FCC RF Test Report

APPLICANT	:	CT Asia (HK) Ltd.
EQUIPMENT	:	Mobile phone
BRAND NAME	:	BLU
MODEL NAME	:	PURE XL
FCC ID	:	YHLBLUPURXL
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E),27(L)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Aug. 24, 2015 and testing was completed on Sep. 17, 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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG582404A	Rev. 01	Initial issue of report	Oct. 08, 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) RSS-139 (6.5)	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d)	RSS-132 (5.4) RSS-133 (6.4) RSS-139 (6.5)	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	-
	§27.50(d)(4)	RSS-139 (6.5) SRSP-513(5.1.2)	Equivalent Isotropic Radiated Power	< 1 Watts	PASS	-
3.4	§2.1049	RSS-GEN(6.6) RSS-133(6.5) RSS-139 (3.1)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a) §27.53(h)	RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.6)	Band Edge Measurement	< 43+10log10(P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a) §27.53(h)	RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.6)	Conducted Emission	< 43+10log10(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a) §27.53(h)	RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.6)	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	Under limit 31.33 dB at 1648.400 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 §27.54	RSS-GEN(6.11) RSS-133 (6.3) RSS-139 (6.4)				

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	Mobile phone
Brand Name	BLU
Model Name	PURE XL
FCC ID	YHLBLUPURXL
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+/DC-HSDPA/LTE/ NFC/WLAN 2.4GHz 802.11b/g/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
IMEI Code	Conducted: 354147042016445/354147042051442 Radiation: 354147042016486/354147042051483 ERP&EIRP: 354147042016478/354147042051475
HW Version	PURE XL_Mainboard_P3.1
SW Version	BLU_P0010UU_V07_GENERIC 16-09-2015 08:43
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 IV : 1712.4 MHz ~ 1752.6 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 IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 32.97 dBm GSM1900 : 29.82 dBm WCDMA Band V : 23.20 dBm WCDMA Band IV : 22.93 dBm WCDMA Band II : 23.23 dBm
Antenna Type	Fixed internal Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA : QPSK (Uplink) HSDPA/DC-HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) HSPA+ : 16QAM DC-HSDPA : 64QAM

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	0.6745	0.0287 ppm	246KGXW
Part 22	GSM850 EDGE class 8	8PSK	0.2168	0.0323 ppm	249KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.0280	0.0143 ppm	4M20F9W
Part 24	GSM1900 GSM	GMSK	1.0839	0.0053 ppm	246KGXW
Part 24	GSM1900 EDGE class 8	8PSK	0.3855	0.0048 ppm	247KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.0690	0.0032 ppm	4M21F9W
Part 27	WCDMA Band IV RMC 12.2Kbps	QPSK	0.0681	0.0075 ppm	4M21F9W

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:

- 47 CFR Part 2, 22(H), 24(E), 27(L)
- 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-139 Issue 3
- 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 WCDMA Band IV
3. 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 ■ EDGE class 8 Link	■ GSM Link ■ EDGE class 8 Link
GSM 1900	■ GSM Link ■ EDGE class 8 Link	■ GSM Link ■ EDGE class 8 Link
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band IV	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

Note: The maximum power levels are chosen to test as the worst case configuration as follows:

GSM mode for GMSK modulation,

EDGE multi-slot class 8 mode for 8PSK modulation,

RMC 12.2Kbps mode for WCDMA band V and WCDMA band IV,

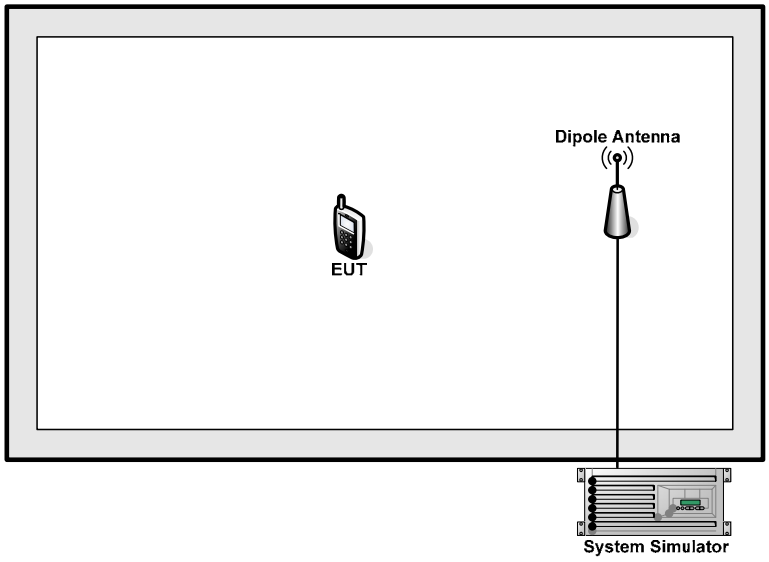
RMC 12.2Kbps mode for WCDMA band II, only these modes were used for all tests.

Conducted Power Measurement Results:

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	32.91	32.92	**32.97**	29.72	**29.82**	29.75
GPRS class 8	32.89	32.90	32.93	29.71	29.80	29.74
GPRS class 10	31.12	31.15	31.18	28.88	29.01	28.92
GPRS class 11	29.11	29.13	29.15	27.00	27.12	26.98
GPRS class 12	27.67	27.68	27.65	25.85	25.98	25.82
EGPRS class 8	26.57	26.56	26.40	25.54	25.57	25.58
EGPRS class 10	25.53	25.55	25.36	24.45	24.55	24.58
EGPRS class 11	23.53	23.59	23.42	22.28	22.36	22.41
EGPRS class 12	22.51	22.51	22.31	21.07	21.22	21.28

Conducted Power (*Unit: dBm)									
Band	**WCDMA Band V**			**WCDMA Band II**			**WCDMA Band IV**		
Channel	**4132**	**4182**	**4233**	**9262**	**9400**	**9538**	**1312**	**1413**	**1513**
Frequency	**826.4**	**836.4**	**846.6**	**1852.4**	**1880**	**1907.6**	**1712.4**	**1732.6**	**1752.6**
AMR 12.2K	23.14	23.12	23.19	23.15	23.17	23.21	22.73	22.84	22.92
RMC 12.2K	23.15	23.14	**23.20**	23.17	23.19	**23.23**	22.74	22.87	**22.93**
HSDPA Subtest-1	21.74	21.75	21.81	21.41	21.36	21.49	21.01	21.34	21.46
HSDPA Subtest-2	21.73	21.75	21.83	21.42	21.34	21.51	20.98	21.32	21.45
HSDPA Subtest-3	21.30	21.24	21.30	20.95	20.90	21.01	20.54	20.84	21.00
HSDPA Subtest-4	21.25	21.20	21.27	20.94	20.84	21.02	20.50	20.83	20.98
DC-HSDPA Subtest-1	19.64	19.58	19.03	19.53	19.64	18.86	19.73	19.84	18.85
DC-HSDPA Subtest-2	19.62	19.57	19.03	19.52	19.63	18.87	19.70	19.81	18.85
DC-HSDPA Subtest-3	19.56	19.45	19.04	19.18	19.32	18.87	19.18	19.29	18.85
DC-HSDPA Subtest-4	19.54	19.45	18.89	19.17	19.32	18.87	19.18	19.30	18.85
HSUPA Subtest-1	19.78	19.75	19.82	19.50	19.43	19.63	19.03	19.25	19.44
HSUPA Subtest-2	19.76	19.70	19.77	19.41	19.32	19.48	18.99	19.22	19.41
HSUPA Subtest-3	20.74	20.71	20.74	20.44	20.34	20.50	20.04	20.24	20.42
HSUPA Subtest-4	19.19	19.15	19.26	18.95	18.90	18.95	18.44	18.68	18.90
HSUPA Subtest-5	21.70	21.70	21.80	21.40	21.30	21.50	21.00	21.30	21.40
HSPA+ (16QAM) Subtest-1	19.02	19.00	19.06	18.96	19.09	19.11	18.15	18.26	18.29

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

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.

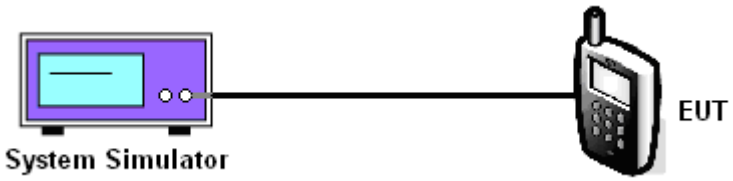
3.1.2 Measuring Instruments

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)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.91	32.92	32.97	26.57	26.56	26.40	23.15	23.14	23.20

PCS Band									
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	29.72	29.82	29.75	25.54	25.57	25.58	23.17	23.19	23.23

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312 (Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Conducted Power (dBm)	22.74	22.87	22.93

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.

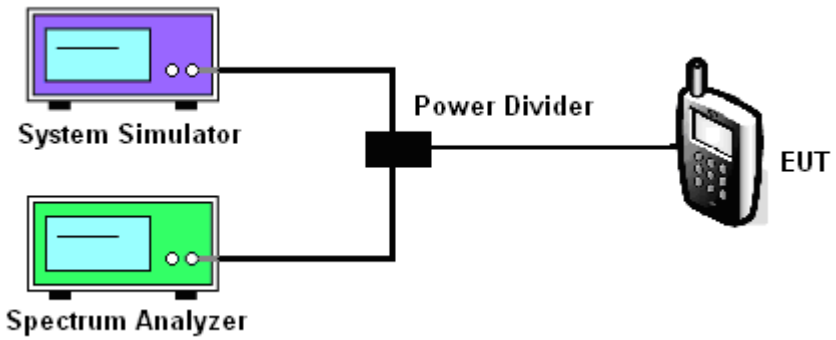
3.2.2 Measuring Instruments

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)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.26	0.25	0.25	2.78	2.89	2.86	2.99	2.99	2.93

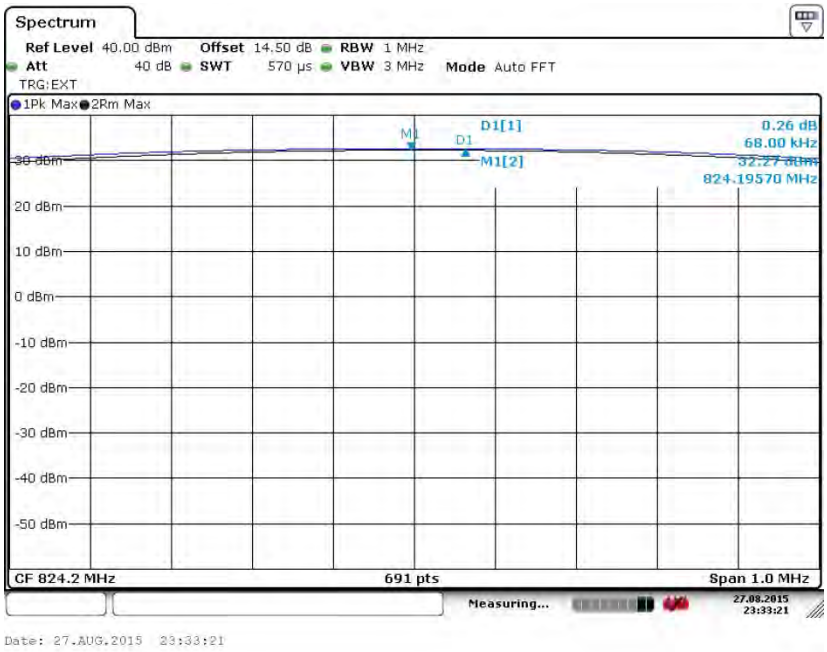
PCS Band									
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.25	0.25	0.26	2.78	2.94	2.82	2.84	2.61	2.64

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Peak-to-Average Ratio (dB)	2.96	2.75	2.87

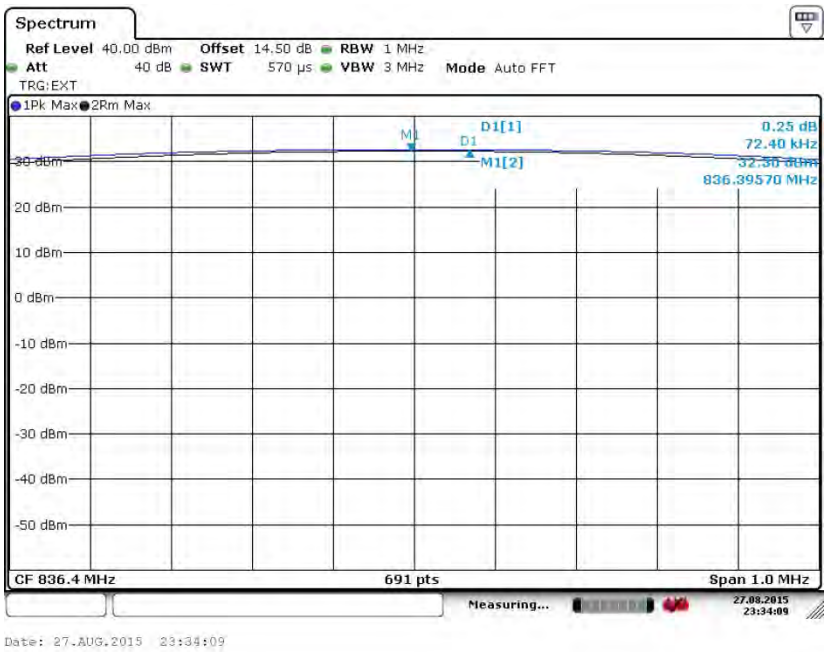
3.2.6 Test Result (Plots) of Peak-to-Average Ratio

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

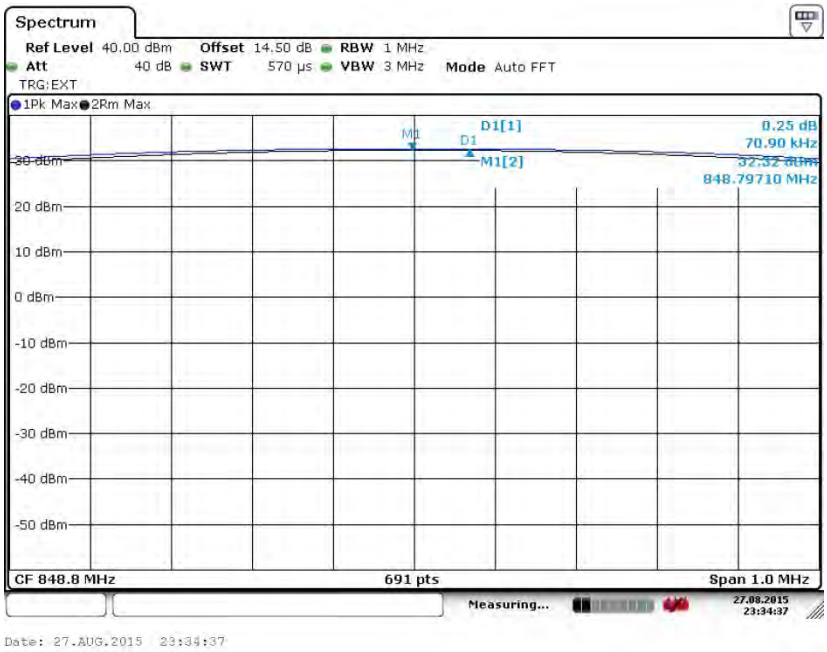
Peak-to-Average Ratio on Channel 128 (824.2 MHz)



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

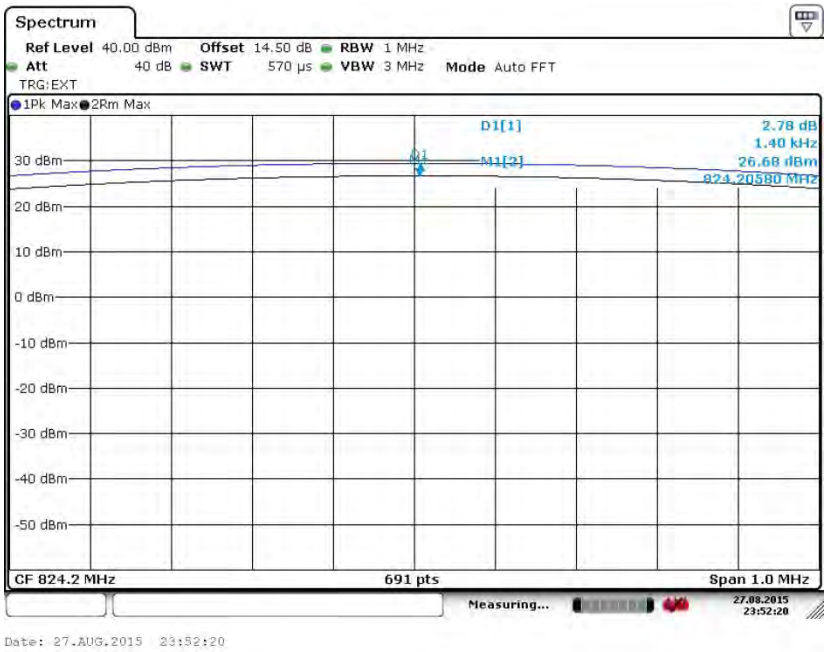


Peak-to-Average Ratio on Channel 251 (848.8 MHz)

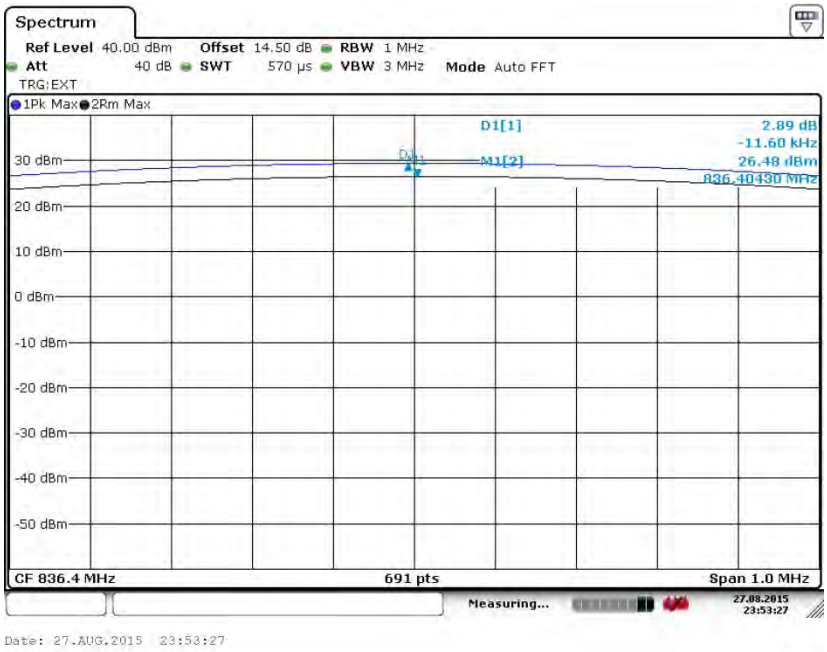


Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)

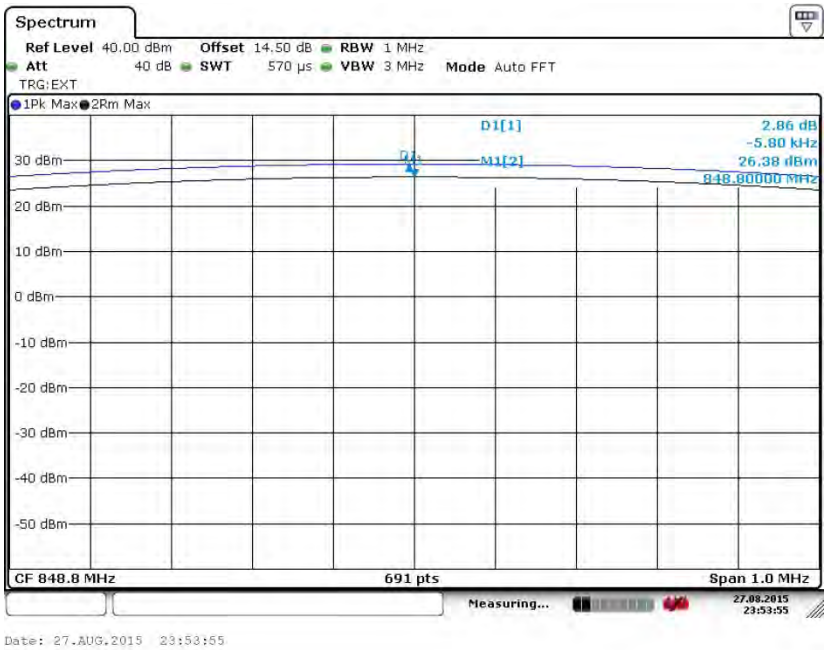
Peak-to-Average Ratio on Channel 128 (824.2 MHz)



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

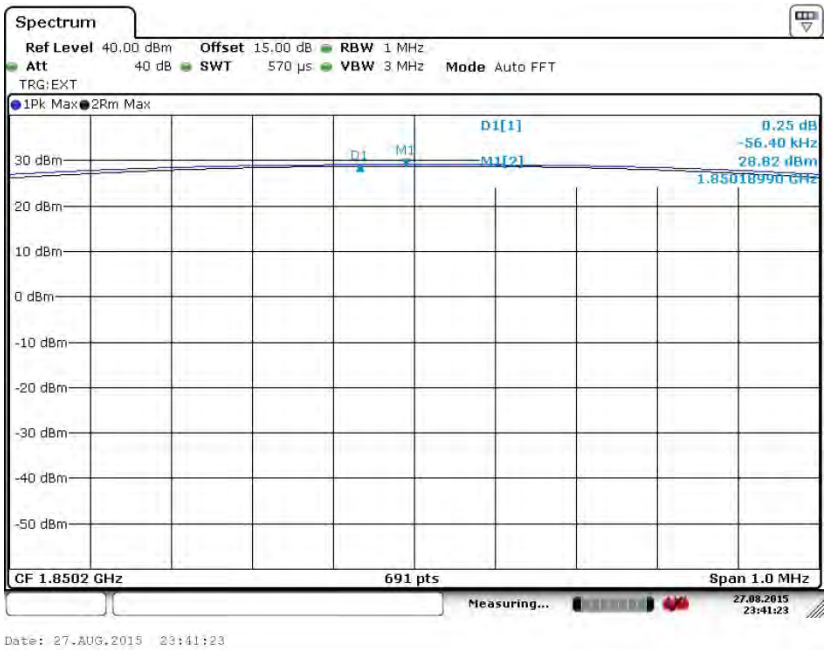


Peak-to-Average Ratio on Channel 251 (848.8 MHz)

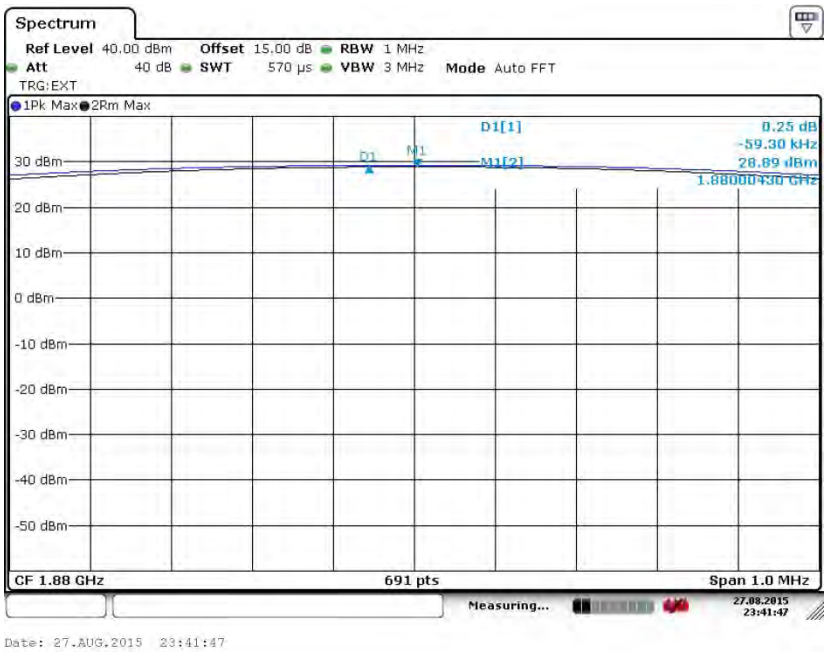


Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

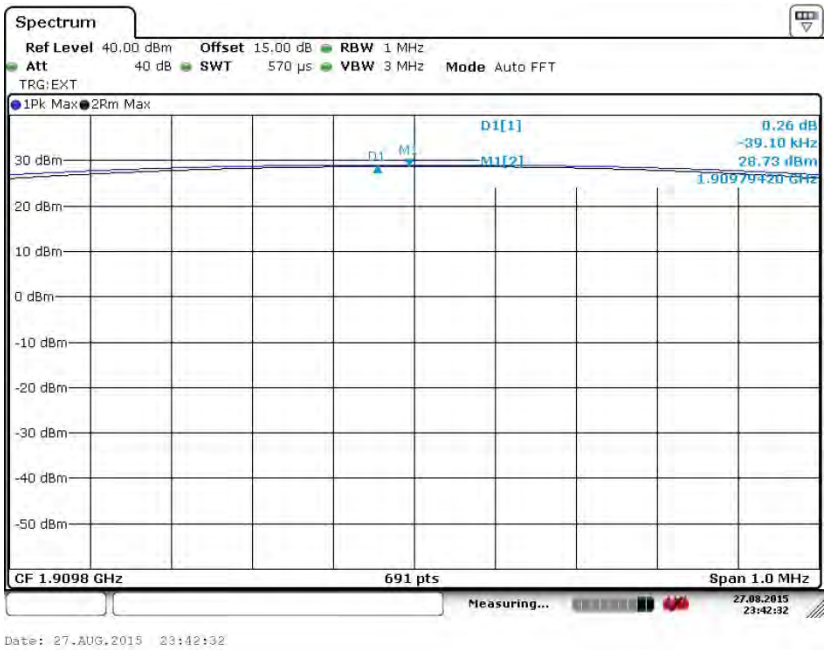
Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



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

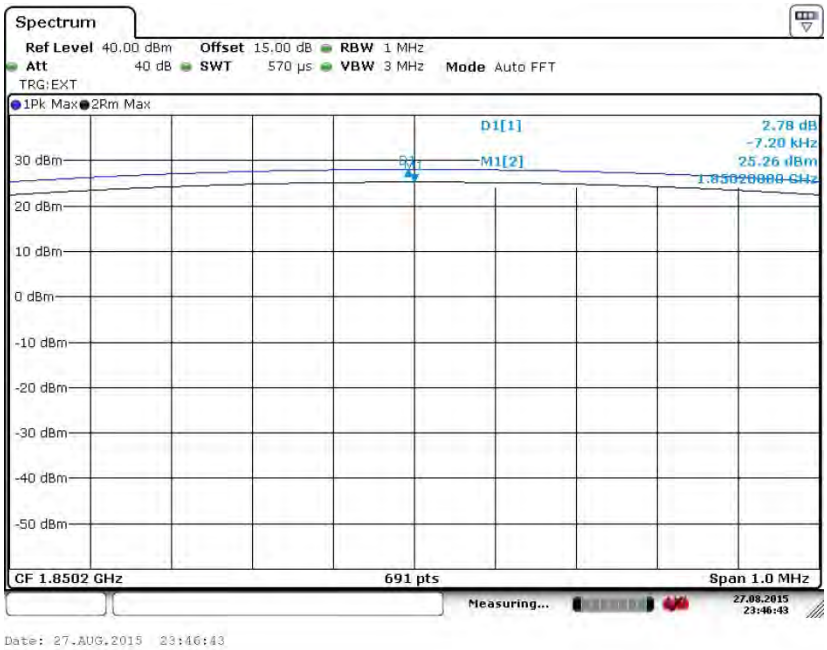


Peak-to-Average Ratio on Channel 810 (1909.8 MHz)

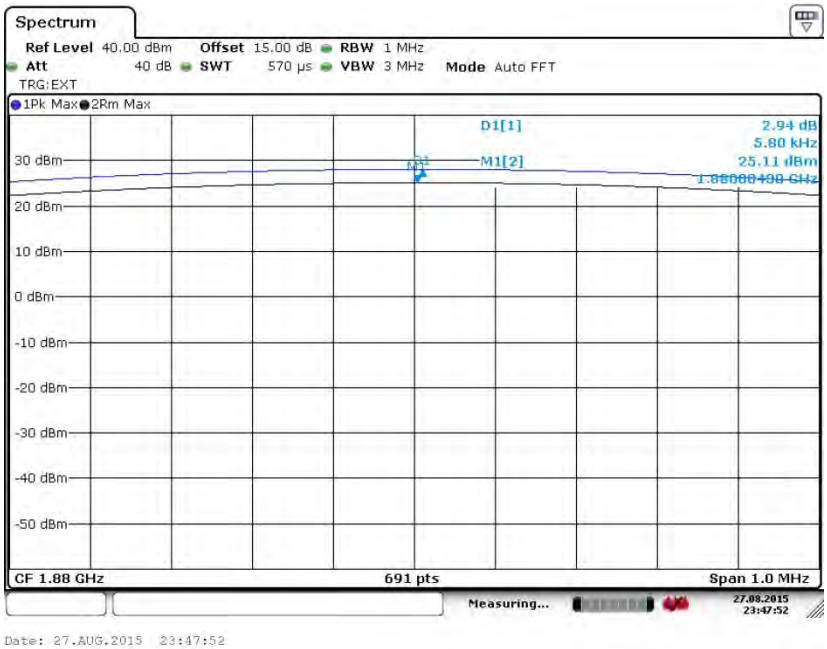


Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)

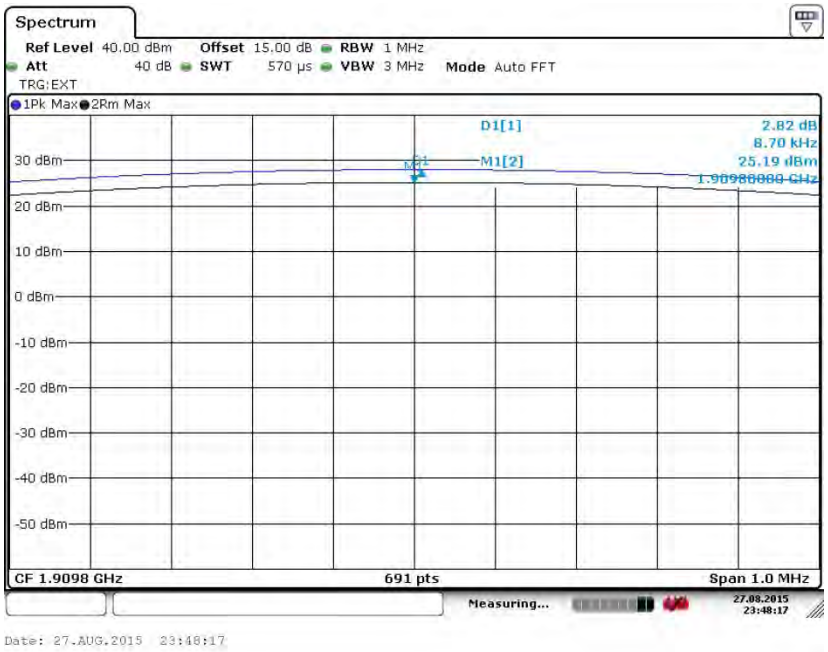
Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



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

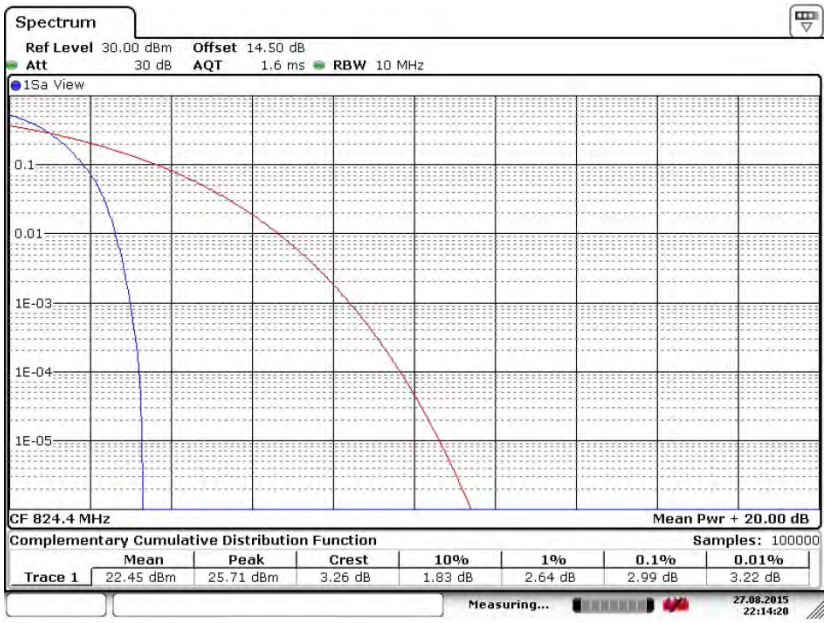


Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



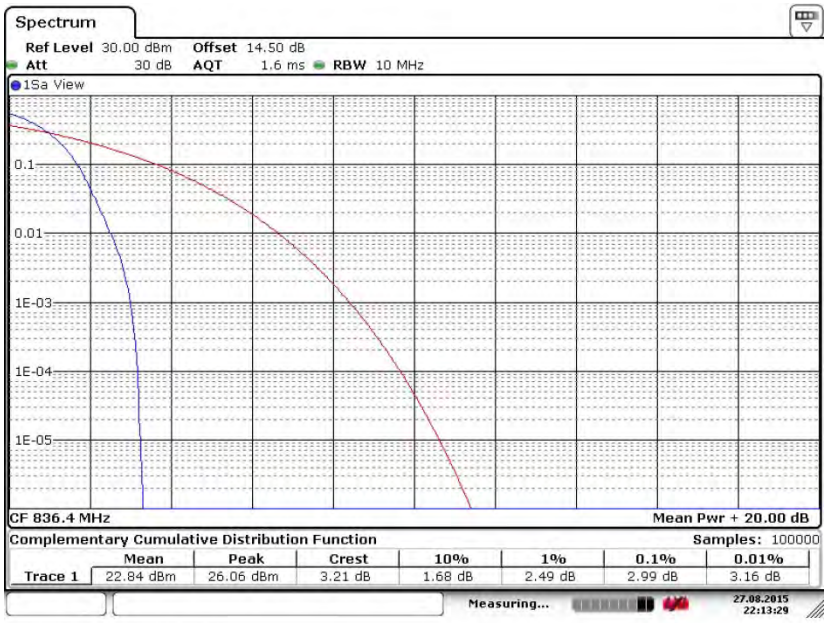
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



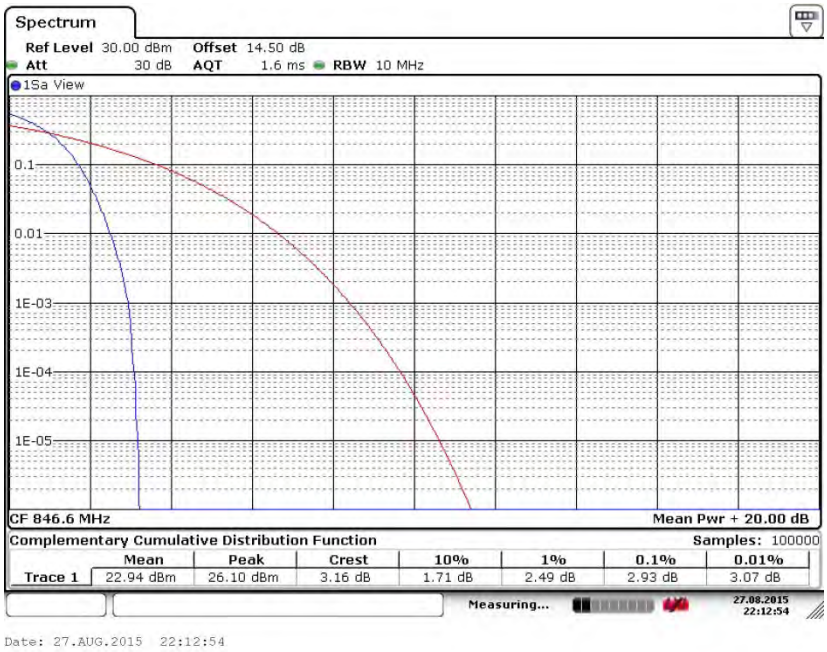
Date: 27.AUG.2015 22:14:20

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



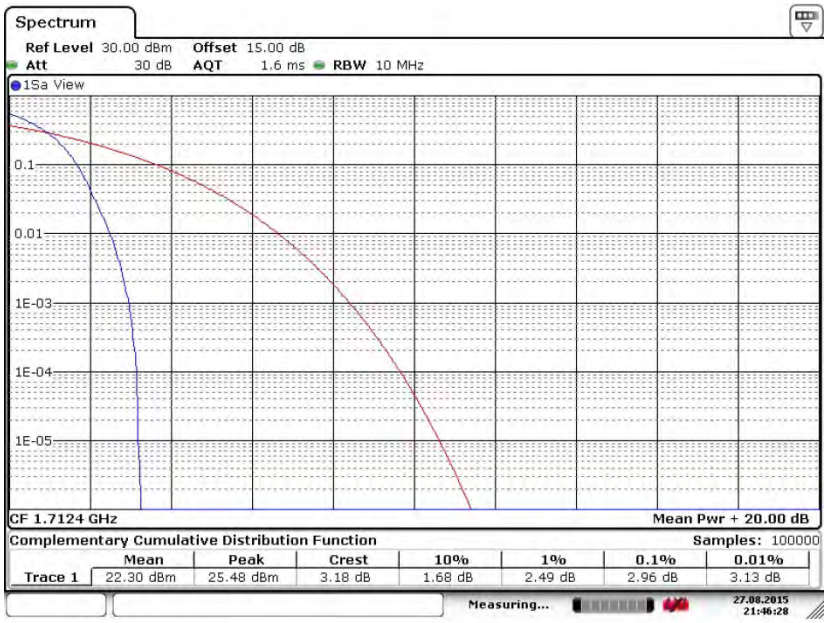
Date: 27.AUG.2015 22:13:29

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



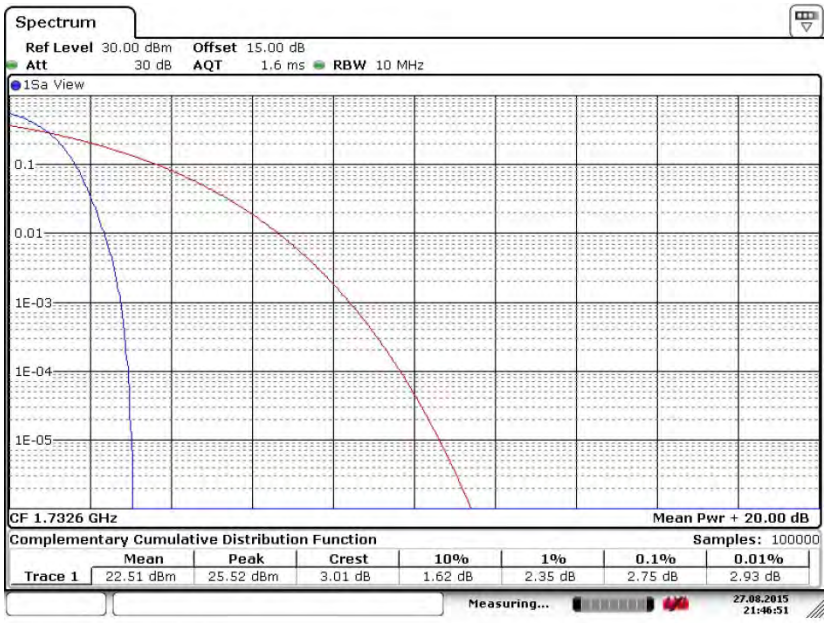
Band :	WCDMA Band IV	Test Mode :	RMC 12.2Kbps Link (QPSK)

Peak-to-Average Ratio on Channel 1312 (1712.4 MHz)



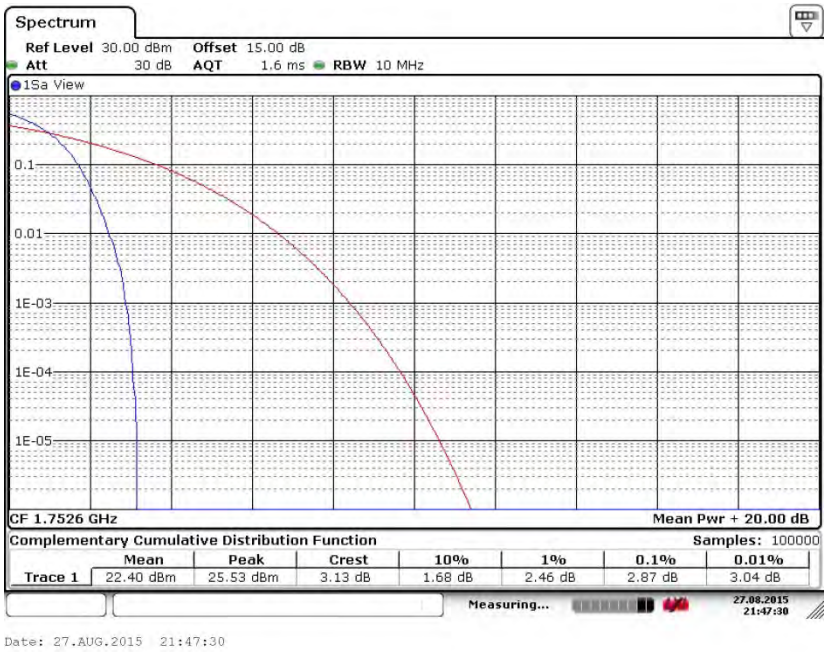
Date: 27.AUG.2015 21:46:28

Peak-to-Average Ratio on Channel 1413 (1732.6 MHz)



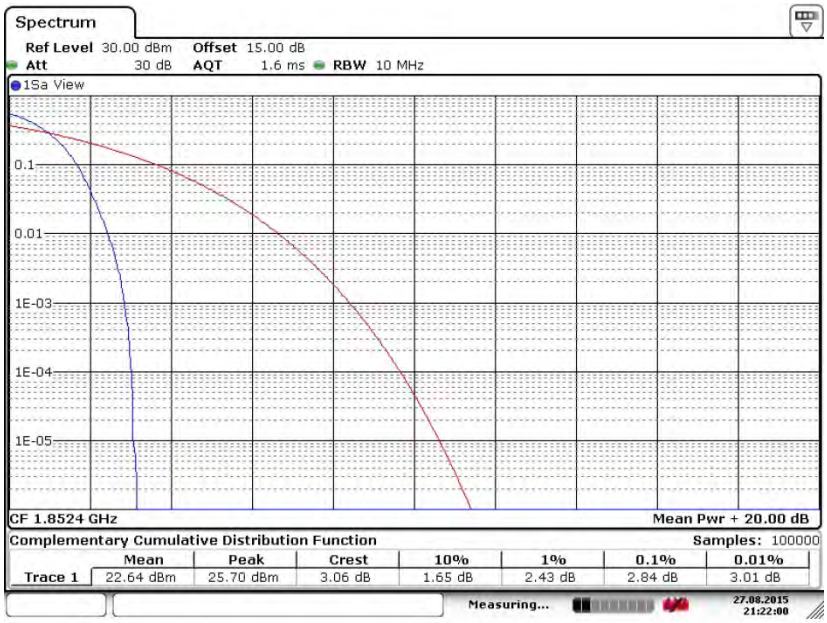
Date: 27.AUG.2015 21:46:52

Peak-to-Average Ratio on Channel 1513 (1752.6 MHz)

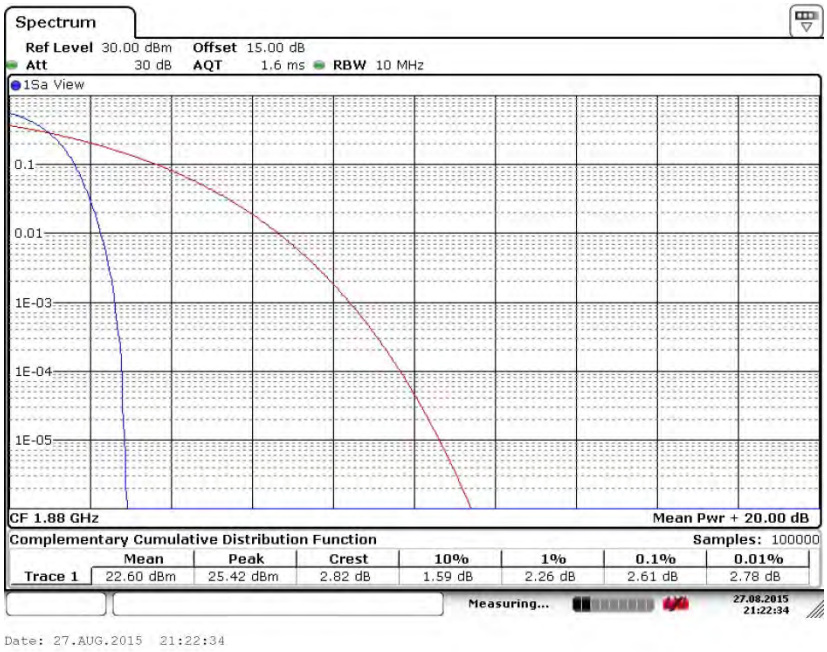


Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

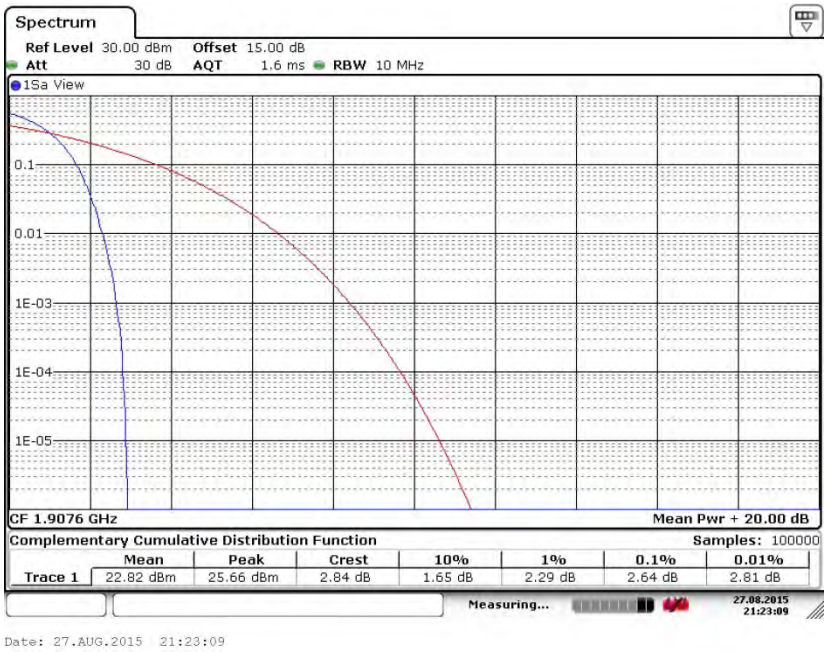
Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)



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



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 (Cellular Band) and the EIRP of mobile transmitters are limited to 2 Watts (PCS Band) and 1 Watts (AWS Band).

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	24.90	0.3090	27.78	0.5998
Middle	836.4	26.52	0.4487	28.29	0.6745
Highest	848.8	25.85	0.3846	28.21	0.6622
Limit	ERP < 7W	Result		PASS	

GSM850 (EDGE class 8) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.2	22.03	0.1596	23.36	0.2168
Middle	836.4	21.90	0.1549	23.12	0.2051
Highest	848.8	22.80	0.1905	22.44	0.1754
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	10.38	0.0109	14.47	0.0280
Middle	836.4	11.70	0.0148	12.83	0.0192
Highest	846.6	13.07	0.0203	12.80	0.0191
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	29.42	0.8750	30.35	1.0839
Middle	1880.0	28.79	0.7568	30.34	1.0814
Highest	1909.8	29.02	0.7980	29.89	0.9750
Limit	EIRP < 2W	Result		PASS	

GSM1900 (EDGE class 8) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1850.2	24.09	0.2564	25.77	0.3776
Middle	1880.0	25.62	0.3648	25.82	0.3819
Highest	1909.8	25.17	0.3289	25.86	0.3855
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	16.96	0.0497	17.89	0.0615
Middle	1880.0	18.22	0.0664	18.39	0.0690
Highest	1907.6	17.92	0.0619	17.17	0.0521
Limit	EIRP < 2W	Result		PASS	

WCDMA Band IV(RMC 12.2Kbps) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1712.4	15.86	0.0385	17.34	0.0542
Middle	1732.6	16.62	0.0459	18.33	0.0681
Highest	1752.6	15.84	0.0384	18.25	0.0668
Limit	EIRP < 1W	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.

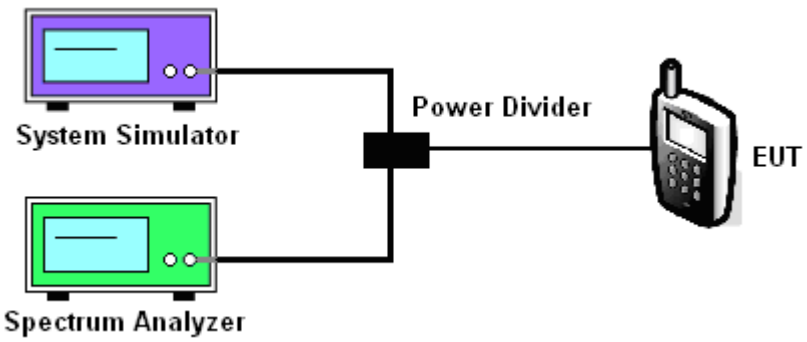
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

5. The testing follows FCC KDB 971168 v02r02 Section 4.2.
6. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
7. 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.
8. The 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, peak detector, trace maximum hold.
9. 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)			GSM850 (EDGE class 8)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8
99% OBW (kHz)	243.13	243.13	246.02	248.91	248.91	247.47
26dB BW (kHz)	312.60	314.00	318.40	316.90	318.40	318.40

PCS Band						
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8
99% OBW (kHz)	246.02	243.13	243.13	247.47	247.47	247.47
26dB BW (kHz)	318.40	315.50	316.90	314.00	314.00	312.60

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)	4.20	4.20	4.20
26dB BW (MHz)	4.86	4.85	4.86

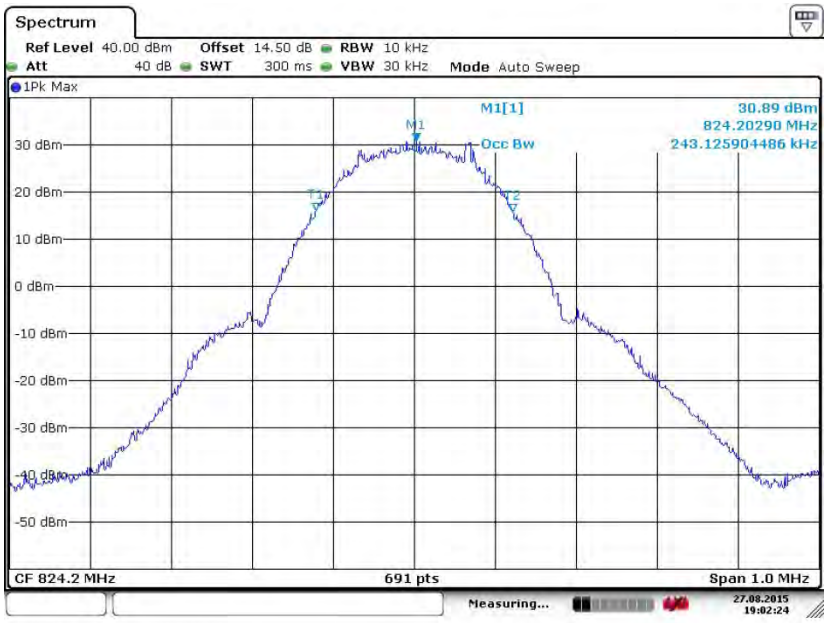
AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
99% OBW (MHz)	4.20	4.21	4.18
26dB BW (MHz)	4.88	4.86	4.85

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)	4.20	4.21	4.21
26dB BW (MHz)	4.88	4.88	4.86

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

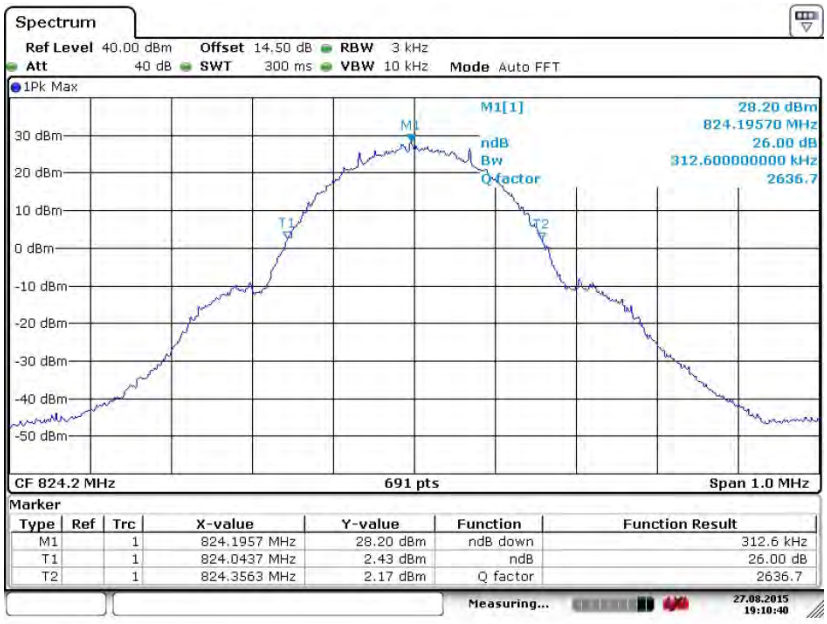
Band :	GSM 850	Test Mode :	GSM Link (GMSK)

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



Date: 27.AUG.2015 19:02:24

26dB Bandwidth Plot on Channel 128 (824.2 MHz)

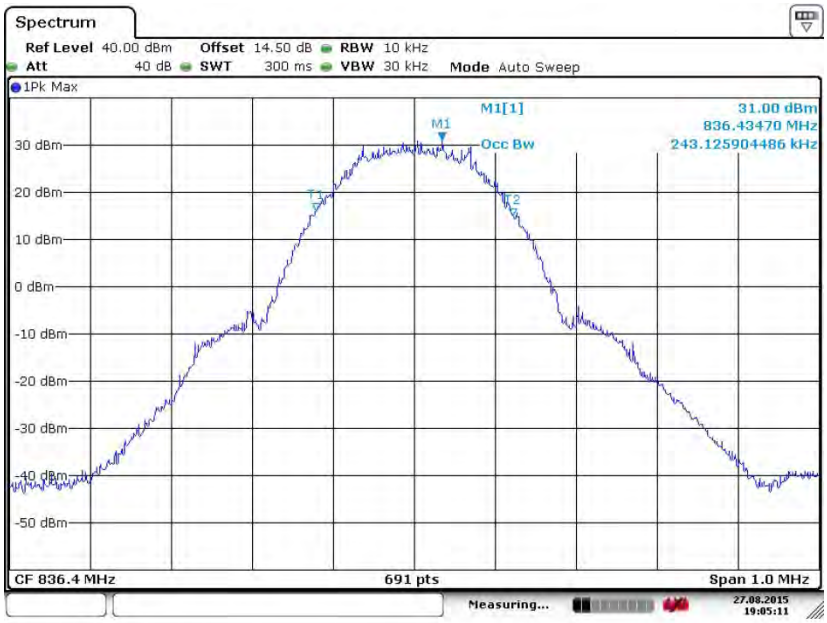


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	824.1957 MHz	28.20 dBm	ndB down	312.6 kHz
T1		1	824.0437 MHz	2.43 dBm	ndB	26.00 dB
T2		1	824.3563 MHz	2.17 dBm	Q factor	2636.7

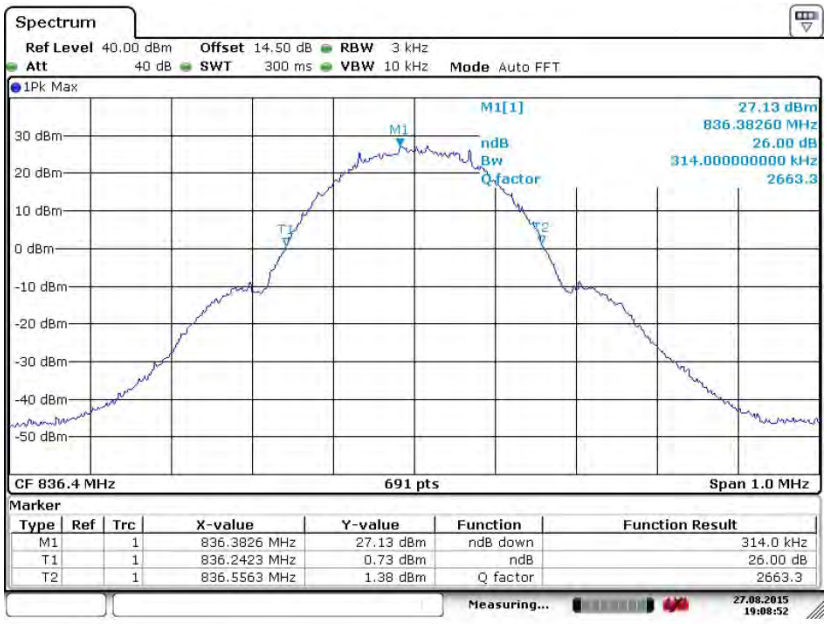
Date: 27.AUG.2015 19:10:40

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



Date: 27.AUG.2015 19:05:11

26dB Bandwidth Plot on Channel 189 (836.4 MHz)

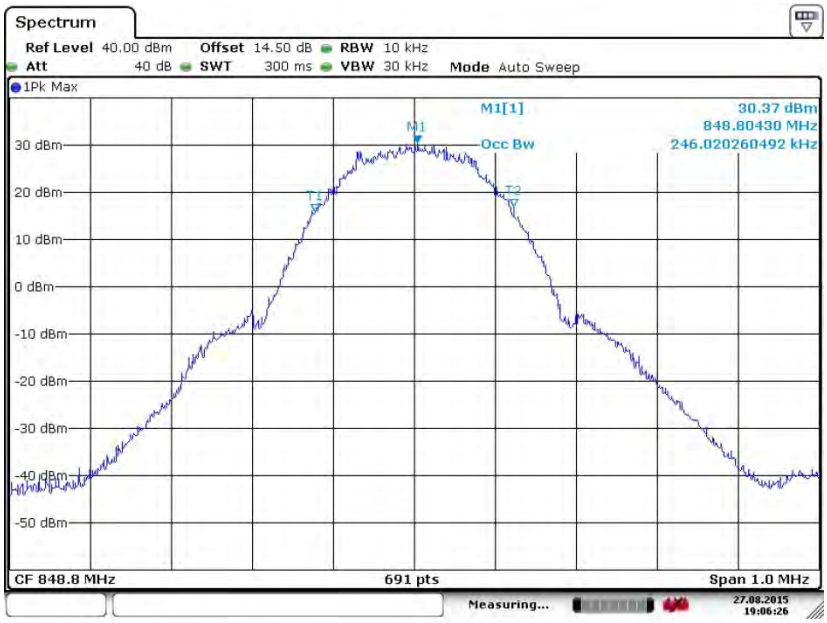


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	836.3826 MHz	27.13 dBm	ndB down	314.0 kHz
T1		1	836.2423 MHz	0.73 dBm	ndB	26.00 dB
T2		1	836.5563 MHz	1.38 dBm	Q factor	2663.3

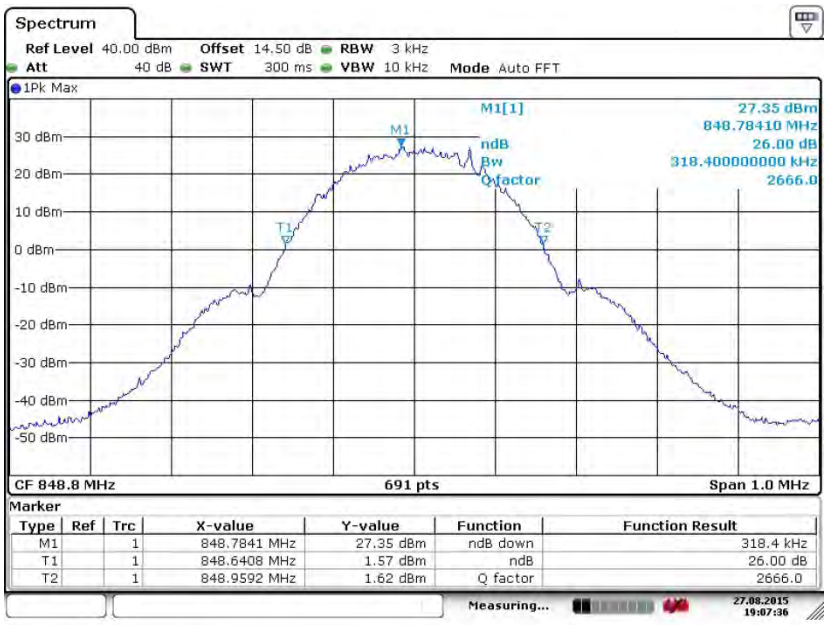
Date: 27.AUG.2015 19:08:52

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



Date: 27.AUG.2015 19:06:26

26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Marker

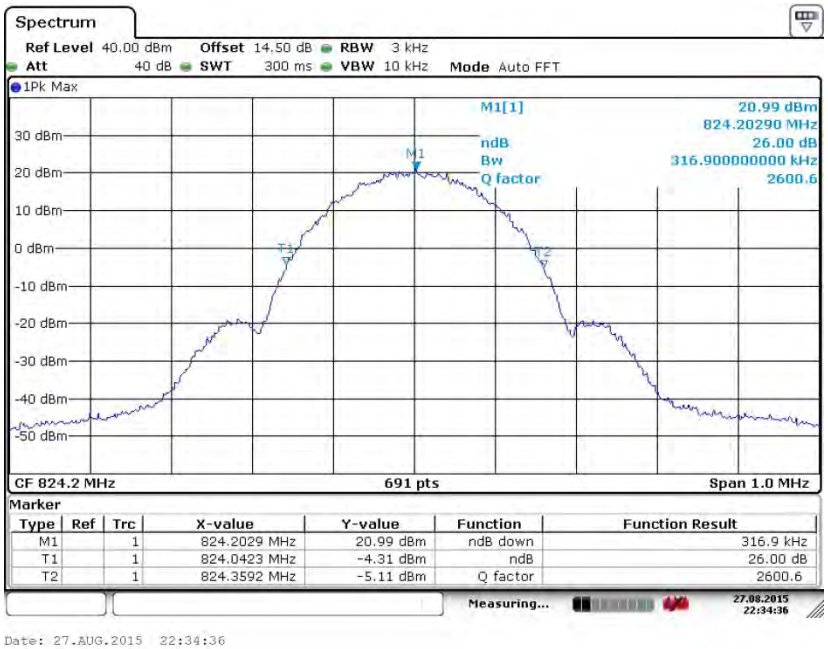
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	848.7841 MHz	27.35 dBm	ndB down	318.4 kHz
T1		1	848.6408 MHz	1.57 dBm	ndB	26.00 dB
T2		1	848.9592 MHz	1.62 dBm	Q factor	2666.0

Date: 27.AUG.2015 19:07:36

Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)

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

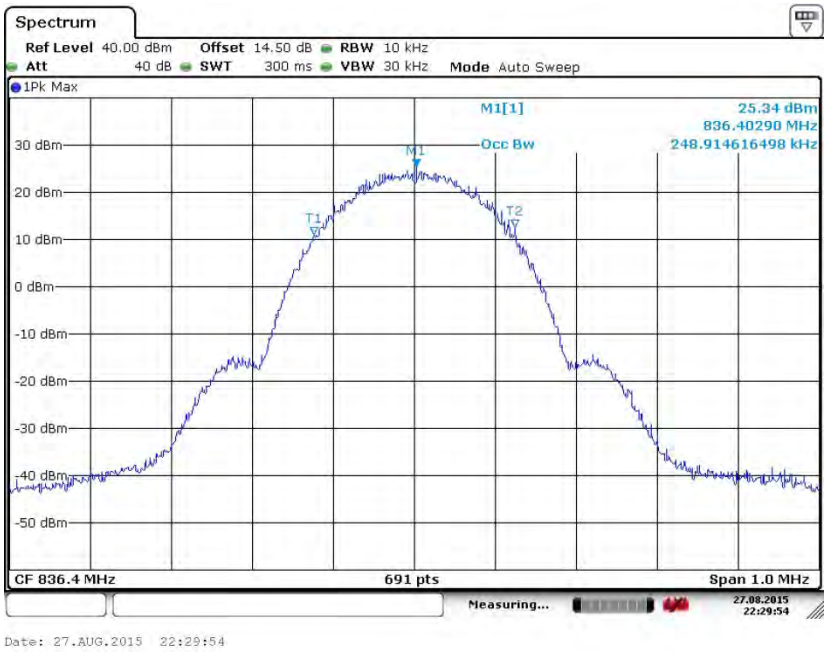
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



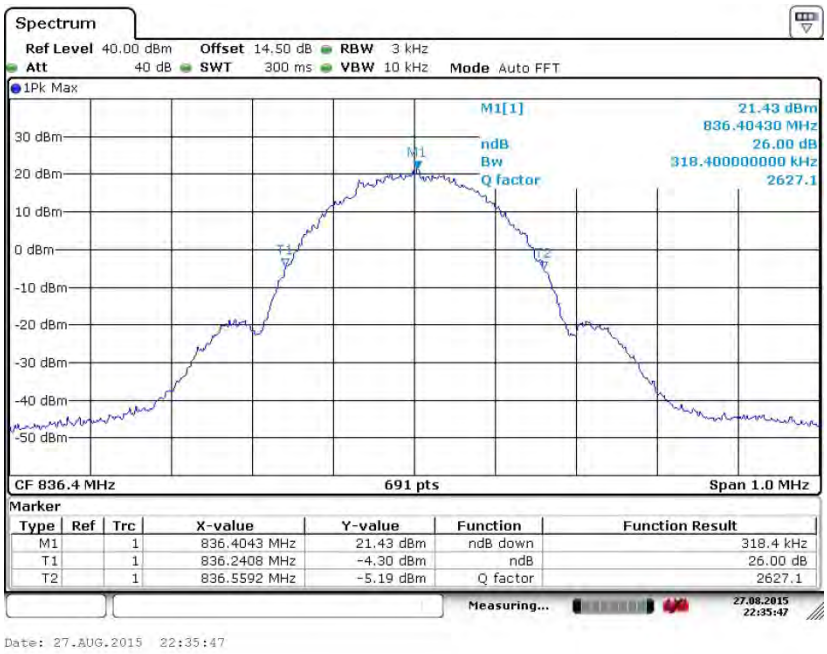
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	824.2029 MHz	20.99 dBm	ndB down	316.9 kHz
T1		1	824.0423 MHz	-4.31 dBm	ndB	26.00 dB
T2		1	824.3592 MHz	-5.11 dBm	Q factor	2600.6

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



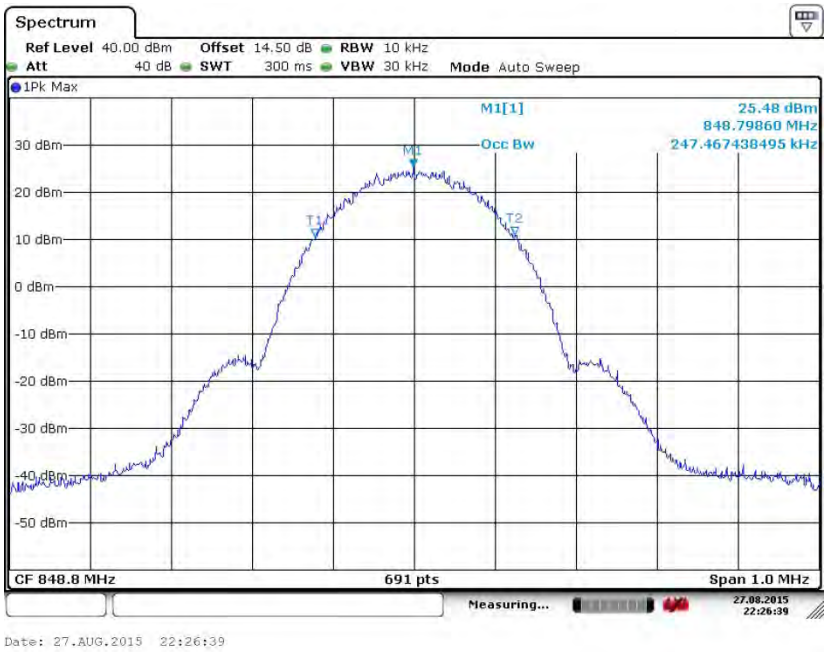
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



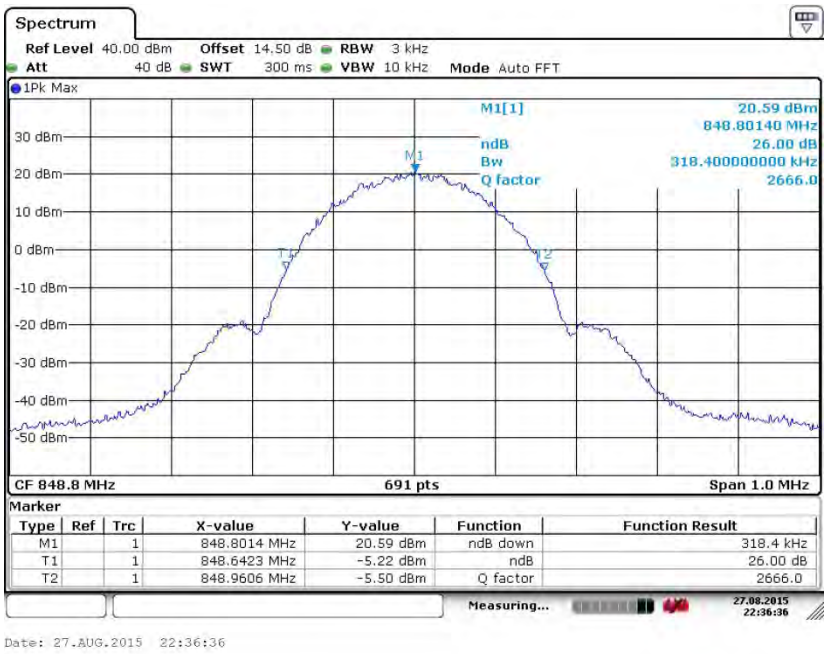
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	836.4043 MHz	21.43 dBm	ndB down	318.4 kHz
T1		1	836.2408 MHz	-4.30 dBm	ndB	26.00 dB
T2		1	836.5592 MHz	-5.19 dBm	Q factor	2627.1

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

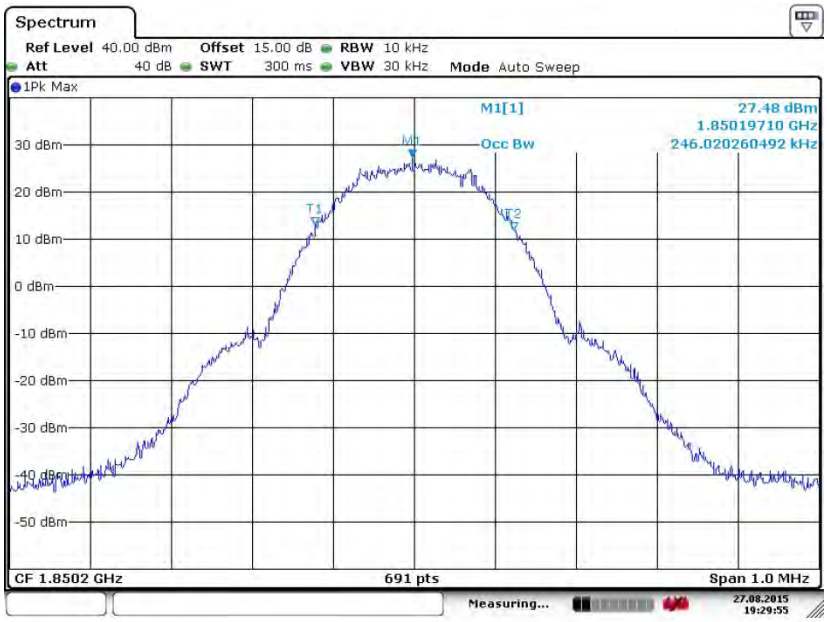


26dB Bandwidth Plot on Channel 251 (848.8 MHz)



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

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



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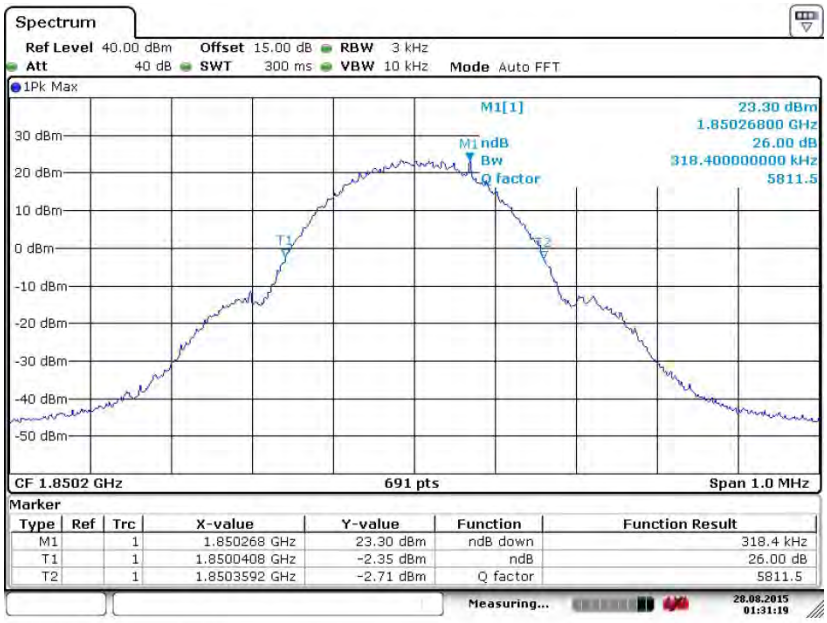
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Marker

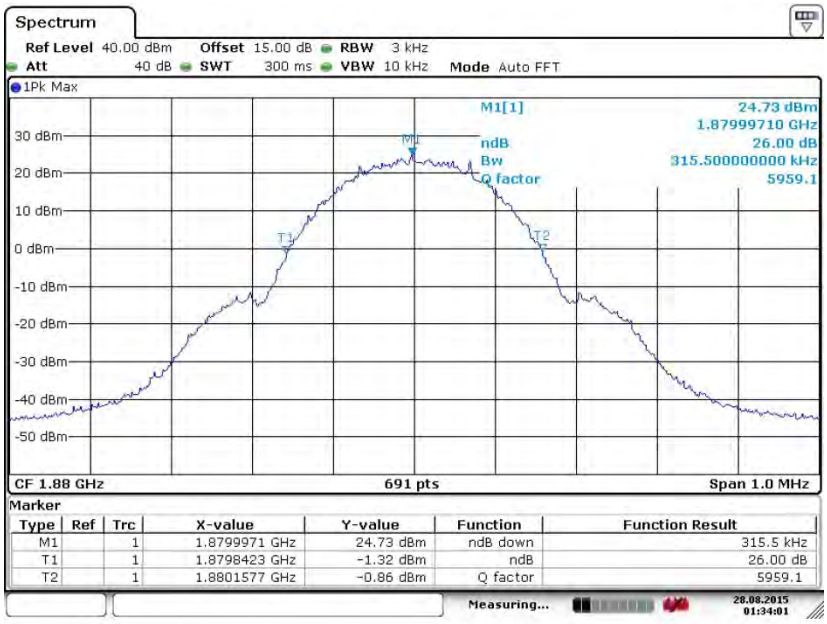
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.850268 GHz	23.30 dBm	ndB down	318.4 kHz
T1		1	1.8500408 GHz	-2.35 dBm	ndB	26.00 dB
T2		1	1.8503592 GHz	-2.71 dBm	Q factor	5811.5

Date: 28.AUG.2015 01:31:19

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

Date: 28.AUG.2015 01:41:18

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)

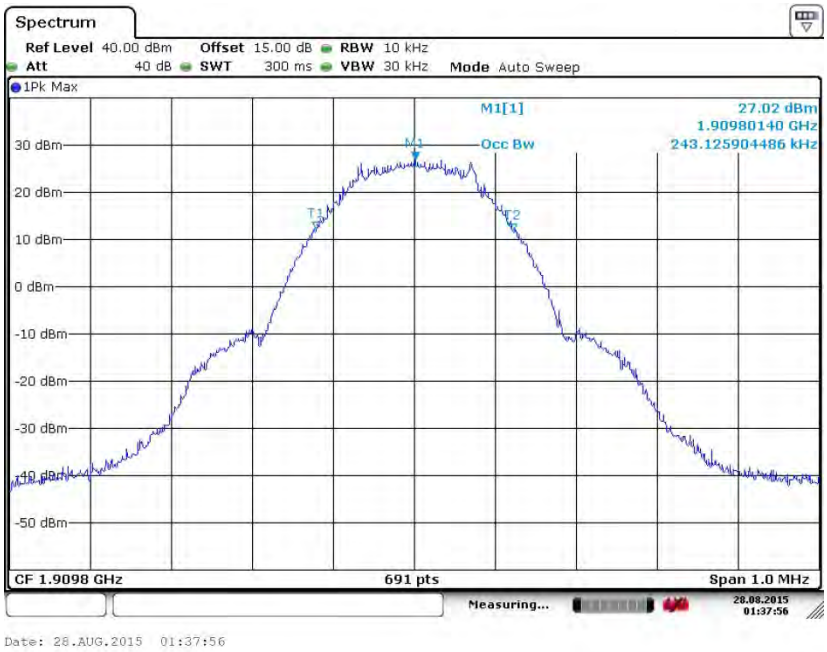


Marker

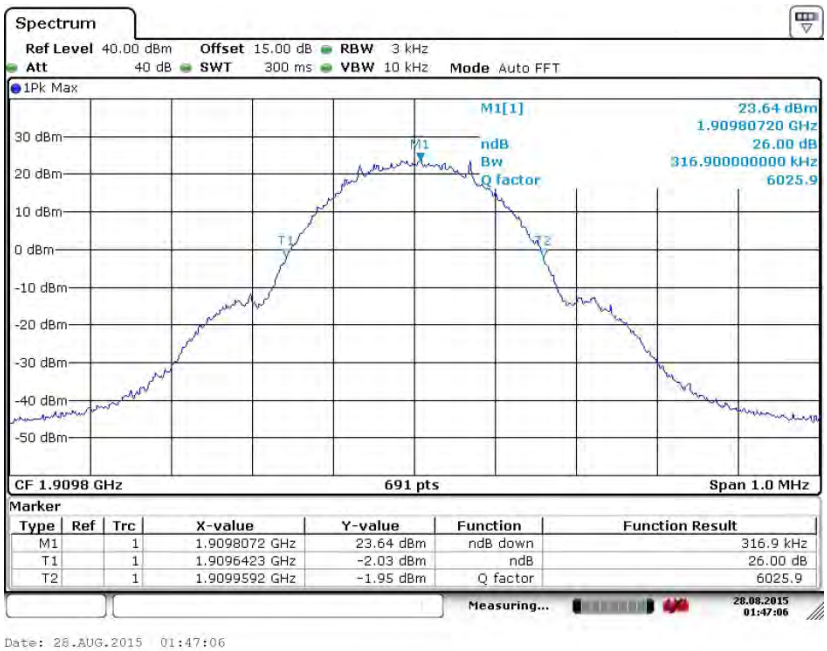
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8799971 GHz	24.73 dBm	ndB down	315.5 kHz
T1		1	1.8798423 GHz	-1.32 dBm	ndB	26.00 dB
T2		1	1.8801577 GHz	-0.86 dBm	Q factor	5959.1

Date: 28.AUG.2015 01:34:01

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



26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

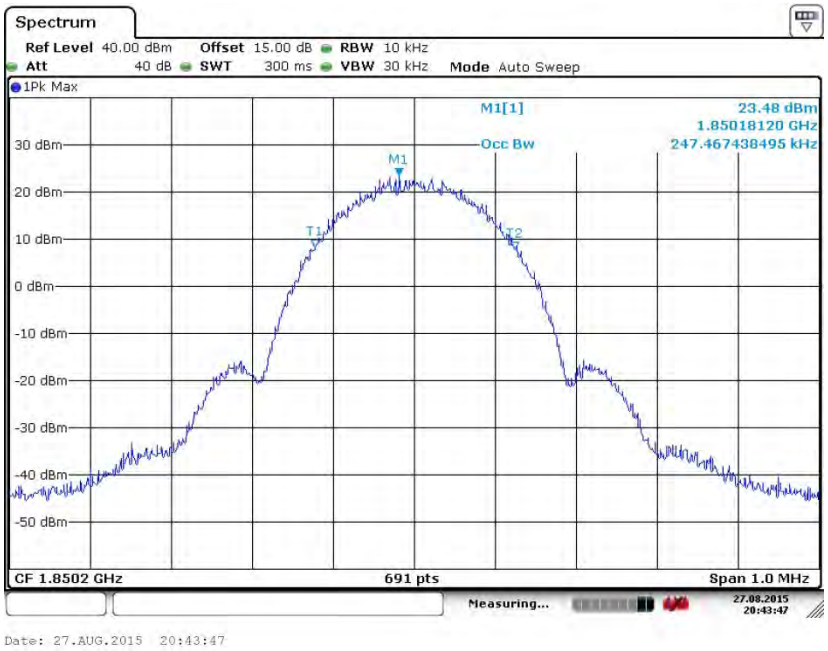


Marker

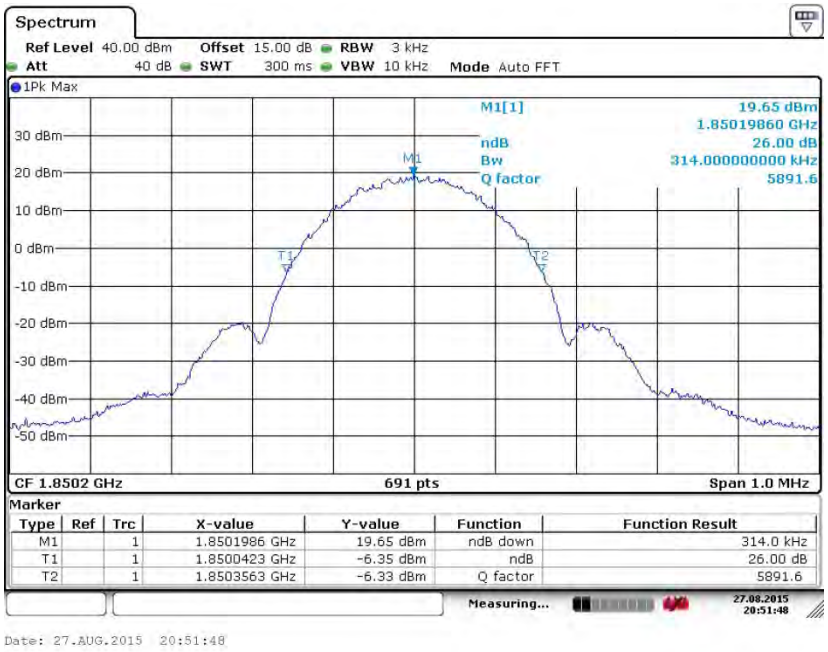
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9098072 GHz	23.64 dBm	ndB down	316.9 kHz
T1		1	1.9096423 GHz	-2.03 dBm	ndB	26.00 dB
T2		1	1.9099592 GHz	-1.95 dBm	Q factor	6025.9

Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)

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



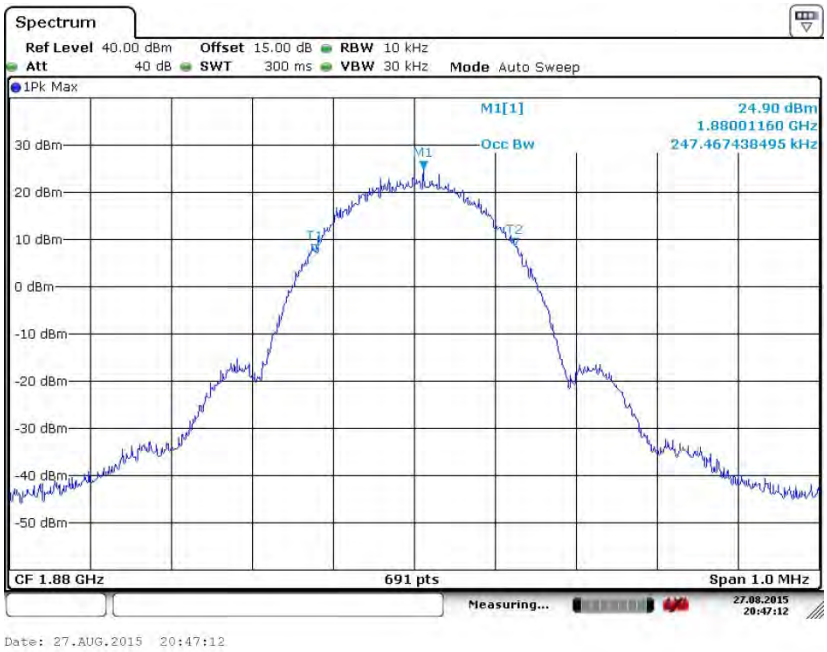
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



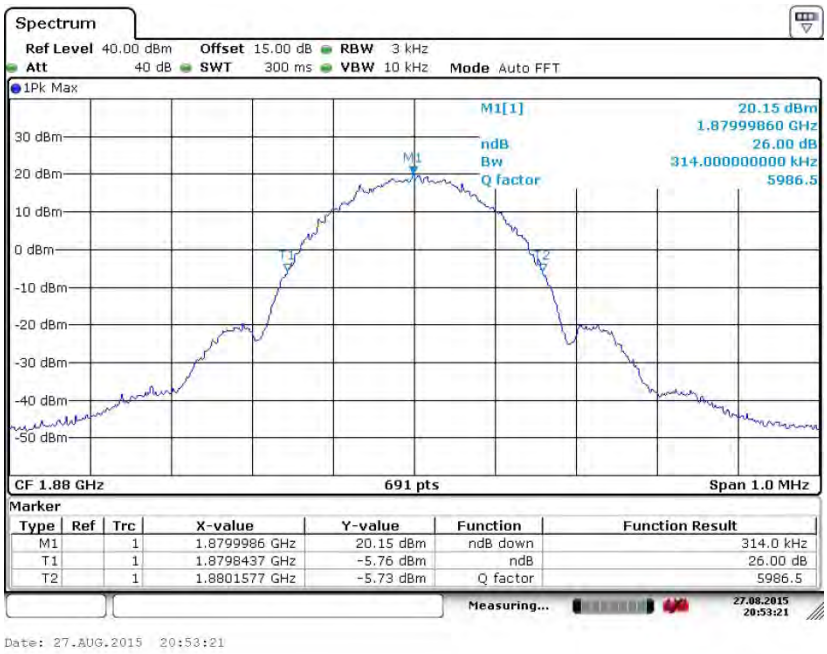
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8501986 GHz	19.65 dBm	ndB down	314.0 kHz
T1		1	1.8500423 GHz	-6.35 dBm	ndB	26.00 dB
T2		1	1.8503563 GHz	-6.33 dBm	Q factor	5891.6

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



26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



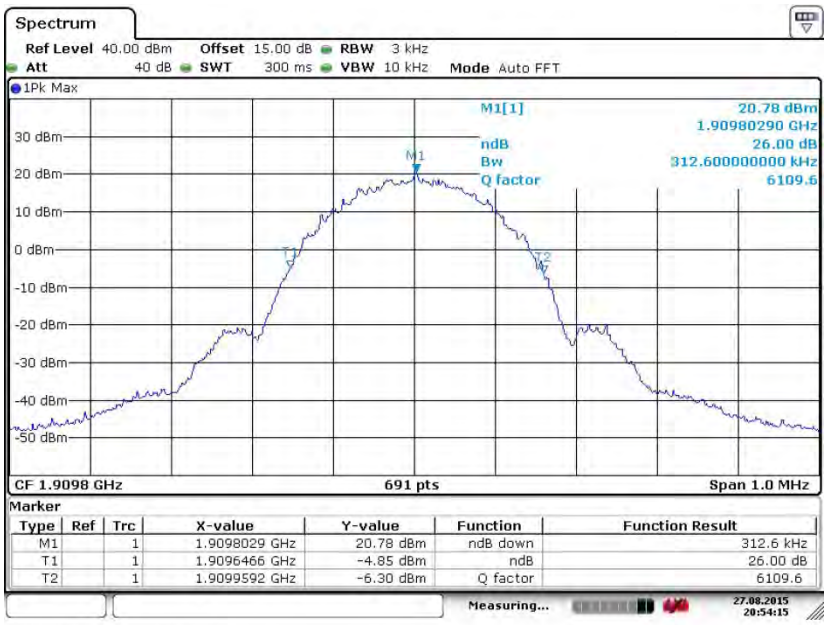
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8799986 GHz	20.15 dBm	ndB down	314.0 kHz
T1		1	1.8798437 GHz	-5.76 dBm	ndB	26.00 dB
T2		1	1.8801577 GHz	-5.73 dBm	Q factor	5986.5

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

Date: 27.AUG.2015 20:49:02

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



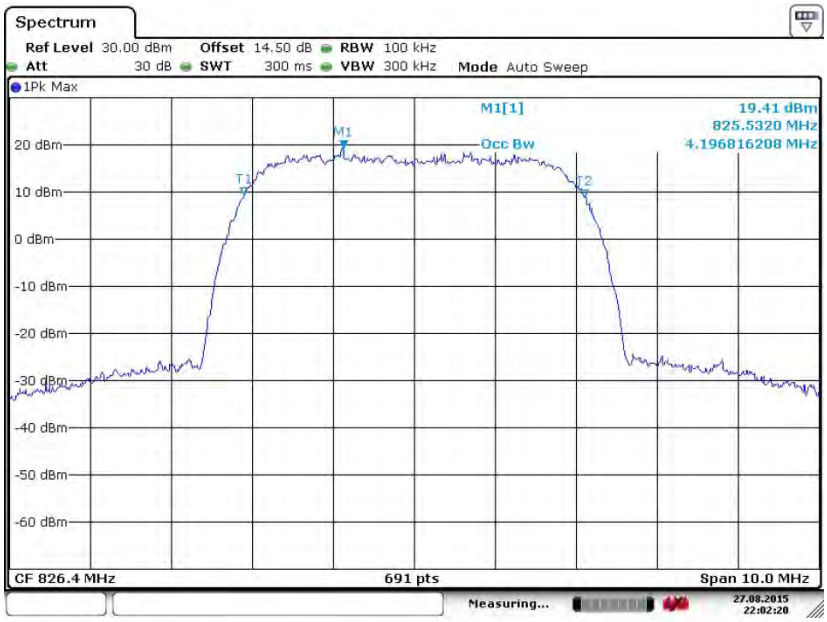
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9098029 GHz	20.78 dBm	ndB down	312.6 kHz
T1		1	1.9096466 GHz	-4.85 dBm	ndB	26.00 dB
T2		1	1.9099592 GHz	-6.30 dBm	Q factor	6109.6

Date: 27.AUG.2015 20:54:15

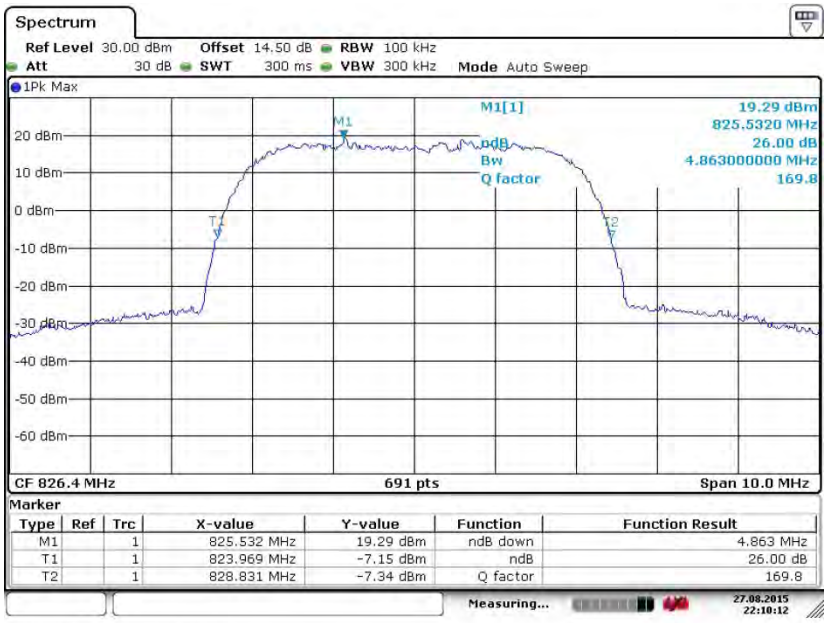
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



Date: 27.AUG.2015 22:02:20

26dB Bandwidth Plot on Channel 4132 (826.4 MHz)

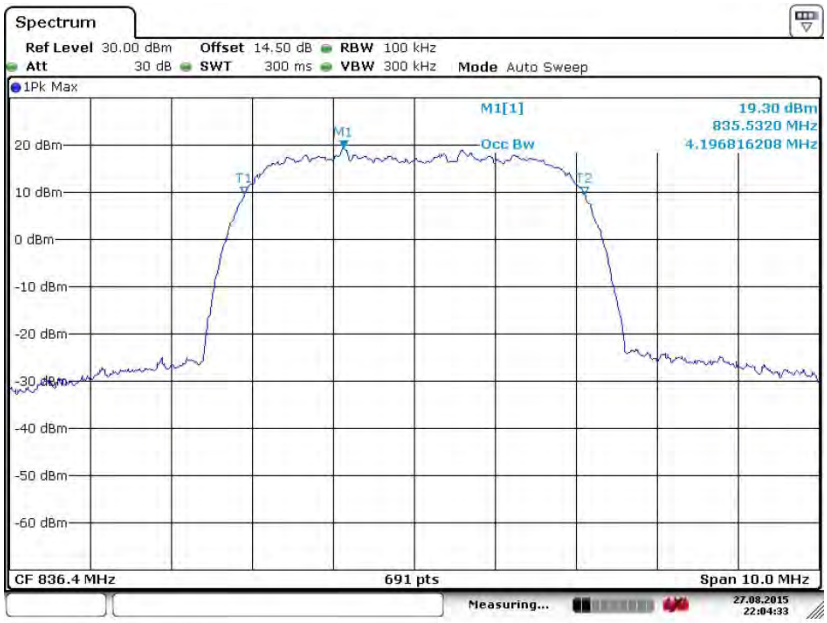


Marker

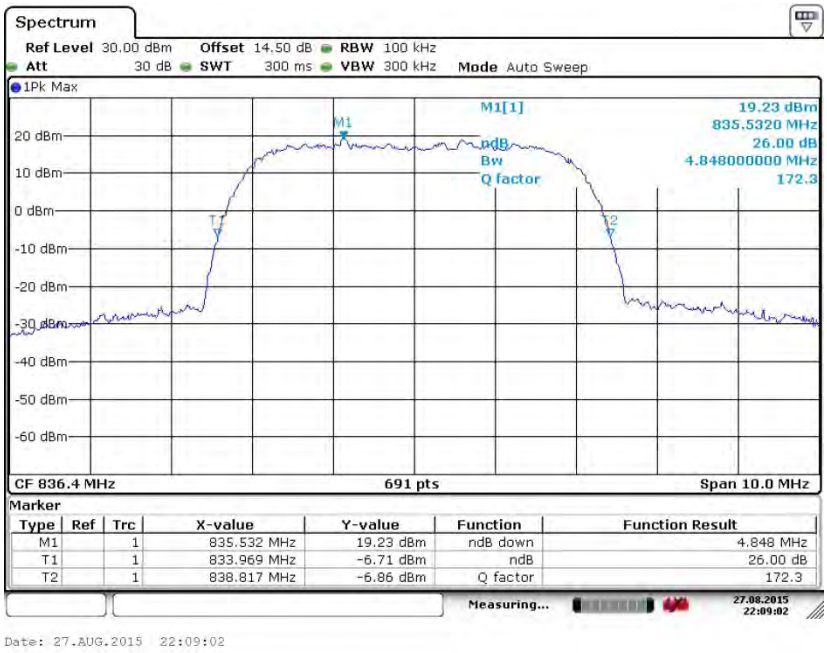
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	825.532 MHz	19.29 dBm	ndB down	4.863 MHz
T1		1	823.969 MHz	-7.15 dBm	ndB	26.00 dB
T2		1	828.831 MHz	-7.34 dBm	Q factor	169.8

Date: 27.AUG.2015 22:10:12

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



26dB Bandwidth Plot on Channel 4182 (836.4 MHz)

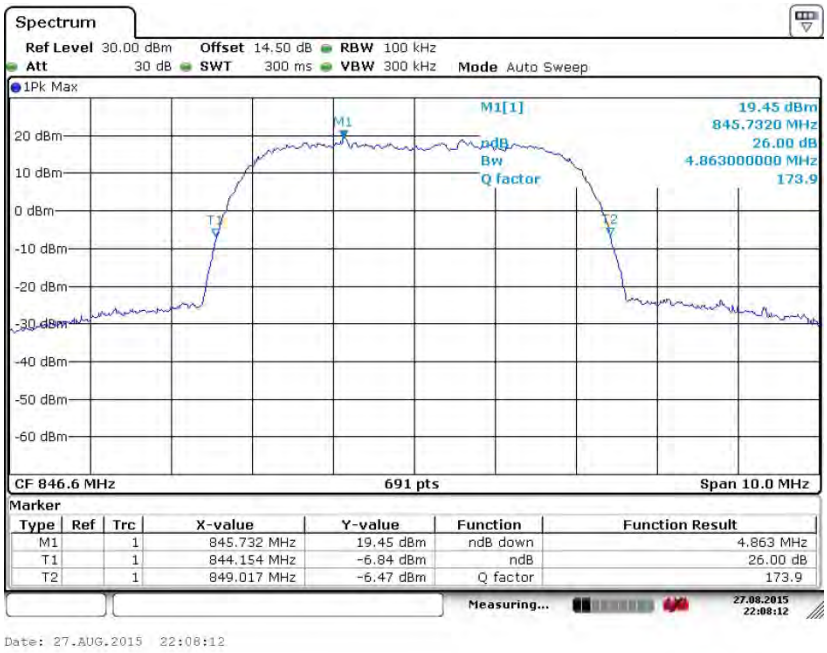


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	835.532 MHz	19.23 dBm	ndB down	4.848 MHz
T1		1	833.969 MHz	-6.71 dBm	ndB	26.00 dB
T2		1	838.817 MHz	-6.86 dBm	Q factor	172.3

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

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)

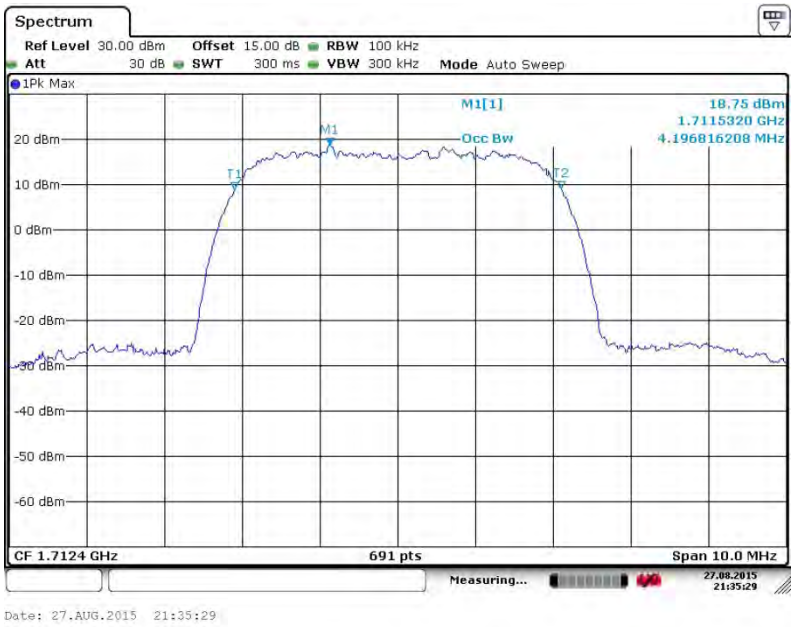


Marker

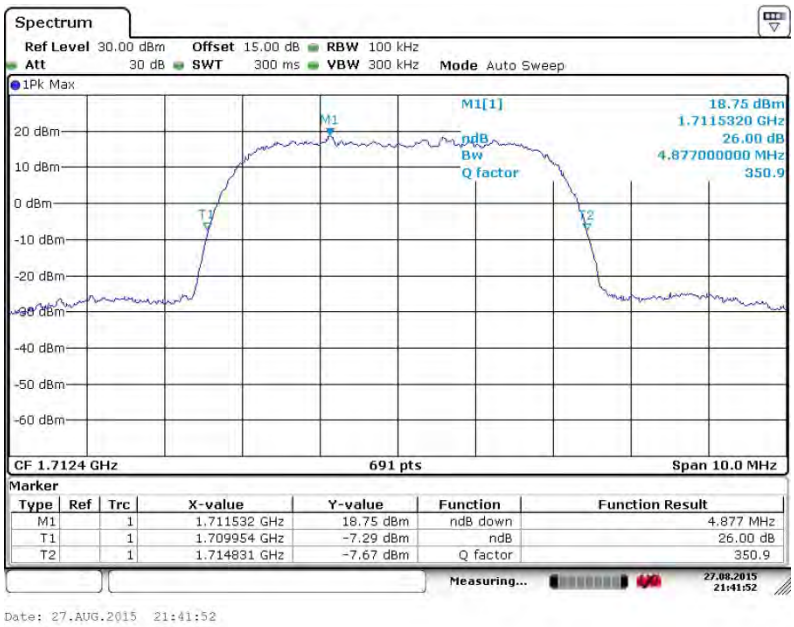
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	845.732 MHz	19.45 dBm	ndB down	4.863 MHz
T1		1	844.154 MHz	-6.84 dBm	ndB	26.00 dB
T2		1	849.017 MHz	-6.47 dBm	Q factor	173.9

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

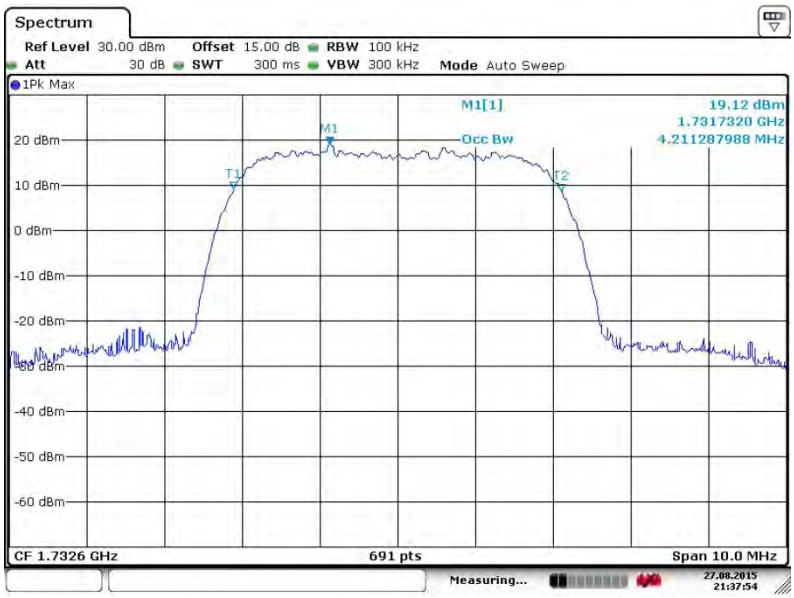
99% Occupied Bandwidth Plot on Channel 1312 (1712.4 MHz)



26dB Bandwidth Plot on Channel 1312 (1712.4 MHz)

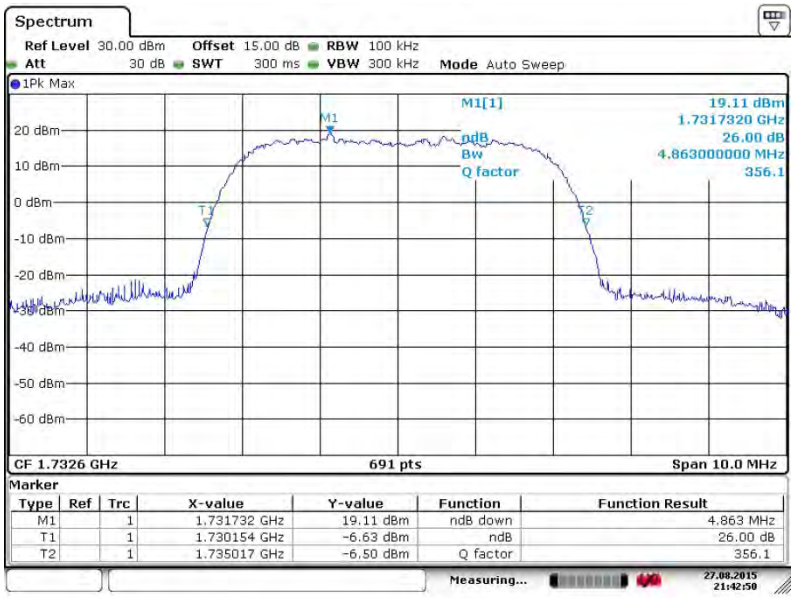


99% Occupied Bandwidth Plot on Channel 1413 (1732.6 MHz)



Date: 27.AUG.2015 21:37:54

26dB Bandwidth Plot on Channel 1413 (1732.6 MHz)



Marker

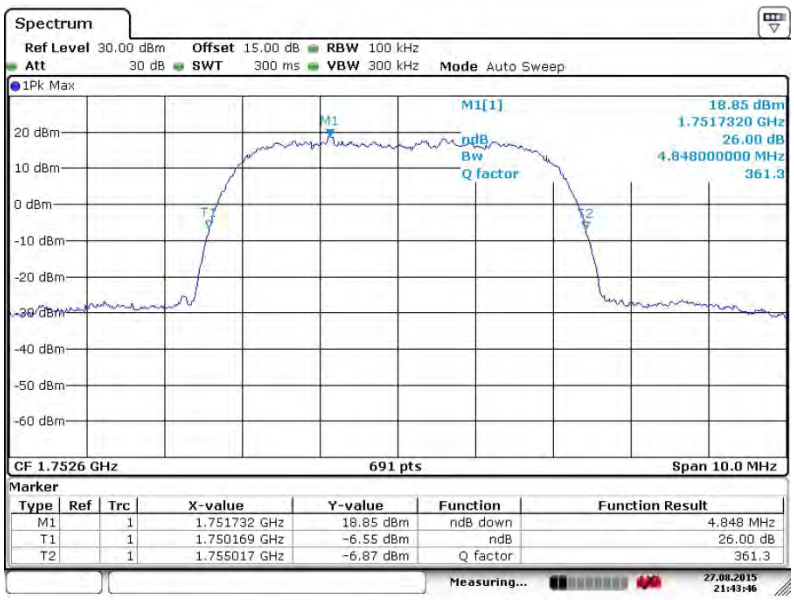
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.731732 GHz	19.11 dBm	ndB down	4.863 MHz
T1		1	1.730154 GHz	-6.63 dBm	ndB	26.00 dB
T2		1	1.735017 GHz	-6.50 dBm	Q factor	356.1

Date: 27.AUG.2015 21:42:50

99% Occupied Bandwidth Plot on Channel 1513 (1752.6 MHz)

Date: 27.AUG.2015 21:38:58

26dB Bandwidth Plot on Channel 1513 (1752.6 MHz)



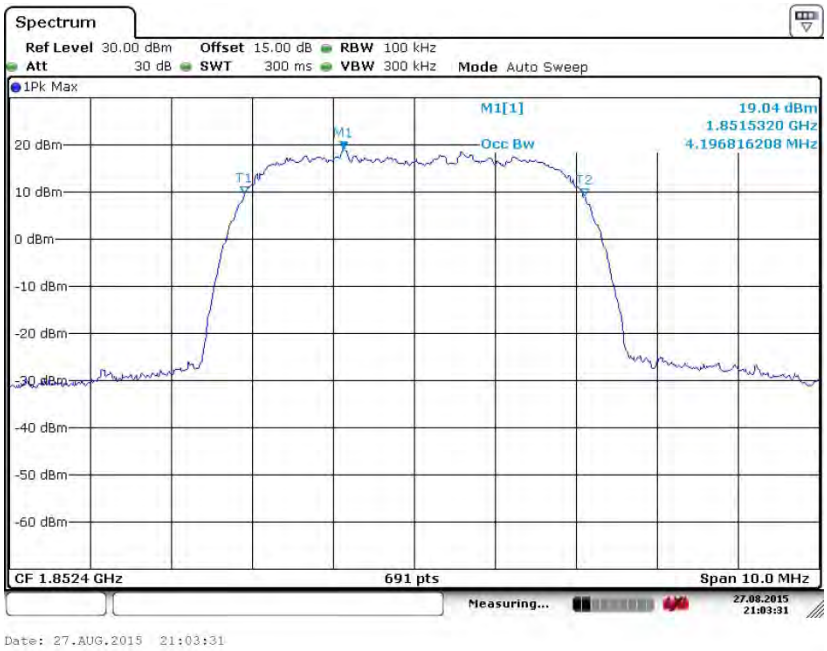
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.751732 GHz	18.85 dBm	ndB down	4.848 MHz
T1		1	1.750169 GHz	-6.55 dBm	ndB	26.00 dB
T2		1	1.755017 GHz	-6.87 dBm	Q factor	361.3

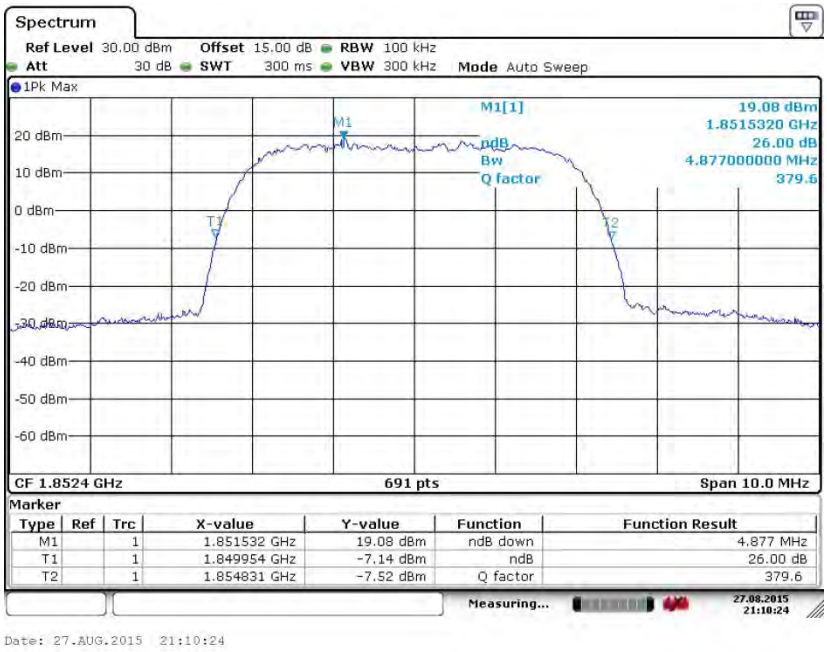
Date: 27.AUG.2015 21:43:46

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

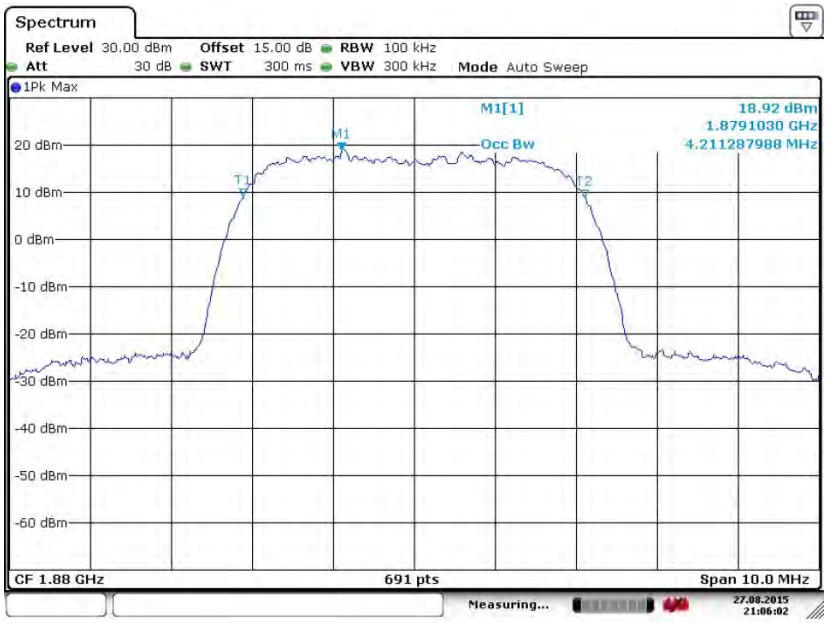
99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)

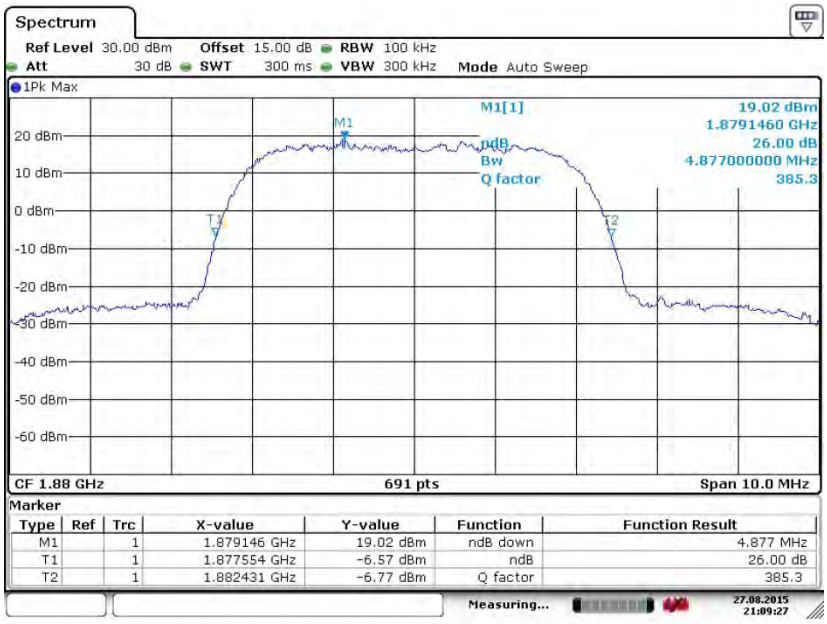


99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 27.AUG.2015 21:06:02

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



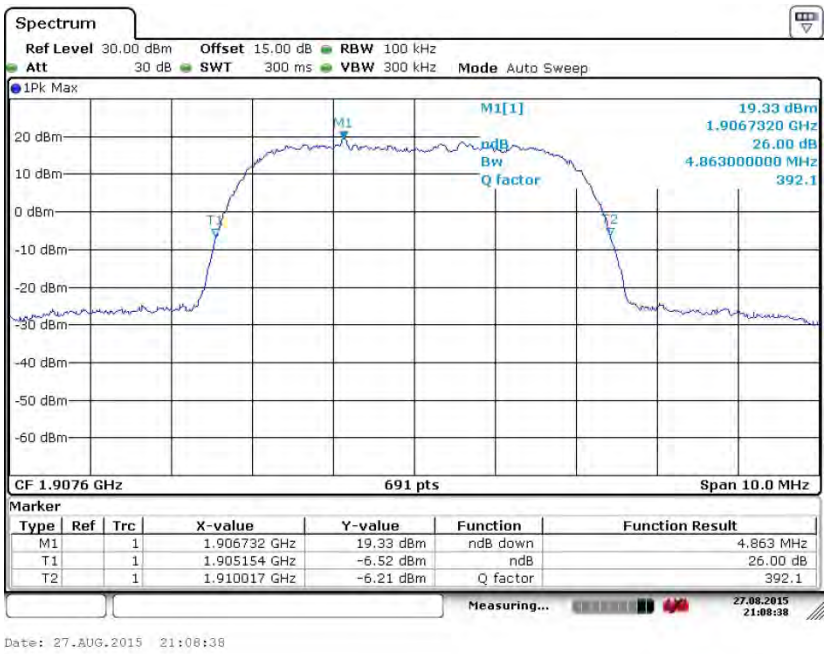
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.879146 GHz	19.02 dBm	ndB down	4.877 MHz
T1		1	1.877554 GHz	-6.57 dBm	ndB	26.00 dB
T2		1	1.882431 GHz	-6.77 dBm	Q factor	385.3

Date: 27.AUG.2015 21:09:27

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

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



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.

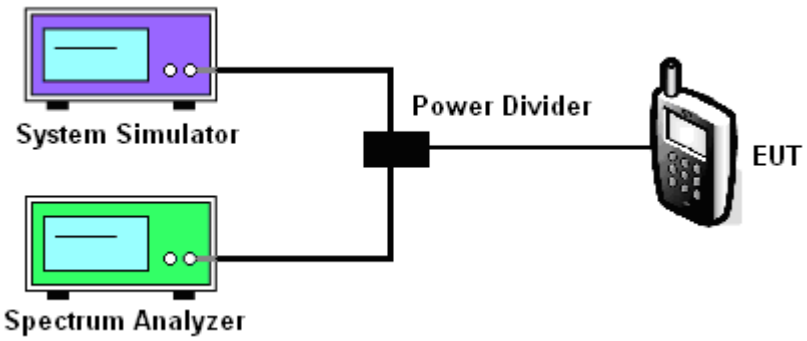
3.5.2 Measuring Instruments

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.

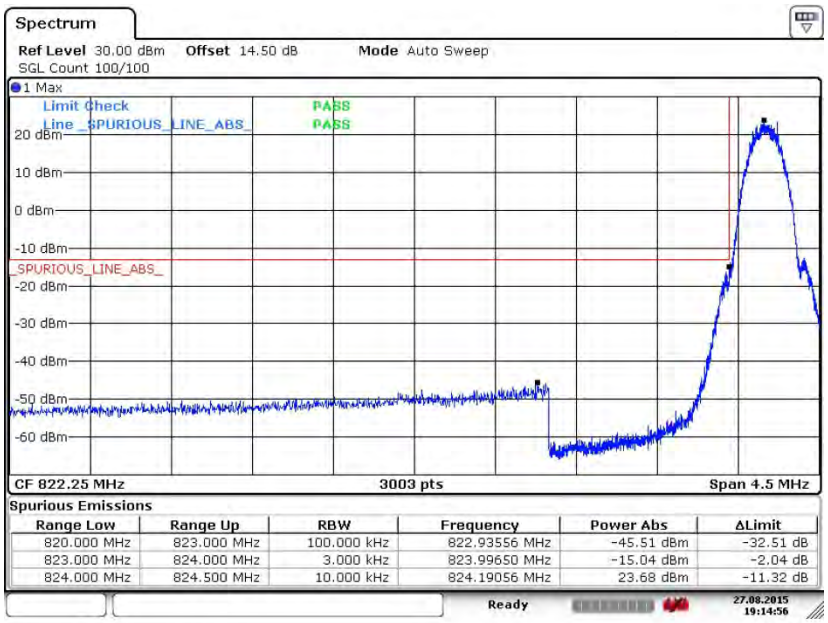
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

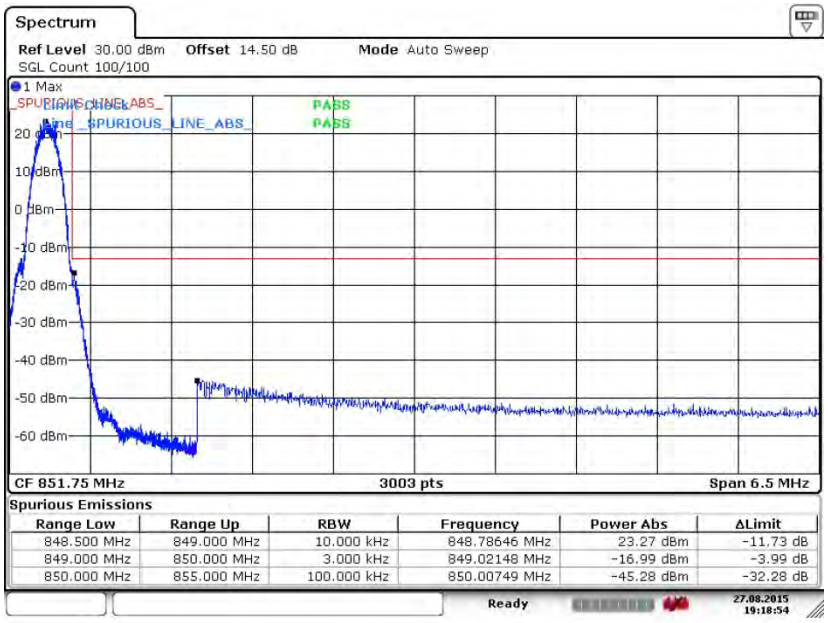
Band :	GSM850	Test Mode :	GSM Link (GMSK)

Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 27.AUG.2015 19:14:56

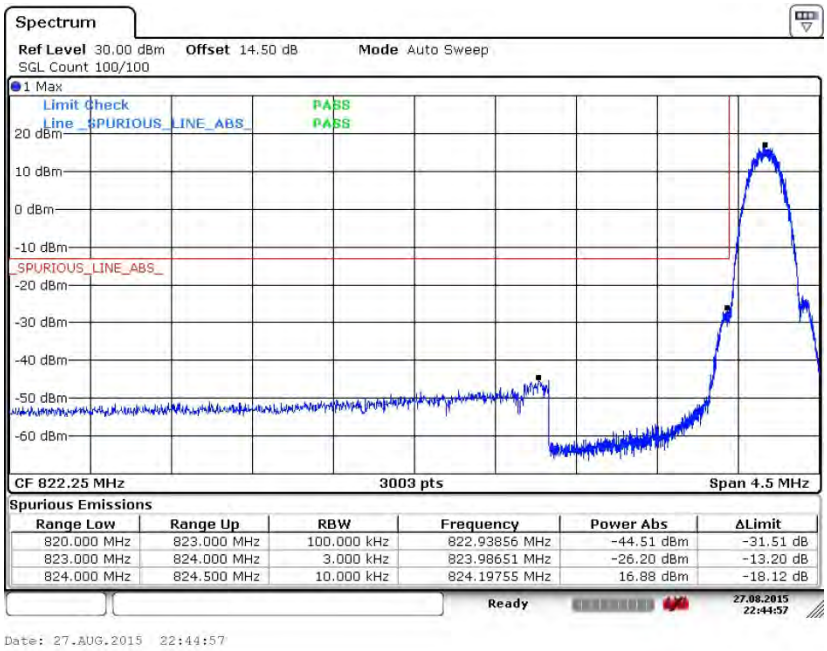
Higher Band Edge Plot on Channel 251 (848.8 MHz)



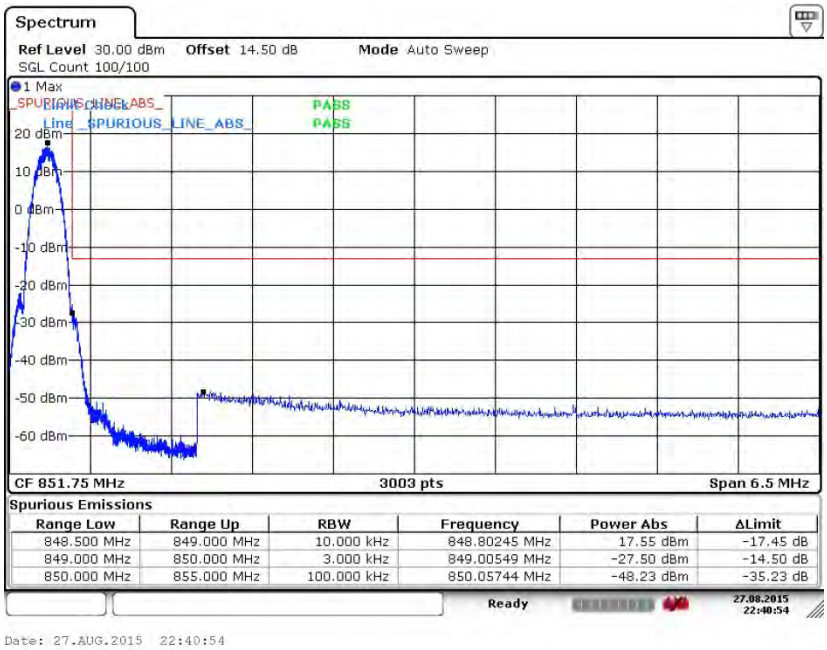
Date: 27.AUG.2015 19:18:54

Band :	GSM850	Test Mode :	EDGE class 8 Link (8PSK)

Lower Band Edge Plot on Channel 128 (824.2 MHz)

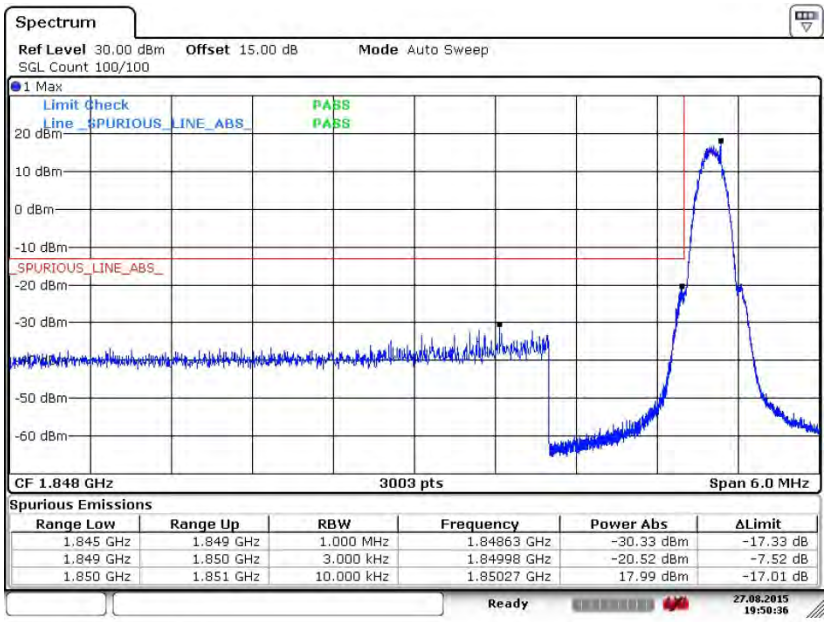


Higher Band Edge Plot on Channel 251 (848.8 MHz)



Band :	GSM1900	Test Mode :	GSM Link (GMSK)

Lower Band Edge Plot on Channel 512 (1850.2 MHz)

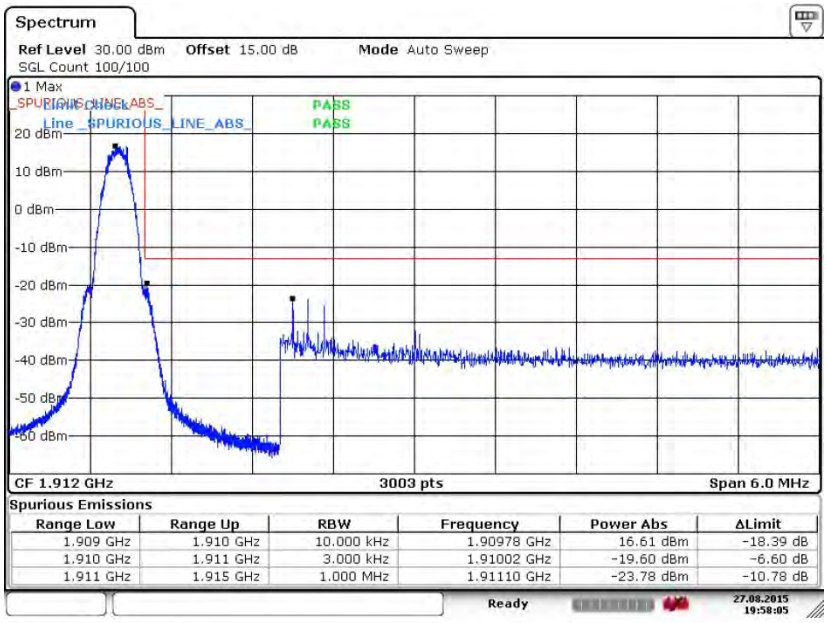


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.845 GHz	1.849 GHz	1.000 MHz	1.84863 GHz	-30.33 dBm	-17.33 dB
1.849 GHz	1.850 GHz	3.000 kHz	1.84998 GHz	-20.52 dBm	-7.52 dB
1.850 GHz	1.851 GHz	10.000 kHz	1.85027 GHz	17.99 dBm	-17.01 dB

Date: 27.AUG.2015 19:50:36

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



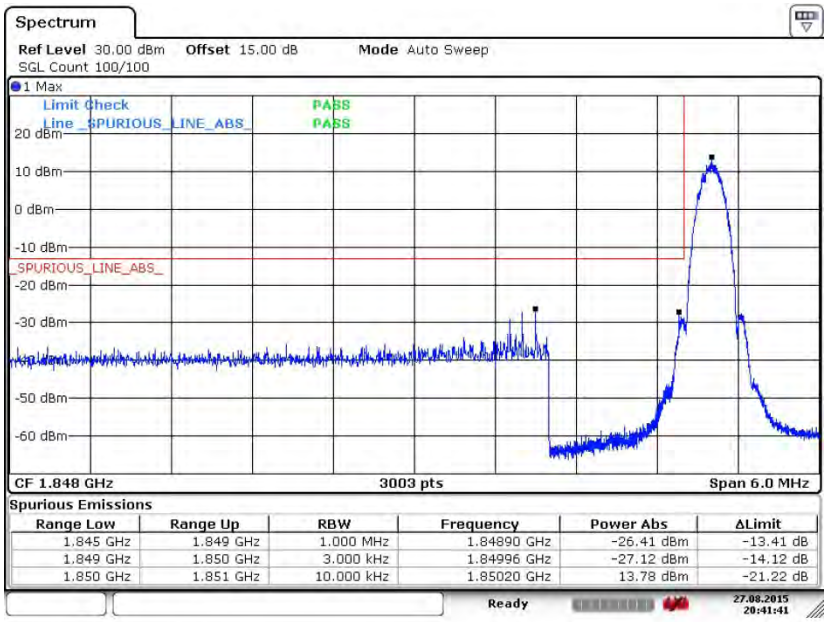
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.909 GHz	1.910 GHz	10.000 kHz	1.90978 GHz	16.61 dBm	-18.39 dB
1.910 GHz	1.911 GHz	3.000 kHz	1.91002 GHz	-19.60 dBm	-6.60 dB
1.911 GHz	1.915 GHz	1.000 MHz	1.91110 GHz	-23.78 dBm	-10.78 dB

Date: 27.AUG.2015 19:58:05

Band :	GSM1900	Test Mode :	EDGE class 8 Link (8PSK)

Lower Band Edge Plot on Channel 512 (1850.2 MHz)

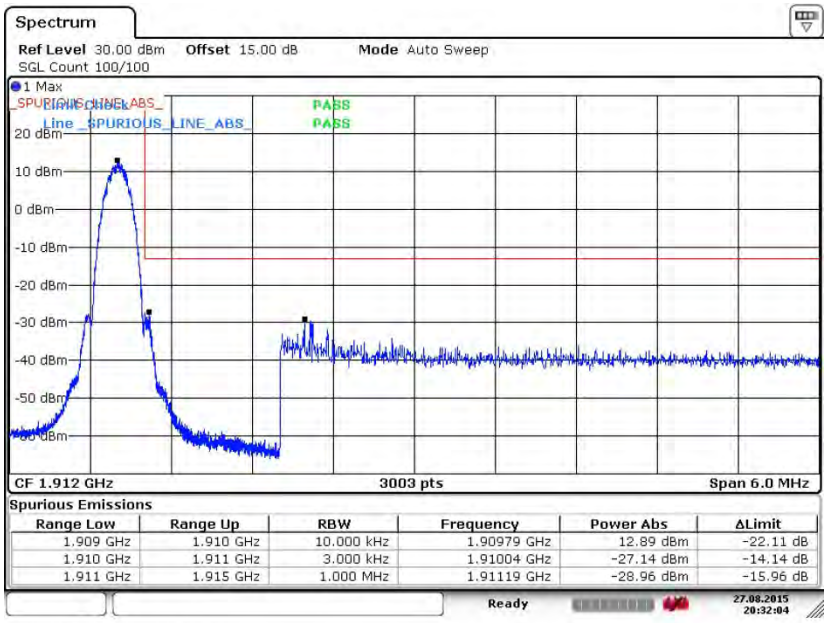


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.845 GHz	1.849 GHz	1.000 MHz	1.84890 GHz	-26.41 dBm	-13.41 dB
1.849 GHz	1.850 GHz	3.000 kHz	1.84996 GHz	-27.12 dBm	-14.12 dB
1.850 GHz	1.851 GHz	10.000 kHz	1.85020 GHz	13.78 dBm	-21.22 dB

Date: 27.AUG.2015 20:41:41

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



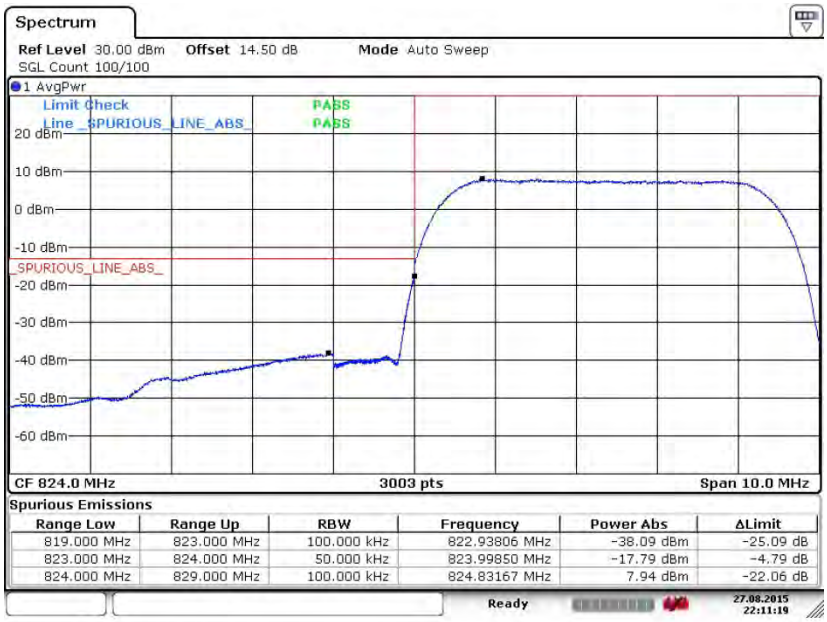
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.909 GHz	1.910 GHz	10.000 kHz	1.90979 GHz	12.89 dBm	-22.11 dB
1.910 GHz	1.911 GHz	3.000 kHz	1.91004 GHz	-27.14 dBm	-14.14 dB
1.911 GHz	1.915 GHz	1.000 MHz	1.91119 GHz	-28.96 dBm	-15.96 dB

Date: 27.AUG.2015 20:32:04

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

Lower Band Edge Plot on Channel 4132 (826.4 MHz)



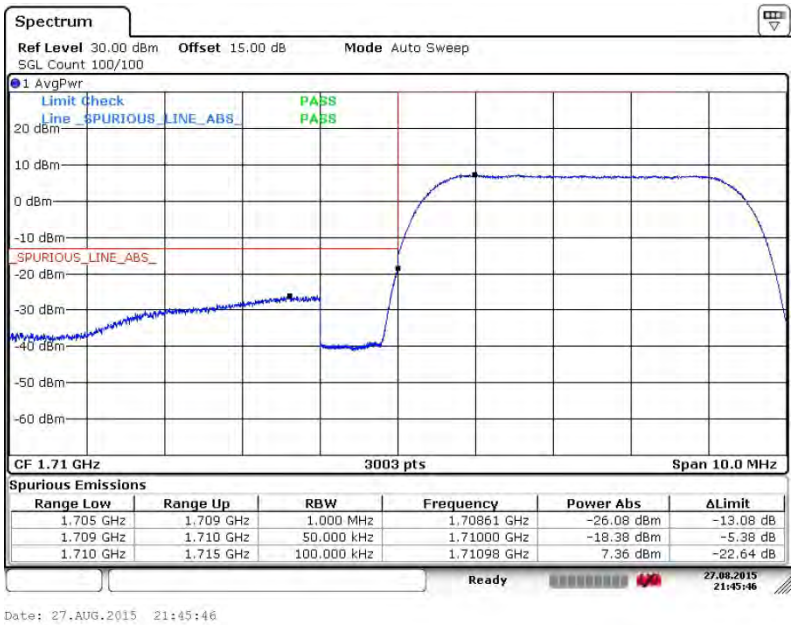
Date: 27.AUG.2015 22:11:19

Higher Band Edge Plot on Channel 4233 (846.6 MHz)

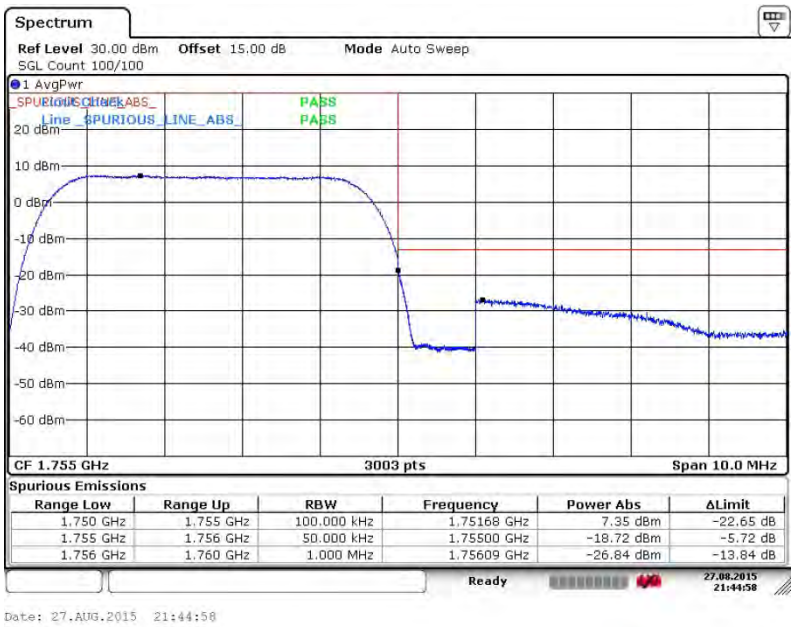
Date: 27.AUG.2015 22:12:21

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

Lower Band Edge Plot on Channel 1312 (1712.4 MHz)



Higher Band Edge Plot on Channel 1513 (1752.6 MHz)



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

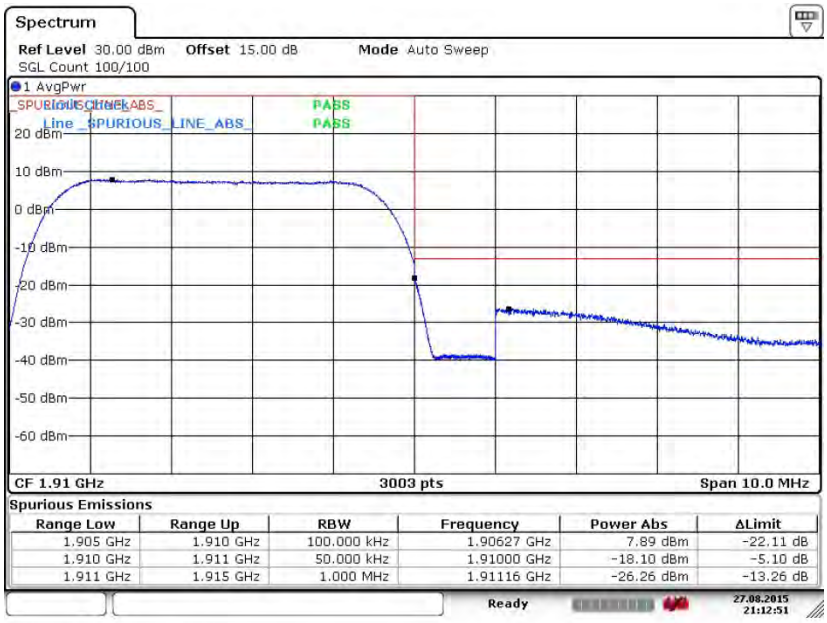
Lower Band Edge Plot on Channel 9262 (1852.4 MHz)

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.845 GHz	1.849 GHz	1.000 MHz	1.84889 GHz	-28.46 dBm	-15.46 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-18.08 dBm	-5.08 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85153 GHz	7.56 dBm	-22.44 dB

Date: 27.AUG.2015 21:13:42

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	1.90627 GHz	7.89 dBm	-22.11 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-18.10 dBm	-5.10 dB
1.911 GHz	1.915 GHz	1.000 MHz	1.91116 GHz	-26.26 dBm	-13.26 dB

Date: 27.AUG.2015 21:12:51

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.

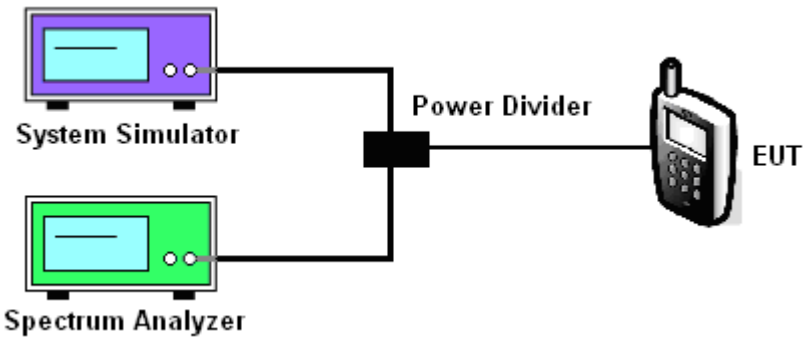
3.6.2 Measuring Instruments

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.

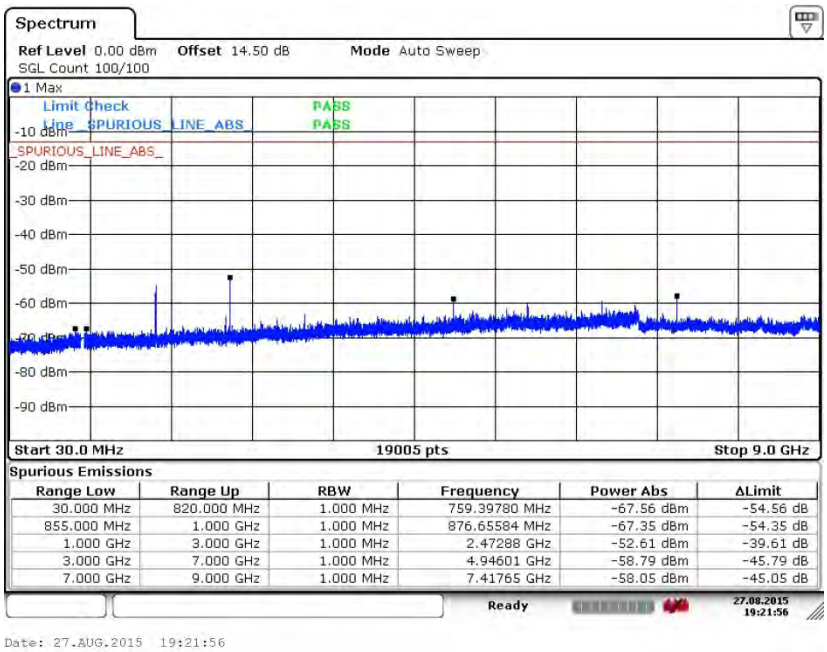
3.6.4 Test Setup



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

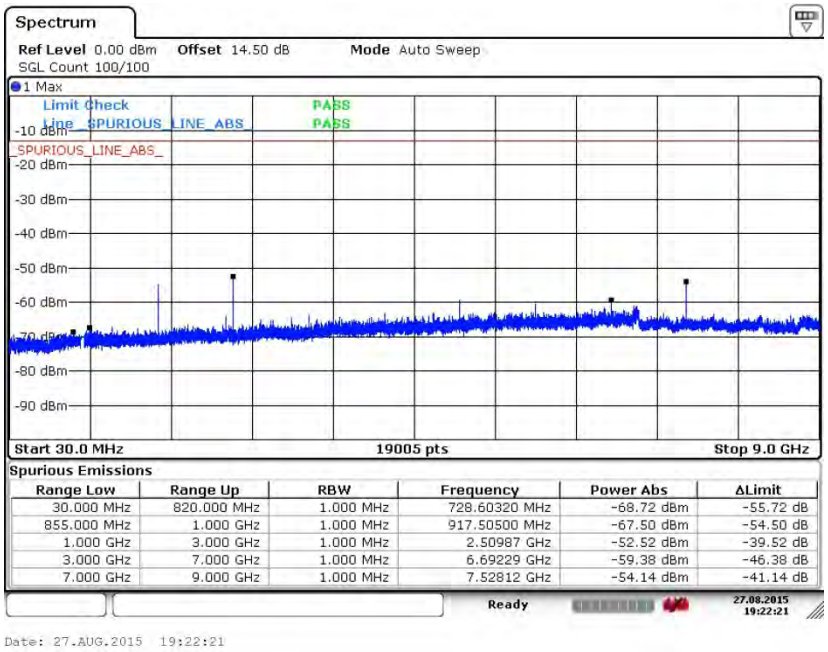


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	759.39780 MHz	-67.56 dBm	-54.56 dB
855.000 MHz	1.000 GHz	1.000 MHz	876.65584 MHz	-67.35 dBm	-54.35 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.47288 GHz	-52.61 dBm	-39.61 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.94601 GHz	-58.79 dBm	-45.79 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.41765 GHz	-58.05 dBm	-45.05 dB

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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

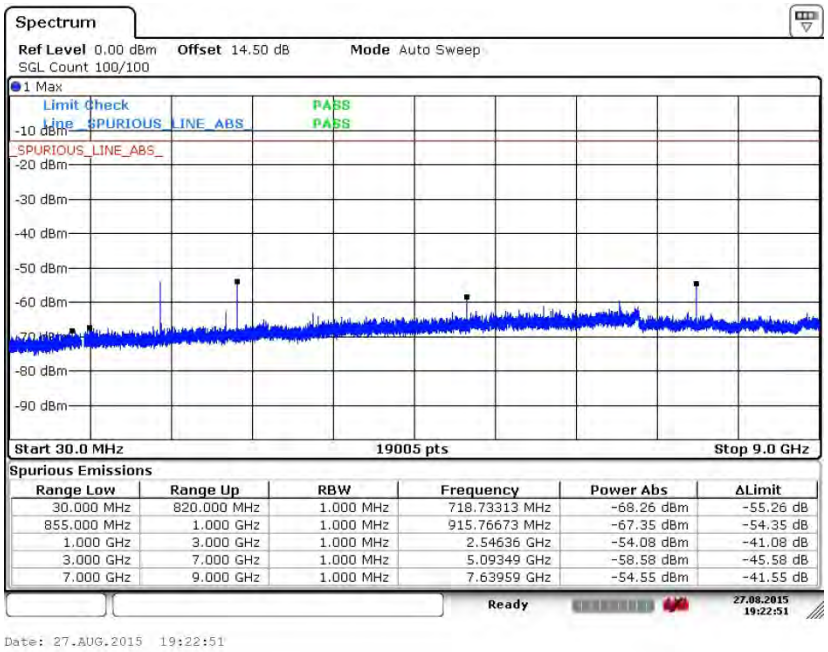


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	728.60320 MHz	-68.72 dBm	-55.72 dB
855.000 MHz	1.000 GHz	1.000 MHz	917.50500 MHz	-67.50 dBm	-54.50 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.50987 GHz	-52.52 dBm	-39.52 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.69229 GHz	-59.38 dBm	-46.38 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.52812 GHz	-54.14 dBm	-41.14 dB

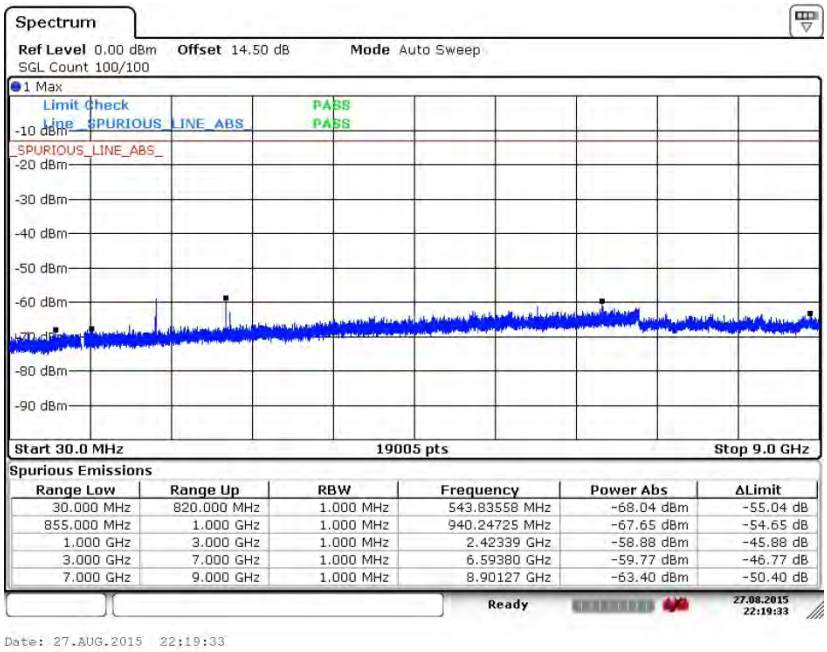
Band :	GSM850	Channel :	CH 251
Test Mode :	GSM Link (GMSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



Band :	GSM850	Channel :	CH128
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	824.2 MHz

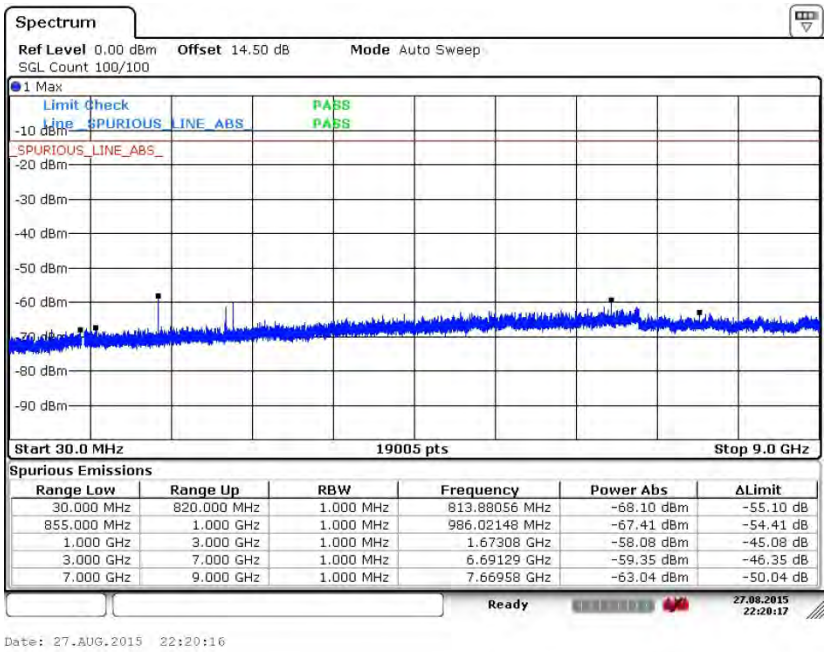
Conducted Spurious Emission Plot between 30MHz ~ 9GHz



Date: 27.AUG.2015 22:19:33

Band :	GSM850	Channel :	CH189
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

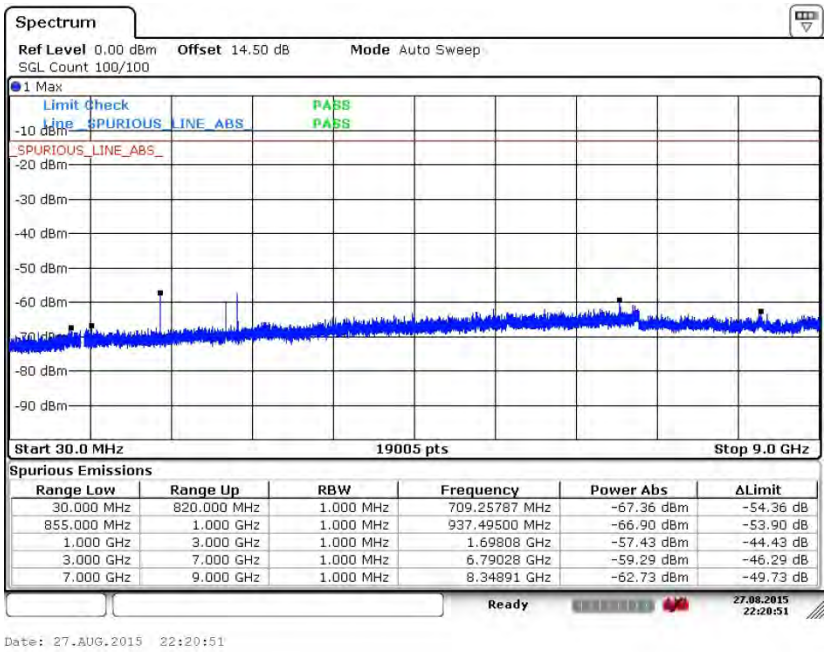


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	813.88056 MHz	-68.10 dBm	-55.10 dB
855.000 MHz	1.000 GHz	1.000 MHz	986.02148 MHz	-67.41 dBm	-54.41 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.67308 GHz	-58.08 dBm	-45.08 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.69129 GHz	-59.35 dBm	-46.35 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.66958 GHz	-63.04 dBm	-50.04 dB

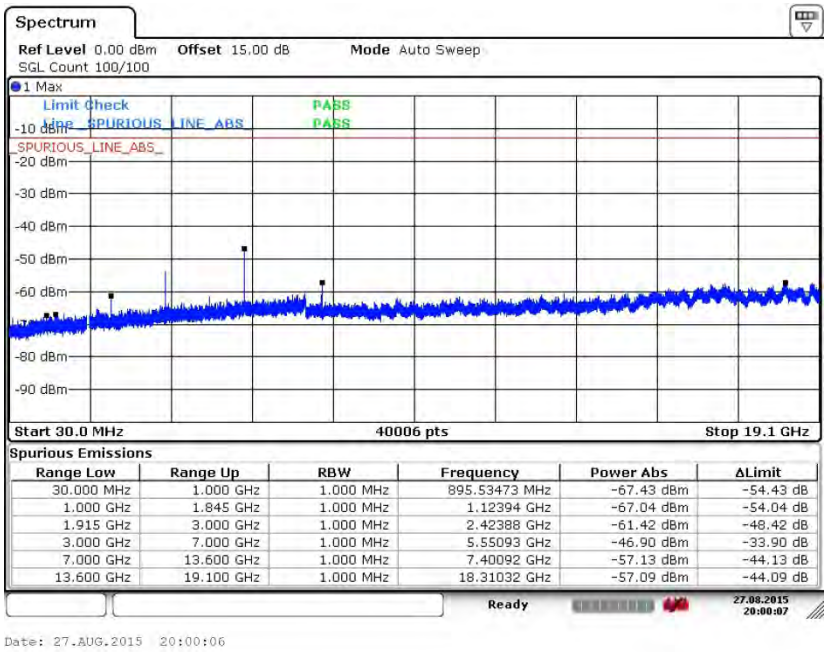
Band :	GSM850	Channel :	CH251
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

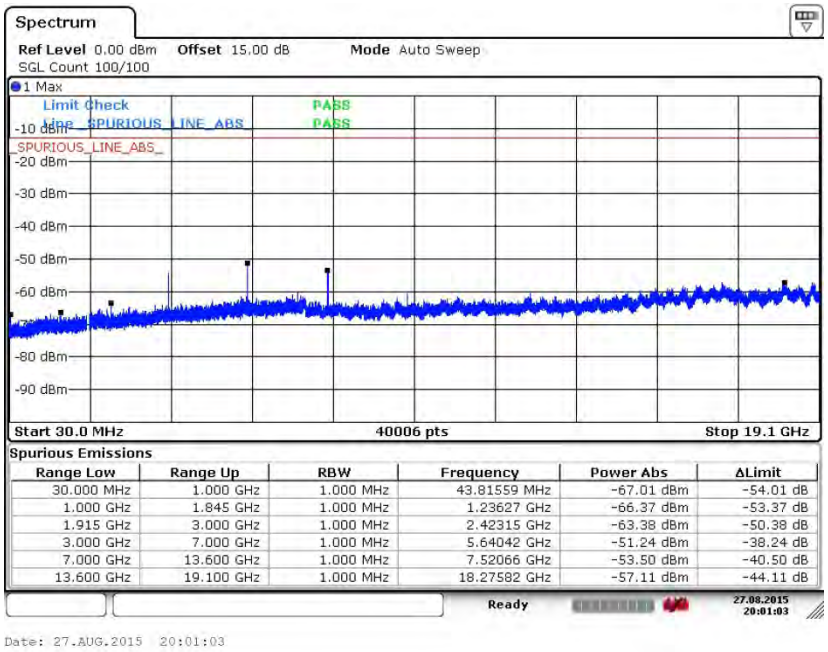


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	895.53473 MHz	-67.43 dBm	-54.43 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.12394 GHz	-67.04 dBm	-54.04 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42388 GHz	-61.42 dBm	-48.42 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.55093 GHz	-46.90 dBm	-33.90 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.40092 GHz	-57.13 dBm	-44.13 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.31032 GHz	-57.09 dBm	-44.09 dB

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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

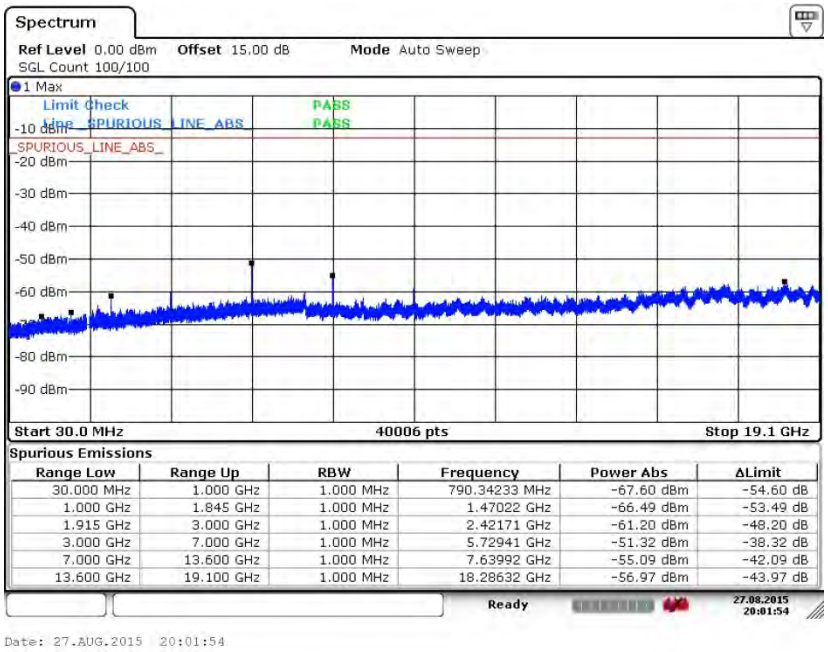


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	43.81559 MHz	-67.01 dBm	-54.01 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.23627 GHz	-66.37 dBm	-53.37 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42315 GHz	-63.38 dBm	-50.38 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.64042 GHz	-51.24 dBm	-38.24 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.52066 GHz	-53.50 dBm	-40.50 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.27582 GHz	-57.11 dBm	-44.11 dB

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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

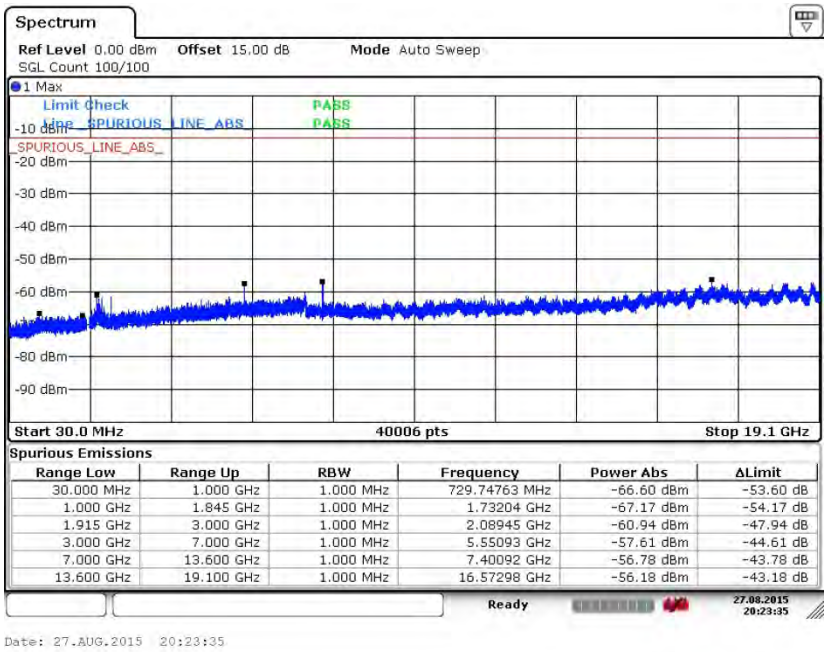


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	790.34233 MHz	-67.60 dBm	-54.60 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.47022 GHz	-66.49 dBm	-53.49 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42171 GHz	-61.20 dBm	-48.20 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.72941 GHz	-51.32 dBm	-38.32 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.63992 GHz	-55.09 dBm	-42.09 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.28632 GHz	-56.97 dBm	-43.97 dB

Band :	GSM1900	Channel :	CH512
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1850.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

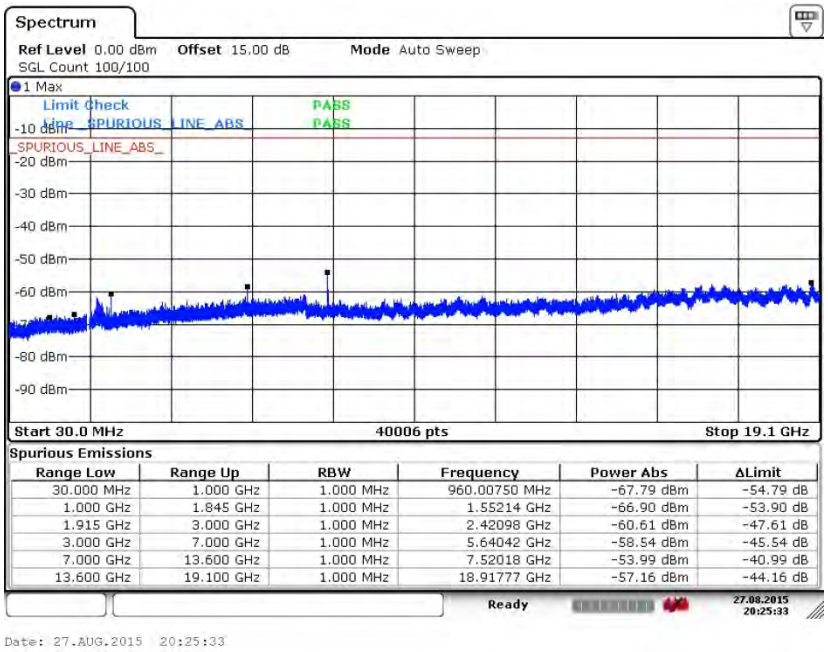


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	729.74763 MHz	-66.60 dBm	-53.60 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.73204 GHz	-67.17 dBm	-54.17 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.08945 GHz	-60.94 dBm	-47.94 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.55093 GHz	-57.61 dBm	-44.61 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.40092 GHz	-56.78 dBm	-43.78 dB
13.600 GHz	19.100 GHz	1.000 MHz	16.57298 GHz	-56.18 dBm	-43.18 dB

Band :	GSM1900	Channel :	CH661
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

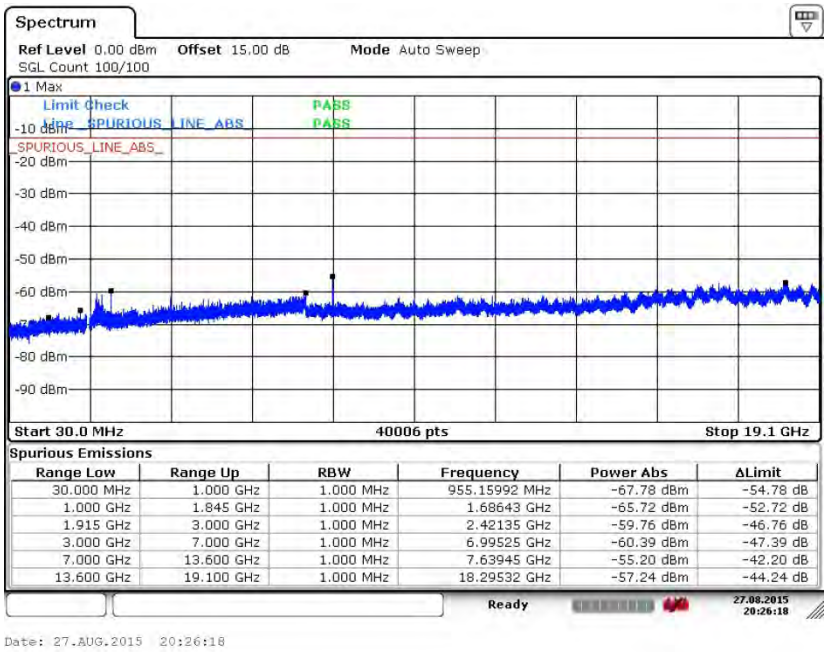


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	960.00750 MHz	-67.79 dBm	-54.79 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.55214 GHz	-66.90 dBm	-53.90 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42098 GHz	-60.61 dBm	-47.61 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.64042 GHz	-58.54 dBm	-45.54 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.52018 GHz	-53.99 dBm	-40.99 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.91777 GHz	-57.16 dBm	-44.16 dB

Band :	GSM1900	Channel :	CH810
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1909.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

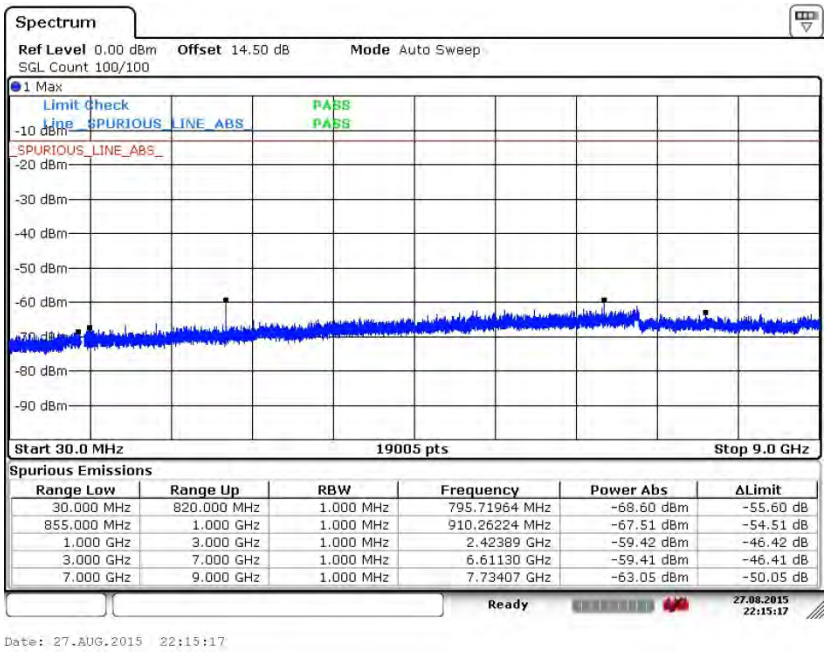


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	955.15992 MHz	-67.78 dBm	-54.78 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.68643 GHz	-65.72 dBm	-52.72 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42135 GHz	-59.76 dBm	-46.76 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99525 GHz	-60.39 dBm	-47.39 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.63945 GHz	-55.20 dBm	-42.20 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.29532 GHz	-57.24 dBm	-44.24 dB

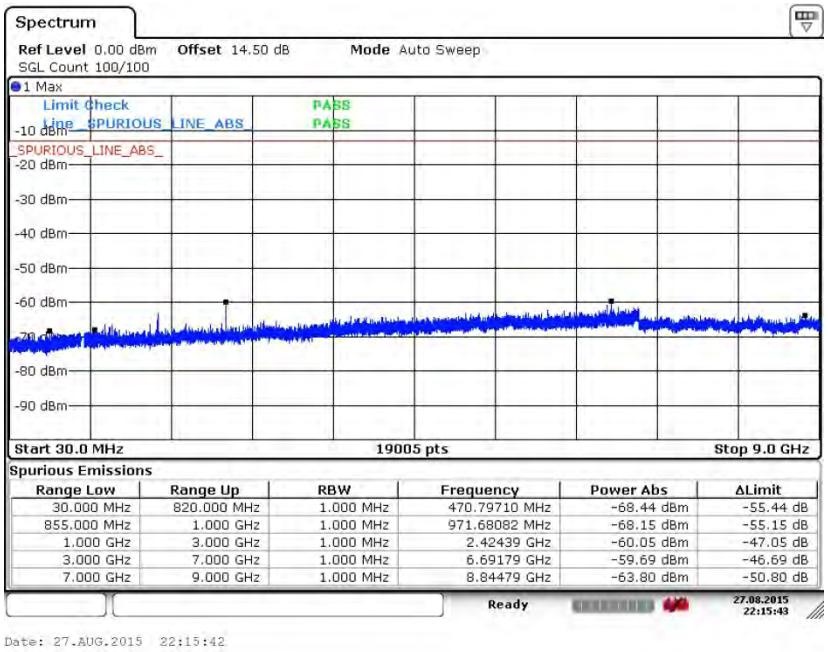
Band :	WCDMA Band V	Channel :	CH4132
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	826.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



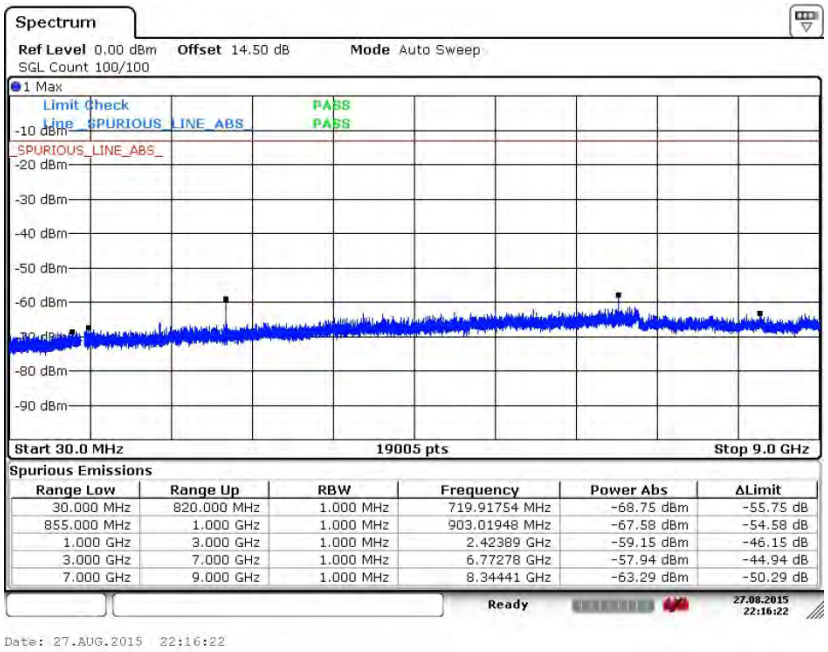
Band :	WCDMA Band V	Channel :	CH4182
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

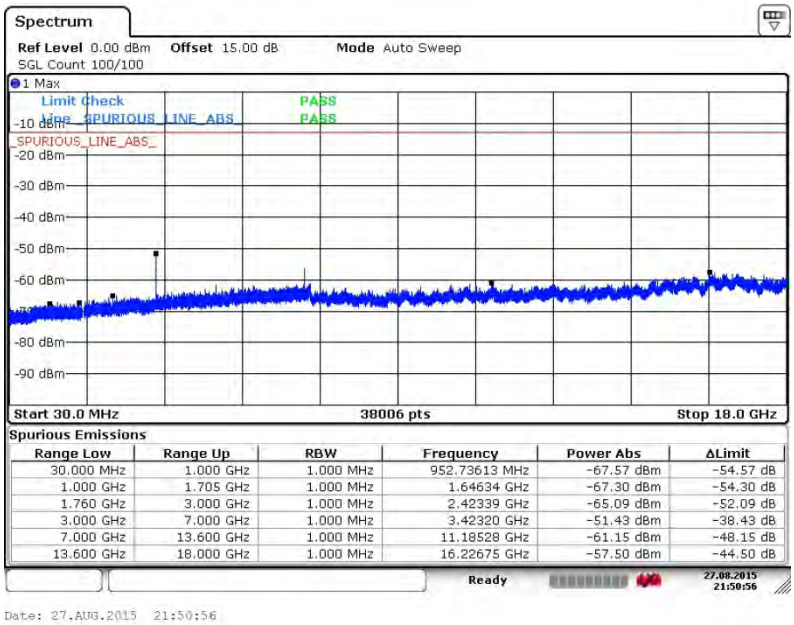


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	820.000 MHz	1.000 MHz	719.91754 MHz	-68.75 dBm	-55.75 dB
855.000 MHz	1.000 GHz	1.000 MHz	903.01948 MHz	-67.58 dBm	-54.58 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.42389 GHz	-59.15 dBm	-46.15 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.77278 GHz	-57.94 dBm	-44.94 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.34441 GHz	-63.29 dBm	-50.29 dB

Band :	WCDMA Band IV	Channel :	CH1312
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1712.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 18GHz

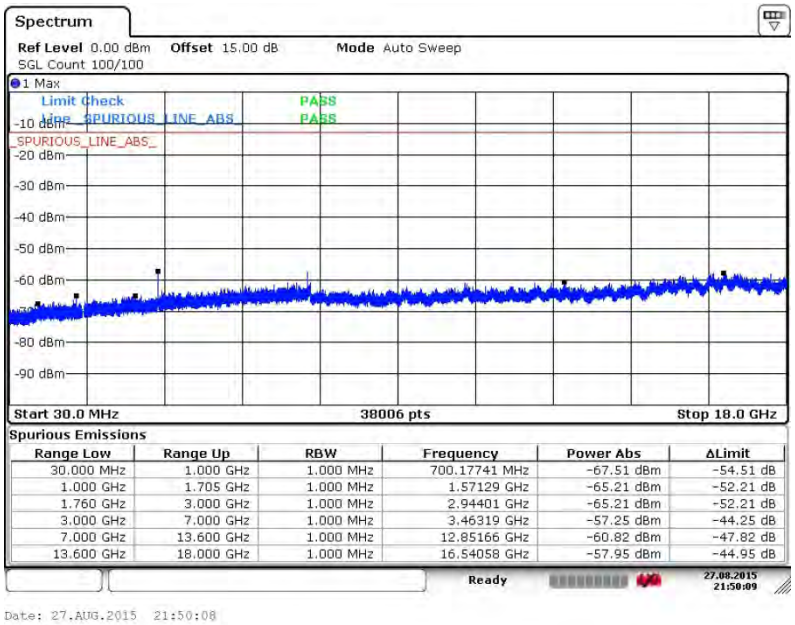


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	952.73613 MHz	-67.57 dBm	-54.57 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.64634 GHz	-67.30 dBm	-54.30 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.42339 GHz	-65.09 dBm	-52.09 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.42320 GHz	-51.43 dBm	-38.43 dB
7.000 GHz	13.600 GHz	1.000 MHz	11.18528 GHz	-61.15 dBm	-48.15 dB
13.600 GHz	18.000 GHz	1.000 MHz	16.22675 GHz	-57.50 dBm	-44.50 dB

Band :	WCDMA Band IV	Channel :	CH1413
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1732.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 18GHz

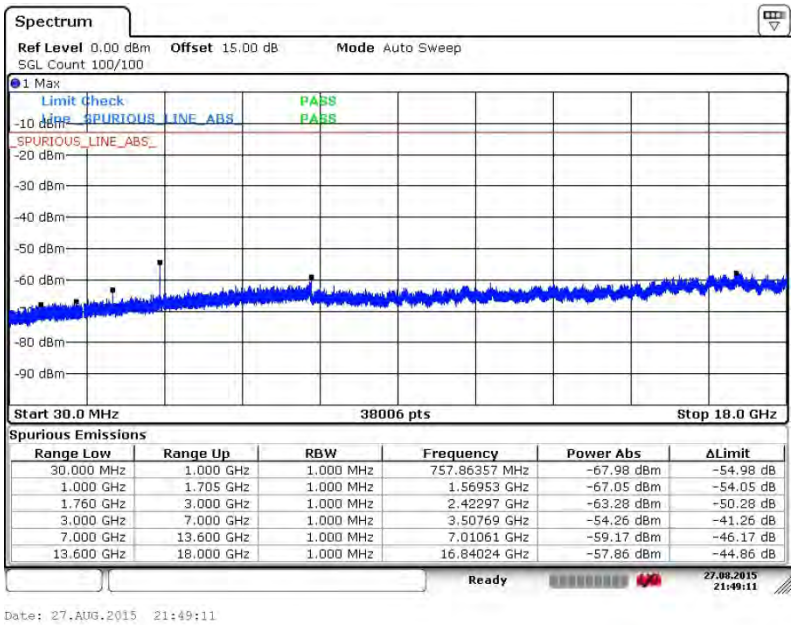


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	700.17741 MHz	-67.51 dBm	-54.51 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.57129 GHz	-65.21 dBm	-52.21 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.94401 GHz	-65.21 dBm	-52.21 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.46319 GHz	-57.25 dBm	-44.25 dB
7.000 GHz	13.600 GHz	1.000 MHz	12.85166 GHz	-60.82 dBm	-47.82 dB
13.600 GHz	18.000 GHz	1.000 MHz	16.54058 GHz	-57.95 dBm	-44.95 dB

Band :	WCDMA Band IV	Channel :	CH1513
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1752.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 18GHz

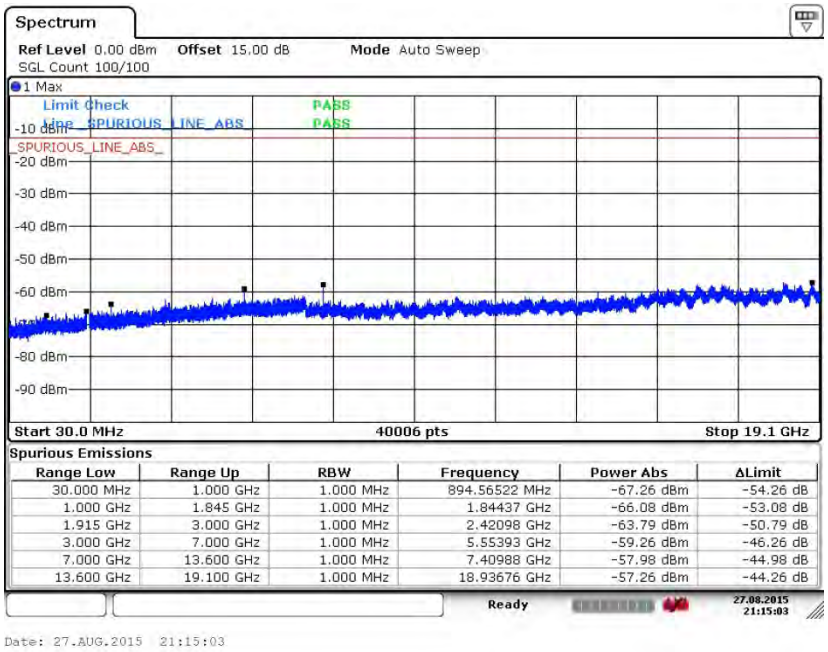


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	757.86357 MHz	-67.98 dBm	-54.98 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.56953 GHz	-67.05 dBm	-54.05 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.42297 GHz	-63.28 dBm	-50.28 dB
3.000 GHz	7.000 GHz	1.000 MHz	3.50769 GHz	-54.26 dBm	-41.26 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.01061 GHz	-59.17 dBm	-46.17 dB
13.600 GHz	18.000 GHz	1.000 MHz	16.84024 GHz	-57.86 dBm	-44.86 dB

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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

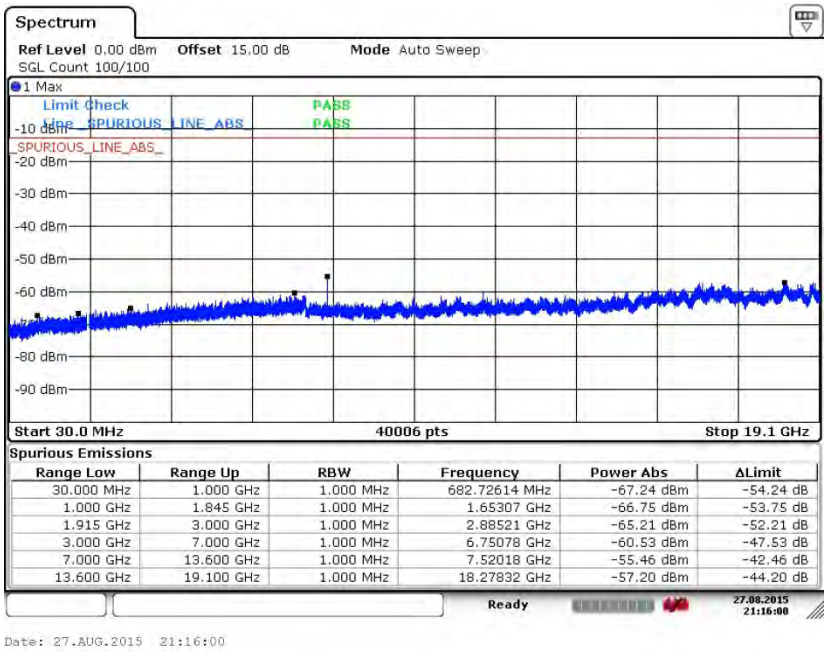


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	894.56522 MHz	-67.26 dBm	-54.26 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.84437 GHz	-66.08 dBm	-53.08 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.42098 GHz	-63.79 dBm	-50.79 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.55393 GHz	-59.26 dBm	-46.26 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.40988 GHz	-57.98 dBm	-44.98 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.93676 GHz	-57.26 dBm	-44.26 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

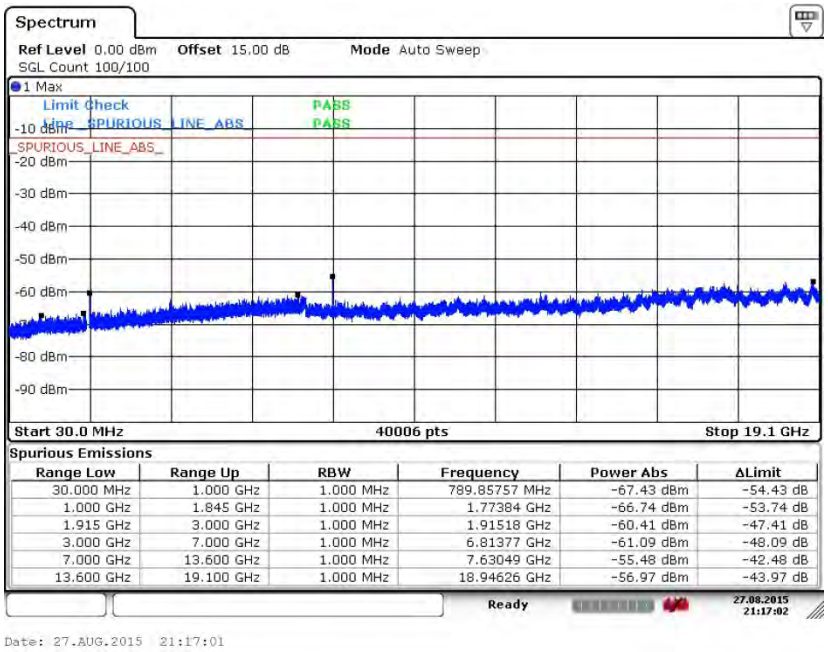


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	682.72614 MHz	-67.24 dBm	-54.24 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.65307 GHz	-66.75 dBm	-53.75 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.88521 GHz	-65.21 dBm	-52.21 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.75078 GHz	-60.53 dBm	-47.53 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.52018 GHz	-55.46 dBm	-42.46 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.27832 GHz	-57.20 dBm	-44.20 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	789.85757 MHz	-67.43 dBm	-54.43 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.77384 GHz	-66.74 dBm	-53.74 dB
1.915 GHz	3.000 GHz	1.000 MHz	1.91518 GHz	-60.41 dBm	-47.41 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.81377 GHz	-61.09 dBm	-48.09 dB
7.000 GHz	13.600 GHz	1.000 MHz	7.63049 GHz	-55.48 dBm	-42.48 dB
13.600 GHz	19.100 GHz	1.000 MHz	18.94626 GHz	-56.97 dBm	-43.97 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)

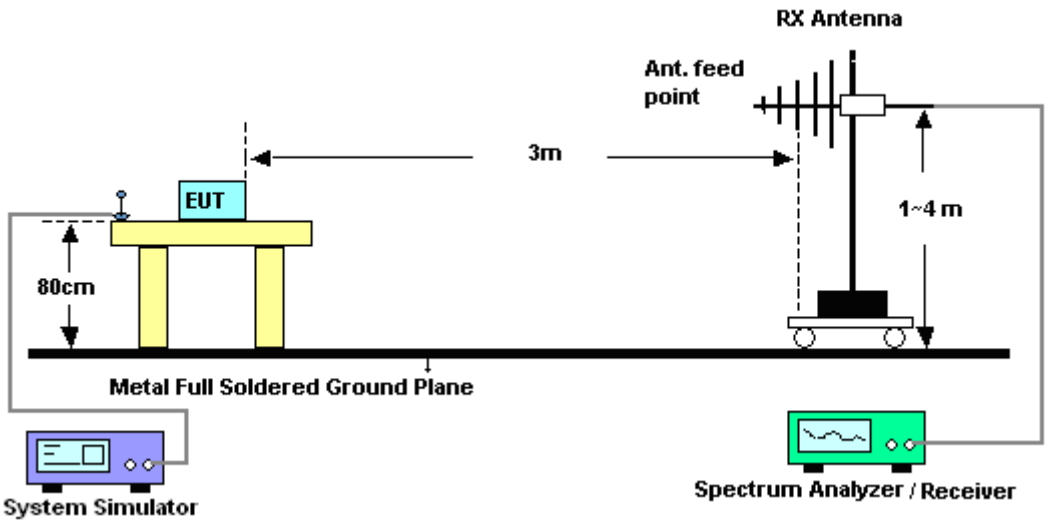
    = P(W) - [43 + 10log(P)] (dB)

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

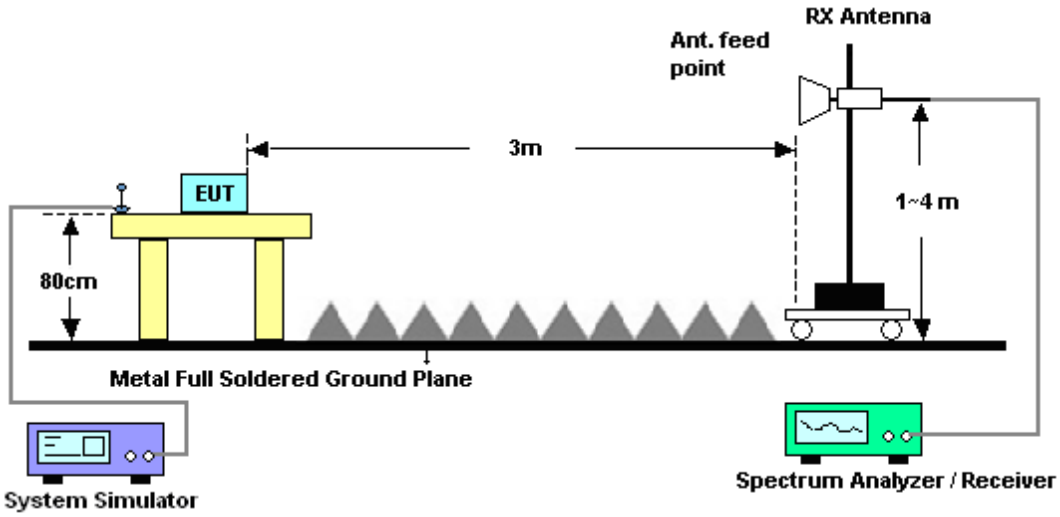
    = -13dBm.

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	-44.71	-13	-31.71	-48.92	-48.53	0.53	6.50	H	Pass
2472.6	-48.24	-13	-35.24	-54.37	-51.11	0.68	5.70	H	Pass
3296.8	-55.41	-13	-42.41	-65.43	-60.45	0.81	8.00	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	-44.33	-13	-31.33	-49.97	-48.15	0.53	6.50	V	Pass
2472.6	-49.85	-13	-36.85	-54.89	-52.72	0.68	5.70	V	Pass
3296.8	-56.66	-13	-43.66	-65.67	-61.70	0.81	8.00	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	-51.83	-13	-38.83	-54.91	-55.65	0.53	6.50	H	Pass
2510	-52.76	-13	-39.76	-58.18	-55.63	0.68	5.70	H	Pass
3346	-55.57	-13	-42.57	-65.59	-60.61	0.81	8.00	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	-46.45	-13	-33.45	-51.69	-50.27	0.53	6.50	V	Pass
2510	-54.03	-13	-41.03	-58.35	-56.90	0.68	5.70	V	Pass
3346	-55.76	-13	-42.76	-64.77	-60.80	0.81	8.00	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	-51.20	-13	-38.20	-54.31	-55.02	0.53	6.50	H	Pass
2546.4	-55.80	-13	-42.80	-61.22	-58.67	0.68	5.70	H	Pass
3395.2	-55.22	-13	-42.22	-65.24	-60.26	0.81	8.00	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	-52.49	-13	-39.49	-55.97	-56.31	0.53	6.50	V	Pass
2546.4	-58.29	-13	-45.29	-62.61	-61.16	0.68	5.70	V	Pass
3395.2	-55.84	-13	-42.84	-64.85	-60.88	0.81	8.00	V	Pass

Band :	GSM850 for CH128	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-58.66	-13	-45.66	-61.21	-62.48	0.53	6.50	H	Pass
2472.6	-56.91	-13	-43.91	-62.33	-59.78	0.68	5.70	H	Pass
3296.8	-55.94	-13	-42.94	-65.96	-60.98	0.81	8.00	H	Pass

Band :	GSM850 for CH128	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-55.20	-13	-42.20	-58.11	-59.02	0.53	6.50	V	Pass
2472.6	-52.61	-13	-39.61	-57.06	-55.48	0.68	5.70	V	Pass
3296.8	-56.61	-13	-43.61	-65.62	-61.65	0.81	8.00	V	Pass

Band :	GSM850 for CH189	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-59.76	-13	-46.76	-62.31	-63.58	0.53	6.50	H	Pass
2510	-58.84	-13	-45.84	-64.26	-61.71	0.68	5.70	H	Pass
3346	-54.79	-13	-41.79	-64.81	-59.83	0.81	8.00	H	Pass

Band :	GSM850 for CH189	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-57.50	-13	-44.50	-60.41	-61.32	0.53	6.50	V	Pass
2510	-54.97	-13	-41.97	-59.29	-57.84	0.68	5.70	V	Pass
3346	-57.14	-13	-44.14	-66.15	-62.18	0.81	8.00	V	Pass

Band :	GSM850 for CH251	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-60.89	-13	-47.89	-63.44	-64.71	0.53	6.50	H	Pass
2546.4	-58.99	-13	-45.99	-64.41	-61.86	0.68	5.70	H	Pass
3395.2	-55.82	-13	-42.82	-65.84	-60.86	0.81	8.00	H	Pass

Band :	GSM850 for CH251	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-59.23	-13	-46.23	-62.14	-63.05	0.53	6.50	V	Pass
2546.4	-59.11	-13	-46.11	-63.43	-61.98	0.68	5.70	V	Pass
3395.2	-56.49	-13	-43.49	-65.50	-61.53	0.81	8.00	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	-51.33	-13	-38.33	-64.10	-58.52	0.81	8.00	H	Pass
5550.6	-46.82	-13	-33.82	-65.57	-56.81	1.01	11.00	H	Pass
7400.8	-47.83	-13	-34.83	-70.00	-60.07	1.46	13.70	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	-52.83	-13	-39.83	-65.9	-60.02	0.81	8	V	Pass
5550.6	-47.81	-13	-34.81	-66.87	-57.80	1.01	11	V	Pass
7400.8	-47.00	-13	-34.00	-69.49	-59.24	1.46	13.7	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	-51.97	-13	-38.97	-64.74	-59.16	0.81	8.00	H	Pass
5640	-46.14	-13	-33.14	-64.89	-56.13	1.01	11.00	H	Pass
7520	-46.68	-13	-33.68	-68.85	-58.92	1.46	13.70	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	-52.25	-13	-39.25	-65.32	-59.44	0.81	8	V	Pass
5640	-47.38	-13	-34.38	-66.44	-57.37	1.01	11	V	Pass
7520	-47.59	-13	-34.59	-70.08	-59.83	1.46	13.7	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	-53.68	-13	-40.68	-66.45	-60.87	0.81	8.00	H	Pass
5729.4	-47.85	-13	-34.85	-66.60	-57.84	1.01	11.00	H	Pass
7639.2	-47.06	-13	-34.06	-69.23	-59.30	1.46	13.70	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	-53.63	-13	-40.63	-66.7	-60.82	0.81	8	V	Pass
5729.4	-48.87	-13	-35.87	-67.93	-58.86	1.01	11	V	Pass
7639.2	-46.98	-13	-33.98	-69.47	-59.22	1.46	13.7	V	Pass

Band :	GSM1900 for CH512	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-52.99	-13	-39.99	-65.76	-60.18	0.81	8.00	H	Pass
5550.6	-49.48	-13	-36.48	-68.23	-59.47	1.01	11.00	H	Pass
7400.8	-47.52	-13	-34.52	-69.69	-59.76	1.46	13.70	H	Pass

Band :	GSM1900 for CH512	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-53.40	-13	-40.40	-66.47	-60.59	0.81	8	V	Pass
5550.6	-48.37	-13	-35.37	-67.43	-58.36	1.01	11	V	Pass
7400.8	-47.39	-13	-34.39	-69.88	-59.63	1.46	13.7	V	Pass

Band :	GSM1900 for CH661	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-54.23	-13	-41.23	-67.00	-61.42	0.81	8.00	H	Pass
5640	-49.71	-13	-36.71	-68.46	-59.70	1.01	11.00	H	Pass
7520	-46.97	-13	-33.97	-69.14	-59.21	1.46	13.70	H	Pass

Band :	GSM1900 for CH661	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-53.62	-13	-40.62	-66.69	-60.81	0.81	8	V	Pass
5640	-49.43	-13	-36.43	-68.49	-59.42	1.01	11	V	Pass
7520	-47.67	-13	-34.67	-70.16	-59.91	1.46	13.7	V	Pass

Band :	GSM1900 for CH810	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-53.46	-13	-40.46	-66.23	-60.65	0.81	8.00	H	Pass
5729.4	-50.78	-13	-37.78	-69.53	-60.77	1.01	11.00	H	Pass
7639.2	-47.08	-13	-34.08	-69.25	-59.32	1.46	13.70	H	Pass

Band :	GSM1900 for CH810	**Temperature :**	23~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**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	-52.92	-13	-39.92	-65.99	-60.11	0.81	8	V	Pass
5729.4	-50.34	-13	-37.34	-69.4	-60.33	1.01	11	V	Pass
7639.2	-46.74	-13	-33.74	-69.23	-58.98	1.46	13.7	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	-60.23	-13	-47.23	-62.78	-64.05	0.53	6.50	H	Pass
2479.2	-58.42	-13	-45.42	-63.84	-61.29	0.68	5.70	H	Pass
3305.6	-55.90	-13	-42.90	-65.92	-60.94	0.81	8.00	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	-59.77	-13	-46.77	-62.68	-63.59	0.53	6.50	V	Pass
2479.2	-59.53	-13	-46.53	-63.85	-62.40	0.68	5.70	V	Pass
3305.6	-57.02	-13	-44.02	-66.03	-62.06	0.81	8.00	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	-60.56	-13	-47.56	-63.11	-64.38	0.53	6.50	H	Pass
2510	-58.67	-13	-45.67	-64.09	-61.54	0.68	5.70	H	Pass
3346	-55.65	-13	-42.65	-65.67	-60.69	0.81	8.00	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	-59.97	-13	-46.97	-62.88	-63.79	0.53	6.50	V	Pass
2510	-59.56	-13	-46.56	-63.88	-62.43	0.68	5.70	V	Pass
3346	-56.53	-13	-43.53	-65.54	-61.57	0.81	8.00	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	-61.14	-13	-48.14	-63.69	-64.96	0.53	6.50	H	Pass
2539.8	-59.23	-13	-46.23	-64.65	-62.10	0.68	5.70	H	Pass
3386.4	-55.76	-13	-42.76	-65.78	-60.80	0.81	8.00	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	-60.77	-13	-47.77	-63.68	-64.59	0.53	6.50	V	Pass
2539.8	-60.15	-13	-47.15	-64.47	-63.02	0.68	5.70	V	Pass
3386.4	-56.43	-13	-43.43	-65.44	-61.47	0.81	8.00	V	Pass

Band :	WCDMA Band IV for CH1312	**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
3424.8	-53.06	-13	-40.06	-65.89	-60.25	0.81	8.00	H	Pass
5137.2	-49.65	-13	-36.65	-68.18	-58.70	0.95	10.00	H	Pass
6849.6	-47.46	-13	-34.46	-68.80	-59.73	1.13	13.40	H	Pass

Band :	WCDMA Band IV for CH1312	**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
3424.8	-53.06	-13	-40.06	-66.4	-64.85	0.81	12.6	V	Pass
5137.2	-50.42	-13	-37.42	-69.05	-62.17	0.95	12.7	V	Pass
6849.6	-47.60	-13	-34.60	-68.59	-58.17	1.13	11.7	V	Pass

Band :	WCDMA Band IV for CH1413	**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
3465	-52.94	-13	-39.94	-65.77	-60.13	0.81	8.00	H	Pass
5197.5	-50.24	-13	-37.24	-68.77	-59.29	0.95	10.00	H	Pass
6930	-46.92	-13	-33.92	-68.26	-59.19	1.13	13.40	H	Pass

Band :	WCDMA Band IV for CH1413	**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
3465	-53.13	-13	-40.13	-66.47	-64.92	0.81	12.6	V	Pass
5197.5	-49.62	-13	-36.62	-68.25	-61.37	0.95	12.7	V	Pass
6930	-47.35	-13	-34.35	-68.34	-57.92	1.13	11.7	V	Pass

Band :	WCDMA Band IV for CH1513	**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
3505.2	-53.54	-13	-40.54	-66.37	-60.73	0.81	8.00	H	Pass
5257.8	-50.11	-13	-37.11	-68.64	-59.16	0.95	10.00	H	Pass
7010.4	-48.12	-13	-35.12	-69.46	-60.39	1.13	13.40	H	Pass

Band :	WCDMA Band IV for CH1513	**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
3505.2	-52.98	-13	-39.98	-66.32	-64.77	0.81	12.6	V	Pass
5257.8	-49.99	-13	-36.99	-68.62	-61.74	0.95	12.7	V	Pass
7010.4	-48.09	-13	-35.09	-69.08	-58.66	1.13	11.7	V	Pass

Band :	WCDMA Band II for CH9296	**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	-53.54	-13	-40.54	-66.31	-60.73	0.81	8.00	H	Pass
5557.2	-49.78	-13	-36.78	-68.53	-59.77	1.01	11.00	H	Pass
7409.6	-47.65	-13	-34.65	-69.82	-59.89	1.46	13.70	H	Pass

Band :	WCDMA Band II for CH9296	**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	-53.17	-13	-40.17	-66.24	-60.36	0.81	8	V	Pass
5557.2	-49.10	-13	-36.10	-68.16	-59.09	1.01	11	V	Pass
7409.6	-47.29	-13	-34.29	-69.78	-59.53	1.46	13.7	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	-53.89	-13	-40.89	-66.66	-61.08	0.81	8.00	H	Pass
5640	-49.31	-13	-36.31	-68.06	-59.30	1.01	11.00	H	Pass
7520	-46.62	-13	-33.62	-68.79	-58.86	1.46	13.70	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	-54.02	-13	-41.02	-67.09	-61.21	0.81	8	V	Pass
5640	-49.88	-13	-36.88	-68.94	-59.87	1.01	11	V	Pass
7520	-47.43	-13	-34.43	-69.92	-59.67	1.46	13.7	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	-54.13	-13	-41.13	-66.90	-61.32	0.81	8.00	H	Pass
5722.8	-50.17	-13	-37.17	-68.92	-60.16	1.01	11.00	H	Pass
7630.4	-46.51	-13	-33.51	-68.68	-58.75	1.46	13.70	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	-53.95	-13	-40.95	-67.02	-61.14	0.81	8	V	Pass
5722.8	-49.83	-13	-36.83	-68.89	-59.82	1.01	11	V	Pass
7630.4	-46.57	-13	-33.57	-69.06	-58.81	1.46	13.7	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.

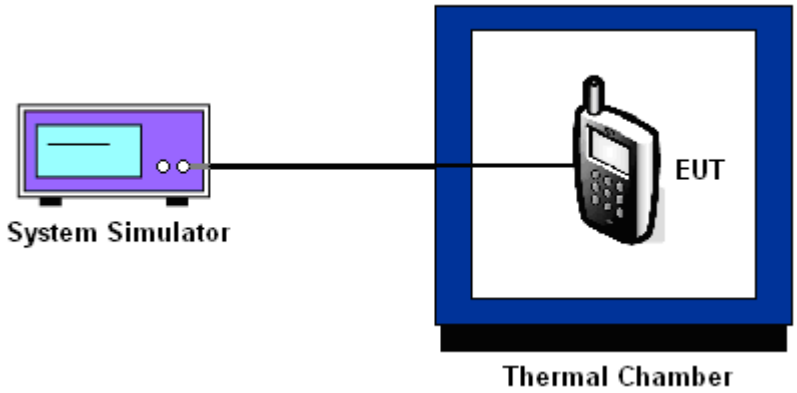
3.8.3 Test Procedures for Temperature Variation

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	EDGE class 8	Result
	Deviation (ppm)	Deviation (ppm)	
50	0.0287	0.0323	PASS
40	0.0263	0.0299	
30	0.0239	0.0287	
20(Ref.)	0.0000	0.0000	
10	0.0012	0.0000	
0	0.0024	0.0012	
-10	0.0036	0.0036	
-20	0.0048	0.0048	
-30	0.0084	0.0060	

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

Temperature (°C)	GSM	EDGE class 8	Result
	Deviation (ppm)	Deviation (ppm)	
50	0.0053	0.0048	PASS
40	0.0037	0.0032	
30	0.0016	0.0016	
20(Ref.)	0.0000	0.0000	
10	0.0011	0.0005	
0	0.0021	0.0011	
-10	0.0032	0.0021	
-20	0.0043	0.0027	
-30	0.0048	0.0043	

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 Deviation (ppm)	Result
50	0.0036	PASS
40	0.0024	
30	0.0012	
20(Ref.)	0.0000	
10	0.0108	
0	0.0108	
-10	0.0120	
-20	0.0132	
-30	0.0143	

Band :	WCDMA Band IV	Channel :	1413
Limit (ppm) :	within authorized band	Frequency :	1732.6 MHz

Temperature (°C)	RMC 12.2Kbps Deviation (ppm)	Result
50	0.0023	PASS
40	0.0017	
30	0.0006	
20(Ref.)	0.0000	
10	0.0063	
0	0.0063	
-10	0.0069	
-20	0.0075	
-30	0.0075	

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

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

Temperature (°C)	RMC 12.2Kbps	Result
	Deviation (ppm)	
50	0.0027	PASS
40	0.0016	
30	0.0005	
20(Ref.)	0.0000	
10	0.0005	
0	0.0011	
-10	0.0021	
-20	0.0027	
-30	0.0032	

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	4.35	0.0012	2.5	PASS
		3.80	0.0000		
		BEP	0.0012		
	EDGE class 8	4.35	0.0012		
		3.80	0.0000		
		BEP	0.0024		
GSM 1900 CH661	GSM	4.35	0.0005	(Note 3.)	
		3.80	0.0000		
		BEP	0.0011		
	EDGE class 8	4.35	0.0011		
		3.80	0.0000		
		BEP	0.0011		
WCDMA Band V CH4182	RMC 12.2Kbps	4.35	0.0012	2.5	
		3.80	0.0000		
		BEP	0.0024		
WCDMA Band IV CH1413	RMC 12.2Kbps	4.35	0.0012	(Note 3.)	
		3.80	0.0000		
		BEP	0.0006		
WCDMA Band II CH9400	RMC 12.2Kbps	4.35	0.0011	(Note 3.)	
		3.80	0.0005		
		BEP	0.0016		

Note:

1. Normal Voltage = 3.80V.
2. Battery End Point (BEP) = 3.50 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	Aug. 27, 2015~ Aug. 28, 2015	May 04, 2016	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Aug. 07, 2015	Aug. 27, 2015~ Aug. 28, 2015	Aug. 06, 2016	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2015	Sep. 02, 2015~ Sep. 17, 2015	May 25, 2016	Radiation (03CH01-SZ)
Spectrum Analyzer	R&S	FSV40	101041	10kHz~40GHz;Max 30dBm	Sep. 25, 2014	Sep. 02, 2015~ Sep. 17, 2015	Sep. 24, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz~2GHz	Nov. 07, 2014	Sep. 02, 2015~ Sep. 17, 2015	Nov. 06, 2015	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Oct. 15, 2014	Sep. 02, 2015~ Sep. 17, 2015	Oct. 14, 2015	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Aug. 17, 2015	Sep. 02, 2015~ Sep. 17, 2015	Aug. 16, 2016	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz / 30 dB	Jan. 28, 2015	Sep. 02, 2015~ Sep. 17, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 05, 2015	Sep. 02, 2015~ Sep. 17, 2015	May 04, 2016	Radiation (03CH01-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 28, 2015	Sep. 02, 2015~ Sep. 17, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Sep. 02, 2015~ Sep. 17, 2015	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 02, 2015~ Sep. 17, 2015	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 02, 2015~ Sep. 17, 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))	**3.9dB**