FCC RF Test Report

APPLICANT	:	**Joyous LLC**
EQUIPMENT	:	**Mobile Phone**
MODEL NAME	:	**SD4930UR**
FCC ID	:	**ZWH-1210**
STANDARD	:	**FCC 47 CFR Part 2, 22(H), 24(E), 27(L)**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**

The testing completed on Apr. 2, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown to be compliant with the applicable technical standards. The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG372301-01A	Rev. 01	Initial issue of report	Apr. 03, 2014
FG372301-01A	Rev. 02	Add test setting and detector to report section 3.3.3.	Apr. 15, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d) §27.50(d)(5)	Peak-to-Average Ratio	< 13 dB	PASS	-
3.3	§22.913(a)(2)	Effective Radiated Power	< 7 Watts	PASS	-
3.3	§24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.3	§27.50(d)(4)	Equivalent Isotropic Radiated Power	< 1 Watts	PASS	-
3.4	§2.1049 §22.917(b) §24.238(b) §27.53(g)	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a) §27.53(g)	Band Edge Measurement	< 43+10log10(P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a) §27.53(g)	Conducted Emission	< 43+10log10(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a) §27.53(g)	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	Under limit 2.73 dB at 2548.000 MHz
3.8	§2.1055 §22.355 §24.235 §27.54	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

Joyous LLC
1090 Vermont Avenue NW Suite 430
Washington, DC 20005

1.2 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Model Name	SD4930UR
FCC ID	ZWH-1210
Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/ WLAN 11b/g/n (HT20) WLAN 11a/n (HT20/HT40) WLAN 11ac (VHT20/VHT40/VHT80) Bluetooth v3.0 + EDR Bluetooth v4.0 + LE NFC

1.3 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II : 1932.4 MHz ~ 1987.6 MHz
Antenna Type	Fixed Internal Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)

1.4 Modification of EUT

No modifications were made during testing.

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

FCC Rule	System	TX Frequency (MHz)	Maximum ERP/EIRP (W)	Frequency Tolerance (ppm)	Emission Designator
Part 22	GSM850 GPRS class 8	824.2 MHz ~ 848.8 MHz	0.51	0.04 ppm	248KGXW
Part 22	GSM850 EDGE class 8	824.2 MHz ~ 848.8 MHz	0.10	0.04 ppm	244KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	826.4 MHz ~ 846.6 MHz	0.08	0.02 ppm	4M20F9W
Part 24	GSM1900 GSM	1850.2 MHz ~ 1909.8MHz	0.88	0.03 ppm	250KGXW
Part 24	GSM1900 EDGE class 8	1850.2 MHz ~ 1909.8MHz	0.36	0.04 ppm	248KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	1852.4 MHz ~ 1907.6 MHz	0.22	0.01 ppm	4M20F9W
Part 27	WCDMA Band IV RMC 12.2Kbps	1712.4 MHz ~ 1752.6 MHz	0.16	0.01 ppm	4M20F9W

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	**Sporton Site No.**		**FCC/IC Registration No.**
	TH02-HY	03CH07-HY	722060/4086B-1

1.7 Applicable Standards

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

- 47 CFR Part 2, 22(H), 24(E), 27(L)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.

2. This EUT has been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 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 three orthogonal test planes to find the maximum emission.

Radiated emission were investigated as following frequency range:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V.
2. 30 MHz to 18000 MHz for WCDMA Band IV.
3. 30 MHz to 19000 MHz for GSM1900 and WCDMA Band II.

Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
GSM 850	■ GPRS class 8 Link ■ EDGE class 8 Link	■ GPRS class 8 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 IV	■ 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:

GPRS multi-slot class 8 mode for 850 band GMSK modulation,

GSM multi-slot class 8 mode for 1900 band 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,

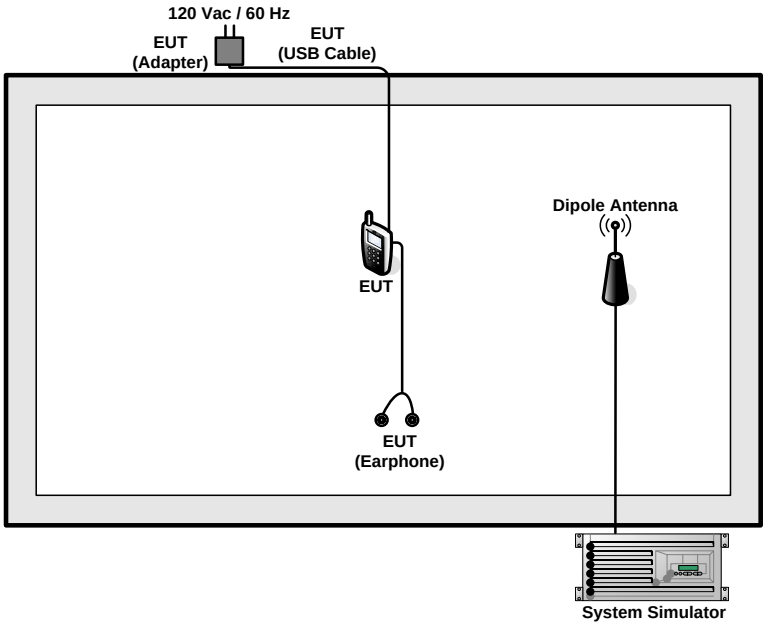
RMC 12.2Kbps mode for WCDMA band IV, only these modes were used for all tests.

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**	**1909.8**
GSM	32.61	32.94	32.96	29.85	**29.96**	29.83
GPRS class 8	32.63	32.70	**32.98**	29.78	29.89	29.78
GPRS class 10	32.71	32.76	32.75	29.90	29.65	29.89
EGPRS class 8	**25.84**	25.63	25.64	**25.99**	25.79	25.66
EGPRS class 10	25.62	25.48	25.54	25.90	25.71	25.61

Conducted Power (*Unit: dBm)									
Band	**WCDMA Band V**			**WCDMA Band II**			**WCDMA Band IV**		
Channel	**4132**	**4182**	**4233**	**9262**	**9400**	**9538**	**1312**	**1413**	**1513**
Frequency	**826.4**	**836.4**	**846.6**	**1852.4**	**1880**	**1907.6**	**1712.4**	**1732.6**	**1752.6**
AMR 12.2K	23.45	23.48	23.43	23.45	23.30	23.15	23.40	23.35	23.33
RMC 12.2K	23.48	**23.50**	23.44	**23.49**	23.35	23.19	**23.45**	23.38	23.37
HSDPA Subtest-1	22.20	22.25	22.14	22.45	22.03	22.04	22.49	22.25	22.12
HSDPA Subtest-2	22.40	22.42	22.49	22.45	22.04	22.05	22.48	22.23	22.08
HSDPA Subtest-3	22.00	22.01	22.04	22.45	21.75	21.85	22.00	21.81	21.63
HSDPA Subtest-4	21.93	22.02	22.15	22.43	21.74	21.75	21.91	21.76	21.58
HSUPA Subtest-1	22.38	22.34	22.50	22.40	22.40	21.99	22.27	22.24	22.12
HSUPA Subtest-2	20.90	21.00	21.04	21.49	21.14	20.98	20.80	20.74	20.60
HSUPA Subtest-3	20.81	20.87	21.12	21.38	21.40	21.21	21.20	21.09	20.90
HSUPA Subtest-4	22.27	22.31	22.41	21.42	21.50	21.33	21.95	21.80	21.65
HSUPA Subtest-5	22.16	22.28	22.27	22.43	22.43	22.32	22.45	22.28	22.19

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	CMU200	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power

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

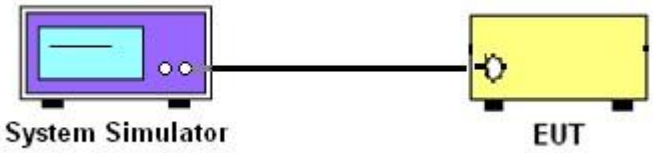
3.1.2 Measuring Instruments

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 base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. 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 (GPRS class 8)**			**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)	32.63	32.70	32.98	25.84	25.63	25.64	23.48	23.50	23.44
Conducted Power (Watts)	1.83	1.86	1.99	0.38	0.37	0.37	0.22	0.22	0.22

PCS Band									
Modes	**GSM1900 (GSM)**			**GSM1900 (EDGE class 8)**			**WCDMA Band II (RMC 12.2Kbps)**		
Channel	**512 (Low)**	**661 (Mid)**	**810 (High)**	**512 (Low)**	**661 (Mid)**	**810 (High)**	**9262 (Low)**	**9400 (Mid)**	**9538 (High)**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**	**1850.2**	**1880**	**1909.8**	**1852.4**	**1880**	**1907.6**
Conducted Power (dBm)	29.85	29.96	29.83	25.99	25.79	25.66	23.49	23.35	23.19
Conducted Power (Watts)	0.97	0.99	0.96	0.40	0.38	0.37	0.22	0.22	0.21

AWS Band			
Modes	**WCDMA Band IV (RMC 12.2Kbps)**		
Channel	**1312 (Low)**	**1413 (Mid)**	**1513 (High)**
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**
Conducted Power (dBm)	23.45	23.38	23.37
Conducted Power (Watts)	0.22	0.22	0.22

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

3.2 Peak-to-Average Ratio

3.2.1 Description of the PAR Measurement

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

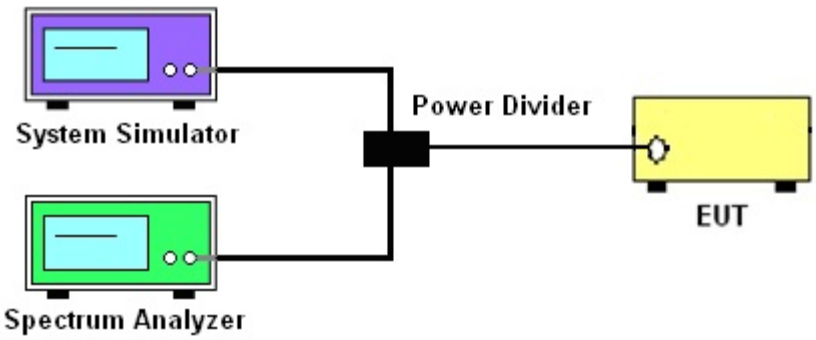
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The EUT was connected to 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 the spectrum analyzer for first trace.
   c. Set the RBW = 1MHz, VBW = 3MHz, RMS detector on the 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 (GPRS class 8)			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)	0.20	0.19	0.20	2.78	2.82	2.84	2.92	3.08	2.68

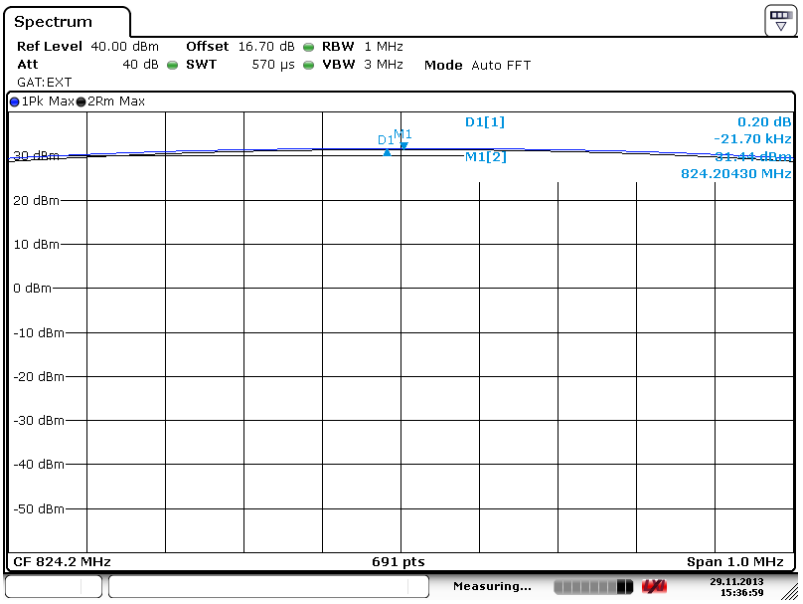
PCS Band									
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.31	0.29	0.25	2.39	2.60	2.40	3.08	3.20	2.64

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Peak-to-Average Ratio (dB)	3.24	3.04	3.48

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

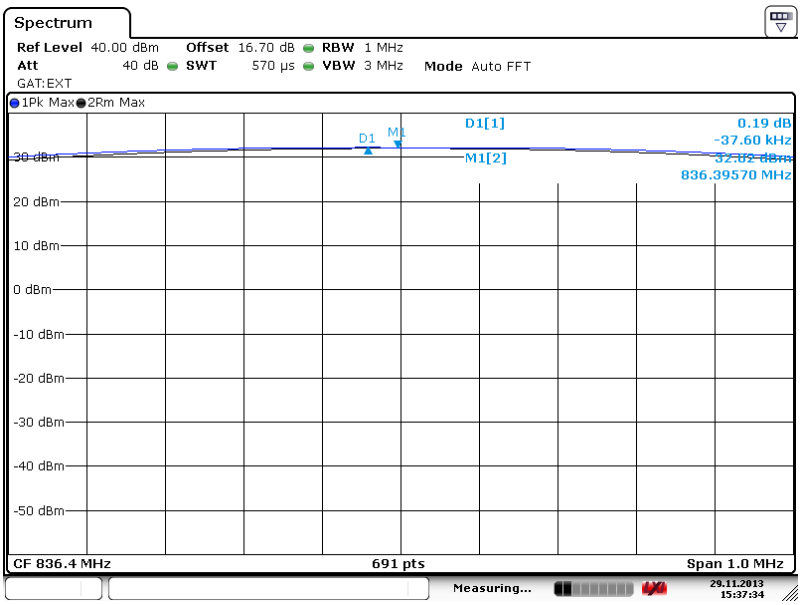
Band :	GSM 850	Test Mode :	GPRS class 8 Link (GMSK)

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



Date: 29.NOV.2013 15:36:59

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



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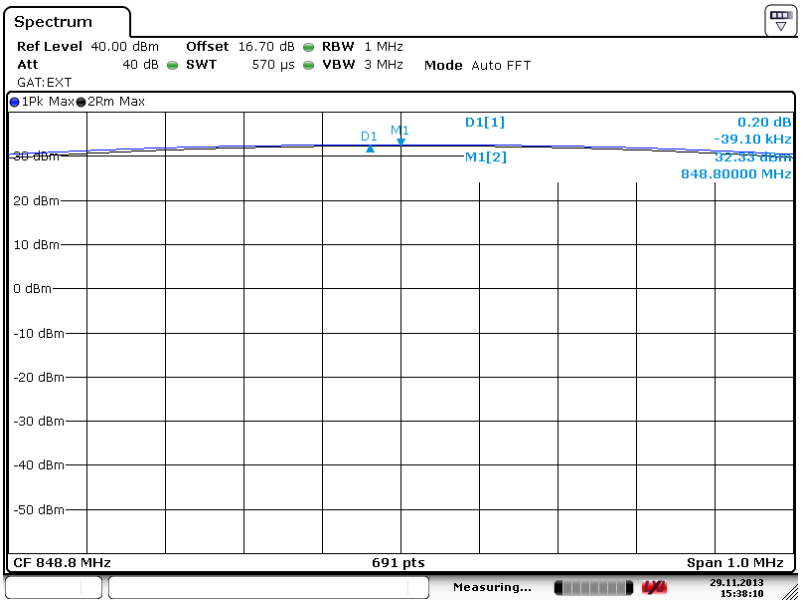
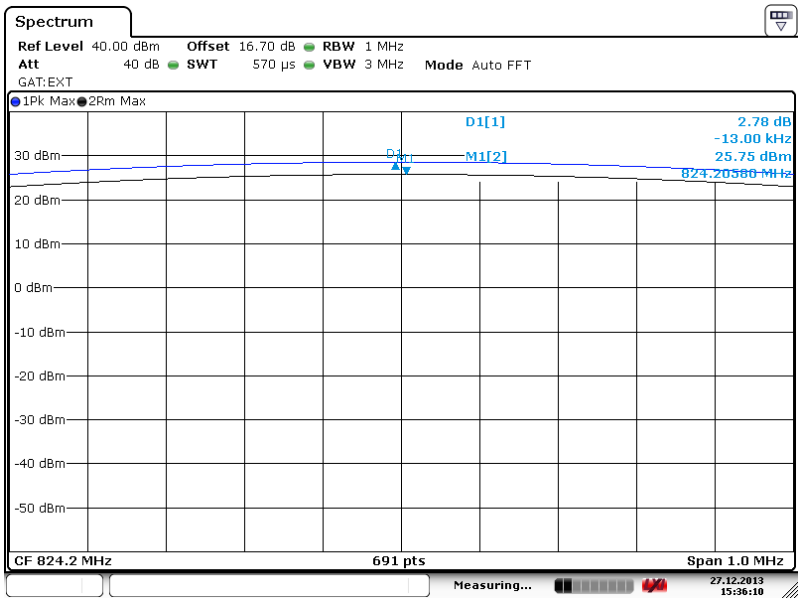
Peak-to-Average Ratio on Channel 251 (848.8 MHz)



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

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



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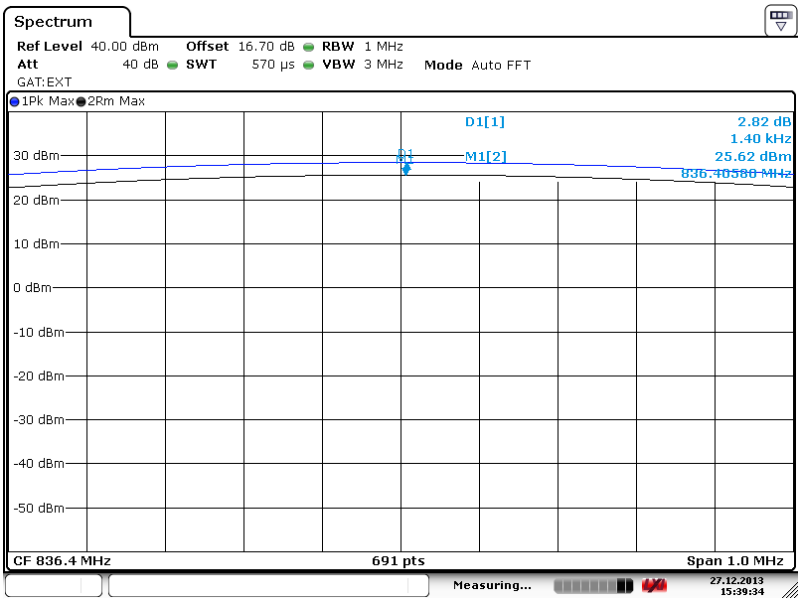
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



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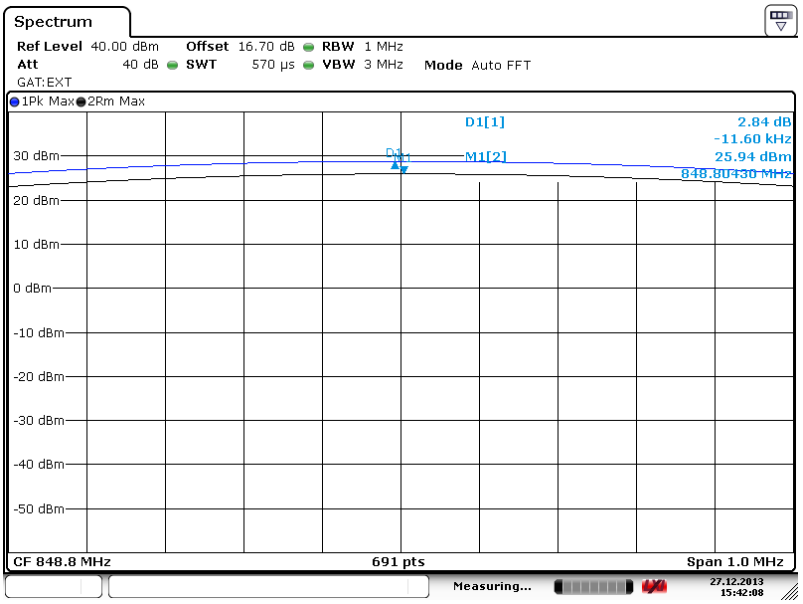
Peak-to-Average Ratio on Channel 251 (848.8 MHz)



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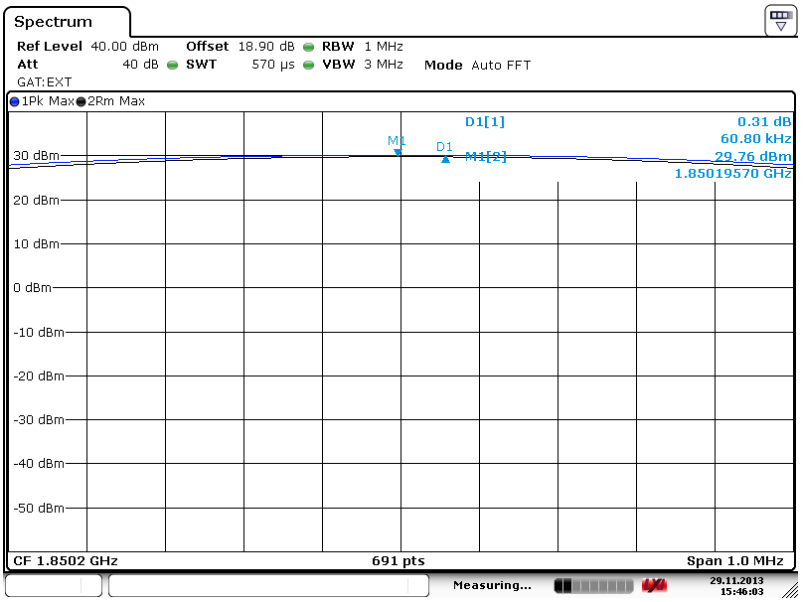
Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

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



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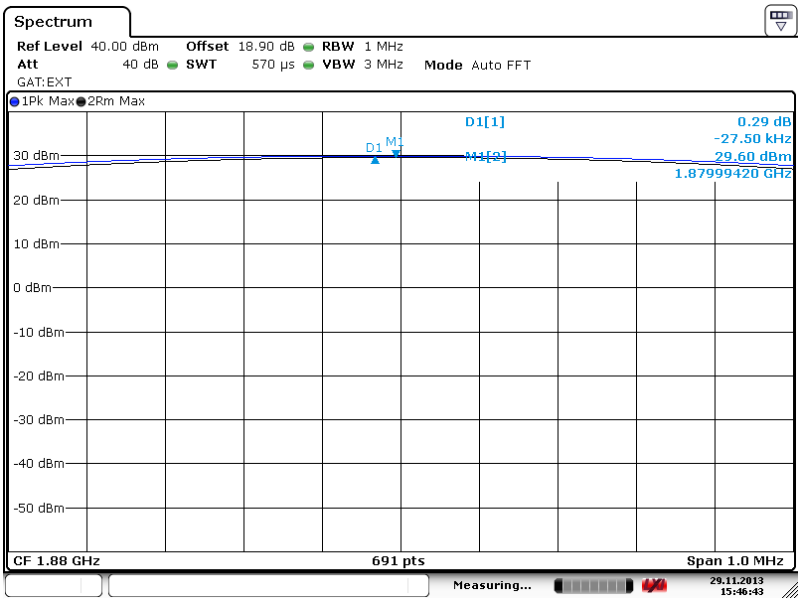
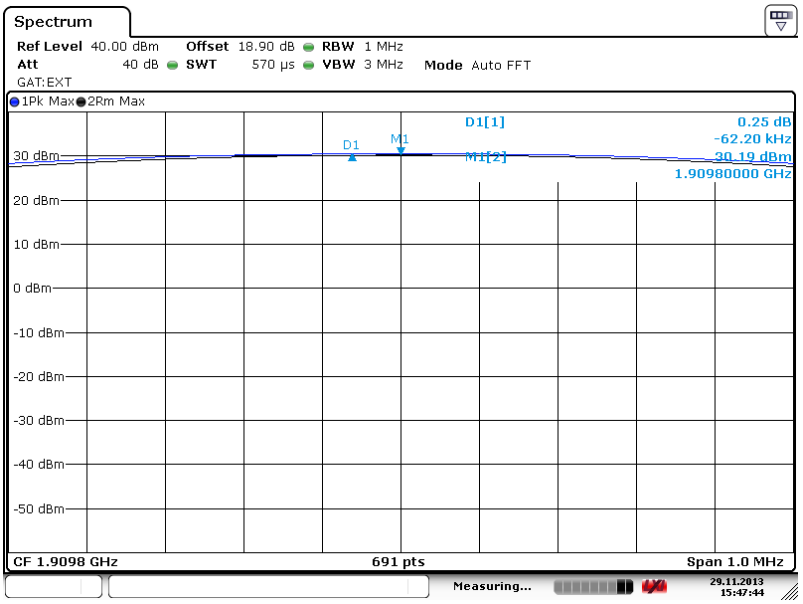
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 29.NOV.2013 15:46:43

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



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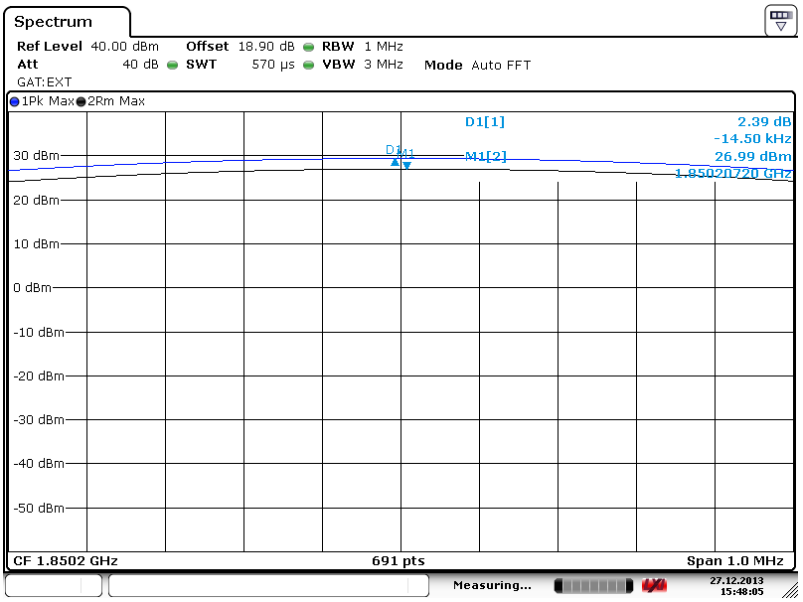
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)

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



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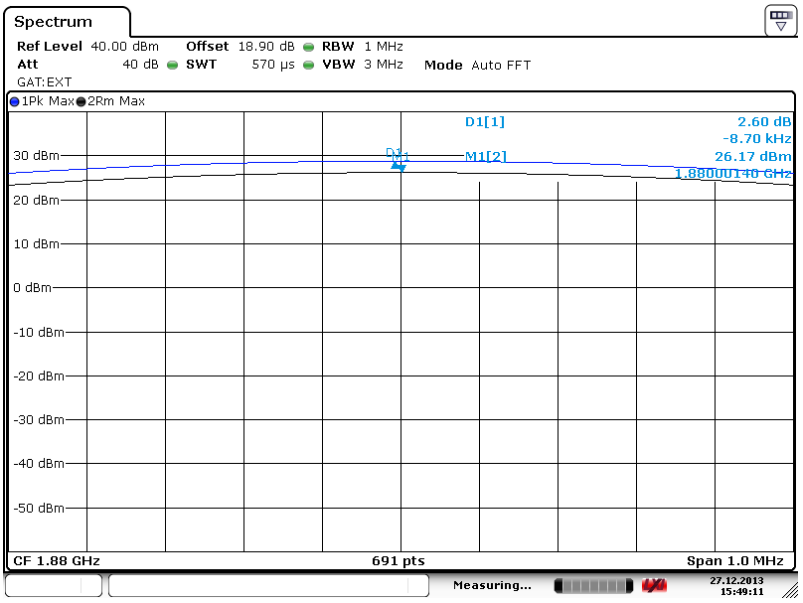
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



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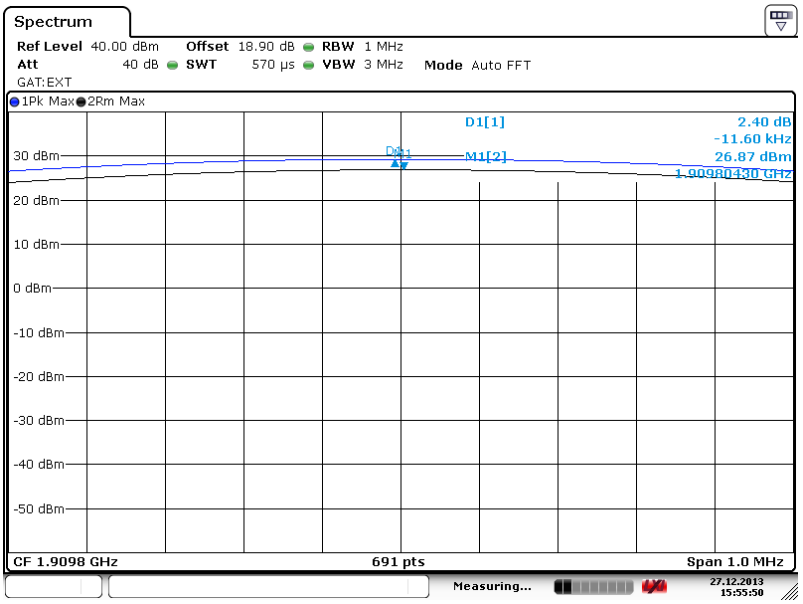
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



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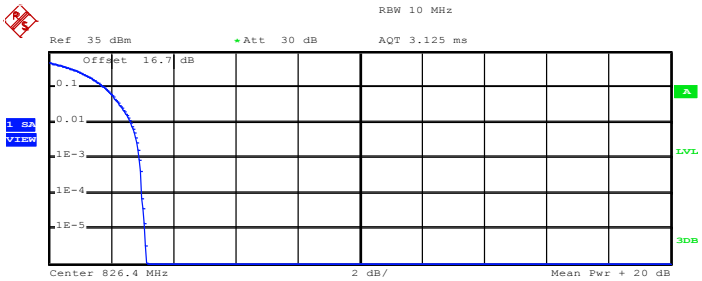
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.73 dBm
Peak	26.86 dBm
Crest	3.13 dB
10 %	1.80 dB
1 %	2.64 dB
.1 %	2.92 dB
.01 %	3.00 dB

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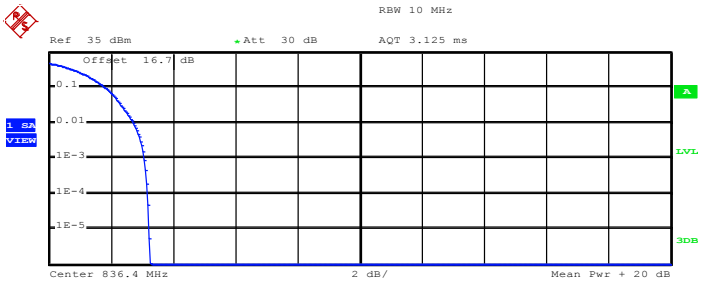
Peak-to-Average Ratio on Channel 4182 (836.4 MHz)

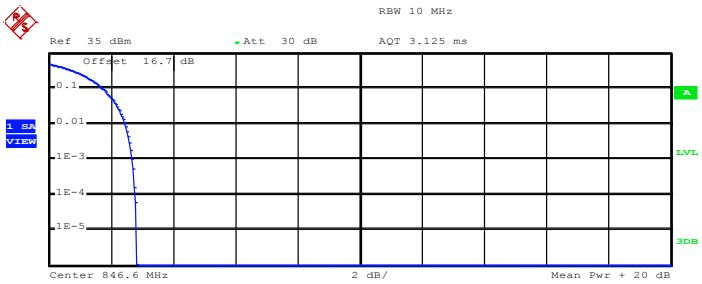


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.95 dBm
Peak	26.22 dBm
Crest	3.28 dB
10 %	1.84 dB
1 %	2.72 dB
.1 %	3.08 dB
.01 %	3.20 dB

Date: 28.NOV.2013 16:29:51

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



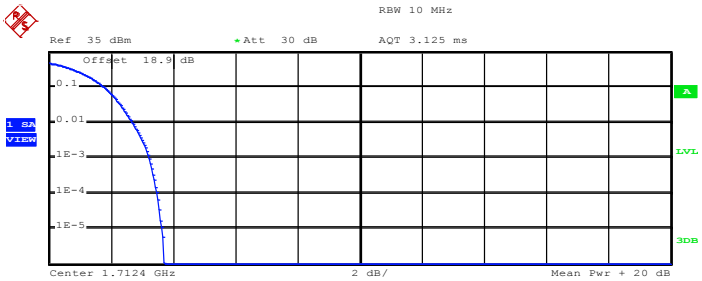
Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.46 dBm
Peak	26.29 dBm
Crest	2.83 dB
10 %	1.76 dB
1 %	2.48 dB
.1 %	2.68 dB
.01 %	2.80 dB

Date: 28.NOV.2013 16:30:17

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

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

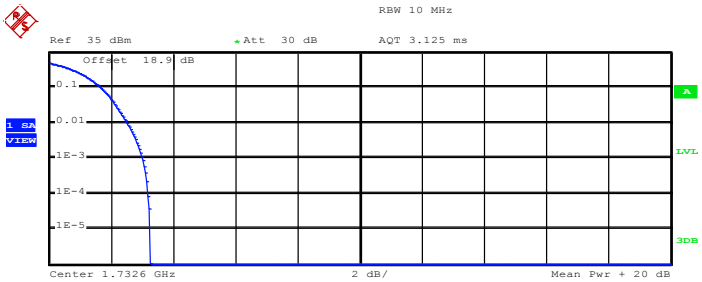


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	20.81 dBm
Peak	24.53 dBm
Crest	3.71 dB
10 %	1.80 dB
1 %	2.72 dB
.1 %	3.24 dB
.01 %	3.48 dB

Date: 28.NOV.2013 15:57:03

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

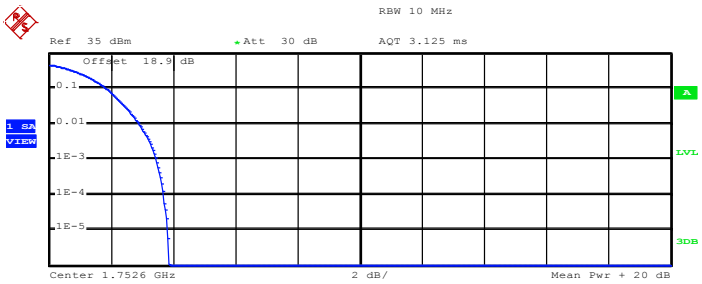


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.26 dBm
Peak	24.53 dBm
Crest	3.26 dB
10 %	1.68 dB
1 %	2.52 dB
.1 %	3.04 dB
.01 %	3.20 dB

Date: 28.NOV.2013 15:58:59

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



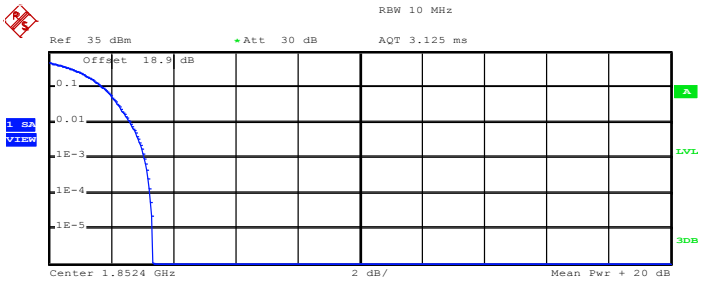
Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	20.96 dBm
Peak	24.81 dBm
Crest	3.85 dB
10 %	1.88 dB
1 %	2.92 dB
.1 %	3.48 dB
.01 %	3.68 dB

Date: 28.NOV.2013 15:59:40

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

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

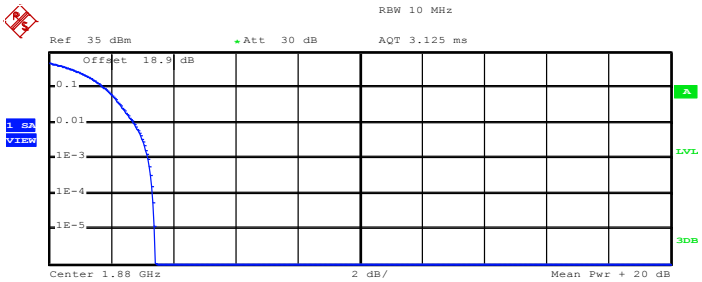


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	24.35 dBm
Peak	27.70 dBm
Crest	3.35 dB
10 %	1.76 dB
1 %	2.64 dB
.1 %	3.08 dB
.01 %	3.24 dB

Date: 28.NOV.2013 14:54:19

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

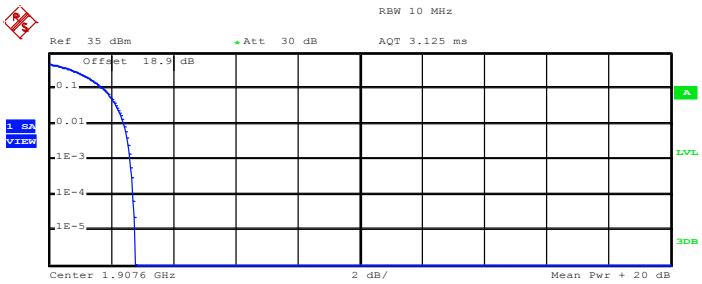


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	24.51 dBm
Peak	27.92 dBm
Crest	3.40 dB
10 %	1.80 dB
1 %	2.72 dB
.1 %	3.20 dB
.01 %	3.36 dB

Date: 28.NOV.2013 14:54:57

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



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.87 dBm
Peak	26.65 dBm
Crest	2.78 dB
10 %	1.76 dB
1 %	2.44 dB
.1 %	2.64 dB
.01 %	2.72 dB

Date: 28.NOV.2013 14:55:32

3.3 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

3.3.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-C-2004, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01. The ERP of mobile transmitters must not exceed 7 Watts (Cellular Band) and the EIRP of mobile transmitters are limited to 2 Watts (PCS Band) and 1 Watts (AWS Band).

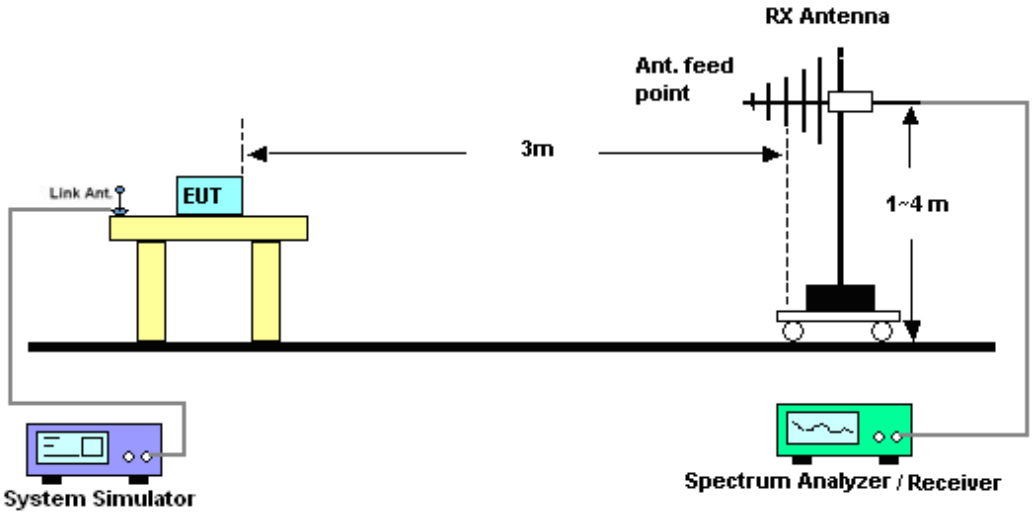
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The 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 base station 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 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 (GPRS class 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	-2.31	31.54	27.08	0.5105
836.40	-3.17	32.04	26.72	0.4699
848.80	-4.38	32.59	26.06	0.4036
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	-12.83	32.93	17.95	0.0624
836.40	-13.66	32.82	17.01	0.0502
848.80	-15.55	33.62	15.92	0.0391

* 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)**
824.20	-9.49	31.54	19.90	0.0977
836.40	-9.72	32.04	20.17	0.1041
848.80	-10.71	32.59	19.73	0.0941
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
824.20	-19.63	32.93	11.15	0.0130
836.40	-20.29	32.82	10.38	0.0109
848.80	-22.14	33.62	9.33	0.0086

* 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	-10.68	31.44	18.61	0.0726
836.40	-11.21	32.04	18.68	0.0738
846.60	-11.70	32.63	18.78	0.0755
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
826.40	-25.39	32.78	5.24	0.0033
836.40	-24.68	32.82	5.99	0.0040
846.60	-24.91	33.4	6.34	0.0043

* 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)**
1850.20	-16.80	43.69	26.89	0.4887
1880.00	-17.25	44.79	27.54	0.5675
1909.80	-16.02	43.59	27.57	0.5715
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.20	-17.06	45.72	28.66	0.7345
1880.00	-17.47	46.78	29.31	0.8531
1909.80	-17.32	46.77	29.45	0.8810

* 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)**
1850.20	-20.25	43.69	23.44	0.2206
1880.00	-21.14	44.79	23.65	0.2317
1909.80	-18.57	43.59	25.02	0.3174
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1850.20	-20.23	45.72	25.49	0.3541
1880.00	-21.43	46.78	25.35	0.3428
1909.80	-21.16	46.77	25.61	0.3641

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

WCDMA Band IV (RMC 12.2Kbps) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1712.40	-22.49	41.74	19.25	0.0842
1732.60	-23.00	42.41	19.41	0.0874
1752.60	-22.28	41.82	19.54	0.0899
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1712.40	-22.29	43.38	21.09	0.1286
1732.60	-23.44	45.43	21.99	0.1582
1752.60	-22.27	44.43	22.16	0.1643

* 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	-21.66	43.69	22.03	0.1596
1880.00	-22.36	44.79	22.43	0.1750
1907.60	-21.18	43.59	22.41	0.1740
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1852.40	-22.45	45.72	23.27	0.2123
1880.00	-23.30	46.78	23.48	0.2228
1907.60	-23.86	46.77	22.91	0.1956

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

3.4 Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of Occupied Bandwidth and 26dB Bandwidth Measurement

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

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

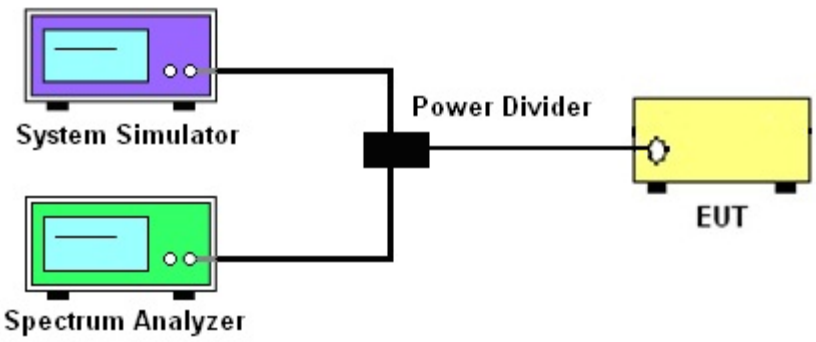
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station 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 (GPRS class 8)**			**GSM850 (EDGE class 8)**		
Channel	**128 (Low)**	**189 (Mid)**	**251 (High)**	**128 (Low)**	**189 (Mid)**	**251 (High)**
Frequency (MHz)	**824.2**	**836.4**	**848.8**	**824.2**	**836.4**	**848.8**
99% OBW (kHz)	248.00	248.00	246.00	240.00	238.00	244.00
26dB BW (kHz)	312.00	310.00	316.00	282.00	288.00	288.00

PCS Band						
Modes	**GSM1900 (GSM)**			**GSM1900 (EDGE class 8)**		
Channel	**512 (Low)**	**661 (Mid)**	**810 (High)**	**512 (Low)**	**661 (Mid)**	**810 (High)**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**	**1850.2**	**1880**	**1909.8**
99% OBW (kHz)	244.00	250.00	246.00	248.00	244.00	248.00
26dB BW (kHz)	312.00	310.00	314.00	310.00	306.00	318.00

Cellular Band			
Modes	**WCDMA Band V (RMC 12.2Kbps)**		
Channel	**4132 (Low)**	**4182 (Mid)**	**4233 (High)**
Frequency (MHz)	**826.4**	**836.4**	**846.6**
99% OBW (MHz)	4.16	4.20	4.18
26dB BW (MHz)	4.68	4.68	4.68

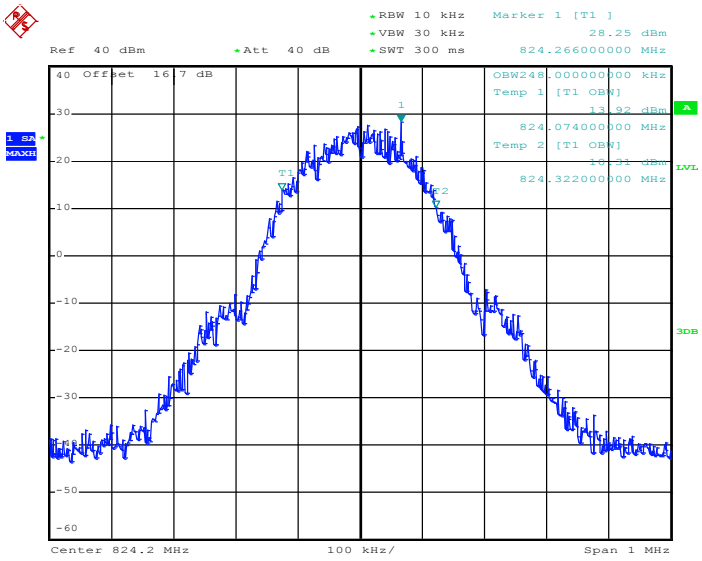
AWS Band			
Modes	**WCDMA Band IV (RMC 12.2Kbps)**		
Channel	**1312(Low)**	**1413 (Mid)**	**1513 (High)**
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**
99% OBW (MHz)	4.20	4.18	4.18
26dB BW (MHz)	4.68	4.68	4.68

PCS Band			
Modes	**WCDMA Band II (RMC 12.2Kbps)**		
Channel	**9262 (Low)**	**9400 (Mid)**	**9538 (High)**
Frequency (MHz)	**1852.4**	**1880**	**1907.6**
99% OBW (MHz)	4.18	4.18	4.20
26dB BW (MHz)	4.70	4.68	4.68

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

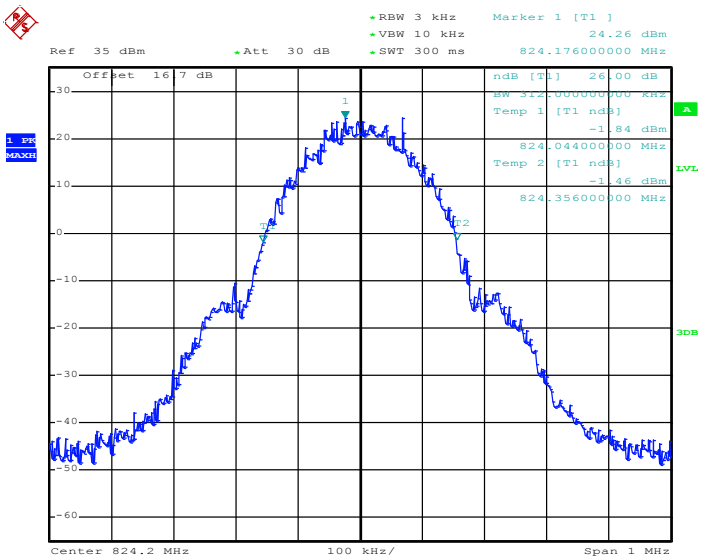
Band :	GSM 850	Test Mode :	GPRS class 8 Link (GMSK)

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



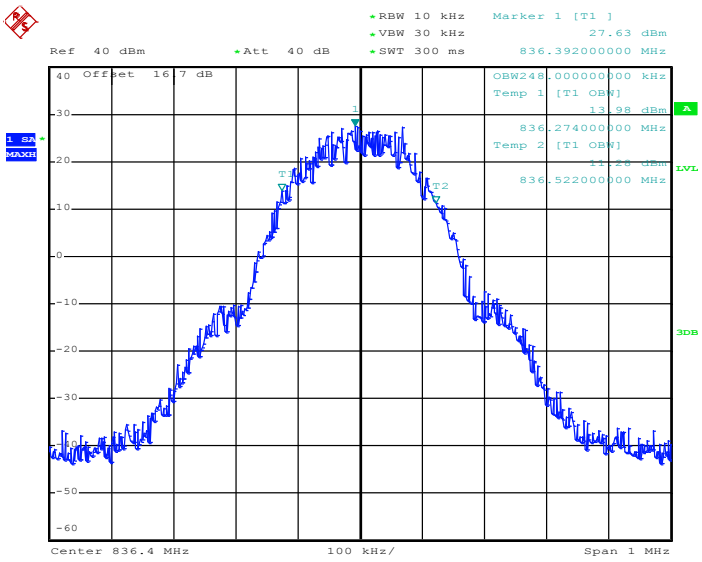
Date: 28.NOV.2013 11:28:43

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



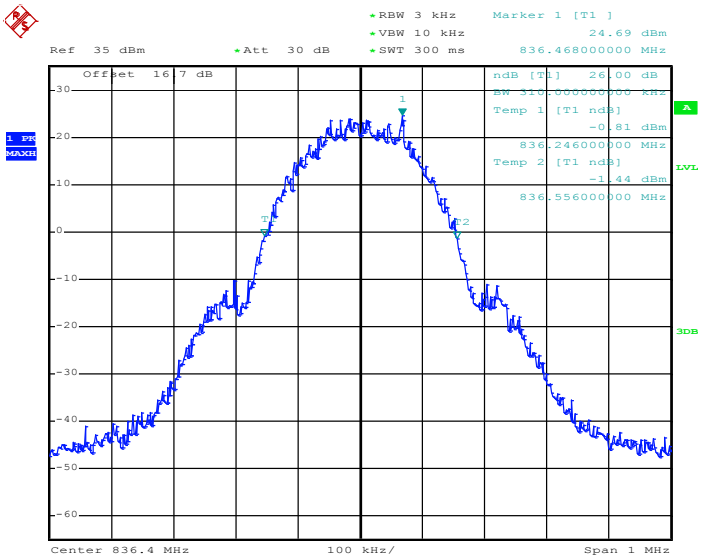
Date: 28.NOV.2013 11:26:49

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



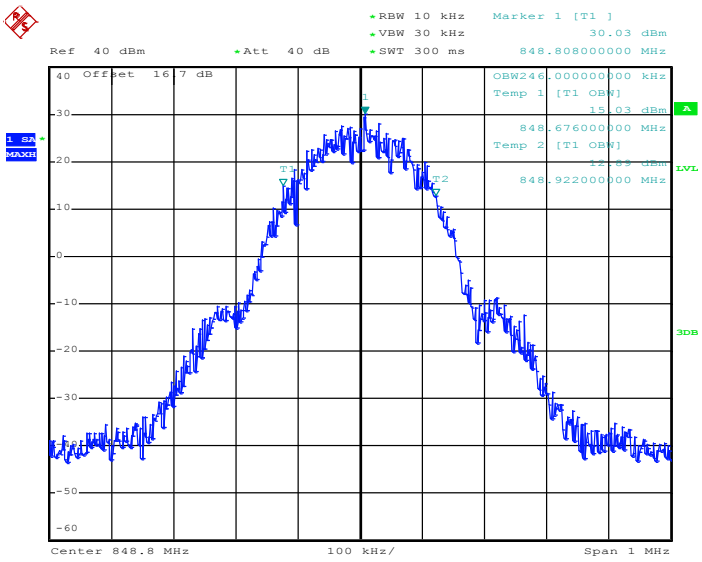
Date: 28.NOV.2013 11:29:13

26dB Bandwidth Plot on Channel 189 (836.4 MHz)



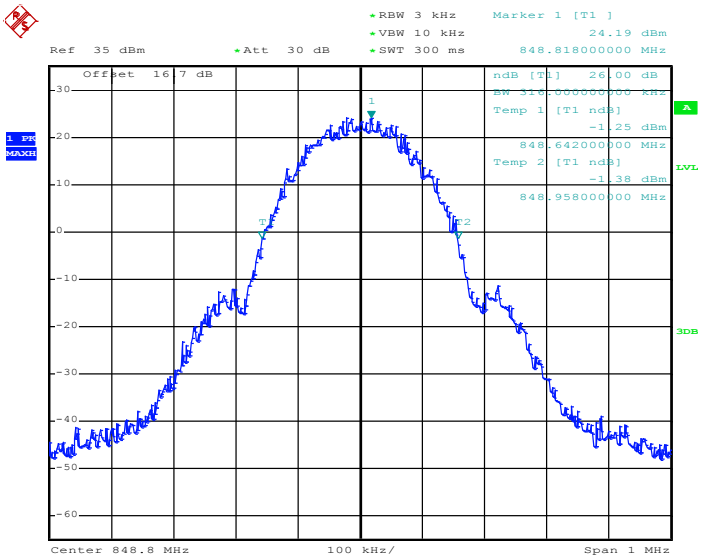
Date: 28.NOV.2013 11:27:19

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



Date: 28.NOV.2013 11:29:43

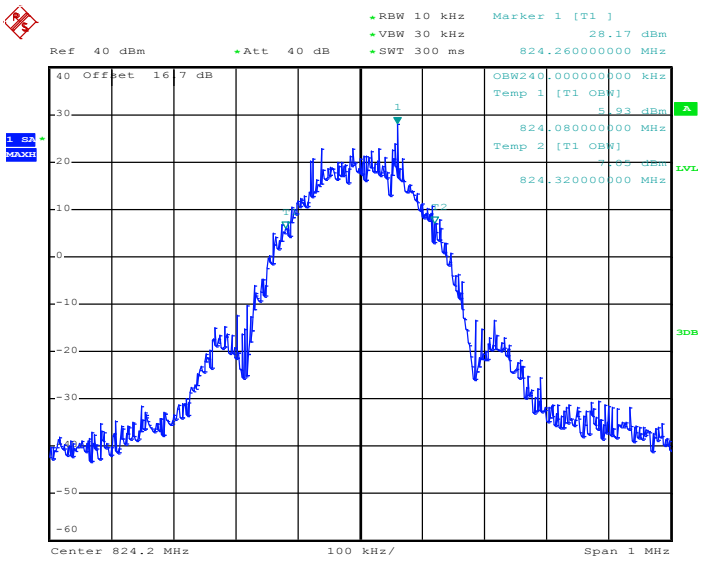
26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 28.NOV.2013 11:27:49

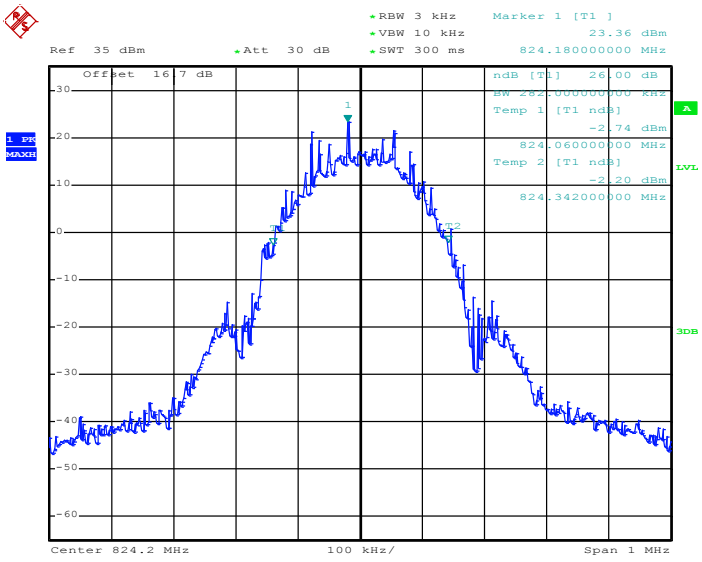
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)

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



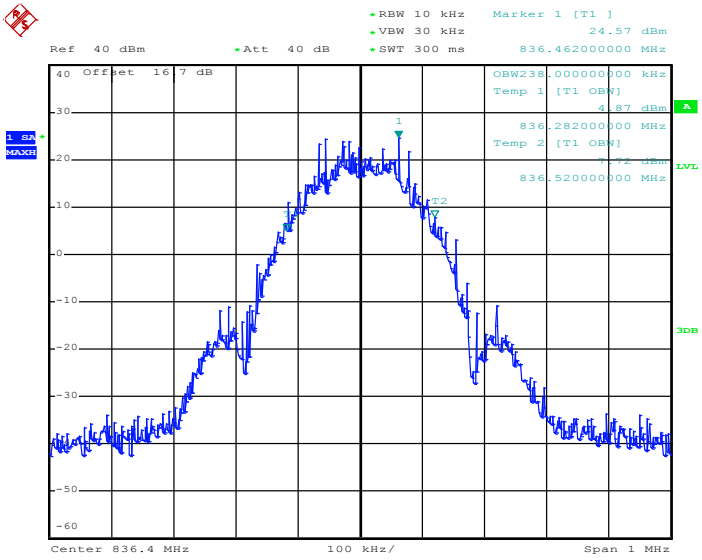
Date: 27.DEC.2013 13:38:14

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



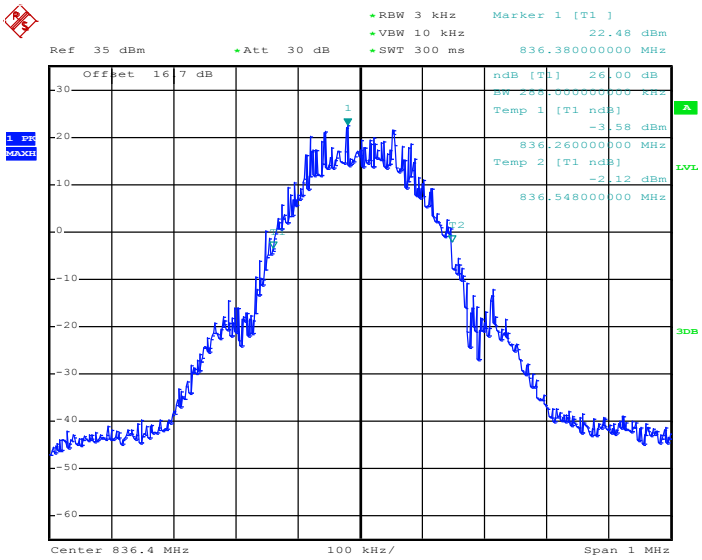
Date: 27.DEC.2013 13:33:46

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



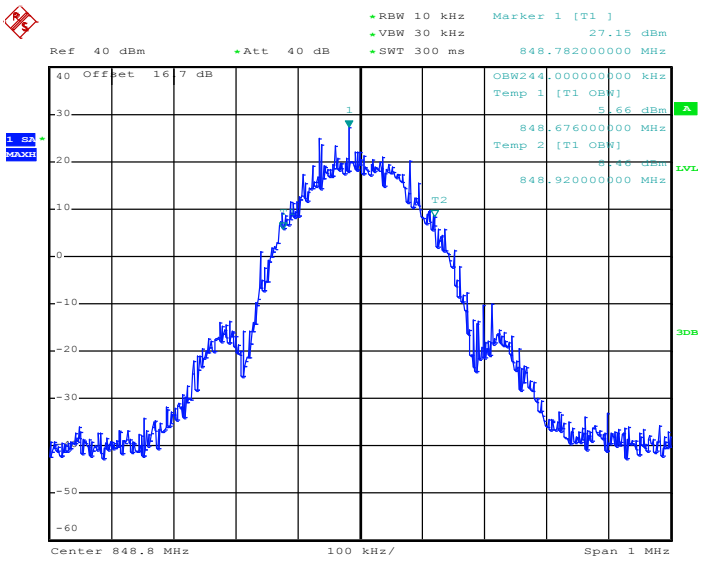
Date: 27.DEC.2013 13:38:43

26dB Bandwidth Plot on Channel 189 (836.4 MHz)



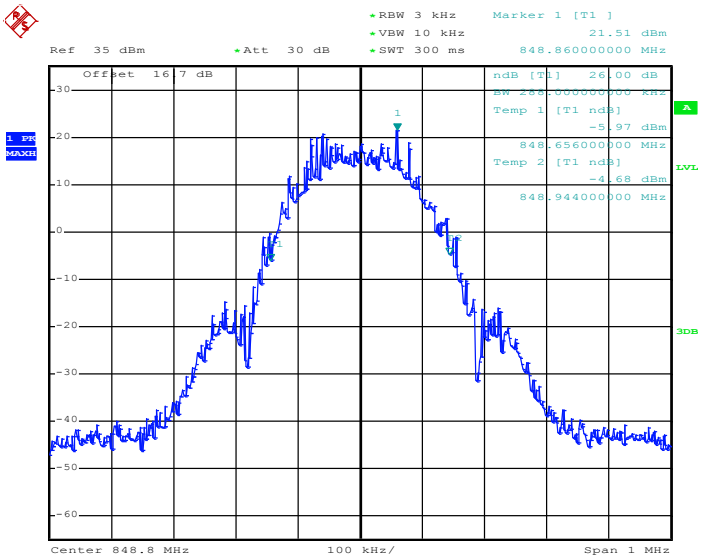
Date: 27.DEC.2013 13:31:54

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



Date: 27.DEC.2013 13:39:11

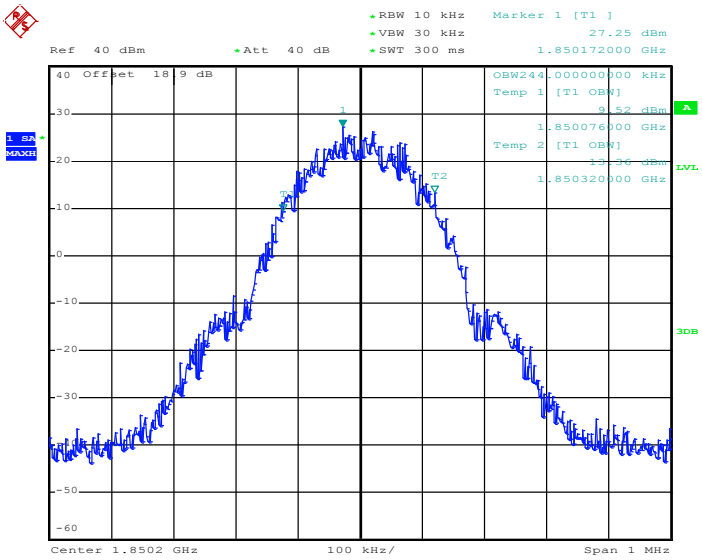
26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 27.DEC.2013 13:32:23

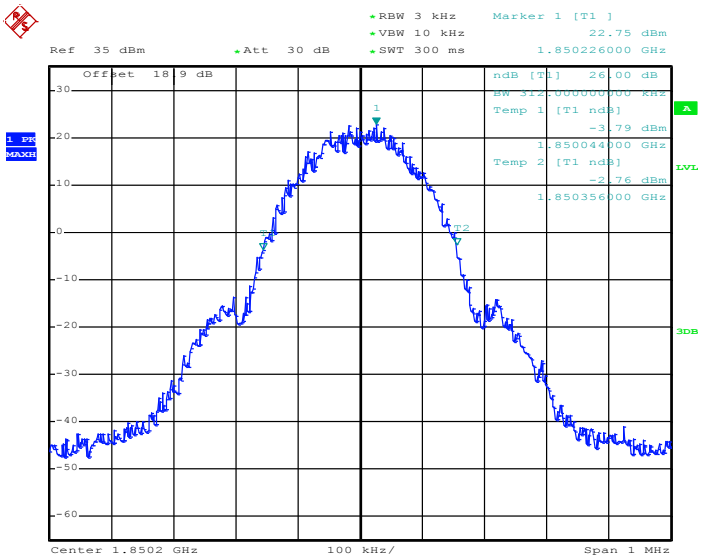
Band :	GSM 1900	Test Mode :	GSM Link (GMSK)

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



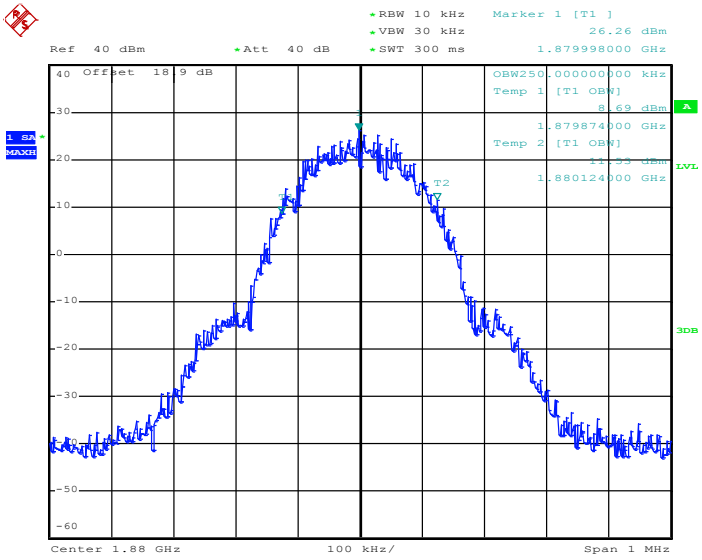
Date: 28.NOV.2013 13:21:44

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)

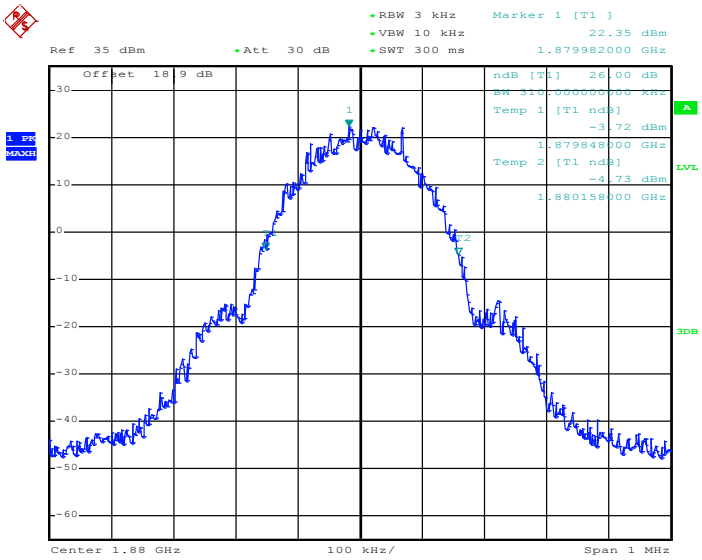


Date: 28.NOV.2013 13:18:55

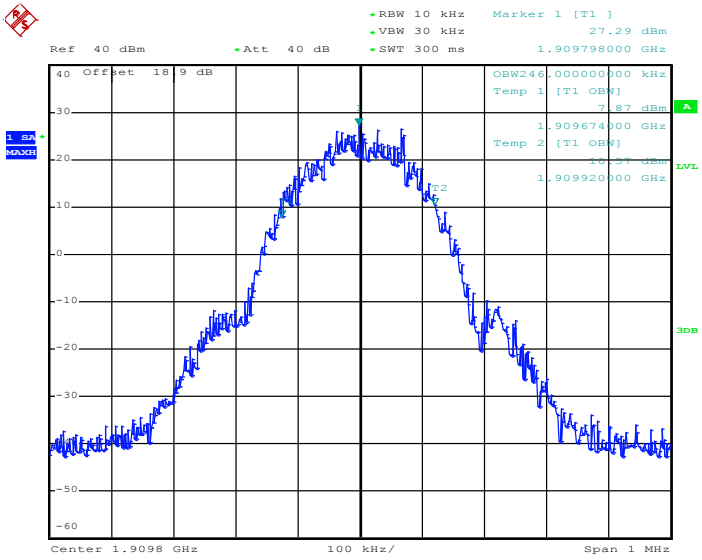
99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



26dB Bandwidth Plot on Channel 661 (1880.0 MHz)

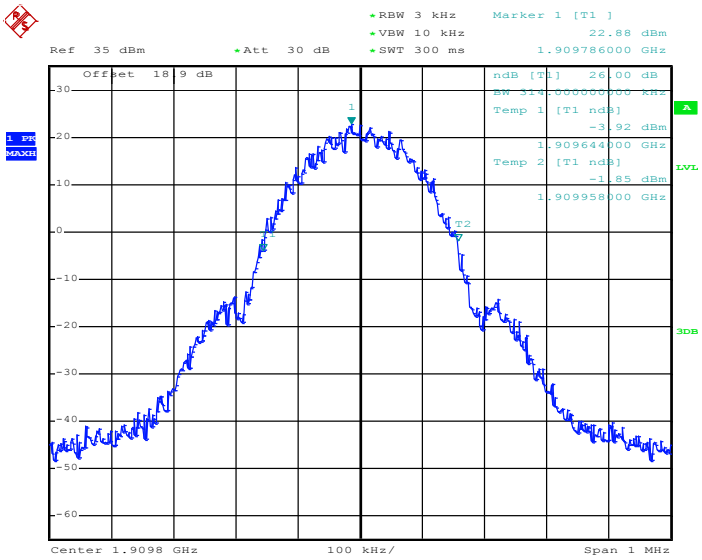


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 28.NOV.2013 13:22:44

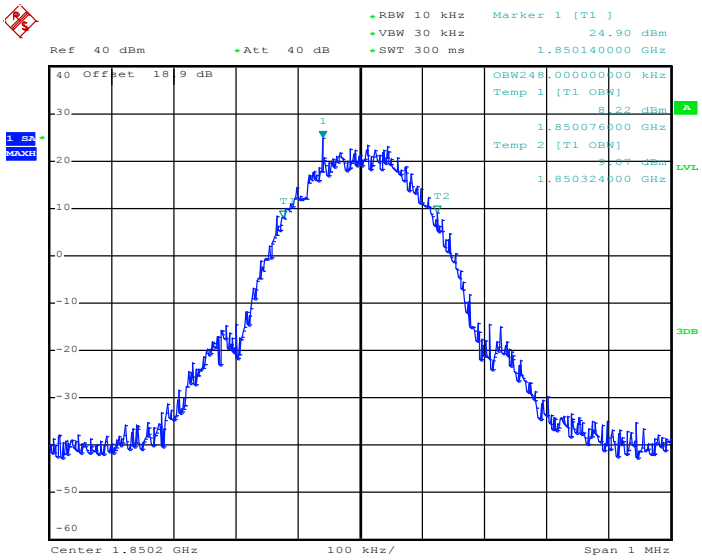
26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 28.NOV.2013 13:13:04

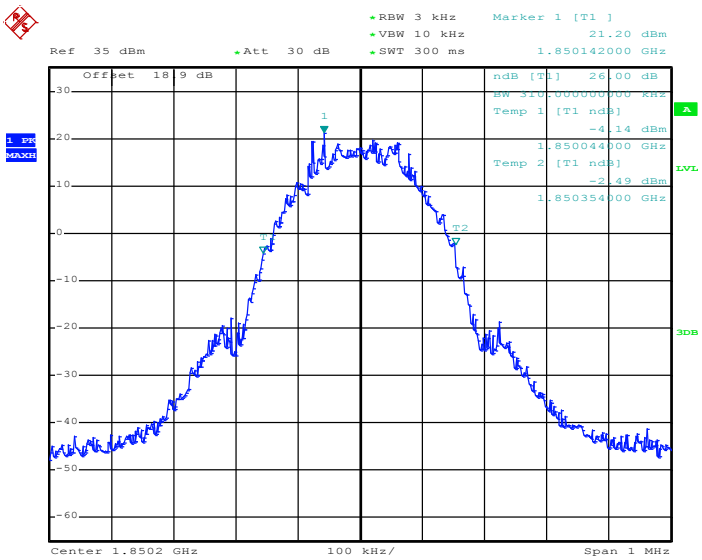
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)

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



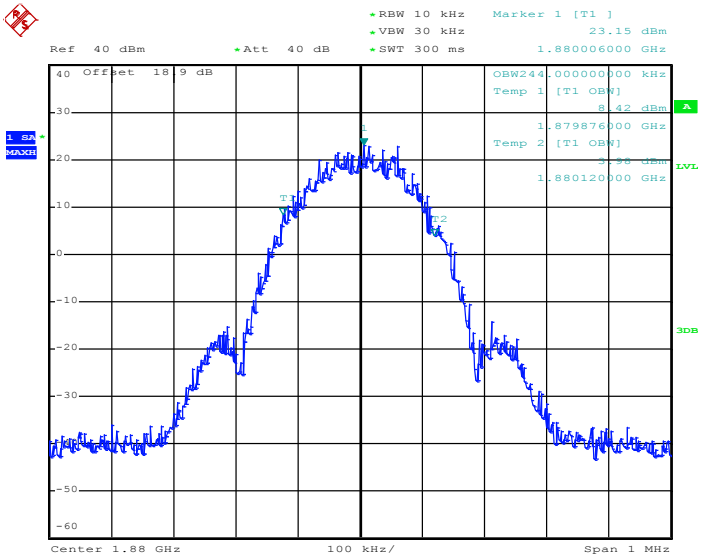
Date: 27.DEC.2013 14:31:15

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



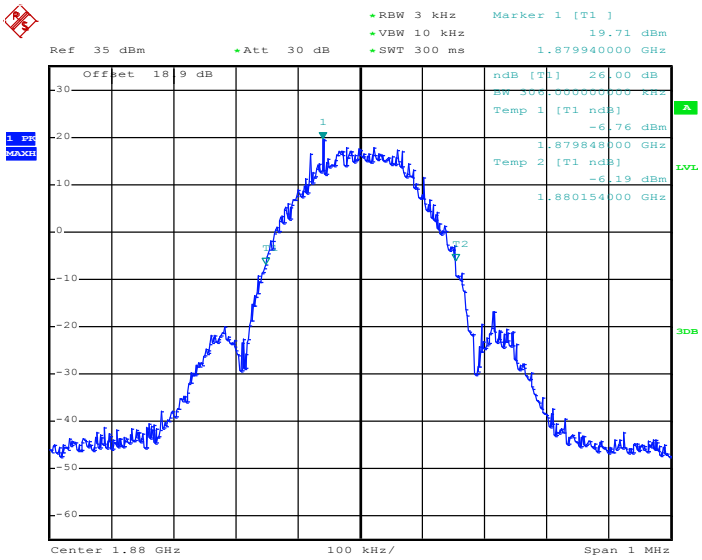
Date: 27.DEC.2013 14:29:17

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



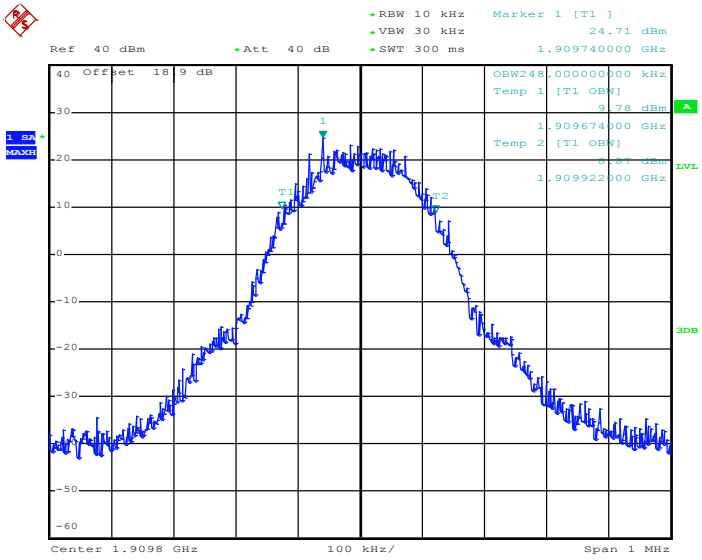
Date: 27.DEC.2013 14:31:44

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



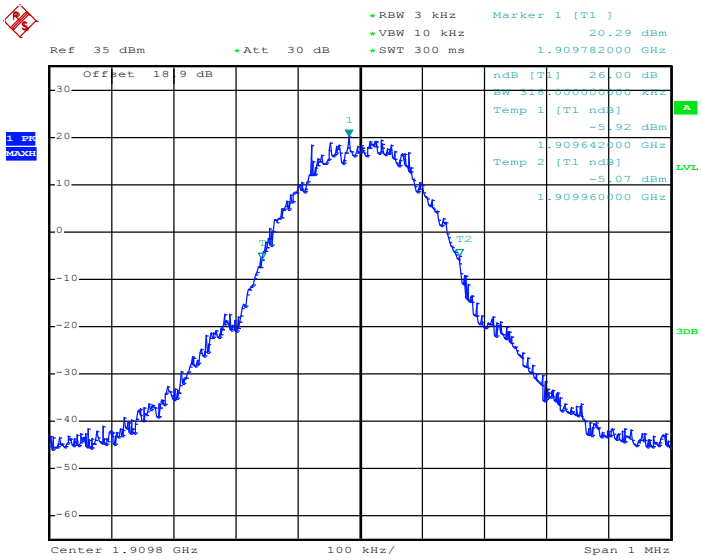
Date: 27.DEC.2013 14:29:46

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



Date: 27.DEC.2013 14:32:12

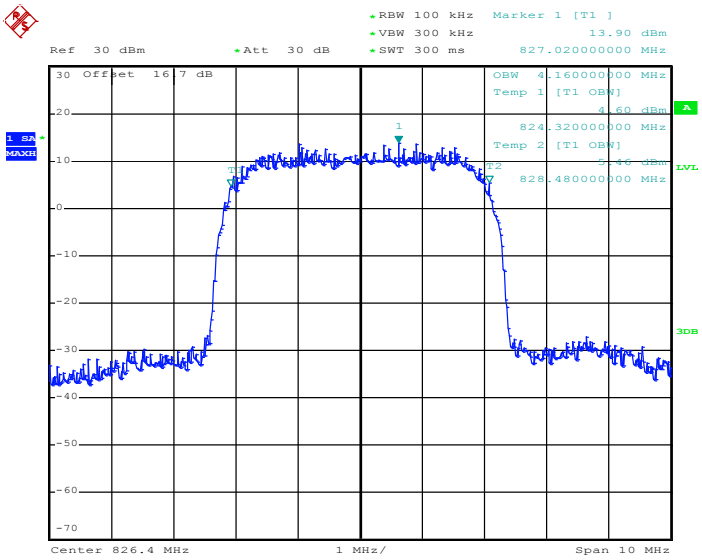
26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 27.DEC.2013 14:30:14

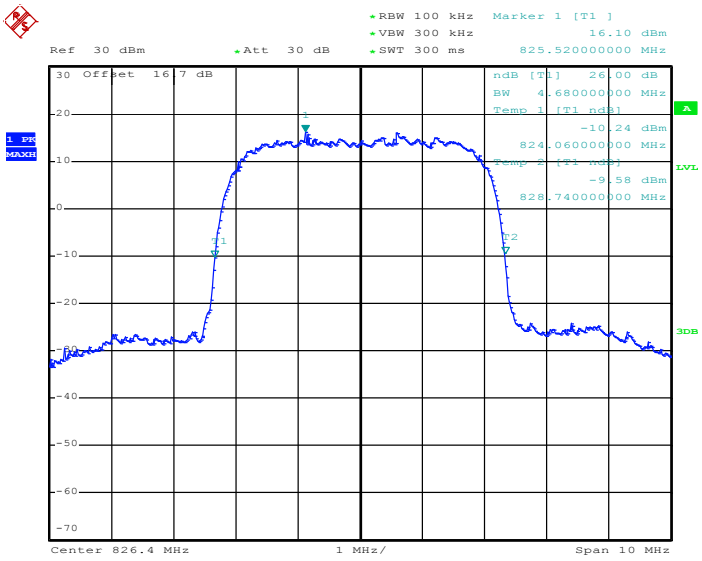
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



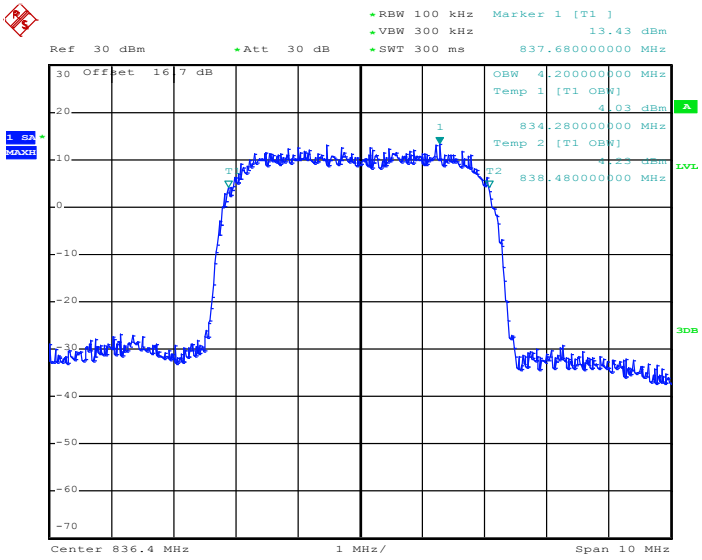
Date: 28.NOV.2013 16:24:10

26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



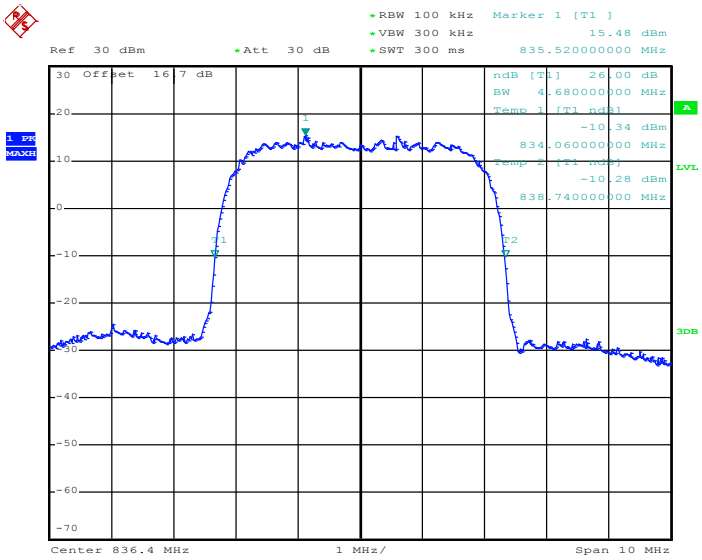
Date: 28.NOV.2013 16:21:52

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



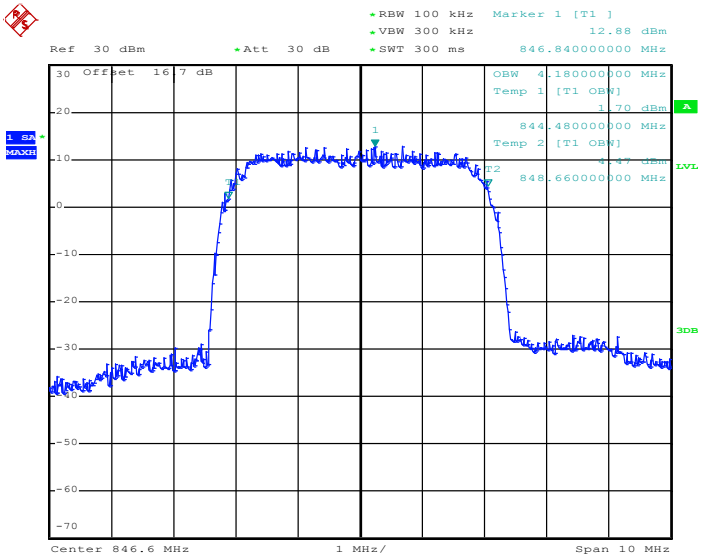
Date: 28.NOV.2013 16:24:40

26dB Bandwidth Plot on Channel 4182 (836.4 MHz)



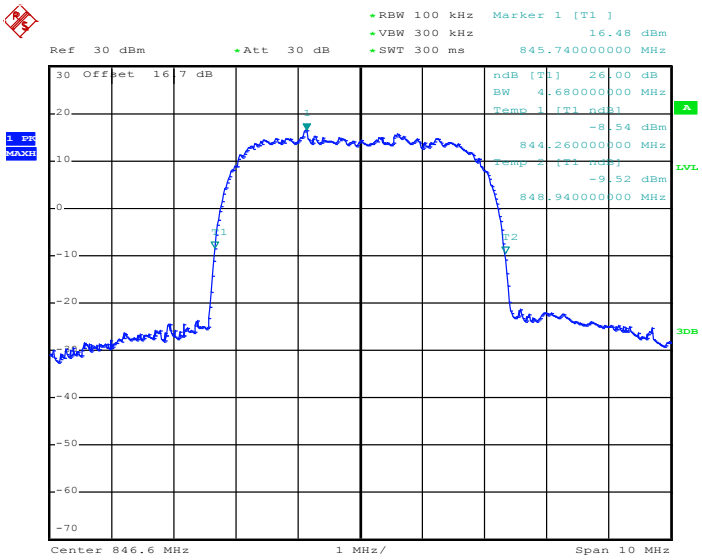
Date: 28.NOV.2013 16:22:22

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



Date: 28.NOV.2013 16:25:10

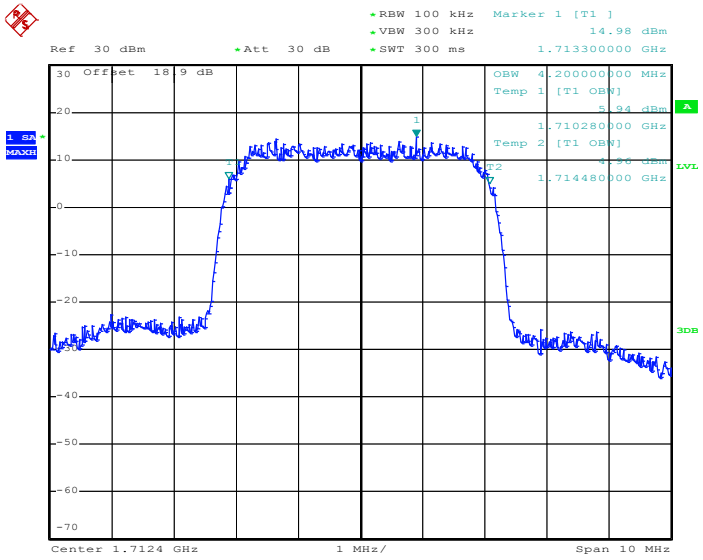
26dB Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 28.NOV.2013 16:22:52

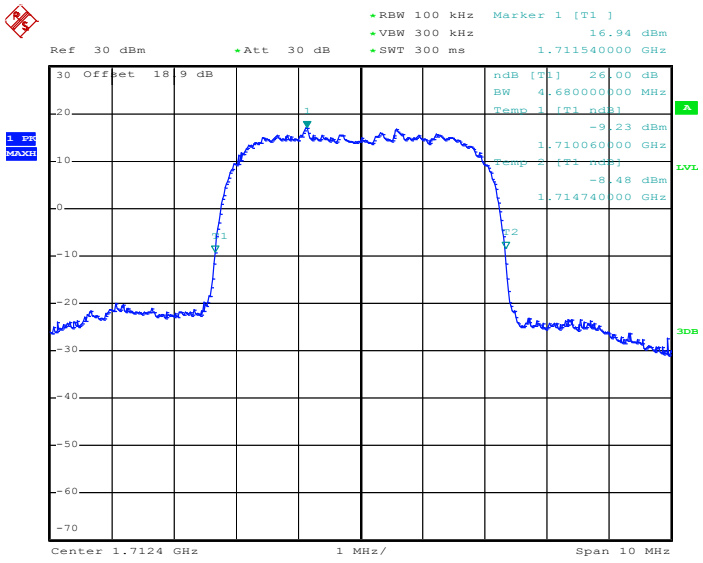
Band :	WCDMA Band IV	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



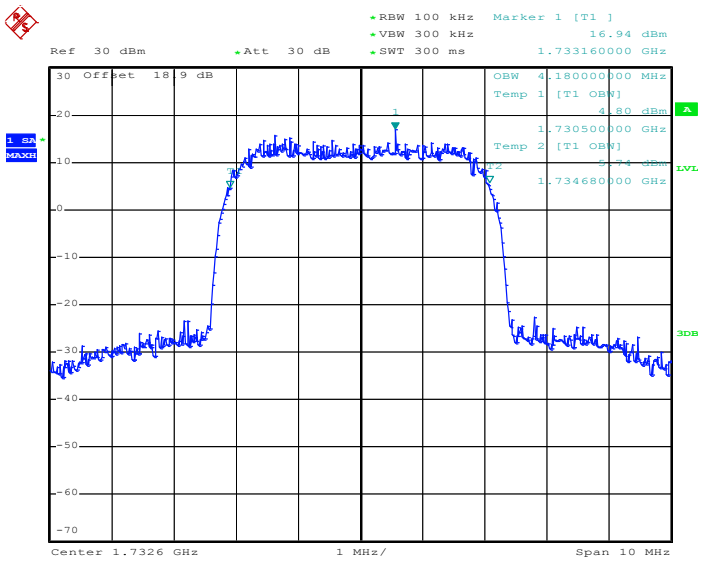
Date: 28.NOV.2013 15:22:30

26dB Bandwidth Plot on Channel 1312 (1712.4 MHz)



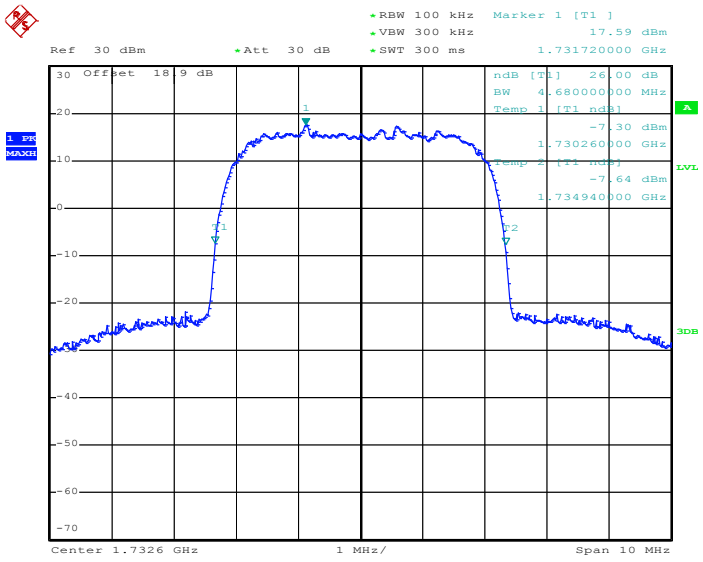
Date: 28.NOV.2013 15:32:15

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



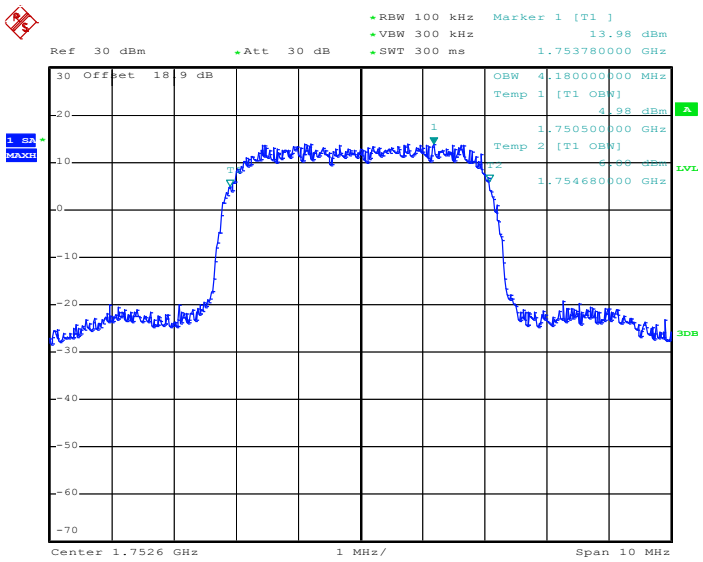
Date: 28.NOV.2013 15:23:00

26dB Bandwidth Plot on Channel 1413 (1732.6 MHz)



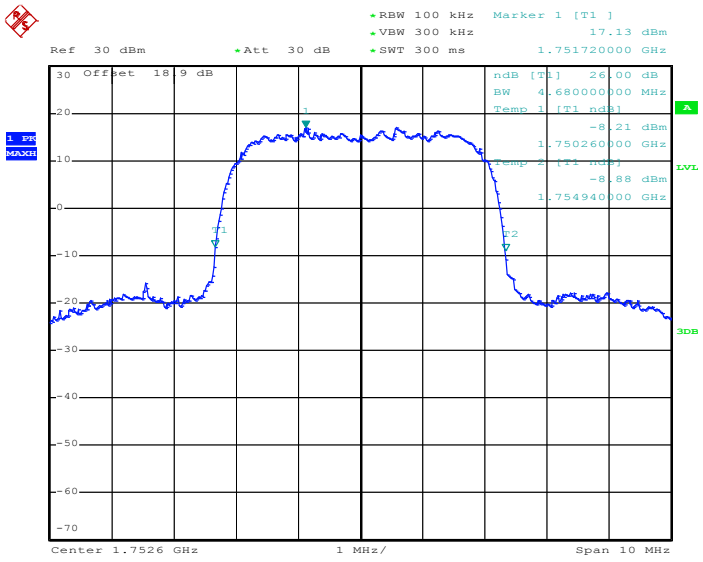
Date: 28.NOV.2013 15:32:44

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



Date: 28.NOV.2013 15:23:30

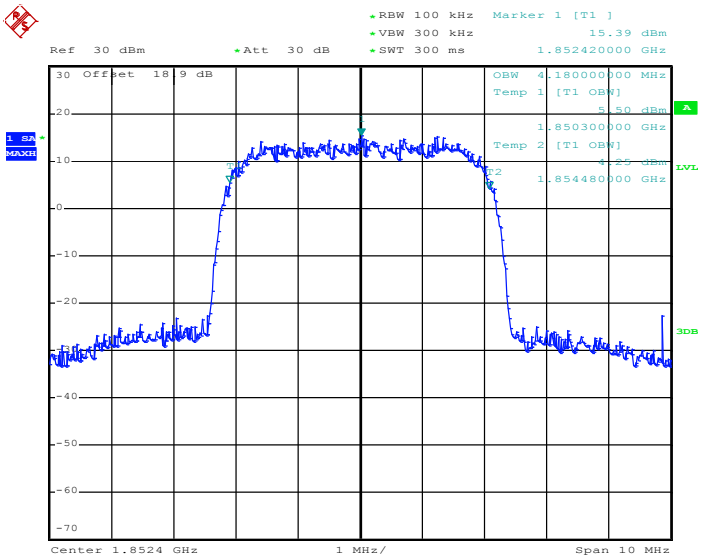
26dB Bandwidth Plot on Channel 1513 (1752.6 MHz)



Date: 28.NOV.2013 15:33:14

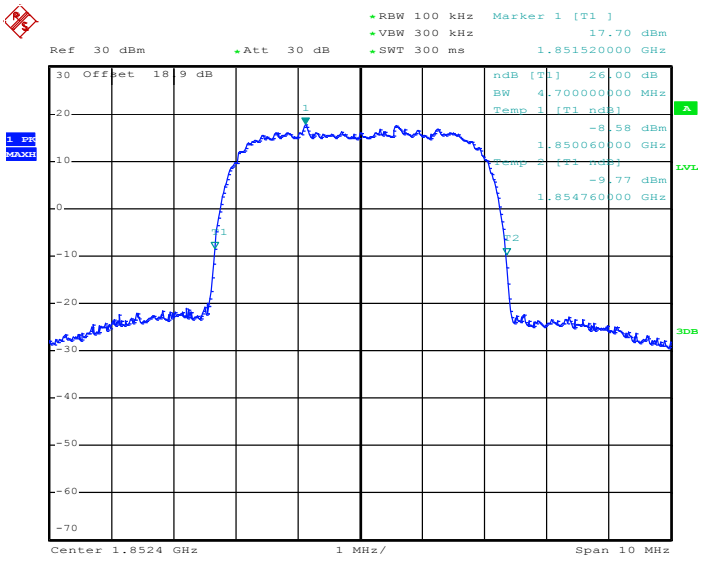
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)

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



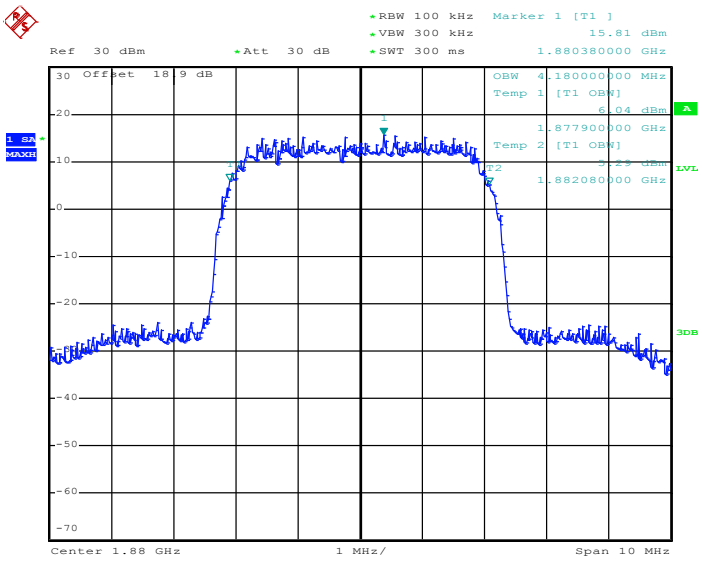
Date: 28.NOV.2013 13:57:33

26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



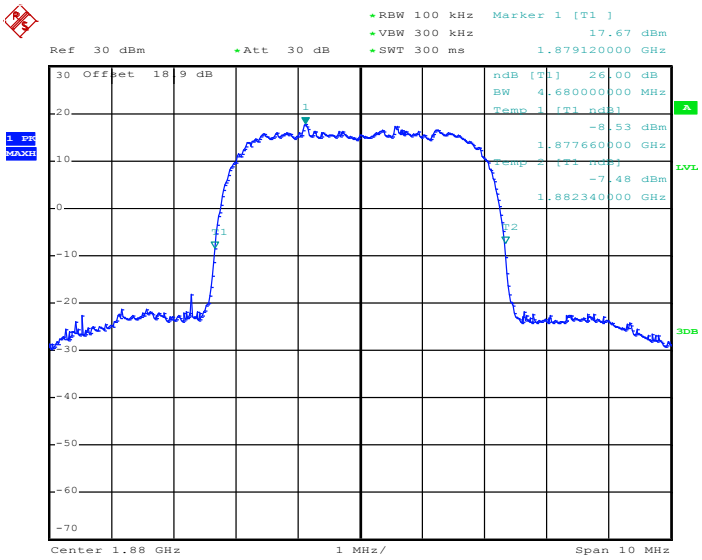
Date: 28.NOV.2013 13:55:57

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



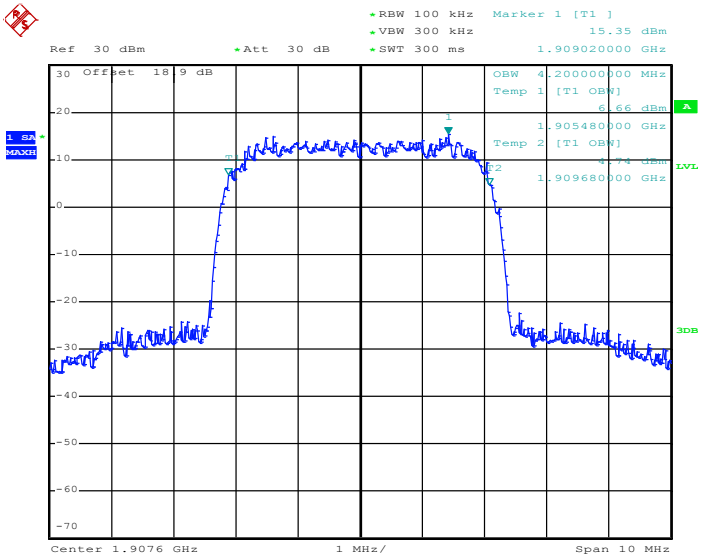
Date: 28.NOV.2013 13:58:03

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



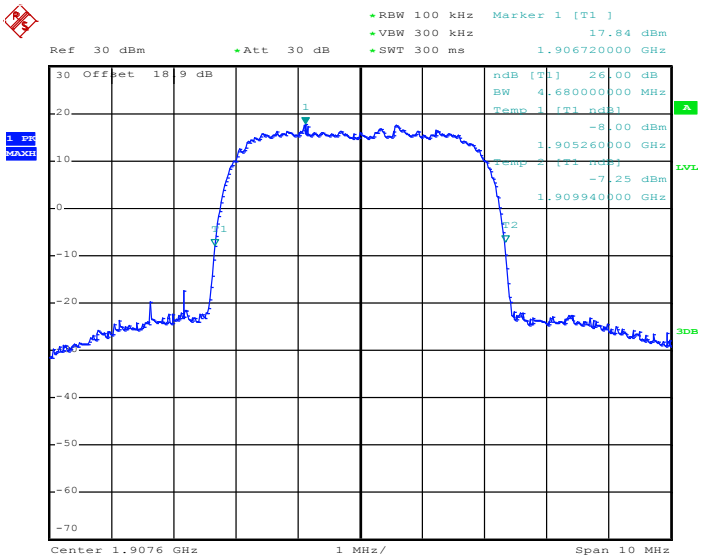
Date: 28.NOV.2013 13:56:26

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



Date: 28.NOV.2013 13:58:32

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 28.NOV.2013 13:56:56

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

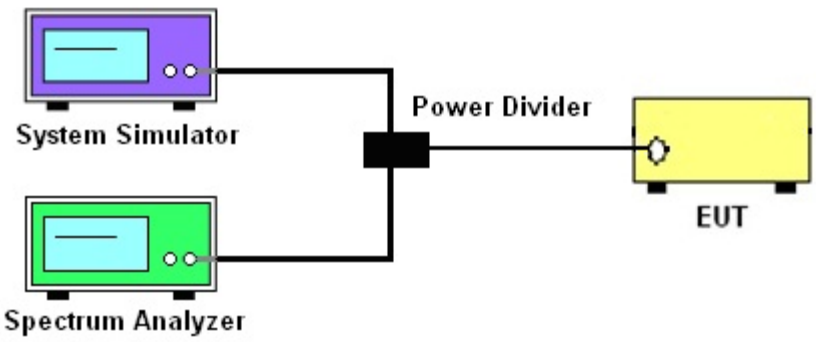
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was connected to a Spectrum Analyzer and Base Station 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. Setting RBW as roughly BW/100.
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

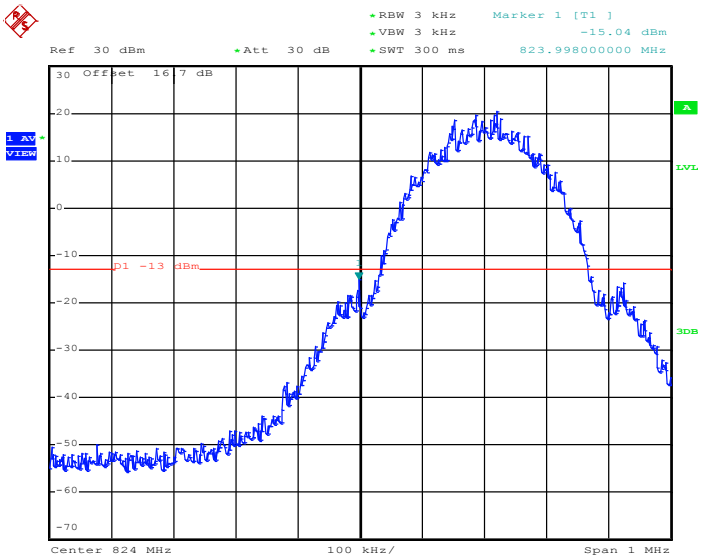
<Conducted Band Edge >



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	GSM850	**Test Mode :**	GPRS class 8 Link (GMSK)
Correction Factor :	0.23dB	**Maximum 26dB Bandwidth :**	0.316MHz
Band Edge :	-14.81dBm	**Measurement Value :**	-15.04dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)

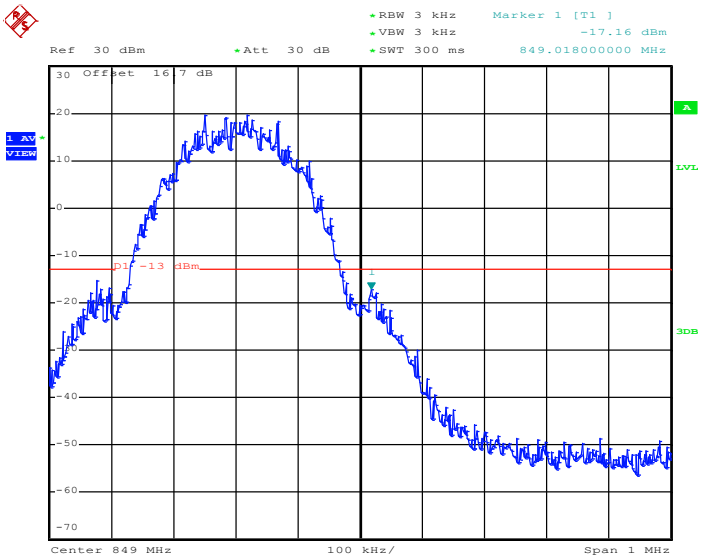


1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

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

Band :	GSM850	**Test Mode :**	GPRS class 8 Link (GMSK)
Correction Factor :	0.23dB	**Maximum 26dB Bandwidth :**	0.316MHz
Band Edge :	-16.93dBm	**Measurement Value :**	-17.16dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



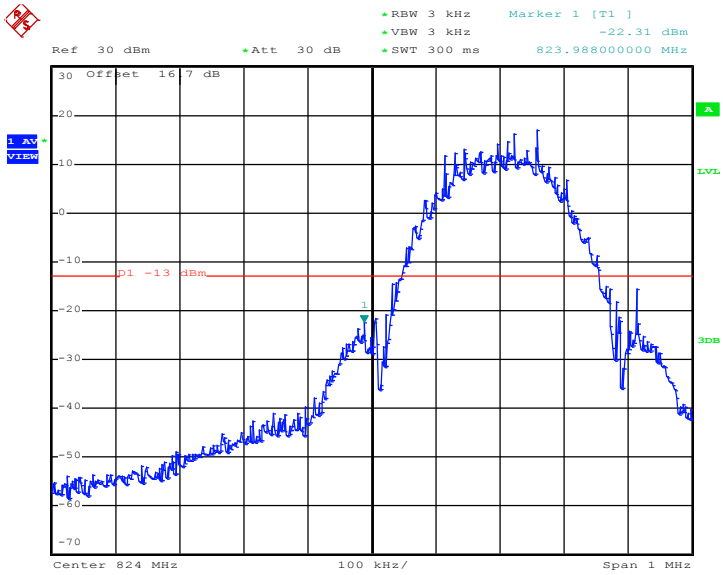
Date: 28.NOV.2013 11:25:19

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 :**	0.288MHz
Band Edge :	-22.49dBm	**Measurement Value :**	-22.31dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)



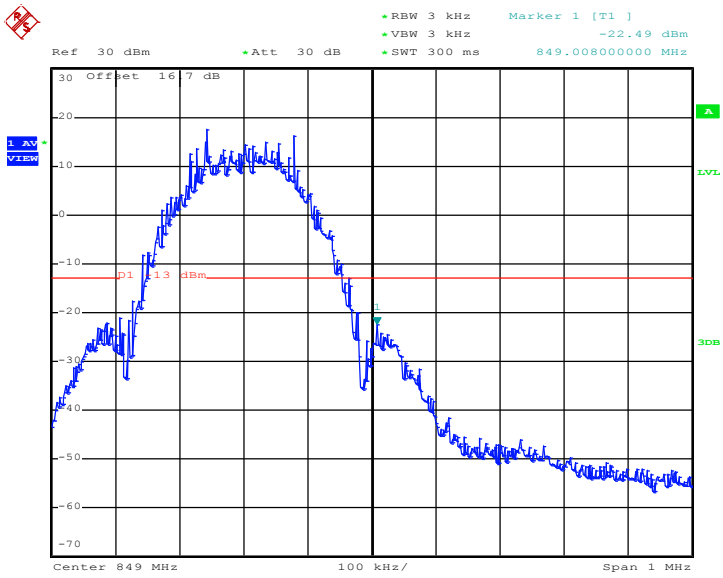
Date: 27.DEC.2013 13:40:24

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 :**	0.288MHz
Band Edge :	-22.67dBm	**Measurement Value :**	-22.49dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



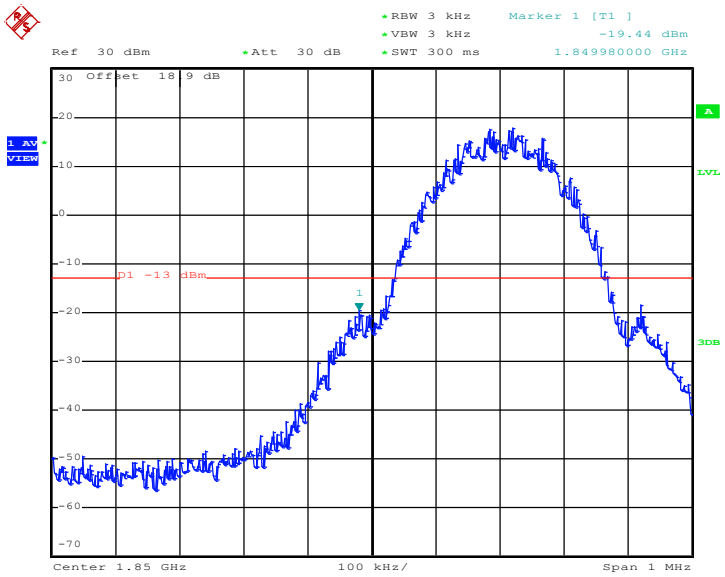
Date: 27.DEC.2013 13:44:41

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 :	0.20dB	Maximum 26dB Bandwidth :	0.314MHz
Band Edge :	-19.24dBm	Measurement Value :	-19.44dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



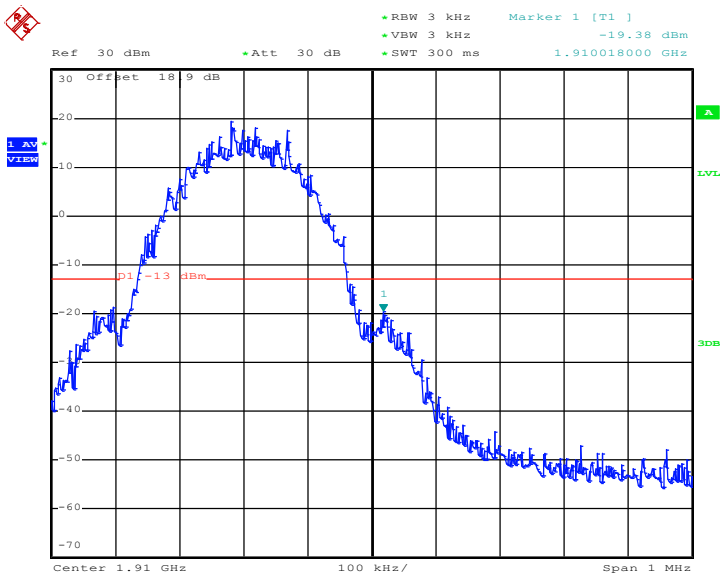
Date: 28.NOV.2013 13:24:48

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 :	0.20dB	Maximum 26dB Bandwidth :	0.314MHz
Band Edge :	-19.18dBm	Measurement Value :	-19.38dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



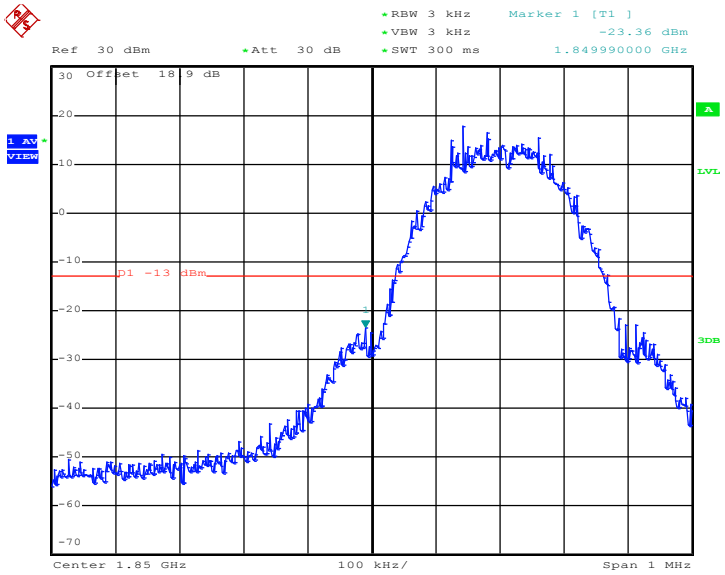
Date: 28.NOV.2013 13:25:17

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 :	0.25dB	**Maximum 26dB Bandwidth :**	0.318MHz
Band Edge :	-23.11dBm	**Measurement Value :**	-23.36dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



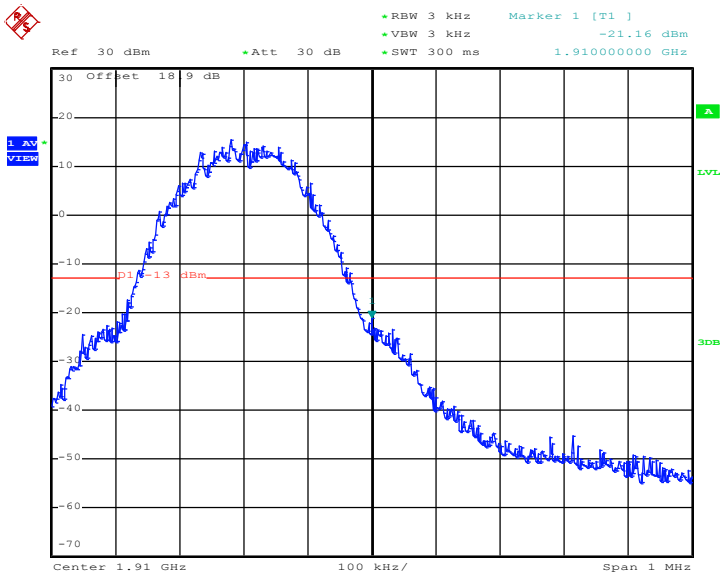
Date: 27.DEC.2013 14:33:49

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 :	0.25dB	**Maximum 26dB Bandwidth :**	0.318MHz
Band Edge :	-20.91dBm	**Measurement Value :**	-21.16dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



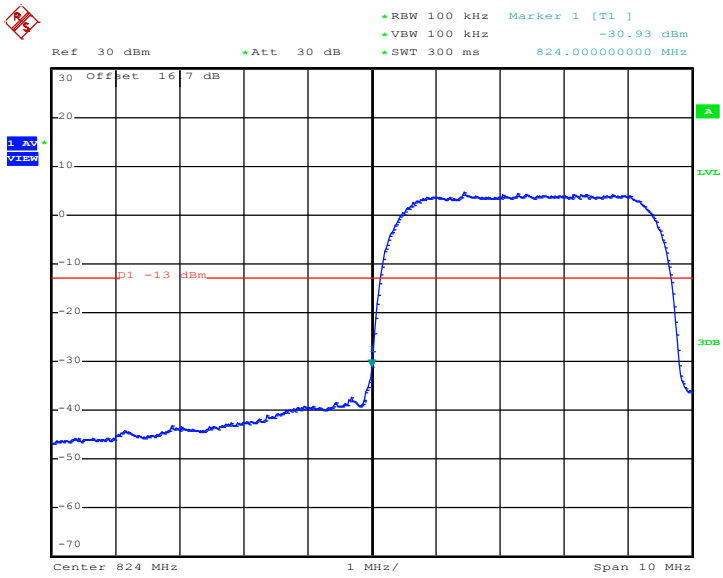
Date: 27.DEC.2013 14:37:00

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 :	-3.30dB	**Maximum 26dB Bandwidth :**	4.680MHz
Band Edge :	-34.23dBm	**Measurement Value :**	-30.93dBm

Lower Band Edge Plot on Channel 4132 (826.4 MHz)



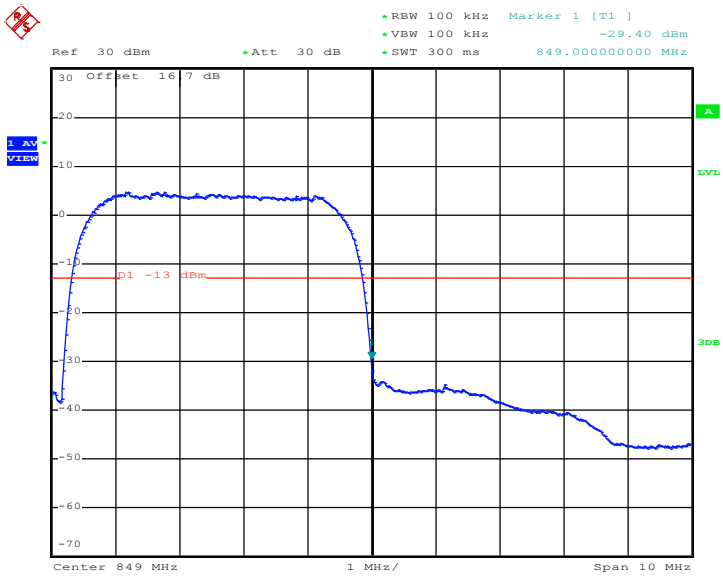
Date: 28.NOV.2013 16:25:49

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 :	-3.30dB	**Maximum 26dB Bandwidth :**	4.680MHz
Band Edge :	-32.70dBm	**Measurement Value :**	-29.40dBm

Higher Band Edge Plot on Channel 4233 (846.6 MHz)

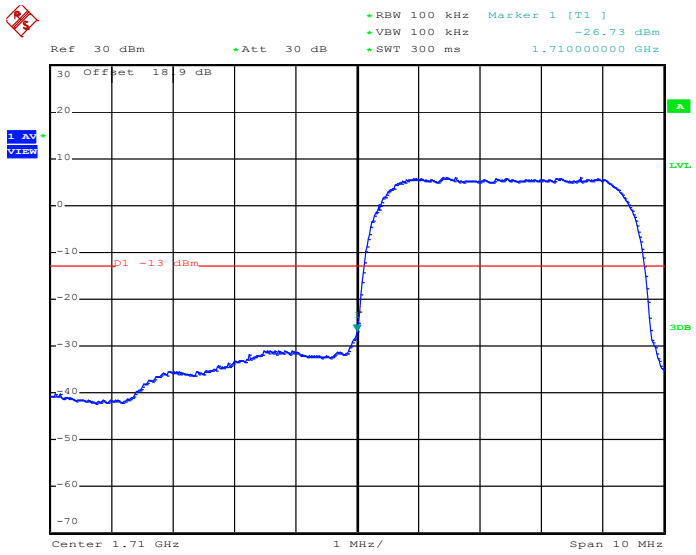


1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

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

Band :	WCDMA Band IV	**Test Mode :**	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.30dB	**Maximum 26dB Bandwidth :**	4.680MHz
Band Edge :	-30.03dBm	**Measurement Value :**	-26.73dBm

Lower Band Edge Plot on Channel 1312 (1712.4 MHz)



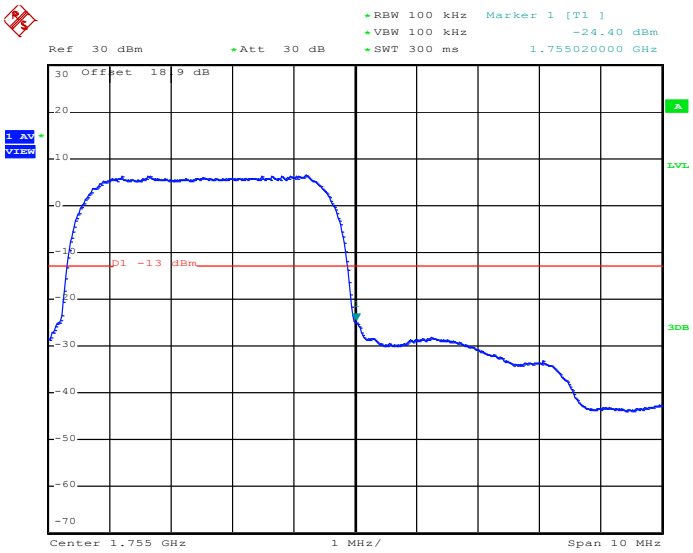
Date: 28.NOV.2013 15:25:00

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

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

Band :	WCDMA Band IV	**Test Mode :**	RMC 12.2Kbps Link (QPSK)
Correction Factor :	-3.30dB	**Maximum 26dB Bandwidth :**	4.680MHz
Band Edge :	-27.70dBm	**Measurement Value :**	-24.40dBm

Higher Band Edge Plot on Channel 1513 (1752.6 MHz)



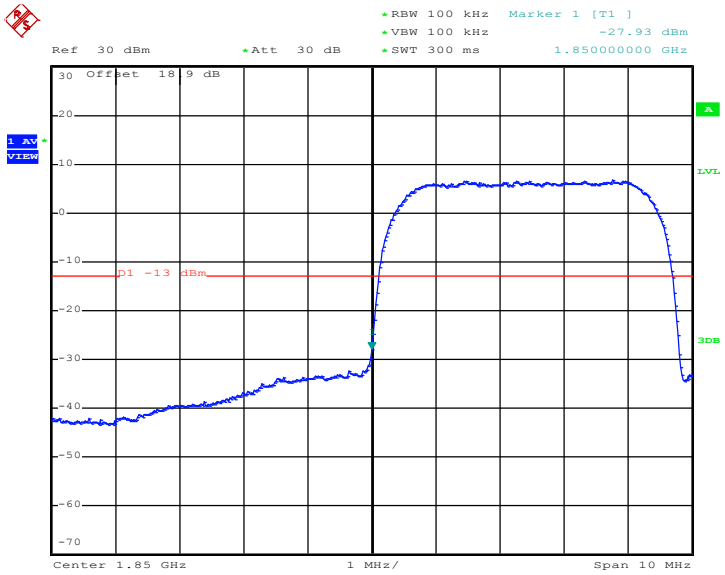
Date: 28.NOV.2013 15:25:29

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 :	-3.28dB	**Maximum 26dB Bandwidth :**	4.700MHz
Band Edge :	-31.21dBm	**Measurement Value :**	-27.93dBm

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



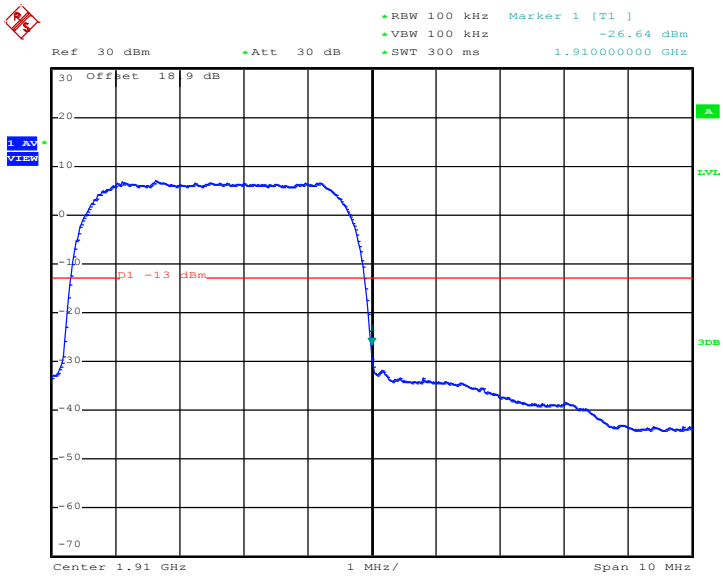
Date: 28.NOV.2013 13:59:46

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 :	-3.28dB	Maximum 26dB Bandwidth :	4.700MHz
Band Edge :	-29.92dBm	Measurement Value :	-26.64dBm

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)



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 10^{th} harmonic.

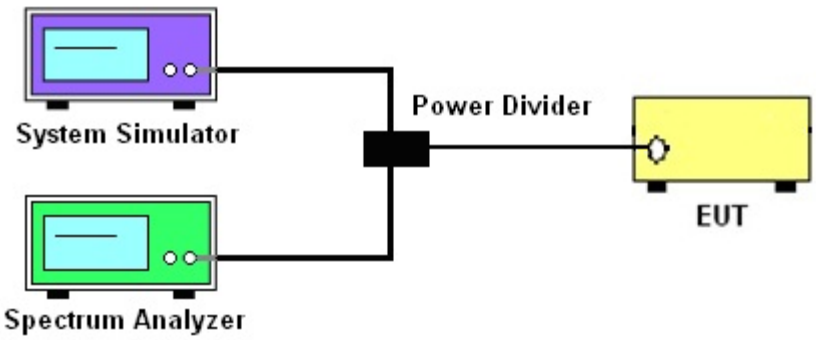
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station 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.

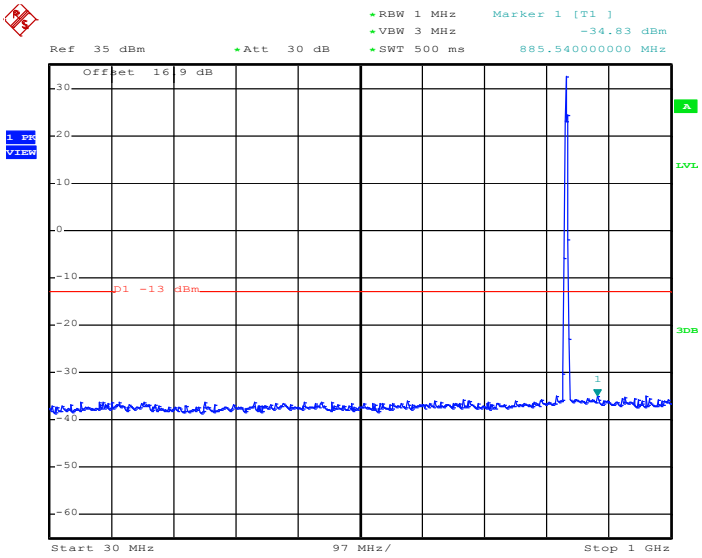
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Emission

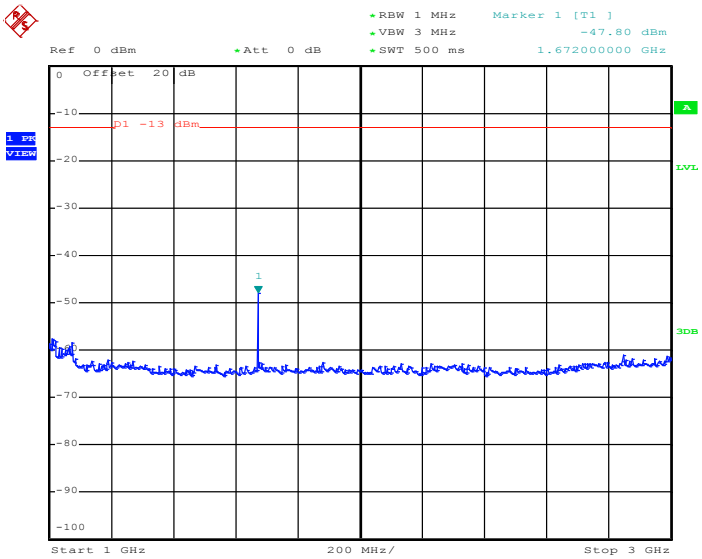
Band :	GSM850	Channel :	CH189
Test Mode :	GPRS class 8 Link (GMSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



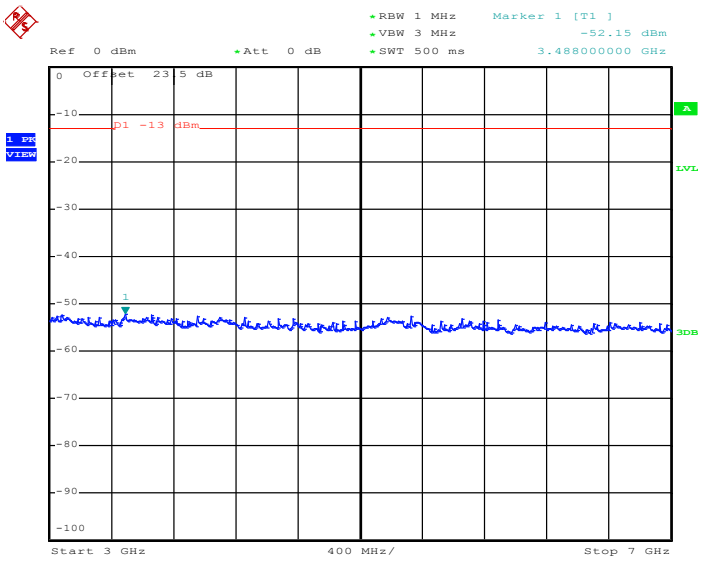
Date: 28.NOV.2013 11:16:51

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



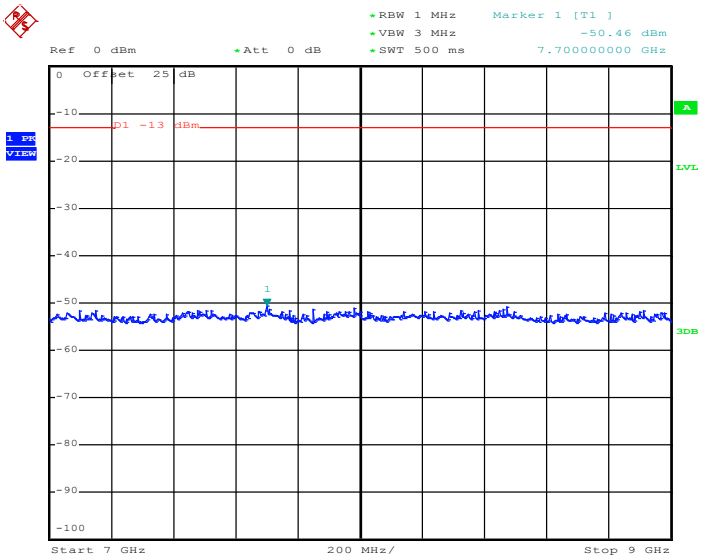
Date: 28.NOV.2013 11:17:09

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 28.NOV.2013 11:17:19

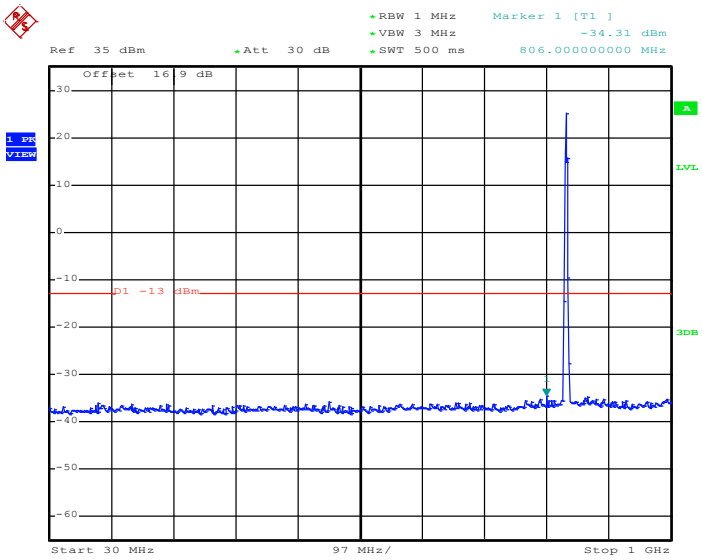
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 28.NOV.2013 11:17:28

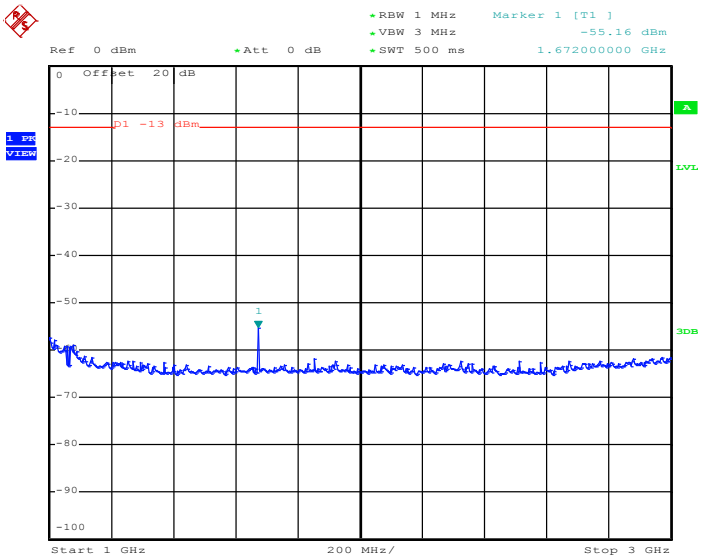
Band :	GSM850	**Channel :**	CH189
Test Mode :	EDGE class 8 Link (8PSK)	**Frequency :**	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



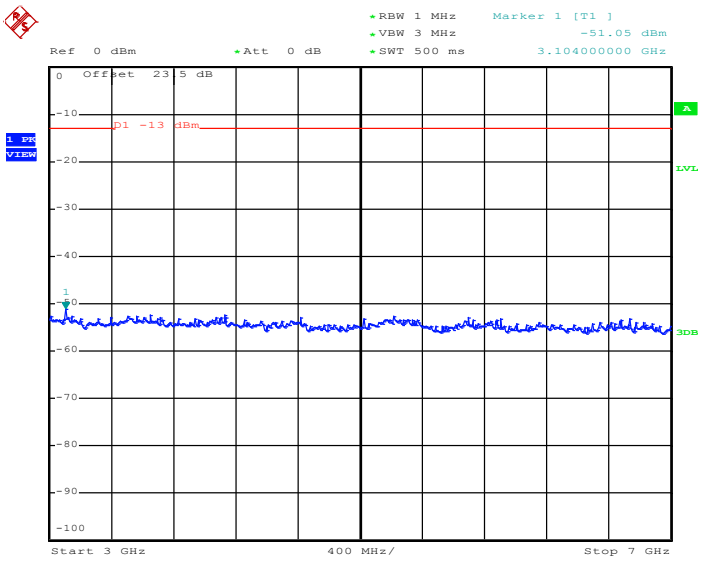
Date: 27.DEC.2013 14:11:36

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



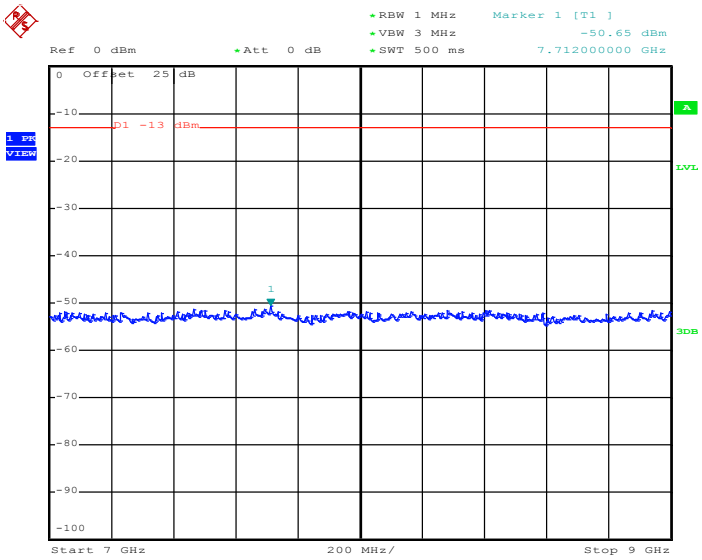
Date: 27.DEC.2013 14:11:50

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 27.DEC.2013 14:11:58

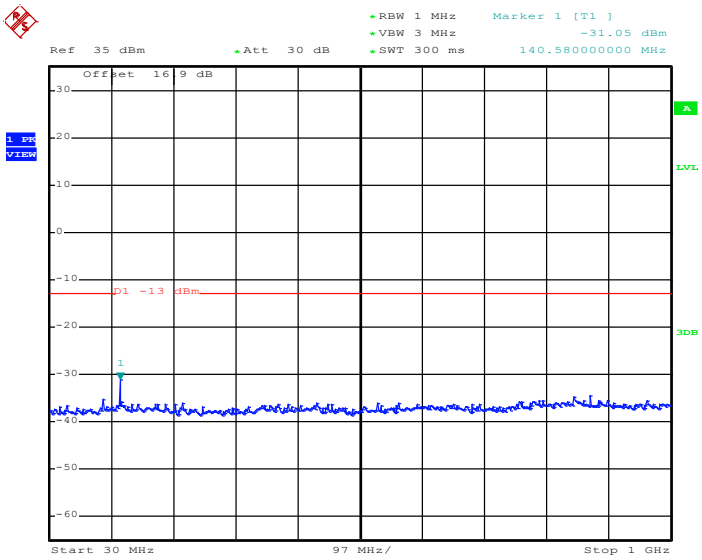
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 27.DEC.2013 14:12:07

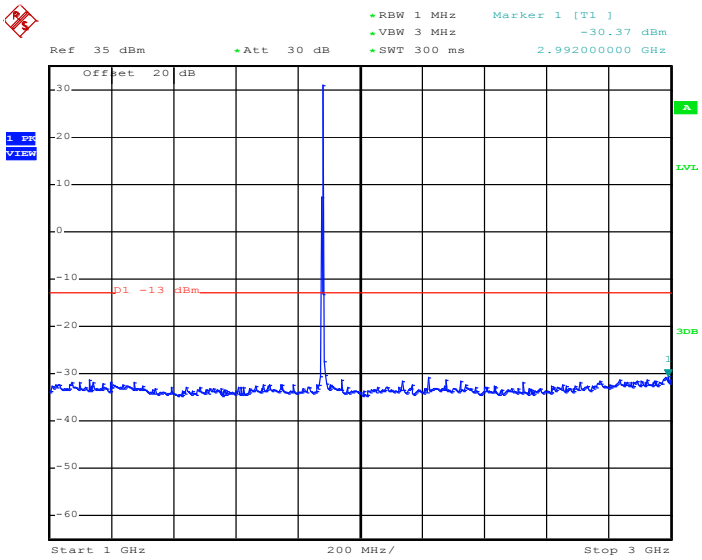
Band :	GSM1900	Channel :	CH661
Test Mode :	GSM Link (GMSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



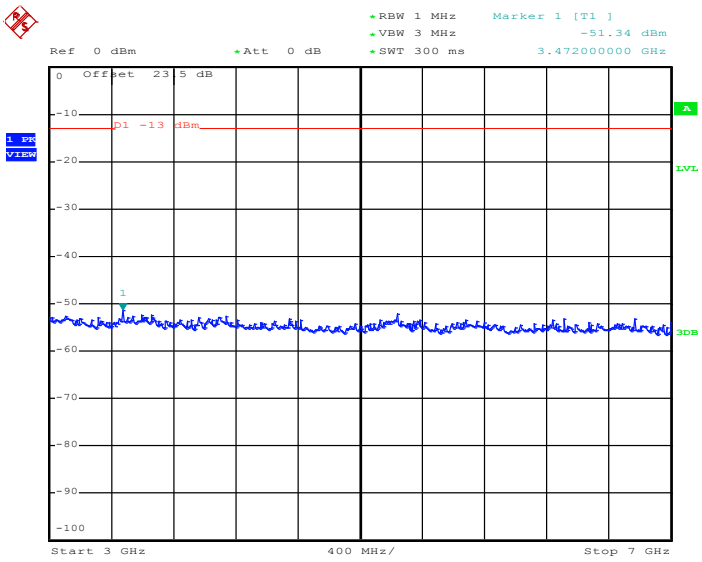
Date: 28.NOV.2013 12:09:31

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



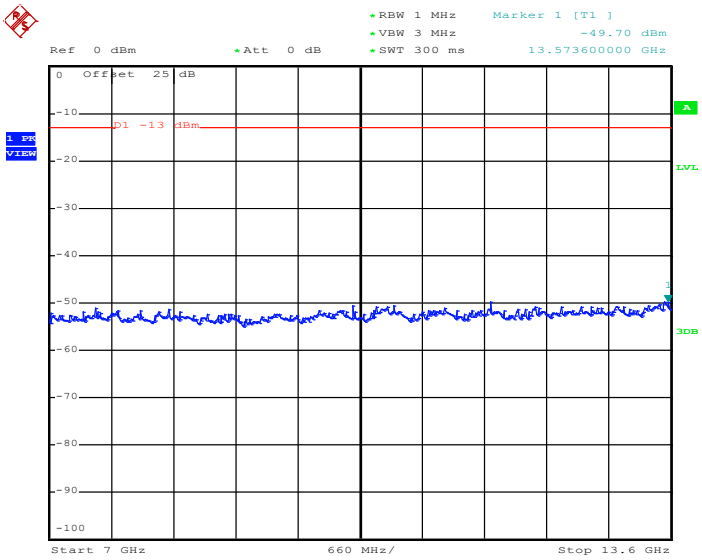
Date: 28.NOV.2013 12:09:40

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



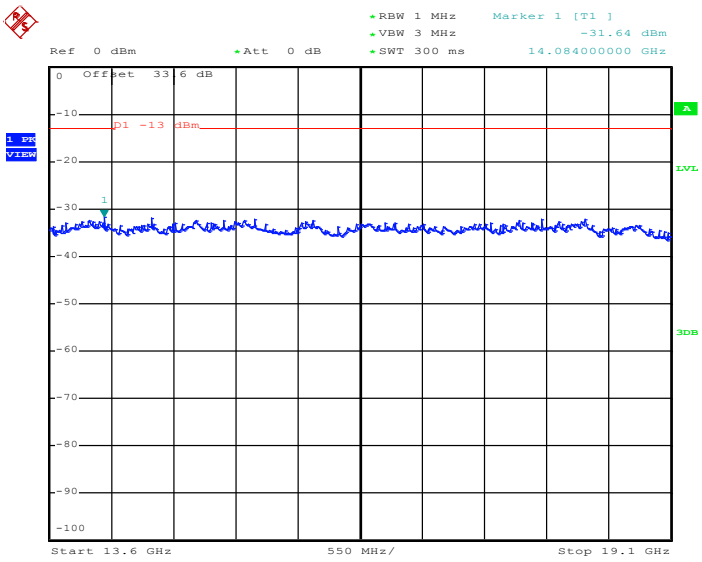
Date: 28.NOV.2013 12:09:55

Conducted Spurious Emission Plot between 7GHz ~ 13.6G



Date: 28.NOV.2013 12:10:04

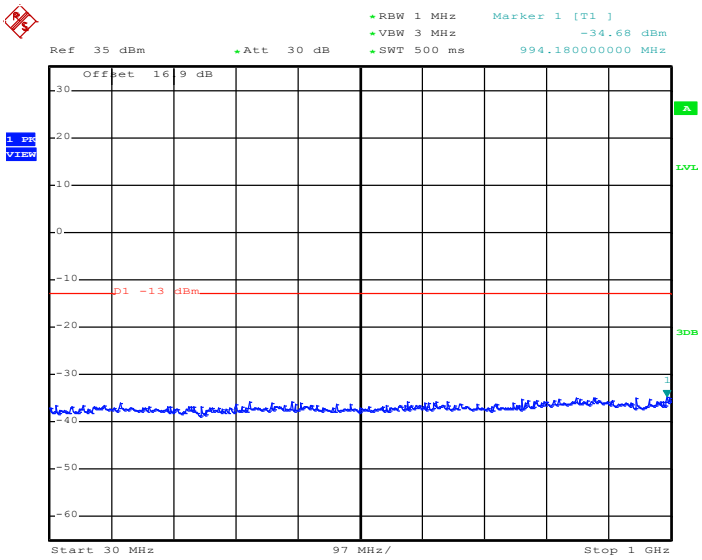
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 28.NOV.2013 12:10:14

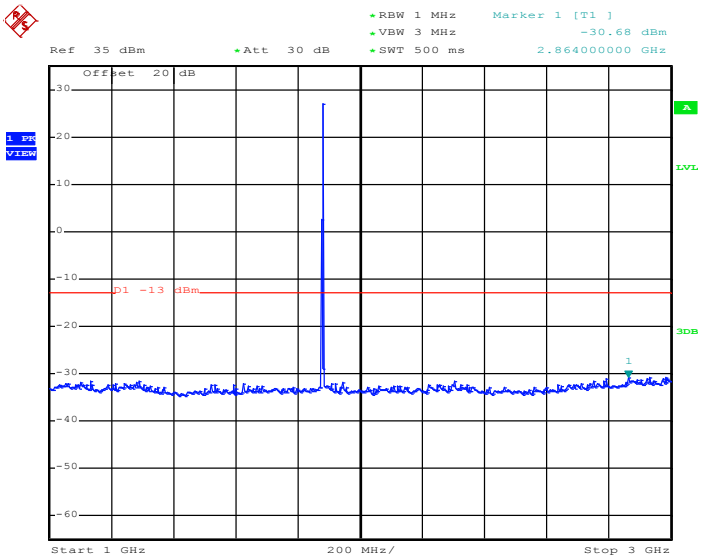
Band :	GSM1900	Channel :	CH661
Test Mode :	EDGE class 8 Link (8PSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



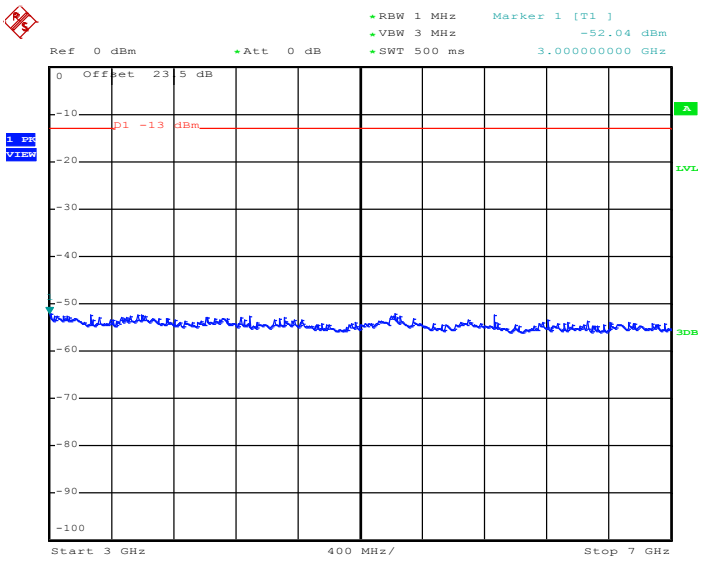
Date: 27.DEC.2013 14:20:32

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



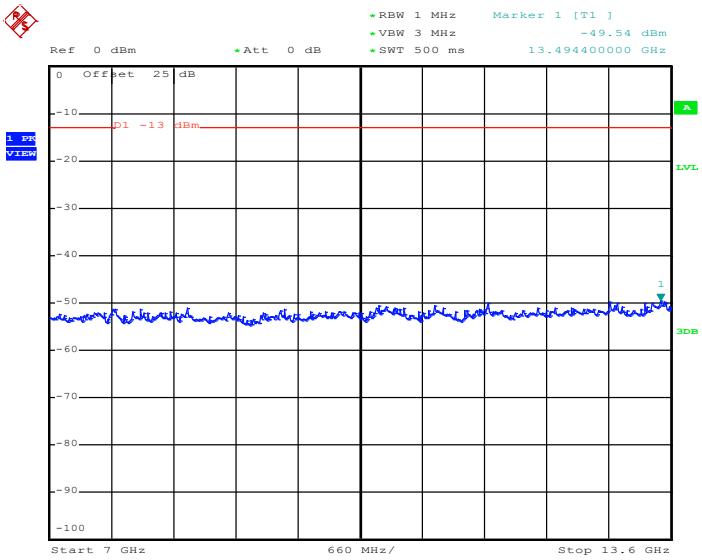
Date: 27.DEC.2013 14:20:41

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



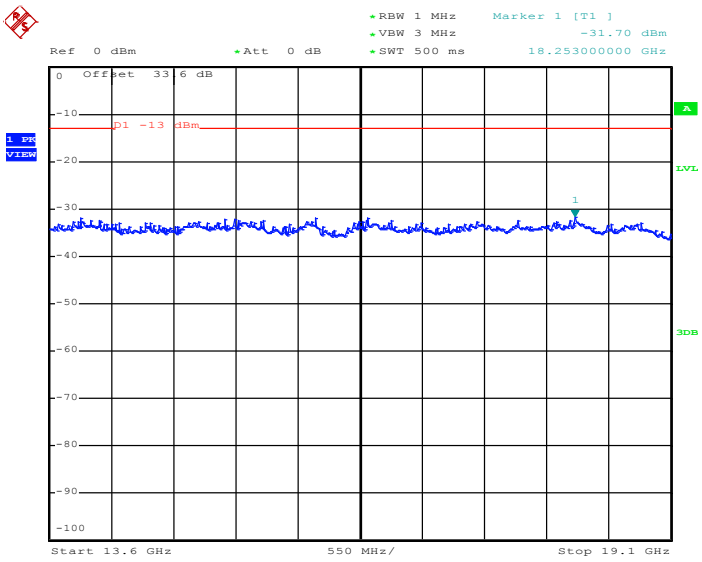
Date: 27.DEC.2013 14:20:53

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 27.DEC.2013 14:21:01

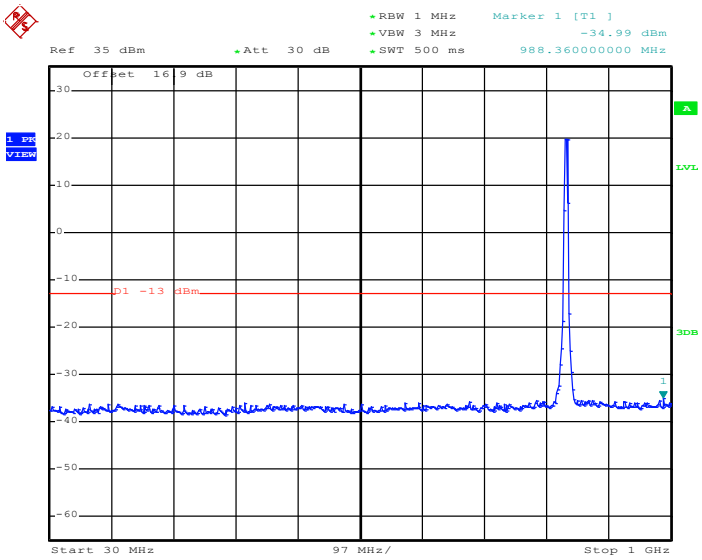
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 27.DEC.2013 14:21:10

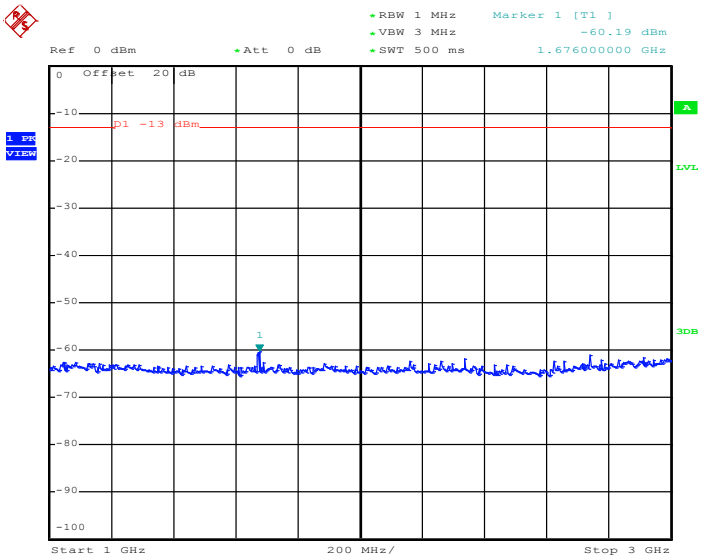
Band :	WCDMA Band V	Channel :	CH4182
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



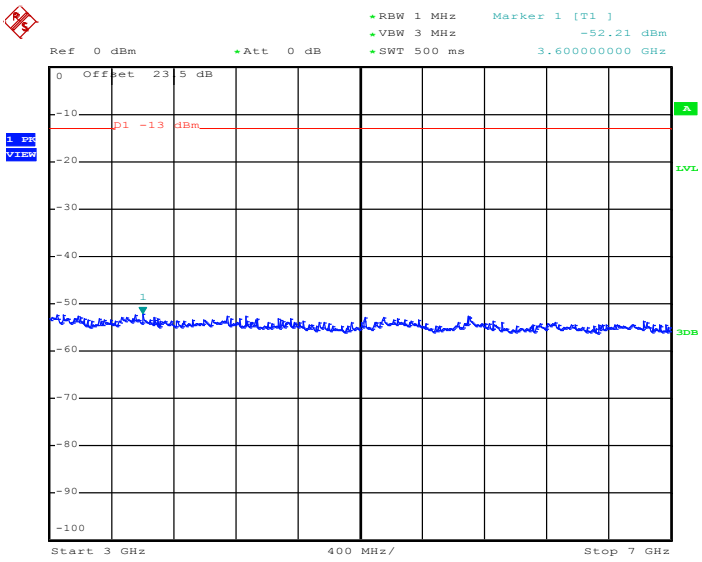
Date: 28.NOV.2013 16:19:43

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



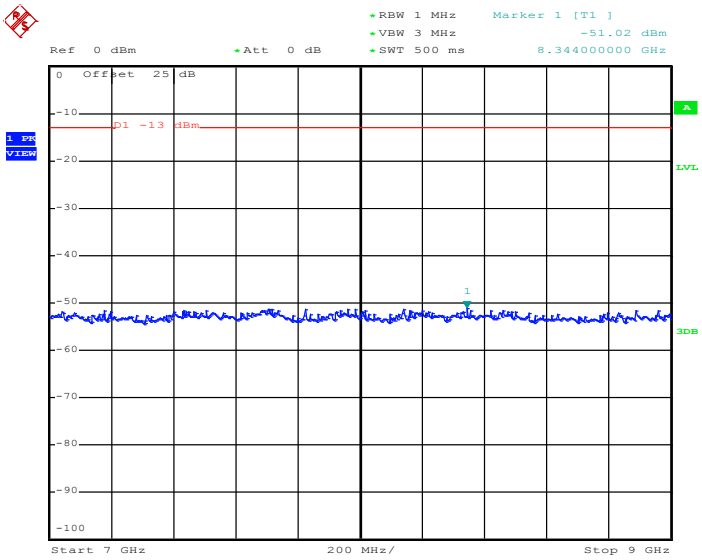
Date: 28.NOV.2013 16:19:57

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 28.NOV.2013 16:20:07

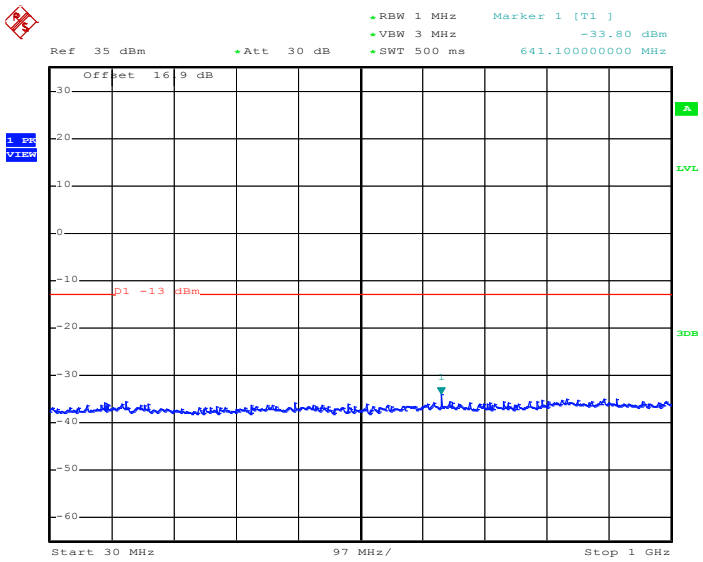
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 28.NOV.2013 16:20:17

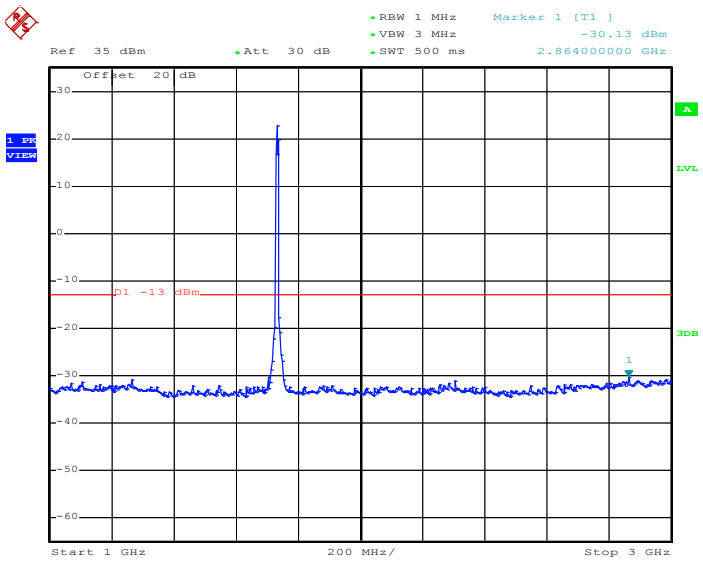
Band :	WCDMA Band IV	Channel :	CH1413
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1732.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



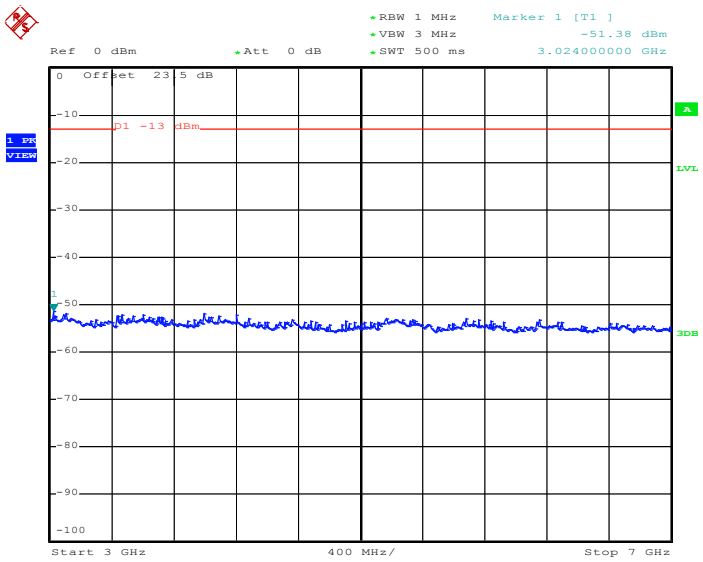
Date: 28.NOV.2013 15:52:43

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



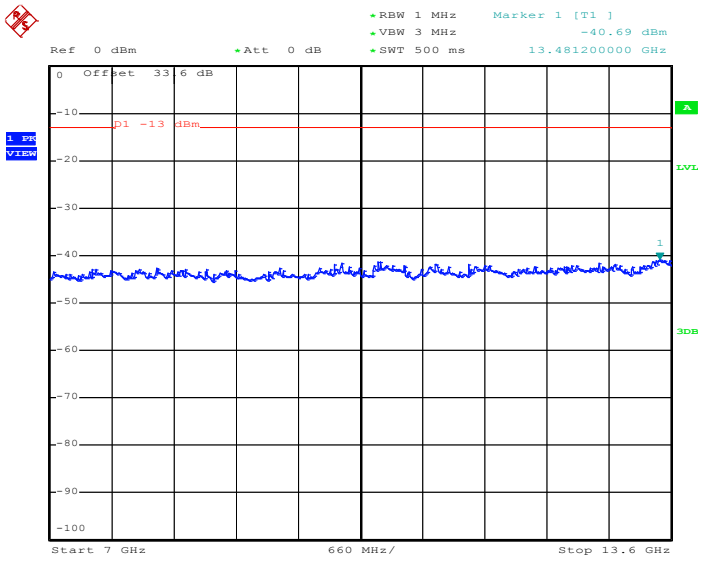
Date: 28.NOV.2013 15:52:56

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 28.NOV.2013 15:53:13

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



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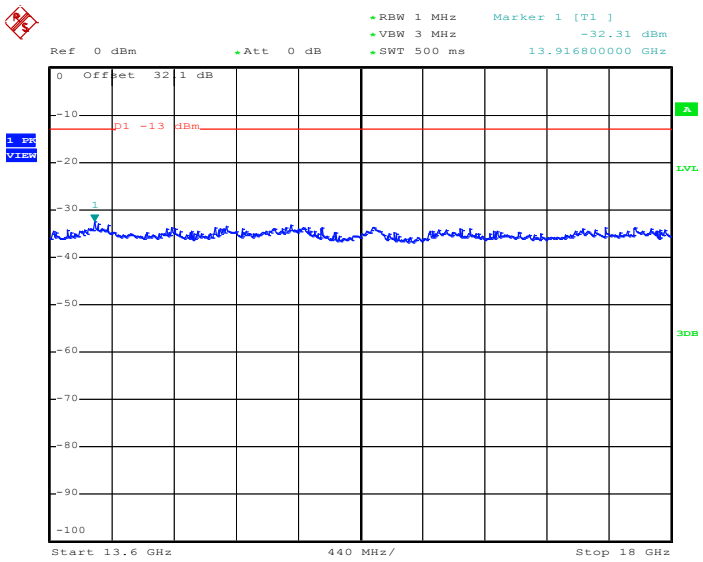
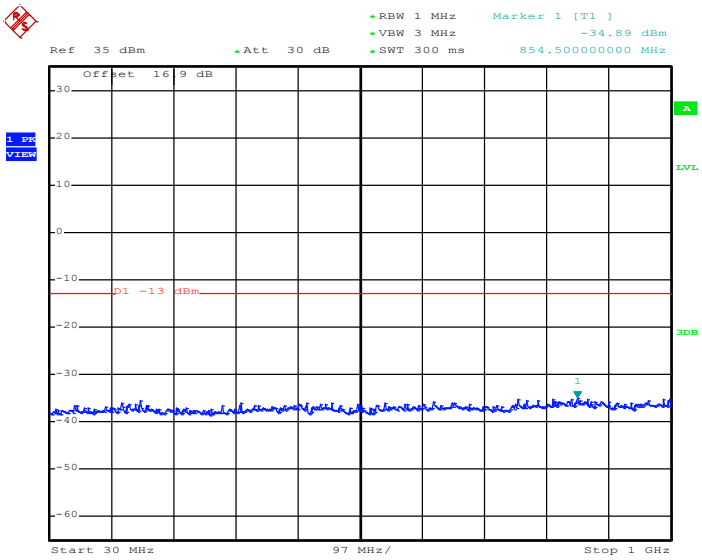
Conducted Spurious Emission Plot between 13.6GHz ~ 18GHz



Date: 28.NOV.2013 15:53:38

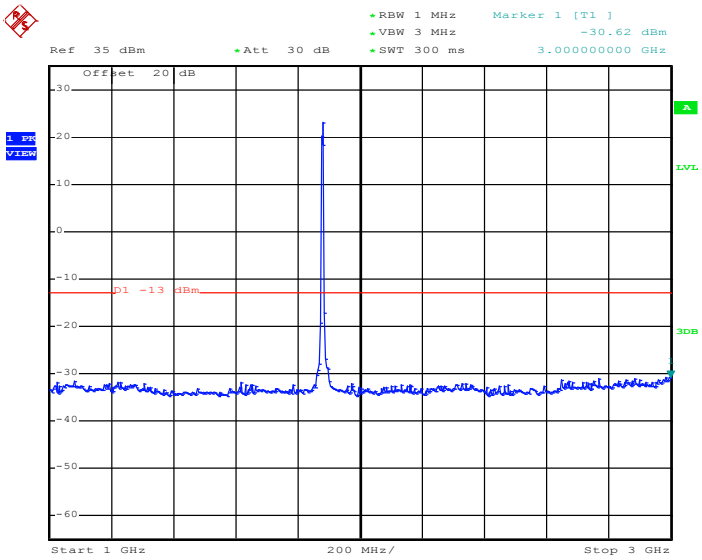
Band :	WCDMA Band II	**Channel :**	CH9400
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Frequency :**	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



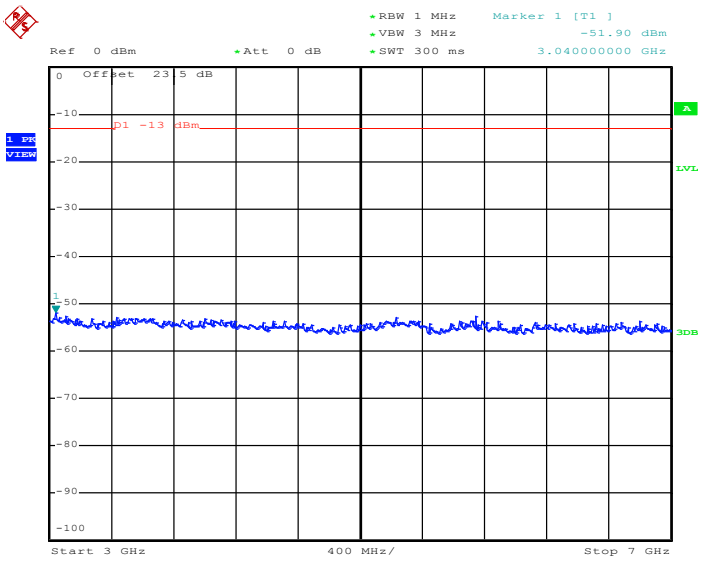
Date: 28.NOV.2013 13:54:11

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



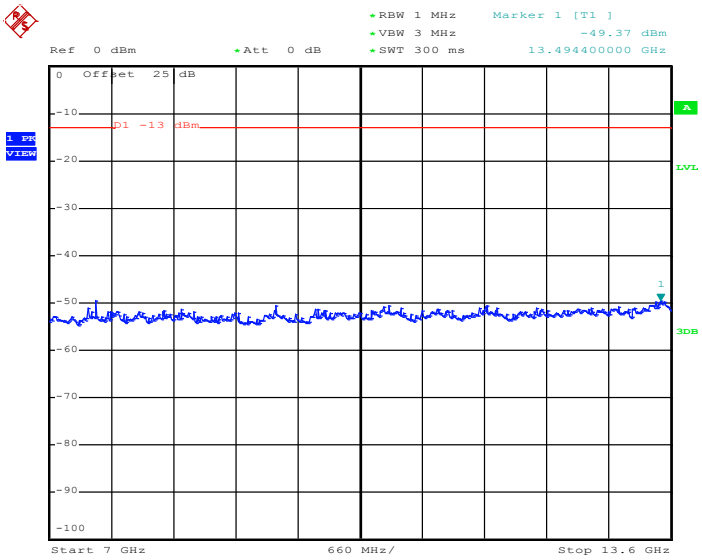
Date: 28.NOV.2013 13:54:21

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



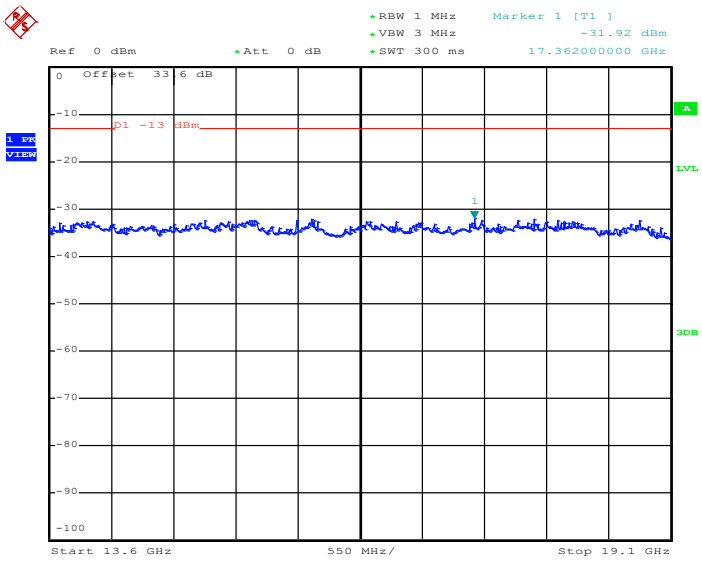
Date: 28.NOV.2013 13:54:34

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 28.NOV.2013 13:54:44

Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 28.NOV.2013 13:54:54

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

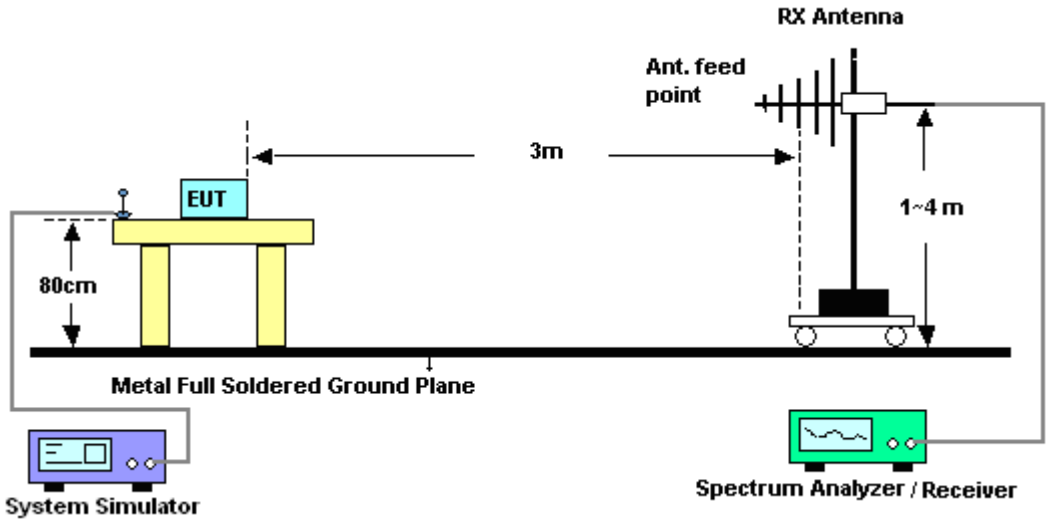
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

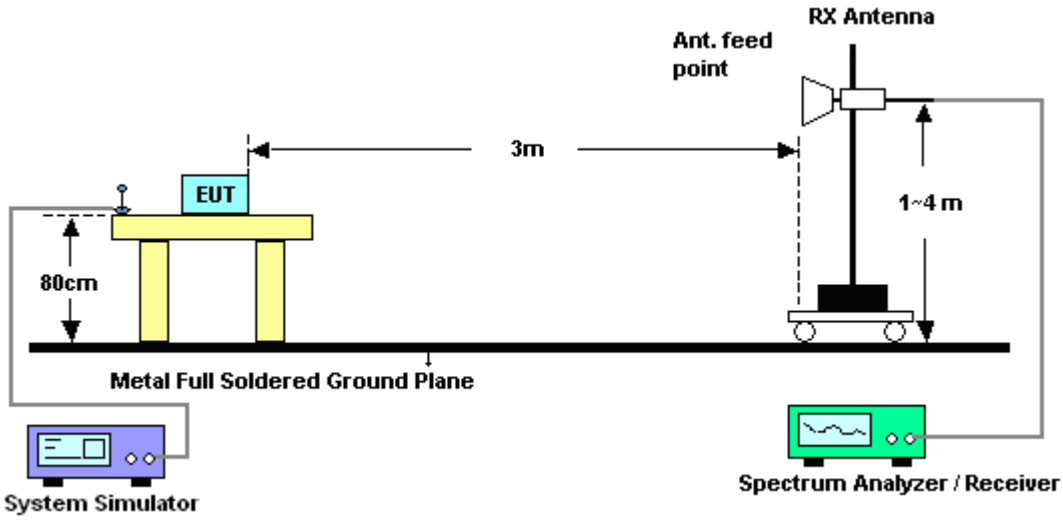
1. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving 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. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. 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
12. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
13. ERP (dBm) = EIRP - 2.15

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



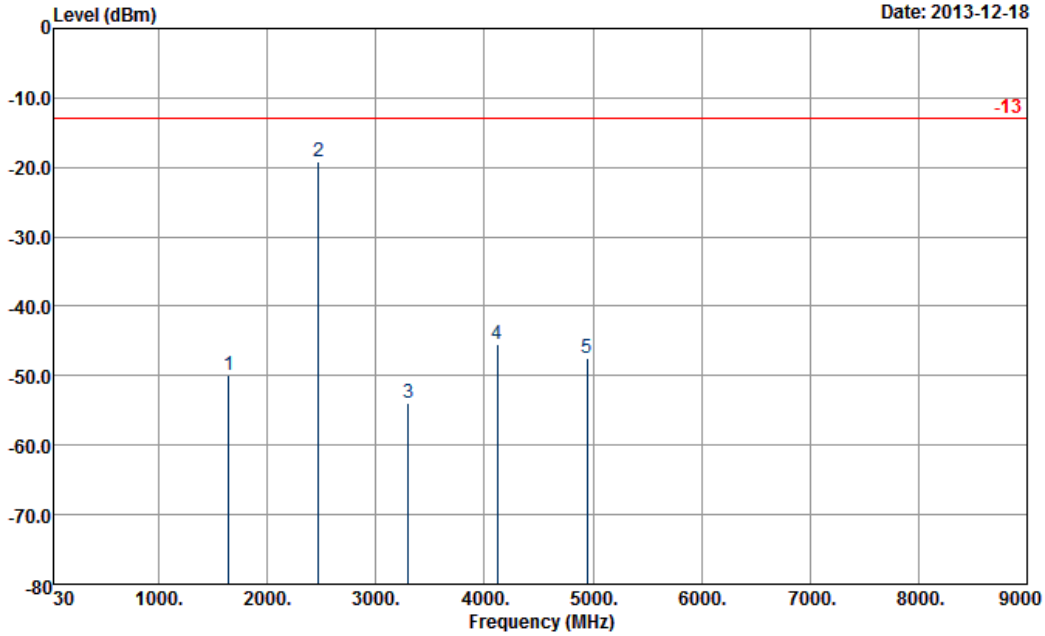
For radiated emissions above 1GHz



3.7.5 Test Result of Field Strength of Spurious Radiated

<Low Channel>

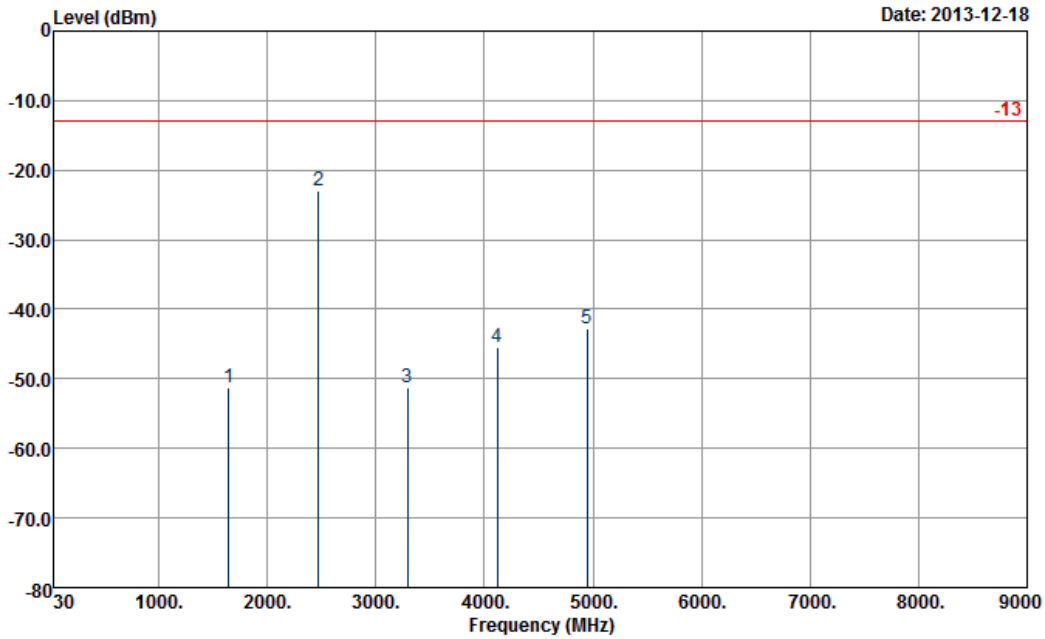
Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	GPRS class 8 Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-49.89	-13	-36.89	-59.42	-53.89	1.53	5.53	H	Pass
2473	-19.18	-13	-6.18	-32.71	-23.27	2.06	6.15	H	Pass
3296	-53.89	-13	-40.89	-67.49	-59.34	2.48	7.93	H	Pass
4120	-45.36	-13	-32.36	-61.94	-51.99	2.54	9.17	H	Pass
4945	-47.51	-13	-34.51	-65.14	-55.03	2.74	10.26	H	Pass

Band :	GSM850	Temperature :	21~24°C
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

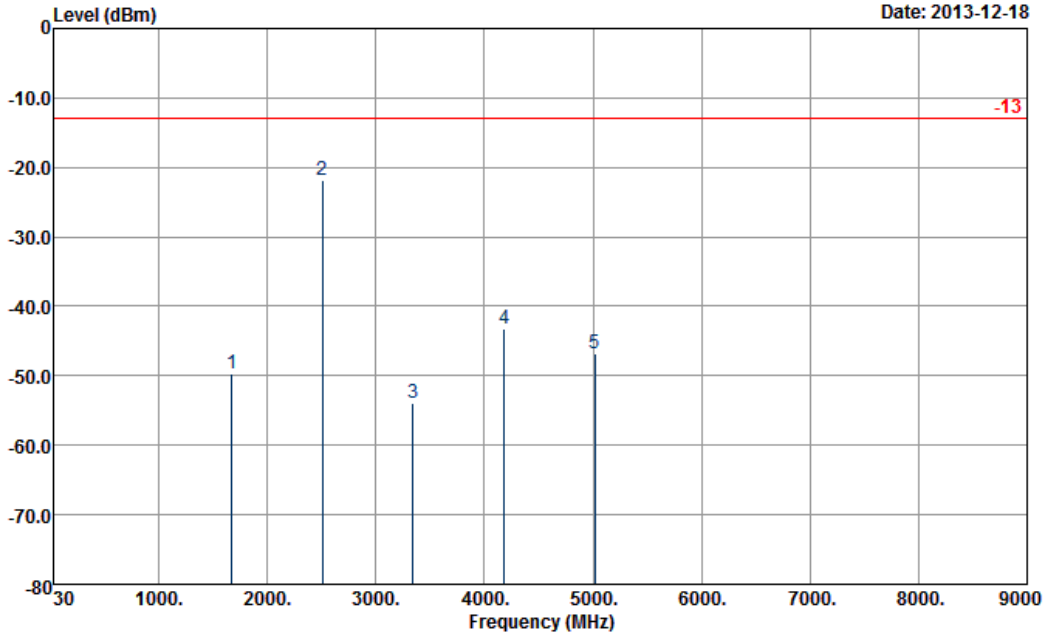


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-51.29	-13	-38.29	-62.2	-55.29	1.53	5.53	V	Pass
2473	-22.94	-13	-9.94	-36.43	-27.03	2.06	6.15	V	Pass
3295	-51.19	-13	-38.19	-67.47	-56.64	2.48	7.93	V	Pass
4120	-45.54	-13	-32.54	-62.67	-52.17	2.54	9.17	V	Pass
4945	-42.75	-13	-29.75	-60.79	-50.27	2.74	10.26	V	Pass

<Middle Channel>

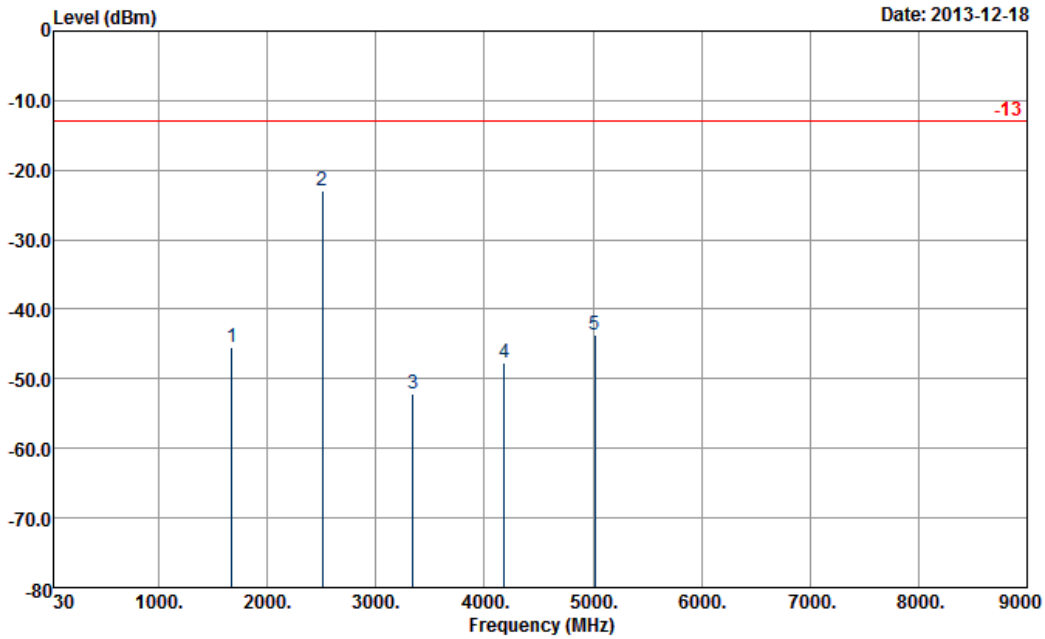
Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	GPRS class 8 Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-49.70	-13	-36.70	-57.93	-53.57	1.62	5.49	H	Pass
2509	-21.91	-13	-8.91	-35.22	-26.03	2.1	6.22	H	Pass
3343	-53.95	-13	-40.95	-68.05	-58.99	3.03	8.07	H	Pass
4180	-43.34	-13	-30.34	-59.64	-50.03	2.52	9.21	H	Pass
5018	-46.71	-13	-33.71	-64.45	-54.31	3.1	10.70	H	Pass

Band :	GSM850	Temperature :	21~24°C
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

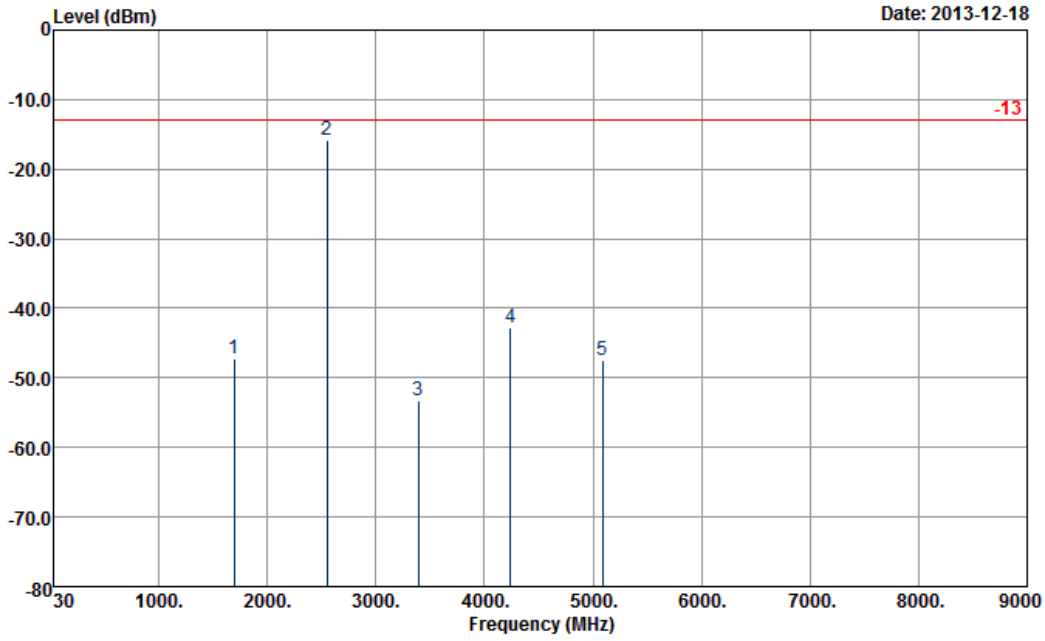


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-45.41	-13	-32.41	-56.55	-49.28	1.62	5.49	V	Pass
2509	-22.91	-13	-9.91	-36.43	-27.03	2.1	6.22	V	Pass
3343	-52.20	-13	-39.20	-67.76	-57.24	3.03	8.07	V	Pass
4180	-47.69	-13	-34.69	-64.39	-54.38	2.52	9.21	V	Pass
5018	-43.67	-13	-30.67	-61.75	-51.27	3.1	10.70	V	Pass

<High Channel>

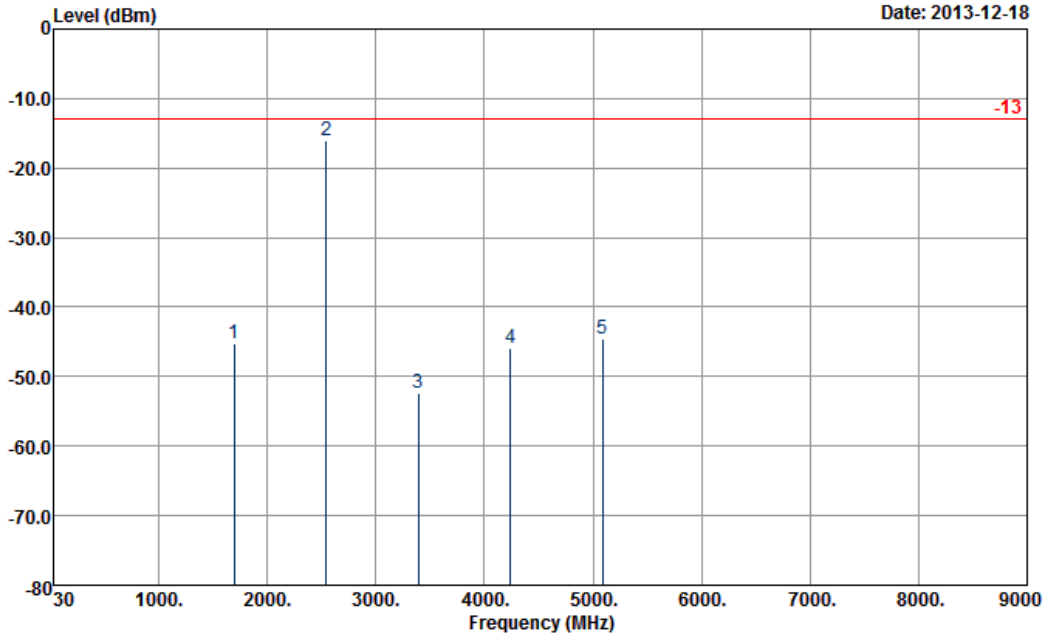
Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	GPRS class 8 Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
1696	-47.15	-13	-34.15	-56.39	-51.03	1.57	5.45	H	Pass
2548	-15.73	-13	-2.73	-28.08	-19.99	2.02	6.28	H	Pass
3391	-53.37	-13	-40.37	-67.5	-59.27	2.3	8.20	H	Pass
4240	-42.77	-13	-29.77	-58.53	-49.28	2.73	9.24	H	Pass
5090	-47.46	-13	-34.46	-65.41	-55.08	2.75	10.37	H	Pass

Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	GPRS class 8 Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

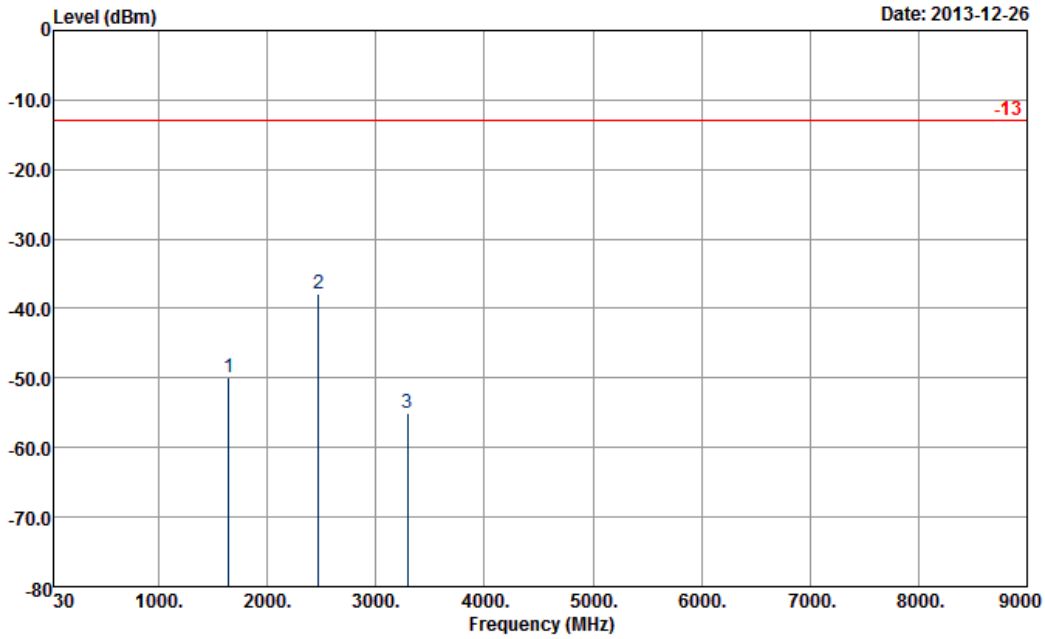


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
1696	-45.33	-13	-32.33	-56.57	-49.21	1.57	5.45	V	Pass
2545	-16.05	-13	-3.05	-29.08	-20.31	2.02	6.28	V	Pass
3392	-52.32	-13	-39.32	-67.59	-58.22	2.3	8.20	V	Pass
4240	-45.80	-13	-32.80	-62.69	-52.31	2.73	9.24	V	Pass
5090	-44.60	-13	-31.60	-62.4	-52.22	2.75	10.37	V	Pass

<Low Channel>

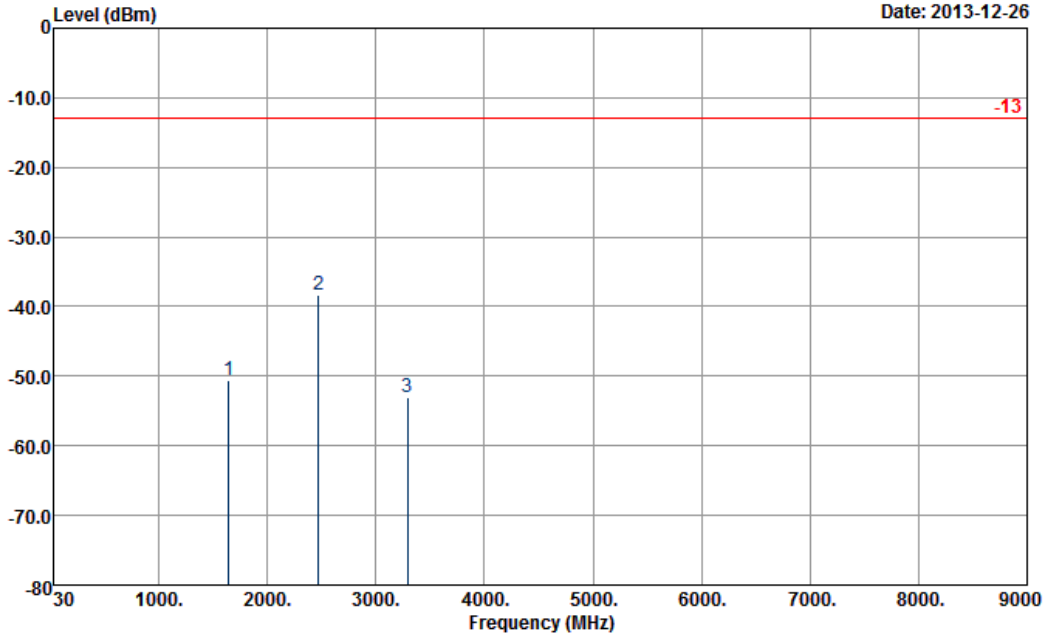
Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-49.87	-13	-36.87	-58.67	-53.87	1.53	5.53	H	Pass
2473	-37.84	-13	-24.84	-50.97	-41.93	2.06	6.15	H	Pass
3295	-54.96	-13	-41.96	-69	-60.41	2.48	7.93	H	Pass

Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

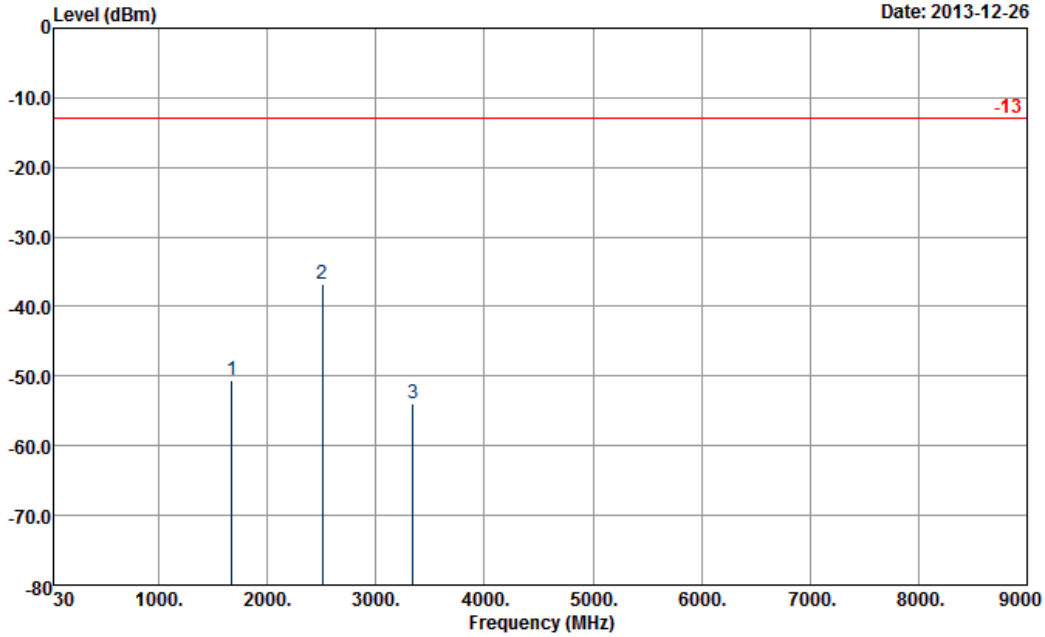


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-50.58	-13	-37.58	-61.58	-54.58	1.53	5.53	V	Pass
2473	-38.23	-13	-25.23	-51.86	-42.32	2.06	6.15	V	Pass
3295	-52.99	-13	-39.99	-68.57	-58.44	2.48	7.93	V	Pass

<Middle Channel>

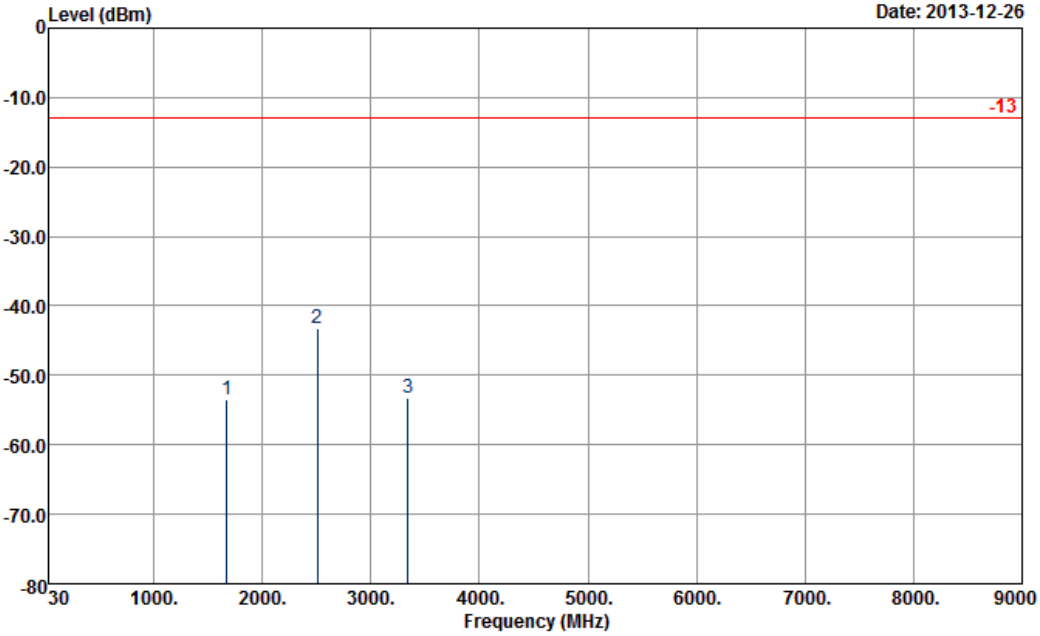
Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-50.65	-13	-37.65	-59.56	-54.52	1.62	5.49	H	Pass
2509	-36.88	-13	-23.88	-50.16	-41	2.1	6.22	H	Pass
3343	-53.97	-13	-40.97	-68.06	-59.01	3.03	8.07	H	Pass

Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

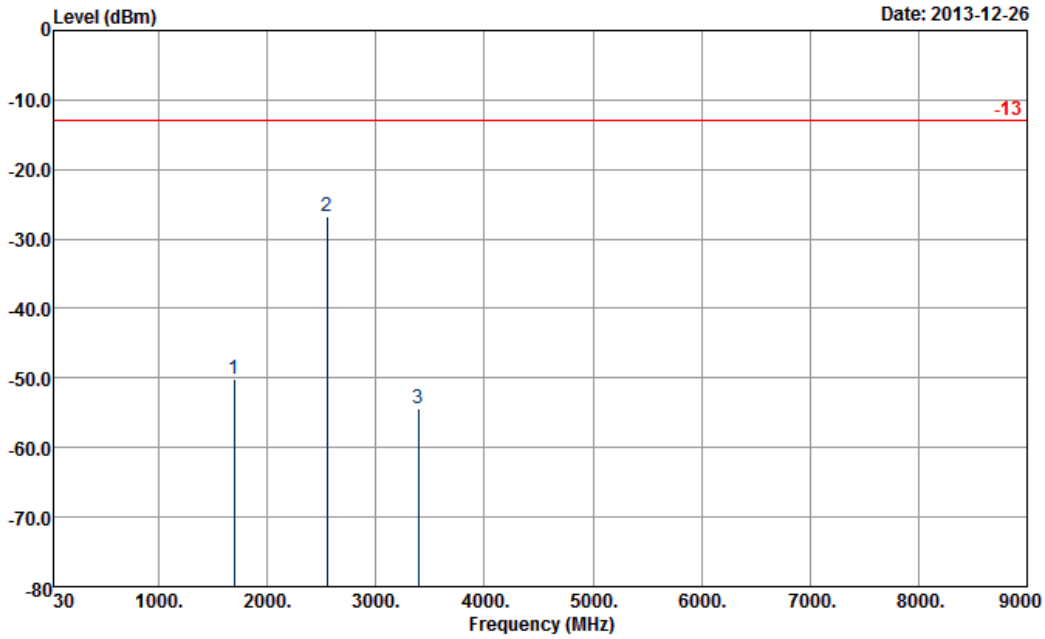


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-53.38	-13	-40.38	-64.61	-57.25	1.62	5.49	V	Pass
2509	-43.30	-13	-30.30	-57.01	-47.42	2.1	6.22	V	Pass
3344	-53.35	-13	-40.35	-68.82	-58.39	3.03	8.07	V	Pass

<High Channel>

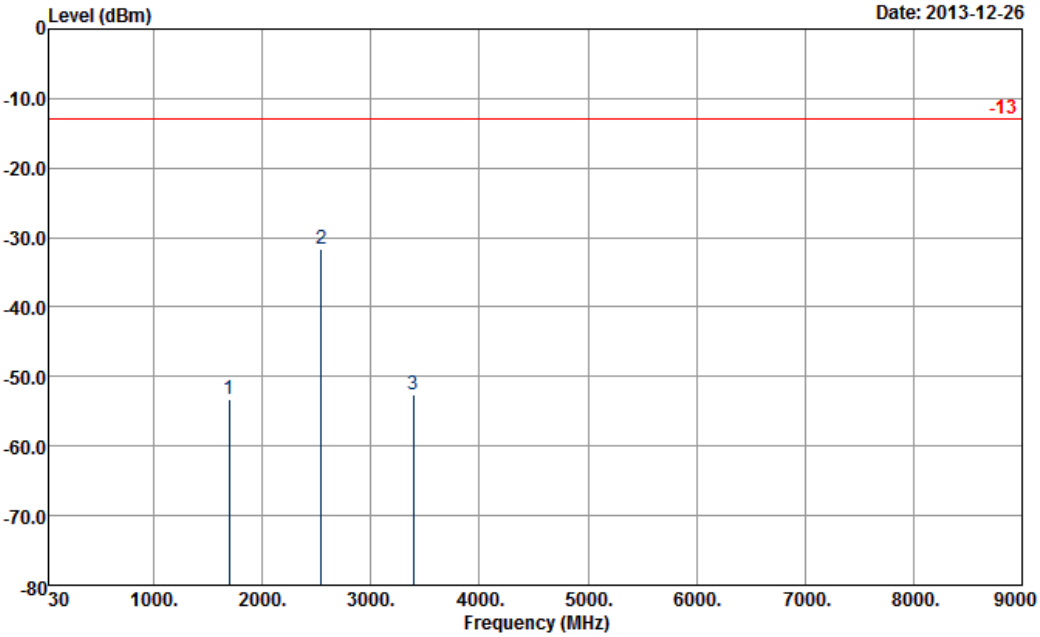
Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
1696	-50.23	-13	-37.23	-59.29	-54.11	1.57	5.45	H	Pass
2548	-26.77	-13	-13.77	-40.17	-31.03	2.02	6.28	H	Pass
3391	-54.43	-13	-41.43	-68.67	-60.33	2.3	8.20	H	Pass

Band :	GSM850	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

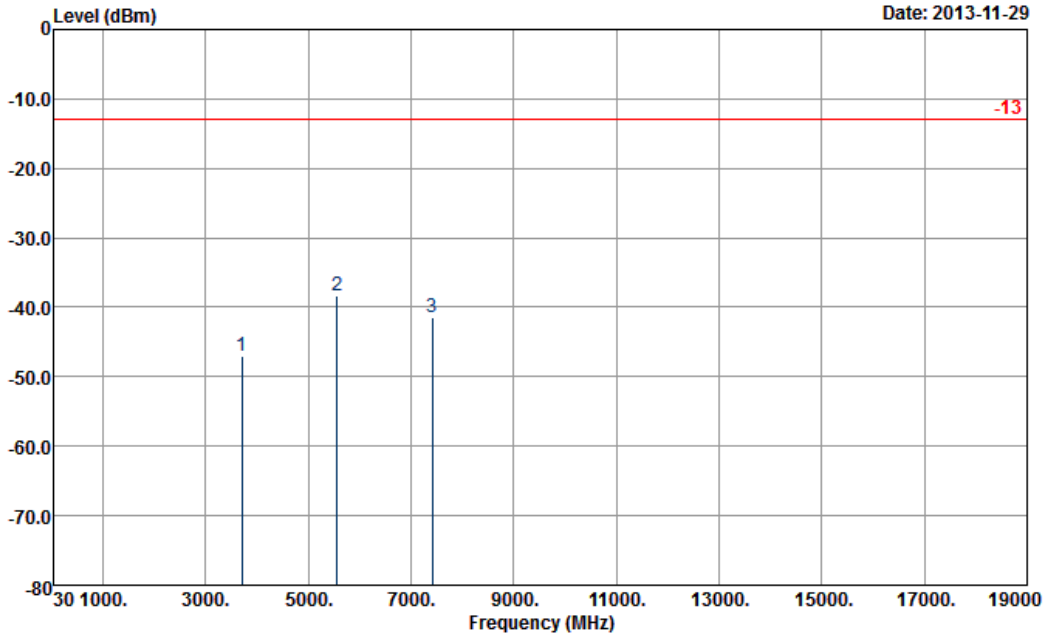


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
1696	-53.33	-13	-40.33	-64.6	-57.21	1.57	5.45	V	Pass
2545	-31.75	-13	-18.75	-45.6	-36.01	2.02	6.28	V	Pass
3391	-52.56	-13	-39.56	-68.19	-58.46	2.3	8.20	V	Pass

<Low Channel>

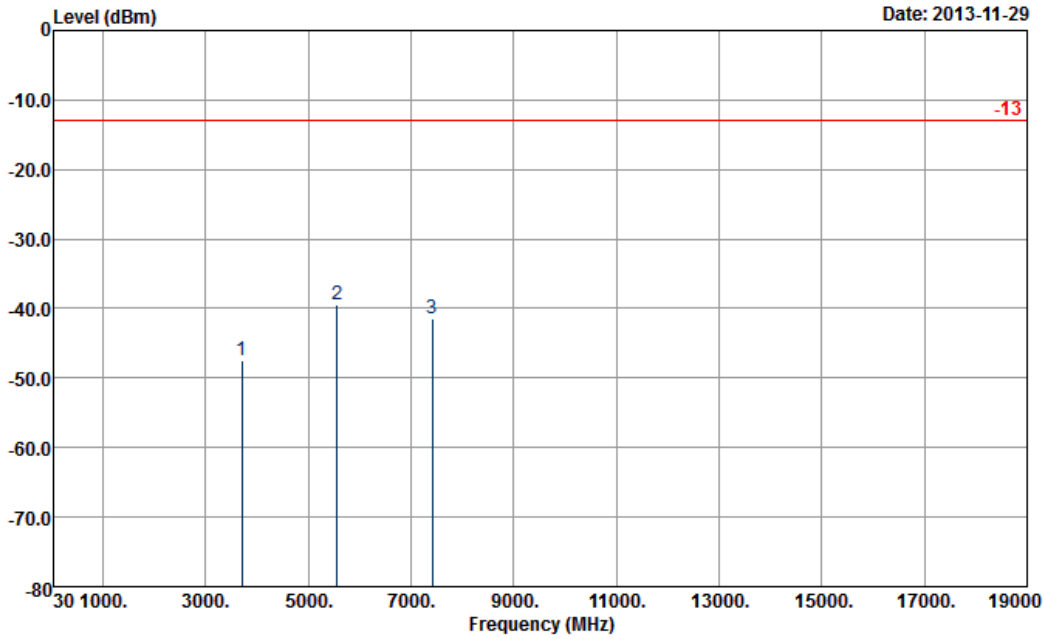
Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
3702	-46.95	-13	-33.95	-62.15	-53.1	2.59	8.74	H	Pass
5553	-38.44	-13	-25.44	-58.93	-46.1	3.04	10.70	H	Pass
7405	-41.36	-13	-28.36	-68.73	-50.1	3.28	12.02	H	Pass

Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

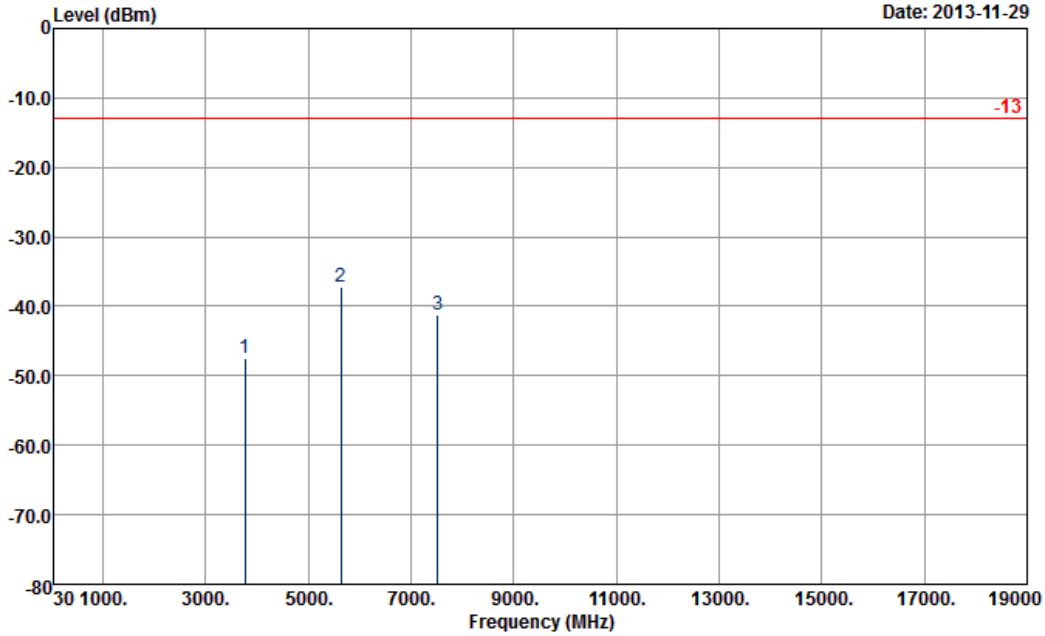


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
3702	-47.45	-13	-34.45	-63.85	-53.6	2.59	8.74	V	Pass
5553	-39.44	-13	-26.44	-59.83	-47.1	3.04	10.70	V	Pass
7405	-41.36	-13	-28.36	-68.58	-50.1	3.28	12.02	V	Pass

<Middle Channel>

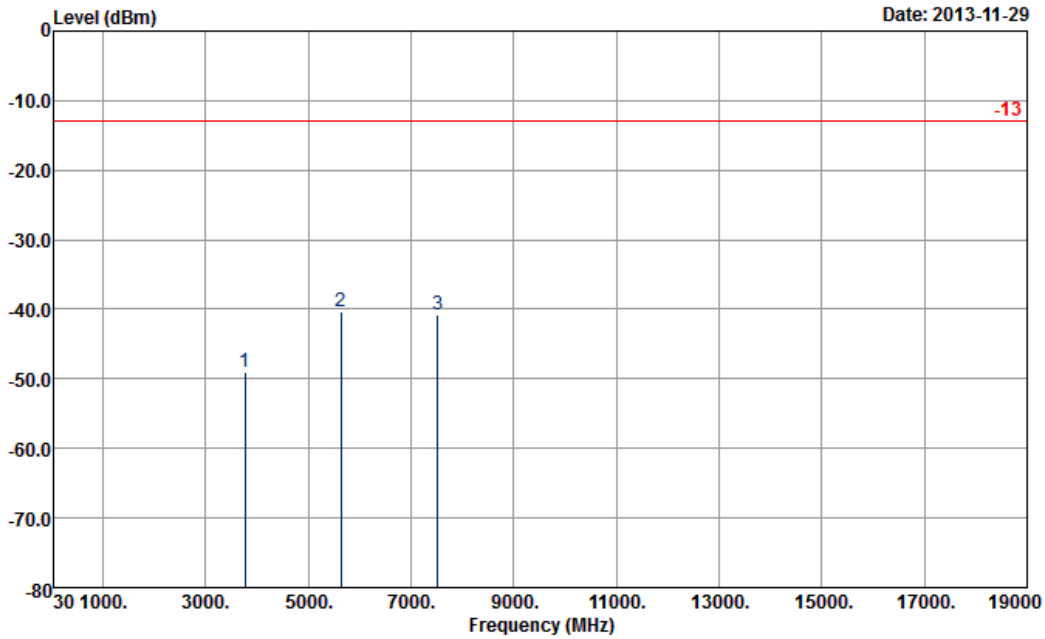
Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-47.50	-13	-34.50	-63.25	-53.8	2.51	8.81	H	Pass
5636	-37.19	-13	-24.19	-58.1	-44.9	2.99	10.70	H	Pass
7520	-41.17	-13	-28.17	-68.69	-49.7	3.59	12.12	H	Pass

Band :	GSM1900	Temperature :	21~24°C
Test Mode :	GSM Link (GMSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

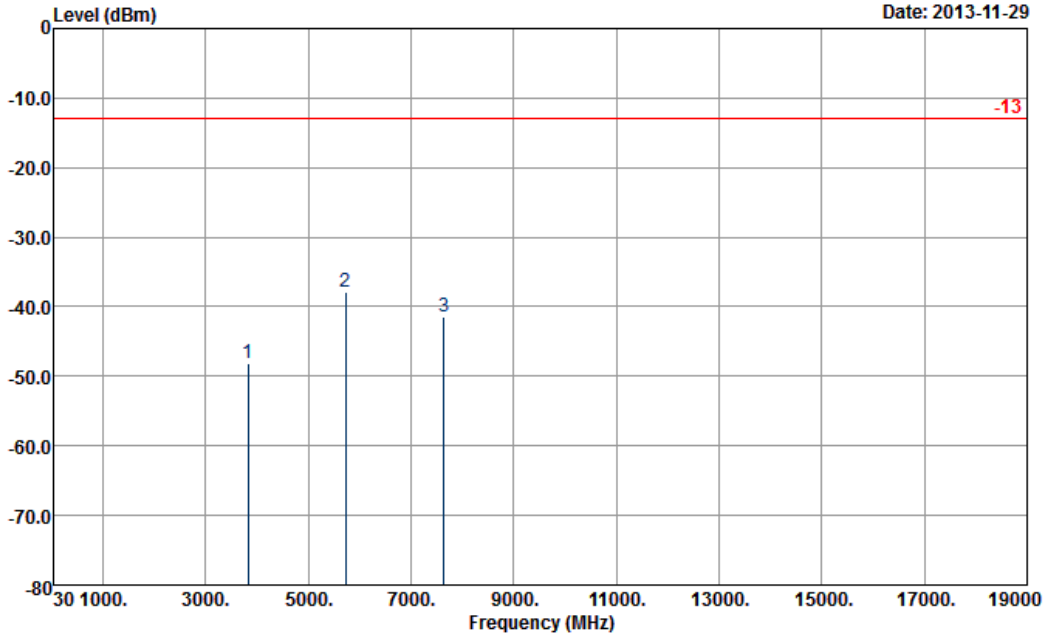


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-49.00	-13	-36.00	-65.68	-55.3	2.51	8.81	V	Pass
5636	-40.39	-13	-27.39	-61.16	-48.1	2.99	10.70	V	Pass
7520	-40.67	-13	-27.67	-67.96	-49.2	3.59	12.12	V	Pass

<High Channel>

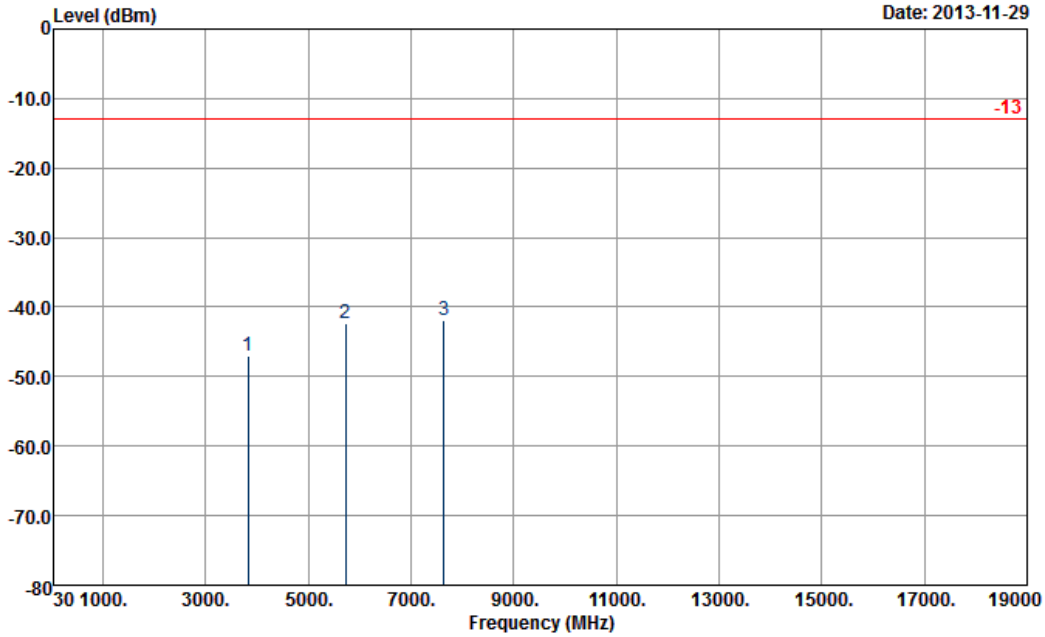
Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	GSM Link (GMSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
3817	-48.09	-13	-35.09	-64.01	-54.5	2.47	8.88	H	Pass
5726	-37.80	-13	-24.80	-59.15	-45.5	3	10.70	H	Pass
7635	-41.42	-13	-28.42	-68.24	-50.2	3.43	12.21	H	Pass

Band :	GSM1900	Temperature :	21~24°C
Test Mode :	GSM Link (GMSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

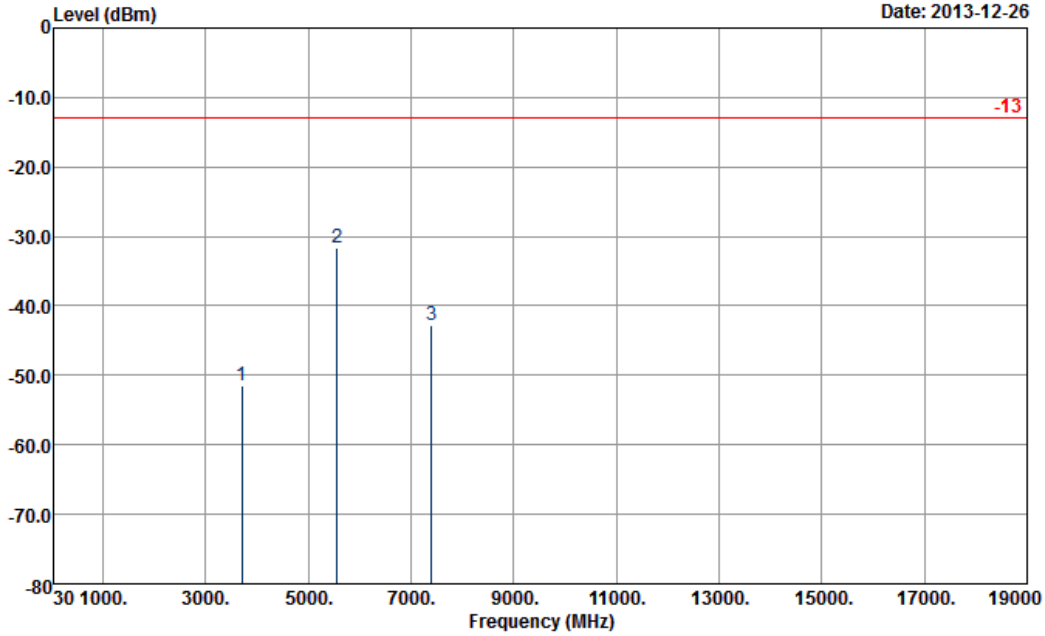


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
3817	-47.09	-13	-34.09	-64.16	-53.5	2.47	8.88	V	Pass
5726	-42.40	-13	-29.40	-63.34	-50.1	3	10.70	V	Pass
7635	-41.92	-13	-28.92	-68.35	-50.7	3.43	12.21	V	Pass

<Low Channel>

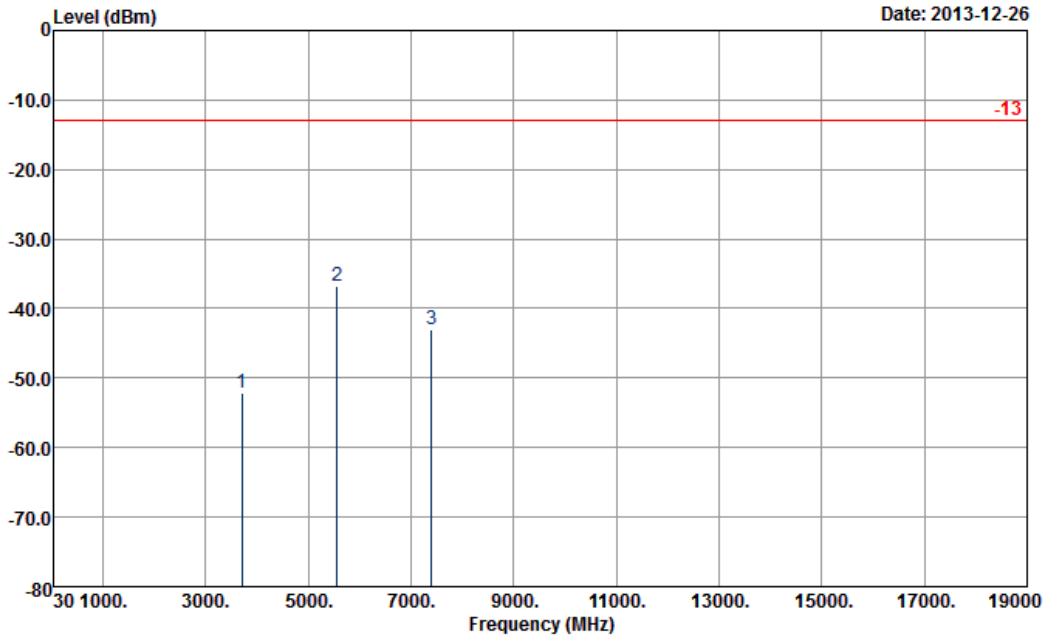
Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-51.38	-13	-38.38	-66.45	-57.53	2.59	8.74	H	Pass
5552	-31.73	-13	-18.73	-52.18	-39.39	3.04	10.70	H	Pass
7400	-42.72	-13	-29.72	-70.01	-51.46	3.28	12.02	H	Pass

Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

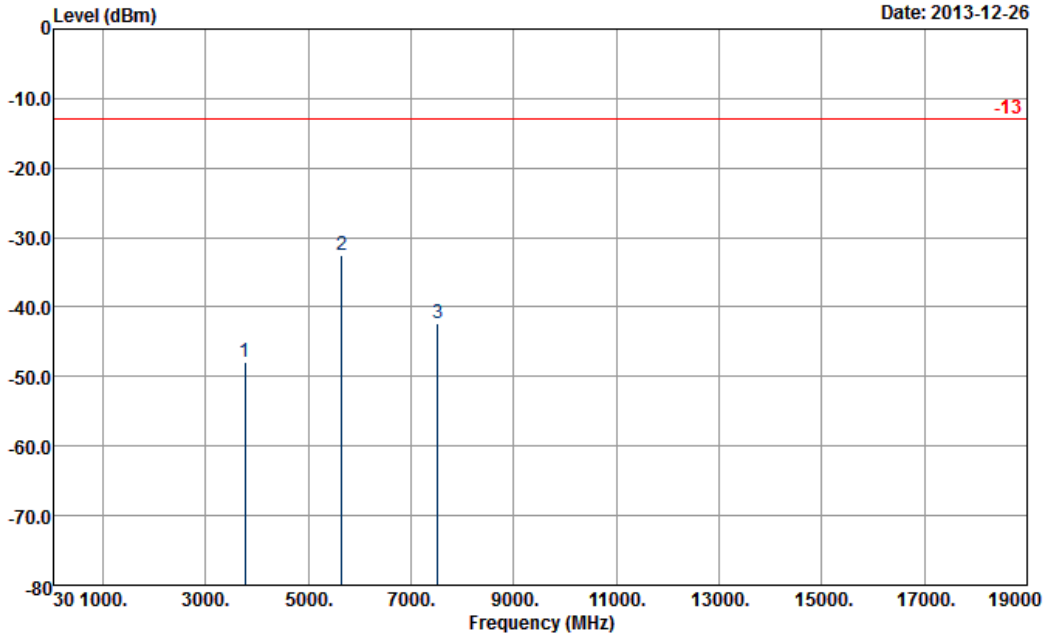


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-52.04	-13	-39.04	-68.23	-58.19	2.59	8.74	V	Pass
5552	-36.81	-13	-23.81	-57.17	-44.47	3.04	10.70	V	Pass
7400	-42.92	-13	-29.92	-69.87	-51.66	3.28	12.02	V	Pass

<Middle Channel>

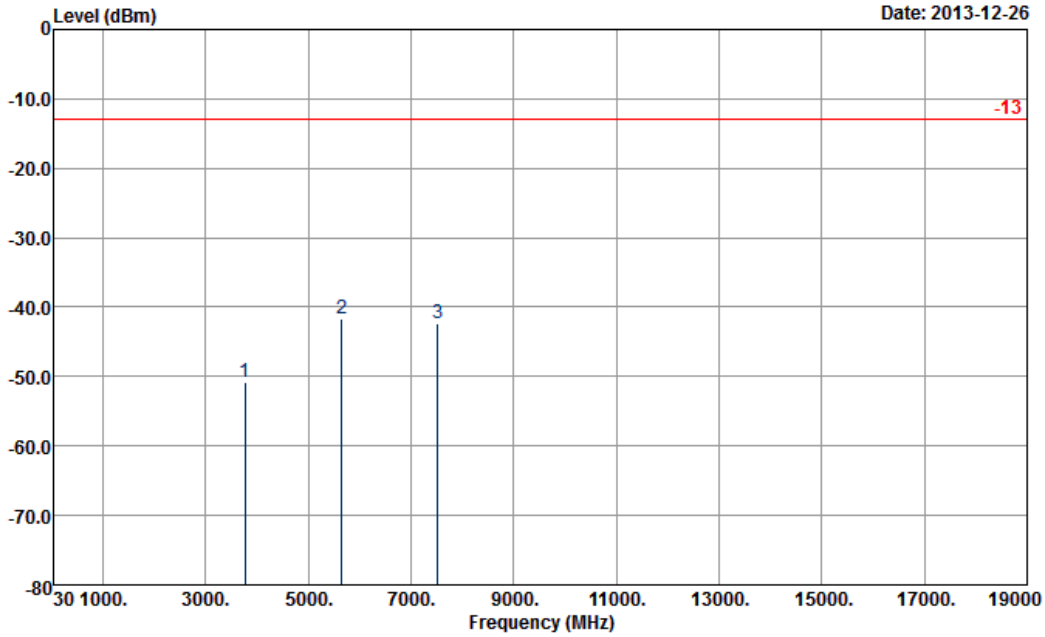
Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-47.93	-13	-34.93	-63.29	-54.23	2.51	8.81	H	Pass
5640	-32.47	-13	-19.47	-53.33	-40.18	2.99	10.70	H	Pass
7520	-42.36	-13	-29.36	-69.51	-50.89	3.59	12.12	H	Pass

Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

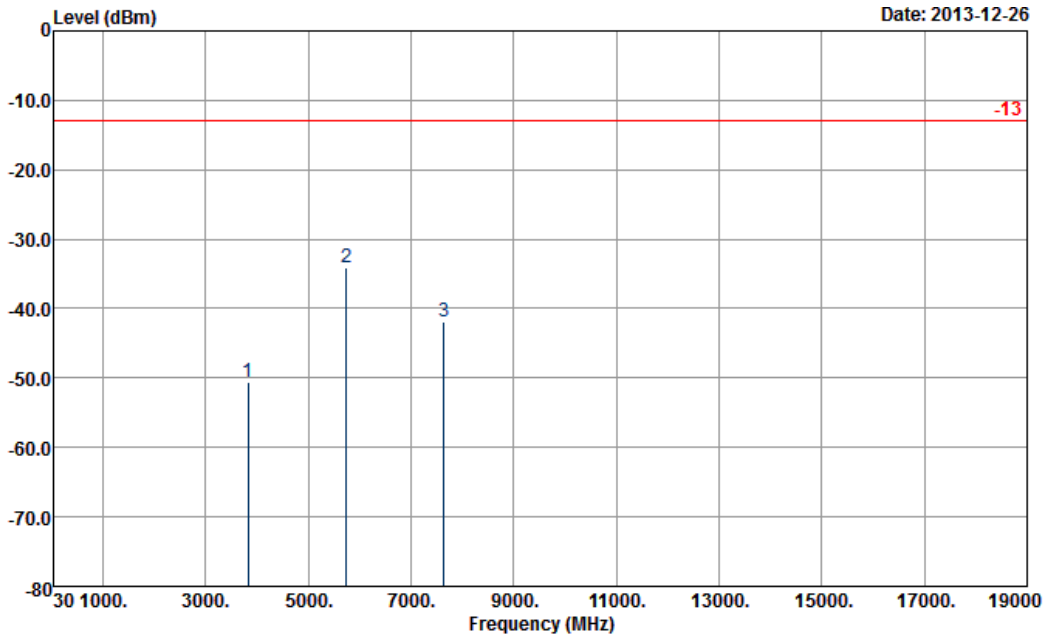


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.81	-13	-37.81	-67.11	-57.11	2.51	8.81	V	Pass
5640	-41.57	-13	-28.57	-62.13	-49.28	2.99	10.70	V	Pass
7520	-42.33	-13	-29.33	-69.24	-50.86	3.59	12.12	V	Pass

<High Channel>

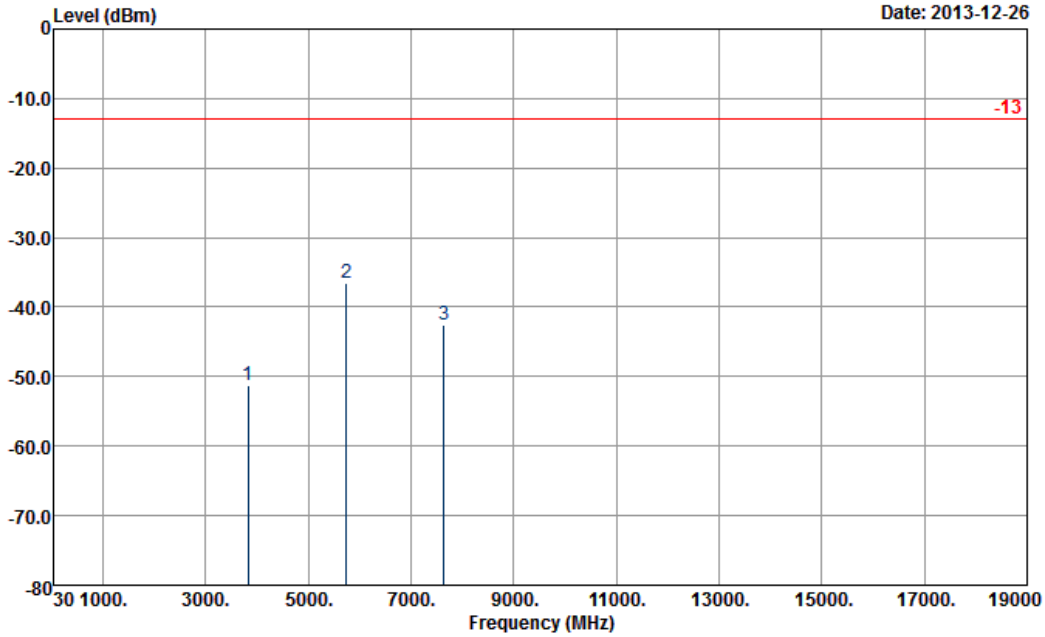
Band :	GSM1900	**Temperature :**	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
3820	-50.48	-13	-37.48	-66.11	-56.89	2.47	8.88	H	Pass
5732	-34.05	-13	-21.05	-55.28	-41.75	3	10.70	H	Pass
7640	-41.88	-13	-28.88	-68.27	-50.66	3.43	12.21	H	Pass

Band :	GSM1900	Temperature :	21~24°C
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

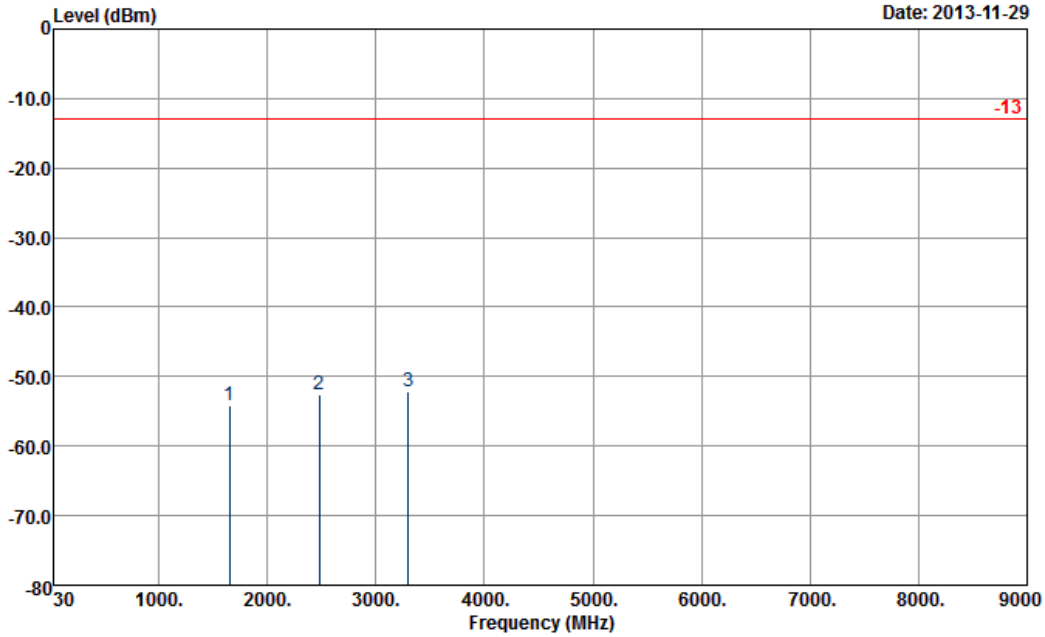


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
3820	-51.27	-13	-38.27	-67.83	-57.68	2.47	8.88	V	Pass
5732	-36.55	-13	-23.55	-57.42	-44.25	3	10.70	V	Pass
7635	-42.67	-13	-29.67	-68.9	-51.45	3.43	12.21	V	Pass

<Low Channel>

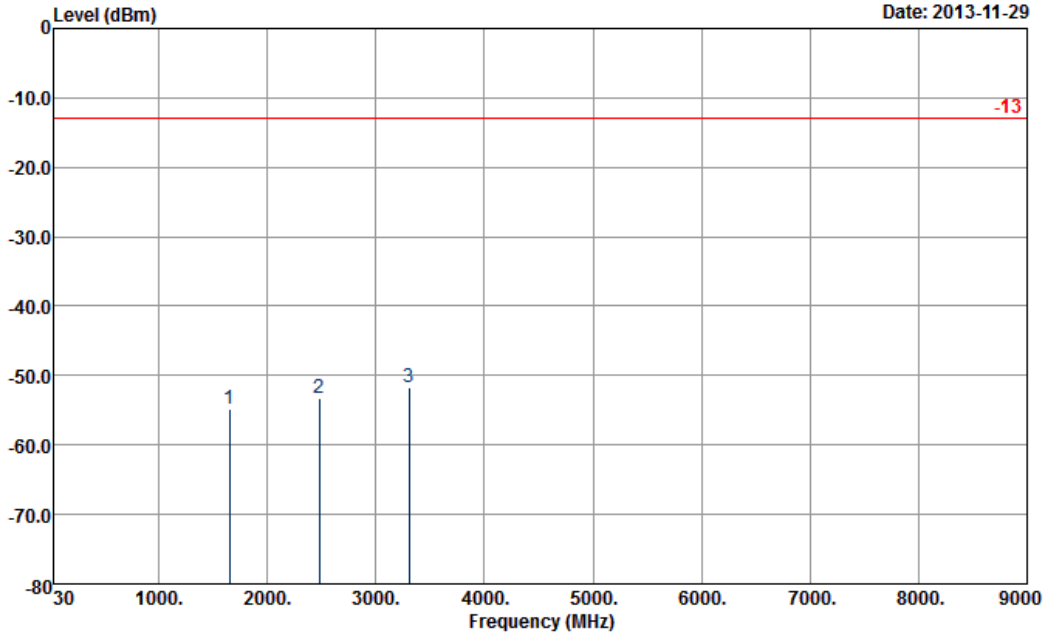
Band :	WCDMA Band V	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
1654	-54.15	-13	-41.15	-62.94	-58.15	1.53	5.53	H	Pass
2476	-52.67	-13	-39.67	-65.84	-56.76	2.06	6.15	H	Pass
3301	-52.24	-13	-39.24	-66.36	-57.69	2.48	7.93	H	Pass

Band :	WCDMA Band V	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

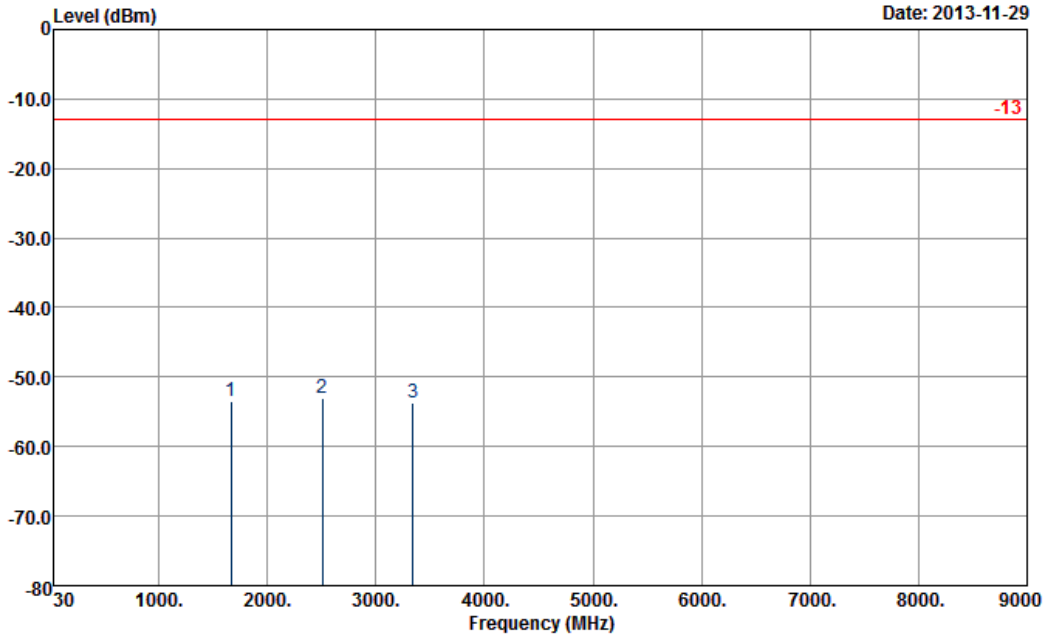


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
1651	-54.88	-13	-41.88	-65.9	-58.88	1.53	5.53	V	Pass
2479	-53.33	-13	-40.33	-67.08	-57.42	2.06	6.15	V	Pass
3304	-51.68	-13	-38.68	-67.5	-57.13	2.48	7.93	V	Pass

<Middle Channel>

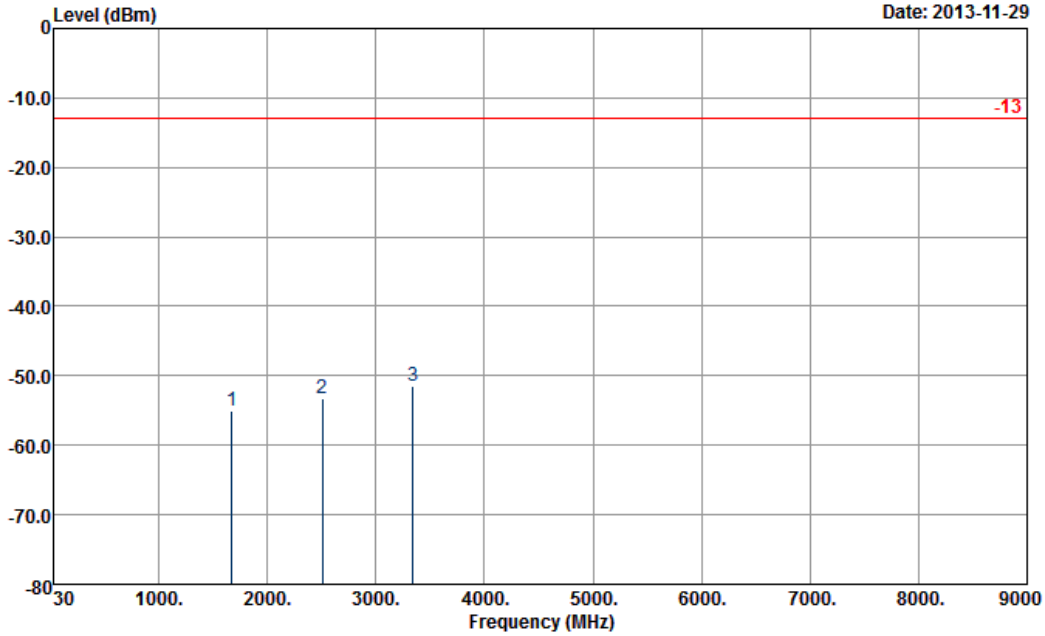
Band :	WCDMA Band V	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
1669	-53.47	-13	-40.47	-62.38	-57.34	1.62	5.49	H	Pass
2509	-53.13	-13	-40.13	-66.44	-57.25	2.1	6.22	H	Pass
3343	-53.61	-13	-40.61	-67.66	-58.65	3.03	8.07	H	Pass

Band :	WCDMA Band V	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

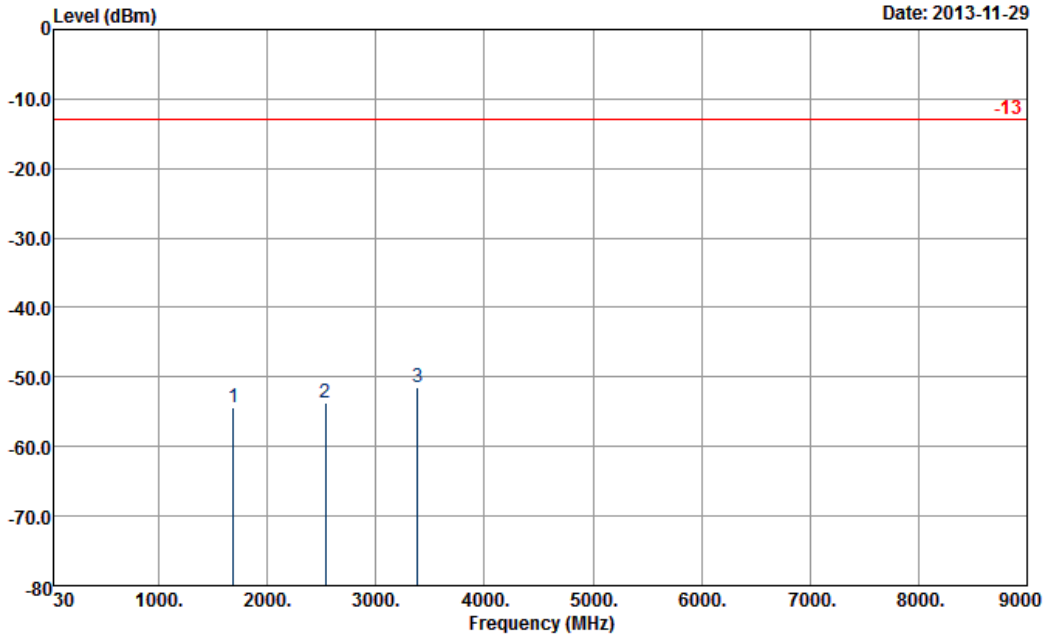


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-55.00	-13	-42.00	-66.16	-58.87	1.62	5.49	V	Pass
2509	-53.30	-13	-40.30	-66.94	-57.42	2.1	6.22	V	Pass
3343	-51.43	-13	-38.43	-66.82	-56.47	3.03	8.07	V	Pass

<High Channel>

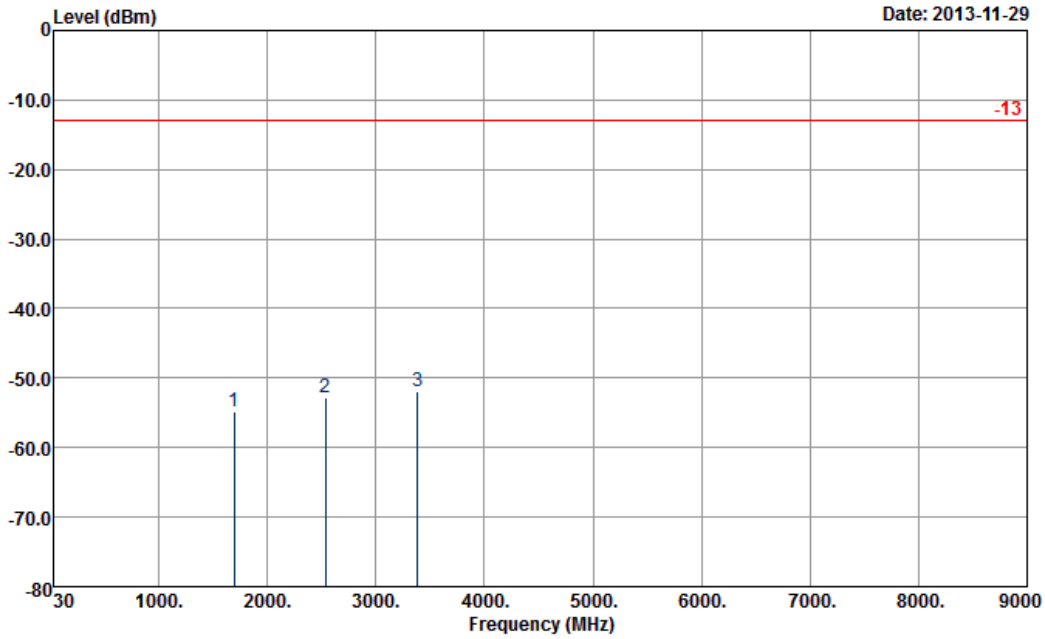
Band :	WCDMA Band V	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
1690	-54.47	-13	-41.47	-63.45	-58.35	1.57	5.45	H	Pass
2539	-53.74	-13	-40.74	-66.93	-58	2.02	6.28	H	Pass
3388	-51.38	-13	-38.38	-65.56	-57.28	2.3	8.20	H	Pass

Band :	WCDMA Band V	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

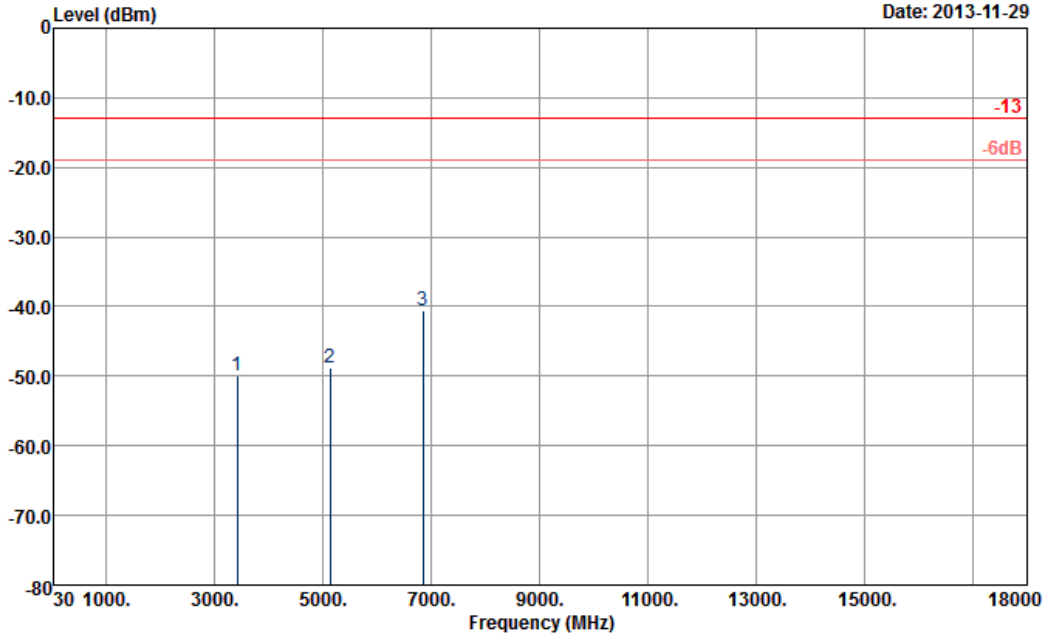


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-54.78	-13	-41.78	-66.03	-58.66	1.57	5.45	V	Pass
2539	-52.75	-13	-39.75	-66.58	-57.01	2.02	6.28	V	Pass
3385	-51.85	-13	-38.85	-67.38	-57.75	2.3	8.20	V	Pass

<Low Channel>

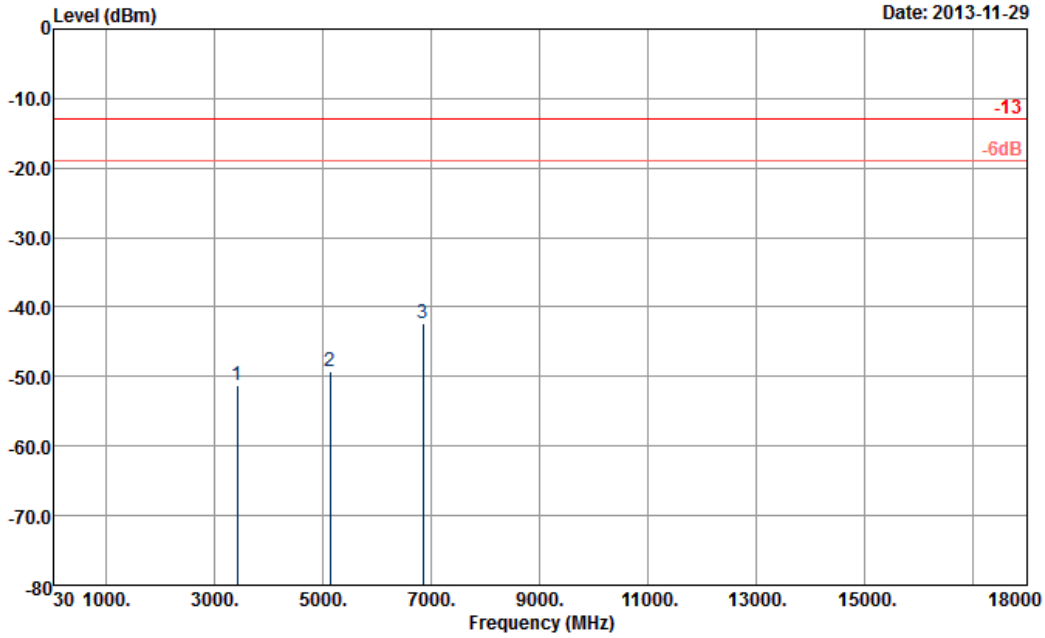
Band :	WCDMA Band IV	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
3425	-49.87	-13	-36.87	-64.21	-53.7	4.48	8.31	H	Pass
5137	-48.86	-13	-35.86	-67.52	-53.5	5.332	9.98	H	Pass
6850	-40.46	-13	-27.46	-66.59	-45.7	6.1	11.34	H	Pass

Band :	WCDMA Band IV	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

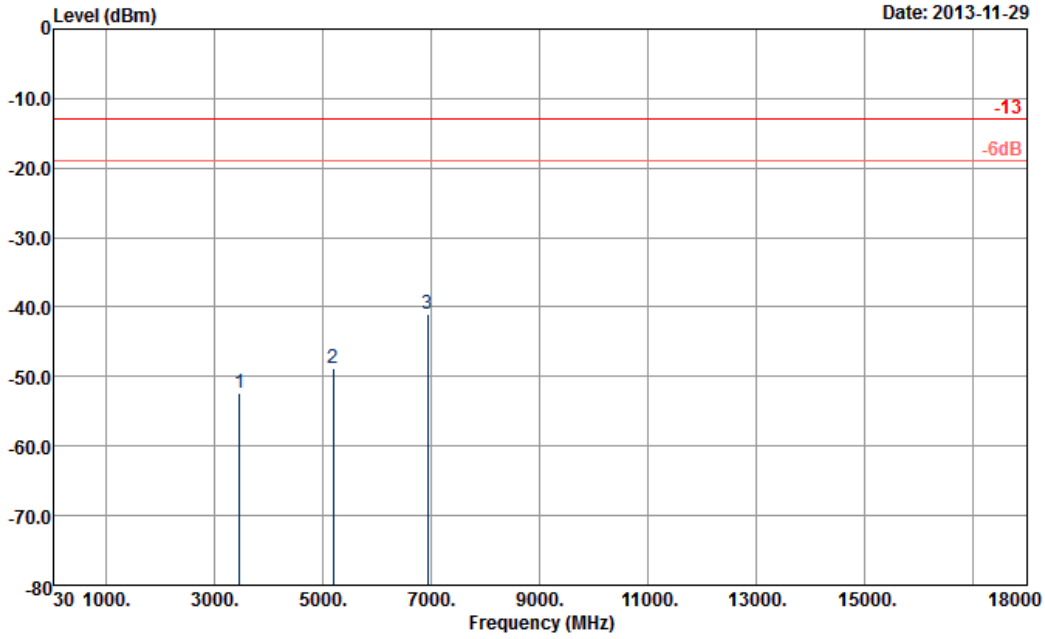


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
3425	-51.27	-13	-38.27	-67.08	-55.1	4.48	8.31	V	Pass
5137	-49.26	-13	-36.26	-68.44	-53.9	5.332	9.98	V	Pass
6850	-42.36	-13	-29.36	-67.69	-47.6	6.1	11.34	V	Pass

<Middle Channel>

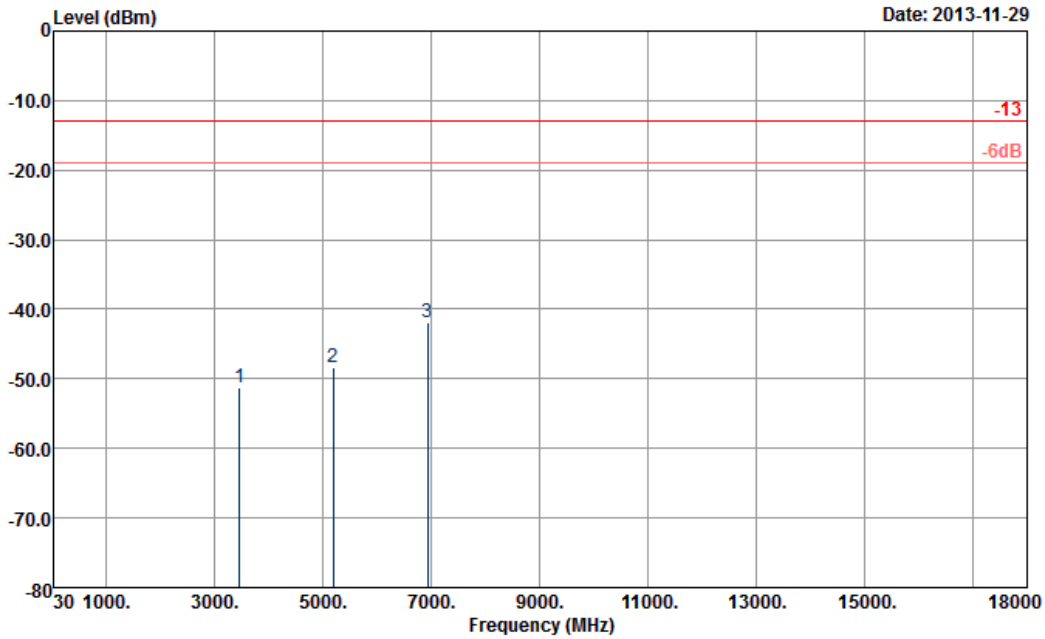
Band :	WCDMA Band IV	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3465	-52.37	-13	-39.37	-67.16	-56.2	4.48	8.31	H	Pass
5197	-48.76	-13	-35.76	-67.79	-53.4	5.332	9.98	H	Pass
6930	-40.96	-13	-27.96	-67.72	-46.2	6.1	11.34	H	Pass

Band :	WCDMA Band IV	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

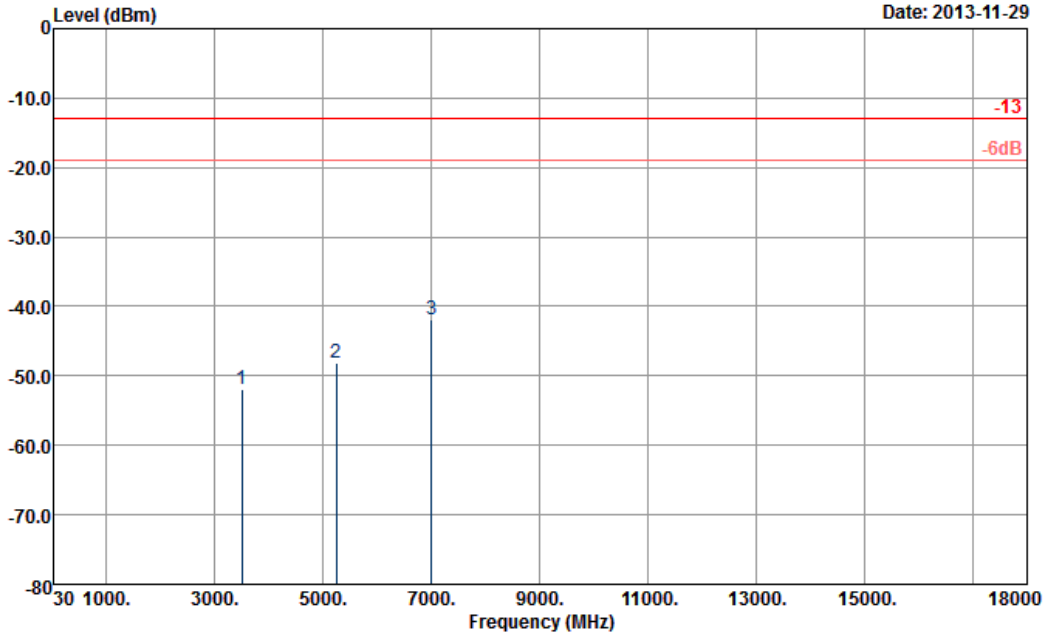


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3465	-51.27	-13	-38.27	-66.99	-55.1	4.48	8.31	V	Pass
5197	-48.46	-13	-35.46	-67.75	-53.1	5.332	9.98	V	Pass
6930	-41.96	-13	-28.96	-67.69	-47.2	6.1	11.34	V	Pass

<High Channel>

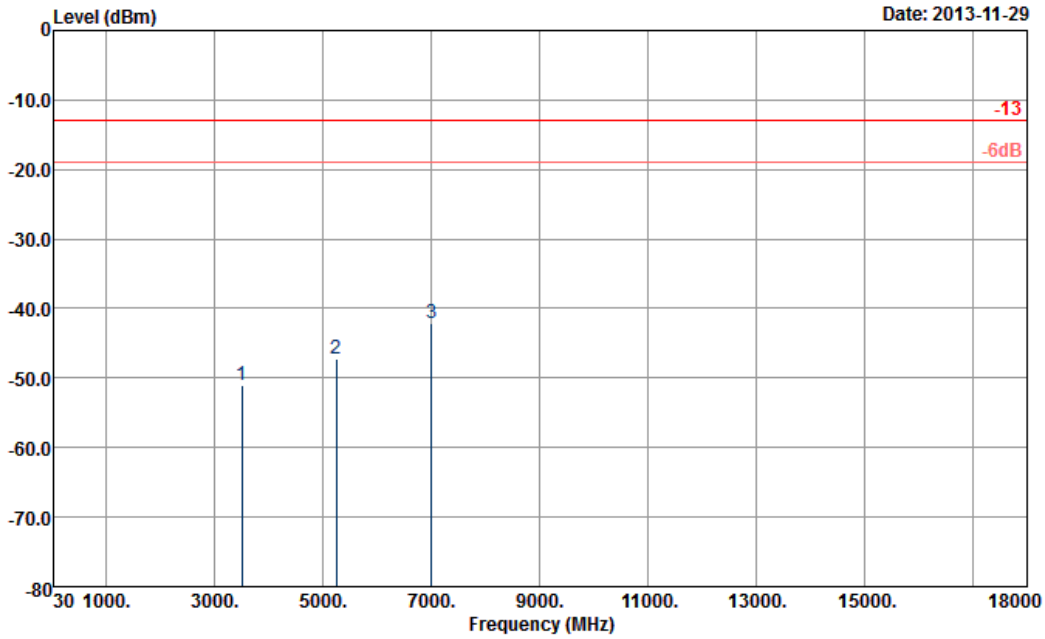
Band :	WCDMA Band IV	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3505	-52.03	-13	-39.03	-66.64	-56.3	4.16	8.43	H	Pass
5258	-48.14	-13	-35.14	-67.5	-53.1	5.13	10.09	H	Pass
7015	-41.92	-13	-28.92	-68.79	-47.2	6.15	11.43	H	Pass

Band :	WCDMA Band IV	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

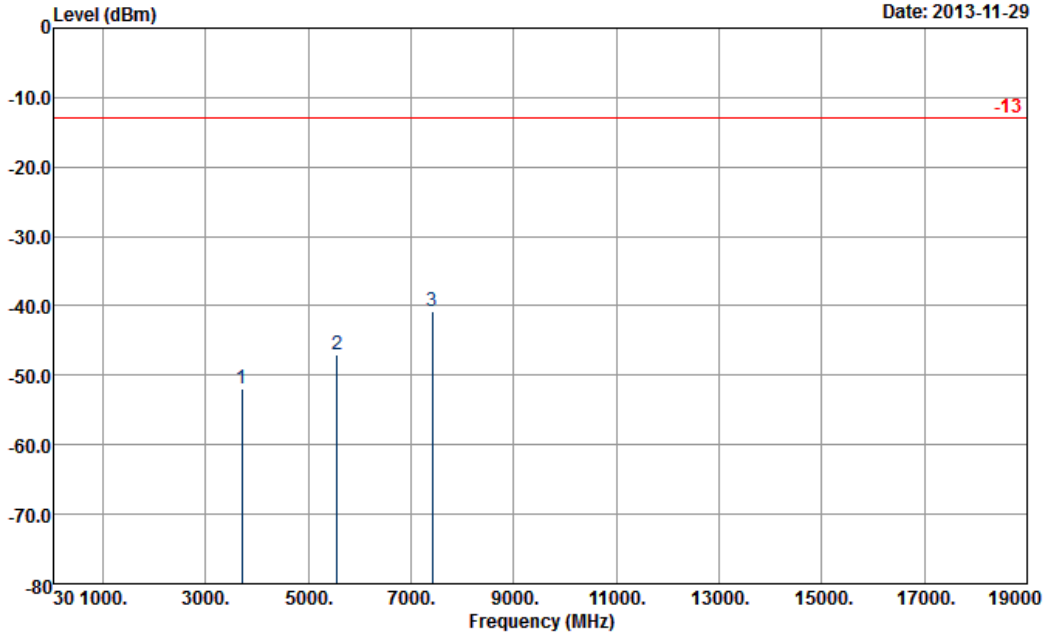


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3505	-50.93	-13	-37.93	-66.71	-55.2	4.16	8.43	V	Pass
5258	-47.34	-13	-34.34	-66.73	-52.3	5.13	10.09	V	Pass
7015	-42.02	-13	-29.02	-67.93	-47.3	6.15	11.43	V	Pass

<Low Channel>

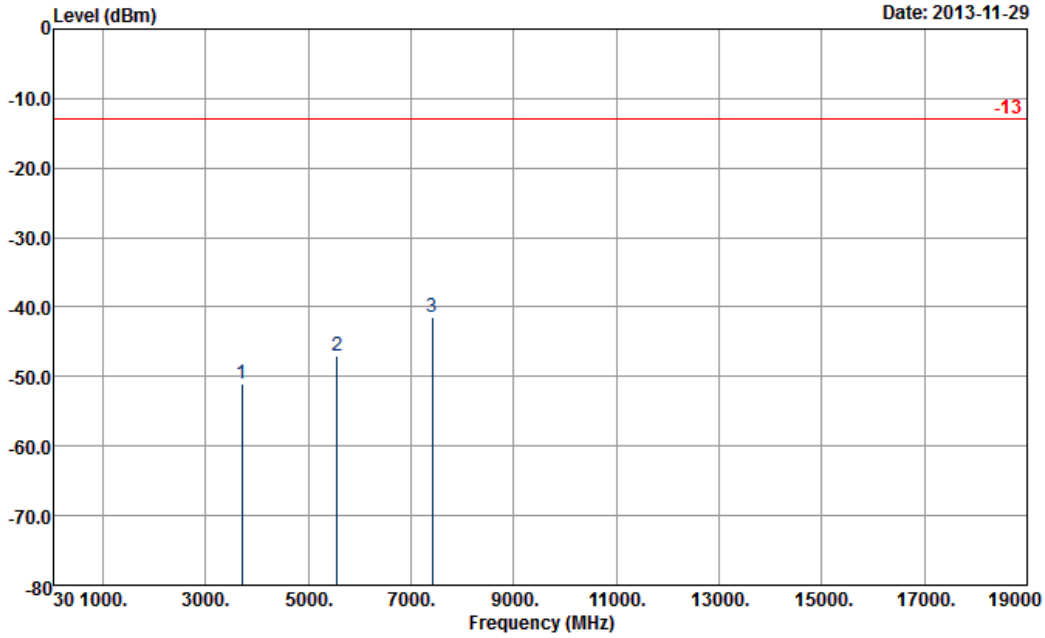
Band :	WCDMA Band II	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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	-51.95	-13	-38.95	-67.19	-58.1	2.59	8.74	H	Pass
5557	-46.94	-13	-33.94	-67.53	-54.6	3.04	10.70	H	Pass
7409	-40.86	-13	-27.86	-68.25	-49.6	3.28	12.02	H	Pass

Band :	WCDMA Band II	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

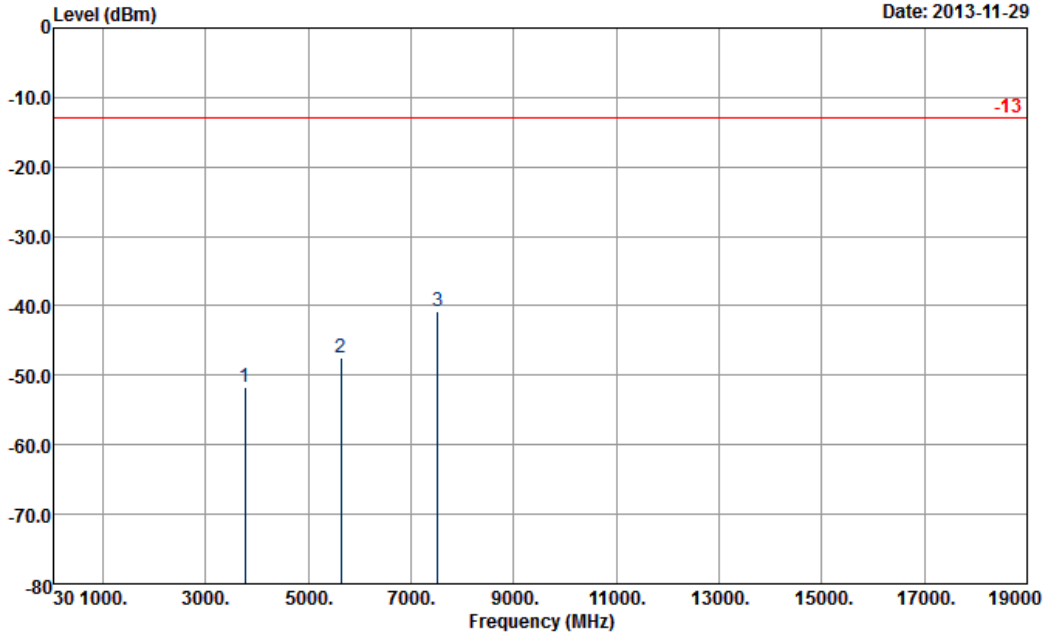


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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	-51.05	-13	-38.05	-67.3	-57.2	2.59	8.74	V	Pass
5557	-47.04	-13	-34.04	-67.41	-54.7	3.04	10.70	V	Pass
7409	-41.36	-13	-28.36	-68.41	-50.1	3.28	12.02	V	Pass

<Middle Channel>

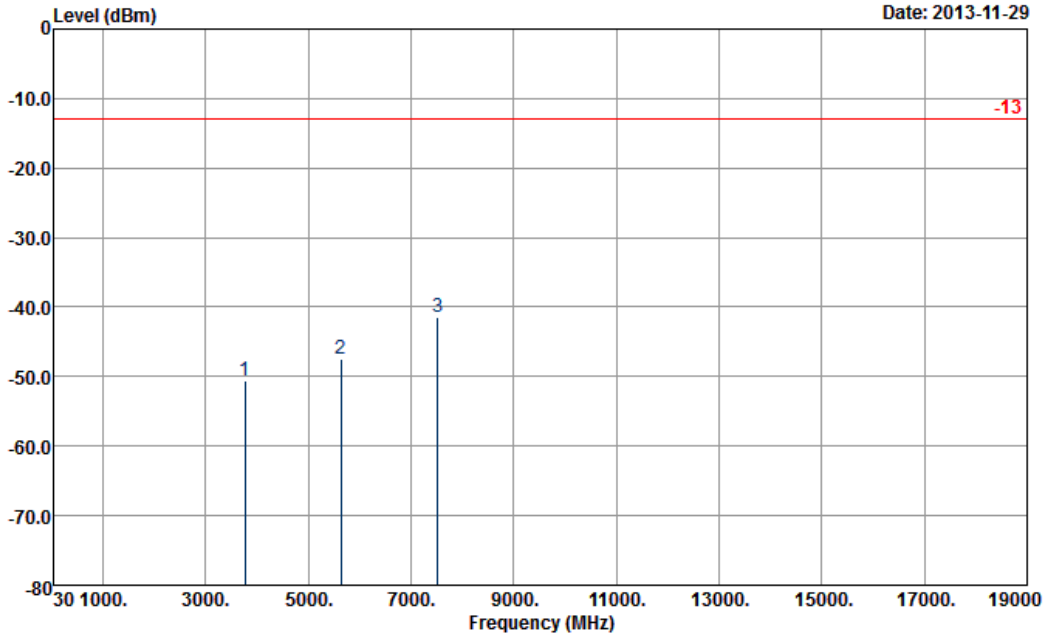
Band :	WCDMA Band II	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.60	-13	-38.60	-67.07	-57.9	2.51	8.81	H	Pass
5639	-47.39	-13	-34.39	-68.13	-55.1	2.99	10.70	H	Pass
7520	-40.67	-13	-27.67	-68.18	-49.2	3.59	12.12	H	Pass

Band :	WCDMA Band II	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

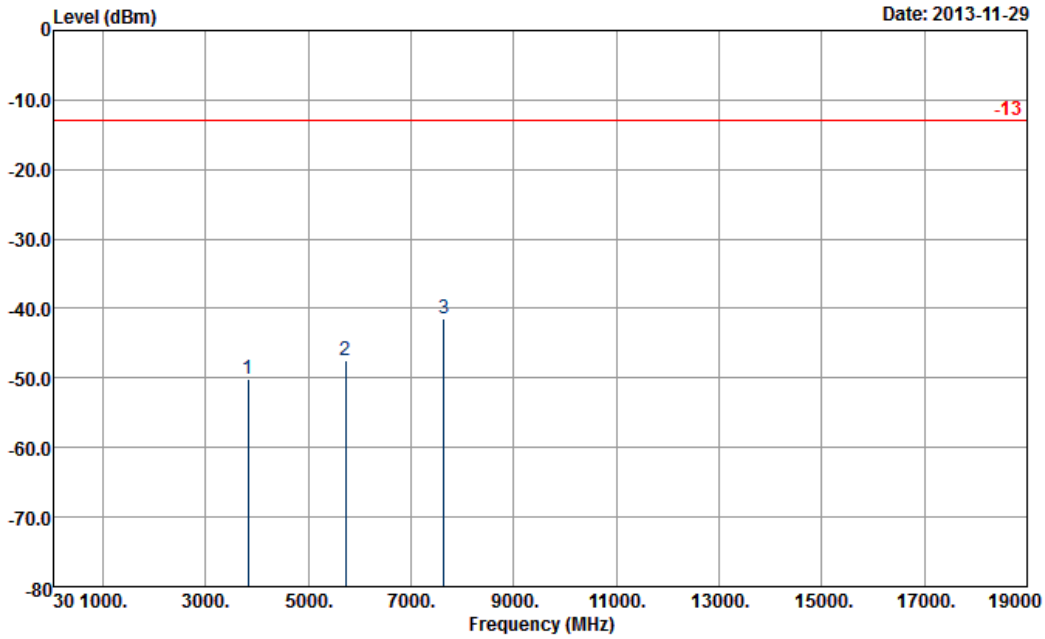


Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.50	-13	-37.50	-67.06	-56.8	2.51	8.81	V	Pass
5639	-47.49	-13	-34.49	-68.06	-55.2	2.99	10.70	V	Pass
7520	-41.37	-13	-28.37	-68.56	-49.9	3.59	12.12	V	Pass

<High Channel>

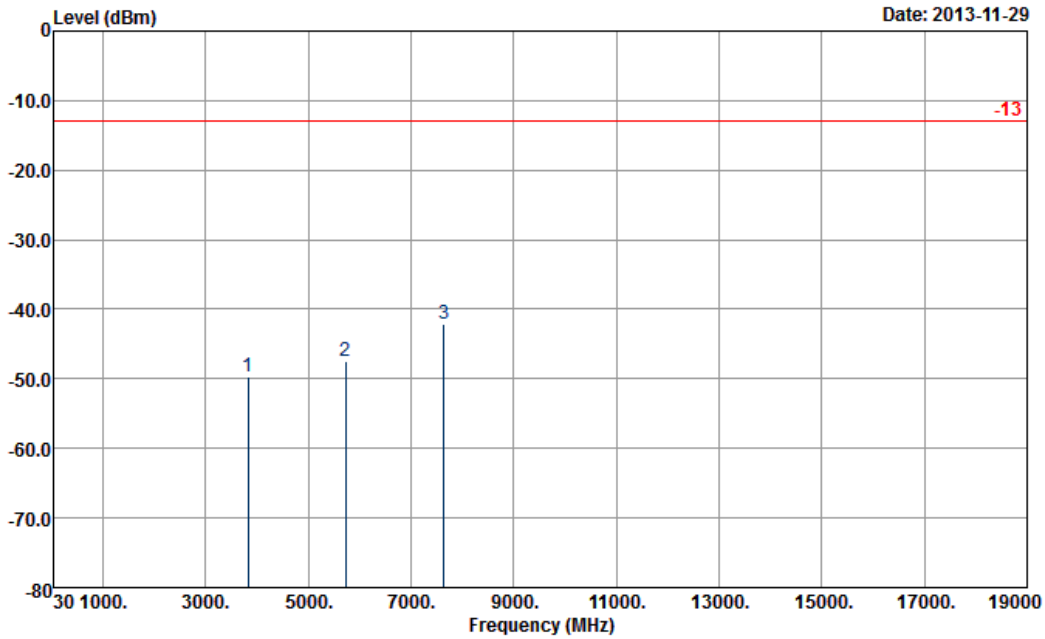
Band :	WCDMA Band II	**Temperature :**	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	**Relative Humidity :**	51~56%
Test Engineer :	Stan Hsieh	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) HORIZONTAL

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
3816	-50.19	-13	-37.19	-65.96	-56.6	2.47	8.88	H	Pass
5723	-47.40	-13	-34.40	-68.62	-55.1	3	10.70	H	Pass
7631	-41.42	-13	-28.42	-68.4	-50.2	3.43	12.21	H	Pass

Band :	WCDMA Band II	Temperature :	21~24°C
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	51~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH07-HY
Condition : -13 HF-EIRP(080306) VERTICAL

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
3816	-49.69	-13	-36.69	-66.44	-56.1	2.47	8.88	V	Pass
5723	-47.50	-13	-34.50	-68.48	-55.2	3	10.70	V	Pass
7631	-42.12	-13	-29.12	-68.6	-50.9	3.43	12.21	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.

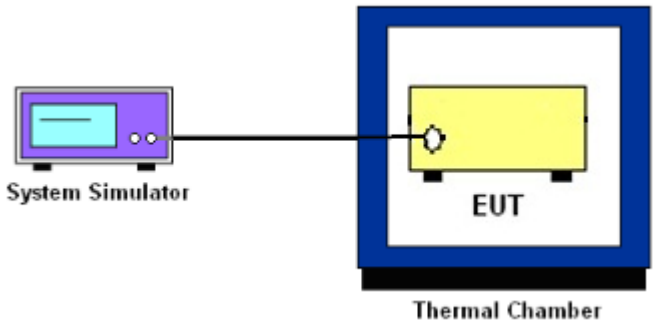
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C 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 base station.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.8.5 Test Setup



3.8.7 Test Result of Temperature Variation

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

Temperature (°C)	GPRS class 8		EDGE class 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	34	0.04	32	0.04	PASS
-20	31	0.04	30	0.04	
-10	32	0.04	28	0.03	
0	33	0.04	26	0.03	
10	28	0.03	24	0.03	
20	26	0.03	25	0.03	
30	28	0.03	26	0.03	
40	30	0.04	28	0.03	
50	33	0.04	27	0.03	

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	63	0.03	72	0.04	PASS
-20	57	0.03	71	0.04	
-10	54	0.03	70	0.04	
0	49	0.03	66	0.03	
10	50	0.03	67	0.04	
20	53	0.03	63	0.03	
30	55	0.03	64	0.03	
40	54	0.03	69	0.04	
50	57	0.03	70	0.04	

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

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-14	-0.02	PASS
-20	-12	-0.01	
-10	-10	-0.01	
0	9	0.01	
10	7	0.01	
20	-8	-0.01	
30	9	0.01	
40	-11	-0.01	
50	-12	-0.01	

Band :	WCDMA Band IV	Channel :	1413
Limit (ppm) :	2.5	Frequency :	1732.6 MHz

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-24	-0.01	PASS
-20	-20	-0.01	
-10	-15	-0.01	
0	-16	-0.01	
10	-10	-0.01	
20	-9	-0.01	
30	-14	-0.01	
40	-18	-0.01	
50	-16	-0.01	

Band :	WCDMA Band II	Channel :	9400
Limit (ppm) :	2.5	Frequency :	1880 MHz

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	18	0.01	PASS
-20	15	0.01	
-10	13	0.01	
0	10	0.01	
10	11	0.01	
20	9	0.00	
30	13	0.01	
40	12	0.01	
50	16	0.01	

3.8.8 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GPRS class 8	3.8	29	0.03	2.5	PASS
		BEP	30	0.04		
		4.35	28	0.03		
	EDGE class 8	3.8	19	0.02		
		BEP	21	0.02		
		4.35	20	0.02		
GSM 1900 CH661	GSM	3.8	57	0.03		
		BEP	60	0.03		
		4.35	55	0.03		
	EDGE class 8	3.8	62	0.03		
		BEP	64	0.03		
		4.35	67	0.04		
WCDMA Band V CH4182	RMC 12.2Kbps	3.8	-5	-0.01		
		BEP	-9	-0.01		
		4.35	6	0.01		
WCDMA Band IV CH1413	RMC 12.2Kbps	3.8	-9	-0.01		
		BEP	-12	-0.01		
		4.35	-10	-0.01		
WCDMA Band II CH9400	RMC 12.2Kbps	3.8	11	0.01		
		BEP	10	0.01		
		4.35	9	0.00		

Note:

1. Normal Voltage = 3.8V.
2. Battery End Point (BEP) = 3.4 V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
System Simulator	Rohde & Schwarz	CMU200	117995	N/A	Aug. 01, 2013	Nov. 28, 2013~ Apr. 2, 2014	Jul. 31, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Nov. 28, 2013~ Apr. 2, 2014	Jun. 06, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	Nov. 28, 2013~ Apr. 2, 2014	Jul. 18, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 20, 2013	Nov. 28, 2013~ Apr. 2, 2014	Nov. 19, 2014	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Nov. 28, 2013~ Apr. 2, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Nov. 28, 2013~ Apr. 2, 2014	Aug. 21, 2014	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Nov. 28, 2013~ Apr. 2, 2014	Oct. 02, 2014	Radiation (03CH07-HY)
Preamplifier	SONOMA	310N	187231	9kHz~1GHz	May 15, 2013	Nov. 28, 2013~ Apr. 2, 2014	May 14, 2014	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02665	1 GHz~26.5 GHz	Sep. 04, 2013	Nov. 28, 2013~ Apr. 2, 2014	Sep. 03, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Nov. 28, 2013~ Apr. 2, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Nov. 28, 2013~ Apr. 2, 2014	N/A	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.50**