

FCC RF Test Report

APPLICANT : Tecom Co., Ltd.
EQUIPMENT : Household Burglar-Alarm and Fire Warning System Unit
BRAND NAME : Cisco
MODEL NAME : DLC-100
FCC ID : D6XDLC100
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION : PCS Licensed Transmitter (PCB)

The product was received on Apr. 18, 2012 and completely tested on Aug. 05, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown 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 INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG241855	Rev. 01	Initial issue of report	Sep. 03, 2012
FG241855	Rev. 02	Update report of adding antenna information	Sep. 06, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	N/A	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	N/A	Peak-to-Average Ratio	< 13 dB	PASS	-
3.3	§22.913(a)	RSS-132(4.4) SRSP-503(5.1.1)	Effective Radiated Power	< 500 Watts	PASS	-
3.3	§24.232(a)	RSS-133 (6.4) SRSP-510(5.1.1)	Equivalent Isotropic Radiated Power	< 1640 Watts	PASS	-
3.4	§2.1049 §22.917(a) §24.238(a)	N/A	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Band Edge Measurement	< 43+10log ₁₀ (P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Conducted Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Field Strength of Spurious Radiation	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 24.71 dB at 1672.000 MHz
3.8	§2.1055 §22.355 §24.235	RSS-132(4.3) RSS-133(6.3)	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

Tecom Co., Ltd.

No. 23, R&D Road 2, Science-Based Industrial Park, Hsin-Chu Taiwan

1.2 Manufacturer

Global Brands Manufacture (DongGuan) Ltd.

Yue Yuan Industrial Estate, Huang Jiang Zhen, DongGuan City, Guangdong Province, China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Household Burglar-Alarm and Fire Warning System Unit
Brand Name	Cisco
Model Name	DLC-100
FCC ID	D6XDLC100
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA WLAN 11bgn
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.

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 : 32.77 dBm GSM1900 : 29.88 dBm WCDMA Band V : 23.51 dBm WCDMA Band II : 23.23 dBm
Antenna Type	Dipole Antenna
Type of Modulation	GPRS: GMSK EDGE: 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)



Antenna Information		
Antenna 1	Manufacturer	Galtronics
	P/N	DS755036
Antenna 2	Manufacturer	Wilson
	P/N	301202
Antenna 3	Manufacturer	Wilson
	P/N	301135

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

FCC Rule	System	Type of Modulation	Frequency Tolerance (%, Hz, ppm)	Emission Designator
Part 22	GSM850 GPRS 8	GMSK	0.06 ppm	248KGXW
Part 22	GSM850 EDGE 8	GMSK / 8PSK	0.06 ppm	250KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.03 ppm	4M22F9W
Part 24	GSM1900 GPRS 8	GMSK	0.05 ppm	250KGXW
Part 24	GSM1900 EDGE 8	GMSK / 8PSK	0.05 ppm	248KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.02 ppm	4M24F9W

<EUT with Antenna 1>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)
Part 22	GSM850 GPRS 8	GMSK	3.7757
Part 22	GSM850 EDGE 8	GMSK / 8PSK	1.4028
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.4887
Part 24	GSM1900 GPRS 8	GMSK	3.3574
Part 24	GSM1900 EDGE 8	GMSK / 8PSK	1.8197
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.7656

<EUT with Antenna 2>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)
Part 22	GSM850 GPRS 8	GMSK	1.5205
Part 22	GSM850 EDGE 8	GMSK / 8PSK	0.5224
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.2000
Part 24	GSM1900 GPRS 8	GMSK	1.2823
Part 24	GSM1900 EDGE 8	GMSK / 8PSK	0.7998
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.2065

<EUT with Antenna 3>

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)
Part 22	GSM850 GPRS 8	GMSK	1.9231
Part 22	GSM850 EDGE 8	GMSK / 8PSK	0.5333
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.2143
Part 24	GSM1900 GPRS 8	GMSK	2.2029
Part 24	GSM1900 EDGE 8	GMSK / 8PSK	1.3397
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.5346

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	03CH05-HY	722060/4086B-1

1.6 Applied Standards

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

- ♦ Preliminary Guidance for Receiving Applications for Certification of 3G Device. May 9, 2006.
- ♦ FCC 47 CFR Part 2, 22(H), 24(E)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v01
- ♦ IC RSS-132 Issue 2
- ♦ IC RSS-133 Issue 5

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.



1.7 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.

Frequency range investigated for radiated emission is as follows:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V.
2. 30 MHz to 19000 MHz for GSM1900 and WCDMA Band II.

Test Modes		
Band	Radiated TCs	Conducted TCs
GSM 850	■ GPRS 8 Link ■ EDGE 8 Link	■ GPRS 8 Link ■ EDGE 8 Link
GSM 1900	■ GPRS 8 Link ■ EDGE 8 Link	■ GPRS 8 Link ■ EDGE 8 Link
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

Note:

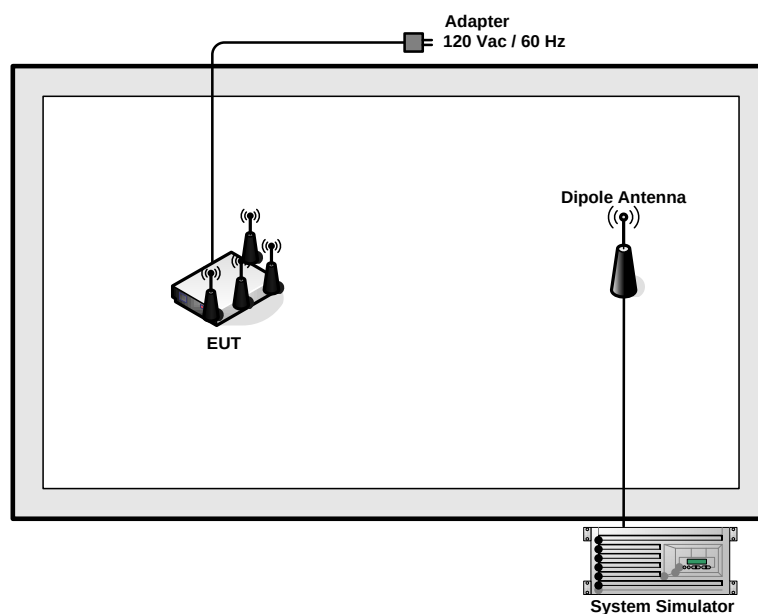
1. The maximum power levels are GPRS multi-slot class 8 mode for GMSK link, EDGE multi-slot class 8 mode for 8PSK link, RMC 12.2Kbps mode for WCDMA band V, and RMC 12.2Kbps mode for WCDMA band II, only these modes were used for all tests.
2. Because there are individual antennas for each WWAN and WLAN, the co-location test modes are not required.
3. For Part 22, all the cases of radiation were performance with Antenna 2. For Part 24, all the cases of radiation were performance with Antenna 3.

The conducted power tables are as follows:

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
GPRS 8	32.77	32.68	32.54	29.45	29.50	29.88
GPRS 10	32.76	32.66	32.53	29.40	29.46	29.85
EGPRS 8	27.48	27.28	27.14	26.38	26.44	26.63
EGPRS 10	27.46	27.29	27.16	26.36	26.44	26.62

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	23.43	23.51	23.48	23.23	23.22	23.21
HSDPA Subtest-1	23.45	23.50	23.49	22.21	22.32	22.25
HSDPA Subtest-2	23.43	23.47	23.48	22.22	22.29	22.20
HSDPA Subtest-3	22.95	23.02	22.99	21.75	21.82	21.78
HSDPA Subtest-4	22.96	23.02	23.00	21.73	21.83	21.79
HSUPA Subtest-1	23.37	23.49	23.42	22.23	22.35	22.40
HSUPA Subtest-2	21.25	21.45	21.43	20.27	20.30	20.38
HSUPA Subtest-3	22.37	22.45	22.43	21.27	21.34	21.36
HSUPA Subtest-4	21.30	21.43	21.43	20.23	20.40	20.37
HSUPA Subtest-5	23.30	23.43	23.38	22.17	22.38	22.39

2.2 Connection Diagram of Test System



3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

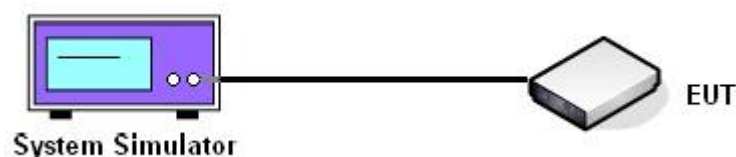
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Compare each band and different modulation combination to show the worst data rate.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GPRS 8)			GSM850 (EDGE 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.77	32.68	32.54	27.48	27.28	27.14	23.43	23.51	23.48
Conducted Power (Watts)	1.89	1.85	1.79	0.56	0.53	0.52	0.22	0.22	0.22

PCS Band									
Modes	GSM1900 (GPRS 8)			GSM1900 (EDGE 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	29.45	29.50	29.88	26.38	26.44	26.63	23.23	23.22	23.21
Conducted Power (Watts)	0.88	0.89	0.97	0.43	0.44	0.46	0.21	0.21	0.21

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

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. The following guidelines are offered for performing a CCDF measurement.

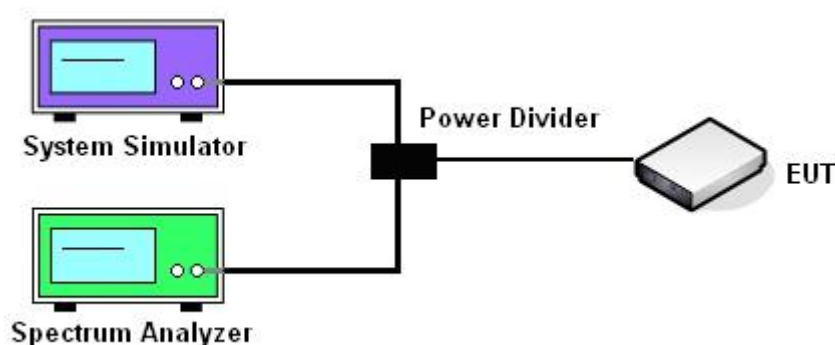
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The CCDF (Complementary Cumulative Distribution Function) of the middle channel for the highest RF powers were measured.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

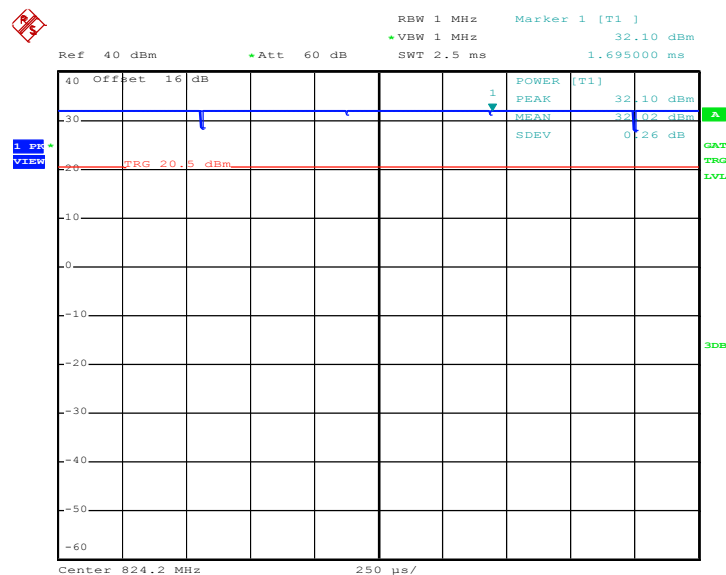
Cellular Band									
Modes	GSM850 (GPRS 8)			GSM850 (EDGE 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.08	0.07	0.05	0.50	0.38	0.48	3.04	2.64	2.56

PCS Band									
Modes	GSM1900 (GPRS 8)			GSM1900 (EDGE 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)	0.10	0.08	0.08	0.43	0.47	0.47	2.24	2.48	2.52

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

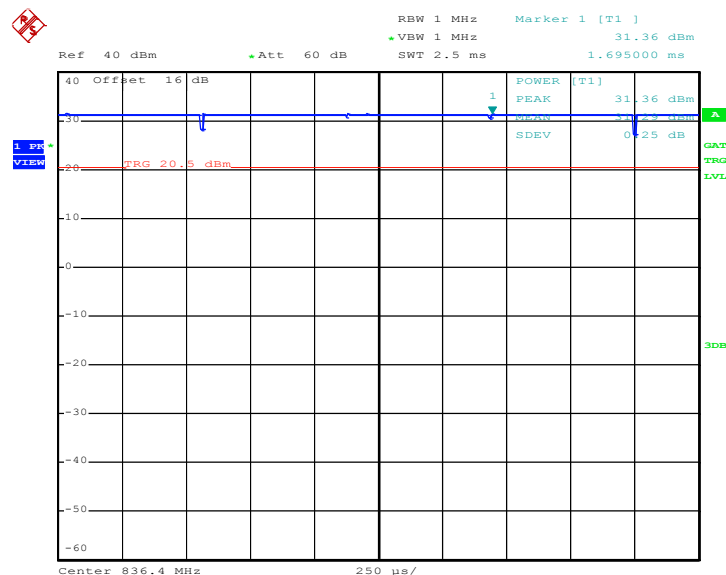
Band :	GSM 850	Test Mode :	GPRS 8 Link
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Peak-to-Average Ratio on Channel 128 (824.2 MHz)



Date: 13.JUL.2012 14:20:13

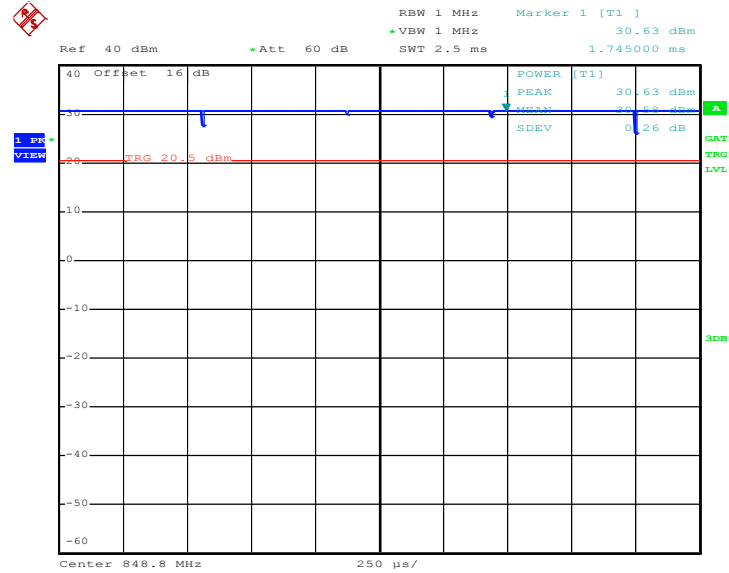
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



Date: 13.JUL.2012 14:20:50



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

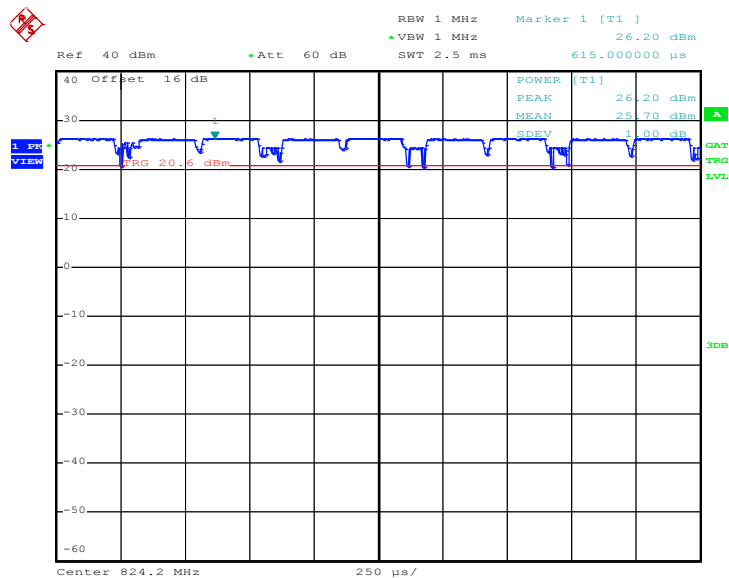


Date: 13.JUL.2012 14:21:54



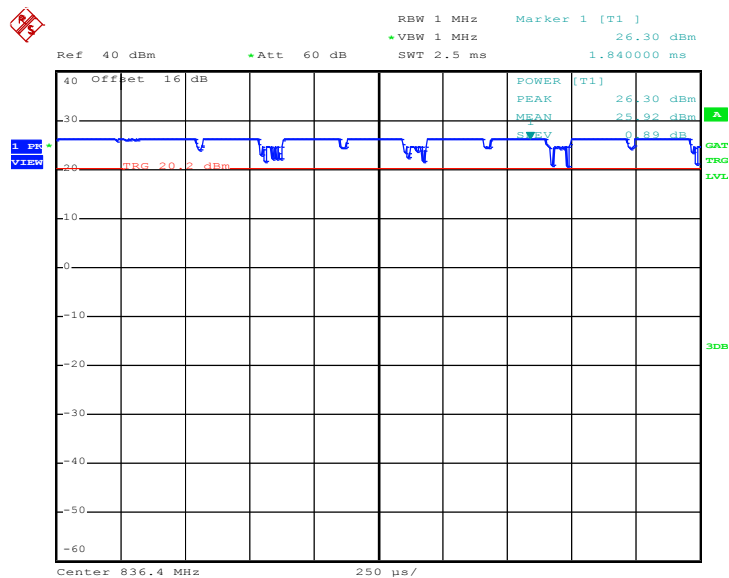
Band :	GSM 850	Test Mode :	EDGE 8 Link
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Peak-to-Average Ratio on Channel 128 (824.2 MHz)



Date: 19.JUL.2012 11:25:05

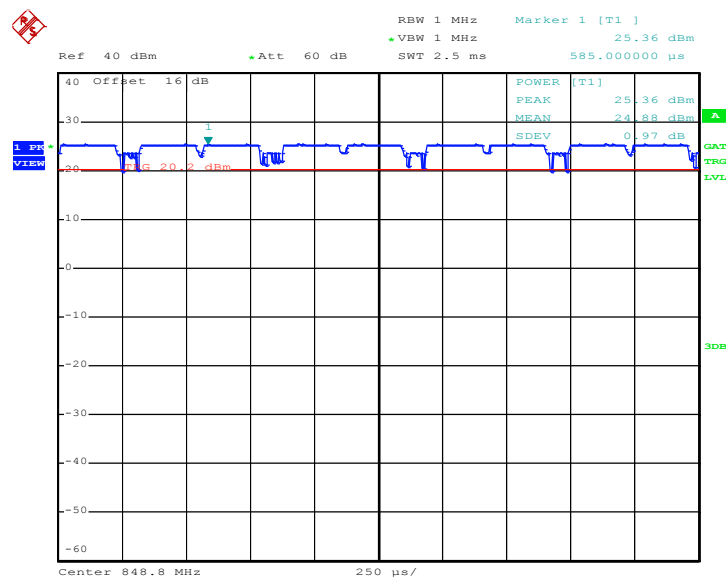
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



Date: 13.JUL.2012 13:24:39



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

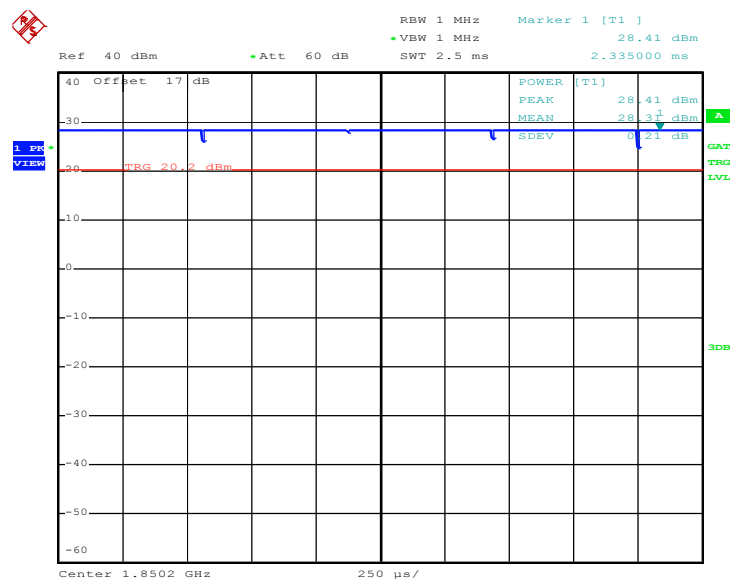


Date: 13.JUL.2012 13:26:46



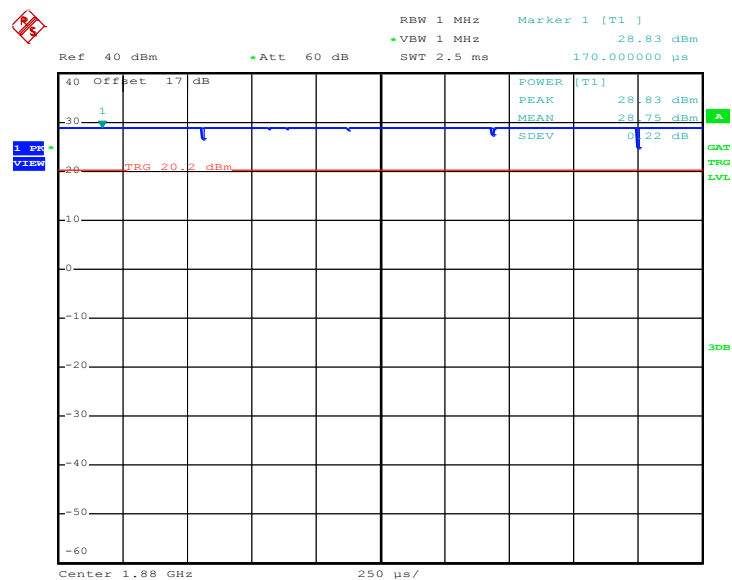
Band :	GSM 1900	Test Mode :	GPRS 8 Link
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 13.JUL.2012 14:13:58

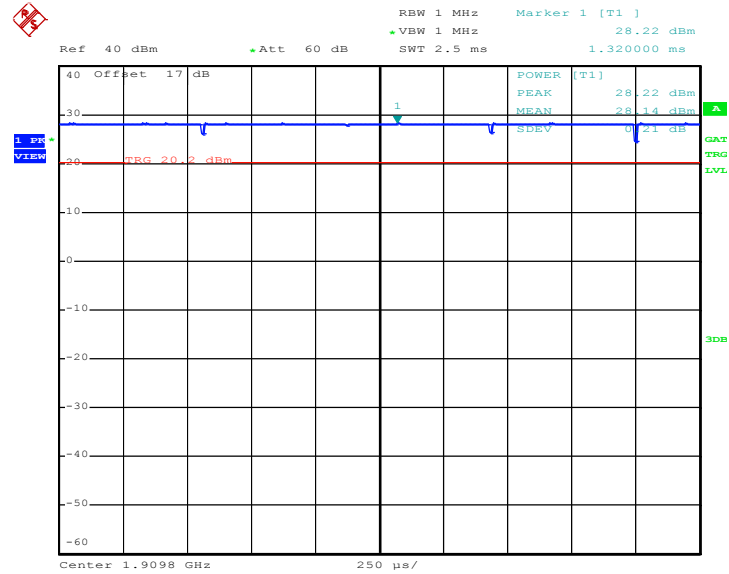
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 13.JUL.2012 14:13:22



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

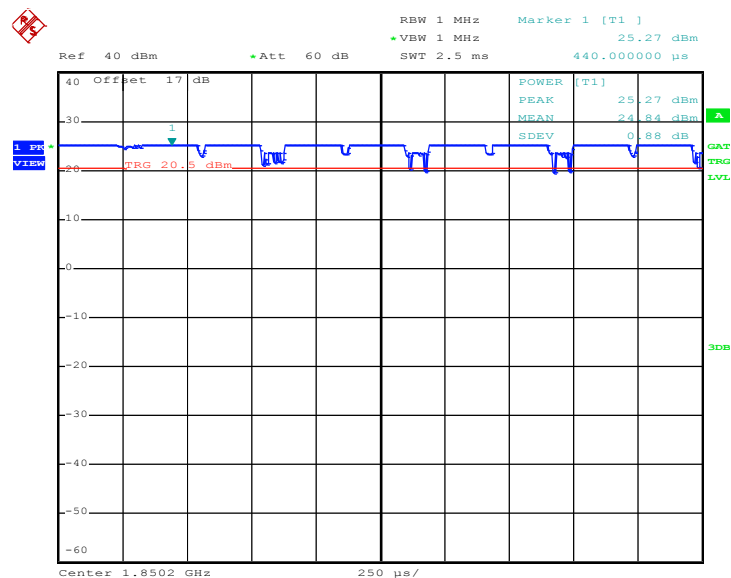


Date: 13.JUL.2012 14:12:48



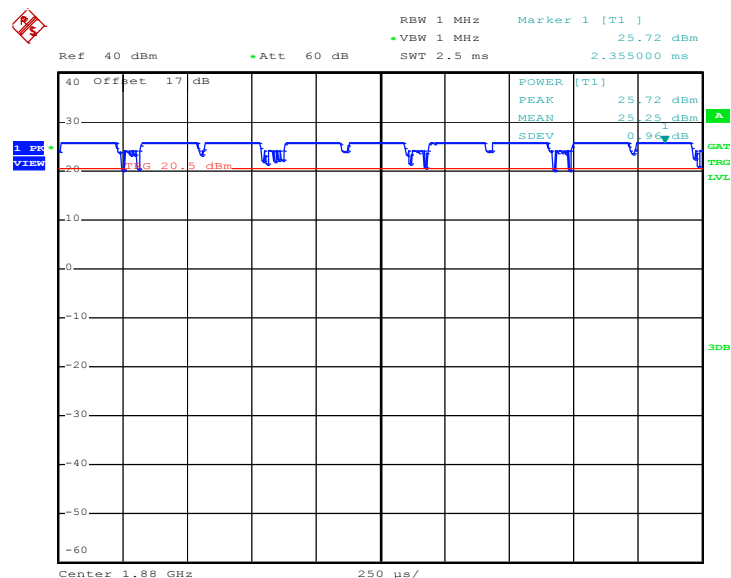
Band :	GSM 1900	Test Mode :	EDGE 8 Link
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 13.JUL.2012 13:55:32

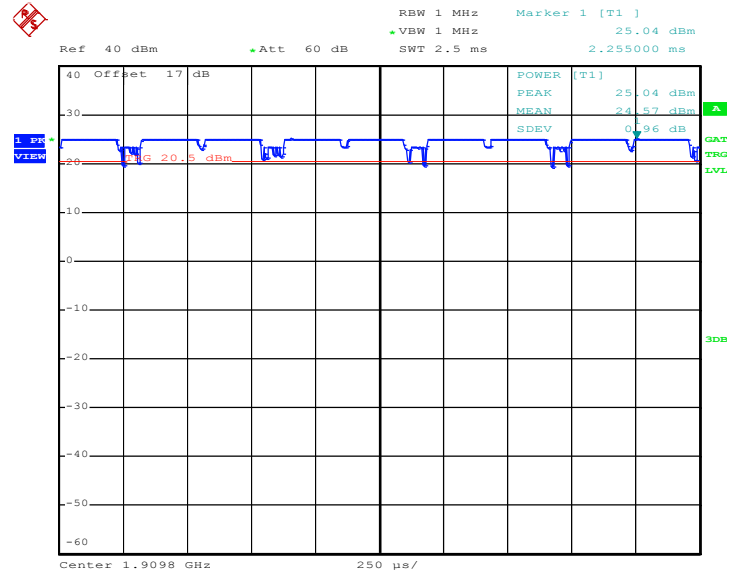
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 13.JUL.2012 13:56:08



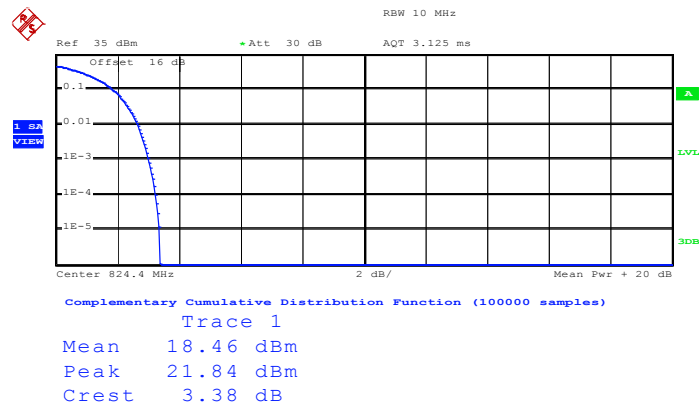
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Date: 13.JUL.2012 13:57:07

Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link
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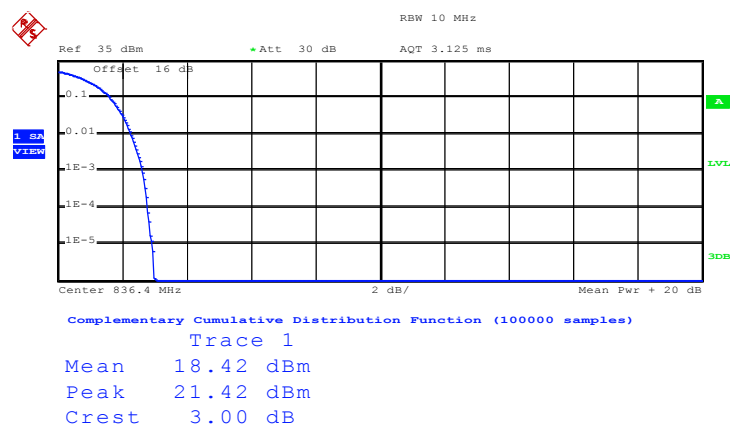
Peak-to-Average Ratio on Channel 4132 (826.4 MHz)



10 %	1.88 dB
1 %	2.68 dB
.1 %	3.04 dB
.01 %	3.24 dB

Date: 13.JUL.2012 14:52:00

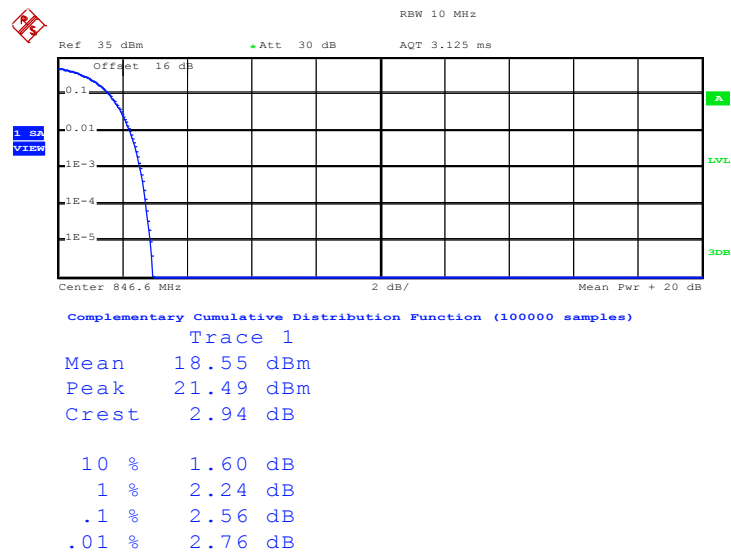
Peak-to-Average Ratio on Channel 4182 (836.4 MHz)



10 %	1.64 dB
1 %	2.28 dB
.1 %	2.64 dB
.01 %	2.80 dB

Date: 13.JUL.2012 14:51:17

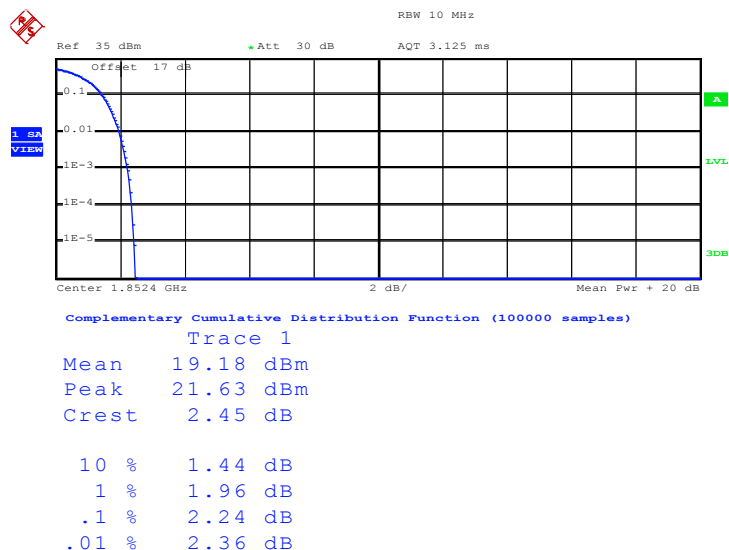
Peak-to-Average Ratio on Channel 4233 (846.6 MHz)



Date: 13.JUL.2012 14:50:43

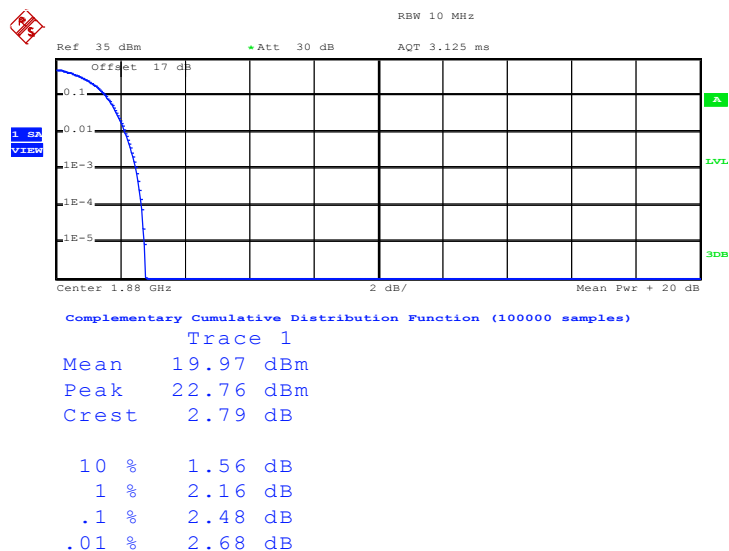
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link
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Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)



Date: 13.JUL.2012 15:04:52

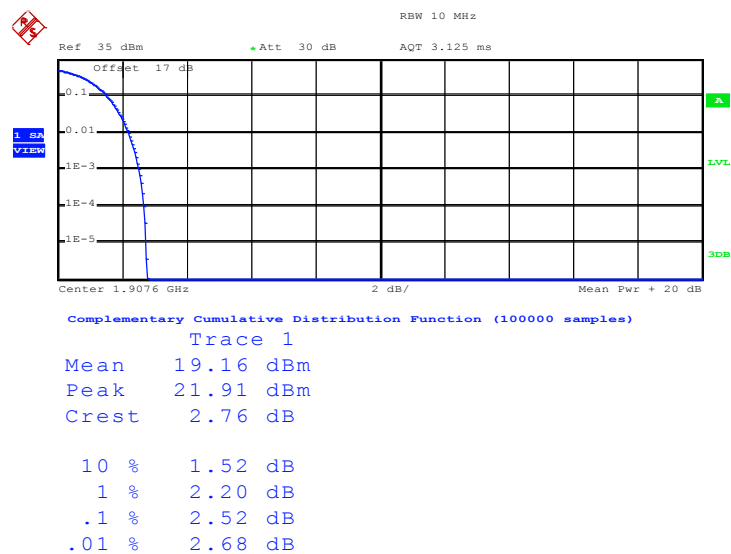
Peak-to-Average Ratio on Channel 9400 (1880.0 MHz)



Date: 13.JUL.2012 15:05:26



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



Date: 13.JUL.2012 15:06:03

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 v01. The ERP of base transmitters must not exceed 500 Watts and the EIRP of base transmitters are limited to 1640 Watts.

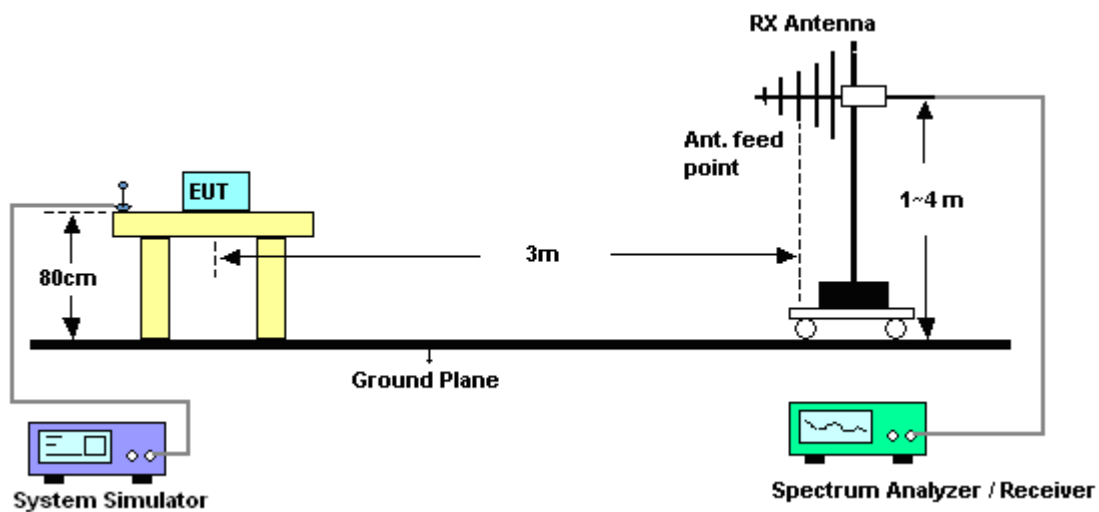
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW= 1MHz, VBW= 3MHz for GSM, RBW= 300KHz, VBW= 1MHz for WCDMA, and RMS detector settings per section 4.0 of KDB 971168 D01.
2. During the measurement, the EUT was enforced in maximum power setting. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$.

3.3.4 Test Setup



3.3.5 Test Result of ERP

<EUT with Antenna 1>

GSM850 (GPRS 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-3.09	28.65	23.41	0.2193
836.4	-4.87	28.91	21.89	0.1545
848.8	-4.33	29.68	23.20	0.2089
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	4.97	32.95	35.77	3.7757
836.4	4.24	32.5	34.59	2.8774
848.8	3.59	32.88	34.32	2.7040

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

GSM850 (EDGE 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-7.98	28.65	18.52	0.0711
836.4	-9.67	28.91	17.09	0.0512
848.8	-9.25	29.68	18.28	0.0673
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	0.67	32.95	31.47	1.4028
836.4	-0.34	32.5	30.01	1.0023
848.8	-0.90	32.88	29.83	0.9616

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.40	-12.49	29.14	14.50	0.0282
836.40	-14.07	29.2	12.98	0.0199
846.60	-12.85	29.88	14.88	0.0308
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.40	-4.07	33.11	26.89	0.4887
836.40	-4.60	32.7	25.95	0.3936
846.60	-4.92	32.76	25.69	0.3707

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

<EUT with Antenna 2>

GSM850 (GPRS 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-0.81	28.65	25.69	0.3707
836.4	-1.18	28.91	25.58	0.3614
848.8	-1.79	29.68	25.74	0.3750
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	0.77	32.95	31.57	1.4355
836.4	0.70	32.5	31.05	1.2735
848.8	1.09	32.88	31.82	1.5205

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

GSM850 (EDGE 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-4.75	28.65	21.75	0.1496
836.4	-5.06	28.91	21.70	0.1479
848.8	-6.86	29.68	20.67	0.1167
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-3.64	32.95	27.16	0.5200
836.4	-3.81	32.5	26.54	0.4508
848.8	-3.55	32.88	27.18	0.5224

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.40	-9.45	29.14	17.54	0.0568
836.40	-9.07	29.2	17.98	0.0628
846.60	-10.49	29.88	17.24	0.0530
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.40	-7.95	33.11	23.01	0.2000
836.40	-7.92	32.7	22.63	0.1832
846.60	-7.69	32.76	22.92	0.1959

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

<EUT with Antenna 3>

GSM850 (GPRS 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-8.91	28.65	17.59	0.0574
836.4	-7.68	28.91	19.08	0.0809
848.8	-7.83	29.68	19.70	0.0933
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-0.70	32.95	30.10	1.0233
836.4	0.84	32.5	31.19	1.3152
848.8	2.11	32.88	32.84	1.9231

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

GSM850 (EDGE 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-13.24	28.65	13.26	0.0212
836.4	-12.35	28.91	14.41	0.0276
848.8	-12.21	29.68	15.32	0.0340
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-5.45	32.95	25.35	0.3428
836.4	-4.19	32.5	26.16	0.4130
848.8	-3.46	32.88	27.27	0.5333

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.40	-17.15	29.14	9.84	0.0096
836.40	-16.57	29.2	10.48	0.0112
846.60	-17.39	29.88	10.34	0.0108
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.40	-8.78	33.11	22.18	0.1652
836.40	-8.13	32.7	22.42	0.1746
846.60	-7.30	32.76	23.31	0.2143

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

3.3.6 Test Result of EIRP

<EUT with Antenna 1>

GSM1900 (GPRS 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-20.91	43.16	22.25	0.1679
1880.0	-20.20	43.11	22.91	0.1954
1909.8	-20.40	43.14	22.74	0.1879
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-10.59	44.81	34.22	2.6424
1880.0	-11.56	46.82	35.26	3.3574
1909.8	-11.95	47.16	35.21	3.3189

* EIRP = LVL (dBm) + Correction Factor (dB)

GSM1900 (EDGE 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-22.86	43.16	20.30	0.1072
1880.0	-22.17	43.11	20.94	0.1242
1909.8	-22.66	43.14	20.48	0.1117
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-12.91	44.81	31.90	1.5488
1880.0	-14.33	46.82	32.49	1.7742
1909.8	-14.56	47.16	32.60	1.8197

* EIRP = LVL (dBm) + Correction Factor (dB)

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.40	-27.34	43.18	15.84	0.0384
1880.00	-27.05	43.03	15.98	0.0396
1907.60	-26.21	43.05	16.84	0.0483
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.40	-17.95	46.23	28.28	0.6730
1880.00	-18.21	46.71	28.50	0.7079
1907.60	-18.29	47.13	28.84	0.7656

* EIRP = LVL (dBm) + Correction Factor (dB)

<EUT with Antenna 2>

GSM1900 (GPRS 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-24.27	43.16	18.89	0.0774
1880.0	-23.57	43.11	19.54	0.0899
1909.8	-23.36	43.14	19.78	0.0951
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-15.49	44.81	29.32	0.8551
1880.0	-16.66	46.82	30.16	1.0375
1909.8	-16.08	47.16	31.08	1.2823

* EIRP = LVL (dBm) + Correction Factor (dB)

GSM1900 (EDGE 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-26.72	43.16	16.44	0.0441
1880.0	-26.31	43.11	16.80	0.0479
1909.8	-26.97	43.14	16.17	0.0414
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-16.03	44.81	28.78	0.7551
1880.0	-17.79	46.82	29.03	0.7998
1909.8	-18.94	47.16	28.22	0.6637

* EIRP = LVL (dBm) + Correction Factor (dB)

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.40	-31.03	43.18	12.15	0.0164
1880.00	-30.45	43.03	12.58	0.0181
1907.60	-31.22	43.05	11.83	0.0152
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.40	-24.10	46.23	22.13	0.1633
1880.00	-23.56	46.71	23.15	0.2065
1907.60	-25.24	47.13	21.89	0.1545

* EIRP = LVL (dBm) + Correction Factor (dB)

<EUT with Antenna 3>

GSM1900 (GPRS 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-22.93	43.16	20.23	0.1054
1880.0	-21.82	43.11	21.29	0.1346
1909.8	-22.23	43.14	20.91	0.1233
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-12.81	44.81	32.00	1.5849
1880.0	-13.39	46.82	33.43	2.2029
1909.8	-13.87	47.16	33.29	2.1330

* EIRP = LVL (dBm) + Correction Factor (dB)

GSM1900 (EDGE 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-25.12	43.16	18.04	0.0637
1880.0	-24.06	43.11	19.05	0.0804
1909.8	-24.79	43.14	18.35	0.0684
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-15.15	44.81	29.66	0.9247
1880.0	-15.55	46.82	31.27	1.3397
1909.8	-16.48	47.16	30.68	1.1695

* EIRP = LVL (dBm) + Correction Factor (dB)

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.40	-29.21	43.18	13.97	0.0249
1880.00	-28.51	43.03	14.52	0.0283
1907.60	-29.57	43.05	13.48	0.0223
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.40	-19.77	46.23	26.46	0.4426
1880.00	-19.43	46.71	27.28	0.5346
1907.60	-20.99	47.13	26.14	0.4111

* EIRP = LVL (dBm) + Correction Factor (dB)

3.4 Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of Occupied Bandwidth and 26dB Bandwidth Measurement

The 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.

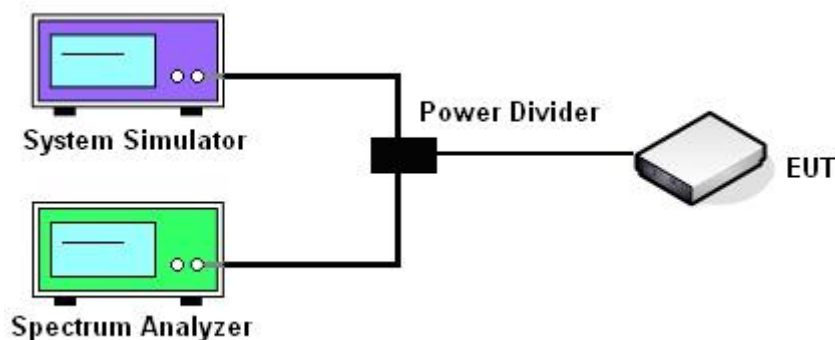
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The 99% occupied bandwidth and 26 dB bandwidth of the middle channel for the highest RF powers were measured.

3.4.4 Test Setup



3.4.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

Cellular Band						
Modes	GSM850 (GPRS 8)			GSM850 (EDGE 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)	244.00	248.00	246.00	246.00	248.00	250.00
26dB BW (KHz)	316.00	318.00	316.00	308.00	302.00	308.00

PCS Band						
Modes	GSM1900 (GPRS 8)			GSM1900 (EDGE 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)	248.00	250.00	248.00	244.00	248.00	246.00
26dB BW (KHz)	318.00	314.00	306.00	312.00	308.00	306.00

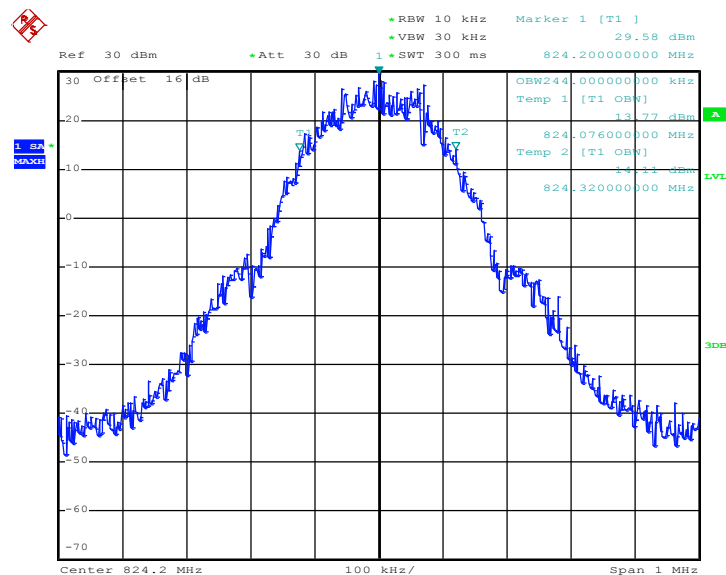
Cellular Band			
Modes	WCDMA Band V (RMC 12.2Kbps)		
Channel	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	826.4	836.4	846.6
99% OBW (MHz)	4.18	4.22	4.22
26dB BW (MHz)	4.86	4.86	4.86

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)	4.24	4.20	4.22
26dB BW (MHz)	4.94	4.88	4.88

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

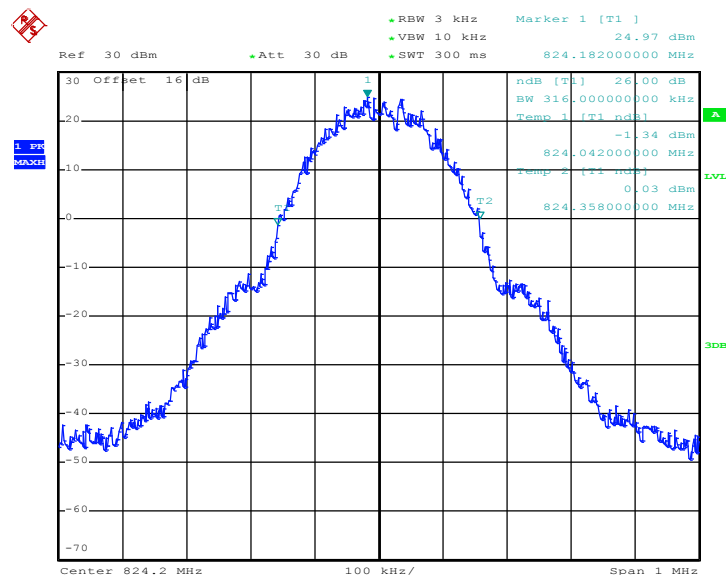
Band :	GSM 850	Test Mode :	GPRS 8 Link
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



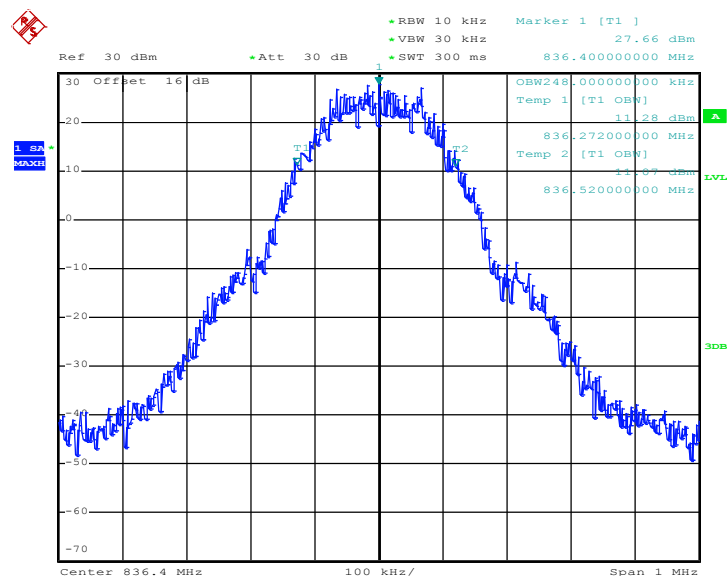
Date: 13.JUL.2012 14:24:01

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



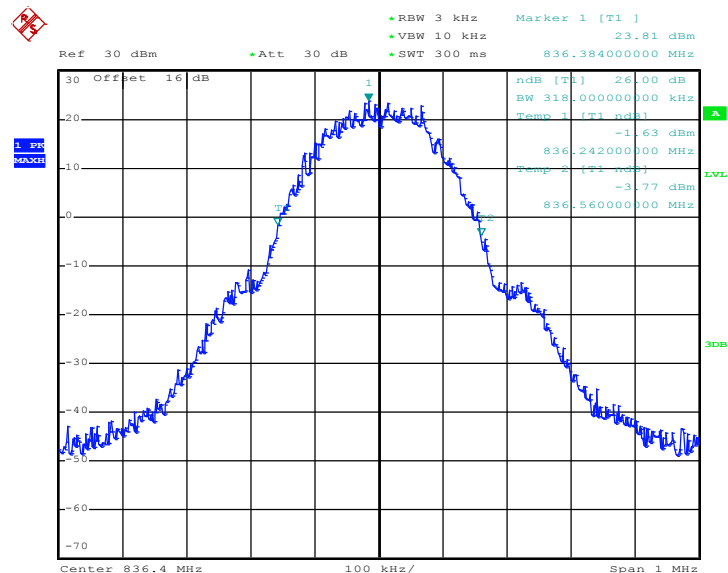
Date: 13.JUL.2012 14:22:43

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

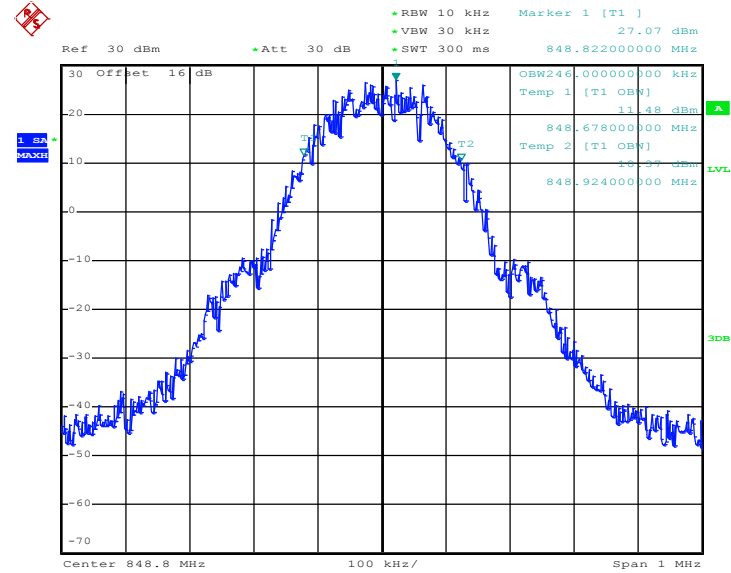


Date: 13.JUL.2012 14:24:27

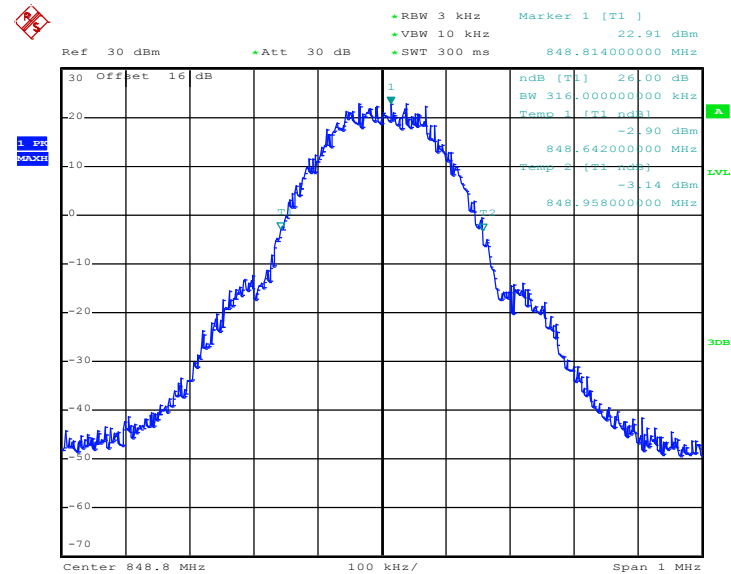
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 13.JUL.2012 14:23:09

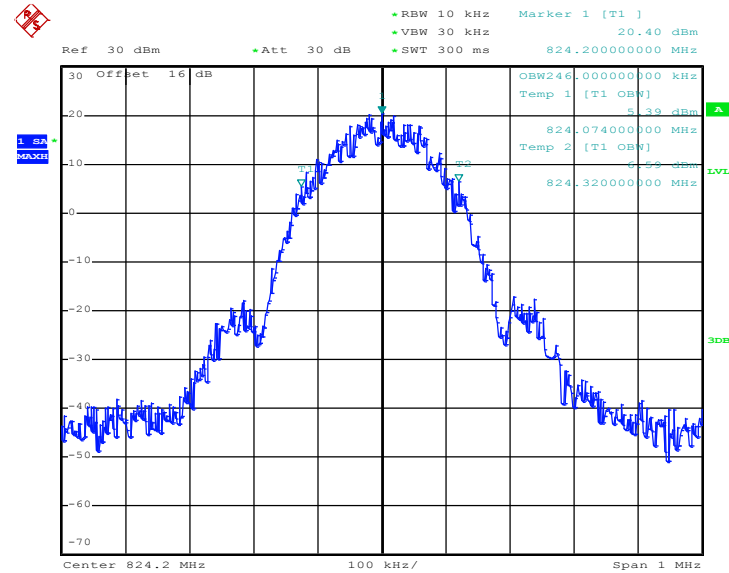
99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)


Date: 13.JUL.2012 14:24:53

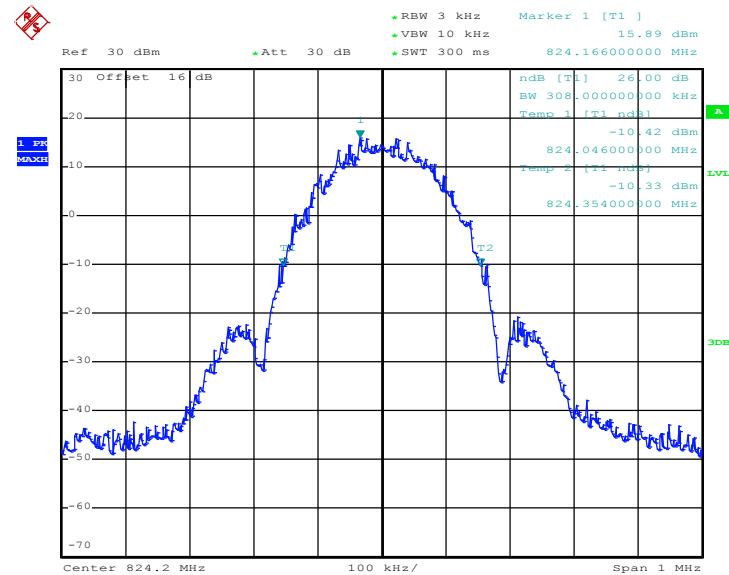
26dB Bandwidth Plot on Channel 251 (848.8 MHz)


Date: 13.JUL.2012 14:23:35

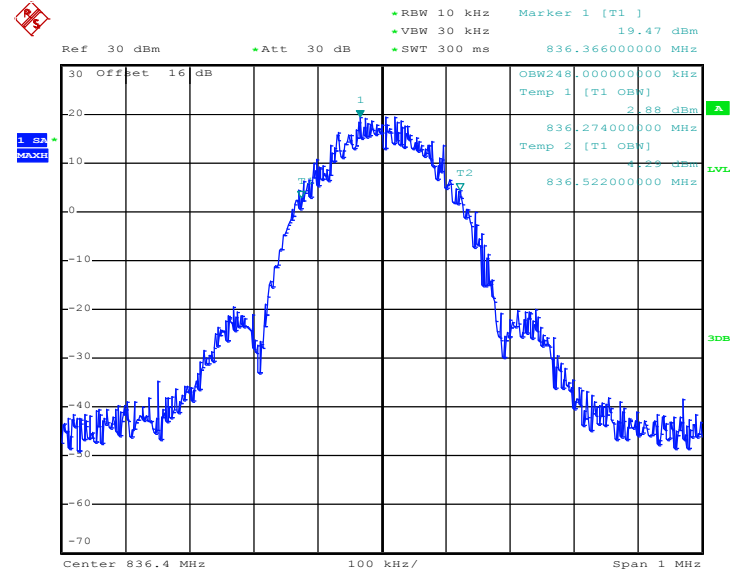
Band :	GSM 850	Test Mode :	EDGE 8 Link
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)


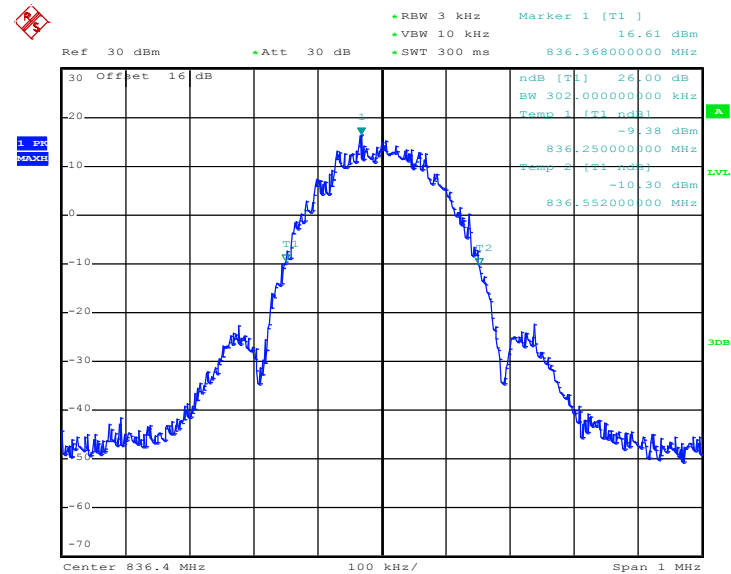
Date: 13.JUL.2012 13:31:37

26dB Bandwidth Plot on Channel 128 (824.2 MHz)


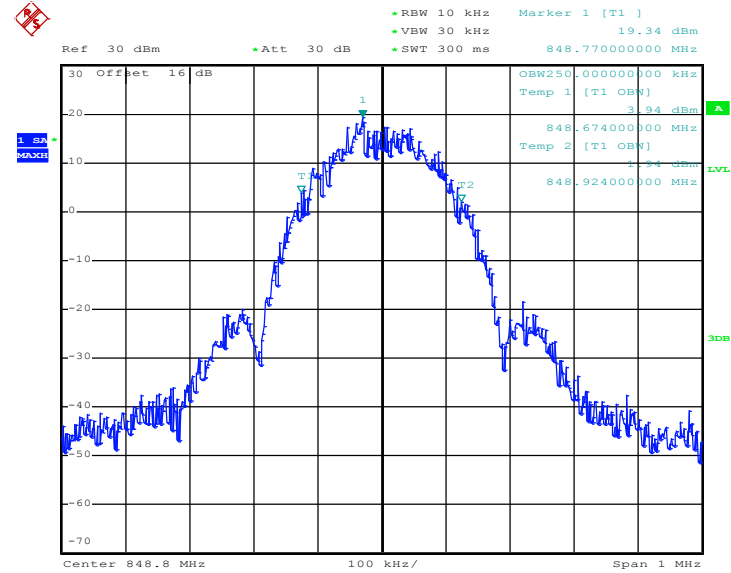
Date: 13.JUL.2012 13:30:18

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


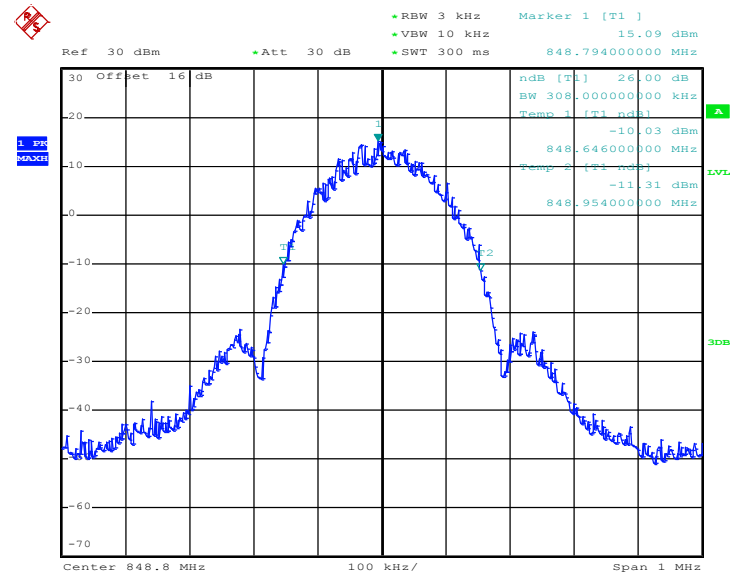
Date: 13.JUL.2012 13:32:03

26dB Bandwidth Plot on Channel 189 (836.4 MHz)


Date: 13.JUL.2012 13:30:45

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


Date: 13.JUL.2012 13:32:29

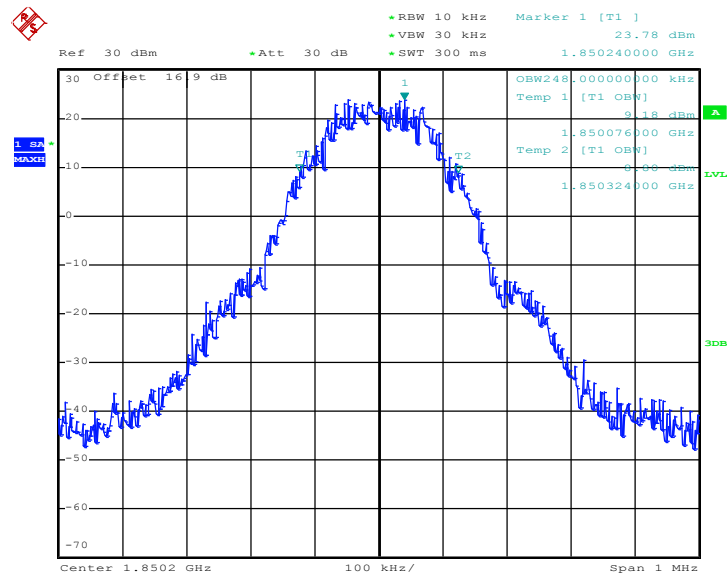
26dB Bandwidth Plot on Channel 251 (848.8 MHz)


Date: 13.JUL.2012 13:31:11



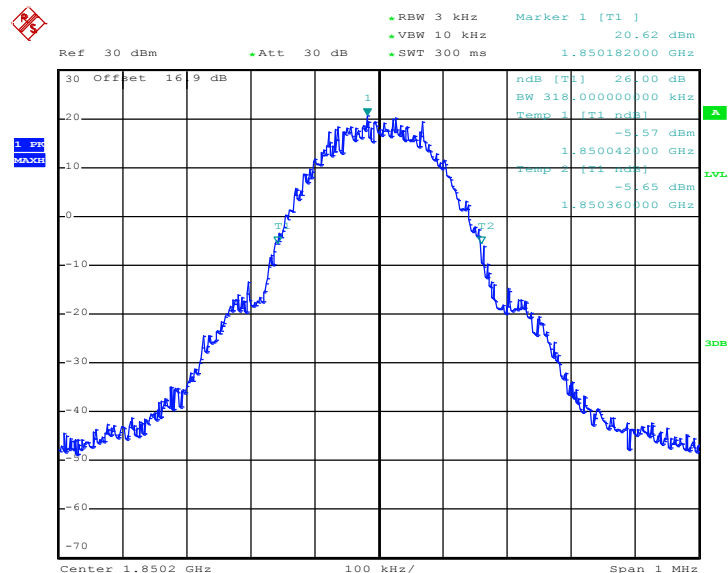
Band :	GSM 1900	Test Mode :	GPRS 8 Link
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)

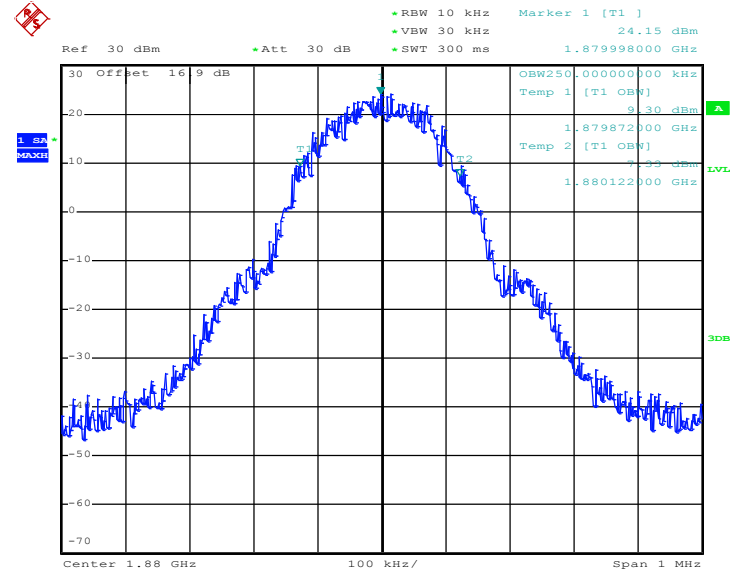


Date: 13.JUL.2012 14:06:05

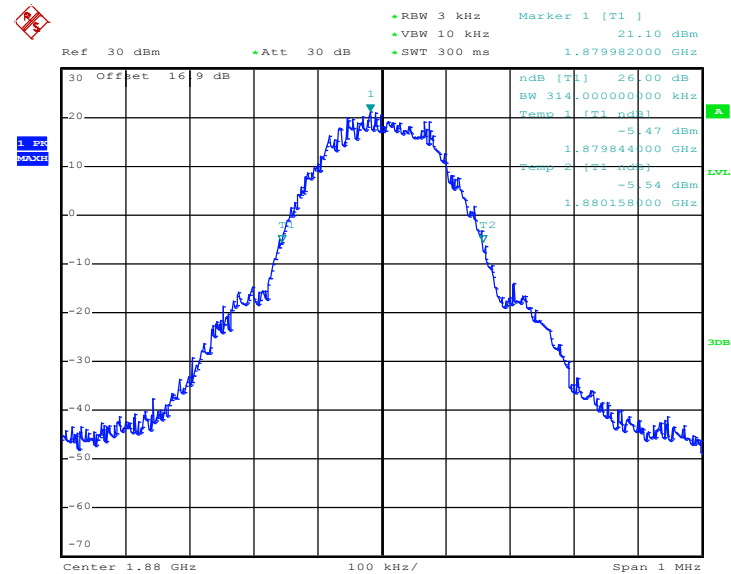
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 13.JUL.2012 14:04:46

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


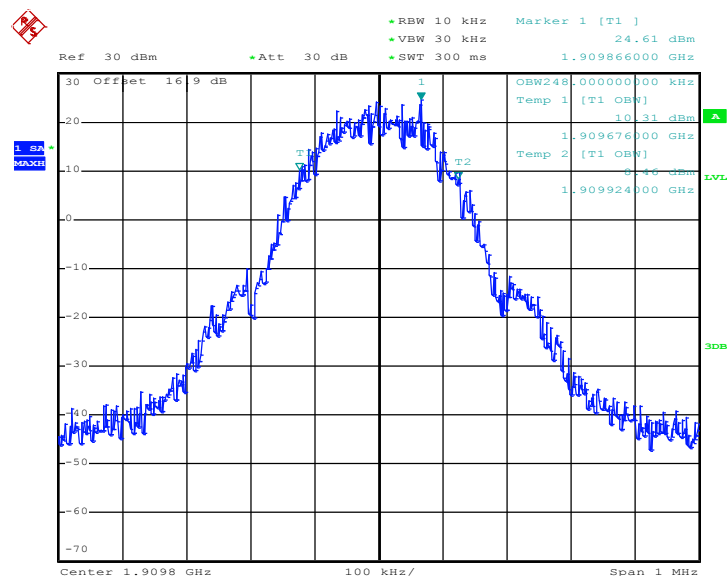
Date: 13.JUL.2012 14:06:31

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)


Date: 13.JUL.2012 14:05:12

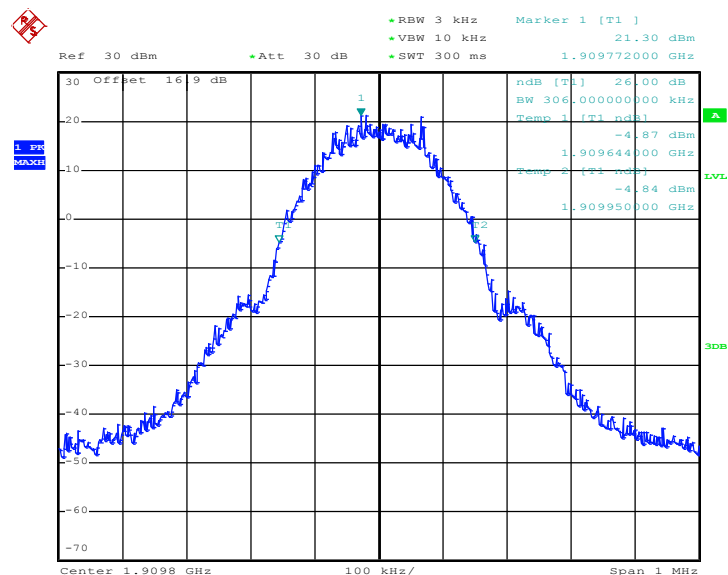


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 13.JUL.2012 14:06:57

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

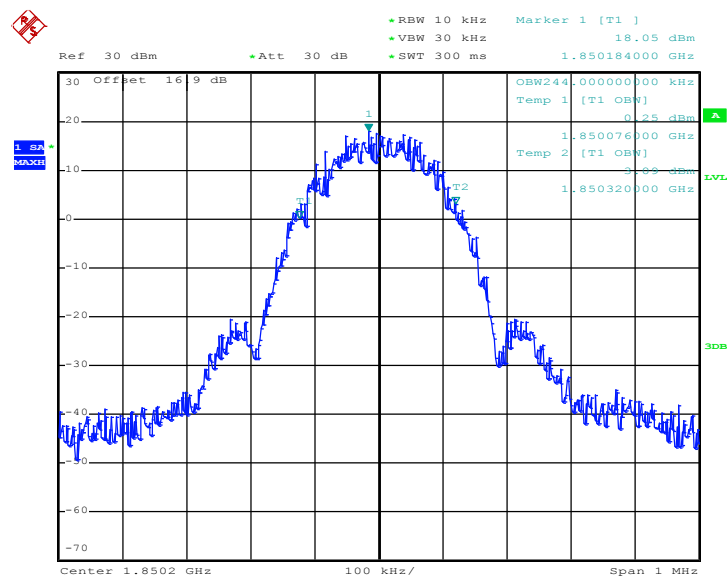


Date: 13.JUL.2012 14:05:38



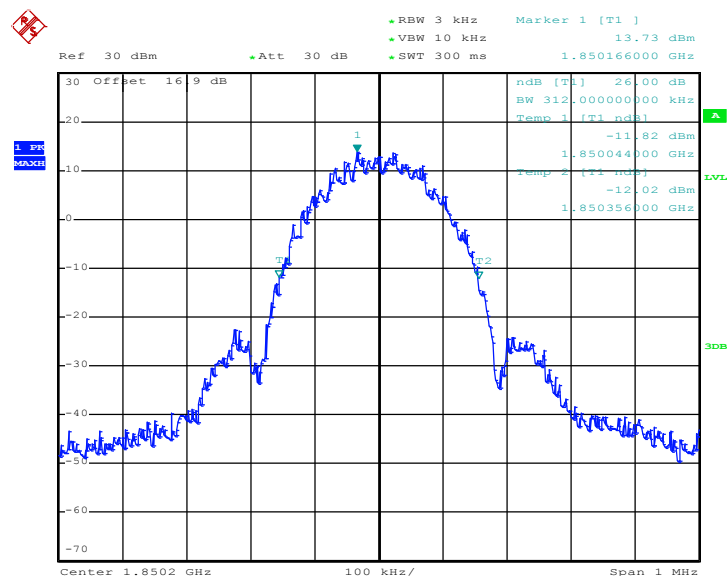
Band :	GSM 1900	Test Mode :	EDGE 8 Link
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 13.JUL.2012 13:45:27

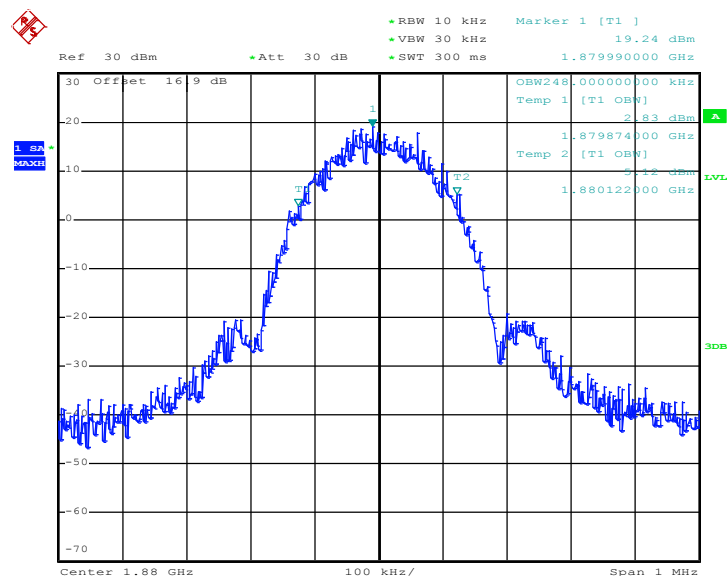
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 13.JUL.2012 13:44:08

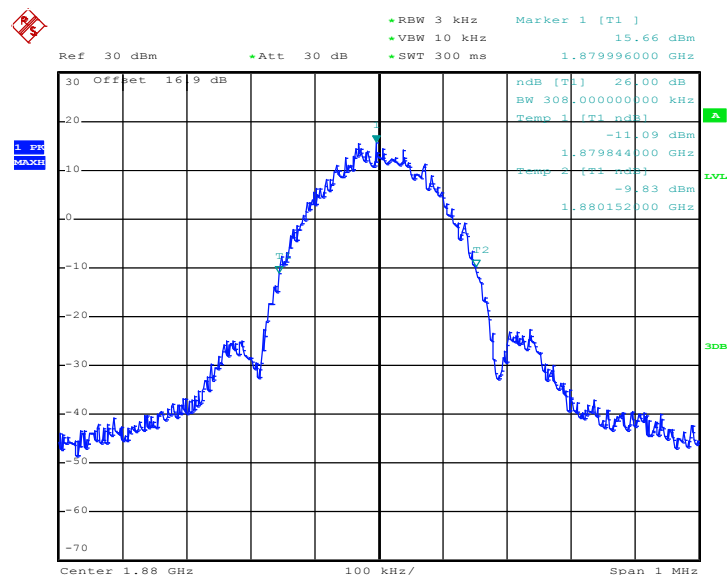


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 13.JUL.2012 13:45:53

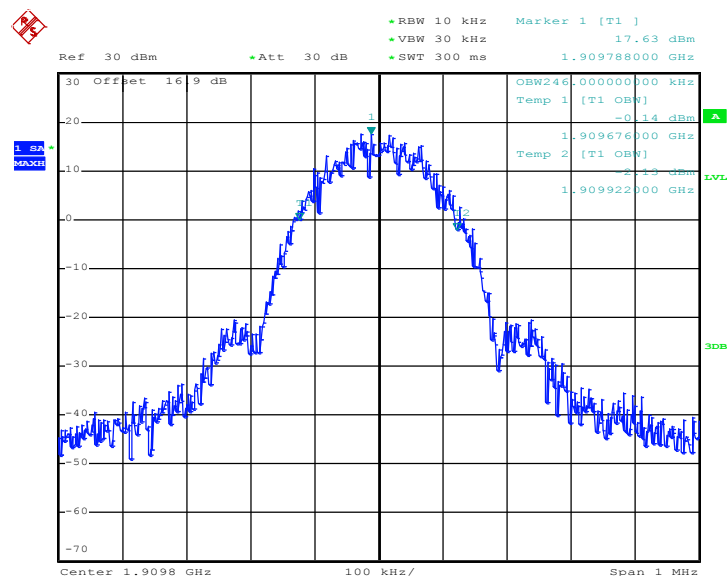
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 13.JUL.2012 13:44:35

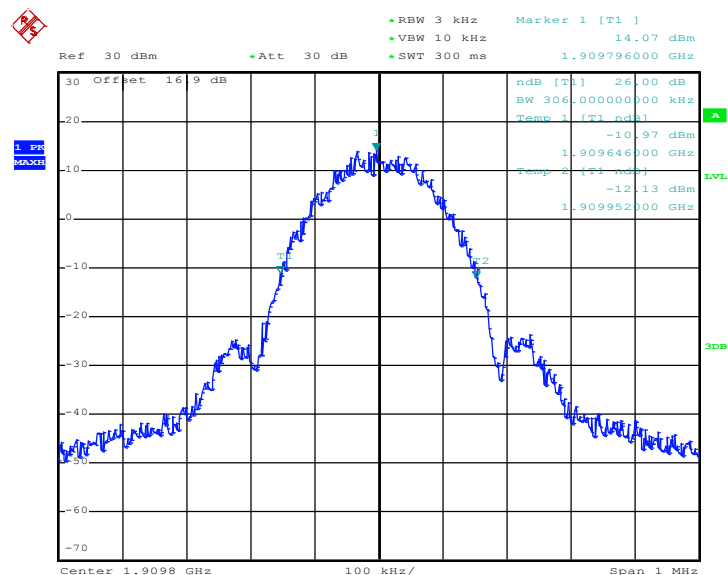


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 13.JUL.2012 13:46:19

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

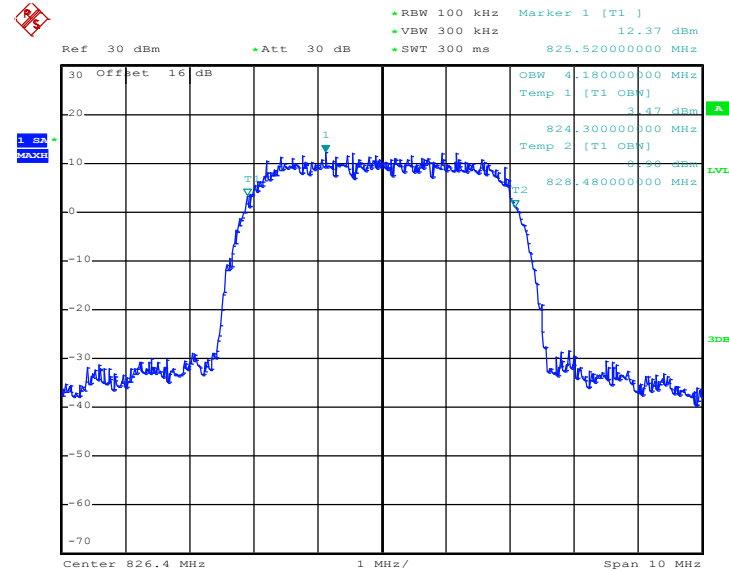


Date: 13.JUL.2012 13:45:01



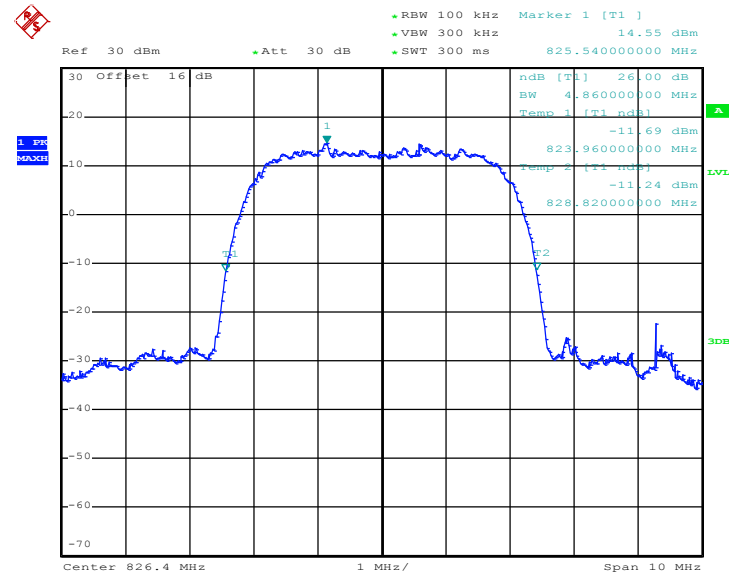
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link
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99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)

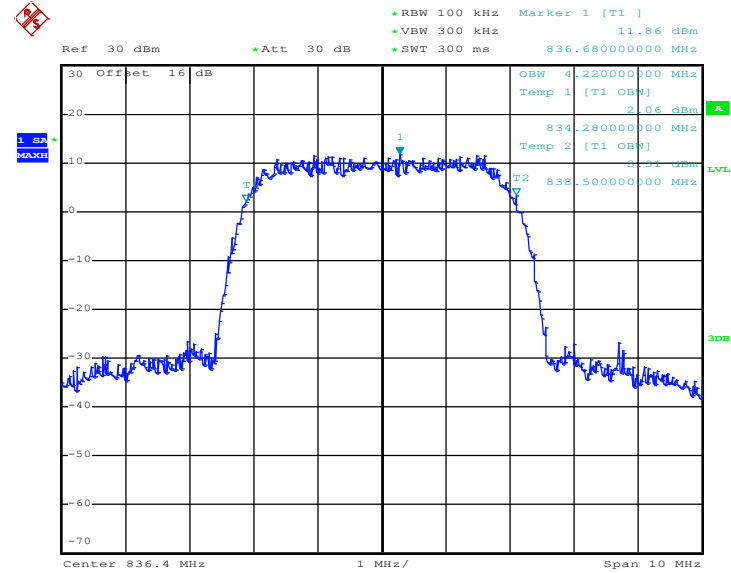


Date: 13.JUL.2012 14:44:35

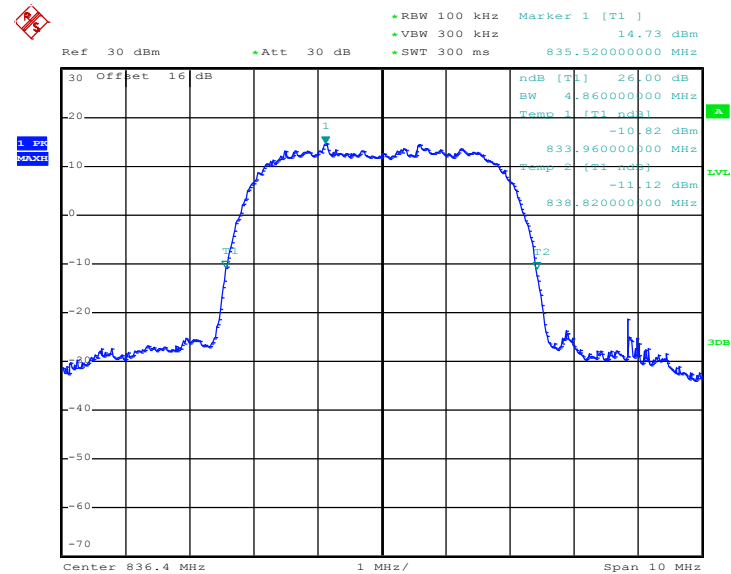
26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 13.JUL.2012 14:43:17

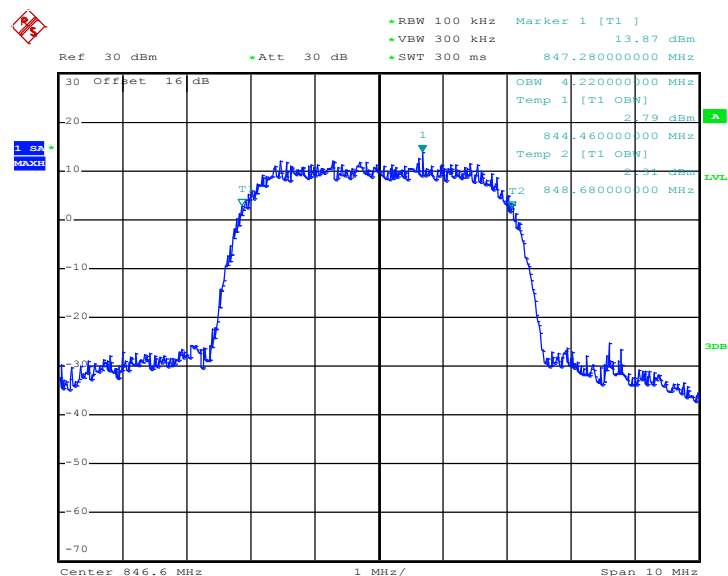
99% Occupied Bandwidth Plot on Channel 4182 (836.4 MHz)


Date: 13.JUL.2012 14:45:01

26dB Bandwidth Plot on Channel 4182 (836.4 MHz)


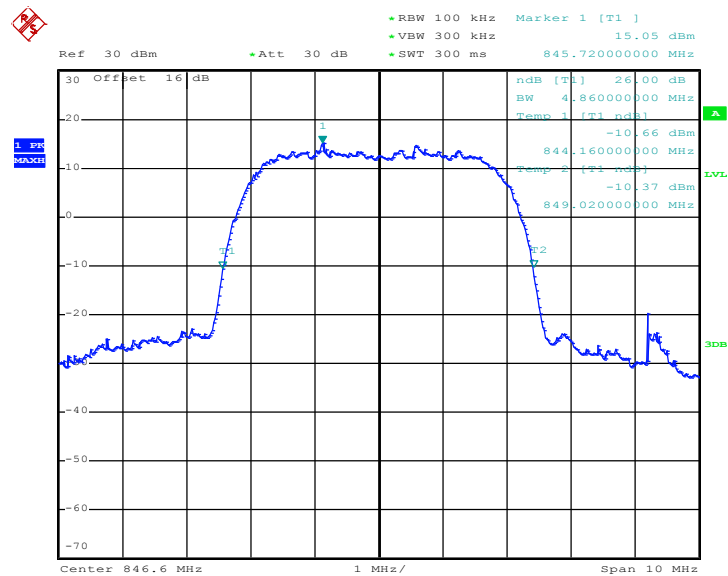
Date: 13.JUL.2012 14:43:43

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



Date: 13.JUL.2012 14:45:27

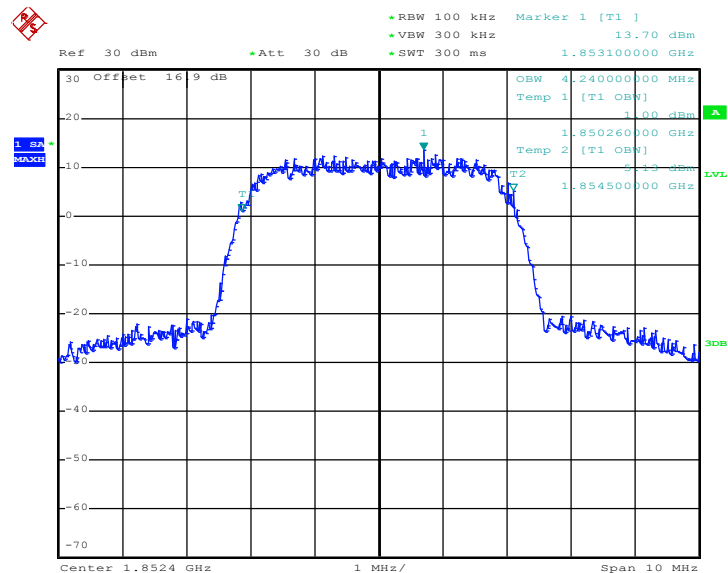
26dB Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 13.JUL.2012 14:44:09

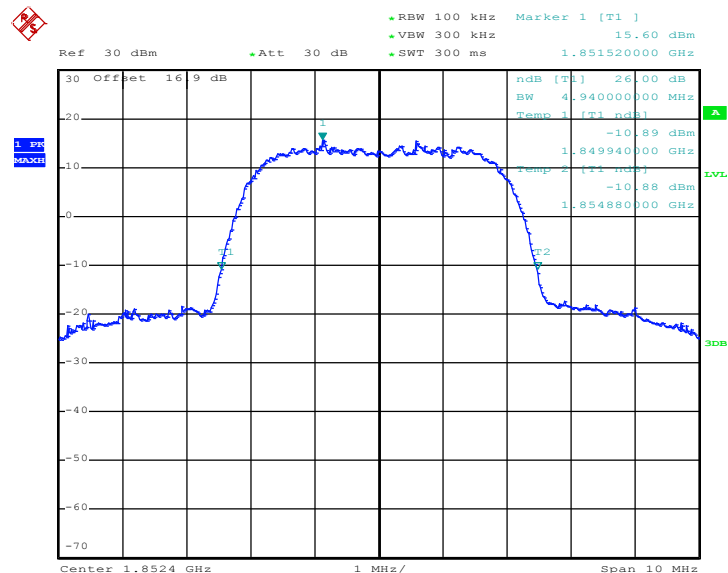
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link
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99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



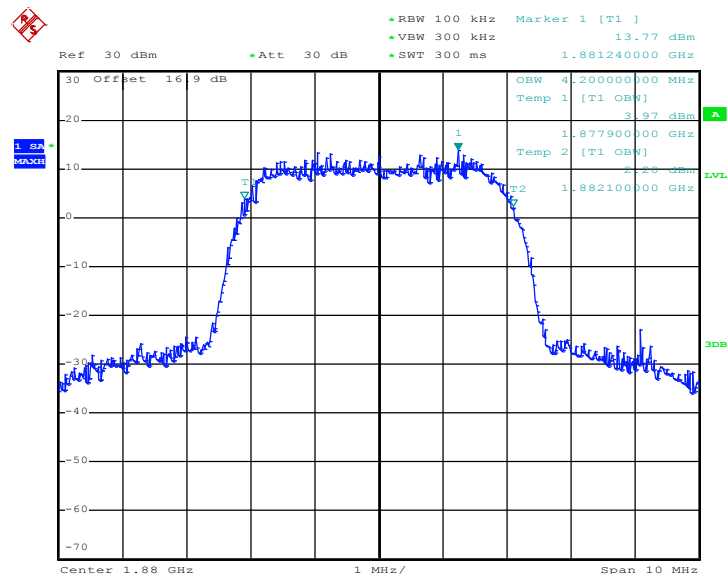
Date: 13.JUL.2012 14:54:50

26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



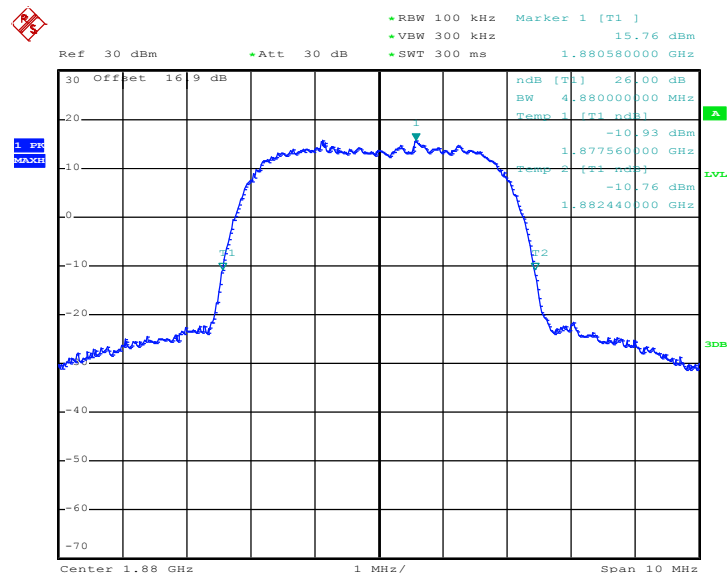
Date: 13.JUL.2012 14:53:32

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



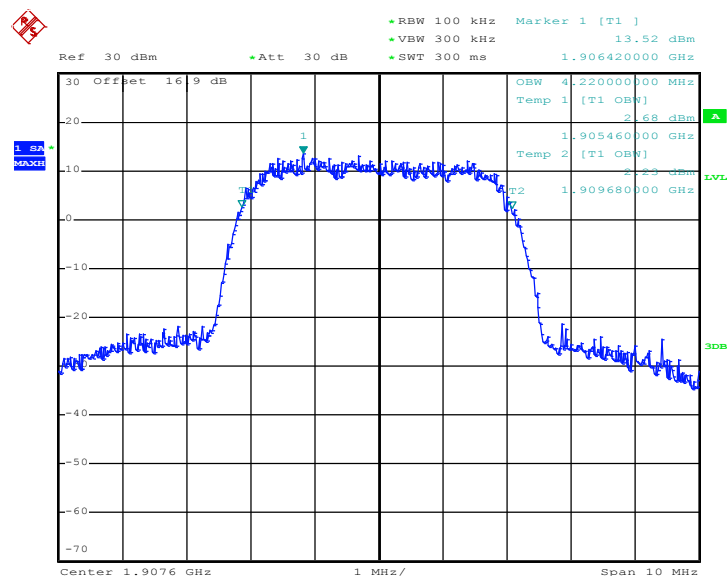
Date: 13.JUL.2012 14:55:16

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



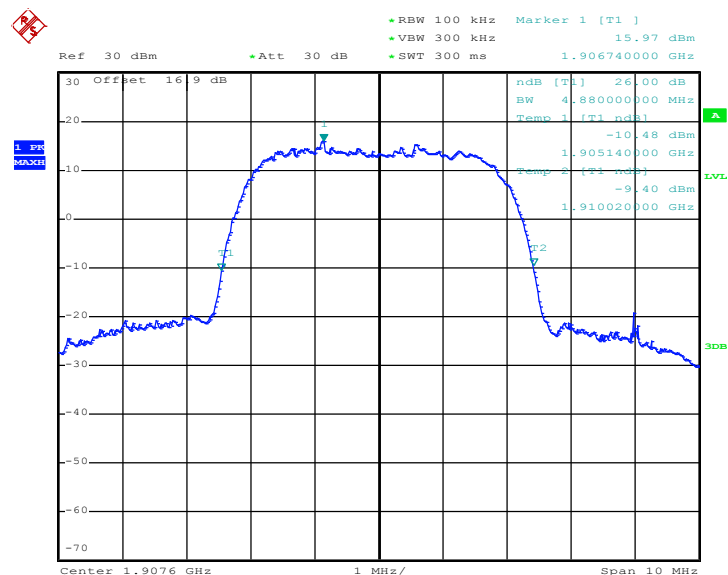
Date: 13.JUL.2012 14:53:58

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



Date: 13.JUL.2012 14:55:42

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 13.JUL.2012 14:54:24

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.

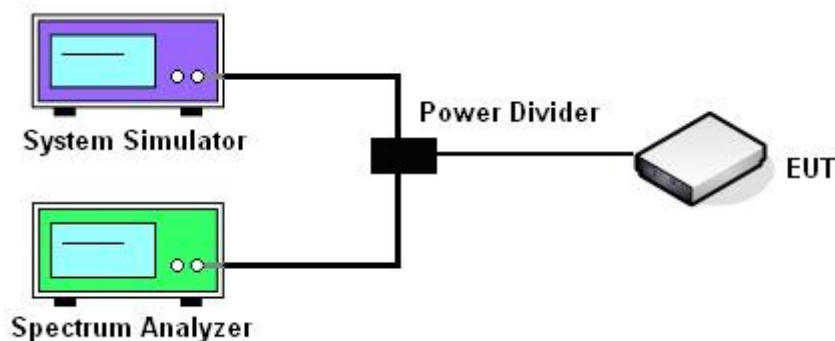
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.

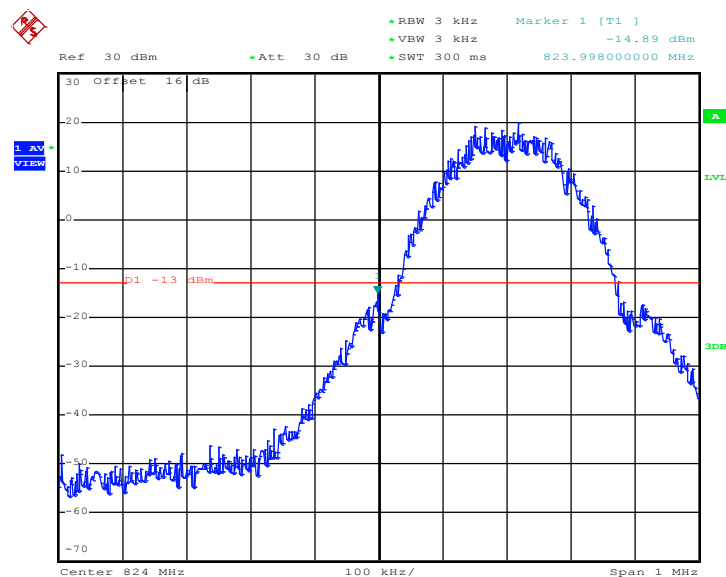
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	GSM850	Test Mode :	GPRS 8 Link
Correction Factor :	0.25dB	Maximum 26dB Bandwidth :	0.318MHz
Band Edge :	-14.64dBm	Measurement Value :	-14.89dBm

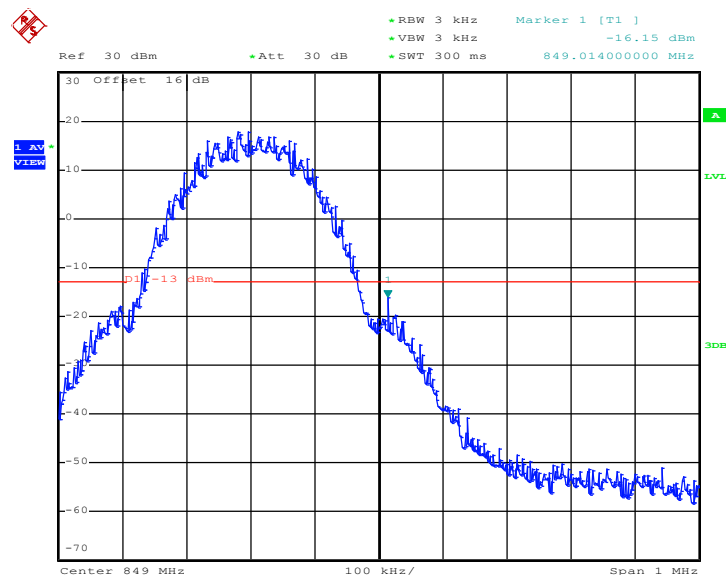
Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 13.JUL.2012 14:30:38

1. Correction Factor(dB)= $10\log(1\% \text{ Emission BW/RBW})$
 2. Band Edge= Measurement Value + Correction Factor(dB)
- For example, $-14.89\text{dBm} + 0.25\text{dB} = -14.64\text{dBm}$

Band :	GSM850	Test Mode :	GPRS 8 Link
Correction Factor :	0.25dB	Maximum 26dB Bandwidth :	0.318MHz
Band Edge :	-15.90dBm	Measurement Value :	-16.15dBm

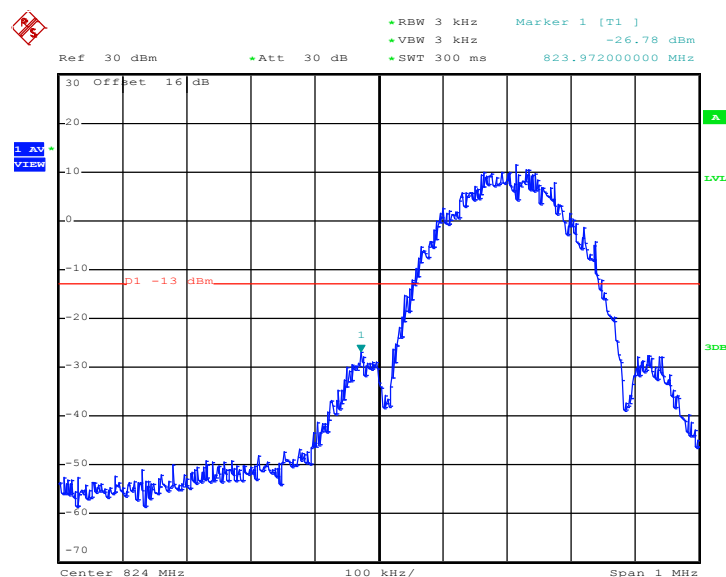
Higher Band Edge Plot on Channel 251 (848.8 MHz)


Date: 13.JUL.2012 14:31:04

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

Band :	GSM850	Test Mode :	EDGE 8 Link
Correction Factor :	0.11dB	Maximum 26dB Bandwidth :	0.308MHz
Band Edge :	-26.67dBm	Measurement Value :	-26.78dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)

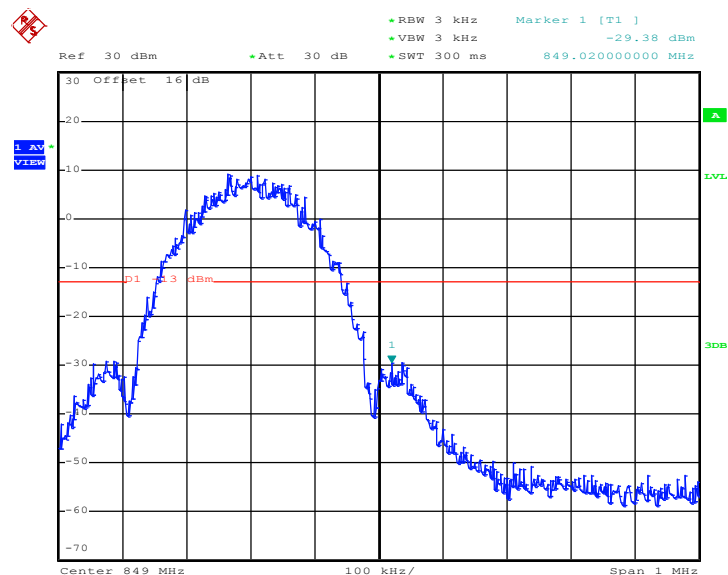


Date: 13.JUL.2012 13:33:55

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

Band :	GSM850	Test Mode :	EDGE 8 Link
Correction Factor :	0.11dB	Maximum 26dB Bandwidth :	0.308MHz
Band Edge :	-29.27dBm	Measurement Value :	-29.38dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



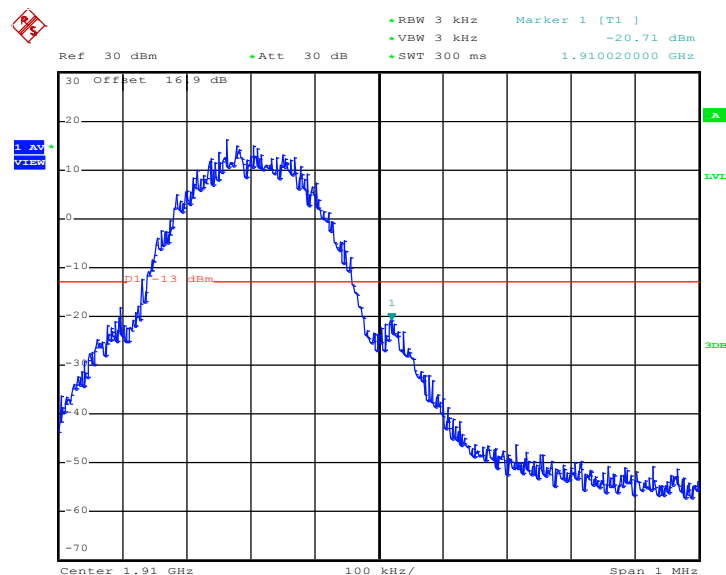
Date: 13.JUL.2012 13:34:21

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



1. *Correction Factor(dB)= 10log(1% Emission BW/RBW)*
2. *Band Edge= Measurement Value + Correction Factor(dB)*

Band :	GSM1900	Test Mode :	GPRS 8 Link
Correction Factor :	0.25dB	Maximum 26dB Bandwidth :	0.318MHz
Band Edge :	-20.46dBm	Measurement Value :	-20.71dBm

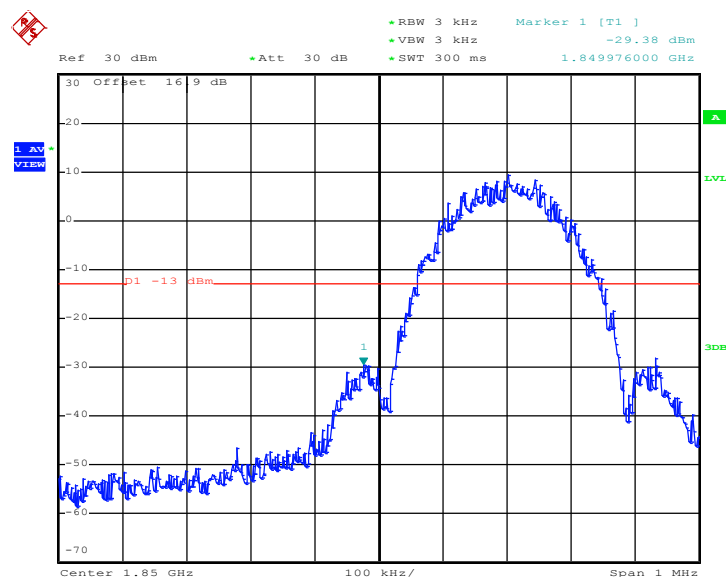
Higher Band Edge Plot on Channel 810 (1909.8 MHz)


Date: 13.JUL.2012 14:11:00

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

Band :	GSM1900	Test Mode :	EDGE 8 Link
Correction Factor :	0.17dB	Maximum 26dB Bandwidth :	0.312MHz
Band Edge :	-29.21dBm	Measurement Value :	-29.38dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



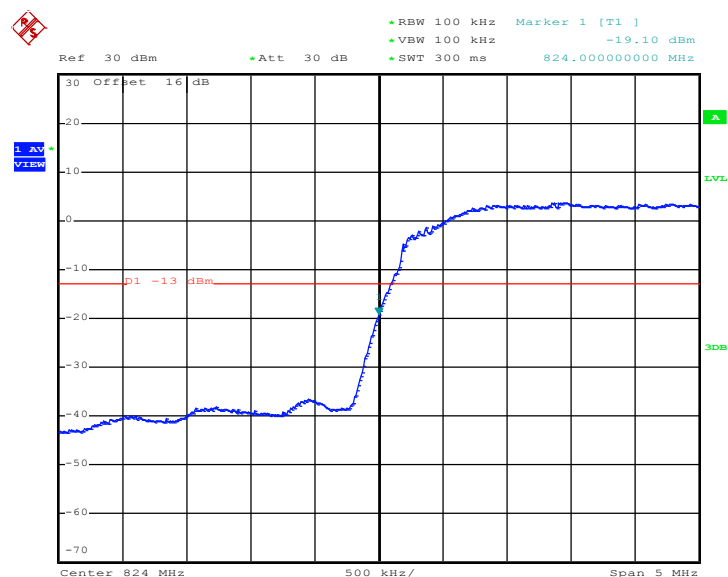
Date: 13.JUL.2012 13:50:03

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



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Report Issued Date : Sep. 06, 2012
Report Version : Rev. 02

Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.13dB	Maximum 26dB Bandwidth :	4.860MHz
Band Edge :	-22.23dBm	Measurement Value :	-19.10dBm

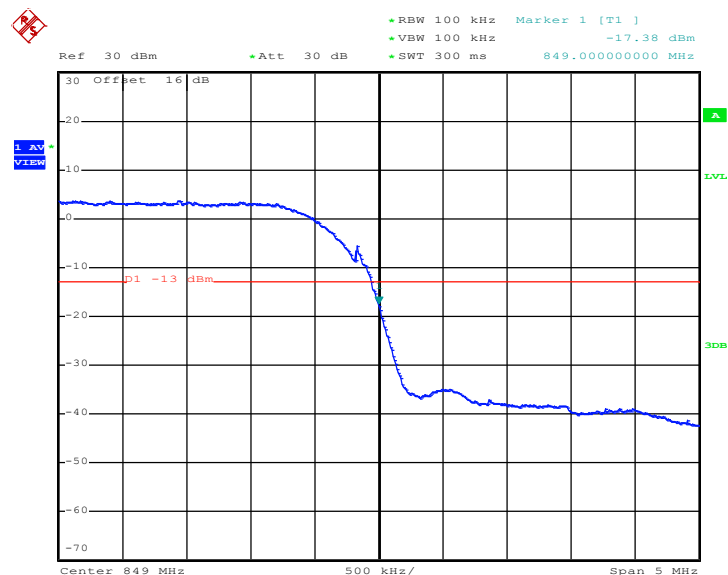
Lower Band Edge Plot on Channel 4132 (826.4 MHz)


Date: 13.JUL.2012 14:46:55

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

Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.13dB	Maximum 26dB Bandwidth :	4.860MHz
Band Edge :	-20.51dBm	Measurement Value :	-17.38dBm

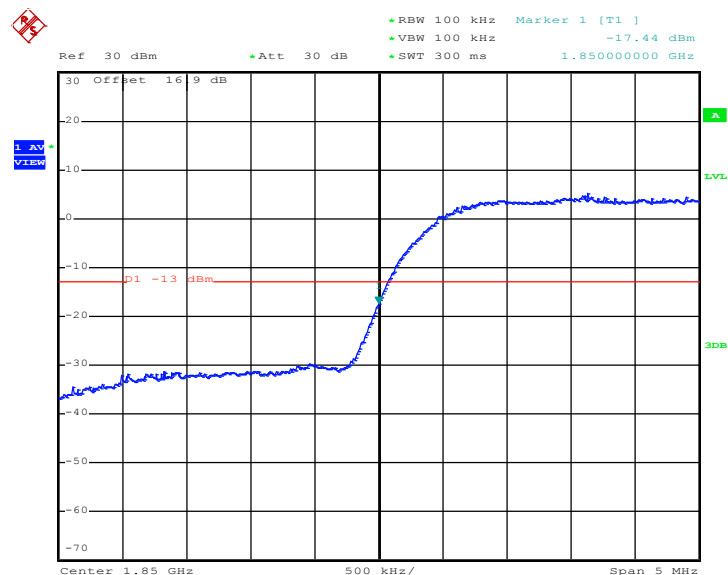
Higher Band Edge Plot on Channel 4233 (846.6 MHz)



Date: 13.JUL.2012 14:47:21

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

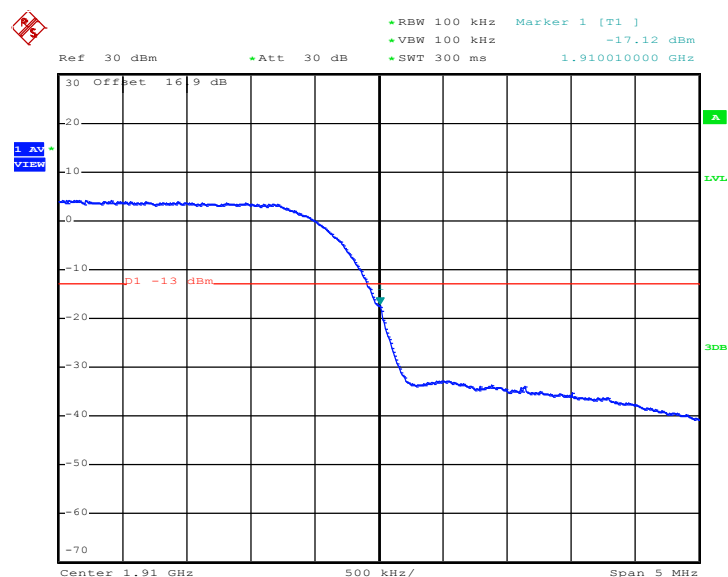
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.06dB	Maximum 26dB Bandwidth :	4.940MHz
Band Edge :	-20.50dBm	Measurement Value :	-17.44dBm

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)


Date: 13.JUL.2012 14:57:10

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

Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link
Correction Factor :	-3.06dB	Maximum 26dB Bandwidth :	4.940MHz
Band Edge :	-20.18dBm	Measurement Value :	-17.12dBm

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)


Date: 13.JUL.2012 14:57:36

1. Correction Factor(dB)= 10log(1% 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.

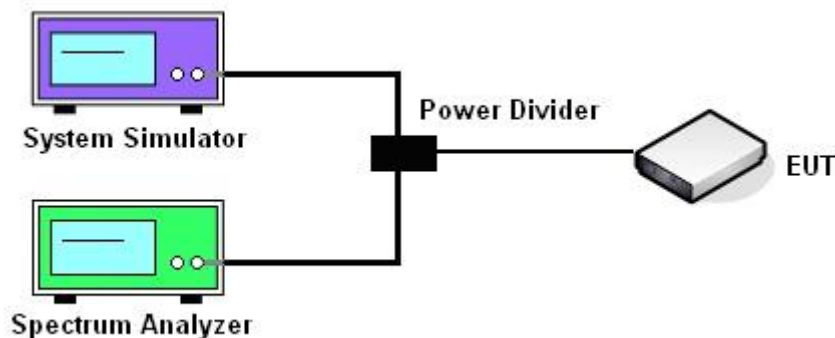
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

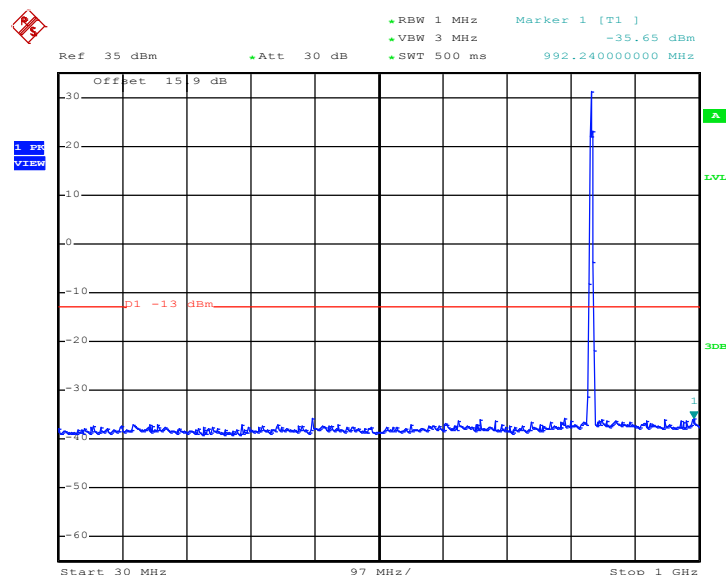
1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The middle channel for the highest RF power within the transmitting frequency was measured.
3. The conducted spurious emission for the whole frequency range was taken.

3.6.4 Test Setup

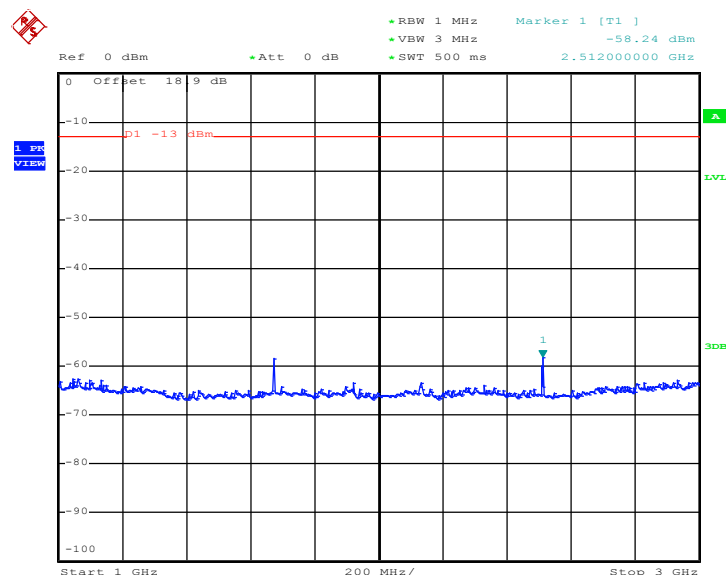


3.6.5 Test Result (Plots) of Conducted Spurious Emission

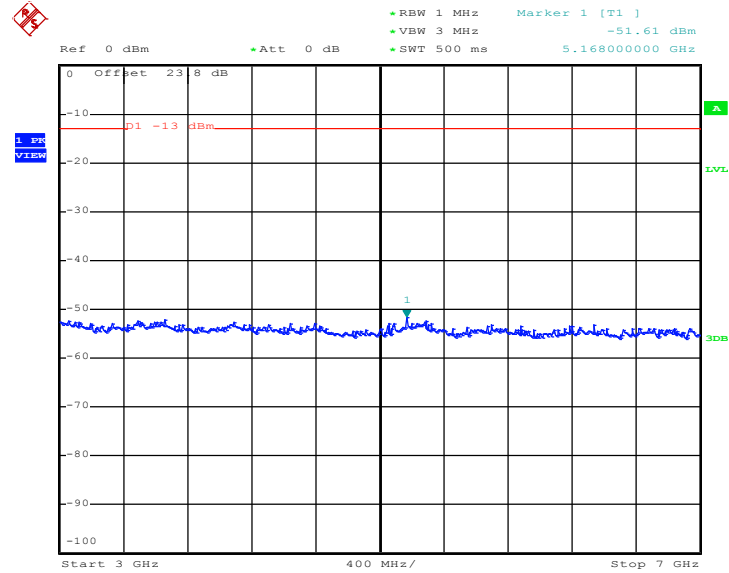
Band :	GSM850	Channel :	CH189
Test Mode :	GPRS 8 Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz


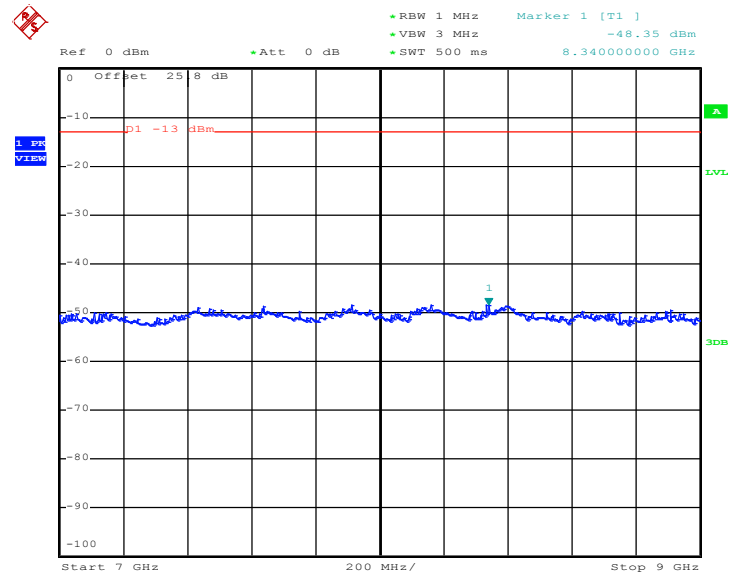
Date: 13.JUL.2012 14:15:57

Conducted Spurious Emission Plot between 1GHz ~ 3GHz


Date: 13.JUL.2012 14:16:19

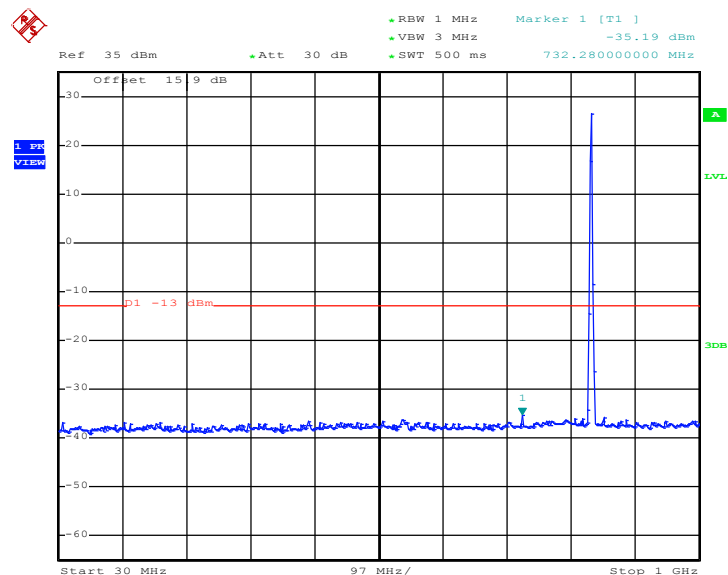
Conducted Spurious Emission Plot between 3GHz ~ 7GHz


Date: 13.JUL.2012 14:16:32

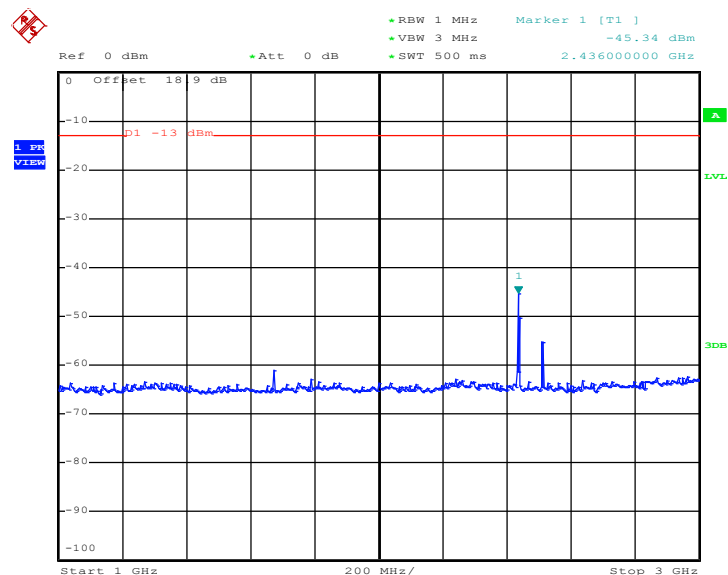
Conducted Spurious Emission Plot between 7GHz ~ 9GHz


Date: 13.JUL.2012 14:16:44

Band :	GSM850	Channel :	CH189
Test Mode :	EDGE 8 Link	Frequency :	836.4 MHz

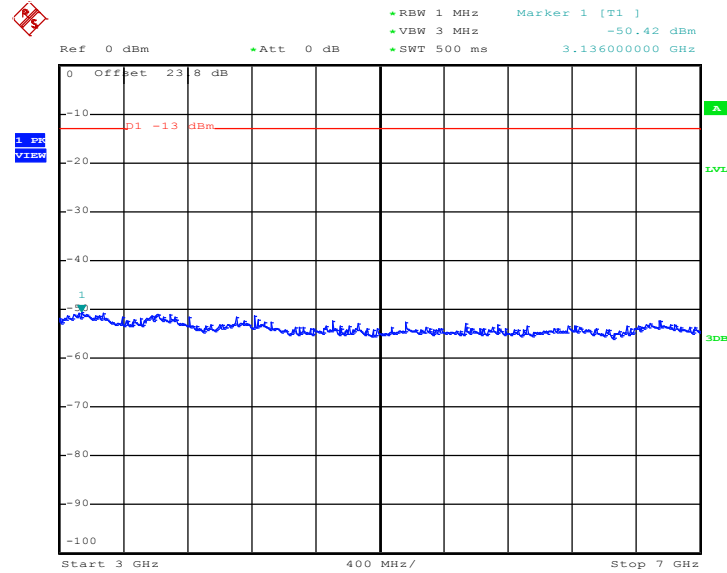
Conducted Spurious Emission Plot between 30MHz ~ 1GHz


Date: 16.JUL.2012 11:03:39

Conducted Spurious Emission Plot between 1GHz ~ 3GHz


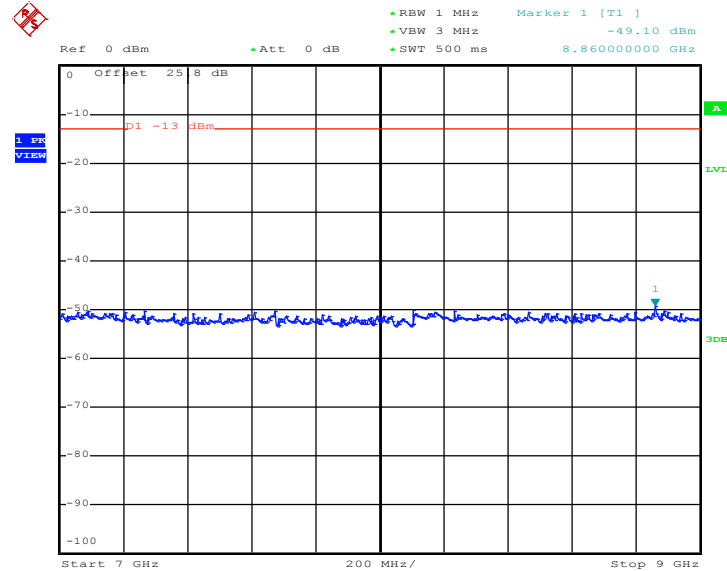
Date: 16.JUL.2012 11:03:55

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 16.JUL.2012 11:04:06

Conducted Spurious Emission Plot between 7GHz ~ 9GHz

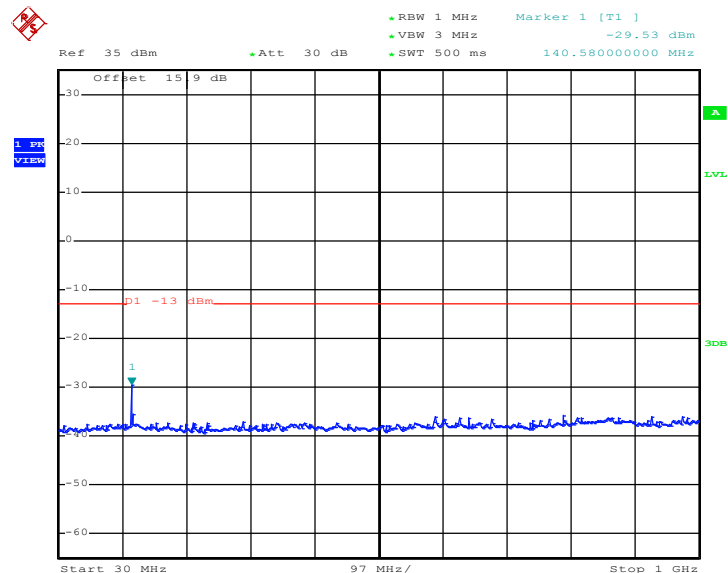


Date: 16.JUL.2012 11:04:18



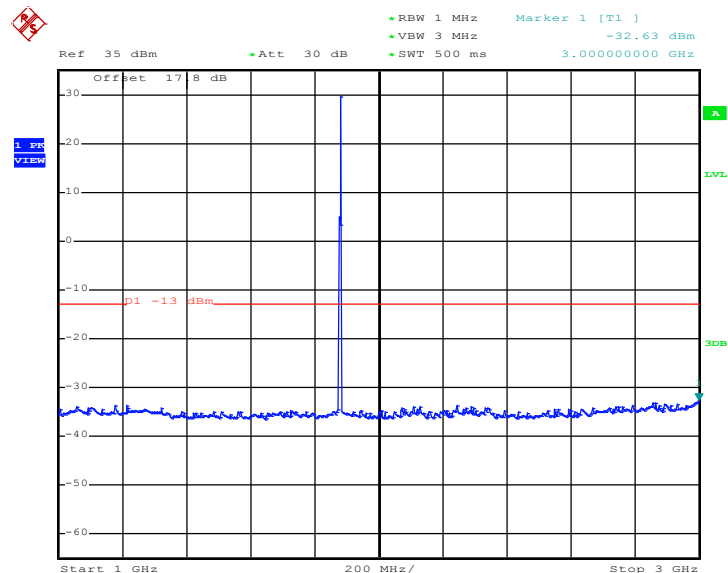
Band :	GSM1900	Channel :	CH661
Test Mode :	GPRS 8 Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz

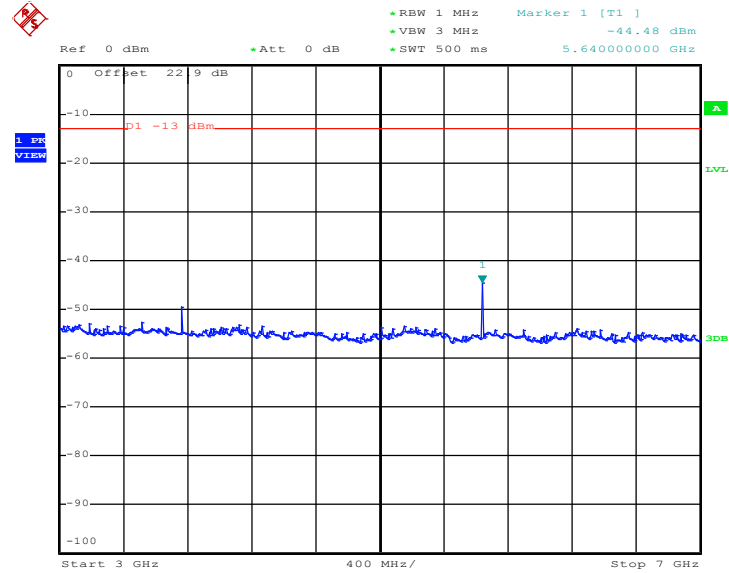


Date: 13.JUL.2012 14:02:34

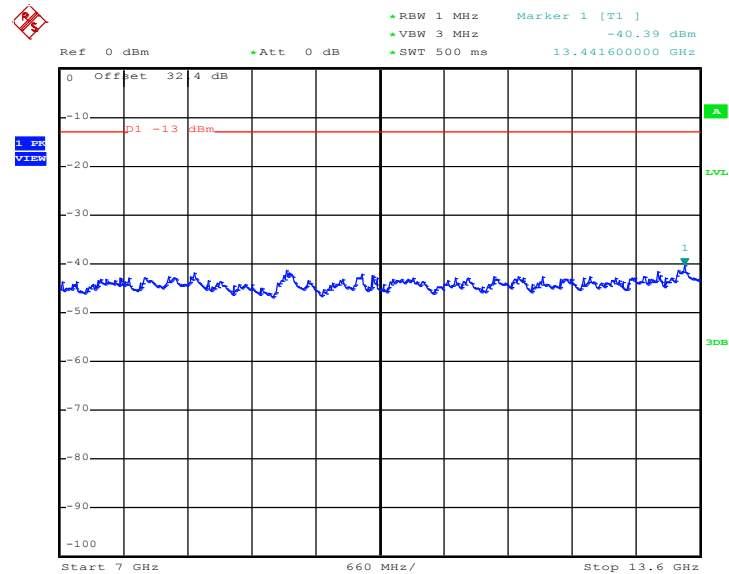
Conducted Spurious Emission Plot between 1GHz ~ 3GHz



Date: 13.JUL.2012 14:02:47

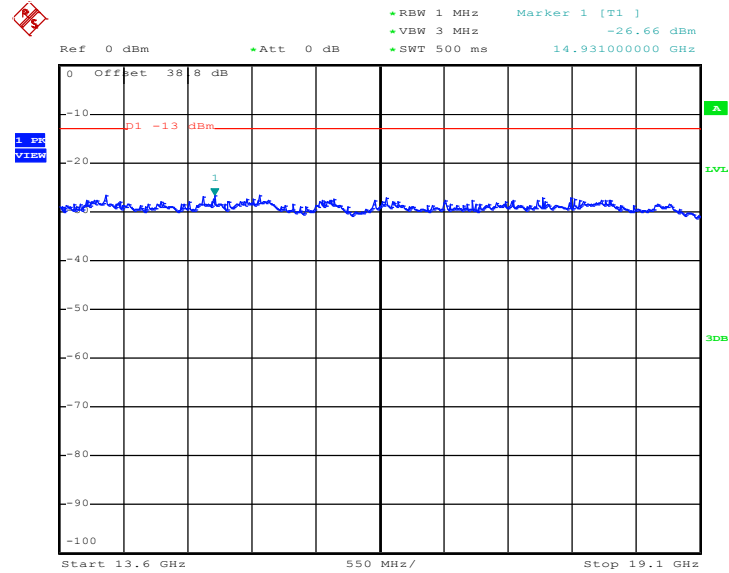
Conducted Spurious Emission Plot between 3GHz ~ 7GHz


Date: 13.JUL.2012 14:03:05

Conducted Emission Plot between 7GHz ~ 13.6GHz


Date: 13.JUL.2012 14:03:18

Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz

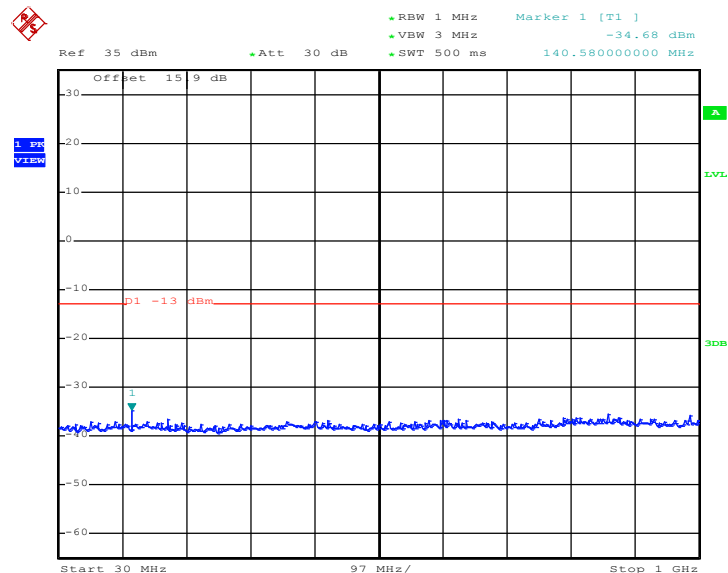


Date: 13.JUL.2012 14:03:30



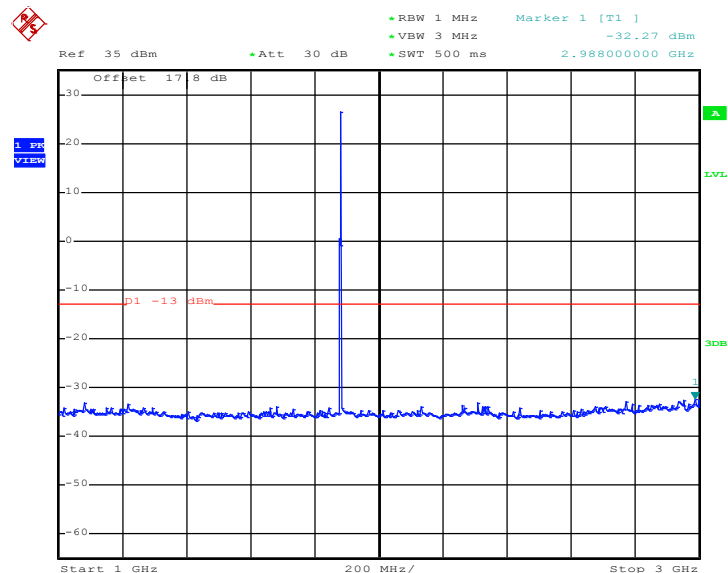
Band :	GSM1900	Channel :	CH661
Test Mode :	EDGE 8 Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



Date: 13.JUL.2012 13:52:41

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



Date: 13.JUL.2012 13:52:53



Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz





Ref 0 dBm +Att 0 dB +RBW 1 MHz Marker 1 [T1] -26.56 dBm
 +VBW 3 MHz +SWT 500 ms 18.74800000 GHz

0 Offset 38.8 dB
 -10
 -20
 -40
 -50
 -60
 -70
 -80
 -90
 -100

1.9%
 VIEW

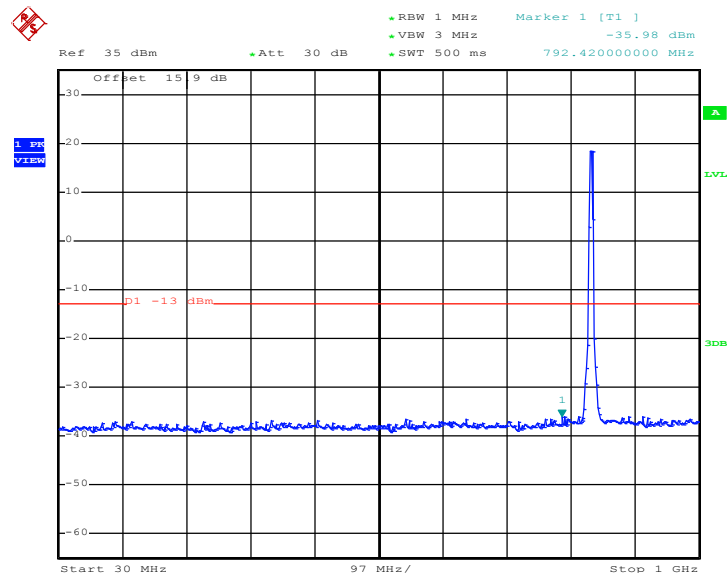
D1 -13 dBm
 1

Start 13.6 GHz 550 MHz/ Stop 19.1 GHz

Date: 13.JUL.2012 13:53:37

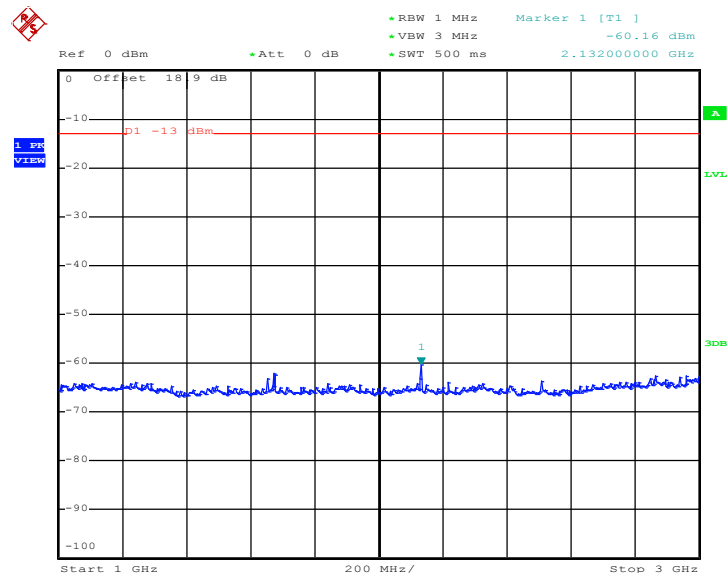
Band :	WCDMA Band V	Channel :	CH4182
Test Mode :	RMC 12.2Kbps Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



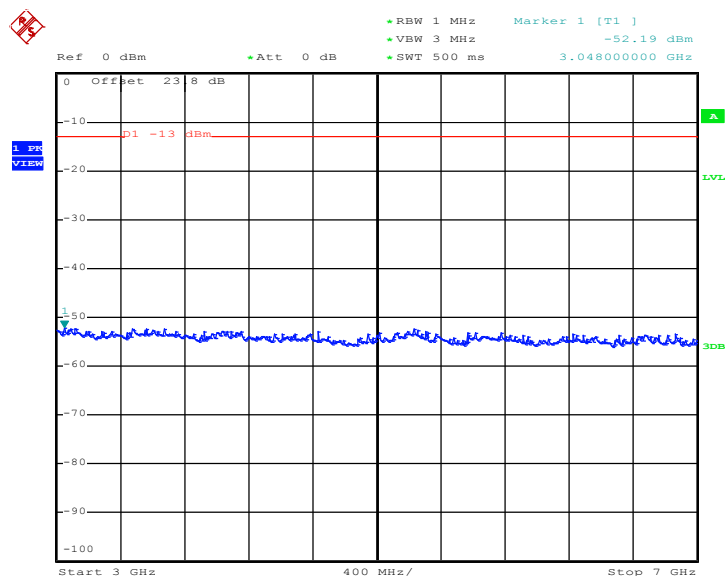
Date: 13.JUL.2012 14:41:47

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



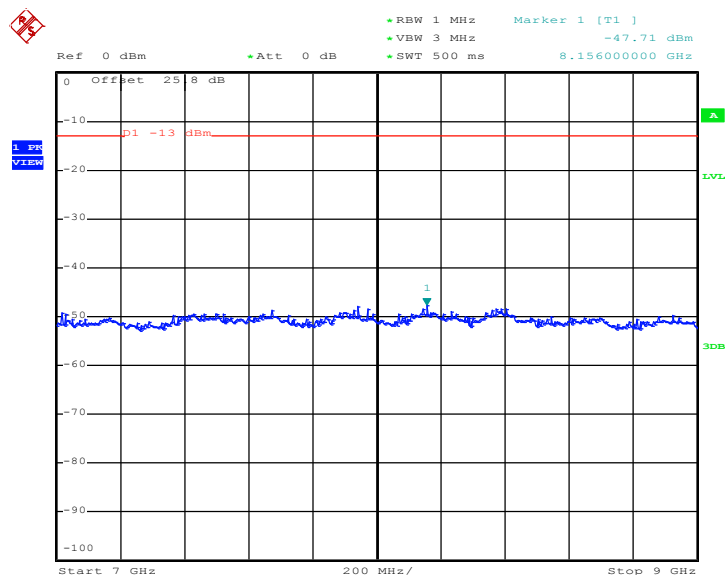
Date: 13.JUL.2012 14:42:05

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



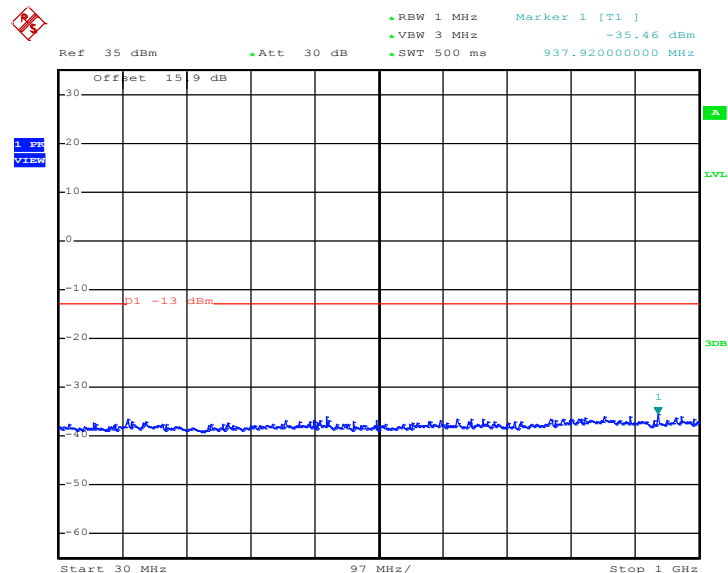
Date: 13.JUL.2012 14:42:18

Conducted Spurious Emission Plot between 7GHz ~ 9GHz

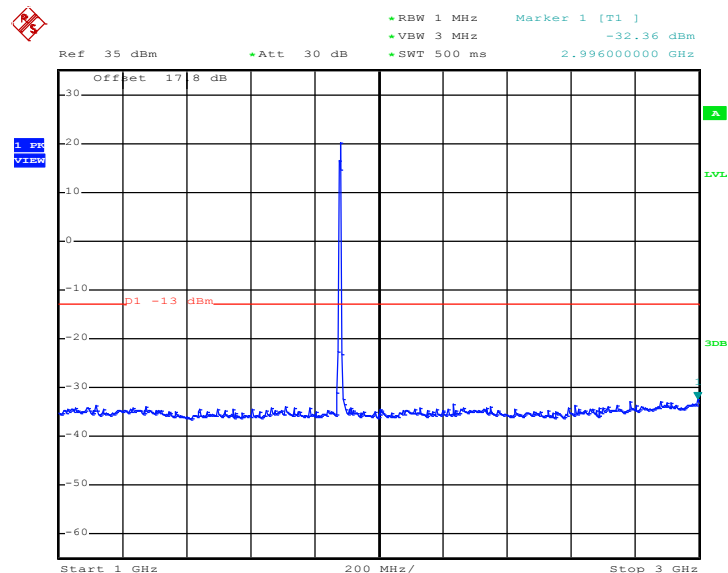


Date: 13.JUL.2012 14:42:30

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

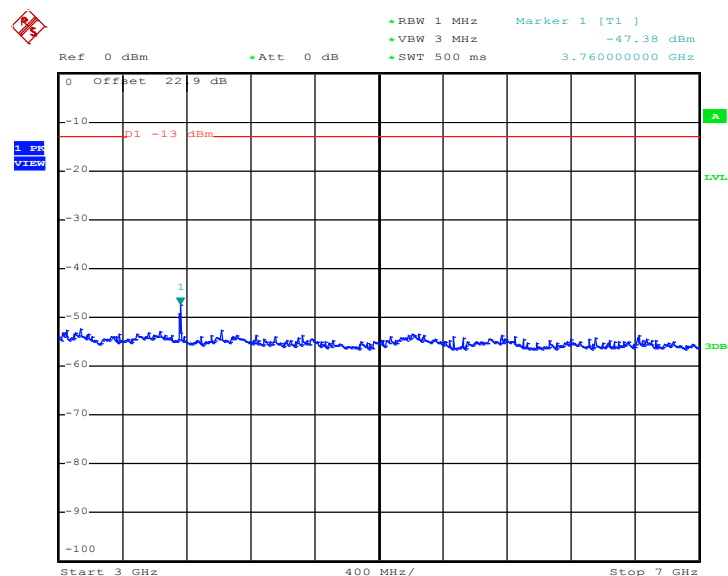
Conducted Spurious Emission Plot between 30MHz ~ 1GHz


Date: 13.JUL.2012 15:00:28

Conducted Spurious Emission Plot between 1GHz ~ 3GHz


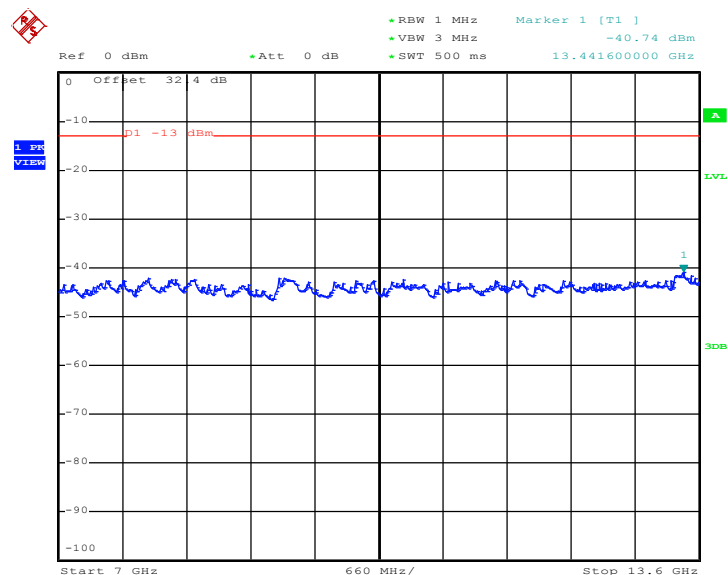
Date: 13.JUL.2012 15:00:40

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 13.JUL.2012 15:01:00

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 13.JUL.2012 15:01:12



Ref 0 dBm •Att 0 dB •RBW 1 MHz Marker 1 [T1] -26.58 dBm
 •VBW 3 MHz •SWT 500 ms 18.25300000 GHz

0 Offset 38.8 dB

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

Start 13.6 GHz 550 MHz/ Stop 19.1 GHz

Date: 13.JUL.2012 15:01:25

3.7 Field Strength of Spurious Radiation Measurement

3.7.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. 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

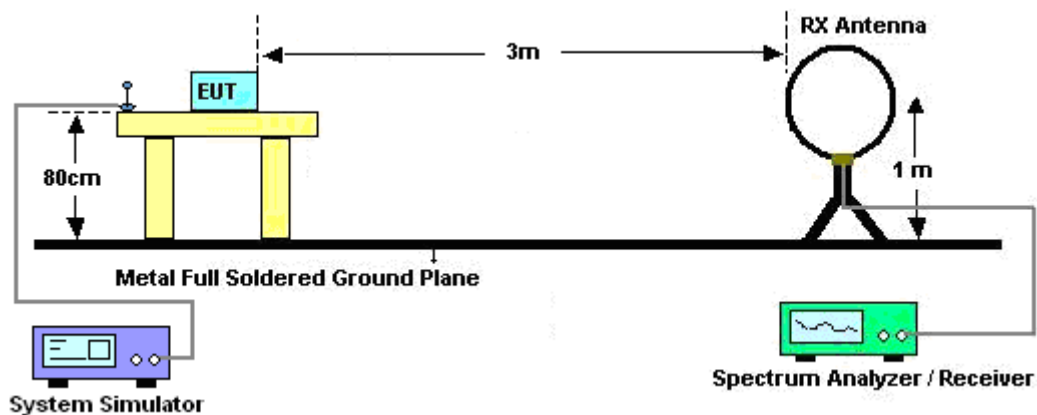
See list of measuring instruments of this test report.

3.7.3 Test Procedures

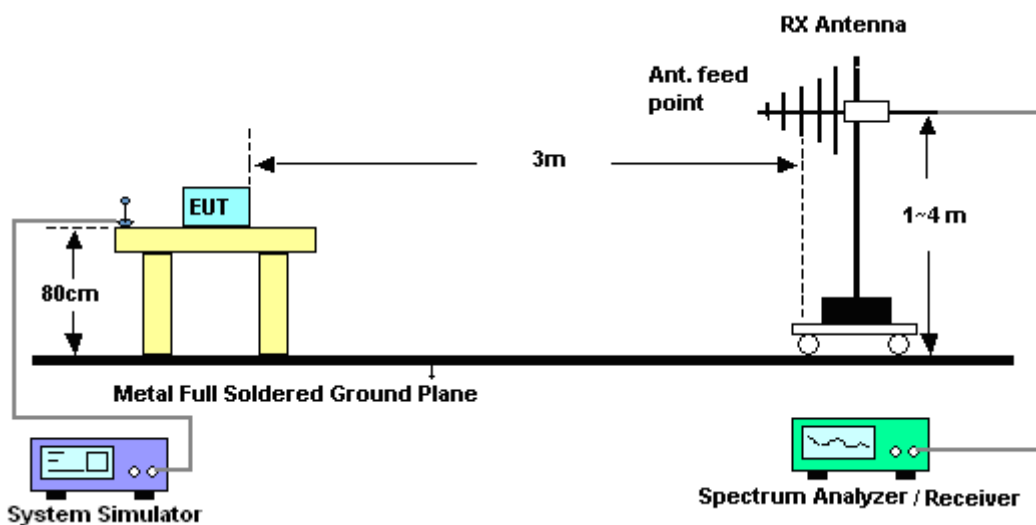
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$

3.7.4 Test Setup

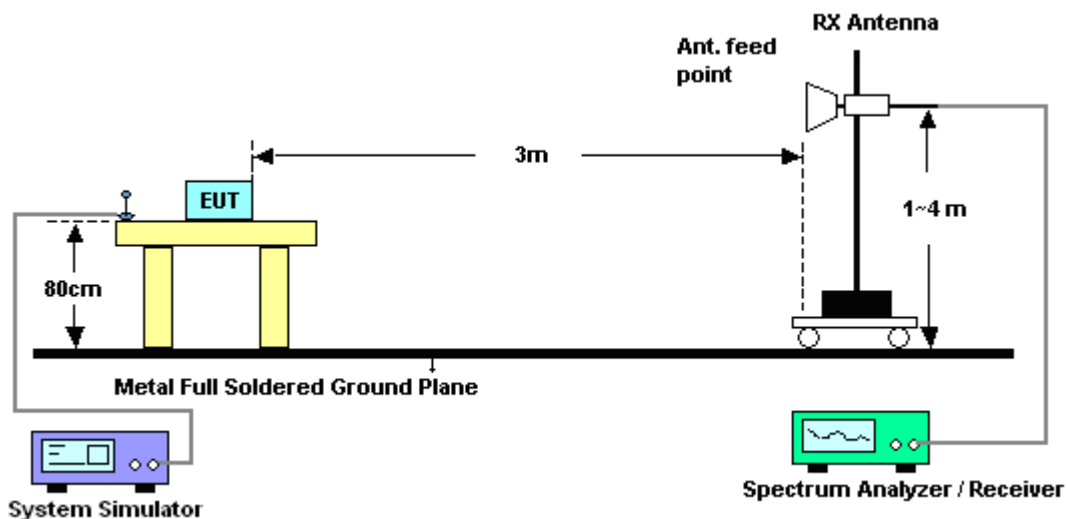
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

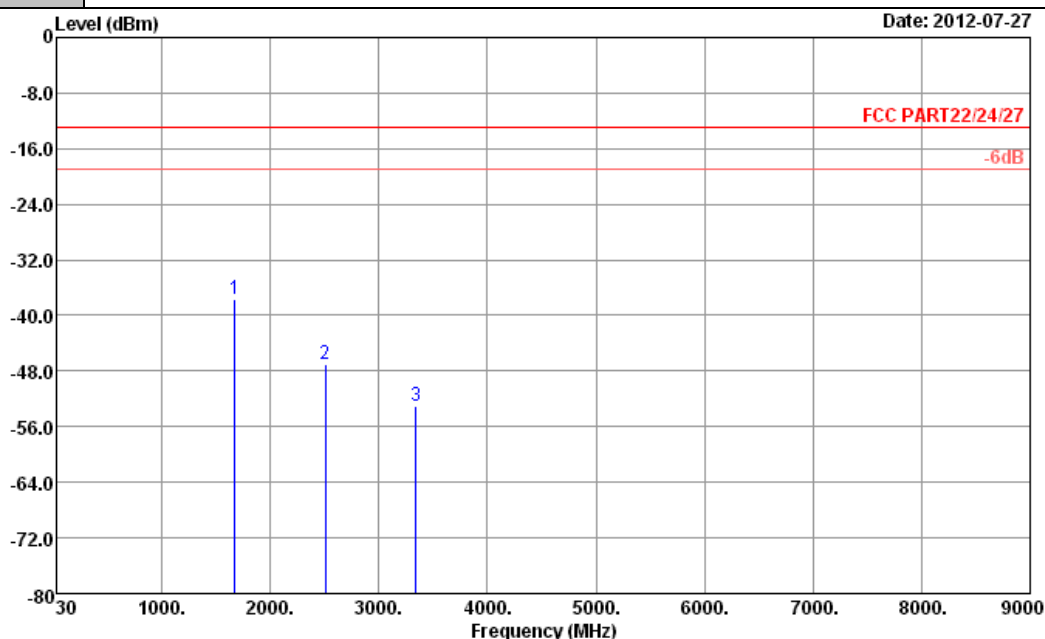


3.7.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.7.6 Test Result of Field Strength of Spurious Radiated

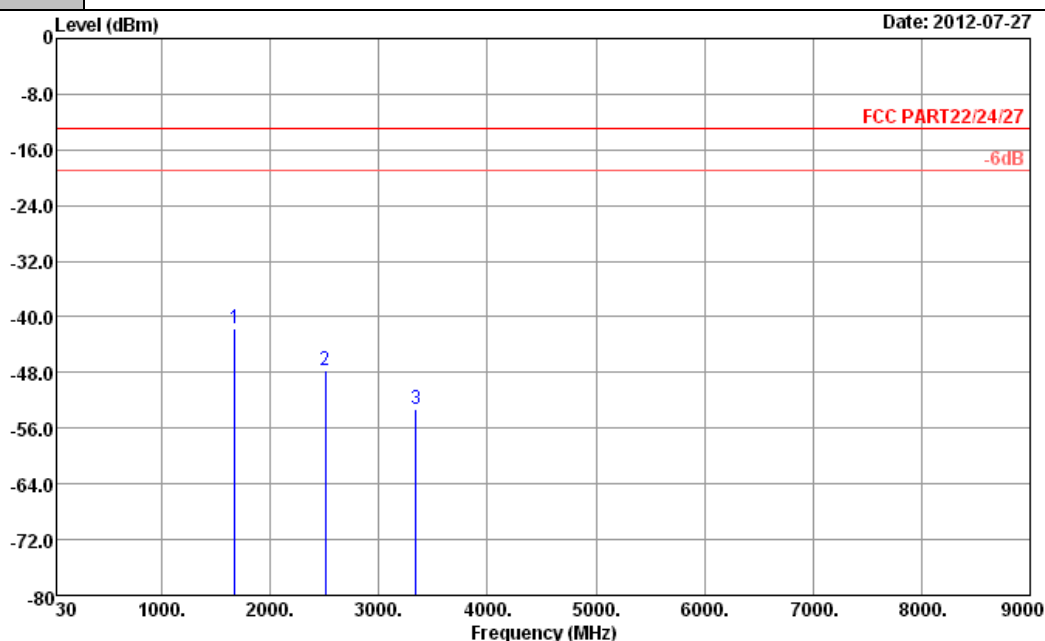
Band :	GSM850	Temperature :	22~23°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
 Project : FG 241855

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-37.71	-13	-24.71	-43.68	-38.9	2.15	5.49	H	Pass
2509	-46.91	-13	-33.91	-56.17	-48.8	2.38	6.41	H	Pass
3345	-53.01	-13	-40.01	-64.5	-56.34	2.86	8.34	H	Pass

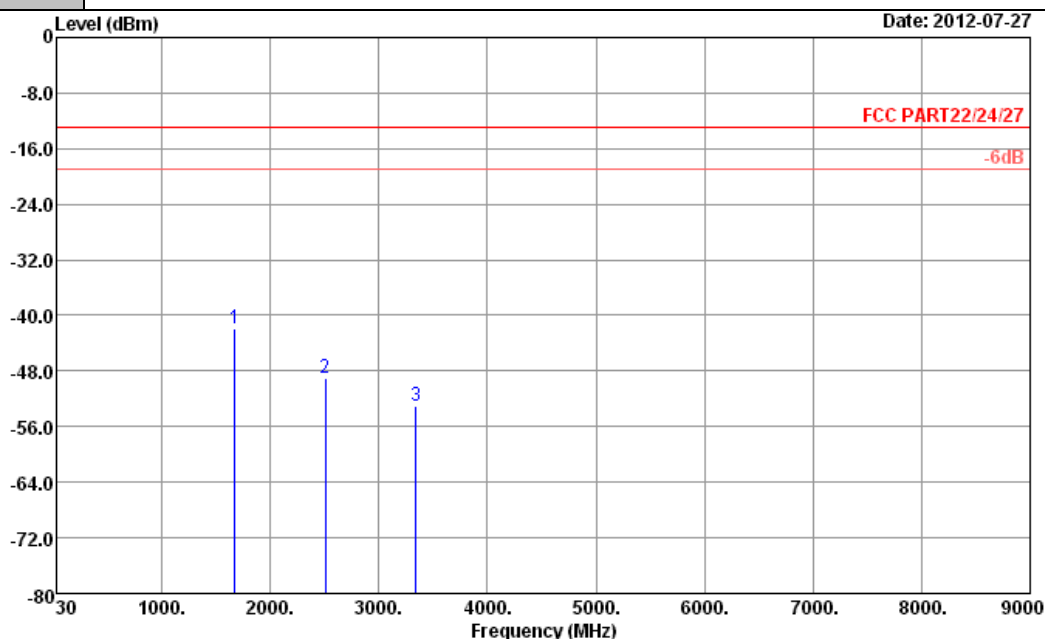
Band :	GSM850	Temperature :	22~23°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
 Project : FG 241855

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-41.61	-13	-28.61	-47.61	-42.8	2.15	5.49	V	Pass
2509	-47.61	-13	-34.61	-56.95	-49.5	2.38	6.41	V	Pass
3345	-53.27	-13	-40.27	-64.8	-56.6	2.86	8.34	V	Pass

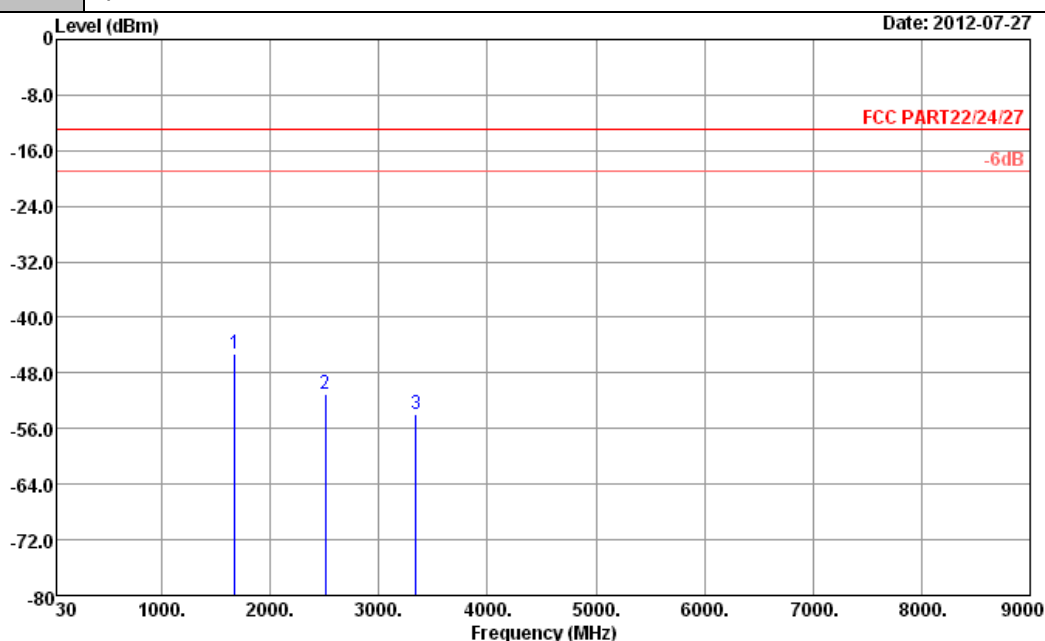
Band :	GSM850	Temperature :	22~23°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
 Project : FG 241855

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-41.99	-13	-28.99	-47.31	-43.18	2.15	5.49	H	Pass
2509	-49.02	-13	-36.02	-57.97	-50.91	2.38	6.41	H	Pass
3345	-53.10	-13	-40.10	-64.34	-56.43	2.86	8.34	H	Pass

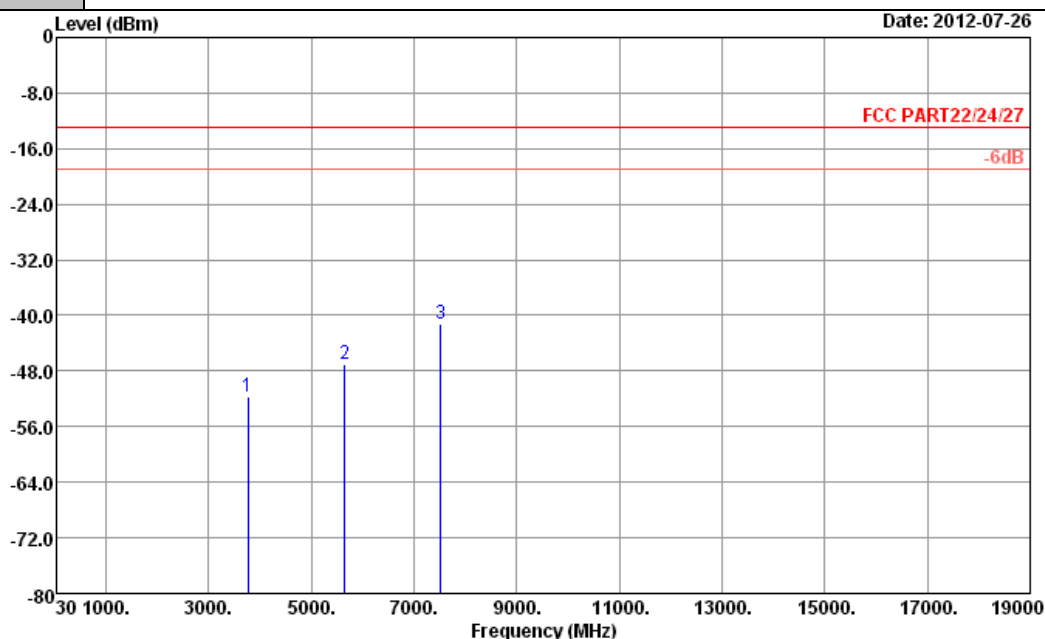
Band :	GSM850	Temperature :	22~23°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 241855

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-45.34	-13	-32.34	-51.42	-46.53	2.15	5.49	V	Pass
2509	-50.92	-13	-37.92	-59.47	-52.81	2.38	6.41	V	Pass
3345	-54.03	-13	-41.03	-65.13	-57.36	2.86	8.34	V	Pass

Band :	GSM1900	Temperature :	22~23°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

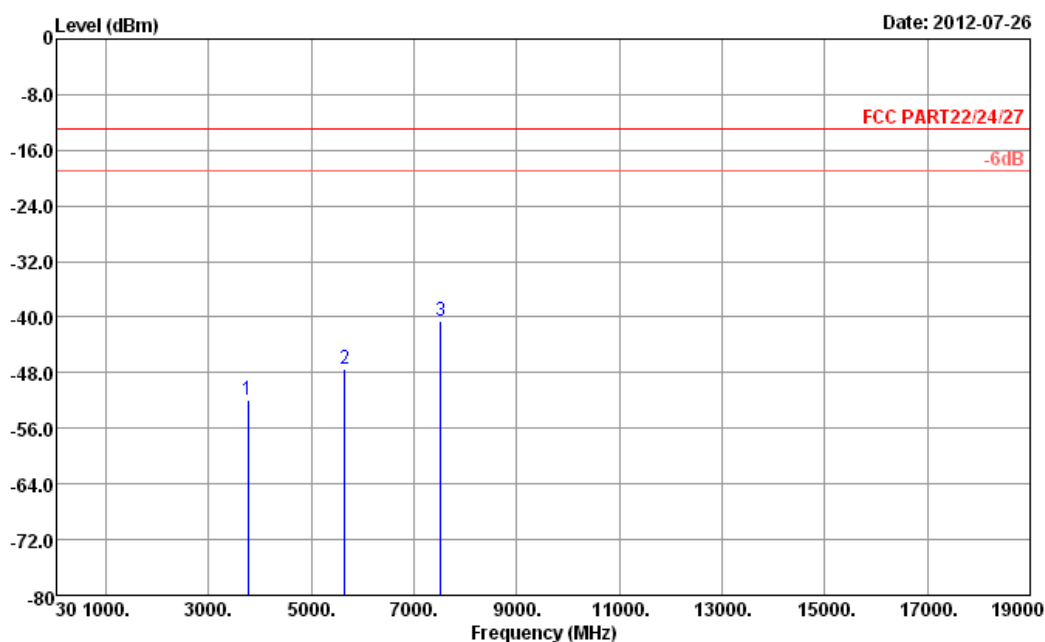


Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
 Project : FG 241855

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.67	-13	-38.67	-65.2	-57.8	2.9292	9.06	H	Pass
5640	-47.08	-13	-34.08	-65.91	-54	3.9072	10.83	H	Pass
7520	-41.28	-13	-28.28	-63.2	-49.3	4.5988	12.62	H	Pass



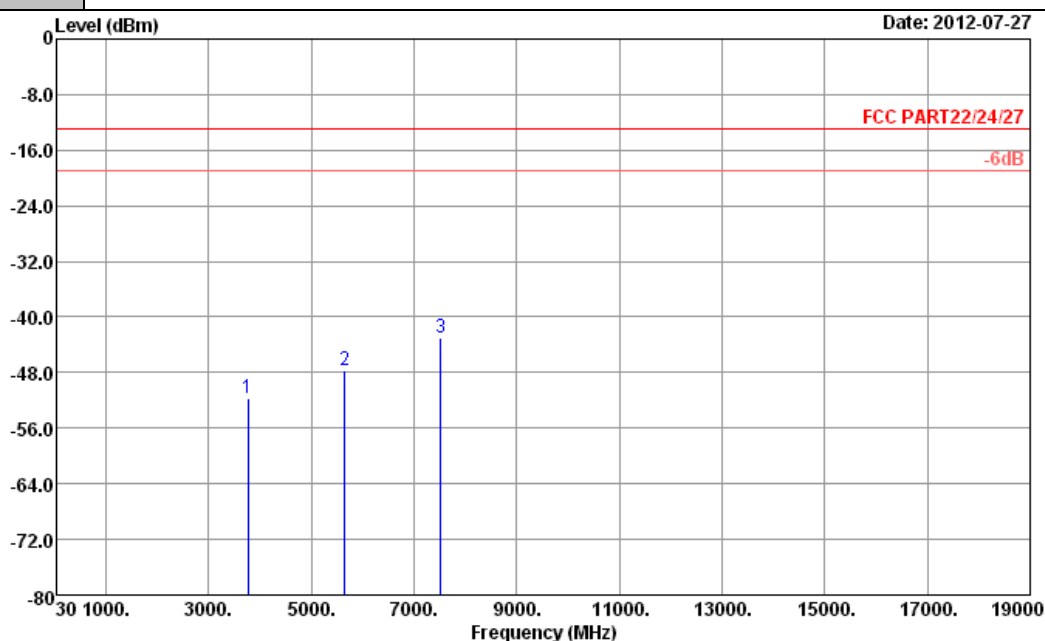
Band :	GSM1900	Temperature :	22~23°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : D3CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 241855

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-52.01	-13	-39.01	-65.44	-58.14	2.9292	9.06	V	Pass
5640	-47.38	-13	-34.38	-66.28	-54.3	3.9072	10.83	V	Pass
7520	-40.48	-13	-27.48	-62.58	-48.5	4.5988	12.62	V	Pass

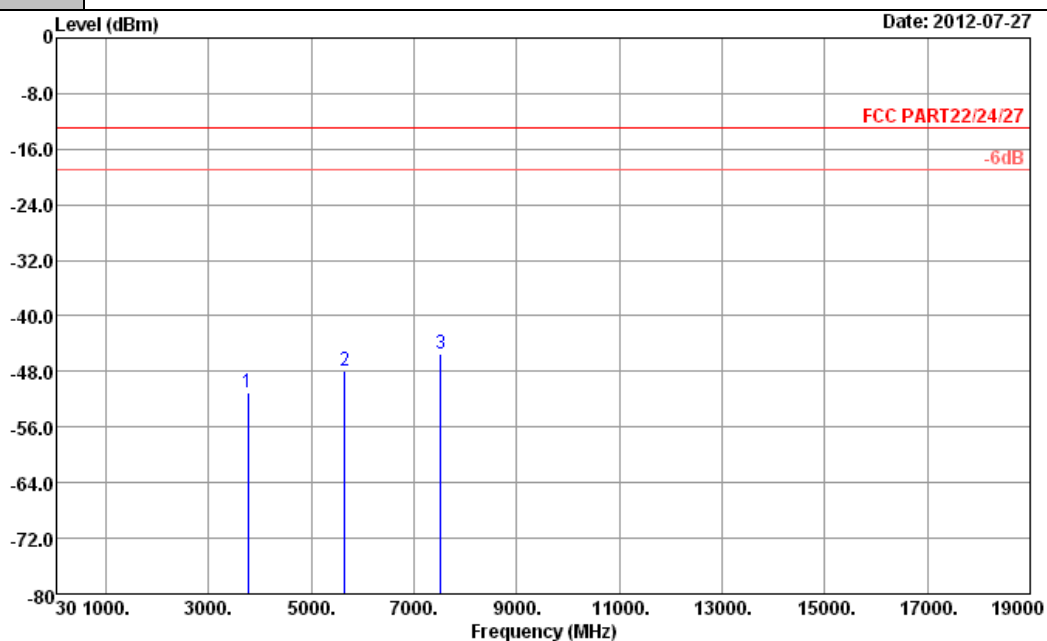
Band :	GSM1900	Temperature :	22~23°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
 Project : FG 241855

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.67	-13	-38.67	-65.1	-57.8	2.9292	9.06	H	Pass
5640	-47.68	-13	-34.68	-66.52	-54.6	3.9072	10.83	H	Pass
7520	-43.01	-13	-30.01	-64.94	-51.03	4.5988	12.62	H	Pass

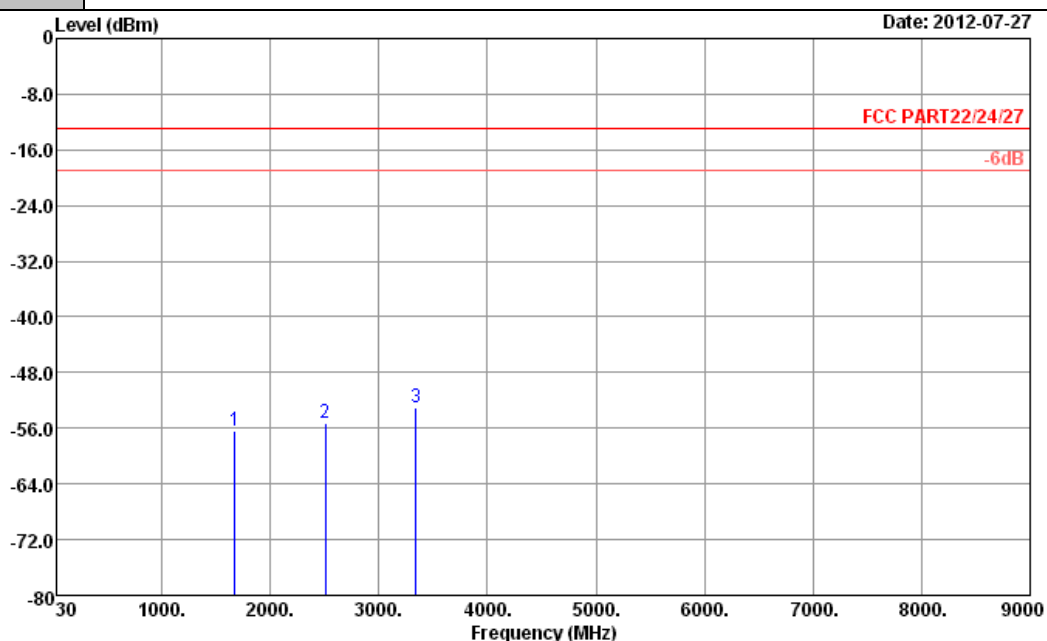
Band :	GSM1900	Temperature :	22~23°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
 Project : FG 241855

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.07	-13	-38.07	-64.52	-57.2	2.9292	9.06	V	Pass
5640	-47.88	-13	-34.88	-66.7	-54.8	3.9072	10.83	V	Pass
7520	-45.38	-13	-32.38	-67.33	-53.4	4.5988	12.62	V	Pass

Band :	WCDMA Band V	Temperature :	22~23°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

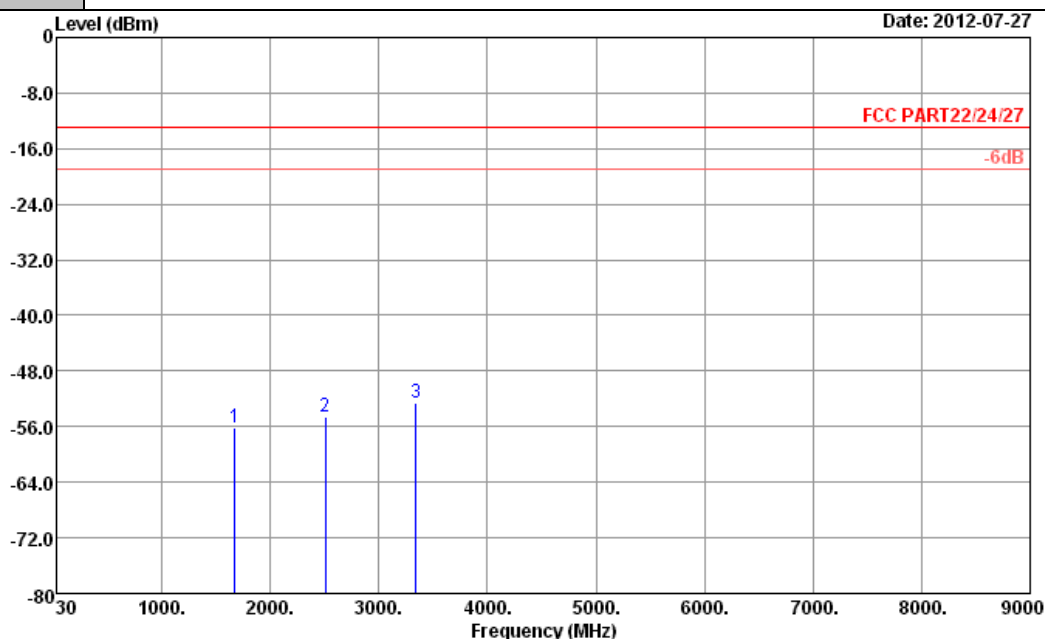


Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 HORIZONTAL
Project : FG 241855

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-56.47	-13	-43.47	-62.28	-57.66	2.15	5.49	H	Pass
2509	-55.32	-13	-42.32	-64.74	-57.21	2.38	6.41	H	Pass
3345	-52.96	-13	-39.96	-64.46	-56.29	2.86	8.34	H	Pass



Band :	WCDMA Band V	Temperature :	22~23°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

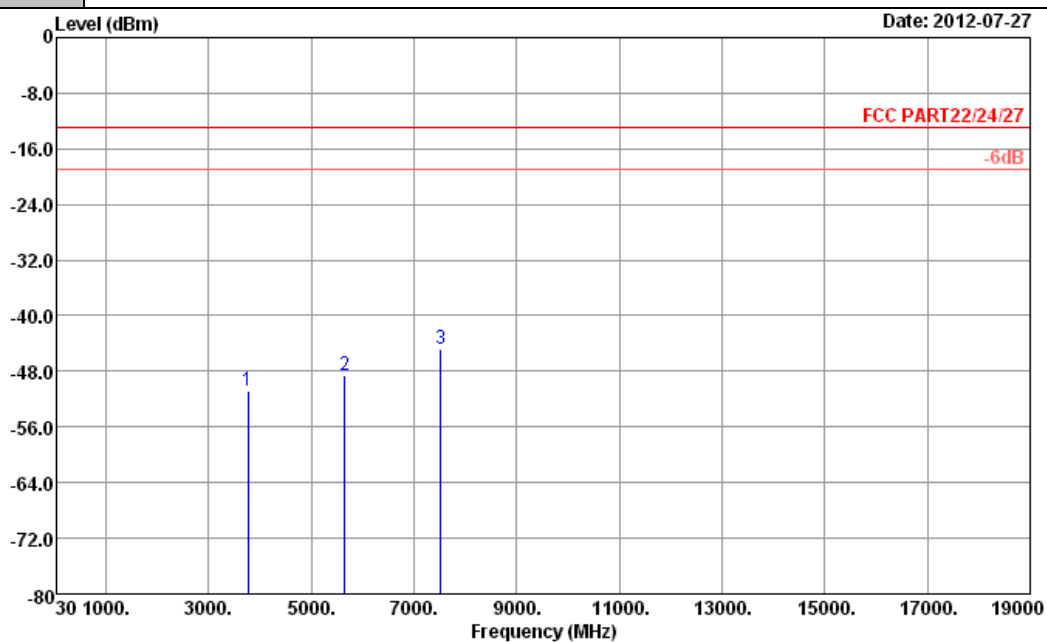


Site : 03CH05-HY
 Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
 Project : FG 241855

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-56.07	-13	-43.07	-61.37	-57.26	2.15	5.49	V	Pass
2509	-54.52	-13	-41.52	-63.59	-56.41	2.38	6.41	V	Pass
3345	-52.64	-13	-39.64	-63.87	-55.97	2.86	8.34	V	Pass



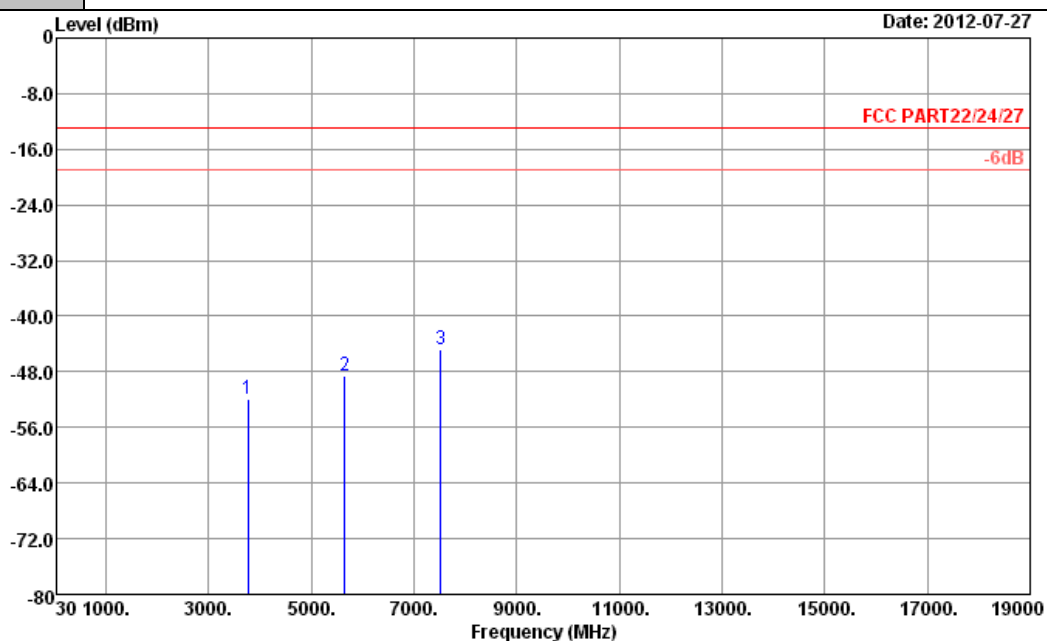
Band :	WCDMA Band II	Temperature :	22~23°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.77	-13	-37.77	-64.21	-56.9	2.9292	9.06	H	Pass
5640	-48.48	-13	-35.48	-67.37	-55.4	3.9072	10.83	H	Pass
7520	-44.88	-13	-31.88	-66.78	-52.9	4.5988	12.62	H	Pass



Band :	WCDMA Band II	Temperature :	22~23°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	42~43%
Test Engineer :	Kai Wang, Luke Chang, and Elvis Chen	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
Condition : FCC PART22/24/27 HF_EIRP_101221 VERTICAL
Project : FG 241855

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.87	-13	-38.87	-65.4	-58	2.9292	9.06	V	Pass
5640	-48.68	-13	-35.68	-67.56	-55.6	3.9072	10.83	V	Pass
7520	-44.78	-13	-31.78	-66.75	-52.8	4.5988	12.62	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

See list of measuring instruments of this test report.

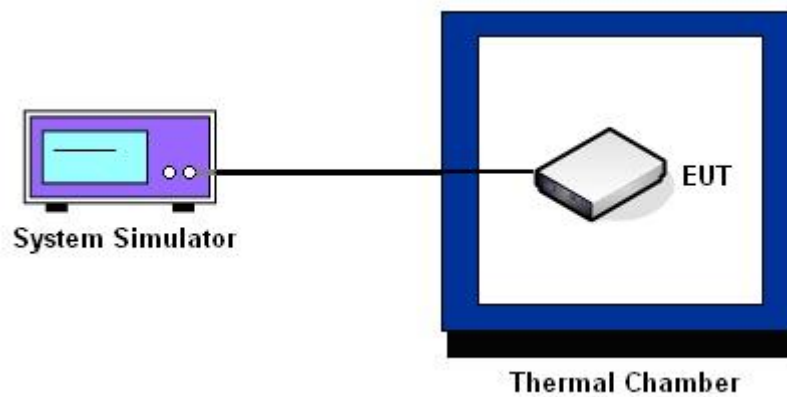
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. 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.
3. With power OFF, the temperature was raised in 10°C step 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.
4. If the EUT cannot be turned on at -30°C , the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

3.8.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the base station.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. 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)	GPRS 8		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	39	0.05	48	0.06	PASS
-20	33	0.04	46	0.05	
-10	-36	-0.04	43	0.05	
0	-40	-0.05	-46	-0.05	
10	-42	-0.05	-38	-0.04	
20	-45	-0.05	-49	-0.06	
30	-50	-0.06	-49	-0.06	
40	-54	-0.06	-51	-0.06	
50	-43	-0.05	54	0.06	

Band :	GSM 1900	Channel :	661
Limit (ppm) :	2.5	Frequency :	1880.0 MHz

Temperature (°C)	GPRS 8		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-88	-0.05	-91	-0.05	PASS
-20	-85	-0.04	-87	-0.05	
-10	-83	-0.04	-89	-0.05	
0	-80	-0.04	-83	-0.04	
10	70	0.04	-66	-0.03	
20	79	0.04	74	0.04	
30	77	0.04	70	0.04	
40	72	0.04	73	0.04	
50	-77	-0.04	-83	-0.04	

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)	
-30	19	0.02	PASS
-20	15	0.02	
-10	13	0.02	
0	13	0.02	
10	25	0.03	
20	21	0.02	
30	26	0.03	
40	23	0.03	
50	29	0.03	

Band :	WCDMA Band II	Channel :	9400
Limit (ppm) :	2.5	Frequency :	1880.0 MHz

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	29	0.02	PASS
-20	24	0.01	
-10	26	0.01	
0	-31	-0.02	
10	33	0.02	
20	38	0.02	
30	42	0.02	
40	39	0.02	
50	-36	-0.02	

3.8.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GPRS 8	14.0	-36	-0.04	2.5	PASS
		BEP	-31	-0.04		
		15.4	-40	-0.05		
	EDGE 8	14.0	-38	-0.04		
		BEP	36	0.04		
		15.4	-45	-0.05		
GSM 1900 CH661	GPRS 8	14.0	-55	-0.03		
		BEP	58	0.03		
		15.4	60	0.03		
	EDGE 8	14.0	58	0.03		
		BEP	64	0.03		
		15.4	-75	-0.04		
WCDMA Band V CH4182	RMC 12.2Kbps	14.0	9	0.01		
		BEP	10	0.01		
		15.4	-11	-0.01		
WCDMA Band II CH9400	RMC 12.2Kbps	14.0	40	0.02		
		BEP	-36	-0.02		
		15.4	-37	-0.02		

Note:

1. Normal Voltage = 14.0V.
2. Battery End Point (BEP) = 13.6 V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Jul. 13, 2012 ~ Jul. 19, 2012	Jul. 27, 2013	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Jul. 13, 2012 ~ Jul. 19, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Thermal hamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 27, 2011	Jul. 13, 2012 ~ Jul. 19, 2012	Jul. 26, 2012	Conducted (TH02-HY)
Spectrum Analyzer	R&S	ESU26	100390	20Hz ~ 26.5GHz	Dec. 22, 2011	Jul. 07, 2012 ~ Aug. 05, 2012	Dec. 21, 2012	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 2GHz	Oct. 22, 2011	Jul. 07, 2012 ~ Aug. 05, 2012	Oct. 21, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 ~ 360 degree	N/A	Jul. 07, 2012 ~ Aug. 05, 2012	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m ~ 4 m	N/A	Jul. 07, 2012 ~ Aug. 05, 2012	N/A	Radiation (03CH05-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Jul. 07, 2012 ~ Aug. 05, 2012	Aug. 09, 2012	Radiation (03CH05-HY)
Pre Amplifier	COM-POWER	PA-103A	161075	10Hz ~ 1000MHz Gain:32dB	Feb. 27, 2012	Jul. 07, 2012 ~ Aug. 05, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Pre Amplifier	MITEQ	AMF-7D-00 101800-30-1	159087	1GHz~18GHz	Feb. 27, 2012	Jul. 07, 2012 ~ Aug. 05, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Aug. 30, 2011	Jul. 07, 2012 ~ Aug. 05, 2012	Aug. 29, 2012	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	15GHz ~ 40GHz	Oct. 21, 2011	Jul. 07, 2012 ~ Aug. 05, 2012	Oct. 20, 2012	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	July. 03, 2012	Jul. 07, 2012 ~ Aug. 05, 2012	July. 02, 2014	Radiation (03CH05-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Jul. 07, 2012 ~ Aug. 05, 2012	Jul. 27, 2013	Radiation (03CH05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP241855 as below.