
Cellular Band						
Modes	GSM850 (GSM)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.26	0.27	0.27	3.48	3.51	3.45

PCS Band						
Modes	GSM1900 (GSM)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.28	0.29	0.28	2.81	3.25	3.04

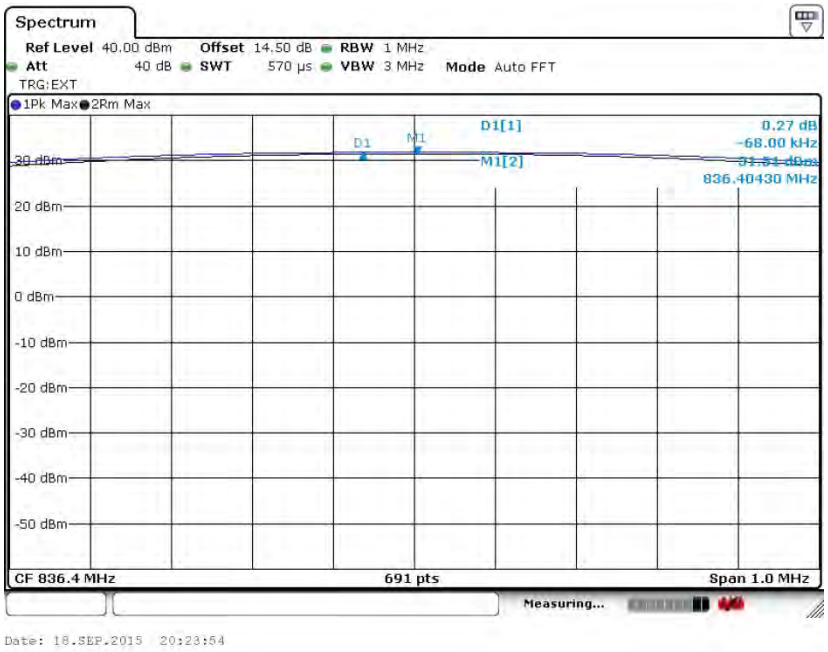
3.2.6 Test Result (Plots) of Peak-to-Average Ratio

Band :	GSM 850	Test Mode :	GSM Link (GMSK)

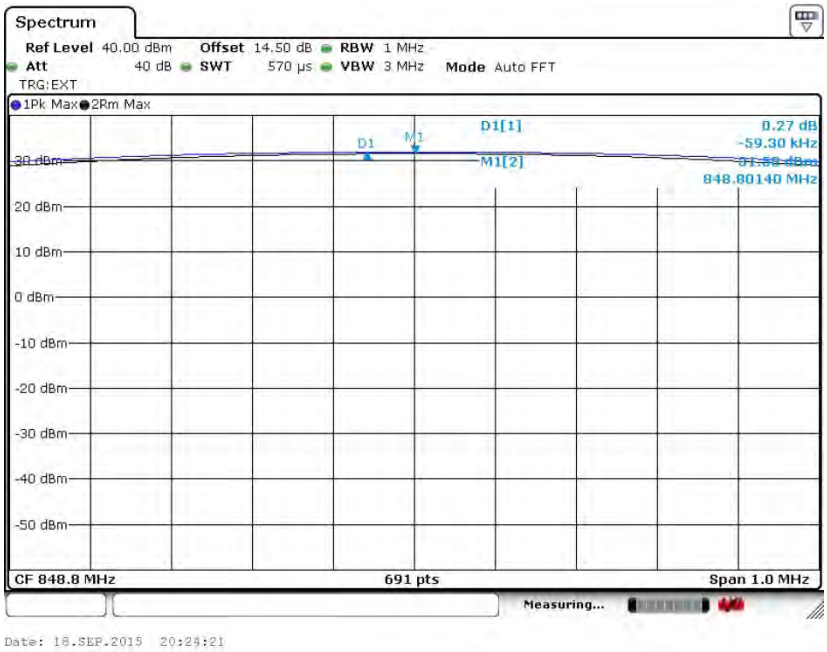
Peak-to-Average Ratio on Channel 128 (824.2 MHz)



Peak-to-Average Ratio on Channel 189 (836.4 MHz)

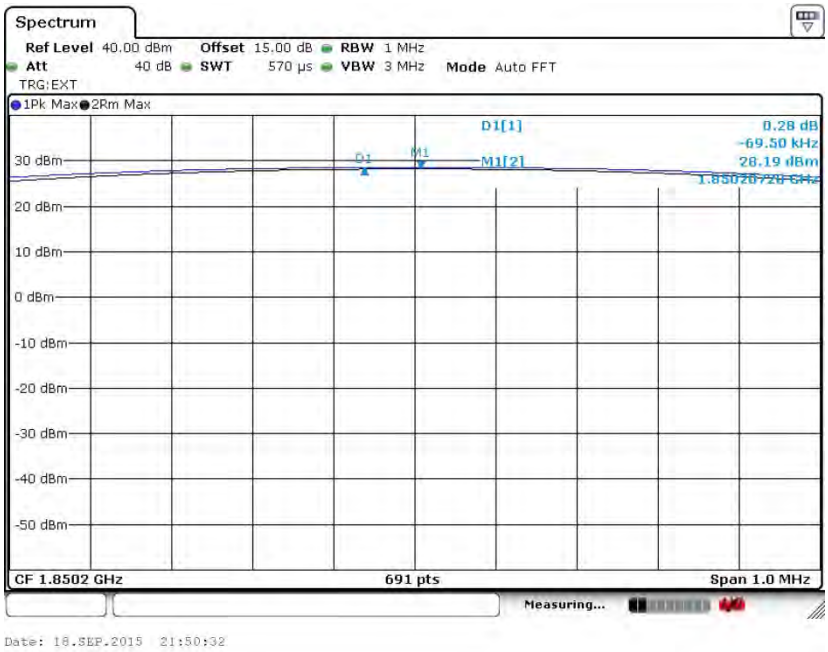


Peak-to-Average Ratio on Channel 251 (848.8 MHz)

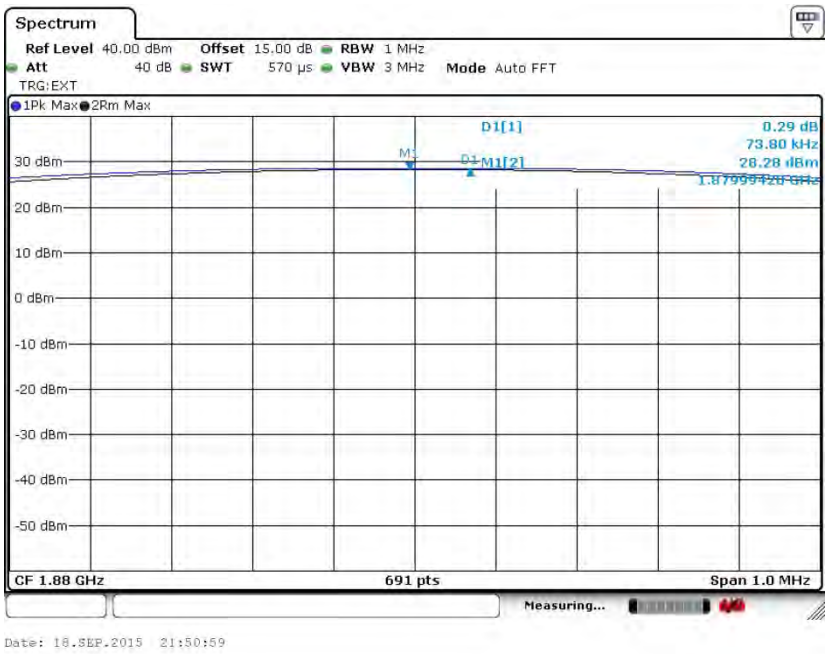


Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

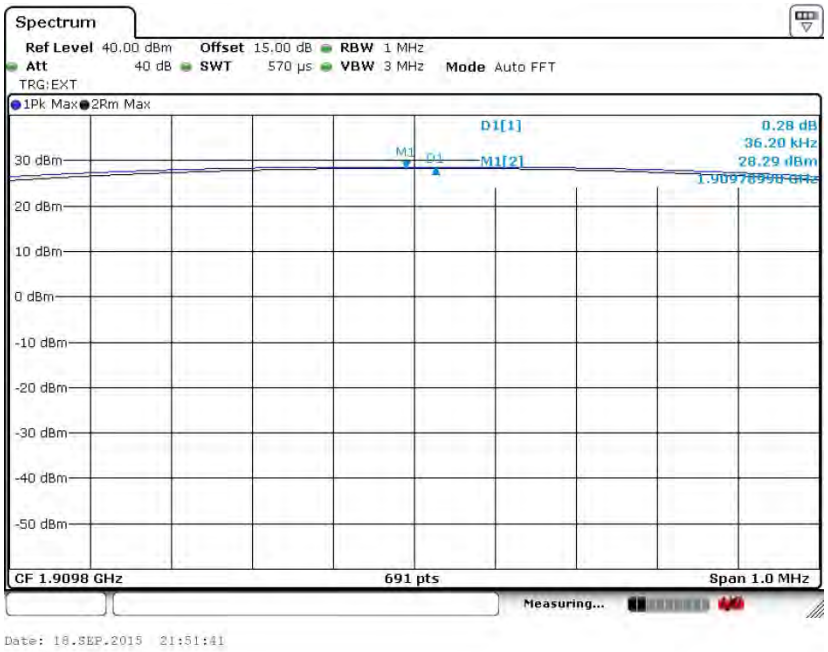
Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Peak-to-Average Ratio on Channel 661 (1880.0 MHz)

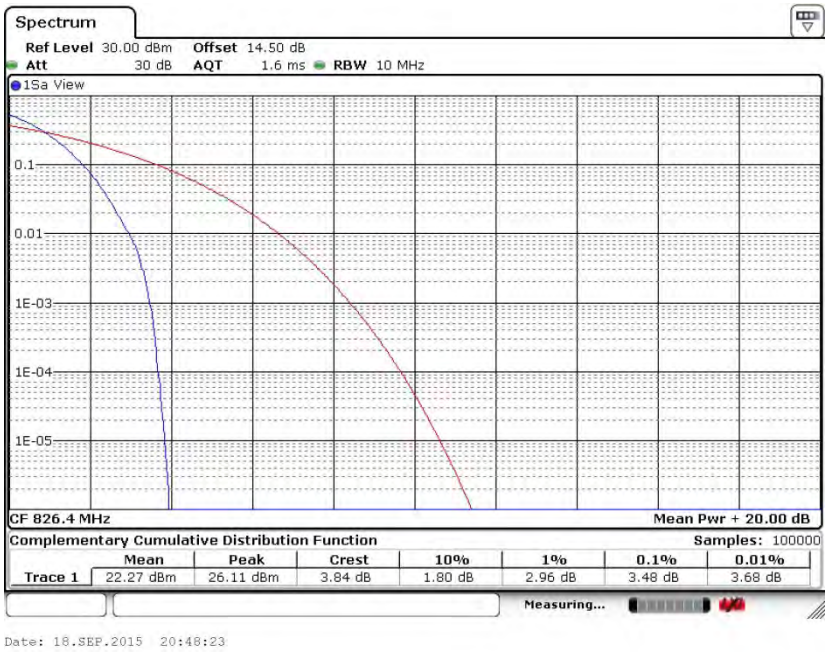


Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

Peak-to-Average Ratio on Channel 4132 (826.4 MHz)

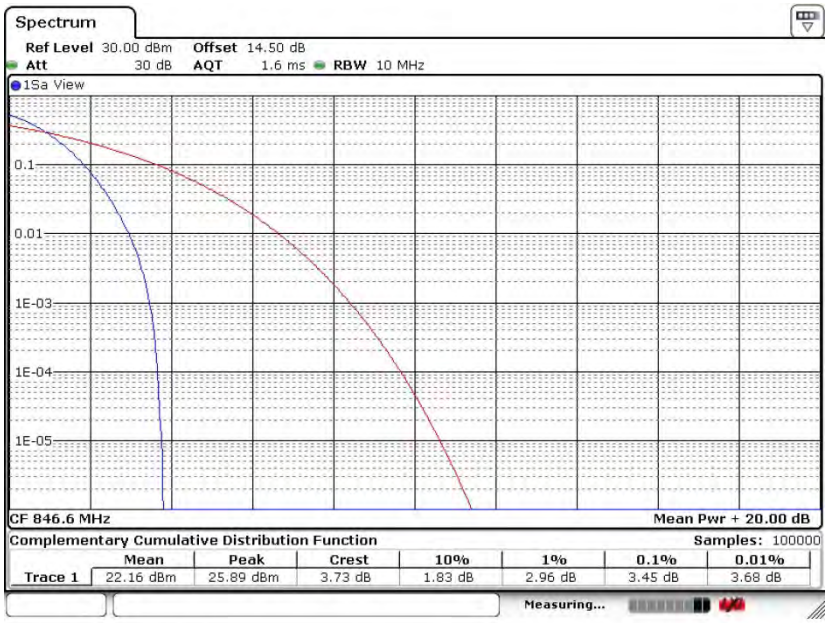


Date: 18.SEP.2015 20:48:23

Peak-to-Average Ratio on Channel 4182 (836.4 MHz)

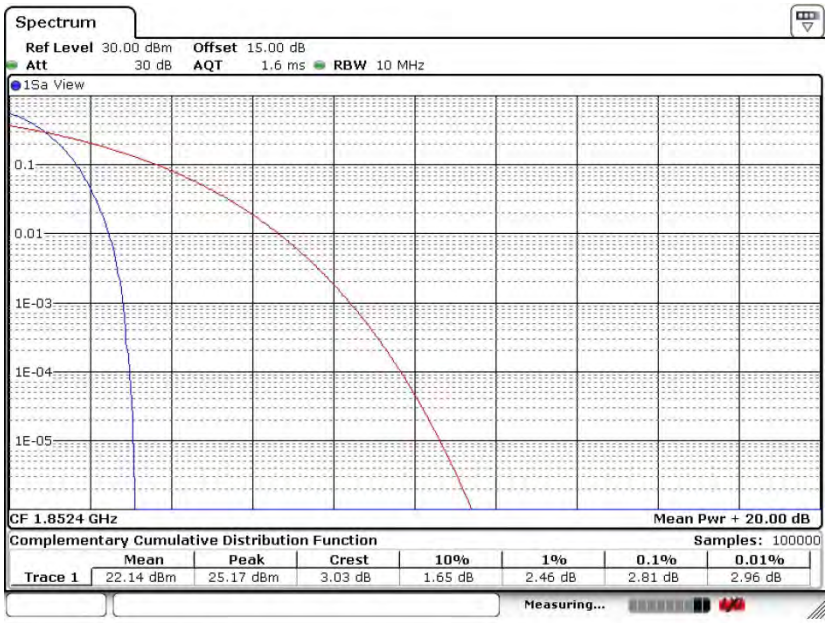
Date: 18.SEP.2015 20:48:46

Peak-to-Average Ratio on Channel 4233 (846.6 MHz)



Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)

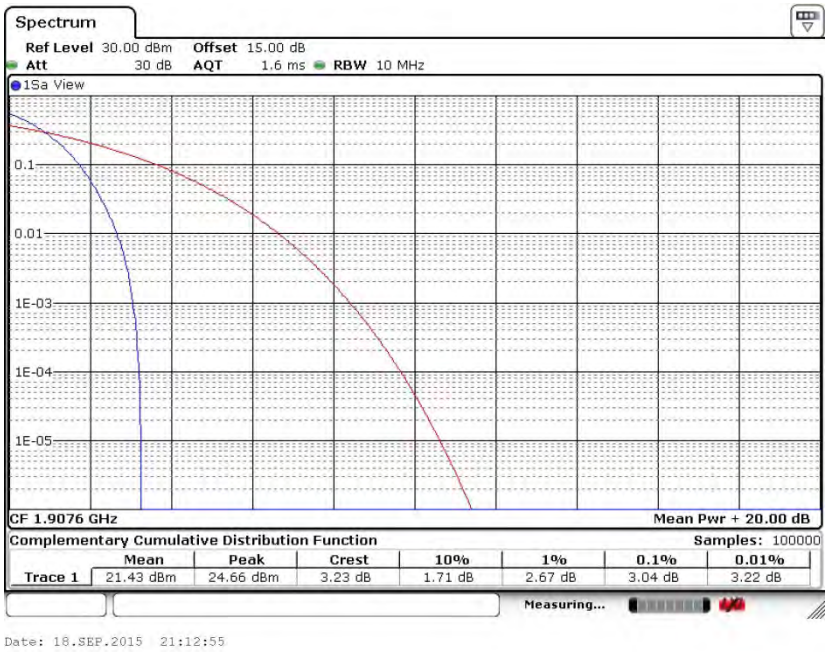


Date: 18.SEP.2015 21:12:02

Peak-to-Average Ratio on Channel 9400 (1880.0 MHz)

Date: 18.SEP.2015 21:12:23

Peak-to-Average Ratio on Channel 9538 (1907.6 MHz)



3.3 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-C-2004, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

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 testing follows FCC KDB 971168 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-C-2004 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP = LVL + Correction factor and ERP = EIRP - 2.15. Take the record of the output power at substitution antenna.

	GSM/GPRS/EDGE	WCDMA/HSPA
SPAN	500kHz	10MHz
RBW	10kHz	100kHz
VBW	30kHz	300kHz
Detector	RMS	RMS
Trace	Average	Average
Average Type	Power	Power
Sweep Count	100	100

3.3.4 Test Result of ERP

GSM850 (GSM) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.2	23.84	0.2421	23.57	0.2275
Middle	836.4	25.46	0.3516	25.35	0.3428
Highest	848.8	25.82	0.3819	24.95	0.3126
Limit	ERP < 7W	Result		PASS	

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	826.4	9.79	0.0095	12.96	0.0198
Middle	836.4	9.66	0.0092	13.04	0.0201
Highest	846.6	10.80	0.0120	15.67	0.0369
Limit	ERP < 7W	Result		PASS	

3.3.5 Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1850.2	30.43	1.1041	30.14	1.0328
Middle	1880.0	30.03	1.0069	29.93	0.9840
Highest	1909.8	30.81	1.2050	29.08	0.8091
Limit	EIRP < 2W	Result		PASS	

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1852.4	23.04	0.2014	22.34	0.1714
Middle	1880.0	24.25	0.2661	22.79	0.1901
Highest	1907.6	23.55	0.2265	22.50	0.1778
Limit	EIRP < 2W	Result		PASS	

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth 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.

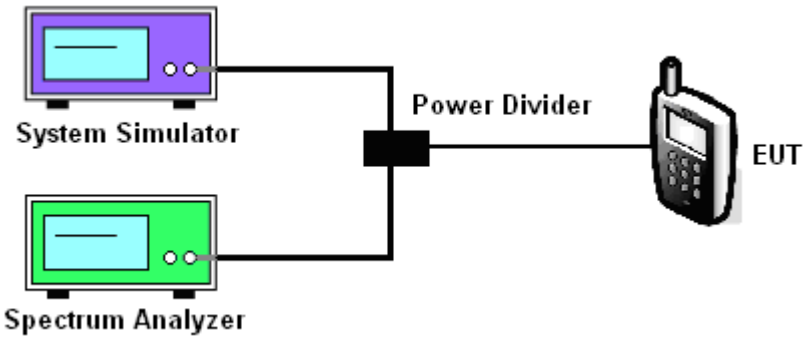
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.2.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of the 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 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, sample detector, trace maximum hold.
5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.

3.4.4 Test Setup



3.4.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

Cellular Band			
Modes	GSM850 (GSM)		
Channel	128 (Low)	189 (Mid)	251 (High)
Frequency (MHz)	824.2	836.4	848.8
99% OBW (kHz)	244.57	246.02	246.02
26dB BW (kHz)	316.90	316.90	318.40

PCS Band			
Modes	GSM1900 (GSM)		
Channel	512 (Low)	661 (Mid)	810 (High)
Frequency (MHz)	1850.2	1880	1909.8
99% OBW (kHz)	244.57	244.57	244.57
26dB BW (kHz)	318.40	318.40	315.50

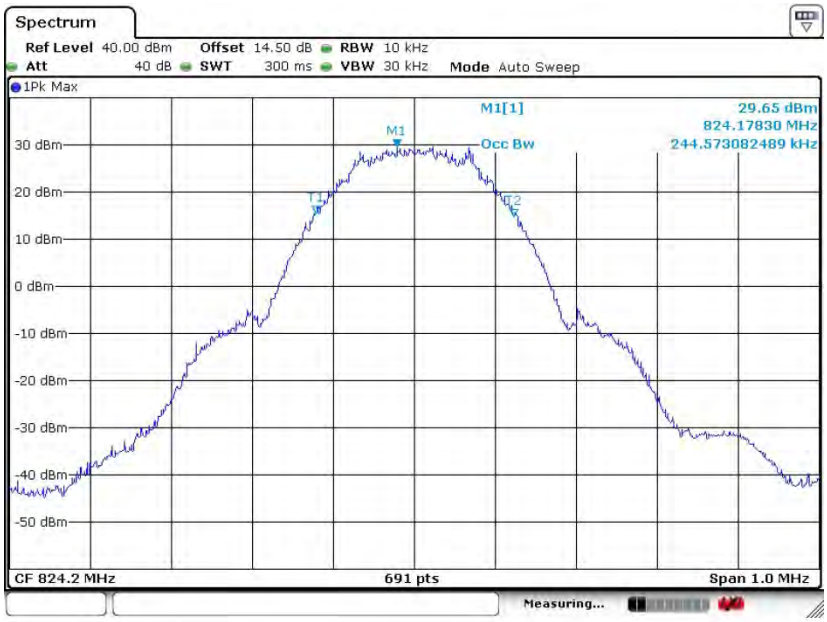
Cellular Band			
Modes	WCDMA Band V (RMC 12.2Kbps)		
Channel	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	826.4	836.4	846.6
99% OBW (MHz)	4.08	4.10	4.08
26dB BW (MHz)	4.66	4.66	4.65

PCS Band			
Modes	WCDMA Band II (RMC 12.2Kbps)		
Channel	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1852.4	1880	1907.6
99% OBW (MHz)	4.11	4.10	4.10
26dB BW (MHz)	4.66	4.67	4.66

3.4.6 Test Result (Plots) of Occupied Bandwidth and 26dB Bandwidth

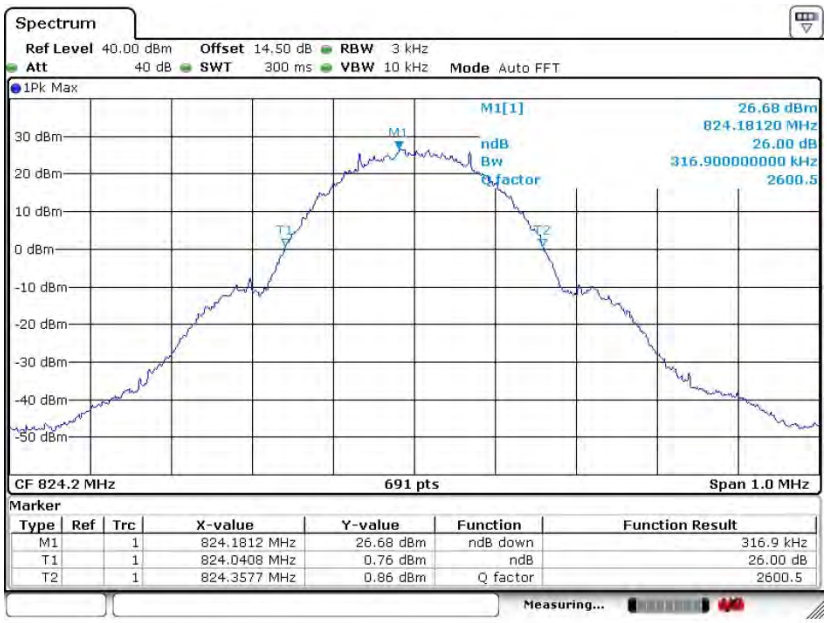
Band :	GSM 850	Test Mode :	GSM Link (GMSK)

99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 18.SEP.2015 20:12:51

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Marker

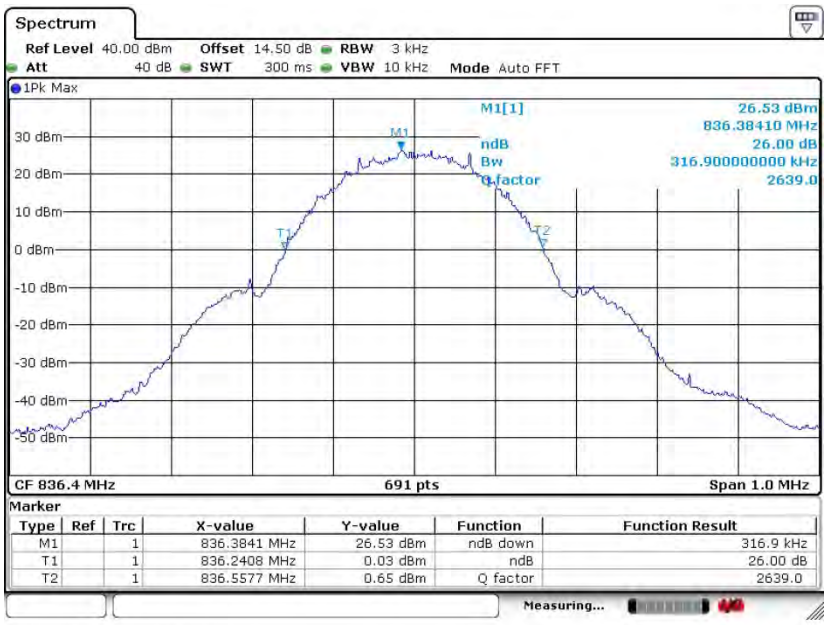
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	824.1812 MHz	26.68 dBm	ndB down	316.9 kHz
T1		1	824.0408 MHz	0.76 dBm	ndB	26.00 dB
T2		1	824.3577 MHz	0.86 dBm	Q factor	2600.5

Date: 18.SEP.2015 20:20:28

99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)

Date: 18.SEP.2015 20:14:47

26dB Bandwidth Plot on Channel 189 (836.4 MHz)

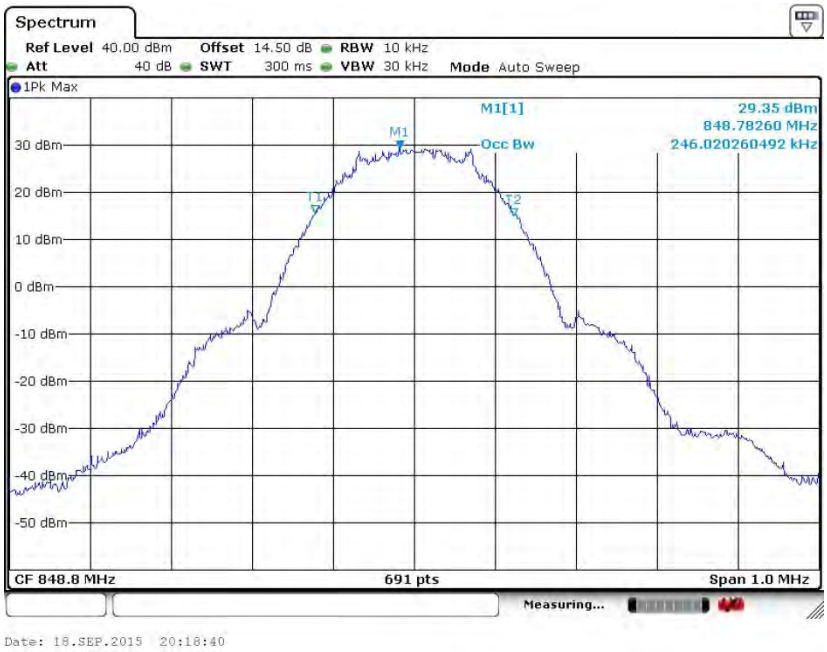


Marker

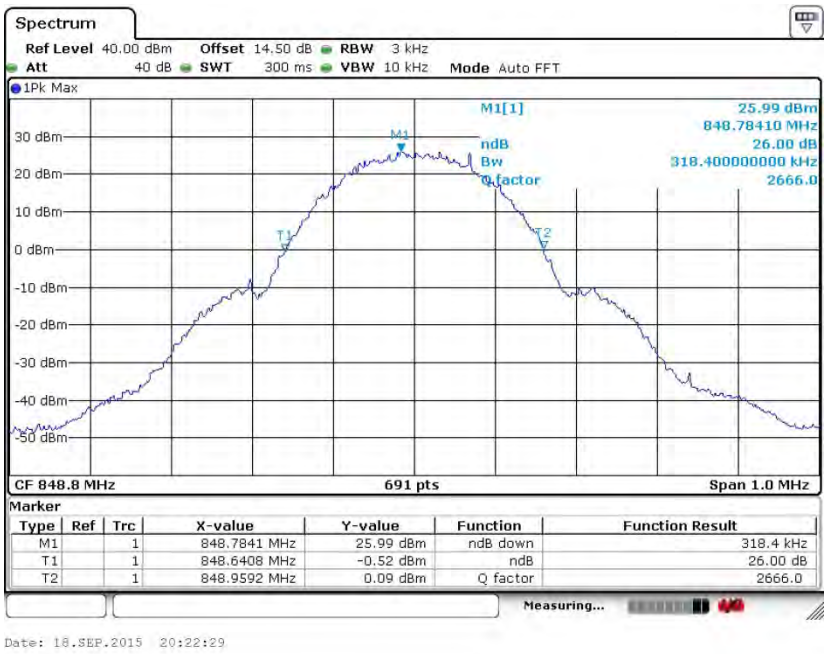
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	836.3841 MHz	26.53 dBm	ndB down	316.9 kHz
T1		1	836.2408 MHz	0.03 dBm	ndB	26.00 dB
T2		1	836.5577 MHz	0.65 dBm	Q factor	2639.0

Date: 18.SEP.2015 20:21:31

99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



26dB Bandwidth Plot on Channel 251 (848.8 MHz)

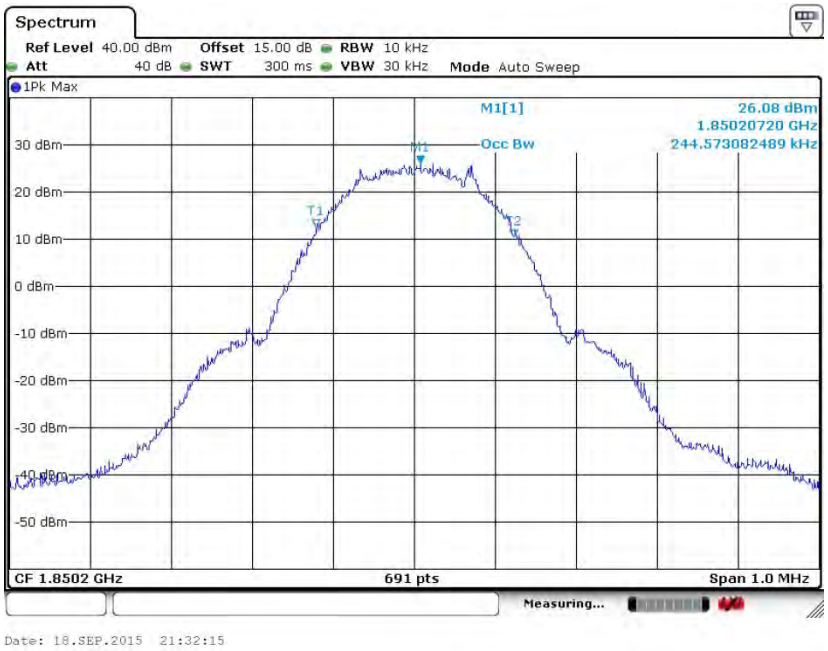


Marker

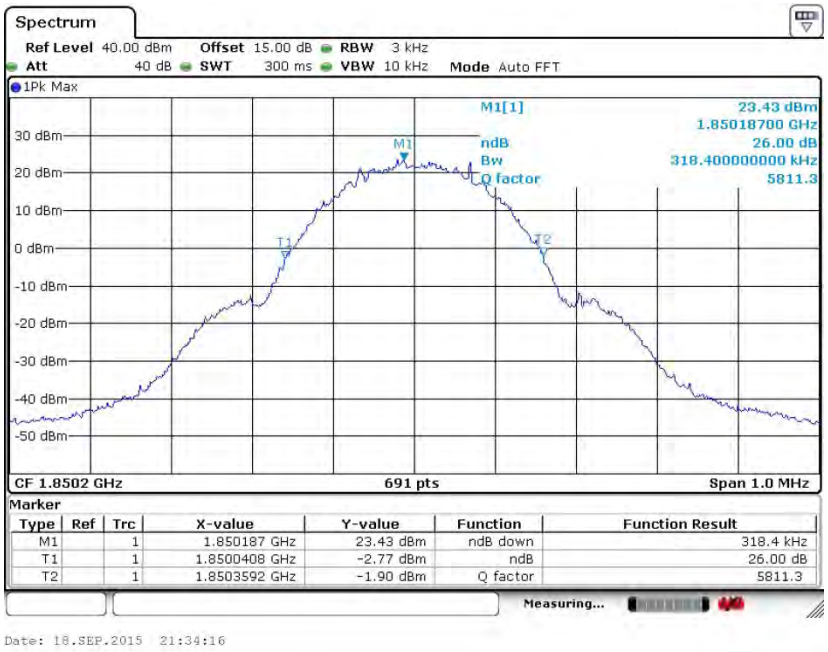
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	848.7841 MHz	25.99 dBm	ndB down	318.4 kHz
T1		1	848.6408 MHz	-0.52 dBm	ndB	26.00 dB
T2		1	848.9592 MHz	0.09 dBm	Q factor	2666.0

Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

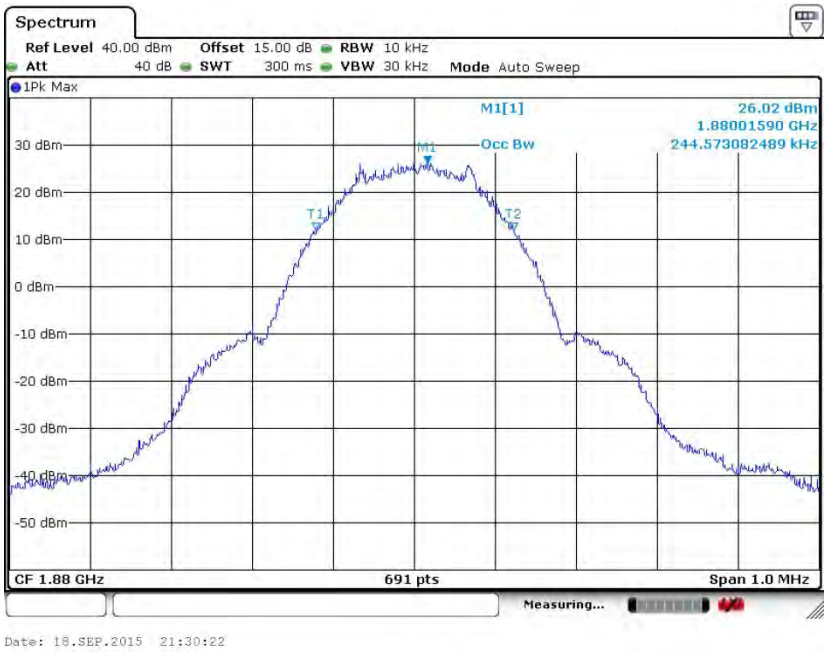
99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



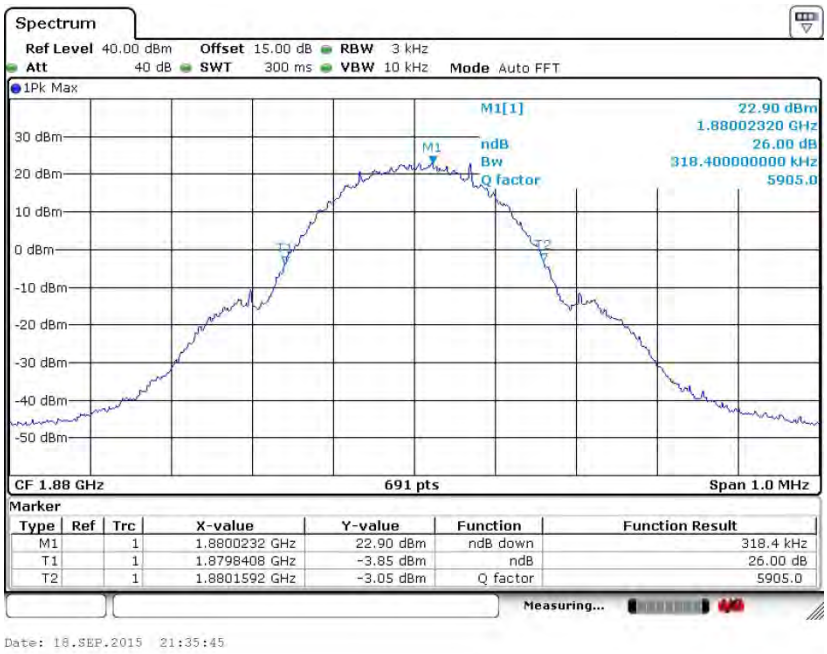
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



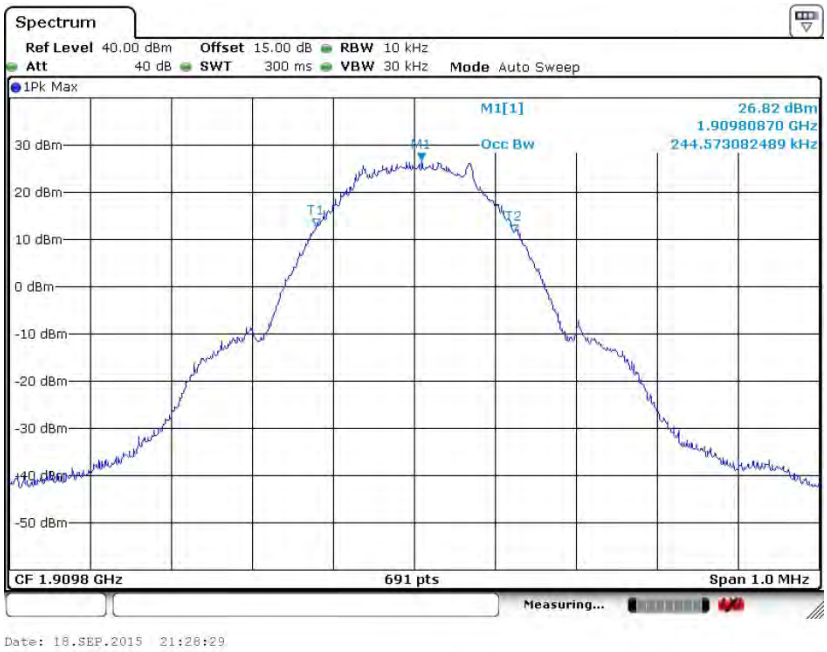
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



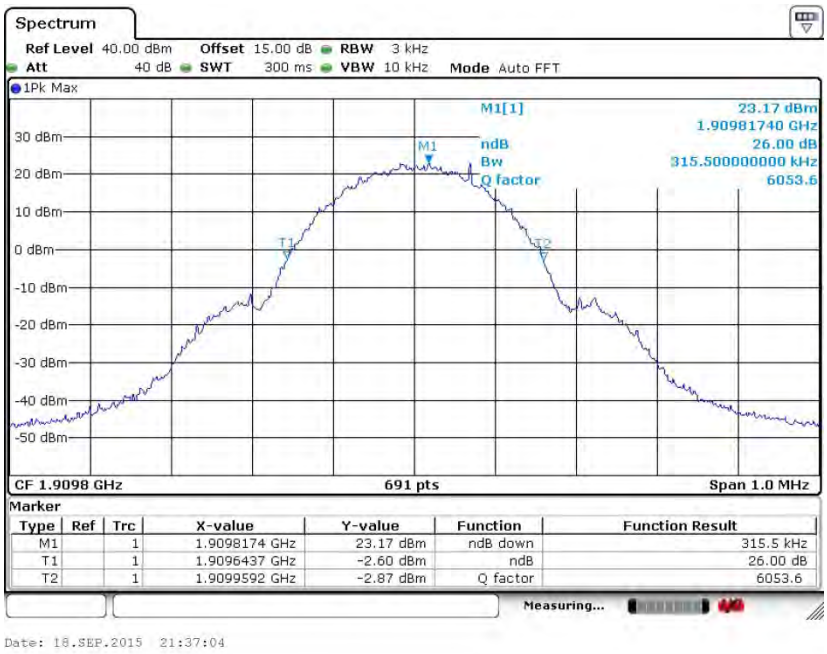
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8800232 GHz	22.90 dBm	ndB down	318.4 kHz
T1		1	1.8798408 GHz	-3.85 dBm	ndB	26.00 dB
T2		1	1.8801592 GHz	-3.05 dBm	Q factor	5905.0

99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

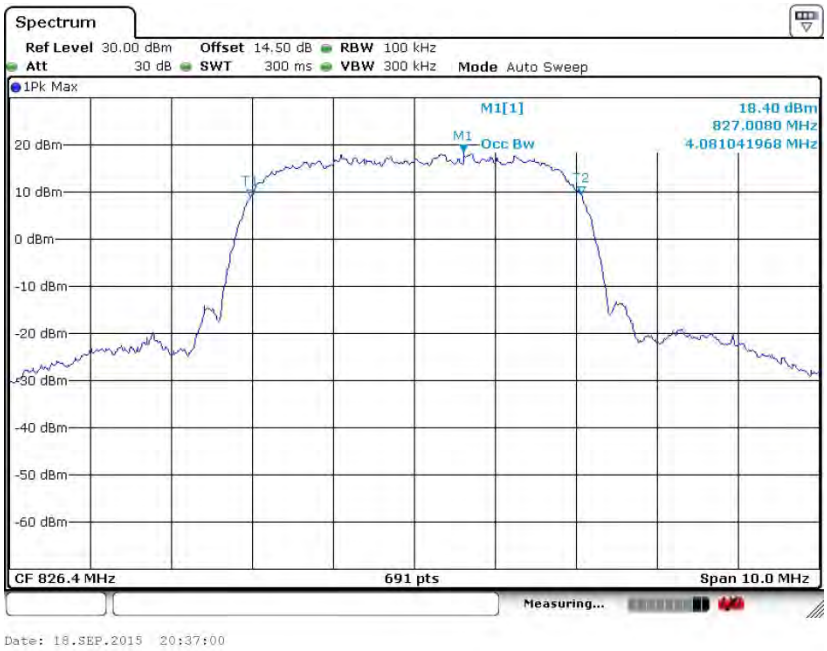


Marker

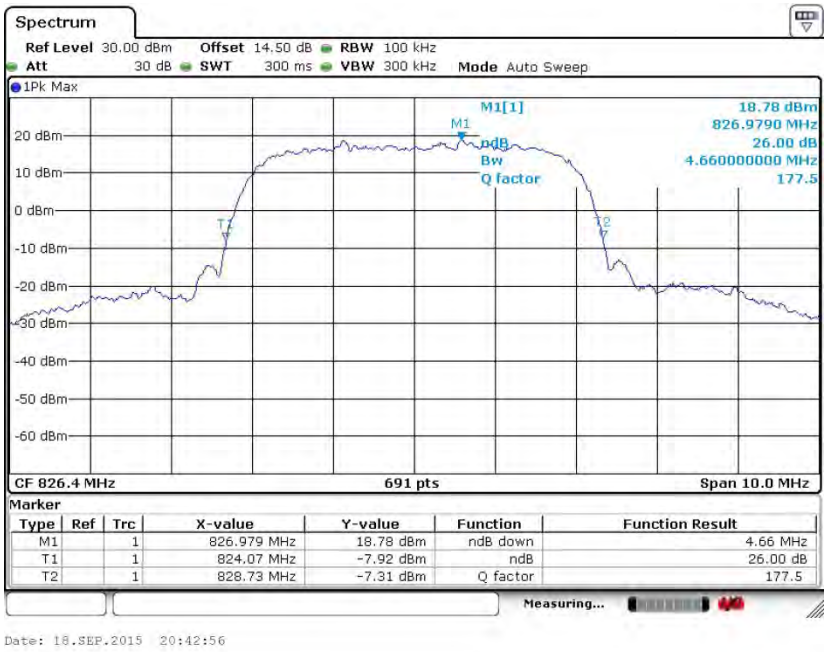
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9098174 GHz	23.17 dBm	ndB down	315.5 kHz
T1		1	1.9096437 GHz	-2.60 dBm	ndB	26.00 dB
T2		1	1.9099592 GHz	-2.87 dBm	Q factor	6053.6

Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)



26dB Bandwidth Plot on Channel 4132 (826.4 MHz)

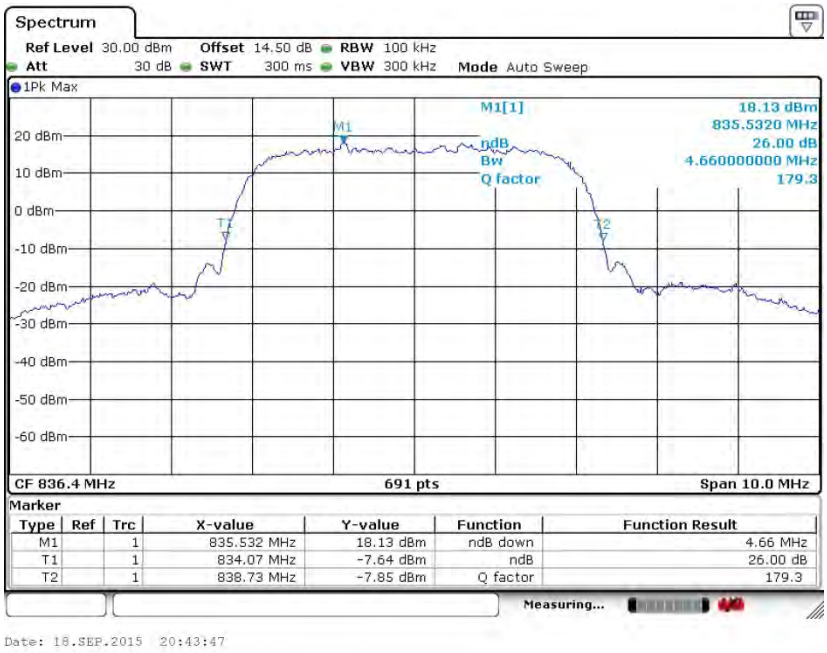


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	826.979 MHz	18.78 dBm	ndB down	4.66 MHz
T1		1	824.07 MHz	-7.92 dBm	ndB	26.00 dB
T2		1	828.73 MHz	-7.31 dBm	Q factor	177.5

99% Occupied Bandwidth Plot on Channel 4182 (836.4 MHz)

26dB Bandwidth Plot on Channel 4182 (836.4 MHz)

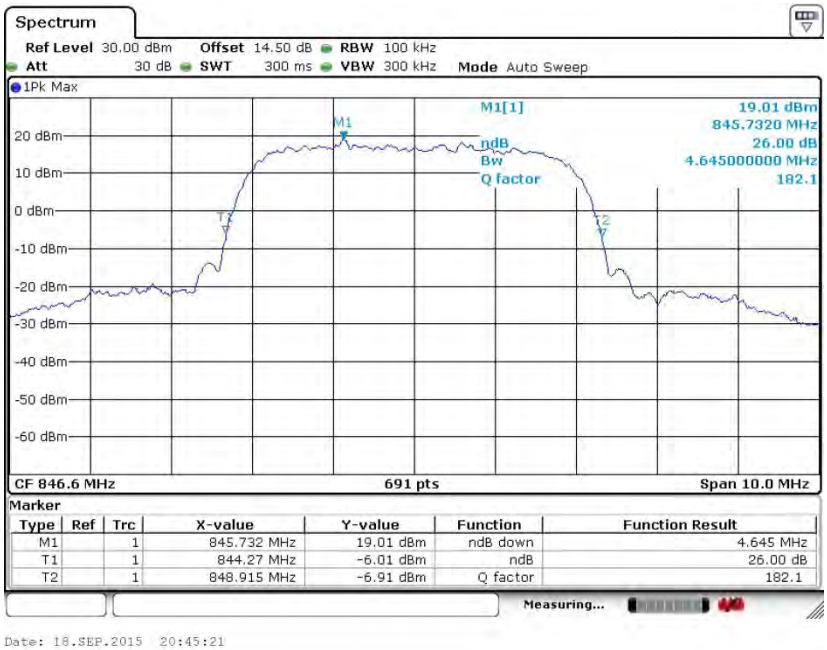


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	835.532 MHz	18.13 dBm	ndB down	4.66 MHz
T1		1	834.07 MHz	-7.64 dBm	ndB	26.00 dB
T2		1	838.73 MHz	-7.85 dBm	Q factor	179.3

99% Occupied Bandwidth Plot on Channel 4233 (846.6 MHz)

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)



Marker

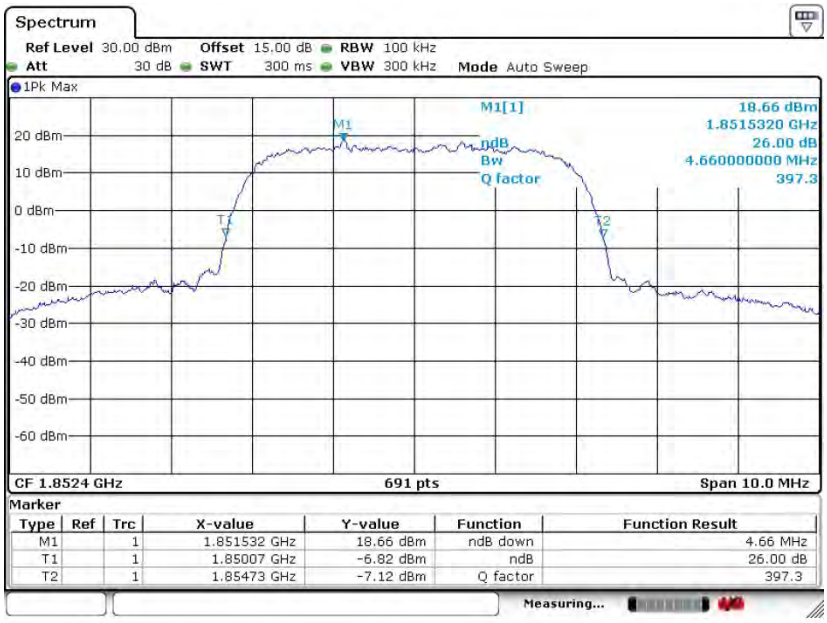
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	845.732 MHz	19.01 dBm	ndB down	4.645 MHz
T1		1	844.27 MHz	-6.01 dBm	ndB	26.00 dB
T2		1	848.915 MHz	-6.91 dBm	Q factor	182.1

Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)

Date: 18.SEP.2015 20:54:00

26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



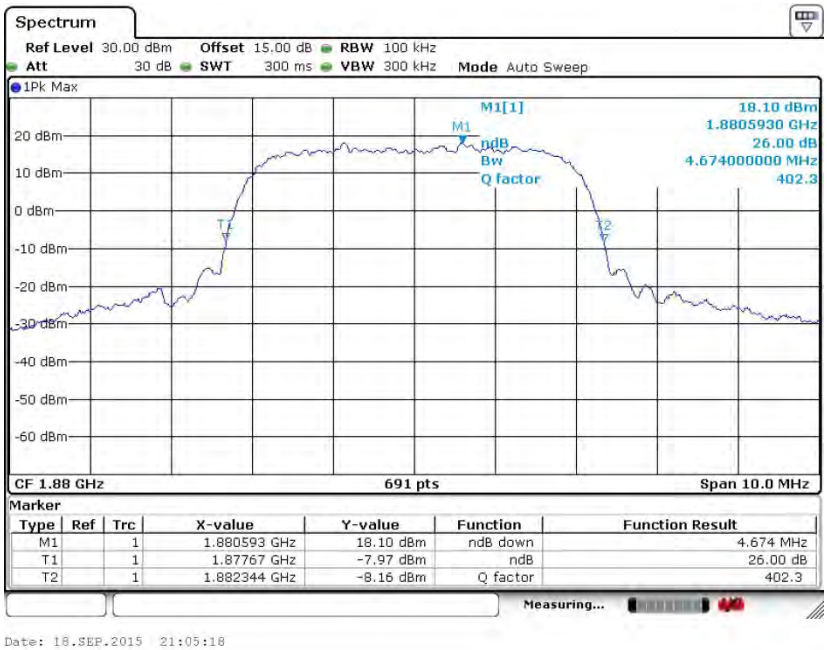
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.851532 GHz	18.66 dBm	ndB down	4.66 MHz
T1		1	1.85007 GHz	-6.82 dBm	ndB	26.00 dB
T2		1	1.85473 GHz	-7.12 dBm	Q factor	397.3

Date: 18.SEP.2015 21:03:58

99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)

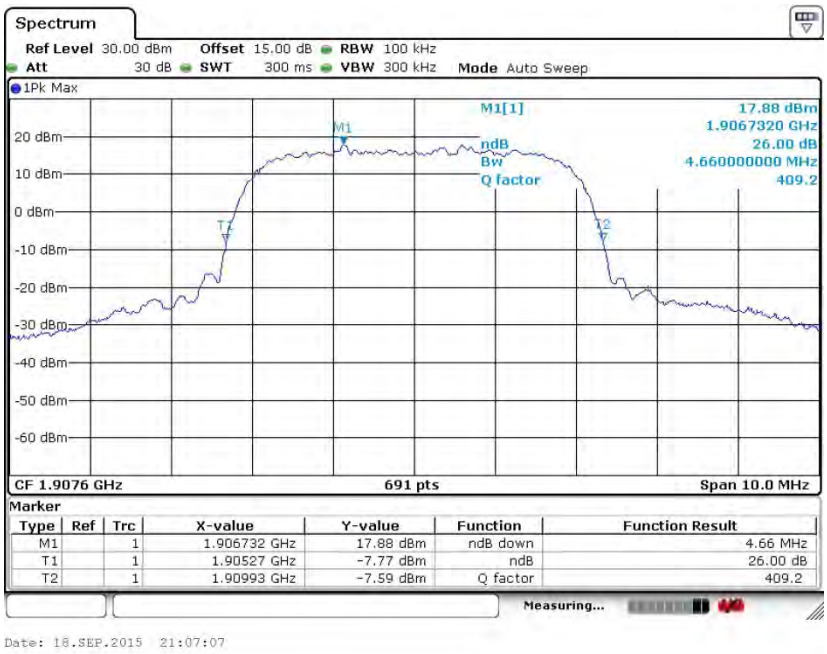


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.880593 GHz	18.10 dBm	ndB down	4.674 MHz
T1		1	1.87767 GHz	-7.97 dBm	ndB	26.00 dB
T2		1	1.882344 GHz	-8.16 dBm	Q factor	402.3

99% Occupied Bandwidth Plot on Channel 9538 (1907.6 MHz)

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.906732 GHz	17.88 dBm	ndB down	4.66 MHz
T1		1	1.90527 GHz	-7.77 dBm	ndB	26.00 dB
T2		1	1.90993 GHz	-7.59 dBm	Q factor	409.2

3.5 Band Edge Measurement

3.5.1 Description of Band Edge 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.

3.5.2 Measuring Instruments

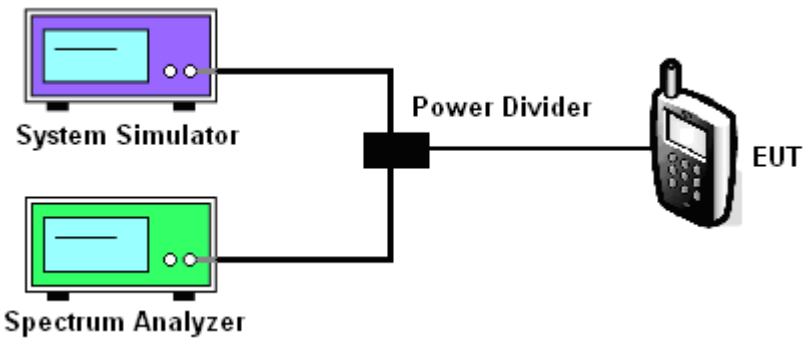
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The band edges of low and high channels for the highest RF powers were measured.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. 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

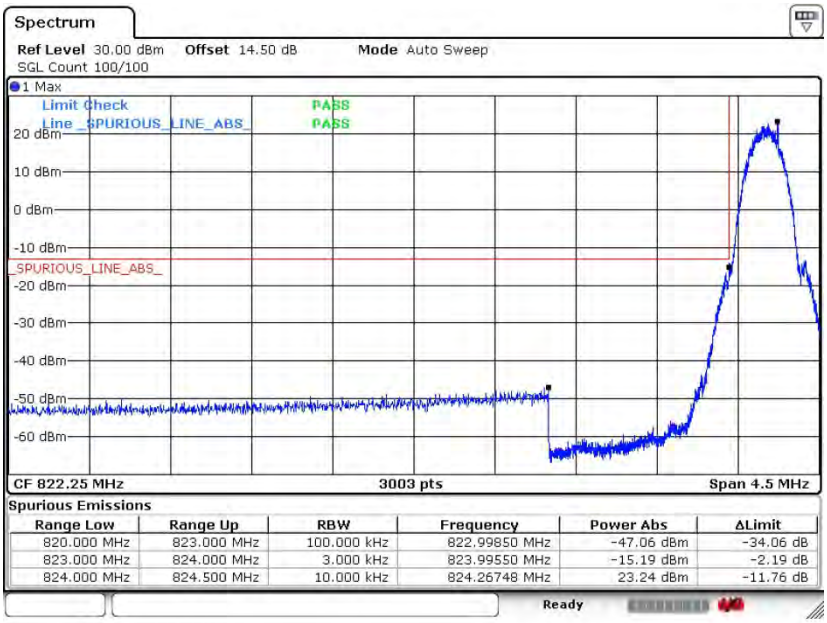
<Conducted Band Edge >



3.5.5 Test Result (Plots) of Conducted Band Edge

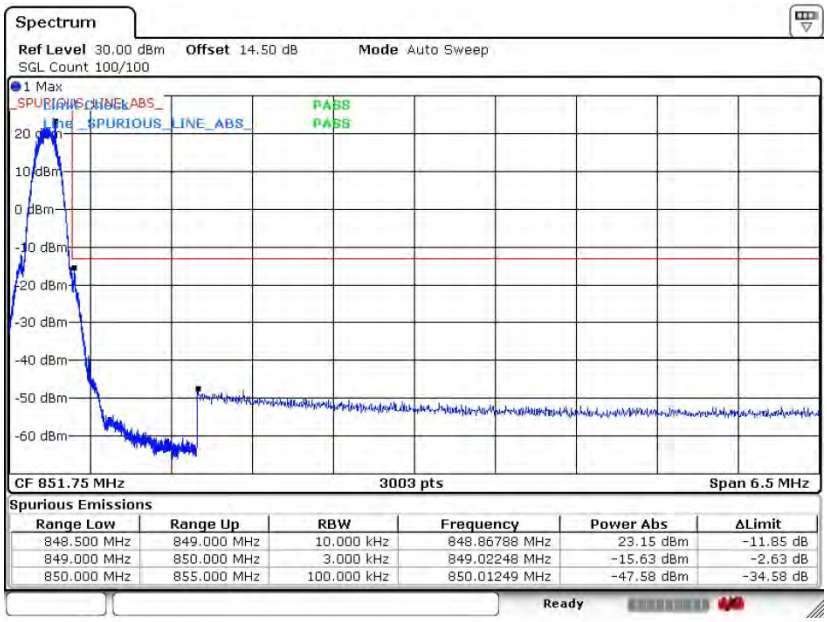
Band :	GSM850	Test Mode :	GSM Link (GMSK)

Lower Band Edge Plot on Channel 128 (824.2 MHz)



Band :	GSM850	Test Mode :	GSM Link (GMSK)

Higher Band Edge Plot on Channel 251 (848.8 MHz)

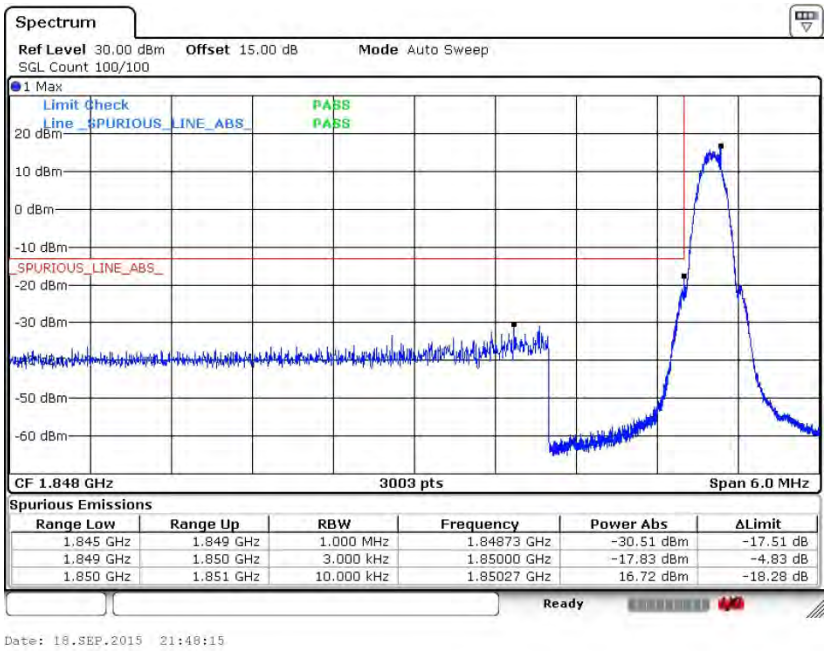


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
848.500 MHz	849.000 MHz	10.000 kHz	848.86788 MHz	23.15 dBm	-11.85 dB
849.000 MHz	850.000 MHz	3.000 kHz	849.02248 MHz	-15.63 dBm	-2.63 dB
850.000 MHz	855.000 MHz	100.000 kHz	850.01249 MHz	-47.58 dBm	-34.58 dB

Band :	GSM1900	Test Mode :	GSM Link (GMSK)

Lower Band Edge Plot on Channel 512 (1850.2 MHz)

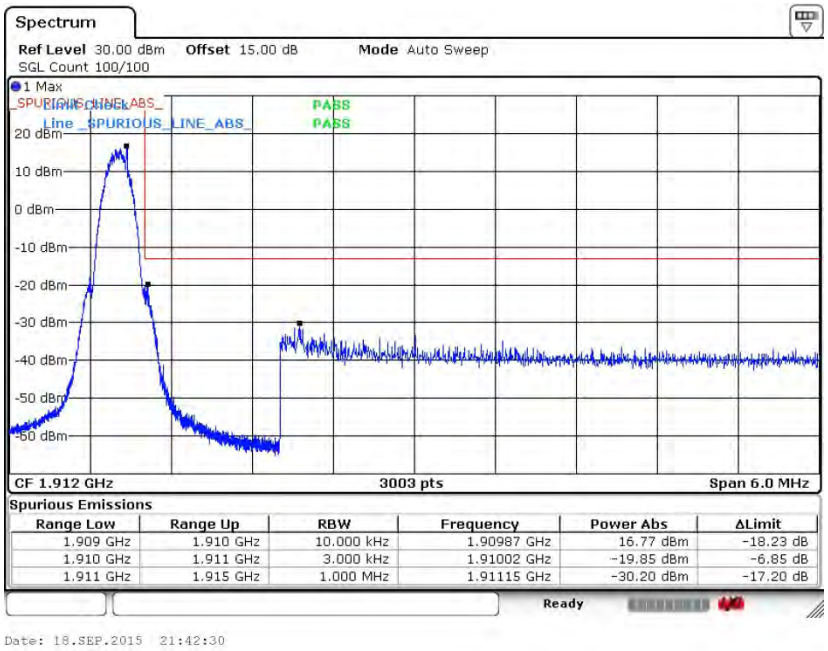


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.845 GHz	1.849 GHz	1.000 MHz	1.84873 GHz	-30.51 dBm	-17.51 dB
1.849 GHz	1.850 GHz	3.000 kHz	1.85000 GHz	-17.83 dBm	-4.83 dB
1.850 GHz	1.851 GHz	10.000 kHz	1.85027 GHz	16.72 dBm	-18.28 dB

Band :	GSM1900	Test Mode :	GSM Link (GMSK)

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

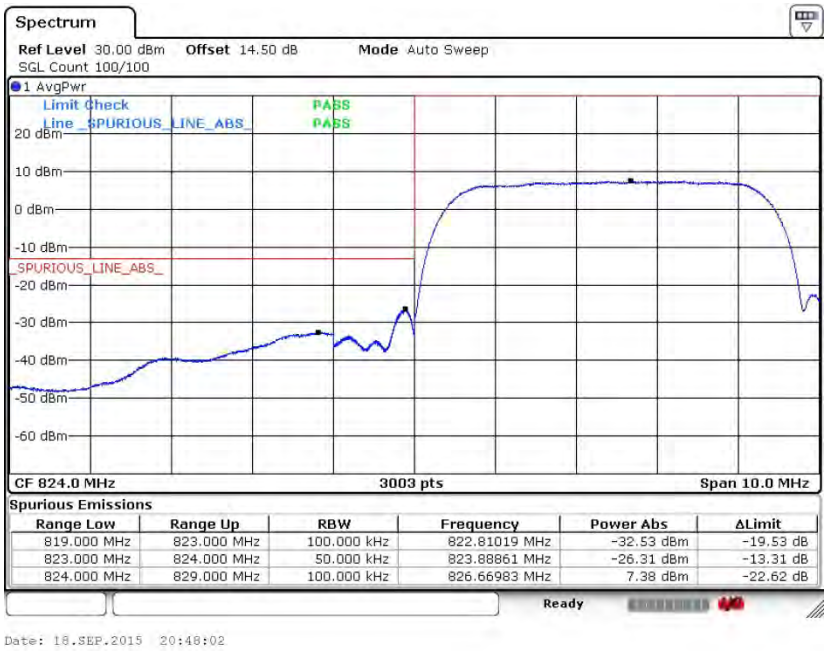


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.909 GHz	1.910 GHz	10.000 kHz	1.90987 GHz	16.77 dBm	-18.23 dB
1.910 GHz	1.911 GHz	3.000 kHz	1.91002 GHz	-19.85 dBm	-6.85 dB
1.911 GHz	1.915 GHz	1.000 MHz	1.91115 GHz	-30.20 dBm	-17.20 dB

Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

Lower Band Edge Plot on Channel 4132 (826.4 MHz)

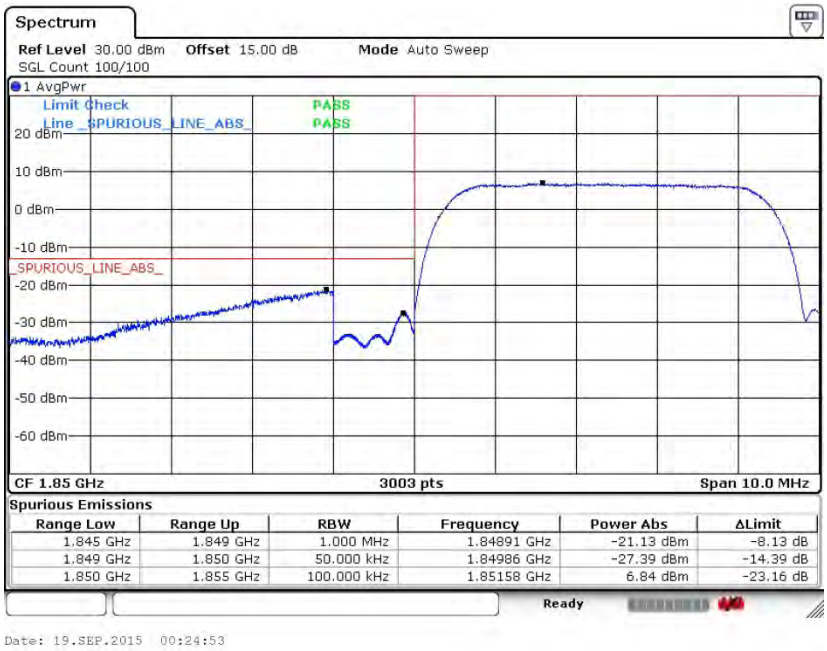


Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

Higher Band Edge Plot on Channel 4233 (846.6 MHz)

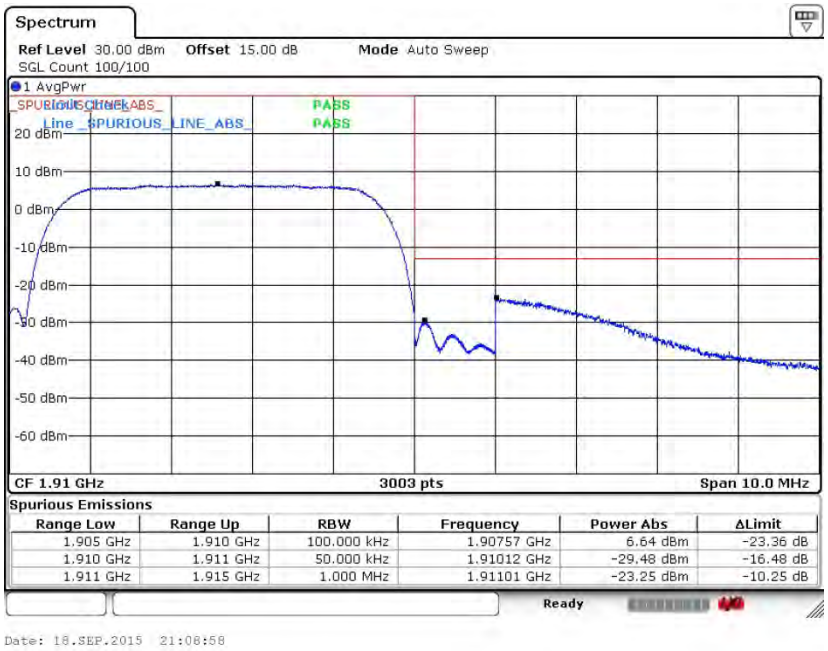
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90757 GHz	6.64 dBm	-23.36 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91012 GHz	-29.48 dBm	-16.48 dB
1.911 GHz	1.915 GHz	1.000 MHz	1.91101 GHz	-23.25 dBm	-10.25 dB

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

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

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

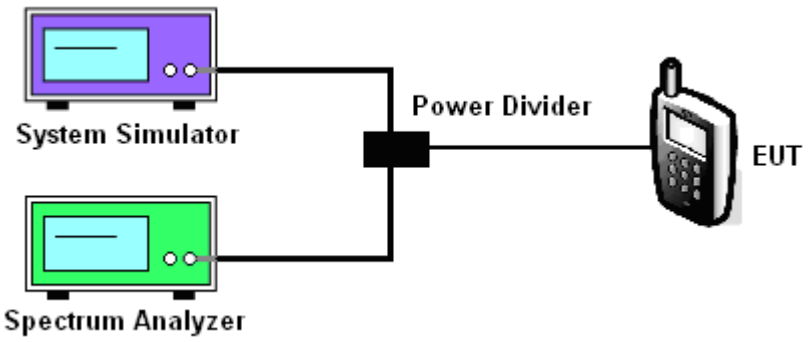
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an 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. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
   = P(W) - [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

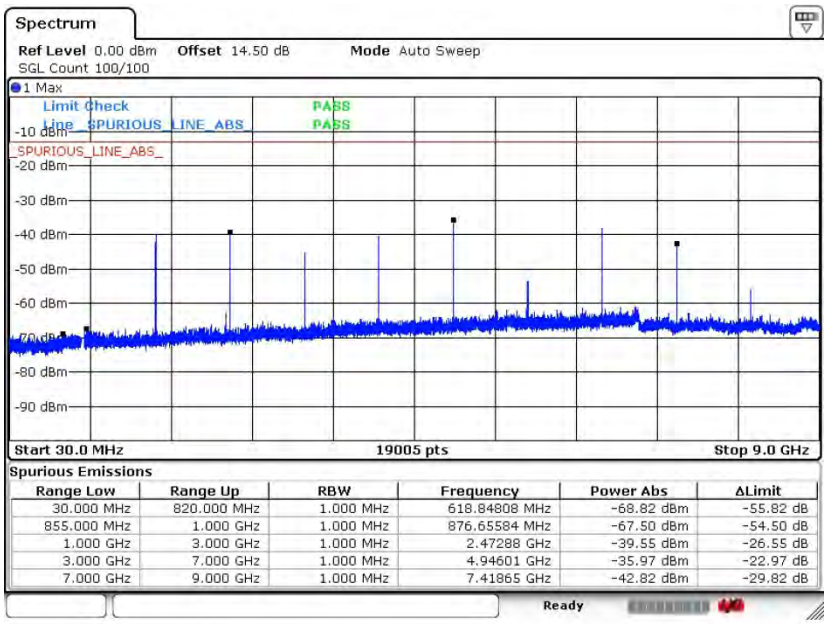
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

Band :	GSM850	Channel :	CH128
Test Mode :	GSM Link (GMSK)	Frequency :	824.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



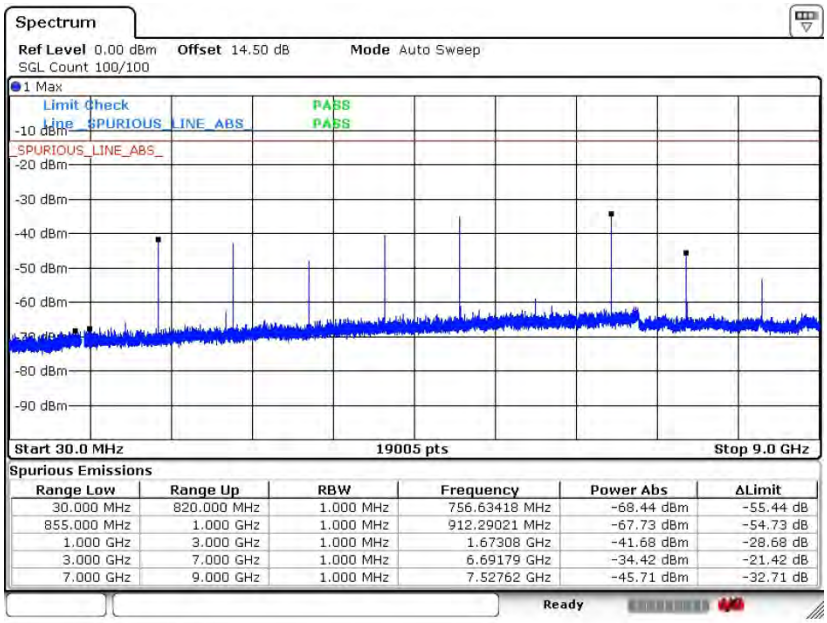
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	618.84808 MHz	-68.82 dBm	-55.82 dB
855.000 MHz	1.000 GHz	1.000 MHz	876.65584 MHz	-67.50 dBm	-54.50 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.47288 GHz	-39.55 dBm	-26.55 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.94601 GHz	-35.97 dBm	-22.97 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.41865 GHz	-42.82 dBm	-29.82 dB

Date: 18.SEP.2015 20:26:41

Band :	GSM850	Channel :	CH189
Test Mode :	GSM Link (GMSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



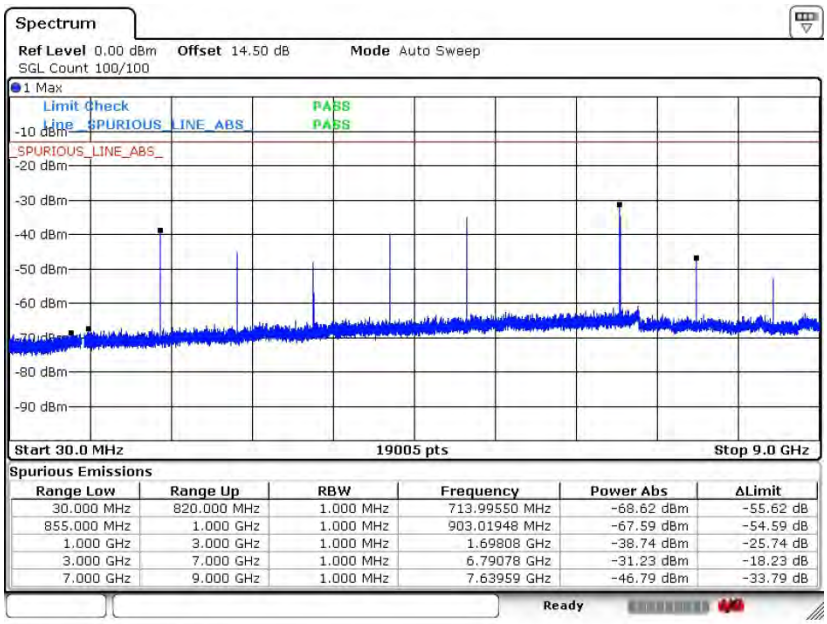
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	756.63418 MHz	-68.44 dBm	-55.44 dB
855.000 MHz	1.000 GHz	1.000 MHz	912.29021 MHz	-67.73 dBm	-54.73 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.67308 GHz	-41.68 dBm	-28.68 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.69179 GHz	-34.42 dBm	-21.42 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.52762 GHz	-45.71 dBm	-32.71 dB

Date: 18.SEP.2015 20:27:04

Band :	GSM850	Channel :	CH251
Test Mode :	GSM Link (GMSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



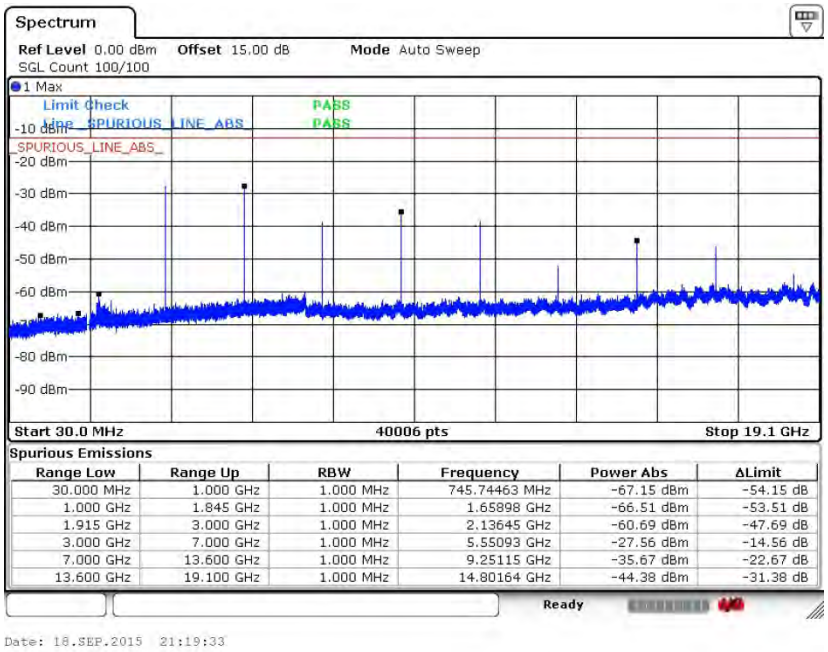
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	713.99550 MHz	-68.62 dBm	-55.62 dB
855.000 MHz	1.000 GHz	1.000 MHz	903.01948 MHz	-67.59 dBm	-54.59 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.69808 GHz	-38.74 dBm	-25.74 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.79078 GHz	-31.23 dBm	-18.23 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.63959 GHz	-46.79 dBm	-33.79 dB

Date: 18.SEP.2015 20:27:27

Band :	GSM1900	Channel :	CH512
Test Mode :	GSM Link (GMSK)	Frequency :	1850.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

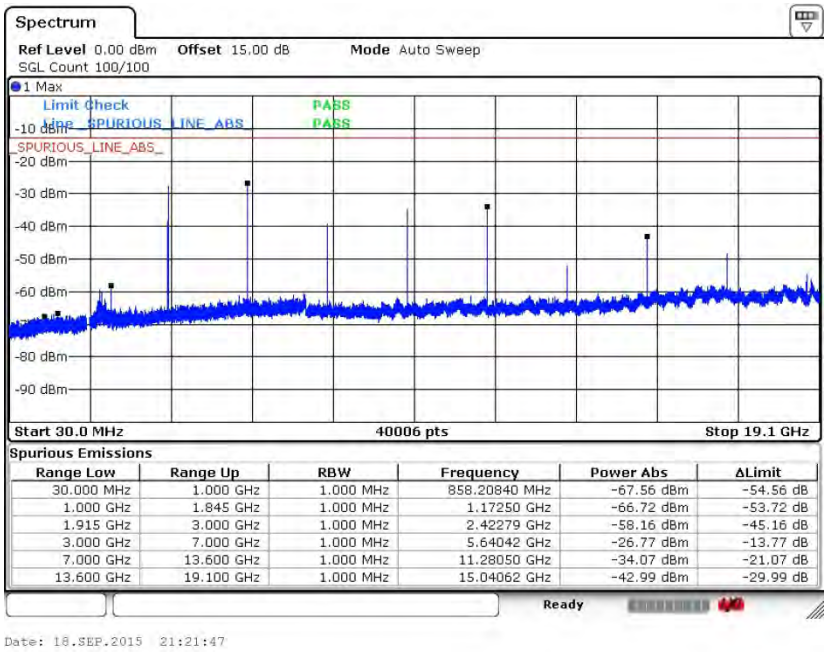


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	745.74463 MHz	-67.15 dBm	-54.15 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.65898 GHz	-66.51 dBm	-53.51 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.13645 GHz	-60.69 dBm	-47.69 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.55093 GHz	-27.56 dBm	-14.56 dB
7.000 GHz	13.600 GHz	1.000 MHz	9.25115 GHz	-35.67 dBm	-22.67 dB
13.600 GHz	19.100 GHz	1.000 MHz	14.80164 GHz	-44.38 dBm	-31.38 dB

Band :	GSM1900	Channel :	CH661
Test Mode :	GSM Link (GMSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

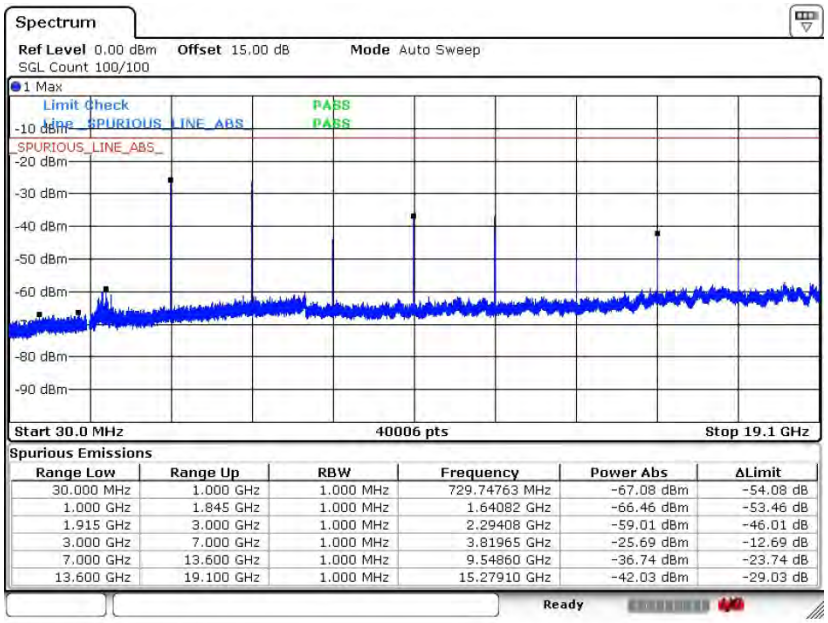


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	858.20840 MHz	-67.56 dBm	-54.56 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.17250 GHz	-66.72 dBm	-53.72 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42279 GHz	-58.16 dBm	-45.16 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.64042 GHz	-26.77 dBm	-13.77 dB
7.000 GHz	13.600 GHz	1.000 MHz	11.28050 GHz	-34.07 dBm	-21.07 dB
13.600 GHz	19.100 GHz	1.000 MHz	15.04062 GHz	-42.99 dBm	-29.99 dB

Band :	GSM1900	Channel :	CH810
Test Mode :	GSM Link (GMSK)	Frequency :	1909.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz



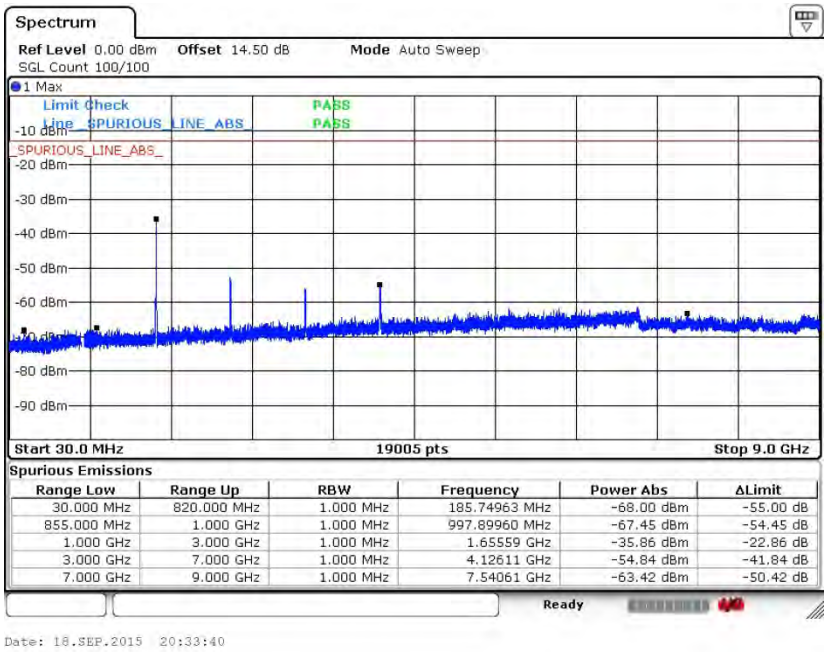
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	729.74763 MHz	-67.08 dBm	-54.08 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.64082 GHz	-66.46 dBm	-53.46 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.29408 GHz	-59.01 dBm	-46.01 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.81965 GHz	-25.69 dBm	-12.69 dB
7.000 GHz	13.600 GHz	1.000 MHz	9.54860 GHz	-36.74 dBm	-23.74 dB
13.600 GHz	19.100 GHz	1.000 MHz	15.27910 GHz	-42.03 dBm	-29.03 dB

Date: 18.SEP.2015 21:22:41

Band :	WCDMA Band V	Channel :	CH4132
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	826.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

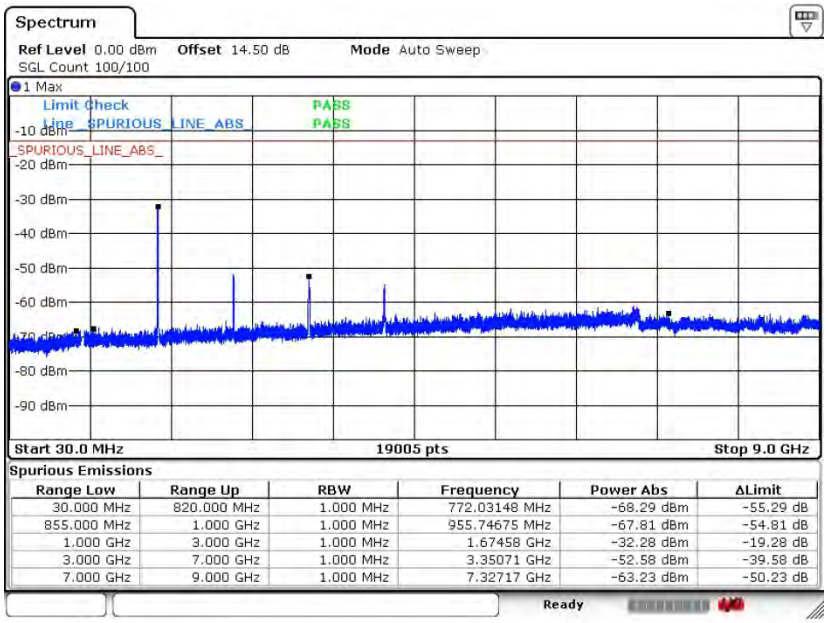


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	185.74963 MHz	-68.00 dBm	-55.00 dB
855.000 MHz	1.000 GHz	1.000 MHz	997.89960 MHz	-67.45 dBm	-54.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.65559 GHz	-35.86 dBm	-22.86 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.12611 GHz	-54.84 dBm	-41.84 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.54061 GHz	-63.42 dBm	-50.42 dB

Band :	WCDMA Band V	Channel :	CH4182
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



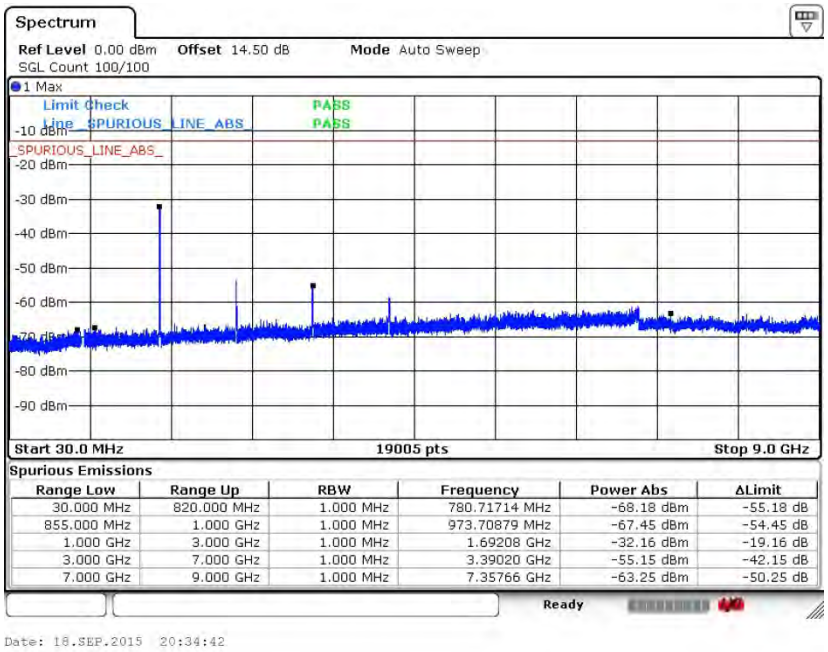
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	772.03148 MHz	-68.29 dBm	-55.29 dB
855.000 MHz	1.000 GHz	1.000 MHz	955.74675 MHz	-67.81 dBm	-54.81 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.67458 GHz	-32.28 dBm	-19.28 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.35071 GHz	-52.58 dBm	-39.58 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.32717 GHz	-63.23 dBm	-50.23 dB

Date: 18.SEP.2015 20:34:09

Band :	WCDMA Band V	Channel :	CH4233
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	846.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

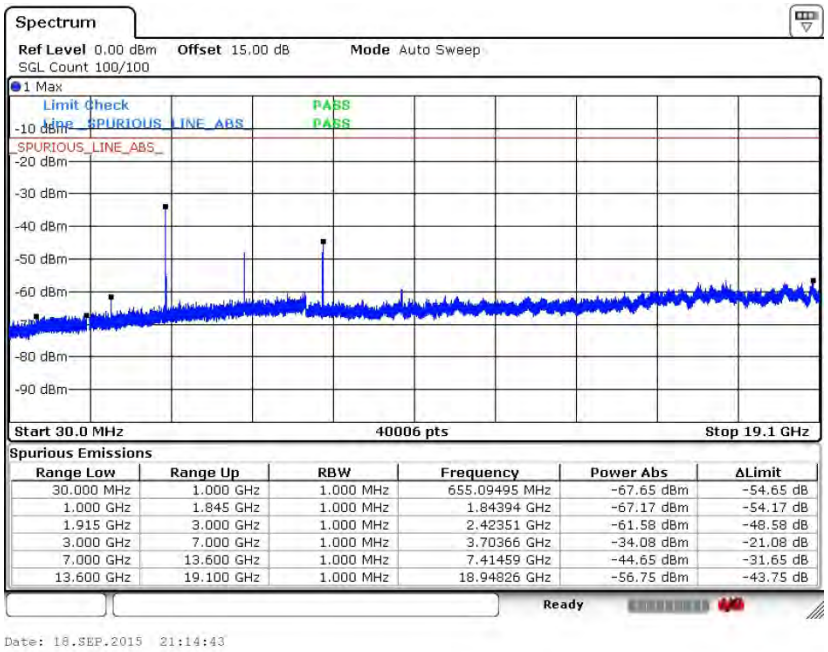


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	780.71714 MHz	-68.18 dBm	-55.18 dB
855.000 MHz	1.000 GHz	1.000 MHz	973.70879 MHz	-67.45 dBm	-54.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.69208 GHz	-32.16 dBm	-19.16 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.39020 GHz	-55.15 dBm	-42.15 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35766 GHz	-63.25 dBm	-50.25 dB

Band :	WCDMA Band II	Channel :	CH9262
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1852.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

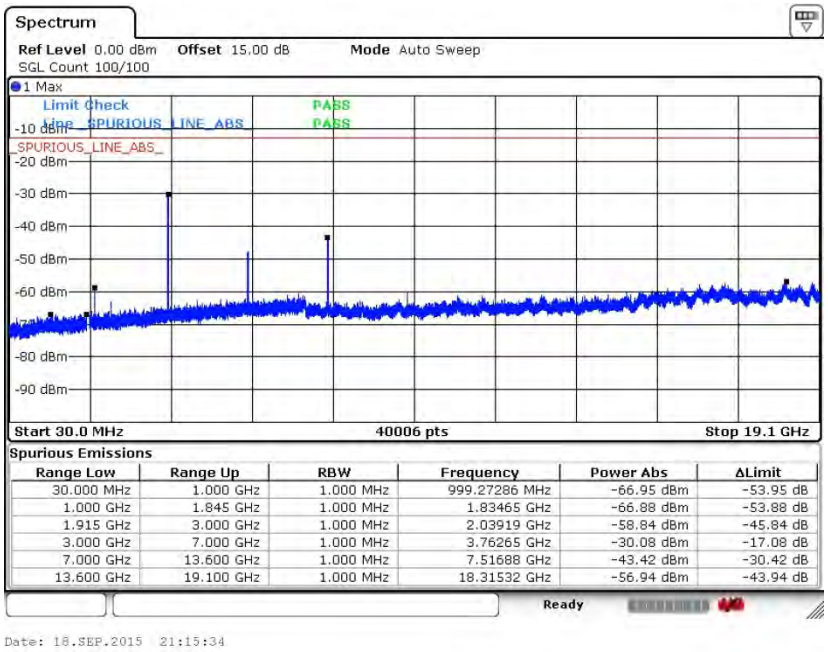


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	655.09495 MHz	-67.65 dBm	-54.65 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.84394 GHz	-67.17 dBm	-54.17 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42351 GHz	-61.58 dBm	-48.58 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.70366 GHz	-34.08 dBm	-21.08 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.41459 GHz	-44.65 dBm	-31.65 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.94826 GHz	-56.75 dBm	-43.75 dB

Band :	WCDMA Band II	Channel :	CH9400
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

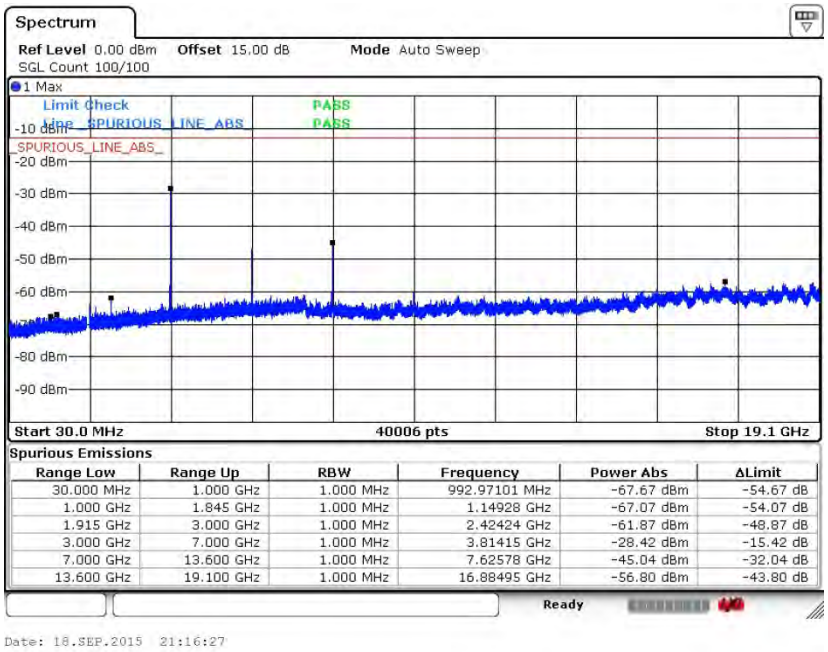


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	999.27286 MHz	-66.95 dBm	-53.95 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.83465 GHz	-66.88 dBm	-53.88 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.03919 GHz	-58.84 dBm	-45.84 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.76265 GHz	-30.08 dBm	-17.08 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.51688 GHz	-43.42 dBm	-30.42 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.31532 GHz	-56.94 dBm	-43.94 dB

Band :	WCDMA Band II	Channel :	CH9538
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1907.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.97101 MHz	-67.67 dBm	-54.67 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.14928 GHz	-67.07 dBm	-54.07 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42424 GHz	-61.87 dBm	-48.87 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.81415 GHz	-28.42 dBm	-15.42 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.62578 GHz	-45.04 dBm	-32.04 dB
13.600 GHz	19.100 GHz	1.000 MHz	16.88495 GHz	-56.80 dBm	-43.80 dB

3.7 Field Strength of Spurious Radiation Measurement

3.7.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.7.2 Measuring Instruments

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

3.7.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

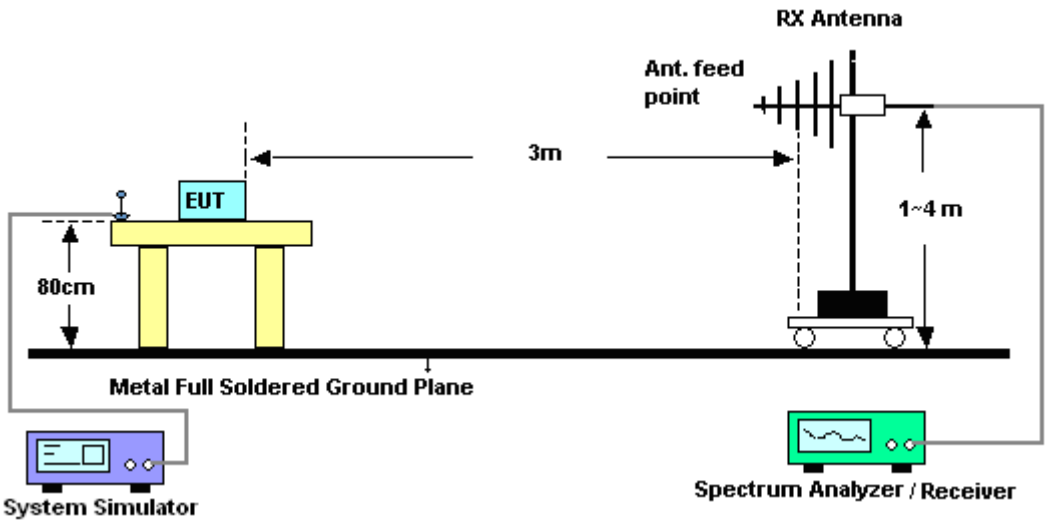
    = P(W) - [43 + 10log(P)] (dB)

    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

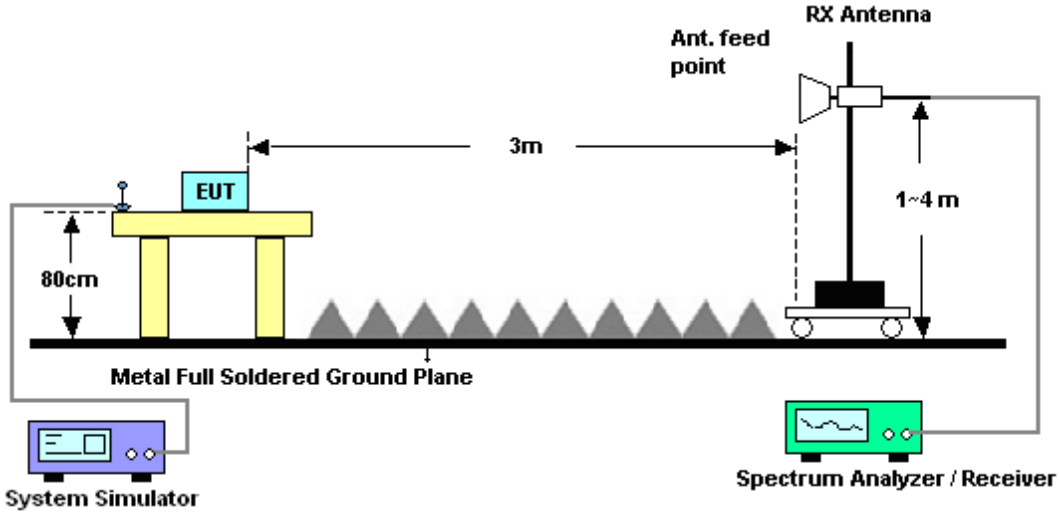
    = -13dBm.

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 Test Result of Field Strength of Spurious Radiated

Band :	GSM850 for CH128	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
1648.4	-34.27	-13	-21.27	-51.00	-40.95	0.57	9.40	H	Pass
2472.6	-43.04	-13	-30.04	-65.09	-50.74	0.75	10.60	H	Pass
3296.8	-44.09	-13	-31.09	-70.02	-53.67	0.87	12.60	H	Pass

Band :	GSM850 for CH128	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
1648.4	-34.07	-13	-21.07	-51.64	-40.75	0.57	9.40	V	Pass
2472.6	-39.21	-13	-26.21	-65.06	-46.91	0.75	10.60	V	Pass
3296.8	-37.51	-13	-24.51	-67.95	-47.09	0.87	12.60	V	Pass

Band :	GSM850 for CH189	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
1672	-36.39	-13	-23.39	-53.08	-43.07	0.57	9.40	H	Pass
2510	-47.45	-13	-34.45	-68.93	-55.15	0.75	10.60	H	Pass
3346	-47.23	-13	-34.23	-71.98	-56.81	0.87	12.60	H	Pass

Band :	GSM850 for CH189	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
1672	-29.57	-13	-16.57	-47.12	-36.25	0.57	9.40	V	Pass
2510	-40.16	-13	-27.16	-65.98	-47.86	0.75	10.60	V	Pass
3346	-42.15	-13	-29.15	-71.24	-51.73	0.87	12.60	V	Pass

Band :	GSM850 for CH251	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
1697.6	-35.76	-13	-22.76	-52.47	-42.44	0.57	9.40	H	Pass
2546.4	-48.09	-13	-35.09	-69.45	-55.79	0.75	10.60	H	Pass
3395.2	-44.43	-13	-31.43	-70.36	-54.01	0.87	12.60	H	Pass

Band :	GSM850 for CH251	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
1697.6	-28.38	-13	-15.38	-46.05	-35.06	0.57	9.40	V	Pass
2546.4	-40.71	-13	-27.71	-66.40	-48.41	0.75	10.60	V	Pass
3395.2	-40.86	-13	-27.86	-70.85	-50.44	0.87	12.60	V	Pass

Band :	GSM1900 for CH512	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-21.75	-13	-8.75	-58.50	-33.48	0.87	12.60	H	Pass
5550.6	-27.39	-13	-14.39	-61.59	-39.42	1.07	13.10	H	Pass
7400.8	-31.42	-13	-18.42	-66.65	-40.85	1.87	11.30	H	Pass

Band :	GSM1900 for CH512	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-30.11	-13	-17.11	-63.33	-41.84	0.87	12.6	V	Pass
5550.6	-27.60	-13	-14.60	-62.73	-39.63	1.07	13.1	V	Pass
7400.8	-33.22	-13	-20.22	-68.47	-42.65	1.87	11.3	V	Pass

Band :	GSM1900 for CH661	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-28.44	-13	-15.44	-63.74	-40.17	0.87	12.60	H	Pass
5640	-27.37	-13	-14.37	-61.57	-39.40	1.07	13.10	H	Pass
7520	-33.97	-13	-20.97	-68.10	-43.40	1.87	11.30	H	Pass

Band :	GSM1900 for CH661	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-29.82	-13	-16.82	-63.06	-41.55	0.87	12.6	V	Pass
5640	-27.42	-13	-14.42	-62.56	-39.45	1.07	13.1	V	Pass
7520	-35.48	-13	-22.48	-69.92	-44.91	1.87	11.3	V	Pass

Band :	GSM1900 for CH810	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-23.85	-13	-10.85	-60.53	-35.58	0.87	12.60	H	Pass
5729.4	-30.93	-13	-17.93	-64.32	-42.96	1.07	13.10	H	Pass
7639.2	-40.22	-13	-27.22	-71.88	-49.65	1.87	11.30	H	Pass

Band :	GSM1900 for CH810	**Temperature :**	23~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-28.97	-13	-15.97	-62.34	-40.70	0.87	12.6	V	Pass
5729.4	-26.98	-13	-13.98	-62.12	-39.01	1.07	13.1	V	Pass
7639.2	-36.95	-13	-23.95	-70.81	-46.38	1.87	11.3	V	Pass

Band :	WCDMA Band V for CH4132	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
1652.8	-36.77	-13	-23.77	-53.43	-43.45	0.57	9.40	H	Pass
2479.2	-46.26	-13	-33.26	-68.11	-53.96	0.75	10.60	H	Pass
3305.6	-38.80	-13	-25.80	-66.68	-48.38	0.87	12.60	H	Pass

Band :	WCDMA Band V for CH4132	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
1652.8	-38.09	-13	-25.09	-55.38	-44.77	0.57	9.40	V	Pass
2479.2	-46.72	-13	-33.72	-70.19	-54.42	0.75	10.60	V	Pass
3305.6	-39.64	-13	-26.64	-69.91	-49.22	0.87	12.60	V	Pass

Band :	WCDMA Band V for CH4182	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
1672	-33.98	-13	-20.98	-50.73	-40.66	0.57	9.40	H	Pass
2510	-45.08	-13	-32.08	-67.09	-52.78	0.75	10.60	H	Pass
3346	-37.08	-13	-24.08	-65.33	-46.66	0.87	12.60	H	Pass

Band :	WCDMA Band V for CH4182	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
1672	-33.80	-13	-20.80	-51.35	-40.48	0.57	9.40	V	Pass
2510	-46.58	-13	-33.58	-70.06	-54.28	0.75	10.60	V	Pass
3346	-38.96	-13	-25.96	-69.64	-48.54	0.87	12.60	V	Pass

Band :	WCDMA Band V for CH4233	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz 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
1693.2	-43.53	-13	-30.53	-59.82	-50.21	0.57	9.40	H	Pass
2539.8	-49.85	-13	-36.85	-70.77	-57.55	0.75	10.60	H	Pass
3386.4	-47.51	-13	-34.51	-72.12	-57.09	0.87	12.60	H	Pass

Band :	WCDMA Band V for CH4233	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz 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
1693.2	-43.50	-13	-30.50	-60.32	-50.18	0.57	9.40	V	Pass
2539.8	-48.15	-13	-35.15	-71.21	-55.85	0.75	10.60	V	Pass
3386.4	-43.10	-13	-30.10	-72.01	-52.68	0.87	12.60	V	Pass

Band :	WCDMA Band II for CH9262	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3704.8	-24.13	-13	-11.13	-60.80	-35.86	0.87	12.60	H	Pass
5557.2	-30.06	-13	-17.06	-63.89	-42.09	1.07	13.10	H	Pass
7409.6	-29.13	-13	-16.13	-64.94	-38.56	1.87	11.30	H	Pass

Band :	WCDMA Band II for CH9262	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3704.8	-26.91	-13	-13.91	-60.3	-38.64	0.87	12.6	V	Pass
5557.2	-28.71	-13	-15.71	-63.78	-40.74	1.07	13.1	V	Pass
7409.6	-34.97	-13	-21.97	-69.61	-44.40	1.87	11.3	V	Pass

Band :	WCDMA Band II for CH9400	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-24.63	-13	-11.63	-61.19	-36.36	0.87	12.60	H	Pass
5640	-24.72	-13	-11.72	-59.37	-36.75	1.07	13.10	H	Pass
7520	-30.31	-13	-17.31	-65.81	-39.74	1.87	11.30	H	Pass

Band :	WCDMA Band II for CH9400	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-24.84	-13	-11.84	-59.33	-36.57	0.87	12.6	V	Pass
5640	-25.86	-13	-12.86	-60.91	-37.89	1.07	13.1	V	Pass
7520	-34.09	-13	-21.09	-69.25	-43.52	1.87	11.3	V	Pass

Band :	WCDMA Band II for CH9538	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3815.2	-19.84	-13	-6.84	-56.69	-31.57	0.87	12.60	H	Pass
5722.8	-20.31	-13	-7.31	-55.94	-32.34	1.07	13.10	H	Pass
7630.4	-34.19	-13	-21.19	-68.26	-43.62	1.87	11.30	H	Pass

Band :	WCDMA Band II for CH9538	**Temperature :**	23~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~52%
Test Engineer :	Jeff Yao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3815.2	-17.57	-13	-4.57	-53.93	-29.30	0.87	12.6	V	Pass
5722.8	-24.38	-13	-11.38	-58.99	-36.41	1.07	13.1	V	Pass
7630.4	-36.87	-13	-23.87	-70.76	-46.30	1.87	11.3	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

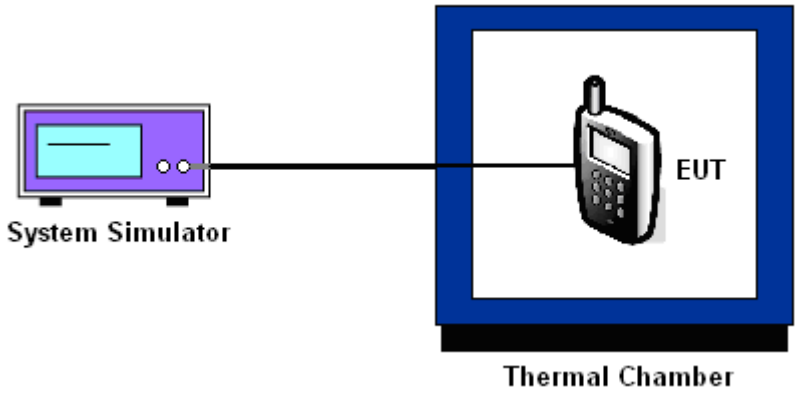
3.8.3 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps 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.

3.8.4 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation

Band :	GSM 850	Channel :	189
Limit (ppm) :	2.5	Frequency :	836.4 MHz

Temperature (°C)	GSM	Result
	Deviation (ppm)	
50	0.0861	PASS
40	0.0837	
30	0.0801	
20(Ref.)	0.0000	
10	0.0012	
0	0.0036	
-10	0.0072	
-20	0.0108	
-30	0.0096	

Band :	GSM 1900	Channel :	661
Limit (ppm) :	within authorized band	Frequency :	1880.0 MHz

Temperature (°C)	GSM	Result
	Deviation (ppm)	
50	0.0372	PASS
40	0.0356	
30	0.0340	
20(Ref.)	0.0000	
10	0.0011	
0	0.0032	
-10	0.0027	
-20	0.0043	
-30	0.0059	

Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Band :	WCDMA Band V	Channel :	4182
Limit (ppm) :	2.5	Frequency :	836.4 MHz

Temperature (°C)	RMC 12.2Kbps	Result
	Deviation (ppm)	
50	0.0275	PASS
40	0.0251	
30	0.0227	
20(Ref.)	0.0000	
10	0.0012	
0	0.0036	
-10	0.0060	
-20	0.0048	
-30	0.0072	

Band :	WCDMA Band II	Channel :	9400
Limit (ppm) :	within authorized band	Frequency :	1880.0 MHz

Temperature (°C)	RMC 12.2Kbps	Result
	Deviation (ppm)	
50	0.0043	PASS
40	0.0021	
30	0.0011	
20(Ref.)	0.0000	
10	0.0005	
0	0.0213	
-10	0.0223	
-20	0.0218	
-30	0.0229	

Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

3.8.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GSM	3.7	0.0000	2.5	PASS
		BEP	0.0012		
		4.2	0.0036		
GSM 1900 CH661	GSM	3.7	0.0000	(Note 3.)	
		BEP	0.0005		
		4.2	0.0011		
WCDMA Band V CH4182	RMC 12.2Kbps	3.7	0.0000	2.5	
		BEP	0.0024		
		4.2	0.0036		
WCDMA Band II CH9400	RMC 12.2Kbps	3.7	0.0011	(Note 3.)	
		BEP	0.0021		
		4.2	0.0027		

Note:

1. Normal Voltage = 3.7V.
2. Battery End Point (BEP) = 3.4 V.
3. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	May 05, 2015	Sep. 18, 2015~ Sep. 19, 2015	May 04, 2016	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Aug. 07, 2015	Sep. 18, 2015~ Sep. 19, 2015	Aug. 06, 2016	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2015	Sep. 04, 2015~ Sep. 08, 2015	May 25, 2016	Radiation (03CH01-SZ)
Spectrum Analyzer	R&S	FSV40	101041	10kHz~40GHz;Max 30dBm	Oct. 15, 2014	Sep. 04, 2015~ Sep. 08, 2015	Oct. 14, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz~2GHz	Nov. 07, 2014	Sep. 04, 2015~ Sep. 08, 2015	Nov. 06, 2015	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Oct. 15, 2014	Sep. 04, 2015~ Sep. 08, 2015	Oct. 14, 2015	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Aug.19, 2015	Sep. 04, 2015~ Sep. 08, 2015	Aug. 18, 2016	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz / 30 dB	Jan. 28, 2015	Sep. 04, 2015~ Sep. 08, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 05, 2015	Sep. 04, 2015~ Sep. 08, 2015	May 04, 2016	Radiation (03CH01-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 28, 2015	Sep. 04, 2015~ Sep. 08, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Sep. 04, 2015~ Sep. 08, 2015	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 04, 2015~ Sep. 08, 2015	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 04, 2015~ Sep. 08, 2015	NCR	Radiation (03CH01-SZ)

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))	**3.9 dB**