FCC RF Test Report

APPLICANT	:	ATELIER HAUTE COMMUNICATION SAS
EQUIPMENT	:	Mobile phone
BRAND NAME	:	TAG Heuer
MODEL NAME	:	TH04M
MARKETING NAME	:	MERIDIIST
FCC ID	:	GUOTH04M
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 16, 2013 and completely tested on May 28, 2013. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory 2627

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG351601	Rev. 01	Initial issue of report	Jun. 27, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	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	-
3.4	§2.1049 §22.917(b) §24.238(b)	99% Occupied Bandwidth and 26dB Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	Band Edge Measurement	< $43+10\log_{10}$(P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	Conducted Spurious Emission	< $43+10\log_{10}$(P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiated	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 33.62 dB at 7520.000 MHz
3.8	§2.1055 §22.355 §24.235	Frequency Stability for Temperature and Voltage	< 2.5 ppm	PASS	-

1 General Description

1.1 Applicant

ATELIER HAUTE COMMUNICATION SAS
100 avenue des Champs Elysées 75008 PARIS-FRANCE

1.2 Manufacturer

ATELIER HAUTE COMMUNICATION SAS
100 avenue des Champs Elysées 75008 PARIS-FRANCE

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile phone
Brand Name	TAG Heuer
Model Name	TH04M
Marketing Name	MERIDIIST
FCC ID	GUOTH04M
EUT supports Radios application	GSM/GPRS/EGPRS/Bluetooth 2.1
HW Version	P1.0
SW Version	LP2_M6235L_1317_00_V109A_WW
EUT Stage	Identical Prototype

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

1.4 Product Specification 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
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz
Maximum Output Power to Antenna	GSM850 : 32.84 dBm GSM1900 : 29.75 dBm
Antenna Type	PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

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

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (%, Hz, ppm)	Emission Designator
Part 22	GSM850 GSM	GMSK	0.6490	0.04 ppm	246KGXW
Part 22	GSM850 EDGE 8	8PSK	0.1930	0.04 ppm	252KG7W
Part 24	GSM1900 GSM	GMSK	0.3259	0.03 ppm	248KGXW
Part 24	GSM1900 EDGE 8	8PSK	0.1793	0.03 ppm	244KG7W

1.7 Testing Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755- 3320-2398	
Test Site No.	**Sporton Site No.**	**FCC/IC Registration No.**
	TH01-SZ	831040/4086F-1

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

1.8 Applied Standards

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

- FCC 47 CFR Part 2, 22(H), 24(E)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission(X plane for 22H and Y plane for 24E).

Frequency range investigated for radiated emission is as follows:

1. 30 MHz to 9000 MHz for GSM850.
2. 30 MHz to 19000 MHz for GSM1900.

Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
GSM 850	■ GSM Link ■ EDGE 8 Link	■ GSM Link ■ EDGE 8 Link
GSM 1900	■ GSM Link ■ EDGE 8 Link	■ GSM Link ■ EDGE 8 Link

Note:

1. The maximum power levels are GSM mode for GMSK link, EDGE multi-slot class 8 modes for 8PSK link, only these modes were used for all tests.
2. Because there are individual antennas for each WWAN and Bluetooth, the co-location test modes are not required.

The conducted power tables are as follows:

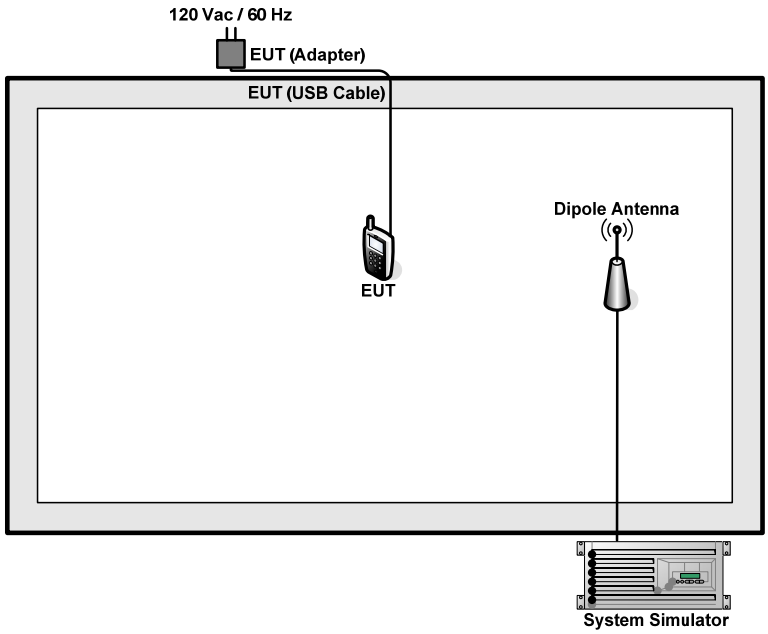
For SIM 1 Card

Conducted Power (*Unit: dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM (GMSK, 1 Tx slot)	32.28	32.51	**32.84**	29.68	29.68	**29.75**
GPRS (GMSK, 1 Tx slot) – CS1	32.27	32.44	32.81	29.56	29.55	29.66
GPRS (GMSK, 2 Tx slots) – CS1	31.43	31.54	31.94	28.69	28.62	28.75
GPRS (GMSK, 3 Tx slots) – CS1	29.74	29.85	30.23	27.00	26.90	27.03
GPRS (GMSK, 4 Tx slots) – CS1	28.88	29.05	29.36	26.17	26.12	26.22
EDGE (GMSK, 1 Tx slot) – MCS1	32.27	32.39	32.76	29.57	29.52	29.64
EDGE (GMSK, 2 Tx slots) – MCS1	31.42	31.50	31.82	28.68	28.60	28.72
EDGE (GMSK, 3 Tx slots) – MCS1	29.71	29.82	30.12	26.98	26.88	27.00
EDGE (GMSK, 4 Tx slots) – MCS1	28.87	29.03	29.27	26.15	26.10	26.20
EDGE (8PSK, 1 Tx slot) – MCS5	26.27	27.10	27.14	25.01	23.74	24.22
EDGE (8PSK, 2 Tx slot) – MCS5	25.21	25.97	26.06	24.47	23.15	23.66
EDGE (8PSK, 3 Tx slot) – MCS5	23.15	23.84	23.96	23.09	21.79	22.35
EDGE (8PSK, 4 Tx slot) – MCS5	21.82	22.51	22.60	21.90	20.70	21.10

For SIM 2 Card

Conducted Power (*Unit: dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**189**	**251**	**512**	**661**	**810**
Frequency	**824.2**	**836.4**	**848.8**	**1850.2**	**1880.0**	**1909.8**
GSM (GMSK, 1 Tx slot)	32.29	32.51	**32.84**	29.57	29.57	**29.65**
GPRS (GMSK, 1 Tx slot) – CS1	32.25	32.37	32.78	29.60	29.52	29.62
GPRS (GMSK, 2 Tx slots) – CS1	31.37	31.48	31.89	28.70	28.60	28.71
GPRS (GMSK, 3 Tx slots) – CS1	29.72	29.80	30.20	27.02	26.89	27.00
GPRS (GMSK, 4 Tx slots) – CS1	28.88	29.01	29.34	26.18	26.11	26.21
EDGE (GMSK, 1 Tx slot) – MCS1	32.18	32.37	32.71	29.59	29.52	29.62
EDGE (GMSK, 2 Tx slots) – MCS1	31.33	31.45	31.84	28.74	28.64	28.74
EDGE (GMSK, 3 Tx slots) – MCS1	29.67	29.77	30.17	27.04	26.93	27.03
EDGE (GMSK, 4 Tx slots) – MCS1	28.82	28.96	29.31	26.20	26.15	26.20
EDGE (8PSK, 1 Tx slot) – MCS5	26.36	27.30	27.26	25.07	23.81	24.30
EDGE (8PSK, 2 Tx slot) – MCS5	25.35	26.19	26.25	24.56	23.23	23.71
EDGE (8PSK, 3 Tx slot) – MCS5	23.39	24.08	24.15	23.18	21.91	22.42
EDGE (8PSK, 4 Tx slot) – MCS5	22.11	22.81	22.83	22.14	20.75	21.29

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Agilent	E5515C	N/A	N/A	Unshielded, 1.8 m
3.	DC Power Supply	TOPWORD	3303DR	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 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 Measurement

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

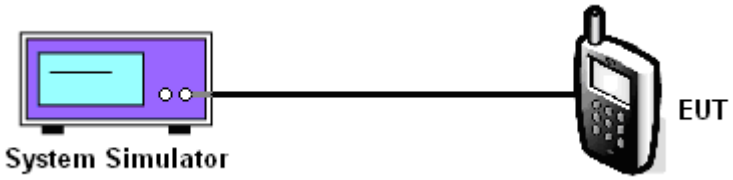
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band						
Modes	**GSM850 (GSM)**			**GSM850 (EDGE 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**
Conducted Power (dBm)	32.28	32.51	32.84	26.27	27.10	27.14
Conducted Power (Watts)	1.69	1.78	1.92	0.42	0.51	0.52

PCS Band						
Modes	**GSM1900 (GSM)**			**GSM1900 (EDGE 8)**		
Channel	**512 (Low)**	**661(Mid)**	**810 (High)**	**512 (Low)**	**661 (Mid)**	**810 (High)**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**	**1850.2**	**1880**	**1909.8**
Conducted Power (dBm)	29.68	29.68	29.75	25.01	23.74	24.22
Conducted Power (Watts)	0.93	0.93	0.94	0.32	0.24	0.26

Note: maximum burst average power for GSM.

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.

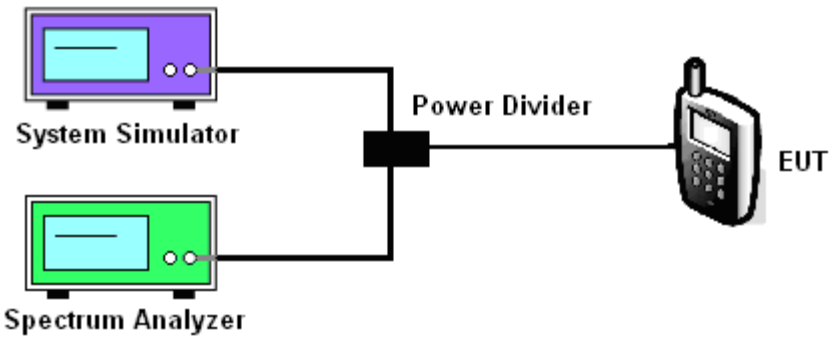
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and System Simulator via power divider.
2. For GSM/EGPRS operating modes:
   a. Set EUT in maximum power output.
   b. Set the RBW = 1MHz, VBW = 3MHz, Peak detector in spectrum analyzer for first trace.
   c. Set the RBW = 1MHz, VBW = 3MHz, RMS detector in 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 synchronized with the spectrum analyzer.
3. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



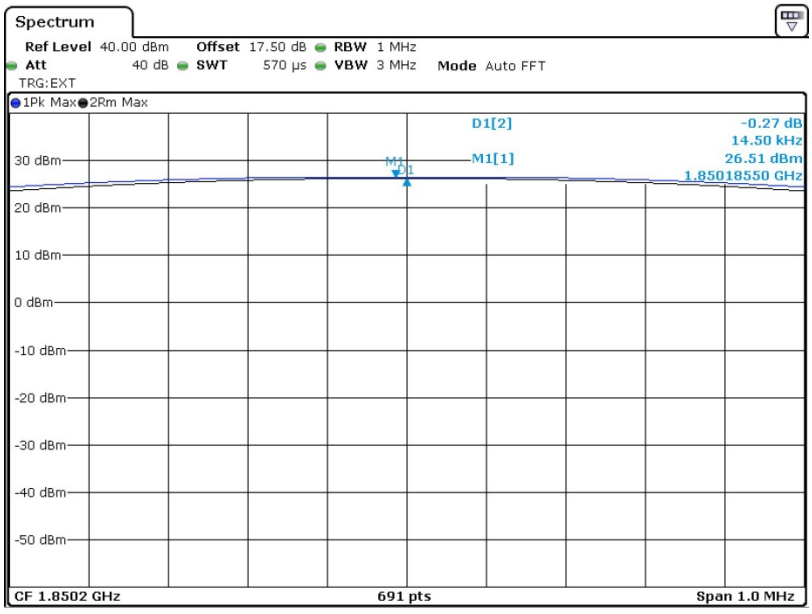
3.2.5 Test Result of Peak-to-Average Ratio

PCS Band						
Modes	**GSM1900 (GSM)**			**GSM1900 (EDGE 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**
Peak-to-Average Ratio (dB)	0.27	0.26	0.27	3.13	3.12	3.18

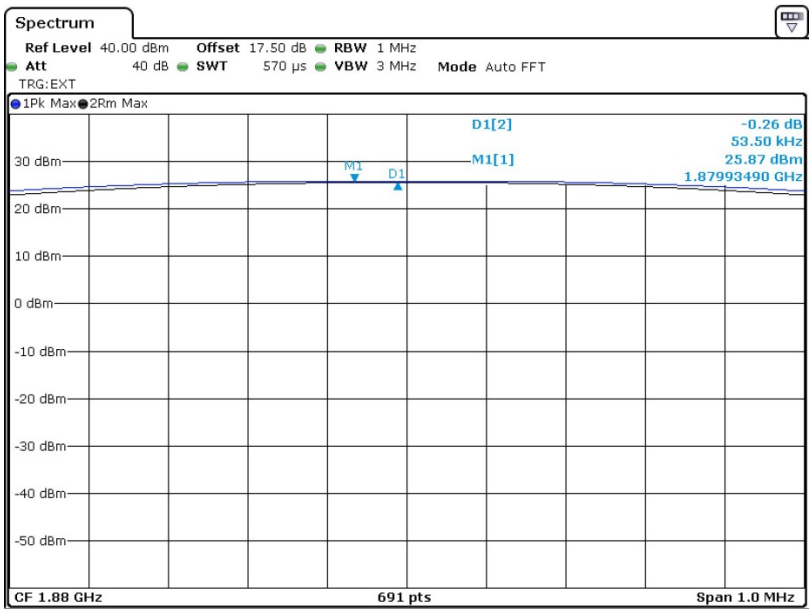
3.2.6 Test Result (Plots) of Peak-to-Average Ratio

Band :	GSM 1900	Test Mode :	GSM Link

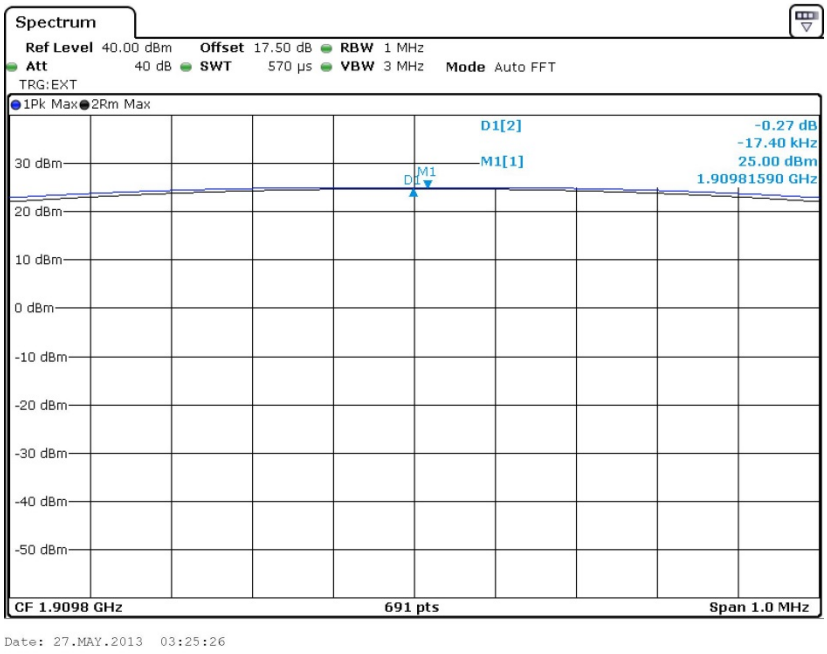
Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



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

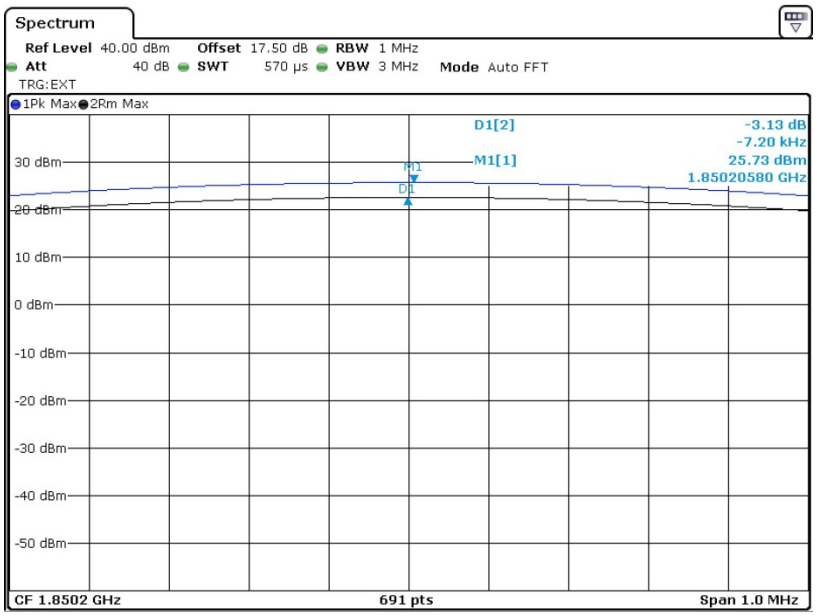


Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Band :	GSM 1900	Test Mode :	EDGE 8 Link

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



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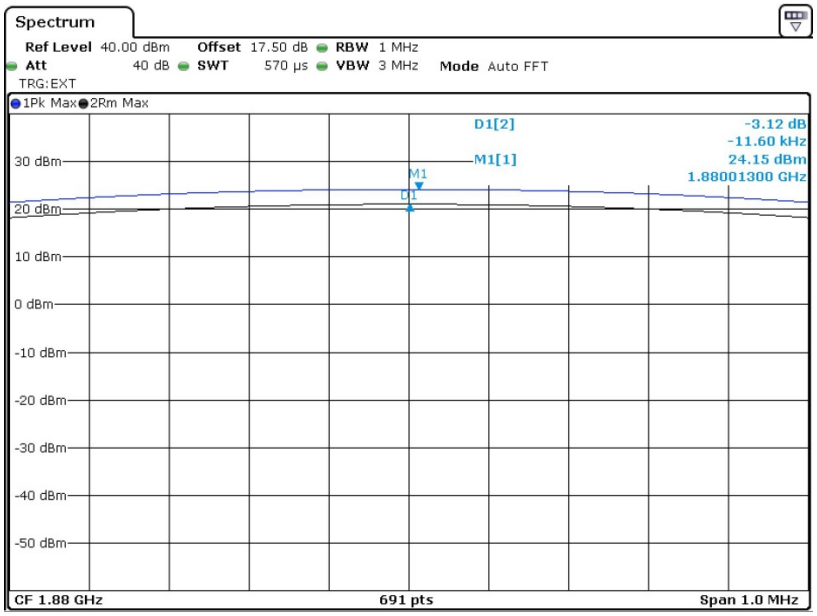
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



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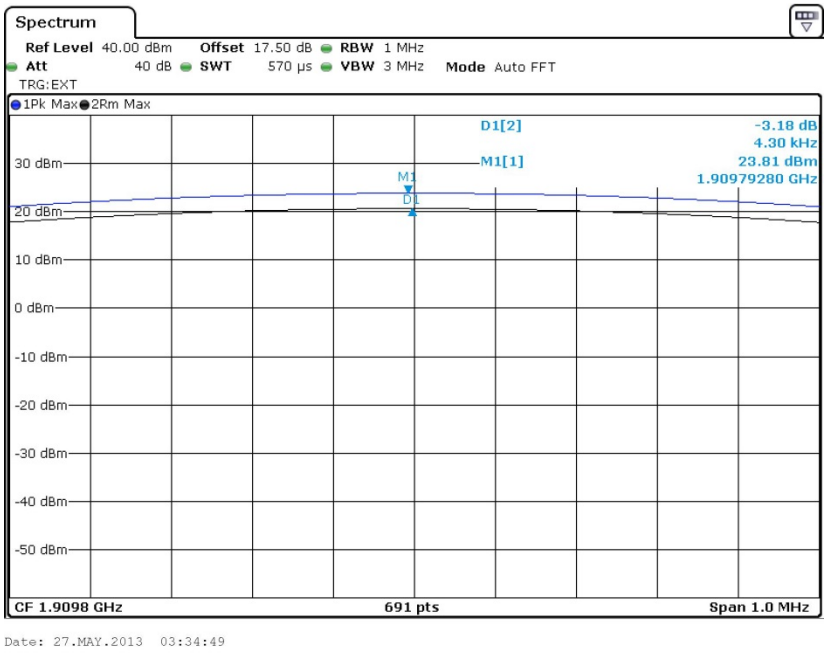
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



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 v02. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

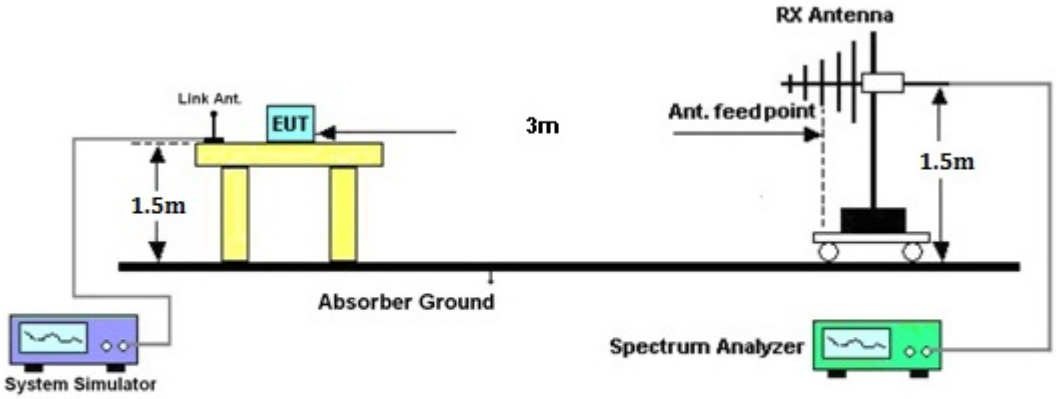
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
   UMTS operating modes: Set RBW= 100 KHz, VBW= 300 KHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. ERP/EIRP = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs
    Ps (dBm)：Input power to substitution antenna.
    Gs (dBi or dBd)：Substitution antenna Gain.
    Et = Rt + AF
    Es = Rs + AF
    AF (dB/m)：Receive antenna factor
    Rt：The highest received signal in spectrum analyzer for EUT.
    Rs：The highest received signal in spectrum analyzer for substitution antenna.

3.3.4 Test Setup



3.3.5 Test Result of ERP

GSM850 (GSM) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**ERP (dBm)**	**ERP (W)**
824.20	-20.51	-48.12	0.00	-1.08	26.53	0.4496
836.40	-19.23	-48.28	0.00	-0.93	28.12	0.6490
848.80	-19.57	-48.35	0.00	-0.76	28.02	0.6342
Vertical Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**ERP (dBm)**	**ERP (W)**
824.20	-36.67	-47.97	0.00	-1.08	10.22	0.0105
836.40	-34.53	-48.01	0.00	-0.93	12.55	0.0180
848.80	-34.22	-48.05	0.00	-0.76	13.07	0.0203

GSM850 (EDGE 8) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**ERP (dBm)**	**ERP (W)**
824.20	-28.21	-48.12	0.00	-1.08	18.83	0.0763
836.40	-25.72	-48.28	0.00	-0.93	21.63	0.1455
848.80	-24.74	-48.35	0.00	-0.76	22.86	0.1930
Vertical Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBd)**	**ERP (dBm)**	**ERP (W)**
824.20	-43.99	-47.97	0.00	-1.08	2.90	0.0019
836.40	-40.70	-48.01	0.00	-0.93	6.38	0.0043
848.80	-39.19	-48.05	0.00	-0.76	8.10	0.0065

3.3.6 Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBi)**	**EIRP (dBm)**	**EIRP (W)**
1850.20	-30.49	-51.88	0.00	1.96	23.35	0.2163
1880.00	-31.46	-52.99	0.00	2.00	23.53	0.2253
1909.80	-31.41	-54.28	0.00	1.98	24.85	0.3052
Vertical Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBi)**	**EIRP (dBm)**	**EIRP (W)**
1850.20	-30.10	-52.13	0.00	1.96	23.99	0.2508
1880.00	-31.06	-53.17	0.00	2.00	24.11	0.2573
1909.80	-30.98	-54.13	0.00	1.98	25.13	0.3259

GSM1900 (EDGE 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBi)**	**EIRP (dBm)**	**EIRP (W)**
1850.20	-31.92	-51.88	0.00	1.96	21.92	0.1557
1880.00	-35.10	-52.99	0.00	2.00	19.89	0.0975
1909.80	-36.49	-54.28	0.00	1.98	19.77	0.0949
Vertical Polarization						
Frequency (MHz)	**Rt (dBm)**	**Rs (dBm)**	**Ps (dBm)**	**Gs (dBi)**	**EIRP (dBm)**	**EIRP (W)**
1850.20	-31.55	-52.13	0.00	1.96	22.54	0.1793
1880.00	-34.76	-53.17	0.00	2.00	20.41	0.1098
1909.80	-35.82	-54.13	0.00	1.98	20.29	0.1068

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

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

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

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

3.4.2 Measuring Instruments

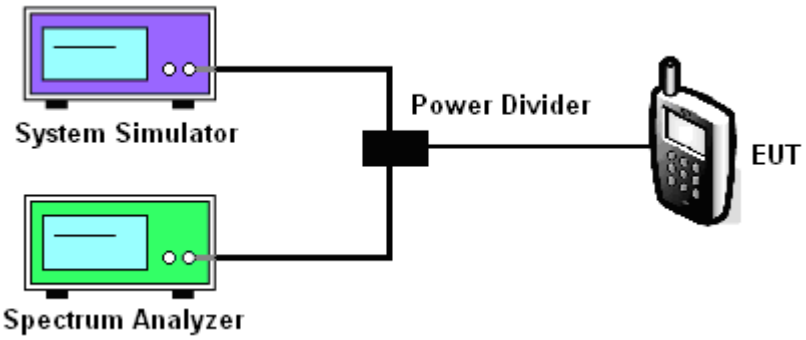
See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of 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.

   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 99% Occupied Bandwidth and 26dB Bandwidth

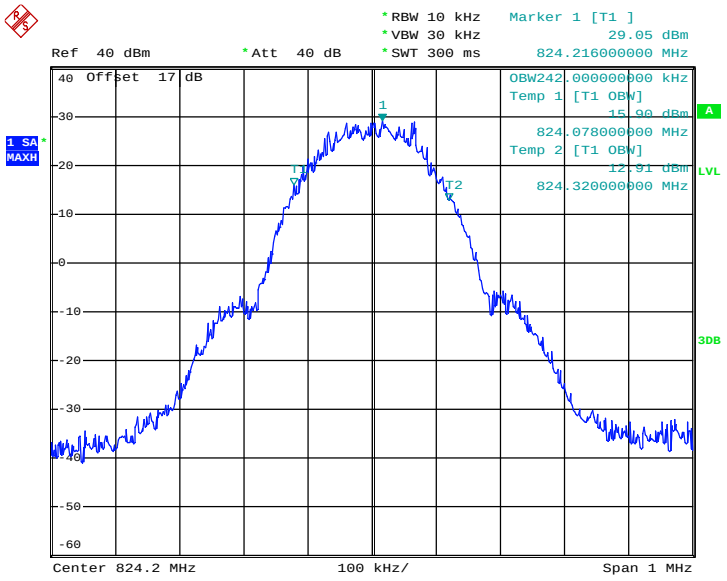
Cellular Band						
Modes	**GSM850 (GSM)**			**GSM850 (EDGE 8)**		
Channel	**128 (Low)**	**189 (Mid)**	**251 (High)**	**128 (Low)**	**189 (Mid)**	**251 (High)**
Frequency (MHz)	**824.2**	**836.4**	**848.8**	**824.2**	**836.4**	**848.8**
99% OBW (kHz)	242.00	246.00	242.00	252.00	248.00	248.00
26dB BW (kHz)	306.00	308.00	308.00	316.00	308.00	308.00

PCS Band						
Modes	**GSM1900 (GSM)**			**GSM1900 (EDGE 8)**		
Channel	**512 (Low)**	**661 (Mid)**	**810 (High)**	**512 (Low)**	**661 (Mid)**	**810 (High)**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**	**1850.2**	**1880**	**1909.8**
99% OBW (kHz)	248.00	246.00	246.00	242.00	244.00	244.00
26dB BW (kHz)	310.00	310.00	314.00	304.00	308.00	302.00

3.4.6 Test Result (Plots) of 99% Occupied Bandwidth and 26dB Bandwidth

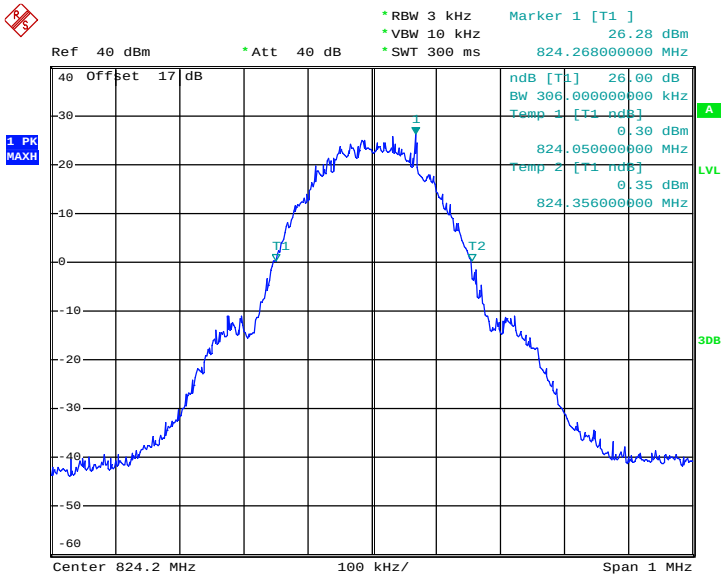
Band :	GSM 850	Test Mode :	GSM Link

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



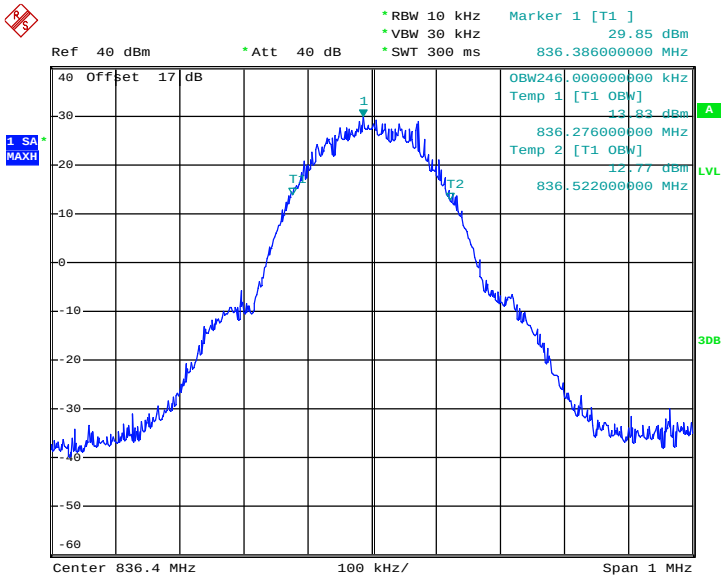
Date: 24.MAY.2013 23:33:38

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



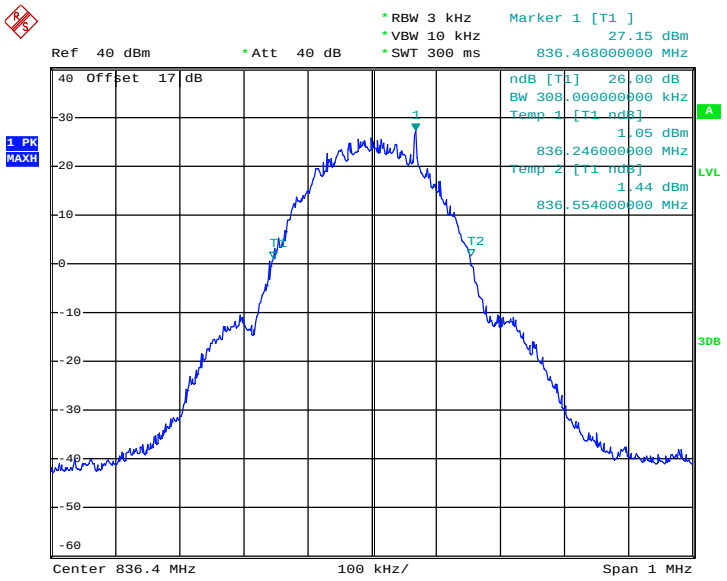
Date: 24.MAY.2013 23:23:10

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



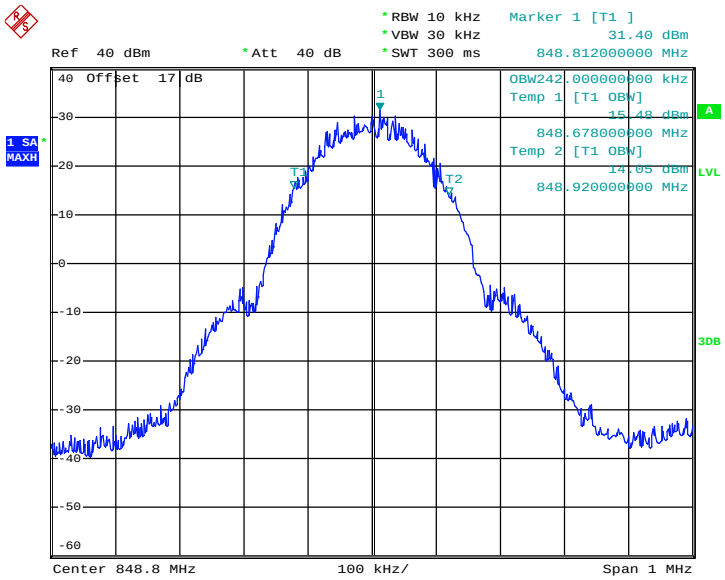
Date: 24.MAY.2013 23:39:15

26dB Bandwidth Plot on Channel 189 (836.4 MHz)



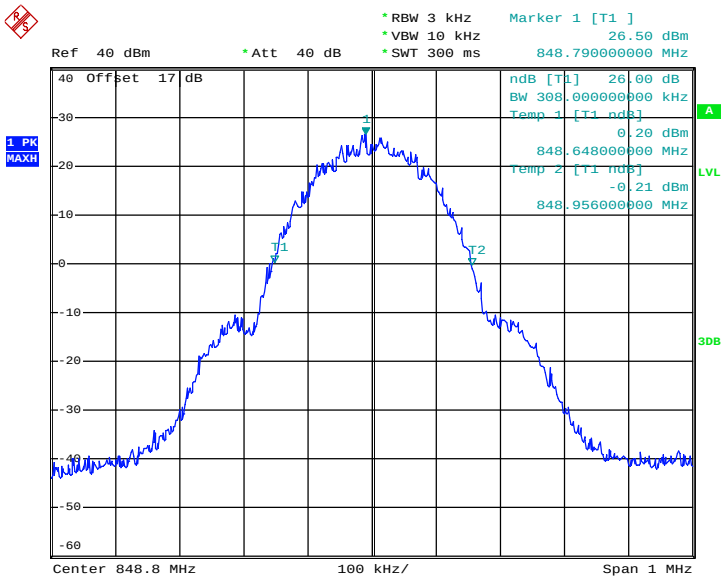
Date: 24.MAY.2013 23:21:08

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



Date: 24.MAY.2013 23:41:19

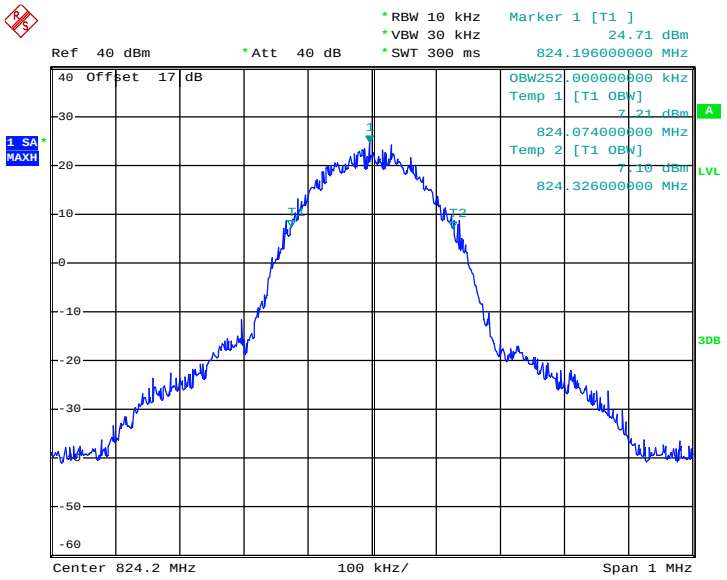
26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 24.MAY.2013 23:24:46

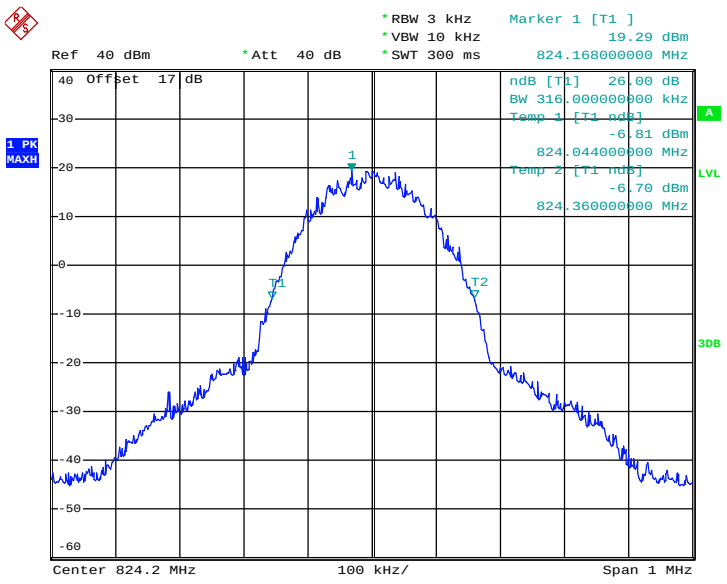
Band :	GSM 850	Test Mode :	EDGE 8 Link

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



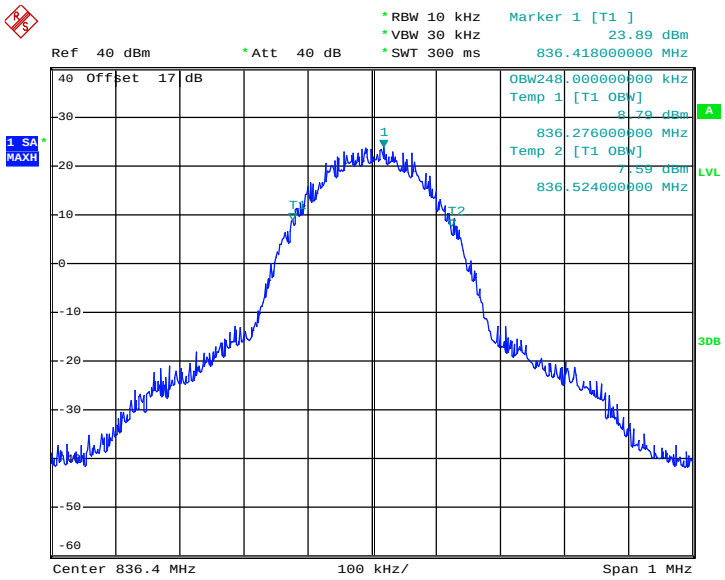
Date: 25.MAY.2013 02:49:02

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



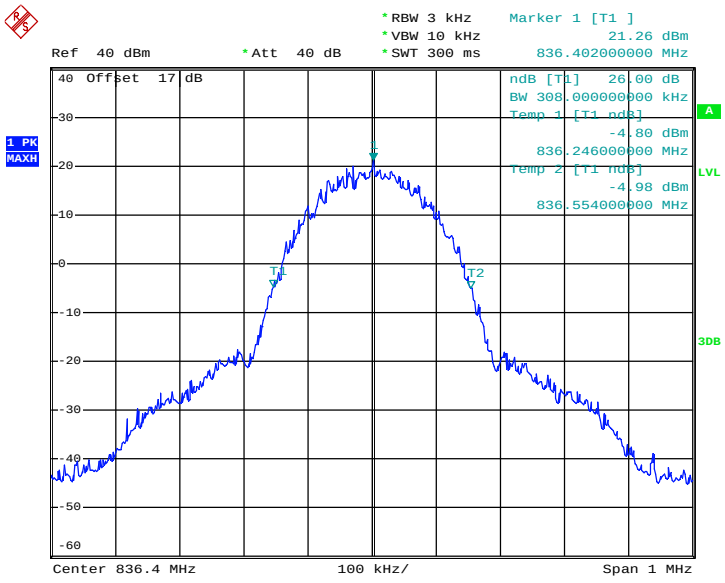
Date: 25.MAY.2013 02:27:57

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



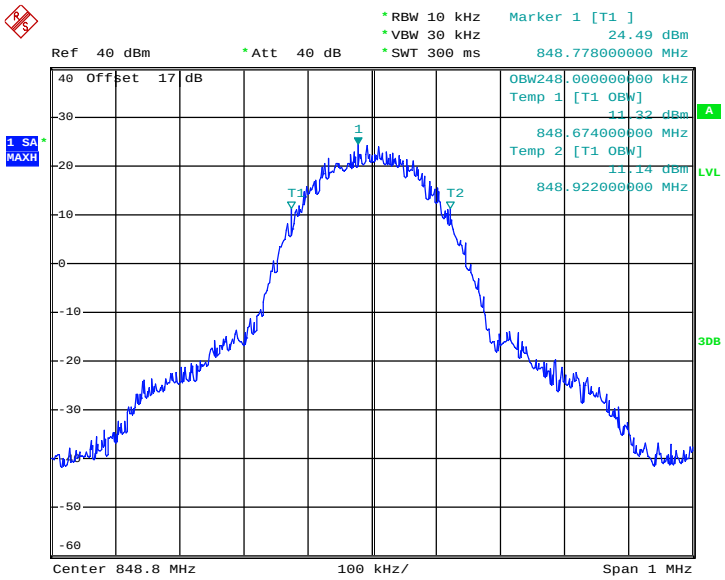
Date: 25.MAY.2013 02:55:41

26dB Bandwidth Plot on Channel 189 (836.4 MHz)



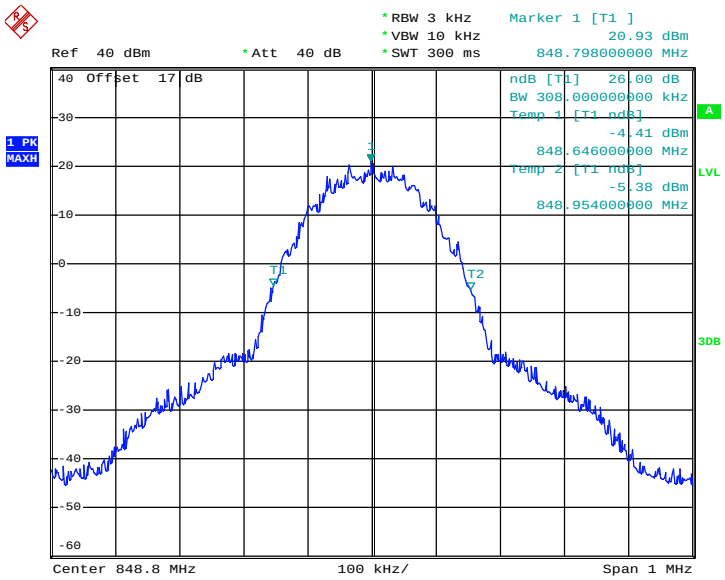
Date: 25.MAY.2013 02:29:57

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



Date: 25.MAY.2013 03:02:29

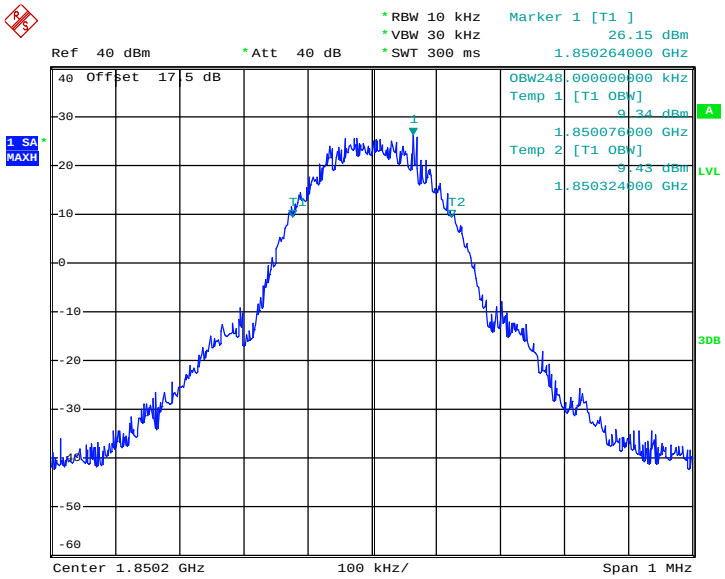
26dB Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 25.MAY.2013 02:31:37

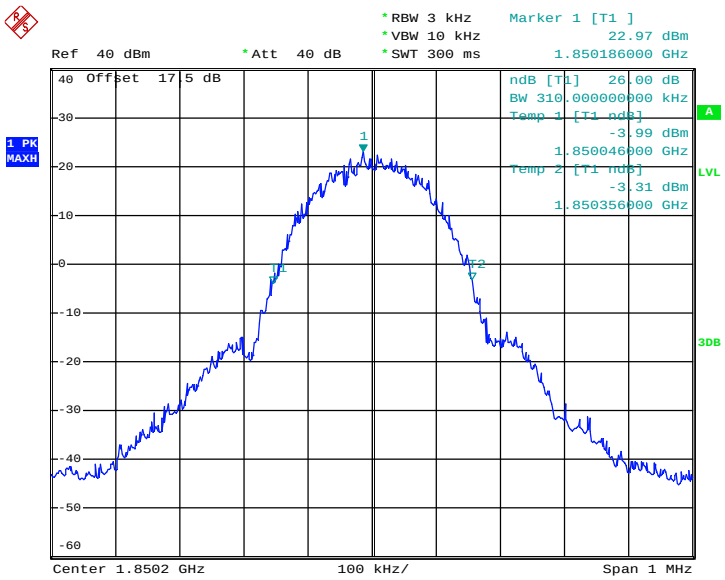
Band :	GSM 1900	Test Mode :	GSM Link

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



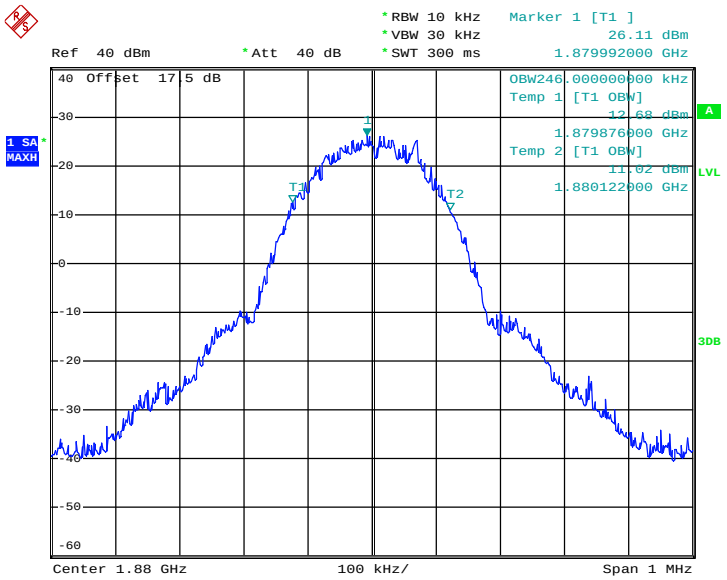
Date: 25.MAY.2013 00:31:21

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)

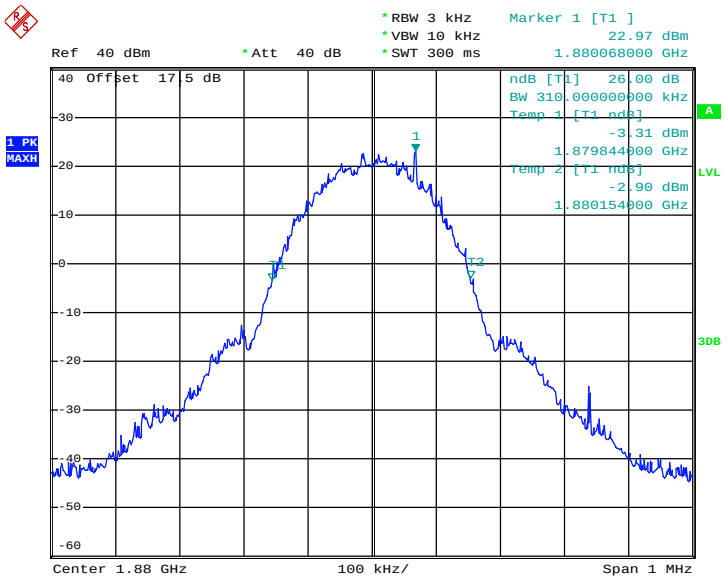


Date: 25.MAY.2013 00:35:00

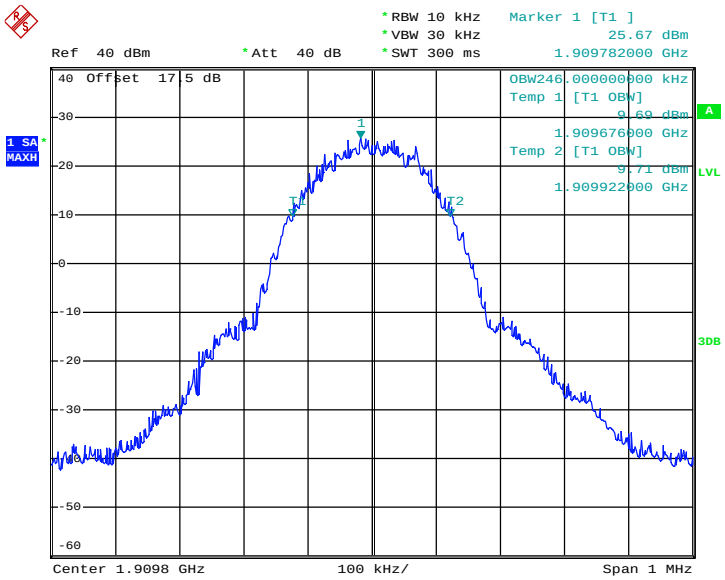
99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



26dB Bandwidth Plot on Channel 661 (1880.0 MHz)

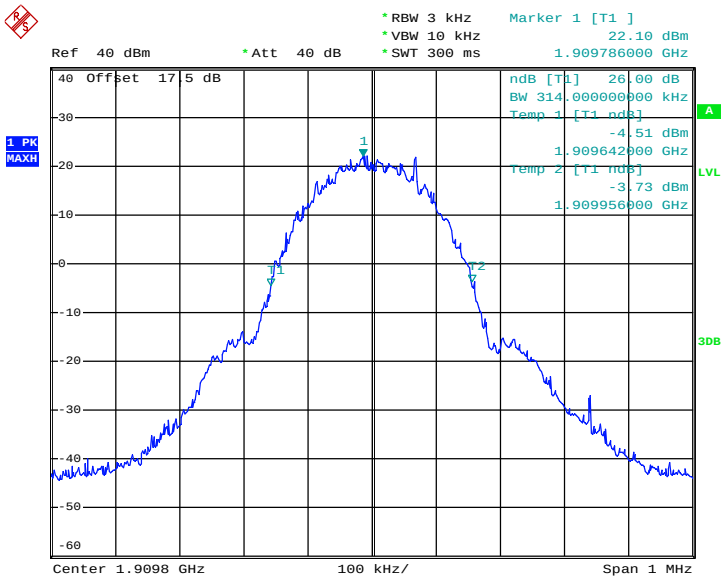


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 25.MAY.2013 00:23:06

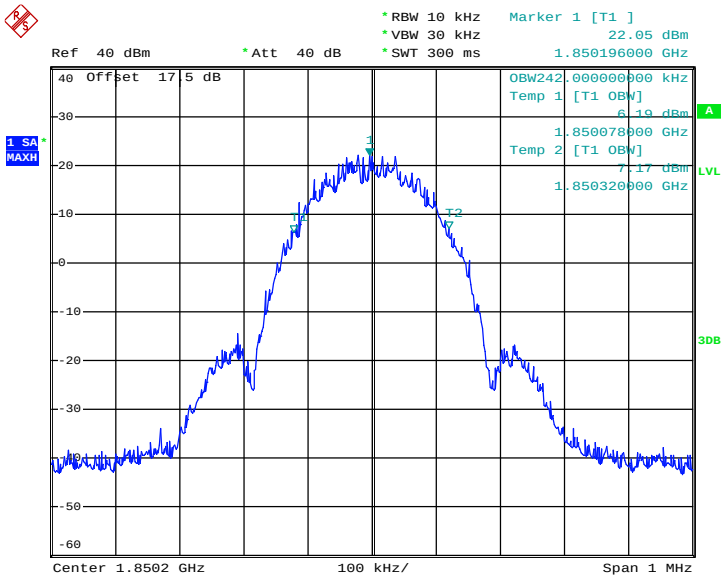
26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



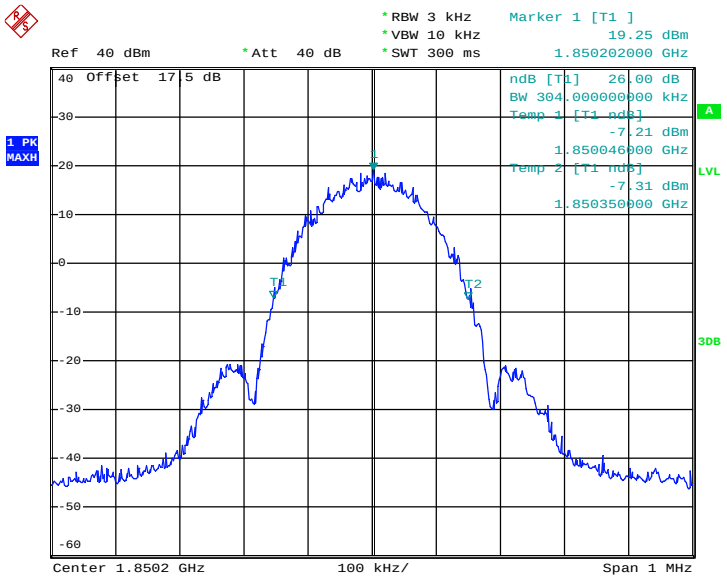
Date: 25.MAY.2013 00:40:35

Band :	GSM 1900	Test Mode :	EDGE 8 Link

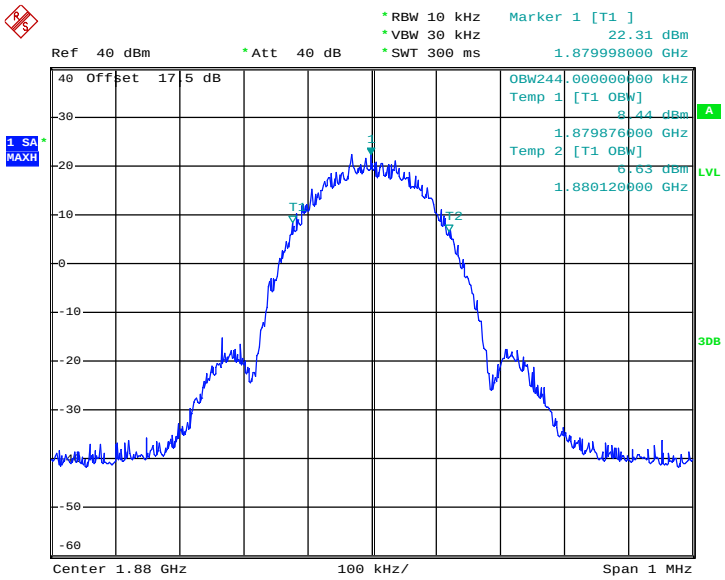
99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



26dB Bandwidth Plot on Channel 512 (1850.2 MHz)

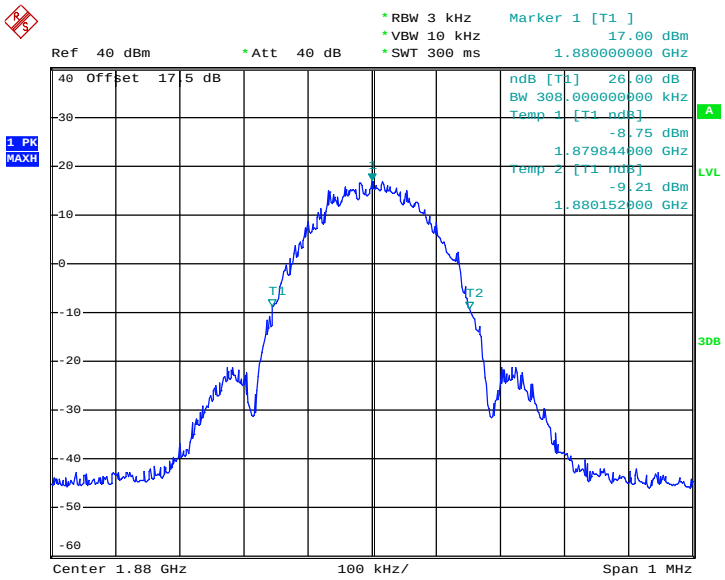


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



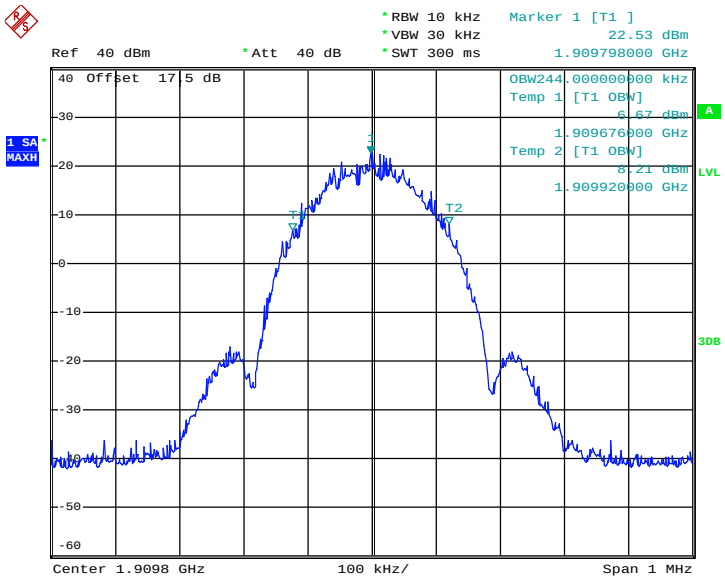
Date: 25.MAY.2013 01:58:30

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



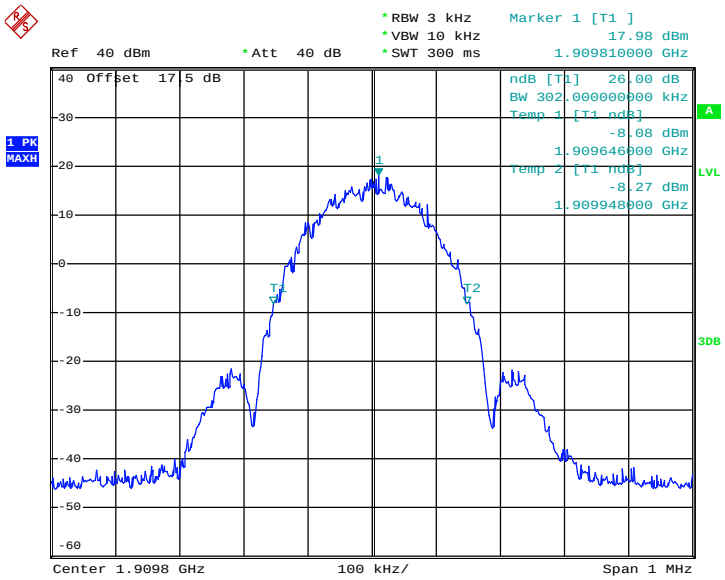
Date: 25.MAY.2013 01:41:10

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



Date: 25.MAY.2013 01:48:06

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 25.MAY.2013 01:44:54

3.5 Band Edge Measurement

3.5.1 Description of Band Edge Measurement

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

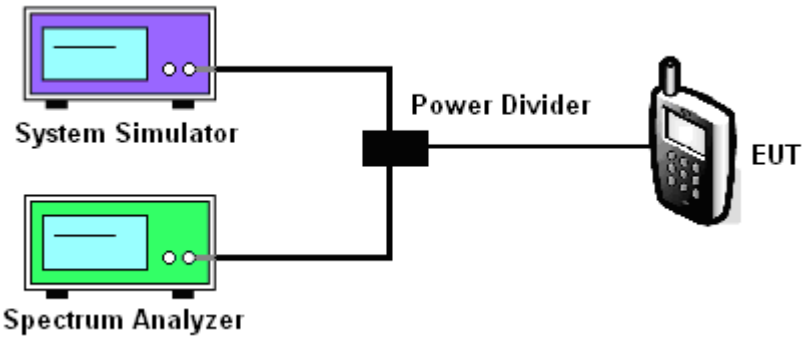
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of 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 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.

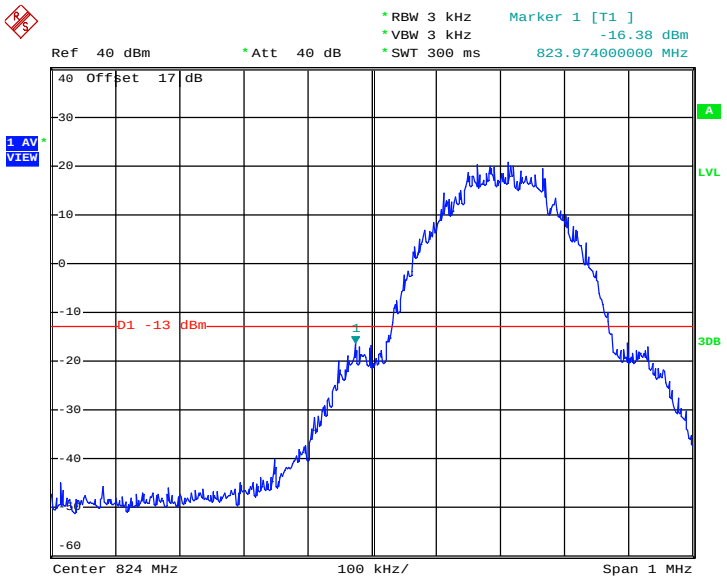
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Band Edge

Band :	GSM850	Test Mode :	GSM Link
Correction Factor :	0.11dB	Maximum 26dB Bandwidth :	0.308MHz
Band Edge :	-16.27dBm	Measurement Value :	-16.38dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)



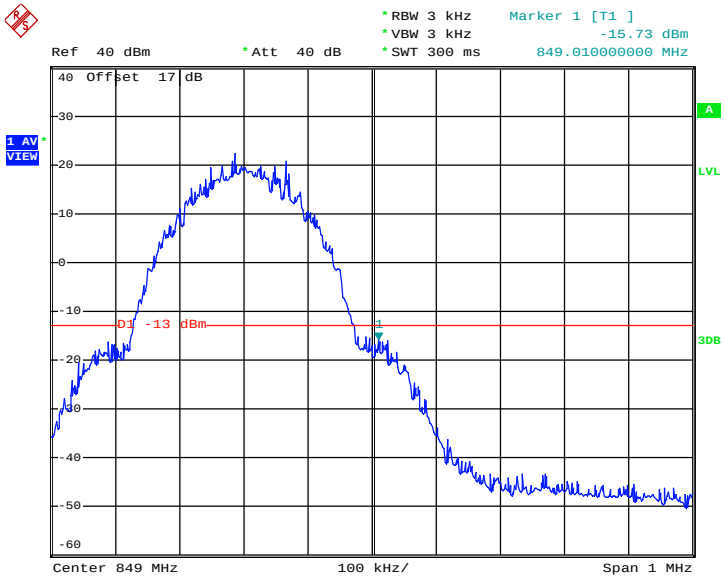
1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

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

For example, -16.38dBm + 0.11dB = -16.27dBm

Band :	GSM850	Test Mode :	GSM Link
Correction Factor :	0.11dB	Maximum 26dB Bandwidth :	0.308MHz
Band Edge :	-15.62dBm	Measurement Value :	-15.73dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



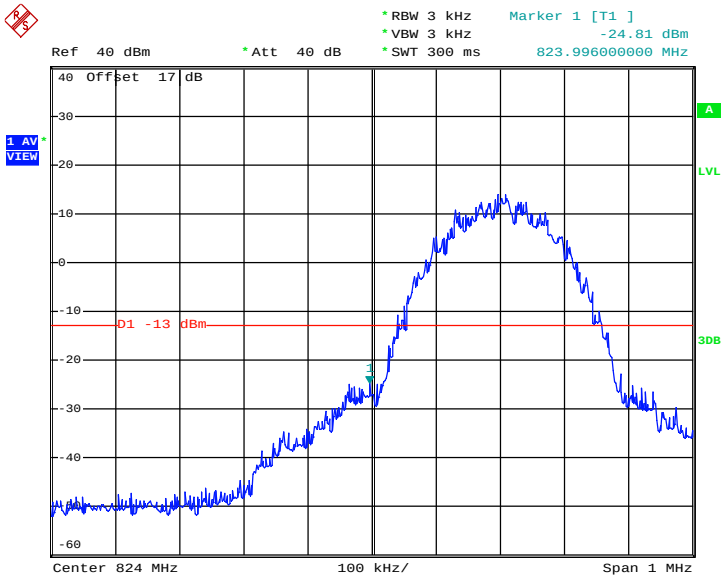
Date: 25.MAY.2013 00:06:35

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

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

Band :	GSM850	Test Mode :	EDGE 8 Link
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-24.58dBm	Measurement Value :	-24.81dBm

Lower Band Edge Plot on Channel 128 (824.2 MHz)



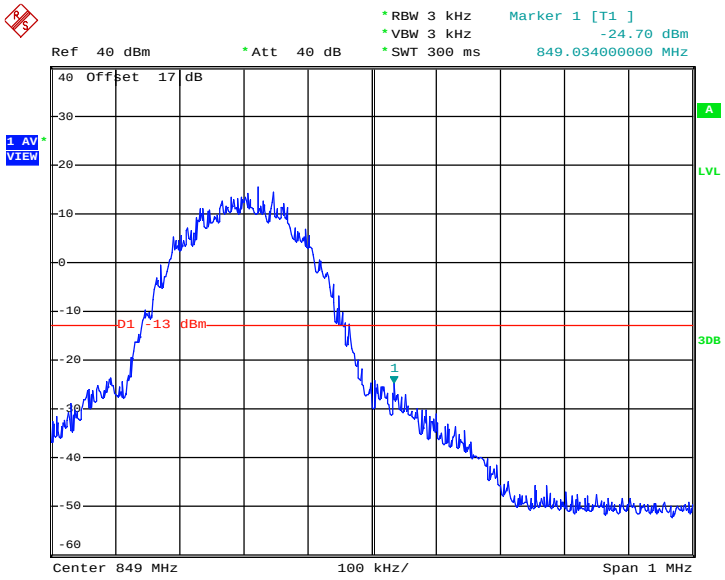
Date: 25.MAY.2013 02:17:24

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

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

Band :	GSM850	Test Mode :	EDGE 8 Link
Correction Factor :	0.23dB	Maximum 26dB Bandwidth :	0.316MHz
Band Edge :	-24.47dBm	Measurement Value :	-24.70dBm

Higher Band Edge Plot on Channel 251 (848.8 MHz)



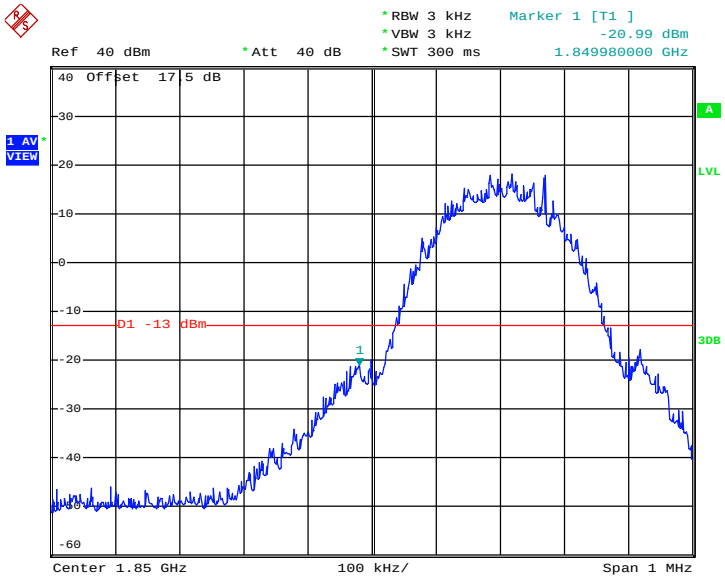
Date: 25.MAY.2013 02:18:37

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

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

Band :	GSM1900	Test Mode :	GSM Link
Correction Factor :	0.20dB	Maximum 26dB Bandwidth :	0.314MHz
Band Edge :	-20.79dBm	Measurement Value :	-20.99dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)



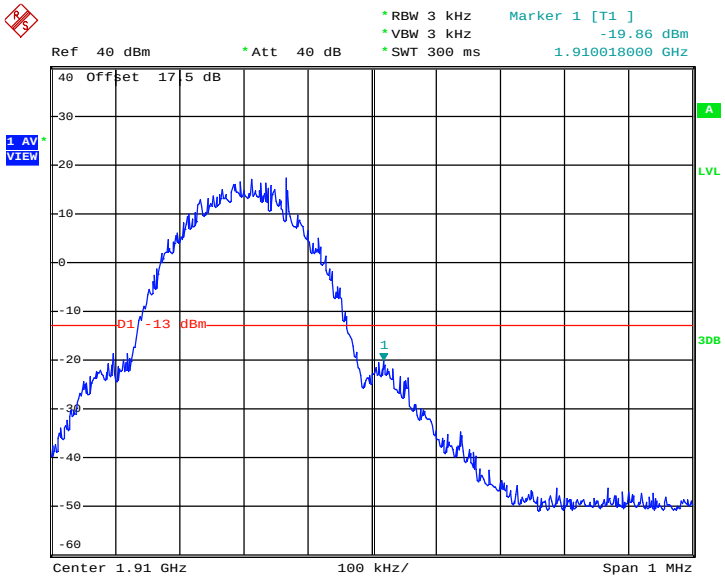
Date: 25.MAY.2013 00:15:33

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

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

Band :	GSM1900	Test Mode :	GSM Link
Correction Factor :	0.20dB	Maximum 26dB Bandwidth :	0.314MHz
Band Edge :	-19.66dBm	Measurement Value :	-19.86dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



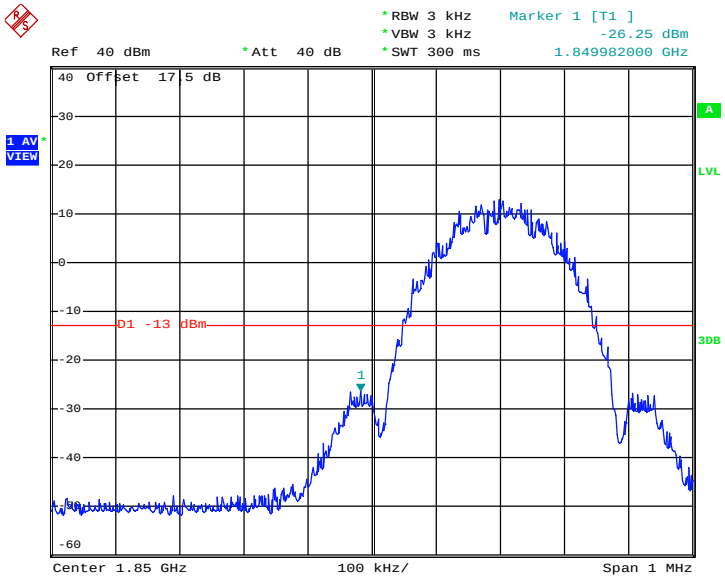
Date: 25.MAY.2013 00:20:07

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

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

Band :	GSM1900	Test Mode :	EDGE 8 Link
Correction Factor :	0.11dB	Maximum 26dB Bandwidth :	0.308MHz
Band Edge :	-26.14dBm	Measurement Value :	-26.25dBm

Lower Band Edge Plot on Channel 512 (1850.2 MHz)

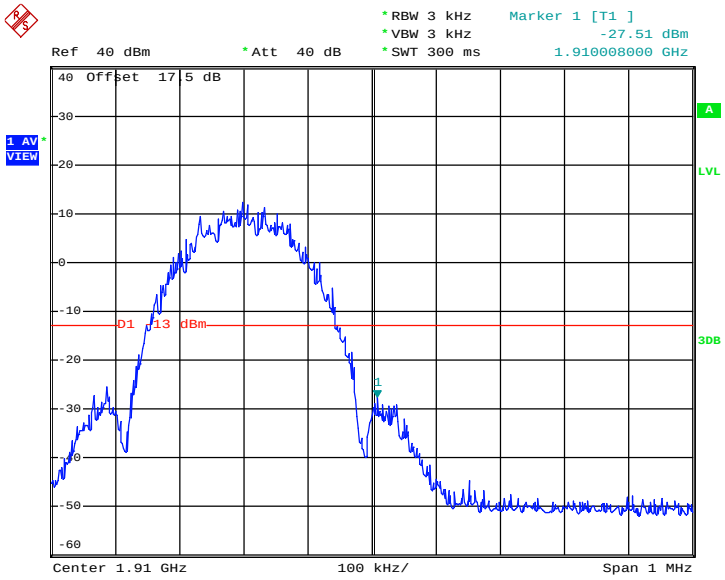


1. Correction Factor(dB)= 10log(1% Emission BW/RBW)

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

Band :	GSM1900	Test Mode :	EDGE 8 Link
Correction Factor :	0.11dB	Maximum 26dB Bandwidth :	0.308MHz
Band Edge :	-27.40dBm	Measurement Value :	-27.51dBm

Higher Band Edge Plot on Channel 810 (1909.8 MHz)



Date: 25.MAY.2013 02:25:15

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

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

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

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

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

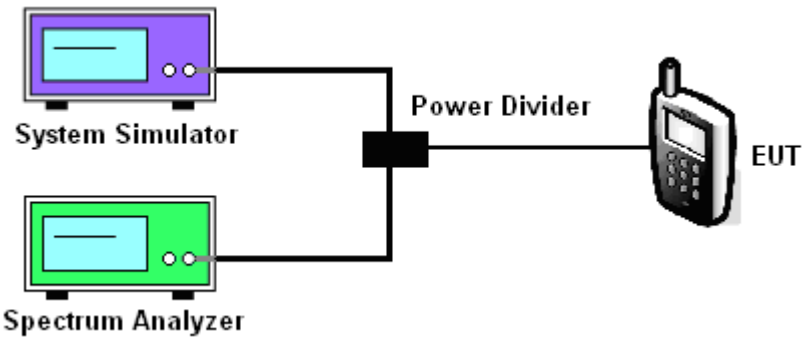
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

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

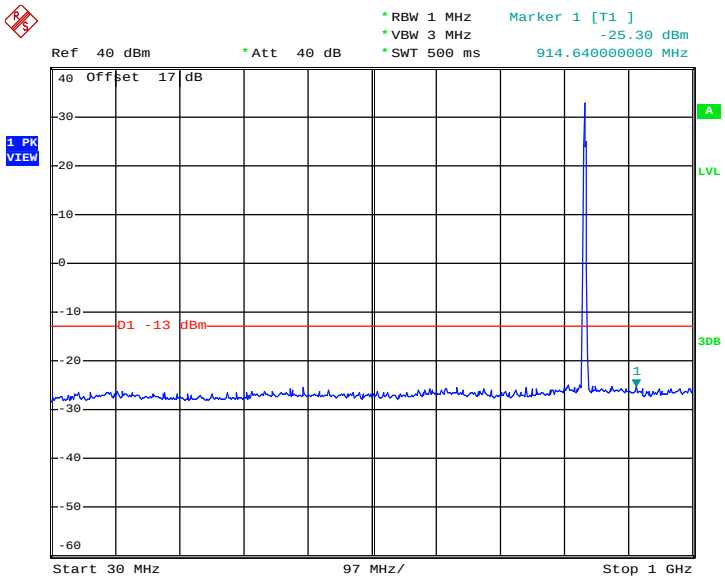
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

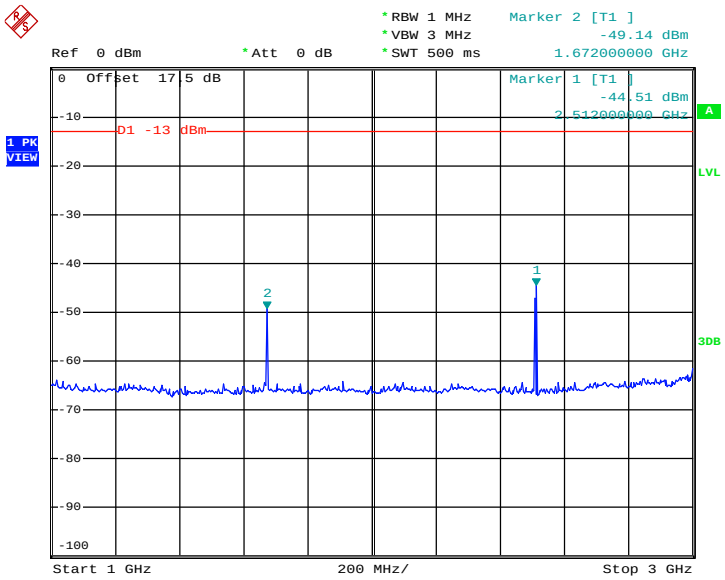
Band :	GSM850	Channel :	CH189
Test Mode :	GSM Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



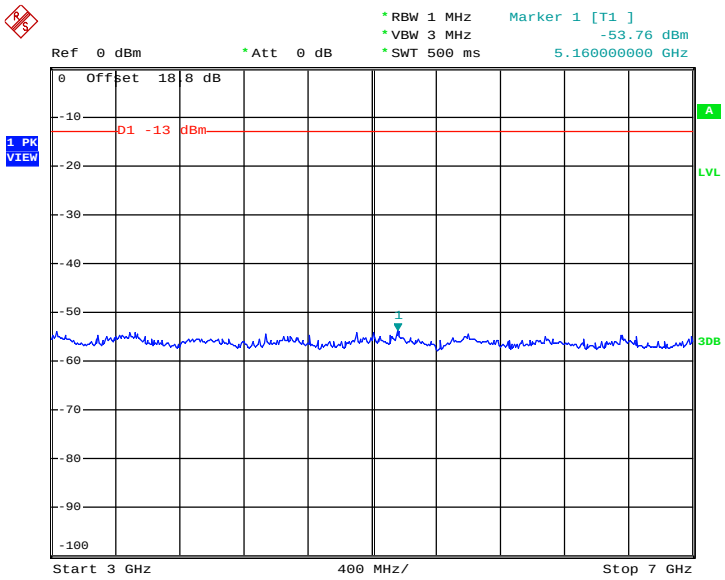
Date: 25.MAY.2013 01:00:03

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



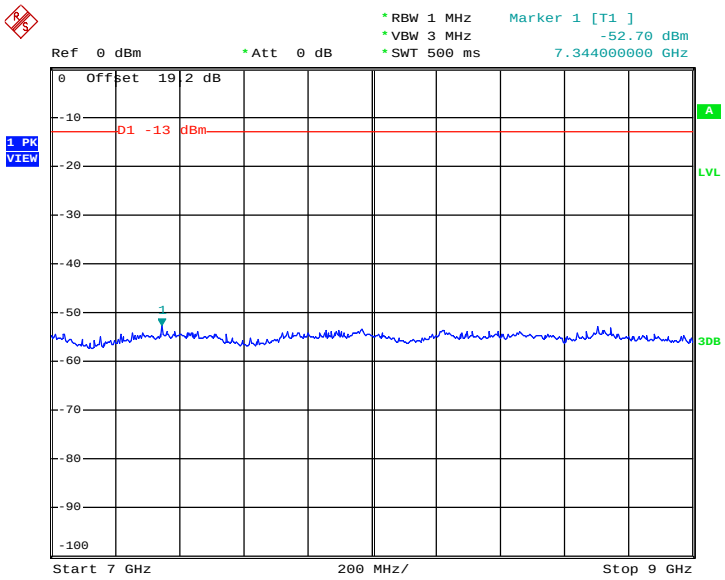
Date: 25.MAY.2013 01:11:54

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 25.MAY.2013 01:12:55

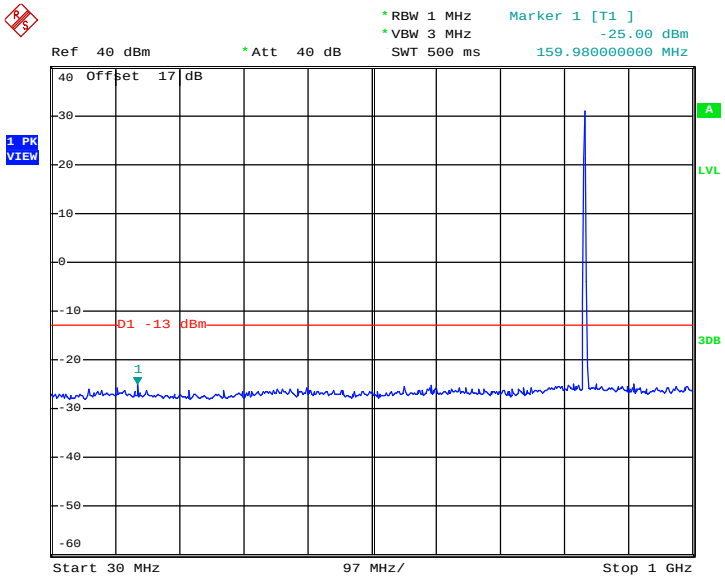
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 25.MAY.2013 01:14:28

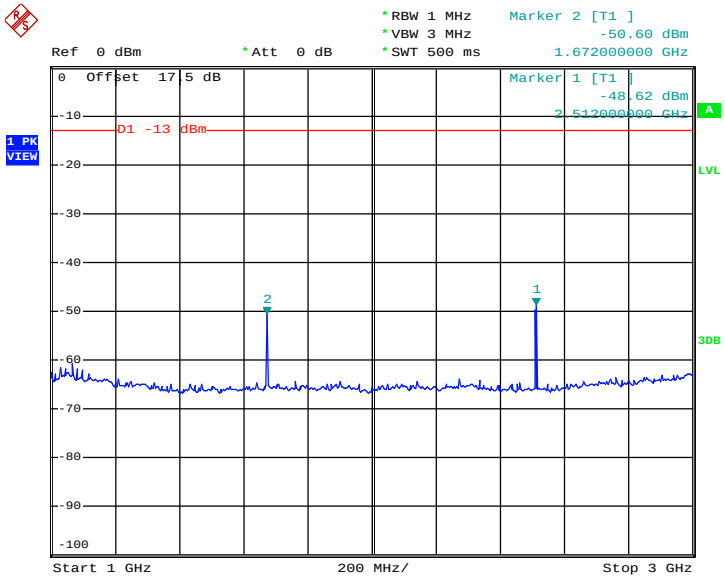
Band :	GSM850	Channel :	CH189
Test Mode :	EDGE 8 Link	Frequency :	836.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



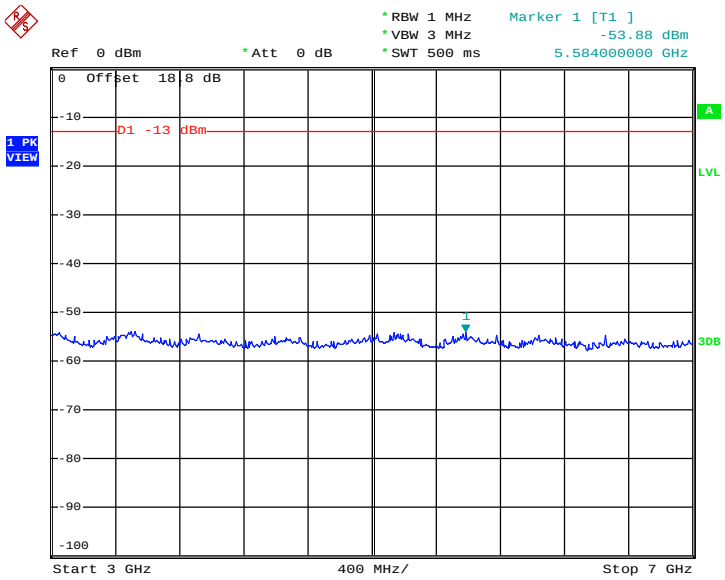
Date: 25.MAY.2013 01:26:21

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



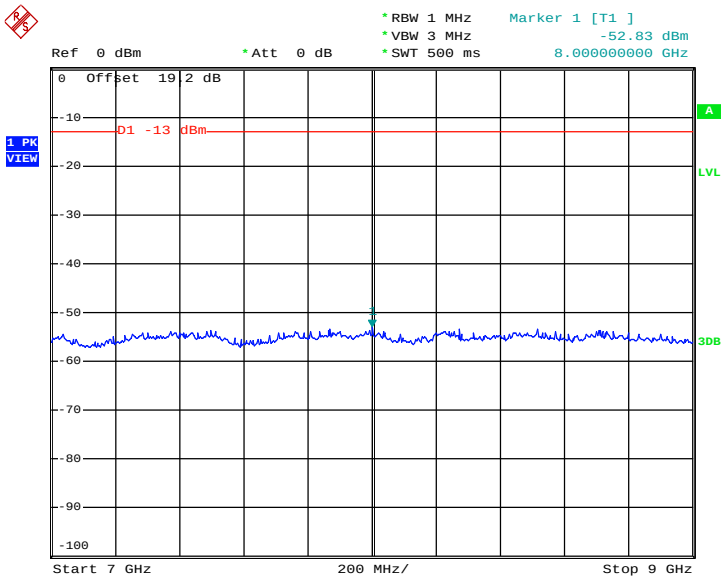
Date: 25.MAY.2013 01:21:48

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



Date: 25.MAY.2013 01:23:07

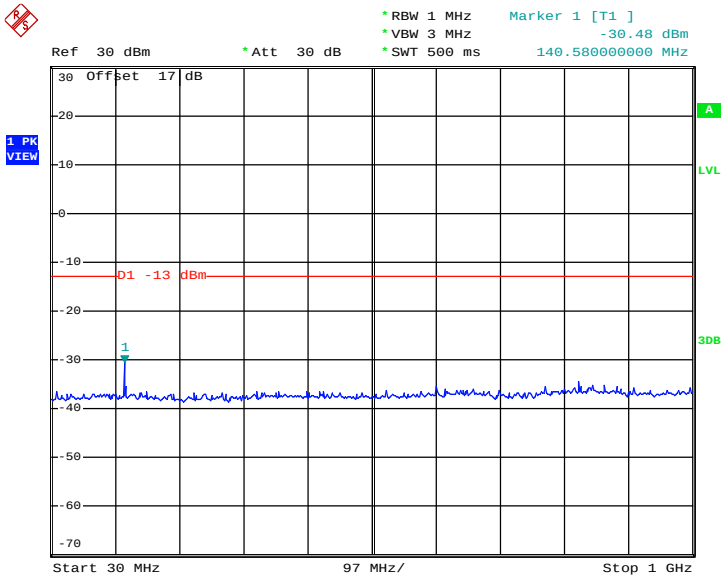
Conducted Spurious Emission Plot between 7GHz ~ 9GHz



Date: 25.MAY.2013 01:18:33

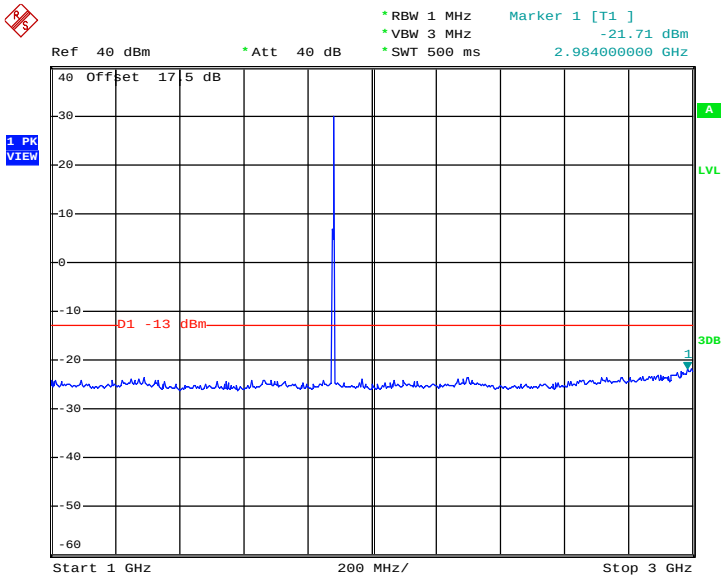
Band :	GSM1900	Channel :	CH661
Test Mode :	GSM Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



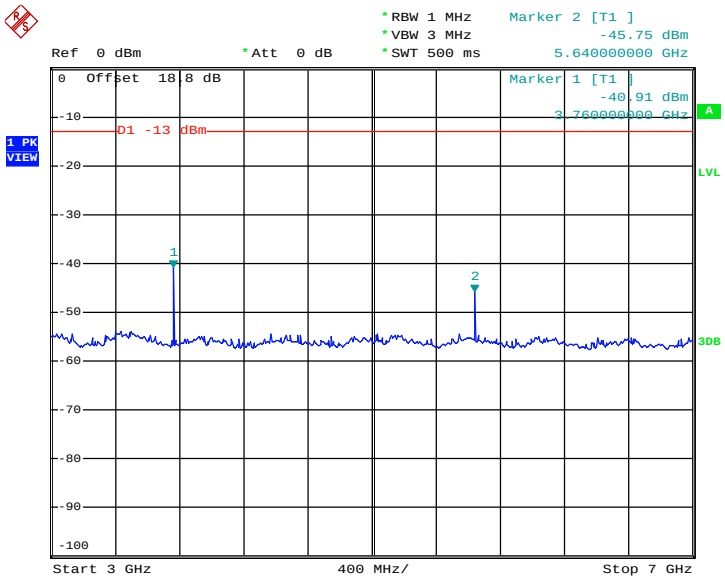
Date: 25.MAY.2013 00:43:43

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



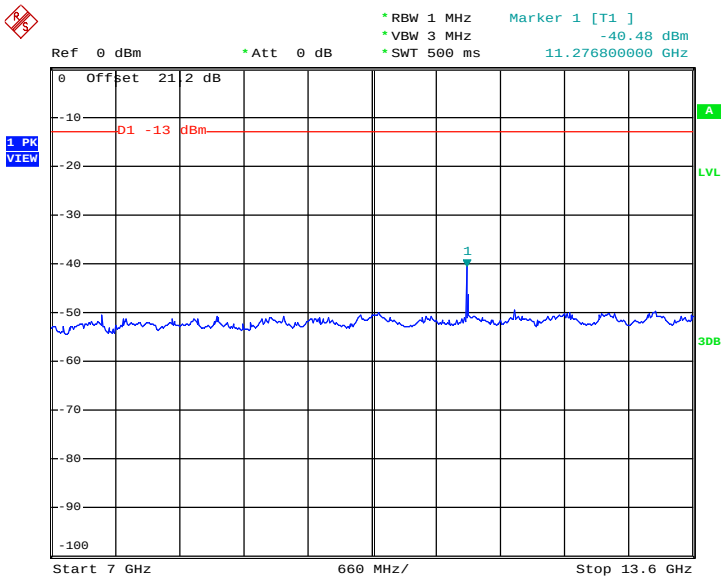
Date: 25.MAY.2013 00:46:07

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



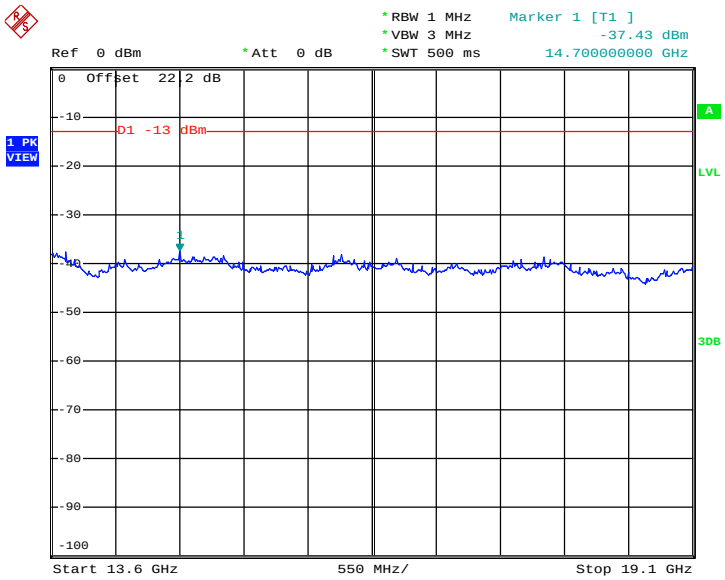
Date: 25.MAY.2013 00:49:34

Conducted Emission Plot between 7GHz ~ 13.6GHz



Date: 25.MAY.2013 00:53:58

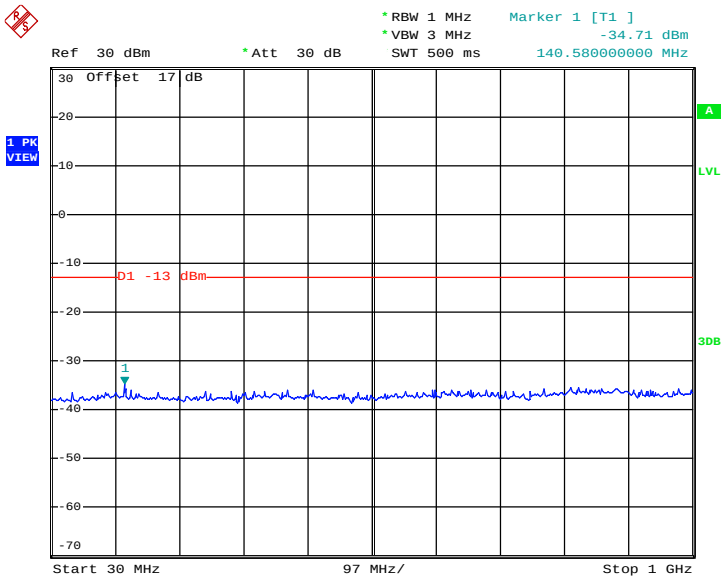
Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 25.MAY.2013 00:55:11

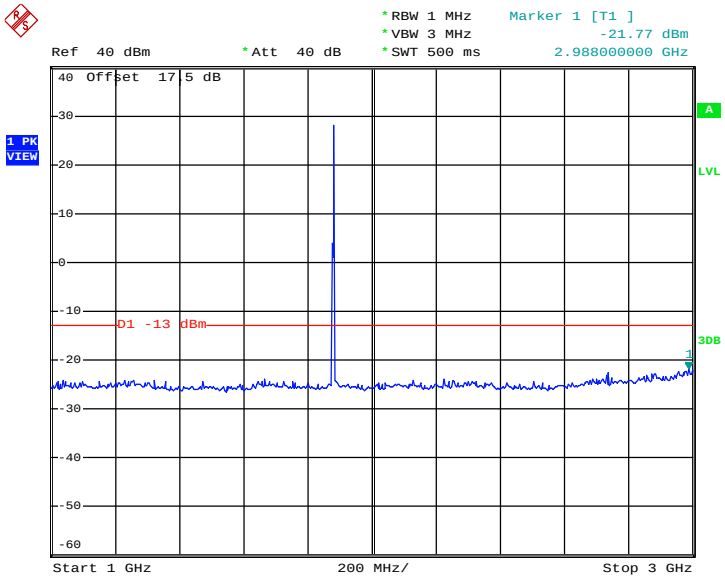
Band :	GSM1900	Channel :	CH661
Test Mode :	EDGE 8 Link	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 1GHz



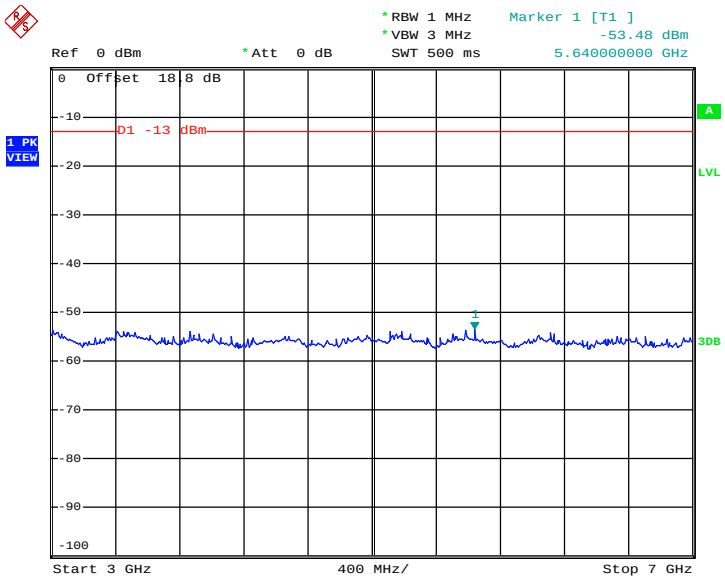
Date: 25.MAY.2013 01:29:21

Conducted Spurious Emission Plot between 1GHz ~ 3GHz



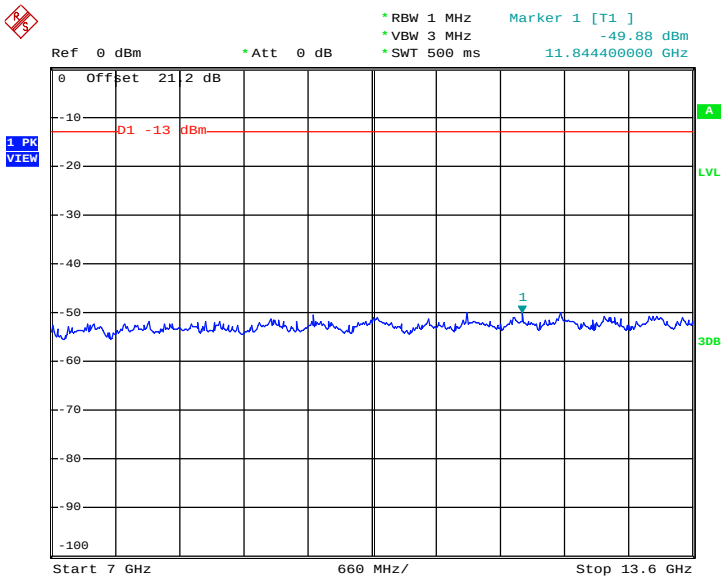
Date: 25.MAY.2013 01:31:03

Conducted Spurious Emission Plot between 3GHz ~ 7GHz



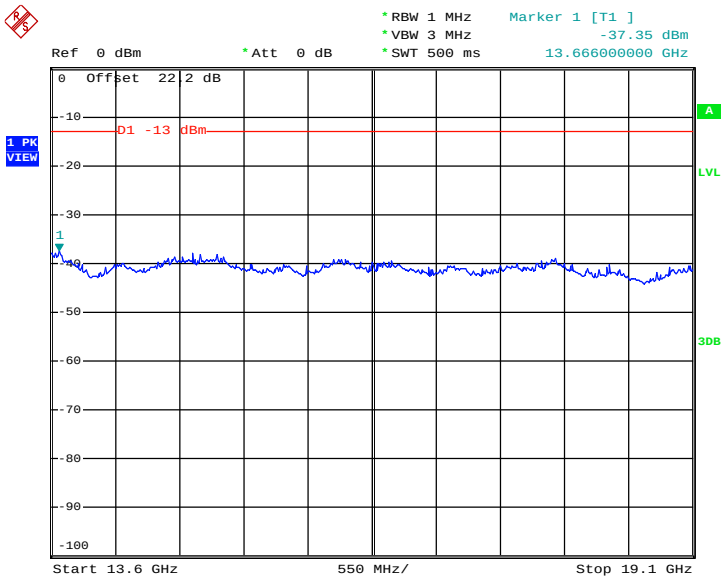
Date: 25.MAY.2013 01:33:54

Conducted Spurious Emission Plot between 7GHz ~ 13.6GHz



Date: 25.MAY.2013 01:34:43

Conducted Spurious Emission Plot between 13.6GHz ~ 19.1GHz



Date: 25.MAY.2013 01:35:40

3.7 Field Strength of Spurious Radiated 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

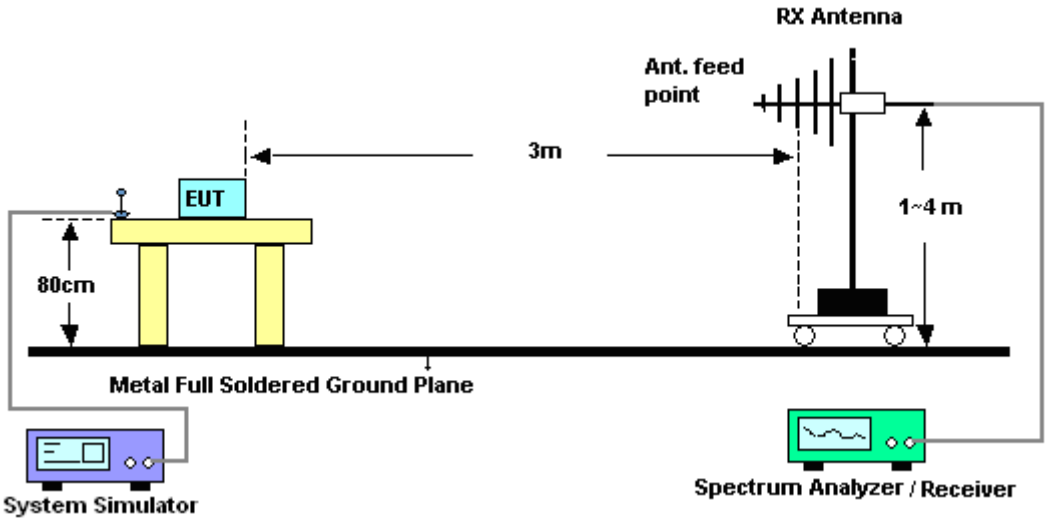
See list of measuring instruments of this test report.

3.7.3 Test Procedures

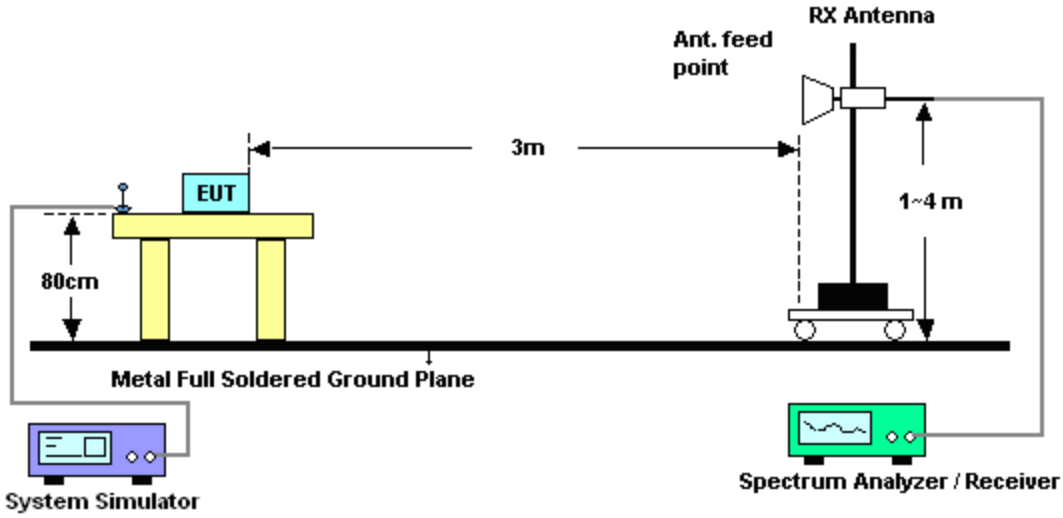
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. 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

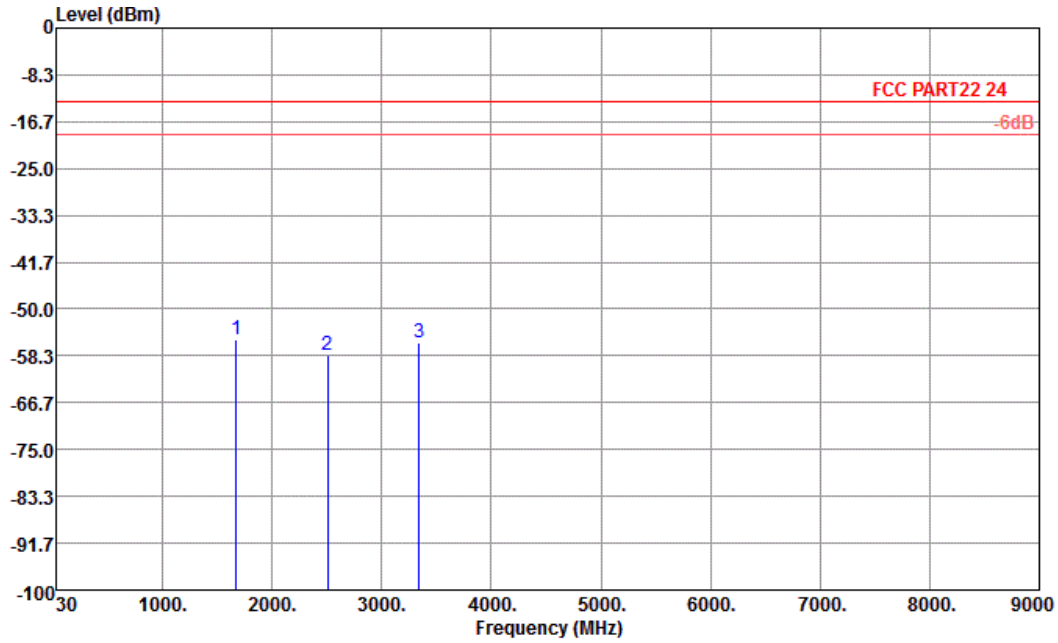


For radiated emissions above 1GHz



3.7.5 Test Result of Field Strength of Spurious Radiated

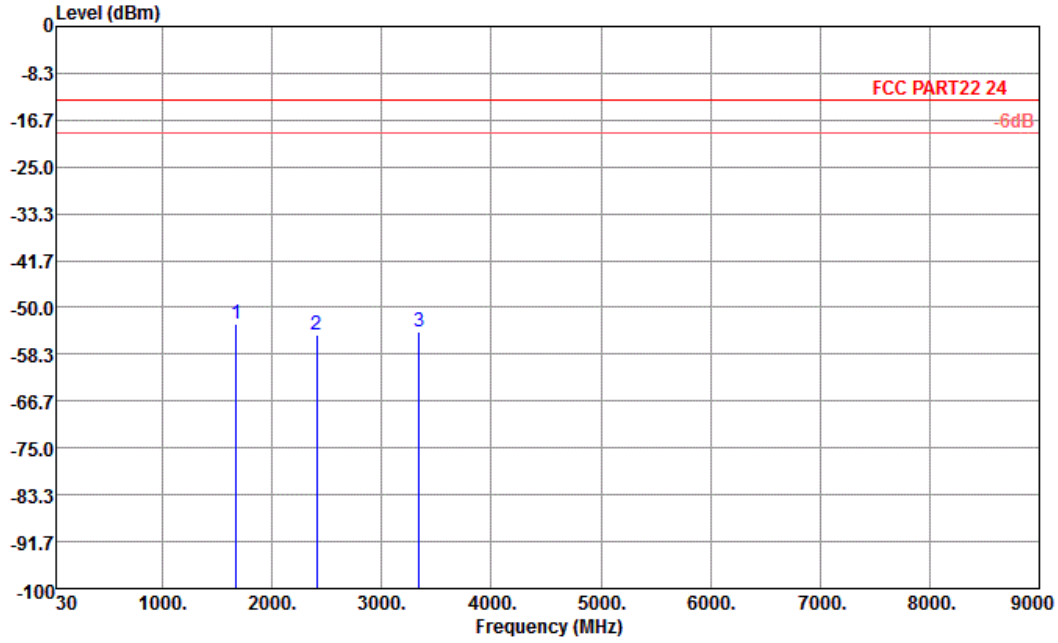
Band :	GSM850	Temperature :	23~24°C
Test Mode :	GSM Link + USB Cable (Charging from Adapter) + SIM 1	Relative Humidity :	43~44%
Test Engineer :	Stone Gu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR HORIZONTAL
EUT : (FG) 351601

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
1674	-55.42	-13	-42.42	-56.35	-56.07	0.57	3.37	H	Pass
2508	-58.08	-13	-45.08	-63.79	-60.31	0.78	5.16	H	Pass
3344	-55.91	-13	-42.91	-62.55	-59.55	0.87	6.66	H	Pass

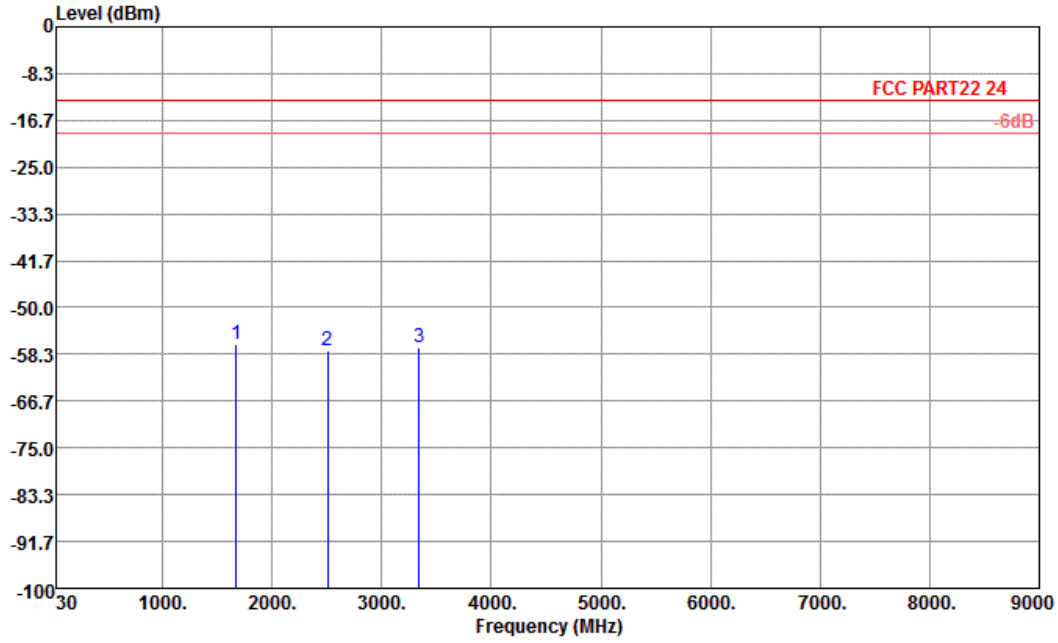
Band :	GSM850	**Temperature :**	23~24°C
Test Mode :	GSM Link + USB Cable (Charging from Adapter) + SIM 1	**Relative Humidity :**	43~44%
Test Engineer :	Stone Gu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR VERTICAL
EUT : (FG) 351601

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
1674	-52.87	-13	-39.87	-56.95	-53.52	0.57	3.37	V	Pass
2408	-54.79	-13	-41.79	-62.98	-57.02	0.78	5.16	V	Pass
3344	-54.18	-13	-41.18	-62.63	-57.82	0.87	6.66	V	Pass

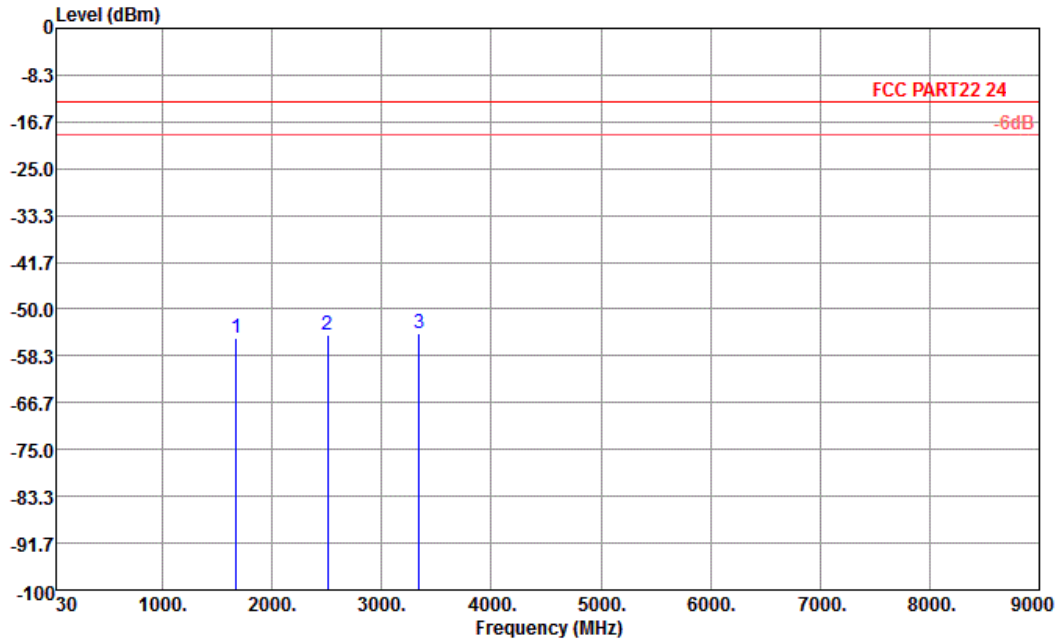
Band :	GSM850	Temperature :	23~24°C
Test Mode :	EDGE 8 Link + USB Cable (Charging from Adapter) + SIM 1	Relative Humidity :	43~44%
Test Engineer :	Stone Gu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR HORIZONTAL
EUT : (FG) 351601

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-56.49	-13	-43.49	-56.90	-57.14	0.57	3.37	H	Pass
2508	-57.77	-13	-44.77	-63.48	-60.00	0.78	5.16	H	Pass
3344	-57.06	-13	-44.06	-63.70	-60.70	0.87	6.66	H	Pass

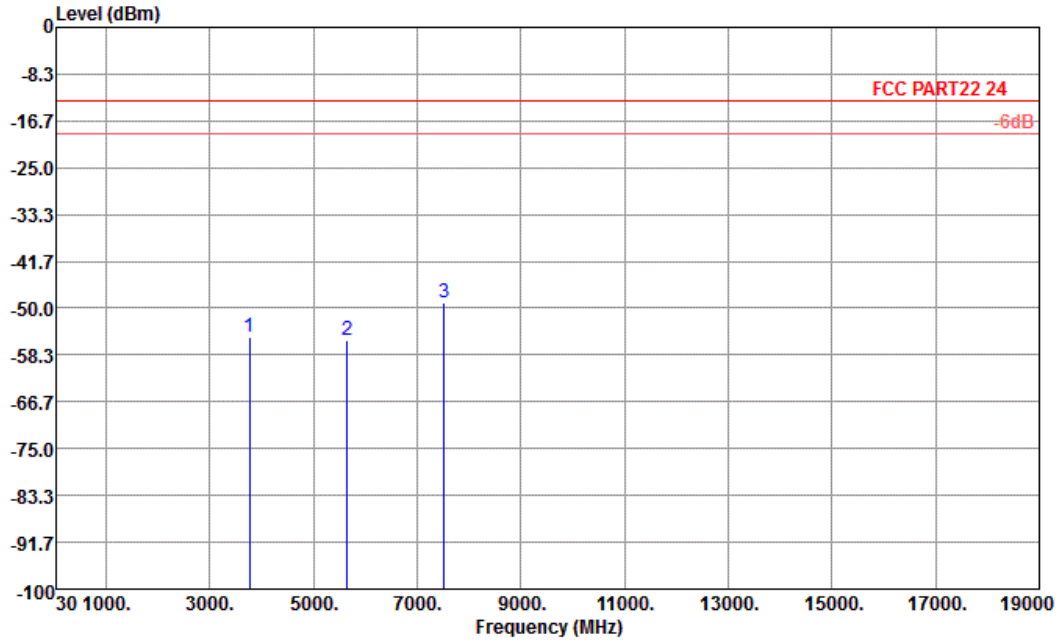
Band :	GSM850	Temperature :	23~24°C
Test Mode :	EDGE 8 Link + USB Cable (Charging from Adapter) + SIM 1	Relative Humidity :	43~44%
Test Engineer :	Stone Gu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR VERTICAL
EUT : (FG) 351601

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	-55.22	-13	-42.22	-58.42	-55.87	0.57	3.37	V	Pass
2508	-54.67	-13	-41.67	-62.86	-56.90	0.78	5.16	V	Pass
3344	-54.21	-13	-41.21	-62.66	-57.85	0.87	6.66	V	Pass

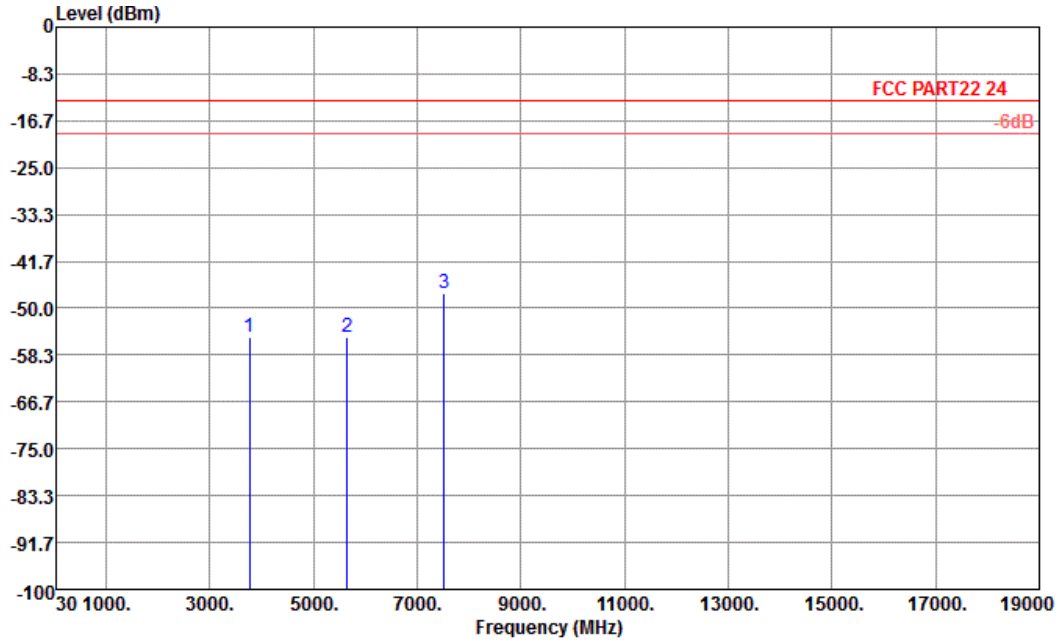
Band :	GSM1900	**Temperature :**	23~24°C
Test Mode :	GSM Link + USB Cable (Charging from Adapter) + SIM 1	**Relative Humidity :**	43~44%
Test Engineer :	Stone Gu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR HORIZONTAL
EUT : (FG) 351601

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	-55.22	-13	-42.22	-62.12	-61.60	0.78	7.16	H	Pass
5640	-55.65	-13	-42.65	-64.33	-64.19	1.04	9.58	H	Pass
7520	-48.96	-13	-35.96	-64.06	-59.07	1.35	11.46	H	Pass

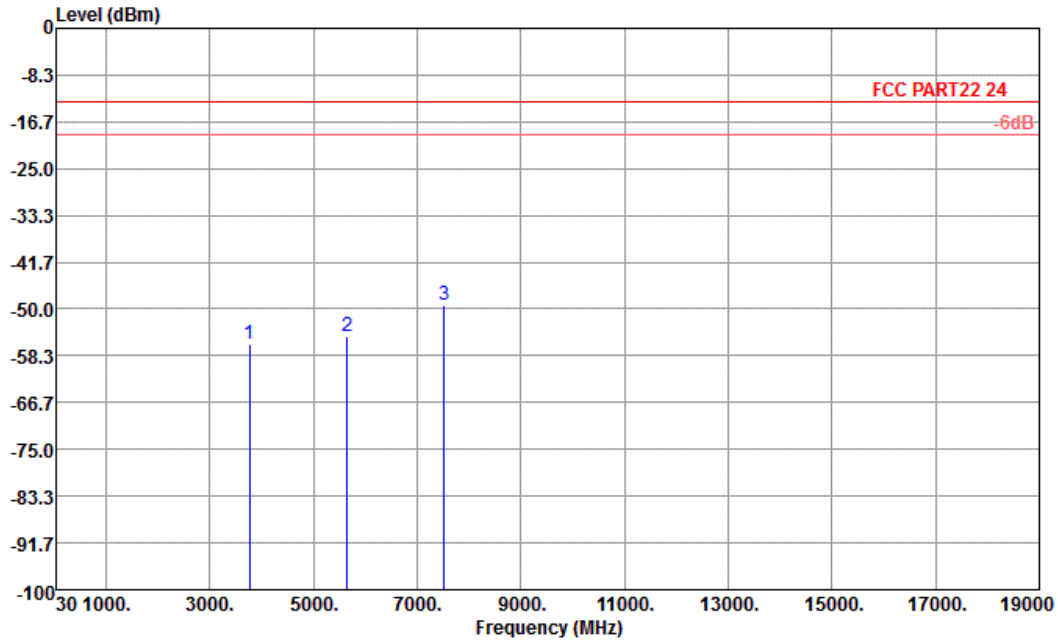
Band :	GSM1900	Temperature :	23~24°C
Test Mode :	GSM Link + USB Cable (Charging from Adapter) + SIM 1	Relative Humidity :	43~44%
Test Engineer :	Stone Gu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR VERTICAL
EUT : (FG) 351601

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	-55.09	-13	-42.09	-62.91	-61.47	0.78	7.16	V	Pass
5640	-55.03	-13	-42.03	-63.89	-63.57	1.04	9.58	V	Pass
7520	-47.25	-13	-34.25	-64.46	-57.36	1.35	11.46	V	Pass

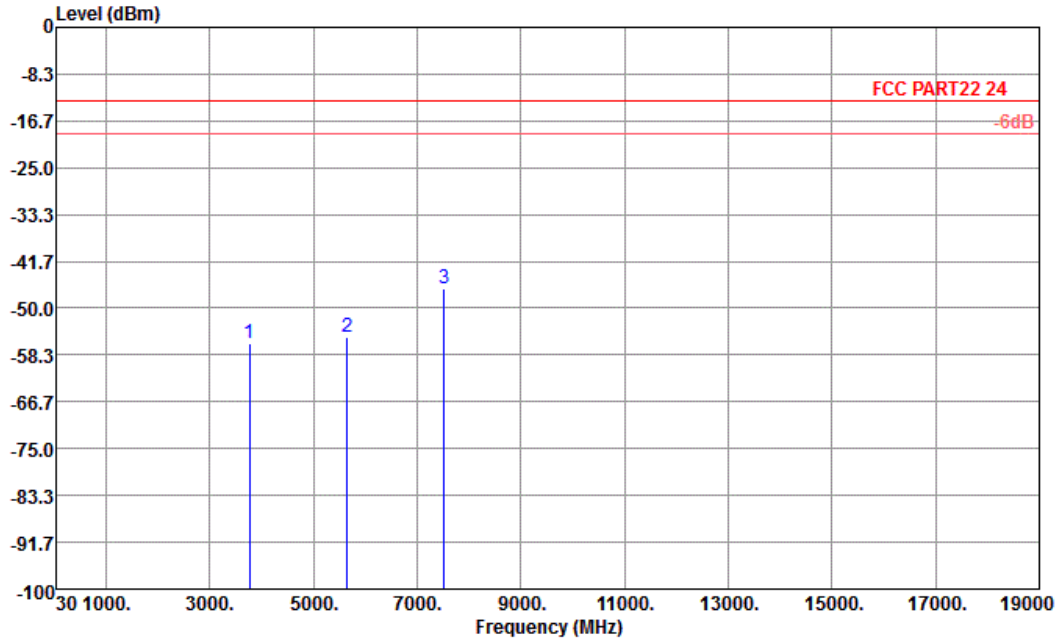
Band :	GSM1900	Temperature :	23~24°C
Test Mode :	EDGE 8 Link + USB Cable (Charging from Adapter) + SIM 1	Relative Humidity :	43~44%
Test Engineer :	Stone Gu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR HORIZONTAL
EUT : (FG) 351601

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-56.13	-13	-43.13	-63.03	-62.51	0.78	7.16	H	Pass
5640	-54.96	-13	-41.96	-63.64	-63.50	1.04	9.58	H	Pass
7520	-49.30	-13	-36.30	-64.40	-59.41	1.35	11.46	H	Pass

Band :	GSM1900	Temperature :	23~24°C
Test Mode :	EDGE 8 Link + USB Cable (Charging from Adapter) + SIM 1	Relative Humidity :	43~44%
Test Engineer :	Stone Gu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH01-KS
Condition : FCC PART22 24 HF EIRP FACTOR VERTICAL
EUT : (FG) 351601

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-56.34	-13	-43.34	-64.16	-62.72	0.78	7.16	V	Pass
5640	-55.17	-13	-42.17	-64.03	-63.71	1.04	9.58	V	Pass
7520	-46.62	-13	-33.62	-63.83	-56.73	1.35	11.46	V	Pass

3.8 Frequency Stability for Temperature and Voltage 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

See list of measuring instruments of this test report.

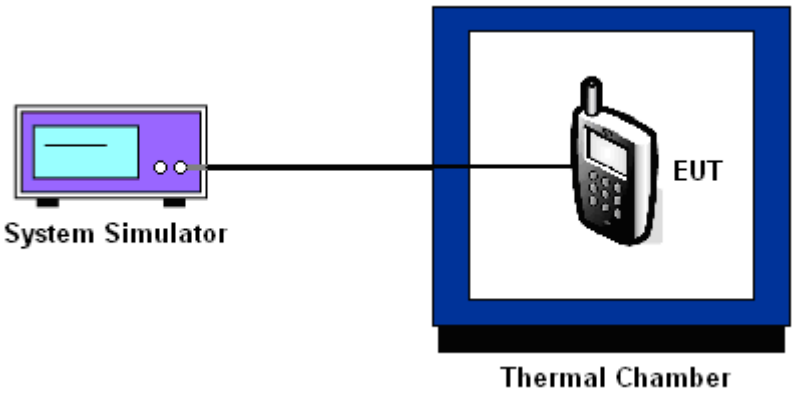
3.8.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
4. If the EUT cannot be turned on at -30°C, the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

3.8.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±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



3.8.6 Test Result of Temperature Variation

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

Temperature (°C)	GSM		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-33	-0.04	-36	-0.04	PASS
-20	-31	-0.04	-35	-0.04	
-10	-27	-0.03	-34	-0.04	
0	-29	-0.03	-32	-0.04	
10	-30	-0.04	-34	-0.04	
20	-25	-0.03	-33	-0.04	
30	-26	-0.03	-31	-0.04	
40	-29	-0.03	-35	-0.04	
50	-32	-0.04	-33	-0.04	
55	-34	-0.04	-34	-0.04	

Note: The manufacturer declared that the EUT could work properly at temperature 55˚C.

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

Temperature (°C)	GSM		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-49	-0.03	-51	-0.03	PASS
-20	-45	-0.02	-49	-0.03	
-10	-41	-0.02	-46	-0.02	
0	-43	-0.02	-43	-0.02	
10	-42	-0.02	-44	-0.02	
20	-39	-0.02	-40	-0.02	
30	-37	-0.02	-42	-0.02	
40	-40	-0.02	-47	-0.02	
50	-44	-0.02	-46	-0.02	
55	-48	-0.03	-48	-0.03	

3.8.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GSM	3.8	-26	-0.03	2.5	PASS
		BEP	-28	-0.03		
		4.2	-30	-0.04		
	EDGE 8	3.8	-31	-0.04		
		BEP	-32	-0.04		
		4.2	-35	-0.04		
GSM 1900 CH661	GSM	3.8	-44	-0.02		
		BEP	-46	-0.02		
		4.2	-47	-0.02		
	EDGE 8	3.8	-45	-0.02		
		BEP	-46	-0.02		
		4.2	-49	-0.03		

Note:

1. Normal Voltage = 3.8V.
2. Battery End Point (BEP) = 3.6 V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101400	9kHz~30GHz	Mar. 28, 2013	May 24, 2013~ May 27, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
DC Power Supply	TOPWORD	3303DR	N/A714621	N/A	Mar. 28, 2013	May 24, 2013~ May 27, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Thermal Chamber	Hongzhan	LP-150U	HD20120425	N/A	Mar. 28, 2013	May 24, 2013~ May 27, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 08, 2012	May 28, 2013	Nov. 07, 2013	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	100400	9kHz~30GHz	Jun. 01, 2012	May 28, 2013	May 31, 2013	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2012	May 28, 2013	Dec. 06, 2013	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2013	May 28, 2013	Jan. 05, 2014	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	N/A	May 28, 2013	N/A	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	N/A	May 28, 2013	N/A	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz	Jun. 01, 2012	May 28, 2013	May 31, 2013	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 29, 2012	May 28, 2013	Dec. 28, 2013	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	9170249	15GHz~40GHz	Nov. 23, 2012	May 28, 2013	Nov. 22, 2013	Radiation (03CH01-KS)
HFH2-Z2 Loop Antenna	R&S	HFH2-Z2	100321	9kHz-30MHz	Oct. 22, 2012	May 28, 2013	Oct. 21, 2013	Radiation (03CH01-KS)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**

Appendix A. Photographs of EUT

Please refer to Sporton report number EP351601 as below.