FCC RF Test Report

APPLICANT	:	ZTE CORPORATION
EQUIPMENT	:	WCDMA Digital Mobile Phone
BRAND NAME	:	ZTE
MODEL NAME	:	ZTE Z933
FCC ID	:	SRQ-Z933
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 20, 2014 and testing was completed on Jun. 24, 2014. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-C-2004 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
2353

SPORTON INTERNATIONAL (SHENZHEN) INC.

No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

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APPENDIX A. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG452005	Rev. 01	Initial issue of report	Jun. 25, 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	< $43+10\log_{10}$(P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Conducted Spurious Emission	< $43+10\log_{10}$(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Field Strength of Spurious Radiation	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 20.01 dB at 2546.400 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

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	WCDMA Digital Mobile Phone
Brand Name	ZTE
Model Name	ZTE Z933
FCC ID	SRQ-Z933
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only) WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	Z933_V1EMB_B
SW Version	Z933V1.0.0B01
EUT Stage	Pre-Production

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

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 32.92 dBm GSM1900 : 30.23 dBm WCDMA Band V : 23.74 dBm WCDMA Band II : 23.32 dBm
Antenna Type	PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Downlink Only)

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	1.66	0.026 ppm	246KGXW
Part 22	GSM850 EDGE class 8	8PSK	0.28	0.019 ppm	246KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.17	0.008 ppm	4M18F9W
Part 24	GSM1900 GSM	GMSK	0.99	0.014 ppm	249KGXW
Part 24	GSM1900 EDGE class 8	8PSK	0.29	0.011 ppm	245KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.21	0.005 ppm	4M18F9W

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.		
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755- 3320-2398		
Test Site No.	**Sporton Site No.**		**FCC/IC Registration No.**
	TH01-SZ	03CH01-SZ	831040//4086F-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 radio communication 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 (Z Plane for 22H, Y Plane for 24E).

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V.
2. 30 MHz to 19100 MHz for GSM1900 and WCDMA Band II.

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

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

GSM mode for GMSK modulation,

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

RMC 12.2Kbps mode for WCDMA band V,

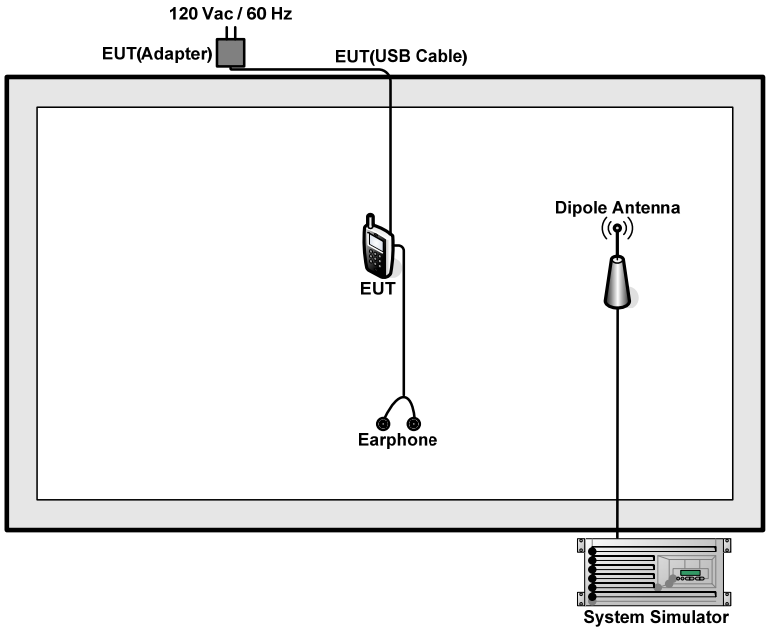
RMC 12.2Kbps mode for WCDMA band II, only these modes were used for all tests.

Conducted Power Measurement Results:

Conducted Power (*Unit: dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM	**32.92**	32.74	32.76	30.11	30.14	**30.23**
GPRS class 8	32.88	32.70	32.73	30.10	30.13	30.21
GPRS class 10	30.51	30.23	30.47	26.93	26.95	27.05
EGPRS class 8	27.07	26.74	27.02	25.66	25.73	25.68
EGPRS class 10	24.48	24.18	24.56	23.02	22.97	23.04

Conducted Power (*Unit: dBm)						
Band	**WCDMA Band V**			**WCDMA Band II**		
Channel	**4132**	**4182**	**4233**	**9262**	**9400**	**9538**
Frequency	**826.4**	**836.4**	**846.6**	**1852.4**	**1880.0**	**1907.6**
RMC 12.2K	23.57	23.59	**23.74**	23.11	**23.32**	23.30
HSDPA Subtest-1	22.61	22.62	22.79	22.26	22.45	22.38
HSDPA Subtest-2	22.59	22.64	22.85	22.29	22.44	22.40
HSDPA Subtest-3	22.07	22.18	22.29	21.82	21.92	21.91
HSDPA Subtest-4	22.11	22.32	22.46	21.80	22.10	22.07
HSUPA Subtest-1	21.69	21.83	21.99	21.43	21.58	21.56
HSUPA Subtest-2	21.22	21.32	21.49	21.38	21.51	21.48
HSUPA Subtest-3	20.92	21.04	21.21	20.80	20.97	20.95
HSUPA Subtest-4	21.60	21.73	21.89	21.89	22.04	22.00
HSUPA Subtest-5	21.06	21.17	21.32	20.28	20.42	20.37

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	TOPWORD	3303DR	N/A	N/A	Unshielded, 1.8 m
3.	iPod Earphone	Apple	MC690ZP/A	FCC DoC	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 7 dB and a 10dB attenuator.

Example :

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

= 7 + 10 = 17 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

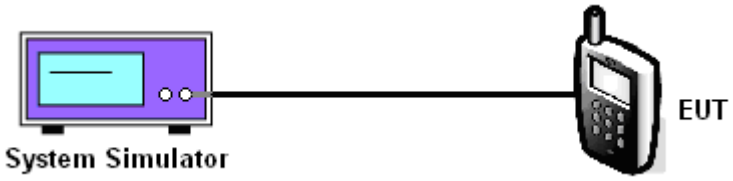
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.92	32.74	32.76	27.07	26.74	27.02	23.57	23.59	23.74
Conducted Power (Watts)	1.96	1.88	1.89	0.51	0.47	0.50	0.23	0.23	0.24

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)	30.11	30.14	30.23	25.66	25.73	25.68	23.11	23.32	23.30
Conducted Power (Watts)	1.03	1.03	1.05	0.37	0.37	0.37	0.20	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

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

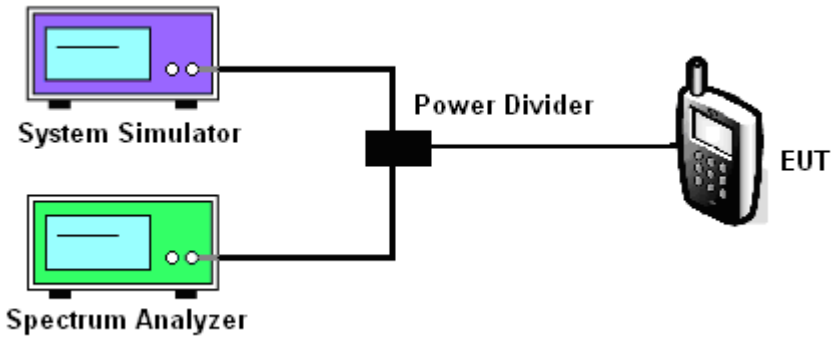
3.2.2 Measuring Instruments

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

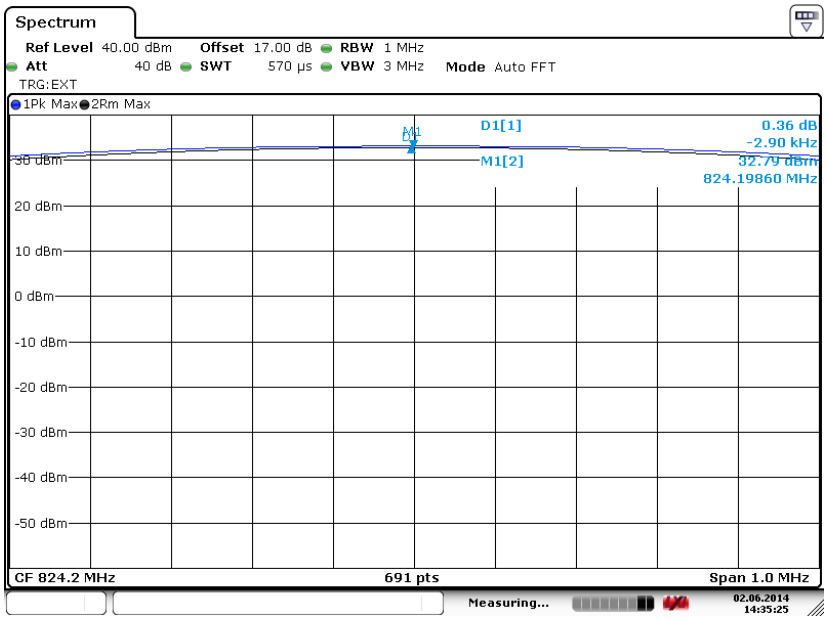
Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.36	0.35	0.37	2.98	3.00	3.02	3.01	2.84	2.96

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)	0.35	0.37	0.39	2.73	2.93	2.92	3.10	2.93	2.61

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

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

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



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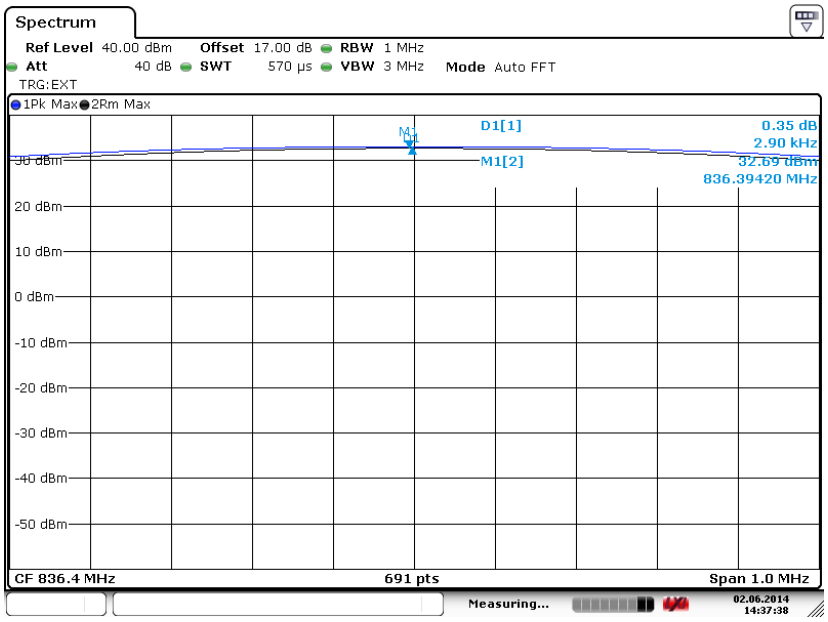
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



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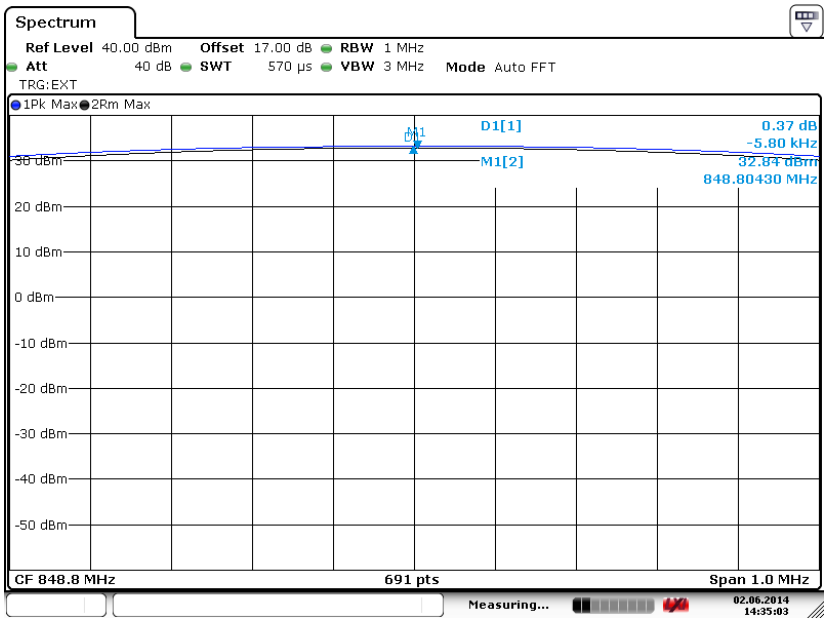
Peak-to-Average Ratio on Channel 251 (848.8 MHz)



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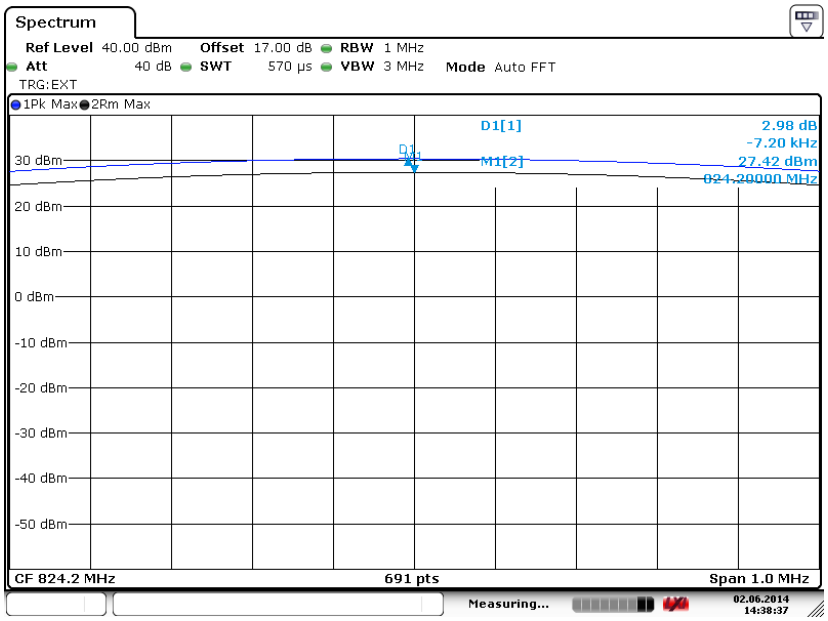
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)

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



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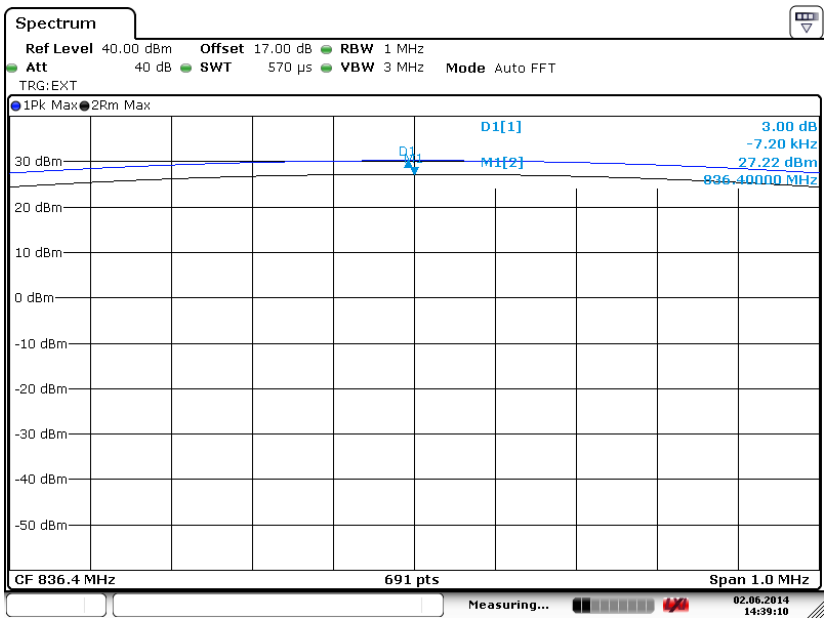
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



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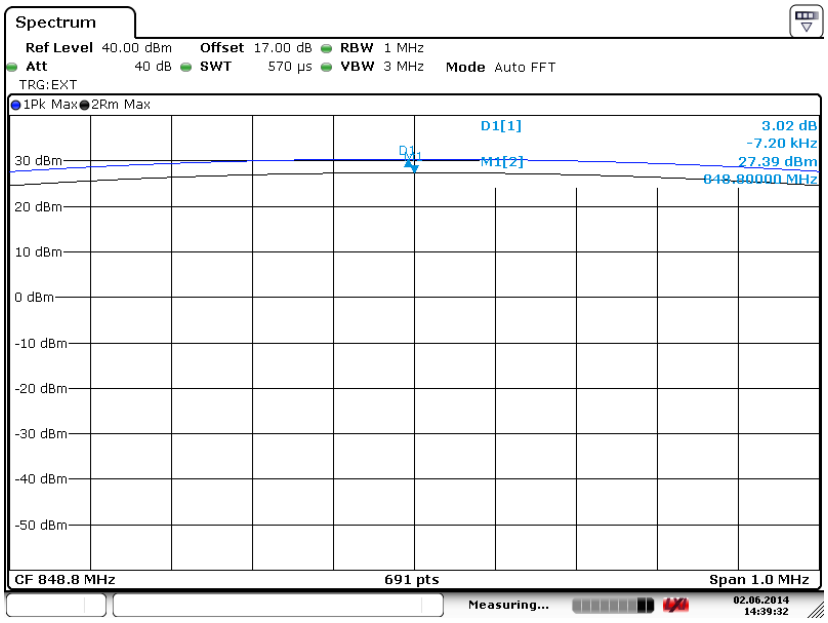
Peak-to-Average Ratio on Channel 251 (848.8 MHz)



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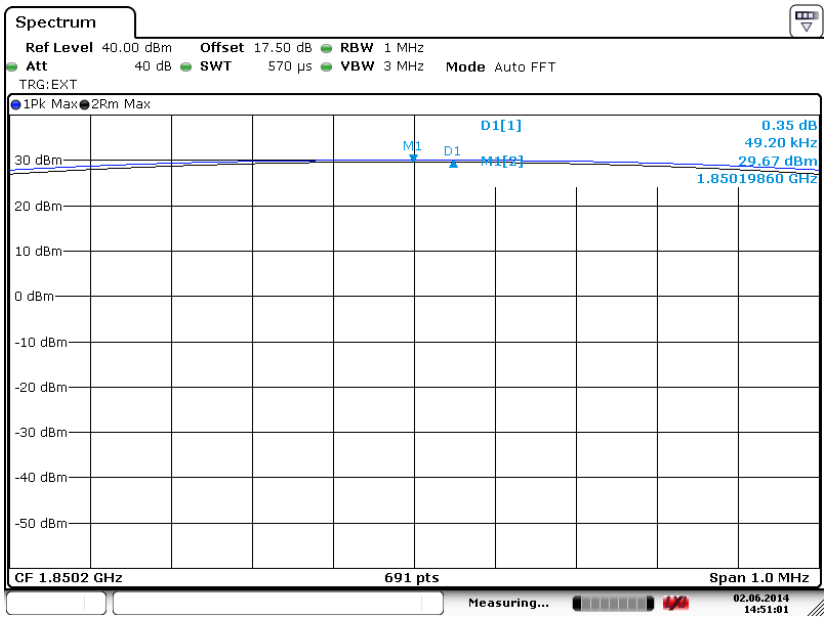
Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

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



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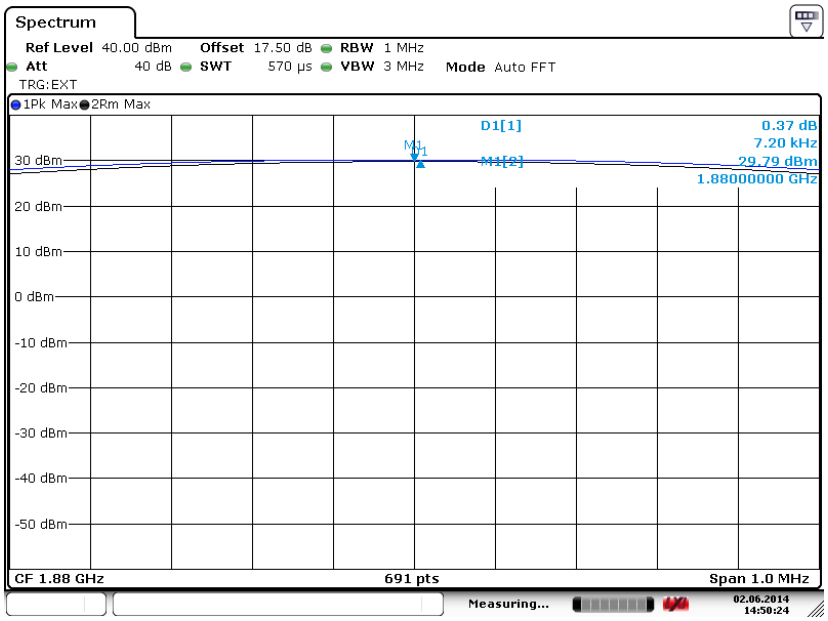
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



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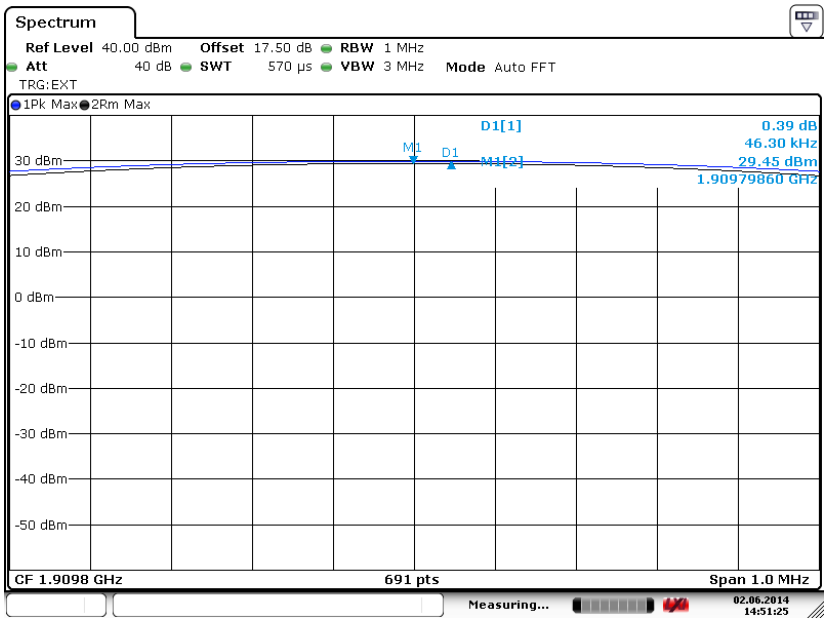
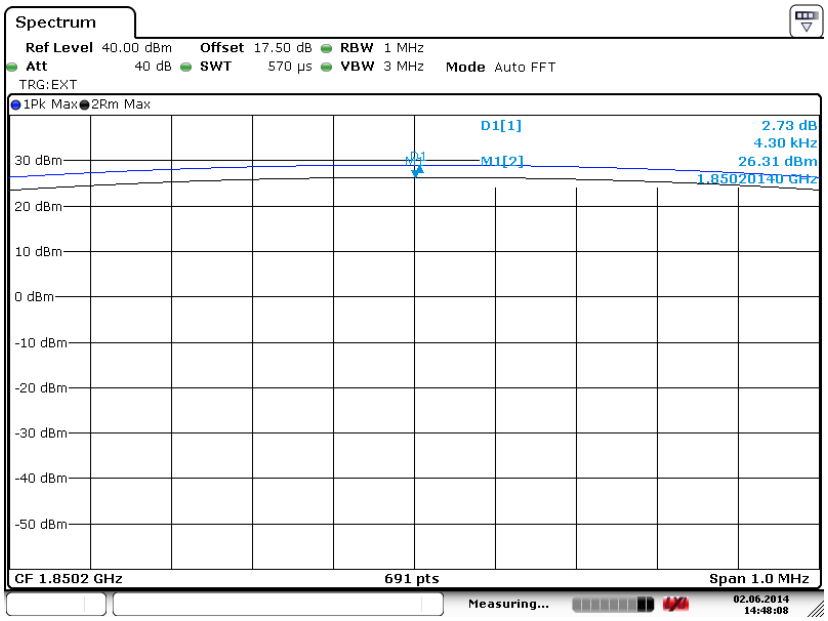
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Date: 2.JUN.2014 14:51:25

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

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



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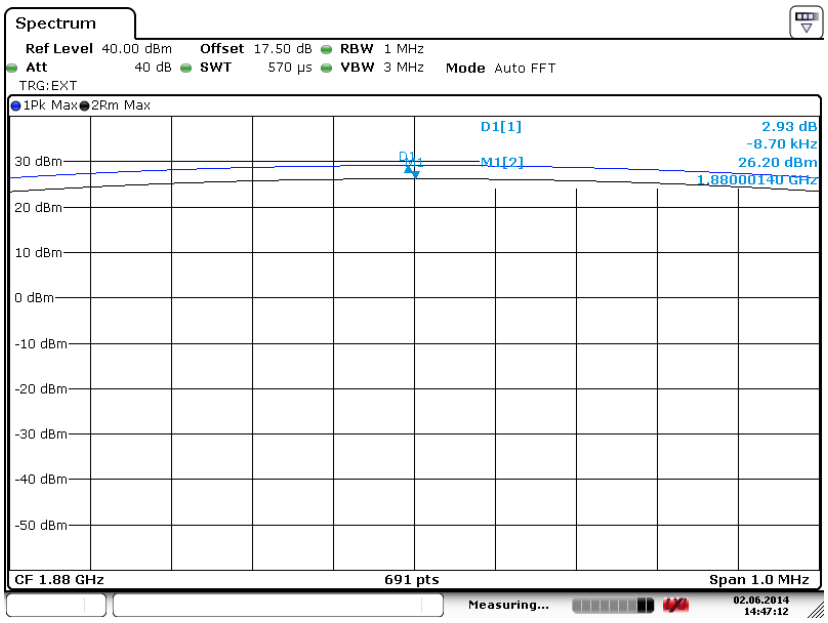
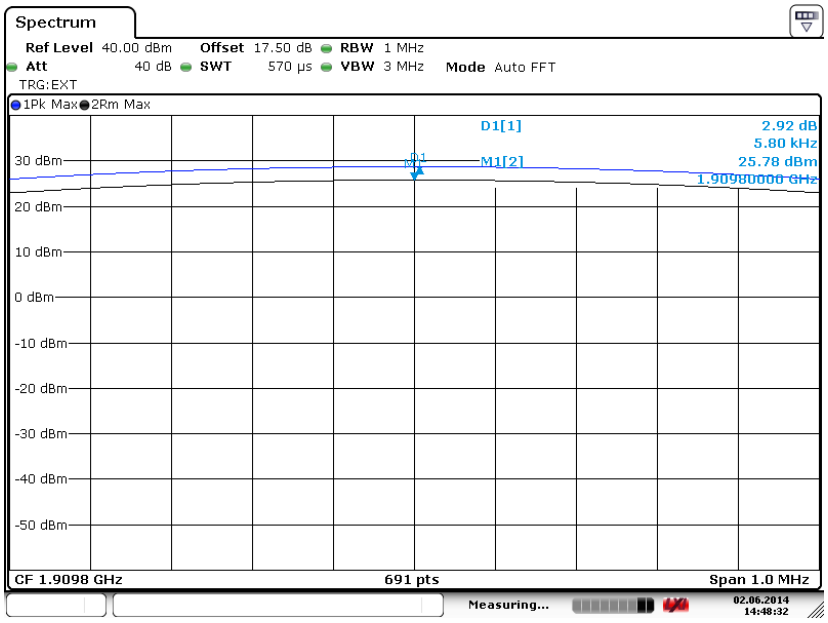
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 2.JUN.2014 14:47:12

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



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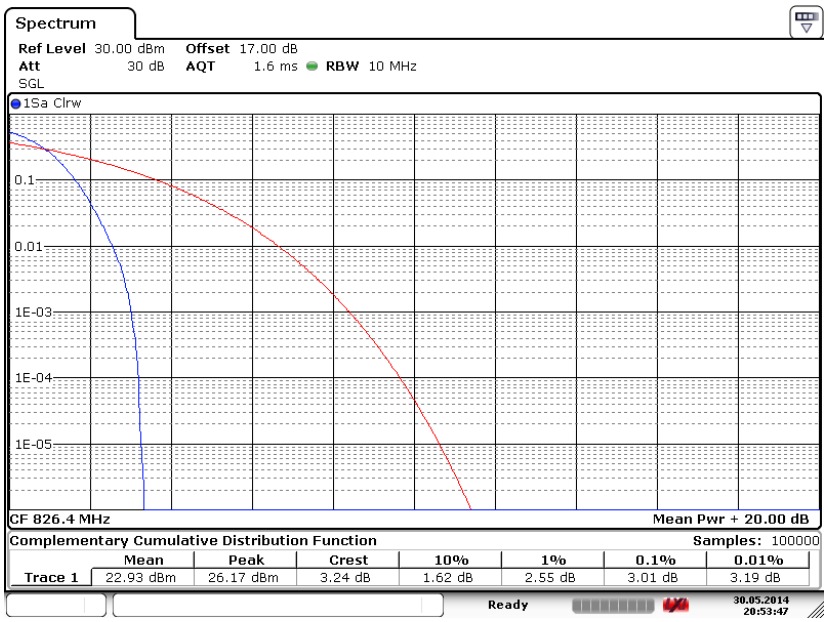
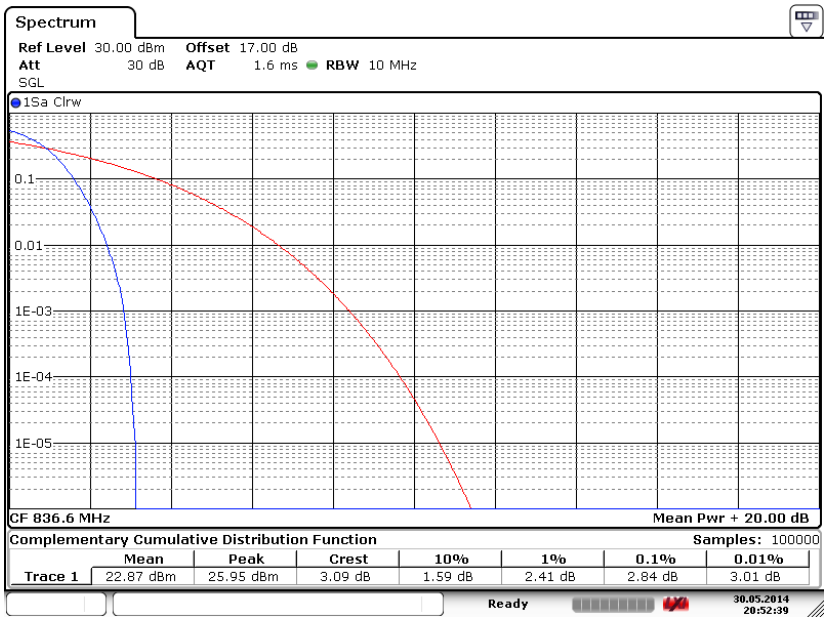
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



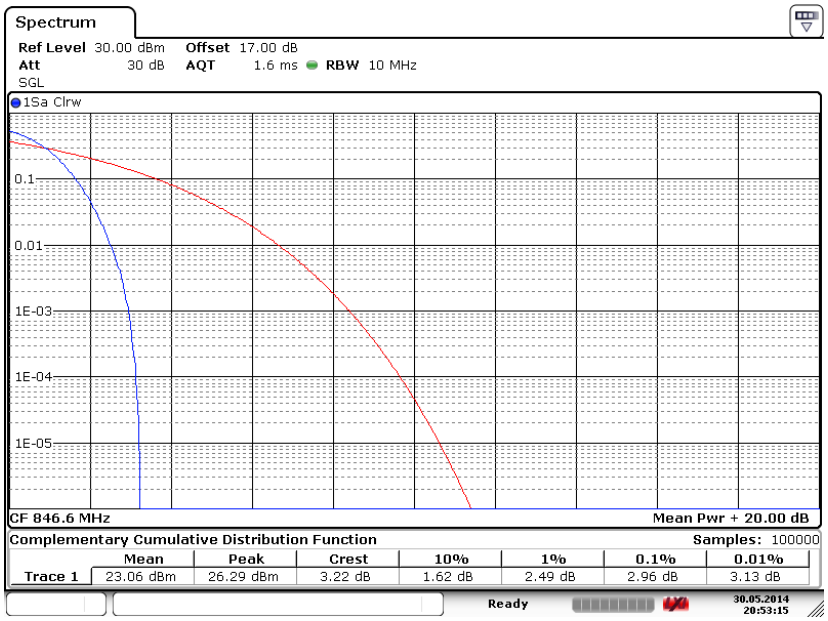
Date: 30.MAY.2014 20:53:47

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



Date: 30.MAY.2014 20:52:39

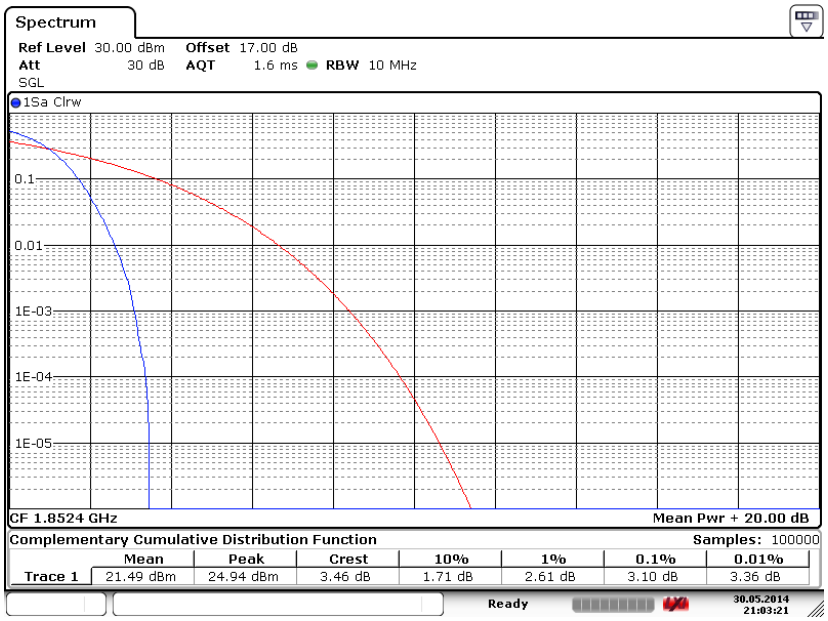
Peak-to-Average Ratio on Channel 4233 (846.6 MHz)



Date: 30.MAY.2014 20:53:16

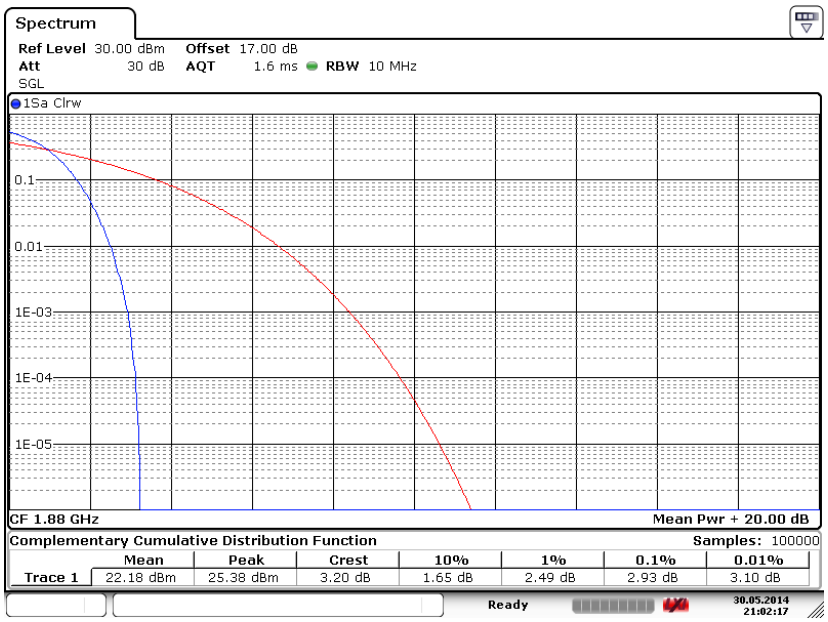
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



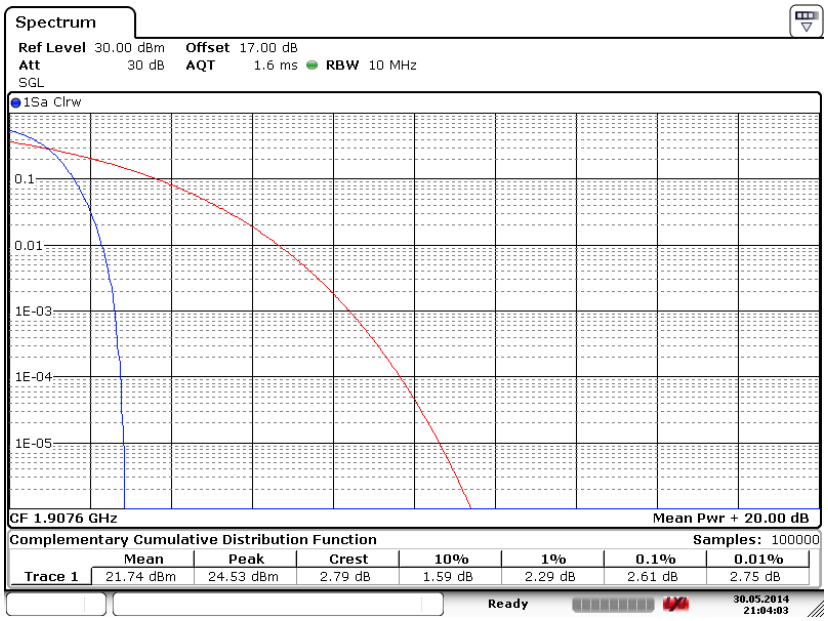
Date: 30.MAY.2014 21:03:21

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



Date: 30.MAY.2014 21:02:17

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



Date: 30.MAY.2014 21:04:03

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

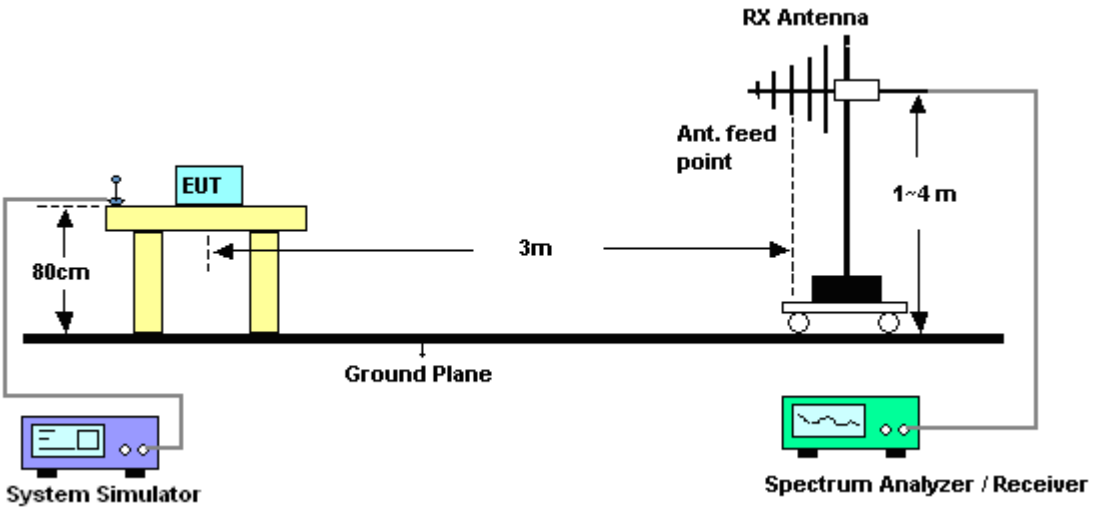
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
2. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
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 the same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP= LVL + Correction factor and ERP = EIRP – 2.15 .

3.3.4 Test Setup



3.3.5 Test Result of ERP

GSM850 (GSM) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-0.20	30.23	27.88	0.61
836.4	-1.01	31.09	27.93	0.62
848.8	0.20	30.51	28.56	0.72
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-1.05	35.14	31.94	1.56
836.4	-1.65	36.01	32.21	1.66
848.8	-1.07	35.11	31.89	1.55

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

GSM850 (EDGE class 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-6.51	30.23	21.57	0.14
836.4	-6.82	31.09	22.12	0.16
848.8	-6.95	30.51	21.41	0.14
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.2	-8.69	35.14	24.30	0.27
836.4	-9.43	36.01	24.43	0.28
848.8	-8.62	35.11	24.34	0.27

* 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	-9.46	30.3	18.69	0.07
836.40	-10.16	31.09	18.78	0.08
846.60	-10.51	31.67	19.01	0.08
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
826.40	-11.46	35.69	22.08	0.16
836.40	-11.63	36.01	22.23	0.17
846.60	-11.38	35.36	21.83	0.15

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

3.3.6 Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-16.05	46.02	29.97	0.99
1880.0	-15.03	44.73	29.70	0.93
1909.8	-15.59	45.20	29.61	0.91
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-20.52	45.58	25.06	0.32
1880.0	-20.59	45.75	25.16	0.33
1909.8	-20.51	47.21	26.70	0.47

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

GSM1900 (EDGE class 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-21.70	46.02	24.32	0.27
1880.0	-20.41	44.73	24.32	0.27
1909.8	-20.64	45.20	24.56	0.29
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.2	-25.37	45.58	20.21	0.10
1880.0	-25.46	45.75	20.29	0.11
1909.8	-26.50	47.21	20.71	0.12

* 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	-22.59	45.71	23.12	0.21
1880.00	-21.76	44.73	22.97	0.20
1907.60	-22.57	45.34	22.77	0.19
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.40	-24.69	45.35	20.66	0.12
1880.00	-24.57	45.75	21.18	0.13
1907.60	-25.79	47.51	21.72	0.15

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

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.

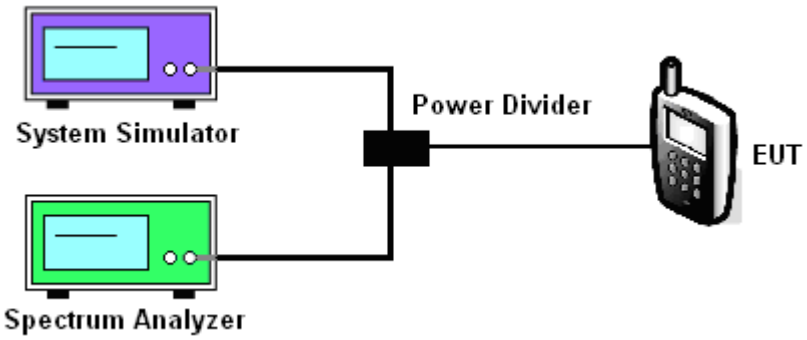
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. 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.
3. The 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, sample detector, trace maximum hold.
4. 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)	246.02	244.57	243.13	244.57	246.02	241.68
26dB BW (kHz)	309.70	303.90	308.20	303.90	312.60	309.70

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)	243.13	248.91	248.91	244.57	244.57	241.68
26dB BW (kHz)	308.20	306.80	305.40	296.70	303.90	302.50

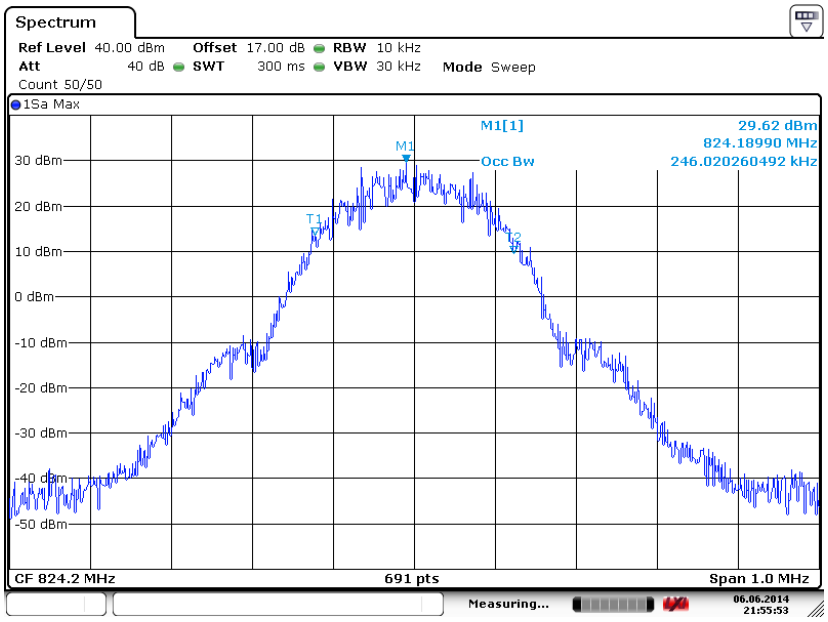
Cellular Band			
Modes	WCDMA Band V (RMC 12.2Kbps)		
Channel	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	826.4	836.4	846.6
99% OBW (MHz)	4.18	4.17	4.17
26dB BW (MHz)	4.73	4.75	4.75

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)	4.14	4.18	4.18
26dB BW (MHz)	4.73	4.75	4.76

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

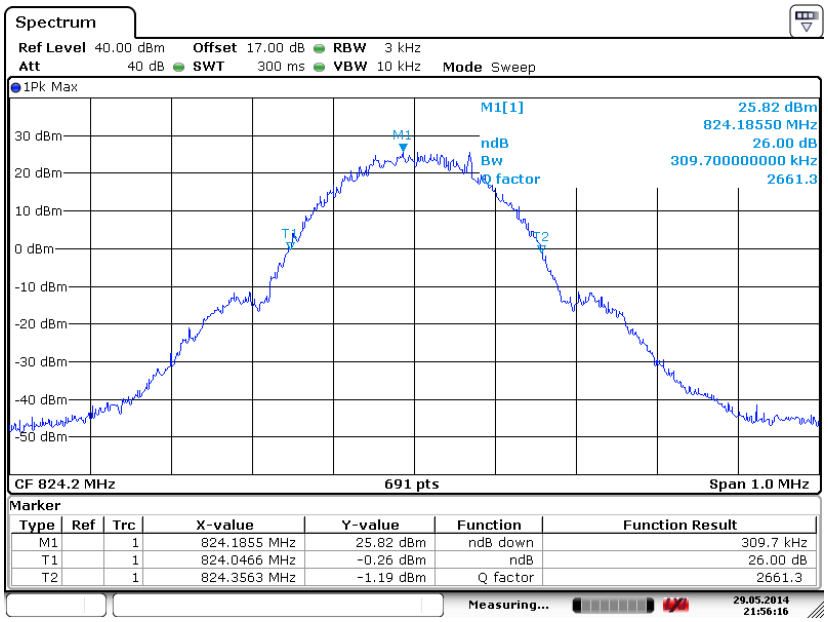
Band :	GSM 850	Test Mode :	GSM Link (GMSK)

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



Date: 6.JUN.2014 21:55:53

26dB Bandwidth Plot on Channel 128 (824.2 MHz)

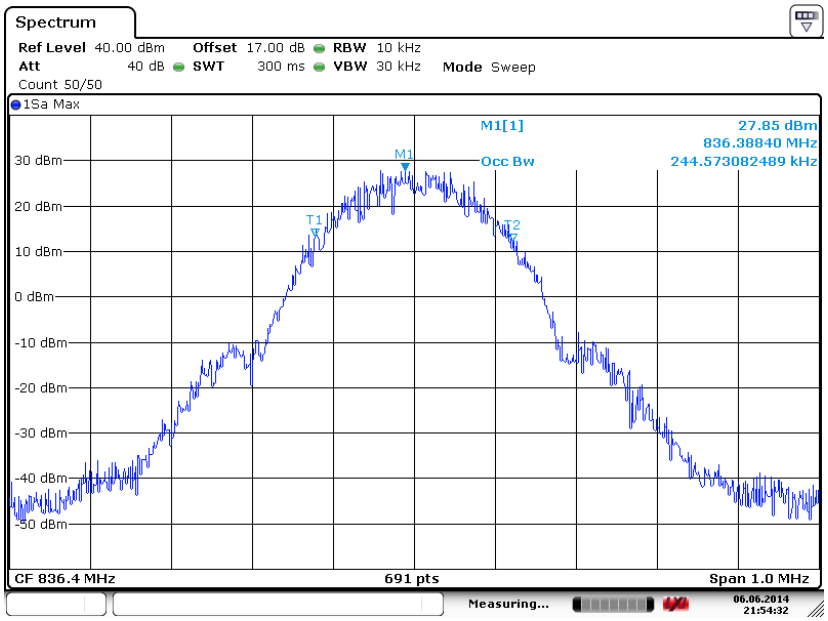


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	824.1855 MHz	25.82 dBm	ndB down	309.7 kHz
T1		1	824.0466 MHz	-0.26 dBm	ndB	26.00 dB
T2		1	824.3563 MHz	-1.19 dBm	Q factor	2661.3

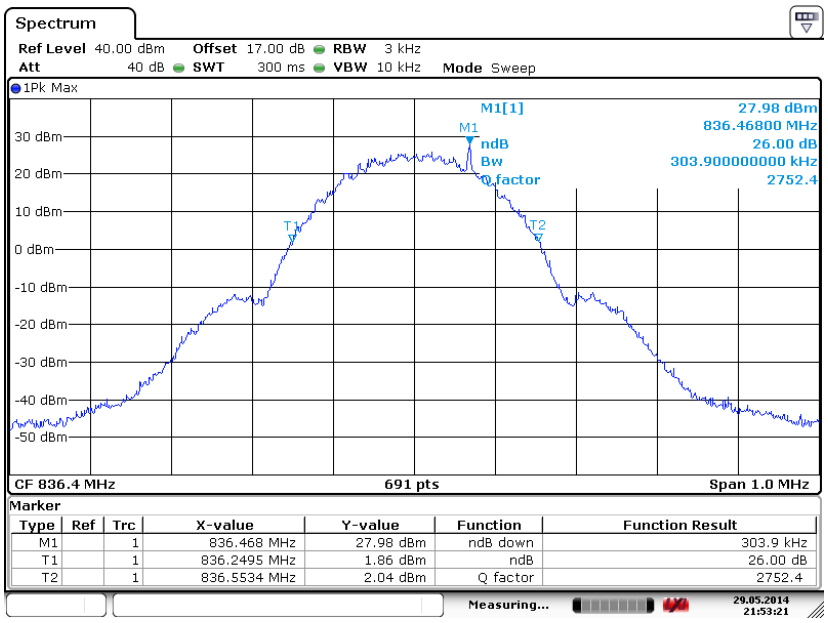
Date: 29.MAY.2014 21:56:16

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



Date: 6.JUN.2014 21:54:31

26dB Bandwidth Plot on Channel 189 (836.4 MHz)

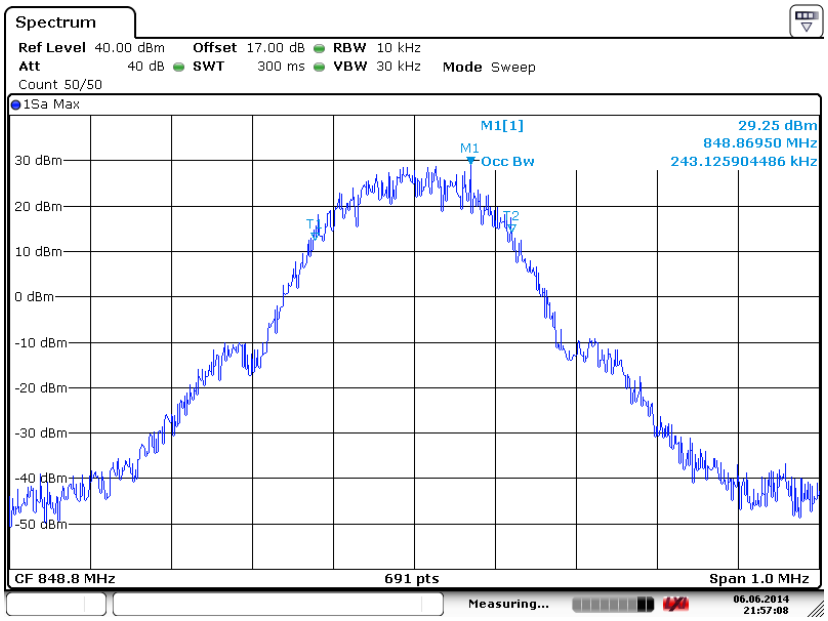


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	836.468 MHz	27.98 dBm	ndB down	303.9 kHz
T1		1	836.2495 MHz	1.86 dBm	ndB	26.00 dB
T2		1	836.5534 MHz	2.04 dBm	Q factor	2752.4

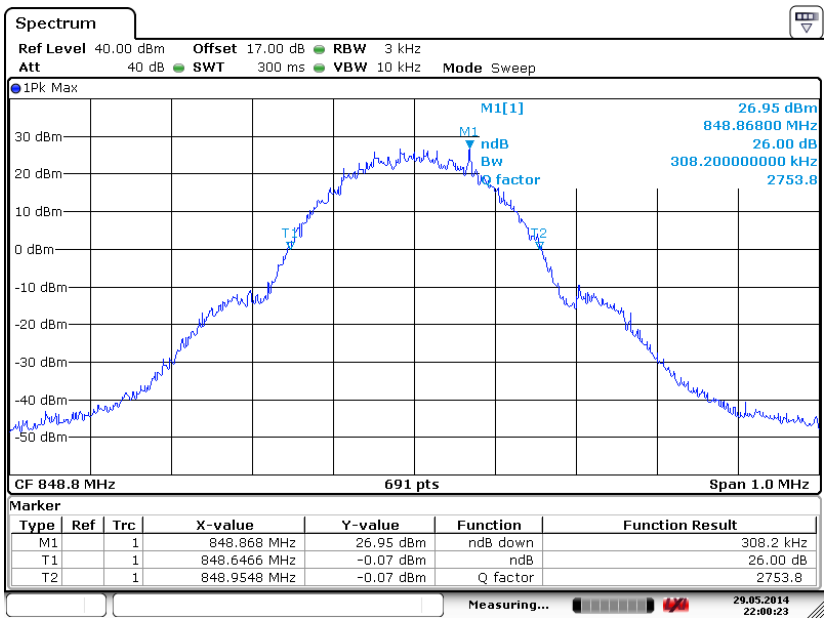
Date: 29.MAY.2014 21:53:21

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



Date: 6.JUN.2014 21:57:08

26dB Bandwidth Plot on Channel 251 (848.8 MHz)



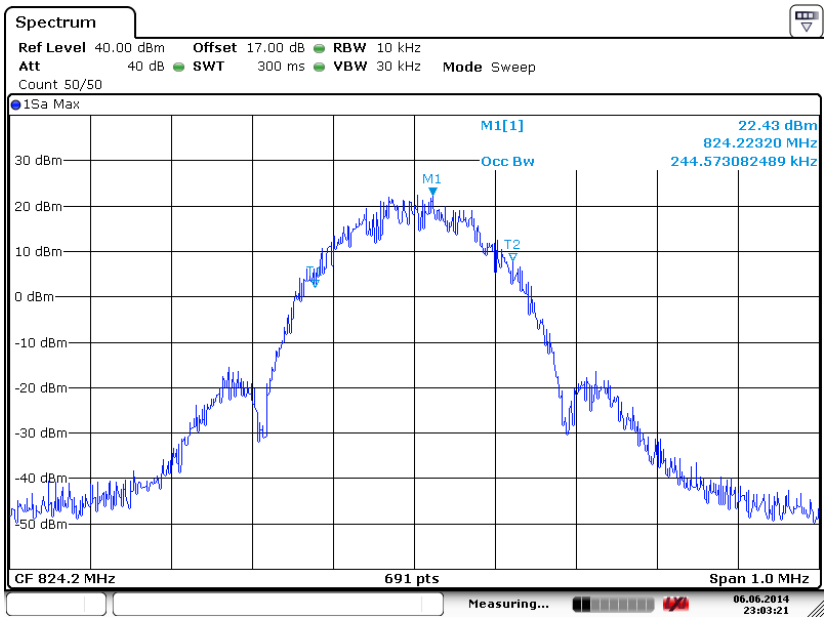
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	848.868 MHz	26.95 dBm	ndB down	308.2 kHz
T1		1	848.6466 MHz	-0.07 dBm	ndB	26.00 dB
T2		1	848.9548 MHz	-0.07 dBm	Q factor	2753.8

Date: 29.MAY.2014 22:00:23

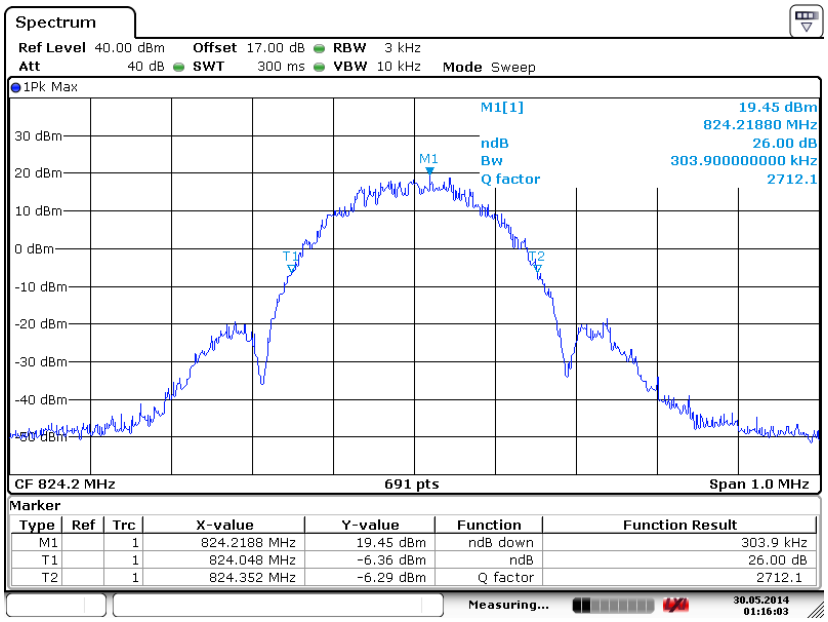
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)

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



Date: 6.JUN.2014 23:03:21

26dB Bandwidth Plot on Channel 128 (824.2 MHz)

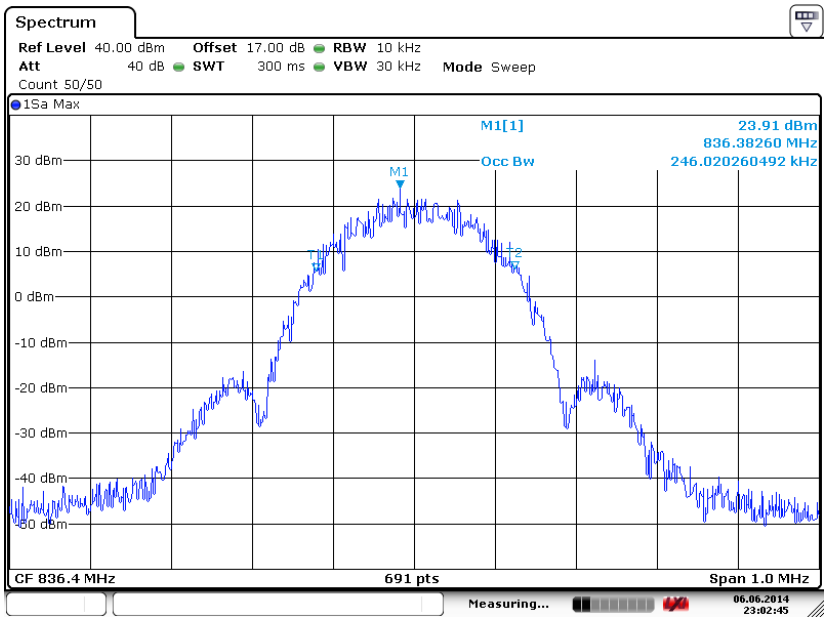


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	824.2188 MHz	19.45 dBm	ndB down	303.9 kHz
T1		1	824.048 MHz	-6.36 dBm	ndB	26.00 dB
T2		1	824.352 MHz	-6.29 dBm	Q factor	2712.1

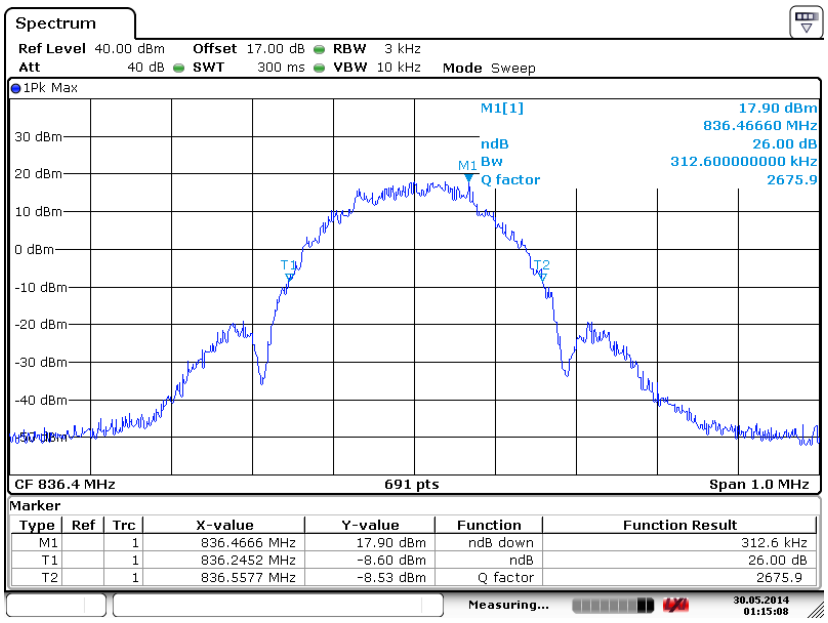
Date: 30.MAY.2014 01:16:03

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



Date: 6.JUN.2014 23:02:45

26dB Bandwidth Plot on Channel 189 (836.4 MHz)

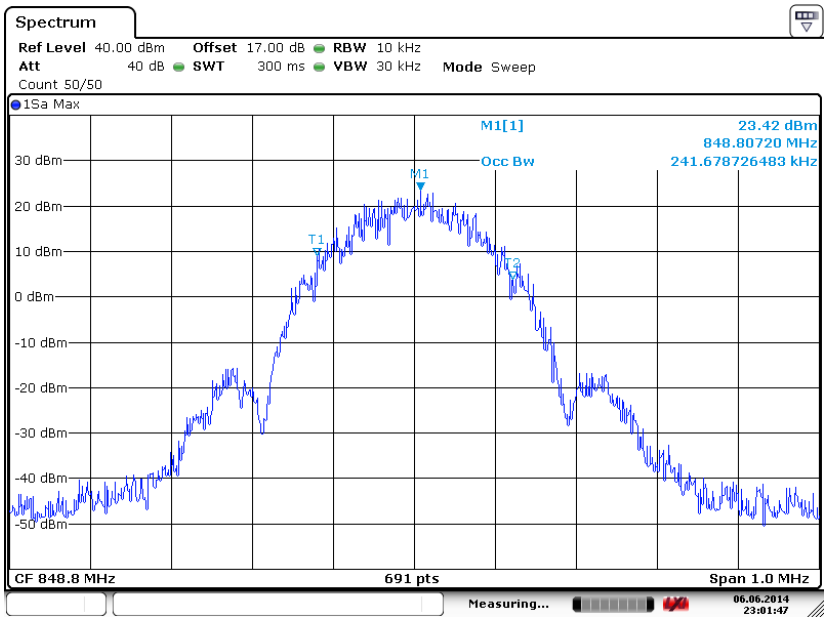


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	836.4666 MHz	17.90 dBm	ndB down	312.6 kHz
T1		1	836.2452 MHz	-8.60 dBm	ndB	26.00 dB
T2		1	836.5577 MHz	-8.53 dBm	Q factor	2675.9

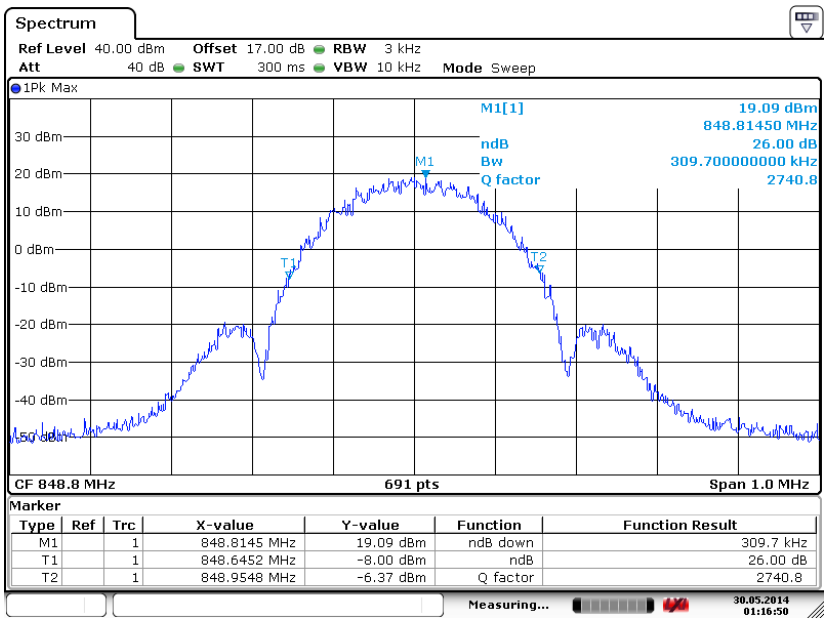
Date: 30.MAY.2014 01:15:08

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



Date: 6.JUN.2014 23:01:47

26dB Bandwidth Plot on Channel 251 (848.8 MHz)



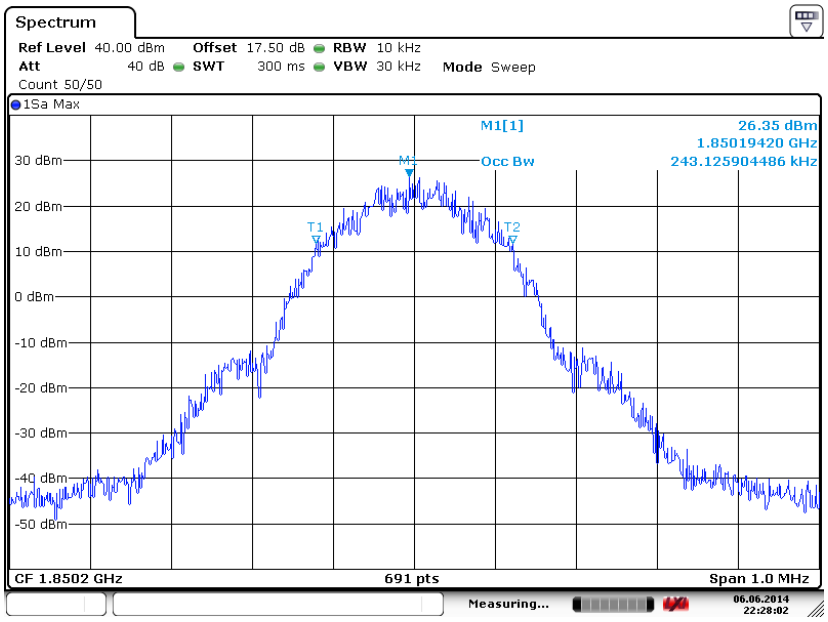
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	848.8145 MHz	19.09 dBm	ndB down	309.7 kHz
T1		1	848.6452 MHz	-8.00 dBm	ndB	26.00 dB
T2		1	848.9548 MHz	-6.37 dBm	Q factor	2740.8

Date: 30.MAY.2014 01:16:50

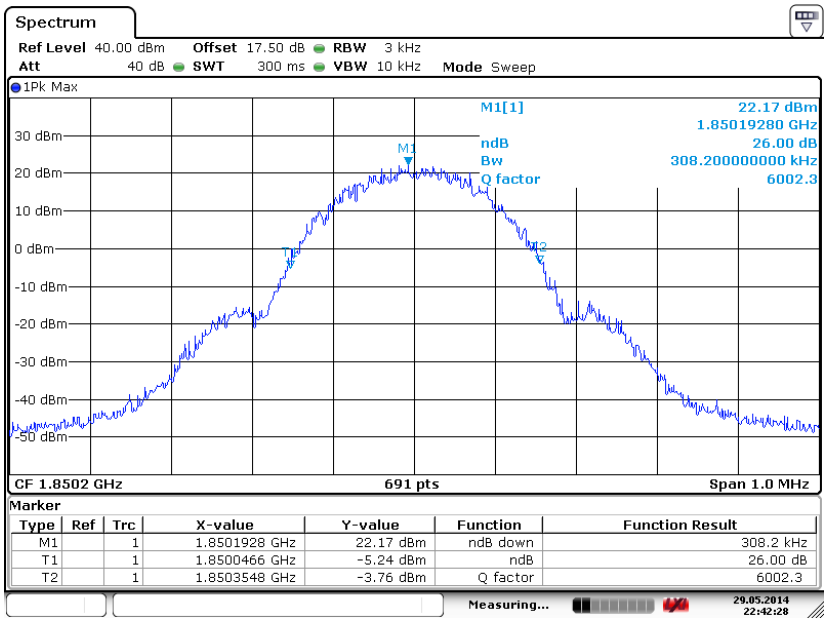
Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

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



Date: 6.JUN.2014 22:28:02

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)

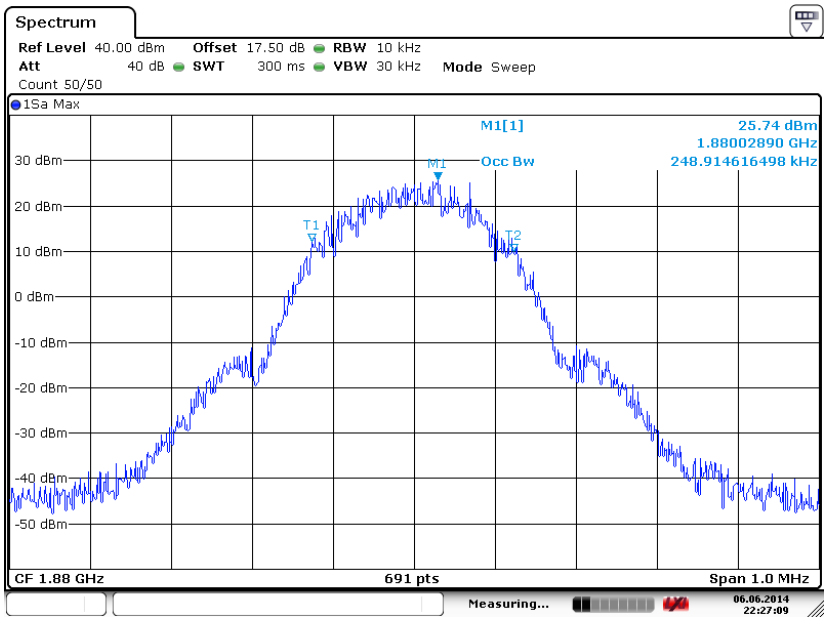


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8501928 GHz	22.17 dBm	ndB down	308.2 kHz
T1		1	1.8500466 GHz	-5.24 dBm	ndB	26.00 dB
T2		1	1.8503548 GHz	-3.76 dBm	Q factor	6002.3

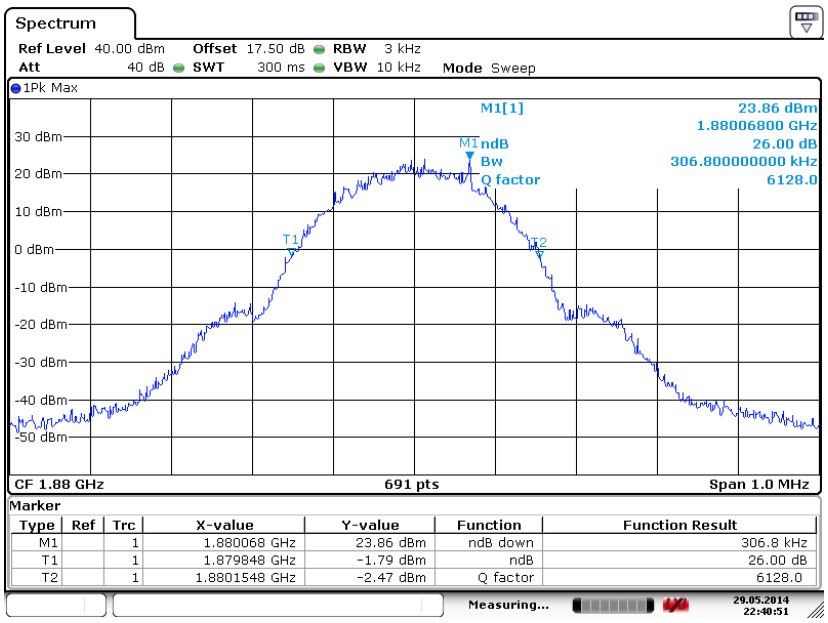
Date: 29.MAY.2014 22:42:28

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



Date: 6.JUN.2014 22:27:08

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)

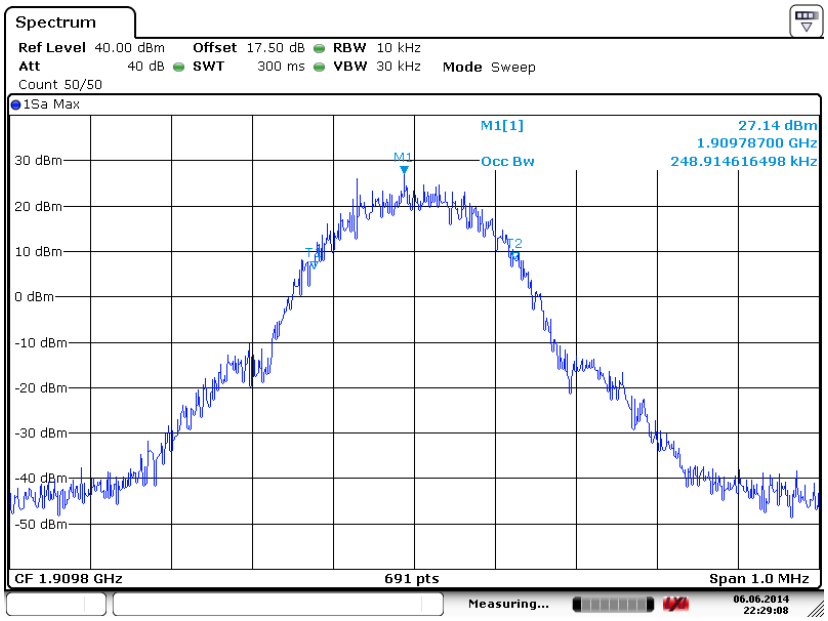


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.880068 GHz	23.86 dBm	ndB down	306.8 kHz
T1		1	1.879848 GHz	-1.79 dBm	ndB	26.00 dB
T2		1	1.8801548 GHz	-2.47 dBm	Q factor	6128.0

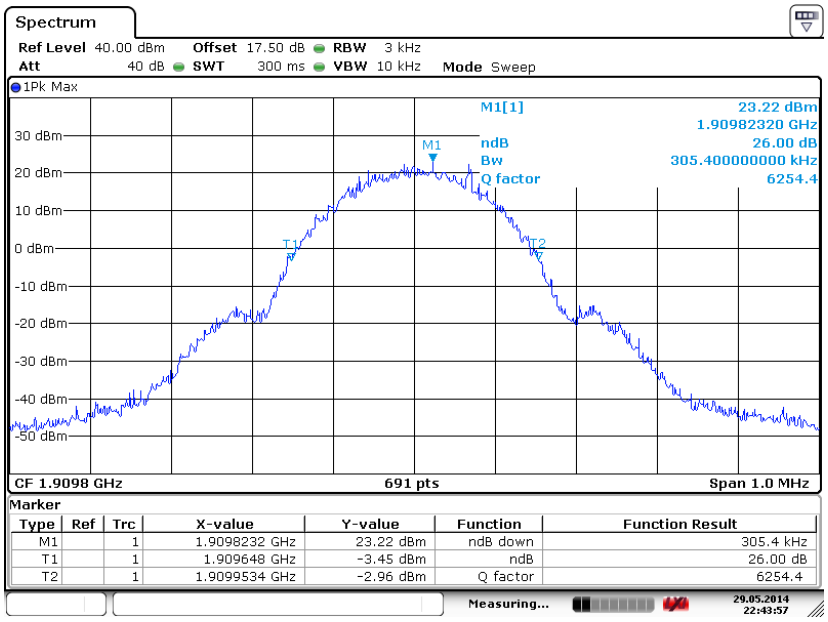
Date: 29.MAY.2014 22:40:51

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



Date: 6.JUN.2014 22:29:08

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



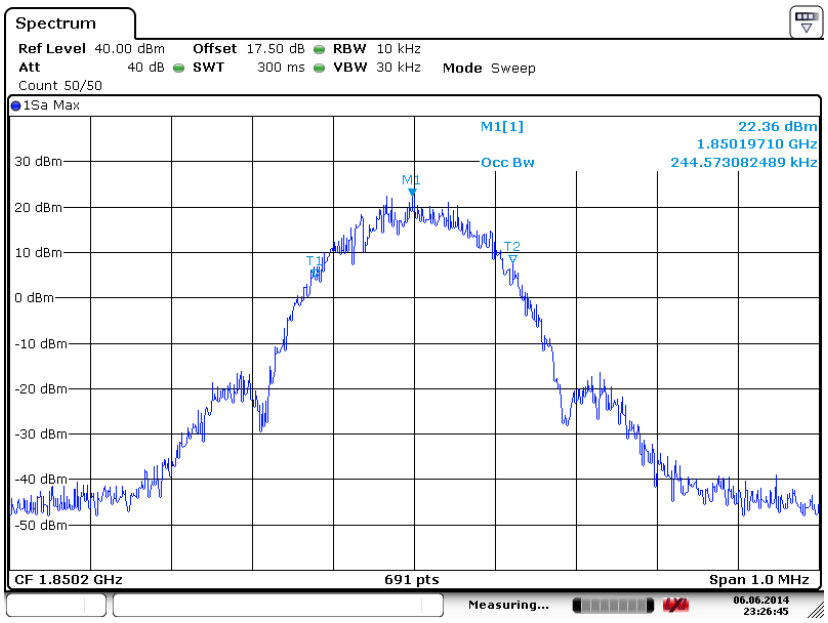
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9098232 GHz	23.22 dBm	ndB down	305.4 kHz
T1		1	1.909648 GHz	-3.45 dBm	ndB	26.00 dB
T2		1	1.9099534 GHz	-2.96 dBm	Q factor	6254.4

Date: 29.MAY.2014 22:43:57

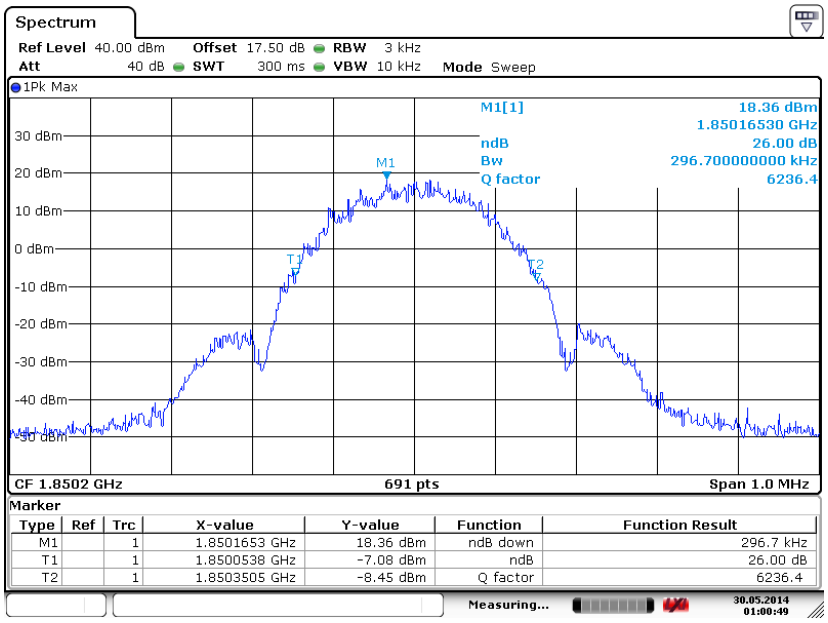
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)

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



Date: 6.JUN.2014 23:26:45

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)

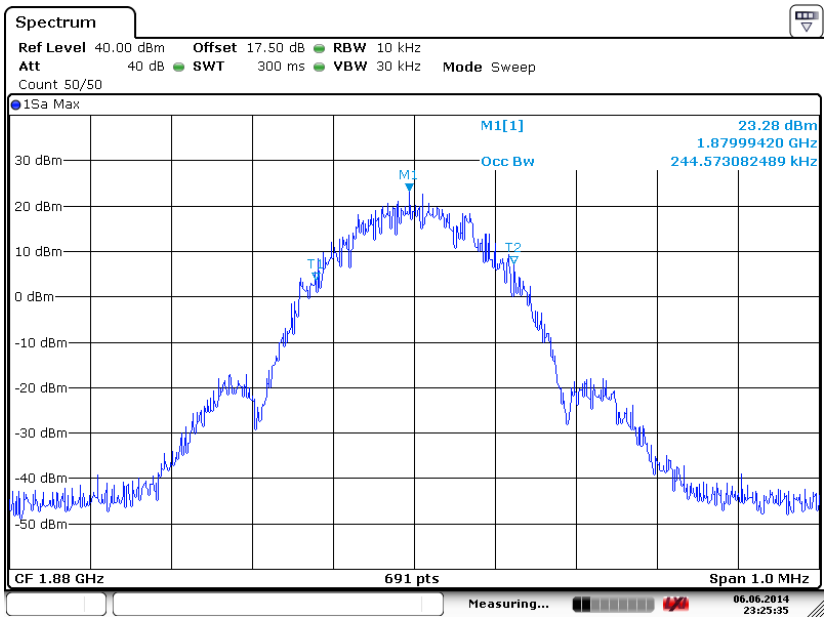


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8501653 GHz	18.36 dBm	ndB down	296.7 kHz
T1		1	1.8500538 GHz	-7.08 dBm	ndB	26.00 dB
T2		1	1.8503505 GHz	-8.45 dBm	Q factor	6236.4

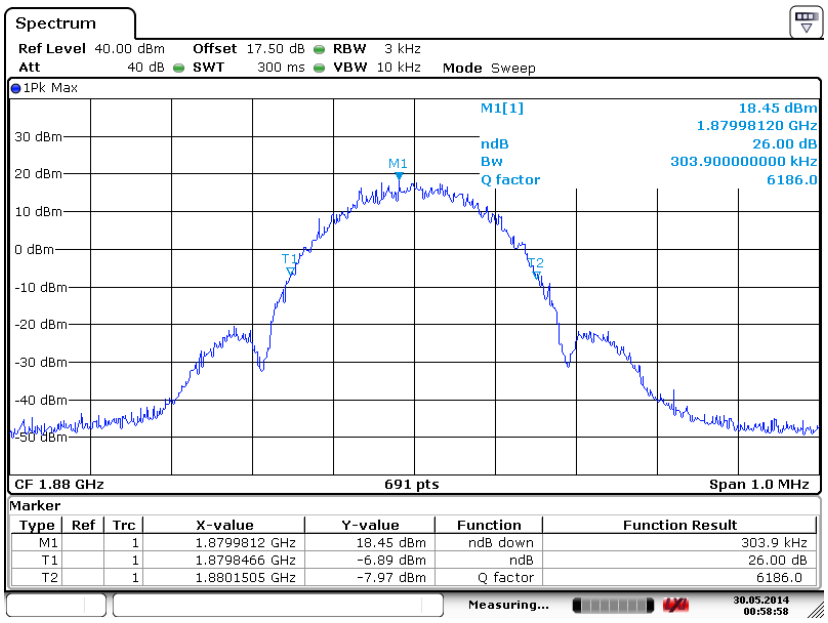
Date: 30.MAY.2014 01:00:49

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



Date: 6.JUN.2014 23:25:34

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)

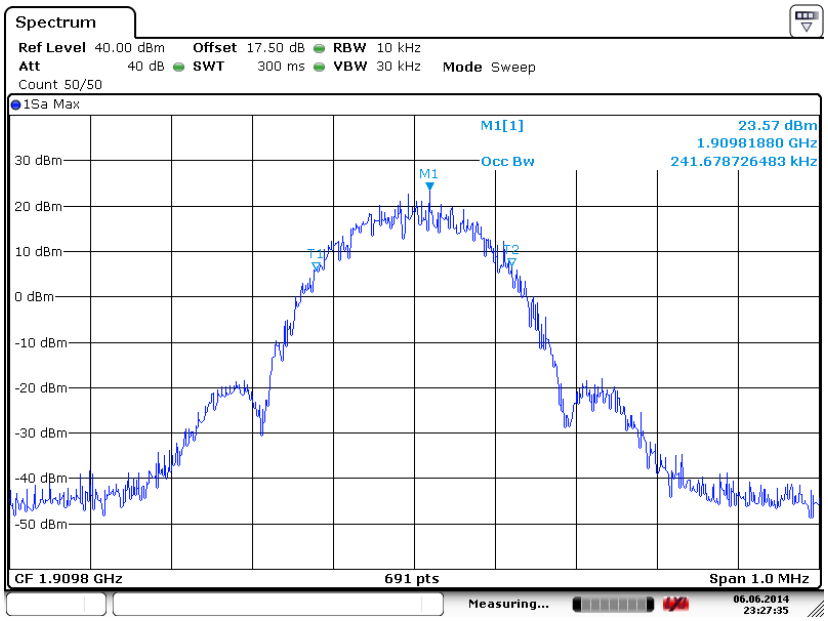


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8799812 GHz	18.45 dBm	ndB down	303.9 kHz
T1		1	1.8798466 GHz	-6.89 dBm	ndB	26.00 dB
T2		1	1.8801505 GHz	-7.97 dBm	Q factor	6186.0

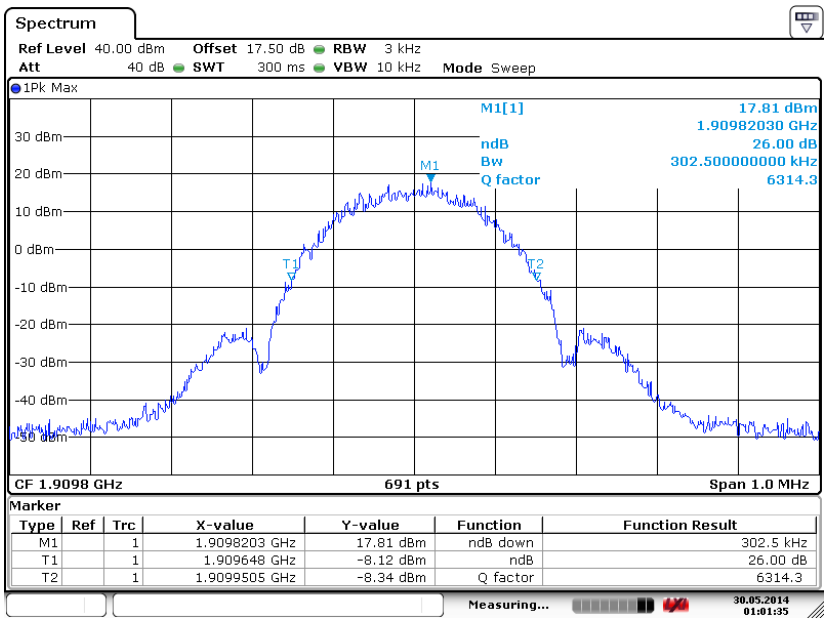
Date: 30.MAY.2014 00:58:58

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



Date: 6.JUN.2014 23:27:35

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



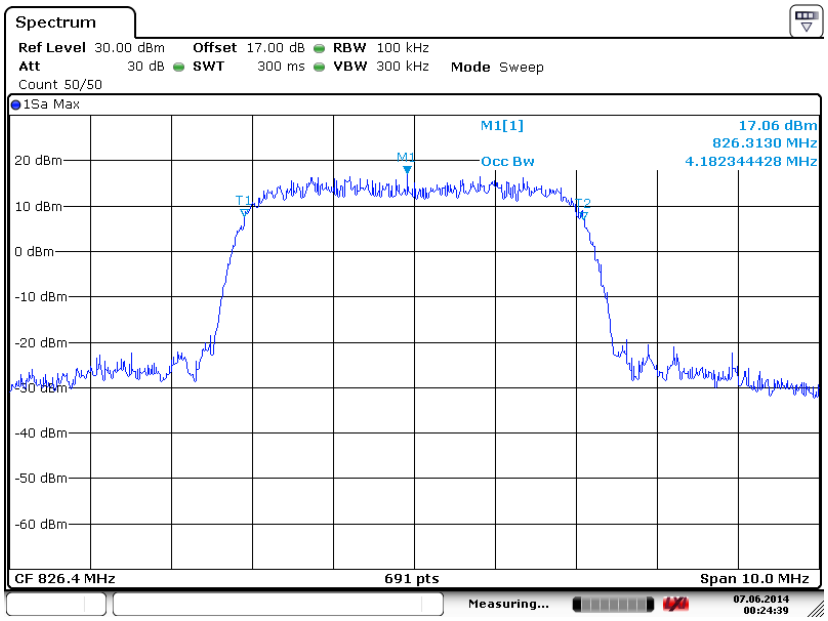
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9098203 GHz	17.81 dBm	ndB down	302.5 kHz
T1		1	1.909648 GHz	-8.12 dBm	ndB	26.00 dB
T2		1	1.9099505 GHz	-8.34 dBm	Q factor	6314.3

Date: 30.MAY.2014 01:01:35

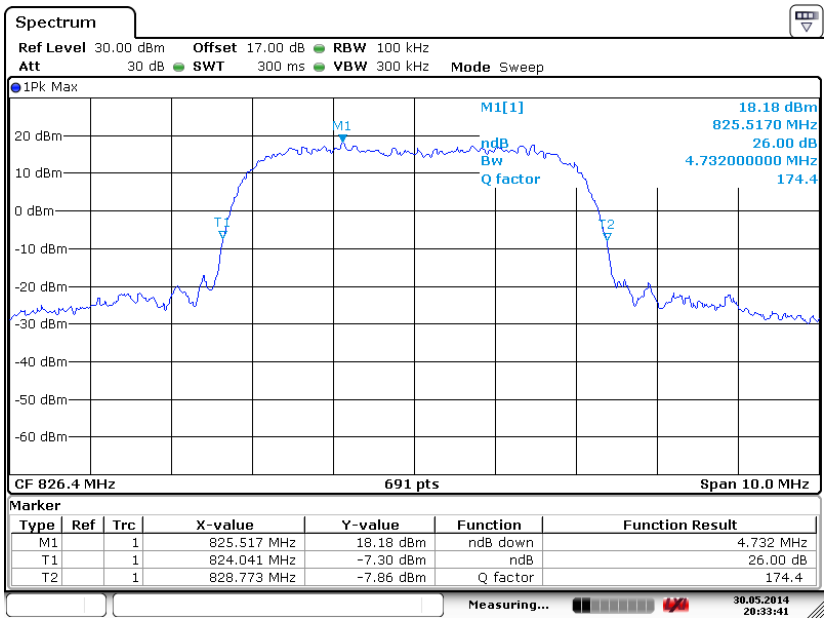
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



Date: 7.JUN.2014 00:24:39

26dB Bandwidth Plot on Channel 4132 (826.4 MHz)

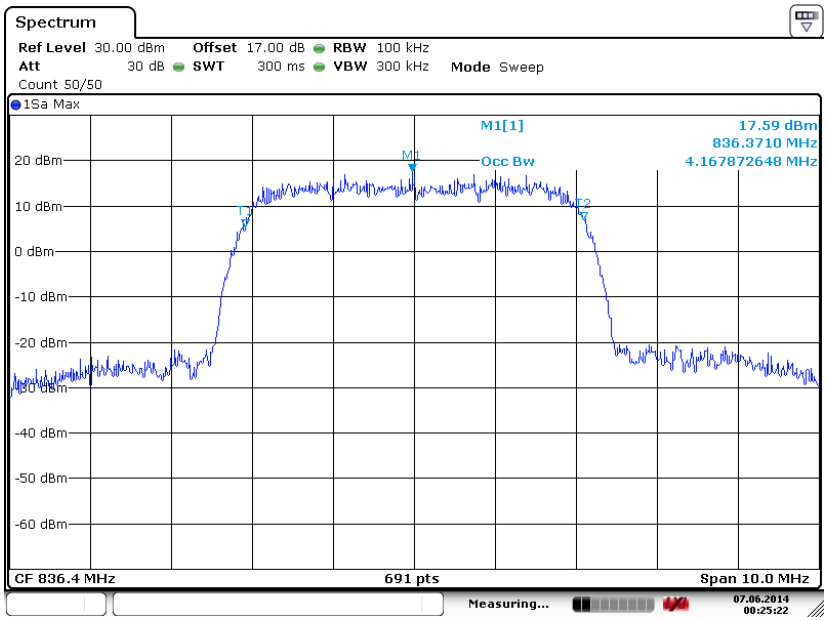


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	825.517 MHz	18.18 dBm	ndB down	4.732 MHz
T1		1	824.041 MHz	-7.30 dBm	ndB	26.00 dB
T2		1	828.773 MHz	-7.86 dBm	Q factor	174.4

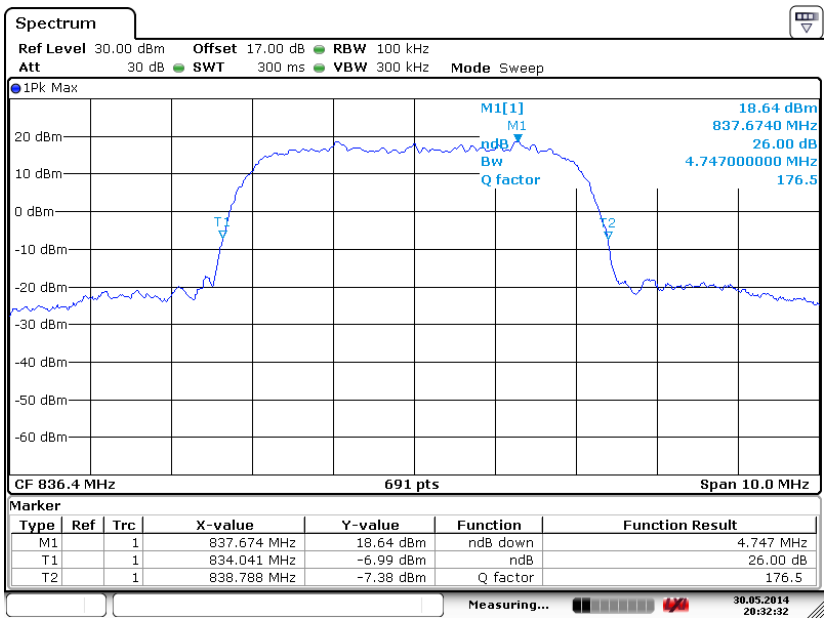
Date: 30.MAY.2014 20:33:41

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



Date: 7.JUN.2014 00:25:22

26dB Bandwidth Plot on Channel 4182 (836.4 MHz)

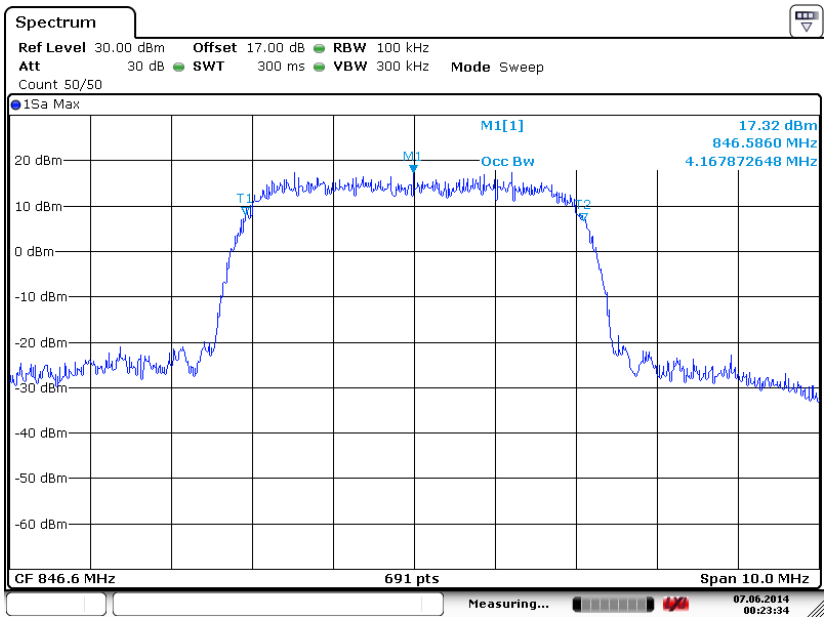


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	837.674 MHz	18.64 dBm	ndB down	4.747 MHz
T1		1	834.041 MHz	-6.99 dBm	ndB	26.00 dB
T2		1	838.788 MHz	-7.38 dBm	Q factor	176.5

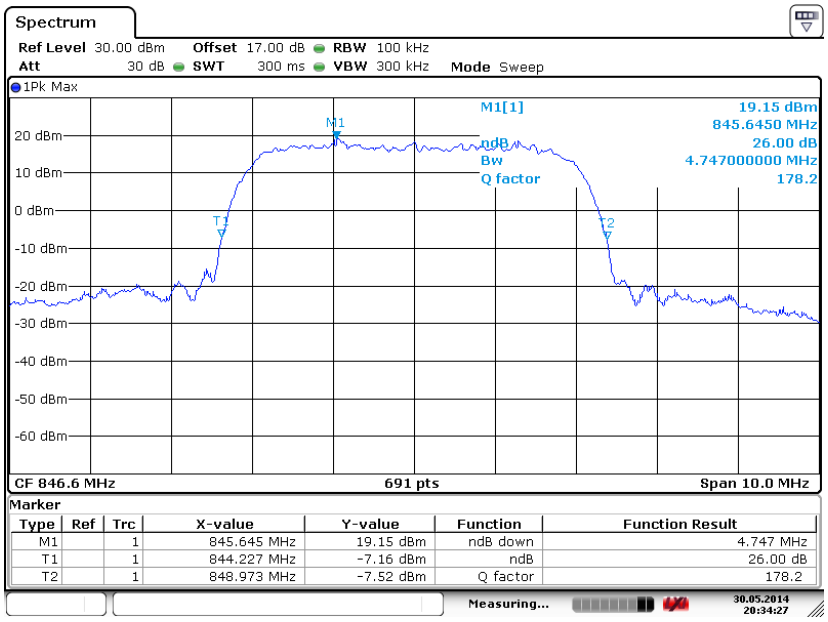
Date: 30.MAY.2014 20:32:32

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



Date: 7.JUN.2014 00:23:34

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)



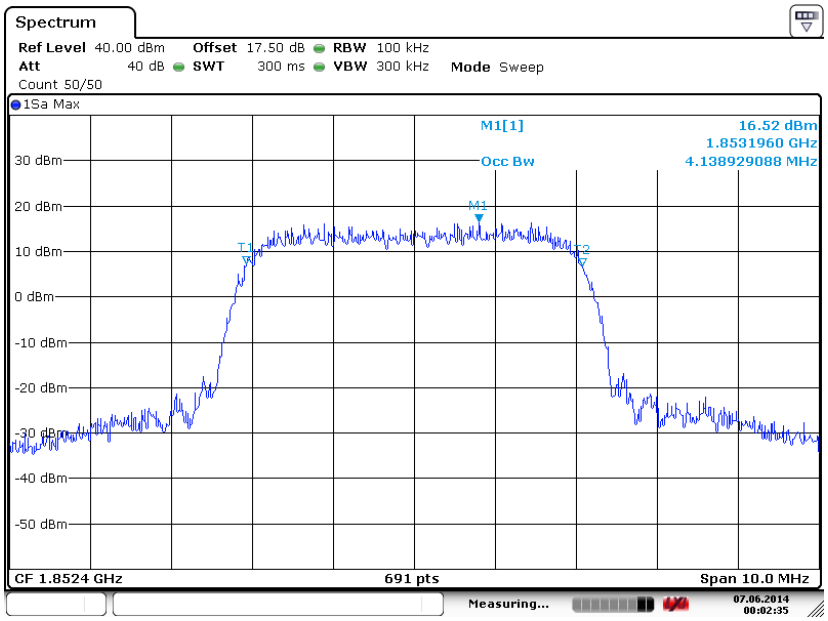
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	845.645 MHz	19.15 dBm	ndB down	4.747 MHz
T1		1	844.227 MHz	-7.16 dBm	ndB	26.00 dB
T2		1	848.973 MHz	-7.52 dBm	Q factor	178.2

Date: 30.MAY.2014 20:34:27

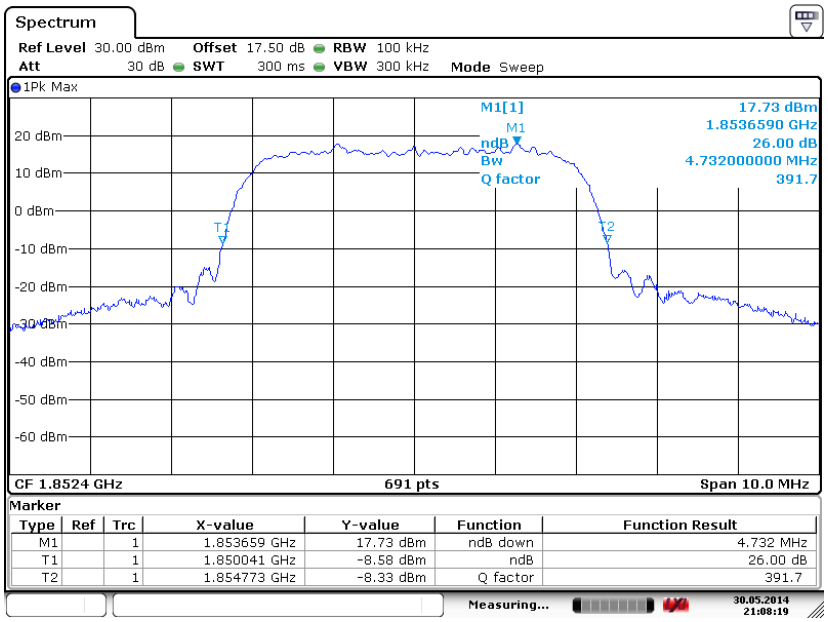
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



Date: 7.JUN.2014 00:02:35

26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)

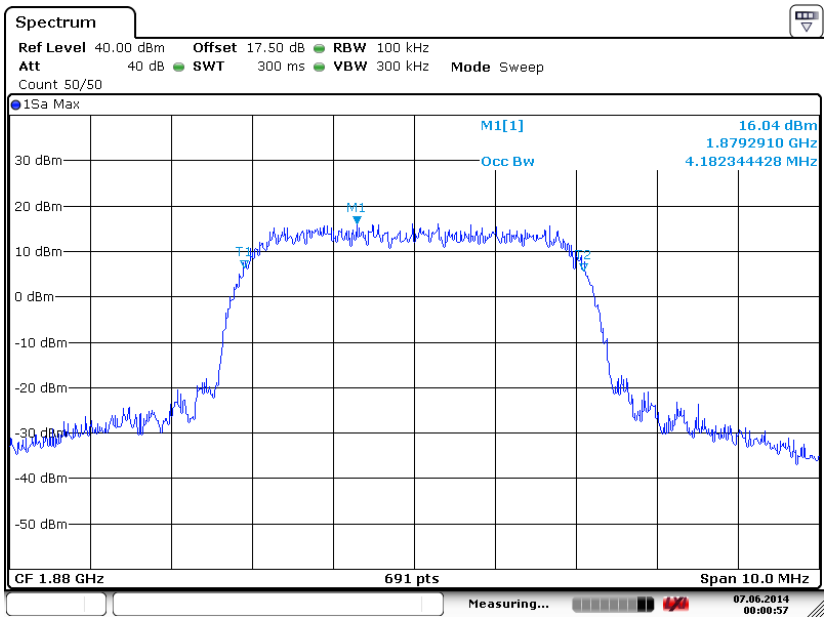


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.853659 GHz	17.73 dBm	ndB down	4.732 MHz
T1		1	1.850041 GHz	-8.58 dBm	ndB	26.00 dB
T2		1	1.854773 GHz	-8.33 dBm	Q factor	391.7

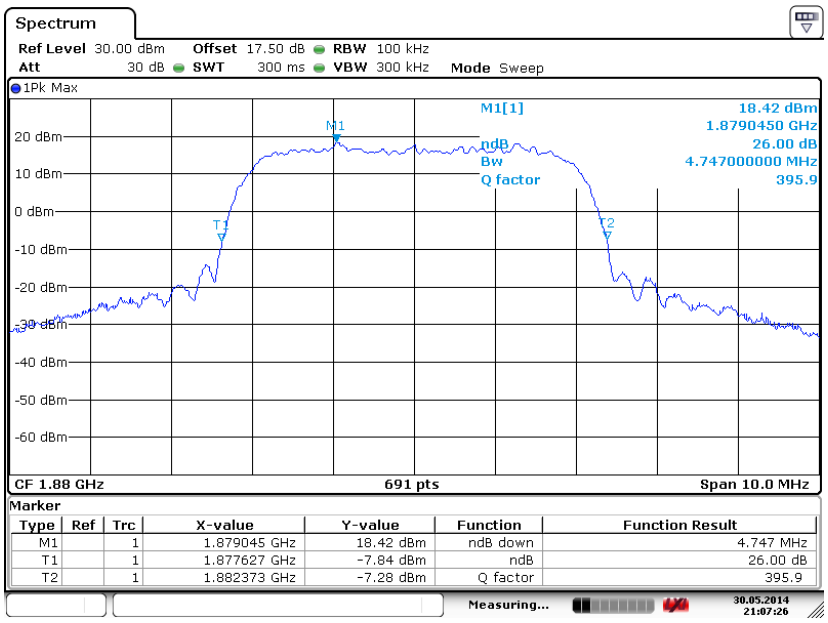
Date: 30.MAY.2014 21:08:19

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



Date: 7.JUN.2014 00:00:56

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)

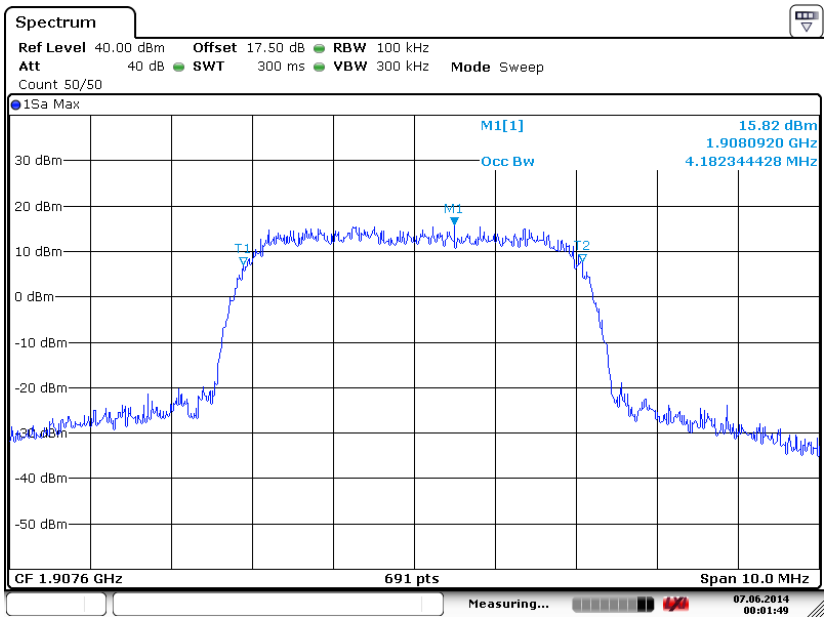


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.879045 GHz	18.42 dBm	ndB down	4.747 MHz
T1		1	1.877627 GHz	-7.84 dBm	ndB	26.00 dB
T2		1	1.882373 GHz	-7.28 dBm	Q factor	395.9

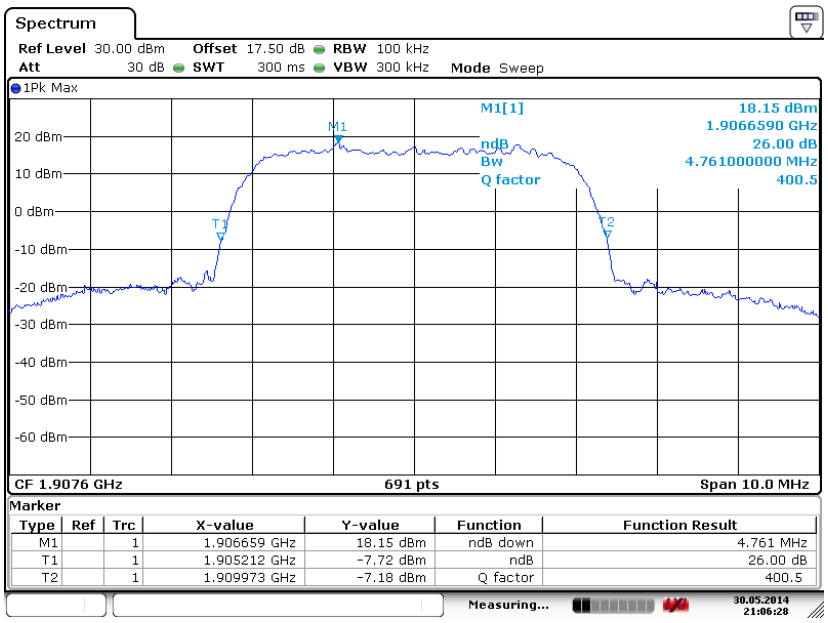
Date: 30.MAY.2014 21:07:26

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



Date: 7.JUN.2014 00:01:49

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.906659 GHz	18.15 dBm	ndB down	4.761 MHz
T1		1	1.905212 GHz	-7.72 dBm	ndB	26.00 dB
T2		1	1.909973 GHz	-7.18 dBm	Q factor	400.5

Date: 30.MAY.2014 21:06:28

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.

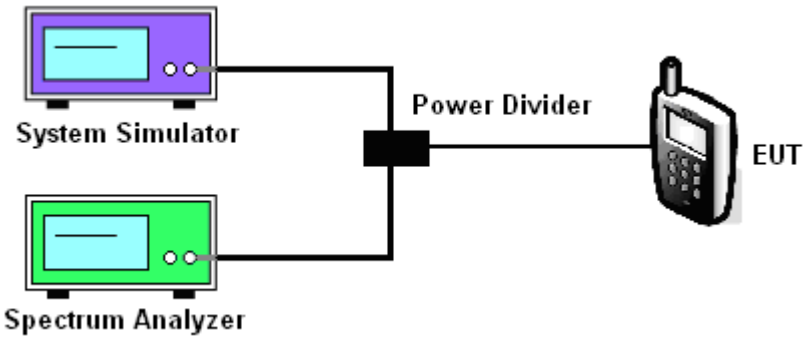
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. 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.
3. The band edges of low and high channels for the highest RF powers were measured.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
5. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
   = P(W) - [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

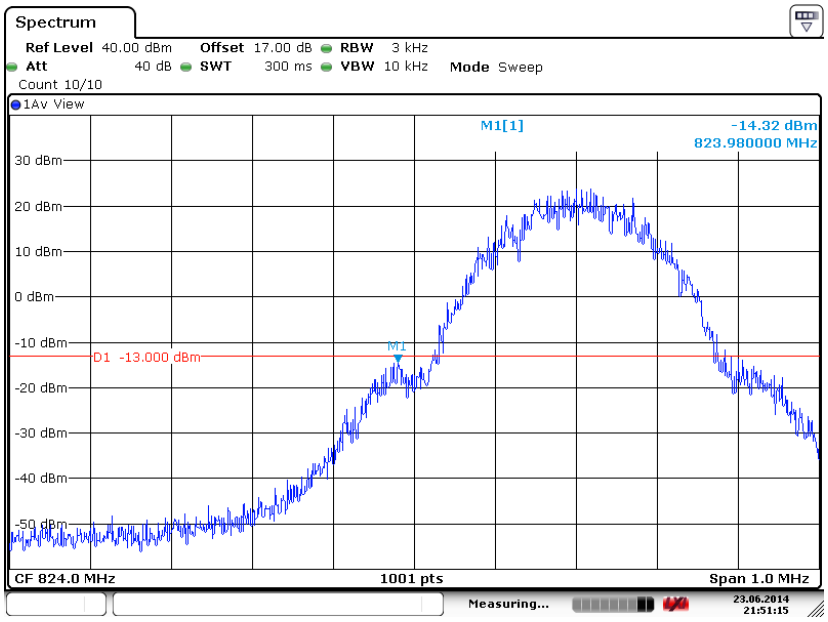
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	GSM850	**Test Mode :**	GSM Link (GMSK)
Correction Factor :	0.14dB	**Maximum 26dB Bandwidth :**	0.310MHz
Band Edge :	-14.18dBm	**Measurement Value :**	-14.32dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)

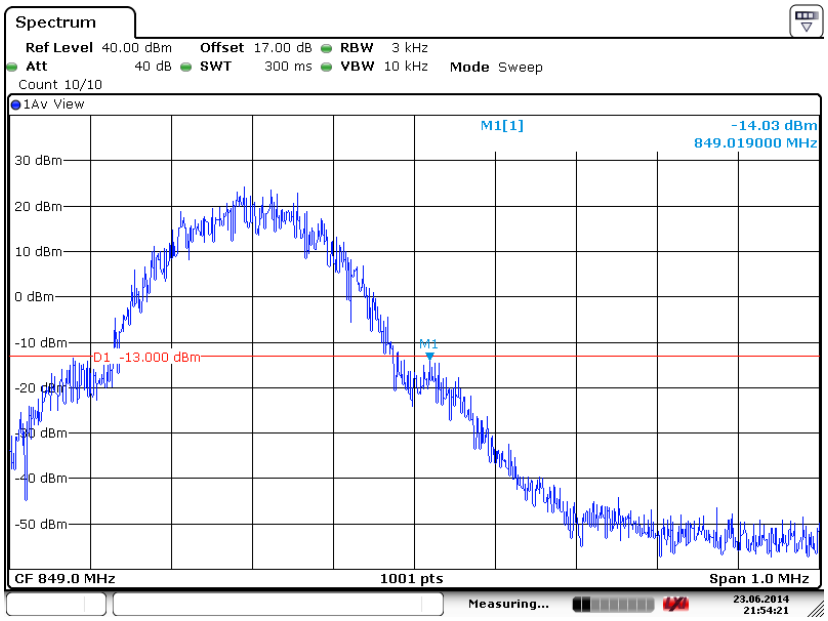


1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM850	**Test Mode :**	GSM Link (GMSK)
Correction Factor :	0.14dB	**Maximum 26dB Bandwidth :**	0.310MHz
Band Edge :	-13.89dBm	**Measurement Value :**	-14.03dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



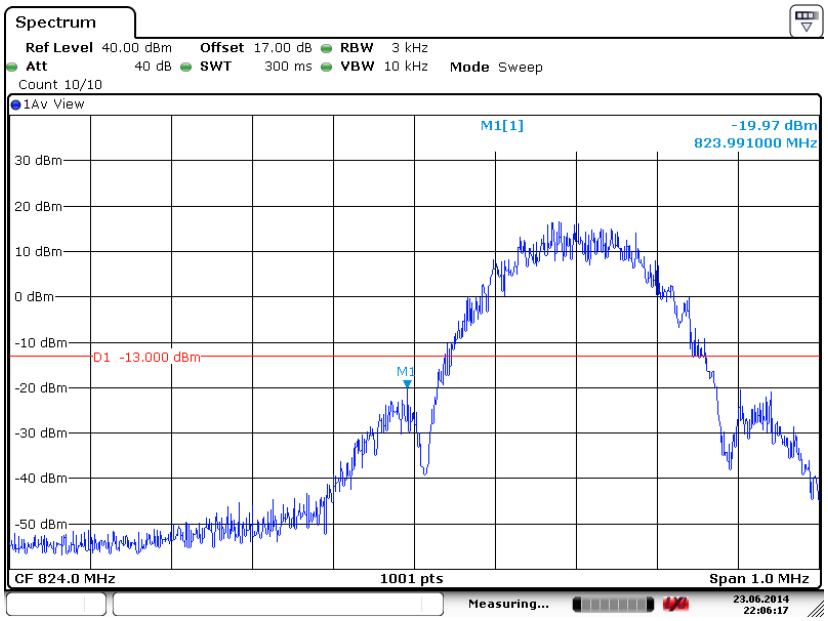
Date: 23.JUN.2014 21:54:21

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM850	**Test Mode :**	EDGE class 8 Link (8PSK)
Correction Factor :	0.18dB	**Maximum 26dB Bandwidth :**	0.313MHz
Band Edge :	-19.79dBm	**Measurement Value :**	-19.97dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)



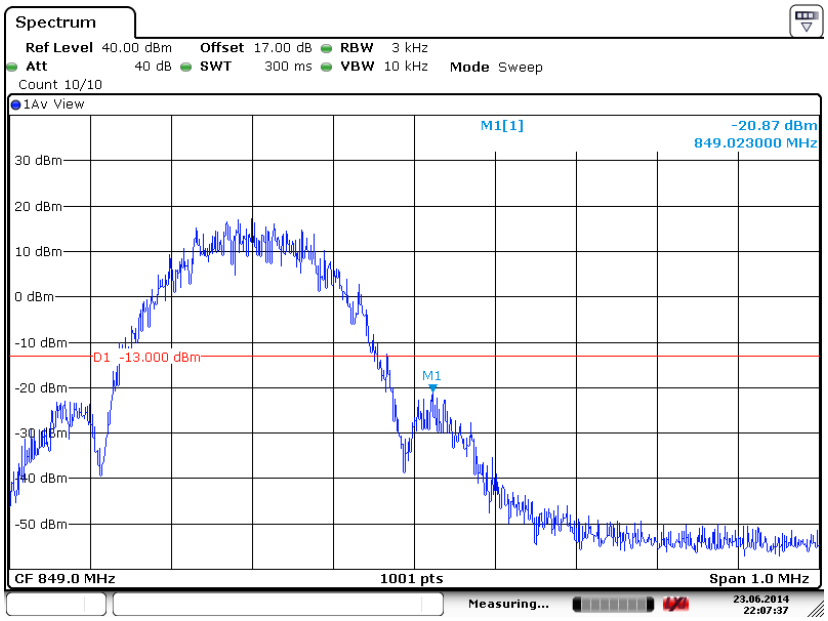
Date: 23.JUN.2014 22:06:17

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM850	**Test Mode :**	EDGE class 8 Link (8PSK)
Correction Factor :	0.18dB	**Maximum 26dB Bandwidth :**	0.313MHz
Band Edge :	-20.69dBm	**Measurement Value :**	-20.87dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)

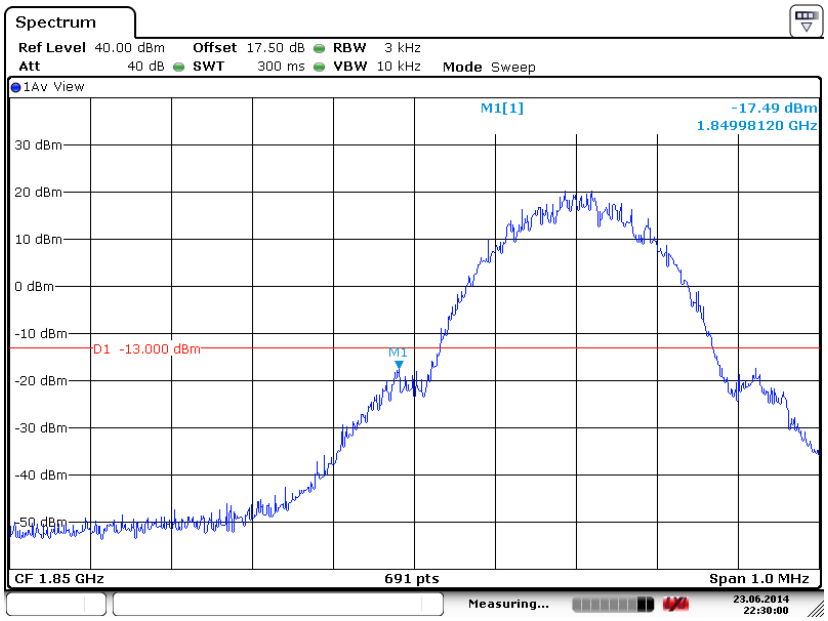


1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM1900	**Test Mode :**	GSM Link (GMSK)
Correction Factor :	0.12dB	**Maximum 26dB Bandwidth :**	0.308MHz
Band Edge :	-17.37dBm	**Measurement Value :**	-17.49dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



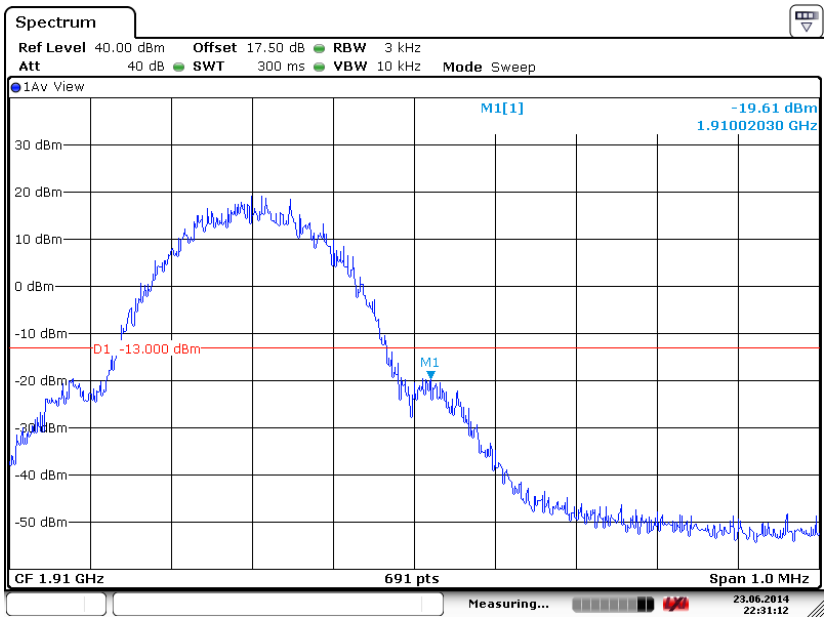
Date: 23.JUN.2014 22:30:00

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM1900	**Test Mode :**	GSM Link (GMSK)
Correction Factor :	0.12dB	**Maximum 26dB Bandwidth :**	0.308MHz
Band Edge :	-19.49dBm	**Measurement Value :**	-19.61dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



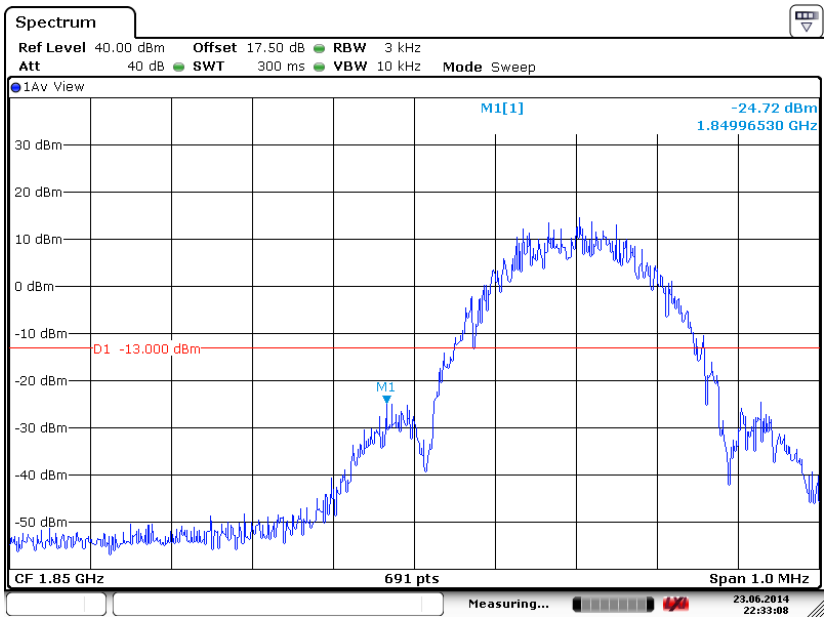
Date: 23.JUN.2014 22:31:12

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM1900	**Test Mode :**	EDGE class 8 Link (8PSK)
Correction Factor :	0.06dB	**Maximum 26dB Bandwidth :**	0.304MHz
Band Edge :	-24.66dBm	**Measurement Value :**	-24.72dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



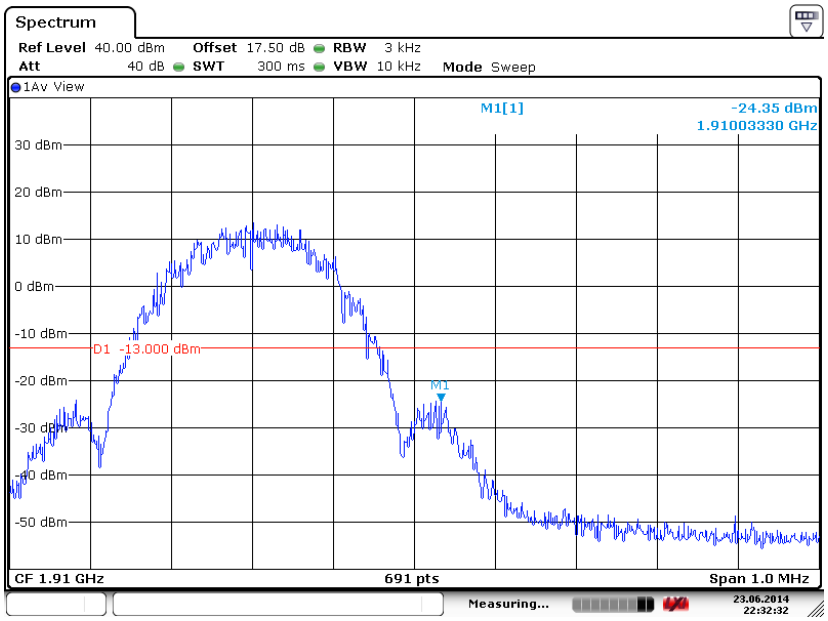
Date: 23.JUN.2014 22:33:08

1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	GSM1900	**Test Mode :**	EDGE class 8 Link (8PSK)
Correction Factor :	0.06dB	**Maximum 26dB Bandwidth :**	0.304MHz
Band Edge :	-24.29dBm	**Measurement Value :**	-24.35dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

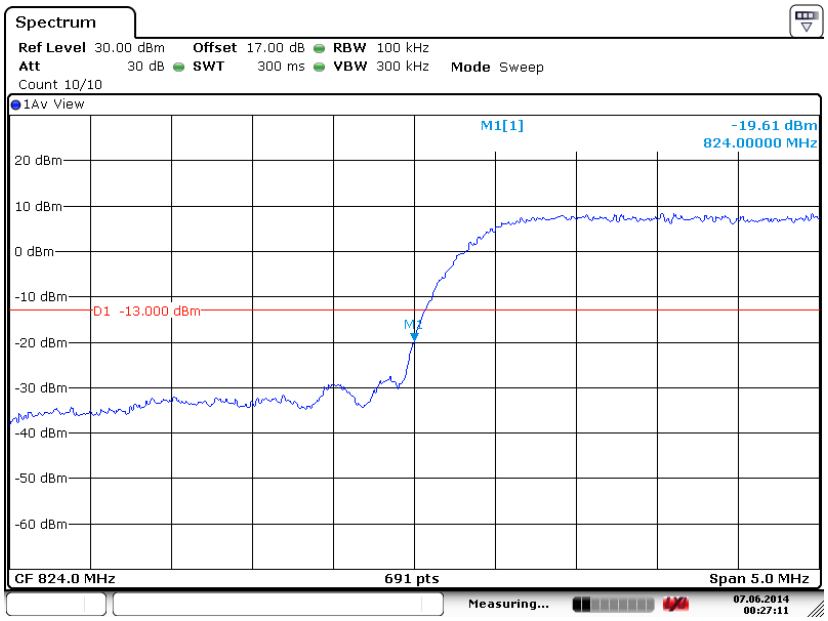


1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

2. Band Edge= Measurement Value + Correction Factor(dB)

Band :	WCDMA Band V	**Test Mode :**	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.24dB	**Maximum 26dB Bandwidth :**	4.750MHz
Band Edge :	-22.85dBm	**Measurement Value :**	-19.61dBm

Lower Band Edge Plot on Channel 4132 (826.4 MHz)



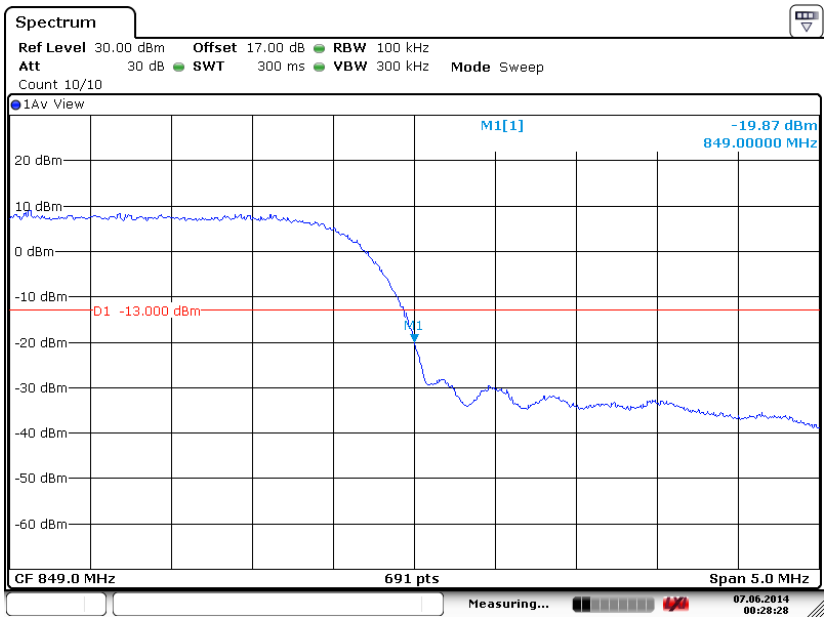
Date: 7.JUN.2014 00:27:11

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 (QPSK)
Correction Factor :	-3.24dB	**Maximum 26dB Bandwidth :**	4.750MHz
Band Edge :	-23.11dBm	**Measurement Value :**	-19.87dBm

Higher Band Edge Plot on Channel 4233 (846.6 MHz)



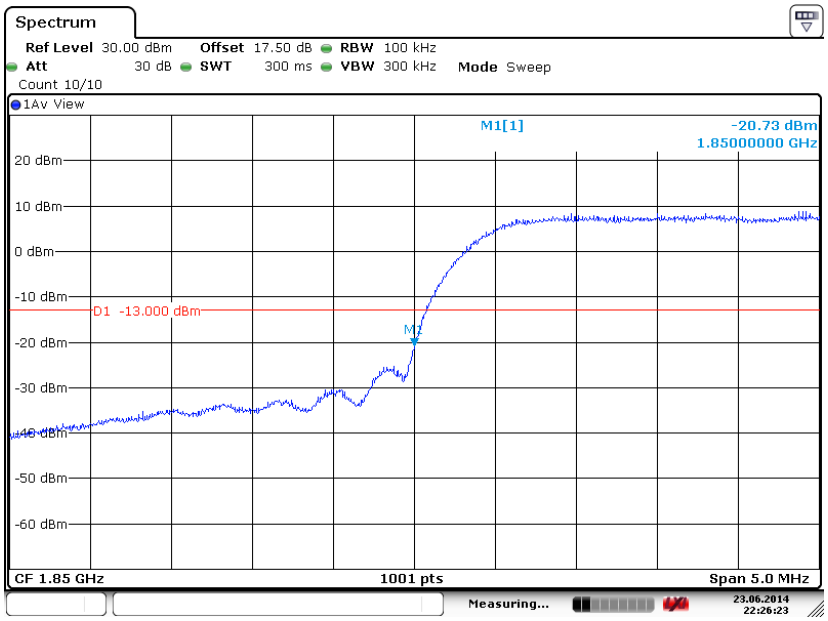
Date: 7.JUN.2014 00:28:27

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 (QPSK)
Correction Factor :	-3.22dB	**Maximum 26dB Bandwidth :**	4.760MHz
Band Edge :	-23.95dBm	**Measurement Value :**	-20.73dBm

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



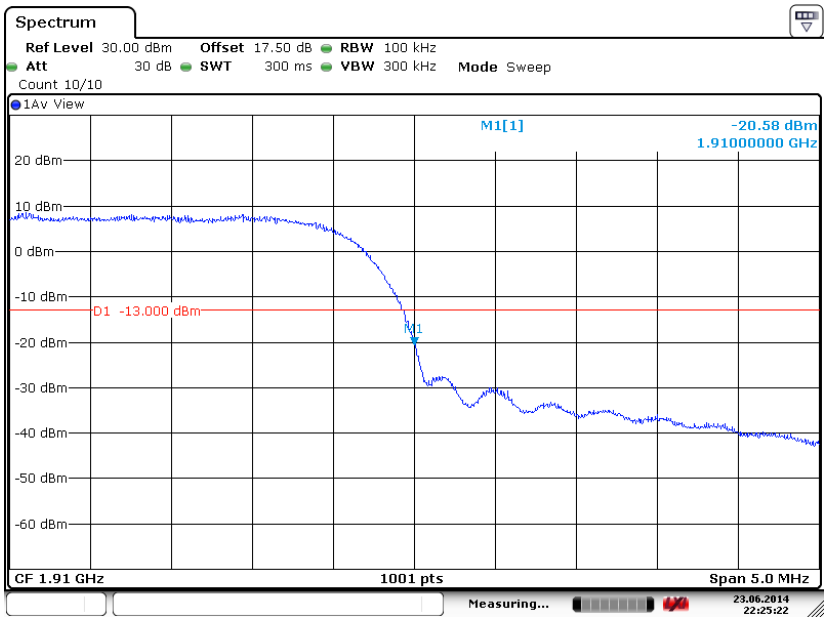
Date: 23.JUN.2014 22:26:22

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 (QPSK)
Correction Factor :	-3.22dB	**Maximum 26dB Bandwidth :**	4.760MHz
Band Edge :	-23.80dBm	**Measurement Value :**	-20.58dBm

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)



Date: 23.JUN.2014 22:25:22

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.

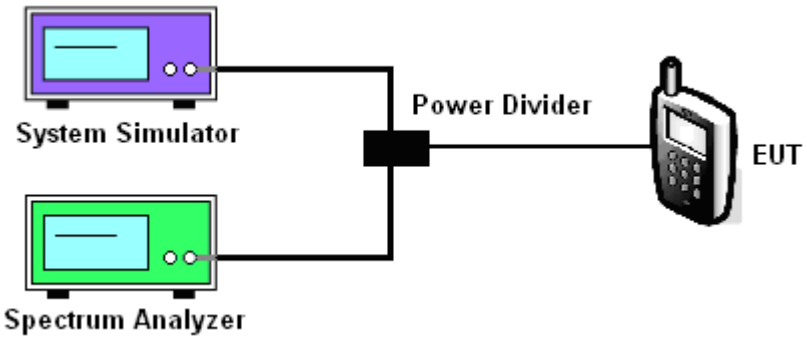
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. 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.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
   = P(W) - [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

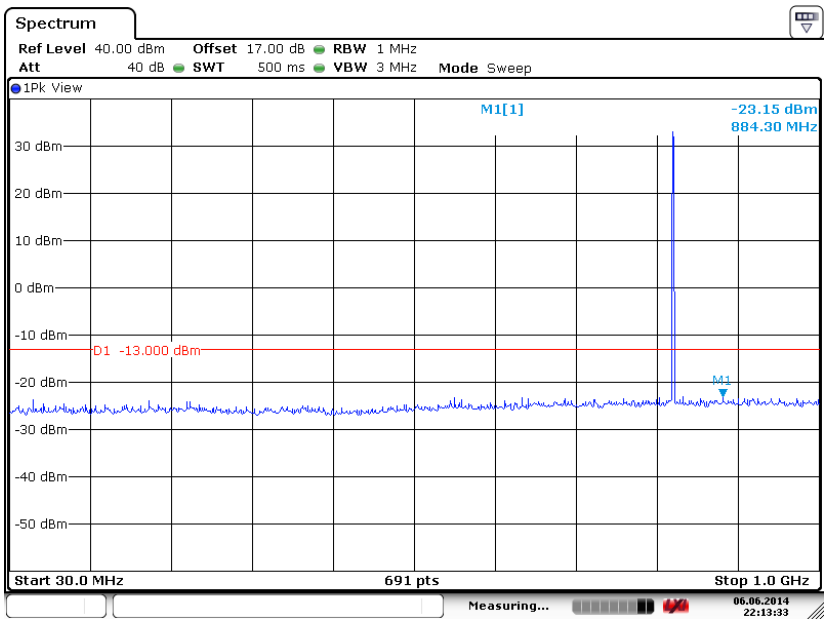
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

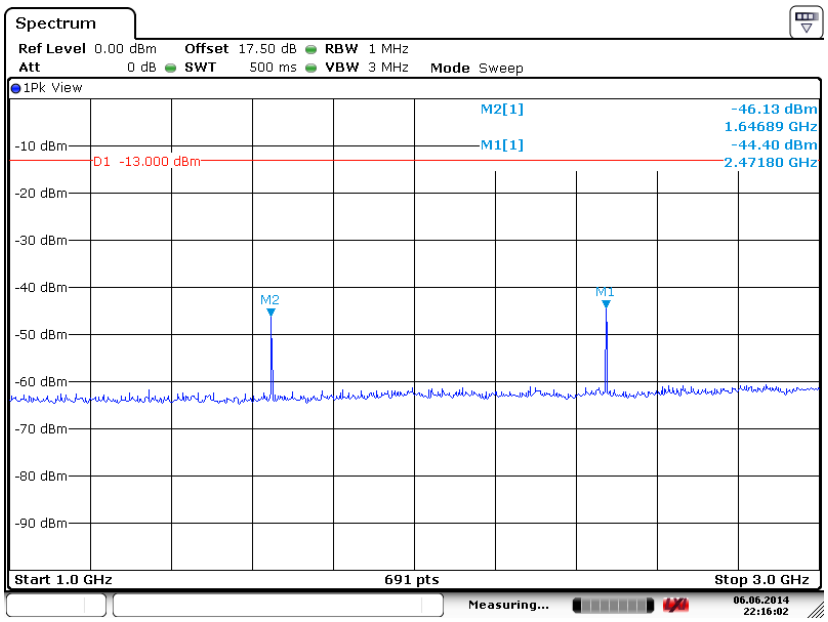
Band :	GSM850	Channel :	CH128
Test Mode :	GSM Link (GMSK)	Frequency :	824.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



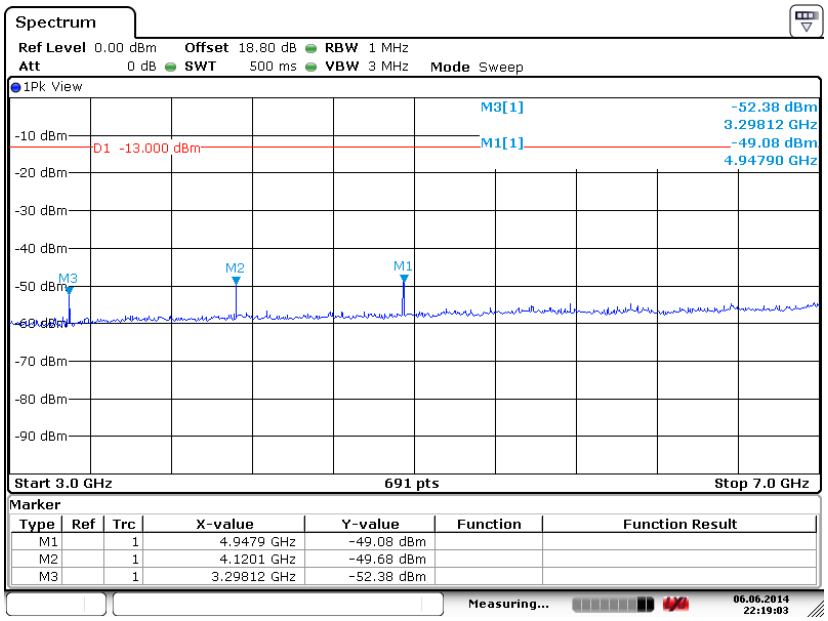
Date: 6.JUN.2014 22:13:33

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



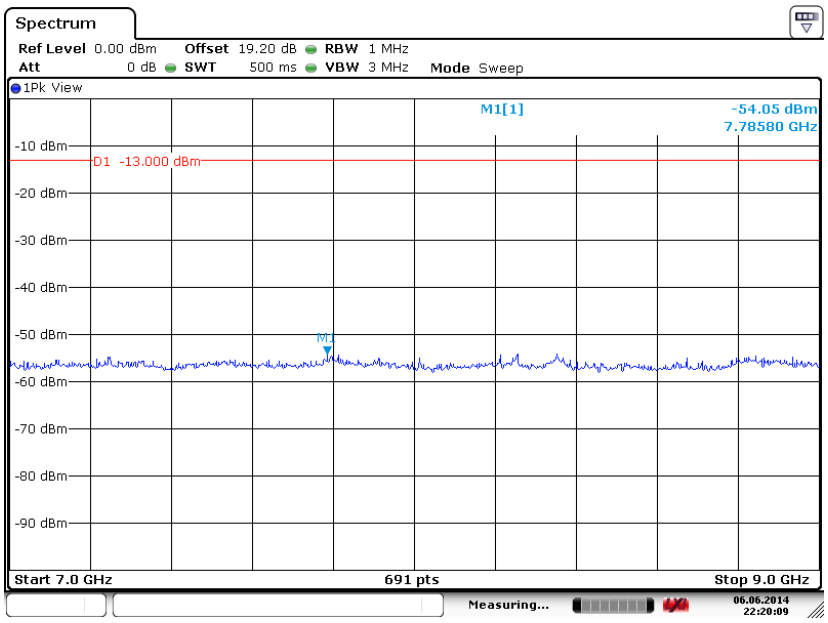
Date: 6.JUN.2014 22:16:02

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 6.JUN.2014 22:19:02

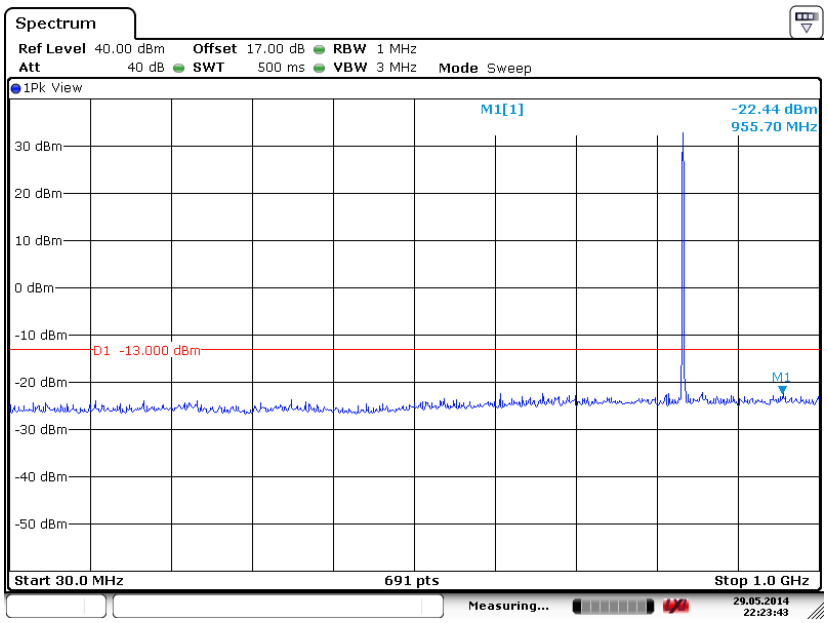
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 6.JUN.2014 22:20:09

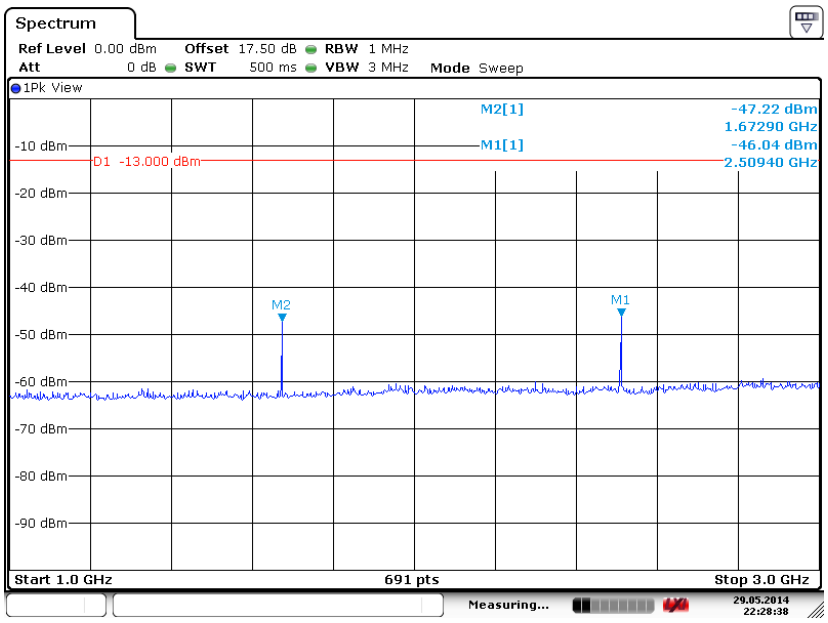
Band :	GSM850	Channel :	CH189
Test Mode :	GSM Link (GMSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



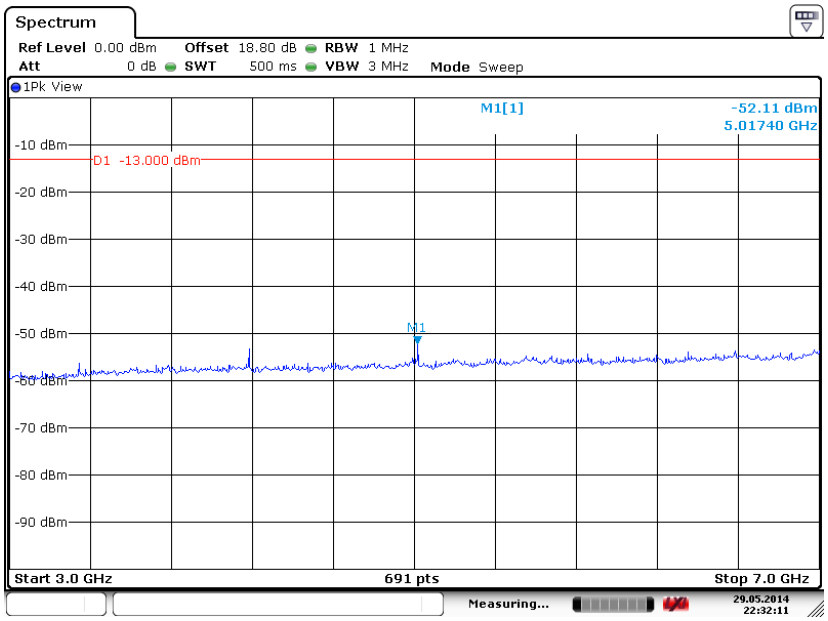
Date: 29.MAY.2014 22:23:43

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



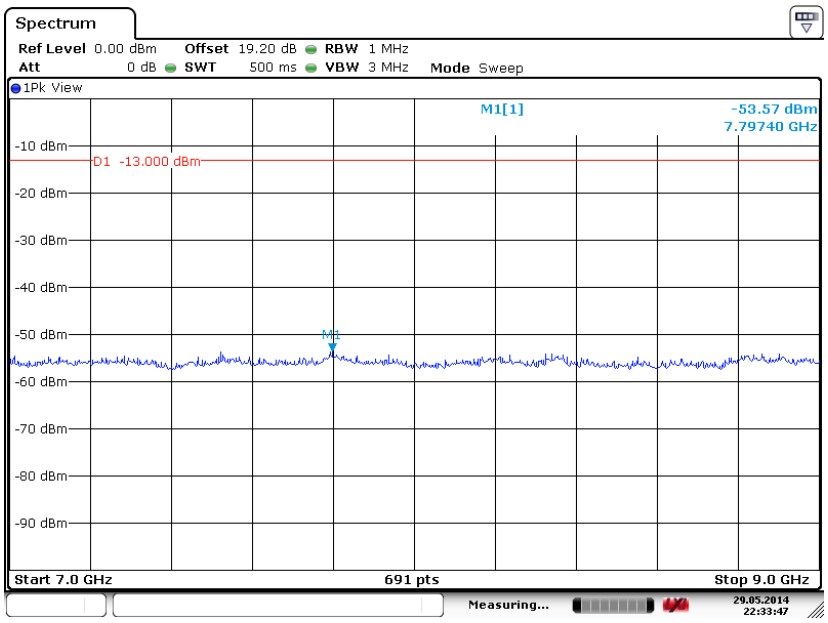
Date: 29.MAY.2014 22:28:38

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 29.MAY.2014 22:32:11

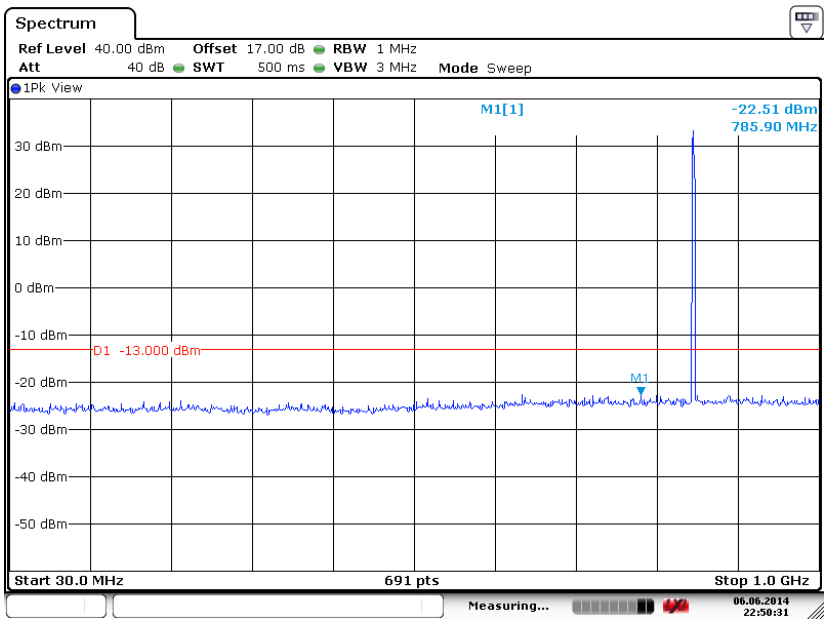
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 29.MAY.2014 22:33:47

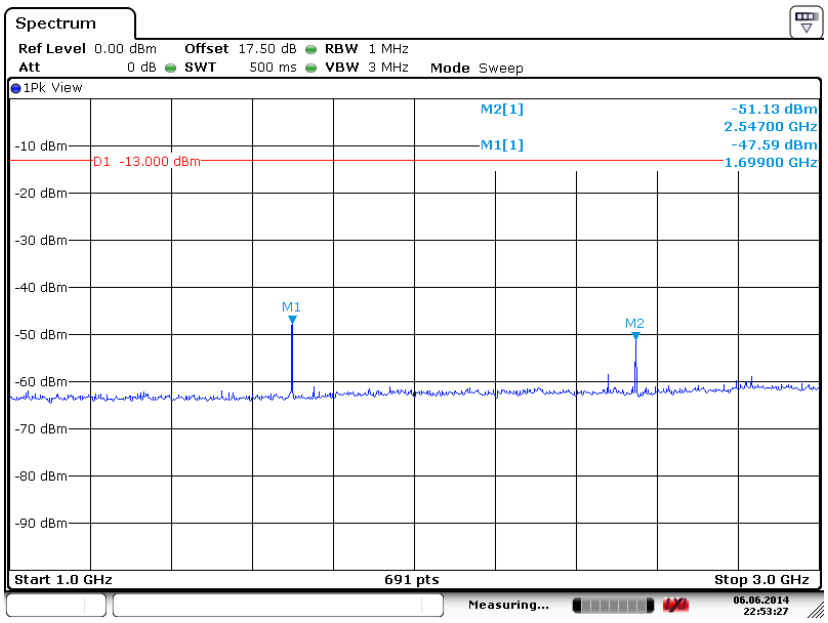
Band :	GSM850	Channel :	CH251
Test Mode :	GSM Link (GMSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



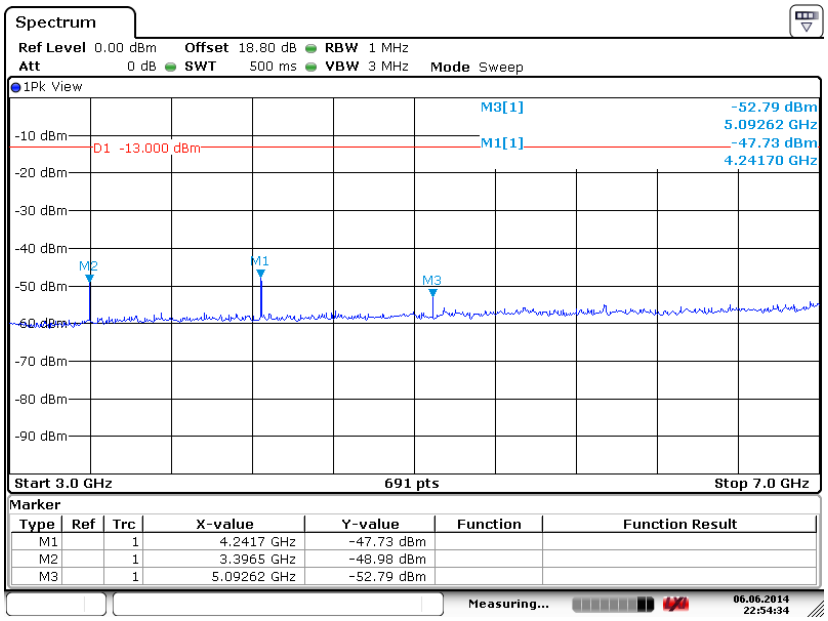
Date: 6.JUN.2014 22:50:31

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



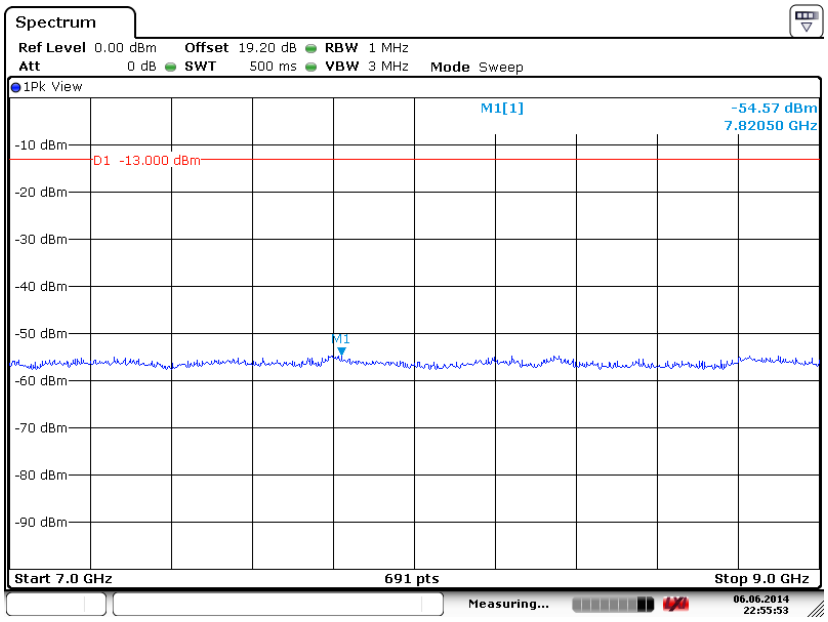
Date: 6.JUN.2014 22:53:27

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 6.JUN.2014 22:54:33

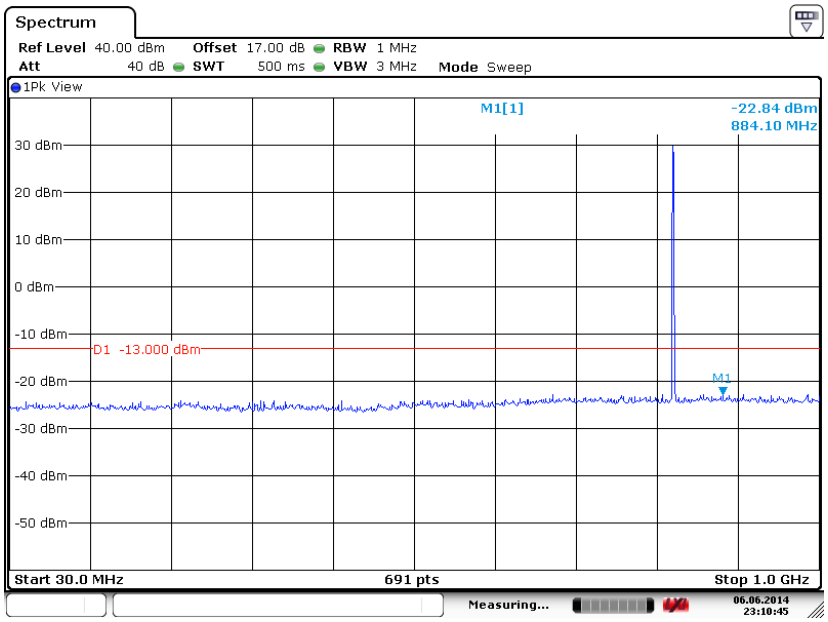
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 6.JUN.2014 22:55:53

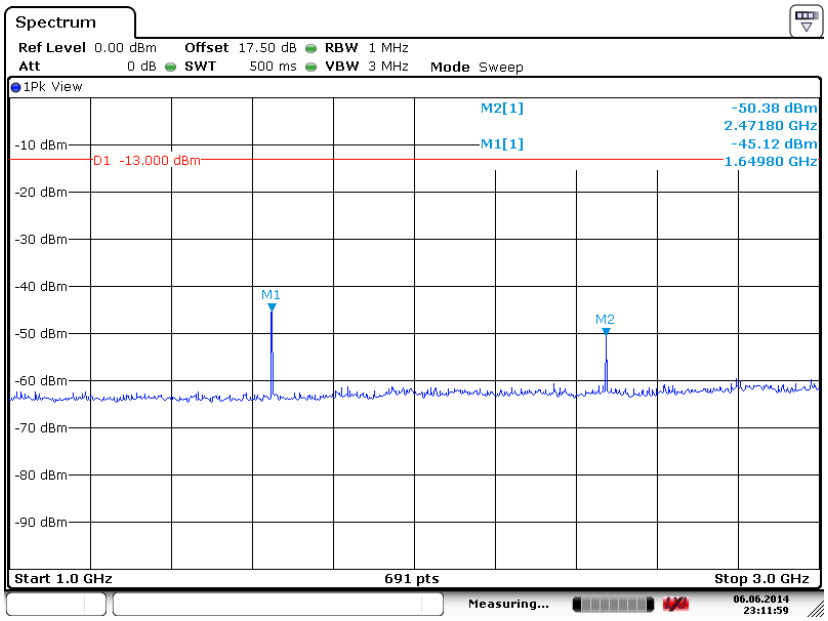
Band :	GSM850	Channel :	CH128
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	824.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



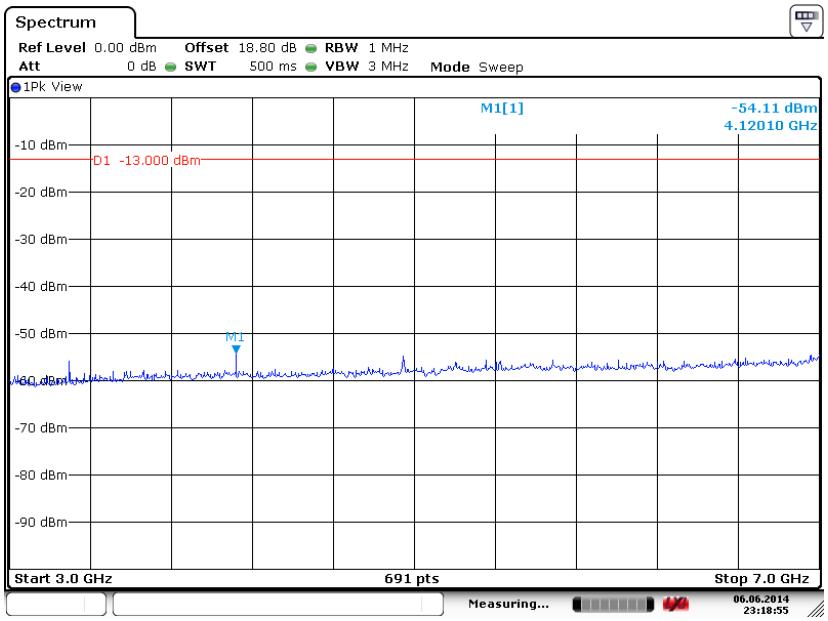
Date: 6.JUN.2014 23:10:44

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



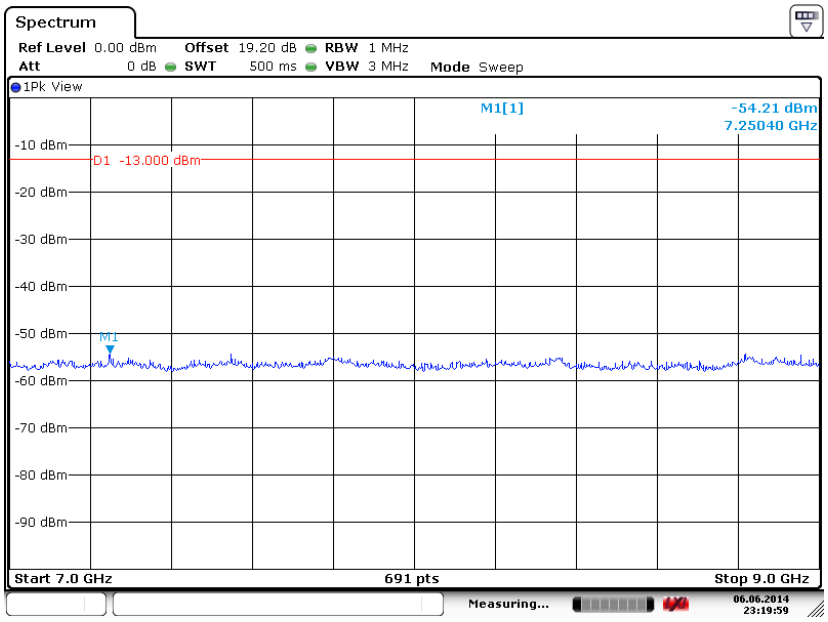
Date: 6.JUN.2014 23:11:58

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 6.JUN.2014 23:18:54

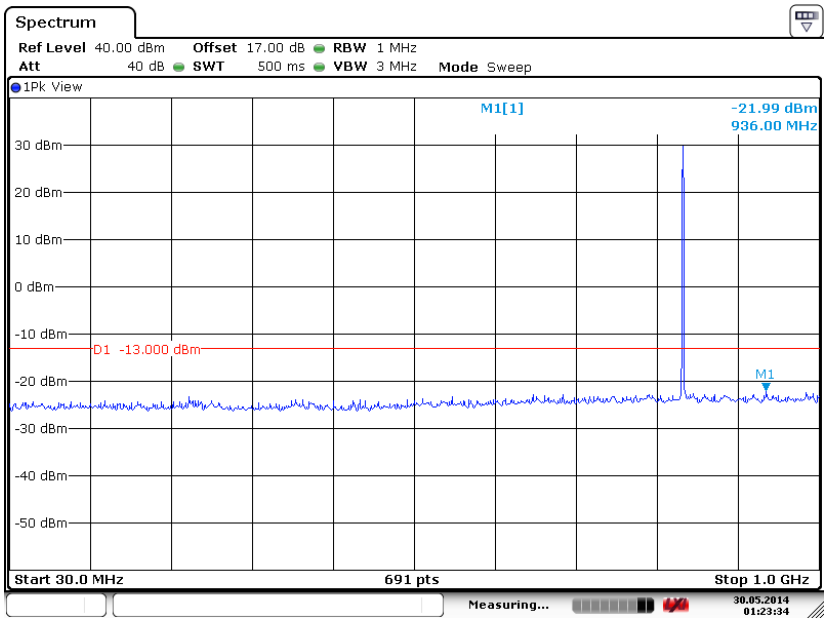
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 6.JUN.2014 23:19:58

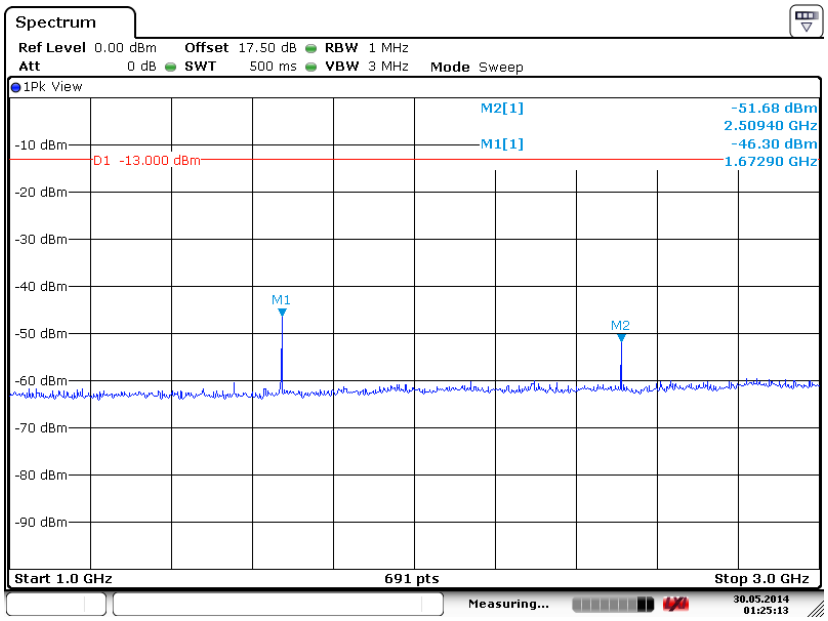
Band :	GSM850	Channel :	CH189
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



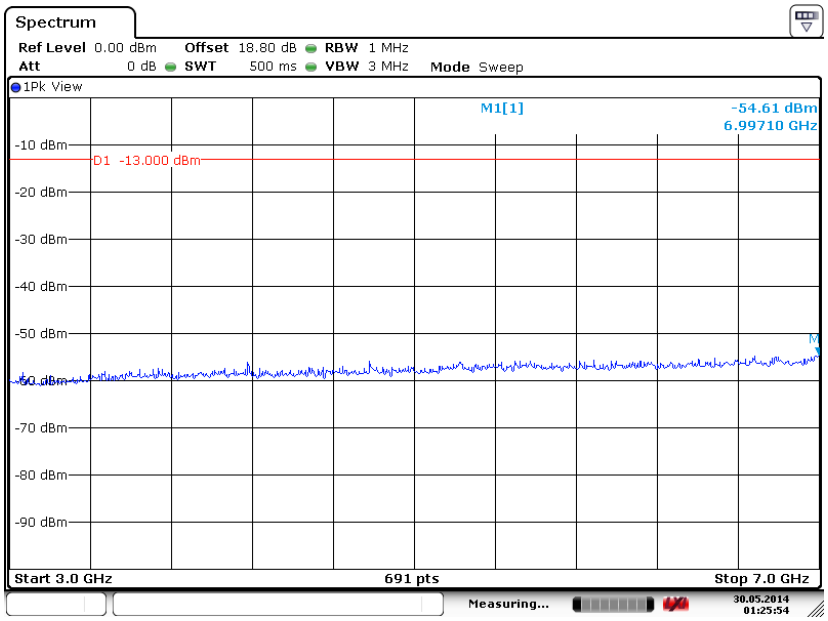
Date: 30.MAY.2014 01:23:34

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



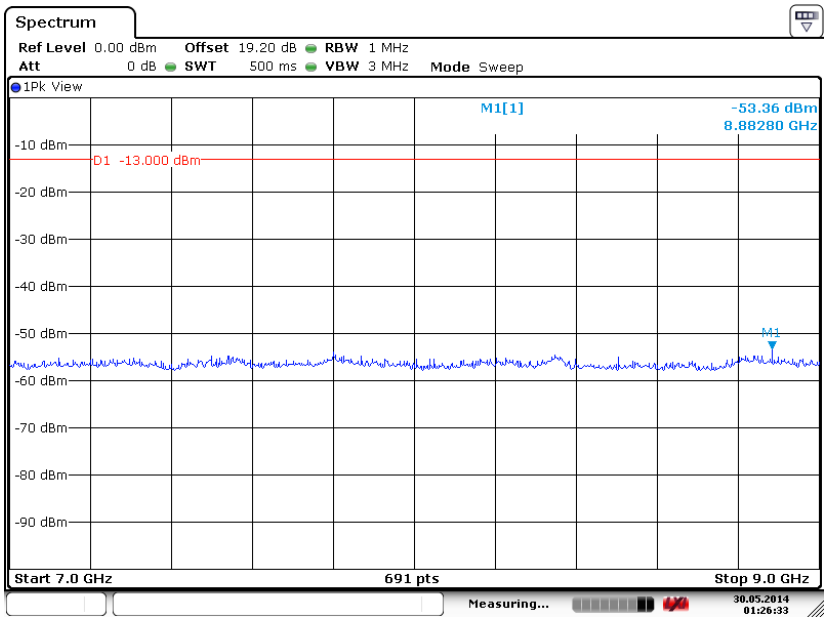
Date: 30.MAY.2014 01:25:13

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 30.MAY.2014 01:25:54

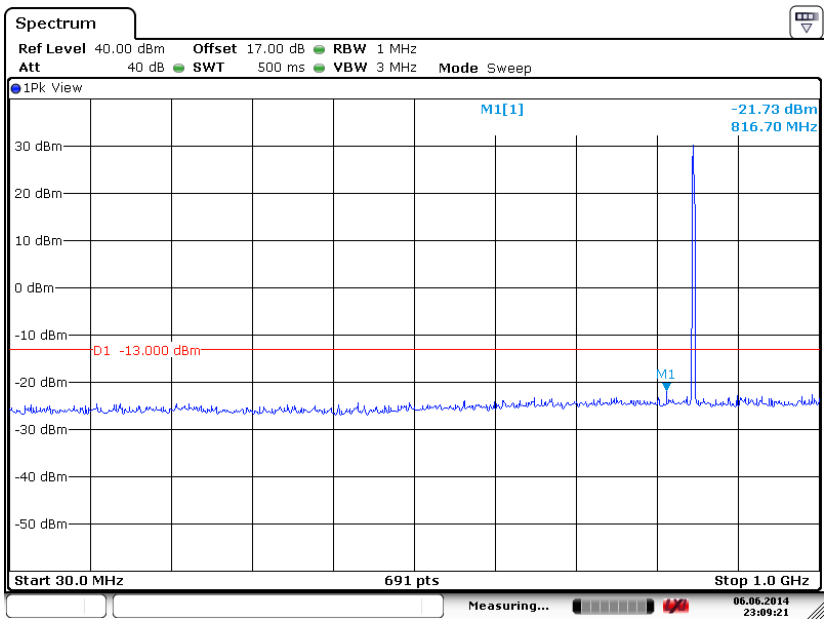
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 30.MAY.2014 01:26:33

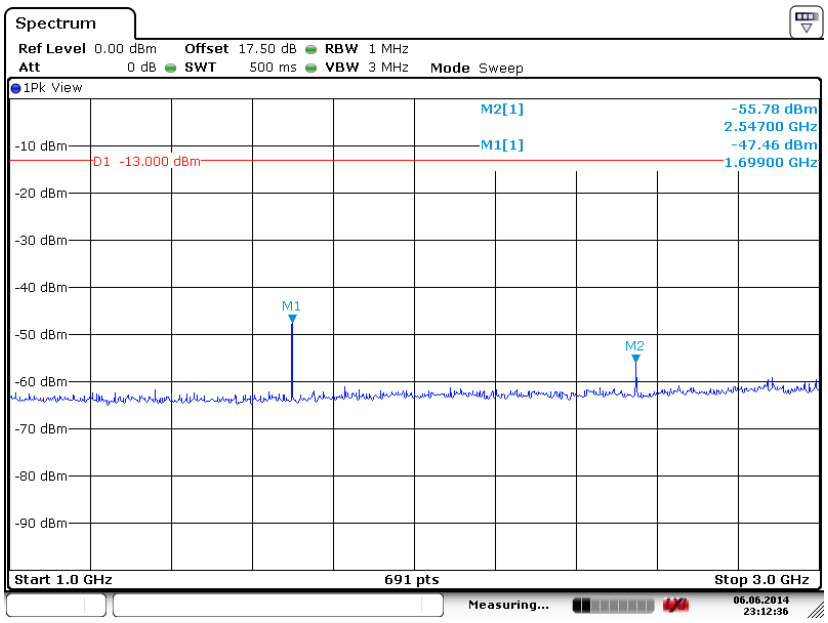
Band :	GSM850	Channel :	CH251
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



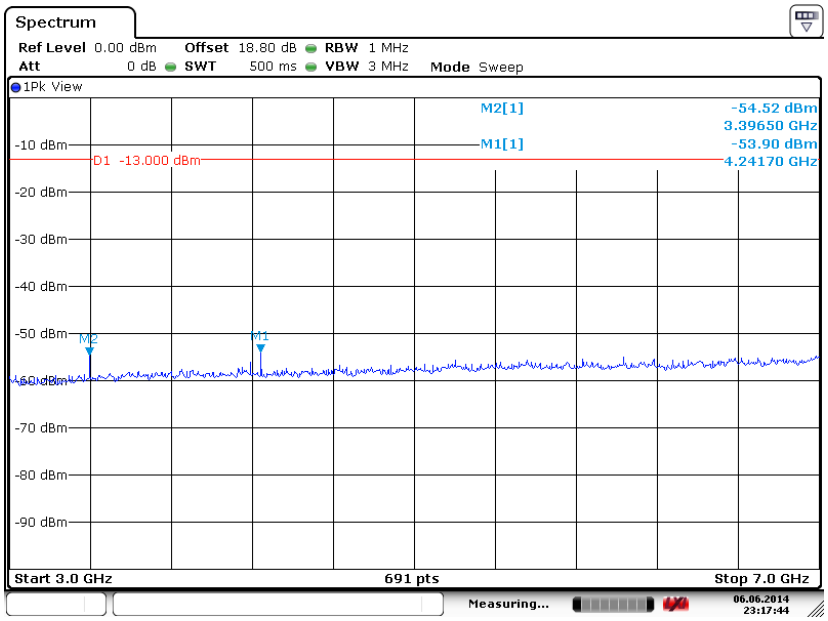
Date: 6.JUN.2014 23:09:20

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



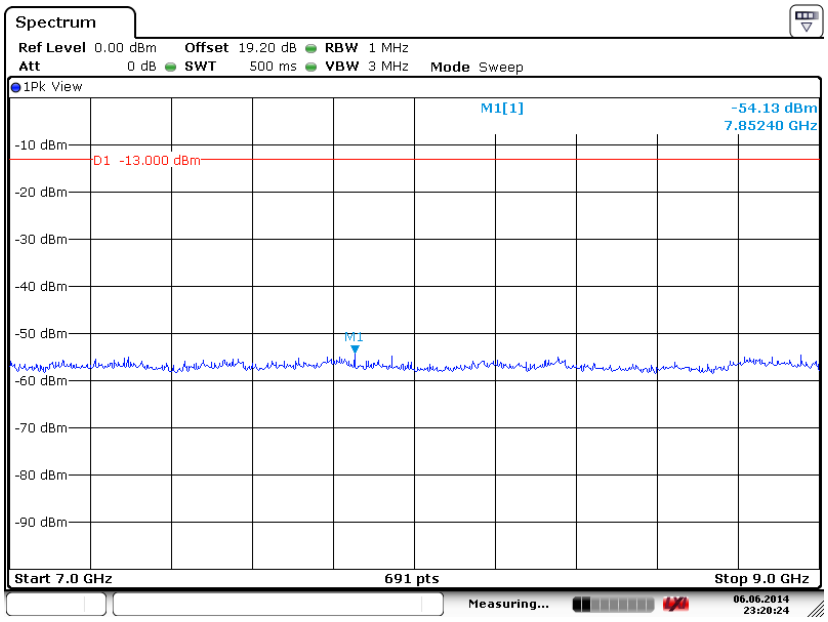
Date: 6.JUN.2014 23:12:35

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 6.JUN.2014 23:17:43

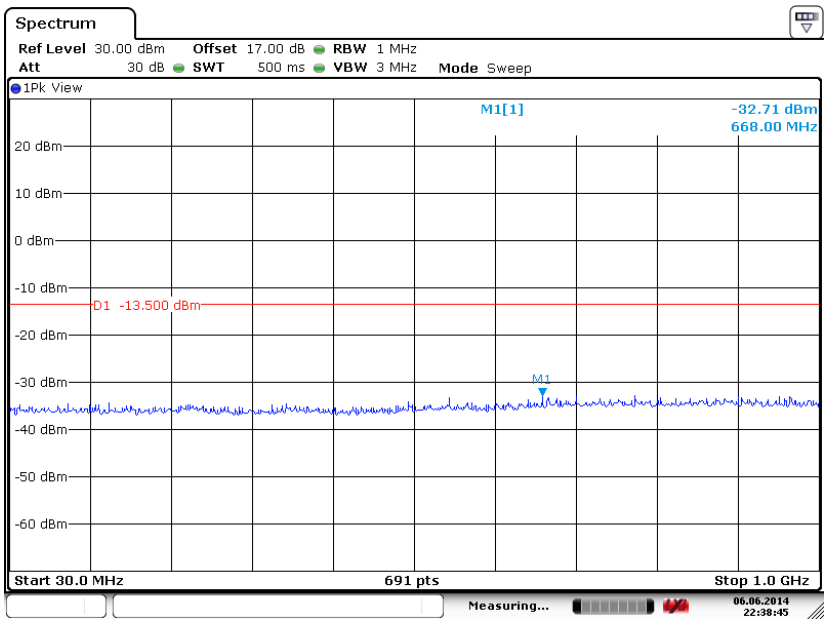
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 6.JUN.2014 23:20:23

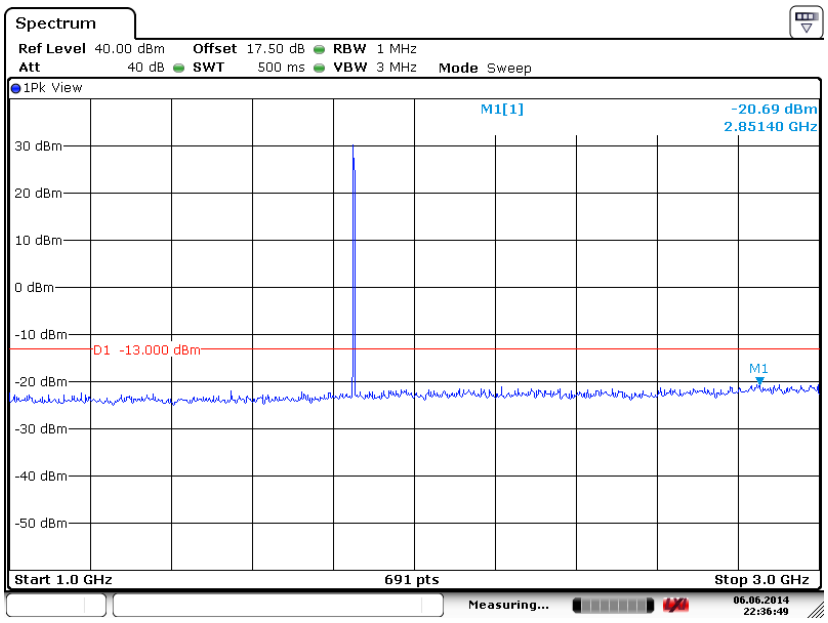
Band :	GSM1900	Channel :	CH512
Test Mode :	GSM Link (GMSK)	Frequency :	1850.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



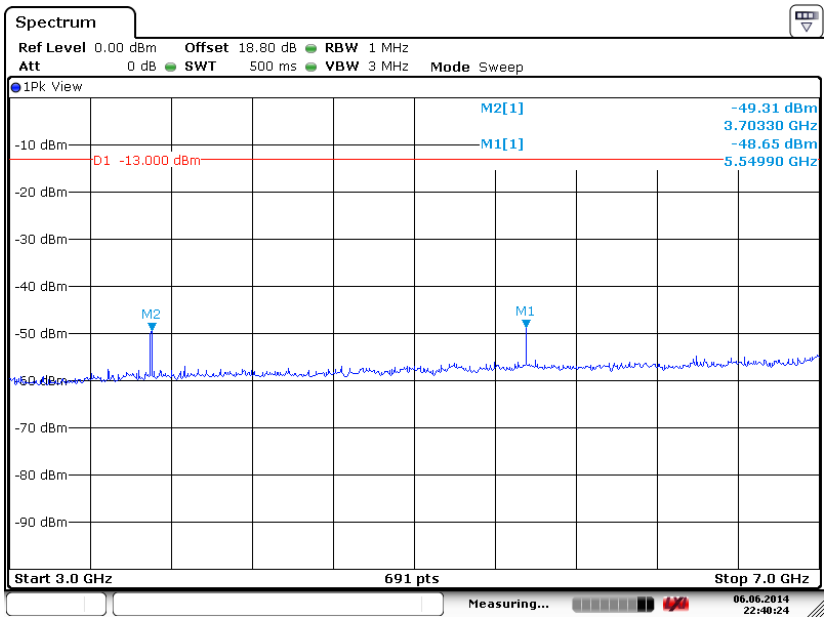
Date: 6.JUN.2014 22:38:44

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



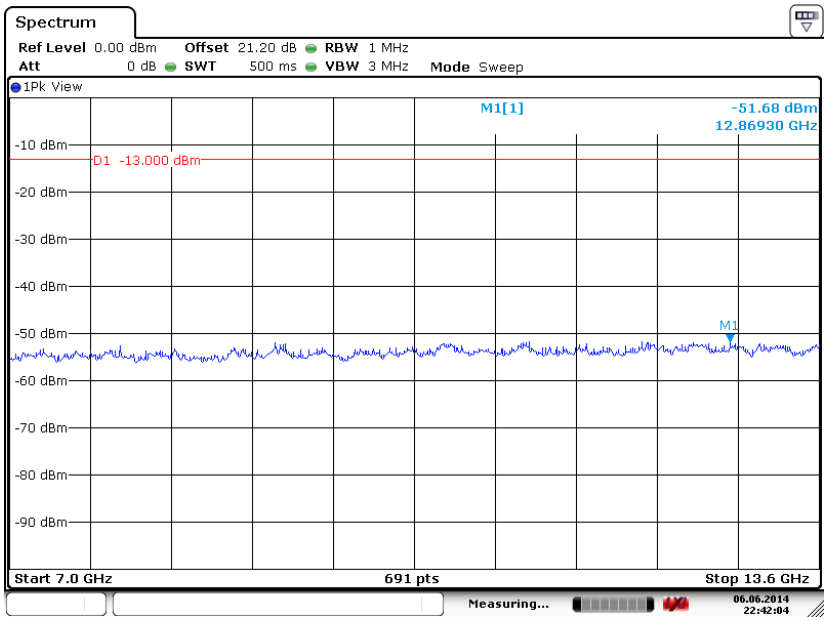
Date: 6.JUN.2014 22:36:48

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



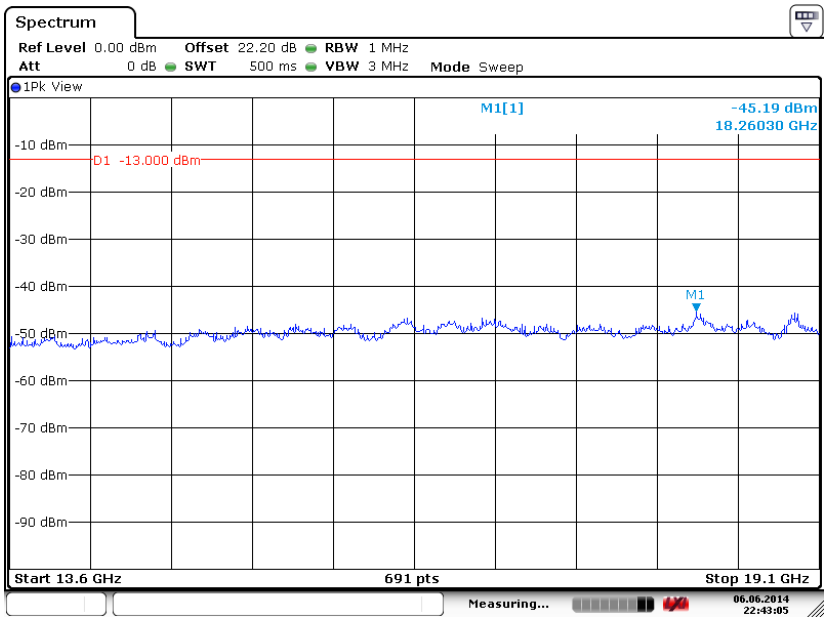
Date: 6.JUN.2014 22:40:24

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 6.JUN.2014 22:42:04

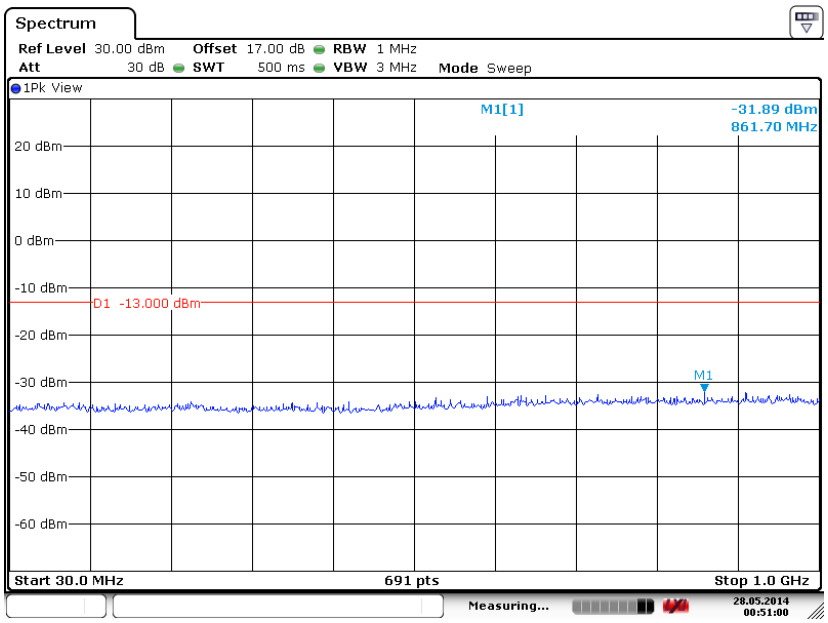
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 6.JUN.2014 22:43:05

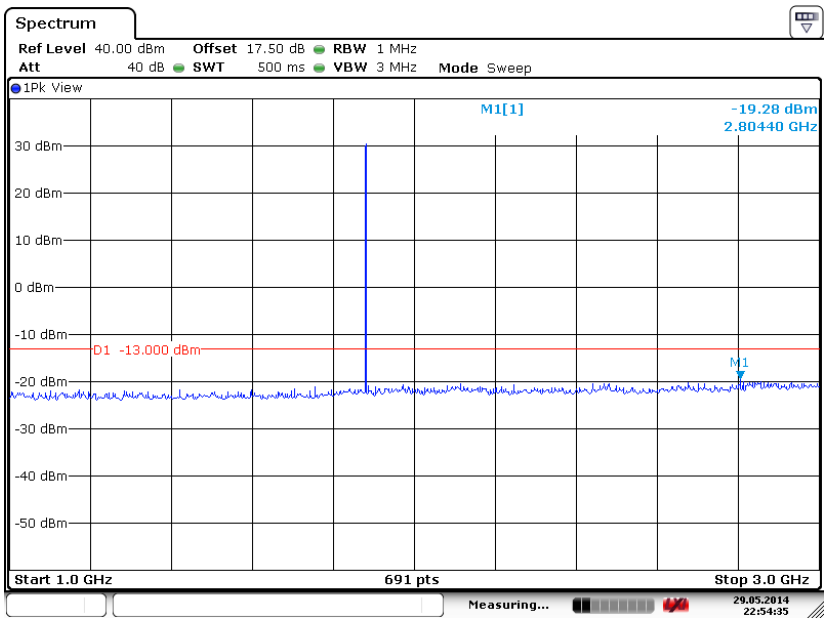
Band :	GSM1900	Channel :	CH661
Test Mode :	GSM Link (GMSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



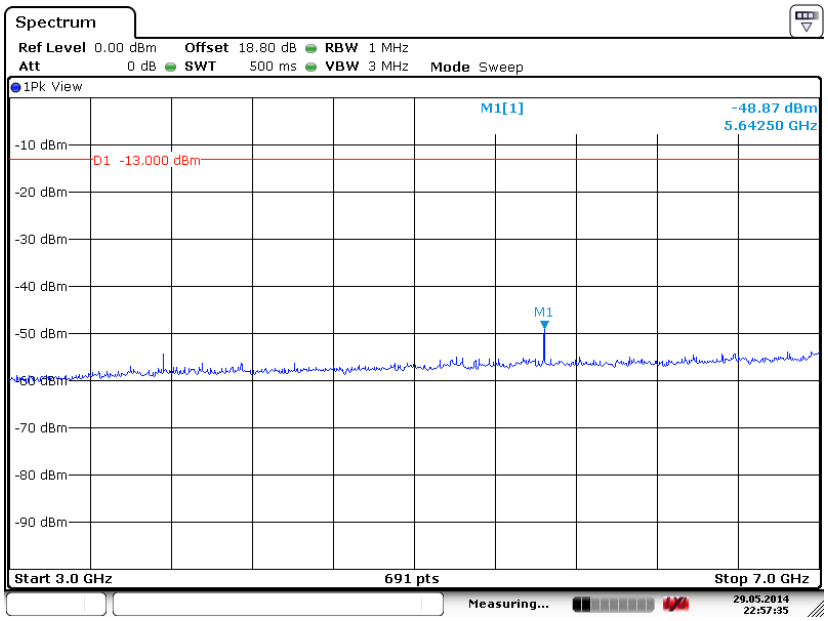
Date: 28.MAY.2014 00:51:00

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



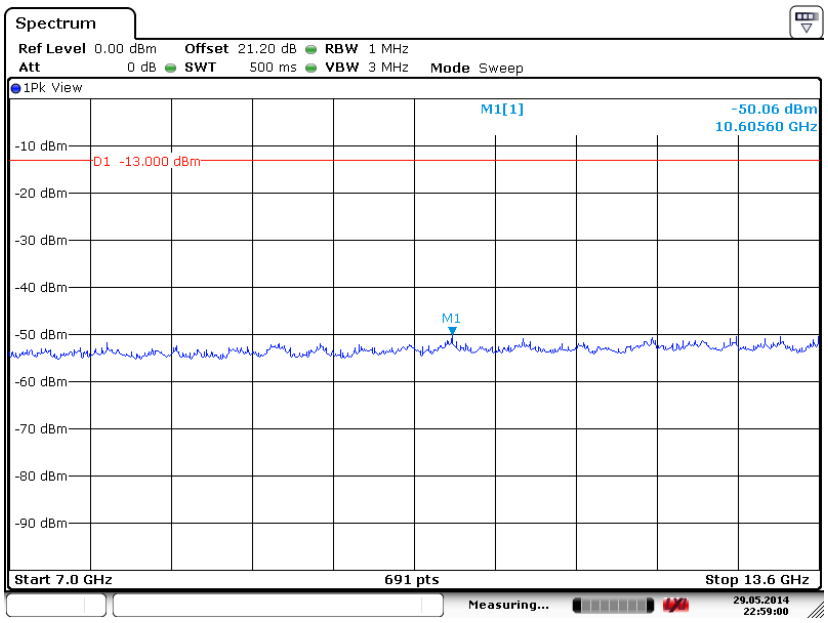
Date: 29.MAY.2014 22:54:34

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



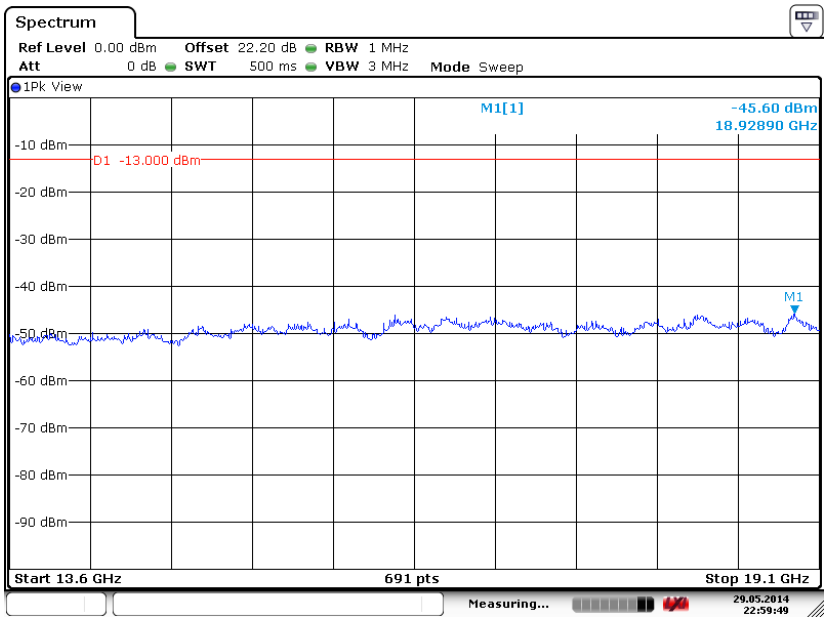
Date: 29.MAY.2014 22:57:35

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 29.MAY.2014 22:59:00

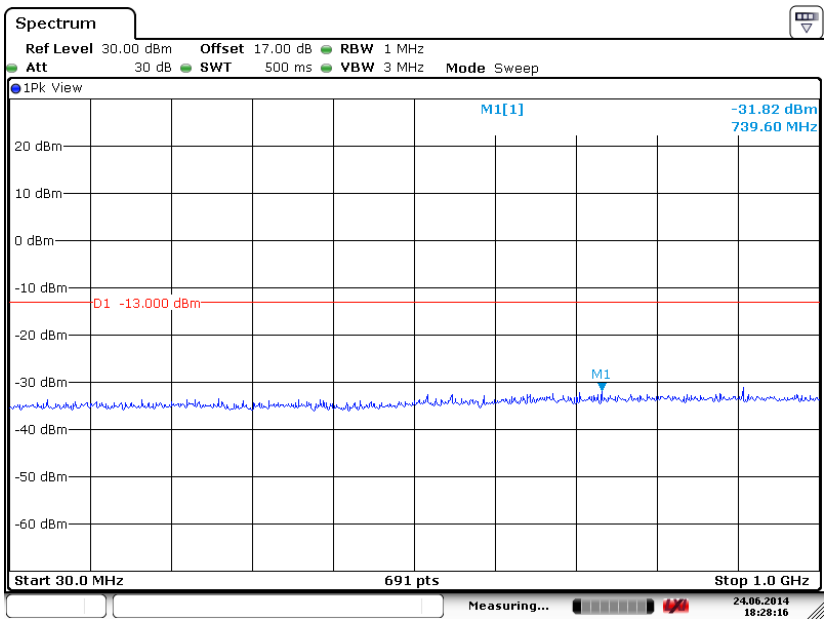
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 29.MAY.2014 22:59:49

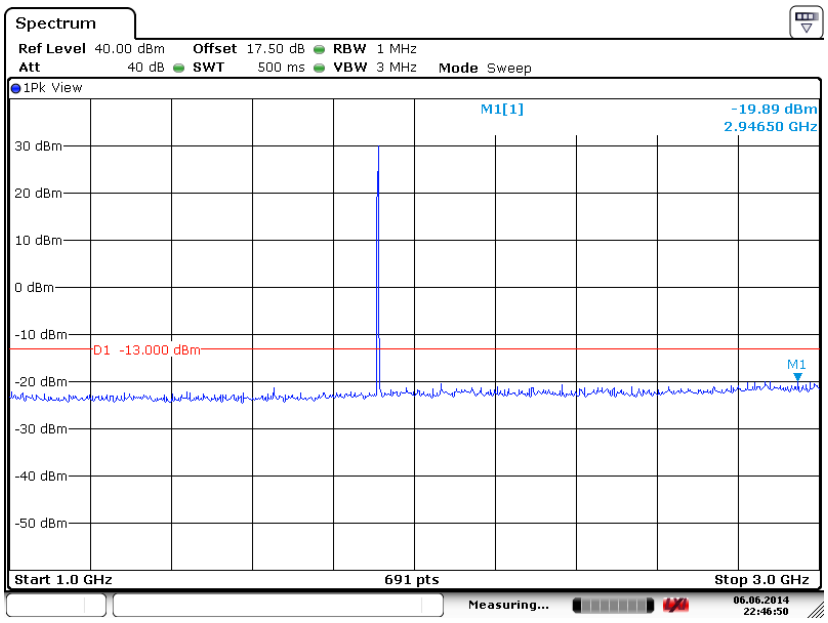
Band :	GSM1900	Channel :	CH810
Test Mode :	GSM Link (GMSK)	Frequency :	1909.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



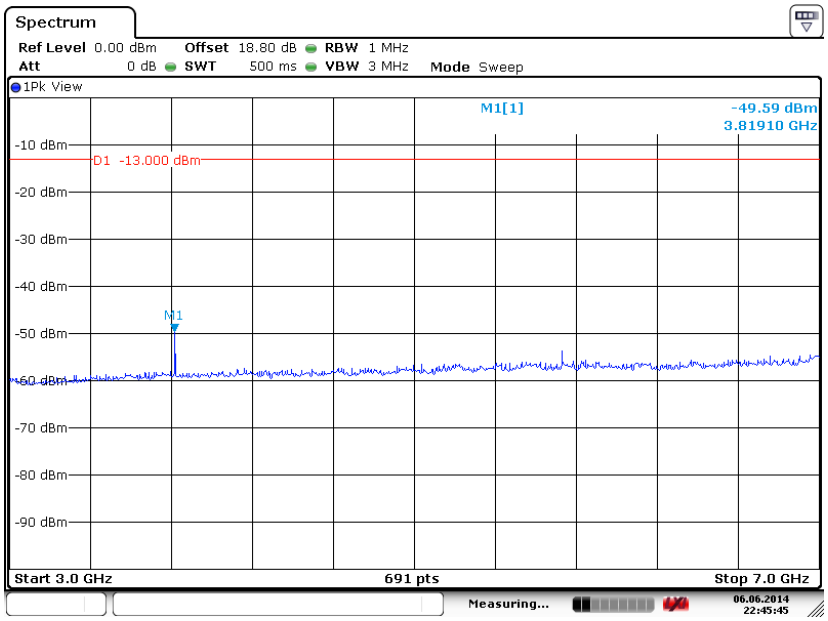
Date: 24.JUN.2014 18:28:16

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



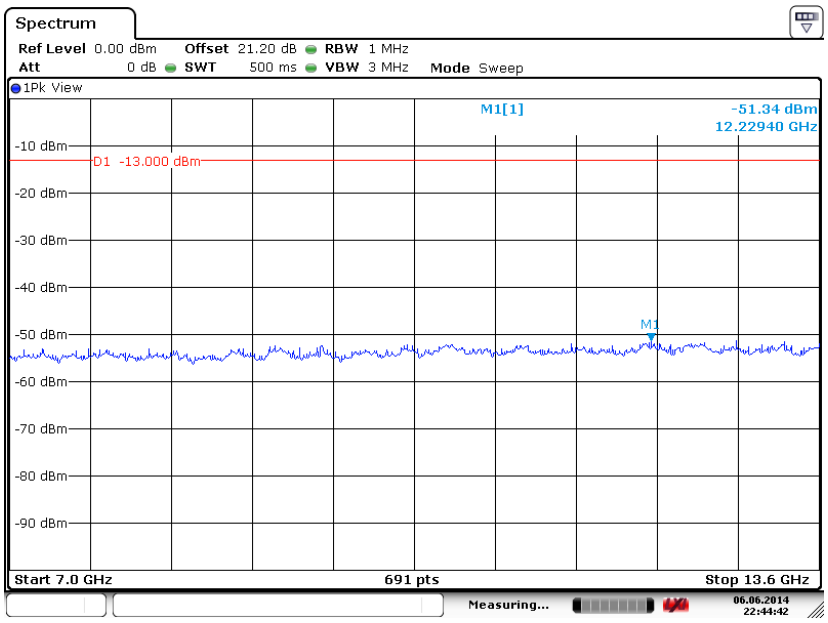
Date: 6.JUN.2014 22:46:50

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



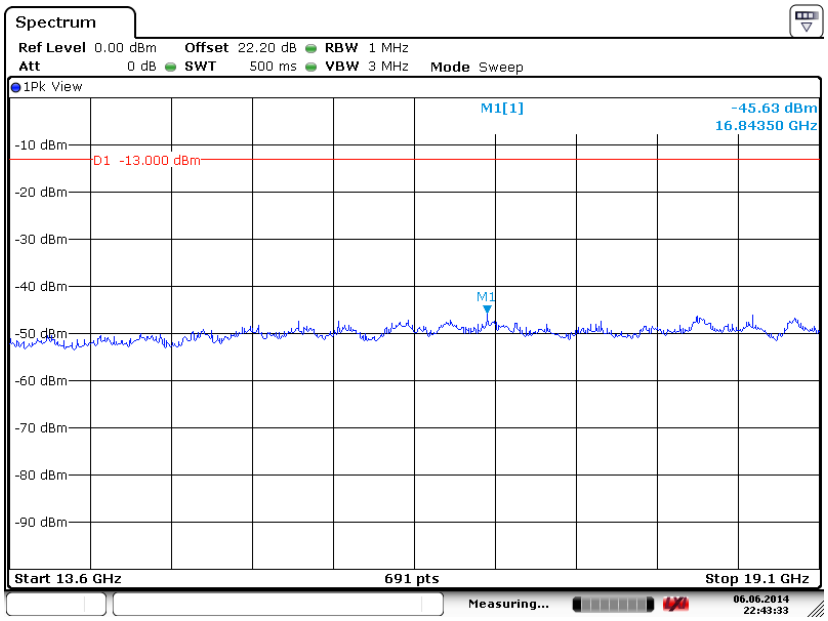
Date: 6.JUN.2014 22:45:45

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 6.JUN.2014 22:44:42

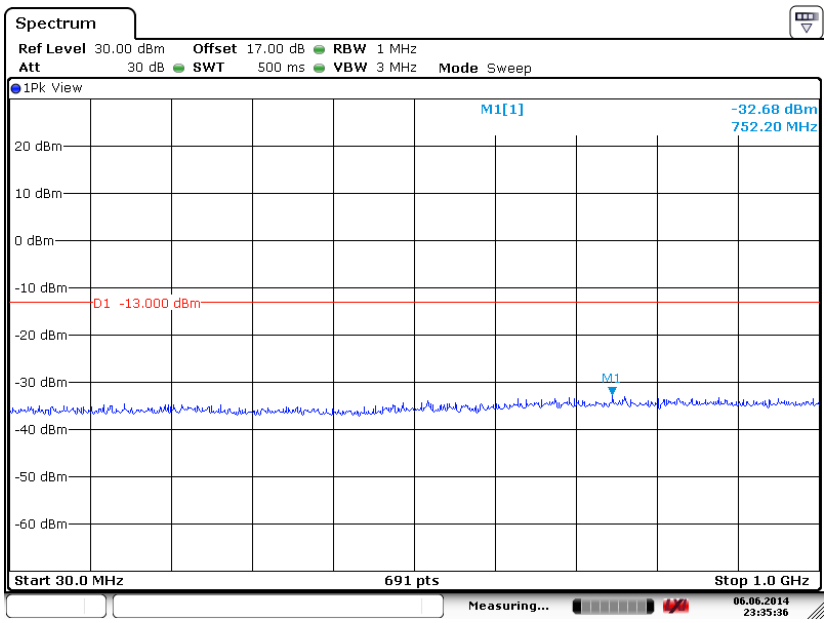
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 6.JUN.2014 22:43:33

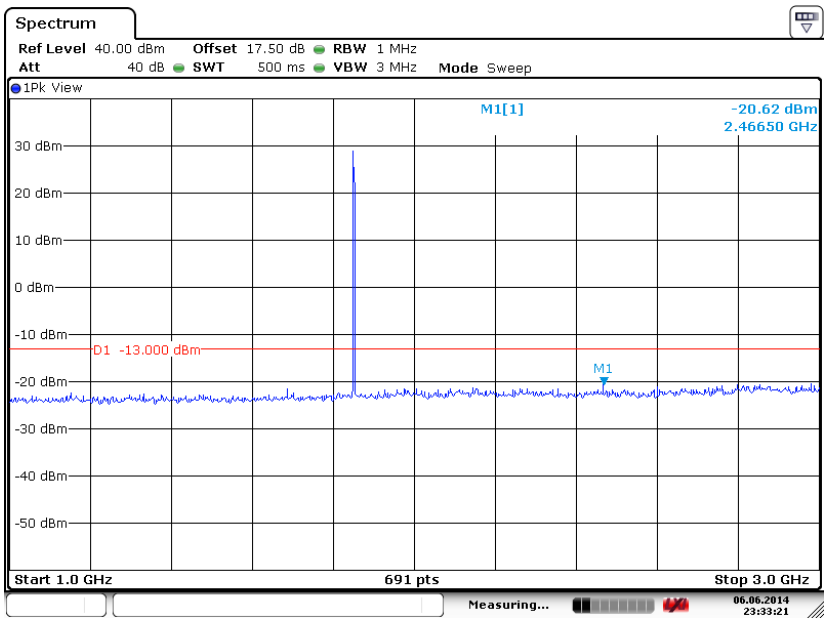
Band :	GSM1900	Channel :	CH512
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1850.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



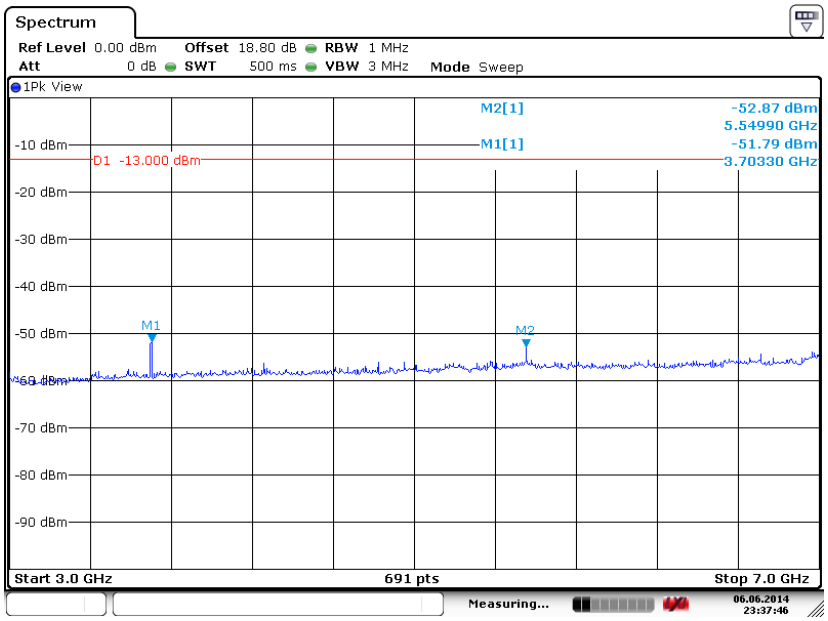
Date: 6.JUN.2014 23:35:35

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



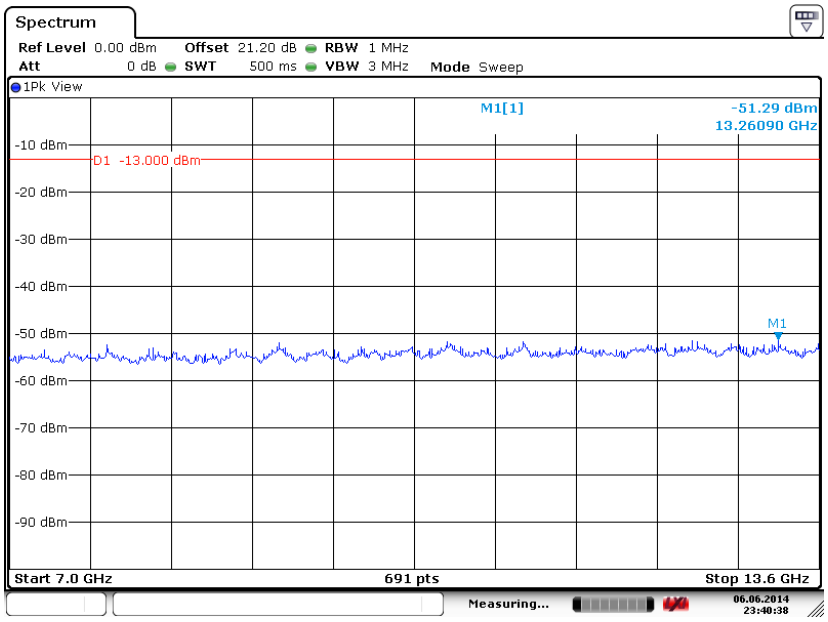
Date: 6.JUN.2014 23:33:21

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



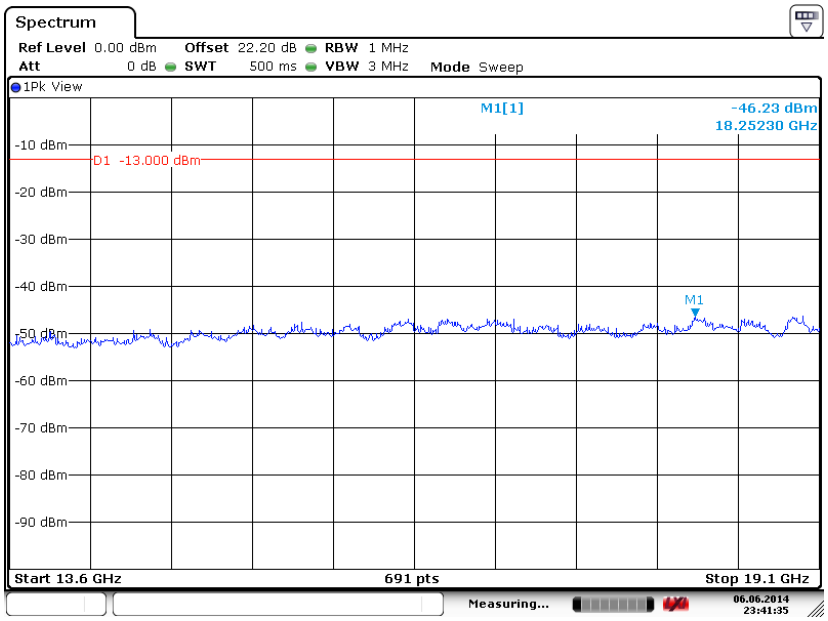
Date: 6.JUN.2014 23:37:45

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 6.JUN.2014 23:40:37

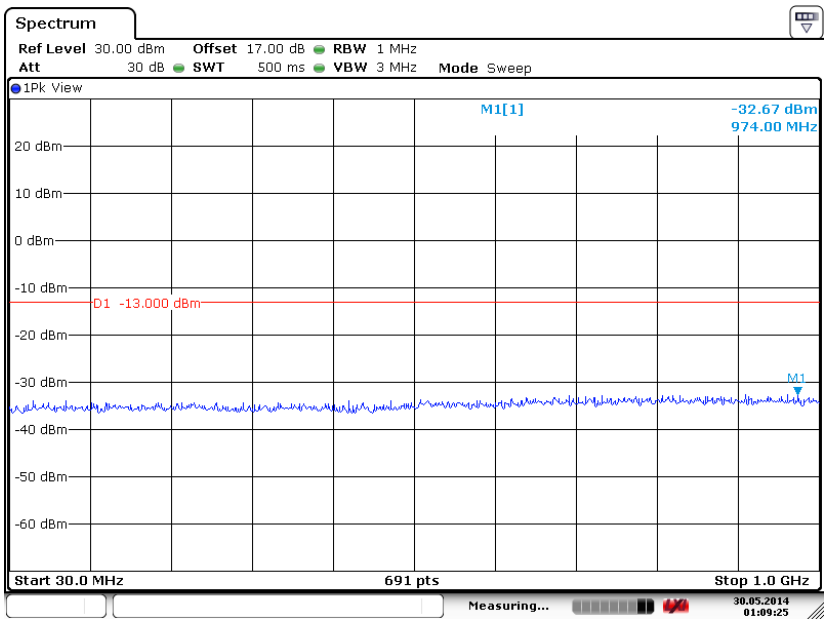
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 6.JUN.2014 23:41:34

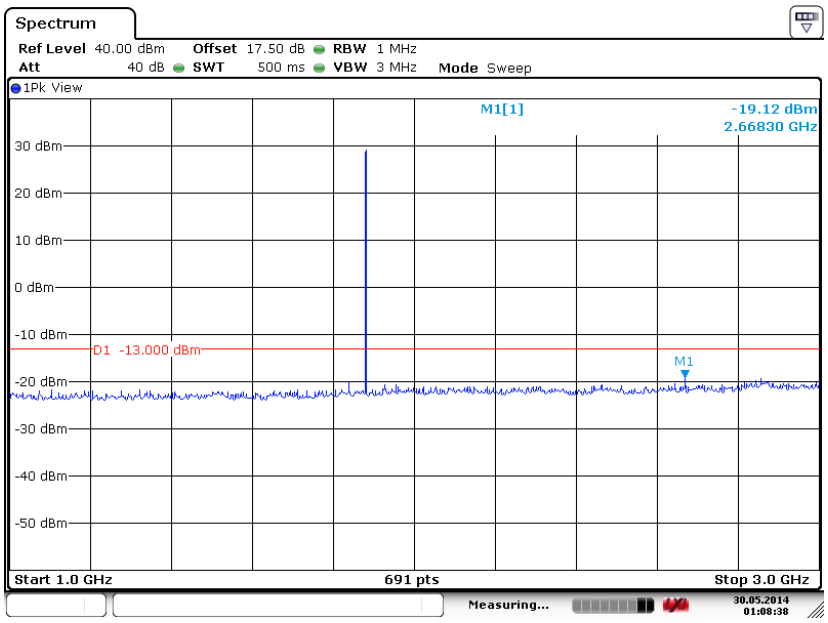
Band :	GSM1900	Channel :	CH661
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



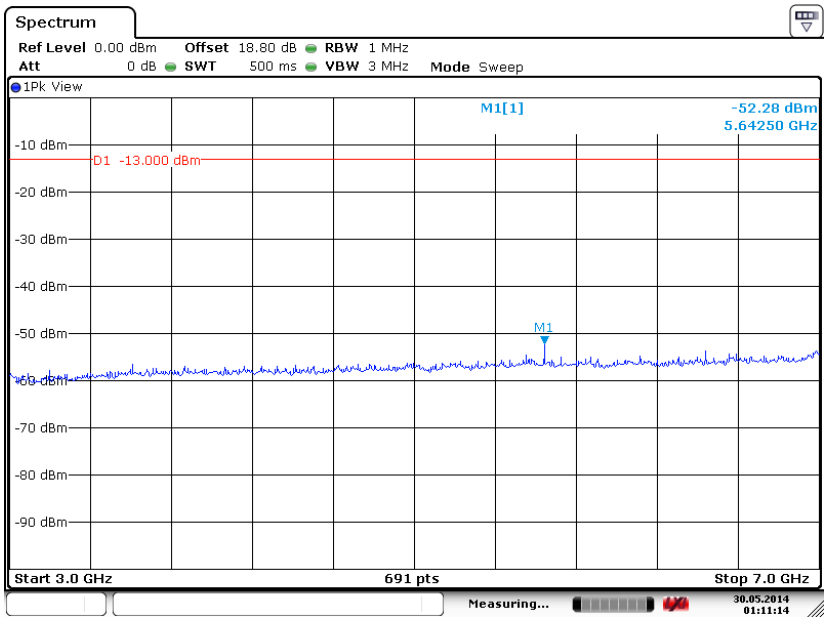
Date: 30.MAY.2014 01:09:25

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



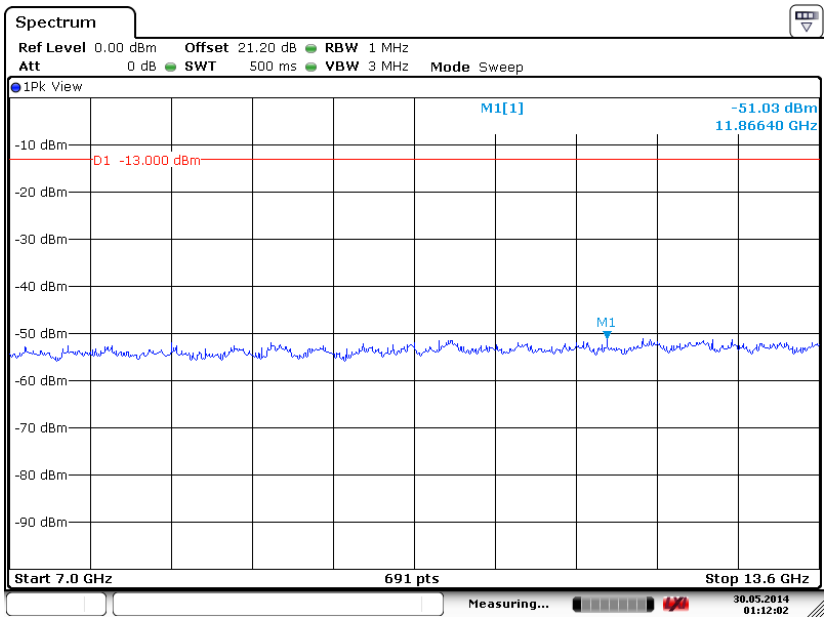
Date: 30.MAY.2014 01:08:38

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



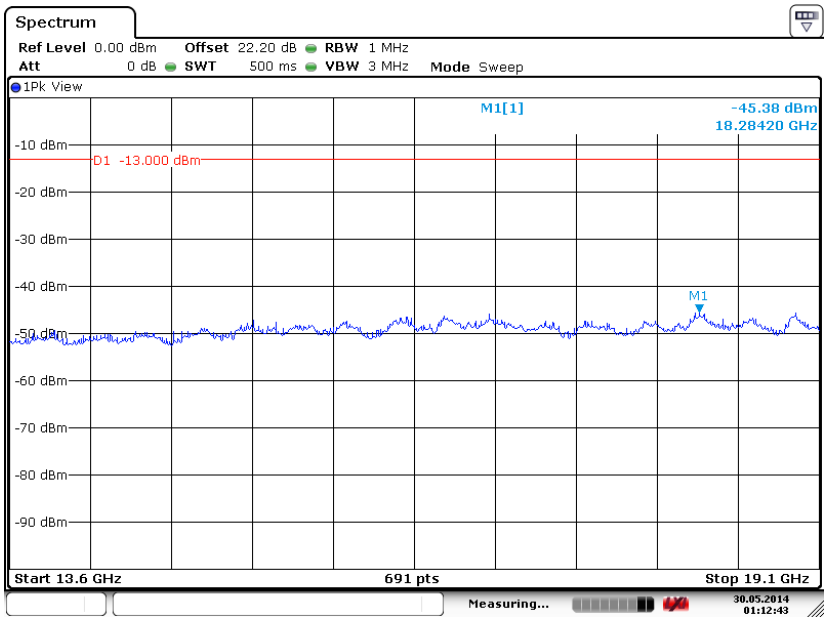
Date: 30.MAY.2014 01:11:14

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 30.MAY.2014 01:12:02

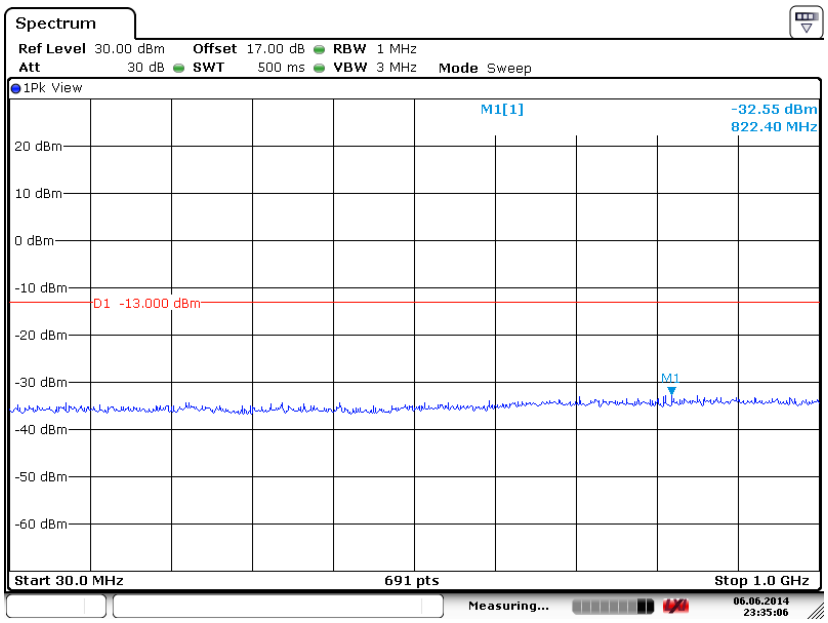
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 30.MAY.2014 01:12:43

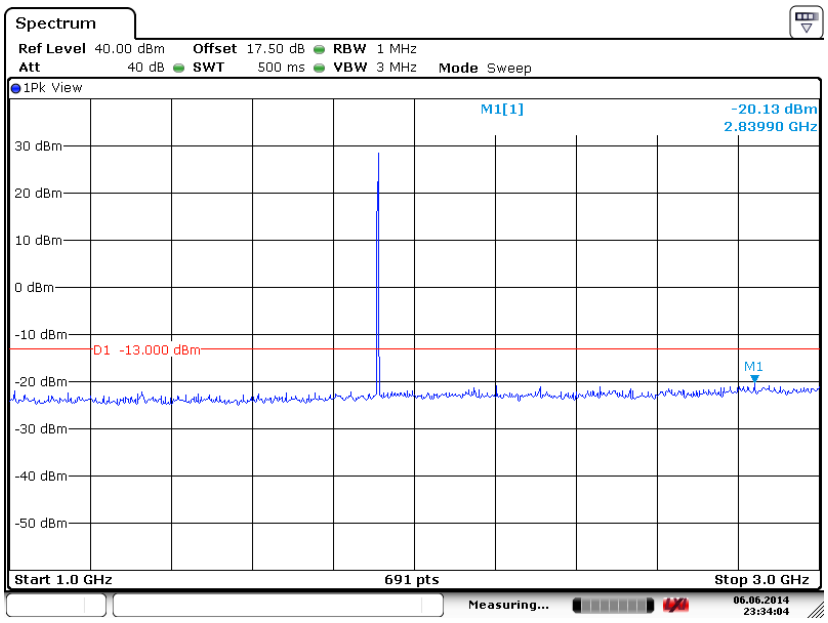
Band :	GSM1900	Channel :	CH810
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1909.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



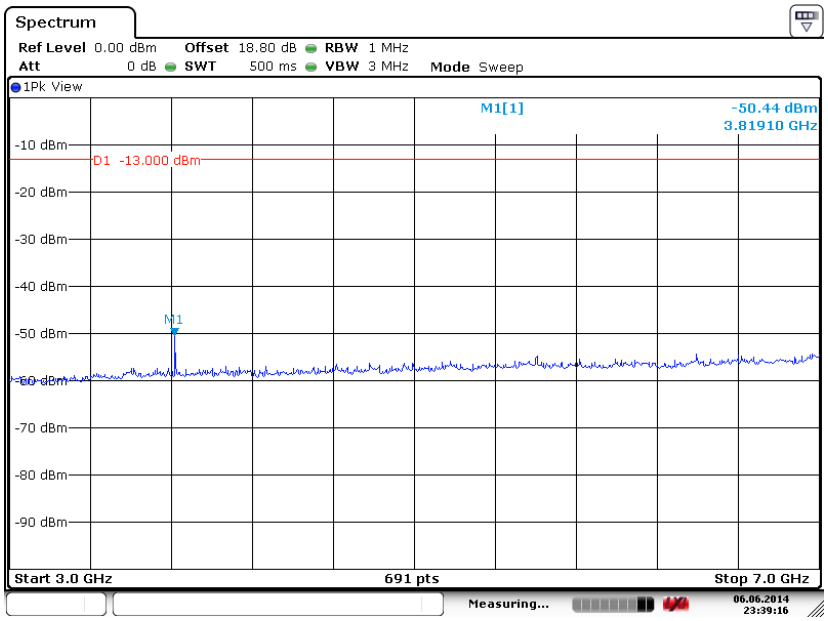
Date: 6.JUN.2014 23:35:06

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



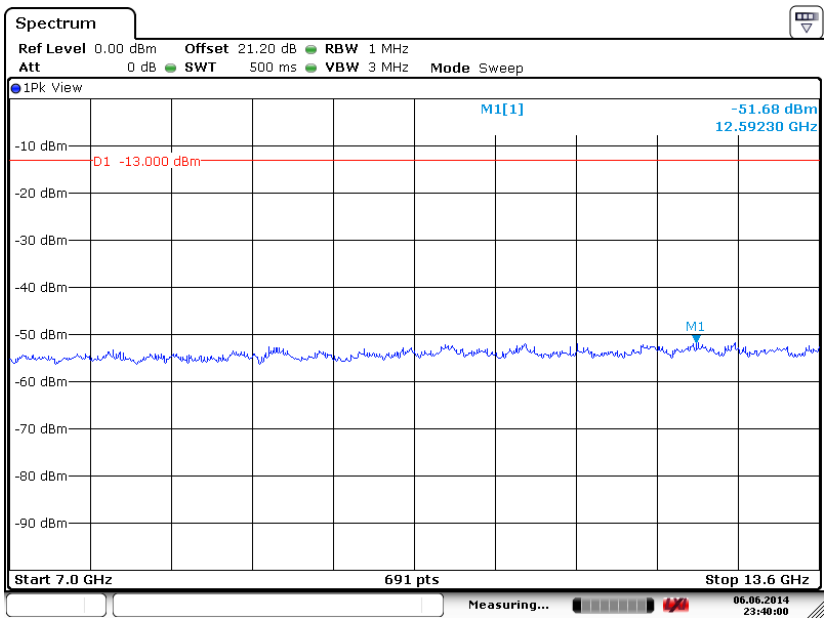
Date: 6.JUN.2014 23:34:03

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



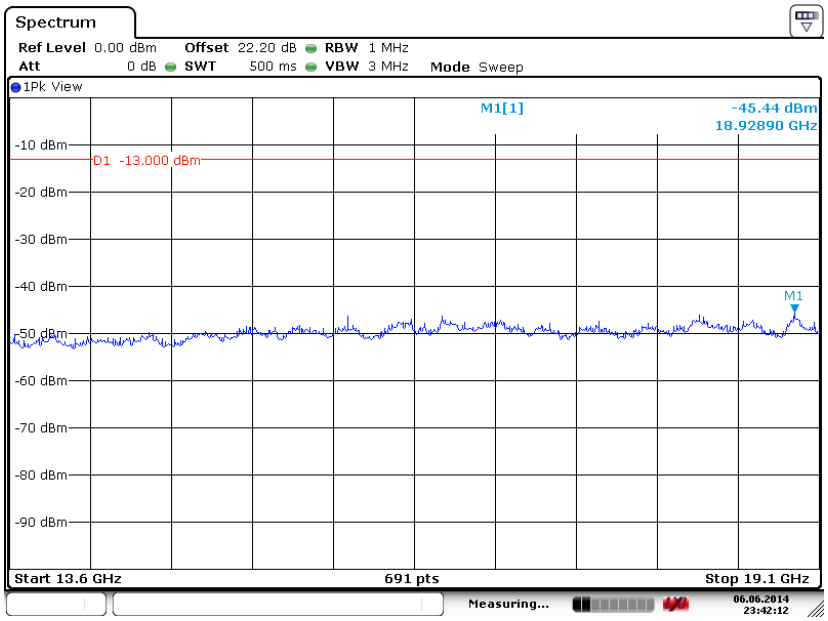
Date: 6.JUN.2014 23:39:15

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 6.JUN.2014 23:39:59

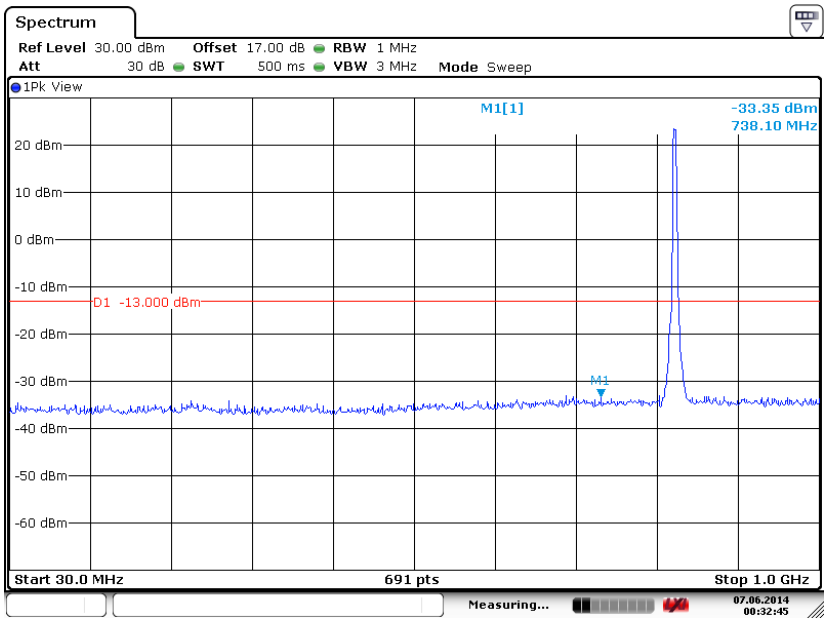
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 6.JUN.2014 23:42:11

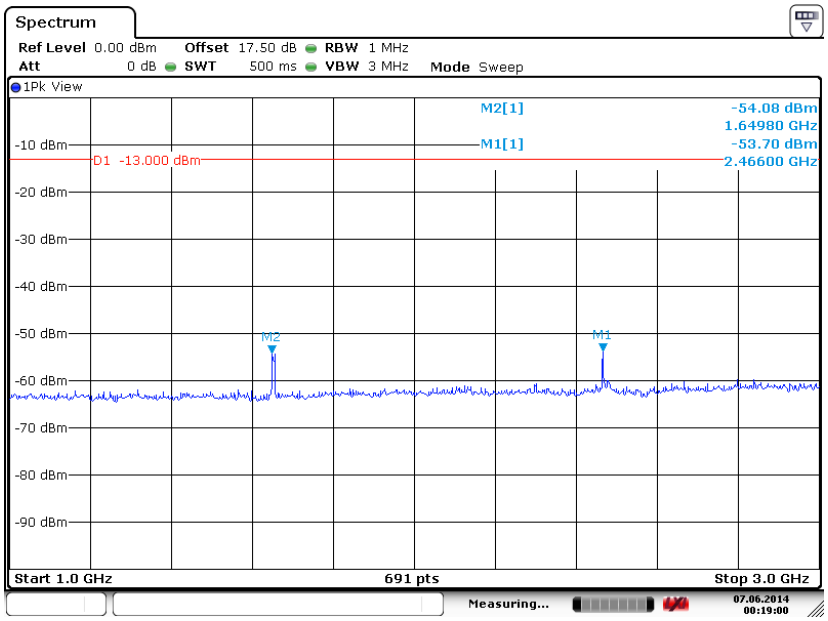
Band :	WCDMA Band V	Channel :	CH4132
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	826.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



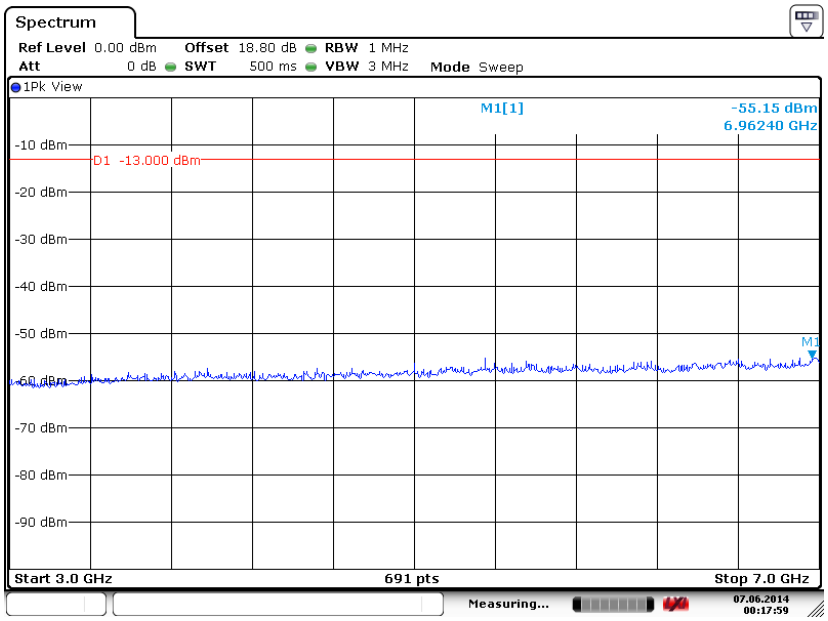
Date: 7.JUN.2014 00:32:45

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



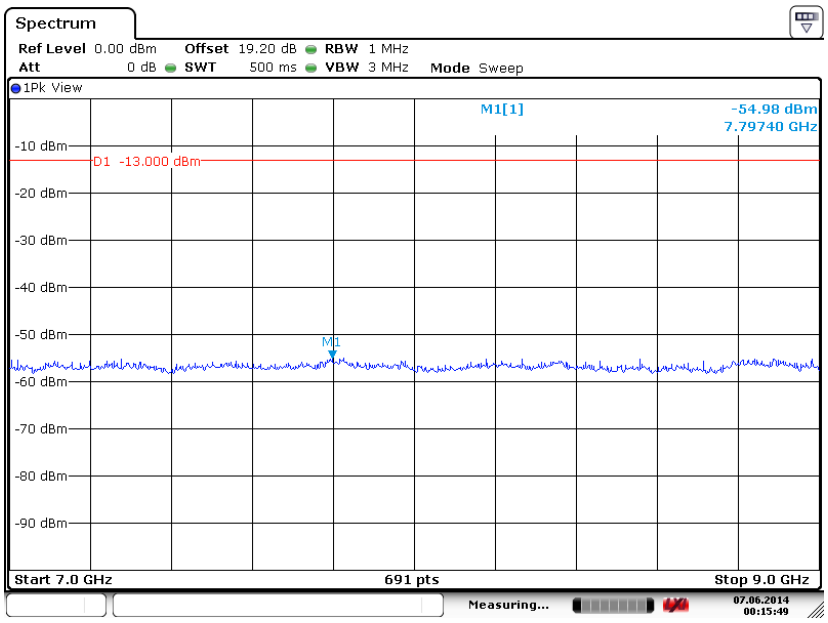
Date: 7.JUN.2014 00:19:00

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 7.JUN.2014 00:17:58

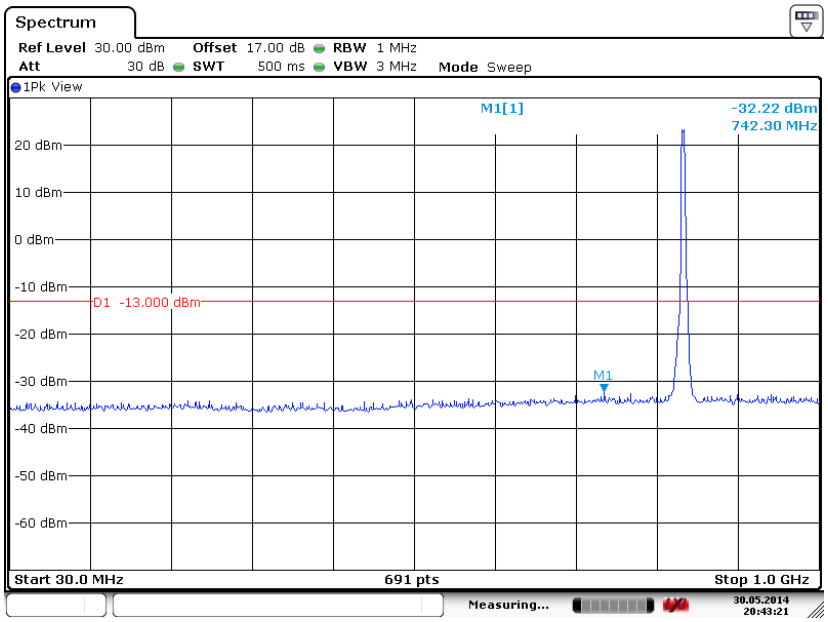
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 7.JUN.2014 00:15:48

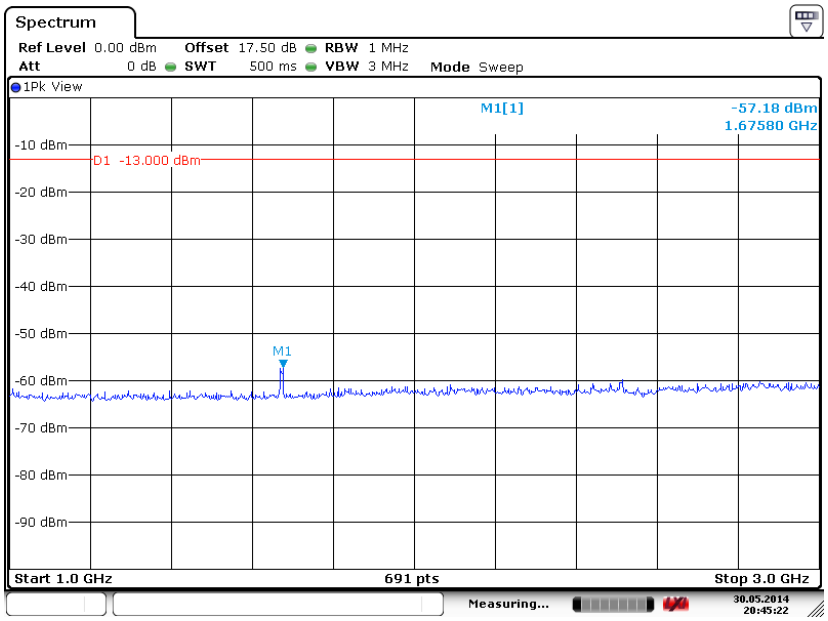
Band :	WCDMA Band V	Channel :	CH4182
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



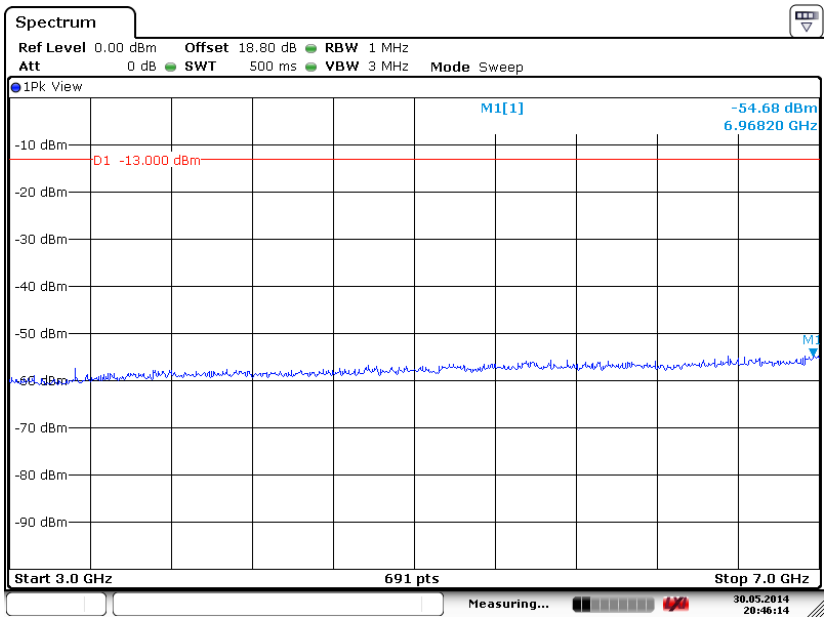
Date: 30.MAY.2014 20:43:21

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



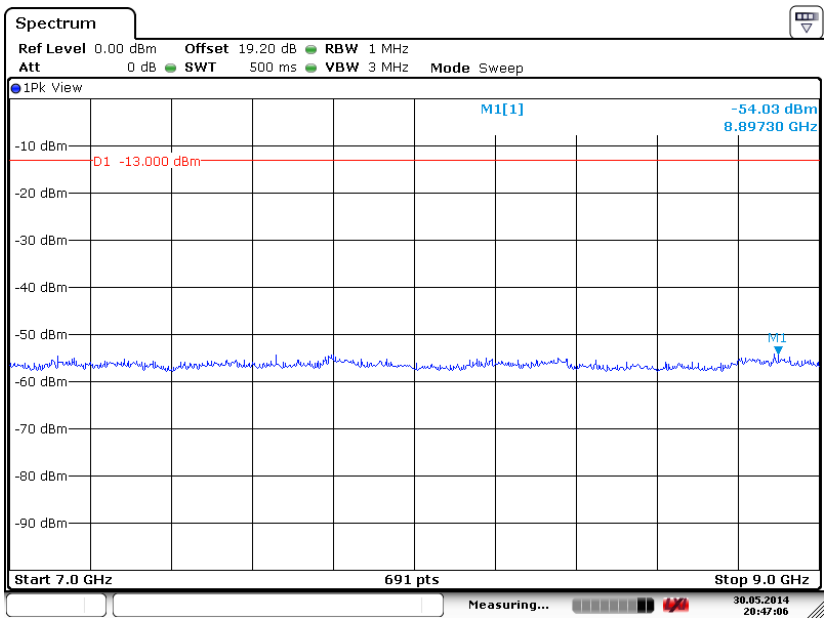
Date: 30.MAY.2014 20:45:22

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 30.MAY.2014 20:46:14

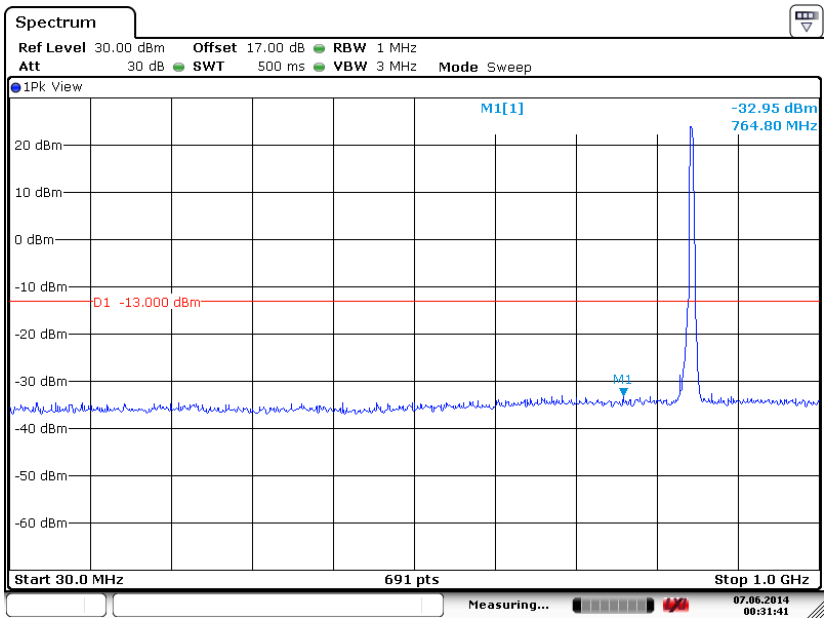
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 30.MAY.2014 20:47:06

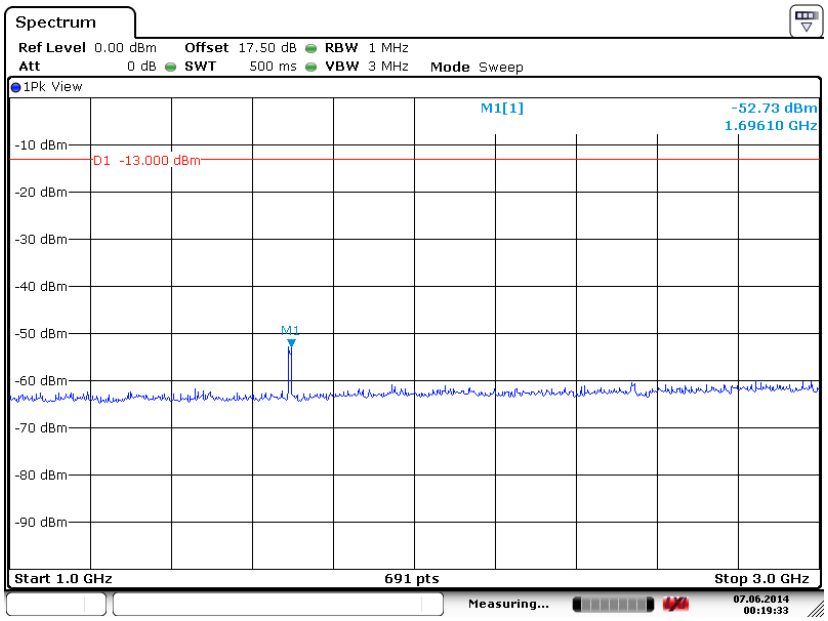
Band :	WCDMA Band V	Channel :	CH4233
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	846.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



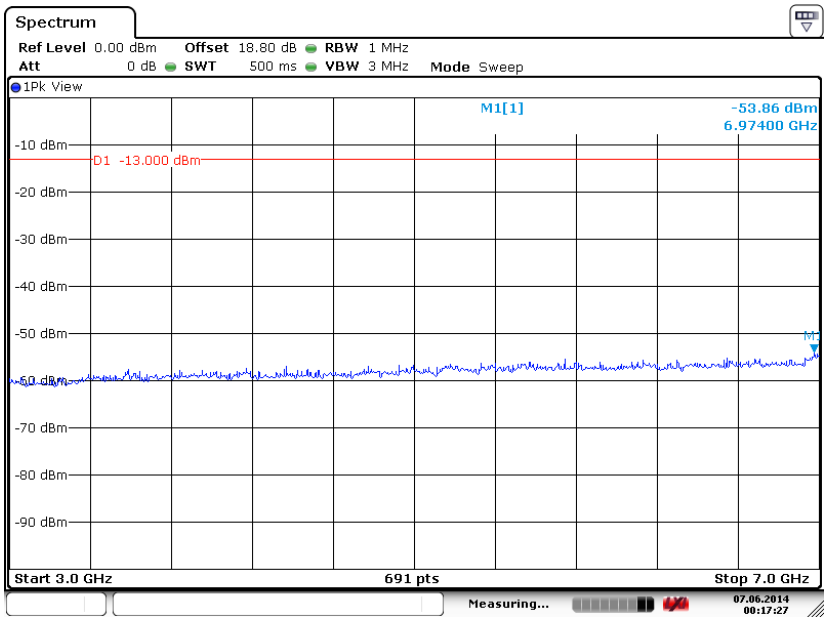
Date: 7.JUN.2014 00:31:41

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



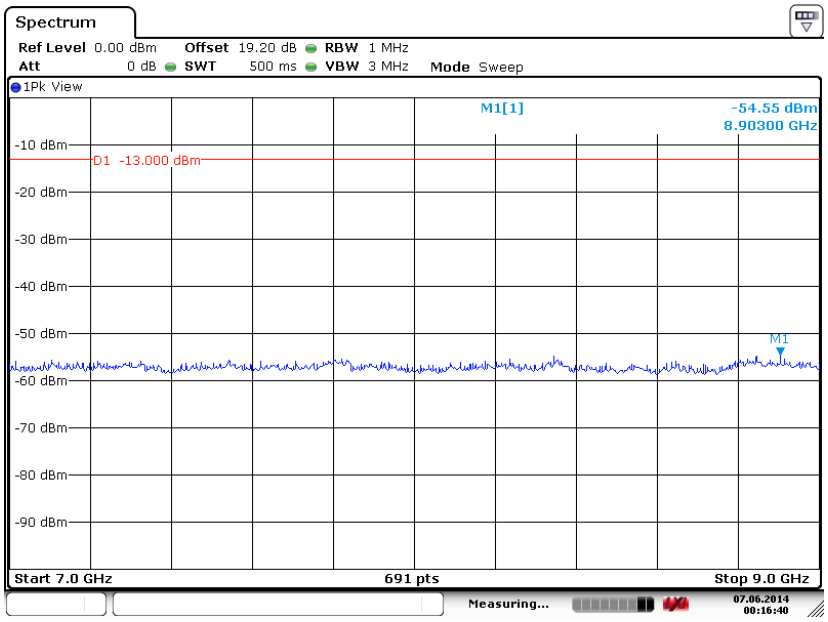
Date: 7.JUN.2014 00:19:33

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 7.JUN.2014 00:17:27

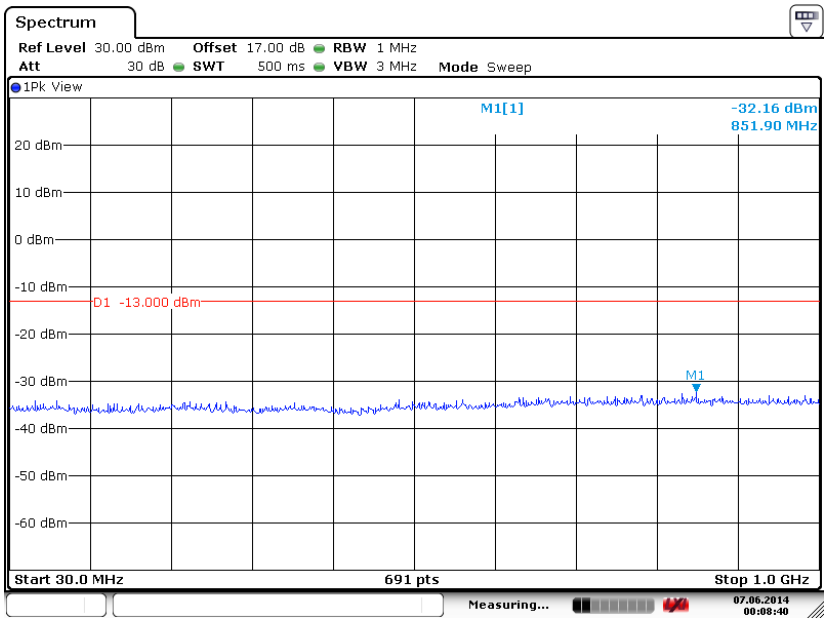
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 7.JUN.2014 00:16:40

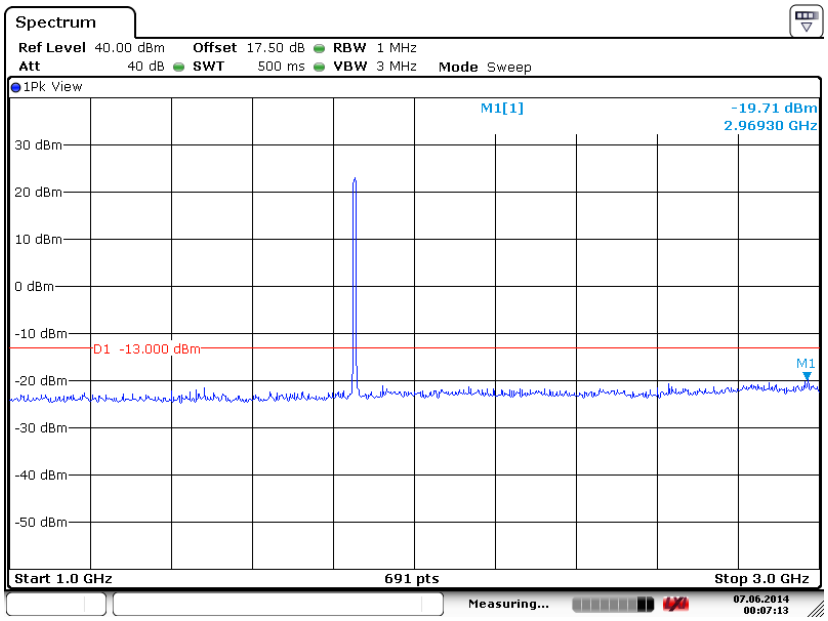
Band :	WCDMA Band II	Channel :	CH9262
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1852.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



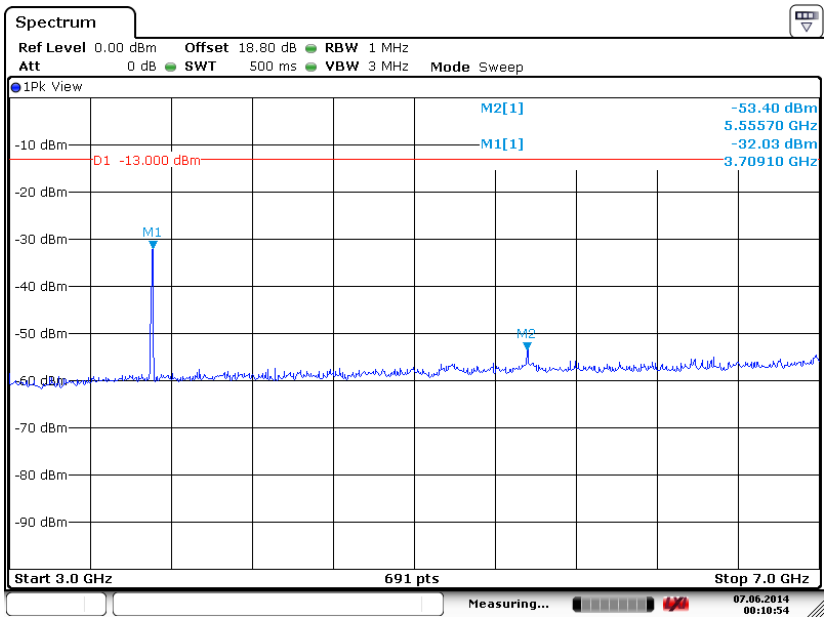
Date: 7.JUN.2014 00:08:40

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



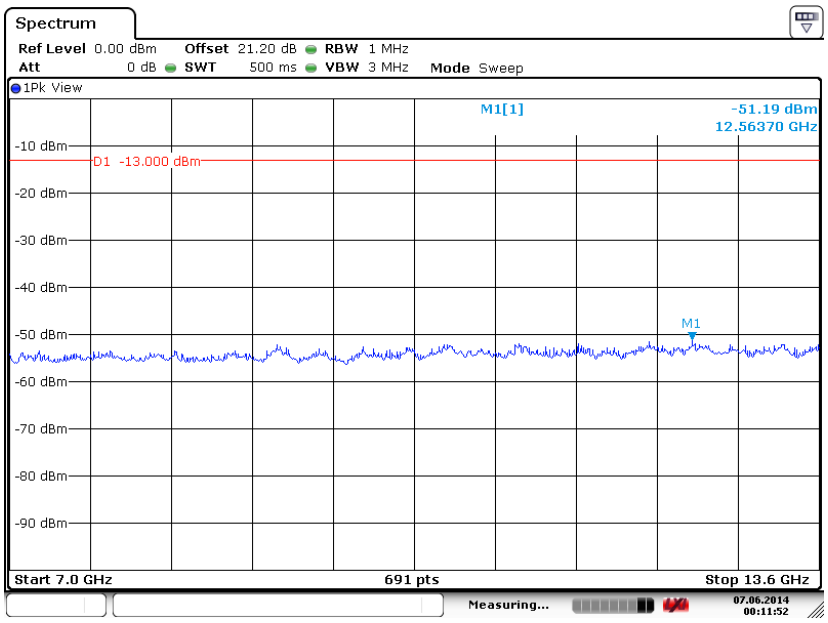
Date: 7.JUN.2014 00:07:13

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



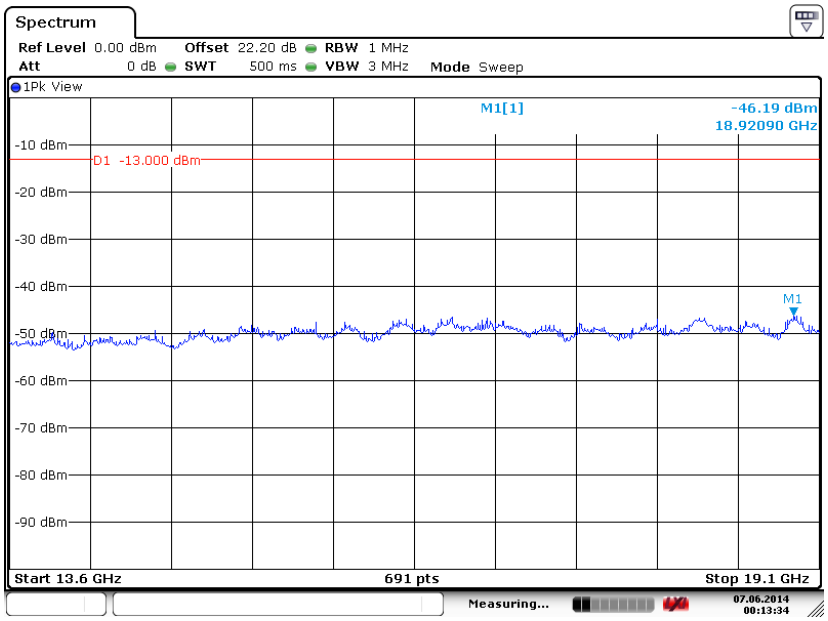
Date: 7.JUN.2014 00:10:54

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 7.JUN.2014 00:11:51

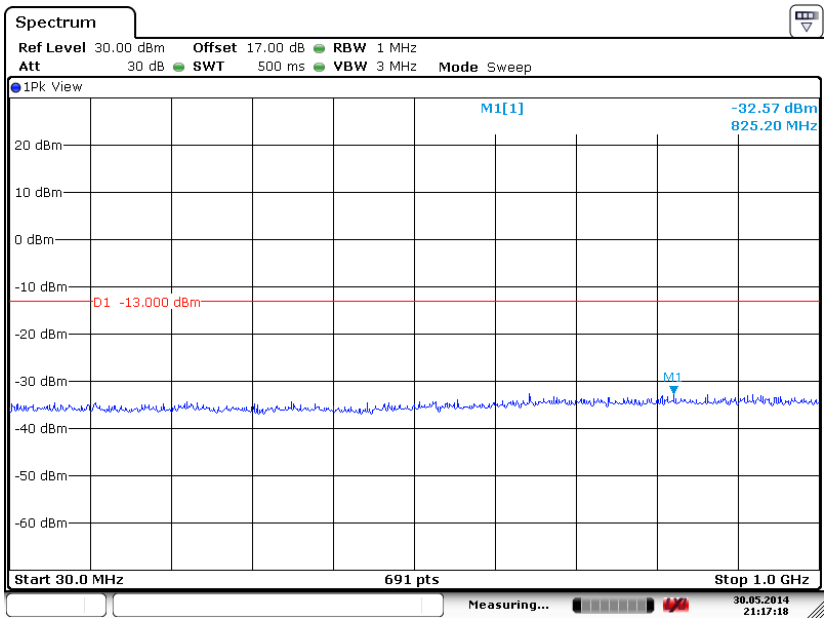
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 7.JUN.2014 00:13:34

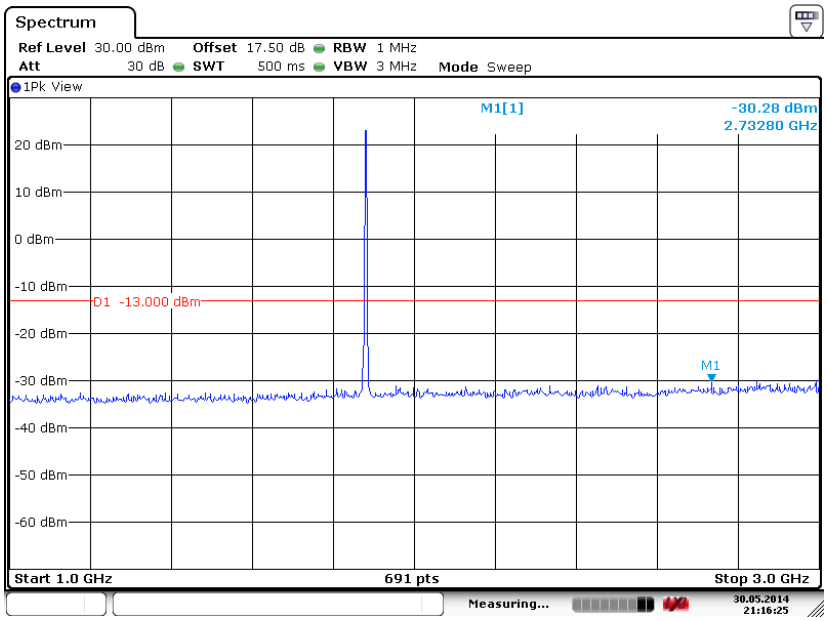
Band :	WCDMA Band II	Channel :	CH9400
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



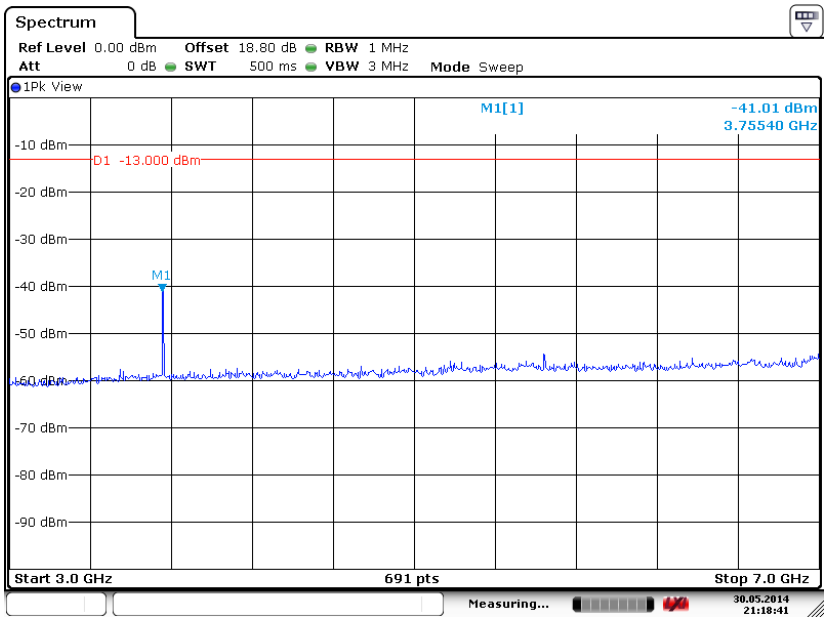
Date: 30.MAY.2014 21:17:18

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



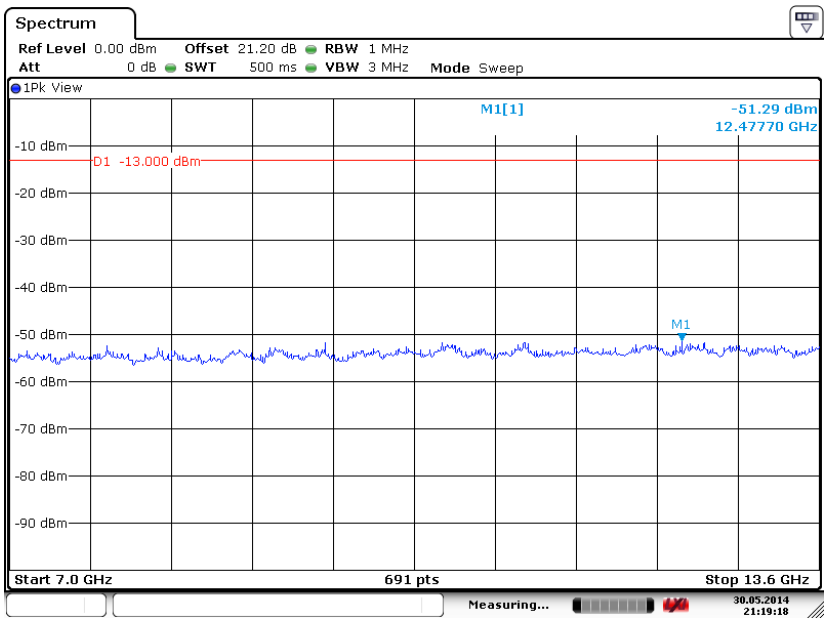
Date: 30.MAY.2014 21:16:25

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



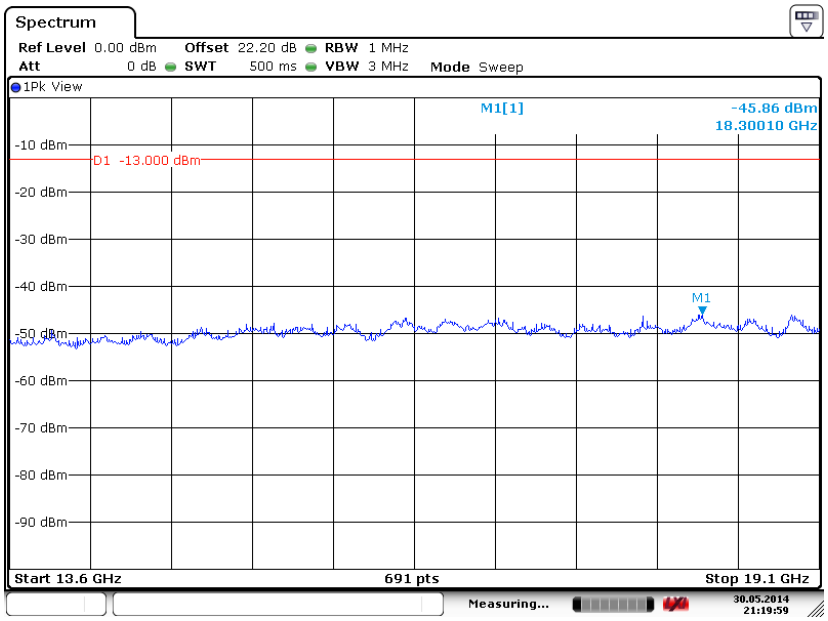
Date: 30.MAY.2014 21:18:41

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 30.MAY.2014 21:19:18

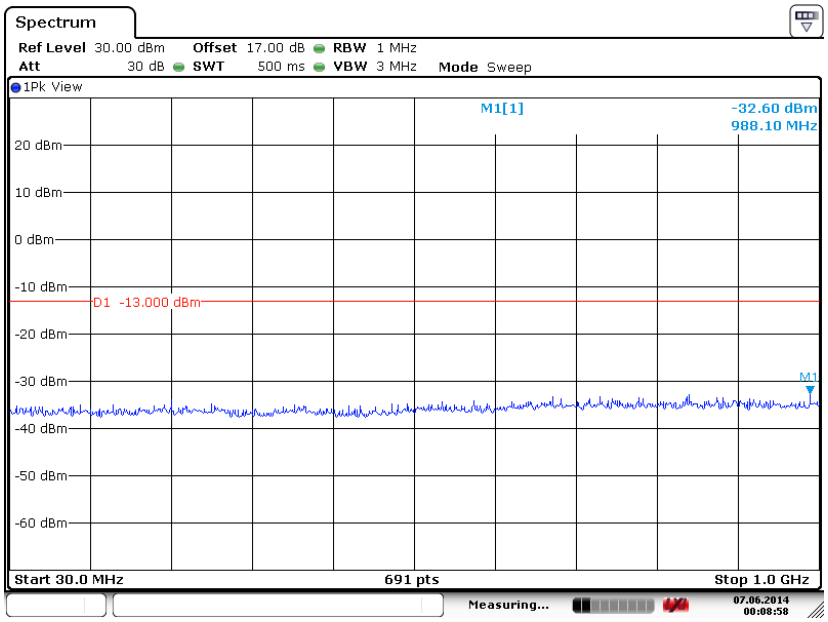
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 30.MAY.2014 21:19:59

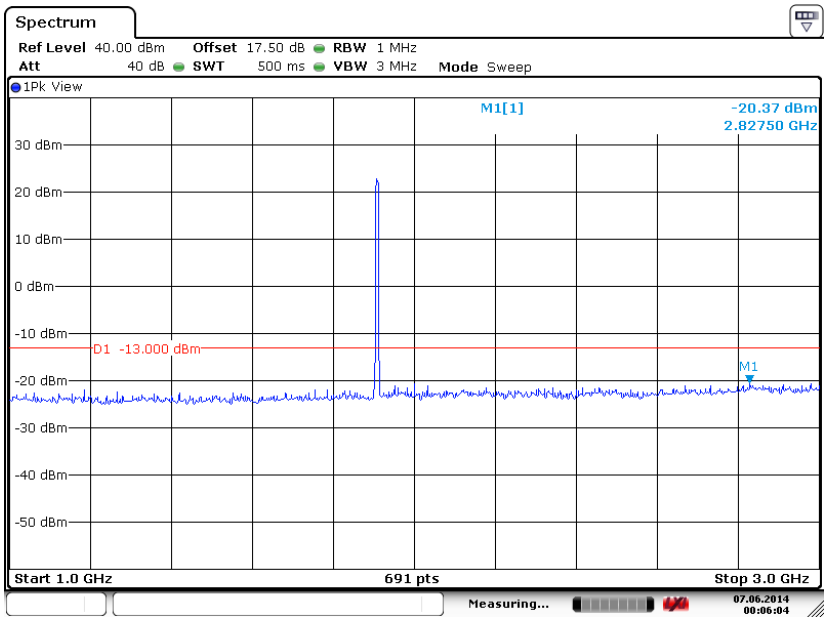
Band :	WCDMA Band II	Channel :	CH9538
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1907.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



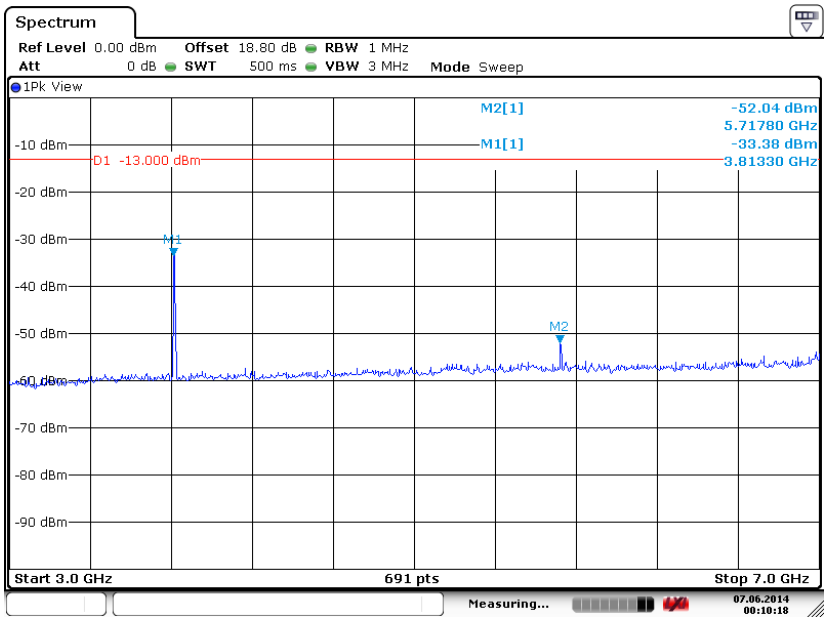
Date: 7.JUN.2014 00:08:57

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



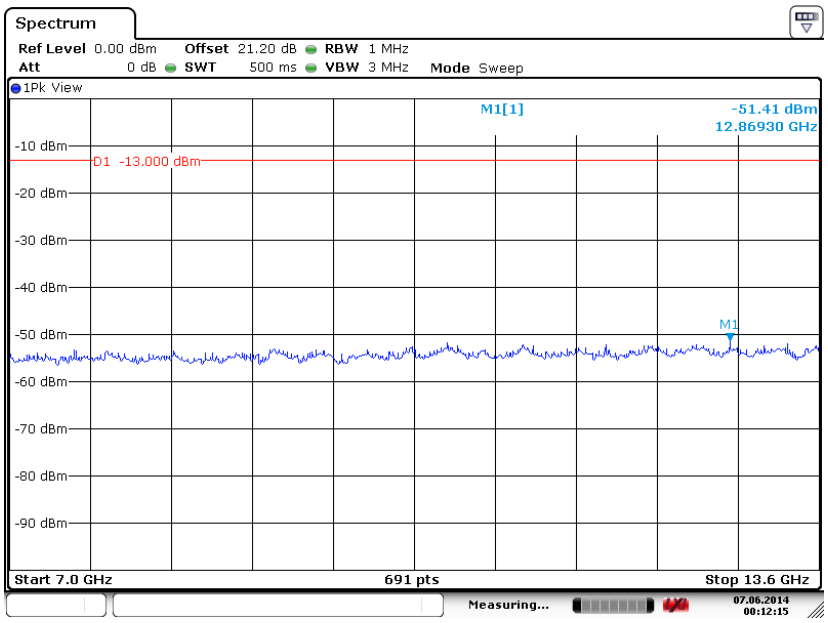
Date: 7.JUN.2014 00:06:03

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



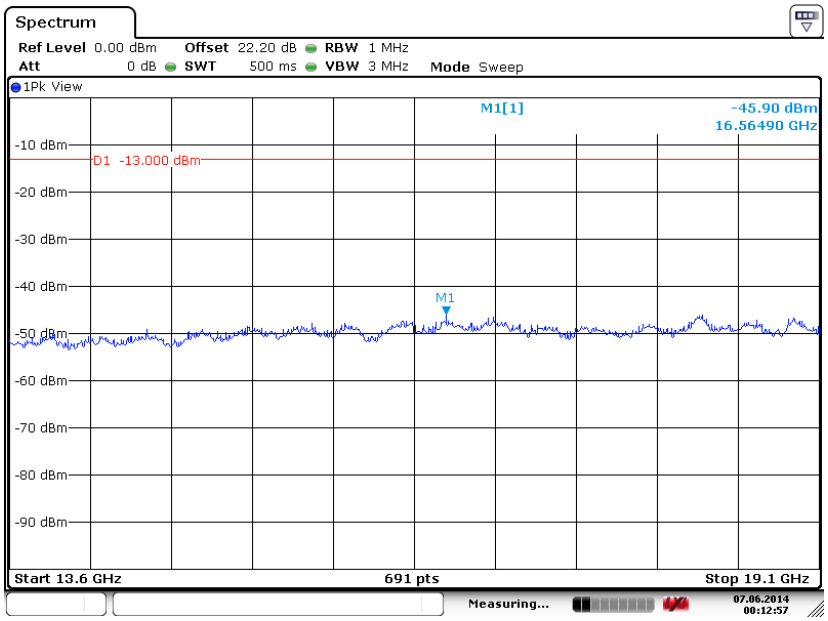
Date: 7.JUN.2014 00:10:18

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 7.JUN.2014 00:12:14

Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 7.JUN.2014 00:12:57

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 EUT was placed on a rotatable wooden table 0.8 meters above the 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 for the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking 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 (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

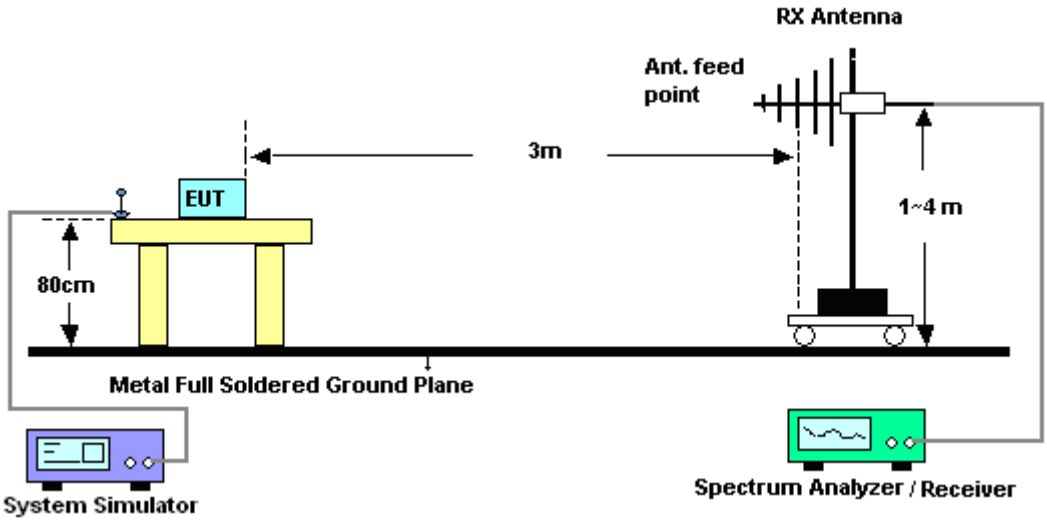
    = P(W) - [43 + 10log(P)] (dB)

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

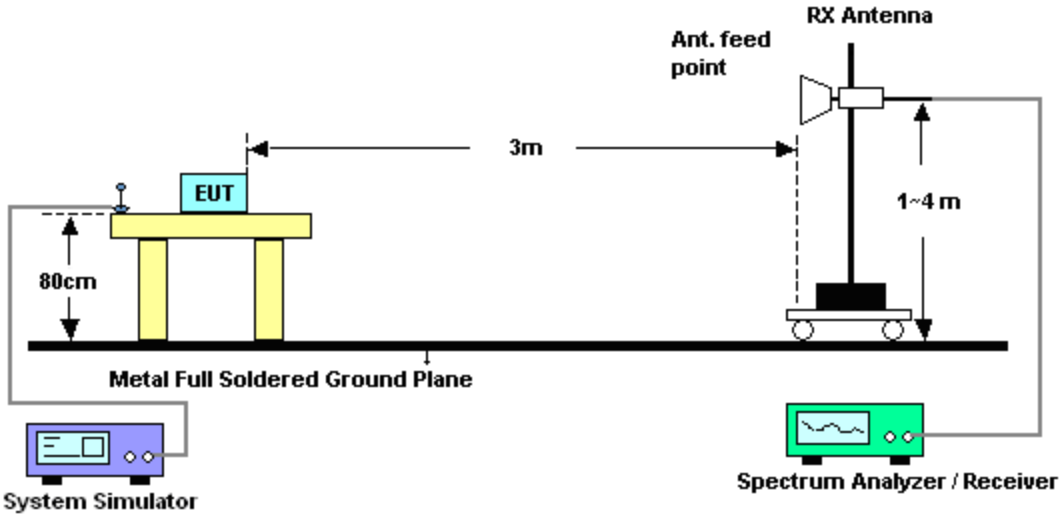
    = -13dBm.

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 Test Result of Field Strength of Spurious Radiated

Band :	GSM850 for CH128	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648.4	-48.60	-13	-35.60	-64.05	-51.42	0.73	5.70	H	Pass
2472.6	-41.07	-13	-28.07	-65.46	-43.43	0.91	5.42	H	Pass
3296.8	-61.20	-13	-48.20	-72.07	-65.84	1.07	7.86	H	Pass

Band :	GSM850 for CH128	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648.4	-53.61	-13	-40.61	-65.59	-56.43	0.73	5.70	V	Pass
2472.6	-47.17	-13	-34.17	-68.28	-49.53	0.91	5.42	V	Pass
3296.8	-60.23	-13	-47.23	-72.41	-64.87	1.07	7.86	V	Pass

Band :	GSM850 for CH189	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-43.69	-13	-30.69	-59.79	-46.66	0.88	6.00	H	Pass
2510	-40.42	-13	-27.42	-64.67	-43.03	1.08	5.84	H	Pass
3346	-61.44	-13	-48.44	-72.04	-65.81	1.14	7.66	H	Pass

Band :	GSM850 for CH189	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-42.94	-13	-29.94	-56.30	-45.91	0.88	6.00	V	Pass
2510	-41.05	-13	-28.05	-63.12	-43.66	1.08	5.84	V	Pass
3346	-60.68	-13	-47.68	-72.51	-65.05	1.14	7.66	V	Pass

Band :	GSM850 for CH251	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1697.6	-44.12	-13	-31.12	-60.48	-46.91	0.95	5.89	H	Pass
2546.4	-33.01	-13	-20.01	-58.59	-35.72	1.12	5.98	H	Pass
3395.2	-60.95	-13	-47.95	-72.15	-65.35	1.25	7.80	H	Pass

Band :	GSM850 for CH251	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1697.6	-55.20	-13	-42.20	-66.18	-57.99	0.95	5.89	V	Pass
2546.4	-40.14	-13	-27.14	-62.77	-42.85	1.12	5.98	V	Pass
3395.2	-59.50	-13	-46.50	-71.93	-63.90	1.25	7.80	V	Pass

Band :	GSM850 for CH128	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648.4	-51.00	-13	-38.00	-66.02	-53.82	0.73	5.70	H	Pass
2472.6	-37.28	-13	-24.28	-62.29	-39.64	0.91	5.42	H	Pass
3296.8	-61.51	-13	-48.51	-72.38	-66.15	1.07	7.86	H	Pass

Band :	GSM850 for CH128	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648.4	-55.51	-13	-42.51	-66.66	-58.33	0.73	5.70	V	Pass
2472.6	-48.35	-13	-35.35	-69.07	-50.71	0.91	5.42	V	Pass
3296.8	-60.04	-13	-47.04	-72.22	-64.68	1.07	7.86	V	Pass

Band :	GSM850 for CH189	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-50.86	-13	-37.86	-65.39	-53.83	0.88	6.00	H	Pass
2510	-46.15	-13	-33.15	-68.93	-48.76	1.08	5.84	H	Pass
3346	-61.46	-13	-48.46	-72.06	-65.83	1.14	7.66	H	Pass

Band :	GSM850 for CH189	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-56.16	-13	-43.16	-66.79	-59.13	0.88	6.00	V	Pass
2510	-42.86	-13	-29.86	-64.39	-45.47	1.08	5.84	V	Pass
3346	-60.36	-13	-47.36	-72.19	-64.73	1.14	7.66	V	Pass

Band :	GSM850 for CH251	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1697.6	-52.16	-13	-39.16	-66.07	-54.95	0.95	5.89	H	Pass
2546.4	-35.24	-13	-22.24	-60.56	-37.95	1.12	5.98	H	Pass
3395.2	-61.10	-13	-48.10	-72.30	-65.50	1.25	7.80	H	Pass

Band :	GSM850 for CH251	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1697.6	-50.83	-13	-37.83	-63.47	-53.62	0.95	5.89	V	Pass
2546.4	-39.63	-13	-26.63	-62.32	-42.34	1.12	5.98	V	Pass
3395.2	-59.02	-13	-46.02	-71.45	-63.42	1.25	7.80	V	Pass

Band :	GSM1900 for CH512	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-60.77	-13	-47.77	-72.32	-67.52	1.2	7.95	H	Pass
5550.6	-48.47	-13	-35.47	-65.86	-56.57	1.5	9.60	H	Pass
7400.8	-53.82	-13	-40.82	-75.40	-64.01	1.7	11.89	H	Pass

Band :	GSM1900 for CH512	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-58.09	-13	-45.09	-72.52	-64.84	1.2	7.95	V	Pass
5550.6	-56.82	-13	-43.82	-73.3	-64.92	1.5	9.6	V	Pass
7400.8	-54.09	-13	-41.09	-75.98	-64.28	1.7	11.89	V	Pass

Band :	GSM1900 for CH661	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**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	-57.41	-13	-44.41	-69.56	-64.15	1.28	8.02	H	Pass
5640	-54.03	-13	-41.03	-72.02	-62.45	1.58	10.00	H	Pass
7520	-53.09	-13	-40.09	-75.03	-63.41	1.78	12.10	H	Pass

Band :	GSM1900 for CH661	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-56.05	-13	-43.05	-71.08	-62.79	1.28	8.02	V	Pass
5640	-53.69	-13	-40.69	-70.77	-62.11	1.58	10	V	Pass
7520	-52.33	-13	-39.33	-74.58	-62.65	1.78	12.1	V	Pass

Band :	GSM1900 for CH810	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-59.78	-13	-46.78	-71.35	-66.55	1.23	8.00	H	Pass
5729.4	-53.54	-13	-40.54	-71.34	-61.67	1.52	9.65	H	Pass
7639.2	-53.10	-13	-40.10	-75.34	-63.28	1.82	12.00	H	Pass

Band :	GSM1900 for CH810	**Temperature :**	24~25°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-57.46	-13	-44.46	-71.91	-64.23	1.23	8	V	Pass
5729.4	-52.21	-13	-39.21	-69.1	-60.34	1.52	9.65	V	Pass
7639.2	-53.00	-13	-40.00	-75.55	-63.18	1.82	12	V	Pass

Band :	GSM1900 for CH512	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-59.96	-13	-46.96	-71.51	-66.71	1.2	7.95	H	Pass
5550.6	-55.67	-13	-42.67	-73.06	-63.77	1.5	9.60	H	Pass
7400.8	-53.72	-13	-40.72	-75.30	-63.91	1.7	11.89	H	Pass

Band :	GSM1900 for CH512	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700.4	-58.88	-13	-45.88	-73.31	-65.63	1.2	7.95	V	Pass
5550.6	-57.08	-13	-44.08	-73.56	-65.18	1.5	9.6	V	Pass
7400.8	-54.28	-13	-41.28	-76.17	-64.47	1.7	11.89	V	Pass

Band :	GSM1900 for CH661	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**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	-59.90	-13	-46.90	-72.05	-66.64	1.28	8.02	H	Pass
5640	-54.92	-13	-41.92	-72.91	-63.34	1.58	10.00	H	Pass
7520	-53.51	-13	-40.51	-75.45	-63.83	1.78	12.10	H	Pass

Band :	GSM1900 for CH661	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-58.14	-13	-45.14	-73.17	-64.88	1.28	8.02	V	Pass
5640	-55.48	-13	-42.48	-72.56	-63.90	1.58	10	V	Pass
7520	-53.55	-13	-40.55	-75.8	-63.87	1.78	12.1	V	Pass

Band :	GSM1900 for CH810	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-61.91	-13	-48.91	-73.48	-68.68	1.23	8.00	H	Pass
5729.4	-54.99	-13	-41.99	-72.79	-63.12	1.52	9.65	H	Pass
7639.2	-52.62	-13	-39.62	-74.86	-62.80	1.82	12.00	H	Pass

Band :	GSM1900 for CH810	**Temperature :**	24~25°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819.6	-58.47	-13	-45.47	-72.92	-65.24	1.23	8	V	Pass
5729.4	-55.32	-13	-42.32	-72.21	-63.45	1.52	9.65	V	Pass
7639.2	-52.81	-13	-39.81	-75.36	-62.99	1.82	12	V	Pass

Band :	WCDMA Band V for CH4132	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1652.8	-55.72	-13	-42.72	-69.44	-58.71	0.81	5.95	H	Pass
2479.2	-45.37	-13	-32.37	-67.85	-47.82	1.2	5.80	H	Pass
3305.6	-62.09	-13	-49.09	-72.69	-66.39	1.25	7.70	H	Pass

Band :	WCDMA Band V for CH4132	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1652.8	-57.92	-13	-44.92	-69.35	-60.91	0.81	5.95	V	Pass
2479.2	-36.45	-13	-23.45	-58.53	-38.90	1.20	5.80	V	Pass
3305.6	-60.75	-13	-47.75	-72.58	-65.05	1.25	7.70	V	Pass

Band :	WCDMA Band V for CH4182	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-56.72	-13	-43.72	-69.64	-59.69	0.88	6.00	H	Pass
2510	-33.68	-13	-20.68	-58.72	-36.29	1.08	5.84	H	Pass
3346	-61.94	-13	-48.94	-72.54	-66.31	1.14	7.66	H	Pass

Band :	WCDMA Band V for CH4182	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-57.36	-13	-44.36	-67.99	-60.33	0.88	6.00	V	Pass
2510	-39.20	-13	-26.20	-61.54	-41.81	1.08	5.84	V	Pass
3346	-59.97	-13	-46.97	-71.80	-64.34	1.14	7.66	V	Pass

Band :	WCDMA Band V for CH4233	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693.2	-56.53	-13	-43.53	-70.07	-59.86	0.82	6.30	H	Pass
2539.8	-35.38	-13	-22.38	-60.29	-37.99	1.08	5.84	H	Pass
3386.4	-61.46	-13	-48.46	-72.35	-65.58	1.23	7.50	H	Pass

Band :	WCDMA Band V for CH4233	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693.2	-58.50	-13	-45.50	-69.75	-61.83	0.82	6.30	V	Pass
2539.8	-45.03	-13	-32.03	-66.40	-47.64	1.08	5.84	V	Pass
3386.4	-59.75	-13	-46.75	-71.87	-63.87	1.23	7.50	V	Pass

Band :	WCDMA Band II for CH9262	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3704.8	-44.63	-13	-31.63	-59.47	-51.48	1.35	8.20	H	Pass
5557.2	-55.36	-13	-42.36	-73.09	-63.97	1.65	10.26	H	Pass
7409.6	-52.60	-13	-39.60	-75.04	-62.94	1.82	12.16	H	Pass

Band :	WCDMA Band II for CH9262	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3704.8	-48.52	-13	-35.52	-63.26	-55.37	1.35	8.2	V	Pass
5557.2	-55.88	-13	-42.88	-72.7	-64.49	1.65	10.26	V	Pass
7409.6	-52.95	-13	-39.95	-75.7	-63.29	1.82	12.16	V	Pass

Band :	WCDMA Band II for CH9400	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**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	-40.62	-13	-27.62	-56.74	-47.36	1.28	8.02	H	Pass
5640	-54.77	-13	-41.77	-72.76	-63.19	1.58	10.00	H	Pass
7520	-52.95	-13	-39.95	-74.89	-63.27	1.78	12.10	H	Pass

Band :	WCDMA Band II for CH9400	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-47.98	-13	-34.98	-63.01	-54.72	1.28	8.02	V	Pass
5640	-56.36	-13	-43.36	-73.44	-64.78	1.58	10	V	Pass
7520	-53.47	-13	-40.47	-75.72	-63.79	1.78	12.1	V	Pass

Band :	WCDMA Band II for CH9538	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3815.2	-41.67	-13	-28.67	-57.57	-48.41	1.28	8.02	H	Pass
5722.8	-54.85	-13	-41.85	-72.84	-63.27	1.58	10.00	H	Pass
7630.4	-53.56	-13	-40.56	-75.50	-63.88	1.78	12.10	H	Pass

Band :	WCDMA Band II for CH9538	**Temperature :**	24~25°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	48~49%
Test Engineer :	Leo Liao	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3815.2	-49.25	-13	-36.25	-64.28	-55.99	1.28	8.02	V	Pass
5722.8	-55.02	-13	-42.02	-72.1	-63.44	1.58	10	V	Pass
7630.4	-53.22	-13	-40.22	-75.47	-63.54	1.78	12.1	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

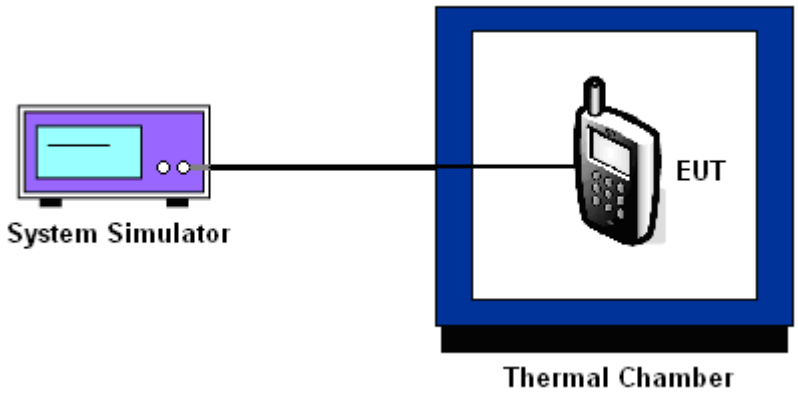
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the system simulator.
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 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 EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
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)	GSM		EDGE class 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-22	-0.026	-16	-0.019	PASS
-20	-20	-0.024	-12	-0.014	
-10	-17	-0.020	-11	-0.013	
0	-18	-0.021	-13	-0.015	
10	-20	-0.024	-15	-0.018	
20(Ref.)	-19	-0.022	-14	-0.016	
30	-18	-0.021	-13	-0.015	
40	-21	-0.025	-13	-0.015	
50	-22	-0.026	-14	-0.016	

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

Temperature (°C)	GSM		EDGE class 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-26	-0.014	-21	-0.011	PASS
-20	-25	-0.013	-20	-0.011	
-10	-22	-0.012	-19	-0.010	
0	-24	-0.013	-17	-0.009	
10	-21	-0.011	-18	-0.009	
20(Ref.)	-23	-0.012	-18	-0.009	
30	-19	-0.010	-19	-0.010	
40	-22	-0.012	-20	-0.011	
50	-24	-0.013	-19	-0.010	

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	7	+0.008	PASS
-20	5	+0.006	
-10	4	+0.005	
0	6	+0.007	
10	5	+0.006	
20(Ref.)	6	+0.007	
30	5	+0.006	
40	4	+0.005	
50	6	+0.007	

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	10	+0.005	PASS
-20	9	+0.005	
-10	8	+0.004	
0	8	+0.004	
10	9	+0.005	
20(Ref.)	8	+0.004	
30	7	+0.004	
40	9	+0.005	
50	9	+0.005	

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	-20	-0.024	2.5	PASS
		BEP	-19	-0.022		
		4.35	-22	-0.026		
	EDGE class 8	3.8	-14	-0.016		
		BEP	-13	-0.015		
		4.35	-15	-0.018		
GSM 1900 CH661	GSM	3.8	-23	-0.012		
		BEP	-22	-0.012		
		4.35	-20	-0.011		
	EDGE class 8	3.8	-17	-0.009		
		BEP	-18	-0.009		
		4.35	-19	-0.010		
WCDMA Band V CH4182	RMC 12.2Kbps	3.8	6	+0.007		
		BEP	5	+0.006		
		4.35	7	+0.008		
WCDMA Band II CH9400	RMC 12.2Kbps	3.8	9	+0.005		
		BEP	8	+0.004		
		4.35	10	+0.005		

Note:

1. Normal Voltage = 3.8V.
2. Battery End Point (BEP) = 3.55 V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101400	9kHz~30GHz	Mar. 03, 2014	May 28, 2014~ Jun. 24, 2014	Mar. 02, 2015	Conducted (TH01-SZ)
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Jun. 17, 2013	May 28, 2014~ Jun. 24, 2014	Jun. 16, 2014	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	13dBm~-20dBm	Mar. 03, 2014	May 28, 2014~ Jun. 24, 2014	Mar. 02, 2015	Conducted (TH01-SZ)
Power Sensor	Anritsu	MA2411B	1207253	0.3GHz~40GHz	Mar. 03, 2014	May 28, 2014~ Jun. 24, 2014	Mar. 02, 2015	Conducted (TH01-SZ)
Thermal Chamber	Hongzhan	LP-150U	HD20120425	-40℃~150℃	Feb. 21, 2014	May 28, 2014~ Jun. 24, 2014	Feb. 20, 2015	Conducted (TH01-SZ)
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Jun. 04, 2014~ Jun. 14, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2014	Jun. 04, 2014~ Jun. 14, 2014	May 25, 2015	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 09, 2014	Jun. 04, 2014~ Jun. 14, 2014	May 08, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TESEQ	CBL 6112D	23188	30MHz~2GHz	Oct. 26, 2013	Jun. 04, 2014~ Jun. 14, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Jun. 04, 2014~ Jun. 14, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridged Horn	COM-POWER	AH-840	101073	18GHz~40GHz	Jan. 27, 2014	Jun. 04, 2014~ Jun. 14, 2014	Jan. 26, 2015	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz	Feb. 21, 2014	Jun. 04, 2014~ Jun. 14, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 08, 2014	Jun. 04, 2014~ Jun. 14, 2014	May 07, 2015	Radiation (03CH01-SZ)
AC Source(AVR)	Chroma	61601	616010001985	100Vac~250Vac	Mar. 25, 2014	Jun. 04, 2014~ Jun. 14, 2014	Mar. 24, 2015	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0~360 degree	NCR	Jun. 04, 2014~ Jun. 14, 2014	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m~4 m	NCR	Jun. 04, 2014~ Jun. 14, 2014	NCR	Radiation (03CH01-SZ)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.90**