



FCC RF Test Report

APPLICANT : HTC Corporation
EQUIPMENT : Smartphone
MODEL NAME : 0PM3100
FCC ID : NM80PM3100
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Mar. 25, 2015 and testing was completed on May 26, 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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG532501A	Rev. 01	Initial issue of report	Jun. 09, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	N/A	PASS	-
3.2	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§22.913(a)(2)	Effective Radiated Power	< 7 Watts	PASS	-
	§24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.4	§2.1049	Occupied Bandwidth	N/A	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a)	Band Edge Measurement	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a)	Conducted Spurious Emission	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 14.23 dB at 5636.000 MHz
0	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22 Within Authorized Band	PASS	-
	§2.1055 §24.235				



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	0PM3100
FCC ID	NM80PM3100
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE WLAN 11b/g/n HT20 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 CDMA2000 BC0: 824.70 MHz ~ 848.31 MHz CDMA2000 BC1: 1851.25 MHz ~ 1908.75 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 CDMA2000 BC0: 869.70 MHz ~ 893.31 MHz CDMA2000 BC1: 1931.25 MHz ~ 1988.75 MHz
Maximum Output Power to Antenna	GSM850 : 32.64 dBm GSM1900 : 29.69 dBm WCDMA Band V : 24.20 dBm WCDMA Band II : 24.44 dBm CDMA2000 BC0 : 24.39 dBm CDMA2000 BC1 : 24.40 dBm
99% Occupied Bandwidth	GSM850: 0.254MHz GSM1900: 0.260MHz WCDMA Band V: 4.23MHz WCDMA Band II: 4.24MHz CDMA2000 BC0: 1.28MHz CDMA2000 BC1: 1.28MHz
Antenna Type	Fixed Internal Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) CDMA2000 : QPSK CDMA2000 1xEV-DO : QPSK/8PSK

1.5 Modification of EUT

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

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

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (ppm)	Emission Designator
Part 22	GSM850 GPRS class 8	GMSK	0.6223	0.0239 ppm	248KGXW
Part 22	GSM850 EDGE class 8	8PSK	0.2624	0.0084 ppm	254KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.1122	0.0203 ppm	4M23F9W
Part 22	CDMA2000 BC0 1xRTT	QPSK	0.1146	0.0239 ppm	1M28F9W
Part 24	GSM1900 GPRS class 8	GMSK	0.8610	0.0059 ppm	247KGXW
Part 24	GSM1900 EDGE class 8	8PSK	0.5508	0.0617 ppm	260KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.1936	0.0059 ppm	4M24F9W
Part 24	CDMA2000 BC1 1xEV-DO Rev. A	QPSK	0.1982	0.0383 ppm	1M28F9W

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.
	TH03-HY

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0855
Test Site No.	Sporton Site No.
	03CH10-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, WCDMA Band V, and CDMA2000 BC0.
2. 30 MHz to 19000 MHz for GSM1900, WCDMA Band II, and CDMA2000 BC1.

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	■ GPRS class 8 Link ■ EDGE class 8 Link	■ GPRS class 8 Link ■ EDGE class 8 Link
GSM 1900	■ GPRS class 8 Link ■ EDGE class 8 Link	■ GPRS class 8 Link ■ EDGE class 8 Link
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
CDMA2000 BC0	■ 1xRTT Link Mode	■ 1xRTT Link Mode
CDMA2000 BC1	■ 1xEV-DO Rev. A Link Mode	■ 1xEV-DO Rev. A Link Mode

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

GPRS multi-slot class 8 mode for GMSK modulation,

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

RMC 12.2Kbps mode for WCDMA band V,

RMC 12.2Kbps mode for WCDMA band II,

1xRTT RC3 SO32(+SCH) mode for CDMA2000 BC0,

1xEV-DO Rev. A RTAP 4096Bits mode for CDMA2000 BC1, only these modes were used for all tests.



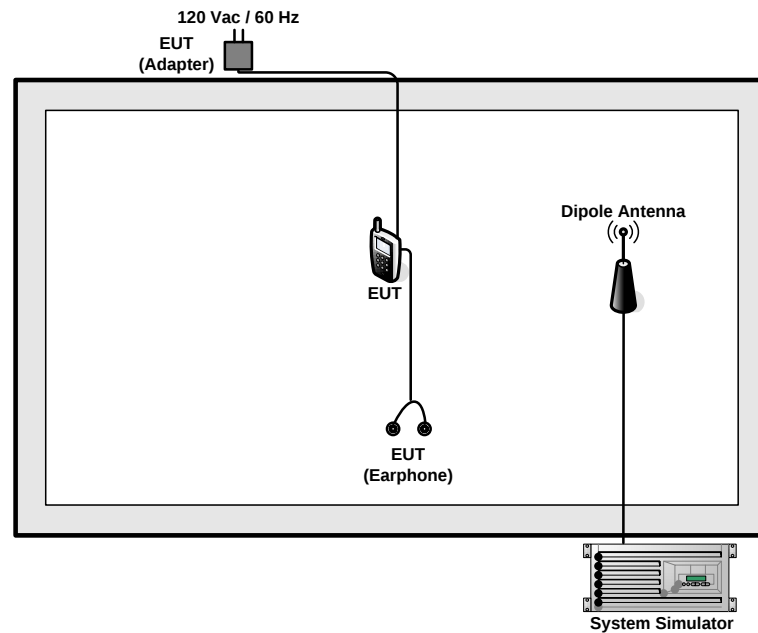
Conducted Power Measurement Results:

Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM	32.19	32.40	32.41	29.65	29.51	29.47
GPRS class 8	32.28	32.45	32.64	29.69	29.52	29.50
GPRS class 10	32.04	32.15	32.25	29.56	29.40	29.35
GPRS class 11	31.00	31.09	31.16	29.14	29.09	29.01
GPRS class 12	30.00	30.12	30.18	28.18	28.03	28.01
EGPRS class 8	27.05	27.15	27.23	26.14	26.05	26.01
EGPRS class 10	27.02	27.08	27.17	26.12	26.04	26.00
EGPRS class 11	26.22	26.28	26.40	25.10	25.06	25.02
EGPRS class 12	25.05	25.12	25.20	24.19	24.07	24.06

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	24.20	24.16	24.19	24.44	24.34	24.39
HSDPA Subtest-1	22.86	22.73	22.85	23.28	23.26	23.19
HSDPA Subtest-2	22.91	22.72	22.87	23.19	23.21	23.16
HSDPA Subtest-3	22.41	22.26	22.39	22.76	22.68	22.80
HSDPA Subtest-4	22.48	22.28	22.31	22.77	22.66	22.76
HSUPA Subtest-1	22.71	22.60	22.59	22.96	23.16	23.06
HSUPA Subtest-2	21.91	21.62	21.56	22.02	22.10	21.79
HSUPA Subtest-3	21.82	21.72	21.51	21.69	21.50	21.60
HSUPA Subtest-4	22.31	21.86	21.96	22.43	22.49	22.40
HSUPA Subtest-5	23.21	23.22	23.19	22.75	22.80	22.83

Conducted Power (*Unit: dBm)						
Band	CDMA2000 BC0			CDMA2000 BC1		
Channel	1013	384	777	25	600	1175
Frequency	824.7	836.52	848.31	1851.25	1880	1908.75
1xRTT RC1 SO55	24.27	24.15	24.36	24.18	24.30	24.25
1xRTT RC3 SO55	24.22	24.13	24.31	24.16	24.20	24.17
1xRTT RC3 SO32(+ F-SCH)	24.21	24.17	24.33	24.15	24.28	24.20
1xRTT RC3 SO32(+SCH)	24.29	24.22	24.39	24.22	24.32	24.22
1xEV-DO RTAP 153.6kbps	23.37	23.39	23.50	24.20	24.35	24.32
1xEV-DO RETAP 4096Bits	23.60	23.57	23.68	24.30	24.40	24.35

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.

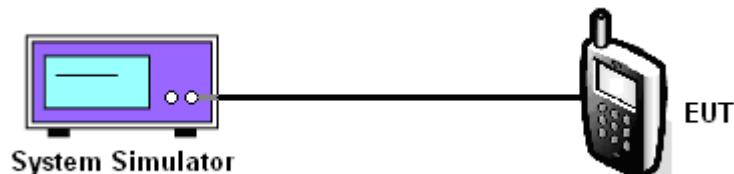
3.1.2 Measuring Instruments

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 (GPRS class 8)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.28	32.45	32.64	27.05	27.15	27.23	24.20	24.16	24.19

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)	29.69	29.52	29.50	26.14	26.05	26.01	24.44	24.34	24.39

CDMA2000 BC0			
Test Mode	CDMA 2000 1xRTT		
Test Status	RC3+SO32		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
Conducted Power (dBm)	24.29	24.22	24.39

CDMA2000 BC1			
Test Mode	CDMA 2000 1xEV-DO Rev. A		
Test Status	RETAP 4096K		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
Conducted Power (dBm)	24.30	24.40	24.35

Note: maximum burst average power for GSM, and maximum average power for WCDMA and CDMA2000.

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.

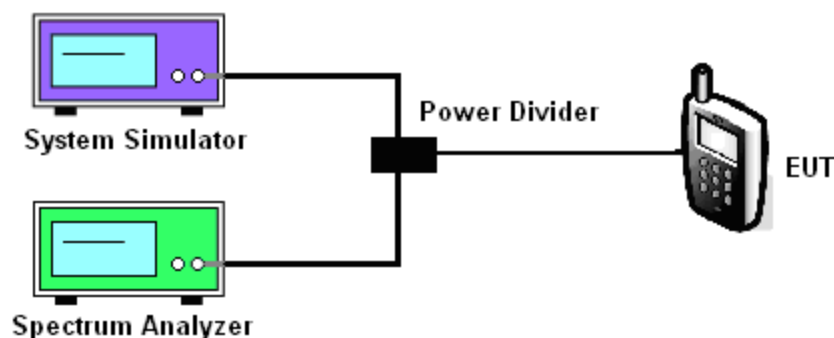
3.2.2 Measuring Instruments

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 the spectrum analyzer and system simulator via a power divider.
3. For GSM/EGPRS operating modes:
 - a. Set EUT in maximum power output.
 - b. Set the RBW = 1MHz, VBW = 3MHz, Peak detector on spectrum analyzer for first trace.
 - c. Set the RBW = 1MHz, VBW = 3MHz, RMS detector on spectrum analyzer for second trace.
 - d. The wanted burst signal is triggered by spectrum analyzer, and measured respectively the peak level and Mean level without burst-off time, after system simulator has synchronized with the spectrum analyzer.
4. For UMTS operating modes:
 - a. Set the CCDF (Complementary Cumulative Distribution Function) option on the spectrum analyzer.
 - b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

Cellular Band									
Modes	GSM850 (GPRS class 8)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.32	0.32	0.32	2.48	2.56	2.44	2.84	2.76	2.64

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)	0.32	0.36	0.32	2.16	2.12	2.32	2.28	2.60	2.28

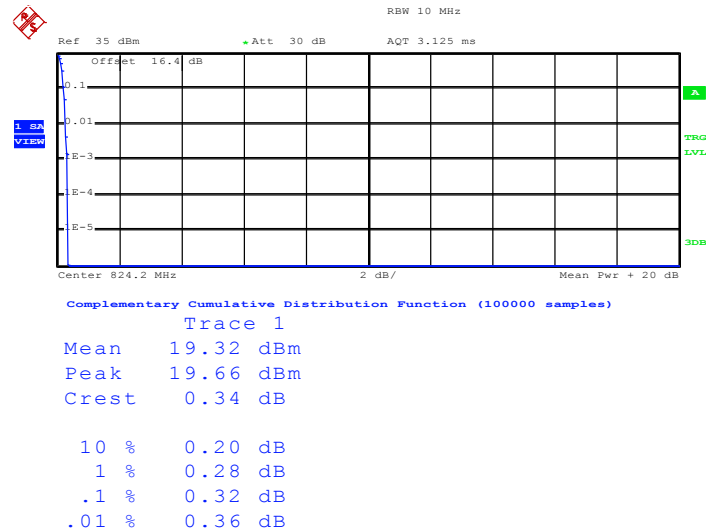
CDMA2000 BC0			
Modes	CDMA 2000 1xRTT		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
Peak-to-Average Ratio (dB)	4.04	4.16	4.16

CDMA2000 BC1			
Modes	CDMA 2000 1xEV-DO Rev. A		
Test Status	RETAP 4096K		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
Peak-to-Average Ratio (dB)	3.88	4.04	4.00

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

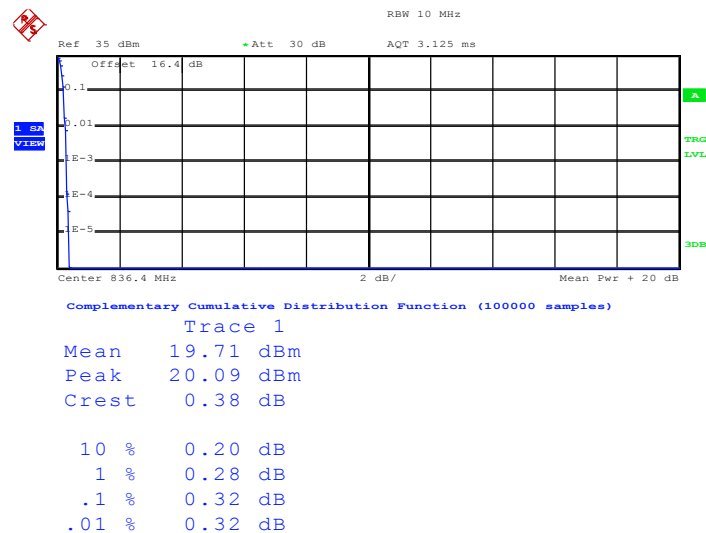
Band :	GSM 850	Test Mode :	GPRS class 8 Link (GMSK)
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Peak-to-Average Ratio on Channel 128 (824.2 MHz)



Date: 26.MAY.2015 09:41:26

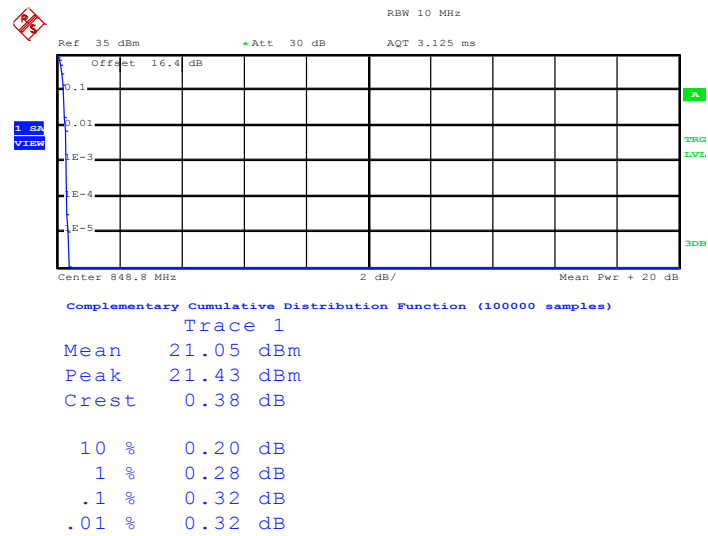
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



Date: 26.MAY.2015 09:41:37



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

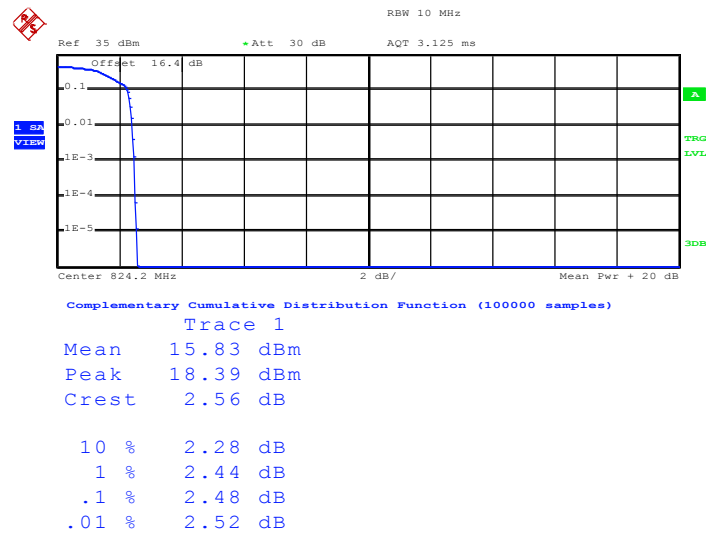


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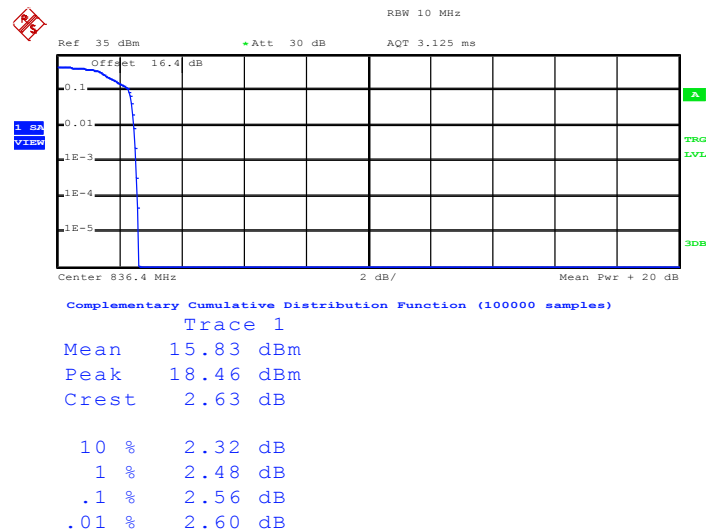
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)
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Peak-to-Average Ratio on Channel 128 (824.2 MHz)



Date: 26.MAY.2015 09:51:01

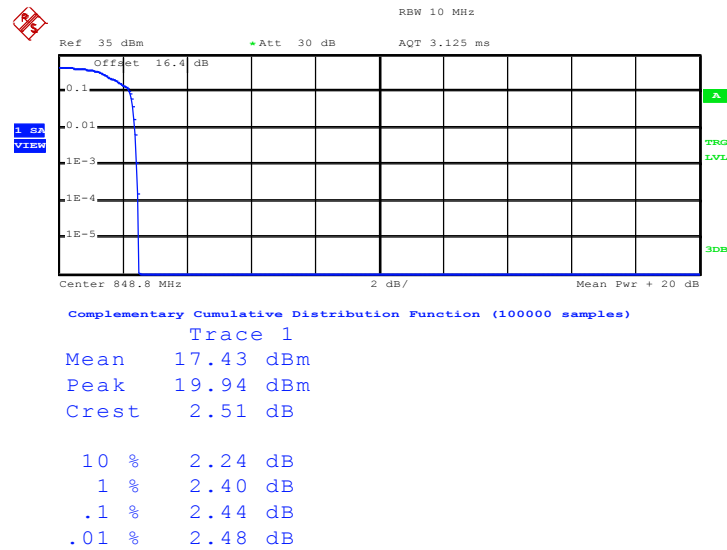
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



Date: 26.MAY.2015 09:51:12



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

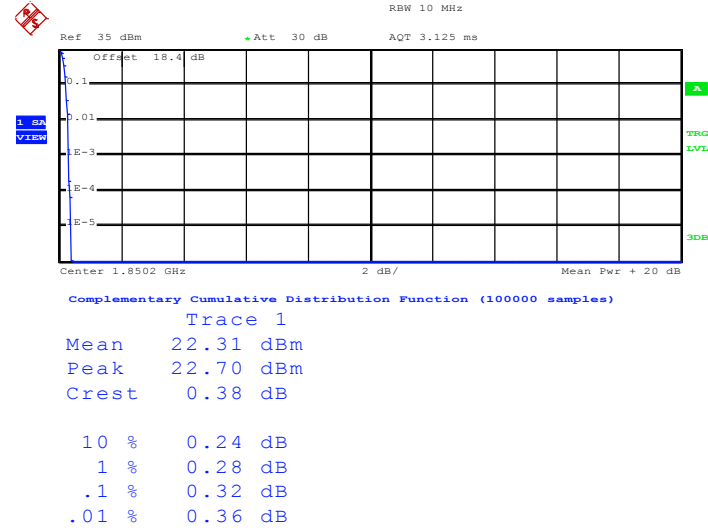


Date: 26.MAY.2015 09:51:23



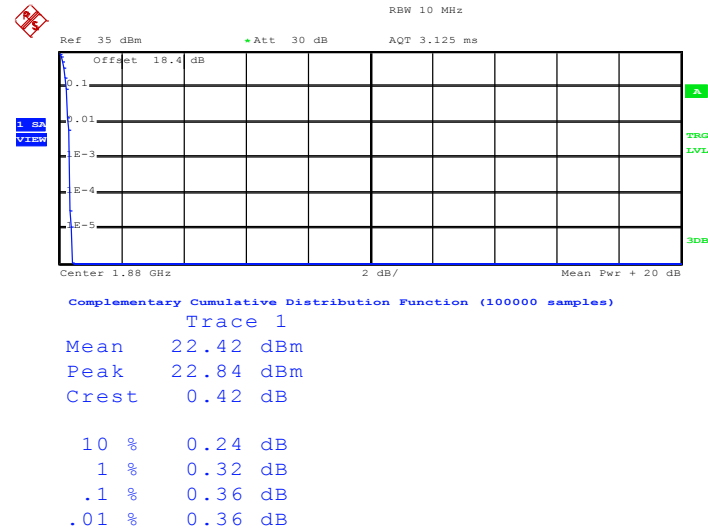
Band :	GSM 1900	Test Mode :	GPRS class 8 Link (GMSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 10:03:15

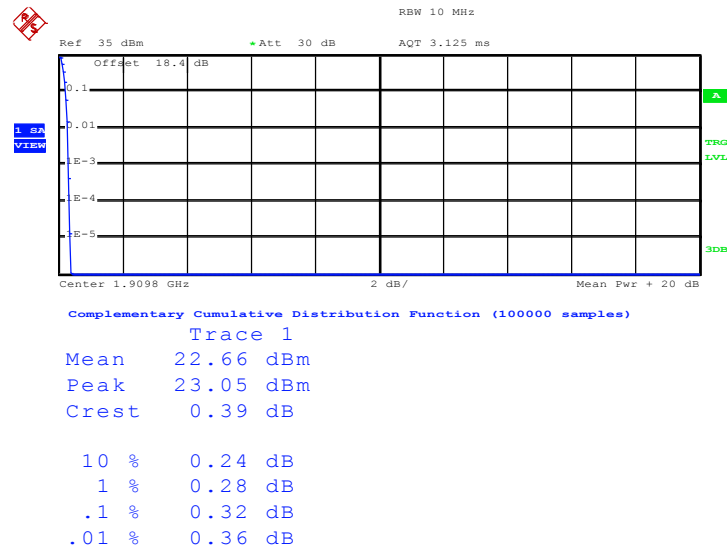
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 26.MAY.2015 10:03:27



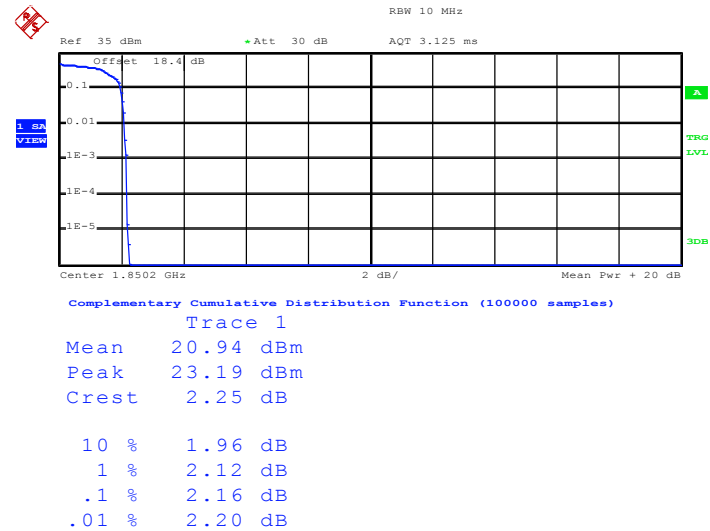
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Date: 26.MAY.2015 10:03:38

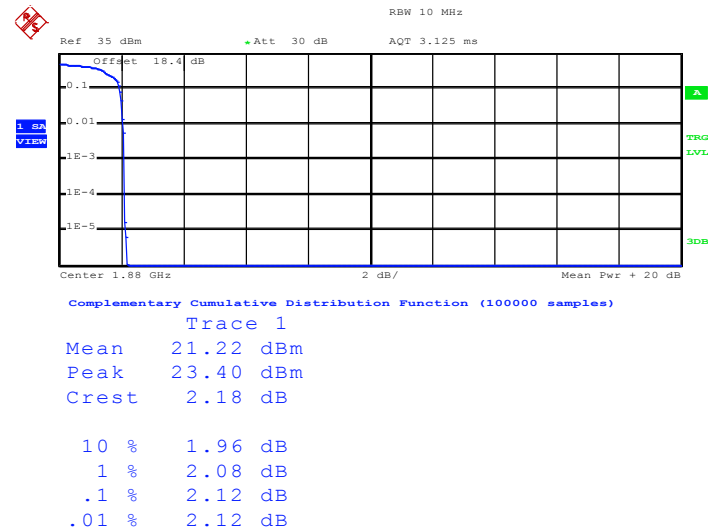
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 10:13:21

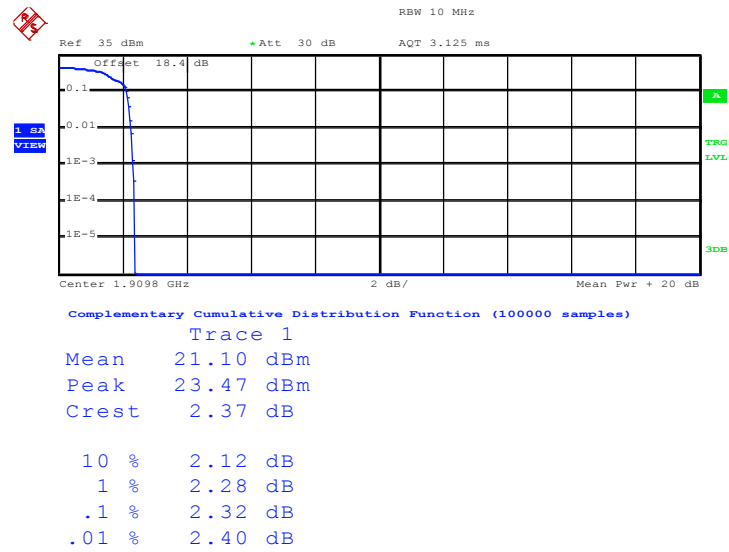
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 26.MAY.2015 10:13:32



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

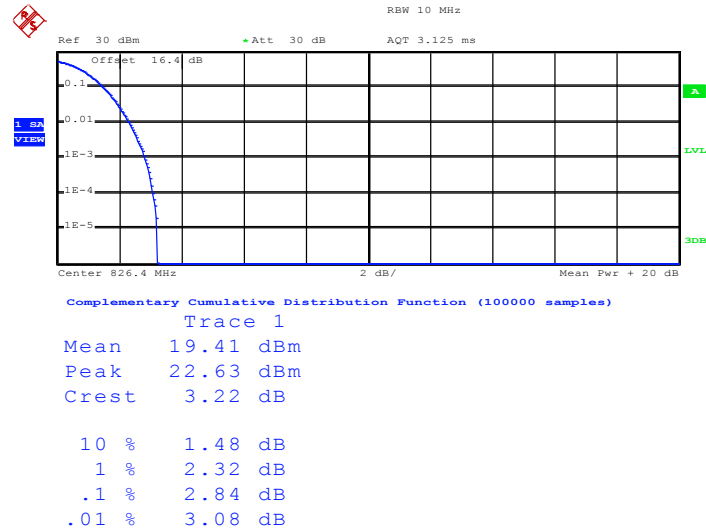


Date: 26.MAY.2015 10:13:43



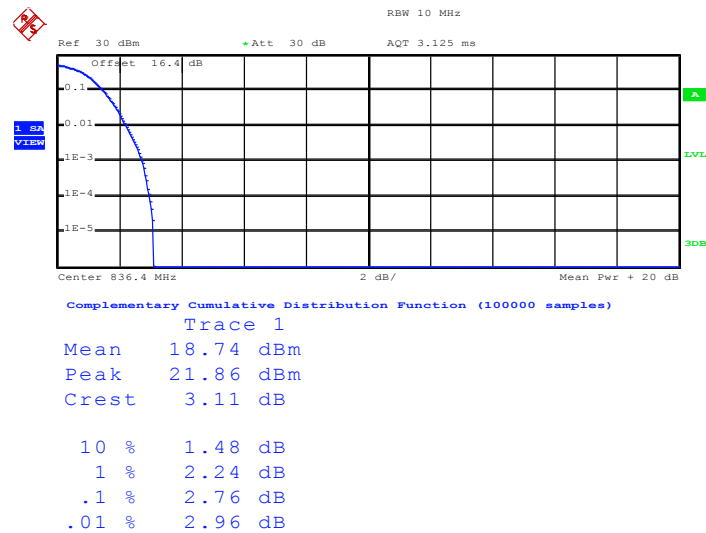
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Peak-to-Average Ratio on Channel 4132 (826.4 MHz)



Date: 16.MAY.2015 13:26:11

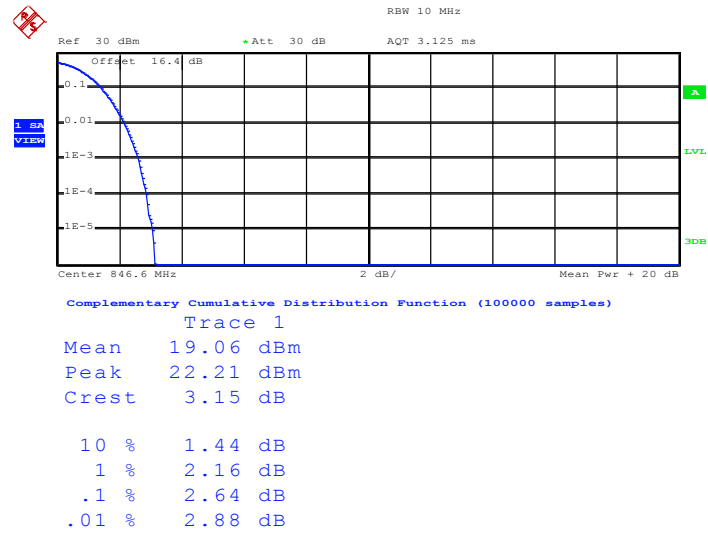
Peak-to-Average Ratio on Channel 4182 (836.4 MHz)



Date: 16.MAY.2015 13:26:21



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

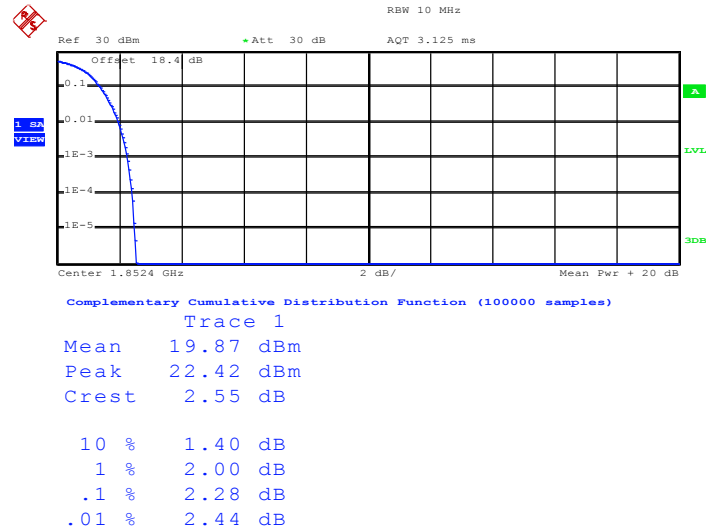


Date: 16.MAY.2015 13:26:31



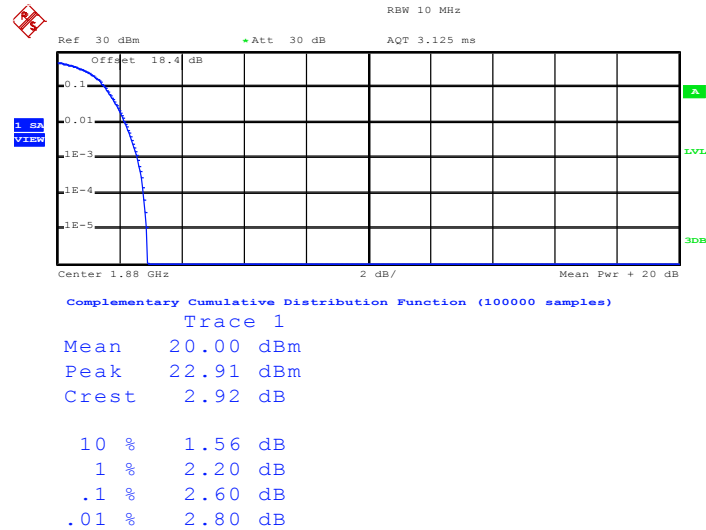
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)



Date: 16.MAY.2015 13:47:18

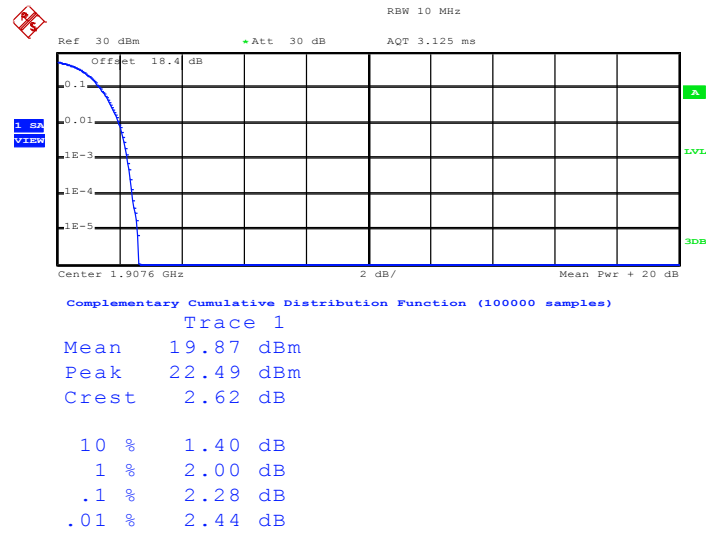
Peak-to-Average Ratio on Channel 9400 (1880.0 MHz)



Date: 16.MAY.2015 13:47:26



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

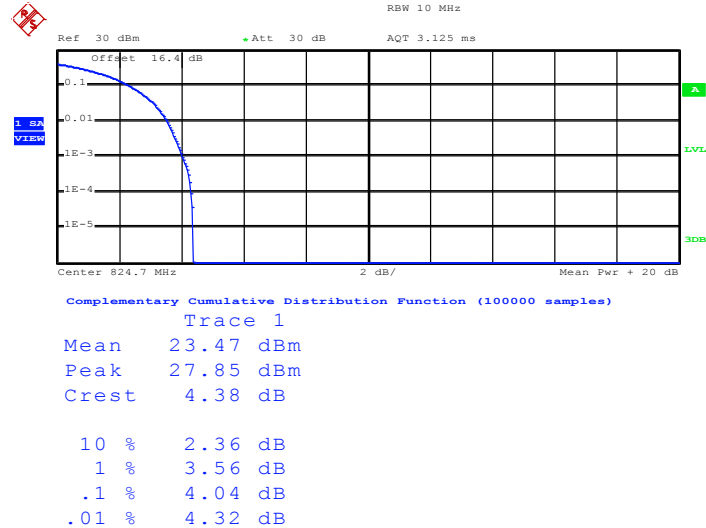


Date: 16.MAY.2015 13:47:35



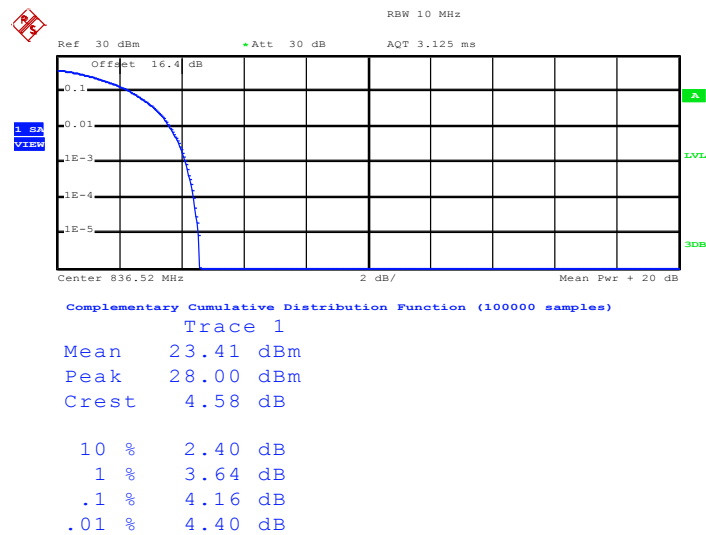
Band :	CDMA2000 BC0	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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Peak-to-Average Ratio on Channel 1013 (824.70 MHz)



Date: 18.MAY.2015 14:54:05

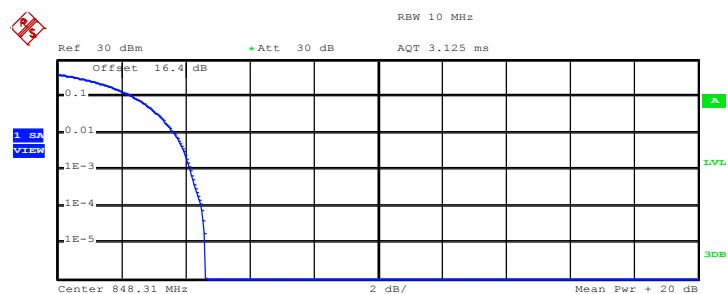
Peak-to-Average Ratio on Channel 384 (836.52 MHz)



Date: 18.MAY.2015 14:54:15



Peak-to-Average Ratio on Channel 777 (848.31 MHz)



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 23.30 dBm
Peak 27.92 dBm
Crest 4.62 dB

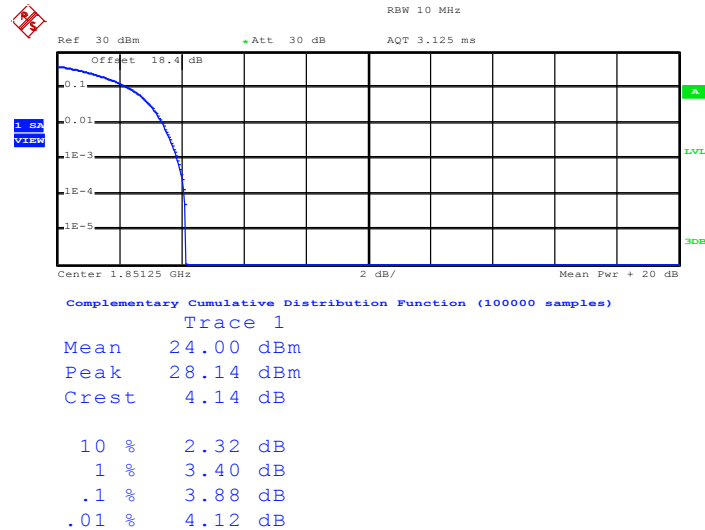
10 %	2.40 dB
1 %	3.64 dB
.1 %	4.16 dB
.01 %	4.52 dB

Date: 18.MAY.2015 14:54:25



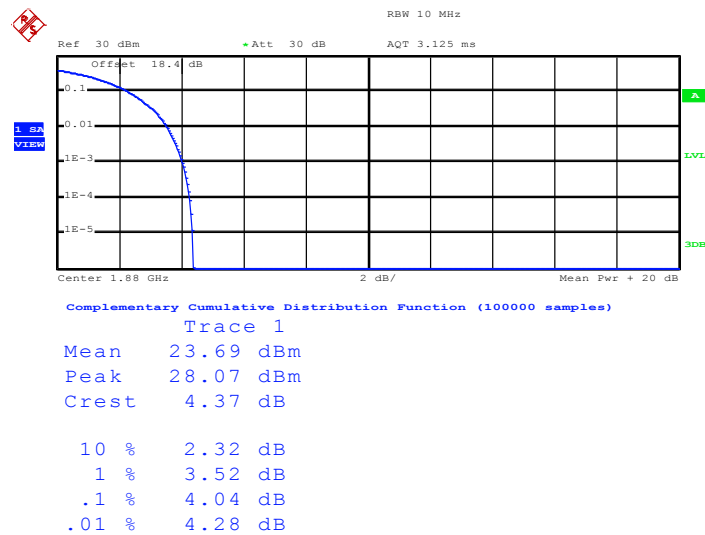
Band :	CDMA2000 BC1	Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)
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Peak-to-Average Ratio on Channel 25 (1851.25 MHz)



Date: 18.MAY.2015 15:38:28

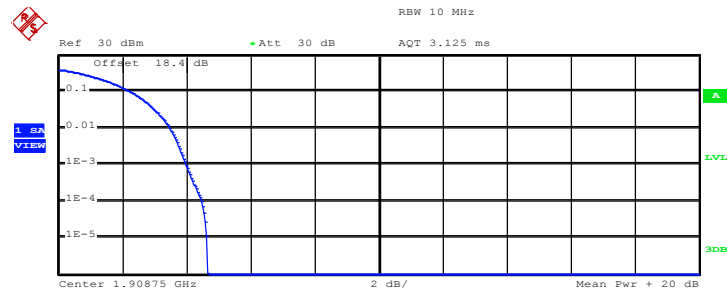
Peak-to-Average Ratio on Channel 600 (1880 MHz)



Date: 18.MAY.2015 15:38:38



Peak-to-Average Ratio on Channel 1175 (1908.75 MHz)



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 22.63 dBm
Peak 27.29 dBm
Crest 4.66 dB

10 %	2.28 dB
1 %	3.48 dB
.1 %	4.00 dB
.01 %	4.48 dB

Date: 18.MAY.2015 15:38:49

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

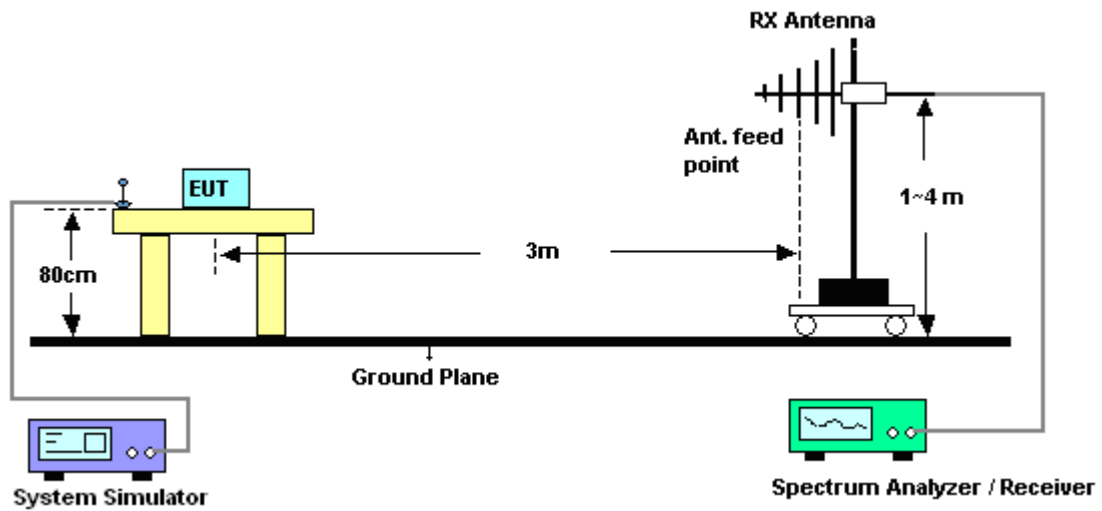
The measuring equipment is listed in the section 4 of this test report.

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 non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$. Take the record of the output power at substitution antenna.

	GSM/GPRS/EDGE	CDMA2000/EV-DO	WCDMA/HSPA
SPAN	500kHz	3MHz	10MHz
RBW	10kHz	30kHz	100kHz
VBW	30kHz	100kHz	300kHz
Detector	RMS	RMS	RMS
Trace	Average	Average	Average
Average Type	Power	Power	Power
Sweep Count	100	100	100

3.3.4 Test Setup



3.3.5 Test Result of ERP

GSM850 (GPRS class 8) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.2	26.49	0.4457	15.38	0.0345
Middle	836.4	27.28	0.5346	16.07	0.0405
Highest	848.8	27.94	0.6223	16.74	0.0472
Limit	ERP < 7W	Result		PASS	

GSM850 (EDGE class 8) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.2	22.90	0.1950	11.59	0.0144
Middle	836.4	23.29	0.2133	11.93	0.0156
Highest	848.8	24.19	0.2624	12.56	0.0180
Limit	ERP < 7W	Result		PASS	

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	826.4	19.21	0.0834	8.51	0.0071
Middle	836.4	20.41	0.1099	9.30	0.0085
Highest	846.6	20.50	0.1122	9.20	0.0083
Limit	ERP < 7W	Result		PASS	

CDMA2000 BC0 1xRTT_RC3+SO32 Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.7	19.16	0.0824	7.50	0.0056
Middle	836.52	20.23	0.1054	8.80	0.0076
Highest	848.31	20.59	0.1146	9.80	0.0095
Limit	ERP < 7W	Result		PASS	

3.3.6 Test Result of EIRP

GSM1900 (GPRS class 8) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1850.2	29.23	0.8375	25.70	0.3715
Middle	1880.0	29.35	0.8610	25.68	0.3698
Highest	1909.8	28.80	0.7586	24.77	0.2999
Limit	EIRP < 2W	Result		PASS	

GSM1900 (EDGE class 8) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1850.2	27.21	0.5260	23.93	0.2472
Middle	1880.0	27.41	0.5508	23.78	0.2388
Highest	1909.8	27.00	0.5012	22.92	0.1959
Limit	EIRP < 2W	Result		PASS	

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1852.4	22.26	0.1683	18.72	0.0745
Middle	1880.0	22.42	0.1746	18.44	0.0698
Highest	1907.6	22.87	0.1936	18.92	0.0780
Limit	EIRP < 2W	Result		PASS	

CDMA2000 BC1 1xEV-DO Rev. A_RETAP 4096K Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1851.25	22.35	0.1718	18.58	0.0721
Middle	1880.0	22.97	0.1982	18.93	0.0782
Highest	1908.75	22.47	0.1766	18.74	0.0748
Limit	EIRP < 2W	Result		PASS	

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.

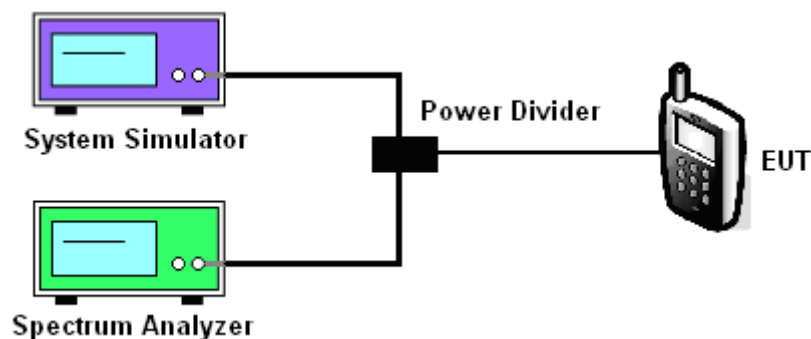
3.4.2 Measuring Instruments

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 (GPRS class 8)			GSM850 (EDGE class 8)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8
99% OBW (kHz)	247.00	242.00	248.00	254.00	249.00	253.00
26dB BW (kHz)	303.00	313.00	291.00	316.00	310.00	313.00

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)	242.00	247.00	246.00	258.00	260.00	253.00
26dB BW (kHz)	317.00	316.00	314.00	324.00	326.00	314.00

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)	4.23	4.17	4.19
26dB BW (MHz)	4.83	4.79	4.83

PCS Band			
Modes	WCDMA Band II (RMC 12.2Kbps)		
Channel	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1852.4	1880	1907.6
99% OBW (MHz)	4.24	4.20	4.24
26dB BW (MHz)	4.88	4.82	4.84



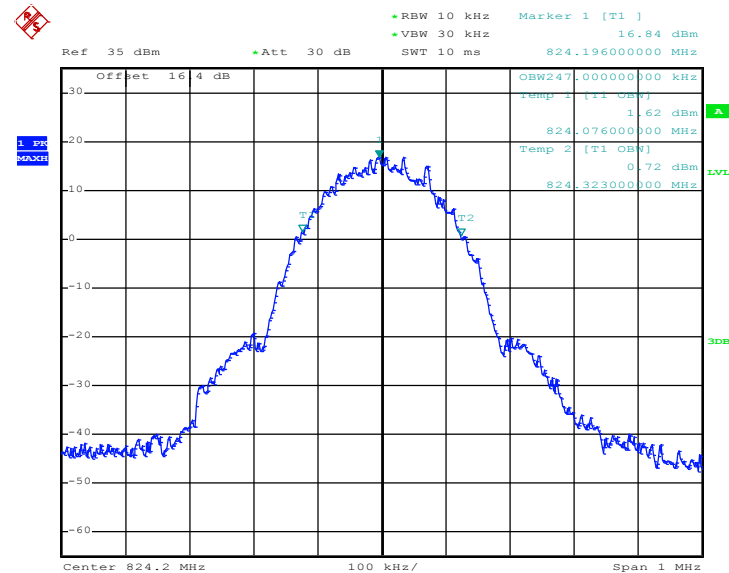
CDMA2000 BC0			
Test Mode	CDMA 2000 1xRTT		
Test Status	RC3+SO55		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
99% OBW (MHz)	1.27	1.28	1.28
26dB BW (MHz)	1.41	1.42	1.42

CDMA2000 BC1			
Test Mode	CDMA 2000 1xEV-DO Rev. A		
Test Status	RETAP 4096K		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
99% OBW (MHz)	1.28	1.28	1.28
26dB BW (MHz)	1.42	1.42	1.42

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

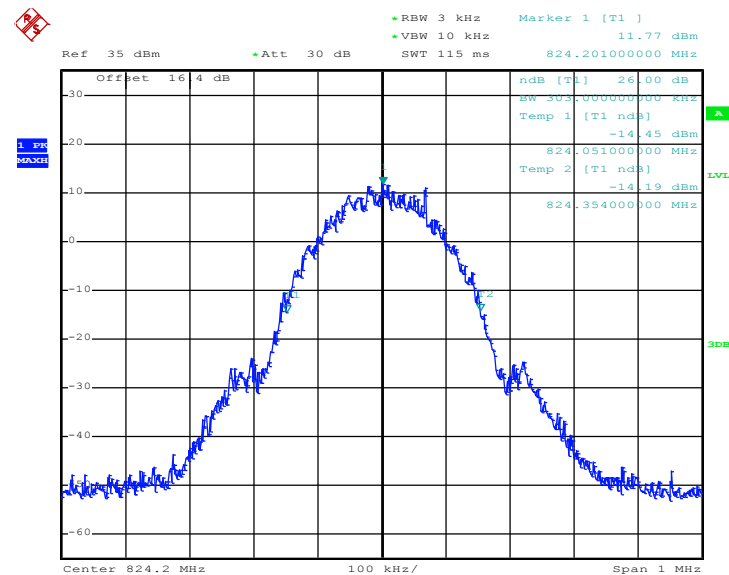
Band :	GSM 850	Test Mode :	GPRS class 8 Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



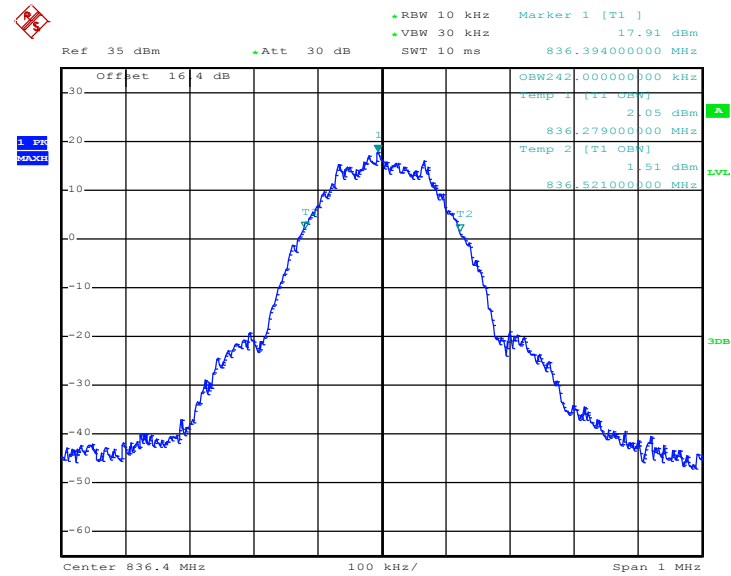
Date: 26.MAY.2015 09:34:57

26dB Bandwidth Plot on Channel 128 (824.2 MHz)



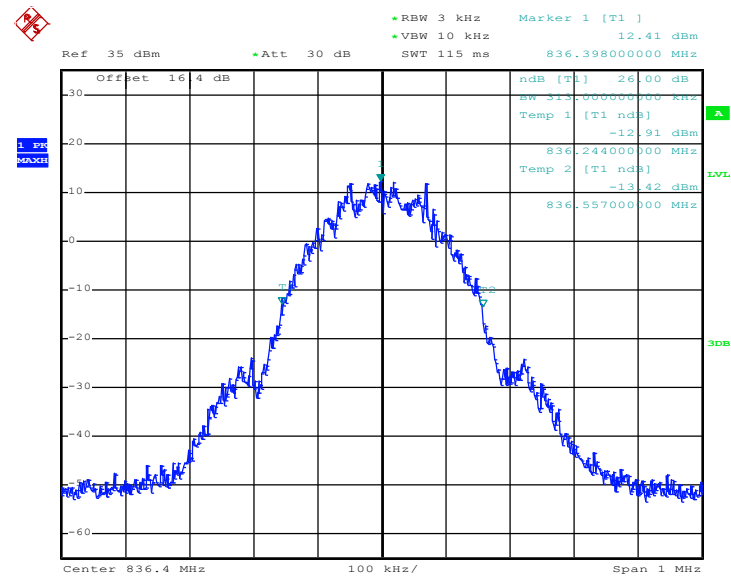
Date: 26.MAY.2015 09:32:33

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



Date: 26.MAY.2015 09:35:25

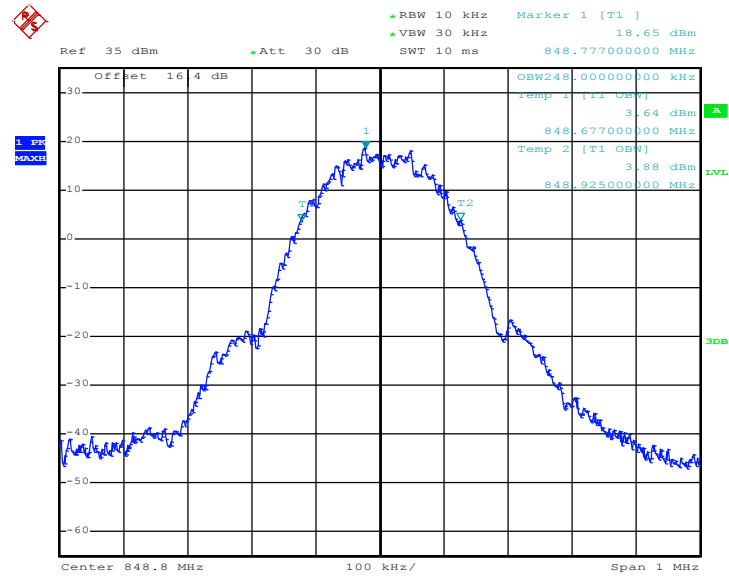
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 26.MAY.2015 09:33:01

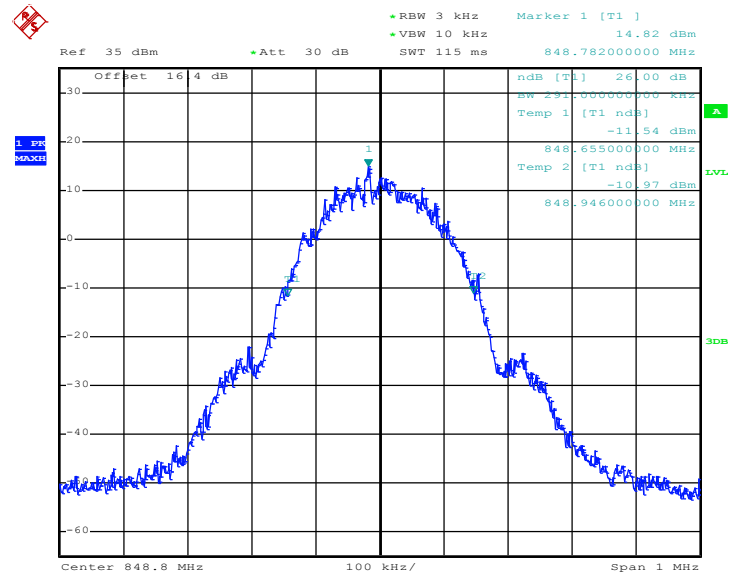


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 26.MAY.2015 09:35:53

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

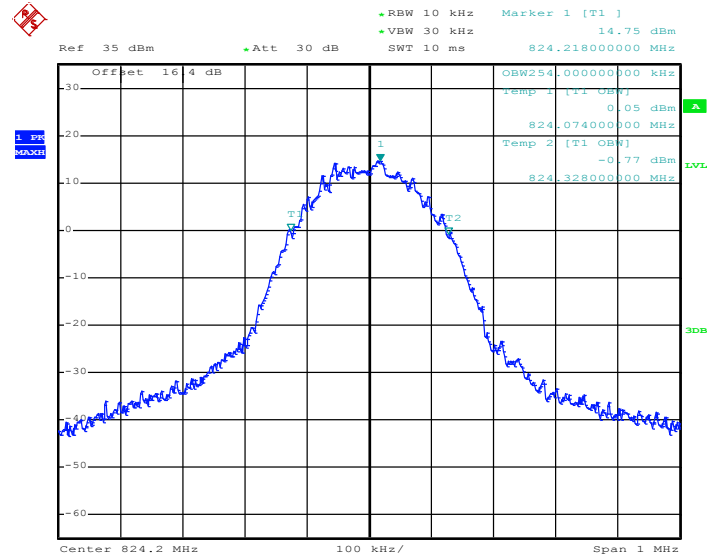


Date: 26.MAY.2015 09:33:29



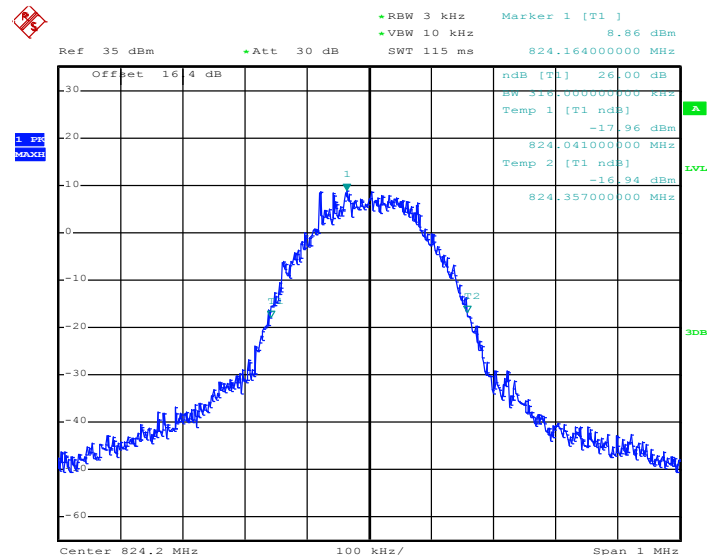
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 26.MAY.2015 09:44:56

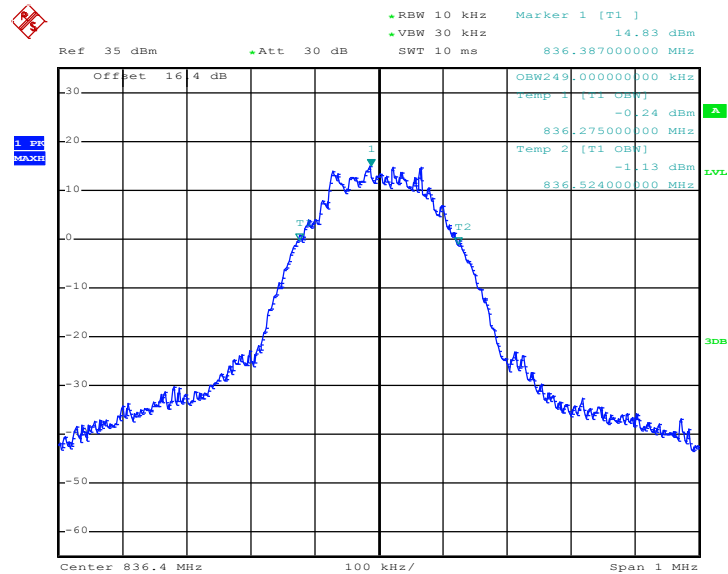
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 26.MAY.2015 09:43:07

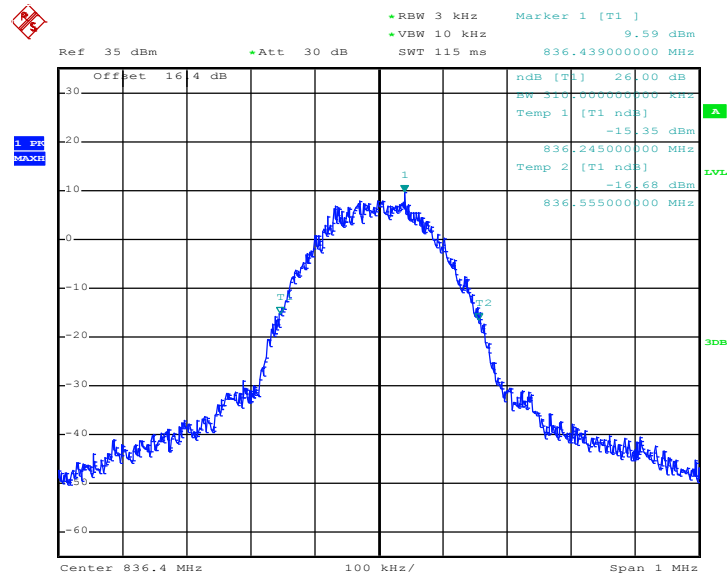


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 26.MAY.2015 09:45:25

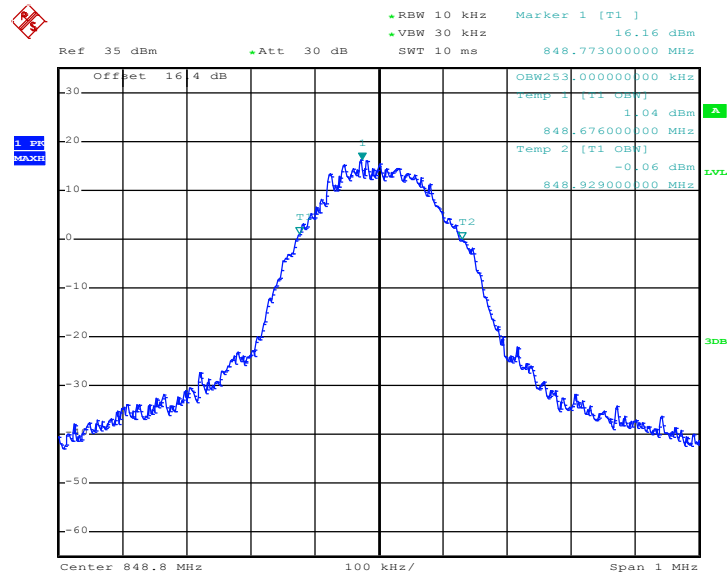
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 26.MAY.2015 09:43:35

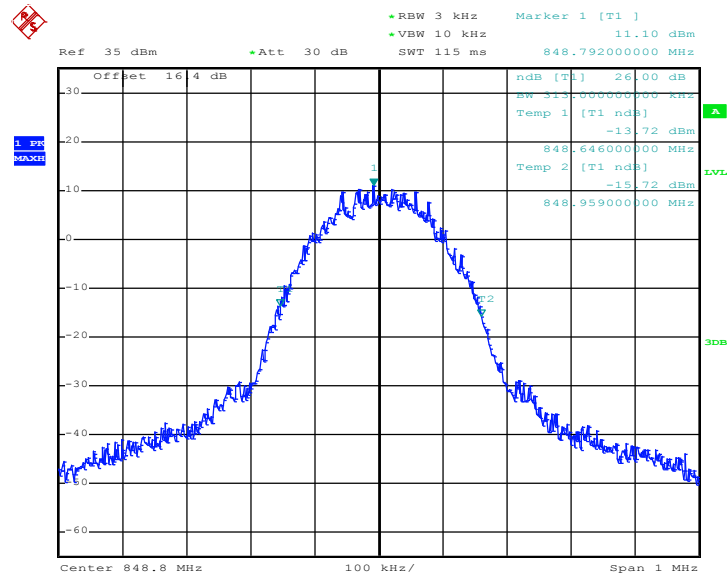


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 26.MAY.2015 09:45:53

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

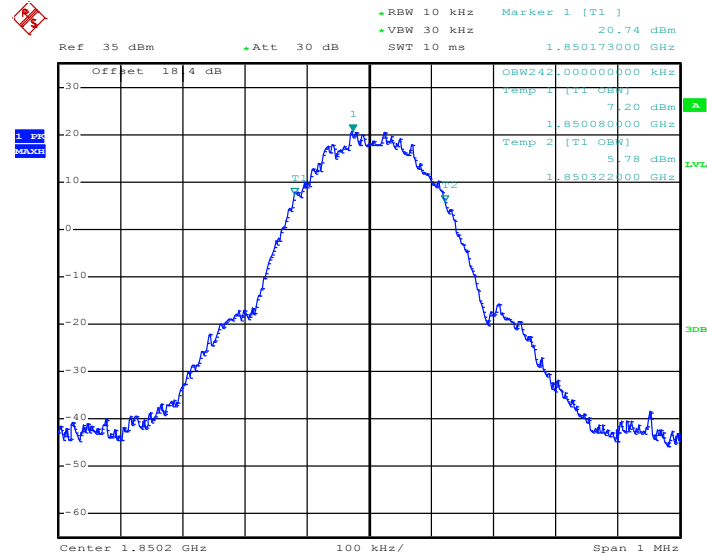


Date: 26.MAY.2015 09:44:04



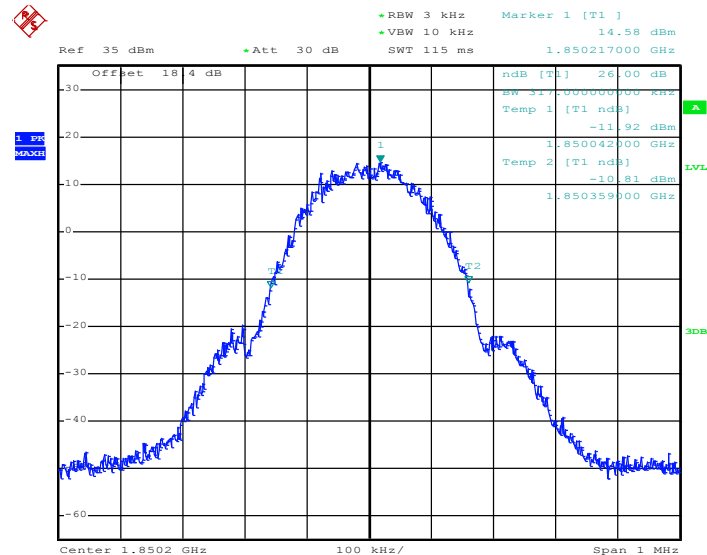
Band :	GSM 1900	Test Mode :	GPRS class 8 Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)

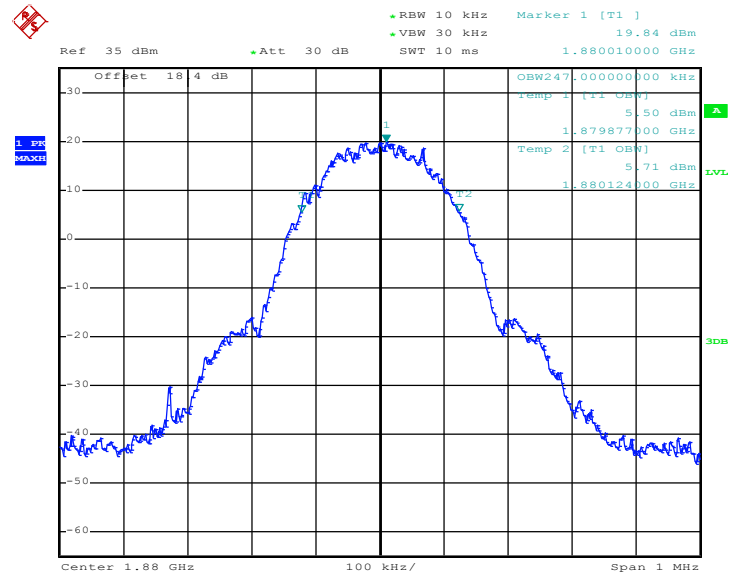


Date: 26.MAY.2015 09:56:35

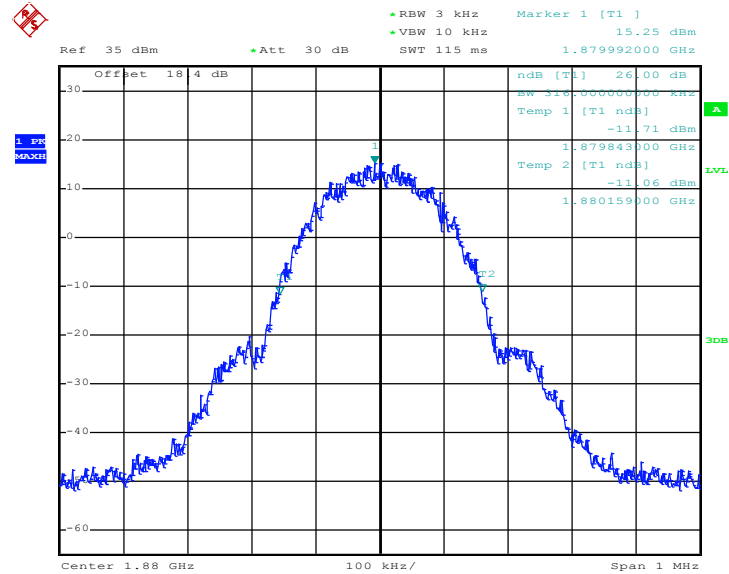
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 09:54:56

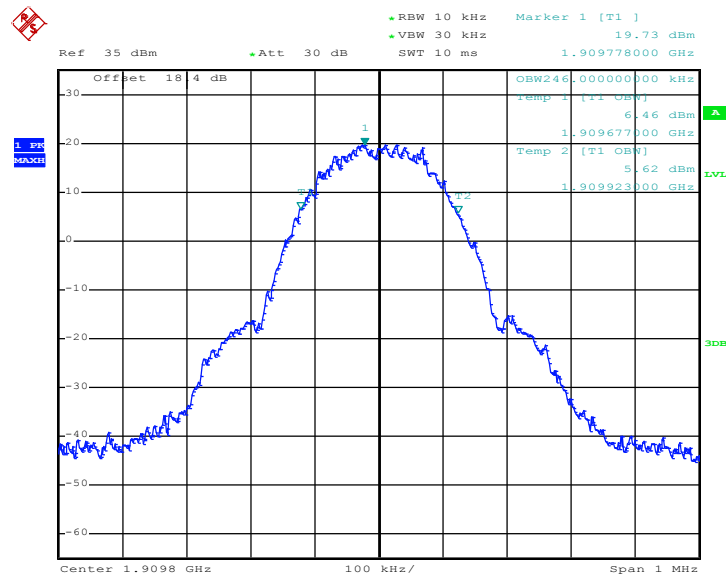
99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)


Date: 26.MAY.2015 09:57:03

26dB Bandwidth Plot on Channel 661 (1880.0 MHz)


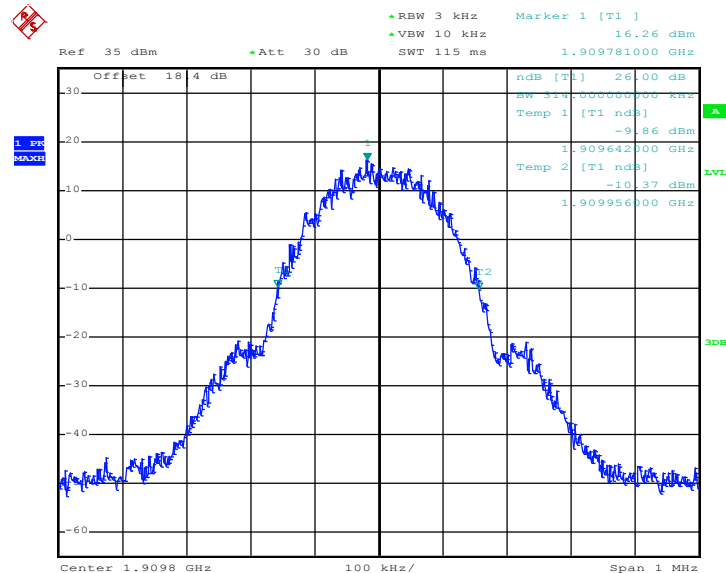
Date: 26.MAY.2015 09:55:24

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



Date: 26.MAY.2015 09:57:31

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

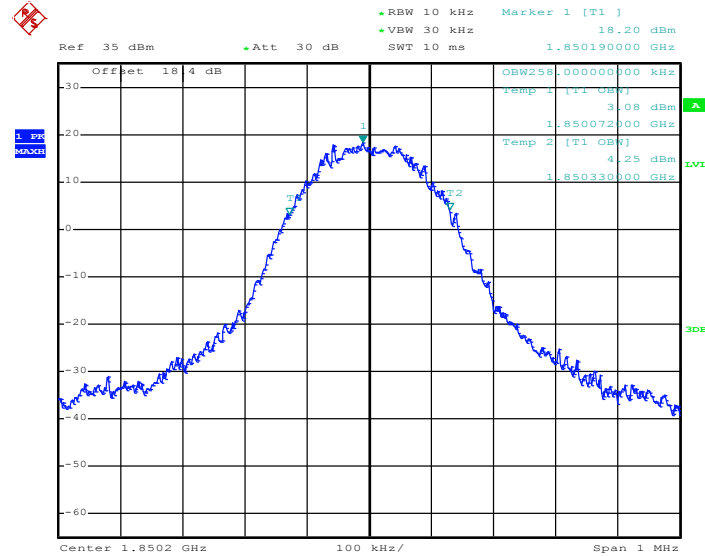


Date: 26.MAY.2015 09:55:53



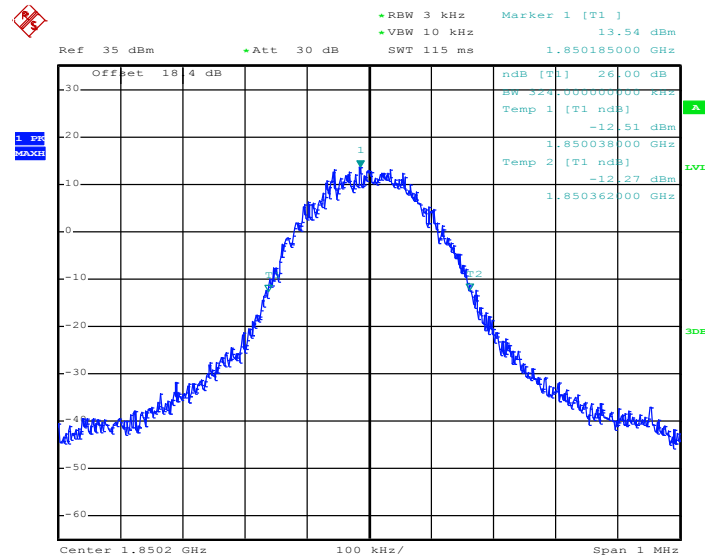
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 10:06:56

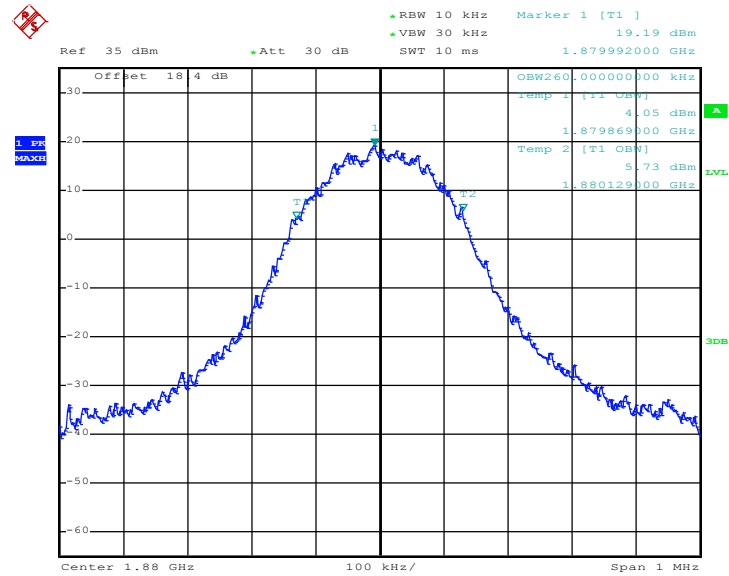
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 10:05:08

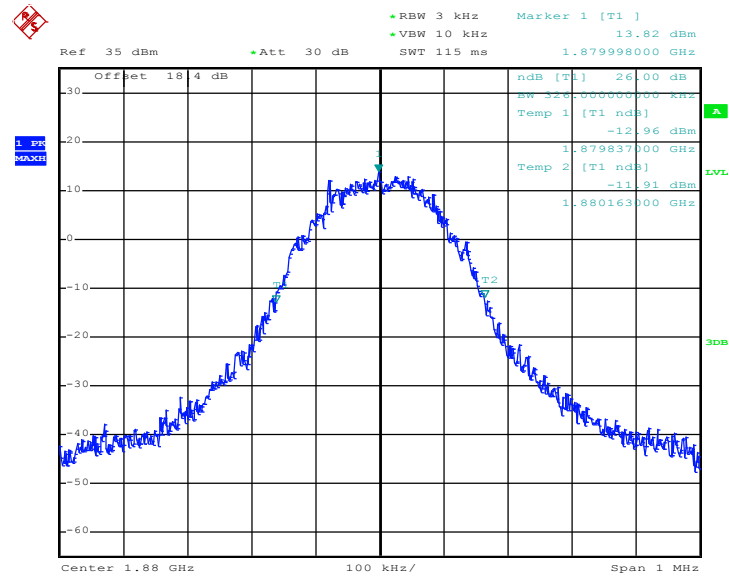


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 26.MAY.2015 10:07:24

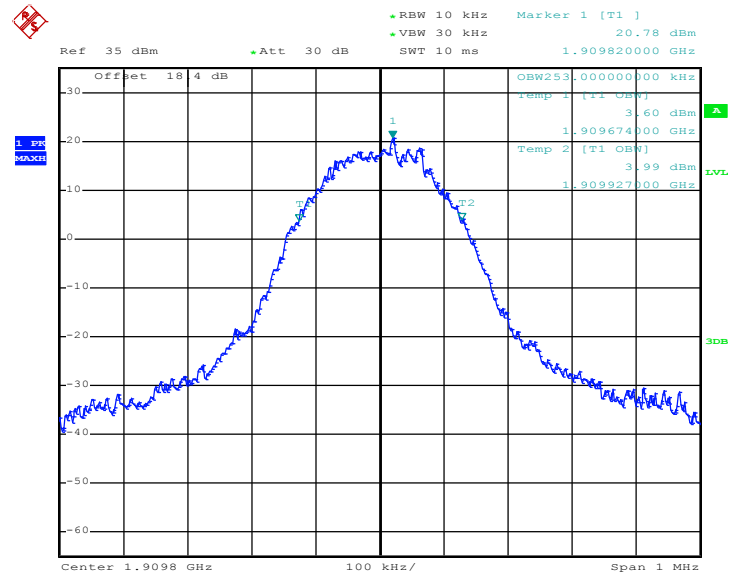
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 26.MAY.2015 10:05:36

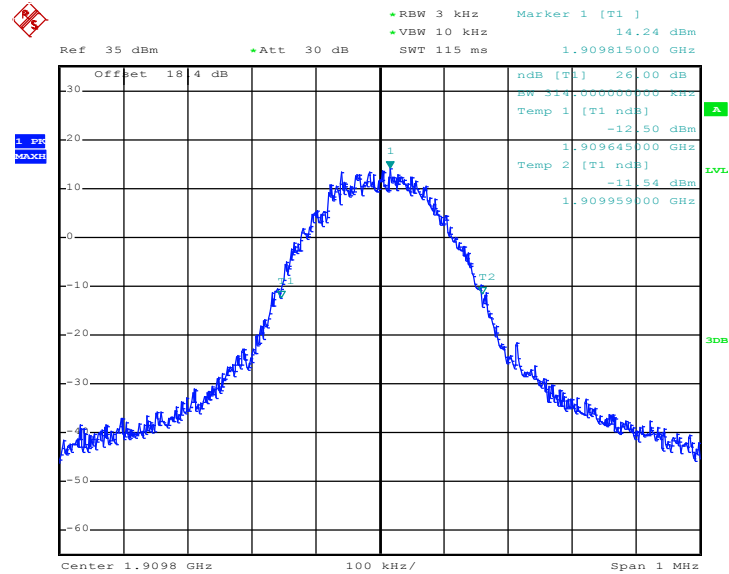


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 26.MAY.2015 10:07:52

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

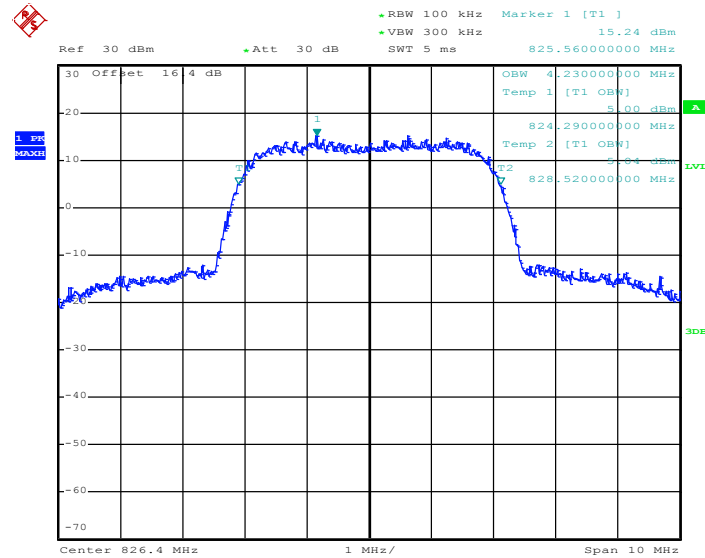


Date: 26.MAY.2015 10:06:04



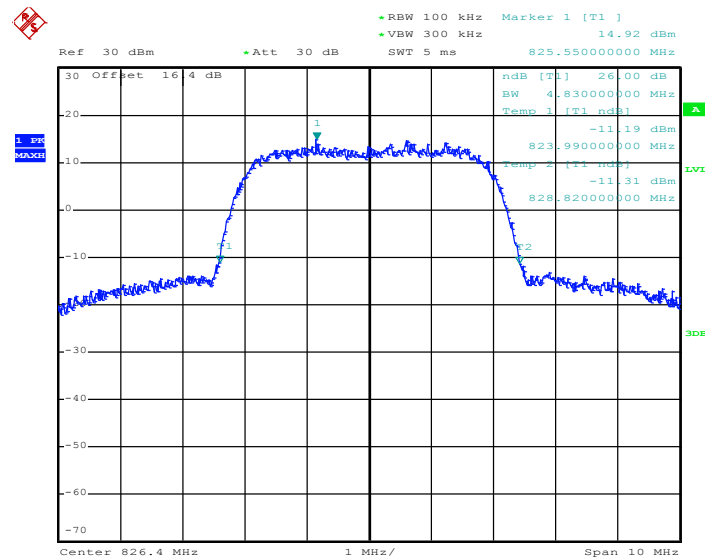
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)

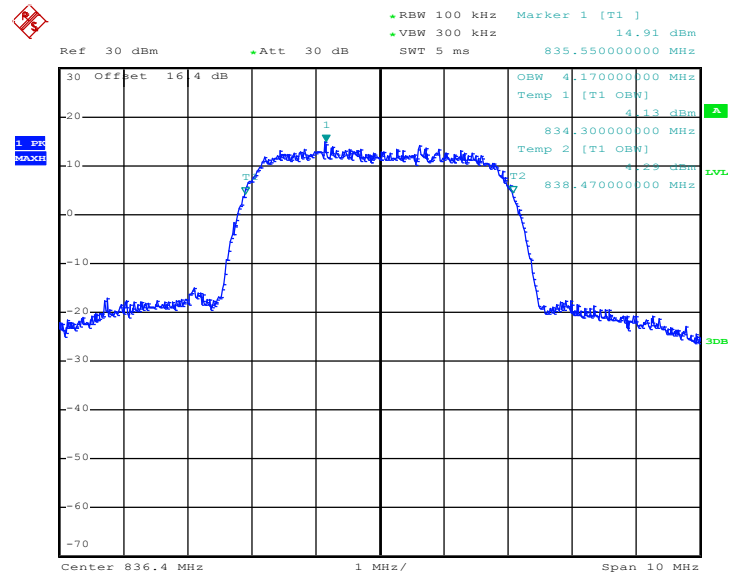


Date: 16.MAY.2015 13:20:27

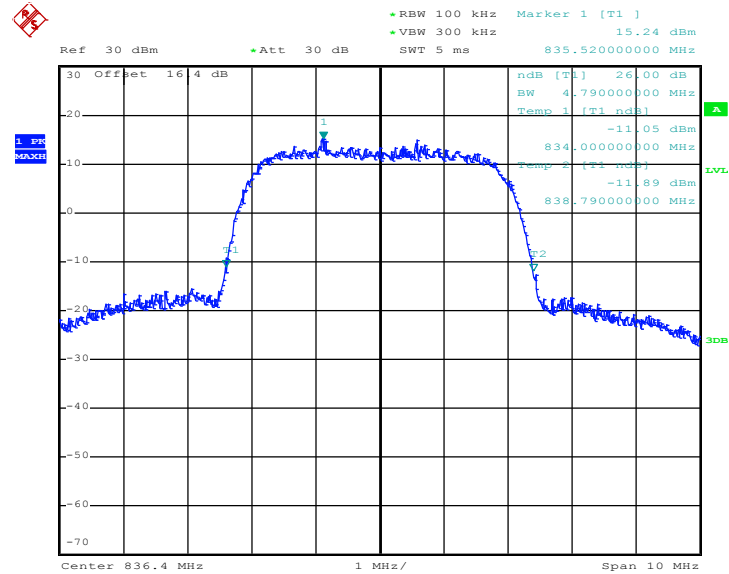
26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 16.MAY.2015 13:17:26

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


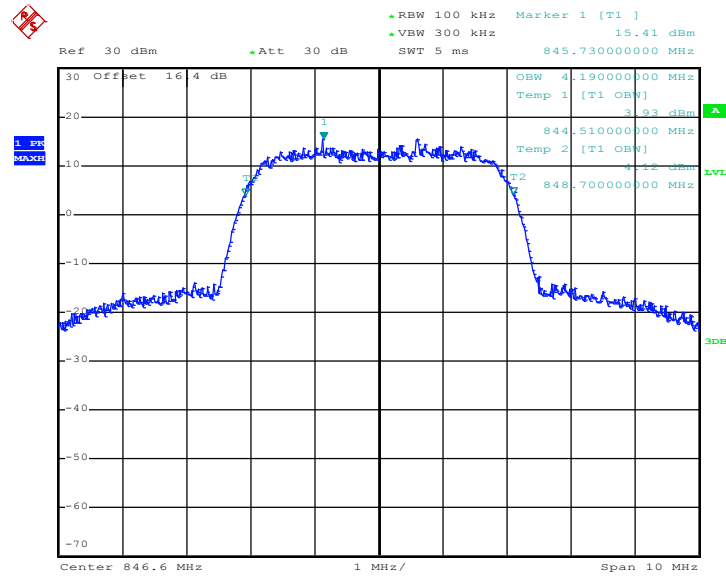
Date: 16.MAY.2015 13:20:56

26dB Bandwidth Plot on Channel 4182 (836.4 MHz)


Date: 16.MAY.2015 13:17:54

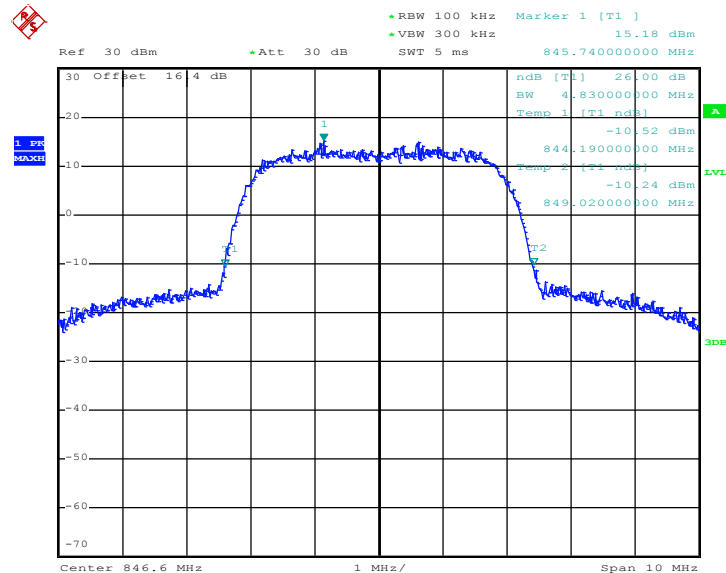


99% Occupied Bandwidth Plot on Channel 4233 (846.6 MHz)



Date: 16.MAY.2015 13:21:25

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)

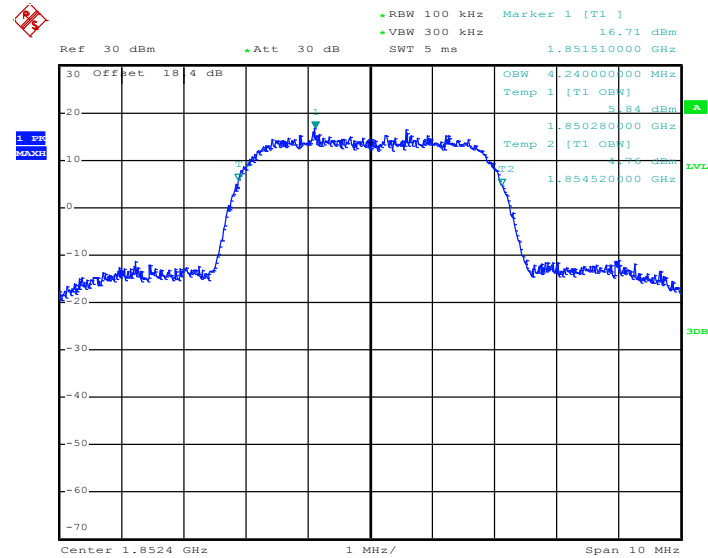


Date: 16.MAY.2015 13:18:23



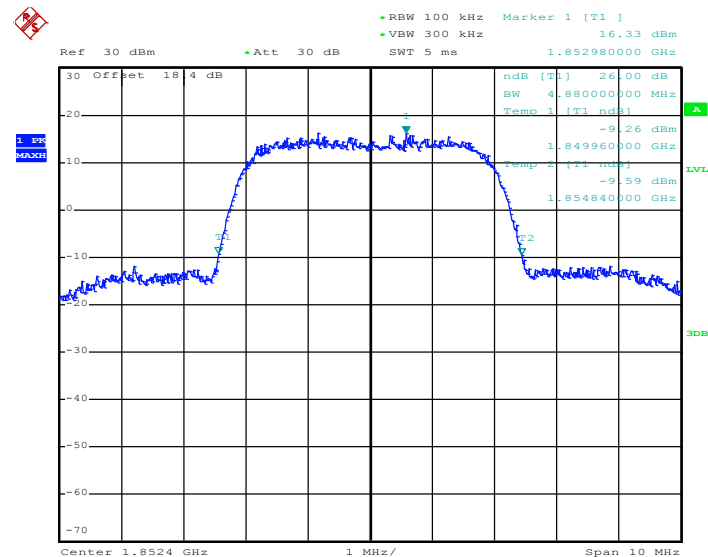
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 16.MAY.2015 13:32:22

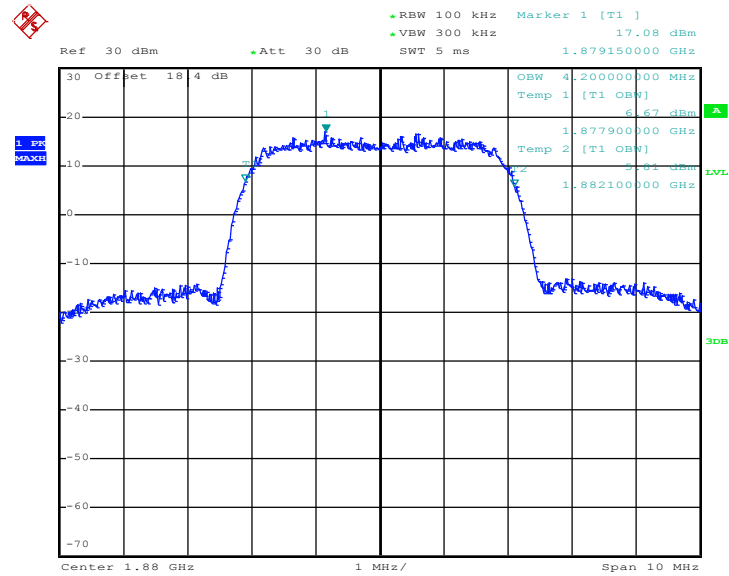
26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 16.MAY.2015 13:30:42

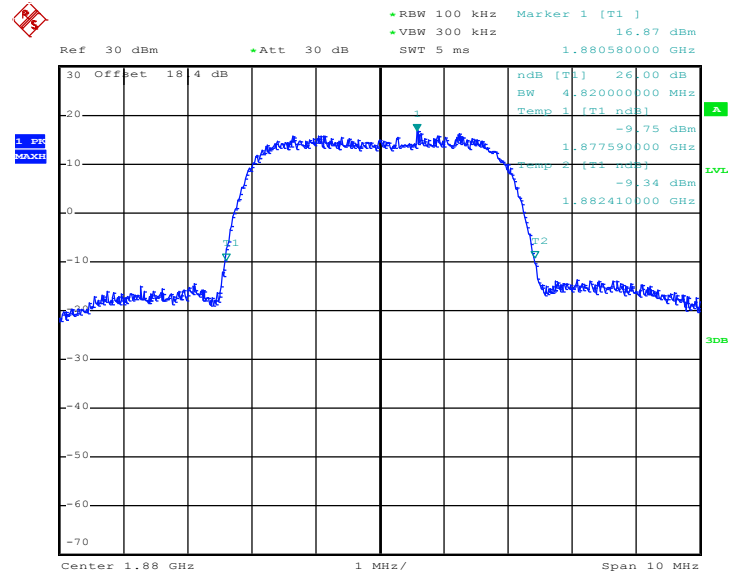


99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 16.MAY.2015 13:32:50

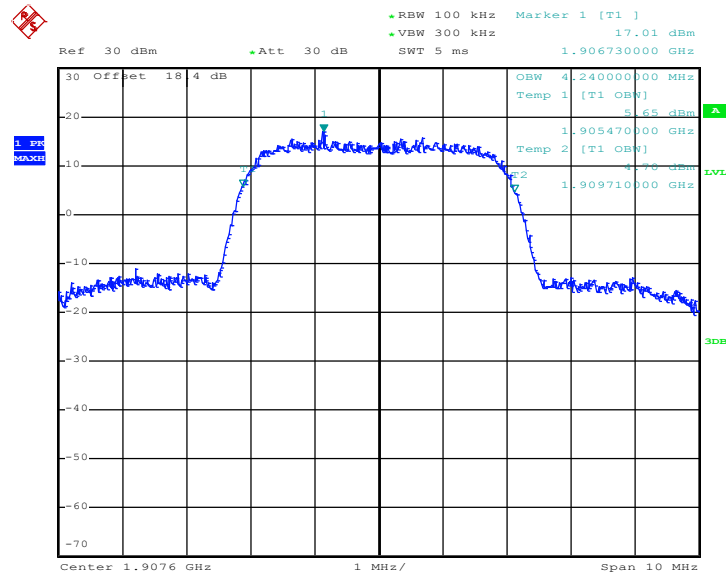
26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



Date: 16.MAY.2015 13:31:11

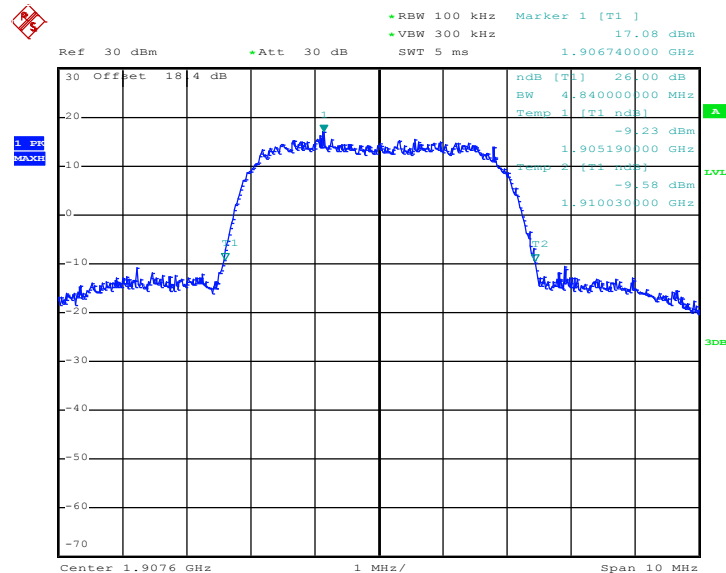


99% Occupied Bandwidth Plot on Channel 9538 (1907.6 MHz)



Date: 16.MAY.2015 13:33:19

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)

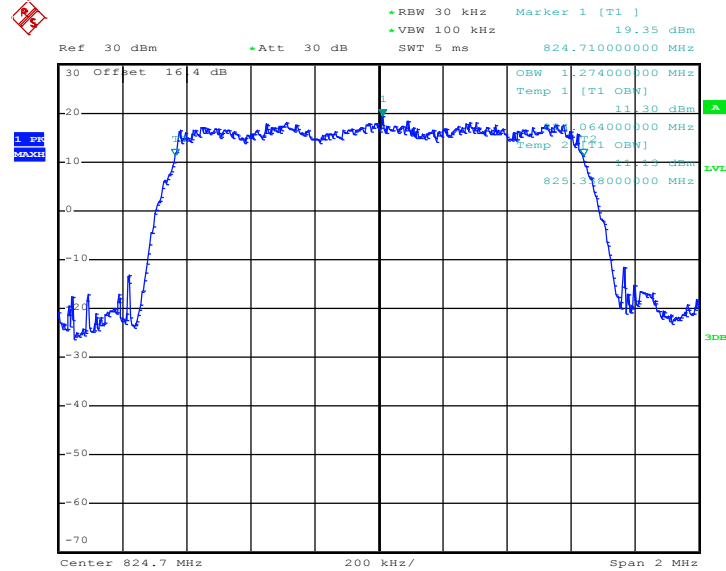


Date: 16.MAY.2015 13:31:39



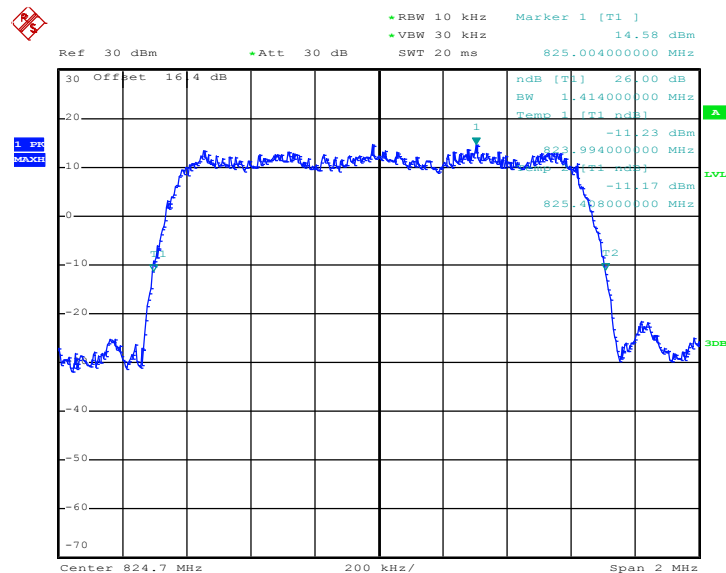
Band :	CDMA2000 BC0	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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99% Occupied Bandwidth Plot on Channel 1013 (824.7 MHz)



Date: 18.MAY.2015 14:51:20

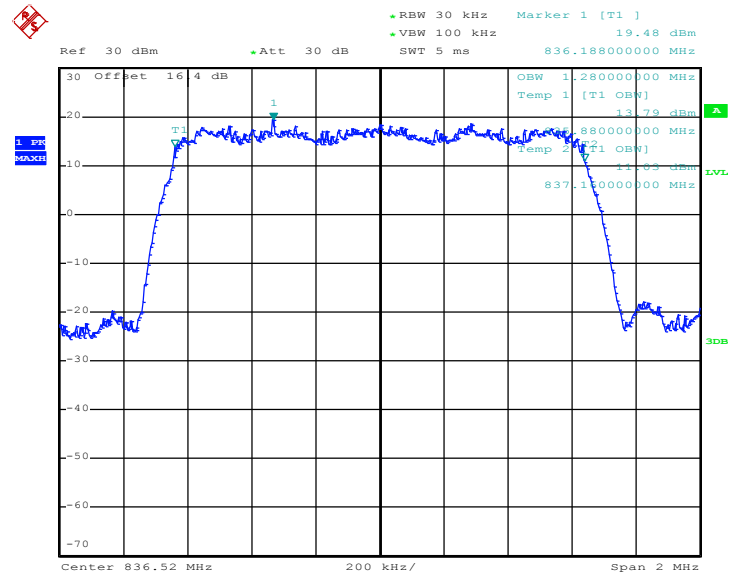
26dB Bandwidth Plot on Channel 1013 (824.7 MHz)



Date: 18.MAY.2015 14:42:47

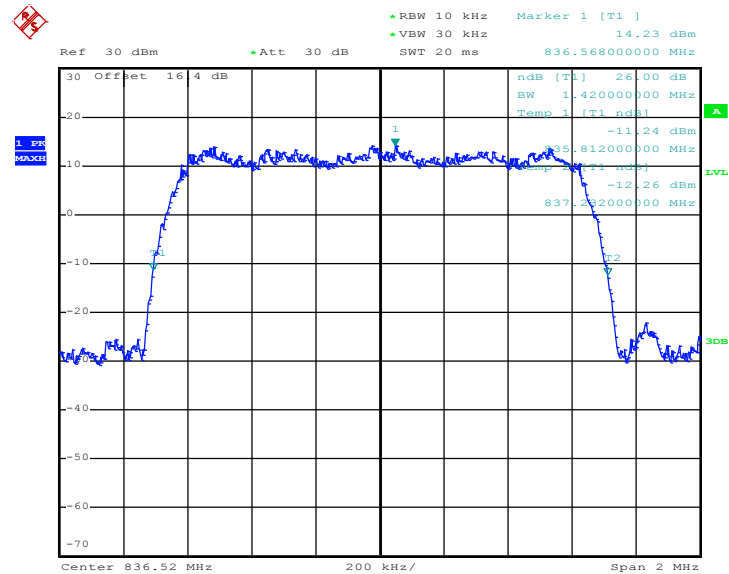


99% Occupied Bandwidth Plot on Channel 384 (836.52 MHz)



Date: 18.MAY.2015 14:51:51

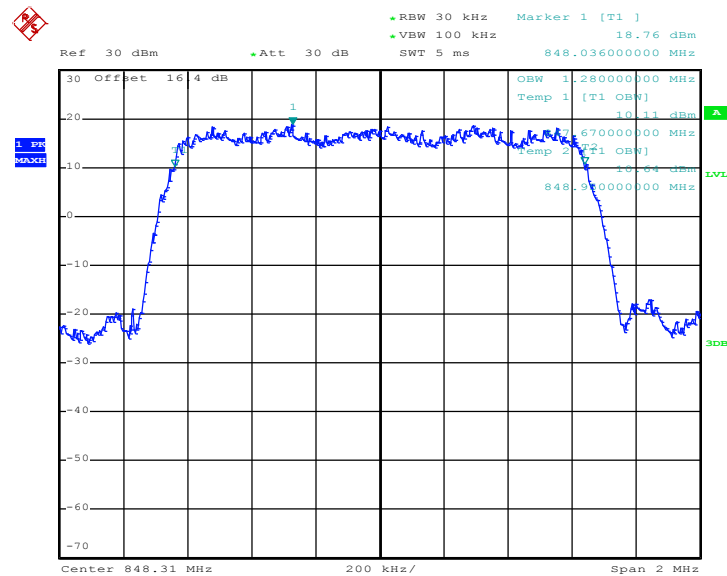
26dB Bandwidth Plot on Channel 384 (836.52 MHz)



Date: 18.MAY.2015 14:43:22

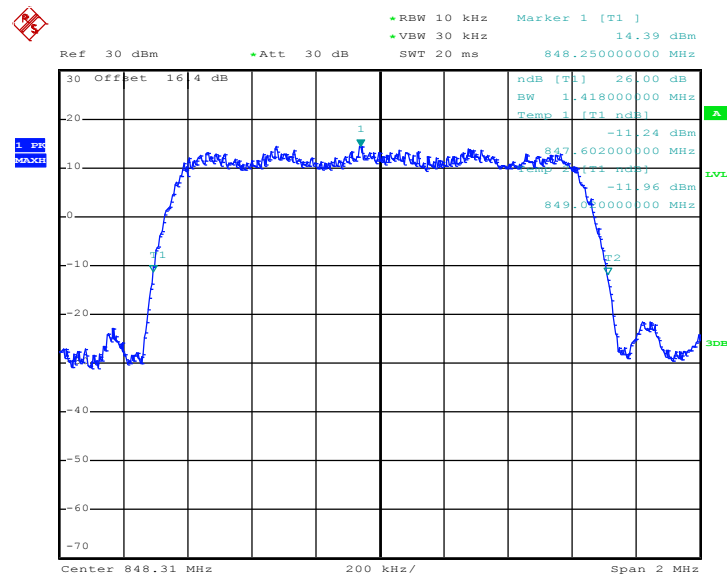


99% Occupied Bandwidth Plot on Channel 777 (848.31 MHz)



Date: 18.MAY.2015 14:52:22

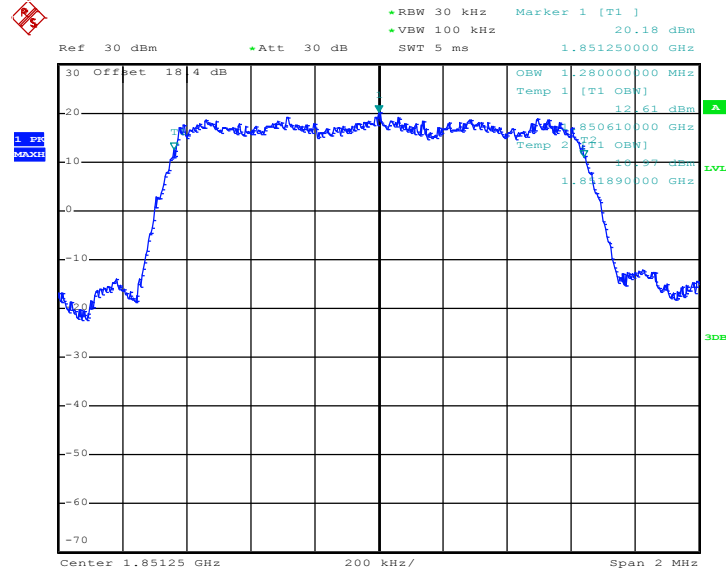
26dB Bandwidth Plot on Channel 777 (848.31 MHz)



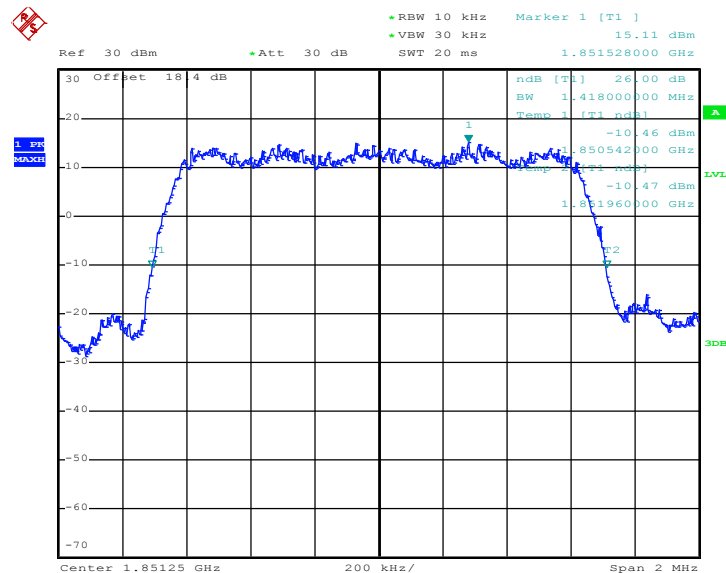
Date: 18.MAY.2015 14:43:58



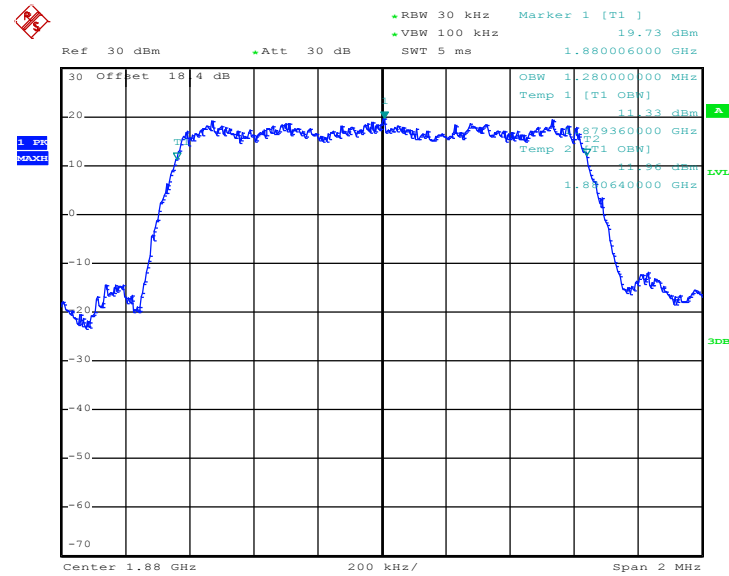
Band :	CDMA2000 BC1	Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)
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99% Occupied Bandwidth Plot on Channel 25 (1851.25 MHz)

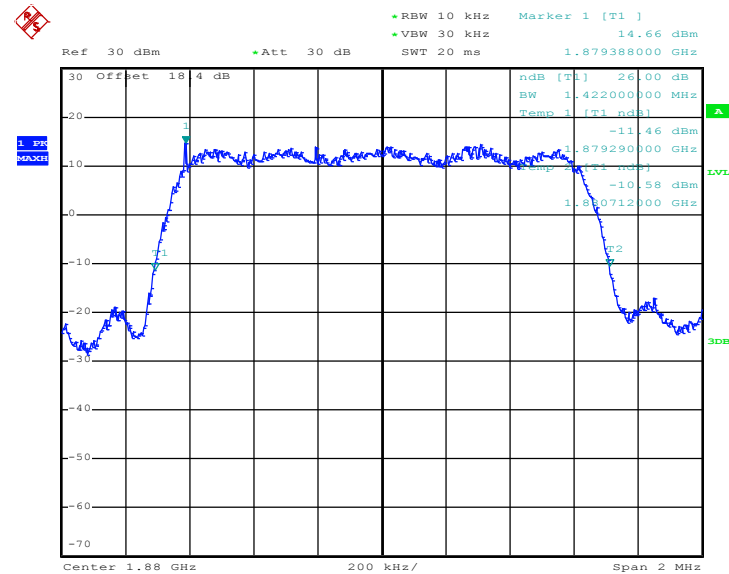
Date: 18.MAY.2015 15:31:09

26dB Bandwidth Plot on Channel 25 (1851.25 MHz)

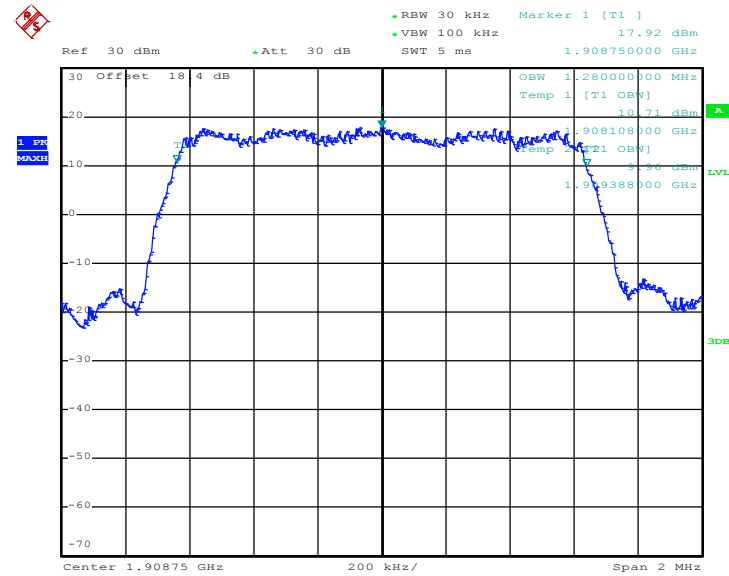
Date: 18.MAY.2015 15:27:43

99% Occupied Bandwidth Plot on Channel 600 (1880.0 MHz)


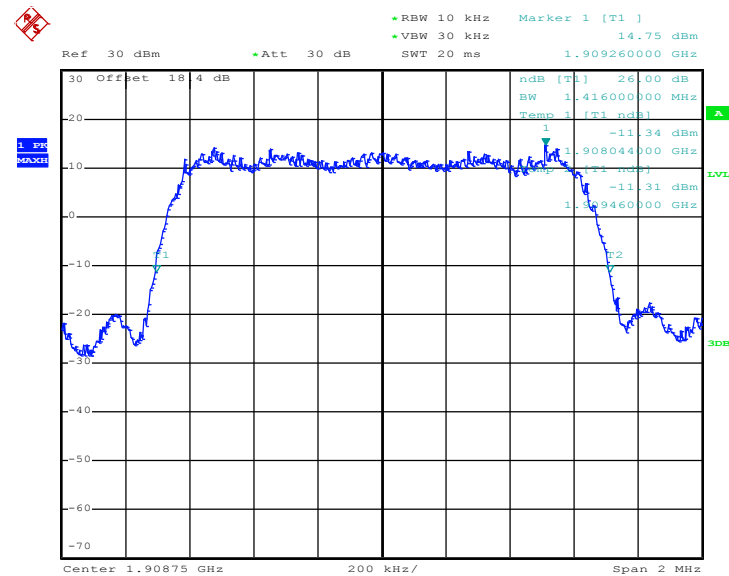
Date: 18.MAY.2015 15:31:40

26dB Bandwidth Plot on Channel 600 (1880.0 MHz)


Date: 18.MAY.2015 15:28:54

99% Occupied Bandwidth Plot on Channel 1175 (1908.75 MHz)


Date: 18.MAY.2015 15:32:11

26dB Bandwidth Plot on Channel 1175 (1908.75 MHz)


Date: 18.MAY.2015 15:29:25

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

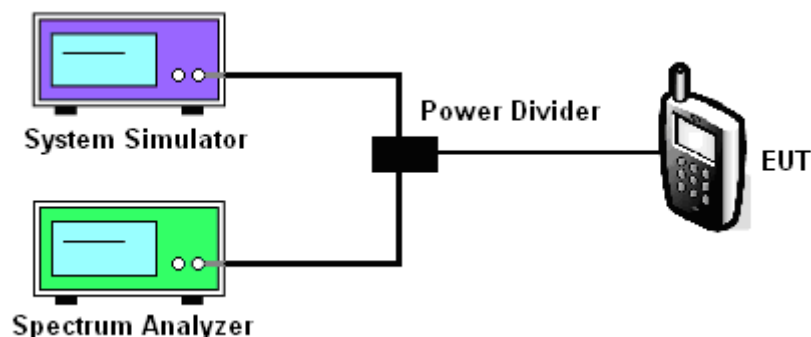
The measuring equipment is listed in the section 4 of this test report.

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)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.5.4 Test Setup

<Conducted Band Edge >

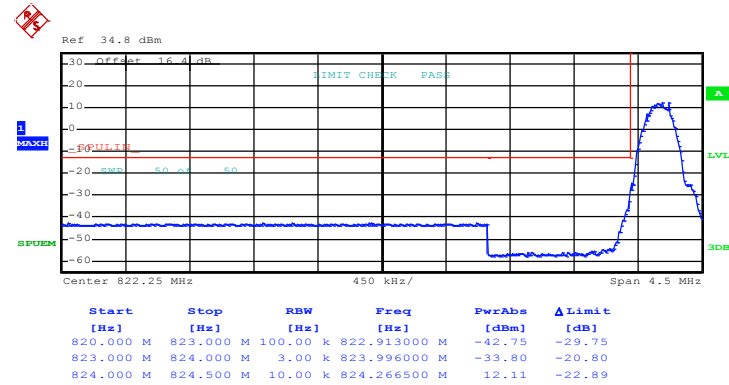




3.5.5 Test Result (Plots) of Conducted Band Edge

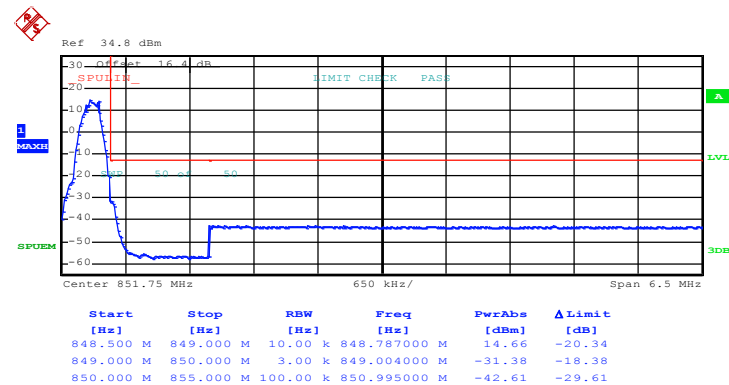
Band :	GSM850	Test Mode :	GPRS class 8 Link (GMSK)
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Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 26.MAY.2015 09:37:50

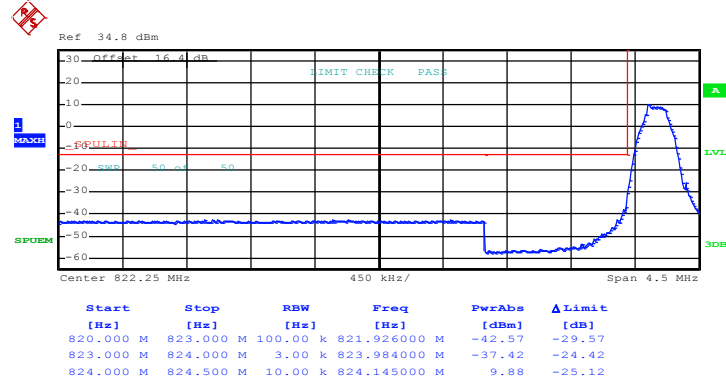
Higher Band Edge Plot on Channel 251 (848.8 MHz)



Date: 26.MAY.2015 09:39:13

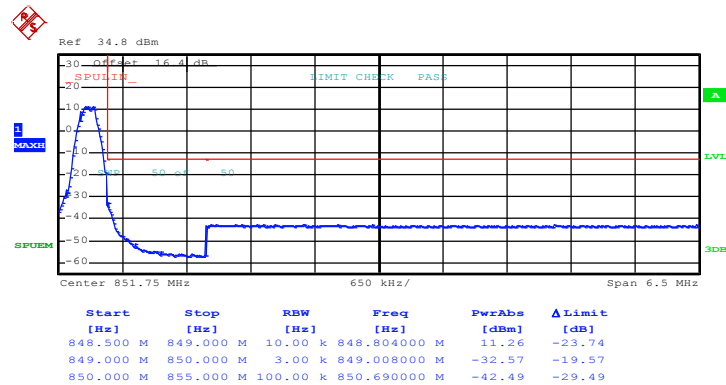
Band :	GSM850	Test Mode :	EDGE class 8 Link (8PSK)
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Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 26.MAY.2015 09:47:31

Higher Band Edge Plot on Channel 251 (848.8 MHz)

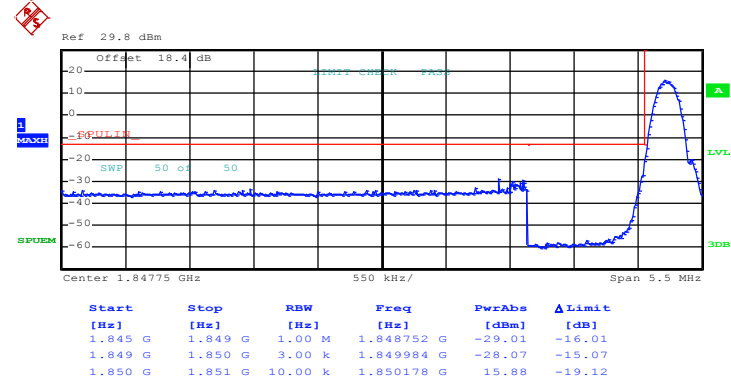


Date: 26.MAY.2015 09:48:54



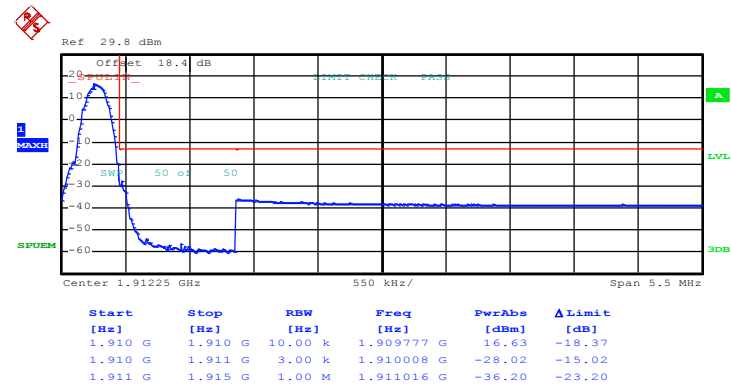
Band :	GSM1900	Test Mode :	GPRS class 8 Link (GMSK)
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Lower Band Edge Plot on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 09:59:12

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

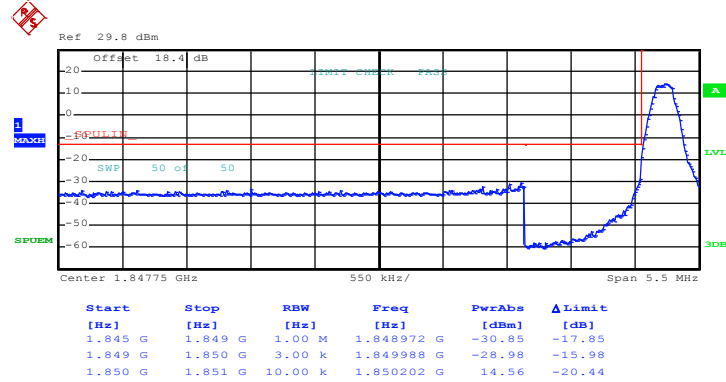


Date: 26.MAY.2015 10:00:35



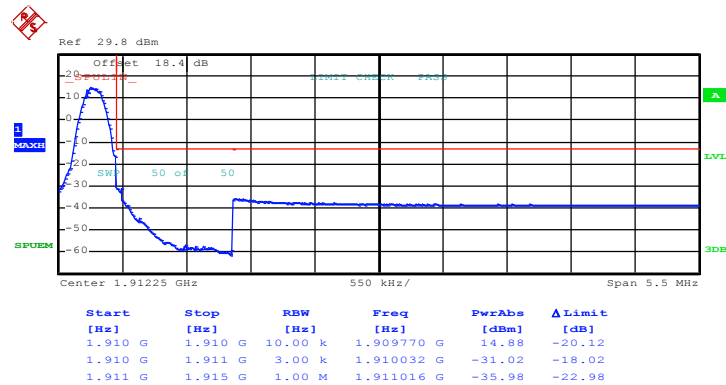
Band :	GSM1900	Test Mode :	EDGE class 8 Link (8PSK)
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Lower Band Edge Plot on Channel 512 (1850.2 MHz)



Date: 26.MAY.2015 10:09:39

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

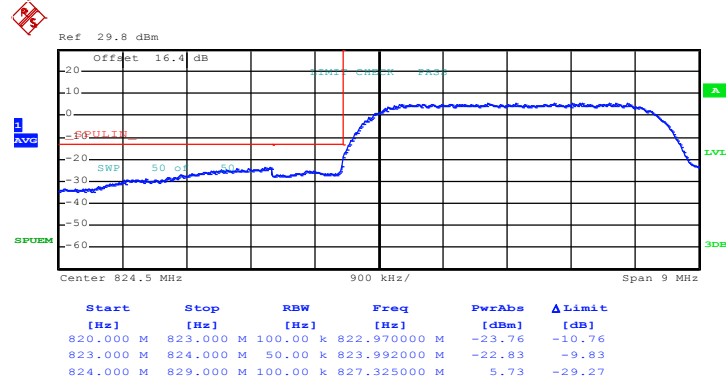


Date: 26.MAY.2015 10:11:02



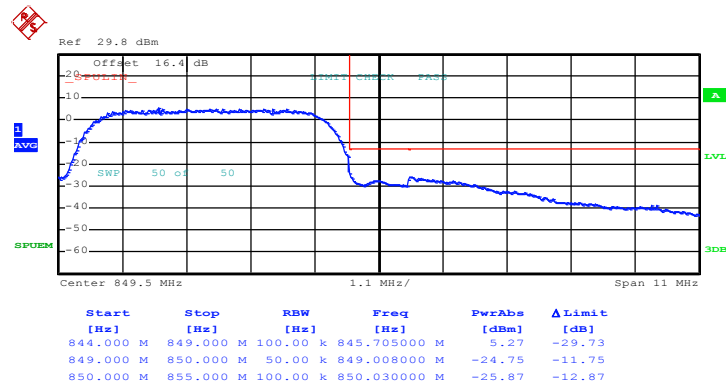
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Lower Band Edge Plot on Channel 4132 (826.4 MHz)



Date: 16.MAY.2015 13:22:55

Higher Band Edge Plot on Channel 4233 (846.6 MHz)

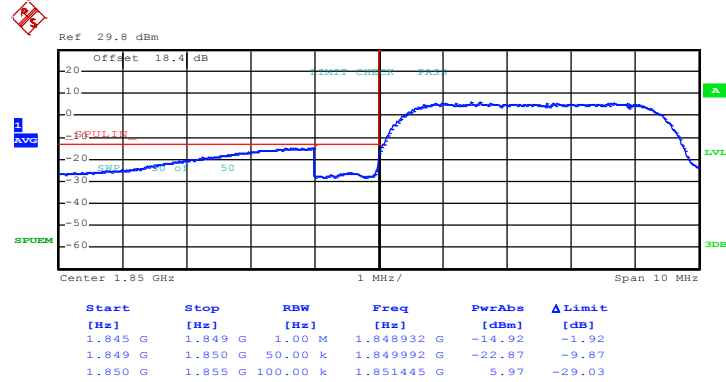


Date: 16.MAY.2015 13:24:18



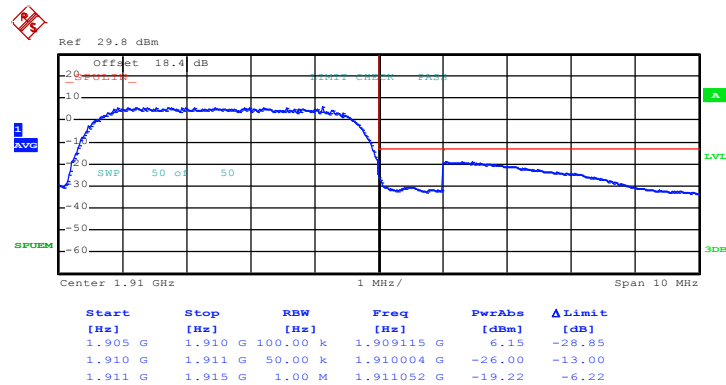
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



Date: 16.MAY.2015 13:43:15

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)

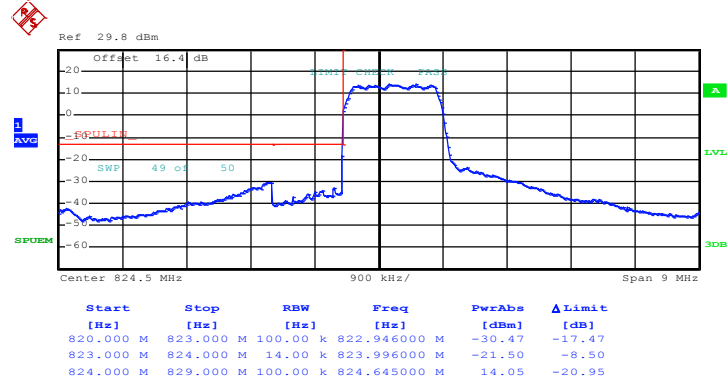


Date: 16.MAY.2015 13:45:17



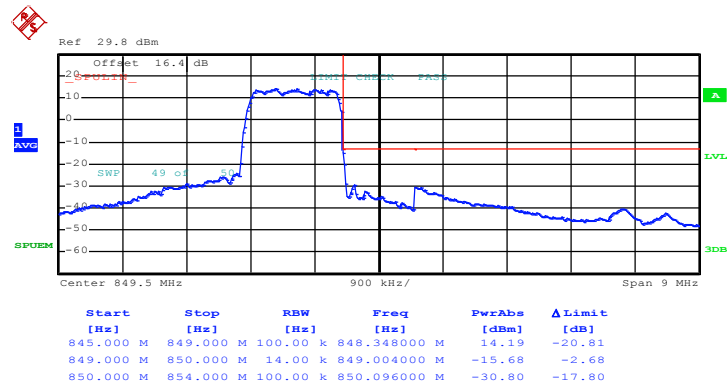
Band :	CDMA2000 BC0	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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Lower Band Edge Plot on Channel 1013 (824.7 MHz)



Date: 18.MAY.2015 14:48:07

Higher Band Edge Plot on Channel 777 (848.31 MHz)

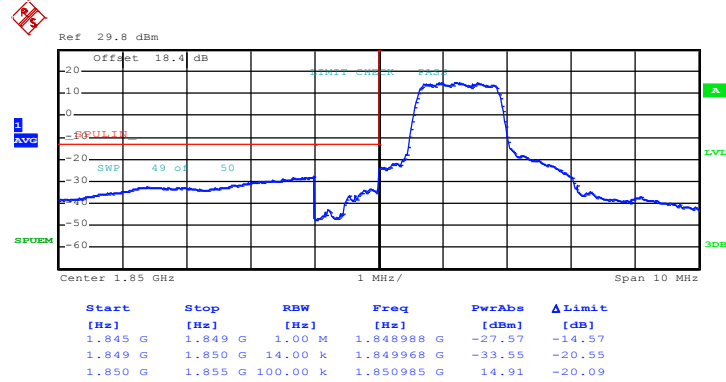


Date: 18.MAY.2015 14:49:30



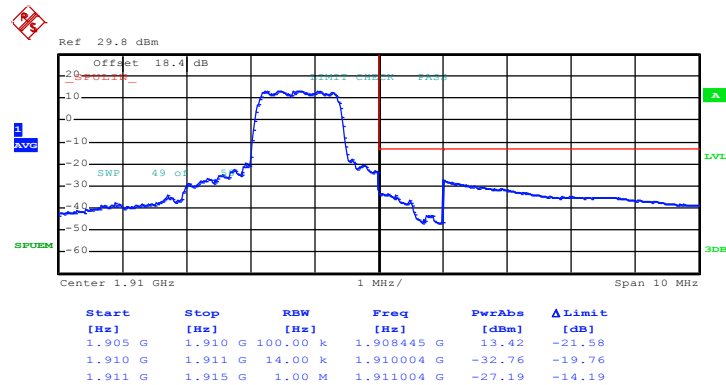
Band :	CDMA2000 BC1	Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)
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Lower Band Edge Plot on Channel 25 (1851.25 MHz)



Date: 18.MAY.2015 15:33:50

Higher Band Edge Plot on Channel 1175 (1908.75 MHz)



Date: 18.MAY.2015 15:35:15

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.

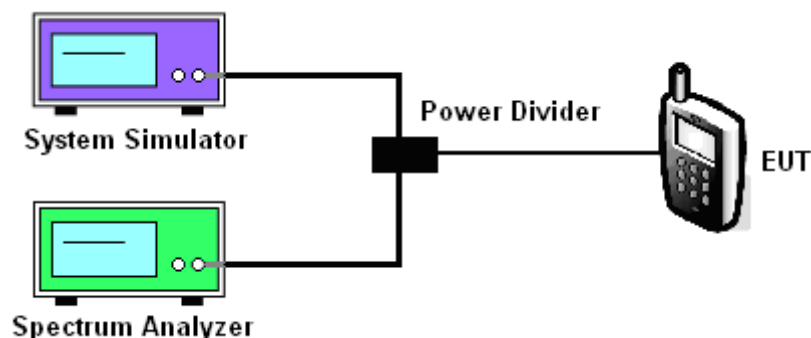
3.6.2 Measuring Instruments

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

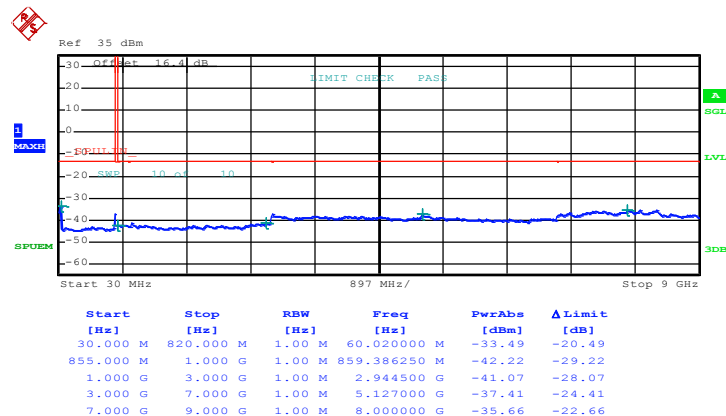




3.6.5 Test Result (Plots) of Conducted Spurious Emission

Band :	GSM850	Channel :	CH128
Test Mode :	GPRS class 8 Link (GMSK)	Frequency :	824.2 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

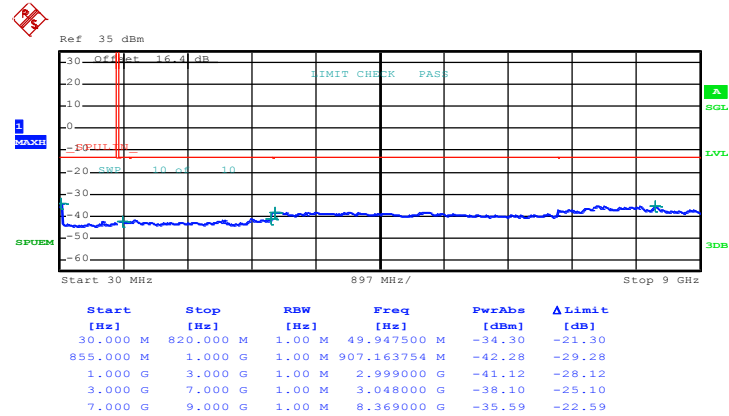


Date: 26.MAY.2015 09:39:46



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

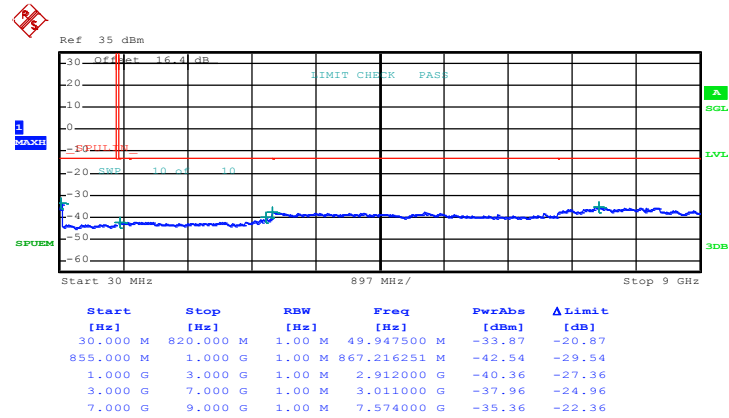


Date: 26.MAY.2015 09:40:11



Band :	GSM850	Channel :	CH251
Test Mode :	GPRS class 8 Link (GMSK)	Frequency :	848.8 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

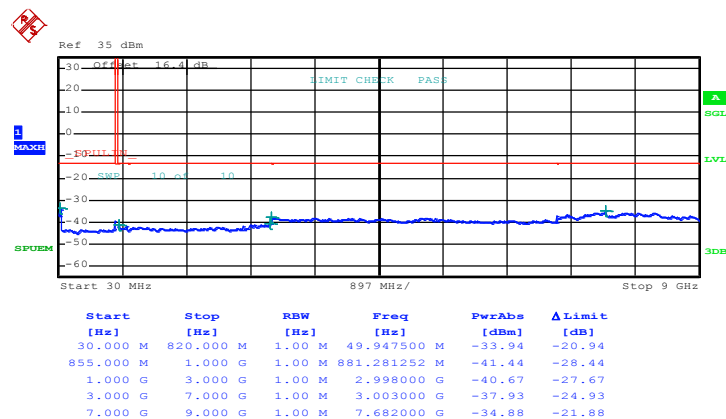


Date: 26.MAY.2015 09:40:36



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

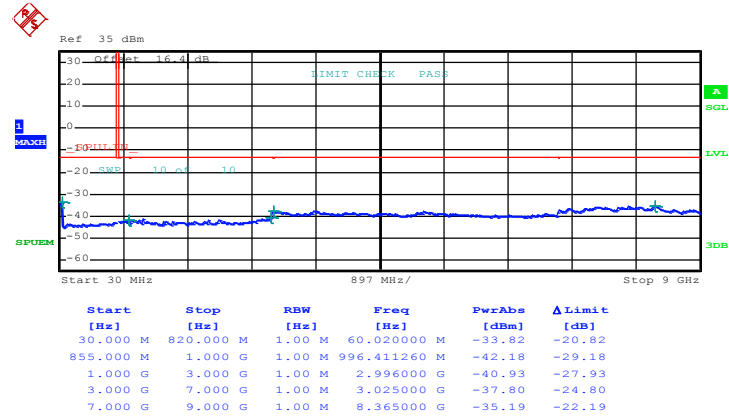


Date: 26.MAY.2015 09:49:44



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

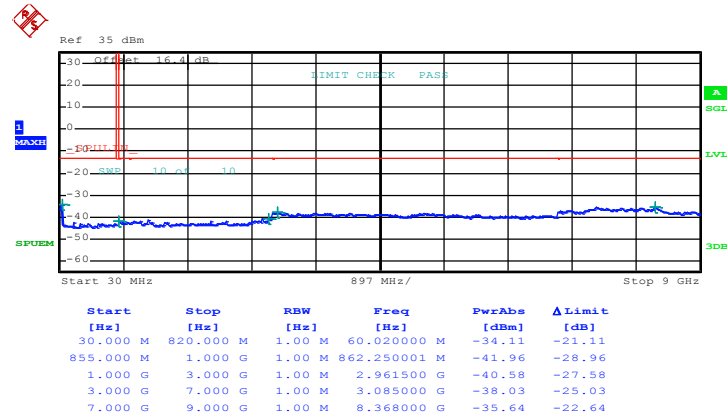


Date: 26.MAY.2015 09:50:09



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

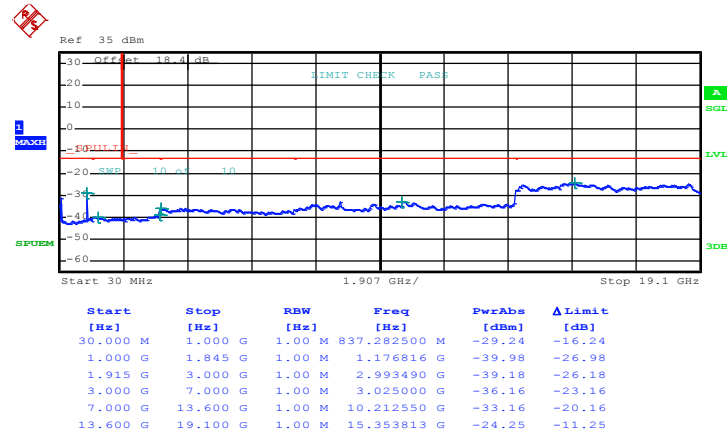


Date: 26.MAY.2015 09:50:34



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

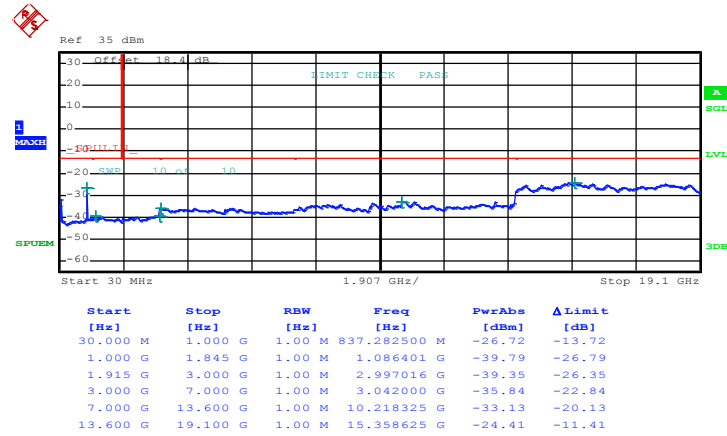


Date: 26.MAY.2015 10:01:57



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

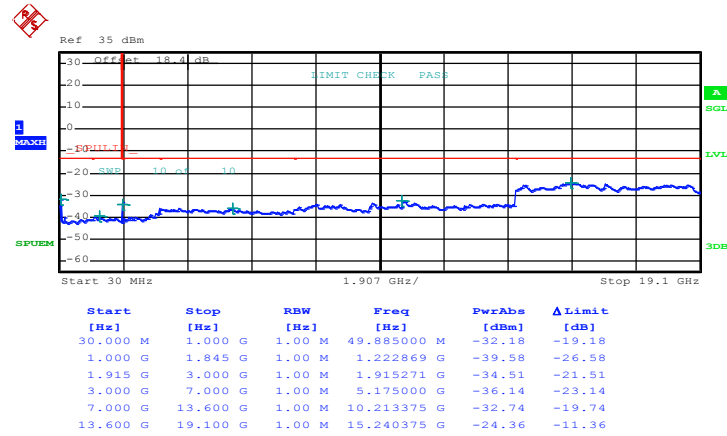


Date: 26.MAY.2015 10:02:22



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

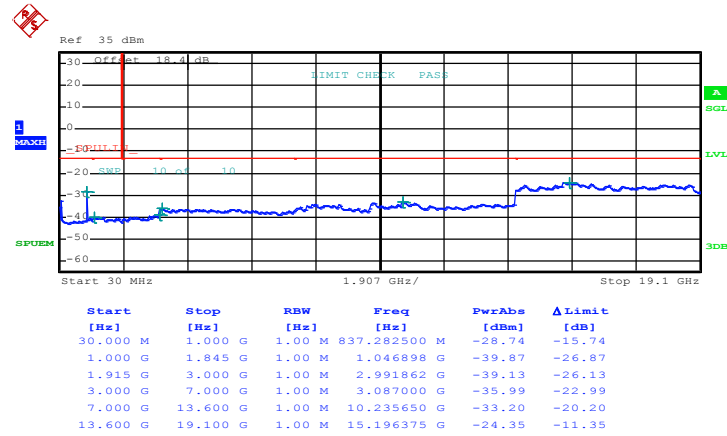


Date: 26.MAY.2015 10:02:47



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

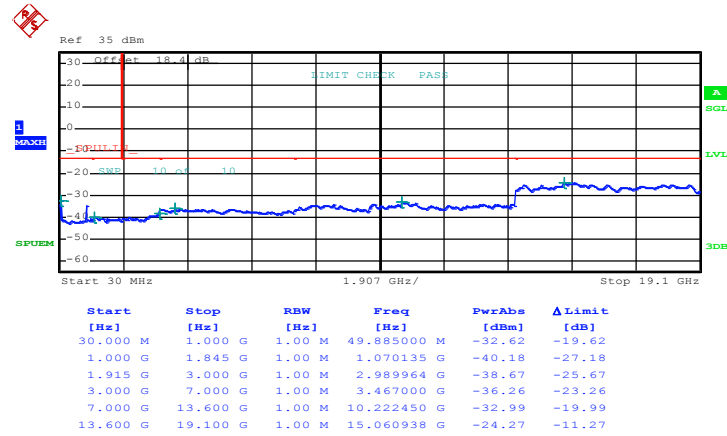


Date: 26.MAY.2015 10:11:52



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

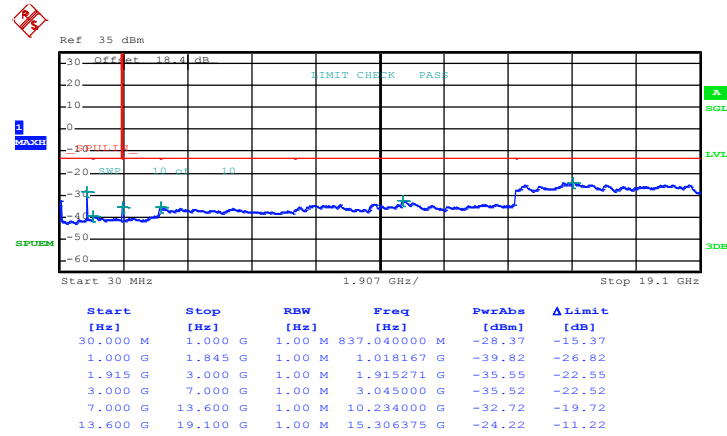


Date: 26.MAY.2015 10:12:17



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

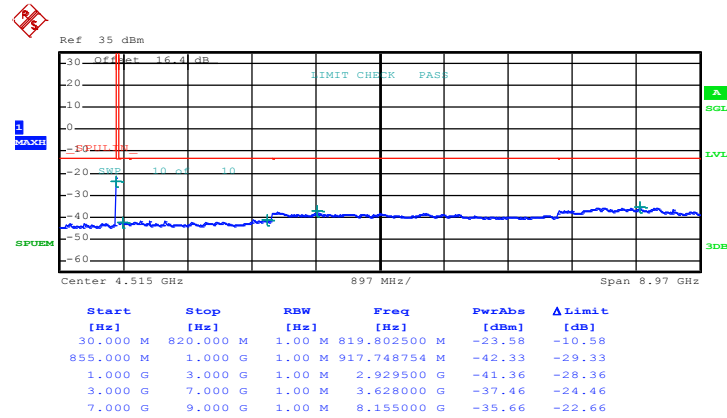


Date: 26.MAY.2015 10:12:43



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

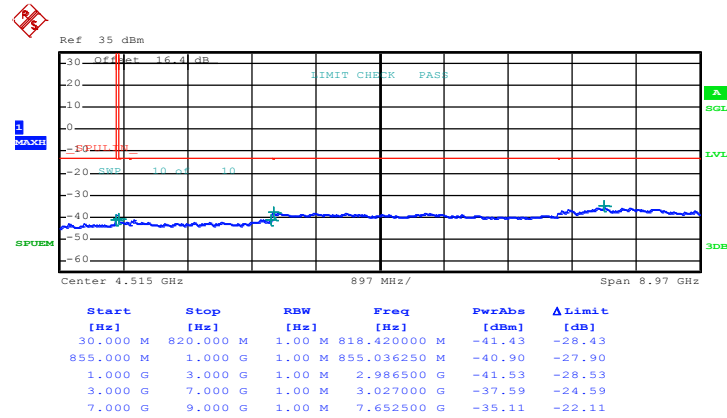


Date: 16.MAY.2015 13:28:34



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

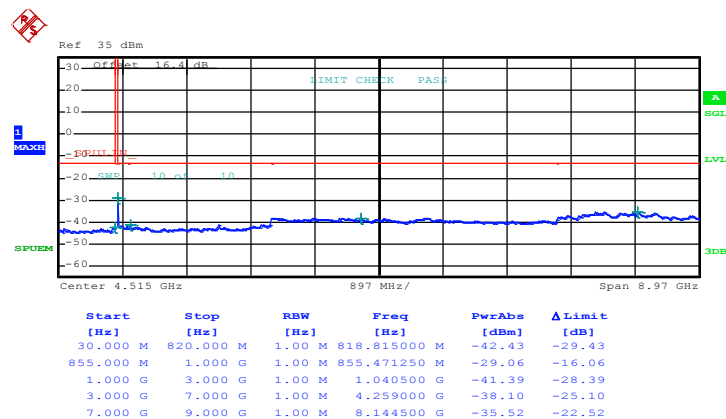


Date: 16.MAY.2015 13:29:03



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

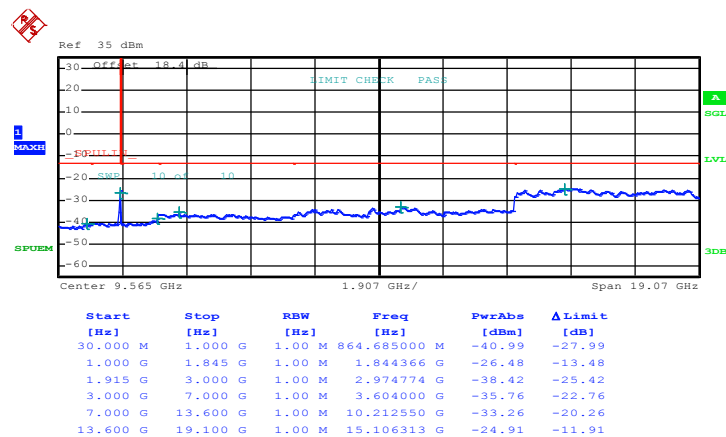


Date: 16.MAY.2015 13:29:30



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

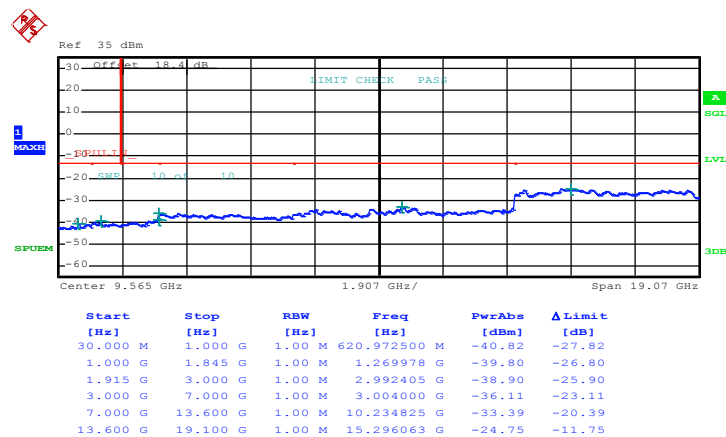


Date: 16.MAY.2015 13:50:39



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

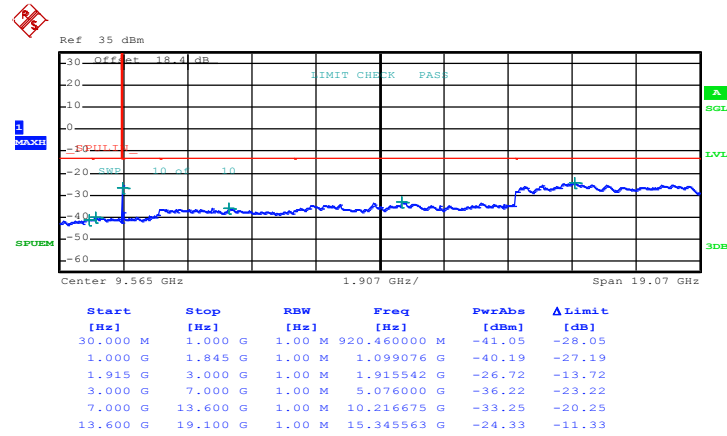


Date: 16.MAY.2015 13:51:11



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

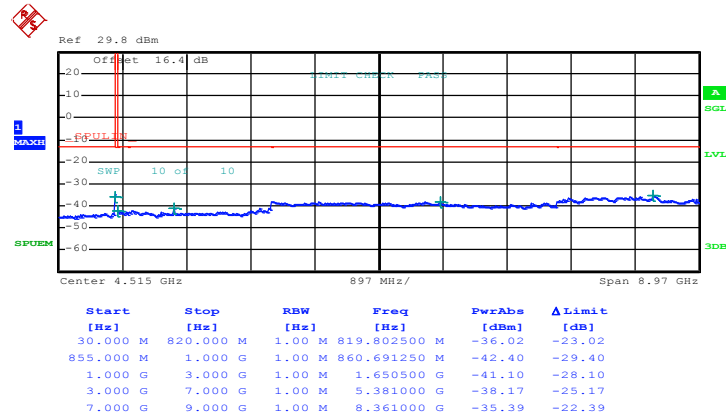


Date: 16.MAY.2015 13:51:46



Band :	CDMA2000 BC0	Channel :	CH1013
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Frequency :	824.7 MHz

Conducted Spurious Emission Plot between 4.515GHz ~ 8.97GHz

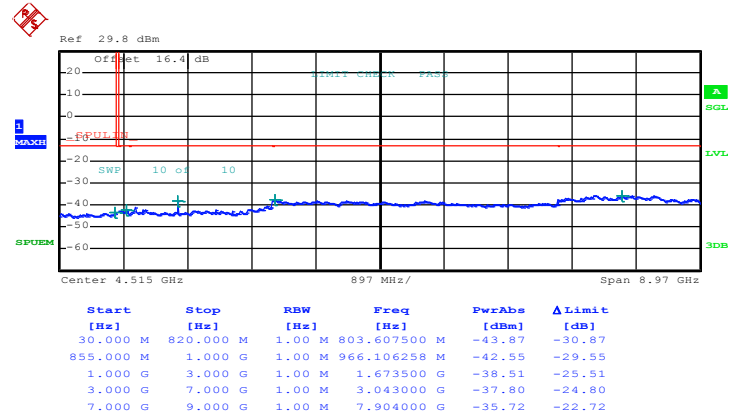


Date: 18.MAY.2015 14:55:46



Band :	CDMA2000 BC0	Channel :	CH384
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Frequency :	836.52 MHz

Conducted Spurious Emission Plot between 4.515GHz ~ 8.97GHz

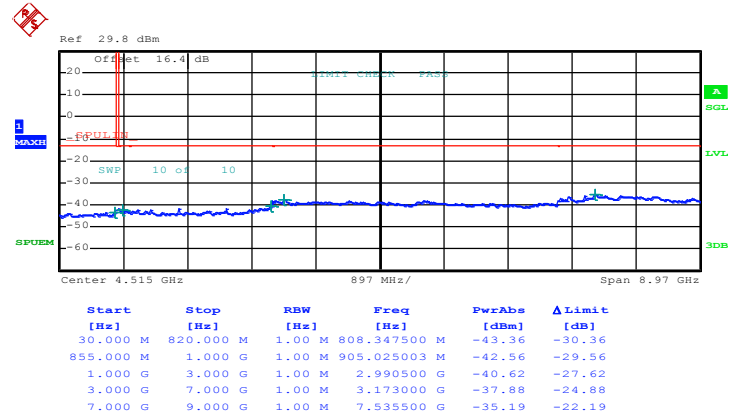


Date: 18.MAY.2015 14:56:12



Band :	CDMA2000 BC0	Channel :	CH777
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Frequency :	848.31 MHz

Conducted Spurious Emission Plot between 4.515GHz ~ 8.97GHz

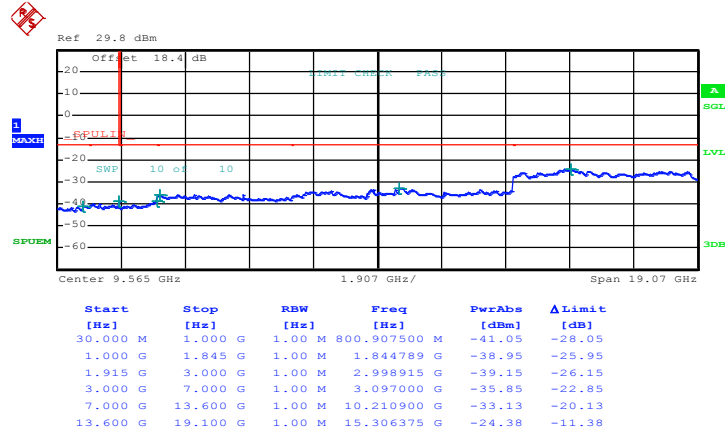


Date: 18.MAY.2015 14:56:55



Band :	CDMA2000 BC1	Channel :	CH25
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)	Frequency :	1851.25 MHz

Conducted Spurious Emission Plot between 9.565GHz ~ 19.07GHz

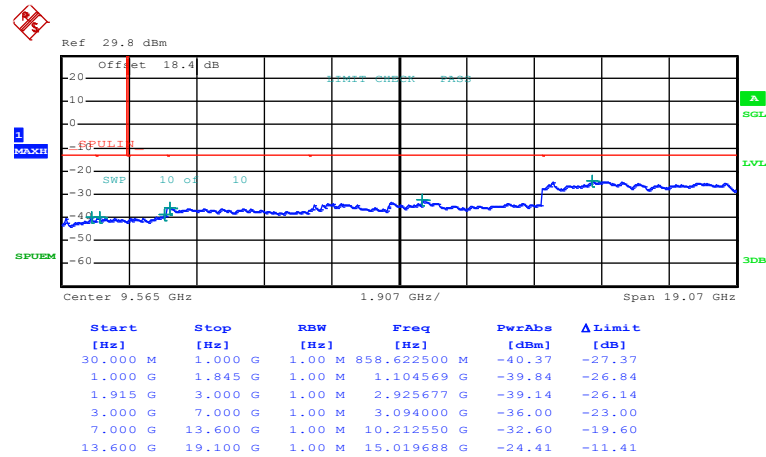


Date: 18.MAY.2015 15:40:13



Band :	CDMA2000 BC1	Channel :	CH600
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 9.565GHz ~ 19.07GHz

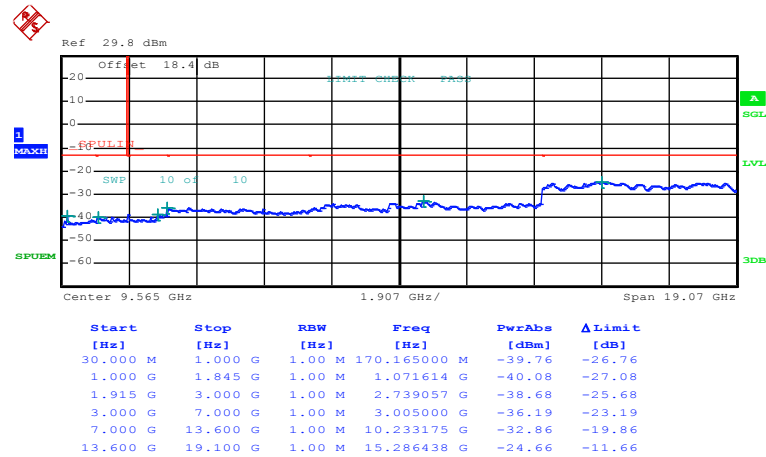


Date: 18.MAY.2015 15:40:43



Band :	CDMA2000 BC1	Channel :	CH1175
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)	Frequency :	1908.75 MHz

Conducted Spurious Emission Plot between 9.565GHz ~ 19.07GHz



Date: 18.MAY.2015 15:41:50

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

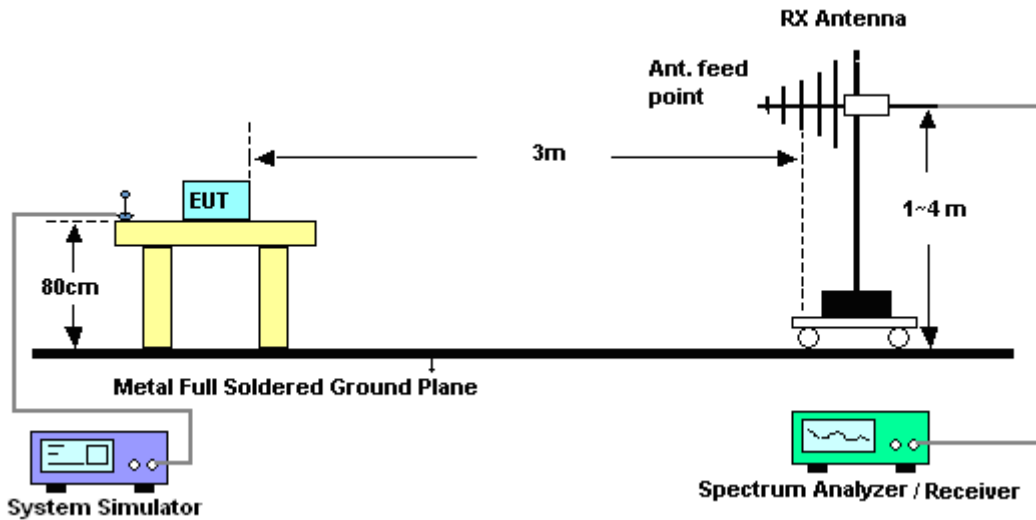
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

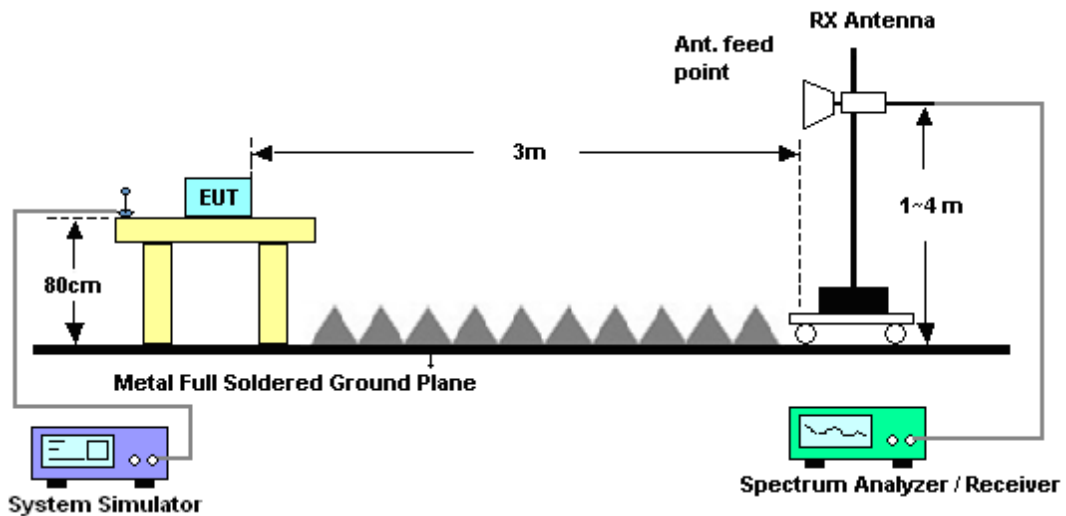
1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 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)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.7.5 Test Result of Field Strength of Spurious Radiated

<Low Channel>

Band :	GSM850	Temperature :	22~24°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1651	-55.77	-13	-42.77	-65.4	-57.52	0.98	4.88	H	Pass
2476	-47.64	-13	-34.64	-60.67	-49.53	1.28	5.33	H	Pass
3301	-60.43	-13	-47.43	-77	-63.86	1.54	7.12	H	Pass

Band :	GSM850	Temperature :	22~24°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)	
1651	-61.00	-13	-48.00	-68.63	-62.75	0.98	4.88	V	Pass
2476	-50.11	-13	-37.11	-65.25	-52	1.28	5.33	V	Pass
3301	-61.60	-13	-48.60	-77.07	-65.03	1.54	7.12	V	Pass

**<Middle Channel>**

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1675	-56.38	-13	-43.38	-65.72	-58.05	0.99	4.81	H	Pass
2512	-44.56	-13	-31.56	-57.83	-46.53	1.29	5.41	H	Pass
3346	-60.70	-13	-47.70	-76.88	-64.32	1.56	7.32	H	Pass

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1675	-57.57	-13	-44.57	-64.77	-59.24	0.99	4.81	V	Pass
2512	-37.14	-13	-24.14	-52.48	-39.11	1.29	5.41	V	Pass
3346	-61.47	-13	-48.47	-76.7	-65.09	1.56	7.32	V	Pass

**<High Channel>**

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1702	-59.29	-13	-46.29	-68.76	-60.87	1.00	4.73	H	Pass
2548	-48.17	-13	-35.17	-61.88	-50.15	1.31	5.44	H	Pass
3391	-60.43	-13	-47.43	-76.85	-64.23	1.57	7.52	H	Pass

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1702	-61.56	-13	-48.56	-69.31	-63.14	1.00	4.73	V	Pass
2548	-47.77	-13	-34.77	-63.13	-49.75	1.31	5.44	V	Pass
3391	-60.88	-13	-47.88	-76.78	-64.68	1.57	7.52	V	Pass

**<Low Channel>**

Band :	GSM850	Temperature :	22~24°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-63.40	-13	-50.40	-72.97	-65.16	0.98	4.89	H	Pass
2472	-60.24	-13	-47.24	-73.35	-62.12	1.28	5.32	H	Pass
3296	-59.32	-13	-46.32	-75.78	-62.73	1.54	7.10	H	Pass

Band :	GSM850	Temperature :	22~24°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1648	-65.78	-13	-52.78	-73.51	-67.54	0.98	4.89	V	Pass
2472	-59.67	-13	-46.67	-74.86	-61.55	1.28	5.32	V	Pass
3296	-60.59	-13	-47.59	-76.05	-64	1.54	7.10	V	Pass

**<Middle Channel>**

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-61.96	-13	-48.96	-71.3	-63.64	0.99	4.82	H	Pass
2512	-59.65	-13	-46.65	-72.91	-61.62	1.29	5.41	H	Pass
3344	-59.69	-13	-46.69	-75.85	-63.3	1.56	7.31	H	Pass

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-63.95	-13	-50.95	-71.19	-65.63	0.99	4.82	V	Pass
2512	-57.05	-13	-44.05	-72.42	-59.02	1.29	5.41	V	Pass
3344	-60.78	-13	-47.78	-76	-64.39	1.56	7.31	V	Pass

**<High Channel>**

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-59.34	-13	-46.34	-68.79	-60.94	1.00	4.75	H	Pass
2544	-57.94	-13	-44.94	-71.65	-59.92	1.30	5.44	H	Pass
3392	-59.84	-13	-46.84	-76.26	-63.64	1.57	7.52	H	Pass

Band :	GSM850					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-63.04	-13	-50.04	-70.76	-64.64	1.00	4.75	V	Pass
2544	-56.74	-13	-43.74	-72.04	-60.87	1.30	5.44	V	Pass
3392	-60.26	-13	-47.26	-76.1	-66.21	1.57	7.52	V	Pass

**<Low Channel>**

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-41.72	-13	-28.72	-60.29	-48.29	1.67	8.24	H	Pass
5548	-30.45	-13	-17.45	-53.81	-37.52	2.65	9.72	H	Pass
7400	-47.28	-13	-34.28	-76.45	-56.42	2.46	11.60	H	Pass

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-46.84	-13	-33.84	-65.17	-53.41	1.67	8.24	V	Pass
5548	-35.32	-13	-22.32	-57.74	-42.39	2.65	9.72	V	Pass
7400	-48.32	-13	-35.32	-76.67	-57.46	2.46	11.60	V	Pass

**<Middle Channel>**

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3763	-41.98	-13	-28.98	-61.75	-48.61	1.69	8.32	H	Pass
5639	-27.23	-13	-14.23	-51.18	-34.28	2.71	9.76	H	Pass
7520	-48.23	-13	-35.23	-76.94	-57.62	2.42	11.81	H	Pass

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	loss	Gain	(H/V)	
3763	-44.52	-13	-31.52	-62.7	-51.15	1.69	8.32	V	Pass
5639	-29.80	-13	-16.80	-51.79	-36.85	2.71	9.76	V	Pass
7520	-48.72	-13	-35.72	-76.87	-58.11	2.42	11.81	V	Pass



<High Channel>

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-40.90	-13	-27.90	-60.26	-47.58	1.70	8.38	H	Pass
5730	-33.22	-13	-20.22	-57.39	-40.25	2.76	9.79	H	Pass
7640	-47.92	-13	-34.92	-76.83	-57.42	2.38	11.88	H	Pass

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	GPRS class 8 Link (GMSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-39.60	-13	-26.60	-58.55	-46.28	1.70	8.38	V	Pass
5730	-31.21	-13	-18.21	-54.34	-38.24	2.76	9.79	V	Pass
7640	-48.87	-13	-35.87	-76.91	-58.37	2.38	11.88	V	Pass

**<Low Channel>**

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-49.51	-13	-36.51	-68	-56.08	1.67	8.24	H	Pass
5548	-29.35	-13	-16.35	-53.47	-36.42	2.65	9.72	H	Pass
7400	-47.30	-13	-34.30	-76.63	-56.44	2.46	11.60	H	Pass

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-48.18	-13	-35.18	-66.62	-54.75	1.67	8.24	V	Pass
5548	-35.27	-13	-22.27	-57.71	-42.34	2.65	9.72	V	Pass
7400	-48.98	-13	-35.98	-76.7	-58.12	2.46	11.60	V	Pass

**<Middle Channel>**

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3763	-45.85	-13	-32.85	-64.86	-52.48	1.69	8.32	H	Pass
5639	-32.97	-13	-19.97	-56.71	-40.02	2.71	9.76	H	Pass
7520	-48.03	-13	-35.03	-76.93	-57.42	2.42	11.81	H	Pass

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3763	-49.83	-13	-36.83	-68.34	-56.46	1.69	8.32	V	Pass
5639	-34.18	-13	-21.18	-56.85	-41.23	2.71	9.76	V	Pass
7520	-48.63	-13	-35.63	-76.88	-58.02	2.42	11.81	V	Pass

**<High Channel>**

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-40.48	-13	-27.48	-60.55	-47.16	1.70	8.38	H	Pass
5730	-29.48	-13	-16.48	-53.6	-36.51	2.76	9.79	H	Pass
7640	-48.78	-13	-35.78	-77.1	-58.28	2.38	11.88	H	Pass

Band :	GSM1900					Temperature :	22~24°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3819	-44.04	-13	-31.04	-62.85	-50.72	1.70	8.38	V	Pass
5730	-37.34	-13	-24.34	-60.97	-44.37	2.76	9.79	V	Pass
7640	-49.19	-13	-36.19	-77.08	-58.69	2.38	11.88	V	Pass

**<Low Channel>**

Band :	WCDMA Band V					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-52.27	-13	-39.27	-61.89	-54.03	0.98	4.89	H	Pass
2480	-49.82	-13	-36.82	-62.79	-51.73	1.28	5.34	H	Pass
3304	-58.97	-13	-45.97	-75.38	-62.41	1.54	7.14	H	Pass

Band :	WCDMA Band V					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1648	-57.88	-13	-44.88	-64.48	-59.64	0.98	4.89	V	Pass
2480	-49.88	-13	-36.88	-65.03	-51.79	1.28	5.34	V	Pass
3304	-58.71	-13	-45.71	-74.13	-62.15	1.54	7.14	V	Pass

**<Middle Channel>**

Band :	WCDMA Band V					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-52.98	-13	-39.98	-62.27	-54.66	0.99	4.82	H	Pass
2504	-53.04	-13	-40.04	-66.08	-55	1.29	5.40	H	Pass
3344	-59.63	-13	-46.63	-75.82	-63.24	1.56	7.31	H	Pass

Band :	WCDMA Band V					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-57.09	-13	-44.09	-64.37	-58.77	0.99	4.82	V	Pass
2512	-52.41	-13	-39.41	-67.75	-54.38	1.29	5.41	V	Pass
3344	-59.78	-13	-46.78	-75.15	-63.39	1.56	7.31	V	Pass

**<High Channel>**

Band :	WCDMA Band V					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-55.06	-13	-42.06	-64.54	-56.66	1.00	4.75	H	Pass
2544	-52.91	-13	-39.91	-66.62	-54.89	1.30	5.44	H	Pass
3392	-59.46	-13	-46.46	-76.09	-63.26	1.57	7.52	H	Pass

Band :	WCDMA Band V					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-57.71	-13	-44.71	-65.55	-59.31	1.00	4.75	V	Pass
2544	-51.13	-13	-38.13	-66.5	-53.11	1.30	5.44	V	Pass
3392	-60.02	-13	-47.02	-75.95	-63.82	1.57	7.52	V	Pass

**<Low Channel>**

Band :	WCDMA Band II				Temperature :	22~24°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	44~46%			
Test Engineer :	Lewis He and Stan Liu				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-50.19	-13	-37.19	-69.54	-56.76	1.67	8.24	H	Pass
5555	-46.91	-13	-33.91	-70.59	-53.98	2.66	9.72	H	Pass
7403	-46.13	-13	-33.13	-75.21	-55.28	2.46	11.61	H	Pass

Band :	WCDMA Band II				Temperature :	22~24°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	44~46%			
Test Engineer :	Lewis He and Stan Liu				Polarization :	Vertical			
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-51.04	-13	-38.04	-70.02	-57.61	1.67	8.24	V	Pass
5555	-50.35	-13	-37.35	-72.54	-57.42	2.66	9.72	V	Pass
7403	-48.21	-13	-35.21	-76.54	-57.36	2.46	11.61	V	Pass

**<Middle Channel>**

Band :	WCDMA Band II					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3756	-49.24	-13	-36.24	-68.17	-55.86	1.68	8.31	H	Pass
5639	-47.63	-13	-34.63	-71.71	-54.68	2.71	9.76	H	Pass
7515	-46.36	-13	-33.36	-75.32	-55.74	2.42	11.81	H	Pass

Band :	WCDMA Band II					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3756	-52.13	-13	-39.13	-70.66	-58.75	1.68	8.31	V	Pass
5639	-52.43	-13	-39.43	-74.42	-59.48	2.71	9.76	V	Pass
7515	-48.24	-13	-35.24	-76.47	-57.62	2.42	11.81	V	Pass

**<High Channel>**

Band :	WCDMA Band II					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3812	-50.15	-13	-37.15	-69.6	-56.82	1.70	8.37	H	Pass
5723	-43.38	-13	-30.38	-67.59	-50.42	2.75	9.79	H	Pass
7630	-47.73	-13	-34.73	-76.36	-57.22	2.39	11.88	H	Pass

Band :	WCDMA Band II					Temperature :	22~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3812	-51.15	-13	-38.15	-69.63	-57.82	1.70	8.37	V	Pass
5723	-49.24	-13	-36.24	-72.84	-56.28	2.75	9.79	V	Pass
7630	-48.85	-13	-35.85	-76.34	-58.34	2.39	11.88	V	Pass

**<Low Channel>**

Band :	CDMA2000 BC0	Temperature :	22~24°C						
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1648	-49.88	-13	-36.88	-59.49	-51.64	0.98	4.89	H	Pass
2472	-44.73	-13	-31.73	-57.77	-46.61	1.28	5.32	H	Pass
3296	-56.63	-13	-43.63	-73.21	-60.04	1.54	7.10	H	Pass

Band :	CDMA2000 BC0	Temperature :	22~24°C						
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
			(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1648	-54.13	-13	-41.13	-61.82	-55.89	0.98	4.89	V	Pass
2472	-43.34	-13	-30.34	-58.67	-45.22	1.28	5.32	V	Pass
3296	-56.43	-13	-43.43	-71.93	-59.84	1.54	7.10	V	Pass

**<Middle Channel>**

Band :	CDMA2000 BC0						Temperature :	22~24℃	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	44~46%	
Test Engineer :	Lewis He and Stan Liu						Polarization :	Horizontal	
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-50.54	-13	-37.54	-59.89	-52.22	0.99	4.82	H	Pass
2512	-47.62	-13	-34.62	-60.89	-49.59	1.29	5.41	H	Pass
3344	-58.56	-13	-45.56	-74.89	-62.17	1.56	7.31	H	Pass

Band :	CDMA2000 BC0						Temperature :	22~24°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	44~46%	
Test Engineer :	Lewis He and Stan Liu						Polarization :	Vertical	
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-53.50	-13	-40.50	-60.89	-55.18	0.99	4.82	V	Pass
2512	-43.90	-13	-30.90	-59.36	-45.87	1.29	5.41	V	Pass
3344	-58.41	-13	-45.41	-73.68	-62.02	1.56	7.31	V	Pass

**<High Channel>**

Band :	CDMA2000 BC0						Temperature :	22~24°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	44~46%	
Test Engineer :	Lewis He and Stan Liu						Polarization :	Horizontal	
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1696	-52.07	-13	-39.07	-61.63	-53.67	1.00	4.75	H	Pass
2544	-47.49	-13	-34.49	-61.2	-49.47	1.30	5.44	H	Pass
3392	-58.92	-13	-45.92	-75.34	-62.72	1.57	7.52	H	Pass

Band :	CDMA2000 BC0						Temperature :	22~24°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	44~46%	
Test Engineer :	Lewis He and Stan Liu						Polarization :	Vertical	
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1696	-54.89	-13	-41.89	-62.65	-56.49	1.00	4.75	V	Pass
2544	-42.43	-13	-29.43	-57.8	-44.41	1.30	5.44	V	Pass
3392	-58.28	-13	-45.28	-74.14	-62.08	1.57	7.52	V	Pass

**<Low Channel>**

Band :	CDMA2000 BC1	Temperature :	22~24°C						
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-42.18	-13	-29.18	-60.71	-48.75	1.67	8.24	H	Pass
5548	-34.26	-13	-21.26	-57.87	-41.33	2.65	9.72	H	Pass
7403	-45.47	-13	-32.47	-74.8	-54.62	2.46	11.61	H	Pass

Band :	CDMA2000 BC1	Temperature :	22~24°C						
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)	Relative Humidity :	44~46%						
Test Engineer :	Lewis He and Stan Liu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3700	-46.19	-13	-33.19	-64.55	-52.76	1.67	8.24	V	Pass
5548	-40.19	-13	-27.19	-62.2	-47.26	2.65	9.72	V	Pass
7403	-46.32	-13	-33.32	-74.69	-55.47	2.46	11.61	V	Pass

**<Middle Channel>**

Band :	CDMA2000 BC1						Temperature :	22~24℃	
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)						Relative Humidity :	44~46%	
Test Engineer :	Lewis He and Stan Liu						Polarization :	Horizontal	
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3763	-41.51	-13	-28.51	-60.53	-48.14	1.69	8.32	H	Pass
7639	-34.08	-13	-21.08	-58.31	-43.58	2.38	11.88	H	Pass
7520	-46.08	-13	-33.08	-74.74	-55.47	2.42	11.81	H	Pass

Band :	CDMA2000 BC1					Temperature :	22~24°C		
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3763	-44.63	-13	-31.63	-63.17	-51.26	1.69	8.32	V	Pass
7639	-40.17	-13	-27.17	-62.47	-49.67	2.38	11.88	V	Pass
7520	-46.23	-13	-33.23	-74.92	-55.62	2.42	11.81	V	Pass



<High Channel>

Band :	CDMA2000 BC1					Temperature :	22~24℃		
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)					Relative Humidity :	44~46%		
Test Engineer :	Lewis He and Stan Liu					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3819	-36.94	-13	-23.94	-56.56	-43.62	1.70	8.38	H	Pass
5730	-32.39	-13	-19.39	-56.37	-39.42	2.76	9.79	H	Pass
7634	-47.63	-13	-34.63	-75.63	-57.12	2.39	11.88	H	Pass

Band :	CDMA2000 BC1						Temperature :	22~24°C	
Test Mode :	1xEV-DO Rev. A_RETAP 4096K (QPSK)						Relative Humidity :	44~46%	
Test Engineer :	Lewis He and Stan Liu						Polarization :	Vertical	
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3819	-42.54	-13	-29.54	-60.78	-49.22	1.70	8.38	V	Pass
5730	-35.82	-13	-22.82	-59.12	-42.85	2.76	9.79	V	Pass
7634	-48.20	-13	-35.20	-76.35	-57.69	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.

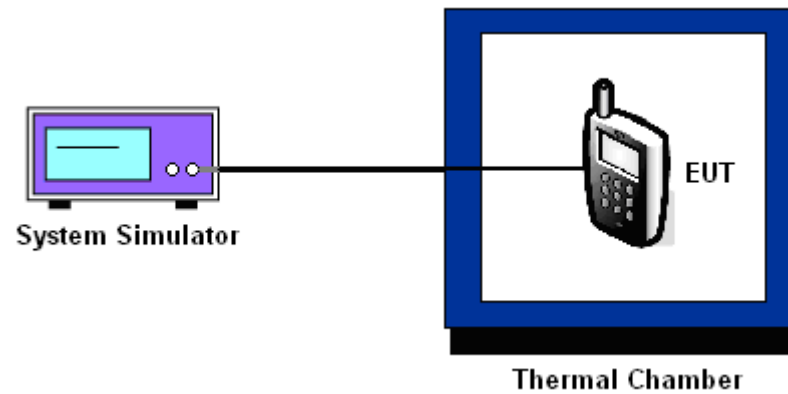
3.8.3 Test Procedures for Temperature Variation

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)	GPRS class 8	EDGE class 8	Result
	Deviation (ppm)	Deviation (ppm)	
50	0.0012	0.0048	PASS
40	0.0084	0.0012	
30	0.0191	0.0048	
20(Ref.)	0.0000	0.0000	
10	0.0203	0.0024	
0	0.0239	0.0012	
-10	0.0167	0.0036	
-20	0.0215	0.0084	
-30	0.0203	0.0024	

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)	
50	0.0016	0.0005	PASS
40	0.0021	0.0016	
30	0.0032	0.0585	
20(Ref.)	0.0000	0.0000	
10	0.0059	0.0011	
0	0.0011	0.0090	
-10	0.0005	0.0112	
-20	0.0027	0.0005	
-30	0.0011	0.0053	

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)	
50	0.0012	PASS
40	0.0024	
30	0.0024	
20(Ref.)	0.0000	
10	0.0203	
0	0.0072	
-10	0.0048	
-20	0.0155	
-30	0.0072	

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

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

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

Band :	CDMA2000 BC0 1xRTT_RC3+SO32	Channel :	384
Limit (ppm) :	2.5	Frequency :	836.52 MHz

Temperature (°C)	Deviation (ppm)	Result
50	0.0239	PASS
40	0.0215	
30	0.0215	
20(Ref.)	0.0000	
10	0.0215	
0	0.0203	
-10	0.0012	
-20	0.0215	
-30	0.0024	

Band :	CDMA2000 BC1 1xEV-DO Rev. A_RETAP 4096K	Channel :	600
Limit (ppm) :	within authorized band	Frequency :	1880.0 MHz

Temperature (°C)	Deviation (ppm)	Result
50	0.0069	PASS
40	0.0074	
30	0.0011	
20(Ref.)	0.0000	
10	0.0037	
0	0.0027	
-10	0.0372	
-20	0.0383	
-30	0.0005	

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	GPRS class 8	4.35	0.0227	2.5	PASS
		3.8	0.0179		
		BEP	0.0036		
	EDGE class 8	4.35	0.0048		
		3.8	0.0012		
		BEP	0.0048		
GSM 1900 CH661	GPRS class 8	4.35	0.0021	(Note 3.)	
		3.8	0.0016		
		BEP	0.0005		
	EDGE class 8	4.35	0.0011		
		3.8	0.0005		
		BEP	0.0617		
WCDMA Band V CH4182	RMC 12.2Kbps	4.35	0.0060	2.5	
		3.8	0.0155		
		BEP	0.0084		
WCDMA Band II CH9400	RMC 12.2Kbps	4.35	0.0005	(Note 3.)	
		3.8	0.0059		
		BEP	0.0011		
CDMA2000 BC0 CH384	1xRTT RC3+SO32	4.35	0.0215	2.5	
		3.8	0.0000		
		BEP	0.0024		
CDMA2000 BC1 CH600	1xEV-DO Rev. A RETAP 4096K	4.35	0.0016	(Note 3.)	
		3.8	0.0000		
		BEP	0.0378		

Note:

1. Normal Voltage = 3.8V.
2. Battery End Point (BEP) = 3.6 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
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Jun. 14, 2014	May 16, 2015 ~ May 26, 2015	Jun. 13, 2015	Conducted (TH03-HY)
Signal Generator	Rohde & Schwarz	SMU200A	102502	9kHz~6GHz	Jul. 07, 2014	May 16, 2015 ~ May 26, 2015	Jul. 06, 2015	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30°C~70°C	Dec. 01, 2014	May 16, 2015 ~ May 26, 2015	Nov. 30, 2015	Conducted (TH03-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 24, 2014	Apr. 29, 2015 ~ May 07, 2015	Nov. 23, 2015	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	35413	30MHz~1GHz	Oct. 24, 2014	Apr. 29, 2015 ~ May 07, 2015	Oct. 23, 2015	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A	MY54130085	20Hz ~ 8.4GHz	Nov. 05, 2014	Apr. 29, 2015 ~ May 07, 2015	Nov. 04, 2015	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Oct. 03, 2014	Apr. 29, 2015 ~ May 07, 2015	Oct. 02, 2015	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Nov. 20, 2014	Apr. 29, 2015 ~ May 07, 2015	Nov. 19, 2015	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHZ	Oct. 14, 2014	Apr. 29, 2015 ~ May 07, 2015	Oct. 13, 2015	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-450 0-B	N/A	1~4m	N/A	Apr. 29, 2015 ~ May 07, 2015	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0-360 degree	N/A	Apr. 29, 2015 ~ May 07, 2015	N/A	Radiation (03CH10-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 24, 2014	Apr. 29, 2015 ~ May 07, 2015	Nov. 23, 2015	Radiation (03CH10-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.90
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