

FCC RF Test Report

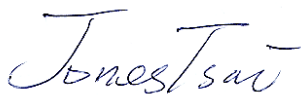
APPLICANT : Acer Incorporated
EQUIPMENT : Smart HandHeld
BRAND NAME : Acer
MODEL NAME : E600
MARKETING NAME : Liquid E600
FCC ID : HLZDME600
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E)
IC RSS-132 issue 3 and RSS-133 issue 6
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jul. 30, 2014 and testing was completed on Aug. 21, 2014. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-C-2004 and 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.



Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG473084A	Rev. 01	Initial issue of report	Sep. 09, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-132 (5.4) RSS-133 (6.4)	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	RSS-132 (5.4) RSS-133(6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§22.913(a)(2)	RSS-132(5.4) SRSP-503(5.1.3)	Effective Radiated Power	< 7 Watts	PASS	-
3.3	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.4	§2.1049 §22.917(b) §24.238(b)	RSS-GEN(4.6.1) RSS-133(2.3)	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Band Edge Measurement	< 43+10log ₁₀ (P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Conducted Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Field Strength of Spurious Radiation	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 18.11 dB at 11103.000 MHz
3.8	§2.1055 §22.355 §24.235	RSS-132(5.3) RSS-133(6.3)	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-



1 General Description

1.1 Applicant

Acer Incorporated

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

1.2 Manufacturer

Arima Communications Corp.

No.16, Lane 658, Yingtao Rd., Yingge Town, Taipei Country 23943 Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart HandHeld
Brand Name	Acer
Model Name	E600
Marketing Name	Liquid E600
FCC ID	HLZDME600
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/DC-HSDPA/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth v3.0+EDR/Bluetooth v4.0 LE
EUT Stage	Identical Prototype

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

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 33.94 dBm GSM1900 : 31.60 dBm WCDMA Band V : 23.49 dBm WCDMA Band II : 23.40 dBm
99% Occupied Bandwidth	GSM850: 0.248MHz GSM1900: 0.248MHz WCDMA Band V: 4.180MHz WCDMA Band II: 4.180MHz
Antenna Type	IFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA/DC-HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Downlink Only) 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	0.8090	0.0263 ppm	248KGXW
Part 22	GSM850 EDGE class 8	8PSK	0.2119	0.0347 ppm	250KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.0903	0.0383 ppm	4M18F9W
Part 24	GSM1900 GSM	GMSK	1.4604	0.0181 ppm	248KGXW
Part 24	GSM1900 EDGE class 8	8PSK	0.4463	0.0202 ppm	244KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.2330	0.0202 ppm	4M18F9W

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH01-KS	03CH01-KS	OTA01-KS	149928/4086E-1

Note: The test site complies with ANSI C63.4 2003 requirement

1.8 Applicable Standards

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

- ♦ FCC 47 CFR Part 2, 22(H), 24(E)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- ♦ IC RSS-132 Issue 3
- ♦ IC RSS-133 Issue 6
- ♦ IC RSS-Gen Issue 3
- ♦ NOTICE 2012-DRS0126

Remark:

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

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

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

Frequency range investigated for radiated emission: 30MHz to 10th harmonic.

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

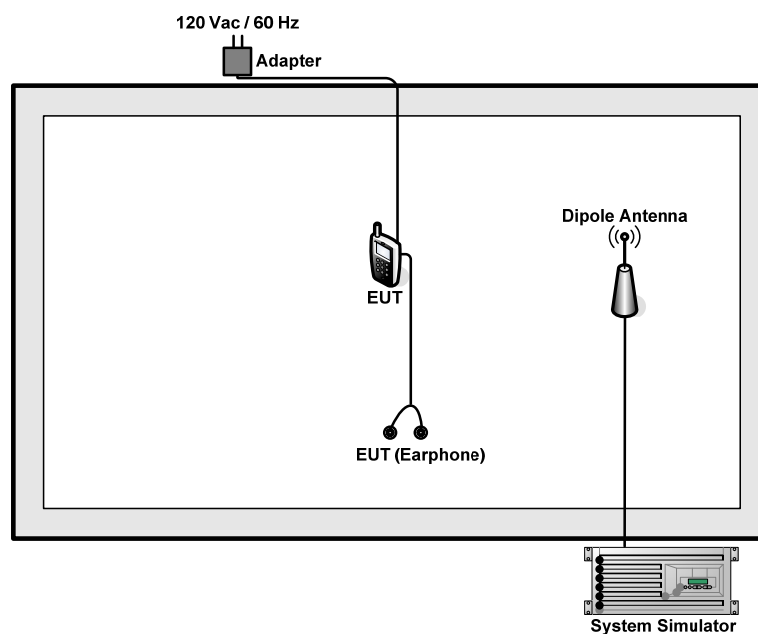


Conducted Power Measurement Results:

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	33.56	33.79	33.94	31.60	31.44	31.52
GPRS class 8	33.50	33.72	33.93	31.49	31.37	31.43
GPRS class 10	31.87	31.80	31.67	28.99	28.97	28.98
GPRS class 11	29.60	29.52	29.75	26.93	27.00	26.95
GPRS class 12	28.32	28.20	28.07	25.66	25.64	25.64
EGPRS class 8	27.54	27.49	27.41	26.65	26.57	26.60
EGPRS class 10	27.46	27.33	27.31	26.51	26.46	26.44
EGPRS class 11	25.54	25.47	25.38	24.50	24.43	24.52
EGPRS class 12	25.13	25.05	25.00	23.14	23.02	23.10

Conducted Power (*Unit: dBm)						
Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency	826.4	836.4	846.6	1852.4	1880.0	1907.6
RMC 12.2K	23.47	23.49	23.36	23.40	23.37	23.36
HSDPA Subtest-1	22.48	22.49	22.44	22.45	22.33	22.44
HSDPA Subtest-2	22.47	22.51	22.40	22.44	22.37	22.50
HSDPA Subtest-3	22.00	22.06	21.93	22.02	21.89	21.91
HSDPA Subtest-4	22.02	22.02	21.94	21.89	21.90	21.88
DC-HSDPA Subtest-1	22.46	22.47	22.42	22.43	22.31	22.42
DC-HSDPA Subtest-2	22.45	22.49	22.38	22.42	22.35	22.48
DC-HSDPA Subtest-3	21.98	22.04	21.91	22.00	21.87	21.89
DC-HSDPA Subtest-4	22.00	22.00	21.92	21.87	21.88	21.86
HSUPA Subtest-1	22.92	22.91	22.88	22.85	22.95	22.82
HSUPA Subtest-2	21.76	21.78	21.62	21.68	21.69	21.54
HSUPA Subtest-3	22.17	22.16	22.08	22.18	22.16	22.11
HSUPA Subtest-4	22.89	22.87	22.74	22.73	22.71	22.65
HSUPA Subtest-5	23.08	23.07	22.88	22.76	23.07	22.86

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

2.4 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 5.2 dB and a 10dB attenuator.

Example :

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 5.2 + 10 = 15.2 \text{ (dB)}\end{aligned}$$

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.

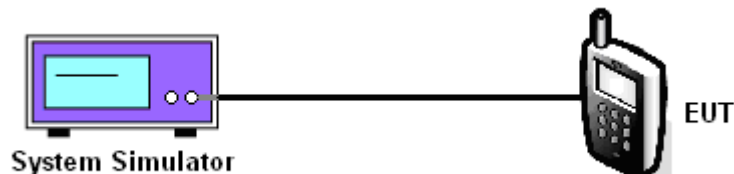
3.1.2 Measuring Instruments

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)	33.56	33.79	33.94	27.54	27.49	27.41	23.47	23.49	23.36
Conducted Power (Watts)	2.27	2.39	2.48	0.57	0.56	0.55	0.22	0.22	0.22

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)	31.60	31.44	31.52	26.65	26.57	26.60	23.40	23.37	23.36
Conducted Power (Watts)	1.45	1.39	1.42	0.46	0.45	0.46	0.22	0.22	0.22

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.

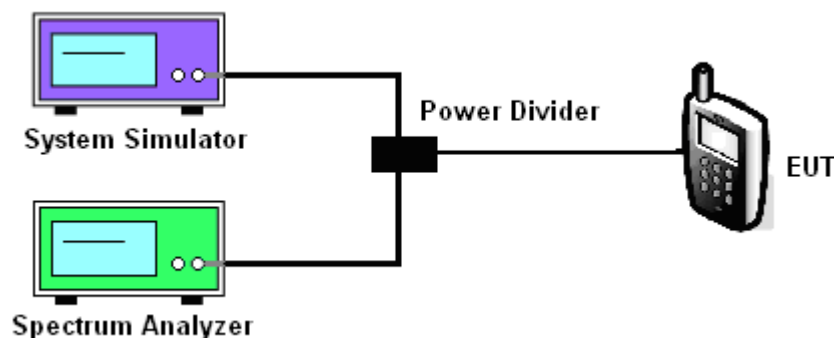
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. 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.
3. 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 %.
4. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



**3.2.5 Test Result of Peak-to-Average Ratio**

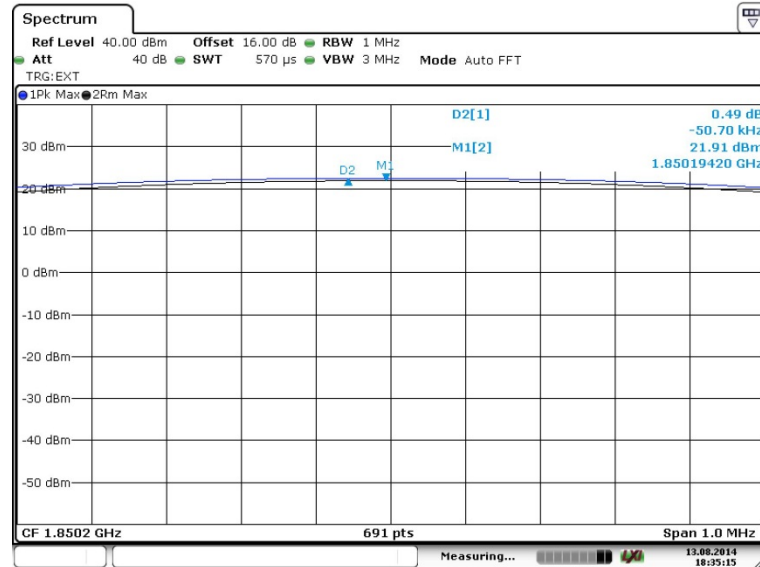
PCS Band									
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.49	0.51	0.50	3.10	3.15	2.99	2.88	2.88	2.68



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

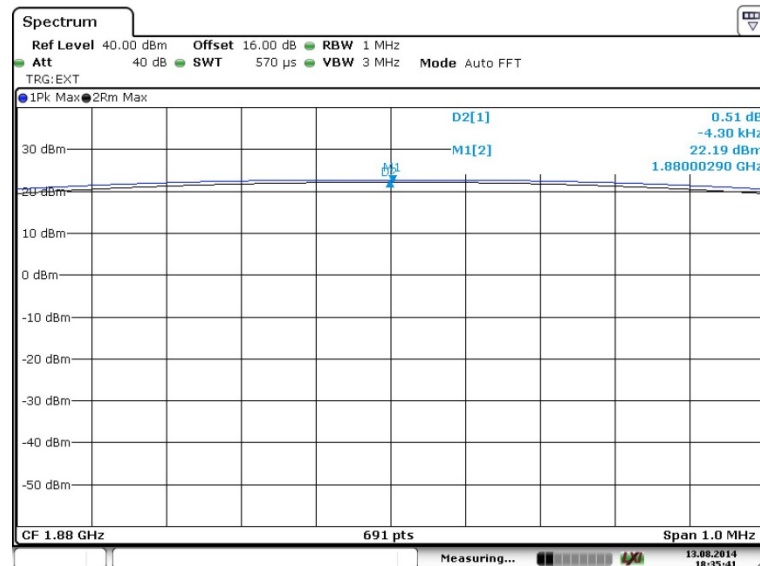
Band :	GSM 1900	Test Mode :	GSM Link (GMSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 13.AUG.2014 18:35:16

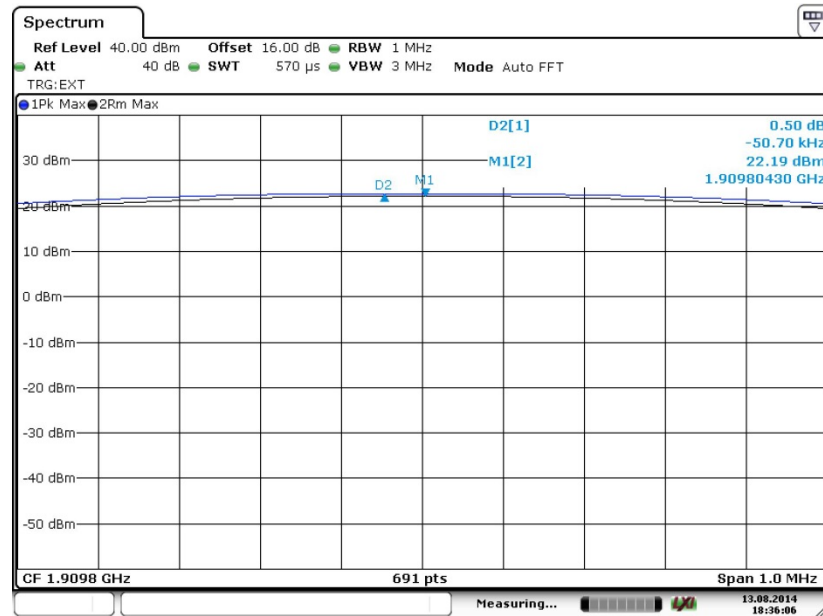
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



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

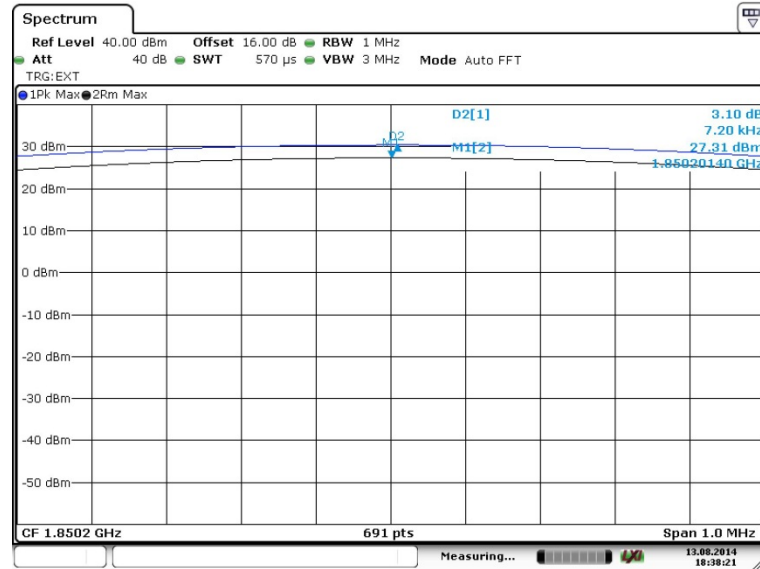


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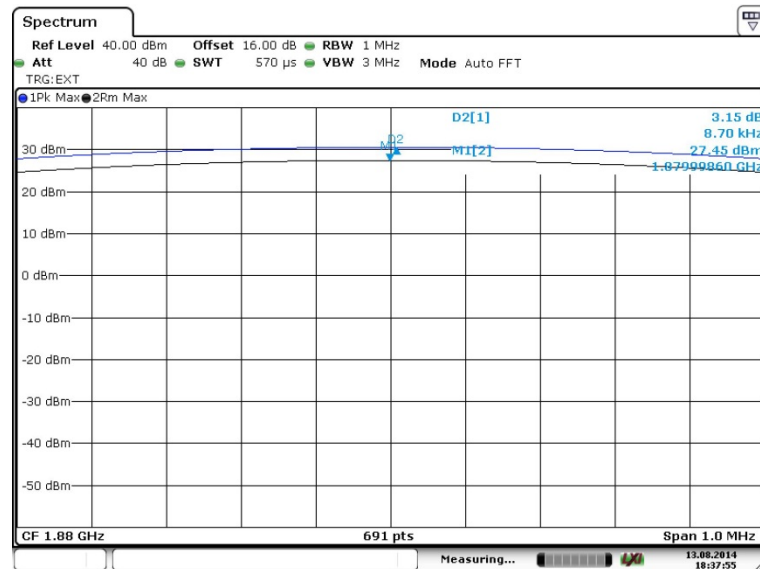
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 13.AUG.2014 18:38:21

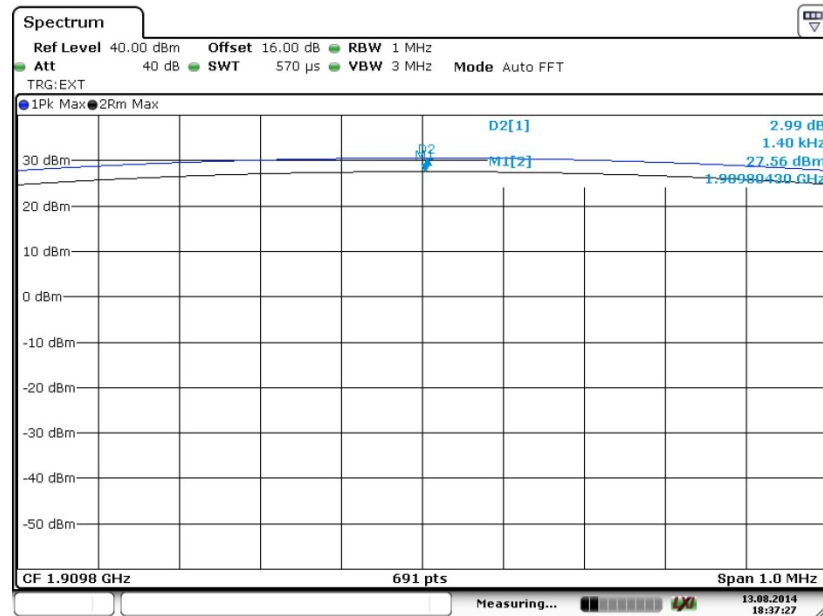
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 13.AUG.2014 18:37:55



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

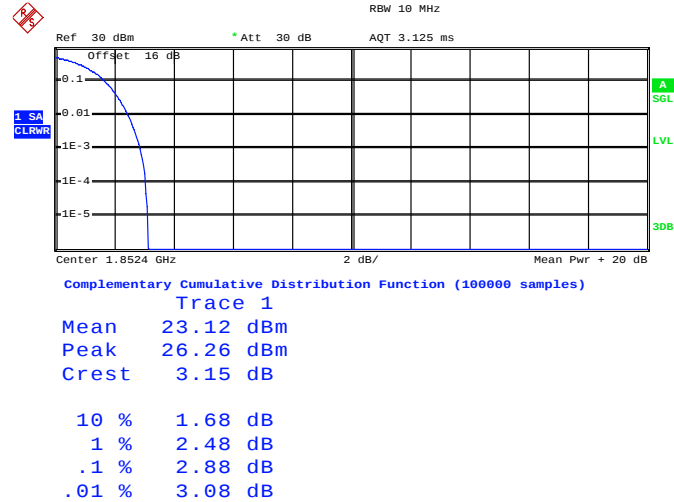


Date: 13.AUG.2014 18:37:27



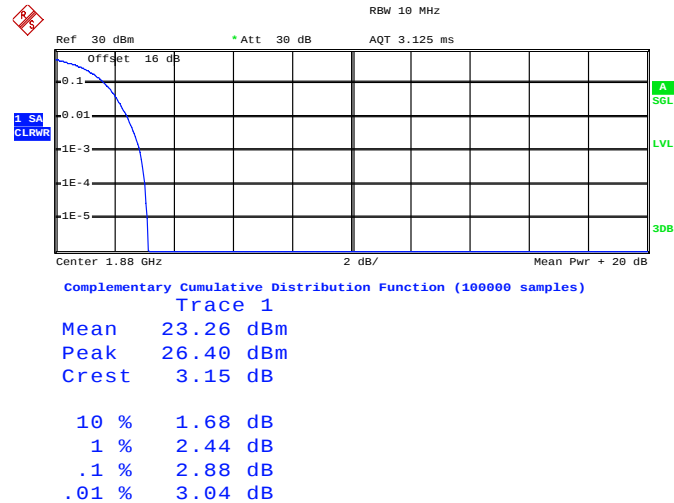
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)



Date: 19.AUG.2014 18:07:34

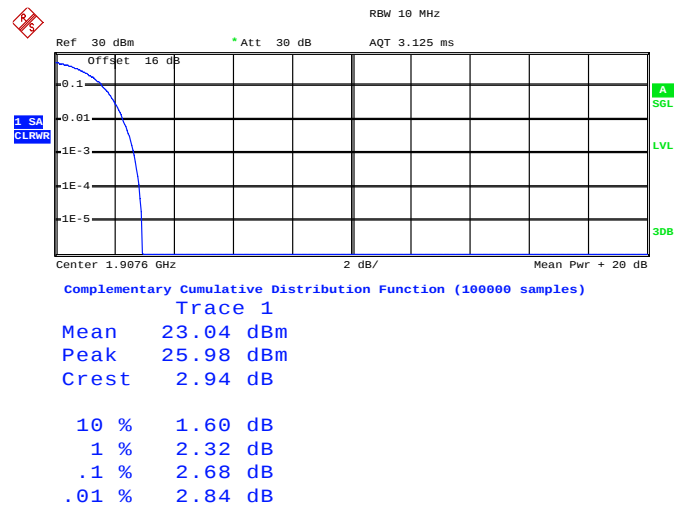
Peak-to-Average Ratio on Channel 9400 (1880.0 MHz)



Date: 19.AUG.2014 18:07:12



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



Date: 19.AUG.2014 18:06:52

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 v02r01. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

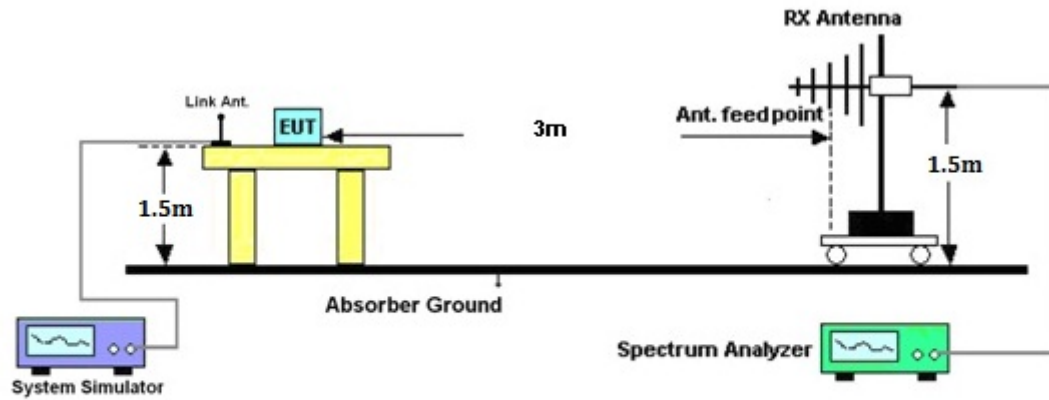
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 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 turntable 1.5 meters high in a fully anechoic chamber.
3. The EUT was placed 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
UMTS operating modes: Set RBW= 100 kHz, VBW= 300 kHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per KDB 971168 D01.
5. The table was rotated 360 degrees to determine the position of the highest radiated power.
6. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
7. Taking the record of maximum ERP/EIRP.
8. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
9. The conducted power at the terminal of the dipole antenna is measured.
10. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
11. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$
 P_s (dBm) : Input power to substitution antenna.
 G_s (dBi or dBd) : Substitution antenna Gain.
 $E_t = R_t + AF$
 $E_s = R_s + AF$
 AF (dB/m) : Receive antenna factor
 R_t : The highest received signal in spectrum analyzer for EUT.
 R_s : The highest received signal in spectrum analyzer for substitution antenna.

3.3.4 Test Setup



3.3.5 Test Result of ERP

GSM850 (GSM) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-17.96	-48.12	0.00	-1.08	29.08	0.8090
836.40	-18.34	-48.28	0.00	-0.93	29.01	0.7964
848.80	-18.61	-48.35	0.00	-0.76	28.98	0.7898
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-29.06	-47.97	0.00	-1.08	17.83	0.0606
836.40	-29.08	-48.01	0.00	-0.93	18.00	0.0630
848.80	-28.68	-48.05	0.00	-0.76	18.61	0.0727

GSM850 (EDGE class 8) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-23.78	-48.12	0.00	-1.08	23.26	0.2119
836.40	-25.23	-48.28	0.00	-0.93	22.12	0.1628
848.80	-26.05	-48.35	0.00	-0.76	21.54	0.1426
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-35.66	-47.97	0.00	-1.08	11.23	0.0133
836.40	-35.80	-48.01	0.00	-0.93	11.28	0.0134
848.80	-36.37	-48.05	0.00	-0.76	10.92	0.0124

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-27.53	-48.12	0.00	-1.08	19.51	0.0893
836.40	-27.80	-48.28	0.00	-0.93	19.55	0.0903
846.60	-28.30	-48.35	0.00	-0.76	19.29	0.0849
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-38.52	-47.97	0.00	-1.08	8.37	0.0069
836.40	-38.44	-48.01	0.00	-0.93	8.64	0.0073
846.60	-38.49	-48.05	0.00	-0.76	8.80	0.0076

3.3.6 Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-23.26	-51.88	0.00	1.96	30.58	1.1438
1880.00	-24.47	-52.99	0.00	2.00	30.52	1.1263
1909.80	-25.57	-54.28	0.00	1.98	30.69	1.1714
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-22.45	-52.13	0.00	1.96	31.64	1.4604
1880.00	-23.79	-53.17	0.00	2.00	31.38	1.3729
1909.80	-24.98	-54.13	0.00	1.98	31.13	1.2961

GSM1900 (EDGE class 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-28.34	-51.88	0.00	1.96	25.50	0.3545
1880.00	-29.63	-52.99	0.00	2.00	25.36	0.3432
1909.80	-30.75	-54.28	0.00	1.98	25.51	0.3560
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-27.59	-52.13	0.00	1.96	26.50	0.4463
1880.00	-29.13	-53.17	0.00	2.00	26.04	0.4014
1909.80	-30.43	-54.13	0.00	1.98	25.68	0.3696



WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-31.58	-51.88	0.00	1.96	22.26	0.1684
1880.00	-32.32	-52.99	0.00	2.00	22.67	0.1847
1907.60	-32.96	-54.28	0.00	1.98	23.30	0.2139
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-31.03	-52.13	0.00	1.96	23.06	0.2025
1880.00	-31.63	-53.17	0.00	2.00	23.54	0.2261
1907.60	-32.44	-54.13	0.00	1.98	23.67	0.2330

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

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

The 99% occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

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

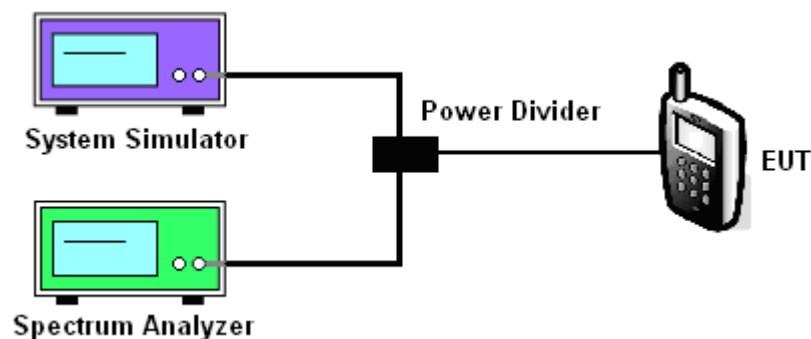
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 4.2.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, sample detector, trace maximum hold.
5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.

3.4.4 Test Setup



3.4.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

Cellular Band						
Modes	GSM850 (GSM)			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)	248.00	244.00	244.00	248.00	244.00	250.00
26dB BW (kHz)	316.00	312.00	312.00	310.00	304.00	310.00

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)	246.00	246.00	248.00	244.00	242.00	242.00
26dB BW (kHz)	316.00	314.00	314.00	308.00	312.00	316.00

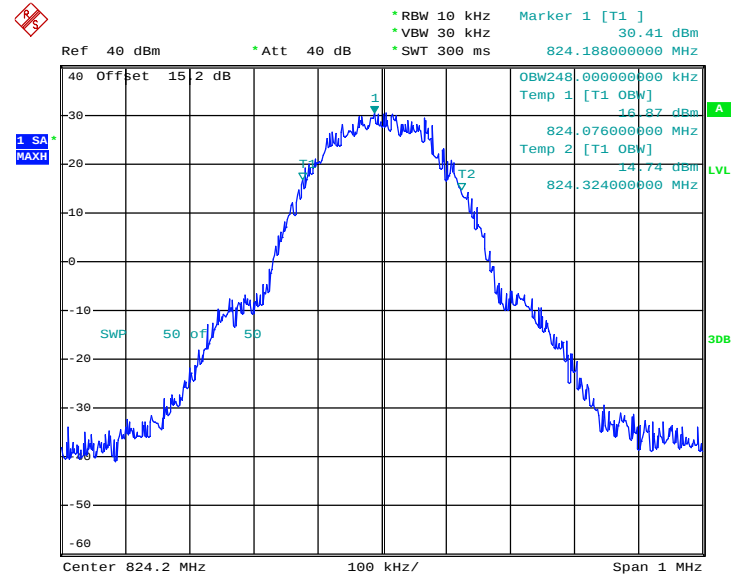
Cellular Band			
Modes	WCDMA Band V (RMC 12.2Kbps)		
Channel	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	826.4	836.4	846.6
99% OBW (MHz)	4.14	4.18	4.16
26dB BW (MHz)	4.66	4.66	4.66

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)	4.18	4.18	4.18
26dB BW (MHz)	4.68	4.68	4.68

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

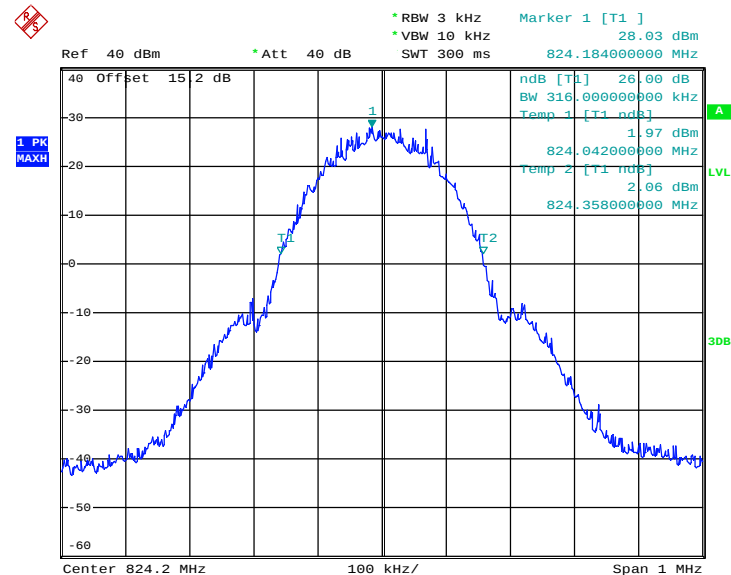
Band :	GSM 850	Test Mode :	GSM Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 13.AUG.2014 15:53:02

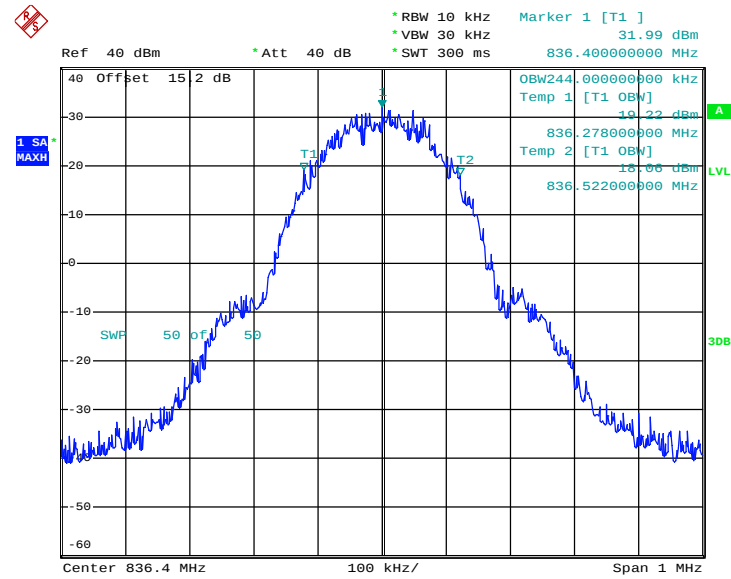
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 13.AUG.2014 15:44:52

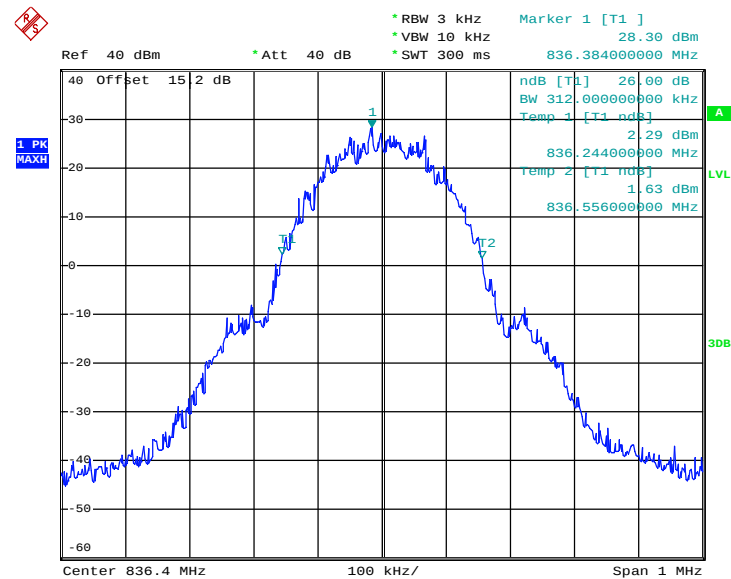


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 13.AUG.2014 15:54:09

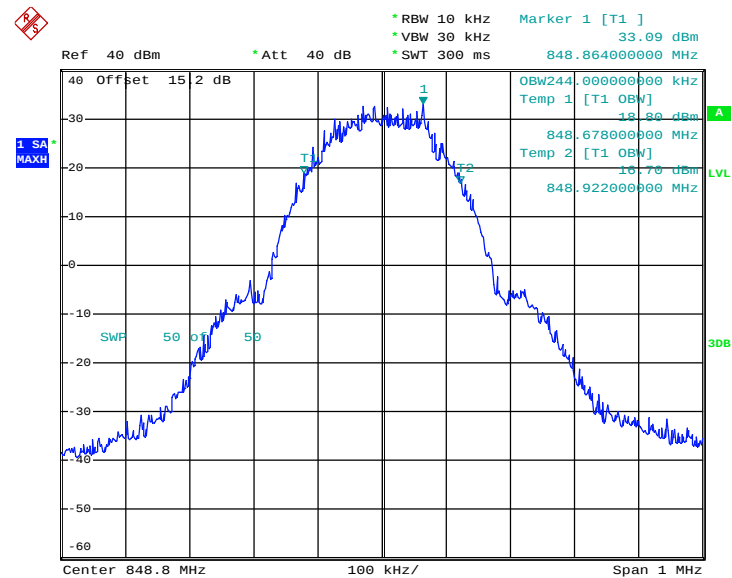
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 13.AUG.2014 15:45:32

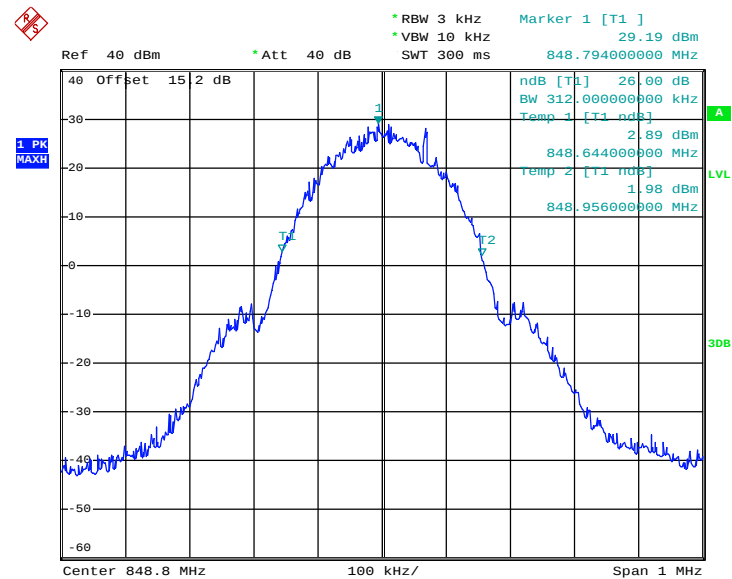


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 13.AUG.2014 15:56:31

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

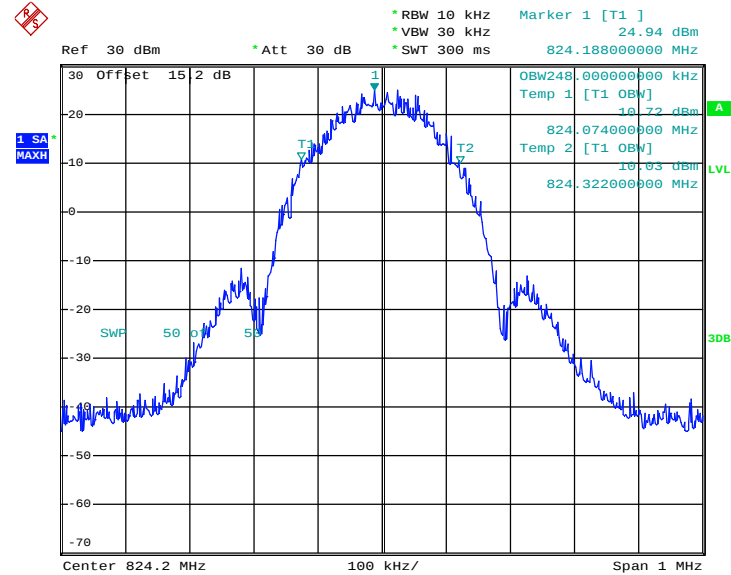


Date: 13.AUG.2014 16:26:24



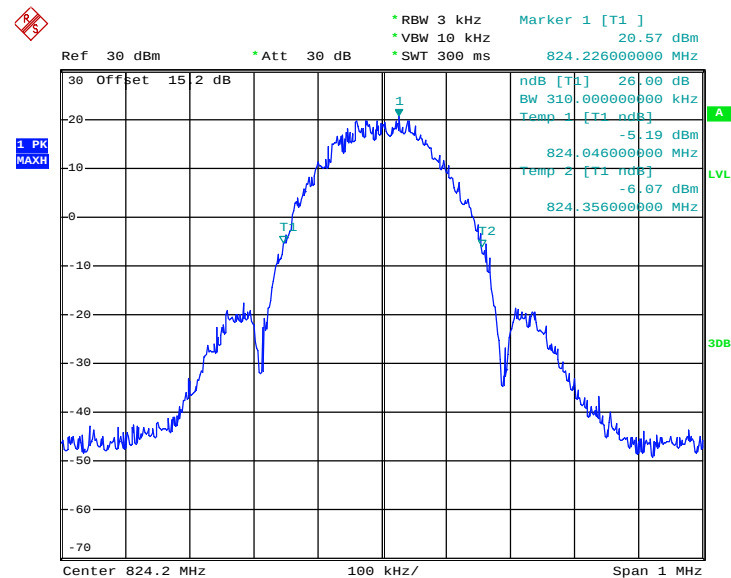
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 13.AUG.2014 14:56:40

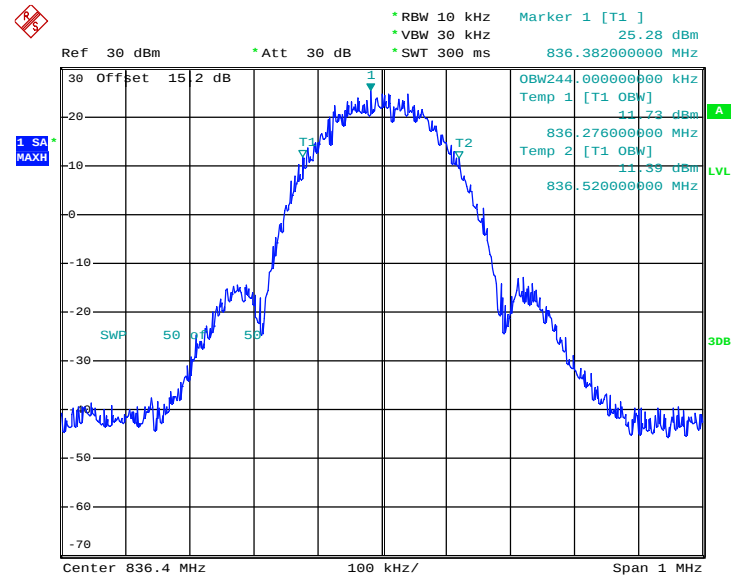
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 13.AUG.2014 14:50:12

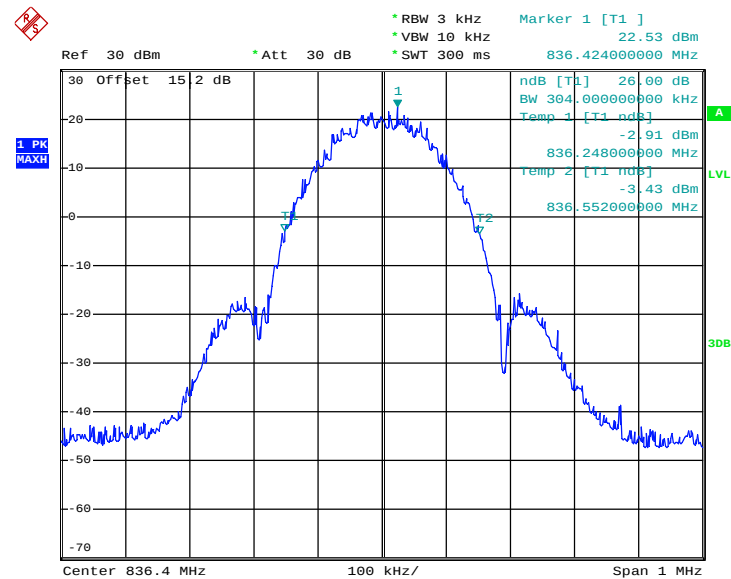


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 13.AUG.2014 15:29:23

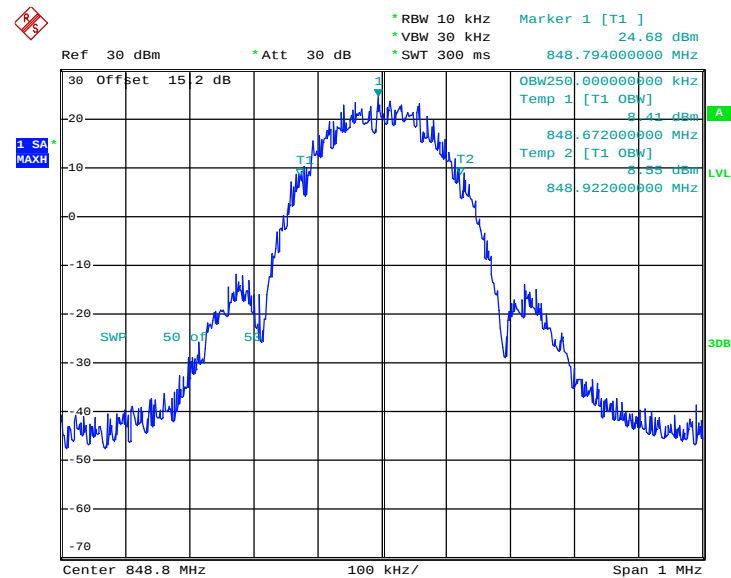
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 13.AUG.2014 15:27:15

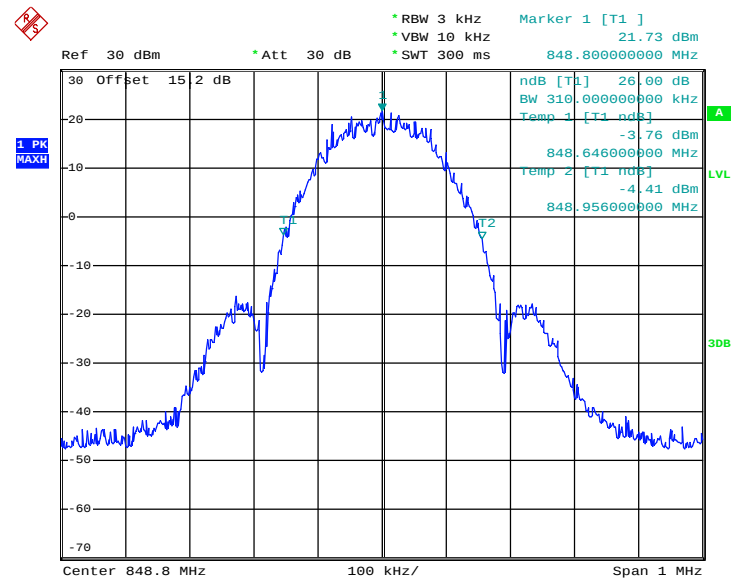


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 13.AUG.2014 15:01:45

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

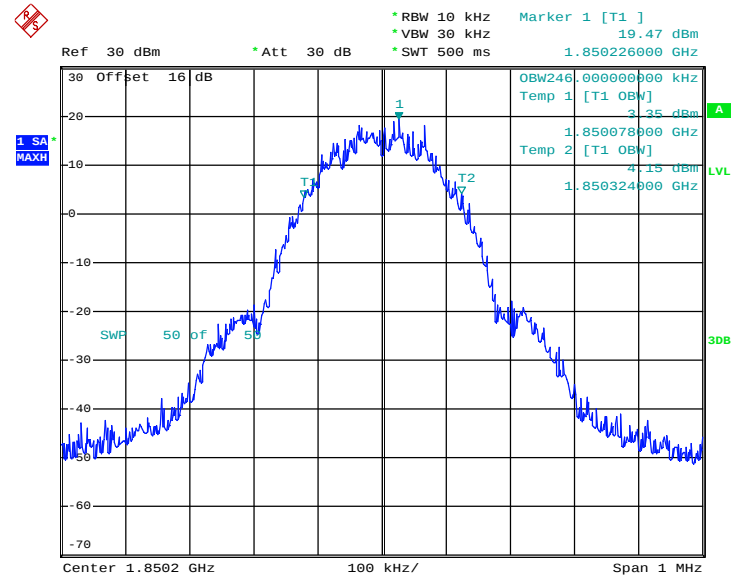


Date: 13.AUG.2014 14:47:01



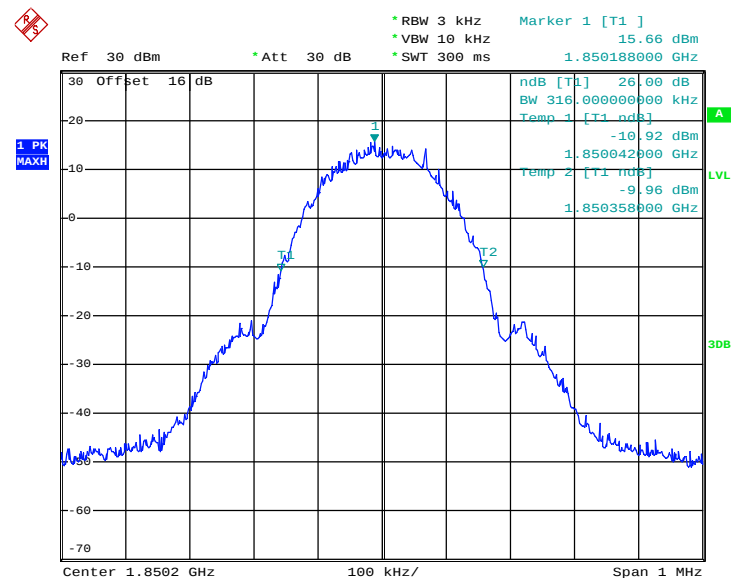
Band :	GSM 1900	Test Mode :	GSM Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 13.AUG.2014 12:37:42

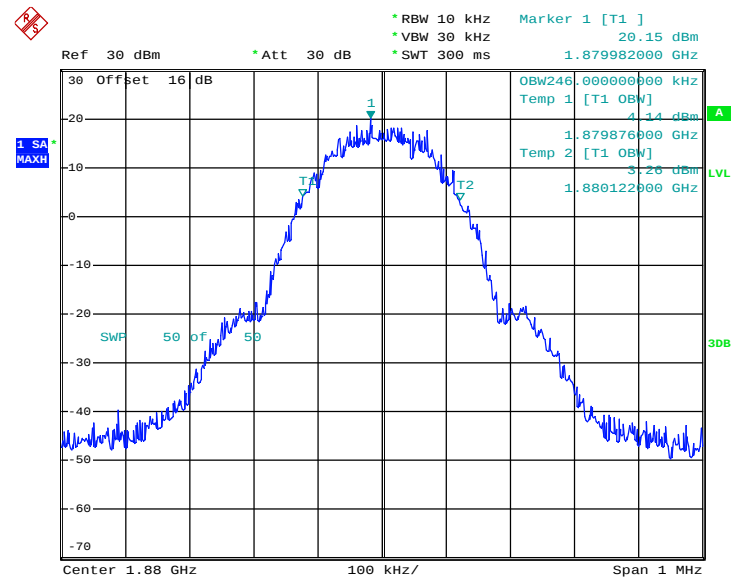
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 13.AUG.2014 11:47:30

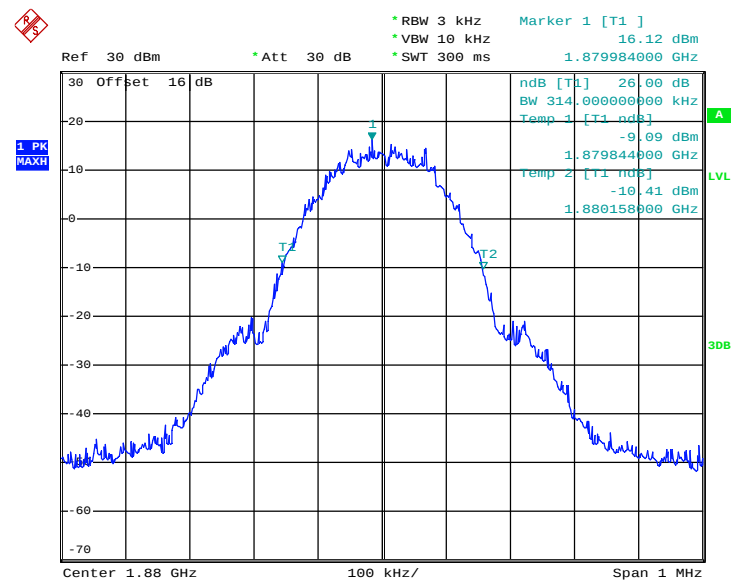


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 13.AUG.2014 12:02:27

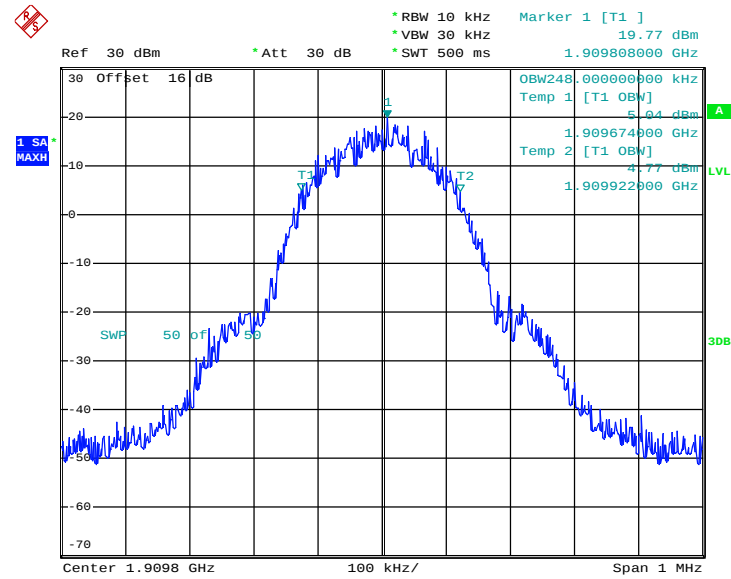
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 13.AUG.2014 11:49:05

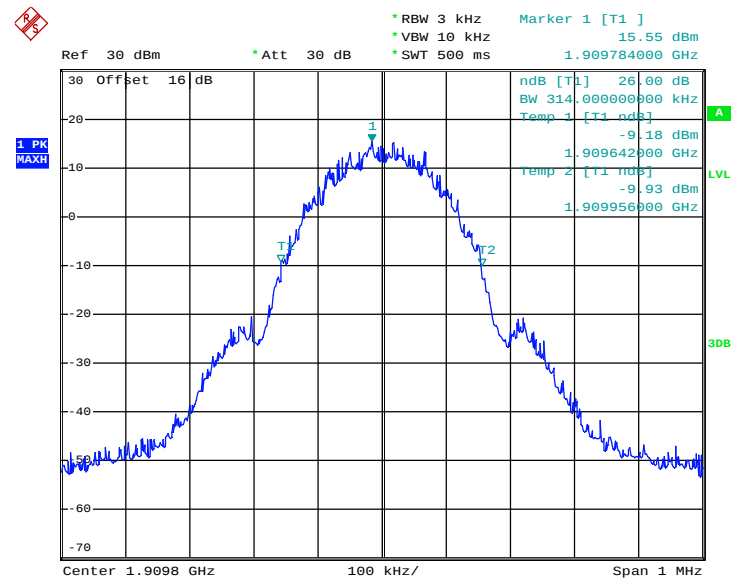


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



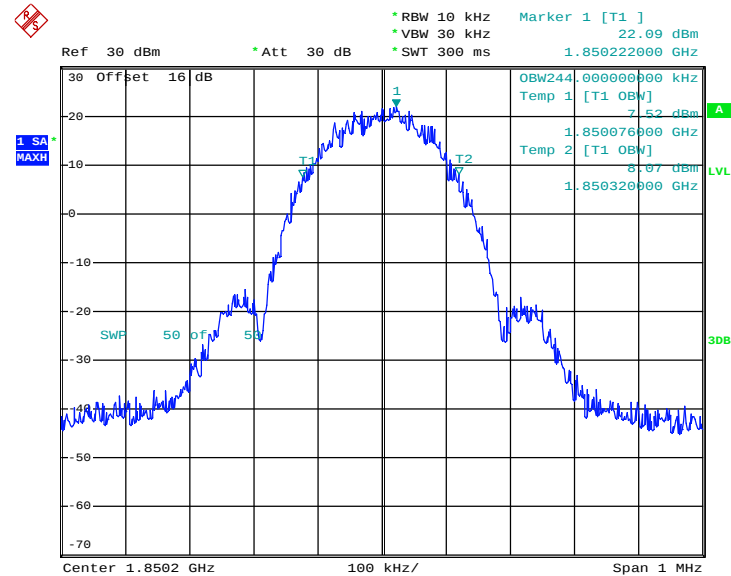
Date: 13.AUG.2014 12:38:39

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

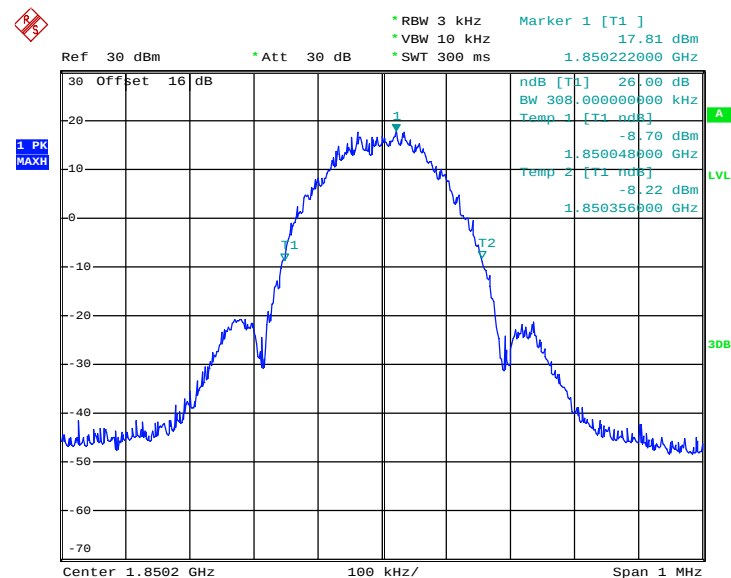


Date: 13.AUG.2014 12:39:54

Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)


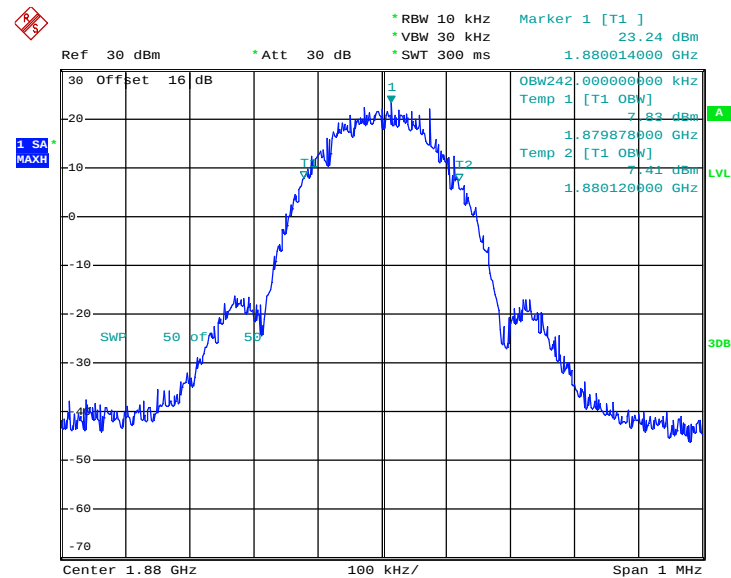
Date: 13.AUG.2014 12:53:41

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)


Date: 13.AUG.2014 12:49:47

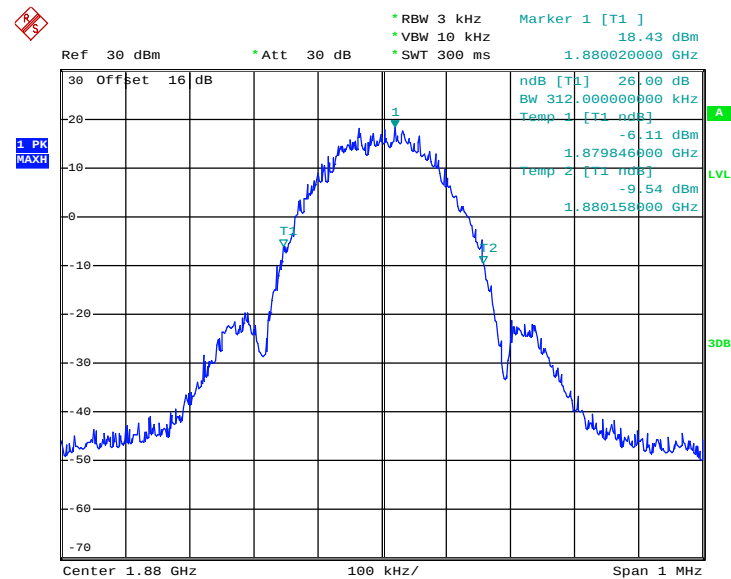


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 13.AUG.2014 13:01:19

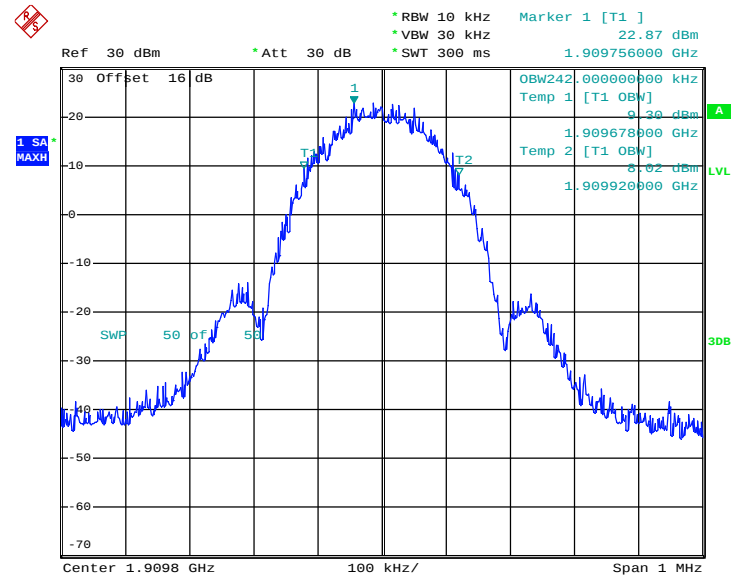
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 13.AUG.2014 12:48:20

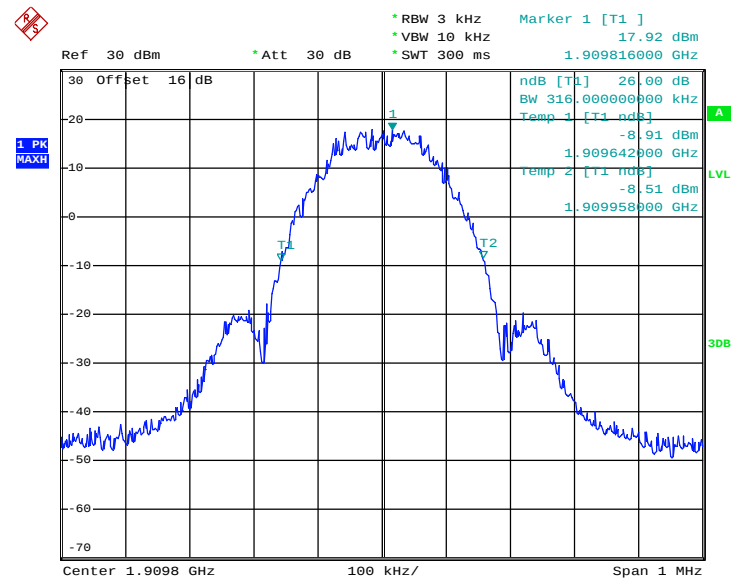


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 13.AUG.2014 13:05:28

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

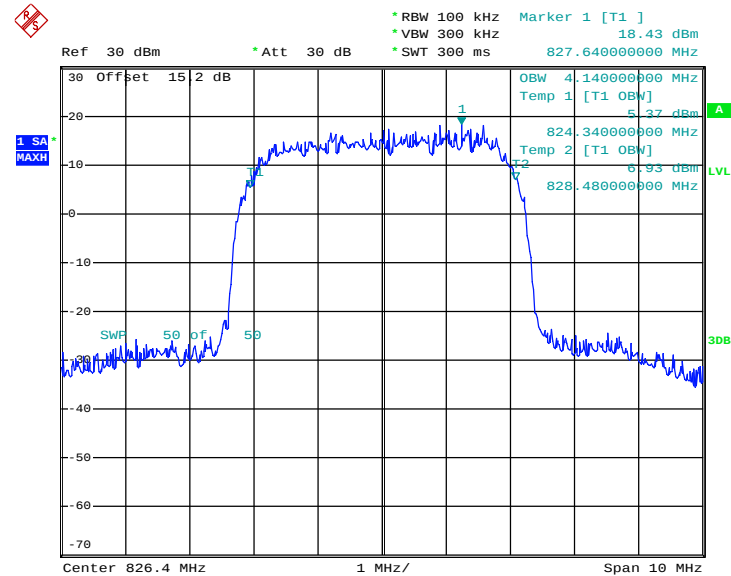


Date: 13.AUG.2014 12:47:29



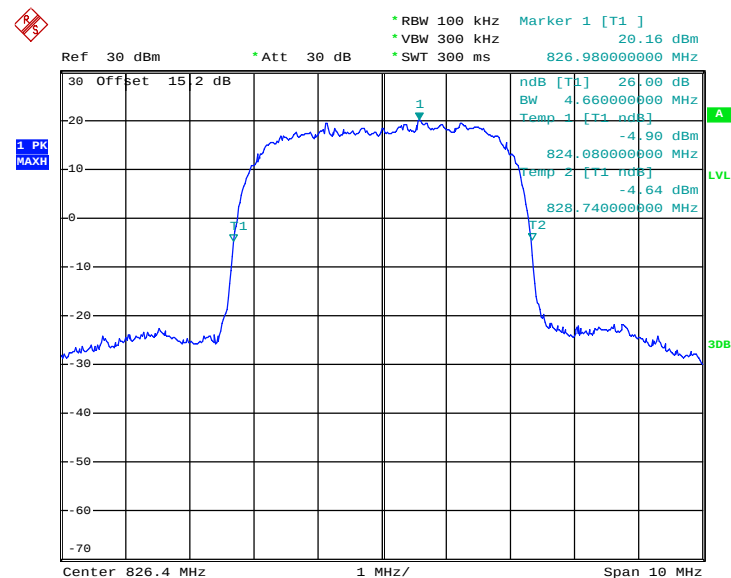
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 13.AUG.2014 16:40:29

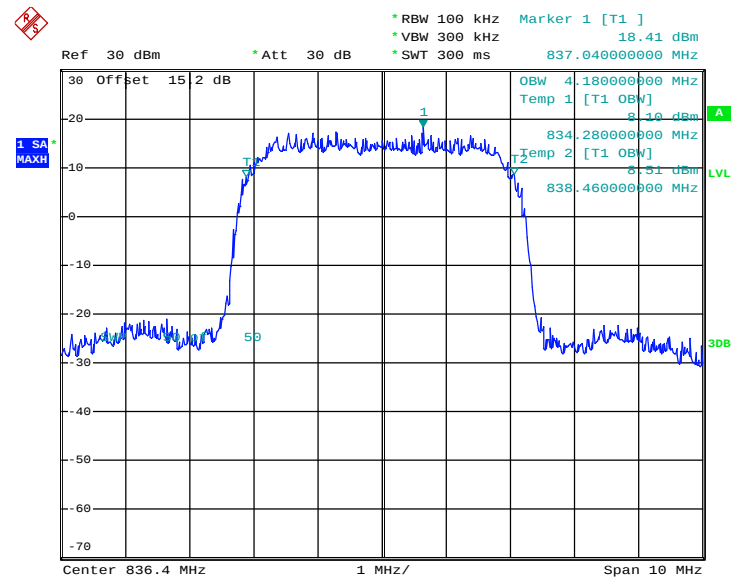
26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 13.AUG.2014 16:37:58

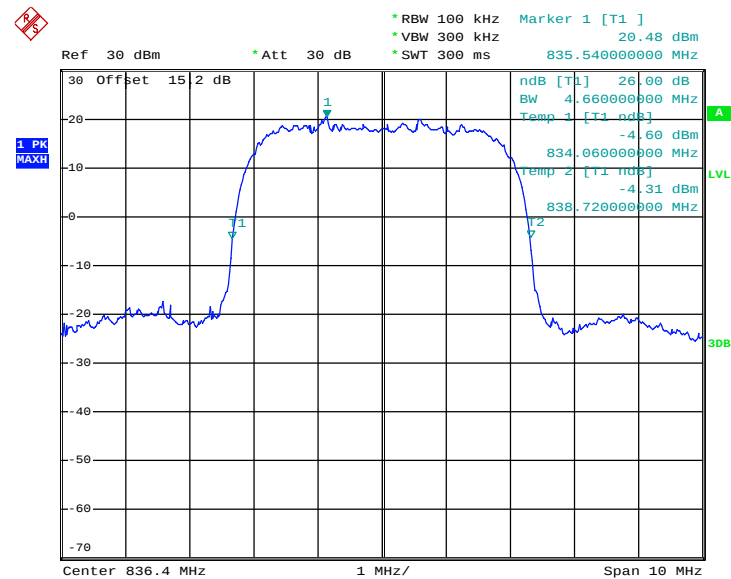


99% Occupied Bandwidth Plot on Channel 4182 (836.4 MHz)



Date: 13.AUG.2014 16:40:50

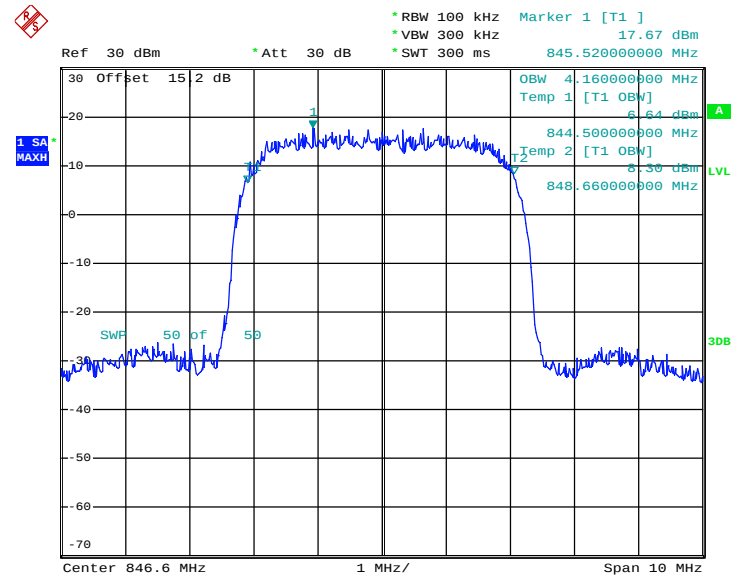
26dB Bandwidth Plot on Channel 4182 (836.4 MHz)



Date: 13.AUG.2014 16:38:24

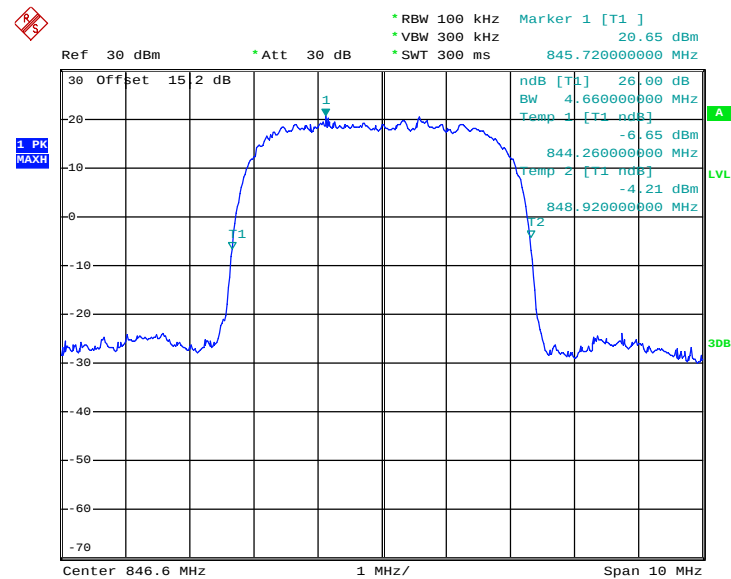


99% Occupied Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 13.AUG.2014 16:41:10

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)

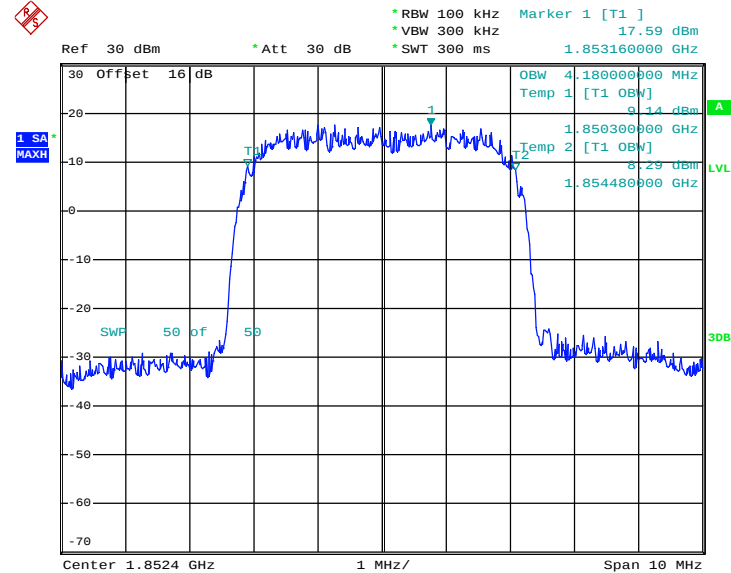


Date: 13.AUG.2014 16:38:50



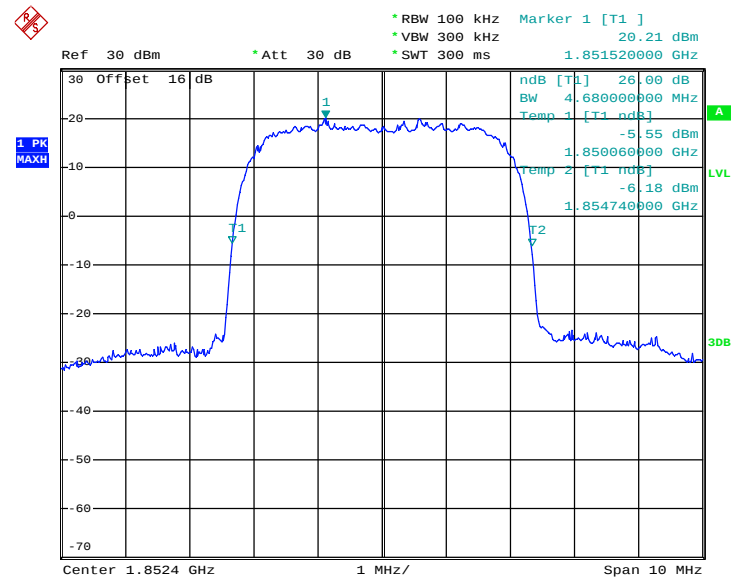
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 13.AUG.2014 17:10:36

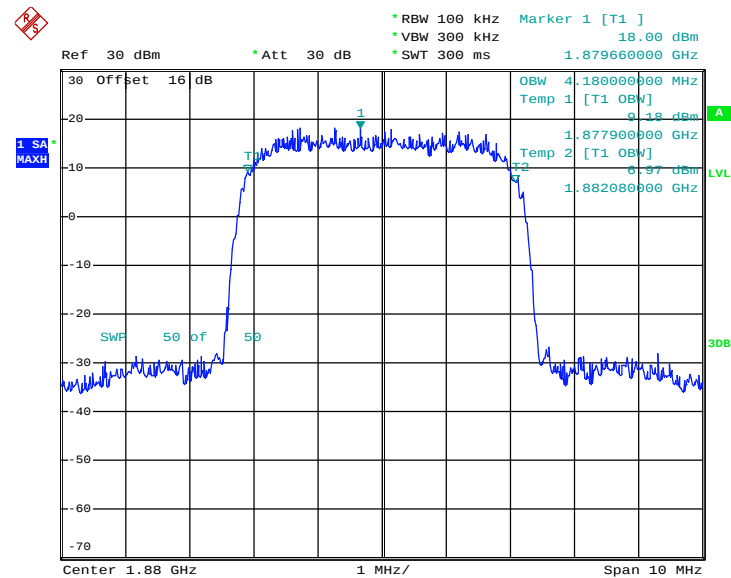
26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 13.AUG.2014 17:08:05

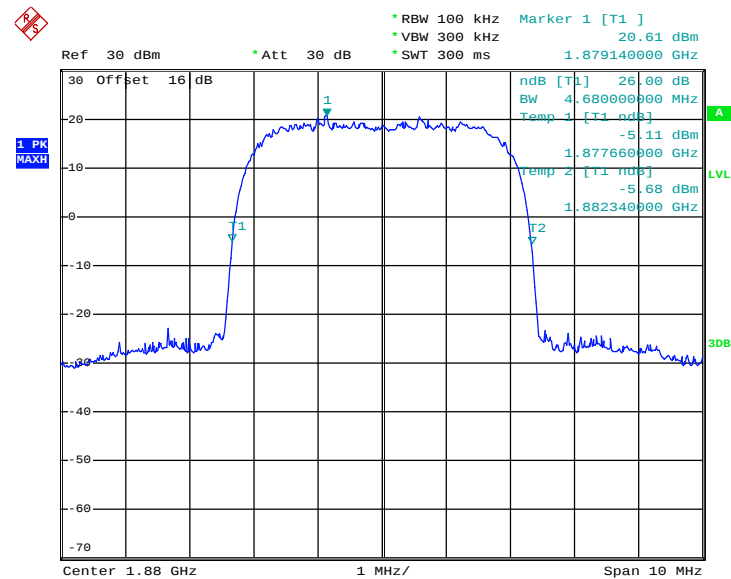


99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 13.AUG.2014 17:10:57

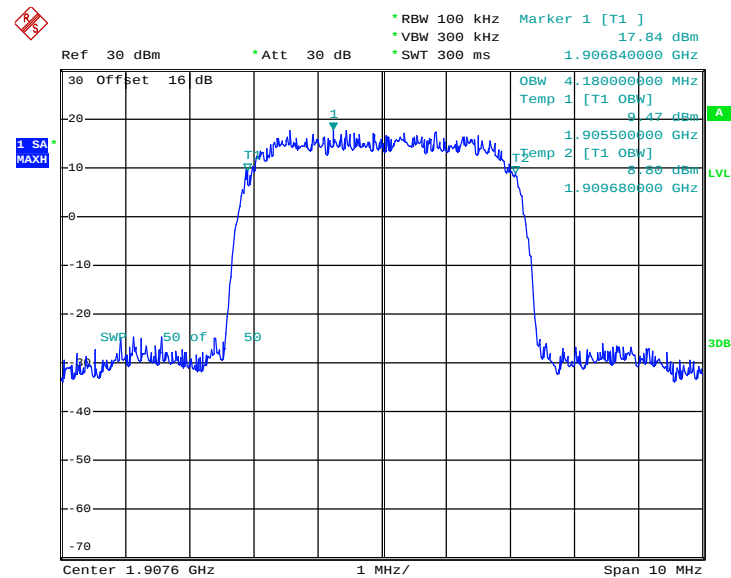
26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 13.AUG.2014 17:08:31

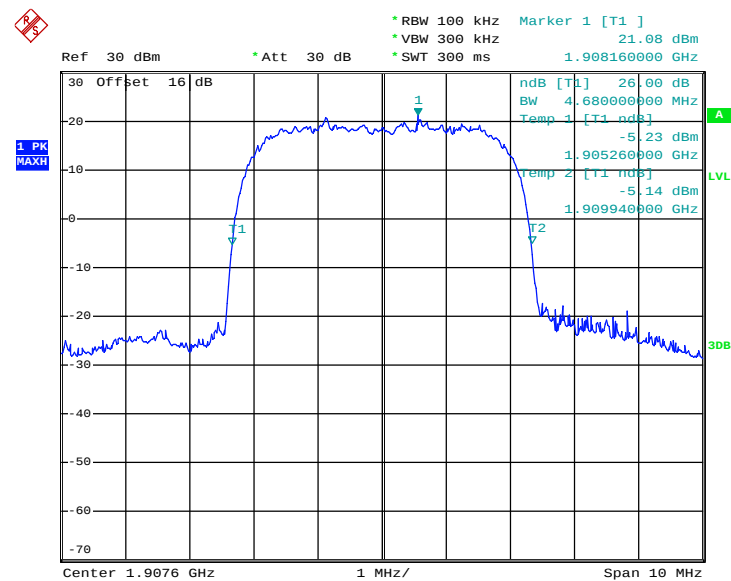


99% Occupied Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 13.AUG.2014 17:11:17

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 13.AUG.2014 17:08:57

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

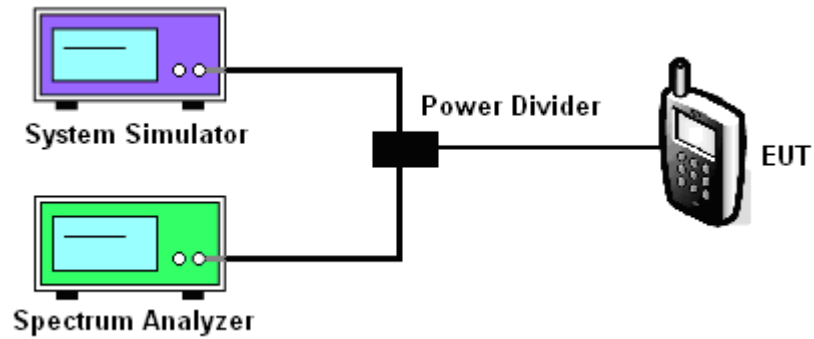
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.5.4 Test Setup

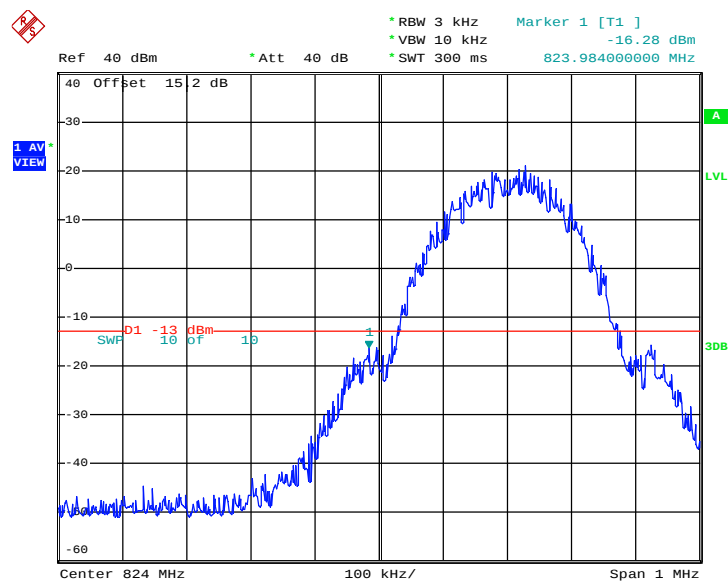
<Conducted Band Edge >



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	GSM850	Test Mode :	GSM Link (GMSK)
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-16.05dBm	Measurement Value :	-16.28dBm

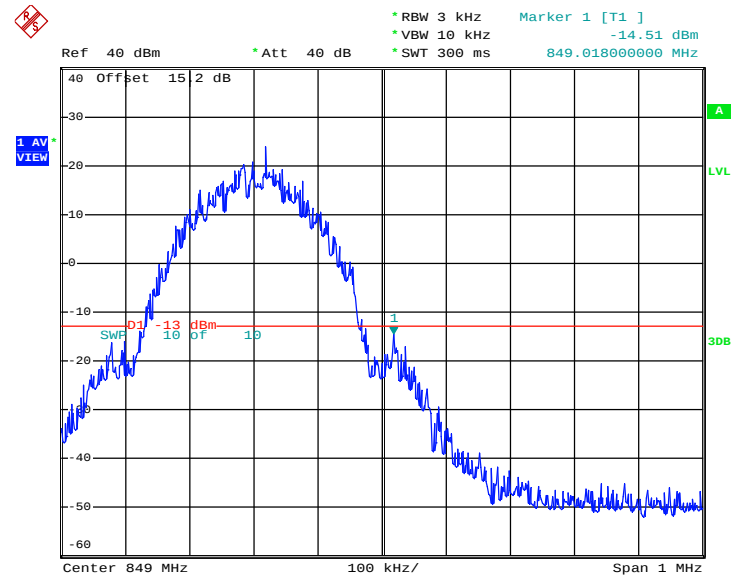
Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 13.AUG.2014 16:04:47

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM850	Test Mode :	GSM Link (GMSK)
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-14.28dBm	Measurement Value :	-14.51dBm

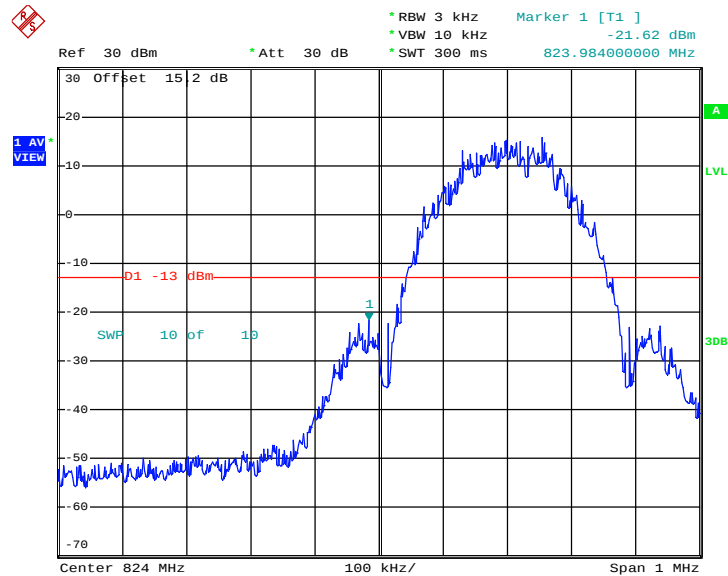
Higher Band Edge Plot on Channel 251 (848.8 MHz)


Date: 13.AUG.2014 16:05:41

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



Band :	GSM850	Test Mode :	EDGE class 8 Link (8PSK)
Correction Factor :	0.14dB	Maximum 26dB Bandwidth :	0.310MHz
Band Edge :	-21.48dBm	Measurement Value :	-21.62dBm

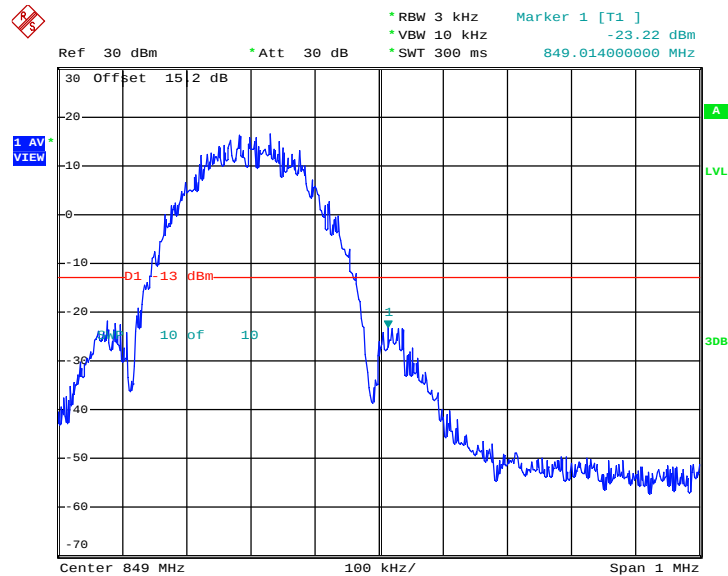
Lower Band Edge Plot on Channel 128 (824.2 MHz)

Date: 13.AUG.2014 14:44:25

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



Band :	GSM850	Test Mode :	EDGE class 8 Link (8PSK)
Correction Factor :	0.14dB	Maximum 26dB Bandwidth :	0.310MHz
Band Edge :	-23.08dBm	Measurement Value :	-23.22dBm

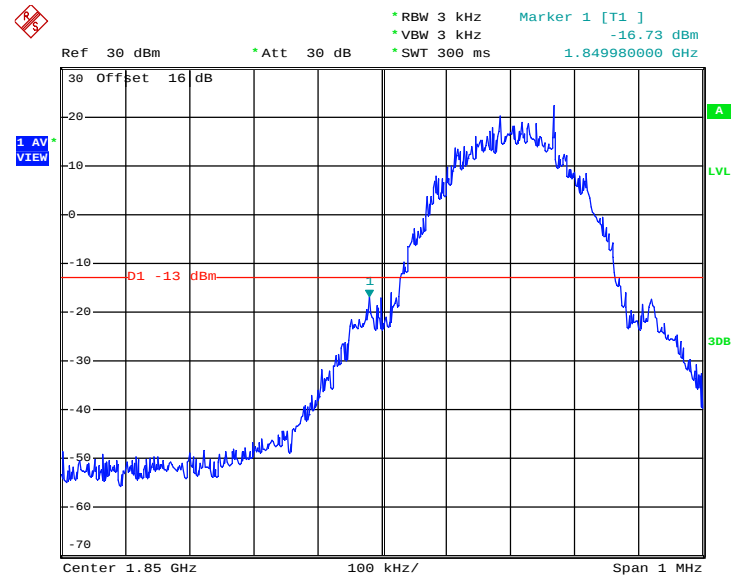
Higher Band Edge Plot on Channel 251 (848.8 MHz)

Date: 13.AUG.2014 14:44:54

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



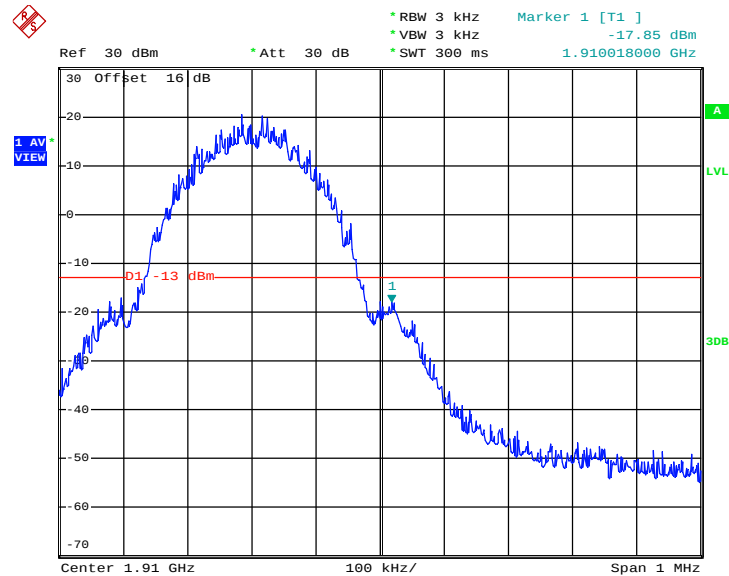
Band :	GSM1900	Test Mode :	GSM Link (GMSK)
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-16.50dBm	Measurement Value :	-16.73dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)

Date: 13.AUG.2014 11:29:56

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM1900	Test Mode :	GSM Link (GMSK)
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-17.62dBm	Measurement Value :	-17.85dBm

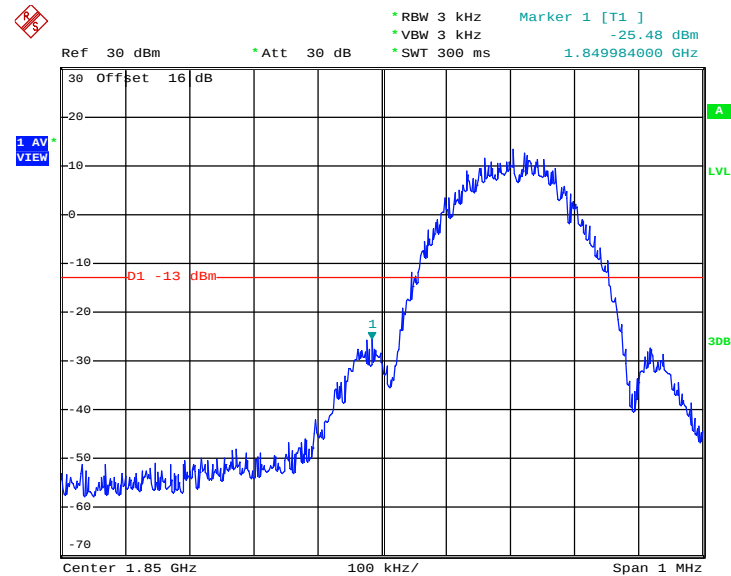
Higher Band Edge Plot on Channel 810 (1909.8 MHz)


Date: 13.AUG.2014 11:30:22

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



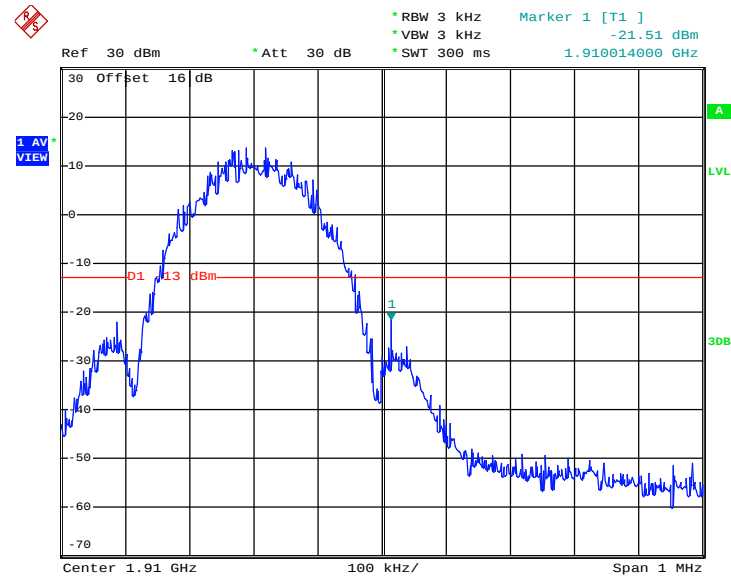
Band :	GSM1900	Test Mode :	EDGE class 8 Link (8PSK)
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-25.25dBm	Measurement Value :	-25.48dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)

Date: 13.AUG.2014 12:43:25

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM1900	Test Mode :	EDGE class 8 Link (8PSK)
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-21.28dBm	Measurement Value :	-21.51dBm

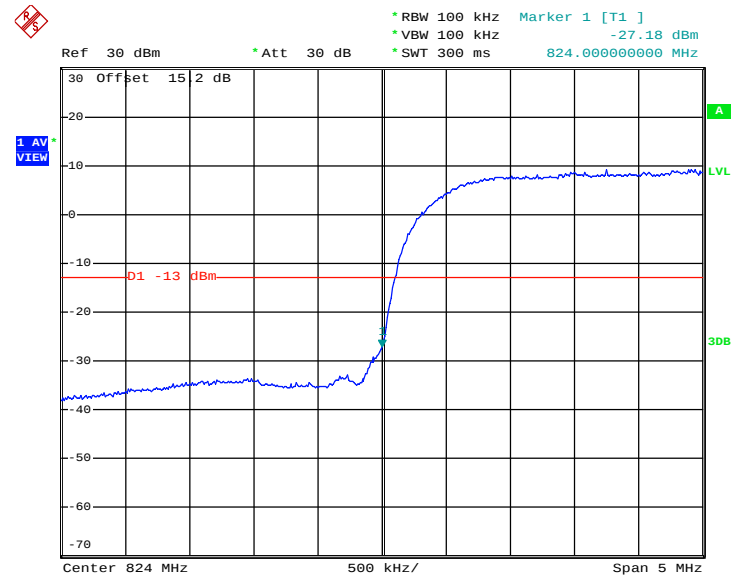
Higher Band Edge Plot on Channel 810 (1909.8 MHz)


Date: 13.AUG.2014 12:43:52

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.32dB	Maximum 26dB Bandwidth :	4.660MHz
Band Edge :	-23.86dBm	Measurement Value :	-27.18dBm

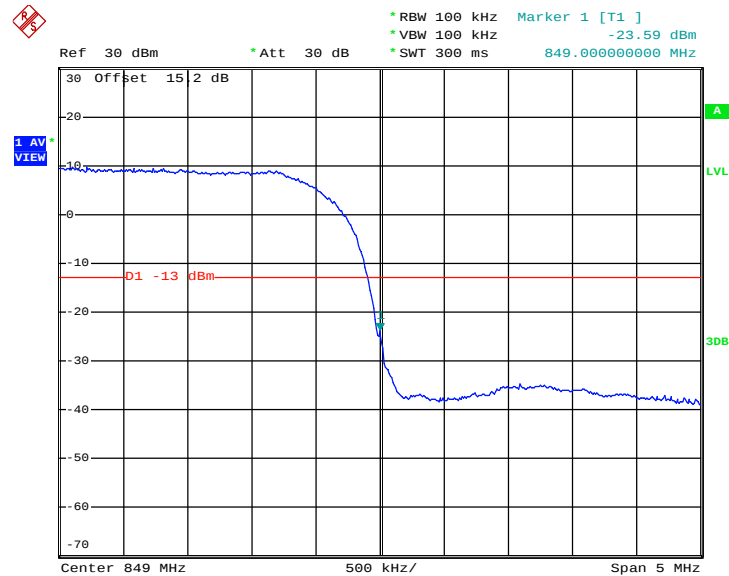
Lower Band Edge Plot on Channel 4132 (826.4 MHz)

Date: 13.AUG.2014 16:41:37

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.32dB	Maximum 26dB Bandwidth :	4.660MHz
Band Edge :	-20.27dBm	Measurement Value :	-23.59dBm

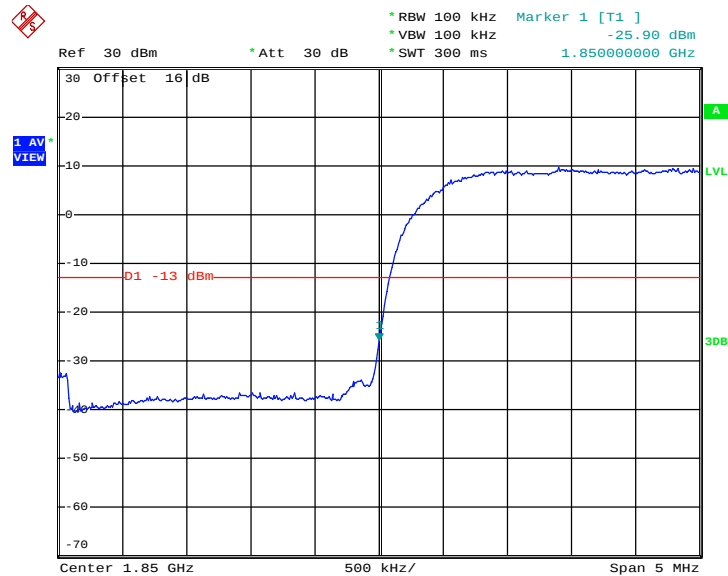
Higher Band Edge Plot on Channel 4233 (846.6 MHz)

Date: 13.AUG.2014 16:42:03

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)



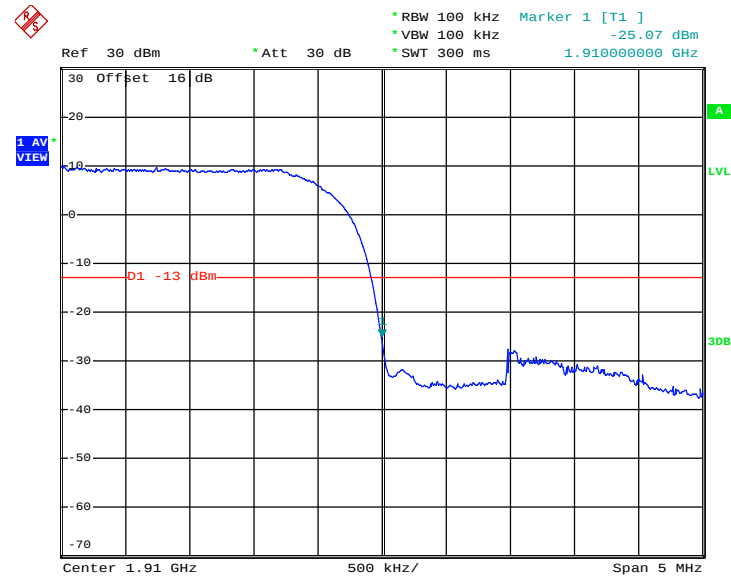
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.30 dB	Maximum 26dB Bandwidth :	4.680MHz
Band Edge :	-22.60dBm	Measurement Value :	-25.90dBm

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)

Date: 13.AUG.2014 17:11:44

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.30 dB	Maximum 26dB Bandwidth :	4.680MHz
Band Edge :	-21.77dBm	Measurement Value :	-25.07dBm

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)


Date: 13.AUG.2014 17:12:10

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
2. Band Edge= Measurement Value + Correction Factor(dB)

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

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

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

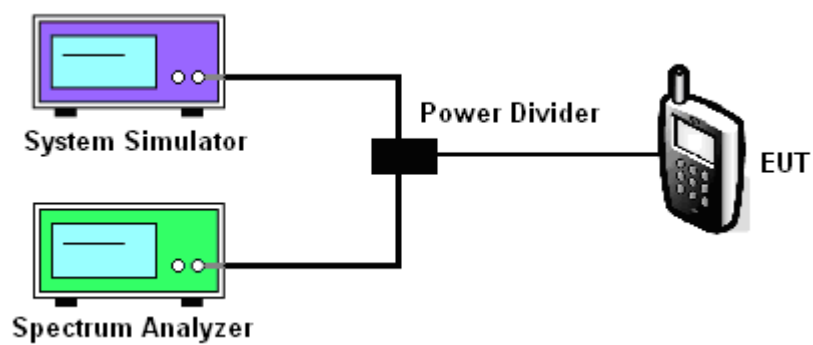
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

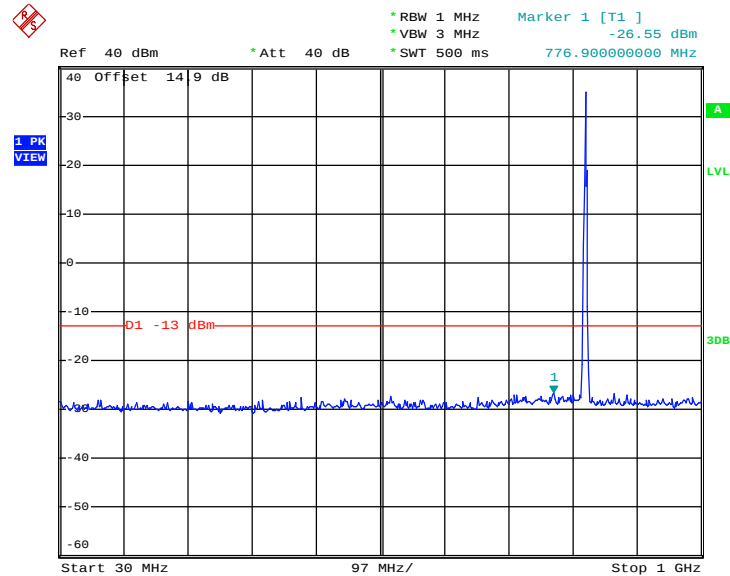
1. The testing follows FCC KDB 971168 v02r01 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator.
The path loss was compensated to the results for each measurement.
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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13\text{dBm}$.

3.6.4 Test Setup

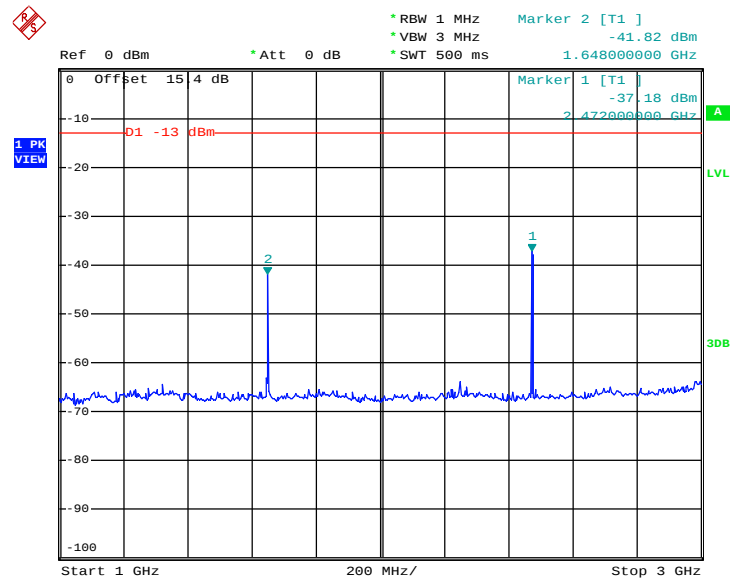


3.6.5 Test Result (Plots) of Conducted Spurious Emission

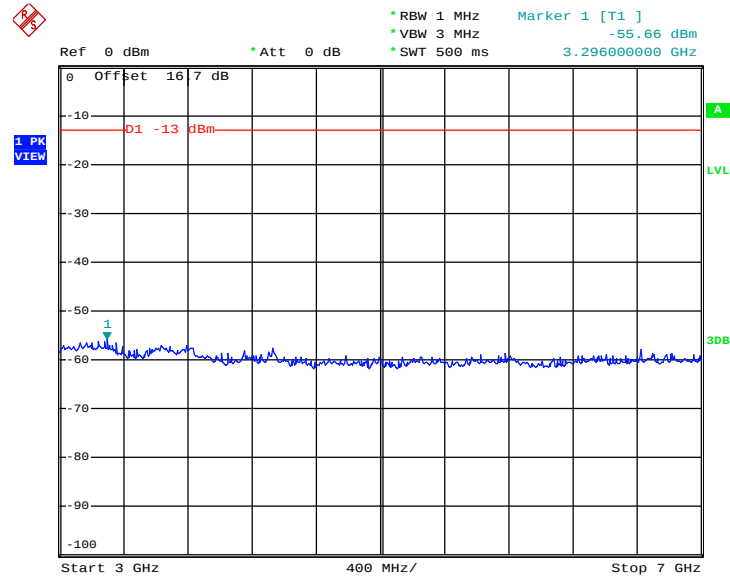
Band :	GSM850	Channel :	CH128
Test Mode :	GSM Link (GMSK)	Frequency :	824.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz


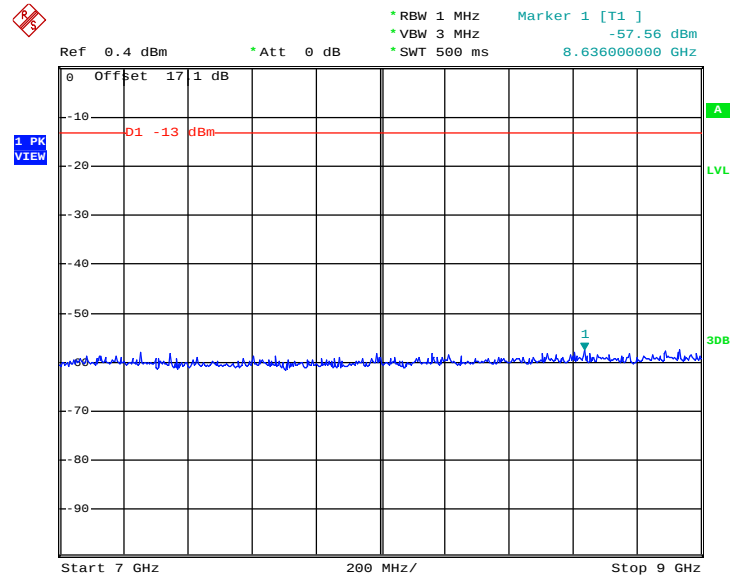
Date: 13.AUG.2014 16:09:34

Conducted Spurious Emission Plot between 1GHz ~ 3GHz


Date: 13.AUG.2014 16:11:24

Conducted Spurious Emission Plot between 3GHz ~ 7GHz


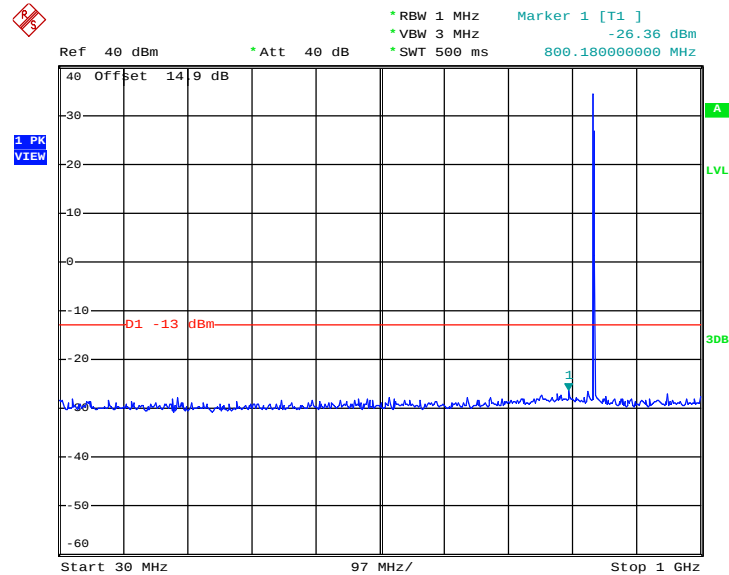
Date: 13.AUG.2014 16:15:11

Conducted Spurious Emission Plot between 7GHz ~ 9GHz


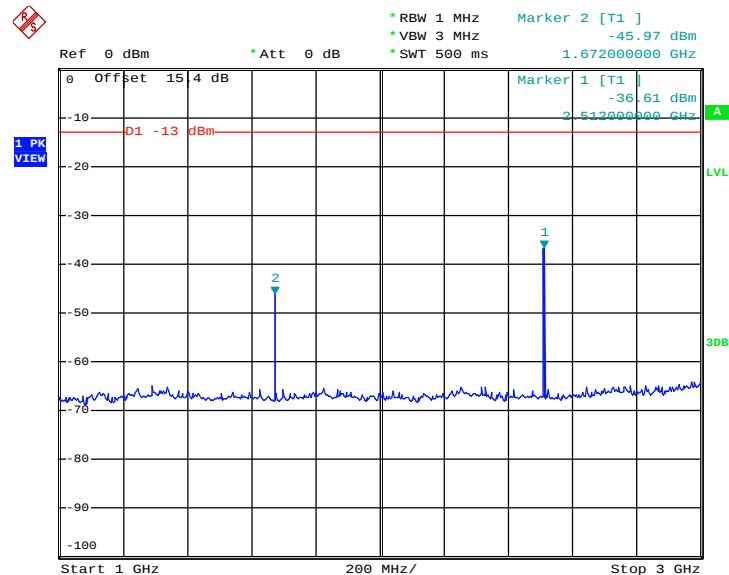
Date: 13.AUG.2014 16:16:07



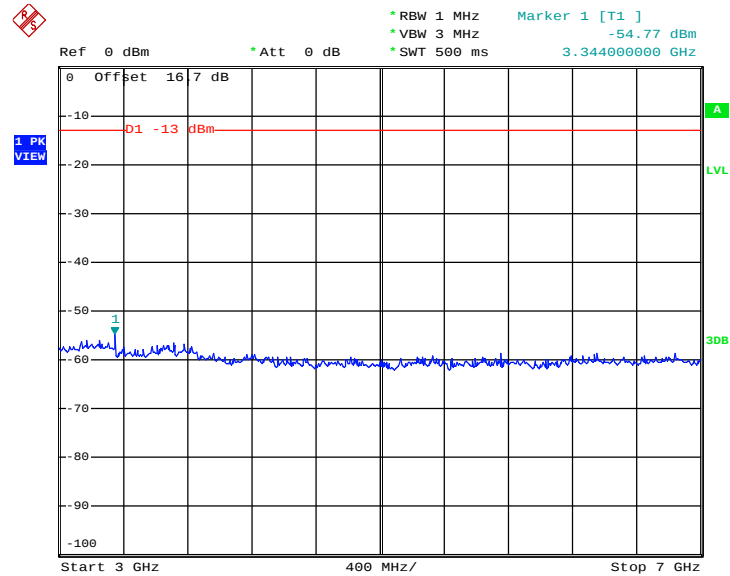
Band :	GSM850	Channel :	CH189
Test Mode :	GSM Link (GMSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

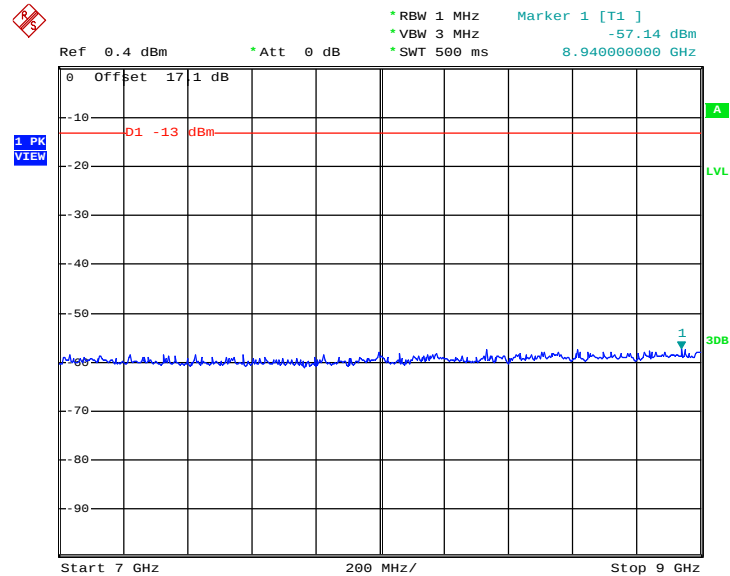
Date: 13.AUG.2014 16:08:45

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 16:12:07

Conducted Spurious Emission Plot between 3GHz ~ 7GHz


Date: 13.AUG.2014 16:14:39

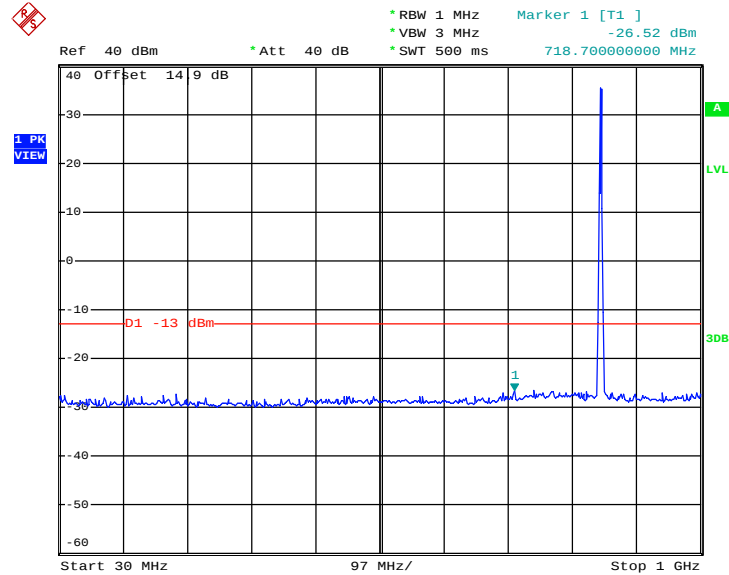
Conducted Spurious Emission Plot between 7GHz ~ 9GHz


Date: 13.AUG.2014 16:16:36



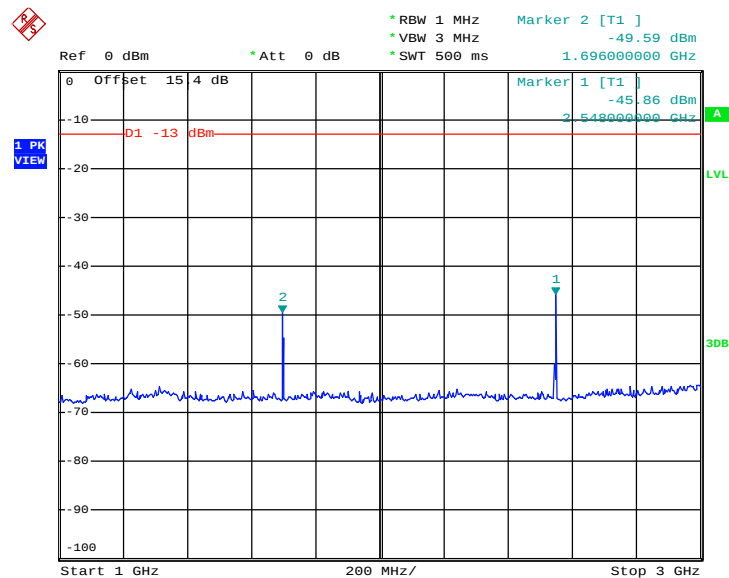
Band :	GSM850	Channel :	CH251
Test Mode :	GSM Link (GMSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



Date: 13.AUG.2014 16:07:59

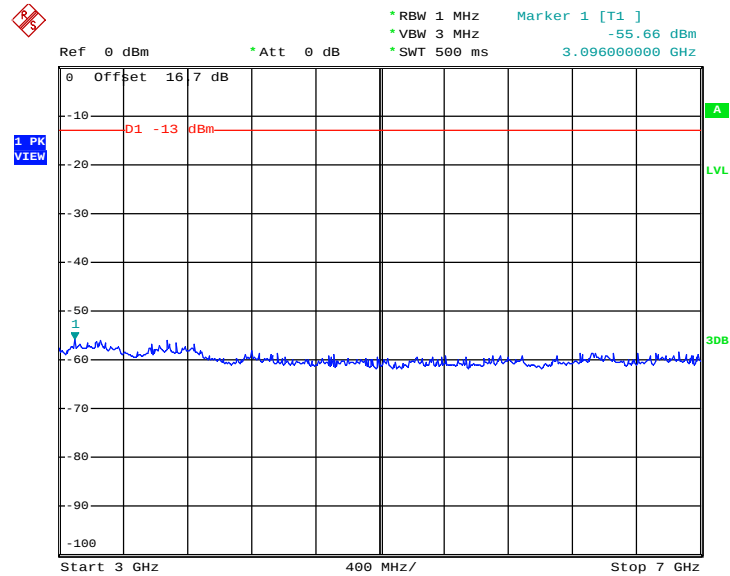
Conducted Spurious Emission Plot between 1GHz ~ 3GHz



Date: 13.AUG.2014 16:13:00

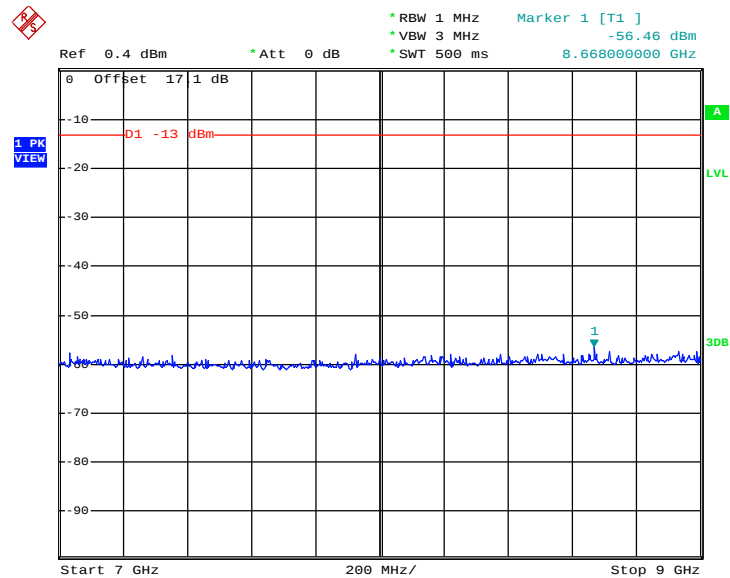


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 16:14:09

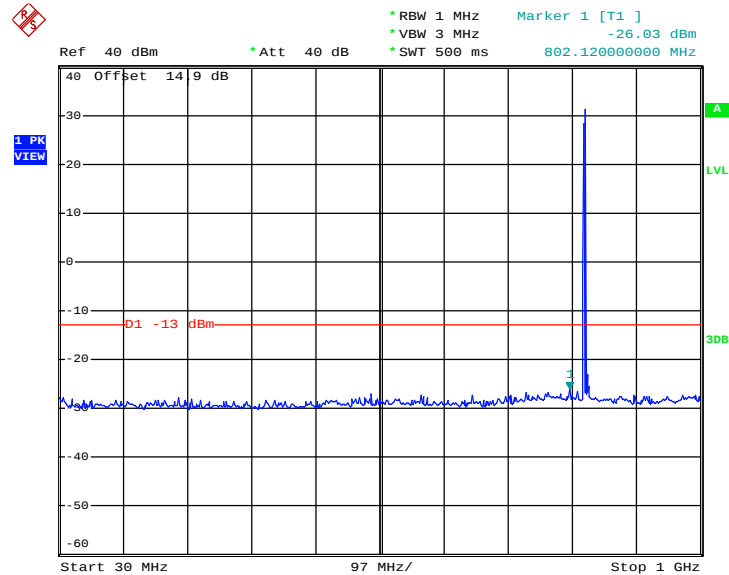
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



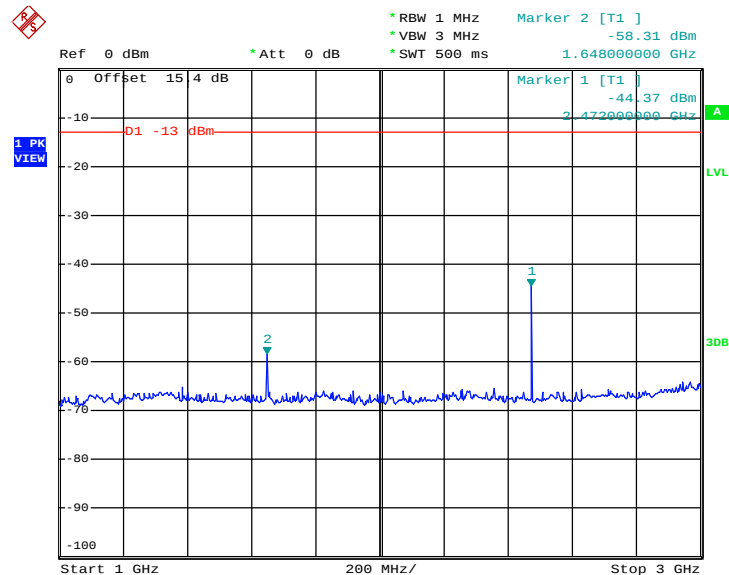
Date: 13.AUG.2014 16:17:08



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

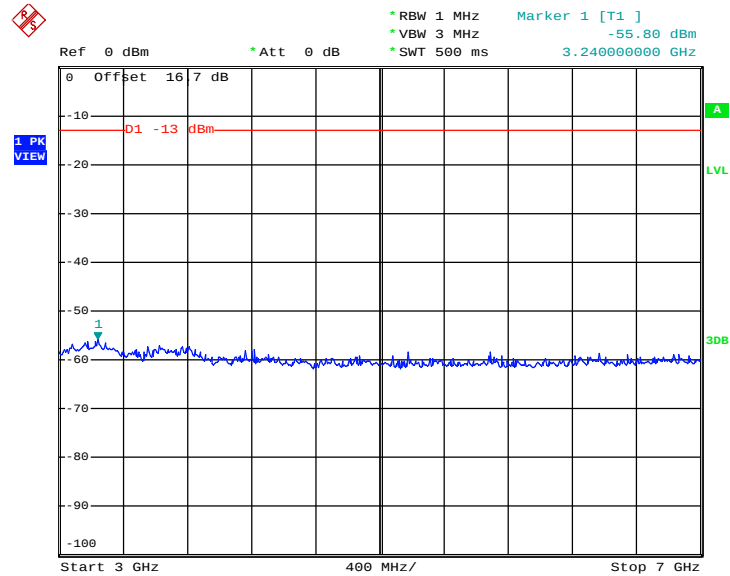
Date: 13.AUG.2014 15:34:20

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 15:13:14

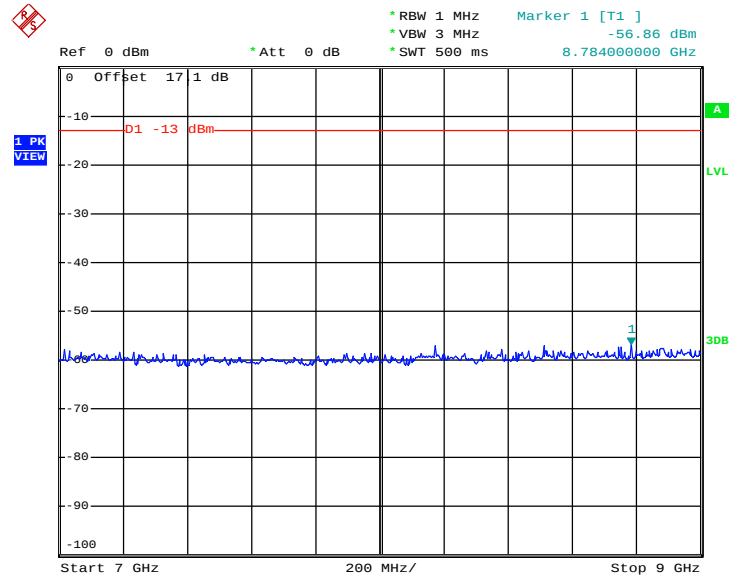


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 15:14:45

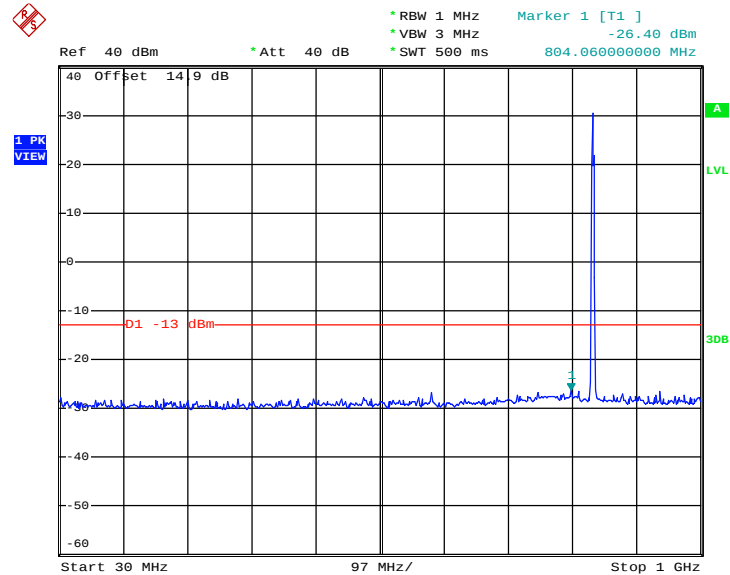
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



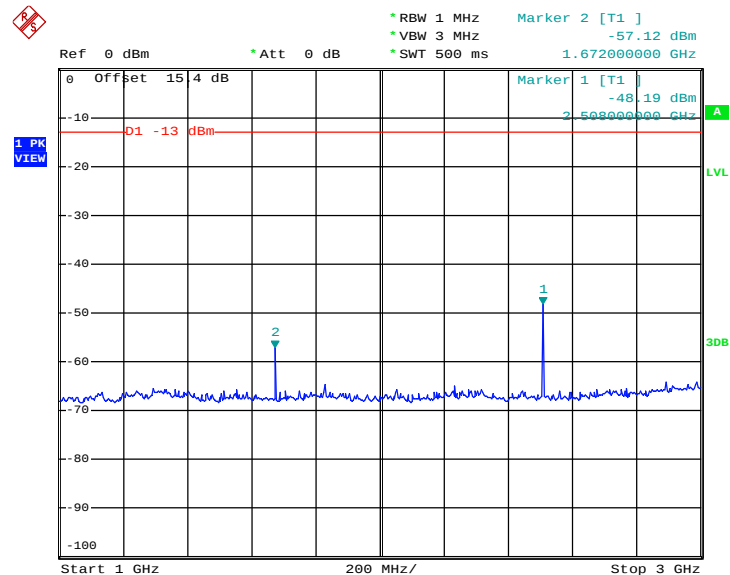
Date: 13.AUG.2014 15:17:27



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

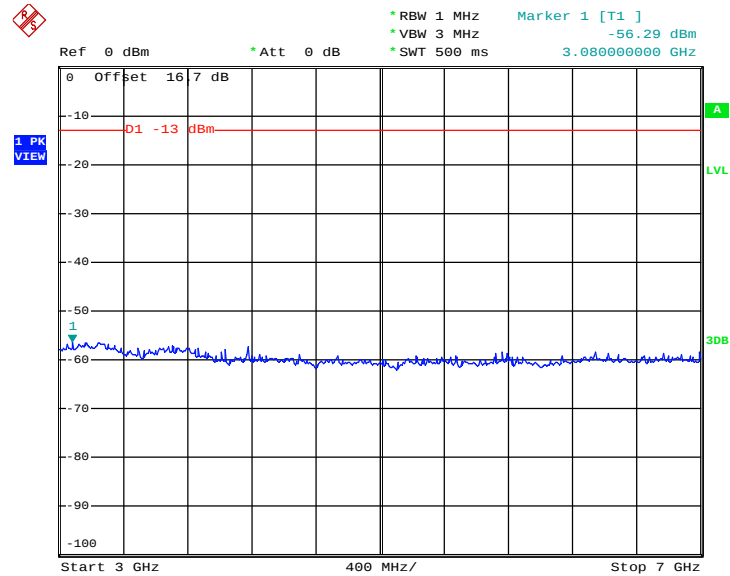
Date: 13.AUG.2014 15:08:15

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 15:12:47

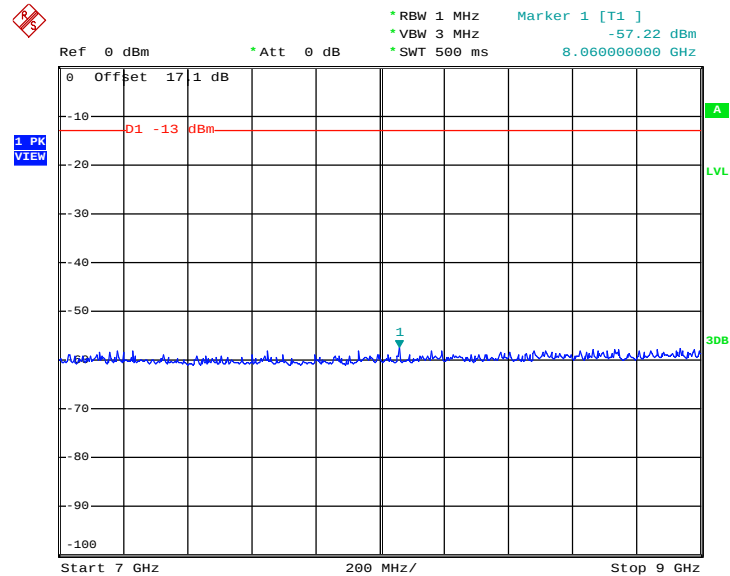


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 15:15:15

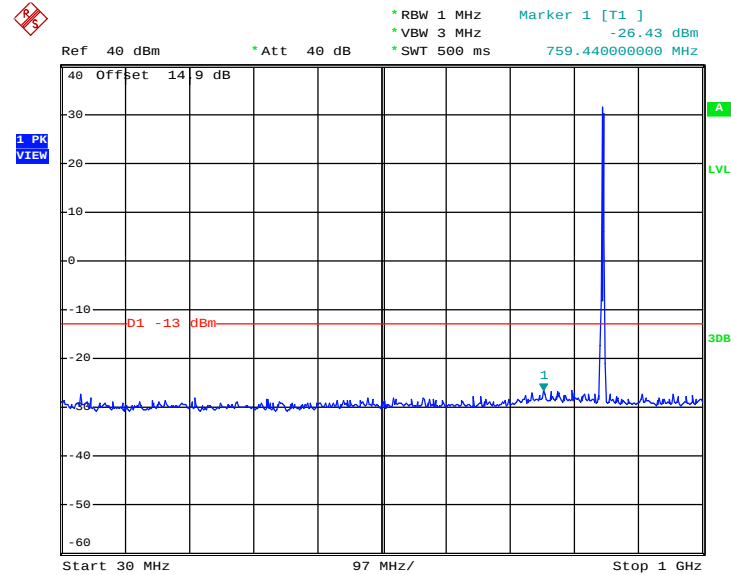
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



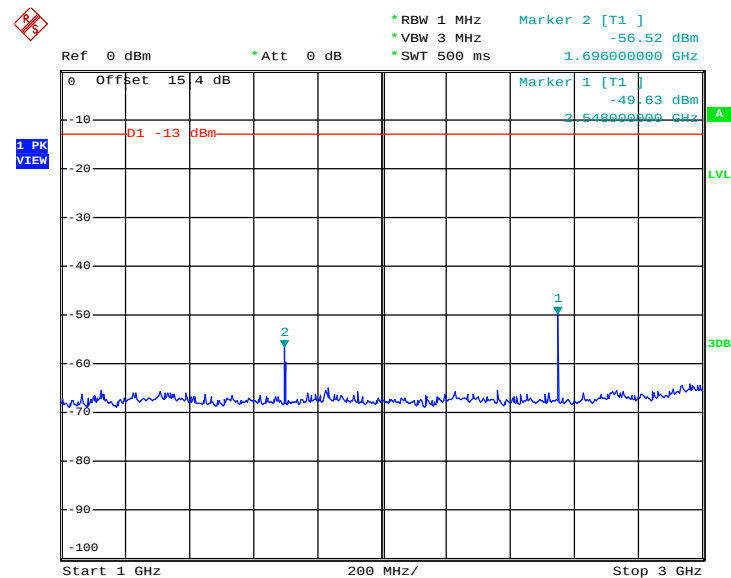
Date: 13.AUG.2014 15:17:04



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

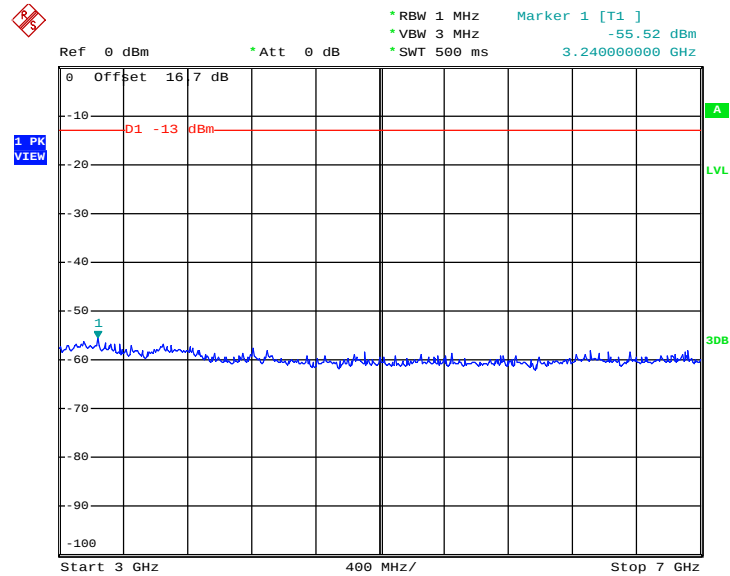
Date: 13.AUG.2014 15:09:54

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 15:12:03

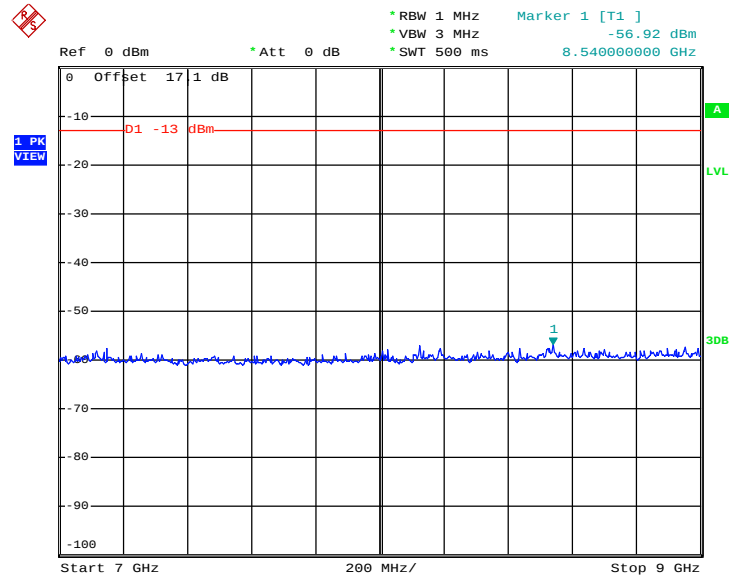


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 15:15:41

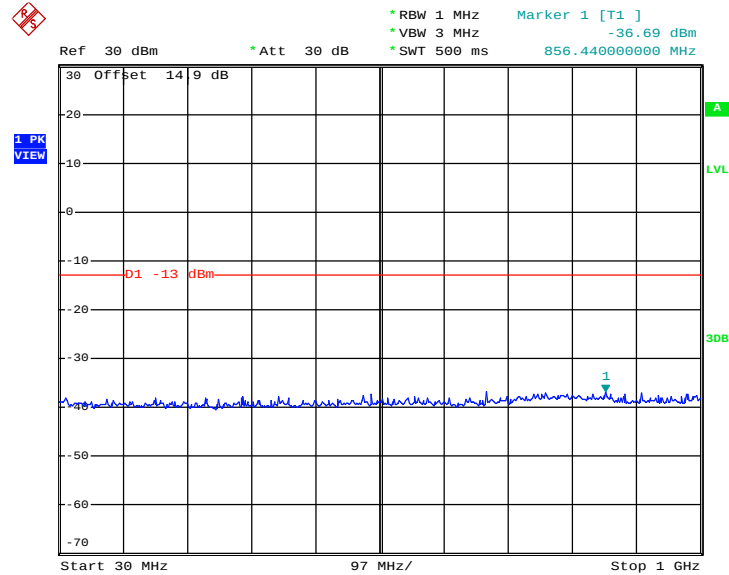
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



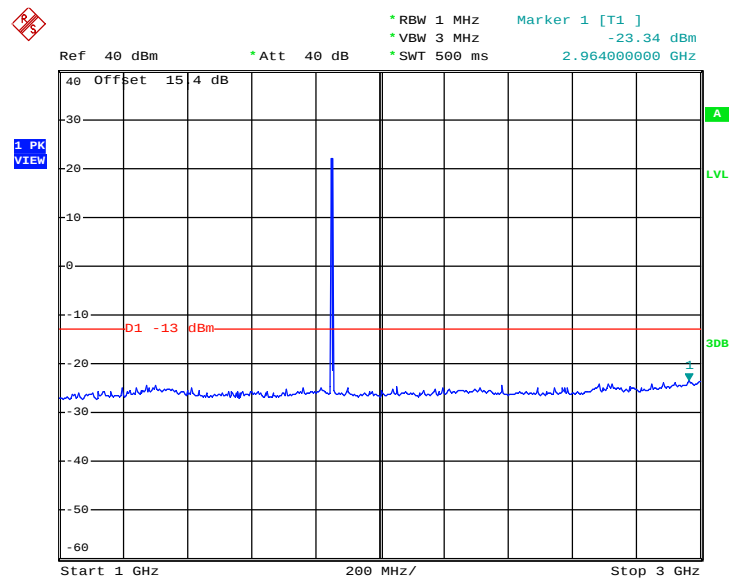
Date: 13.AUG.2014 15:16:37



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

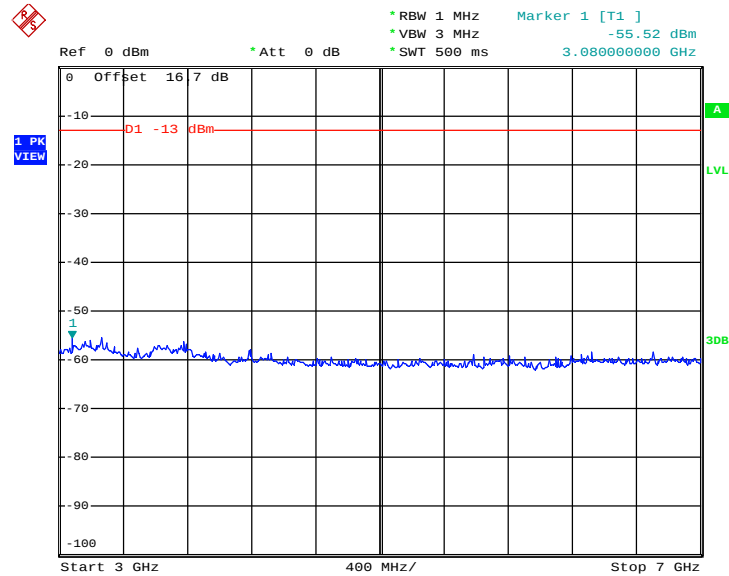
Date: 13.AUG.2014 12:12:16

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 12:15:39

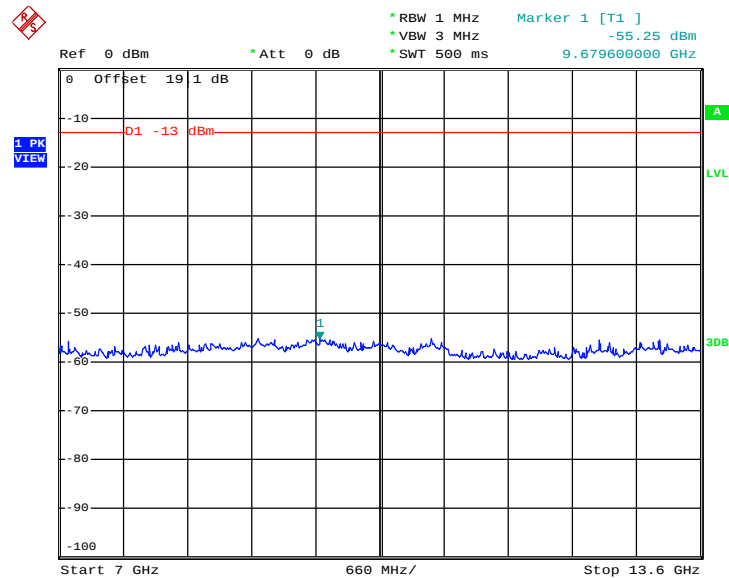


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



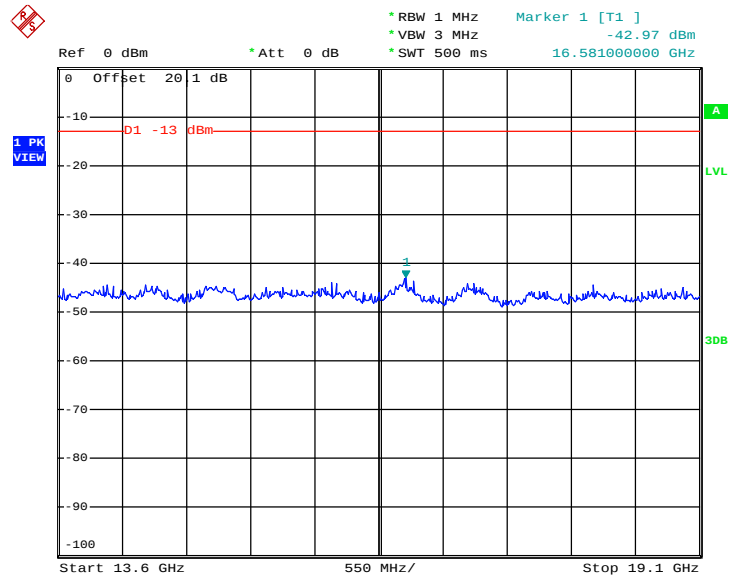
Date: 13.AUG.2014 12:21:48

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 12:22:55

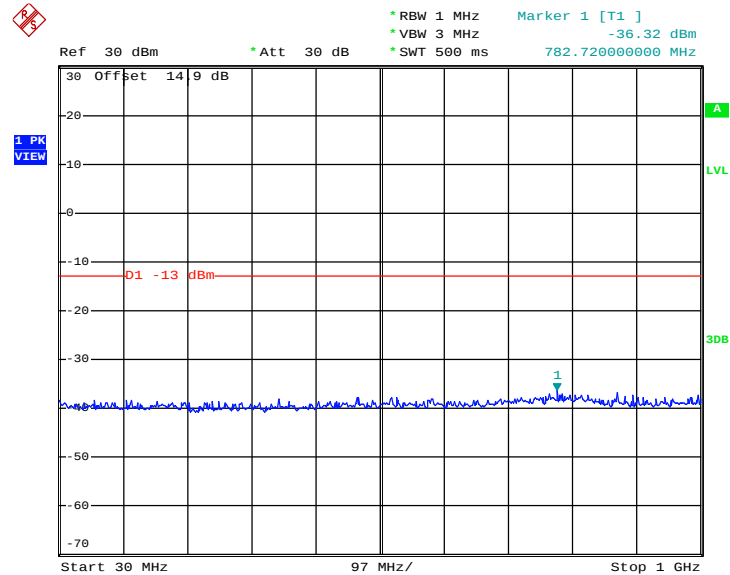
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



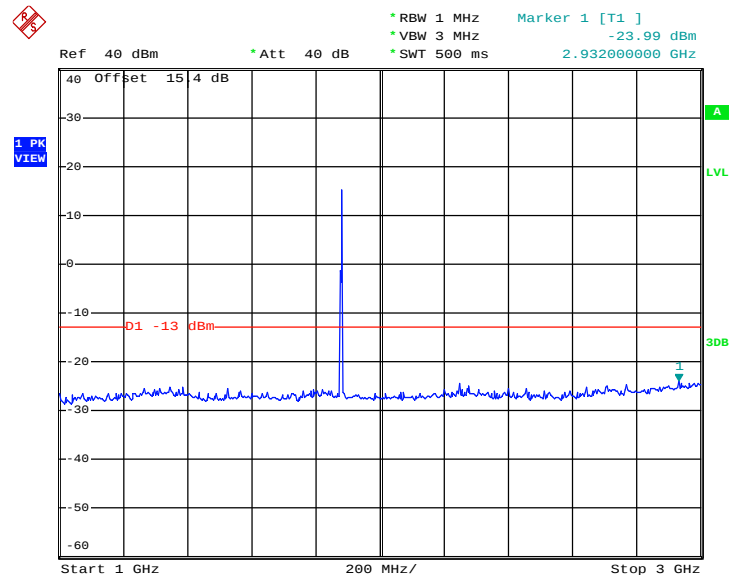
Date: 13.AUG.2014 12:25:35



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

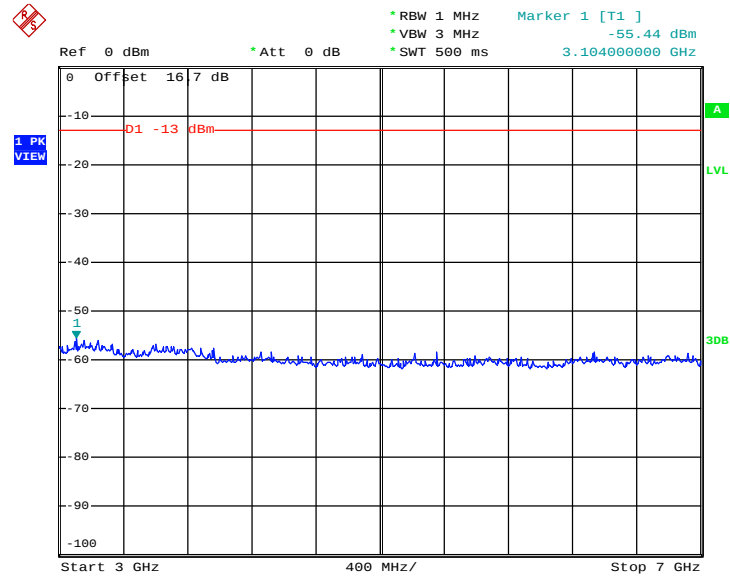
Date: 13.AUG.2014 12:10:31

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 12:16:36

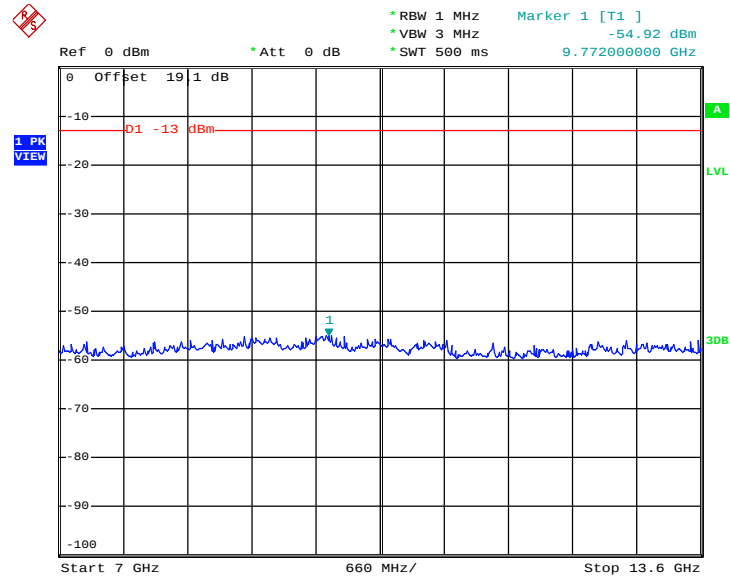


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 12:21:23

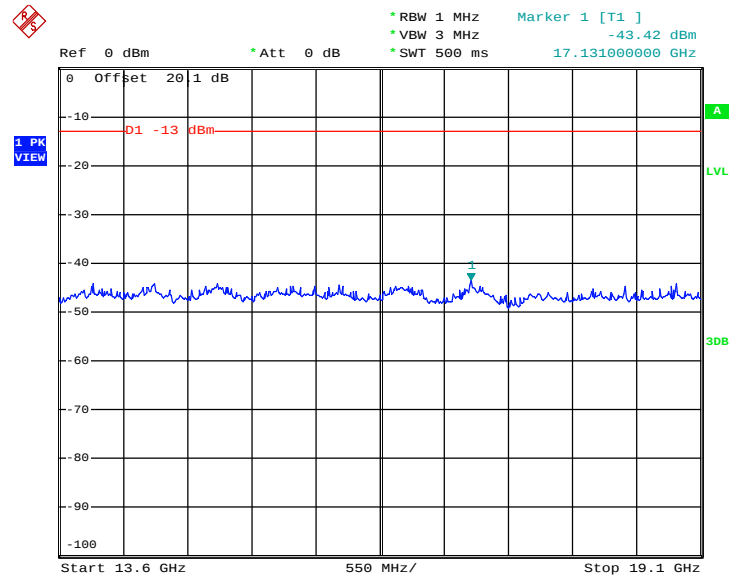
Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 12:23:20



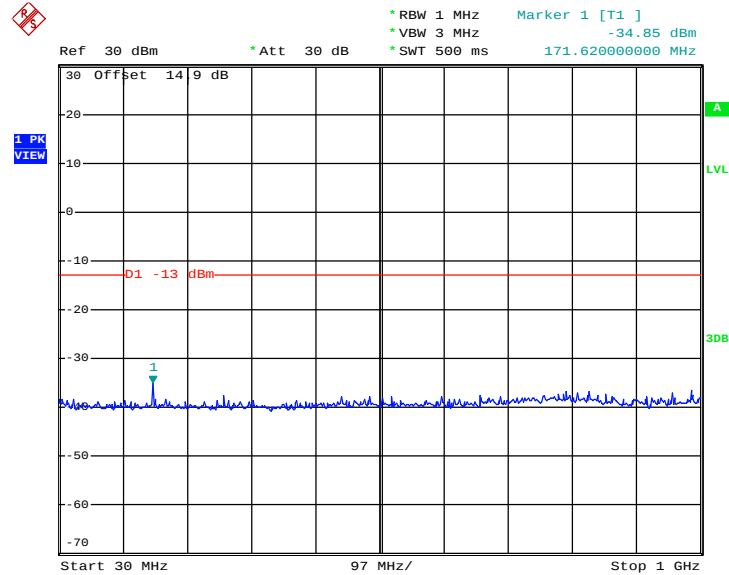
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



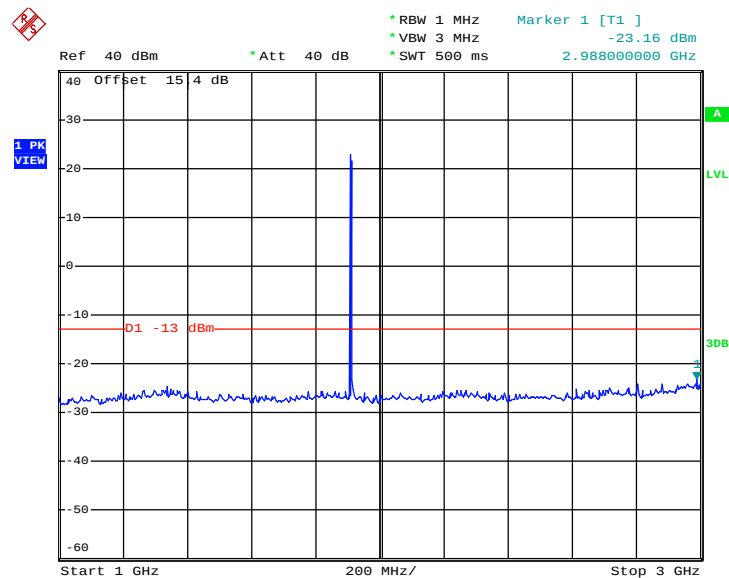
Date: 13.AUG.2014 12:25:14



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

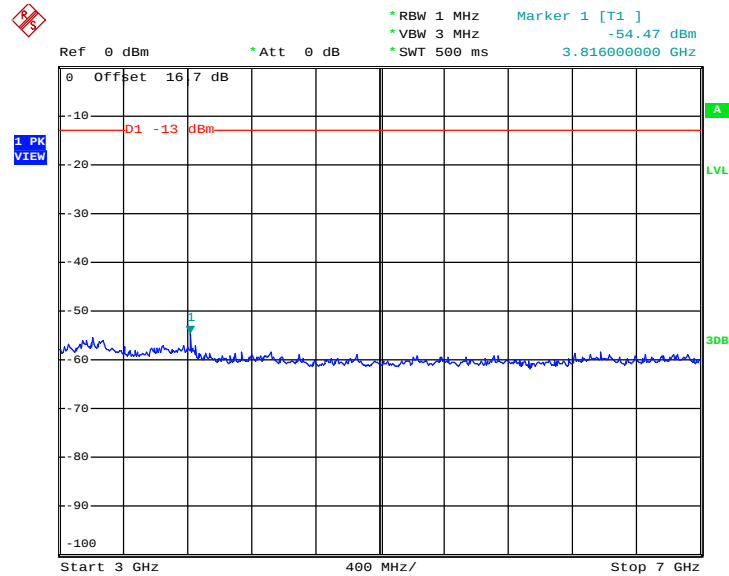
Date: 13.AUG.2014 12:11:36

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 12:17:34

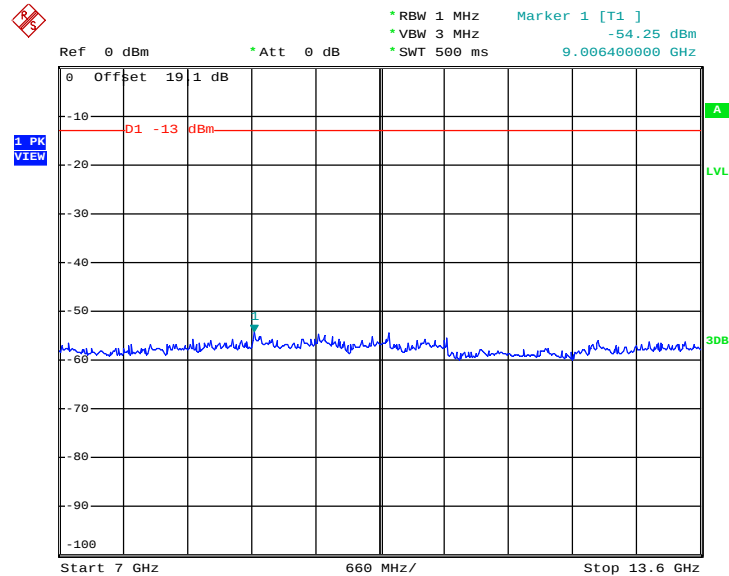


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 12:20:57

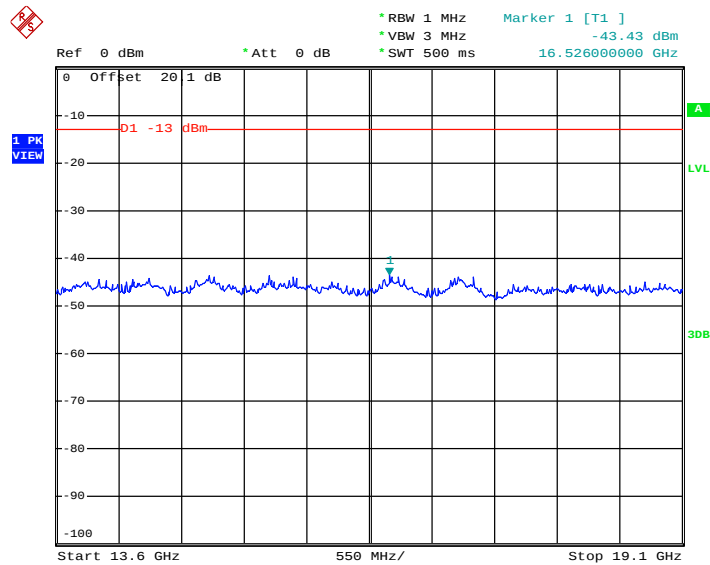
Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 12:23:51



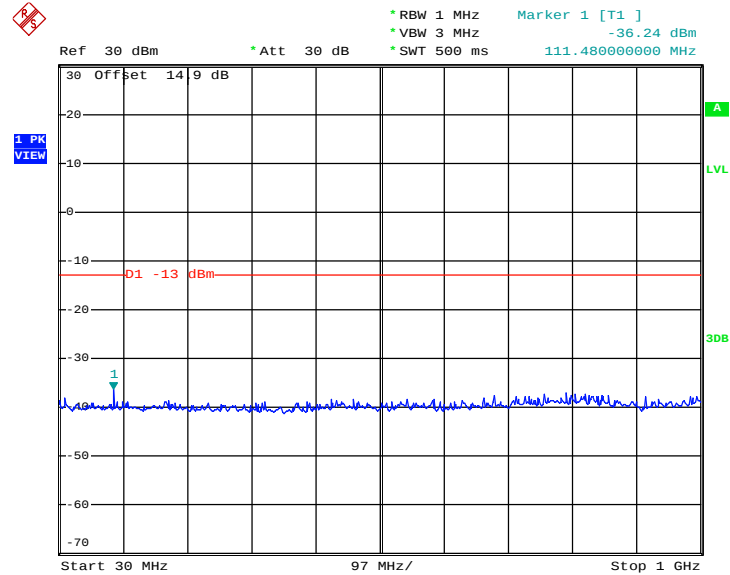
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



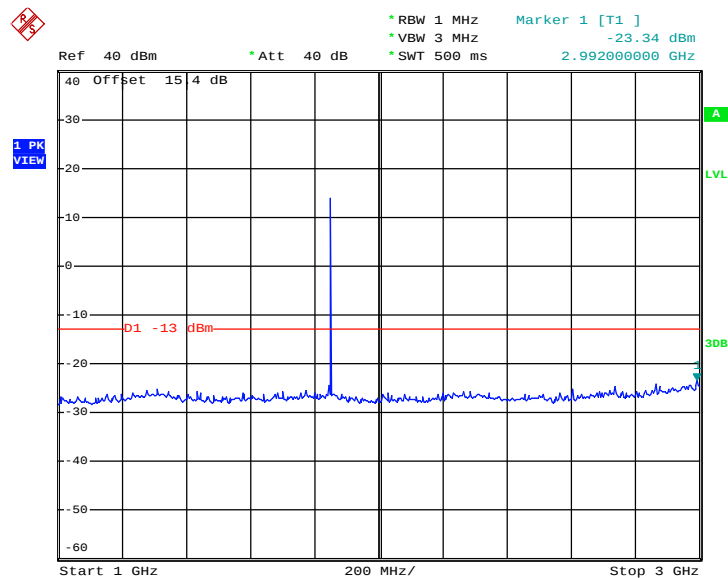
Date: 13.AUG.2014 12:24:50



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

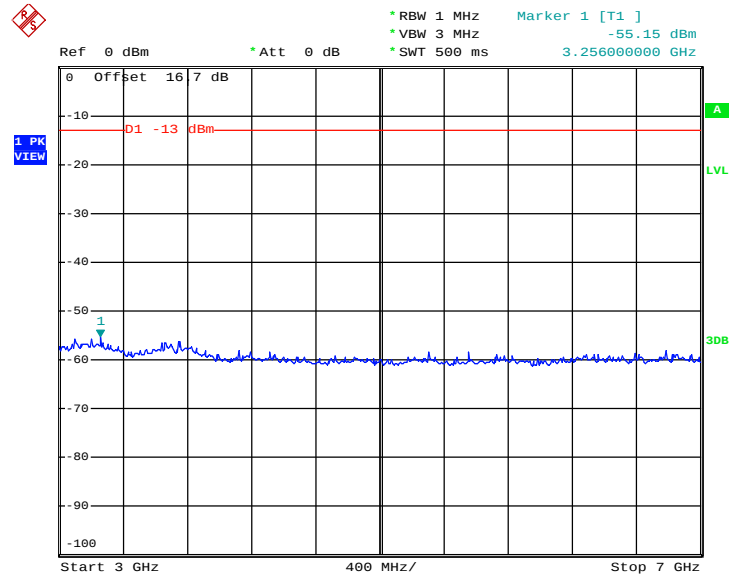
Date: 13.AUG.2014 13:10:47

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 13:12:11

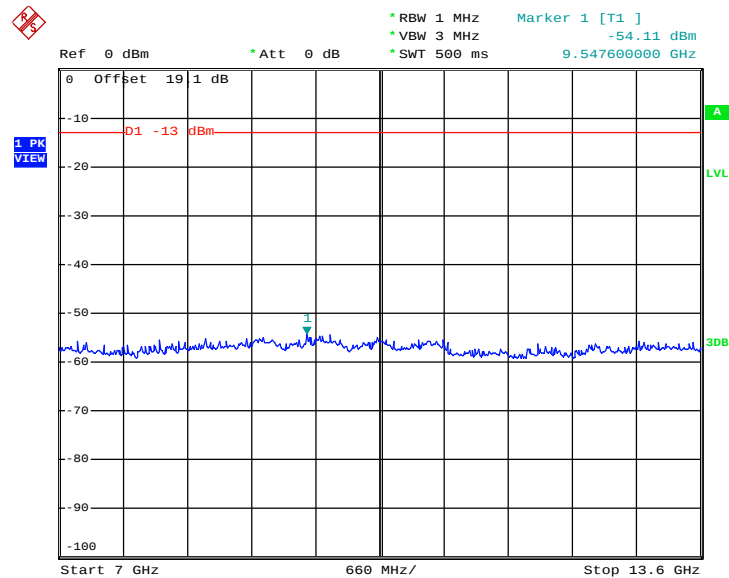


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 14:28:38

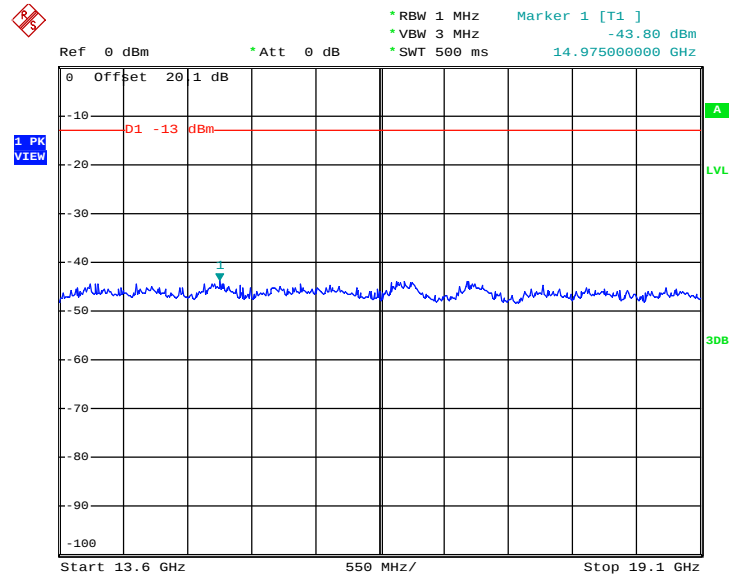
Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 14:30:07



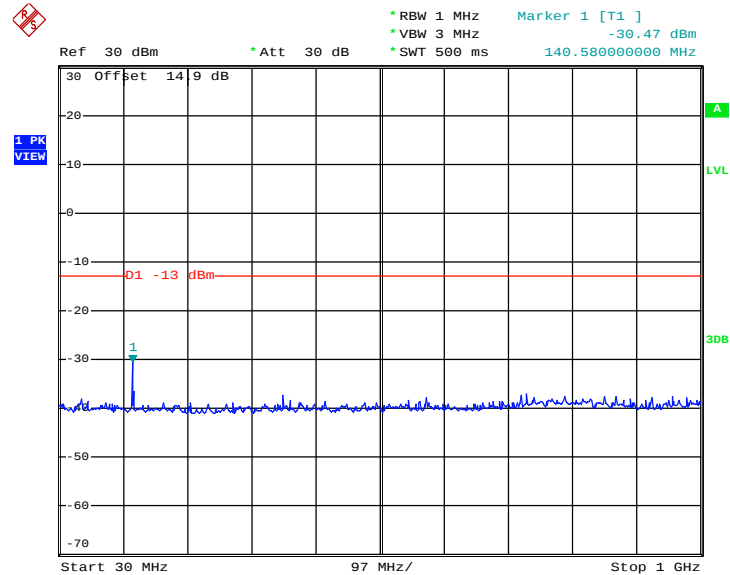
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



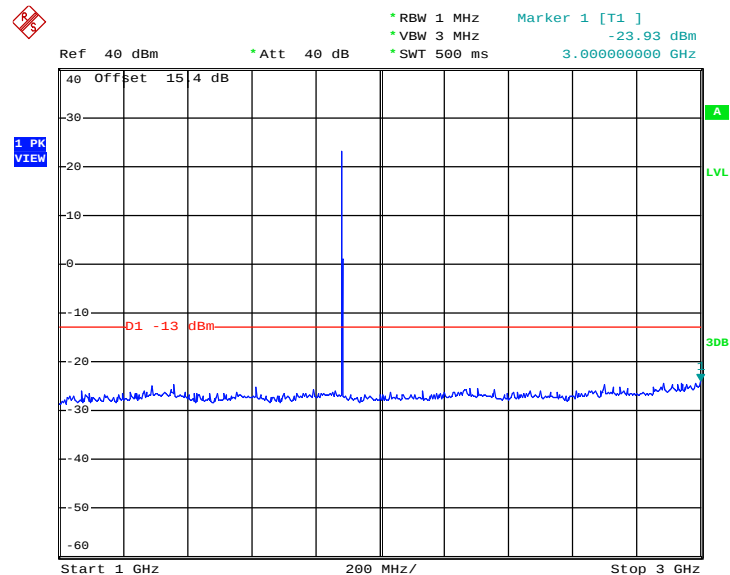
Date: 13.AUG.2014 14:33:36



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

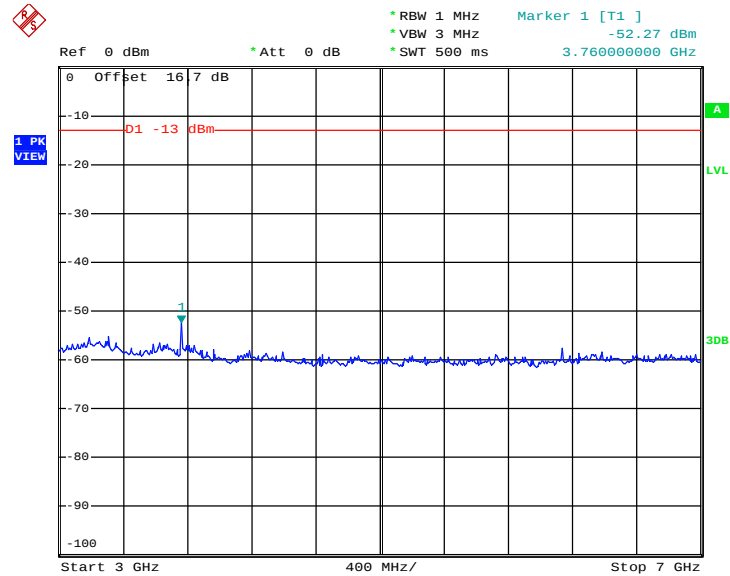
Date: 13.AUG.2014 13:09:54

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 14:23:39

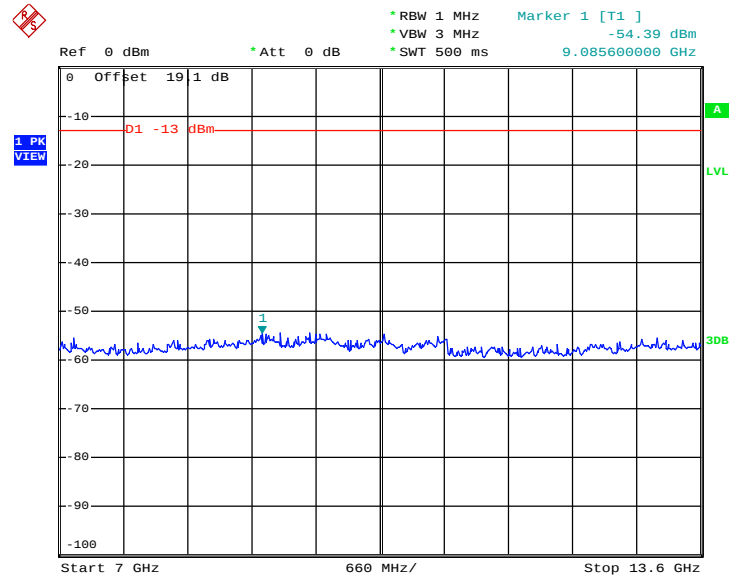


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



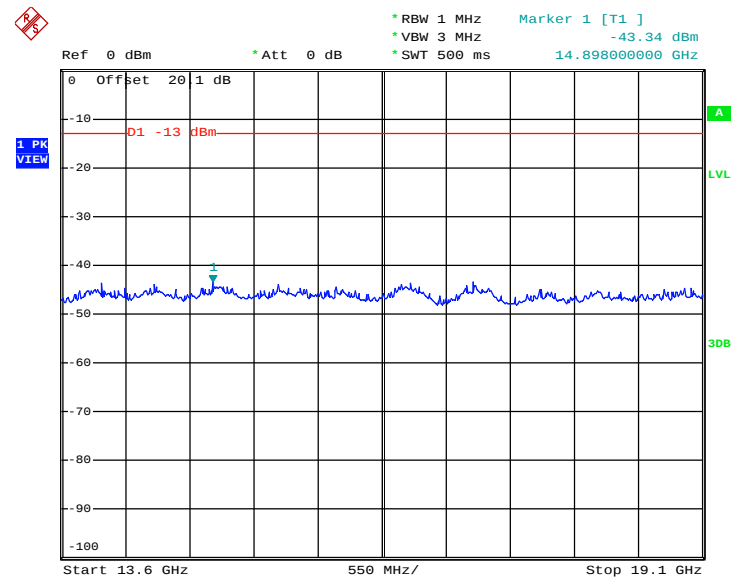
Date: 13.AUG.2014 14:27:59

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 14:30:40

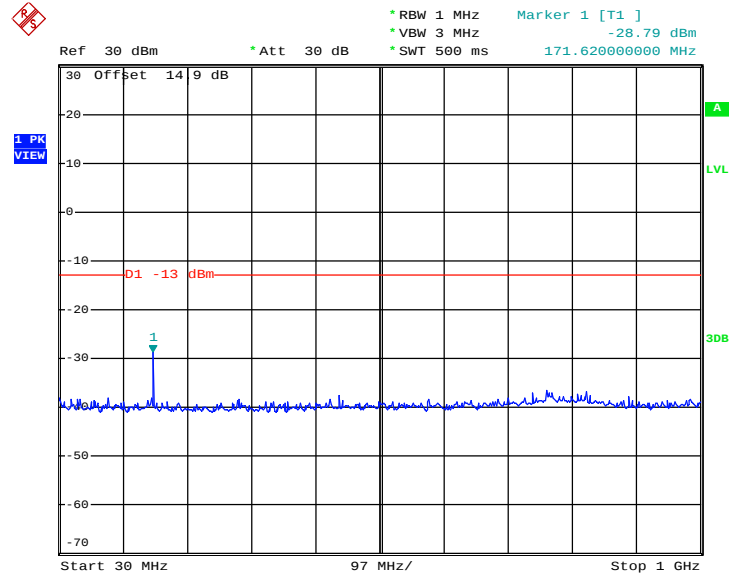
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



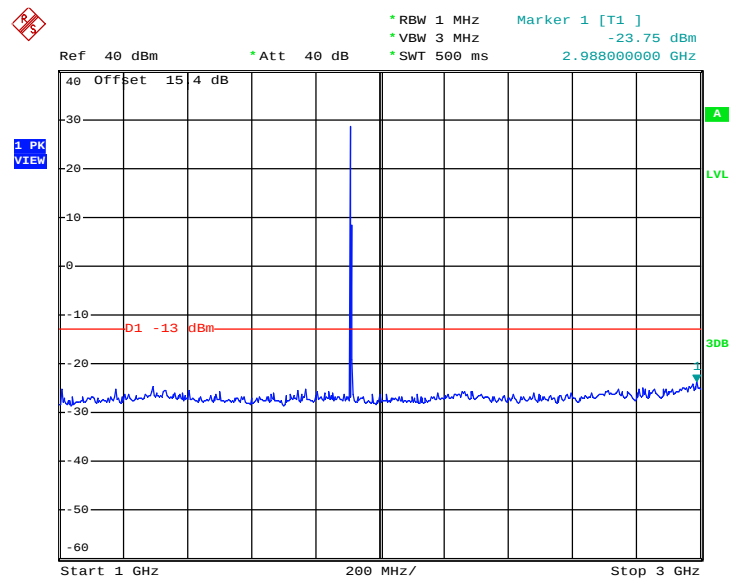
Date: 13.AUG.2014 14:33:05



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

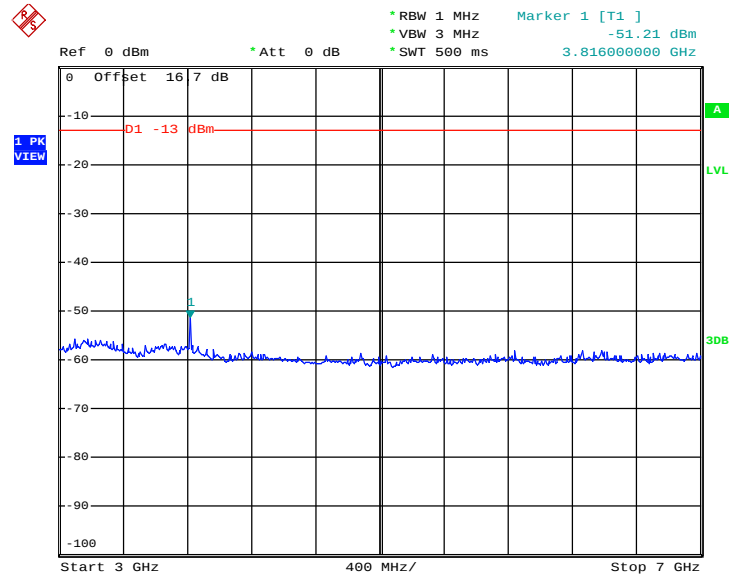
Date: 13.AUG.2014 13:10:28

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 14:24:50

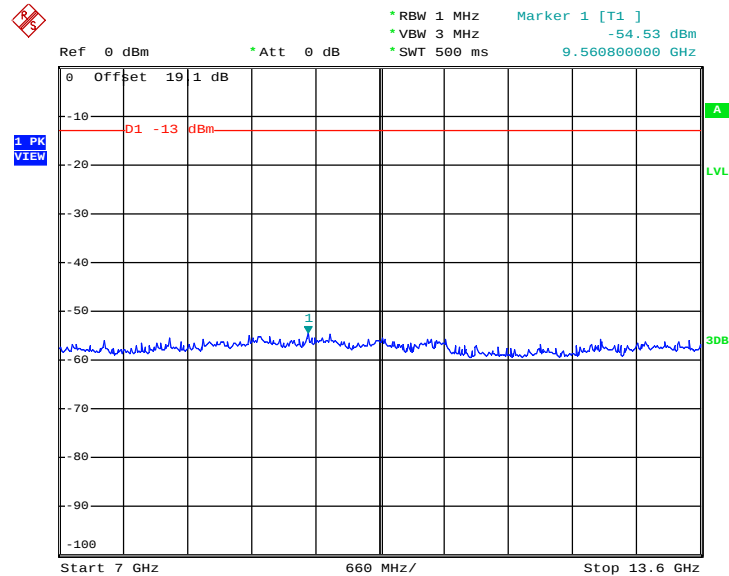


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



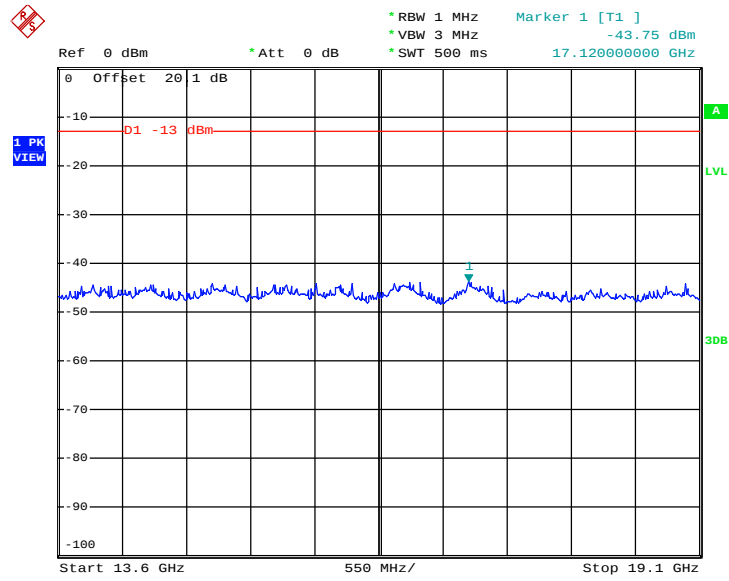
Date: 13.AUG.2014 14:27:09

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 14:31:15

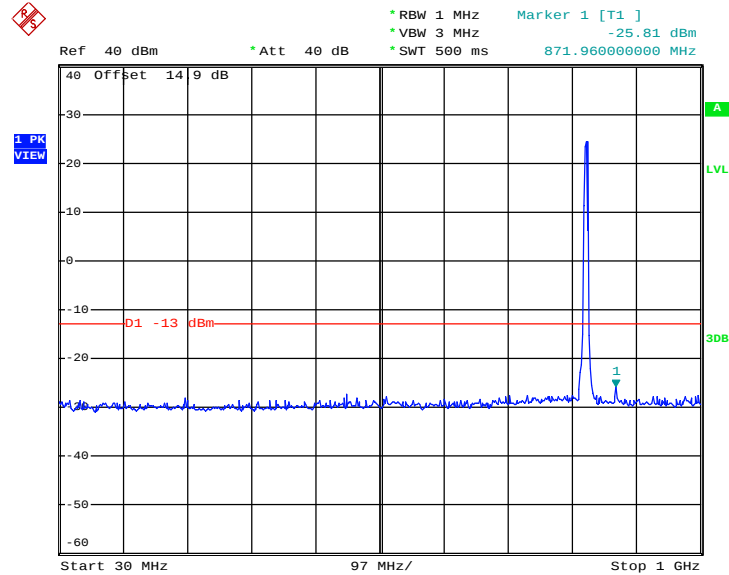
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



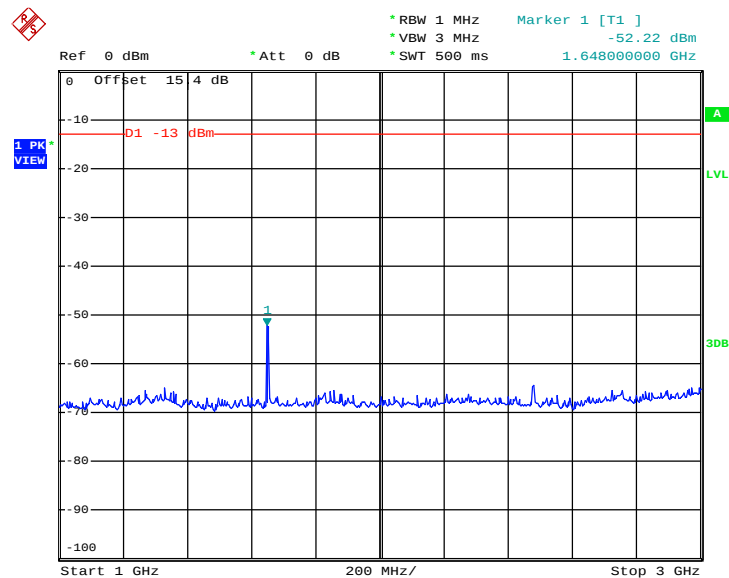
Date: 13.AUG.2014 14:32:34



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

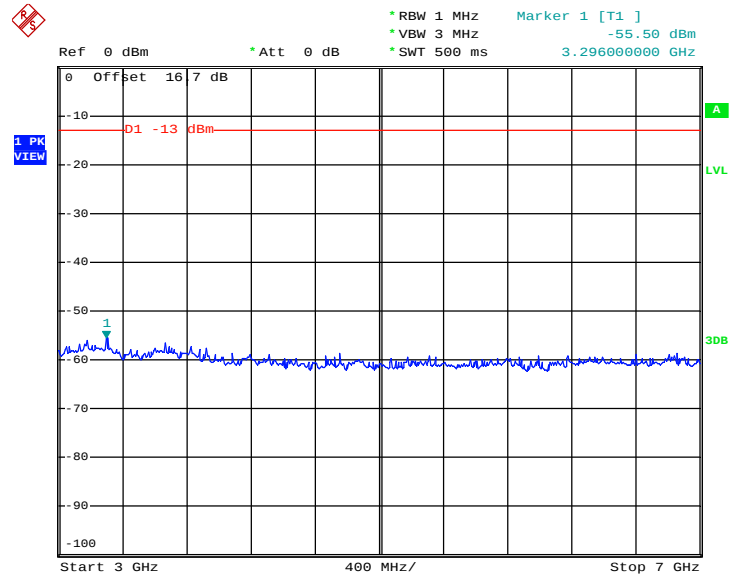
Date: 13.AUG.2014 16:52:48

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 16:54:18

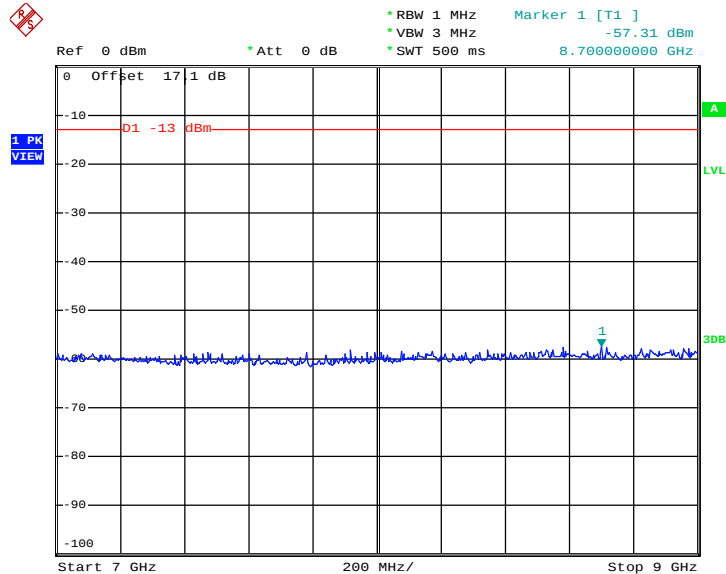


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 16:57:01

Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 13.AUG.2014 16:57:48

Band :

WCDMA Band V

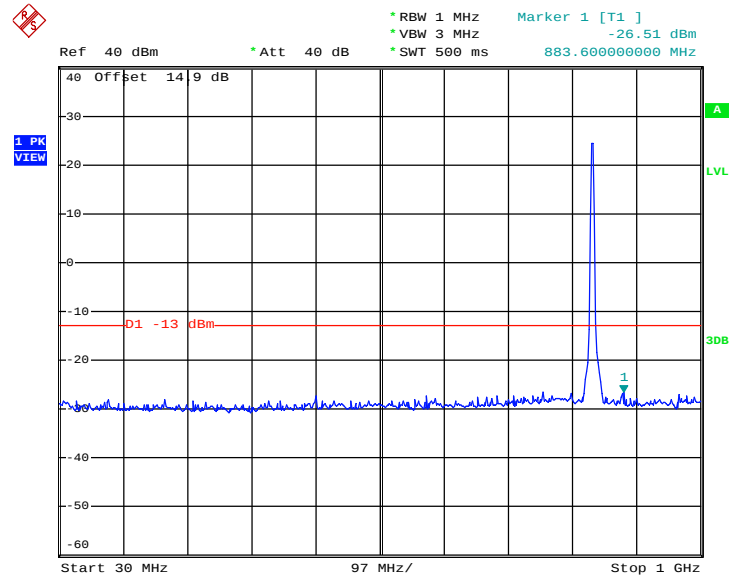
Channel :

CH4182



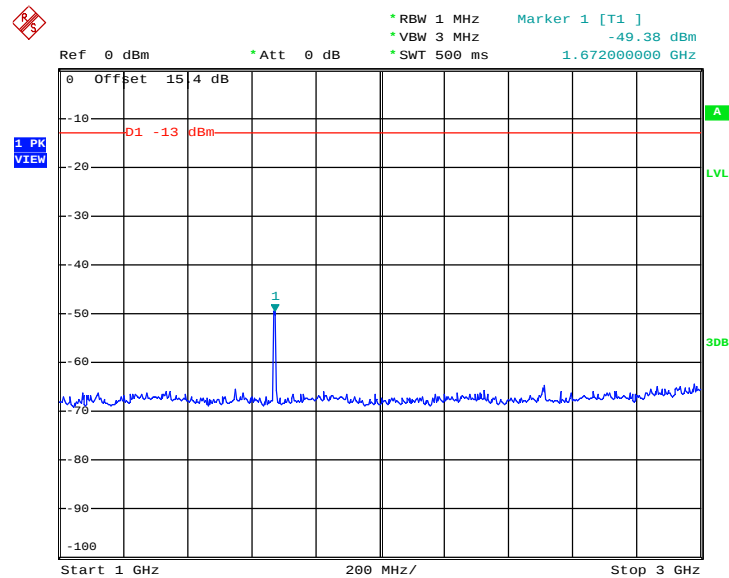
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	836.4 MHz
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Conducted Spurious Emission Plot between 30MHz ~ 1GHz



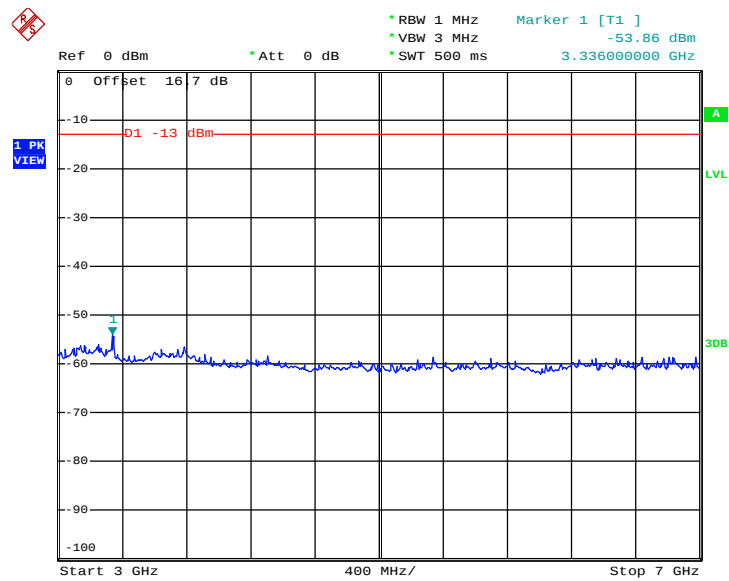
Date: 13.AUG.2014 16:52:01

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



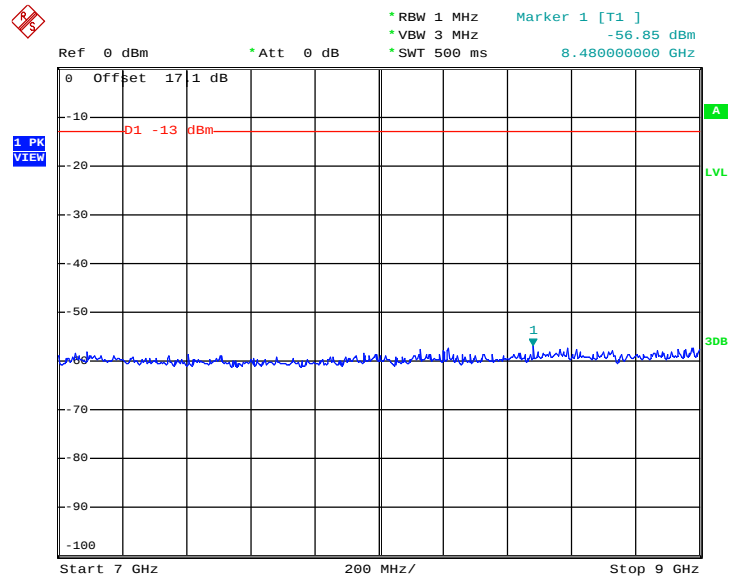
Date: 13.AUG.2014 16:54:39

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 16:56:32

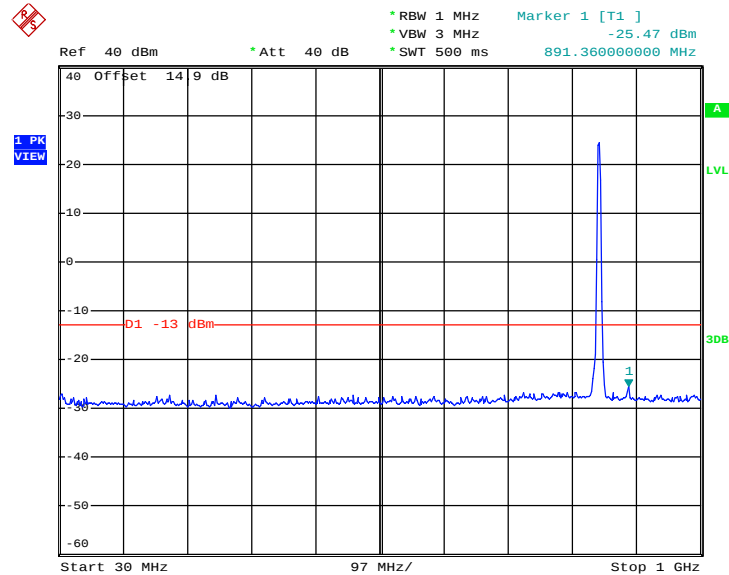
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



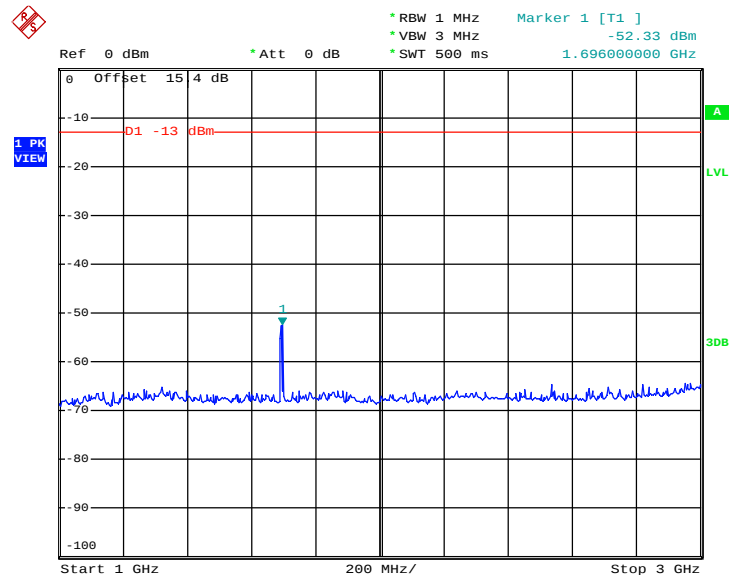
Date: 13.AUG.2014 16:59:06



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

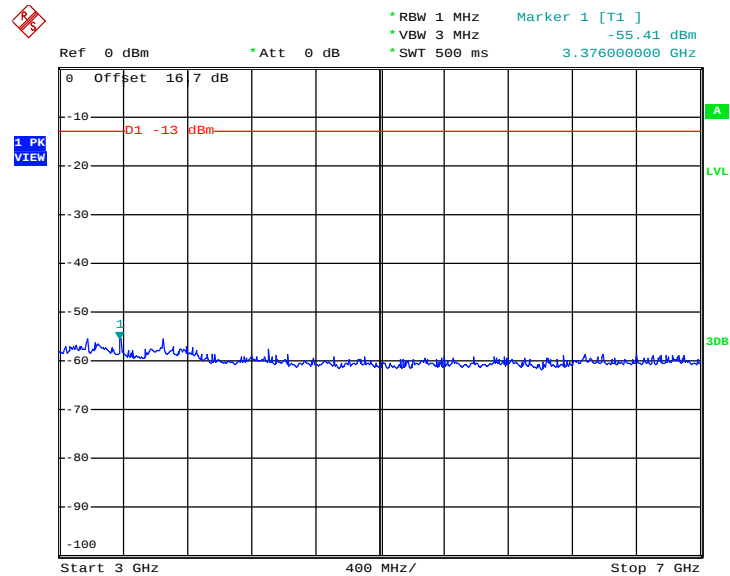
Date: 13.AUG.2014 16:51:10

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 16:55:08

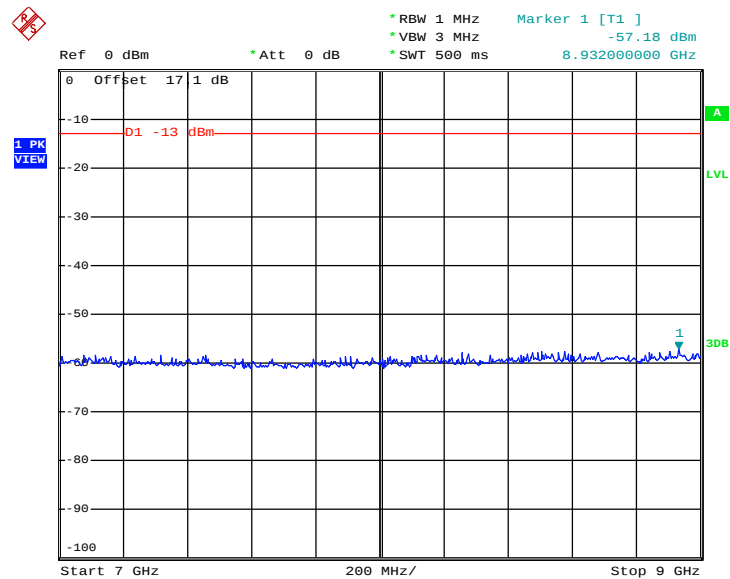


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 16:56:03

Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 13.AUG.2014 16:59:41

Band :

WCDMA Band II

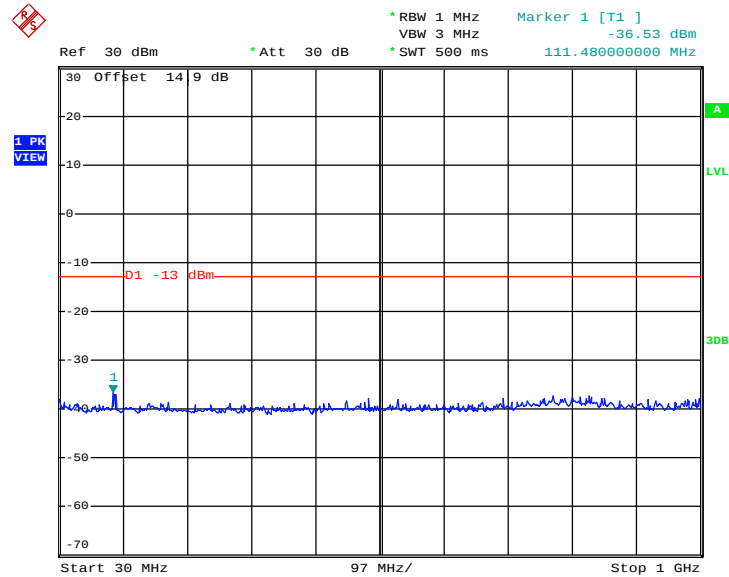
Channel :

CH9262



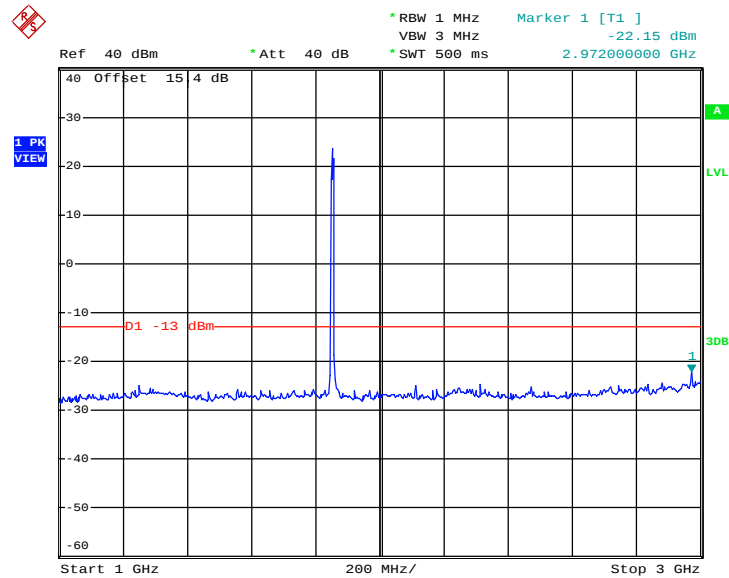
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1852.4 MHz
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Conducted Spurious Emission Plot between 30MHz ~ 1GHz



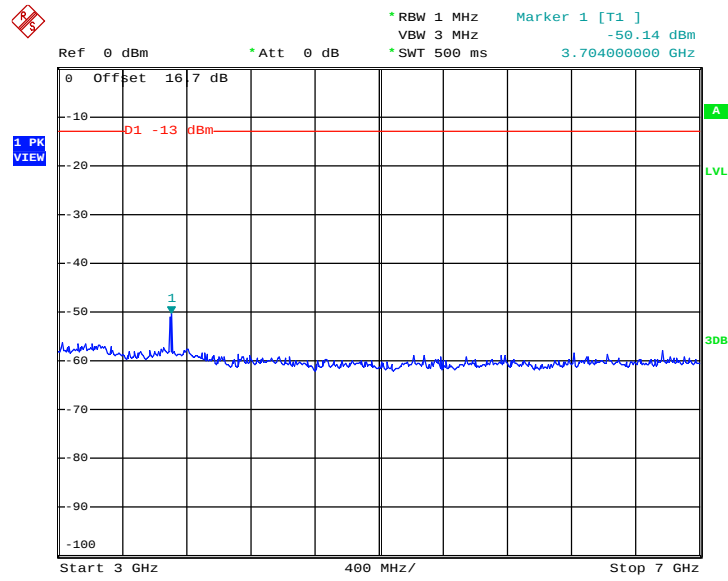
Date: 13.AUG.2014 17:17:22

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



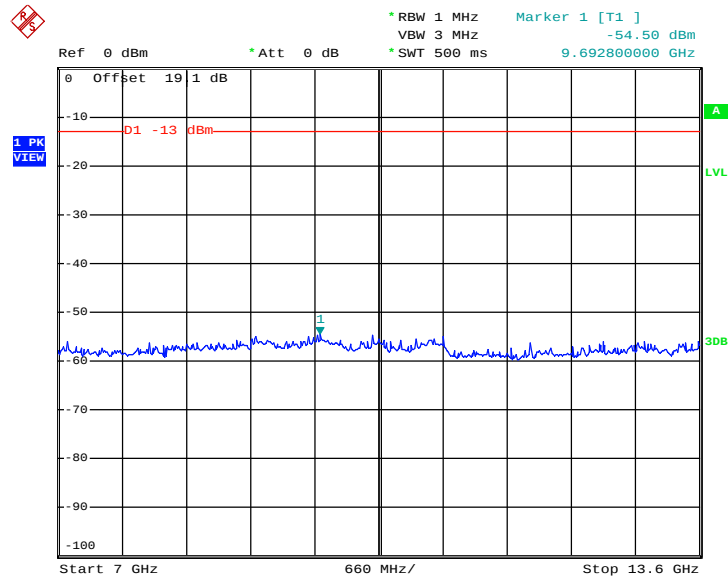
Date: 13.AUG.2014 17:18:35

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



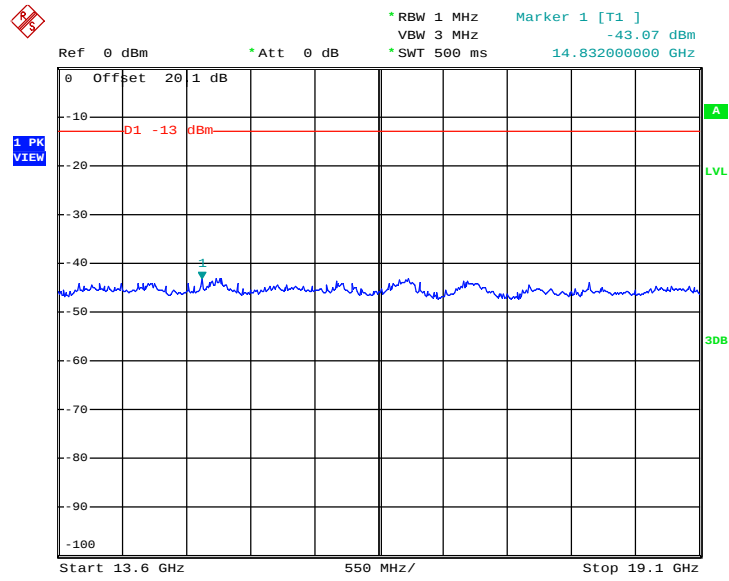
Date: 13.AUG.2014 17:23:04

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



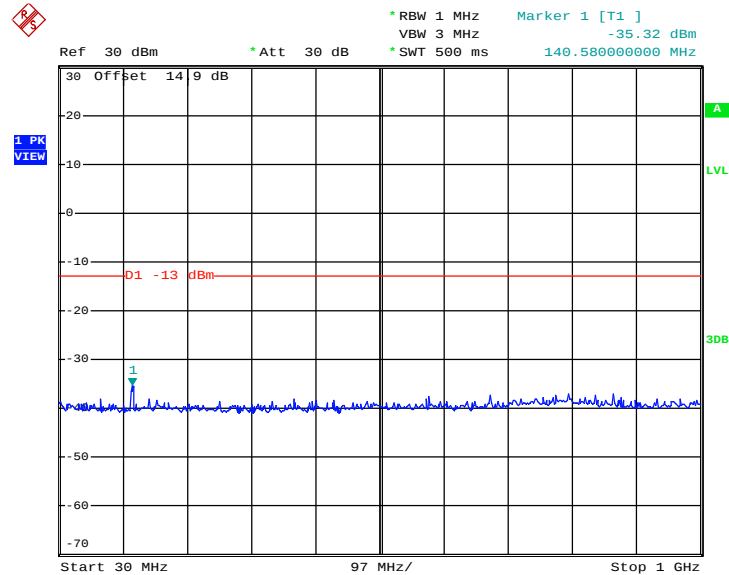
Date: 13.AUG.2014 17:24:15

Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz

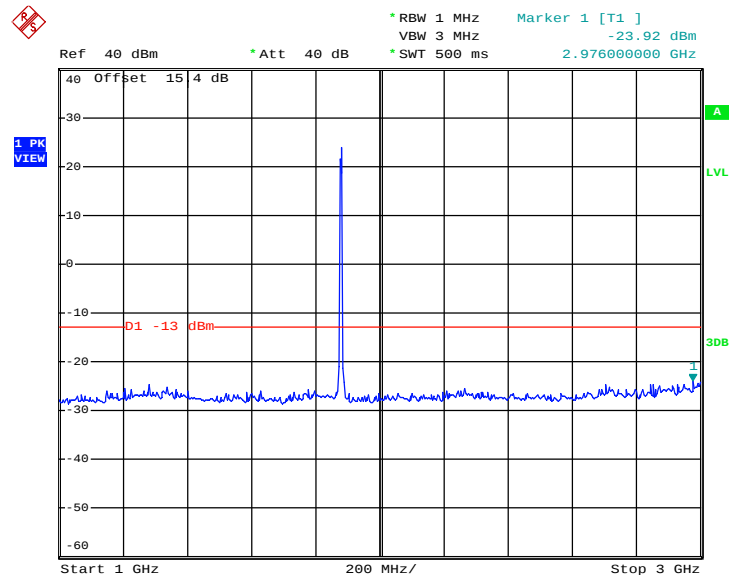


Date: 13.AUG.2014 17:28:24

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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz


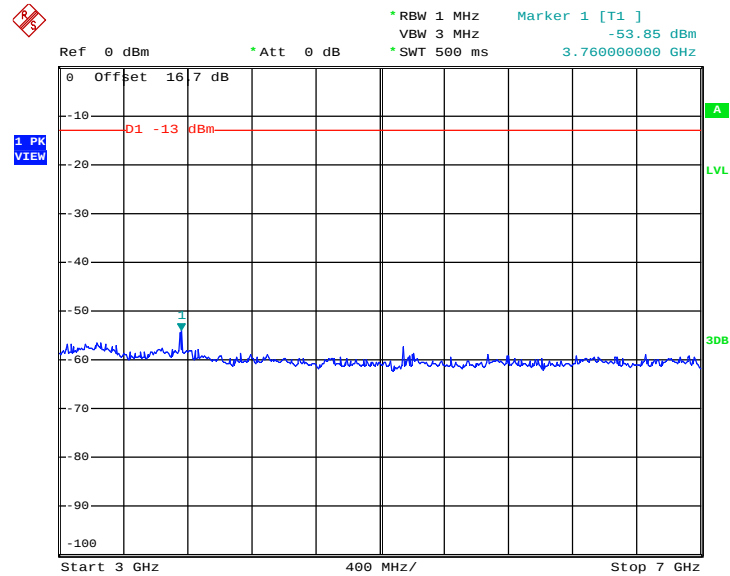
Date: 13.AUG.2014 17:16:42

Conducted Spurious Emission Plot between 1GHz ~ 3GHz


Date: 13.AUG.2014 17:19:17

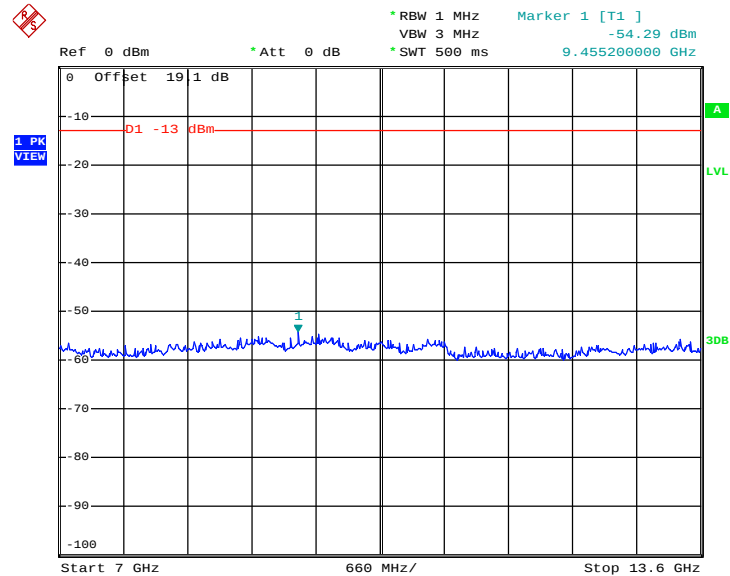


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 17:21:30

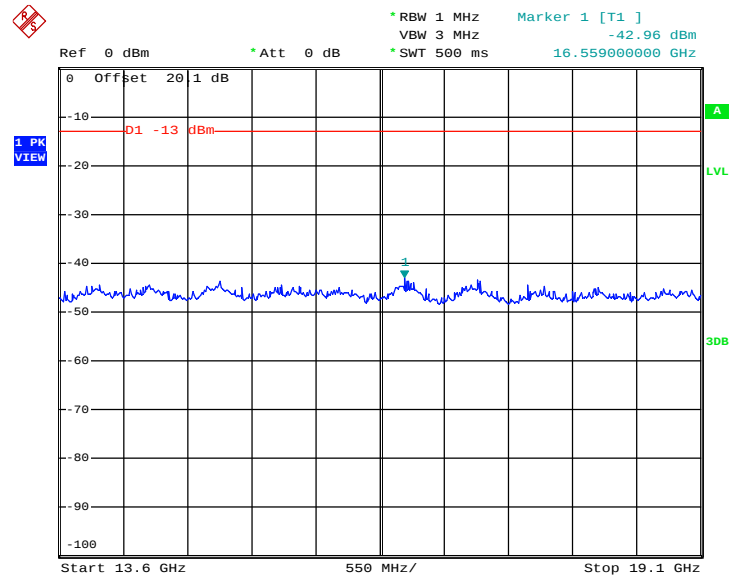
Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 17:24:45



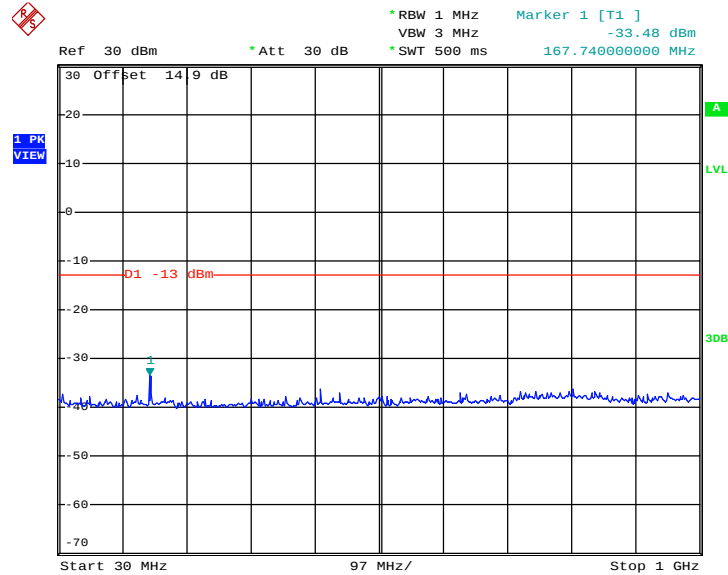
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



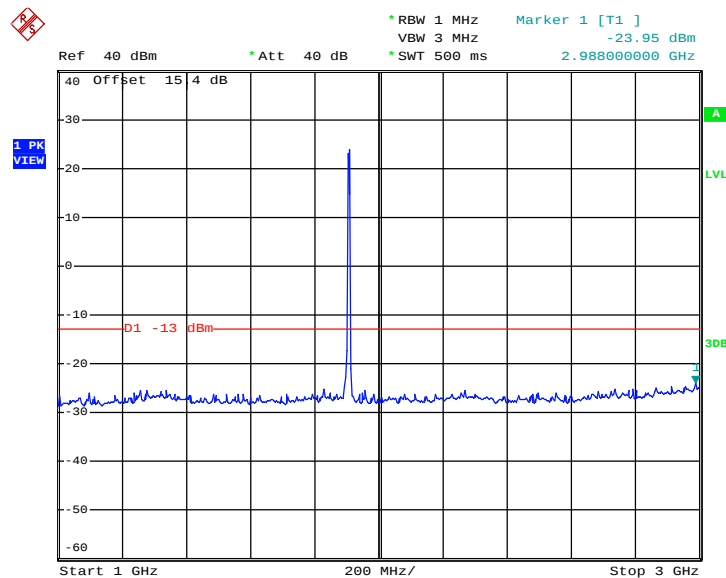
Date: 13.AUG.2014 17:27:19



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

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

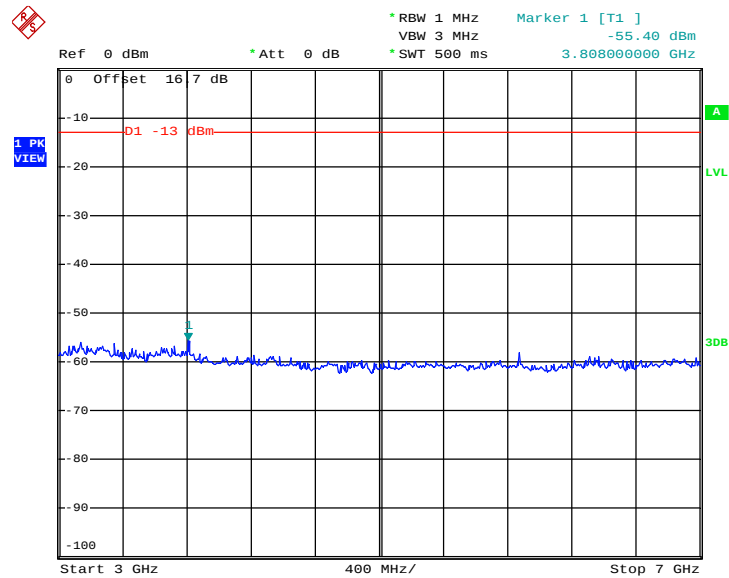
Date: 13.AUG.2014 17:16:17

Conducted Spurious Emission Plot between 1GHz ~ 3GHz

Date: 13.AUG.2014 17:20:04

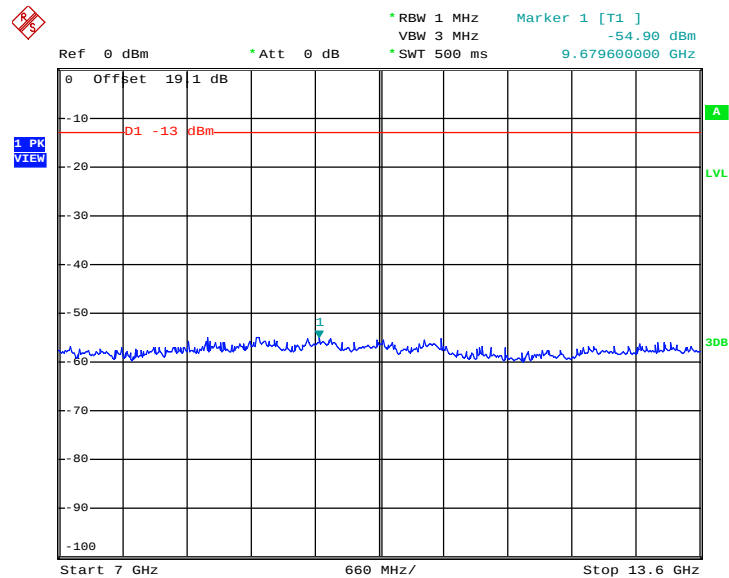


Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.AUG.2014 17:21:03

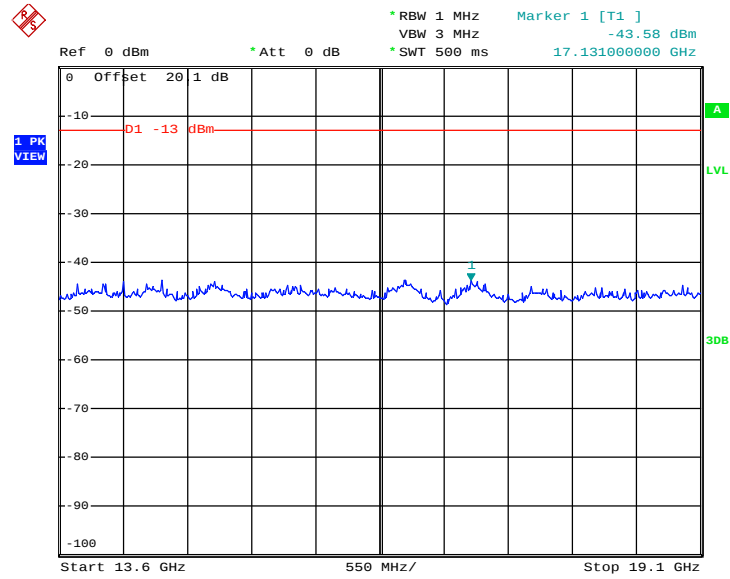
Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.AUG.2014 17:25:26



Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 13.AUG.2014 17:26:44

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

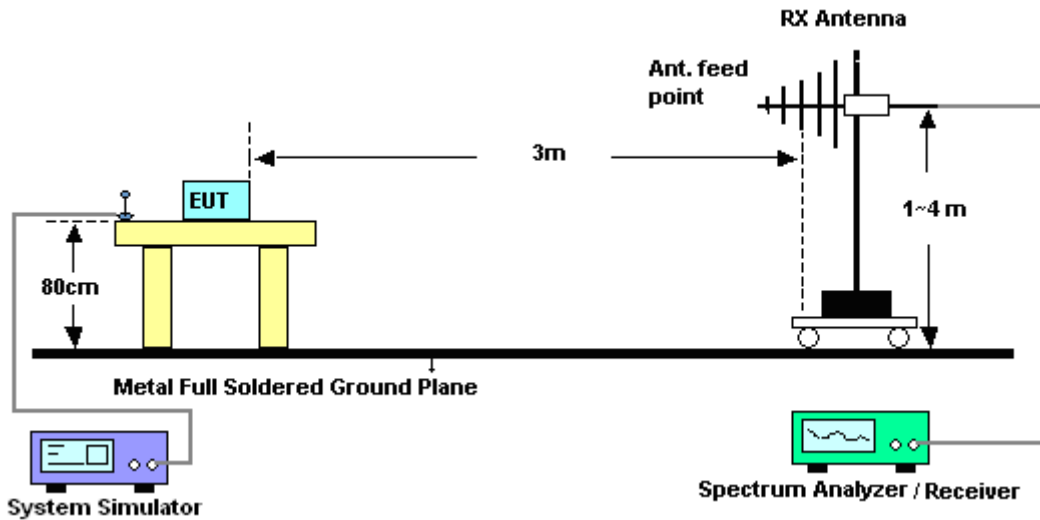
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

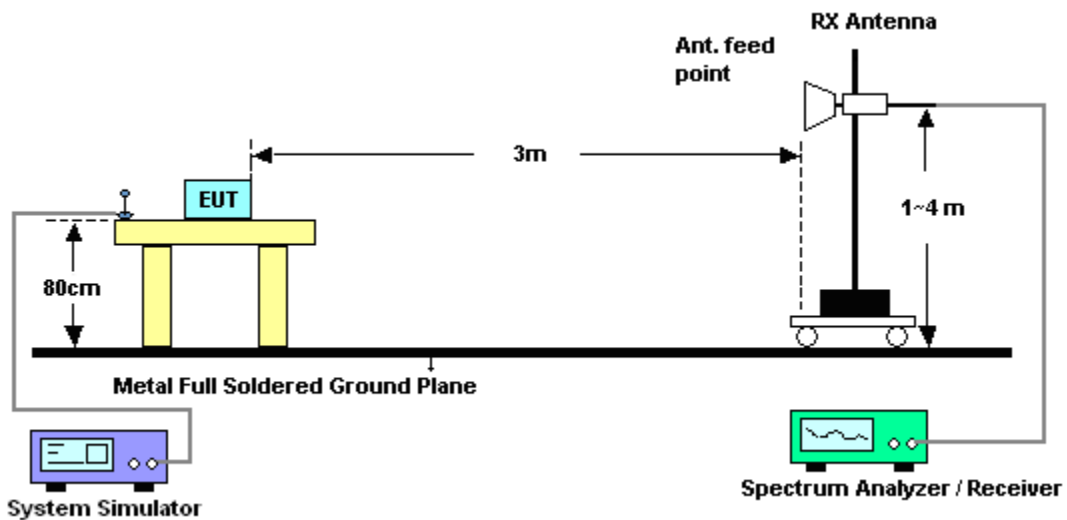
1. The testing follows FCC KDB 971168 v02r01 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 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. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
12. $ERP \text{ (dBm)} = EIRP - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

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 :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-64.30	-13	-51.30	-57.89	-64.95	0.57	3.37	H	Pass
2474	-40.56	-13	-27.56	-44.84	-42.79	0.78	5.16	H	Pass
3296	-66.40	-13	-53.40	-66.03	-70.04	0.87	6.66	H	Pass

Band :	GSM850 for CH128					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-57.46	-13	-44.46	-57.98	-58.11	0.57	3.37	V	Pass
2474	-43.92	-13	-30.92	-52.41	-46.15	0.78	5.16	V	Pass
3296	-64.53	-13	-51.53	-65.59	-68.17	0.87	6.66	V	Pass



Band :	GSM850 for CH189					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-64.44	-13	-51.44	-58.00	-65.09	0.57	3.37	H	Pass
2510	-41.66	-13	-28.66	-45.88	-43.89	0.78	5.16	H	Pass
3344	-66.73	-13	-53.73	-66.36	-70.37	0.87	6.66	H	Pass

Band :	GSM850 for CH189	Temperature :	22~23°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1672	-52.35	-13	-39.35	-54.57	-53.00	0.57	3.37	V	Pass
2510	-39.80	-13	-26.80	-48.92	-42.03	0.78	5.16	V	Pass
3344	-65.22	-13	-52.22	-66.28	-68.86	0.87	6.66	V	Pass



Band :	GSM850 for CH251					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1698	-69.17	-13	-56.17	-60.29	-69.82	0.57	3.37	H	Pass
2548	-49.85	-13	-36.85	-52.69	-52.08	0.78	5.16	H	Pass
3396	-64.81	-13	-51.81	-64.44	-68.45	0.87	6.66	H	Pass

Band :	GSM850 for CH251	Temperature :	22~23°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1698	-54.32	-13	-41.32	-56.04	-54.97	0.57	3.37	V	Pass
2548	-42.73	-13	-29.73	-51.43	-44.96	0.78	5.16	V	Pass
3396	-64.37	-13	-51.37	-65.43	-68.01	0.87	6.66	V	Pass



Band :	GSM850 for CH128	Temperature :	22~23°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-67.84	-13	-54.84	-59.51	-68.49	0.57	3.37	H	Pass
2472	-45.31	-13	-32.31	-48.80	-47.54	0.78	5.16	H	Pass
3296	-64.70	-13	-51.70	-64.33	-68.34	0.87	6.66	H	Pass

Band :	GSM850 for CH128	Temperature :	22~23°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1648	-53.53	-13	-40.53	-55.54	-54.18	0.57	3.37	V	Pass
2474	-34.87	-13	-21.87	-44.44	-37.10	0.78	5.16	V	Pass
3296	-64.66	-13	-51.66	-65.72	-68.30	0.87	6.66	V	Pass



Band :	GSM850 for CH189					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1674	-69.08	-13	-56.08	-60.20	-69.73	0.57	3.37	H	Pass
2510	-40.54	-13	-27.54	-44.83	-42.77	0.78	5.16	H	Pass
3344	-66.46	-13	-53.46	-66.09	-70.10	0.87	6.66	H	Pass

Band :	GSM850 for CH189	Temperature :	22~23°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1674	-53.09	-13	-40.09	-55.23	-53.74	0.57	3.37	V	Pass
2512	-36.35	-13	-23.35	-45.81	-38.58	0.78	5.16	V	Pass
3344	-65.50	-13	-52.50	-66.56	-69.14	0.87	6.66	V	Pass



Band :	GSM850 for CH251	Temperature :	22~23°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1700	-63.97	-13	-50.97	-57.62	-64.62	0.57	3.37	H	Pass
2548	-54.23	-13	-41.23	-55.57	-56.46	0.78	5.16	H	Pass
3396	-67.09	-13	-54.09	-66.72	-70.73	0.87	6.66	H	Pass

Band :	GSM850 for CH251	Temperature :	22~23°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1698	-53.53	-13	-40.53	-55.54	-54.18	0.57	3.37	V	Pass
2548	-49.38	-13	-36.38	-56.34	-51.61	0.78	5.16	V	Pass
3396	-65.46	-13	-52.46	-66.52	-69.10	0.87	6.66	V	Pass



Band :	GSM1900 for CH512					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-60.16	-13	-47.16	-63.51	-66.54	0.78	7.16	H	Pass
5553	-32.26	-13	-19.26	-48.04	-40.80	1.04	9.58	H	Pass
7401	-37.38	-13	-24.38	-54.17	-47.49	1.35	11.46	H	Pass
9249	-48.28	-13	-35.28	-61.18	-59.34	1.75	12.81	H	Pass
11103	-31.11	-13	-18.11	-54.99	-42.20	2	13.09	H	Pass

Band :	GSM1900 for CH512					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3699	-56.08	-13	-43.08	-64.48	-64.62	1.04	9.58	V	Pass
5553	-35.17	-13	-22.17	-52.12	-45.28	1.35	11.46	V	Pass
7401	-39.34	-13	-26.34	-56.59	-50.40	1.75	12.81	V	Pass
9251	-51.46	-13	-38.46	-63.99	-62.55	2	13.09	V	Pass
11103	-43.05	-13	-30.05	-60.69	-54.76	2.04	13.75	V	Pass



Band :	GSM1900 for CH661					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3759	-55.83	-13	-42.83	-61.02	-62.21	0.78	7.16	H	Pass
5643	-37.71	-13	-24.71	-52.86	-46.25	1.04	9.58	H	Pass
7521	-44.33	-13	-31.33	-58.78	-54.44	1.35	11.46	H	Pass
9399	-46.20	-13	-33.20	-60.01	-57.26	1.75	12.81	H	Pass
11283	-33.11	-13	-20.11	-56.58	-44.20	2	13.09	H	Pass

Band :	GSM1900 for CH661					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3759	-55.68	-13	-42.68	-64.08	-64.22	1.04	9.58	V	Pass
5643	-42.66	-13	-29.66	-58.2	-52.77	1.35	11.46	V	Pass
7521	-41.36	-13	-28.36	-57.71	-52.42	1.75	12.81	V	Pass
9399	-48.53	-13	-35.53	-61.29	-59.62	2	13.09	V	Pass
11280	-46.97	-13	-33.97	-63.67	-58.68	2.04	13.75	V	Pass



Band :	GSM1900 for CH810					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-54.33	-13	-41.33	-59.88	-60.71	0.78	7.16	H	Pass
5730	-45.73	-13	-32.73	-58.38	-54.27	1.04	9.58	H	Pass
7641	-50.47	-13	-37.47	-62.01	-60.58	1.35	11.46	H	Pass
9549	-49.44	-13	-36.44	-61.87	-60.50	1.75	12.81	H	Pass
11460	-31.72	-13	-18.72	-55.42	-42.81	2	13.09	H	Pass

Band :	GSM1900 for CH810					Temperature :	22~23°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarizati on	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3819	-58.23	-13	-45.23	-66.63	-66.77	1.04	9.58	V	Pass
5730	-42.40	-13	-29.40	-57.92	-52.51	1.35	11.46	V	Pass
7641	-45.96	-13	-32.96	-60.65	-57.02	1.75	12.81	V	Pass
9549	-51.33	-13	-38.33	-63.86	-62.42	2	13.09	V	Pass
11459	-47.61	-13	-34.61	-64.31	-59.32	2.04	13.75	V	Pass



Band :	GSM1900 for CH512					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-62.97	-13	-49.97	-66.32	-69.35	0.78	7.16	H	Pass
5553	-35.65	-13	-22.65	-51.00	-44.19	1.04	9.58	H	Pass
7401	-48.73	-13	-35.73	-61.00	-58.84	1.35	11.46	H	Pass
9252	-53.37	-13	-40.37	-65.80	-64.43	1.75	12.81	H	Pass
11101	-46.44	-13	-33.44	-65.95	-57.53	2	13.09	H	Pass

Band :	GSM1900 for CH512					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-58.12	-13	-45.12	-66.52	-66.66	1.04	9.58	V	Pass
5553	-44.89	-13	-31.89	-59.67	-55.00	1.35	11.46	V	Pass
7401	-49.83	-13	-36.83	-63.92	-60.89	1.75	12.81	V	Pass
9252	-53.78	-13	-40.78	-66.31	-64.87	2	13.09	V	Pass
11101	-49.96	-13	-36.96	-66.66	-61.67	2.04	13.75	V	Pass



Band :	GSM1900 for CH661					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3759	-61.89	-13	-48.89	-65.24	-68.27	0.78	7.16	H	Pass
5643	-42.63	-13	-29.63	-56.56	-51.17	1.04	9.58	H	Pass
7521	-48.97	-13	-35.97	-61.10	-59.08	1.35	11.46	H	Pass
9399	-53.04	-13	-40.04	-65.47	-64.10	1.75	12.81	H	Pass
11280	-46.86	-13	-33.86	-66.37	-57.95	2	13.09	H	Pass

Band :	GSM1900 for CH661					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3759	-57.93	-13	-44.93	-66.33	-66.47	1.04	9.58	V	Pass
5643	-47.04	-13	-34.04	-61.1	-57.15	1.35	11.46	V	Pass
7521	-47.90	-13	-34.90	-61.99	-58.96	1.75	12.81	V	Pass
9399	-52.63	-13	-39.63	-65.16	-63.72	2	13.09	V	Pass
11280	-49.43	-13	-36.43	-66.13	-61.14	2.04	13.75	V	Pass



Band :	GSM1900 for CH810					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-52.82	-13	-39.82	-59.31	-59.20	0.78	7.16	H	Pass
5730	-34.05	-13	-21.05	-49.73	-42.59	1.04	9.58	H	Pass
7641	-51.58	-13	-38.58	-63.12	-61.69	1.35	11.46	H	Pass
9549	-53.60	-13	-40.60	-66.03	-64.66	1.75	12.81	H	Pass
11459	-46.42	-13	-33.42	-65.93	-57.51	2	13.09	H	Pass

Band :	GSM1900 for CH810					Temperature :	22~23°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-58.03	-13	-45.03	-66.43	-66.57	1.04	9.58	V	Pass
5730	-44.56	-13	-31.56	-59.34	-54.67	1.35	11.46	V	Pass
7638	-52.23	-13	-39.23	-66.32	-63.29	1.75	12.81	V	Pass
9549	-53.08	-13	-40.08	-65.61	-64.17	2	13.09	V	Pass
11459	-49.17	-13	-36.17	-65.87	-60.88	2.04	13.75	V	Pass



Band :	WCDMA Band V for CH4132	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1652	-69.01	-13	-56.01	-60.13	-69.66	0.57	3.37	H	Pass
2478	-46.05	-13	-33.05	-49.43	-48.28	0.78	5.16	H	Pass
3306	-66.66	-13	-53.66	-66.29	-70.30	0.87	6.66	H	Pass

Band :	WCDMA Band V for CH4132	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1654	-59.64	-13	-46.64	-59.11	-60.29	0.57	3.37	V	Pass
2478	-43.68	-13	-30.68	-52.22	-45.91	0.78	5.16	V	Pass
3306	-65.62	-13	-52.62	-66.68	-69.26	0.87	6.66	V	Pass



Band :	WCDMA Band V for CH4182	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1674	-67.61	-13	-54.61	-59.35	-68.26	0.57	3.37	H	Pass
2506	-42.37	-13	-29.37	-46.54	-44.60	0.78	5.16	H	Pass
3344	-66.56	-13	-53.56	-66.19	-70.20	0.87	6.66	H	Pass

Band :	WCDMA Band V for CH4182	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1672	-61.91	-13	-48.91	-60.53	-62.56	0.57	3.37	V	Pass
2506	-41.21	-13	-28.21	-50.06	-43.44	0.78	5.16	V	Pass
3344	-64.22	-13	-51.22	-65.28	-67.86	0.87	6.66	V	Pass



Band :	WCDMA Band V for CH4233	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1692	-70.68	-13	-57.68	-61.80	-71.33	0.57	3.37	H	Pass
2538	-47.57	-13	-34.57	-50.72	-49.80	0.78	5.16	H	Pass
3386	-65.22	-13	-52.22	-64.85	-68.86	0.87	6.66	H	Pass

Band :	WCDMA Band V for CH4233	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1694	-61.42	-13	-48.42	-60.29	-62.07	0.57	3.37	V	Pass
2540	-43.02	-13	-30.02	-51.69	-45.25	0.78	5.16	V	Pass
3386	-64.65	-13	-51.65	-65.71	-68.29	0.87	6.66	V	Pass



Band :	WCDMA Band II for CH9262					Temperature :	22~23°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3705	-62.35	-13	-49.35	-65.70	-68.73	0.78	7.16	H	Pass
5556	-54.37	-13	-41.37	-64.43	-62.91	1.04	9.58	H	Pass
7410	-53.20	-13	-40.20	-64.74	-63.31	1.35	11.46	H	Pass
9261	-53.46	-13	-40.46	-65.89	-64.52	1.75	12.81	H	Pass
11114	-47.11	-13	-34.11	-66.62	-58.20	2	13.09	H	Pass

Band :	WCDMA Band II for CH9262					Temperature :	22~23°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3705	-57.78	-13	-44.78	-66.18	-66.32	1.04	9.58	V	Pass
5556	-51.19	-13	-38.19	-63.84	-61.30	1.35	11.46	V	Pass
7410	-51.13	-13	-38.13	-65.22	-62.19	1.75	12.81	V	Pass
9261	-53.16	-13	-40.16	-65.69	-64.25	2	13.09	V	Pass
11114	-49.78	-13	-36.78	-66.48	-61.49	2.04	13.75	V	Pass



Band :	WCDMA Band II for CH9400					Temperature :	22~23°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3759	-61.99	-13	-48.99	-65.34	-68.37	0.78	7.16	H	Pass
5637	-49.01	-13	-36.01	-60.53	-57.55	1.04	9.58	H	Pass
7518	-50.65	-13	-37.65	-62.19	-60.76	1.35	11.46	H	Pass
9399	-53.15	-13	-40.15	-65.58	-64.21	1.75	12.81	H	Pass
11280	-45.89	-13	-32.89	-65.40	-56.98	2	13.09	H	Pass

Band :	WCDMA Band II for CH9400	Temperature :	22~23°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3759	-58.10	-13	-45.10	-66.5	-66.64	1.04	9.58	V	Pass
5643	-49.17	-13	-36.17	-62.17	-59.28	1.35	11.46	V	Pass
7521	-49.33	-13	-36.33	-63.42	-60.39	1.75	12.81	V	Pass
9399	-52.35	-13	-39.35	-64.88	-63.44	2	13.09	V	Pass
11280	-48.92	-13	-35.92	-65.62	-60.63	2.04	13.75	V	Pass



Band :	WCDMA Band II for CH9538					Temperature :	22~23°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3816	-61.82	-13	-48.82	-65.17	-68.20	0.78	7.16	H	Pass
5721	-48.13	-13	-35.13	-59.70	-56.67	1.04	9.58	H	Pass
7629	-54.57	-13	-41.57	-66.11	-64.68	1.35	11.46	H	Pass
9537	-52.89	-13	-39.89	-65.32	-63.95	1.75	12.81	H	Pass
11446	-45.83	-13	-32.83	-65.34	-56.92	2	13.09	H	Pass

Band :	WCDMA Band II for CH9538					Temperature :	22~23°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3816	-56.93	-13	-43.93	-65.33	-65.47	1.04	9.58	V	Pass
5730	-46.08	-13	-33.08	-60.03	-56.19	1.35	11.46	V	Pass
7629	-51.07	-13	-38.07	-65.16	-62.13	1.75	12.81	V	Pass
9537	-53.55	-13	-40.55	-66.08	-64.64	2	13.09	V	Pass
11446	-48.88	-13	-35.88	-65.58	-60.59	2.04	13.75	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 $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

3.8.2 Measuring Instruments

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

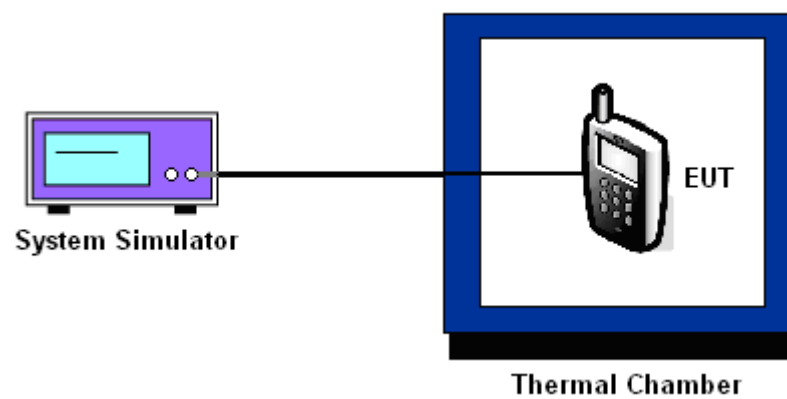
3.8.3 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 v02r01 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 v02r01 Section 9.0.
2. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ 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
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
50	14	0.0251	7	0.0227	PASS
40	10	0.0203	-8	0.0048	
30	-11	0.0048	9	0.0251	
20(Ref.)	-7	0.0000	-12	0.0000	
10	-8	0.0012	17	0.0347	
0	9	0.0191	15	0.0323	
-10	15	0.0263	12	0.0287	
-20	14	0.0251	-13	0.0012	
-30	-12	0.0060	11	0.0275	

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

Temperature (°C)	GSM		EDGE class 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
50	-18	0.0181	13	0.0160	PASS
40	13	0.0016	21	0.0202	
30	11	0.0027	14	0.0165	
20(Ref.)	16	0.0000	-17	0.0000	
10	-15	0.0165	-12	0.0027	
0	21	0.0027	11	0.0149	
-10	19	0.0016	17	0.0181	
-20	14	0.0011	-12	0.0027	
-30	-12	0.0149	16	0.0176	

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

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

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
50	-14	0.0048	PASS
40	-8	0.0120	
30	10	0.0335	
20(Ref.)	-18	0.0000	
10	11	0.0347	
0	-9	0.0108	
-10	14	0.0383	
-20	12	0.0359	
-30	-8	0.0120	

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

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
50	22	0.0059	PASS
40	21	0.0053	
30	-27	0.0202	
20(Ref.)	11	0.0000	
10	14	0.0016	
0	-16	0.0144	
-10	17	0.0032	
-20	18	0.0037	
-30	-21	0.0170	

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)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GSM	3.8	10	0.0203	2.5 (Note 3.)	PASS
		BEP	-11	0.0048		
		4.1	14	0.0251		
	EDGE class 8	3.8	9	0.0251		
		BEP	-8	0.0048		
		4.1	12	0.0287		
GSM 1900 CH661	GSM	3.8	-15	0.0165		
		BEP	-11	0.0144		
		4.1	18	0.0011		
	EDGE class 8	3.8	-22	0.0027		
		BEP	18	0.0186		
		4.1	19	0.0191		
WCDMA Band V CH4182	RMC 12.2Kbps	3.8	10	0.0335		
		BEP	-14	0.0048		
		4.1	12	0.0359		
WCDMA Band II CH9400	RMC 12.2Kbps	3.8	-22	0.0117		
		BEP	13	0.0069		
		4.1	18	0.0096		

Note:

1. Normal Voltage = 3.8V.
2. Battery End Point (BEP) = 3.5 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	FSP40	100319	9kHz~40GHz	Dec. 28, 2013	Aug. 13, 2014~ Aug. 19, 2014	Dec. 27, 2014	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2014	Aug. 13, 2014~ Aug. 19, 2014	May 03, 2015	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	30MHz~40GHz	Feb. 27, 2014	Aug. 13, 2014~ Aug. 19, 2014	Feb. 26, 2015	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	Aug. 21, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 04, 2014	Aug. 21, 2014	May 03, 2015	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	Aug. 21, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 08, 2014	Aug. 21, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz	Nov. 18, 2013	Aug. 21, 2014	Nov. 17, 2014	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 10, 2014	Aug. 21, 2014	Mar. 09, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	Aug. 21, 2014	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Dec. 10, 2013	Aug. 21, 2014	Dec. 09, 2014	Radiation (03CH01-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 21, 2014	NCR	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Aug. 21, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Aug. 21, 2014	NCR	Radiation (03CH01-KS)



Spectrum Analyzer	R&S	FSP 7	100819	9kHz~7GHz	May 23, 2013	Aug. 13, 2014~ Aug. 19, 2014	May 03, 2015	ERP/EIRP (OTA01-KS)
Switch Control Manframe	Agilent	3499A	MY42005452	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Dual 1-to-6(4) MW MUX	Agilent	N2276A	MY42000841	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Microwave Switch	Agilent	44476A	MY42002573	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Microwave Switch	Agilent	44476A	MY42002586	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Diagonal Dual Polarized Horn	ETS-Lindgren	3164-04	00066993	700MHz~6GHz	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Multi-Devices Controller	ETS-Lindgren	2090-OPT1	00066604	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Conical Log Spiral (Small)	ETS-Lindgren	3102	00066951	1~10GHz	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Turn Table	ETS-Lindgren	2088	N/A	Resolution :0.1deg	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Limiting Amplifier	ETS-lindgren	109643	920326	10MHz~2.5GHz	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
EMQuest	ETS-Lindgren	EMQ-100	1125	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)
Medium Duty Holder	ETS-Lindgren	2015	N/A	N/A	N/A	Aug. 13, 2014~ Aug. 19, 2014	N/A	ERP/EIRP (OTA01-KS)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.5
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