



FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : 0PKV100
FCC ID : NM80PKV100
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jan. 12, 2015 and testing was completed on Feb. 20, 2015. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-C-2004 and has been in compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-132 (5.4) RSS-133 (6.4)	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	RSS-132 (5.4) RSS-133(6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§22.913(a)(2)	RSS-132(5.4) SRSP-503(5.1.3)	Effective Radiated Power	< 7 Watts	PASS	-
	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.4	§2.1049 §22.917(b) §24.238(b)	RSS-GEN(4.6.1) RSS-133(2.3)	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Band Edge Measurement	< 43+10log ₁₀ (P[Watts])	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Conducted Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Field Strength of Spurious Radiation	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 17.98 dB at 2544.000 MHz
3.8	§2.1055 §22.355	RSS-132(5.3)	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22 Within Authorized Band	PASS	-
	§2.1055 §24.235	RSS-133(6.3)				



1 General Description

1.1 Applicant

HTC Corporation

1F, 6-3 Baoqiang Road, Xindian District, New Taipei City, Taiwan 231

1.2 Manufacturer

HTC Corporation

1F, 6-3 Baoqiang Road, Xindian District, New Taipei City, Taiwan 231

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Model Name	0PKV100
FCC ID	NM80PKV100
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n (HT20) WLAN 11a/n (HT20/HT40) WLAN 11ac (VHT20/VHT40/VHT80) Bluetooth v4.0 EDR/LE
EUT Stage	Identical Prototype

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



1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 34.70 dBm GSM1900 : 31.72 dBm WCDMA Band V : 23.08 dBm WCDMA Band II : 23.33 dBm
99% Occupied Bandwidth	GSM850: 0.249MHz GSM1900: 0.249MHz WCDMA Band V: 4.16MHz WCDMA Band II: 4.18MHz
Antenna Type	Fixed Internal Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)

1.5 Modification of EUT

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



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

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)		Frequency Tolerance (ppm)	Emission Designator
			Ant. 1	Ant. 2		
Part 22	GSM850 GSM	GMSK	1.0375	0.3787	0.0311 ppm	249KGXW
Part 22	GSM850 EDGE class 8	8PSK	0.2270	0.1073	0.0036 ppm	244KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.1000	0.0392	0.0155 ppm	4M16F9W
Part 24	GSM1900 GPRS class 8	GMSK	1.2383	0.6097	0.0160 ppm	245KGXW
Part 24	GSM1900 EDGE class 8	8PSK	0.3839	0.2056	0.0037 ppm	249KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.2310	0.1115	0.0021 ppm	4M18F9W

1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH02-HY	03CH07-HY

1.8 Applicable Standards

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

- ♦ FCC 47 CFR Part 2, 22(H), 24(E)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

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

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

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

Radiated emissions were investigated as following frequency range:

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

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
GSM 850	<ul style="list-style-type: none">■ GSM Link■ EDGE class 8 Link	<ul style="list-style-type: none">■ GSM Link■ EDGE class 8 Link
GSM 1900	<ul style="list-style-type: none">■ GPRS class 8 Link■ EDGE class 8 Link	<ul style="list-style-type: none">■ GPRS class 8 Link■ EDGE class 8 Link
WCDMA Band V	<ul style="list-style-type: none">■ RMC 12.2Kbps Link	<ul style="list-style-type: none">■ RMC 12.2Kbps Link
WCDMA Band II	<ul style="list-style-type: none">■ RMC 12.2Kbps Link	<ul style="list-style-type: none">■ RMC 12.2Kbps Link

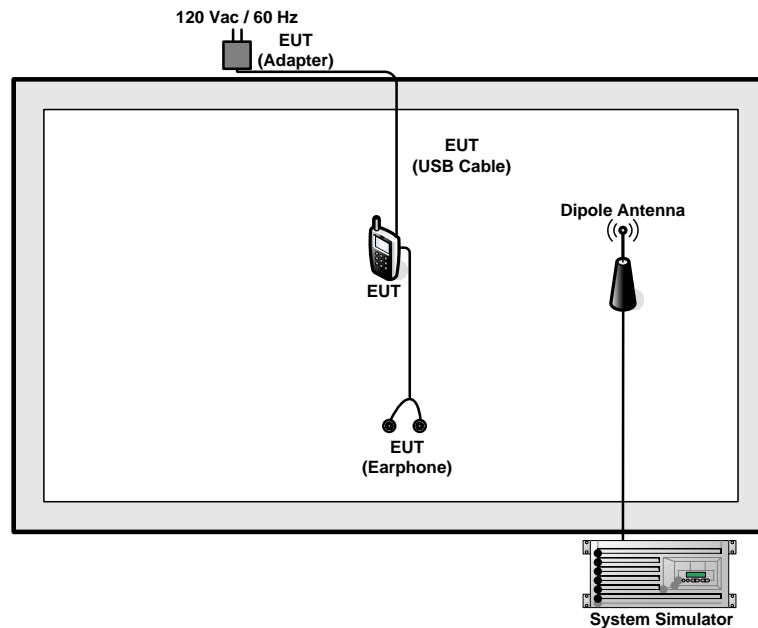


Conducted Power Measurement Results:

Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM	34.70	34.68	34.52	31.40	31.42	31.43
GPRS class 8	34.54	34.61	34.41	31.52	31.48	31.72
GPRS class 10	32.57	32.46	32.50	30.09	30.47	30.45
GPRS class 11	31.49	31.45	31.45	29.33	29.77	29.75
GPRS class 12	30.40	30.42	30.00	28.22	28.39	28.46
EGPRS class 8	27.81	27.70	27.64	26.54	26.72	26.76
EGPRS class 10	27.22	27.05	26.99	25.87	26.08	26.11
EGPRS class 11	27.07	26.93	26.84	24.62	24.73	24.74
EGPRS class 12	24.77	24.68	24.52	23.28	23.48	23.50

Conducted Power (*Unit: dBm)						
Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency	826.4	836.4	846.6	1852.4	1880.0	1907.6
RMC 12.2K	23.00	23.08	23.03	23.21	23.33	23.31
HSDPA Subtest-1	22.02	22.14	22.16	22.40	22.28	22.37
HSDPA Subtest-2	21.98	22.12	22.13	22.37	22.25	22.35
HSDPA Subtest-3	21.50	21.62	21.68	21.98	21.84	21.94
HSDPA Subtest-4	21.47	21.59	21.66	21.95	21.81	21.91
HSUPA Subtest-1	21.95	22.02	22.07	22.20	22.12	22.15
HSUPA Subtest-2	20.65	20.72	20.78	20.97	20.86	20.88
HSUPA Subtest-3	20.51	20.55	20.63	20.80	20.62	20.75
HSUPA Subtest-4	20.98	21.03	21.08	21.97	21.82	21.88
HSUPA Subtest-5	22.01	22.10	22.13	22.27	22.16	22.18

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)} \end{aligned}$$

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

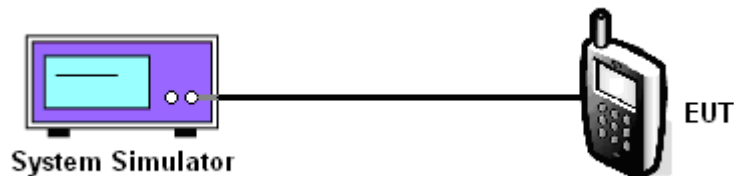
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup





3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	34.70	34.68	34.52	27.81	27.70	27.64	23.00	23.08	23.03

PCS Band									
Modes	GSM1900 (GPRS class 8)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	31.52	31.48	31.72	26.54	26.72	26.76	23.21	23.33	23.31

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.

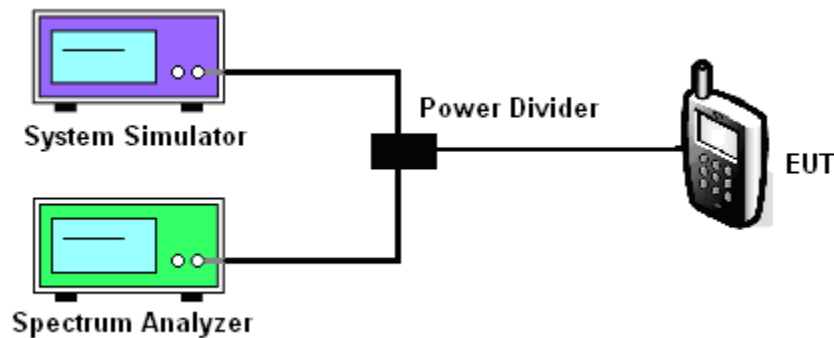
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. Set EUT to transmit at maximum output power.
4. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
5. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer.
Record the maximum PAPR level associated with a probability of 0.1%.

3.2.4 Test Setup





3.2.5 Test Result of Peak-to-Average Ratio

Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.20	0.20	0.24	3.16	3.28	3.32	3.04	3.08	3.08

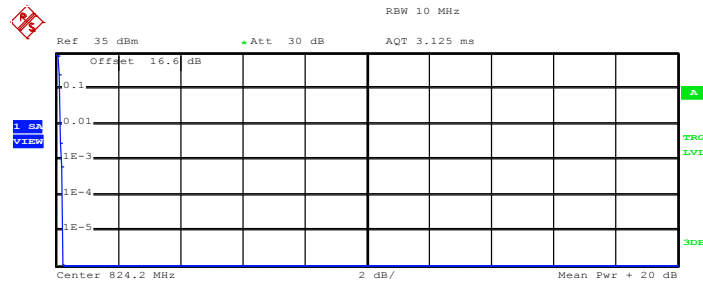
PCS Band									
Modes	GSM1900 (GPRS class 8)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.28	0.28	0.24	3.28	3.64	3.44	2.88	3.04	2.96



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

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



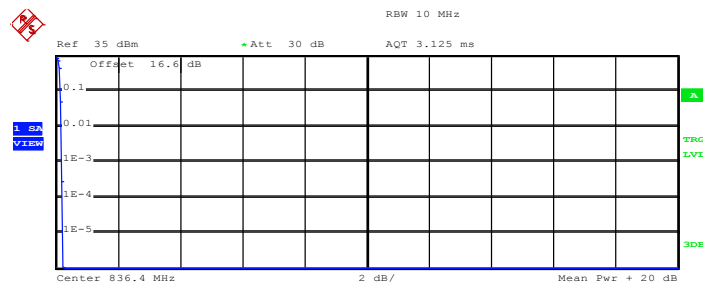
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	32.99 dBm
Peak	33.21 dBm
Crest	0.21 dB
10 %	0.16 dB
1 %	0.16 dB
.1 %	0.20 dB
.01 %	0.24 dB

Date: 16.FEB.2015 10:33:42

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



Complementary Cumulative Distribution Function (100000 samples)

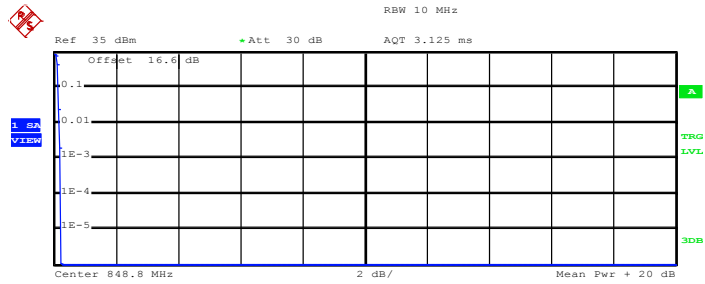
Trace 1

Mean	32.90 dBm
Peak	33.13 dBm
Crest	0.24 dB
10 %	0.16 dB
1 %	0.20 dB
.1 %	0.20 dB
.01 %	0.24 dB

Date: 16.FEB.2015 10:34:11



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



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

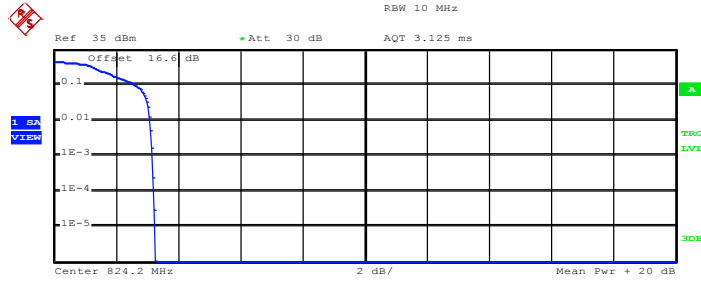
Mean	32.69 dBm
Peak	32.92 dBm
Crest	0.23 dB
10 %	0.16 dB
1 %	0.20 dB
.1 %	0.24 dB
.01 %	0.24 dB

Date: 16.FEB.2015 10:34:28



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

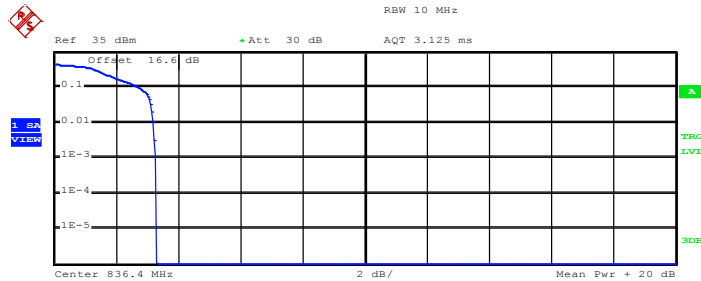


Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	26.93 dBm
Peak	30.17 dBm
Crest	3.24 dB
10 %	2.64 dB
1 %	3.08 dB
.1 %	3.16 dB
.01 %	3.24 dB

Date: 16.FEB.2015 11:16:23

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



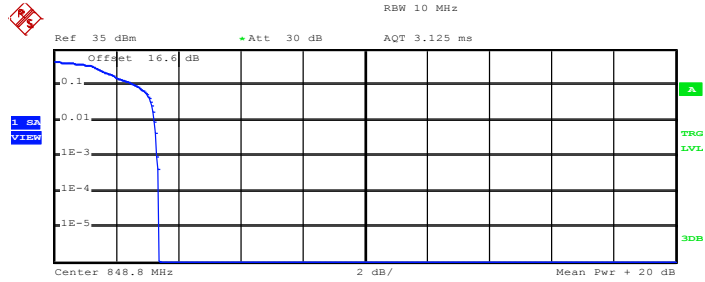
Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	26.81 dBm
Peak	30.10 dBm
Crest	3.29 dB
10 %	2.76 dB
1 %	3.20 dB
.1 %	3.28 dB
.01 %	3.32 dB

Date: 16.FEB.2015 11:16:42



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



Complementary Cumulative Distribution Function (100000 samples)

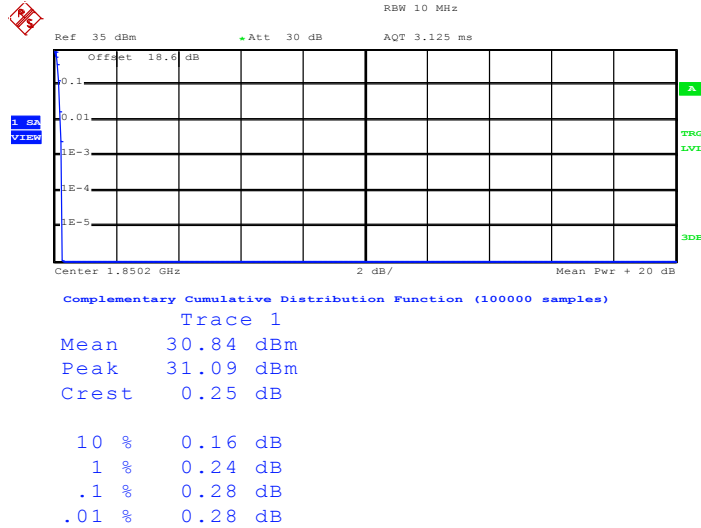
Trace 1	
Mean	26.44 dBm
Peak	29.82 dBm
Crest	3.38 dB
10 %	2.64 dB
1 %	3.24 dB
.1 %	3.32 dB
.01 %	3.40 dB

Date: 16.FEB.2015 11:17:13



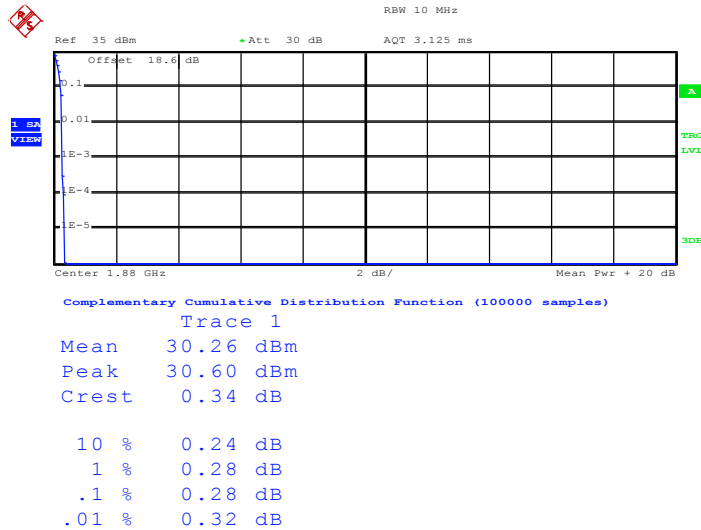
Band :	GSM 1900	Test Mode :	GPRS class 8 Link (GMSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:42:44

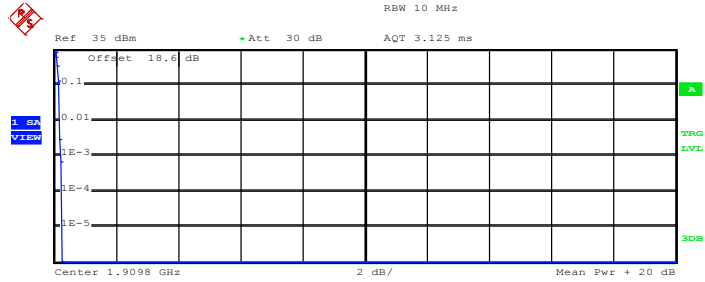
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 16.FEB.2015 11:43:07



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



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

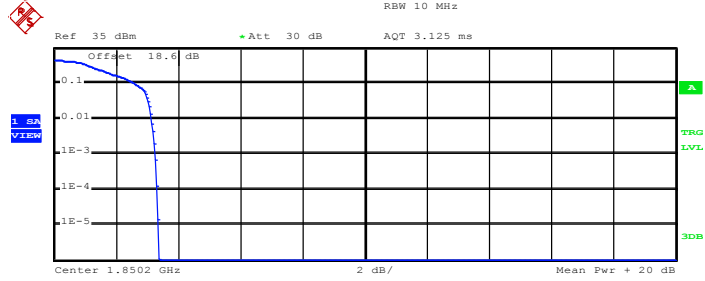
Mean	30.48 dBm
Peak	30.74 dBm
Crest	0.25 dB
10 %	0.16 dB
1 %	0.20 dB
.1 %	0.24 dB
.01 %	0.28 dB

Date: 16.FEB.2015 11:43:25



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

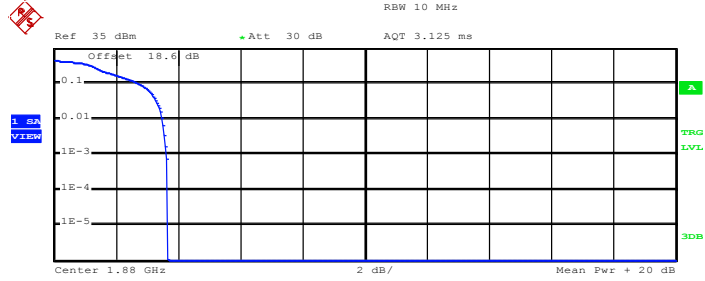


Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	26.25 dBm
Peak	29.61 dBm
Crest	3.36 dB
10 %	2.64 dB
1 %	3.16 dB
.1 %	3.28 dB
.01 %	3.32 dB

Date: 16.FEB.2015 13:32:17

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



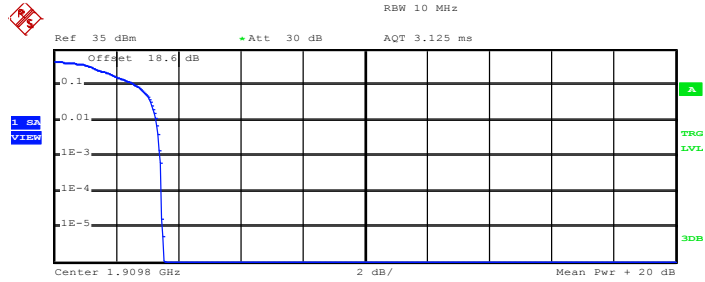
Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	25.37 dBm
Peak	29.04 dBm
Crest	3.67 dB
10 %	2.76 dB
1 %	3.48 dB
.1 %	3.64 dB
.01 %	3.68 dB

Date: 16.FEB.2015 13:32:34



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



Complementary Cumulative Distribution Function (100000 samples)

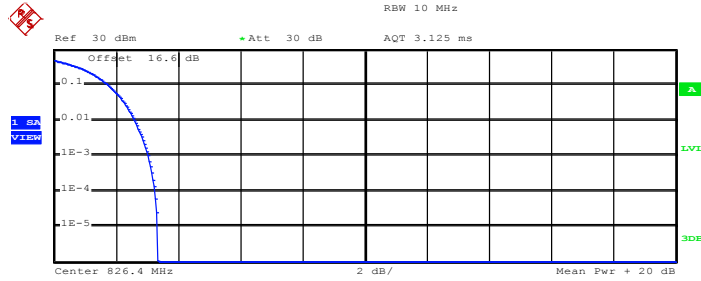
Trace 1	
Mean	26.00 dBm
Peak	29.54 dBm
Crest	3.53 dB
10 %	2.64 dB
1 %	3.28 dB
.1 %	3.44 dB
.01 %	3.48 dB

Date: 16.FEB.2015 13:32:55



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



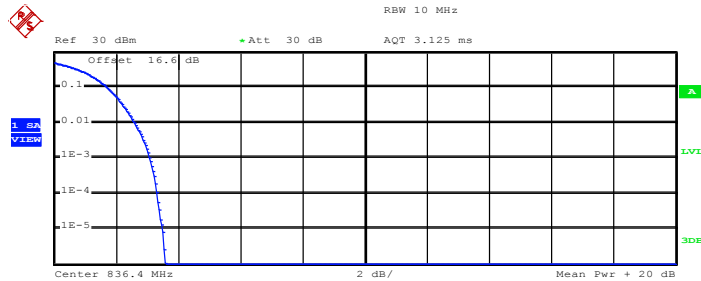
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	22.68 dBm
Peak	26.02 dBm
Crest	3.34 dB
10 %	1.76 dB
1 %	2.60 dB
.1 %	3.04 dB
.01 %	3.28 dB

Date: 16.FEB.2015 14:22:46

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



Complementary Cumulative Distribution Function (100000 samples)

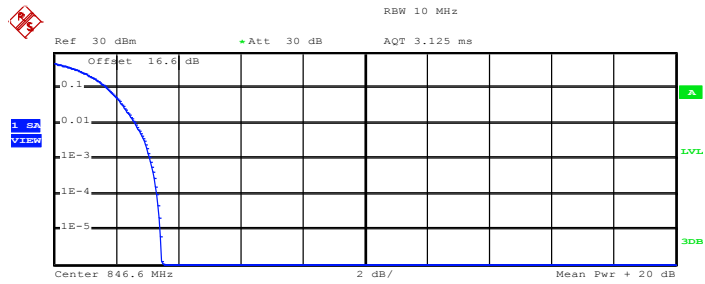
Trace 1

Mean	22.37 dBm
Peak	25.95 dBm
Crest	3.57 dB
10 %	1.72 dB
1 %	2.60 dB
.1 %	3.08 dB
.01 %	3.32 dB

Date: 16.FEB.2015 14:23:01



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



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

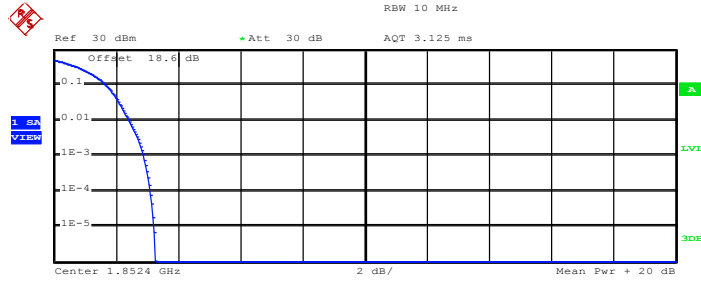
Mean	22.40 dBm
Peak	25.88 dBm
Crest	3.48 dB
10 %	1.72 dB
1 %	2.64 dB
.1 %	3.08 dB
.01 %	3.32 dB

Date: 16.FEB.2015 14:23:18



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



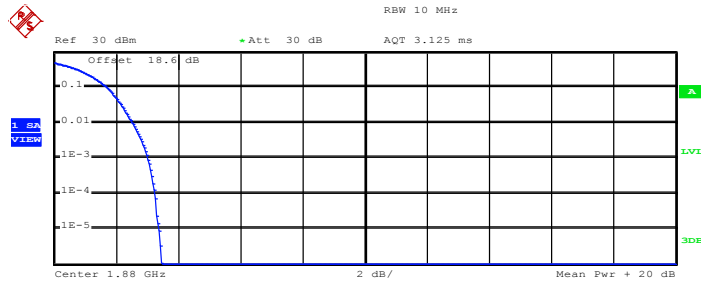
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	22.62 dBm
Peak	25.88 dBm
Crest	3.26 dB
10 %	1.68 dB
1 %	2.44 dB
.1 %	2.88 dB
.01 %	3.12 dB

Date: 16.FEB.2015 14:03:43

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



Complementary Cumulative Distribution Function (100000 samples)

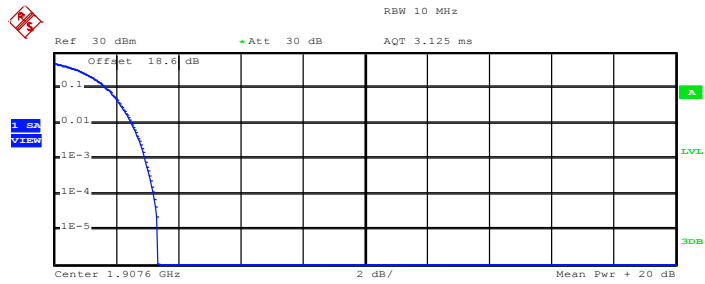
Trace 1

Mean	22.28 dBm
Peak	25.74 dBm
Crest	3.46 dB
10 %	1.72 dB
1 %	2.52 dB
.1 %	3.04 dB
.01 %	3.28 dB

Date: 16.FEB.2015 14:04:02



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



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	22.38 dBm
Peak	25.74 dBm
Crest	3.36 dB
10 %	1.68 dB
1 %	2.52 dB
.1 %	2.96 dB
.01 %	3.20 dB

Date: 16.FEB.2015 14:04:19



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 v02r02. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-C-2004 Section 2.2.17.
2. The EUT was placed on a turntable 1.5 meters high in a fully anechoic chamber.
3. The EUT was placed 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
UMTS operating modes: Set RBW= 100 kHz, VBW= 300 kHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per KDB 971168 D01.
5. The table was rotated 360 degrees to determine the position of the highest radiated power.
6. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
7. Taking the record of maximum ERP/EIRP.
8. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
9. The conducted power at the terminal of the dipole antenna is measured.
10. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
11. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

$E_s = R_s + AF$

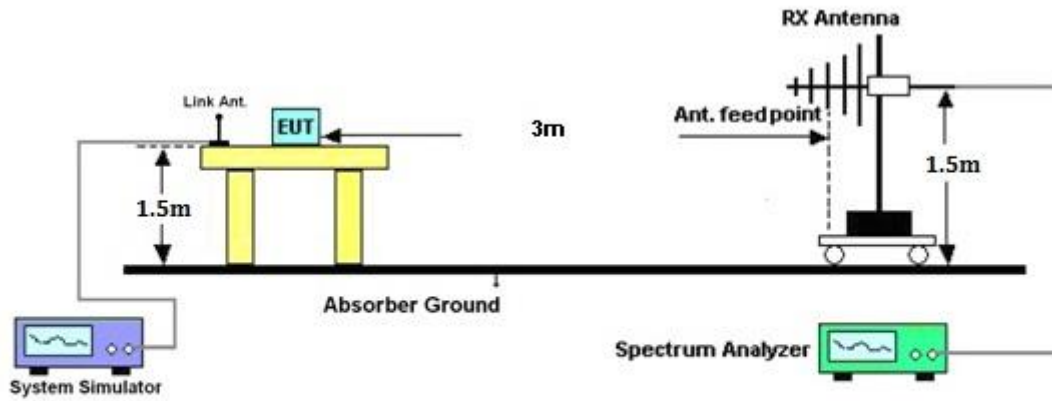
AF (dB/m) : Receive antenna factor

R_t : The highest received signal in spectrum analyzer for EUT.

R_s : The highest received signal in spectrum analyzer for substitution antenna.

	GSM/GPRS/EDGE	WCDMA/HSPA
SPAN	500kHz	10MHz
RBW	10kHz	100kHz
VBW	30kHz	300kHz
Detector	RMS	RMS
Trace	Average	Average
Average Type	Power	Power
Sweep Count	100	100

3.3.4 Test Setup





3.3.5 Test Result of ERP

<Ant. 1>

GSM850 (GSM) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-16.95	-48.12	0.00	-1.08	30.09	1.0209
836.40	-17.19	-48.28	0.00	-0.93	30.16	1.0375
848.80	-17.60	-48.35	0.00	-0.76	29.99	0.9977
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-26.30	-47.97	0.00	-1.08	20.59	0.1146
836.40	-26.59	-48.01	0.00	-0.93	20.49	0.1119
848.80	-26.34	-48.05	0.00	-0.76	20.95	0.1245

GSM850 (EDGE class 8) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-23.48	-48.12	0.00	-1.08	23.56	0.2270
836.40	-24.00	-48.28	0.00	-0.93	23.35	0.2163
848.80	-24.65	-48.35	0.00	-0.76	22.94	0.1968
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-32.84	-47.97	0.00	-1.08	14.05	0.0254
836.40	-33.06	-48.01	0.00	-0.93	14.02	0.0252
848.80	-33.50	-48.05	0.00	-0.76	13.79	0.0239



WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-27.26	-48.12	0.00	-1.08	19.78	0.0951
836.40	-27.35	-48.28	0.00	-0.93	20.00	0.1000
846.60	-27.65	-48.35	0.00	-0.76	19.94	0.0986
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-36.29	-47.97	0.00	-1.08	10.60	0.0115
836.40	-36.22	-48.01	0.00	-0.93	10.86	0.0122
846.60	-36.19	-48.05	0.00	-0.76	11.10	0.0129

<Ant. 2>

GSM850 (GSM) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-21.26	-48.12	0.00	-1.08	25.78	0.3787
836.40	-24.41	-48.28	0.00	-0.93	22.94	0.1966
848.80	-21.90	-48.35	0.00	-0.76	25.69	0.3709
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-36.13	-47.97	0.00	-1.08	10.76	0.0119
836.40	-41.85	-48.01	0.00	-0.93	5.23	0.0033
848.80	-33.84	-48.05	0.00	-0.76	13.45	0.0221



GSM850 (EDGE class 8) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-26.73	-48.12	0.00	-1.08	20.31	0.1073
836.40	-27.36	-48.28	0.00	-0.93	19.99	0.0997
848.80	-27.90	-48.35	0.00	-0.76	19.69	0.0931
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-41.30	-47.97	0.00	-1.08	5.59	0.0036
836.40	-40.42	-48.01	0.00	-0.93	6.66	0.0046
848.80	-39.93	-48.05	0.00	-0.76	7.36	0.0054

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-31.11	-48.12	0.00	-1.08	15.93	0.0392
836.40	-31.45	-48.28	0.00	-0.93	15.90	0.0389
846.60	-32.39	-48.35	0.00	-0.76	15.20	0.0331
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-45.58	-47.97	0.00	-1.08	1.31	0.0014
836.40	-44.71	-48.01	0.00	-0.93	2.37	0.0017
846.60	-44.16	-48.05	0.00	-0.76	3.13	0.0021



3.3.6 Test Result of EIRP

<Ant. 1>

GSM1900 (GPRS class 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-23.98	-51.88	0.00	1.96	29.86	0.9691
1880.00	-24.25	-52.99	0.00	2.00	30.74	1.1870
1909.80	-25.33	-54.28	0.00	1.98	30.93	1.2383
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-24.89	-52.13	0.00	1.96	29.20	0.8318
1880.00	-25.18	-53.17	0.00	2.00	29.99	0.9986
1909.80	-26.20	-54.13	0.00	1.98	29.91	0.9805

GSM1900 (EDGE class 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-28.83	-51.88	0.00	1.96	25.01	0.3169
1880.00	-29.27	-52.99	0.00	2.00	25.72	0.3733
1909.80	-30.42	-54.28	0.00	1.98	25.84	0.3839
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-29.90	-52.13	0.00	1.96	24.19	0.2624
1880.00	-30.22	-53.17	0.00	2.00	24.95	0.3123
1909.80	-30.97	-54.13	0.00	1.98	25.14	0.3264



WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-30.75	-51.88	0.00	1.96	23.09	0.2036
1880.00	-31.45	-52.99	0.00	2.00	23.54	0.2260
1907.60	-32.62	-54.28	0.00	1.98	23.64	0.2310
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-31.58	-52.13	0.00	1.96	22.51	0.1782
1880.00	-32.19	-53.17	0.00	2.00	22.98	0.1987
1907.60	-33.24	-54.13	0.00	1.98	22.87	0.1938

<Ant. 2>

GSM1900 (GPRS class 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-26.82	-51.88	0.00	1.96	27.02	0.5039
1880.00	-27.48	-52.99	0.00	2.00	27.51	0.5632
1909.80	-28.41	-54.28	0.00	1.98	27.85	0.6097
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-28.32	-52.13	0.00	1.96	25.77	0.3776
1880.00	-28.92	-53.17	0.00	2.00	26.25	0.4220
1909.80	-29.25	-54.13	0.00	1.98	26.86	0.4858



GSM1900 (EDGE class 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-32.09	-51.88	0.00	1.96	21.75	0.1495
1880.00	-32.09	-52.99	0.00	2.00	22.90	0.1950
1909.80	-33.13	-54.28	0.00	1.98	23.13	0.2056
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-33.35	-52.13	0.00	1.96	20.74	0.1187
1880.00	-33.53	-53.17	0.00	2.00	21.64	0.1458
1909.80	-33.85	-54.13	0.00	1.98	22.26	0.1681

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-33.84	-51.88	0.00	1.96	20.00	0.0999
1880.00	-34.52	-52.99	0.00	2.00	20.47	0.1115
1907.60	-35.87	-54.28	0.00	1.98	20.39	0.1093
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-34.98	-52.13	0.00	1.96	19.11	0.0816
1880.00	-35.66	-53.17	0.00	2.00	19.51	0.0894
1907.60	-36.81	-54.13	0.00	1.98	19.30	0.0851

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

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

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

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

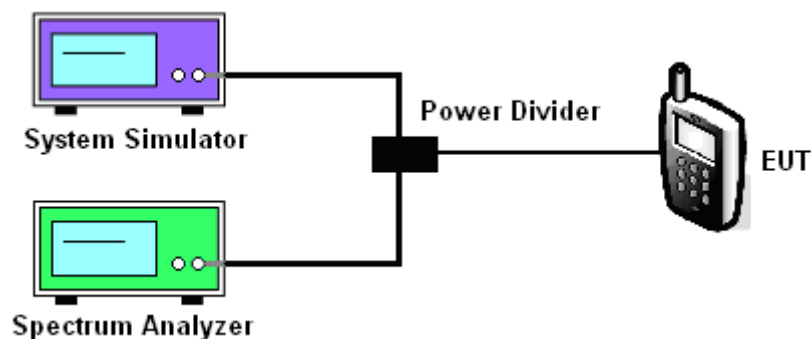
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.2.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of the EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The 99% occupied bandwidth were measured, set RBW= 1% of span, VBW= 3*RBW, sample detector, trace maximum hold.
5. The 26dB bandwidth were measured, set RBW= 1% of EBW, VBW= 3*RBW, peak detector, trace maximum hold.

3.4.4 Test Setup





3.4.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

Cellular Band						
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8
99% OBW (kHz)	244.00	248.00	249.00	242.00	244.00	244.00
26dB BW (kHz)	313.00	316.00	309.00	307.00	301.00	307.00

PCS Band						
Modes	GSM1900 (GPRS class 8)			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	245.00	241.00	245.00	242.00	249.00
26dB BW (kHz)	299.00	304.00	295.00	287.00	310.00	308.00

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)	4.15	4.16	4.16
26dB BW (MHz)	4.66	4.66	4.65

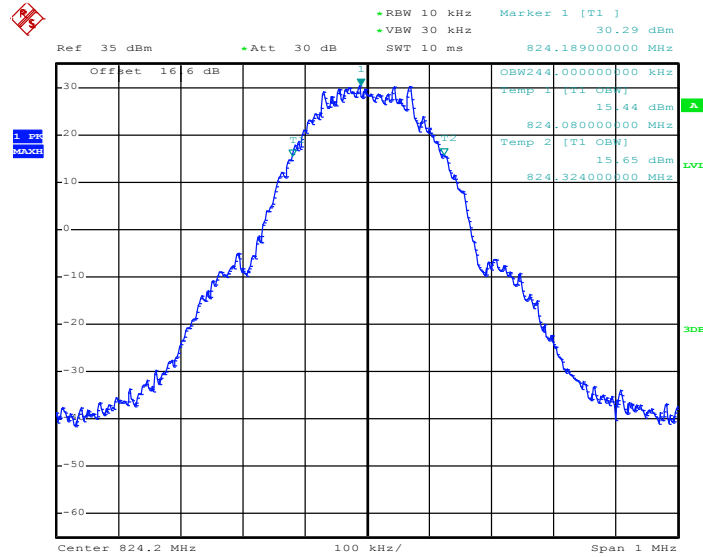
PCS Band			
Modes	WCDMA Band II (RMC 12.2Kbps)		
Channel	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1852.4	1880	1907.6
99% OBW (MHz)	4.17	4.18	4.17
26dB BW (MHz)	4.67	4.68	4.68



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

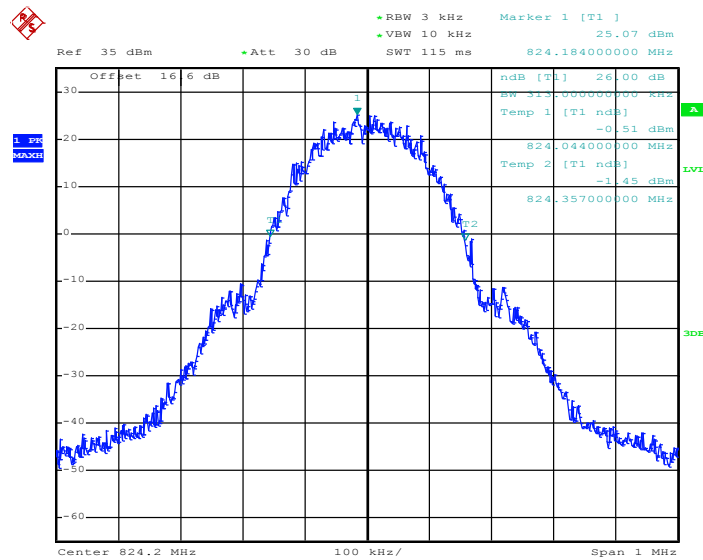
Band :	GSM 850	Test Mode :	GSM Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 16.FEB.2015 10:20:32

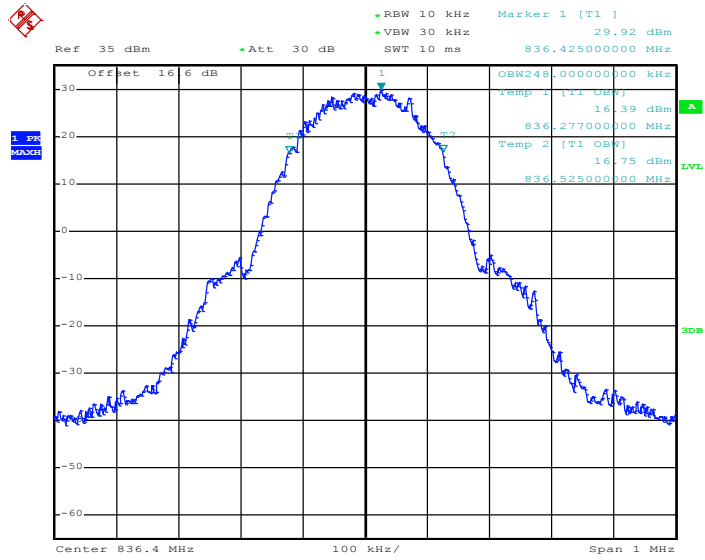
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 16.FEB.2015 10:17:52

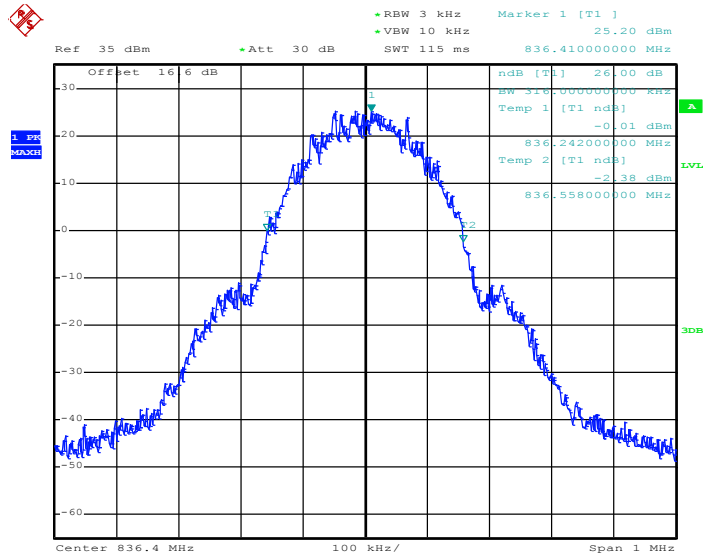


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 16.FEB.2015 10:21:44

26dB Bandwidth Plot on Channel 189 (836.4 MHz)

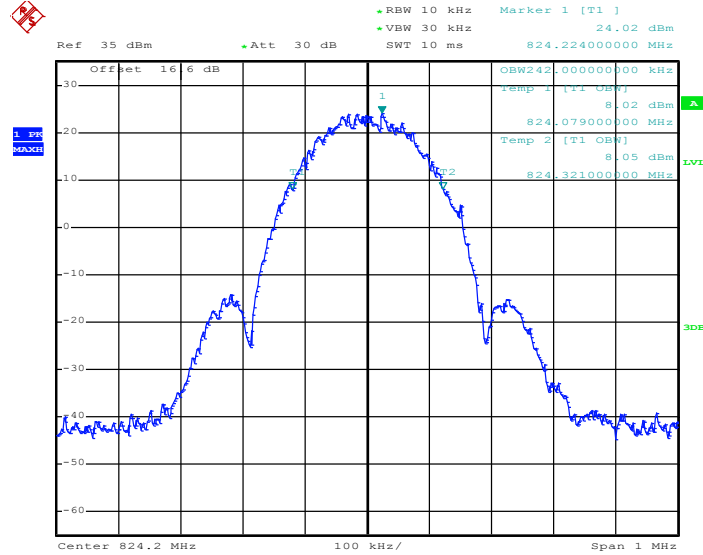


Date: 16.FEB.2015 10:18:28



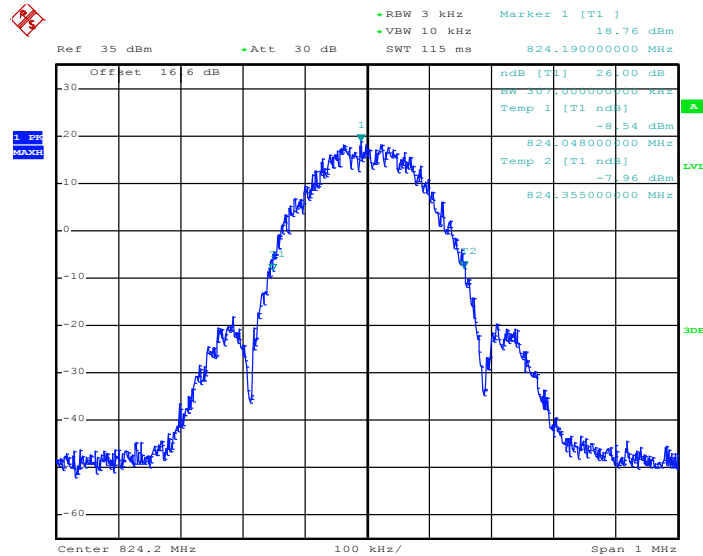
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 16.FEB.2015 11:01:42

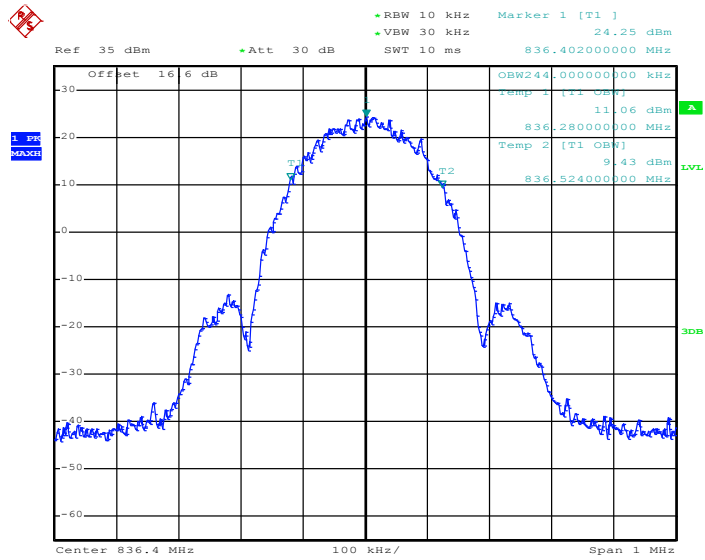
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 16.FEB.2015 10:59:25

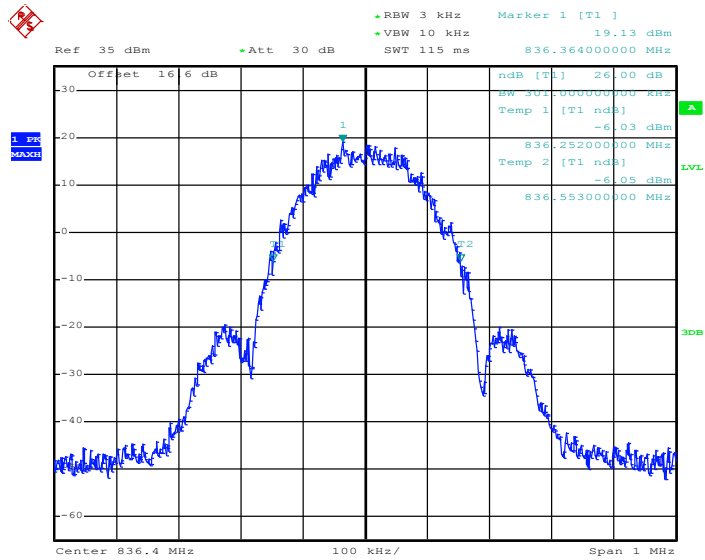


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 16.FEB.2015 11:02:15

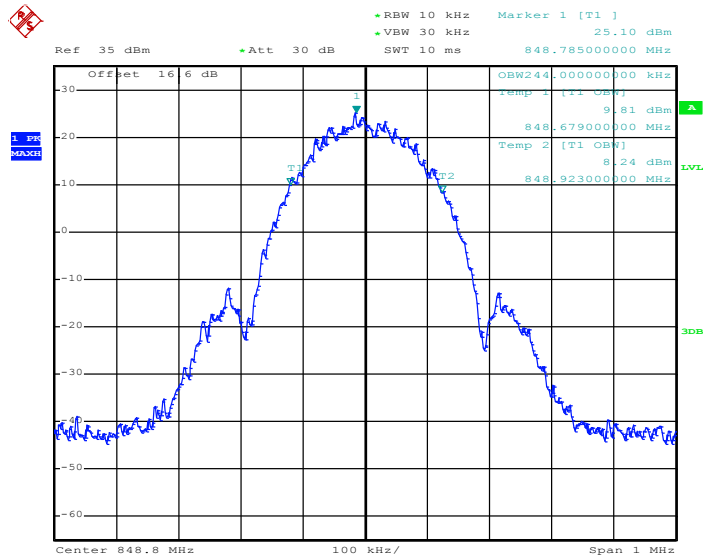
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 16.FEB.2015 11:00:04

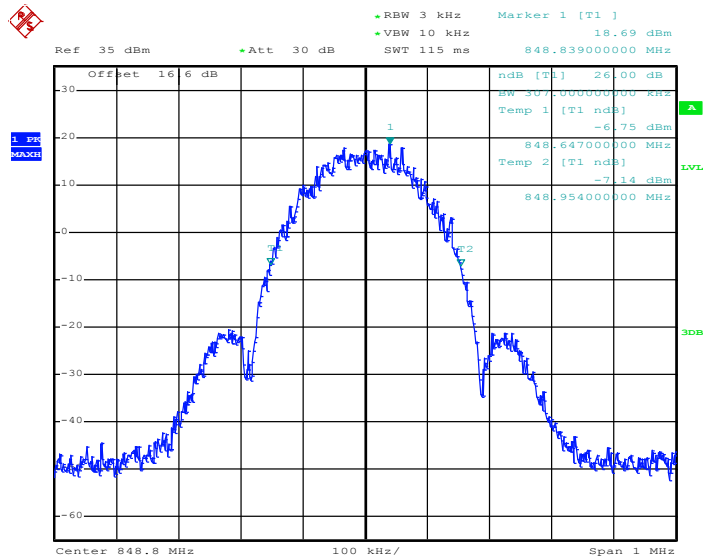


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 16.FEB.2015 11:02:49

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

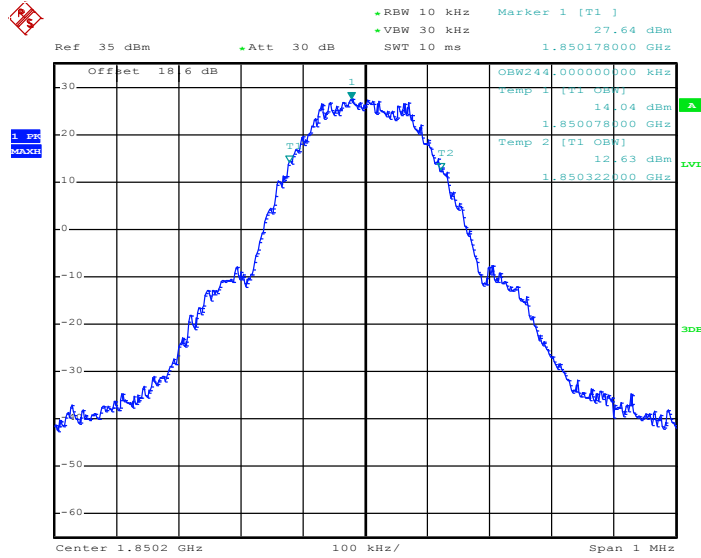


Date: 16.FEB.2015 11:00:48



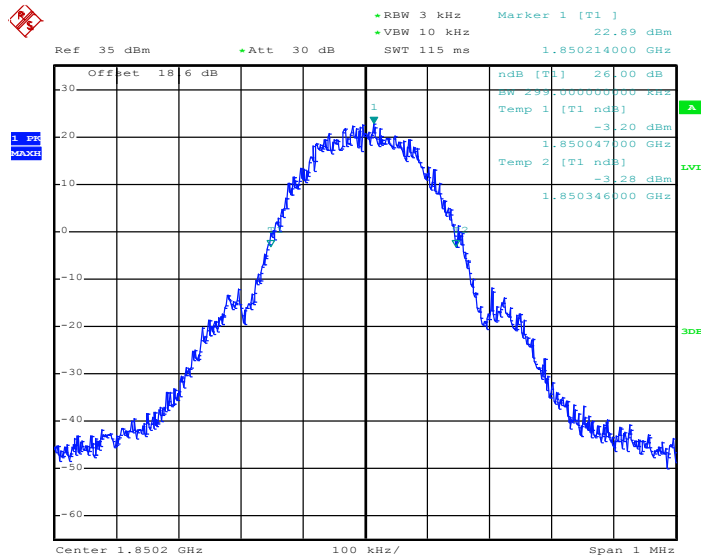
Band :	GSM 1900	Test Mode :	GPRS class 8 Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:36:31

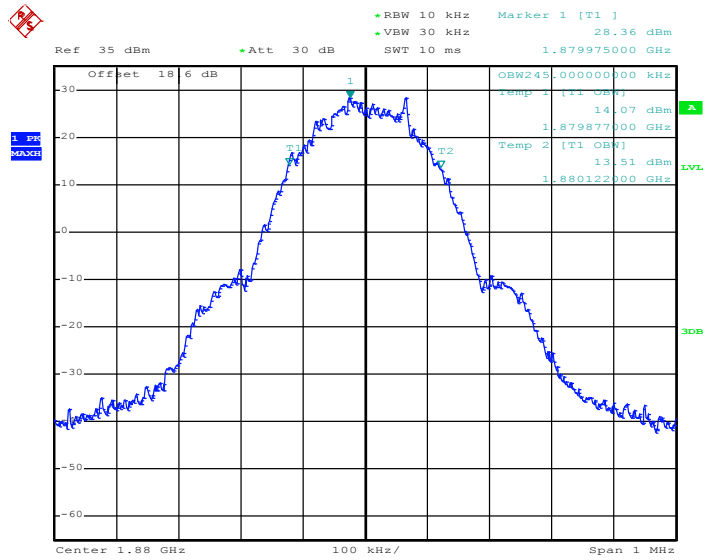
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:34:40

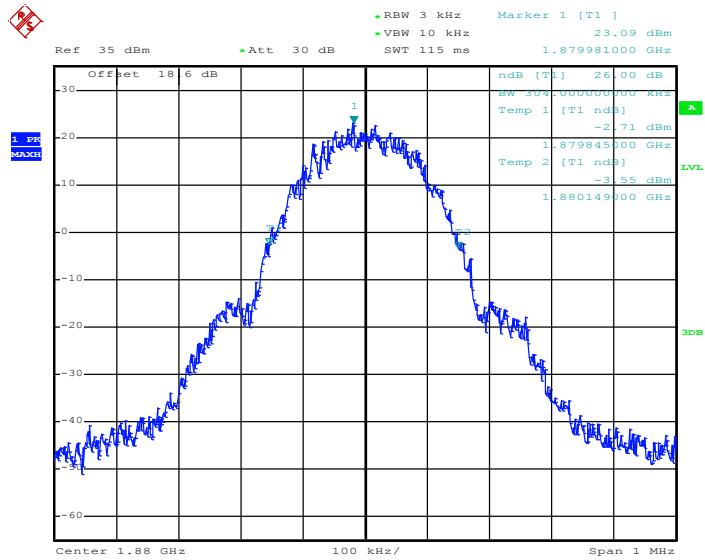


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 16.FEB.2015 11:37:05

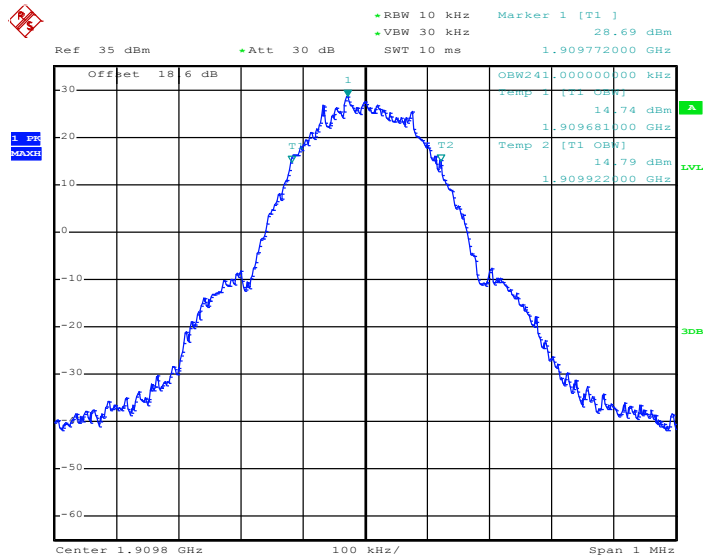
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 16.FEB.2015 11:35:14

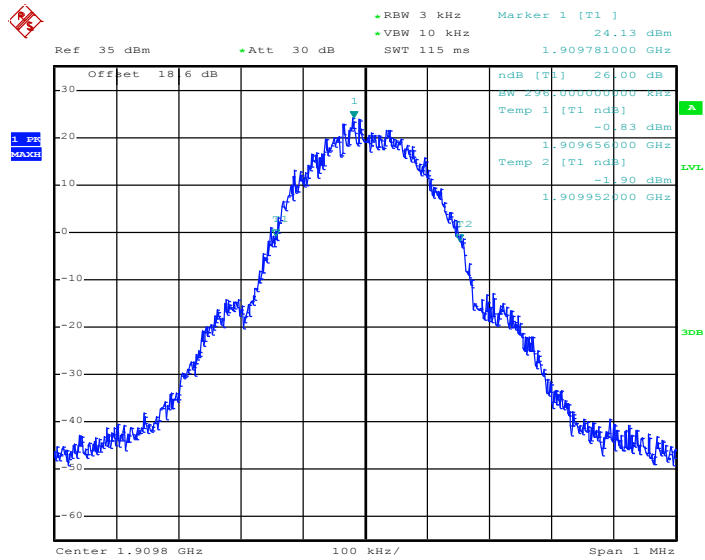


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 16.FEB.2015 11:37:38

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

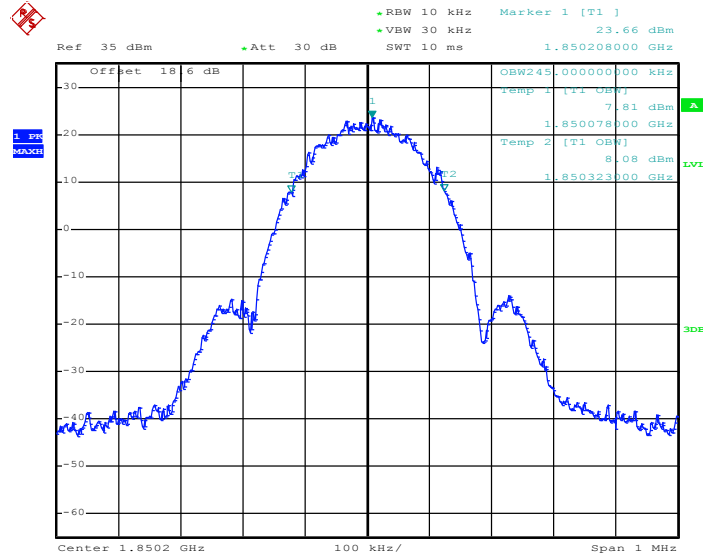


Date: 16.FEB.2015 11:35:47



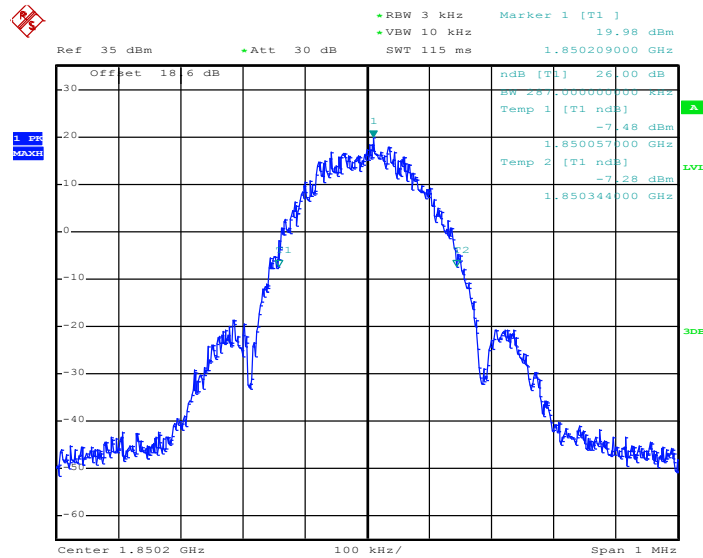
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:56:12

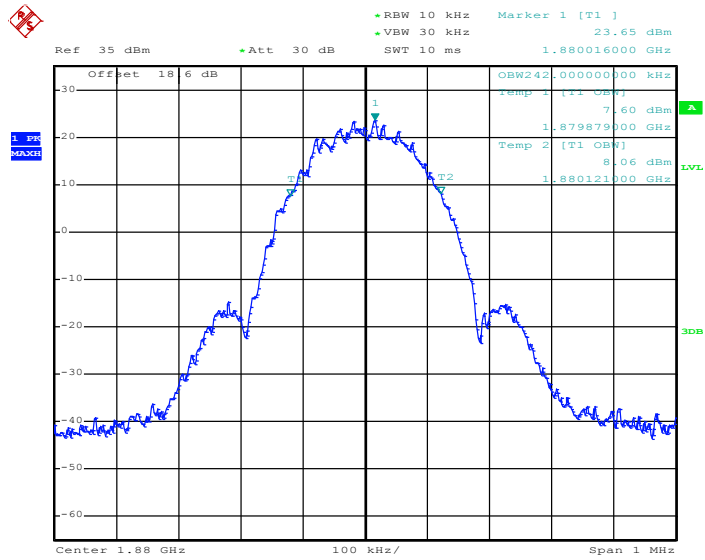
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:50:44

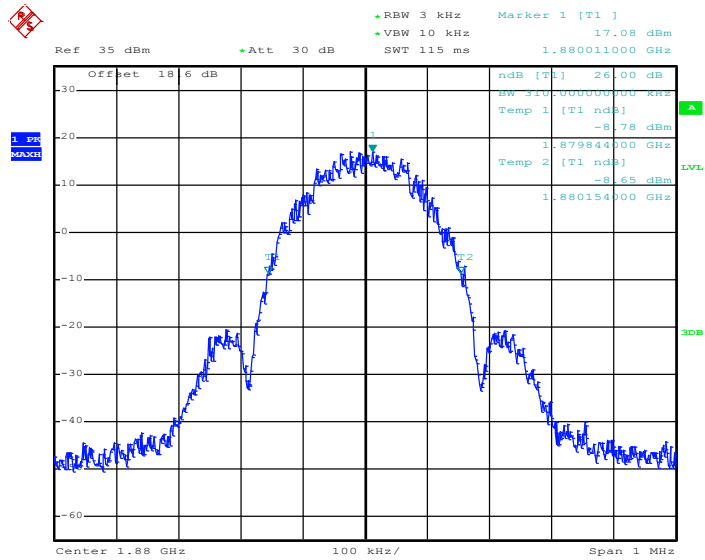


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 16.FEB.2015 11:56:45

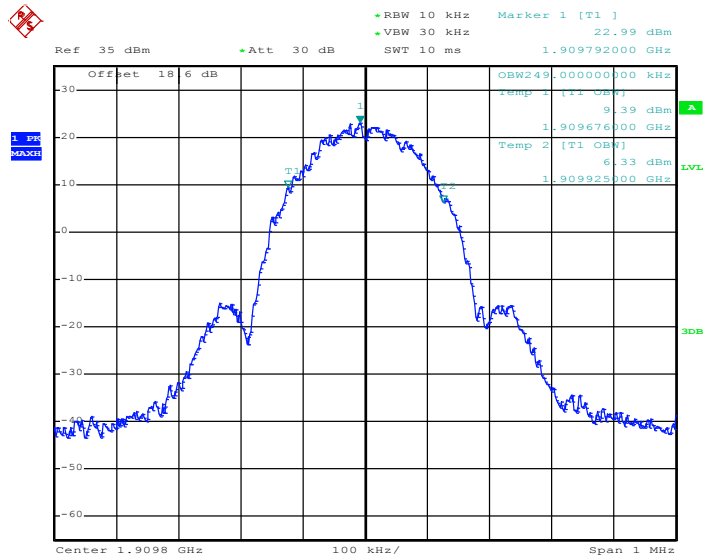
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 16.FEB.2015 11:51:22

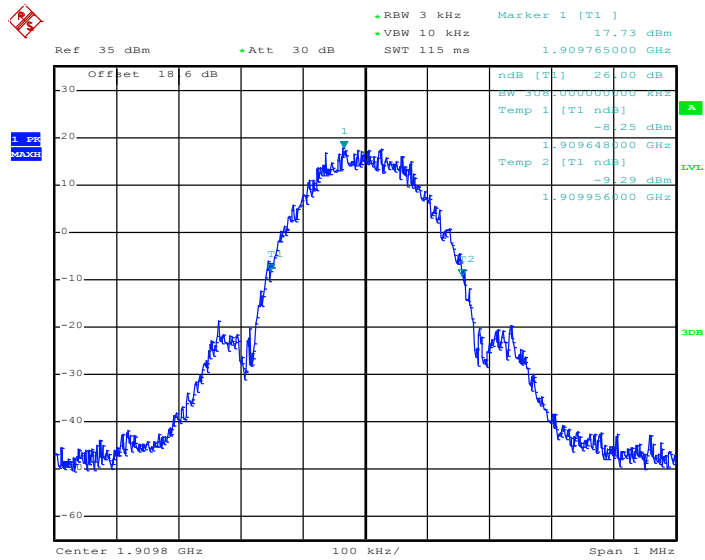


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 16.FEB.2015 11:57:17

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

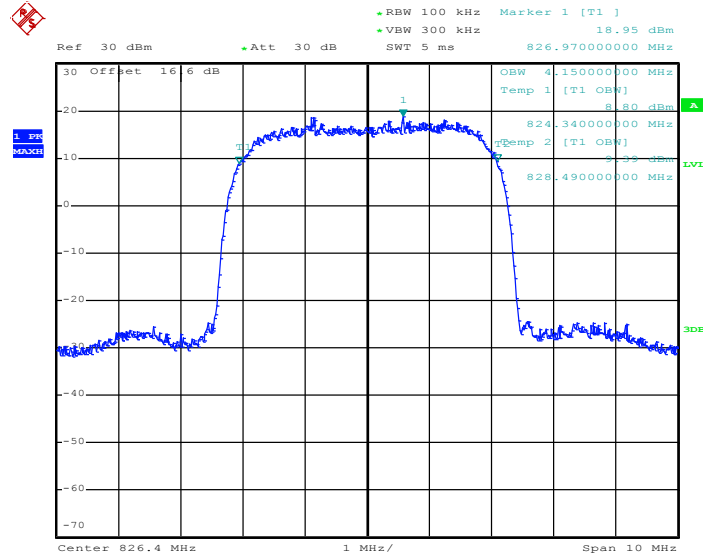


Date: 16.FEB.2015 11:51:55



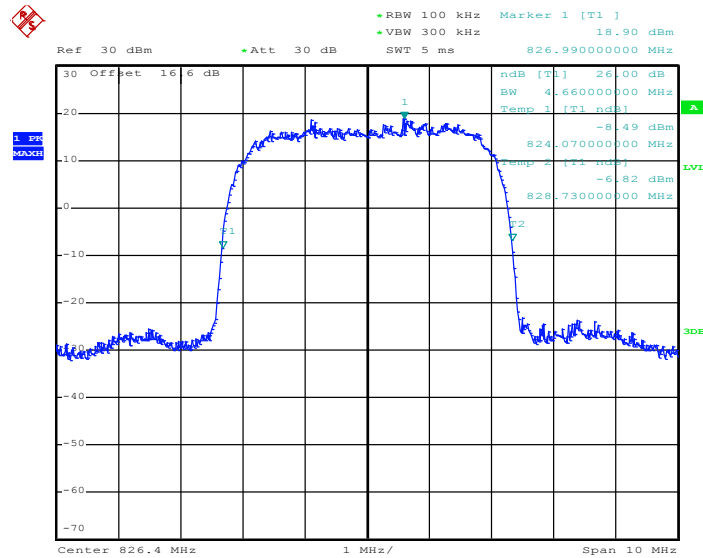
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 16.FEB.2015 14:14:30

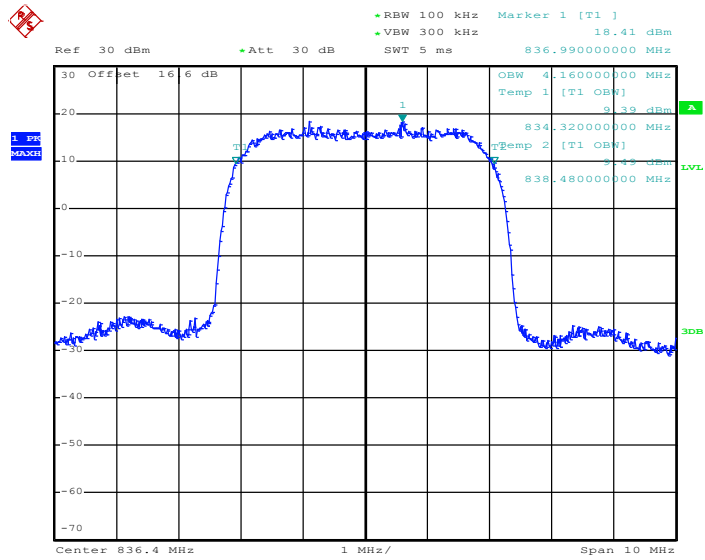
26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 16.FEB.2015 14:12:16

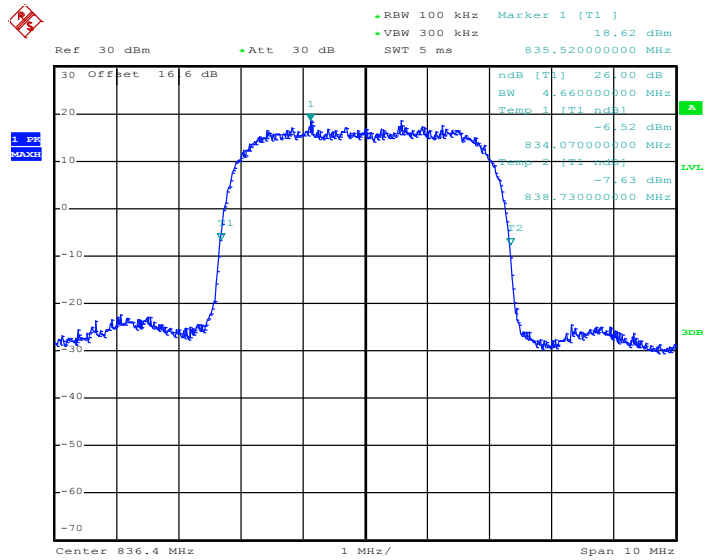


99% Occupied Bandwidth Plot on Channel 4182 (836.4 MHz)



Date: 16.FEB.2015 14:15:04

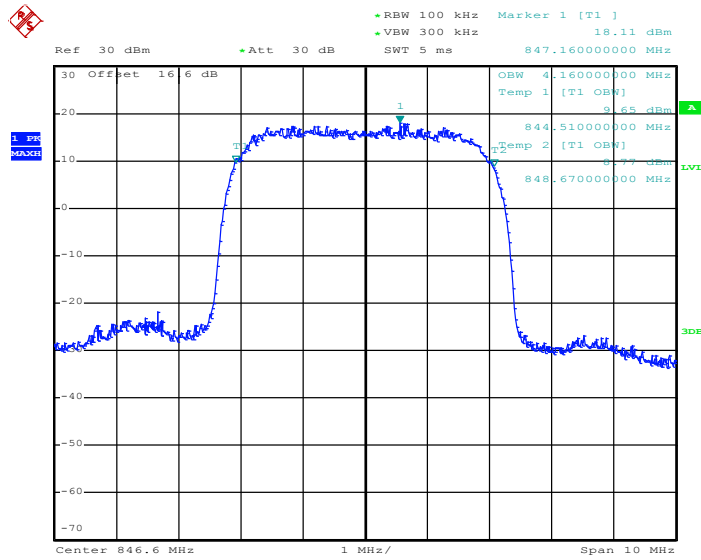
26dB Bandwidth Plot on Channel 4182 (836.4 MHz)



Date: 16.FEB.2015 14:12:51

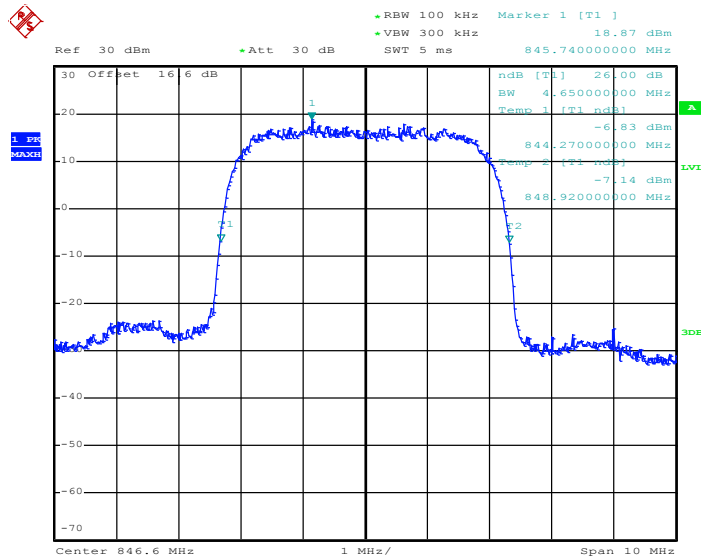


99% Occupied Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 16.FEB.2015 14:15:39

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)

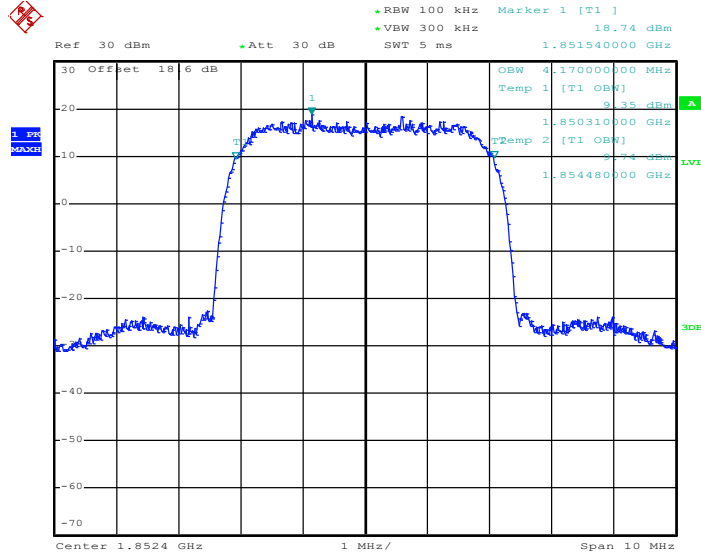


Date: 16.FEB.2015 14:13:37



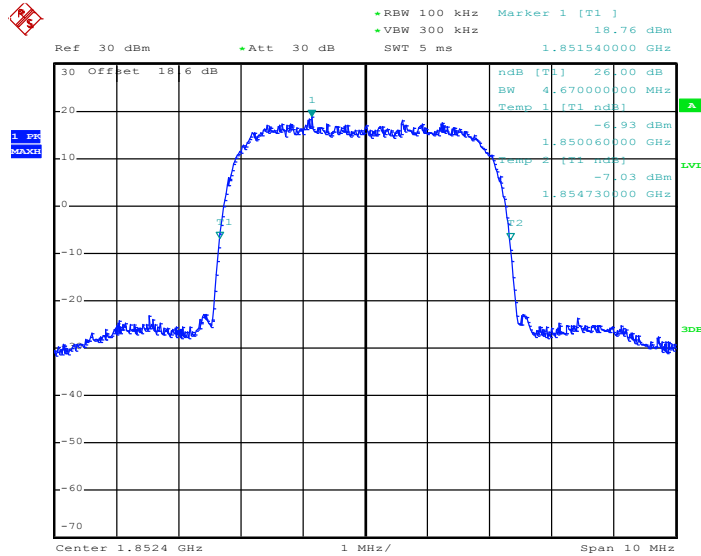
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 16.FEB.2015 13:53:06

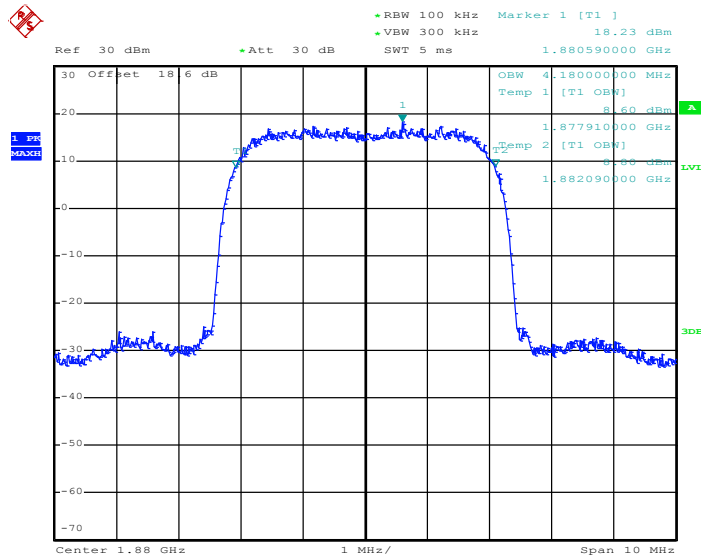
26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 16.FEB.2015 13:50:26

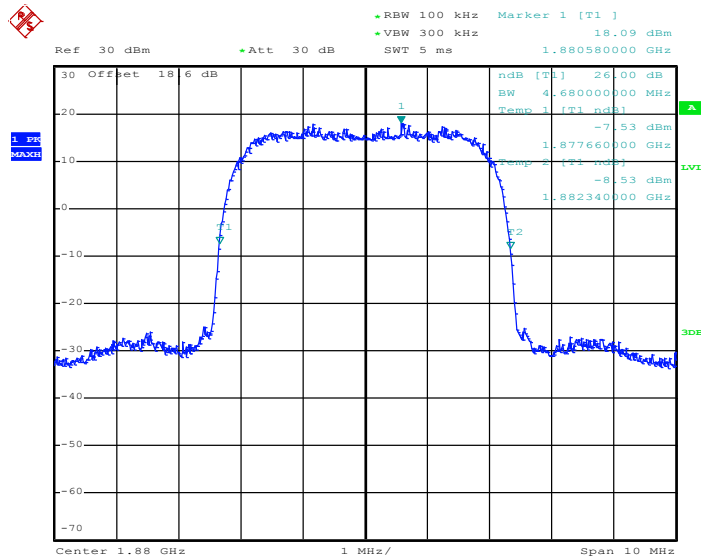


99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 16.FEB.2015 13:53:46

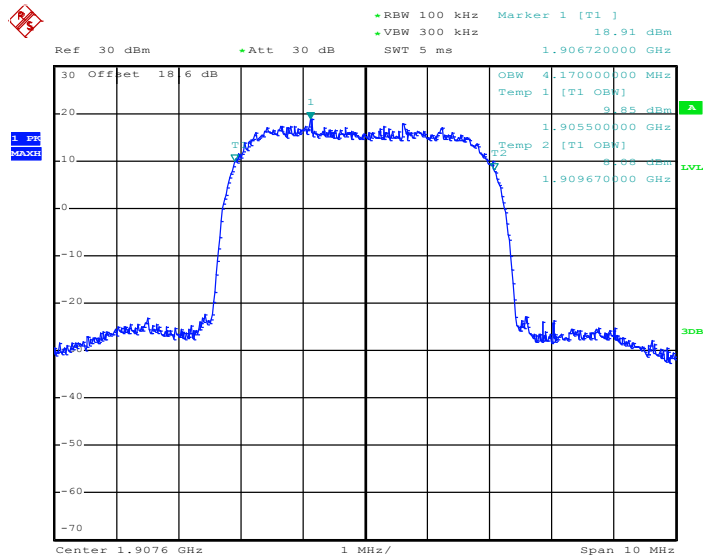
26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 16.FEB.2015 13:51:03

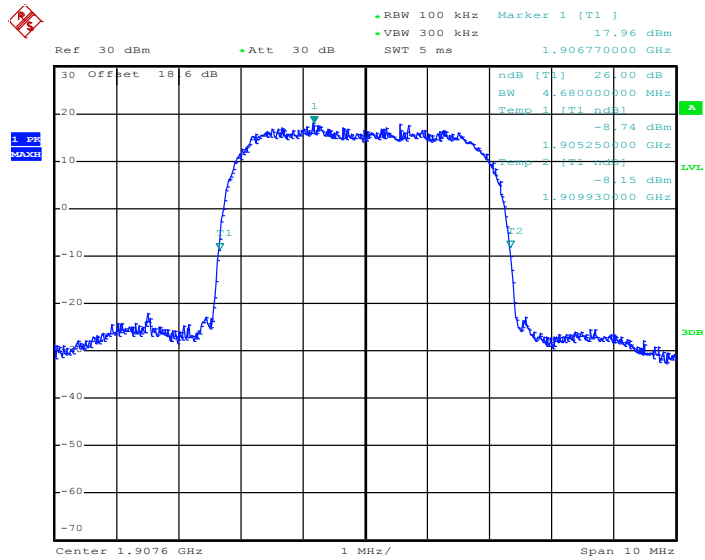


99% Occupied Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 16.FEB.2015 13:54:43

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 16.FEB.2015 13:52:03

3.5 Band Edge Measurement

3.5.1 Description of Band Edge Measurement

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

3.5.2 Measuring Instruments

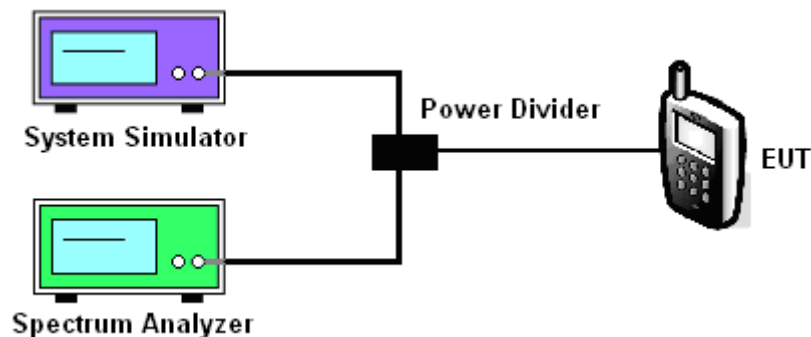
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The band edges of low and high channels for the highest RF powers were measured.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13\text{dBm}$.

3.5.4 Test Setup

<Conducted Band Edge >

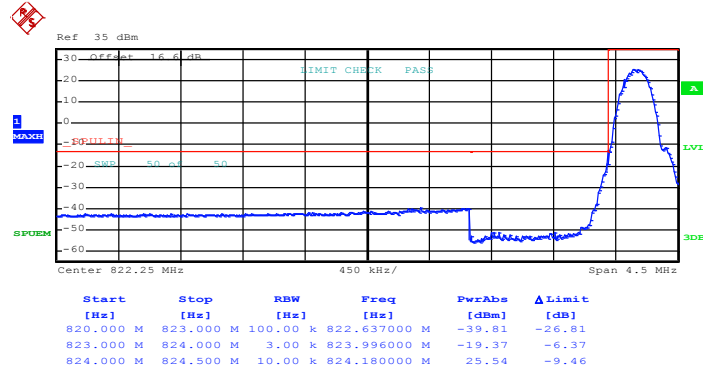




3.5.5 Test Result (Plots) of Conducted Band Edge

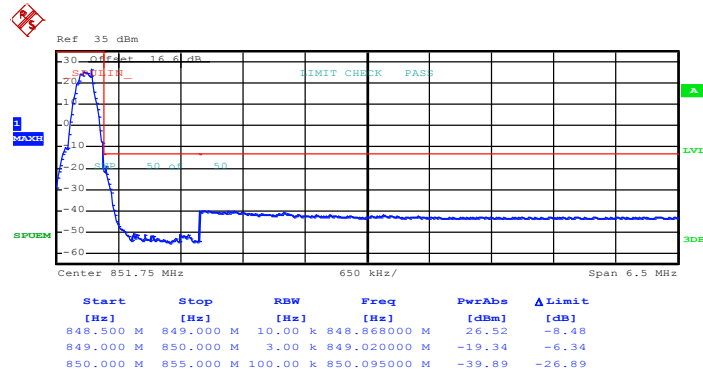
Band :	GSM850	Test Mode :	GSM Link (GMSK)
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Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 16.FEB.2015 10:25:04

Higher Band Edge Plot on Channel 251 (848.8 MHz)

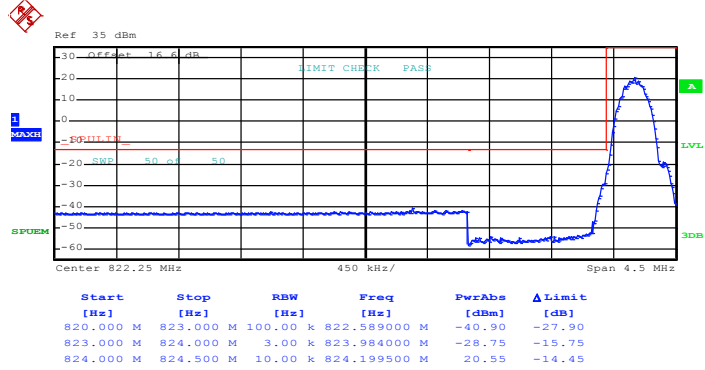


Date: 16.FEB.2015 10:27:22



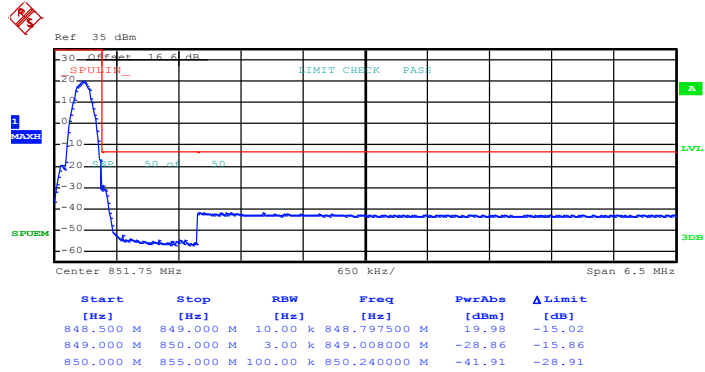
Band :	GSM850	Test Mode :	EDGE class 8 Link (8PSK)
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Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 16.FEB.2015 11:04:15

Higher Band Edge Plot on Channel 251 (848.8 MHz)

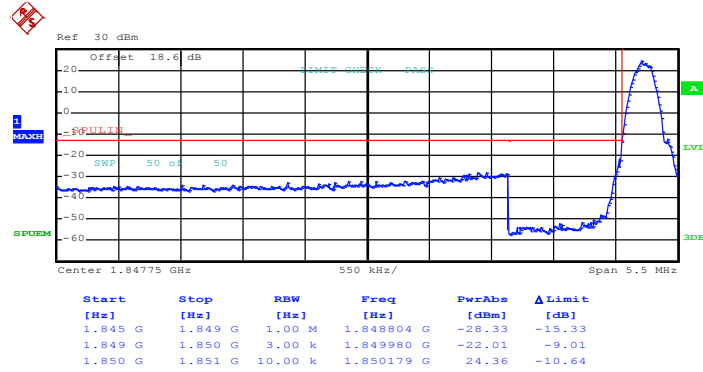


Date: 16.FEB.2015 11:10:47



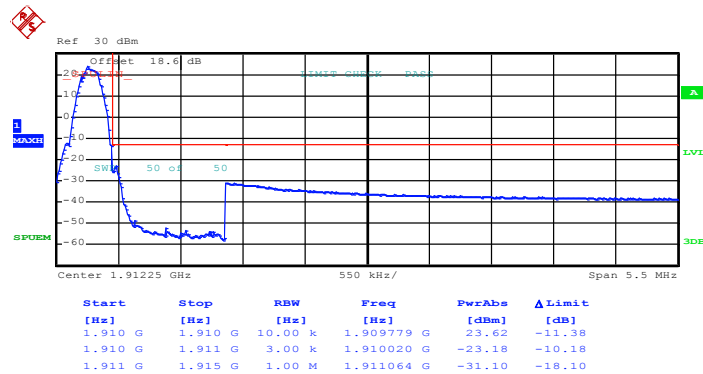
Band :	GSM1900	Test Mode :	GPRS class 8 Link (GMSK)
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Lower Band Edge Plot on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:39:05

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

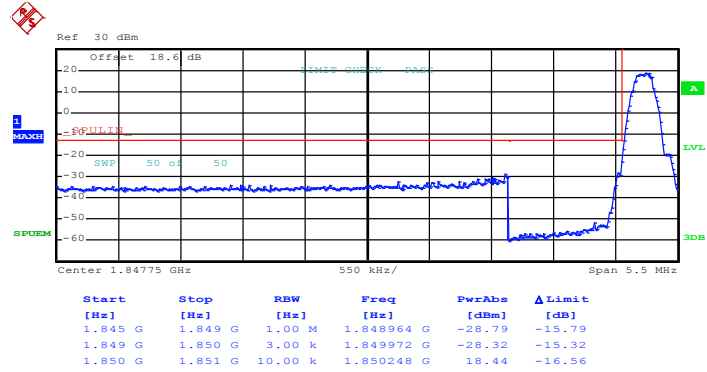


Date: 16.FEB.2015 11:40:22



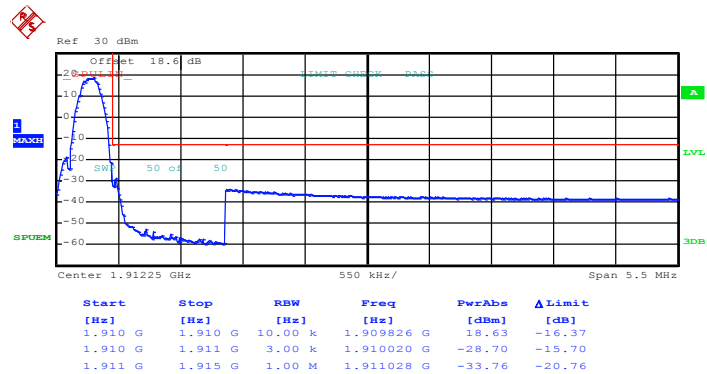
Band :	GSM1900	Test Mode :	EDGE class 8 Link (8PSK)
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Lower Band Edge Plot on Channel 512 (1850.2 MHz)



Date: 16.FEB.2015 11:59:12

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

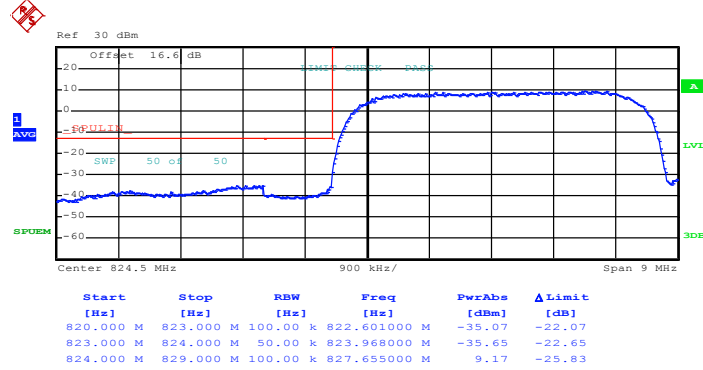


Date: 16.FEB.2015 12:00:31



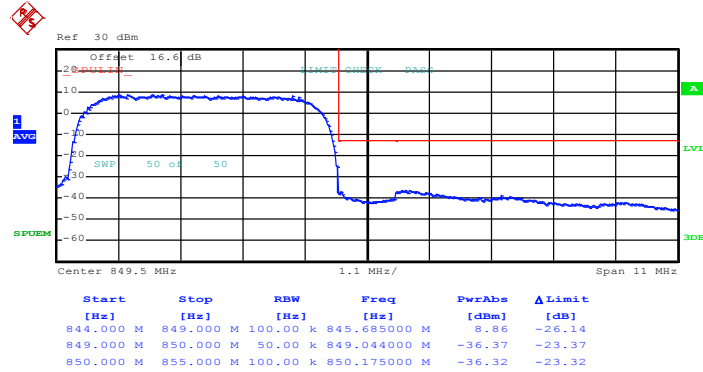
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Lower Band Edge Plot on Channel 4132 (826.4 MHz)



Date: 16.FEB.2015 14:17:16

Higher Band Edge Plot on Channel 4233 (846.6 MHz)

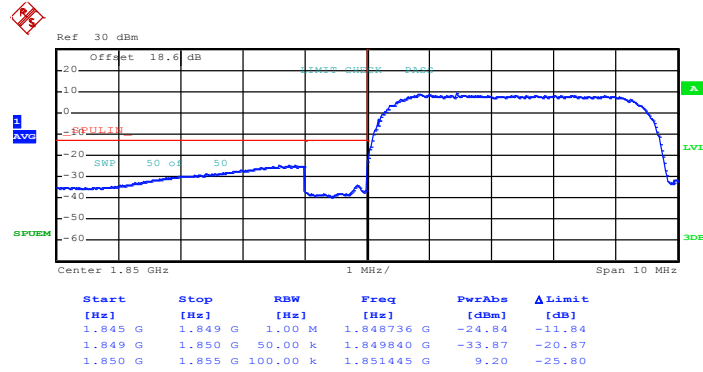


Date: 16.FEB.2015 14:18:37



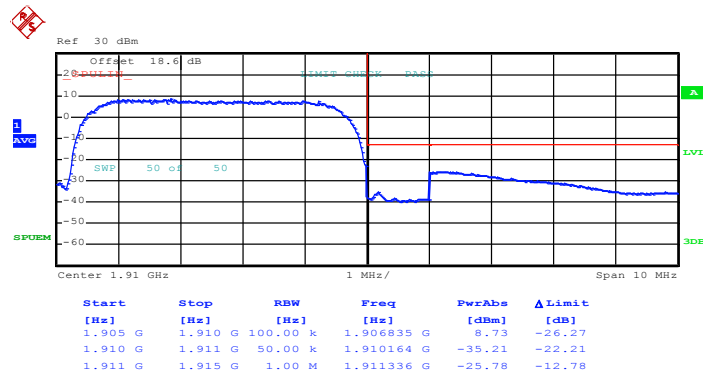
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



Date: 16.FEB.2015 13:56:45

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)



Date: 16.FEB.2015 13:58:09

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

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

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

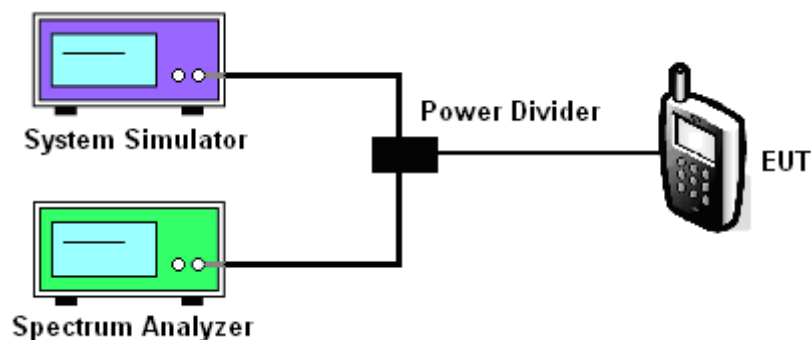
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13\text{dBm}$.

3.6.4 Test Setup

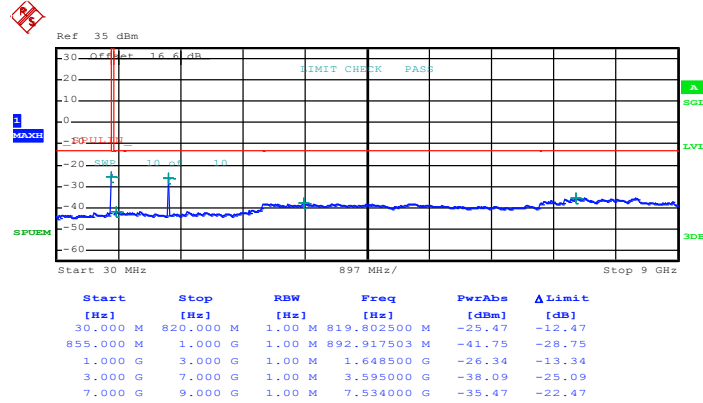




3.6.5 Test Result (Plots) of Conducted Spurious Emission

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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

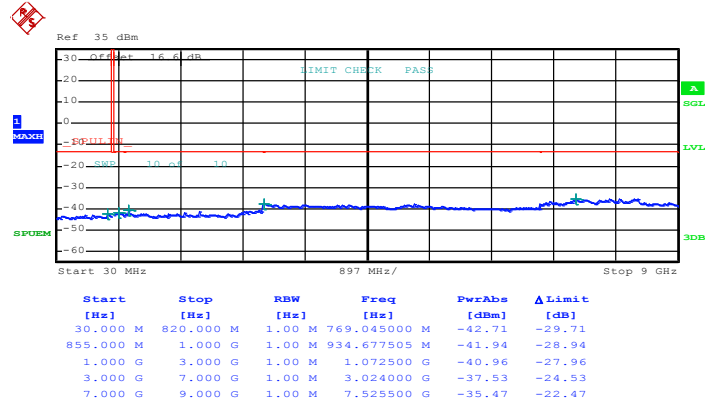


Date: 16.FEB.2015 10:31:30



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

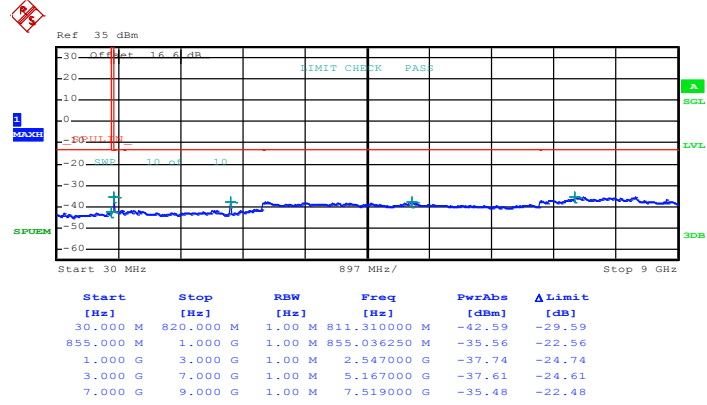


Date: 16.FEB.2015 10:32:02



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

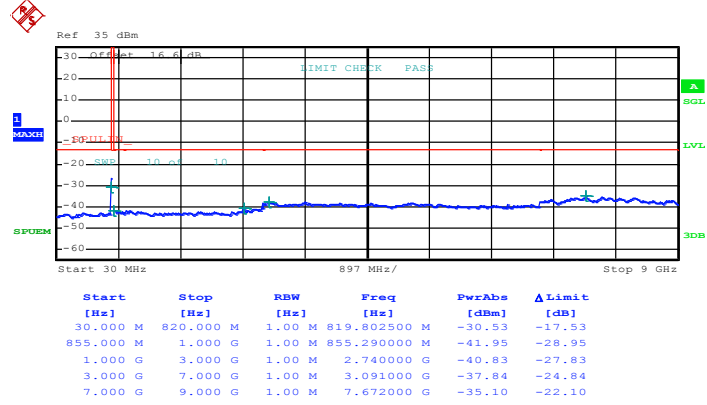


Date: 16.FEB.2015 10:32:32



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

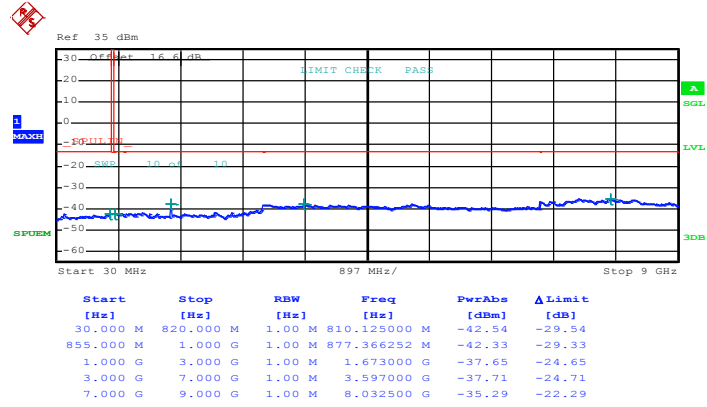


Date: 16.FEB.2015 11:14:48



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

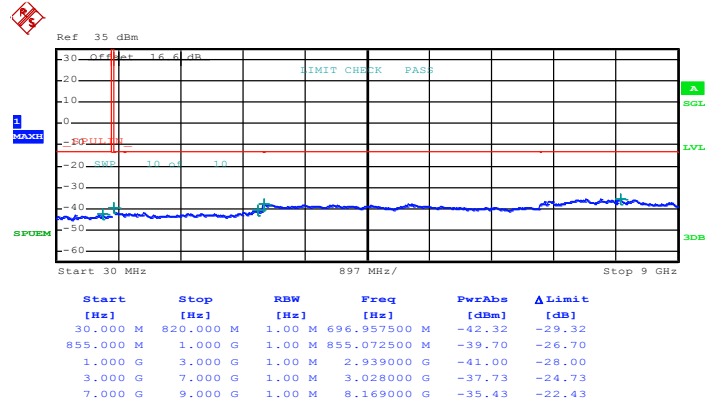


Date: 16.FEB.2015 11:15:17



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

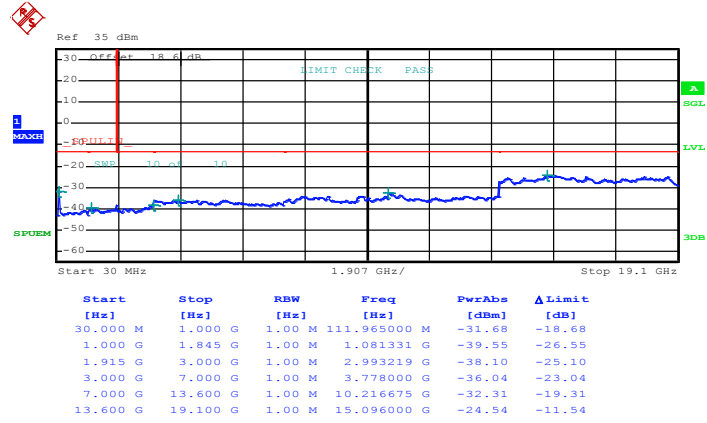


Date: 16.FEB.2015 11:15:48



Band :	GSM1900	Channel :	CH512
Test Mode :	GPRS class 8 Link (GMSK)	Frequency :	1850.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

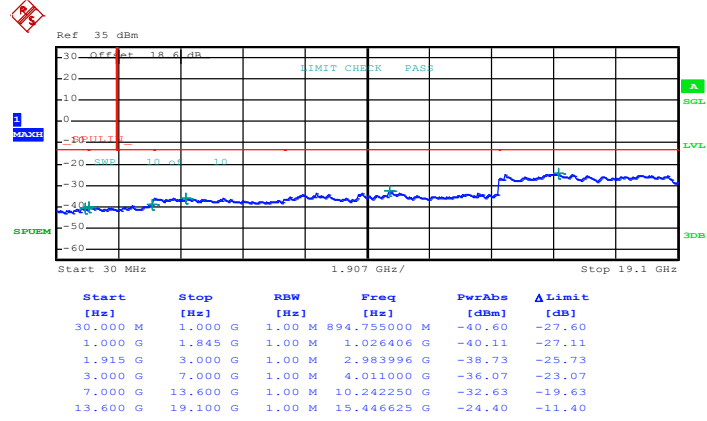


Date: 16.FEB.2015 11:41:06



Band :	GSM1900	Channel :	CH661
Test Mode :	GPRS class 8 Link (GMSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

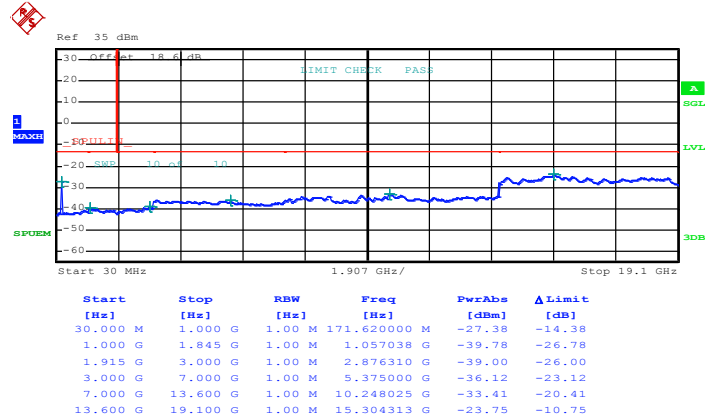


Date: 16.FEB.2015 11:41:36



Band :	GSM1900	Channel :	CH810
Test Mode :	GPRS class 8 Link (GMSK)	Frequency :	1909.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

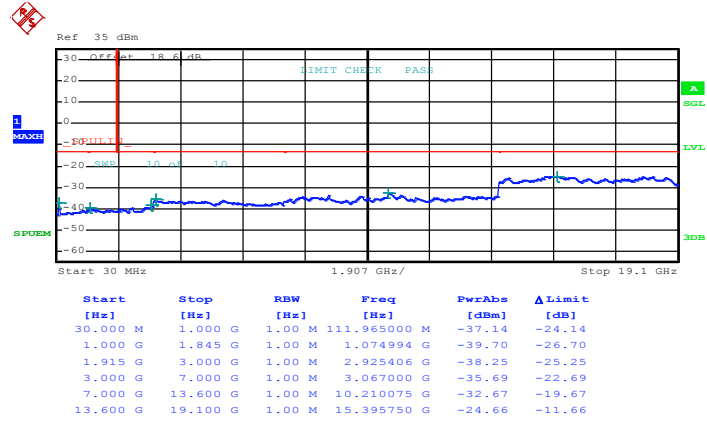


Date: 16.FEB.2015 11:42:06



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

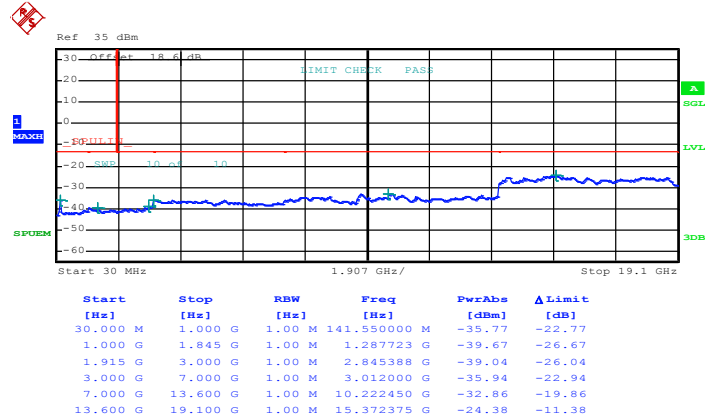


Date: 16.FEB.2015 12:01:33



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

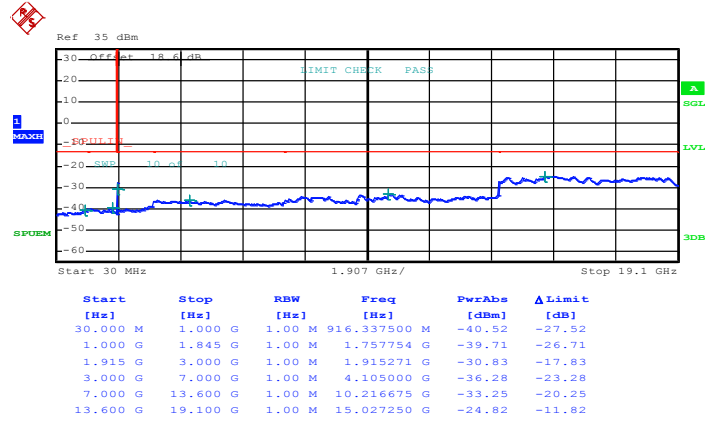


Date: 16.FEB.2015 12:02:02



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

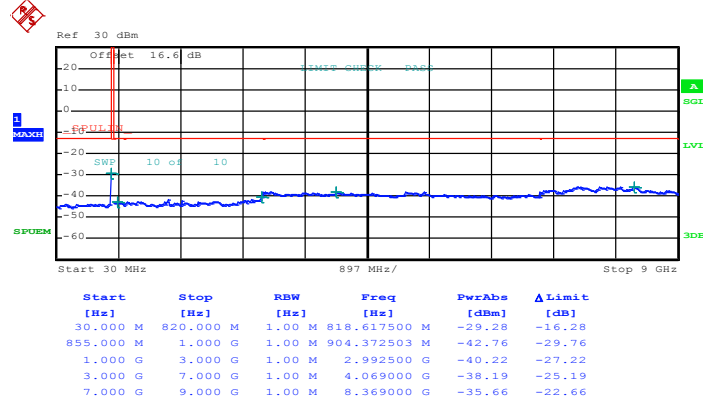


Date: 16.FEB.2015 12:02:32



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

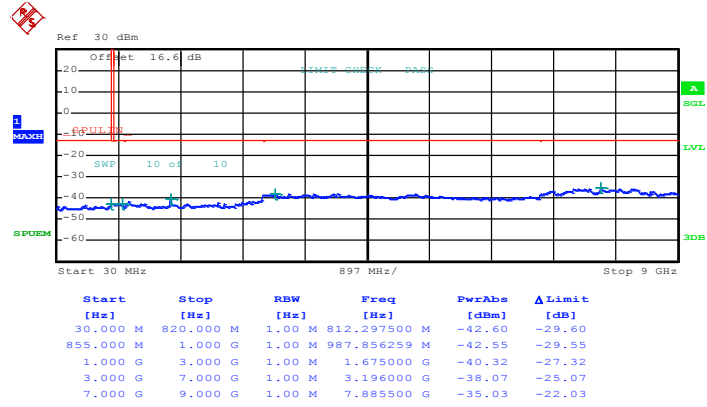


Date: 16.FEB.2015 14:20:37



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

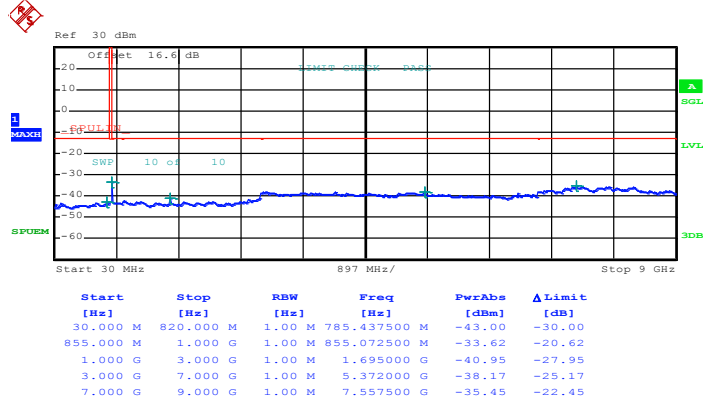


Date: 16.FEB.2015 14:21:06



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

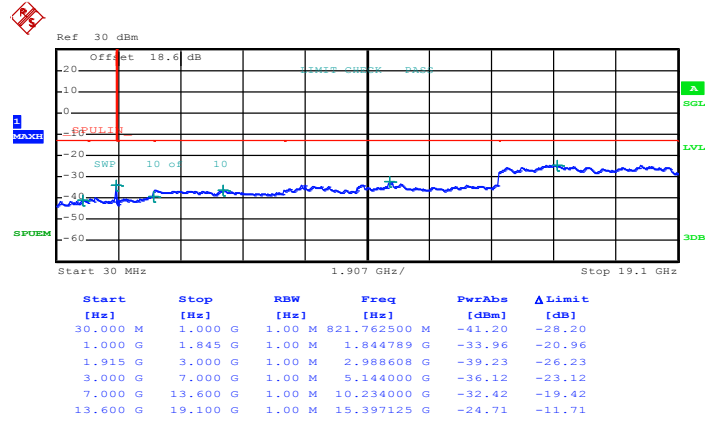


Date: 16.FEB.2015 14:21:48



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

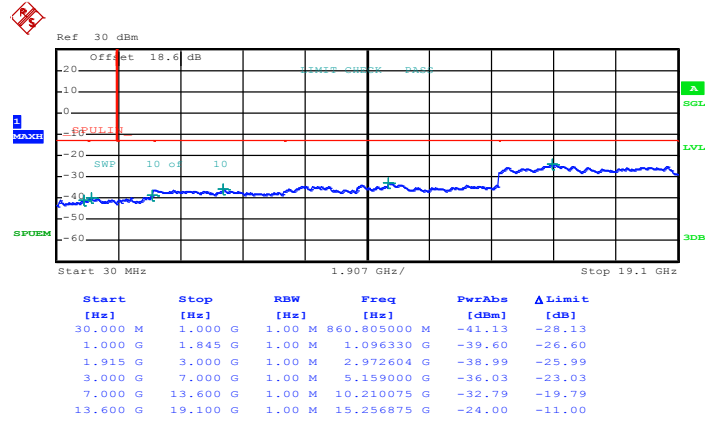


Date: 16.FEB.2015 14:01:56



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

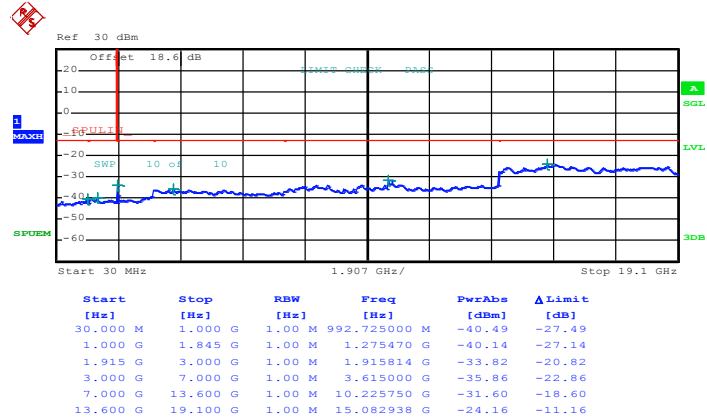


Date: 16.FEB.2015 14:02:36



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz



Date: 16.FEB.2015 14:03:08



3.7 Field Strength of Spurious Radiation Measurement

3.7.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.7.2 Measuring Instruments

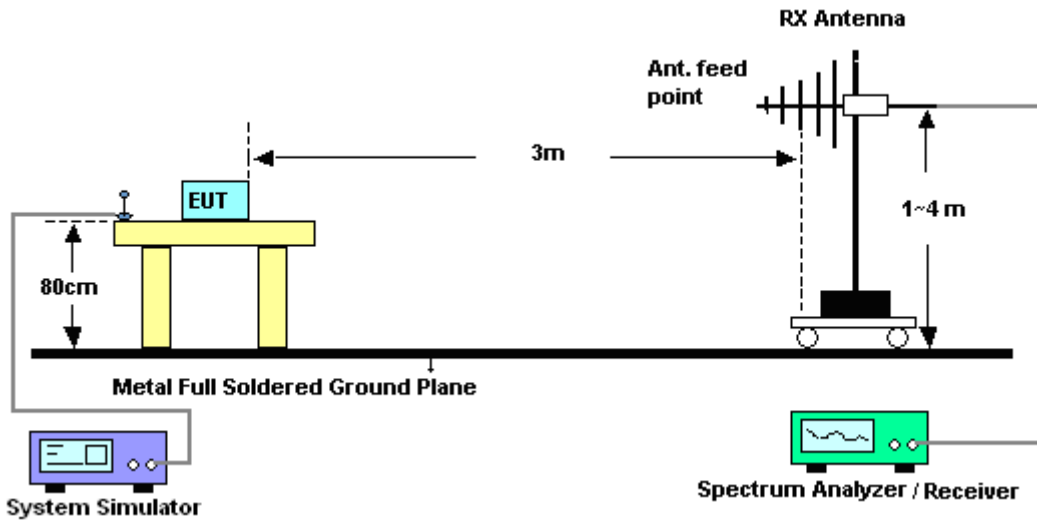
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

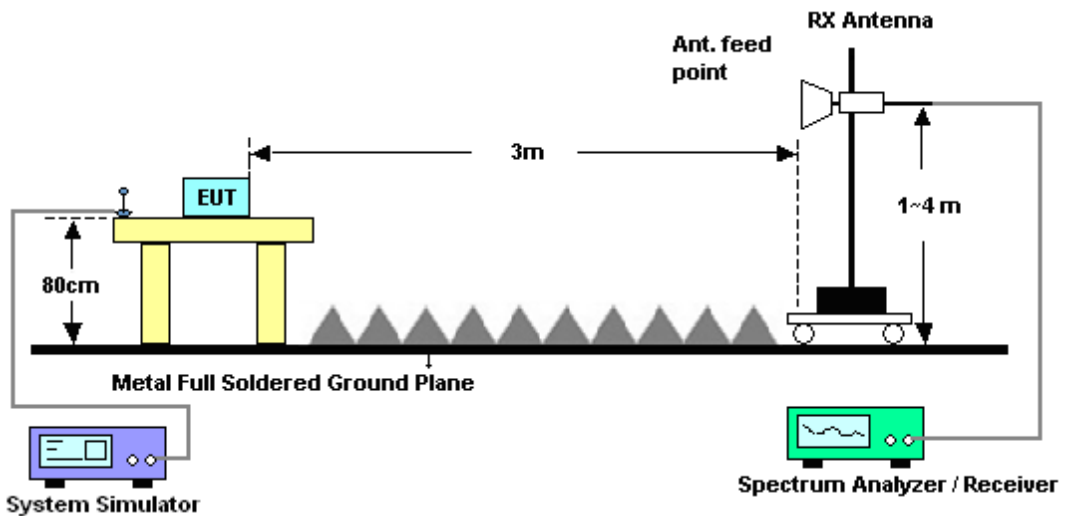
1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
12. $ERP \text{ (dBm)} = EIRP - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10\log(P)] \text{ (dB)}$
= $[30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
= -13dBm.

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.7.5 Test Result of Field Strength of Spurious Radiated

<Low Channel for Antenna 1>

Band :	GSM850		Temperature :	19~21°C					
Test Mode :	GSM Link (GMSK)		Relative Humidity :	46~48%					
Test Engineer :	Derreck Chen and Ken Wu		Polarization :	Horizontal					
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-55.02	-13	-42.02	-65.93	-56.78	0.98	4.89	H	Pass
2472	-45.01	-13	-32.01	-61.04	-46.89	1.28	5.32	H	Pass
3296	-49.81	-13	-36.81	-66.77	-53.22	1.54	7.10	H	Pass
4120	-54.51	-13	-41.51	-75.8	-59.15	1.83	8.62	H	Pass

Band :	GSM850		Temperature :	19~21°C					
Test Mode :	GSM Link (GMSK)		Relative Humidity :	46~48%					
Test Engineer :	Derreck Chen and Ken Wu		Polarization :	Vertical					
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-49.37	-13	-36.37	-60.94	-51.13	0.98	4.89	V	Pass
2472	-34.33	-13	-21.33	-51.79	-36.21	1.28	5.32	V	Pass
3296	-53.02	-13	-40.02	-71.54	-56.43	1.54	7.10	V	Pass
4120	-53.57	-13	-40.57	-75.55	-58.21	1.83	8.62	V	Pass



<Middle Channel for Antenna 1>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-59.09	-13	-46.09	-70.07	-60.77	0.99	4.82	H	Pass
2509	-45.71	-13	-32.71	-61.37	-47.67	1.29	5.41	H	Pass
3345	-51.23	-13	-38.23	-68.45	-54.84	1.56	7.32	H	Pass
4184	-52.09	-13	-39.09	-73.43	-56.71	1.87	8.64	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-53.53	-13	-40.53	-65.25	-55.21	0.99	4.82	V	Pass
2509	-33.58	-13	-20.58	-51.63	-35.54	1.29	5.41	V	Pass
3345	-52.60	-13	-39.60	-71.12	-56.21	1.56	7.32	V	Pass



<High Channel for Antenna 1>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-59.99	-13	-46.99	-71.38	-61.59	1.00	4.75	H	Pass
2544	-44.69	-13	-31.69	-60.78	-46.67	1.30	5.44	H	Pass
3392	-51.39	-13	-38.39	-68.83	-55.19	1.57	7.52	H	Pass
4240	-53.05	-13	-40.05	-74.45	-57.65	1.90	8.65	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-54.28	-13	-41.28	-66.39	-55.88	1.00	4.75	V	Pass
2544	-30.98	-13	-17.98	-48.52	-32.96	1.30	5.44	V	Pass
3392	-50.57	-13	-37.57	-69.39	-54.37	1.57	7.52	V	Pass
4240	-49.11	-13	-36.11	-71.18	-53.71	1.90	8.65	V	Pass



<Low Channel for Antenna 1>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-62.22	-13	-49.22	-73.13	-63.98	0.98	4.89	H	Pass
2472	-59.01	-13	-46.01	-75.1	-60.89	1.28	5.32	H	Pass
3296	-59.95	-13	-46.95	-76.91	-63.36	1.54	7.10	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-55.99	-13	-42.99	-67.66	-57.75	0.98	4.89	V	Pass
2472	-50.89	-13	-37.89	-68.64	-52.77	1.28	5.32	V	Pass
3296	-58.47	-13	-45.47	-76.99	-61.88	1.54	7.10	V	Pass



<Middle Channel for Antenna 1>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-62.80	-13	-49.80	-73.78	-64.48	0.99	4.82	H	Pass
2512	-59.62	-13	-46.62	-74.76	-61.59	1.29	5.41	H	Pass
3344	-58.97	-13	-45.97	-76.19	-62.58	1.56	7.31	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-58.14	-13	-45.14	-69.86	-59.82	0.99	4.82	V	Pass
2512	-50.42	-13	-37.42	-67.82	-52.39	1.29	5.41	V	Pass
3344	-57.98	-13	-44.98	-76.69	-61.59	1.56	7.31	V	Pass



<High Channel for Antenna 1>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-62.98	-13	-49.98	-74.37	-64.58	1.00	4.75	H	Pass
2544	-57.70	-13	-44.70	-73.59	-59.68	1.30	5.44	H	Pass
3392	-58.81	-13	-45.81	-76.35	-62.61	1.57	7.52	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-57.24	-13	-44.24	-69.38	-58.84	1.00	4.75	V	Pass
2544	-51.38	-13	-38.38	-68.71	-55.51	1.30	5.44	V	Pass
3392	-58.44	-13	-45.44	-77.09	-64.39	1.57	7.52	V	Pass



<Low Channel for Antenna 1>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-49.55	-13	-36.55	-68.3	-56.12	1.67	8.24	H	Pass
5548	-40.50	-13	-27.50	-64.44	-47.57	2.65	9.72	H	Pass
7403	-53.53	-13	-40.53	-79.31	-62.68	2.46	11.61	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-51.37	-13	-38.37	-71.17	-57.94	1.67	8.24	V	Pass
5548	-41.82	-13	-28.82	-67.63	-48.89	2.65	9.72	V	Pass
7403	-51.51	-13	-38.51	-79.03	-60.66	2.46	11.61	V	Pass



<Middle Channel for Antenna 1>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-54.50	-13	-41.50	-74.08	-61.13	1.69	8.32	H	Pass
5639	-41.16	-13	-28.16	-65.06	-48.21	2.71	9.76	H	Pass
7522	-52.98	-13	-39.98	-79.5	-62.37	2.42	11.81	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-53.01	-13	-40.01	-73.31	-59.64	1.69	8.32	V	Pass
5639	-39.62	-13	-26.62	-64.55	-46.67	2.71	9.76	V	Pass
7522	-51.13	-13	-38.13	-79.36	-60.52	2.42	11.81	V	Pass



<High Channel for Antenna 1>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-50.55	-13	-37.55	-71.15	-57.23	1.70	8.38	H	Pass
5730	-48.14	-13	-35.14	-72.11	-55.17	2.76	9.79	H	Pass
7641	-51.91	-13	-38.91	-79.04	-61.41	2.38	11.88	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-50.15	-13	-37.15	-71.21	-56.83	1.70	8.38	V	Pass
5730	-43.61	-13	-30.61	-68.85	-50.64	2.76	9.79	V	Pass
7641	-49.61	-13	-36.61	-78.26	-59.11	2.38	11.88	V	Pass



<Low Channel for Antenna 1>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-52.66	-13	-39.66	-71.49	-59.23	1.67	8.24	H	Pass
5548	-52.81	-13	-39.81	-76.75	-59.88	2.65	9.72	H	Pass
7403	-53.67	-13	-40.67	-79.45	-62.82	2.46	11.61	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-53.91	-13	-40.91	-73.71	-60.48	1.67	8.24	V	Pass
5548	-50.14	-13	-37.14	-75.5	-57.21	2.65	9.72	V	Pass
7403	-51.98	-13	-38.98	-79.4	-61.13	2.46	11.61	V	Pass



<Middle Channel for Antenna 1>

Band :	GSM1900		Temperature :	19~21°C					
Test Mode :	EDGE class 8 Link (8PSK)		Relative Humidity :	46~48%					
Test Engineer :	Derreck Chen and Ken Wu		Polarization :	Horizontal					
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-53.79	-13	-40.79	-73.37	-60.42	1.69	8.32	H	Pass
5639	-50.38	-13	-37.38	-74.28	-57.43	2.71	9.76	H	Pass
7522	-52.50	-13	-39.50	-79.02	-61.89	2.42	11.81	H	Pass

Band :	GSM1900		Temperature :	19~21°C					
Test Mode :	EDGE class 8 Link (8PSK)		Relative Humidity :	46~48%					
Test Engineer :	Derreck Chen and Ken Wu		Polarization :	Vertical					
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-55.11	-13	-42.11	-75.41	-61.74	1.69	8.32	V	Pass
5639	-48.64	-13	-35.64	-73.95	-55.69	2.71	9.76	V	Pass
7522	-50.25	-13	-37.25	-78.48	-59.64	2.42	11.81	V	Pass



<High Channel for Antenna 1>

Band :	GSM1900		Temperature :	19~21°C					
Test Mode :	EDGE class 8 Link (8PSK)		Relative Humidity :	46~48%					
Test Engineer :	Derreck Chen and Ken Wu		Polarization :	Horizontal					
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-49.98	-13	-36.98	-70.58	-56.66	1.70	8.38	H	Pass
5730	-48.86	-13	-35.86	-72.83	-55.89	2.76	9.79	H	Pass
7641	-51.82	-13	-38.82	-78.95	-61.32	2.38	11.88	H	Pass

Band :	GSM1900		Temperature :	19~21°C					
Test Mode :	EDGE class 8 Link (8PSK)		Relative Humidity :	46~48%					
Test Engineer :	Derreck Chen and Ken Wu		Polarization :	Vertical					
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-51.04	-13	-38.04	-72.1	-57.72	1.70	8.38	V	Pass
5730	-44.44	-13	-31.44	-69.28	-51.47	2.76	9.79	V	Pass
7641	-49.48	-13	-36.48	-78.14	-58.98	2.38	11.88	V	Pass



<Low Channel for Antenna 1>

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1656	-61.76	-13	-48.76	-72.64	-63.49	0.98	4.86	H	Pass
2480	-56.46	-13	-43.46	-72.53	-58.37	1.28	5.34	H	Pass
3304	-57.35	-13	-44.35	-74.34	-60.79	1.54	7.14	H	Pass

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1656	-58.48	-13	-45.48	-70.12	-60.21	0.98	4.86	V	Pass
2480	-53.78	-13	-40.78	-71.16	-55.69	1.28	5.34	V	Pass
3304	-56.88	-13	-43.88	-75.43	-60.32	1.54	7.14	V	Pass



<Middle Channel for Antenna 1>

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-59.28	-13	-46.28	-70.62	-60.96	0.99	4.82	H	Pass
2512	-53.39	-13	-40.39	-69.89	-55.36	1.29	5.41	H	Pass
3344	-57.20	-13	-44.20	-74.42	-60.81	1.56	7.31	H	Pass

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-54.81	-13	-41.81	-66.53	-56.49	0.99	4.82	V	Pass
2512	-51.01	-13	-38.01	-68.72	-52.98	1.29	5.41	V	Pass
3344	-57.02	-13	-44.02	-75.73	-60.63	1.56	7.31	V	Pass



<High Channel for Antenna 1>

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-57.71	-13	-44.71	-69.1	-59.31	1.00	4.75	H	Pass
2536	-55.65	-13	-42.65	-71.64	-57.63	1.30	5.43	H	Pass
3384	-57.79	-13	-44.79	-75.3	-61.56	1.57	7.49	H	Pass

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-55.06	-13	-42.06	-67.17	-56.66	1.00	4.75	V	Pass
2536	-49.59	-13	-36.59	-67.57	-51.57	1.30	5.43	V	Pass
3384	-57.56	-13	-44.56	-76.35	-61.33	1.57	7.49	V	Pass



<Low Channel for Antenna 1>

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3707	-58.32	-13	-45.32	-77.23	-64.9	1.67	8.25	H	Pass
5555	-53.37	-13	-40.37	-77.31	-60.44	2.66	9.72	H	Pass
7410	-49.96	-13	-36.96	-75.77	-59.12	2.46	11.62	H	Pass

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3707	-57.32	-13	-44.32	-77.18	-63.9	1.67	8.25	V	Pass
5555	-51.91	-13	-38.91	-76.95	-58.98	2.66	9.72	V	Pass
7410	-49.05	-13	-36.05	-76.61	-58.21	2.46	11.62	V	Pass



<Middle Channel for Antenna 1>

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-57.92	-13	-44.92	-77.5	-64.55	1.69	8.32	H	Pass
5639	-52.68	-13	-39.68	-76.58	-59.73	2.71	9.76	H	Pass
7522	-49.33	-13	-36.33	-75.85	-58.72	2.42	11.81	H	Pass

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-57.92	-13	-44.92	-77.5	-64.55	1.69	8.32	V	Pass
5639	-52.68	-13	-39.68	-76.58	-59.73	2.71	9.76	V	Pass
7522	-49.33	-13	-36.33	-75.85	-58.72	2.42	11.81	V	Pass



<High Channel for Antenna 1>

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3812	-56.45	-13	-43.45	-76.99	-63.12	1.70	8.37	H	Pass
5723	-52.47	-13	-39.47	-76.48	-59.51	2.75	9.79	H	Pass
7627	-49.37	-13	-36.37	-76.5	-58.86	2.39	11.88	H	Pass

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3812	-55.70	-13	-42.70	-76.66	-62.37	1.70	8.37	V	Pass
5723	-49.23	-13	-36.23	-74.08	-56.27	2.75	9.79	V	Pass
7627	-47.79	-13	-34.79	-76.58	-57.28	2.39	11.88	V	Pass



<Low Channel for Antenna 2 >

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-51.53	-13	-38.53	-62.64	-53.29	0.98	4.89	H	Pass
2472	-48.05	-13	-35.05	-64.37	-49.93	1.28	5.32	H	Pass
3296	-59.06	-13	-46.06	-76.19	-62.47	1.54	7.10	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-49.73	-13	-36.73	-61.63	-51.49	0.98	4.89	V	Pass
2472	-44.81	-13	-31.81	-62.23	-46.69	1.28	5.32	V	Pass
3296	-56.22	-13	-43.22	-74.81	-59.63	1.54	7.10	V	Pass



<Middle Channel for Antenna 2 >

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672.8	-58.91	-13	-45.91	-69.5	-60.59	0.99	4.82	H	Pass
2509.2	-48.33	-13	-35.33	-64.81	-50.29	1.29	5.41	H	Pass
3345.6	-57.81	-13	-44.81	-75.11	-61.42	1.56	7.32	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672.8	-51.25	-13	-38.25	-62.07	-52.93	0.99	4.82	V	Pass
2509.2	-45.93	-13	-32.93	-63.04	-47.89	1.29	5.41	V	Pass
3345.6	-57.59	-13	-44.59	-76.47	-61.2	1.56	7.32	V	Pass



<High Channel for Antenna 2>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-59.36	-13	-46.36	-70.41	-60.96	1.00	4.75	H	Pass
2546	-53.84	-13	-40.84	-69.73	-55.82	1.31	5.44	H	Pass
3395	-56.97	-13	-43.97	-74.54	-60.79	1.57	7.54	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	GSM Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-49.23	-13	-36.23	-61.01	-50.83	1.00	4.75	V	Pass
2546	-48.43	-13	-35.43	-66.57	-50.41	1.31	5.44	V	Pass
3395	-57.39	-13	-44.39	-75.89	-61.21	1.57	7.54	V	Pass



<Low Channel for Antenna 2>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-63.63	-13	-50.63	-74.94	-65.39	0.98	4.89	H	Pass
2472	-55.41	-13	-42.41	-72.17	-57.29	1.28	5.32	H	Pass
3296	-60.62	-13	-47.62	-77.57	-64.03	1.54	7.10	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-59.33	-13	-46.33	-71	-61.09	0.98	4.89	V	Pass
2472	-53.63	-13	-40.63	-71.57	-55.51	1.28	5.32	V	Pass
3296	-59.00	-13	-46.00	-77.63	-62.41	1.54	7.10	V	Pass



<Middle Channel for Antenna 2>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-61.53	-13	-48.53	-72.52	-63.21	0.99	4.82	H	Pass
2509	-56.89	-13	-43.89	-73.57	-58.85	1.29	5.41	H	Pass
3345	-60.48	-13	-47.48	-77.66	-64.09	1.56	7.32	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-59.61	-13	-46.61	-71.24	-61.29	0.99	4.82	V	Pass
2509	-54.43	-13	-41.43	-72.82	-56.39	1.29	5.41	V	Pass
3345	-58.80	-13	-45.80	-77.61	-62.41	1.56	7.32	V	Pass



<High Channel for Antenna 2>

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-62.72	-13	-49.72	-74.04	-64.32	1.00	4.75	H	Pass
2546	-58.23	-13	-45.23	-74.77	-60.21	1.31	5.44	H	Pass
3395	-59.59	-13	-46.59	-77.48	-63.41	1.57	7.54	H	Pass

Band :	GSM850				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-59.35	-13	-46.35	-71.46	-60.95	1.00	4.75	V	Pass
2546	-56.29	-13	-43.29	-74.01	-60.42	1.31	5.44	V	Pass
3395	-58.55	-13	-45.55	-77.69	-64.52	1.57	7.54	V	Pass



<Low Channel for Antenna 2>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-57.95	-13	-44.95	-77.15	-64.52	1.67	8.24	H	Pass
5548	-37.22	-13	-24.22	-61.21	-44.29	2.65	9.72	H	Pass
7403	-49.02	-13	-36.02	-75.44	-58.17	2.46	11.61	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-57.82	-13	-44.82	-77.88	-64.39	1.67	8.24	V	Pass
5548	-45.40	-13	-32.40	-70.31	-52.47	2.65	9.72	V	Pass
7403	-51.04	-13	-38.04	-78.71	-60.19	2.46	11.61	V	Pass



<Middle Channel for Antenna 2>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-54.65	-13	-41.65	-73.93	-61.27	1.68	8.31	H	Pass
5639	-32.22	-13	-19.22	-56.33	-39.27	2.71	9.76	H	Pass
7522	-48.80	-13	-35.80	-75.46	-58.19	2.42	11.81	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-54.85	-13	-41.85	-75.03	-61.47	1.68	8.31	V	Pass
5639	-40.53	-13	-27.53	-65.83	-47.58	2.71	9.76	V	Pass
7522	-49.73	-13	-36.73	-77.89	-59.12	2.42	11.81	V	Pass



<High Channel for Antenna 2>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-54.53	-13	-41.53	-75.07	-61.21	1.70	8.38	H	Pass
5730	-37.29	-13	-24.29	-61.6	-44.32	2.76	9.79	H	Pass
7641	-47.43	-13	-34.43	-74.56	-56.93	2.38	11.88	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	GPRS class 8 Link (GMSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-54.59	-13	-41.59	-75.79	-61.27	1.70	8.38	V	Pass
5730	-41.99	-13	-28.99	-67.05	-49.02	2.76	9.79	V	Pass
7641	-48.71	-13	-35.71	-77.68	-58.21	2.38	11.88	V	Pass



<Low Channel for Antenna 2>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-57.75	-13	-44.75	-76.79	-64.32	1.67	8.24	H	Pass
5550	-46.13	-13	-33.13	-70.13	-53.2	2.65	9.72	H	Pass
7400	-53.00	-13	-40.00	-79.17	-62.14	2.46	11.60	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3700	-58.00	-13	-45.00	-78.2	-64.57	1.67	8.24	V	Pass
5550	-47.12	-13	-34.12	-72.52	-54.19	2.65	9.72	V	Pass
7400	-51.95	-13	-38.95	-79.47	-61.09	2.46	11.60	V	Pass



<Middle Channel for Antenna 2>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-57.69	-13	-44.69	-77.56	-64.32	1.69	8.32	H	Pass
5639	-43.24	-13	-30.24	-67.64	-50.29	2.71	9.76	H	Pass
7520	-52.94	-13	-39.94	-79.36	-62.33	2.42	11.81	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-57.58	-13	-44.58	-78.06	-64.21	1.69	8.32	V	Pass
5639	-50.27	-13	-37.27	-75.56	-57.32	2.71	9.76	V	Pass
7520	-50.80	-13	-37.80	-79.36	-60.19	2.42	11.81	V	Pass



<High Channel for Antenna 2>

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-55.41	-13	-42.41	-76.06	-62.09	1.70	8.38	H	Pass
5729	-42.18	-13	-29.18	-66.47	-49.21	2.76	9.79	H	Pass
7639	-50.91	-13	-37.91	-78.45	-60.41	2.38	11.88	H	Pass

Band :	GSM1900				Temperature :	19~21°C			
Test Mode :	EDGE class 8 Link (8PSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-54.59	-13	-41.59	-76.01	-61.27	1.70	8.38	V	Pass
5729	-47.33	-13	-34.33	-72.74	-54.36	2.76	9.79	V	Pass
7639	-49.69	-13	-36.69	-78.98	-59.19	2.38	11.88	V	Pass



<Low Channel for Antenna 2>

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-58.52	-13	-45.52	-69.65	-60.28	0.98	4.89	H	Pass
2472	-58.59	-13	-45.59	-75.28	-60.47	1.28	5.32	H	Pass
3296	-60.06	-13	-47.06	-77.23	-63.47	1.54	7.10	H	Pass

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1648	-56.00	-13	-43.00	-67.45	-57.76	0.98	4.89	V	Pass
2472	-56.15	-13	-43.15	-73.89	-58.03	1.28	5.32	V	Pass
3296	-58.78	-13	-45.78	-77.43	-62.19	1.54	7.10	V	Pass



<Middle Channel for Antenna 2>

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-58.15	-13	-45.15	-68.51	-59.83	0.99	4.82	H	Pass
2509	-59.12	-13	-46.12	-75.18	-61.08	1.29	5.41	H	Pass
3345	-58.58	-13	-45.58	-75.81	-62.19	1.56	7.32	H	Pass

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-53.73	-13	-40.73	-65.6	-55.41	0.99	4.82	V	Pass
2509	-56.67	-13	-43.67	-74.93	-58.63	1.29	5.41	V	Pass
3345	-58.48	-13	-45.48	-77.2	-62.09	1.56	7.32	V	Pass



<High Channel for Antenna 2>

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-57.04	-13	-44.04	-68.63	-58.64	1.00	4.75	H	Pass
2539	-60.11	-13	-47.11	-76.75	-62.09	1.30	5.43	H	Pass
3386	-59.41	-13	-46.41	-76.95	-63.19	1.57	7.50	H	Pass

Band :	WCDMA Band V				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-54.49	-13	-41.49	-66.77	-56.09	1.00	4.75	V	Pass
2539	-59.29	-13	-46.29	-76.72	-61.27	1.30	5.43	V	Pass
3386	-58.75	-13	-45.75	-77.57	-62.53	1.57	7.50	V	Pass



<Low Channel for Antenna 2>

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3707	-58.60	-13	-45.60	-77.68	-65.18	1.67	8.25	H	Pass
5557	-52.03	-13	-39.03	-76.28	-59.09	2.66	9.72	H	Pass
7409	-50.05	-13	-37.05	-76.32	-59.21	2.46	11.62	H	Pass

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3707	-57.71	-13	-44.71	-78.01	-64.29	1.67	8.25	V	Pass
5557	-53.15	-13	-40.15	-78.6	-60.21	2.66	9.72	V	Pass
7409	-45.52	-13	-32.52	-73.22	-54.68	2.46	11.62	V	Pass



<Middle Channel for Antenna 2>

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-57.58	-13	-44.58	-77.4	-64.21	1.69	8.32	H	Pass
5640	-48.04	-13	-35.04	-72.09	-55.09	2.71	9.76	H	Pass
7520	-48.62	-13	-35.62	-75.29	-58.01	2.42	11.81	H	Pass

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-57.46	-13	-44.46	-77.95	-64.09	1.69	8.32	V	Pass
5640	-52.27	-13	-39.27	-77.6	-59.32	2.71	9.76	V	Pass
7520	-45.43	-13	-32.43	-73.76	-54.82	2.42	11.81	V	Pass



<High Channel for Antenna 2>

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3812	-55.65	-13	-42.65	-76.3	-62.32	1.70	8.37	H	Pass
5722	-48.05	-13	-35.05	-72.06	-55.09	2.75	9.79	H	Pass
7630	-48.72	-13	-35.72	-76.12	-58.21	2.39	11.88	H	Pass

Band :	WCDMA Band II				Temperature :	19~21°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	46~48%			
Test Engineer :	Derreck Chen and Ken Wu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3812	-56.42	-13	-43.42	-77.42	-63.09	1.70	8.37	V	Pass
5722	-52.27	-13	-39.27	-77.44	-59.31	2.75	9.79	V	Pass
7630	-46.83	-13	-33.83	-75.92	-56.32	2.39	11.88	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

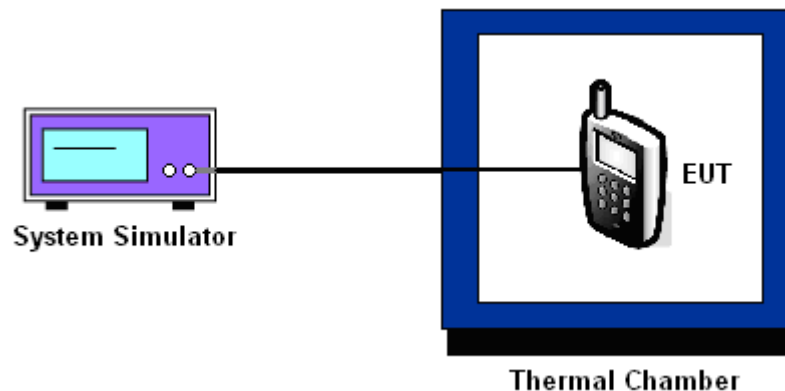
3.8.3 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.8.4 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

3.8.5 Test Setup





3.8.6 Test Result of Temperature Variation

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

Temperature (°C)	GSM	EDGE class 8	Result
	Deviation (ppm)	Deviation (ppm)	
-30	0.0024	0.0024	PASS
-20	0.0012	0.0036	
-10	0.0012	0.0024	
0	0.0000	0.0000	
10	0.0036	0.0012	
20(Ref.)	0.0311	0.0036	
30	0.0012	0.0000	
40	0.0024	0.0012	
50	0.0000	0.0036	

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

Temperature (°C)	GPRS class 8	EDGE class 8	Result
	Deviation (ppm)	Deviation (ppm)	
-30	0.0005	0.0037	PASS
-20	0.0011	0.0027	
-10	0.0027	0.0005	
0	0.0000	0.0000	
10	0.0016	0.0011	
20(Ref.)	0.0021	0.0016	
30	0.0138	0.0005	
40	0.0160	0.0011	
50	0.0016	0.0021	

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



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

Temperature (°C)	RMC 12.2Kbps		Result
	Deviation (ppm)		
-30	0.0155		PASS
-20	0.0132		
-10	0.0120		
0	0.0000		
10	0.0108		
20(Ref.)	0.0143		
30	0.0012		
40	0.0036		
50	0.0132		

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

Temperature (°C)	RMC 12.2Kbps		Result
	Deviation (ppm)		
-30	0.0021		PASS
-20	0.0005		
-10	0.0011		
0	0.0000		
10	0.0011		
20(Ref.)	0.0005		
30	0.0016		
40	0.0021		
50	0.0011		

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



3.8.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GSM	4.35	0.0036	2.5	PASS
		3.80	0.0000		
		BEP	0.0012		
	EDGE class 8	4.35	0.0000		
		3.80	0.0024		
		BEP	0.0012		
GSM 1900 CH661	GPRS class 8	4.35	0.0027	(Note 3.)	
		3.80	0.0016		
		BEP	0.0021		
	EDGE class 8	4.35	0.0027		
		3.80	0.0005		
		BEP	0.0000		
WCDMA Band V CH4182	RMC 12.2Kbps	4.35	0.0108	2.5	
		3.80	0.0012		
		BEP	0.0000		
WCDMA Band II CH9400	RMC 12.2Kbps	4.35	0.0000	(Note 3.)	
		3.80	0.0005		
		BEP	0.0016		

Note:

1. Normal Voltage = 3.80V.
2. Battery End Point (BEP) = 3.50 V.
3. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
System Simulator	Rohde & Schwarz	CMU200	117995	N/A	Jul. 29, 2014	Feb. 16, 2015	Jul. 28, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 09, 2014	Feb. 16, 2015	Jun. 08, 2015	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 17, 2014	Feb. 16, 2015	Jul. 16, 2015	Conducted (TH02-HY)
Signal Analyzer	Rohde & Schwarz	FSV 30	100895	9kHz ~ 30GHz	Apr. 11, 2014	Feb. 09, 2015~ Feb. 20, 2015	Apr. 10, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Sep. 27, 2014	Feb. 09, 2015~ Feb. 20, 2015	Sep. 26, 2015	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 19, 2014	Feb. 09, 2015~ Feb. 20, 2015	Aug. 18, 2015	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz	Mar. 17, 2014	Feb. 09, 2015~ Feb. 20, 2015	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Oct. 21, 2014	Feb. 09, 2015~ Feb. 20, 2015	Oct. 20, 2015	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Feb. 09, 2015~ Feb. 20, 2015	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Feb. 09, 2015~ Feb. 20, 2015	N/A	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Oct. 02, 2014	Feb. 09, 2015~ Feb. 20, 2015	Oct. 01, 2015	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
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