



FCC RF Test Report

APPLICANT : Motorola Mobility, LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : 4601
FCC ID : IHDT56QG6
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Apr. 20, 2015 and testing was completed on Jun. 03, 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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG542019-08A	Rev. 01	Initial issue of report	Jun. 26, 2015
FG542019-08A	Rev. 02	Add antenna for radiation emission in section 4.	Jul. 08, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d)	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	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power	< 1 Watts	PASS	-
3.4	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.5	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Band Edge Measurement	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	-
3.6	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Conducted Spurious Emission	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	-
3.7	§2.1053 §22.917(a) §24.238(a) §27.53(h)	Field Strength of Spurious Radiation	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 18.93 dB at 5548.000 MHz
3.8	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22 Within Authorized Band	PASS	-
	§2.1055 §24.235 §27.53				



1 General Description

1.1 Applicant

Motorola Mobility, LLC

222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

1.2 Manufacturer

Motorola Mobility, LLC

222 W Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654, United States

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	4601
FCC ID	IHDT56QG6
IMEI Code	990005750011935
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE WLAN 11b/g/n HT20 Bluetooth v3.0 EDR Bluetooth v4.0 LE
HW Version	P2B
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.

Accessory List	
AC Adapter	Brand Name : Motorola
	Model Name : SPN5810A
Battery	Brand Name : Motorola
	Model Name : FC40

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 WCDMA Band IV : 1712.4 MHz ~ 1752.6 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 WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz CDMA2000 BC0: 869.70 MHz ~ 893.31 MHz CDMA2000 BC1: 1931.25 MHz ~ 1988.75 MHz
Maximum Output Power to Antenna	GSM850 : 32.34 dBm GSM1900 : 29.73 dBm WCDMA Band V : 23.19 dBm WCDMA Band II : 23.04 dBm WCDMA Band IV : 23.22 dBm CDMA2000 BC0 : 24.20 dBm CDMA2000 BC1 : 24.17 dBm
99% Occupied Bandwidth	GSM850: 0.25MHz GSM1900: 0.25MHz WCDMA Band V: 4.16MHz WCDMA Band II: 4.17MHz WCDMA Band IV: 4.19MHz 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: 64QAM (Downlink) 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 GSM	GMSK	1.0471	0.0383 ppm	247KGXW
Part 22	GSM850 EDGE class 8	8PSK	0.2198	0.0096 ppm	243KG7W
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.1365	0.0132 ppm	4M16F9W
Part 22	CDMA2000 BC0 1xEV-DO Rev. 0	QPSK	0.1276	0.0347 ppm	1M28F9W
Part 22	CDMA2000 BC0 1xRTT	QPSK	0.1268	0.0371 ppm	1M28F9W
Part 24	GSM1900 GPRS class 8	GMSK	1.6406	0.0048 ppm	244KGXW
Part 24	GSM1900 EDGE class 8	8PSK	0.5483	0.0048 ppm	245KG7W
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.3573	0.0080 ppm	4M17F9W
Part 24	CDMA2000 BC1 1xRTT	QPSK	0.4508	0.0271 ppm	1M28F9W
Part 24	CDMA2000 BC1 1xEV-DO Rev. 0	QPSK	0.3581	0.0250 ppm	1M28F9W
Part 27	WCDMA Band IV RMC 12.2Kbps	QPSK	0.3784	0.0179 ppm	4M19F9W

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. Kwei-Shan District, Tao Yuan 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), 27(L)
- ♦ 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 18000 MHz for WCDMA Band IV
3. 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	■ GSM Link ■ EDGE class 8 Link	■ GSM 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
WCDMA Band IV	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
CDMA2000 BC0	■ 1xEV-DO Rev. 0 Link Mode ■ 1xRTT Link Mode	■ 1xEV-DO Rev. 0 Link Mode ■ 1xRTT Link Mode
CDMA2000 BC1	■ 1xRTT Link Mode ■ 1xEV-DO Rev. 0 Link Mode	■ 1xRTT Link Mode ■ 1xEV-DO Rev. 0 Link Mode

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

GSM mode for GMSK modulation for GSM850,

GPRS multi-slot class 8 mode for GMSK modulation for GSM1900,

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

RMC 12.2Kbps mode for WCDMA band V, WCDMA band IV, and WCDMA band II,

1xRTT RC3 SO32(+ F-SCH) and 1xEVDO RTAP 153.6Kbps mode for CDMA2000 BC0,

1xRTT RC3 SO32(+SCH) and 1xEV-DO RETAP 4096Bits mode for CDMA2000 BC1,

only these modes were used for all tests. In addition to above worst-case test, below investigating on all data rates, and all modes are compliance with each FCC test case which has specific test limits. For spurious emissions at antenna port, the EUT was investigated the band edges on low and high channels, and the unwanted spurious emissions on middle channel for all modes, the results are pass, then only the worst-results were reported in the test report. The Radiated Spurious emissions for GSM/GPRS/EGPRS/HSDPA/CDMA modes were investigated on the middle channel and the passed results were not worst than those data tested from the highest power channels.



Conducted Power Measurement Results:

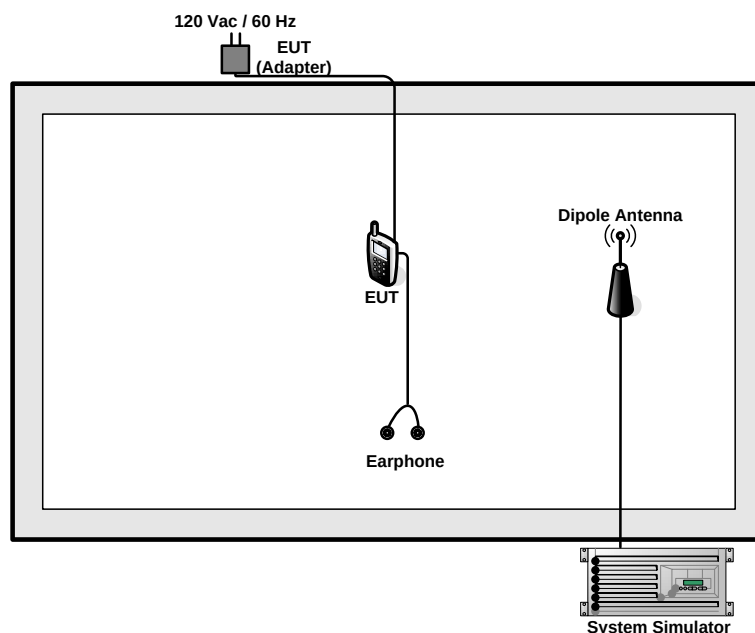
Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM	32.33	32.32	32.34	29.30	29.30	29.72
GPRS class 8	32.27	32.26	32.33	29.31	29.31	29.73
GPRS class 10	30.31	30.30	30.34	27.60	27.51	27.76
GPRS class 11	28.56	28.41	28.41	25.38	25.13	25.58
GPRS class 12	26.40	26.17	26.18	23.33	23.30	23.53
EGPRS class 8	26.67	26.53	26.54	25.54	25.49	25.78
EGPRS class 10	24.59	24.43	24.47	23.61	23.55	23.81
EGPRS class 11	22.51	22.34	22.33	21.54	21.49	21.81
EGPRS class 12	21.14	20.97	20.97	19.45	19.38	19.74

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	22.82	23.08	23.19	23.02	22.94	23.04
HSDPA Subtest-1	21.86	22.12	22.25	22.08	21.92	21.97
HSDPA Subtest-2	21.82	22.16	22.19	22.07	21.94	21.99
HSDPA Subtest-3	21.30	21.87	21.70	21.62	21.35	21.41
HSDPA Subtest-4	21.24	21.85	21.64	21.65	21.46	21.43
HSUPA Subtest-1	21.57	21.93	21.51	21.58	21.54	21.74
HSUPA Subtest-2	20.27	20.56	20.90	21.19	20.64	20.60
HSUPA Subtest-3	20.05	20.10	20.34	20.97	21.06	20.88
HSUPA Subtest-4	21.29	21.23	20.98	21.26	21.19	21.46
HSUPA Subtest-5	21.73	22.32	22.14	22.12	21.98	22.00

Conducted Power (*Unit: dBm)			
Band	WCDMA Band IV		
Channel	1312	1413	1513
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	23.22	23.14	22.99
HSDPA Subtest-1	22.22	22.18	21.89
HSDPA Subtest-2	22.30	22.27	22.09
HSDPA Subtest-3	21.74	21.70	21.42
HSDPA Subtest-4	21.85	22.24	21.67
HSUPA Subtest-1	21.60	21.59	21.22
HSUPA Subtest-2	21.44	21.02	21.04
HSUPA Subtest-3	21.47	21.24	20.78
HSUPA Subtest-4	21.64	21.69	21.80
HSUPA Subtest-5	22.40	22.65	22.10

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	23.91	23.87	23.95	23.87	23.87	23.97
1xRTT RC3 SO55	23.96	23.94	24.03	23.86	23.86	23.89
1xRTT RC3 SO32(+ F-SCH)	23.99	23.99	24.06	24.05	24.05	24.00
1xRTT RC3 SO32(+SCH)	24.04	24.03	24.03	24.10	24.06	24.17
1xEV-DO RTAP 153.6kbps	24.14	24.10	24.20	24.10	24.01	24.13
1xEV-DO RETAP 4096Bits	24.12	24.06	24.17	24.06	24.03	24.15

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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m



2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

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

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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

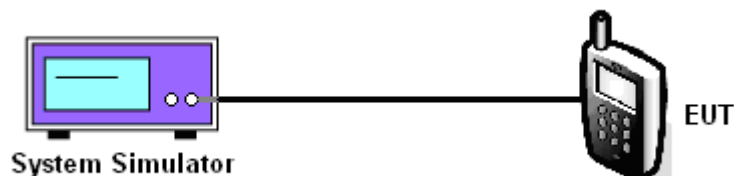
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.33	32.32	32.34	26.67	26.53	26.54	22.82	23.08	23.19

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)	29.31	29.31	29.73	25.54	25.49	25.78	23.02	22.94	23.04

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Conducted Power (dBm)	23.22	23.14	22.99

CDMA2000 BC0			
Test Mode	CDMA 2000 1xEV-DO Rev. 0		
Test Status	RTAP 153.6K		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
Conducted Power (dBm)	24.14	24.10	24.20

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)	23.99	23.99	24.06

CDMA2000 BC1			
Test Mode	CDMA 2000 1xRTT		
Test Status	RC3+SO32		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
Conducted Power (dBm)	24.10	24.06	24.17

CDMA2000 BC1			
Test Mode	CDMA 2000 1xEV-DO Rev. 0		
Test Status	RETAP 4096K		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
Conducted Power (dBm)	24.06	24.03	24.15

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.

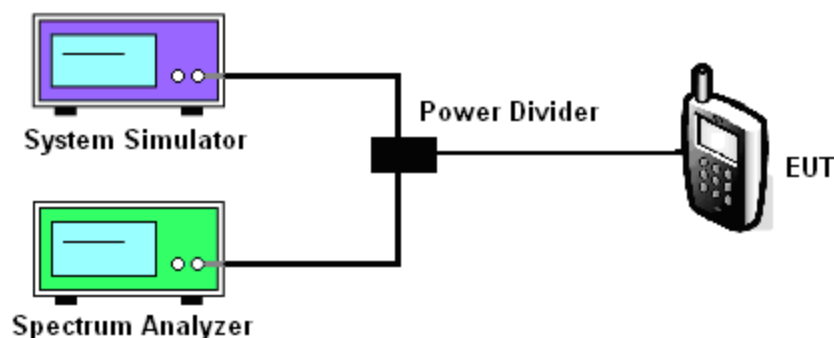
3.2.2 Measuring Instruments

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 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Peak-to-Average Ratio (dB)	0.24	0.24	0.24	3.32	3.36	3.20	3.36	3.44	3.44

PCS Band									
Modes	GSM1900 (GPRS class 8)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Peak-to-Average Ratio (dB)	0.28	0.28	0.28	3.24	3.36	3.32	3.20	3.20	3.24

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Peak-to-Average Ratio (dB)	3.16	2.80	2.68

CDMA2000 BC0			
Modes	CDMA 2000 1xEV-DO Rev. 0		
Test Status	RTAP 153.6K		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
Peak-to-Average Ratio (dB)	3.72	4.00	3.68

CDMA2000 BC0			
Modes	CDMA 2000 1xRTT		
Test Status	RC3+SO32		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
Peak-to-Average Ratio (dB)	4.00	4.00	3.76

CDMA2000 BC1			
Modes	CDMA 2000 1xRTT		
Test Status	RC3+SO32		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
Peak-to-Average Ratio (dB)	4.04	4.12	3.92

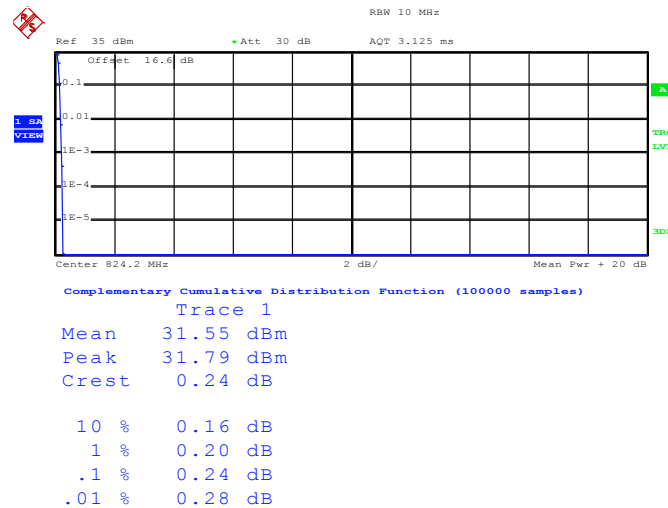
CDMA2000 BC1			
Modes	CDMA 2000 1xEV-DO Rev. 0		
Test Status	RETAP 4096K		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
Peak-to-Average Ratio (dB)	4.00	4.20	3.88



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

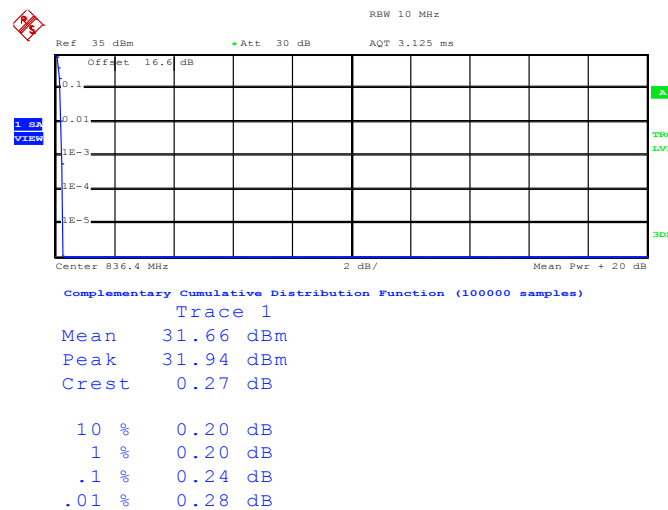
Band :	GSM 850	Test Mode :	GSM Link (GMSK)
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Peak-to-Average Ratio on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:36:16

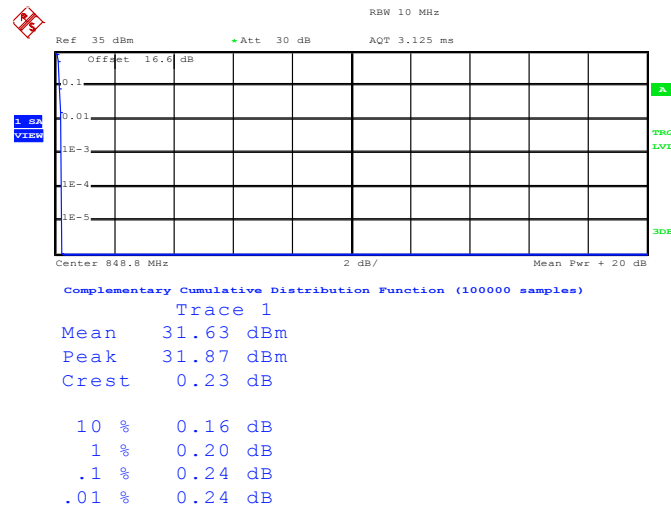
Peak-to-Average Ratio on Channel 189 (836.4 MHz)



Date: 25.MAY.2015 10:36:30



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

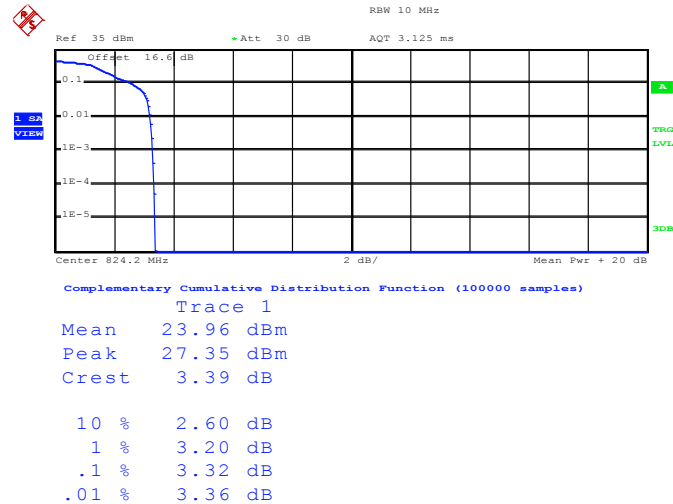


Date: 25.MAY.2015 10:36:40



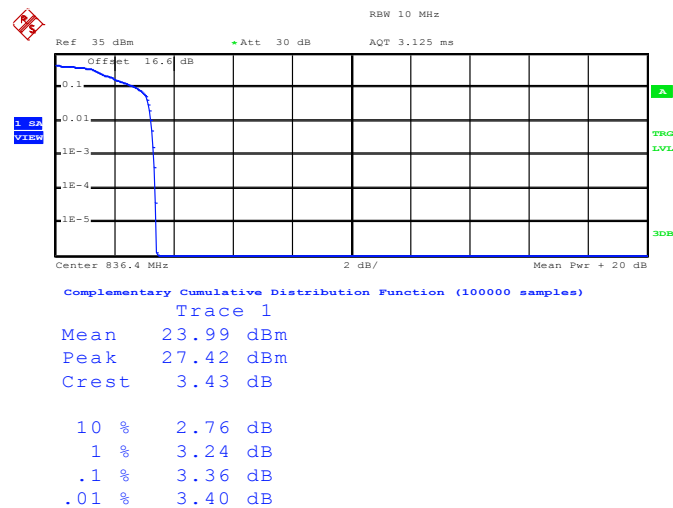
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)
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Peak-to-Average Ratio on Channel 128 (824.2 MHz)



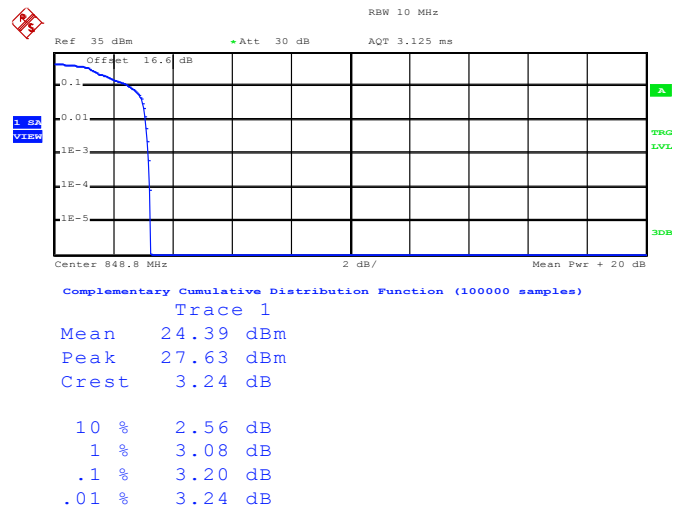
Date: 25.MAY.2015 10:46:09

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



Date: 25.MAY.2015 10:46:20

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

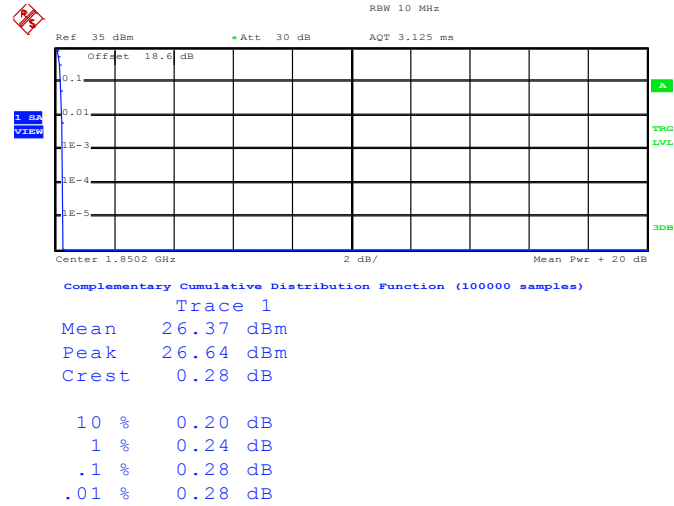


Date: 25.MAY.2015 10:46:30



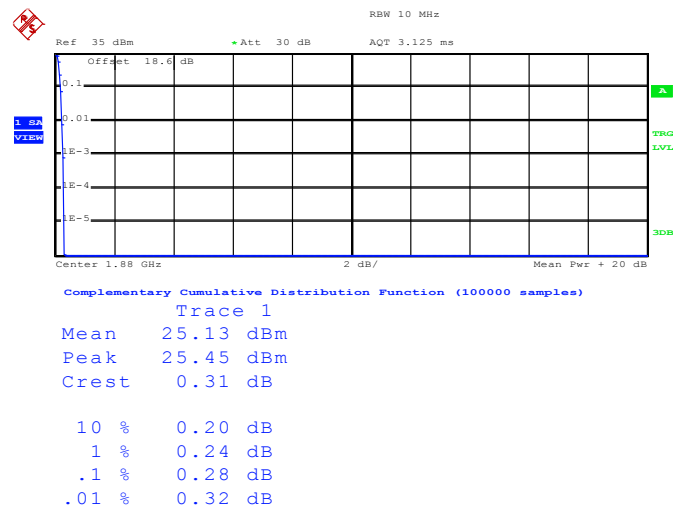
Band :	GSM 1900	Test Mode :	GPRS class 8 Link (GMSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 25.MAY.2015 11:13:58

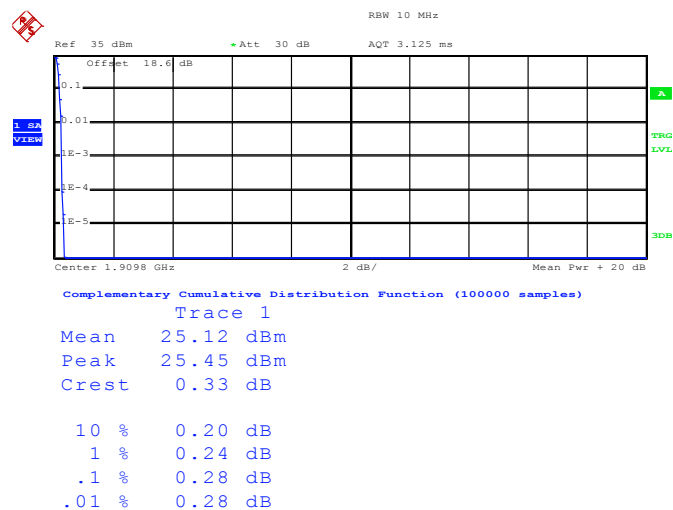
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 25.MAY.2015 11:14:09



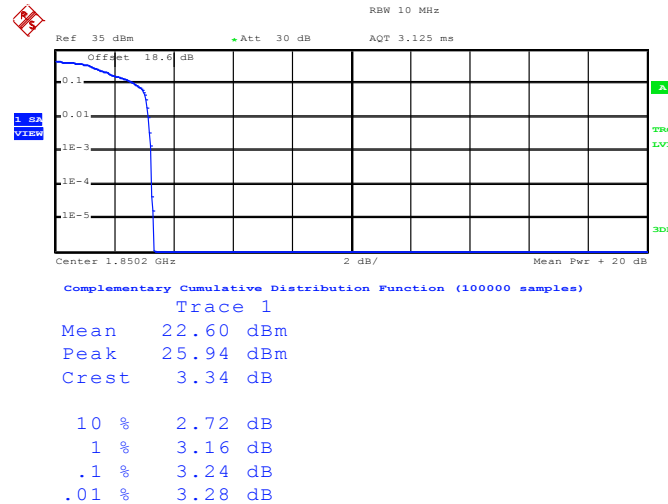
Peak-to-Average Ratio on Channel 810 (1909.8 MHz)



Date: 25.MAY.2015 11:14:20

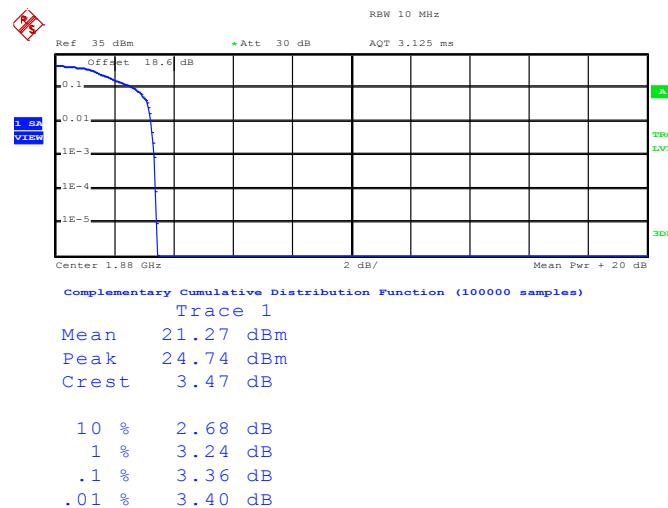
Band :	GSM 1900	Test Mode :	EDGE class 8 Link (8PSK)
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Peak-to-Average Ratio on Channel 512 (1850.2 MHz)



Date: 25.MAY.2015 11:25:10

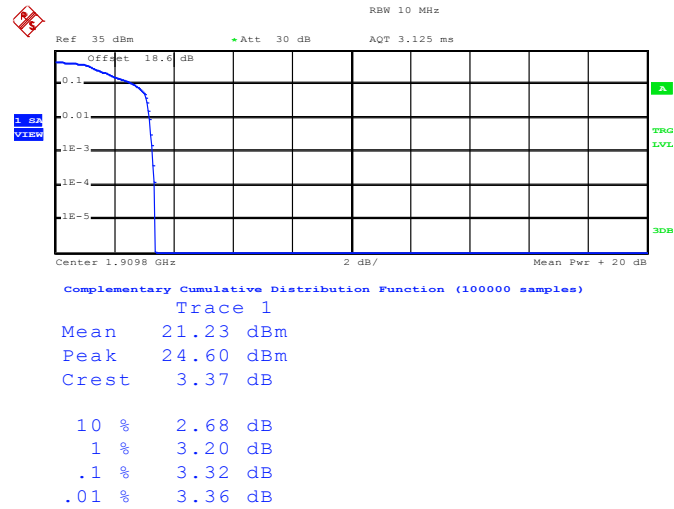
Peak-to-Average Ratio on Channel 661 (1880.0 MHz)



Date: 25.MAY.2015 11:25:21



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

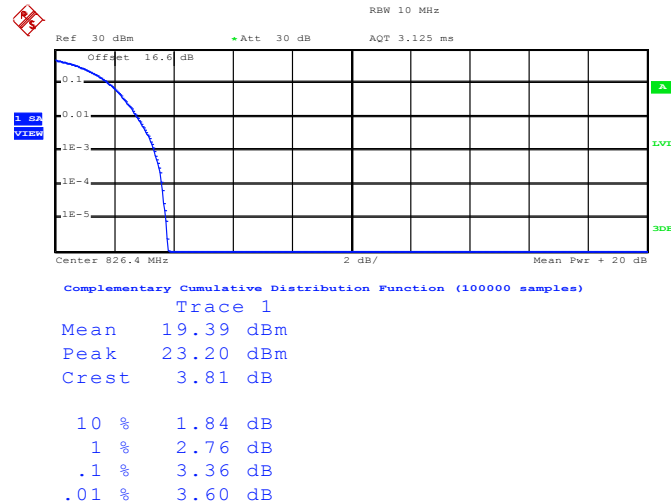


Date: 25.MAY.2015 11:25:45



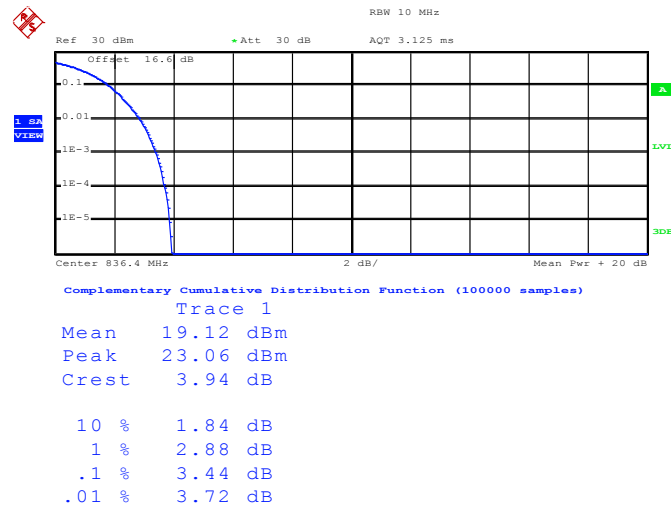
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Peak-to-Average Ratio on Channel 4132 (826.4 MHz)



Date: 25.MAY.2015 13:36:53

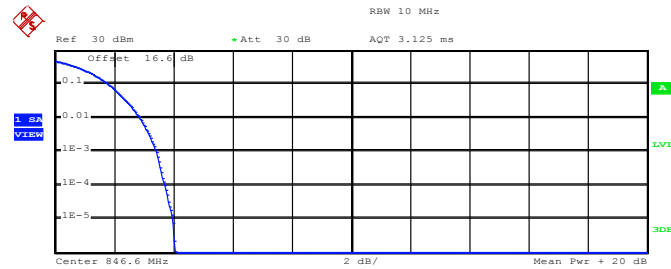
Peak-to-Average Ratio on Channel 4182 (836.4 MHz)



Date: 25.MAY.2015 13:37:02



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



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 19.22 dBm
Peak 23.27 dBm
Crest 4.05 dB

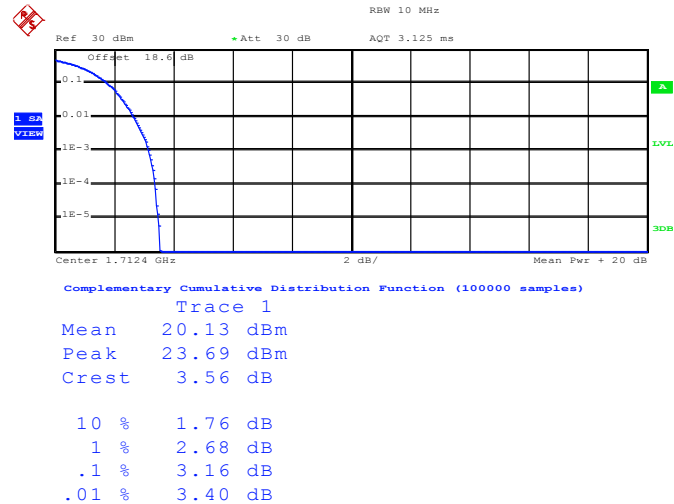
10 %	1.80 dB
1 %	2.88 dB
.1 %	3.44 dB
.01 %	3.72 dB

Date: 25.MAY.2015 13:37:13



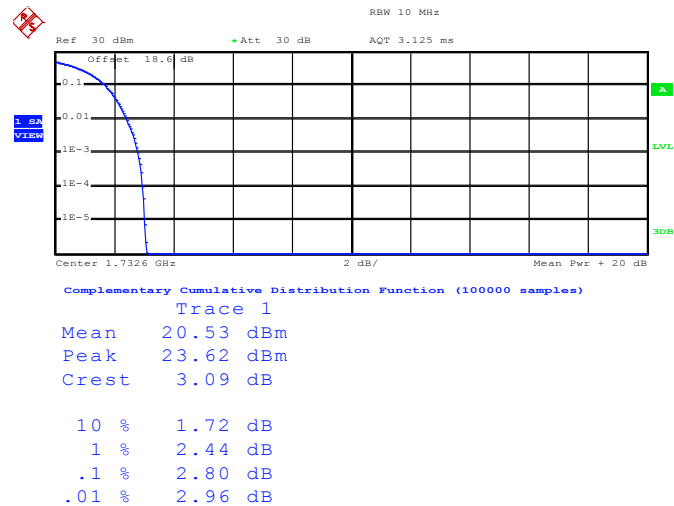
Band :	WCDMA Band IV	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Peak-to-Average Ratio on Channel 1312 (1712.4 MHz)



Date: 25.MAY.2015 12:28:40

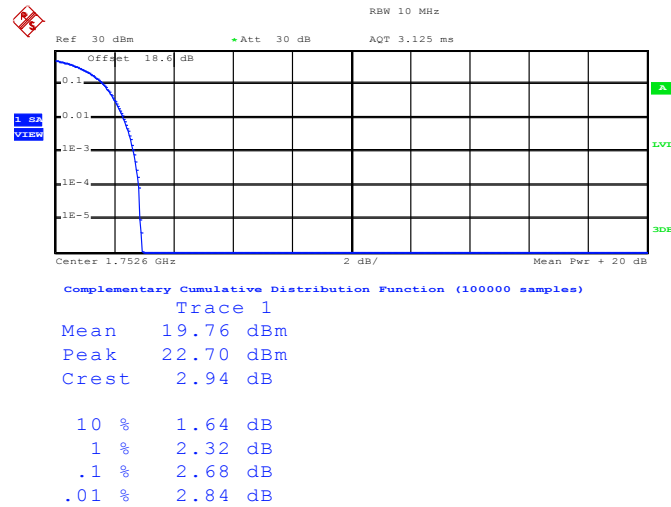
Peak-to-Average Ratio on Channel 1413 (1732.6 MHz)



Date: 25.MAY.2015 12:28:49



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

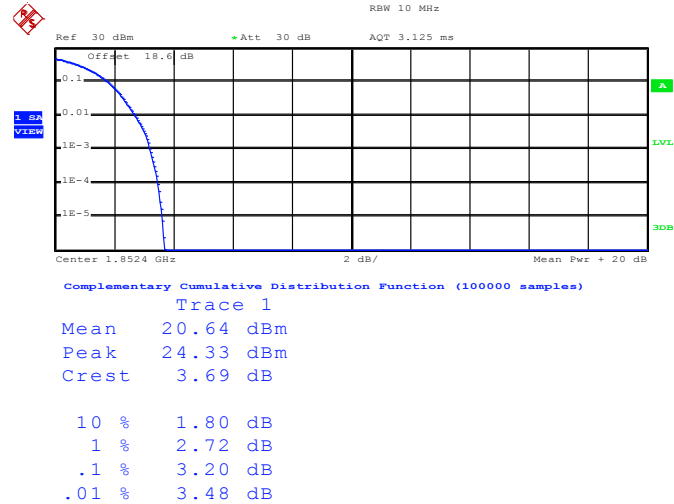


Date: 25.MAY.2015 12:28:57



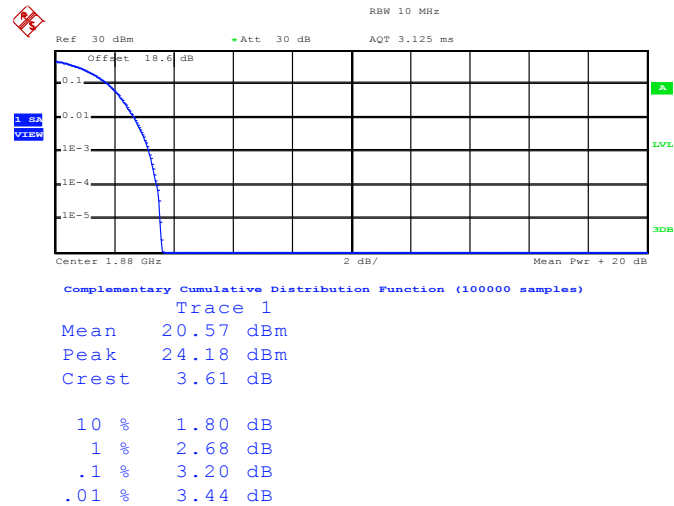
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Peak-to-Average Ratio on Channel 9262 (1852.4 MHz)



Date: 25.MAY.2015 11:49:13

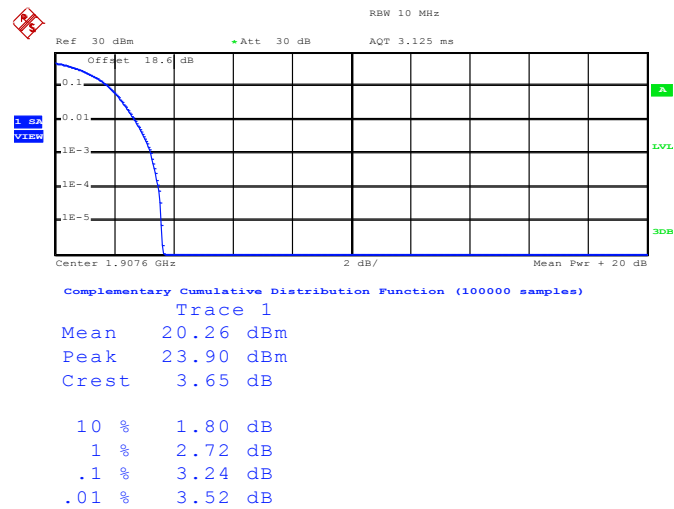
Peak-to-Average Ratio on Channel 9400 (1880.0 MHz)



Date: 25.MAY.2015 11:49:22

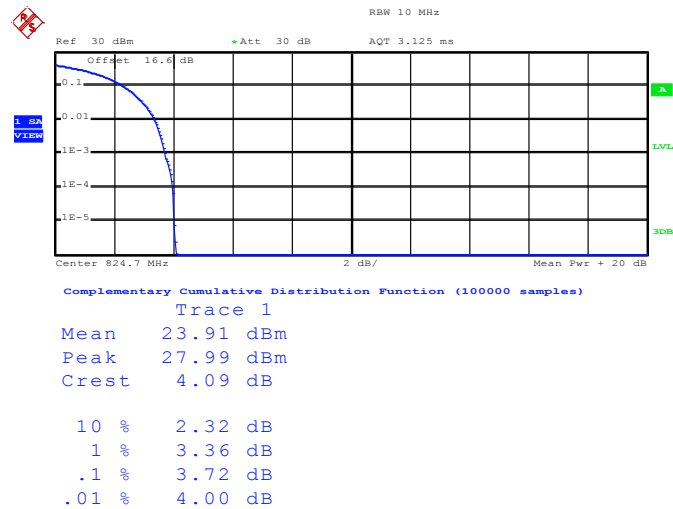


Peak-to-Average Ratio on Channel 9538 (1907.6 MHz)

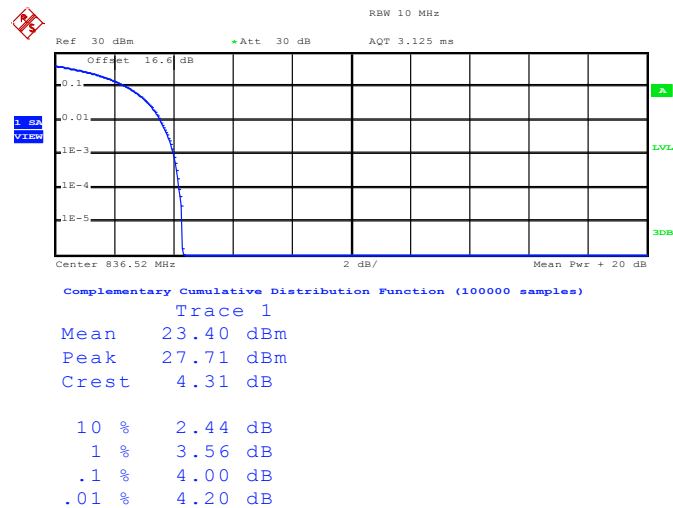


Date: 25.MAY.2015 11:49:30

Band :	CDMA2000 BC0	Test Mode :	1xEV-DO Rev. 0 Link (QPSK)
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Peak-to-Average Ratio on Channel 1013 (824.70 MHz)


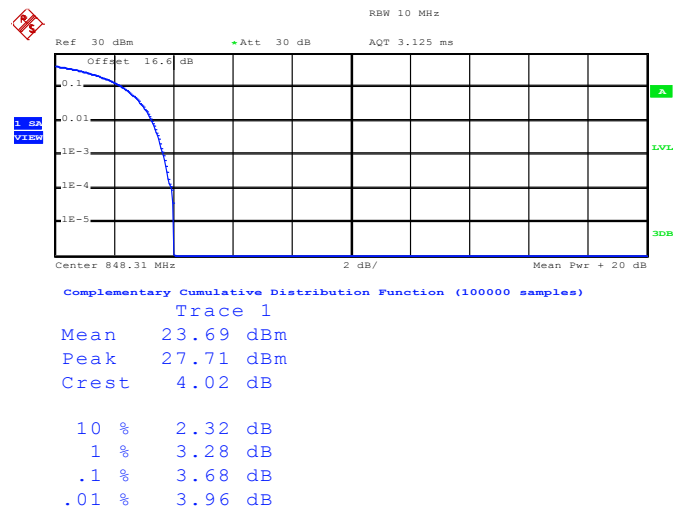
Date: 3.JUN.2015 15:19:48

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


Date: 3.JUN.2015 15:20:02



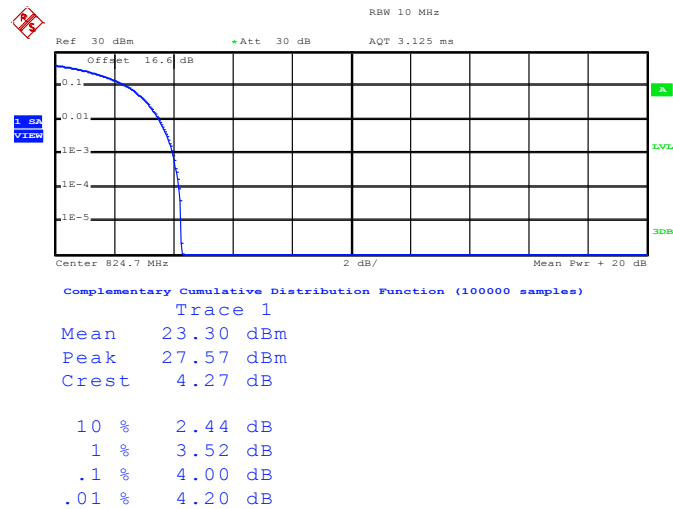
Peak-to-Average Ratio on Channel 777 (848.31 MHz)



Date: 3.JUN.2015 15:20:13

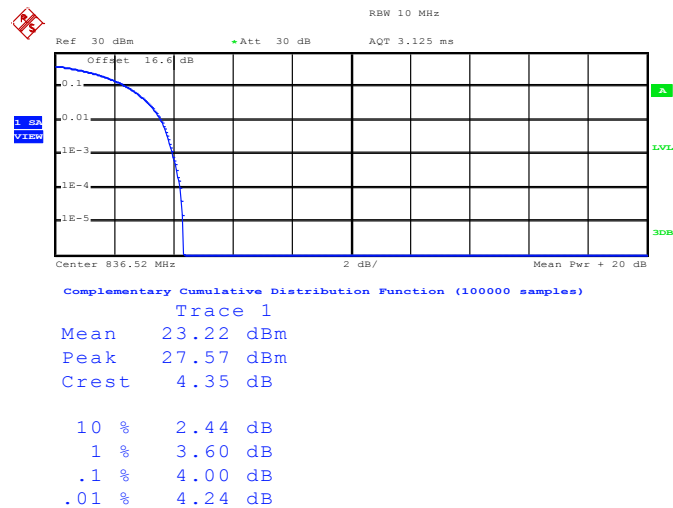
Band :	CDMA2000 BC0	Test Mode :	1xRTT Link (QPSK)
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Peak-to-Average Ratio on Channel 1013 (824.70 MHz)



Date: 3.JUN.2015 14:55:24

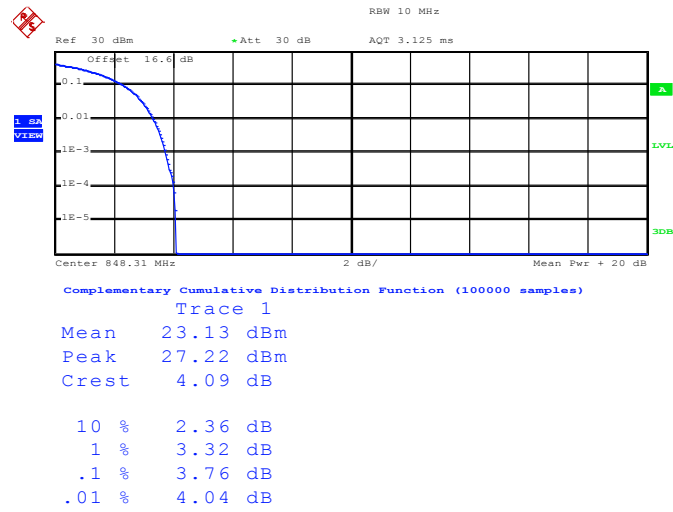
Peak-to-Average Ratio on Channel 384 (836.52 MHz)



Date: 3.JUN.2015 14:55:35

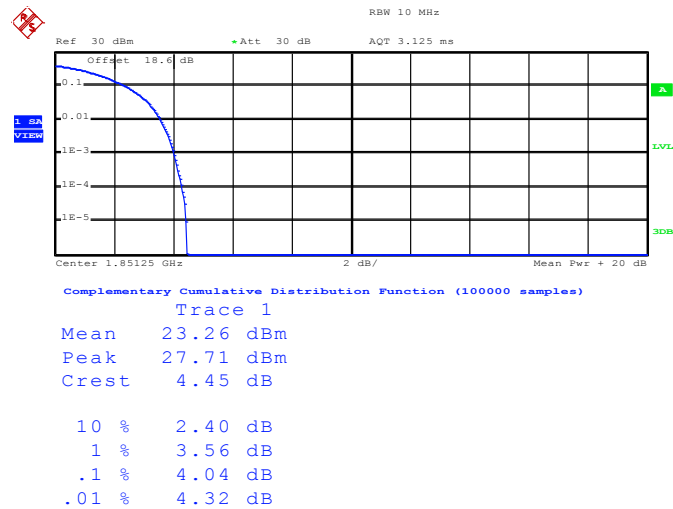


Peak-to-Average Ratio on Channel 777 (848.31 MHz)

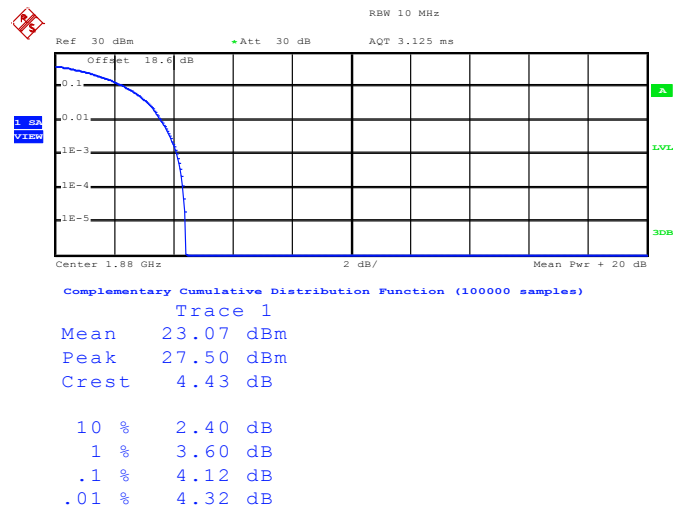


Date: 3.JUN.2015 14:55:45

Band :	CDMA2000 BC1	Test Mode :	1xRTT Link (QPSK)
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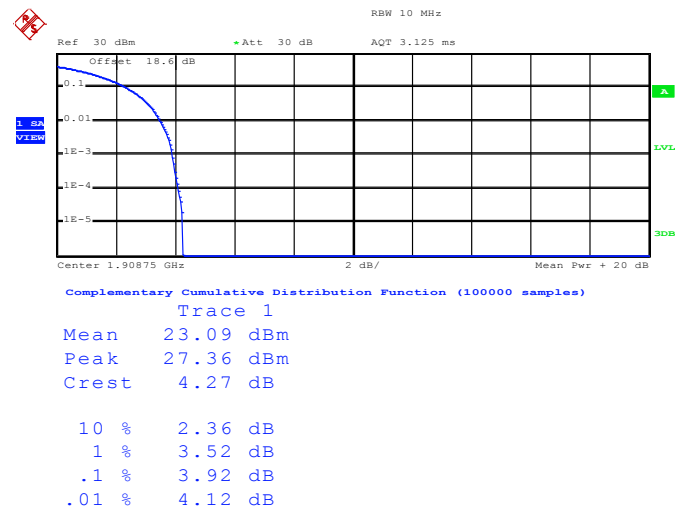
Peak-to-Average Ratio on Channel 25 (1851.25 MHz)


Date: 3.JUN.2015 16:29:12

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


Date: 3.JUN.2015 16:29:30

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

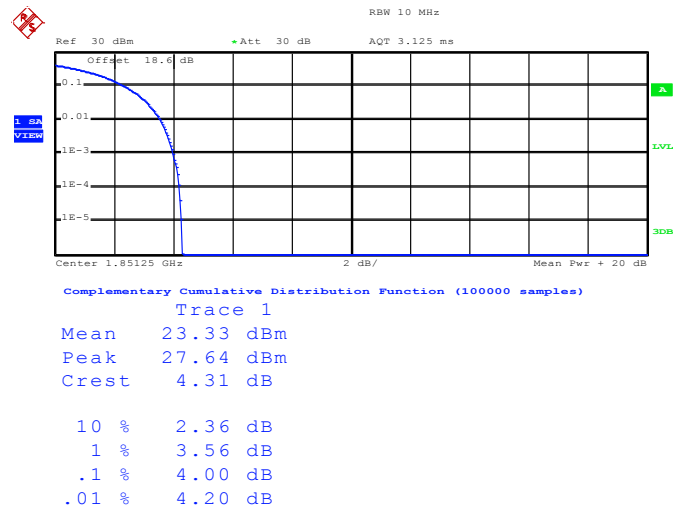


Date: 3.JUN.2015 16:29:42



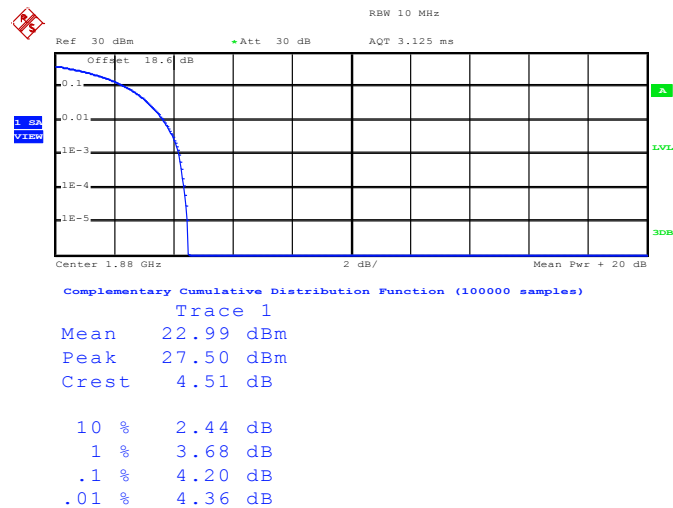
Band :	CDMA2000 BC1	Test Mode :	1xEV-DO Rev. 0 Link (QPSK)
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Peak-to-Average Ratio on Channel 25 (1851.25 MHz)



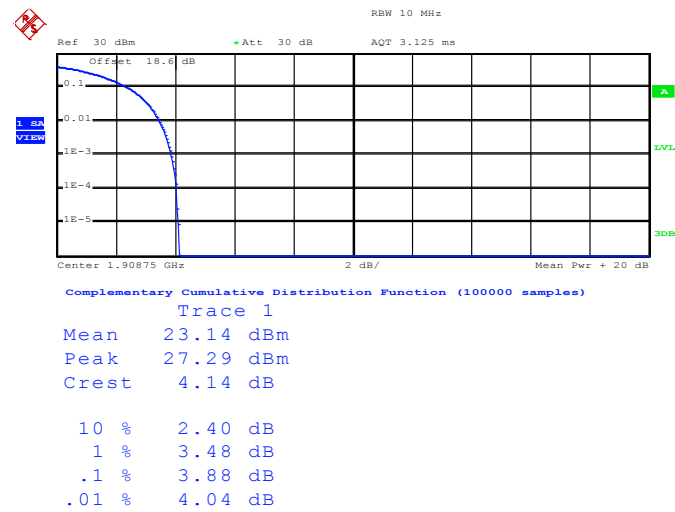
Date: 3.JUN.2015 16:46:46

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



Date: 3.JUN.2015 16:47:07

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



Date: 3.JUN.2015 16:47:22

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

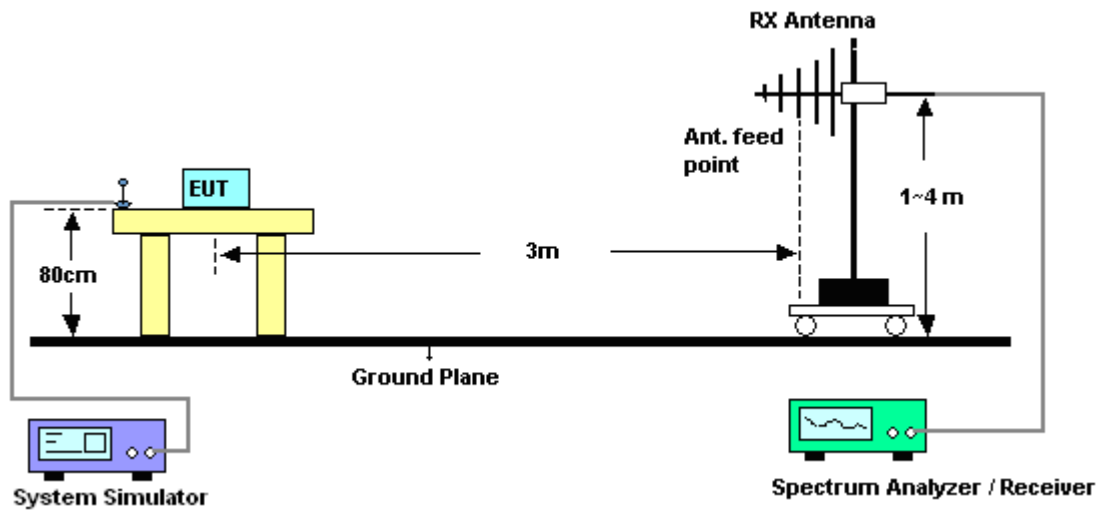
The measuring equipment is listed in the section 4 of this test report.

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 (GSM) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.20	21.59	0.1442	28.50	0.7079
Middle	836.40	20.84	0.1213	29.50	0.8913
Highest	848.80	20.30	0.1072	30.20	1.0471
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	824.20	14.25	0.0266	21.25	0.1334
Middle	836.40	13.80	0.0240	22.31	0.1702
Highest	848.80	13.73	0.0236	23.42	0.2198
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	826.40	11.44	0.0139	20.81	0.1205
Middle	836.40	12.02	0.0159	20.89	0.1227
Highest	846.60	13.22	0.0210	21.35	0.1365
Limit	ERP < 7W	Result		PASS	

CDMA2000 BC0 1xEV-DO Rev. 0_RTAP 153.6K Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.70	11.45	0.0140	21.06	0.1276
Middle	836.52	12.39	0.0173	20.90	0.1230
Highest	848.31	13.12	0.0205	20.64	0.1159
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	824.70	11.72	0.0149	21.03	0.1268
Middle	836.52	12.55	0.0180	21.03	0.1268
Highest	848.31	13.32	0.0215	20.79	0.1199
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	1850.20	27.42	0.5521	30.71	1.1776
Middle	1880.00	27.78	0.5998	31.66	1.4655
Highest	1909.80	28.07	0.6412	32.15	1.6406
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	1850.20	22.50	0.1778	25.71	0.3724
Middle	1880.00	23.01	0.2000	26.94	0.4943
Highest	1909.80	23.23	0.2104	27.39	0.5483
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	1852.40	20.92	0.1236	24.39	0.2748
Middle	1880.00	21.02	0.1265	24.86	0.3062
Highest	1907.60	21.39	0.1377	25.53	0.3573
Limit	EIRP < 2W	Result		PASS	

CDMA2000 BC1 1xRTT_RC3+SO32 Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1851.25	21.78	0.1507	25.27	0.3365
Middle	1880.00	21.86	0.1535	25.72	0.3733
Highest	1908.75	22.63	0.1832	26.54	0.4508
Limit	EIRP < 2W	Result		PASS	

CDMA2000 BC1 1xEV-DO Rev. 0_RETAP 4096K Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1851.25	20.85	0.1216	24.23	0.2649
Middle	1880.00	21.07	0.1279	24.81	0.3027
Highest	1908.75	21.55	0.1429	25.54	0.3581
Limit	EIRP < 2W	Result		PASS	

WCDMA Band IV(RMC 12.2Kbps) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1712.40	20.18	0.1042	25.38	0.3451
Middle	1732.60	20.35	0.1084	25.73	0.3741
Highest	1752.60	20.74	0.1186	25.78	0.3784
Limit	EIRP < 1W	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.

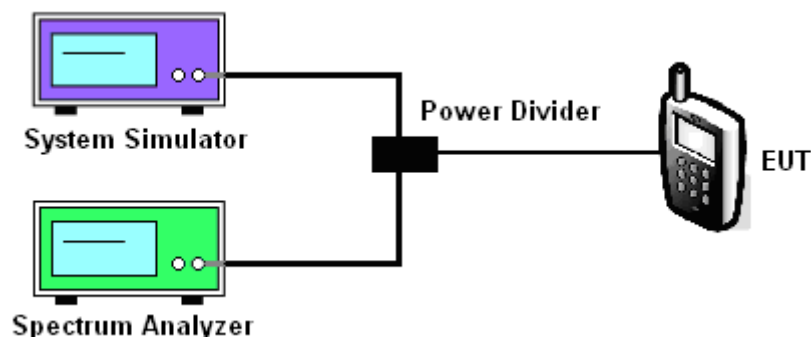
3.4.2 Measuring Instruments

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 (GSM)			GSM850 (EDGE class 8)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8
99% OBW (kHz)	244.00	247.00	243.00	235.00	243.00	242.00
26dB BW (kHz)	311.00	303.00	314.00	291.00	304.00	284.00

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)	241.00	243.00	244.00	243.00	241.00	245.00
26dB BW (kHz)	312.00	316.00	319.00	299.00	287.00	310.00

Cellular Band			
Modes	WCDMA Band V (RMC 12.2Kbps)		
Channel	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	826.4	836.4	846.6
99% OBW (MHz)	4.16	4.15	4.14
26dB BW (MHz)	4.65	4.66	4.64

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)	4.16	4.17	4.17
26dB BW (MHz)	4.67	4.66	4.68

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
99% OBW (MHz)	4.17	4.18	4.19
26dB BW (MHz)	4.68	4.66	4.68

CDMA2000 BC0			
Test Mode	CDMA 2000 1xEV-DO Rev. 0		
Test Status	RTAP 153.6K		
Channel	1013 (Low)	384 (Mid)	777 (High)
Frequency (MHz)	824.70	836.52	848.31
99% OBW (MHz)	1.28	1.28	1.28
26dB BW (MHz)	1.42	1.42	1.42

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
99% OBW (MHz)	1.28	1.28	1.28
26dB BW (MHz)	1.42	1.41	1.42



CDMA2000 BC1			
Test Mode	CDMA 2000 1xRTT		
Test Status	RC3+SO32		
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	1.43

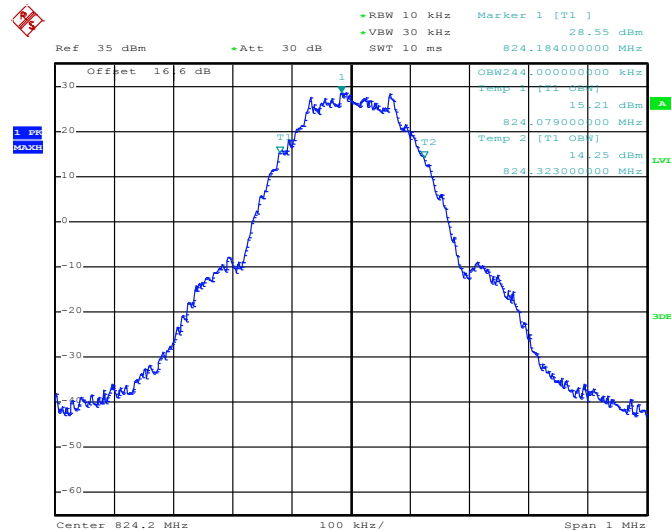
CDMA2000 BC1			
Test Mode	CDMA 2000 1xEV-DO Rev. 0		
Test Status	RETAP 4096K		
Channel	25 (Low)	600 (Mid)	1175 (High)
Frequency (MHz)	1851.25	1880.00	1908.75
99% OBW (MHz)	1.28	1.28	1.28
26dB BW (MHz)	1.42	1.42	1.43



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

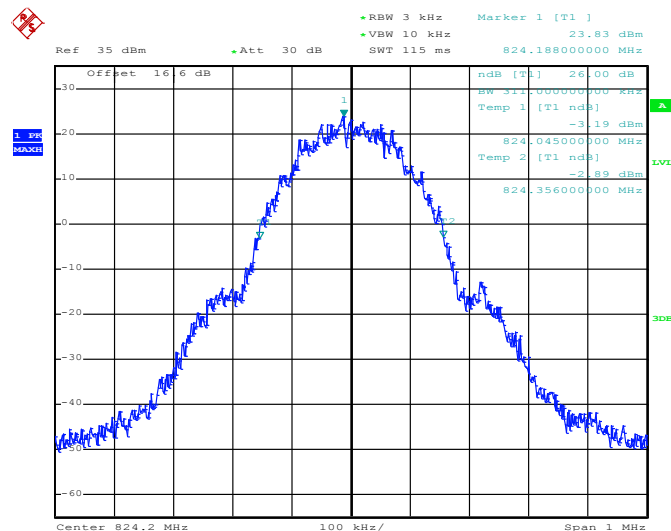
Band :	GSM 850	Test Mode :	GSM Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:20:09

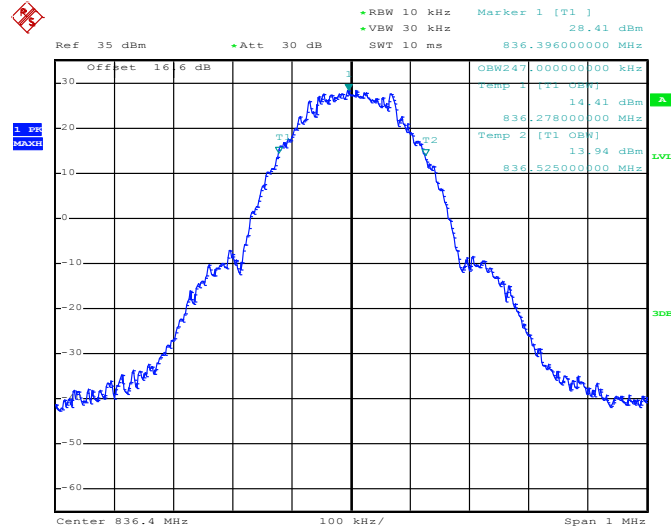
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:17:42

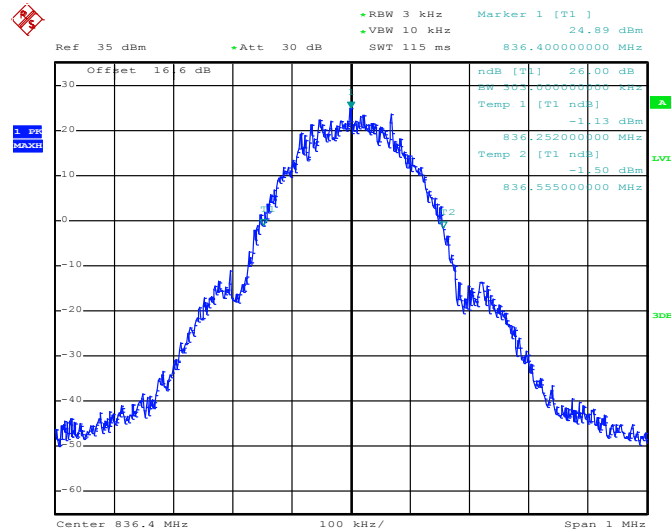


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 25.MAY.2015 10:20:37

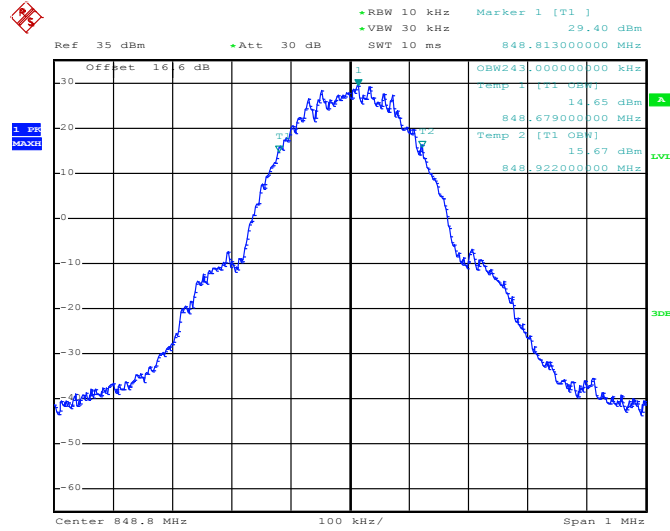
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 25.MAY.2015 10:18:10

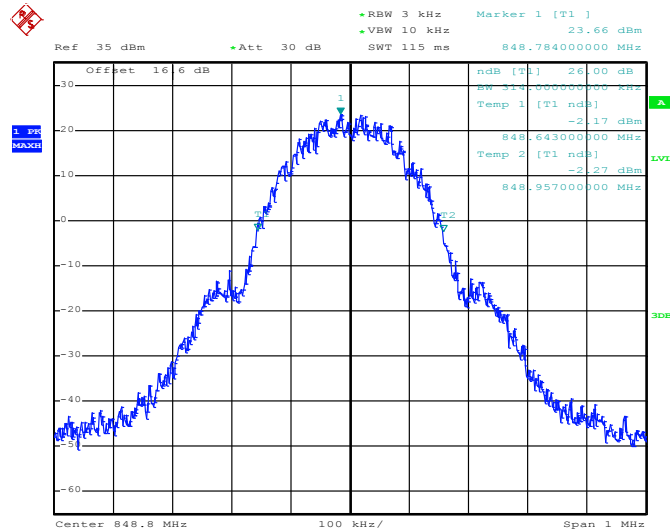


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 25.MAY.2015 10:21:05

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

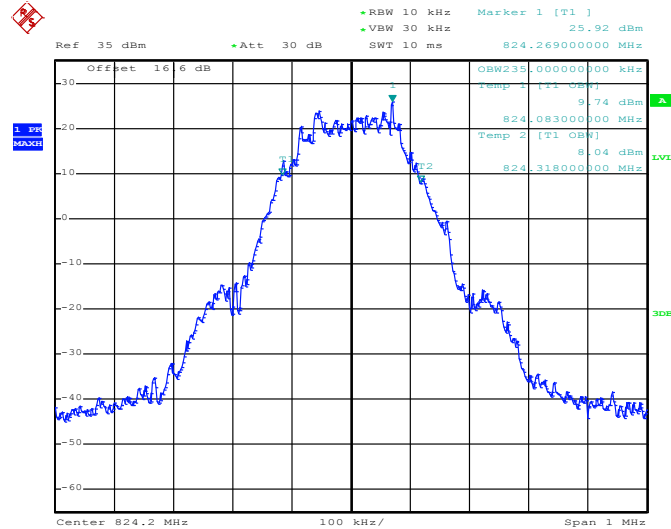


Date: 25.MAY.2015 10:18:38



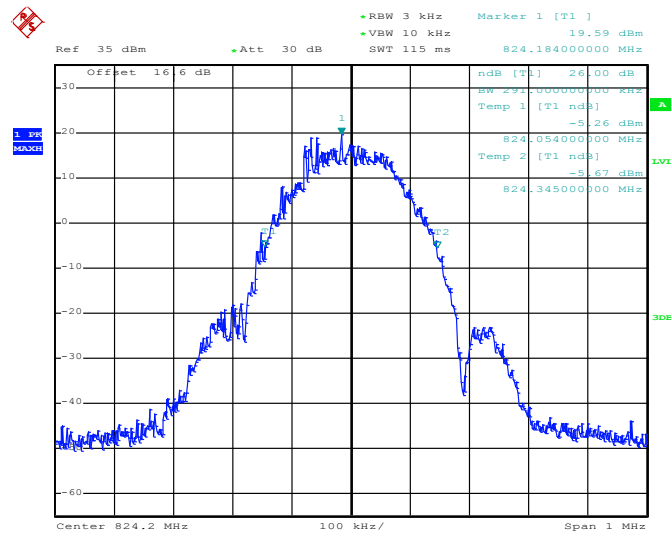
Band :	GSM 850	Test Mode :	EDGE class 8 Link (8PSK)
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99% Occupied Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:39:44

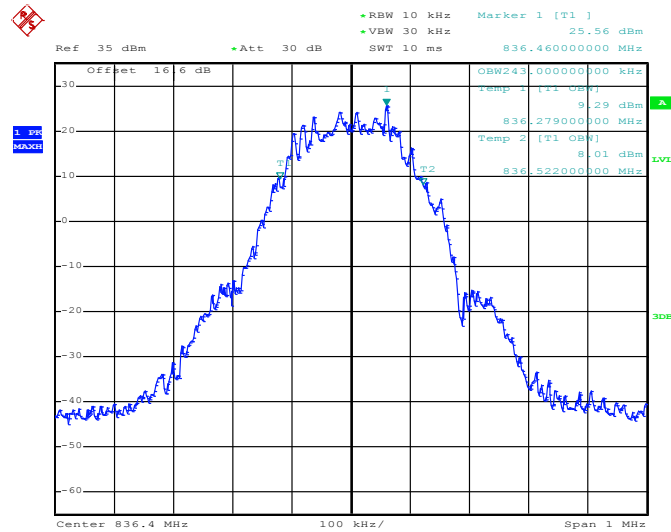
26dB Bandwidth Plot on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:38:02

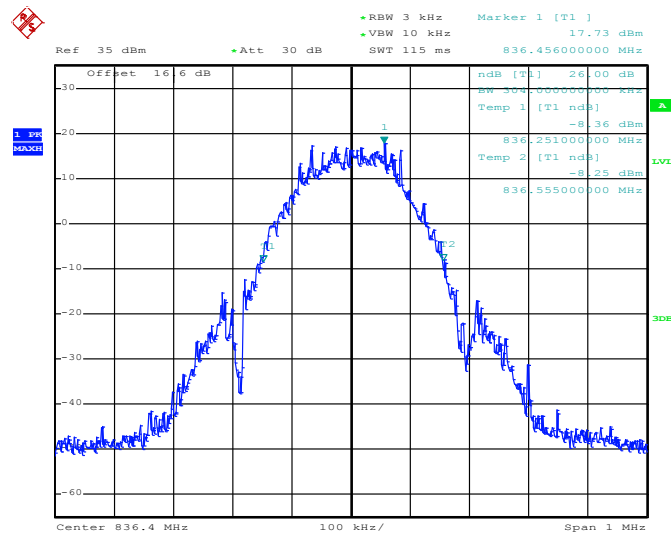


99% Occupied Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 25.MAY.2015 10:40:13

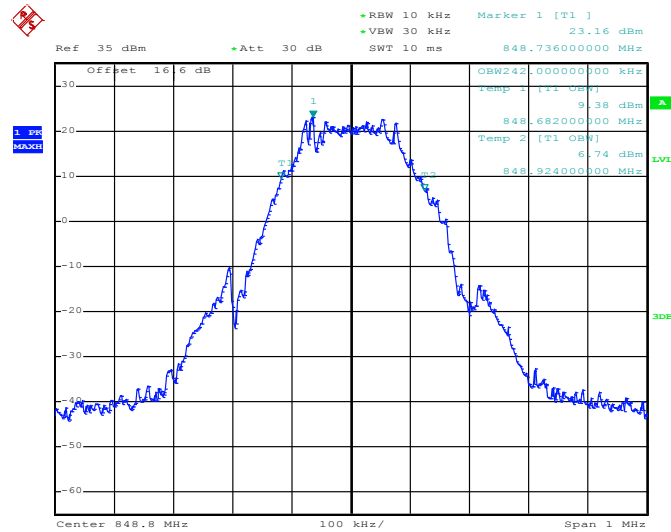
26dB Bandwidth Plot on Channel 189 (836.4 MHz)



Date: 25.MAY.2015 10:38:30

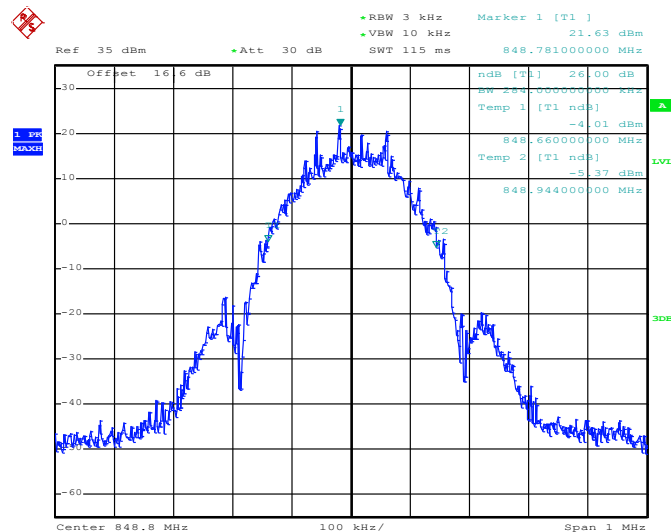


99% Occupied Bandwidth Plot on Channel 251 (848.8 MHz)



Date: 25.MAY.2015 10:40:41

26dB Bandwidth Plot on Channel 251 (848.8 MHz)

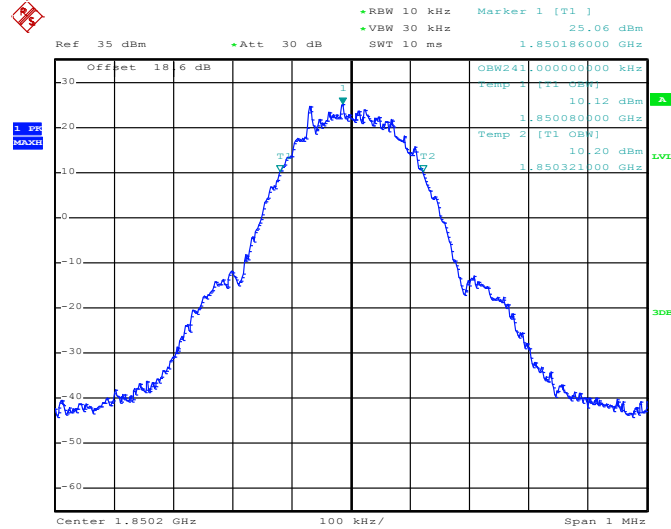


Date: 25.MAY.2015 10:38:58



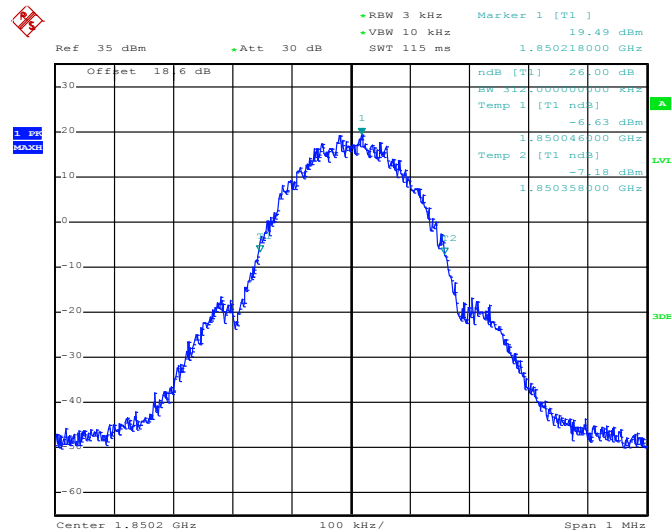
Band :	GSM 1900	Test Mode :	GPRS class 8 Link (GMSK)
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99% Occupied Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 25.MAY.2015 11:07:29

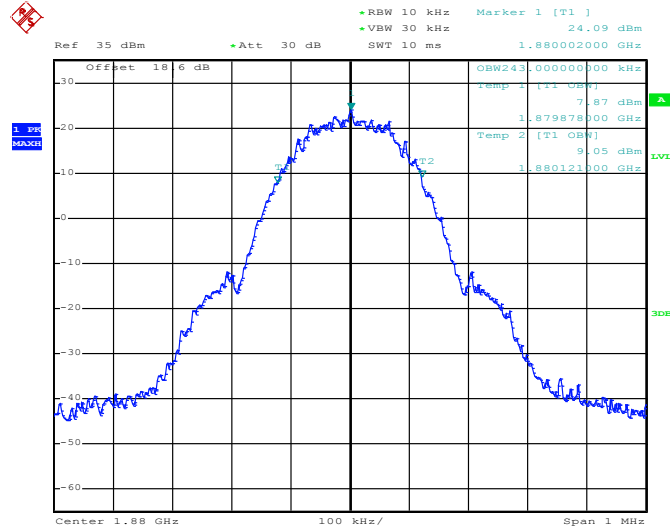
26dB Bandwidth Plot on Channel 512 (1850.2 MHz)



Date: 25.MAY.2015 11:05:43

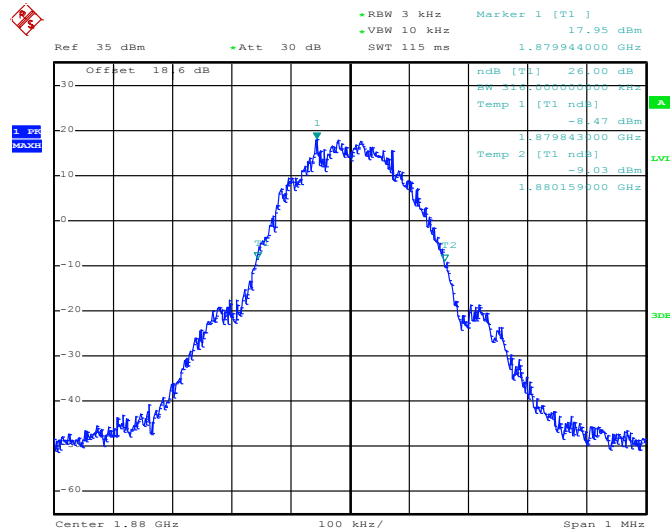


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 25.MAY.2015 11:07:58

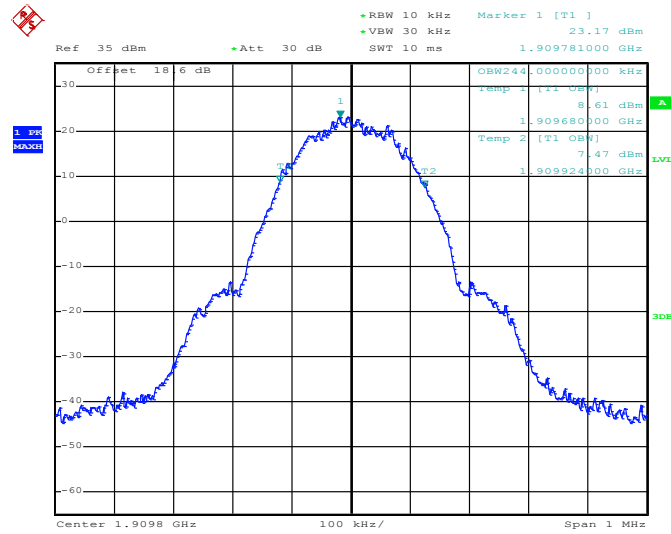
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 25.MAY.2015 11:06:11

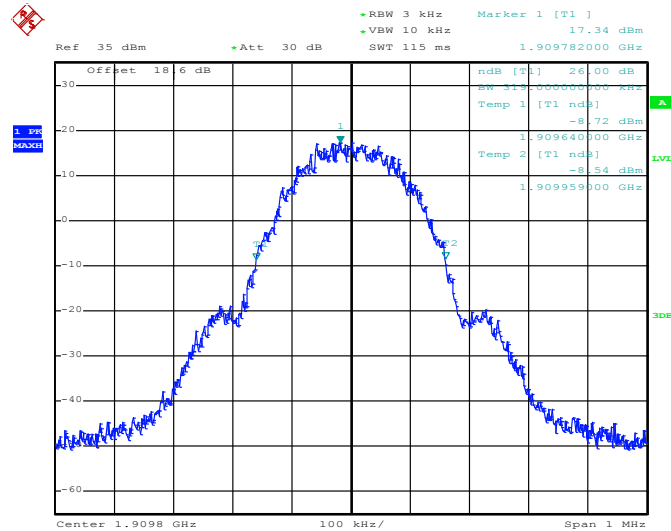


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



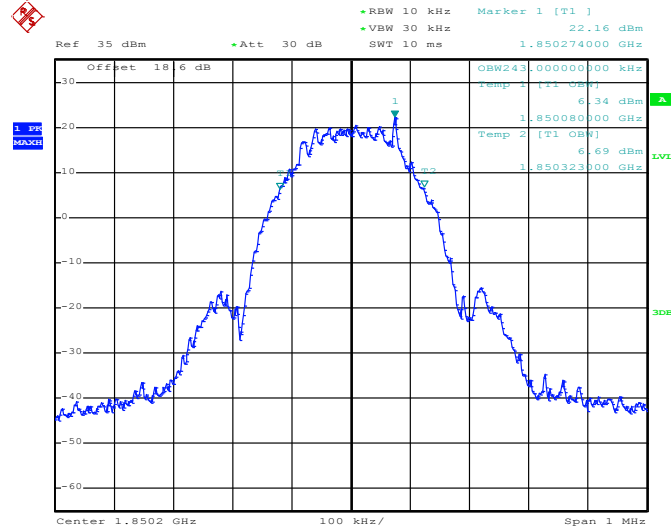
Date: 25.MAY.2015 11:08:26

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

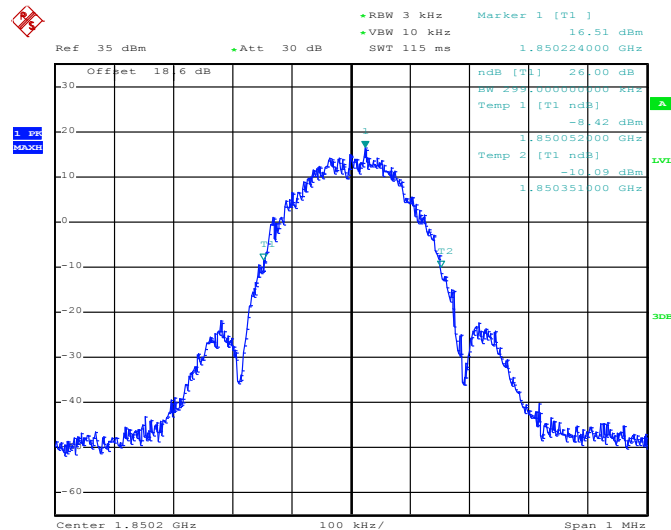


Date: 25.MAY.2015 11:06:40

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


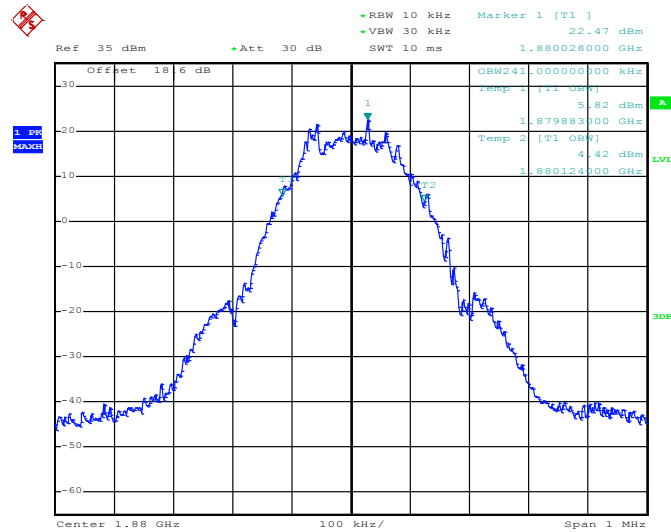
Date: 25.MAY.2015 11:17:18

26dB Bandwidth Plot on Channel 512 (1850.2 MHz)


Date: 25.MAY.2015 11:15:47

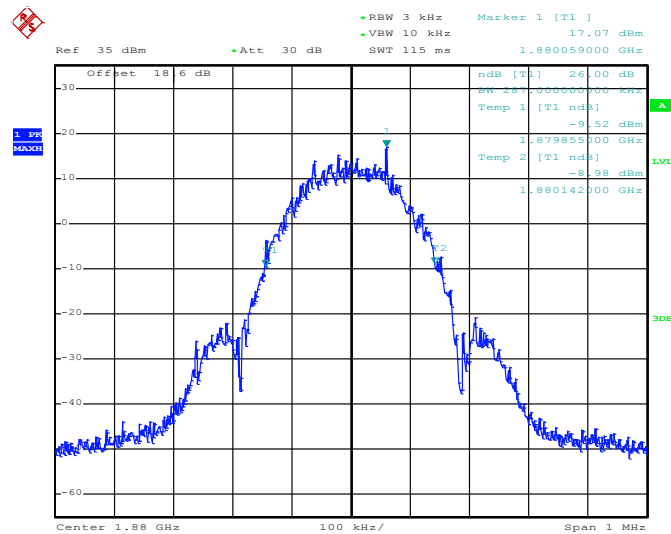


99% Occupied Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 25.MAY.2015 11:17:46

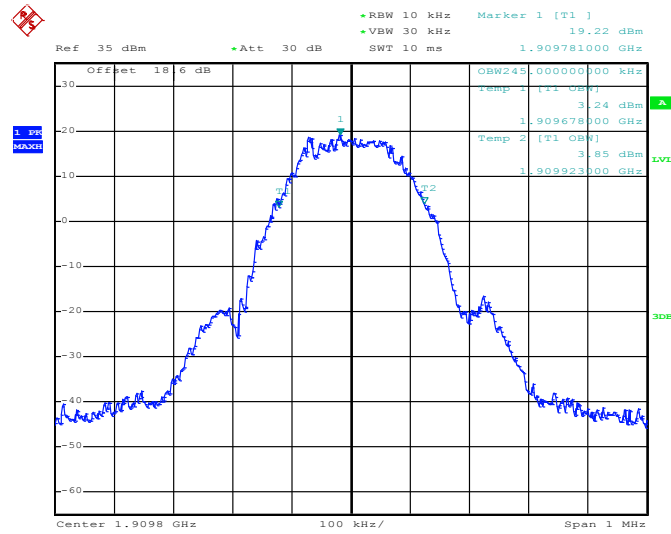
26dB Bandwidth Plot on Channel 661 (1880.0 MHz)



Date: 25.MAY.2015 11:16:15

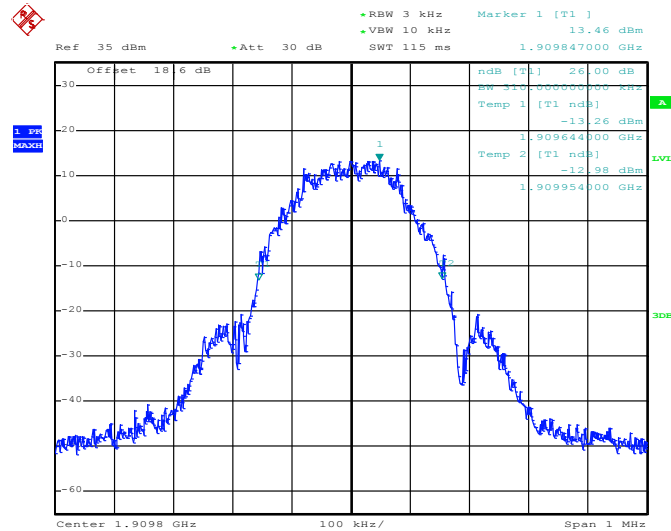


99% Occupied Bandwidth Plot on Channel 810 (1909.8 MHz)



Date: 25.MAY.2015 11:18:14

26dB Bandwidth Plot on Channel 810 (1909.8 MHz)

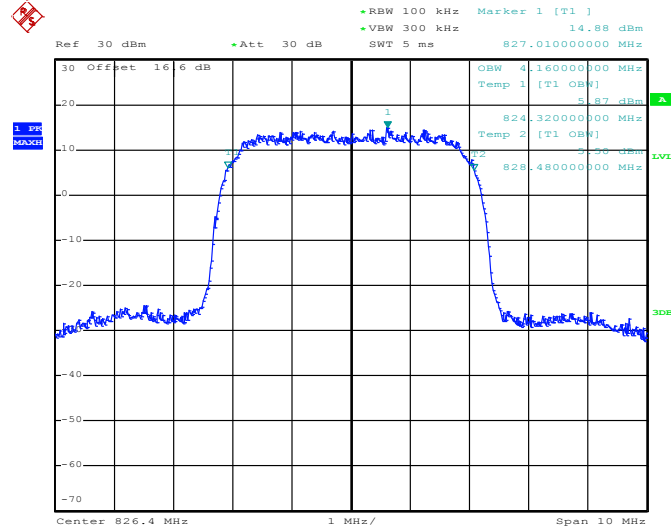


Date: 25.MAY.2015 11:16:44



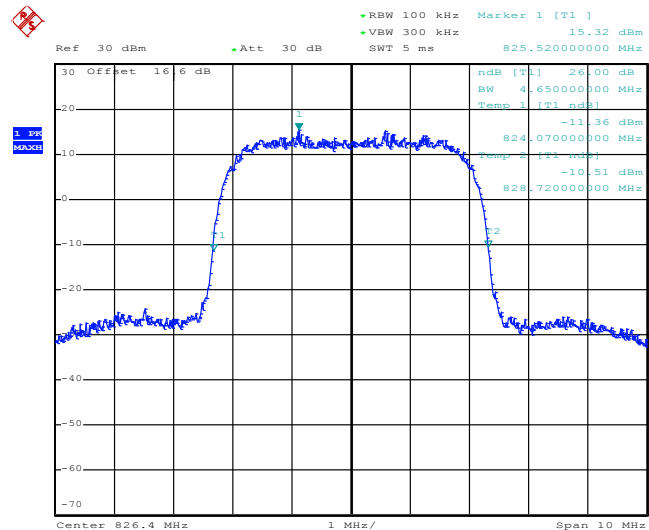
Band :	WCDMA Band V	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 25.MAY.2015 13:31:26

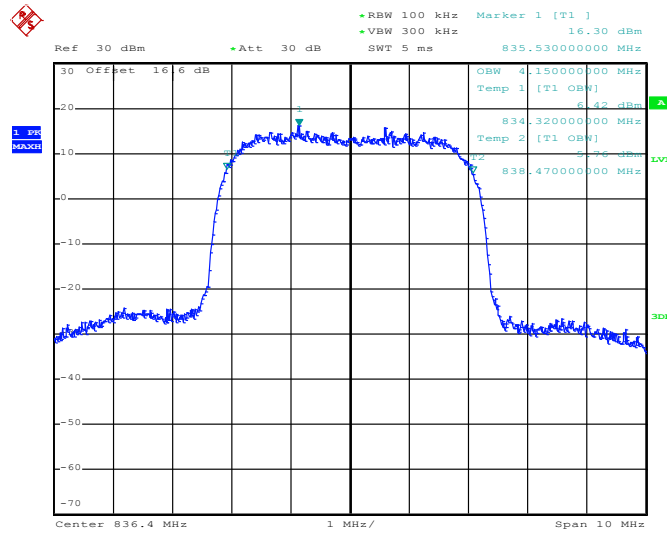
26dB Bandwidth Plot on Channel 4132 (826.4 MHz)



Date: 25.MAY.2015 13:29:55

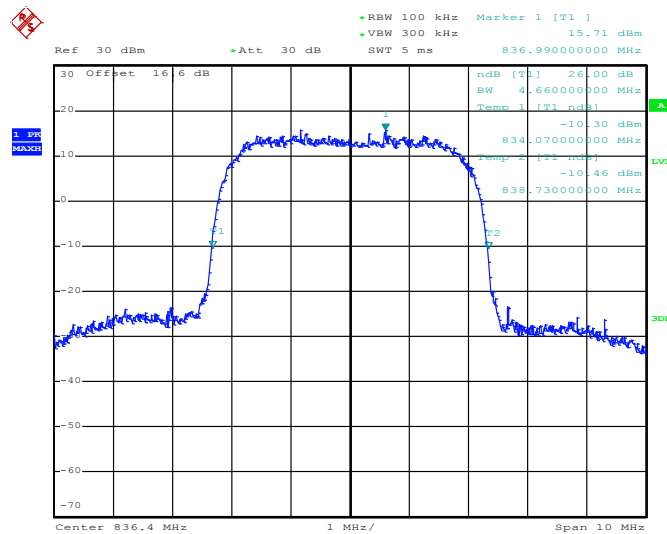


99% Occupied Bandwidth Plot on Channel 4182 (836.4 MHz)



Date: 25.MAY.2015 13:31:54

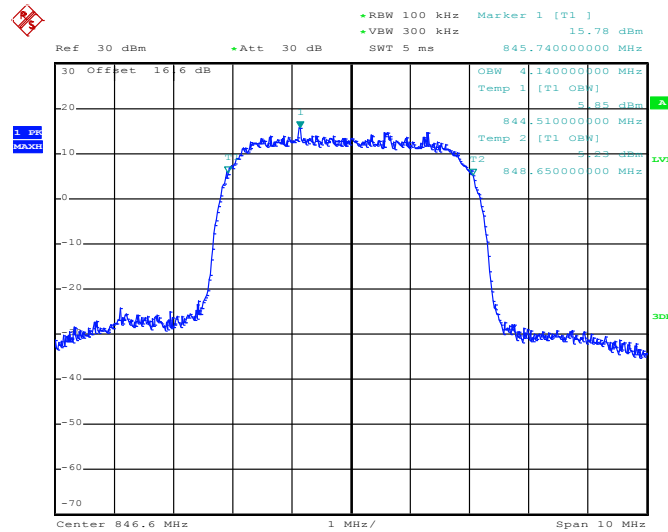
26dB Bandwidth Plot on Channel 4182 (836.4 MHz)



Date: 25.MAY.2015 13:30:23

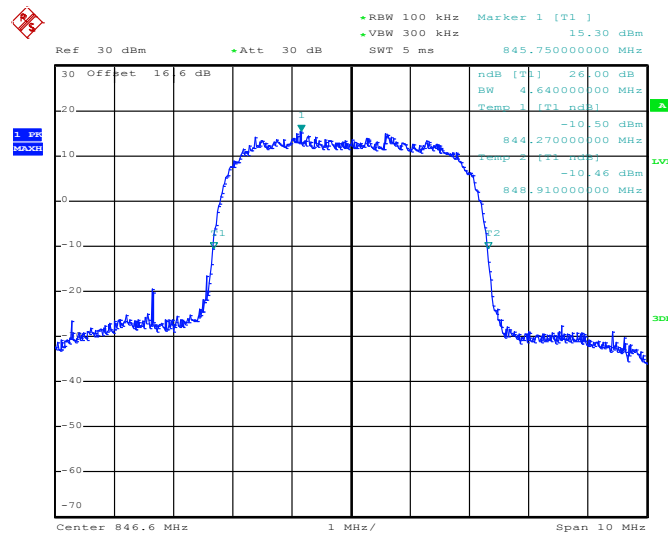


99% Occupied Bandwidth Plot on Channel 4233 (846.6 MHz)



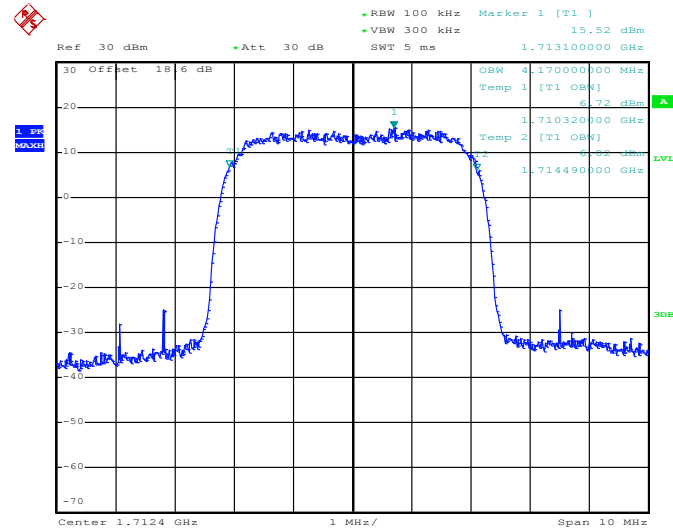
Date: 25.MAY.2015 13:32:22

26dB Bandwidth Plot on Channel 4233 (846.6 MHz)

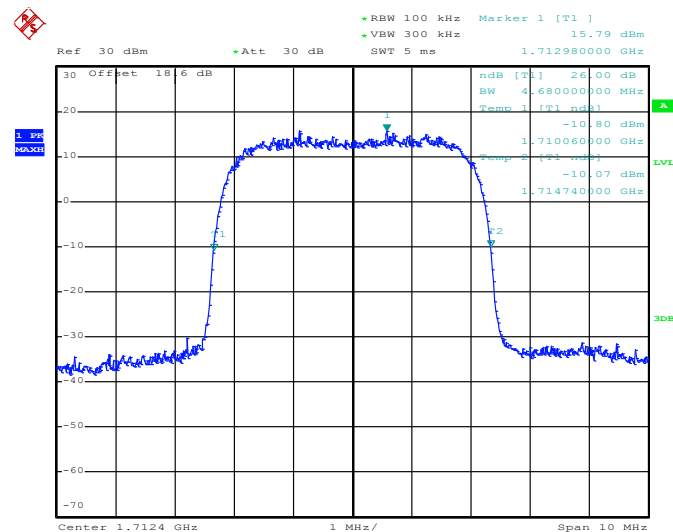


Date: 25.MAY.2015 13:30:51

Band :	WCDMA Band IV	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 1312 (1712.4 MHz)


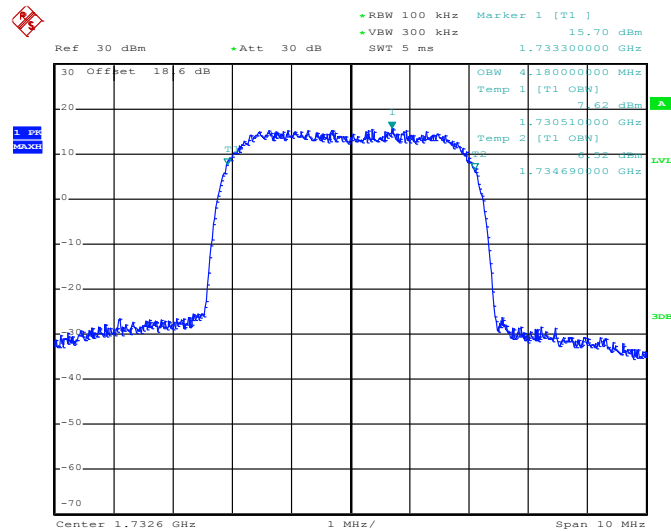
Date: 25.MAY.2015 11:52:08

26dB Bandwidth Plot on Channel 1312 (1712.4 MHz)


Date: 25.MAY.2015 11:50:39

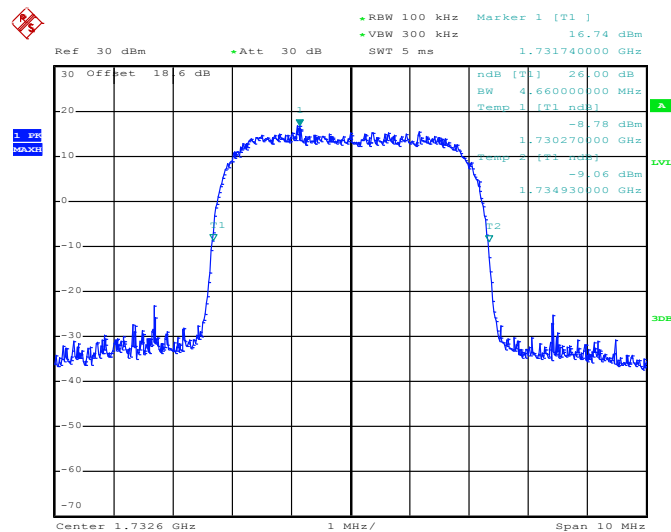


99% Occupied Bandwidth Plot on Channel 1413 (1732.6 MHz)

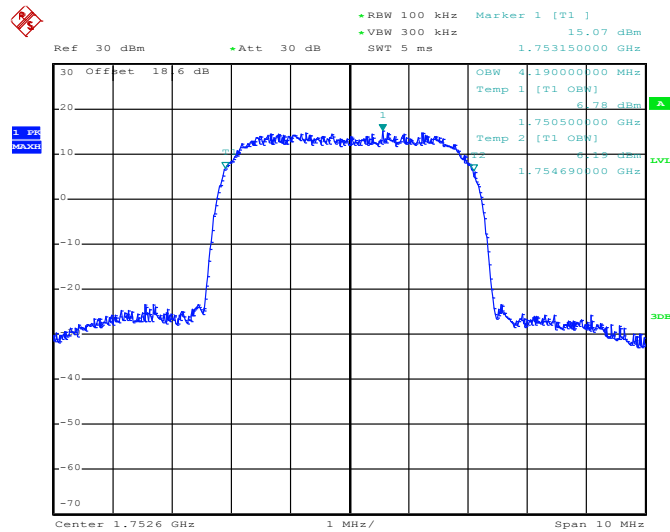


Date: 25.MAY.2015 11:52:36

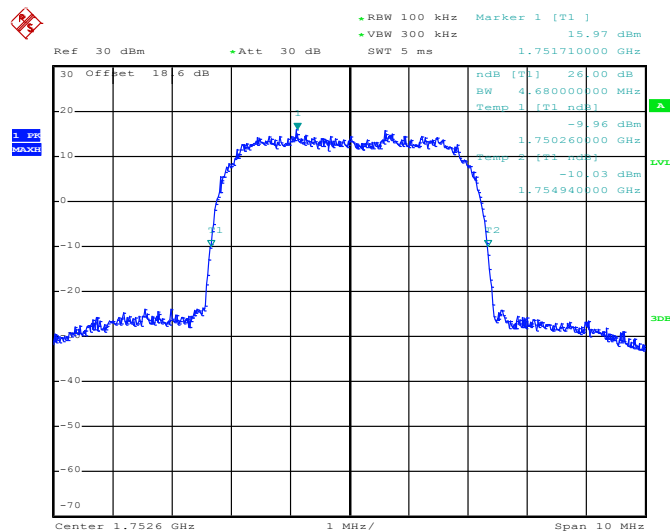
26dB Bandwidth Plot on Channel 1413 (1732.6 MHz)



Date: 25.MAY.2015 11:51:07

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


Date: 25.MAY.2015 11:53:05

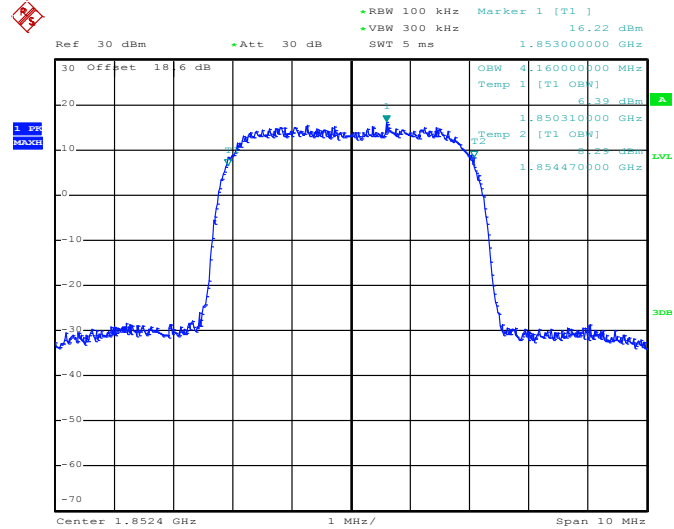
26dB Bandwidth Plot on Channel 1513 (1752.6 MHz)


Date: 25.MAY.2015 11:51:35



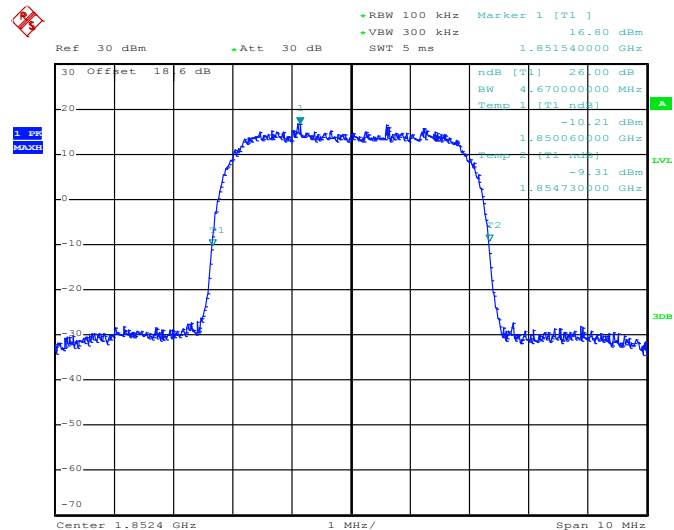
Band :	WCDMA Band II	Test Mode :	RMC 12.2Kbps Link (QPSK)
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99% Occupied Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 25.MAY.2015 11:43:42

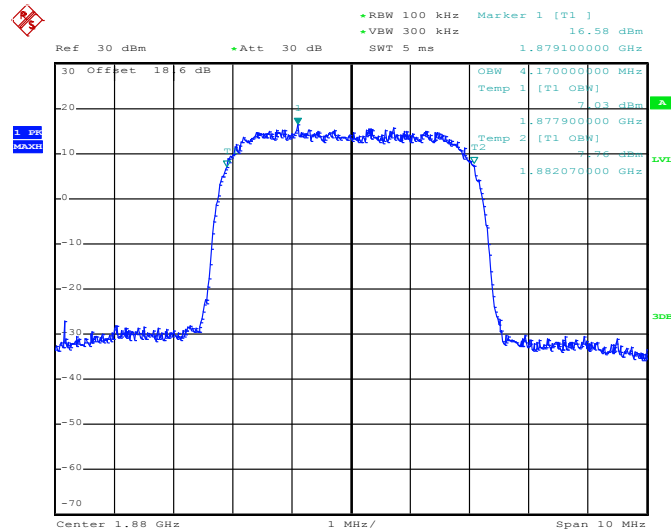
26dB Bandwidth Plot on Channel 9262 (1852.4 MHz)



Date: 25.MAY.2015 11:41:53

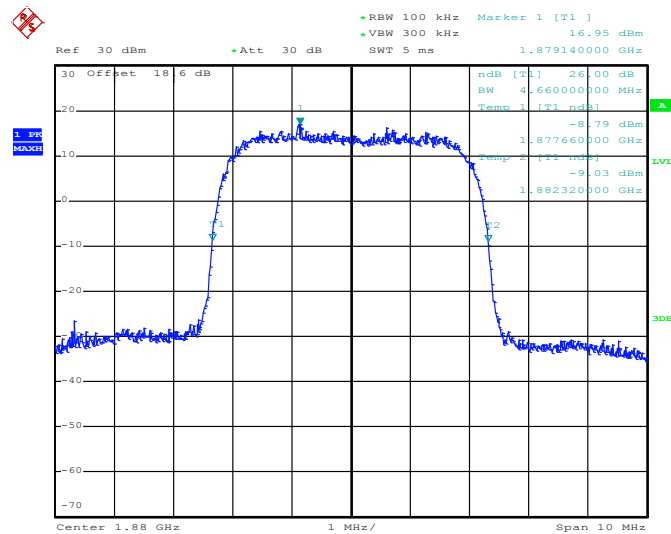


99% Occupied Bandwidth Plot on Channel 9400 (1880.0 MHz)



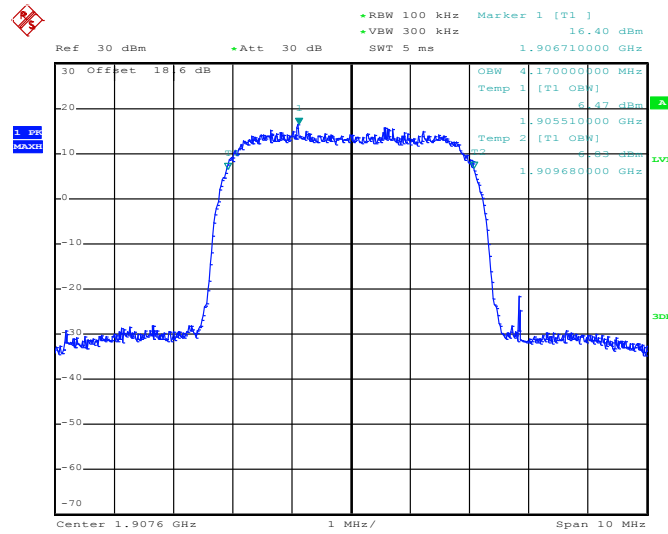
Date: 25.MAY.2015 11:44:10

26dB Bandwidth Plot on Channel 9400 (1880.0 MHz)



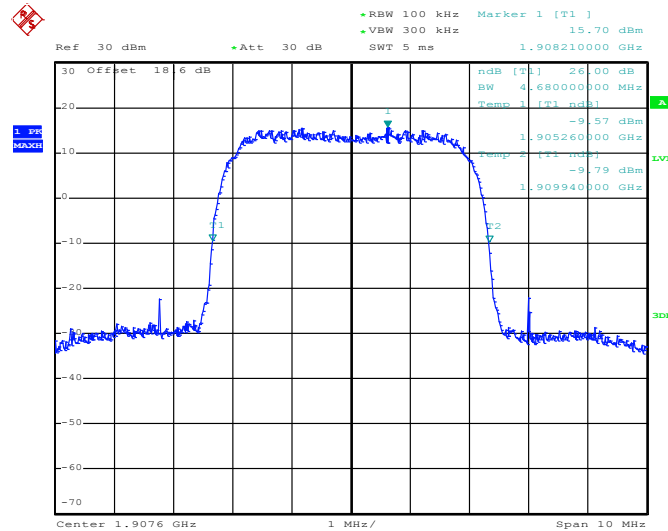
Date: 25.MAY.2015 11:42:21

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



Date: 25.MAY.2015 11:44:38

26dB Bandwidth Plot on Channel 9538 (1907.6 MHz)

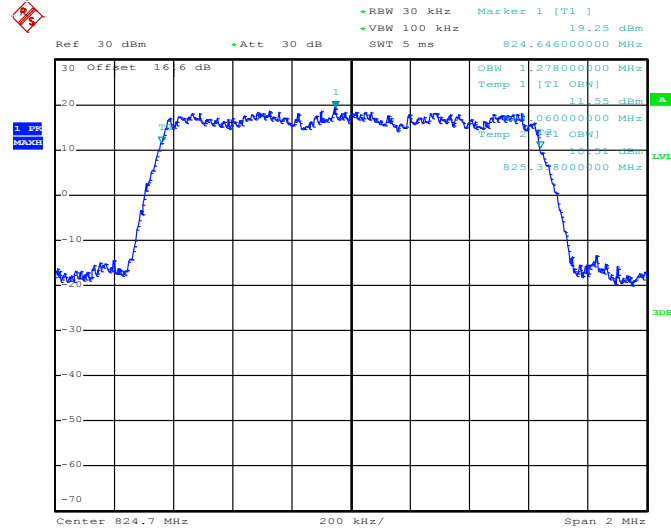


Date: 25.MAY.2015 11:42:49



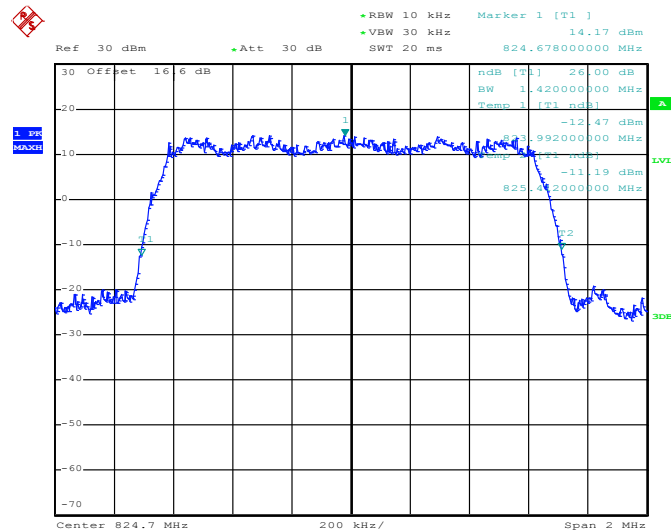
Band :	CDMA2000 BC0	Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)
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99% Occupied Bandwidth Plot on Channel 1013 (824.7 MHz)



Date: 3.JUN.2015 15:14:31

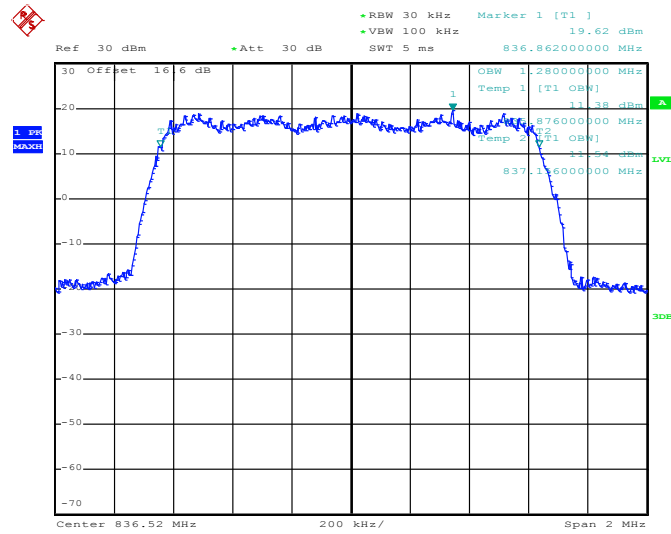
26dB Bandwidth Plot on Channel 1013 (824.7 MHz)



Date: 3.JUN.2015 15:11:56

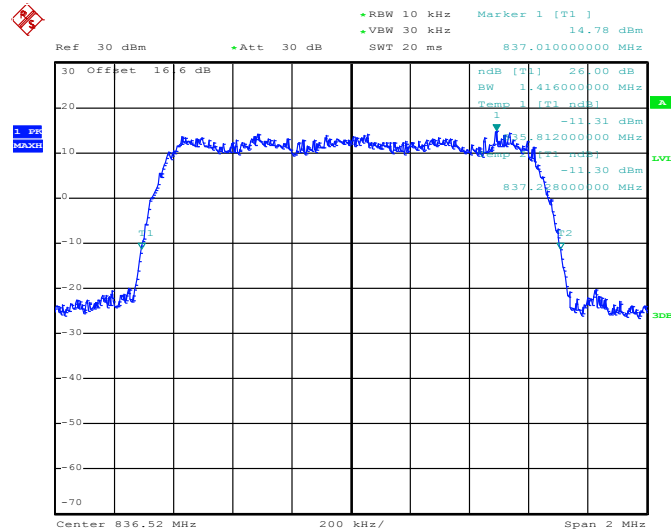


99% Occupied Bandwidth Plot on Channel 384 (836.52 MHz)



Date: 3.JUN.2015 15:15:05

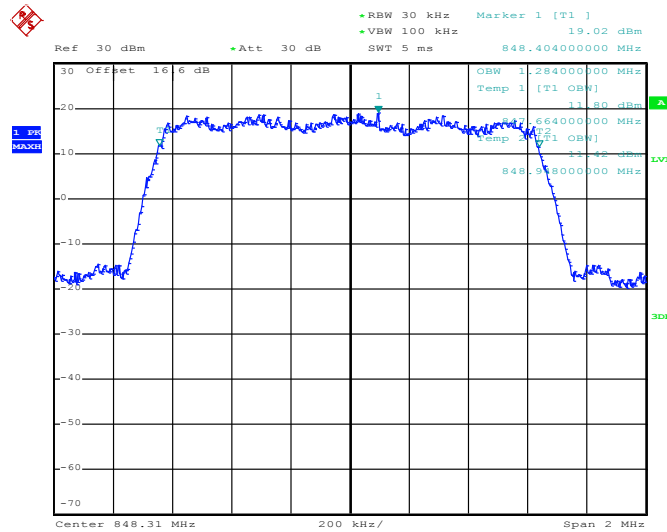
26dB Bandwidth Plot on Channel 384 (836.52 MHz)



Date: 3.JUN.2015 15:12:34

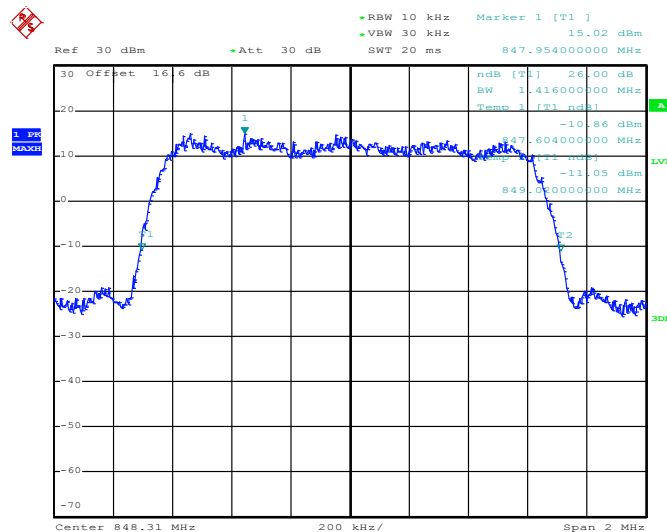


99% Occupied Bandwidth Plot on Channel 777 (848.31 MHz)



Date: 3.JUN.2015 15:15:41

26dB Bandwidth Plot on Channel 777 (848.31 MHz)

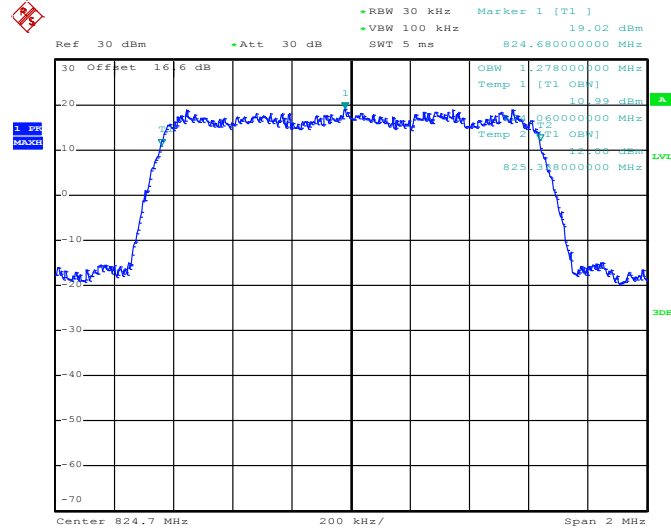


Date: 3.JUN.2015 15:13:51



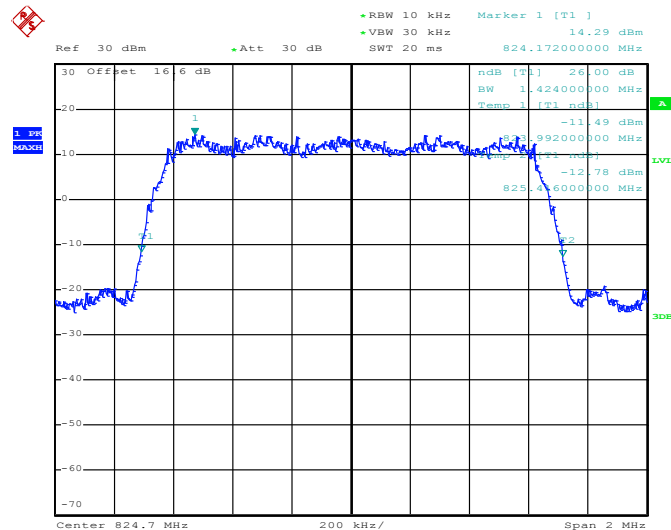
Band :	CDMA2000 BC0	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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99% Occupied Bandwidth Plot on Channel 1013 (824.7 MHz)



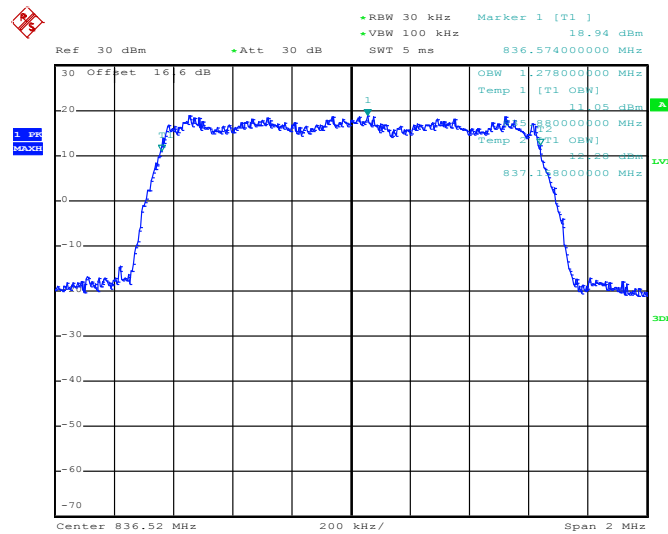
Date: 3.JUN.2015 14:47:44

26dB Bandwidth Plot on Channel 1013 (824.7 MHz)



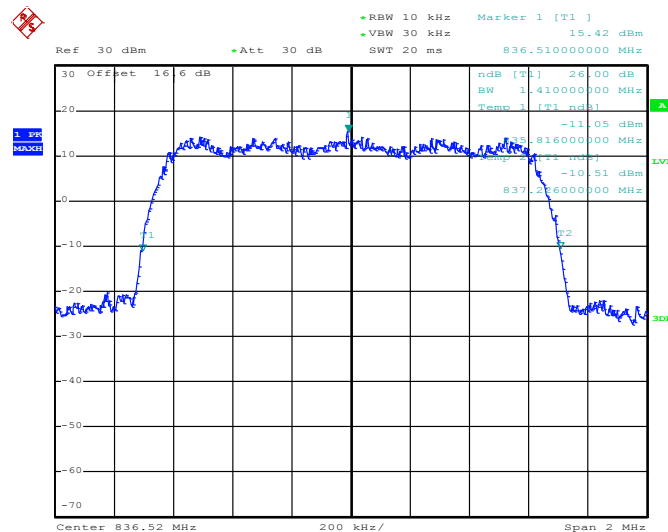
Date: 3.JUN.2015 14:45:19

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



Date: 3.JUN.2015 14:48:49

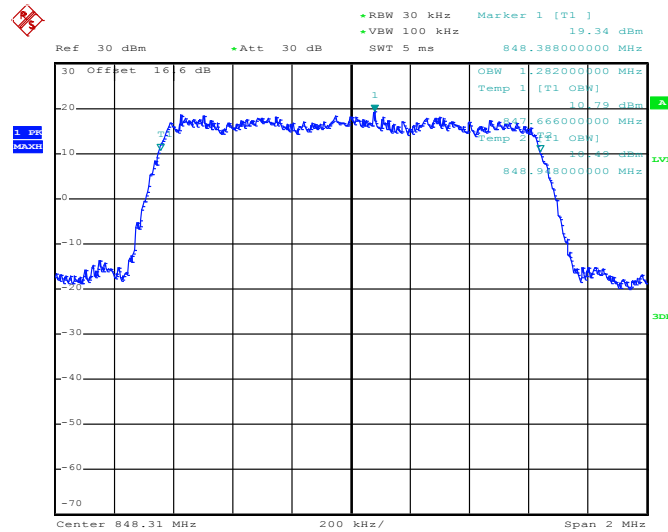
26dB Bandwidth Plot on Channel 384 (836.52 MHz)



Date: 3.JUN.2015 14:46:07

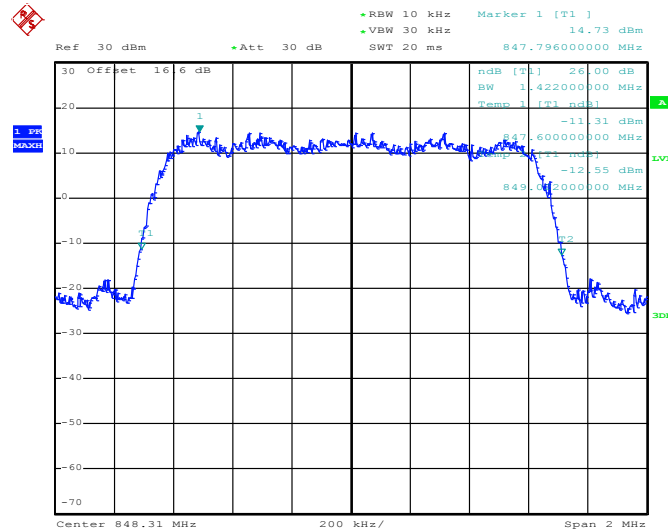


99% Occupied Bandwidth Plot on Channel 777 (848.31 MHz)



Date: 3.JUN.2015 14:49:20

26dB Bandwidth Plot on Channel 777 (848.31 MHz)

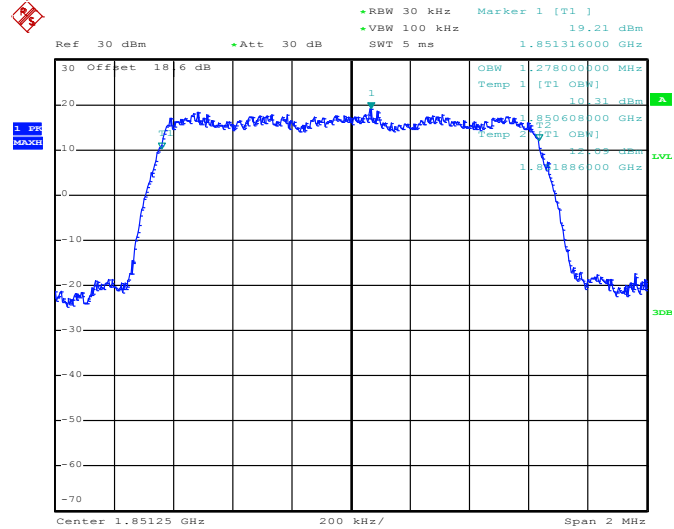


Date: 3.JUN.2015 14:46:40



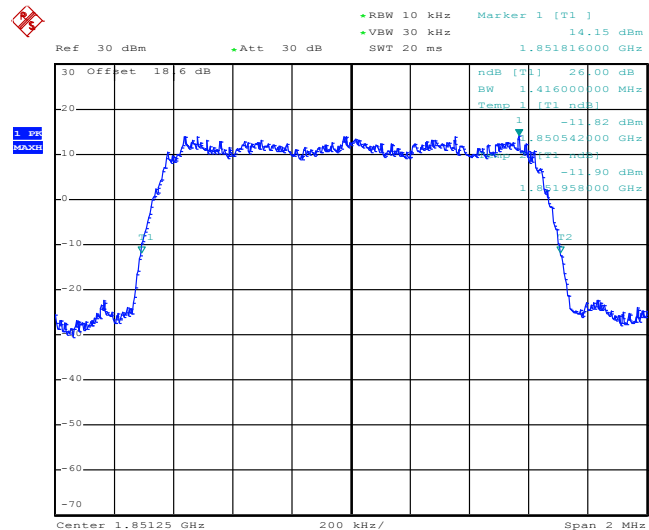
Band :	CDMA2000 BC1	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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99% Occupied Bandwidth Plot on Channel 25 (1851.25 MHz)



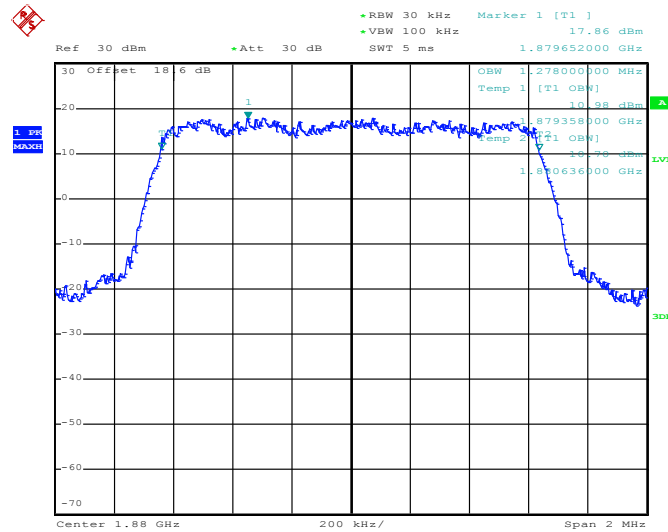
Date: 3.JUN.2015 16:25:54

26dB Bandwidth Plot on Channel 25 (1851.25 MHz)



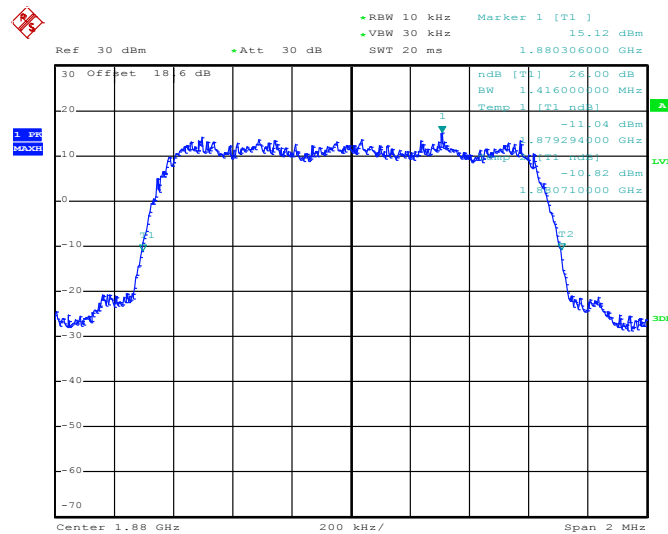
Date: 3.JUN.2015 16:24:05

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



Date: 3.JUN.2015 16:26:32

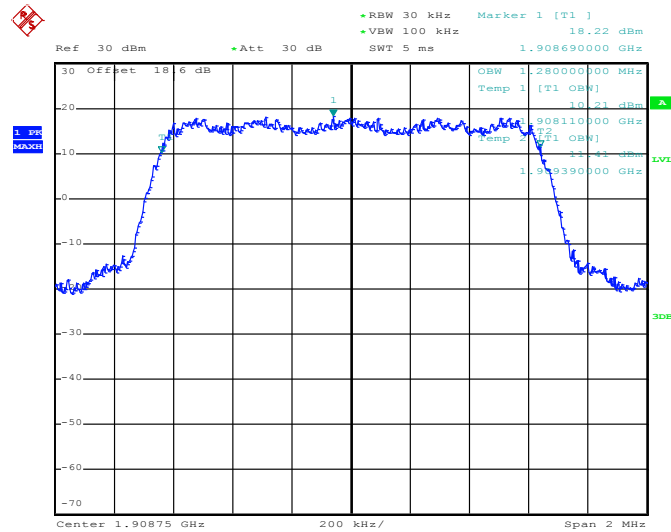
26dB Bandwidth Plot on Channel 600 (1880.0 MHz)



Date: 3.JUN.2015 16:24:37

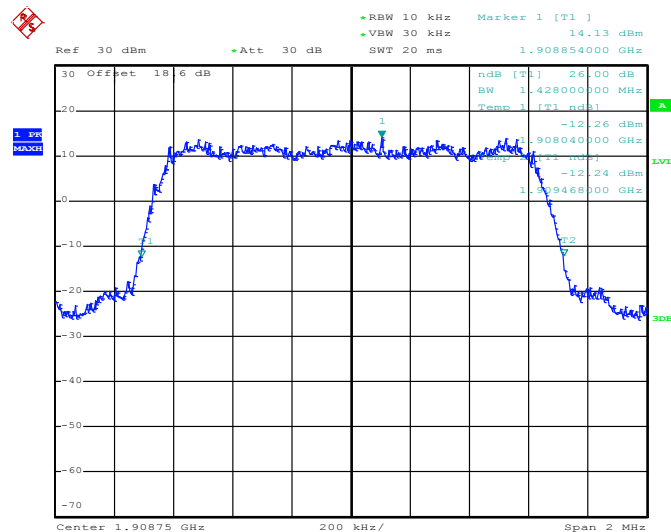


99% Occupied Bandwidth Plot on Channel 1175 (1908.75 MHz)



Date: 3.JUN.2015 16:27:06

26dB Bandwidth Plot on Channel 1175 (1908.75 MHz)

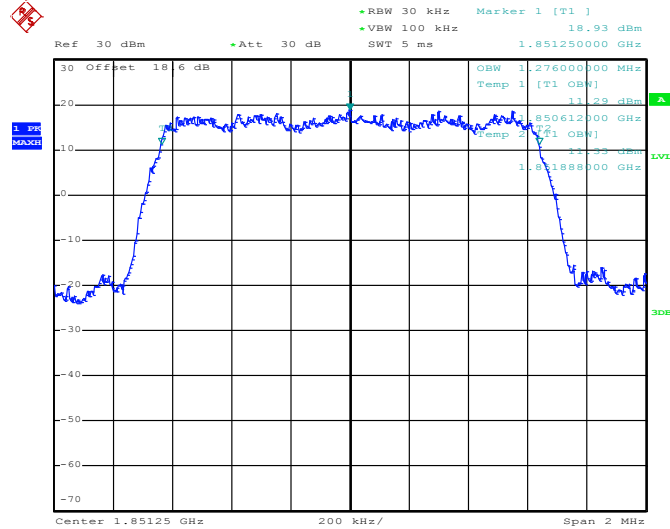


Date: 3.JUN.2015 16:25:10



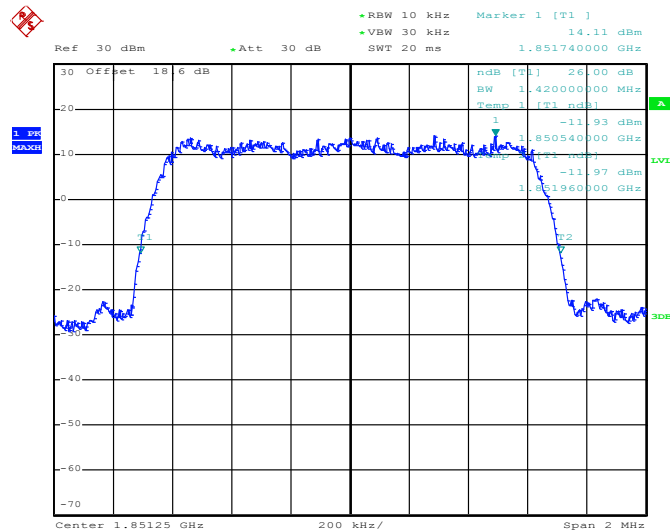
Band :	CDMA2000 BC1	Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)
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99% Occupied Bandwidth Plot on Channel 25 (1851.25 MHz)



Date: 3.JUN.2015 16:42:29

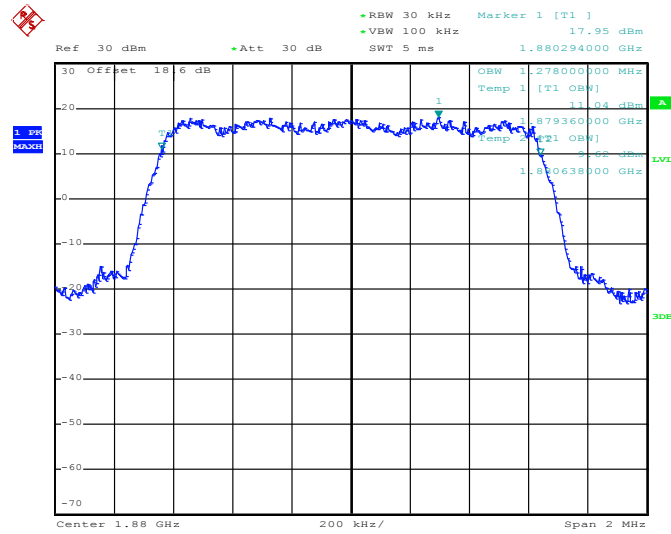
26dB Bandwidth Plot on Channel 25 (1851.25 MHz)



Date: 3.JUN.2015 16:39:47

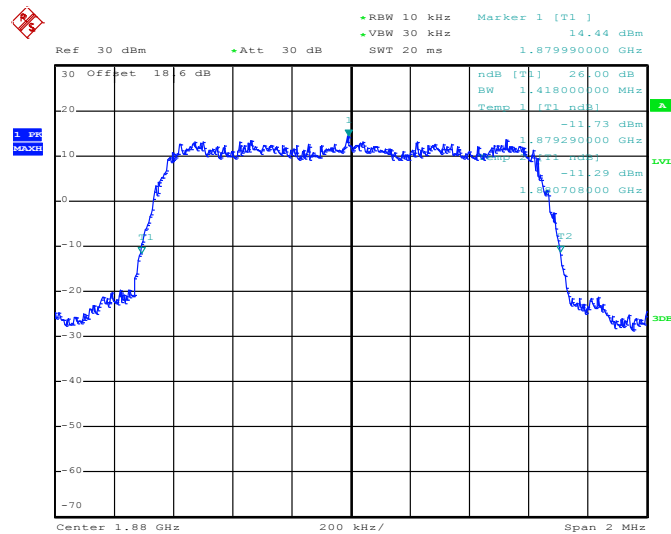


99% Occupied Bandwidth Plot on Channel 600 (1880.0 MHz)



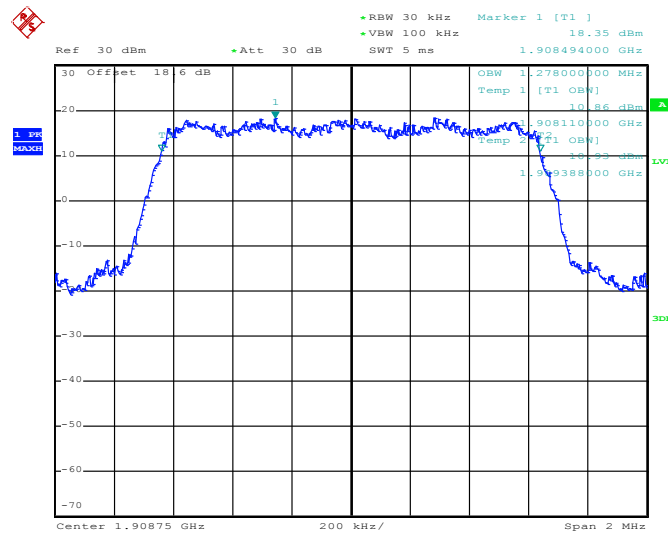
Date: 3.JUN.2015 16:43:04

26dB Bandwidth Plot on Channel 600 (1880.0 MHz)



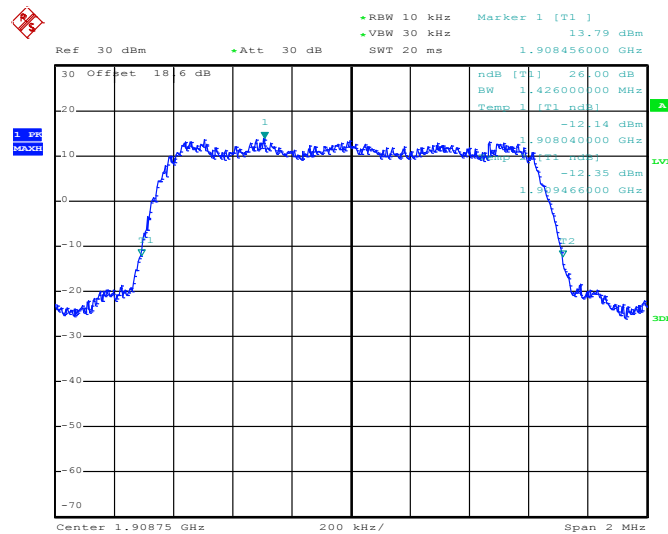
Date: 3.JUN.2015 16:41:15

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



Date: 3.JUN.2015 16:43:39

26dB Bandwidth Plot on Channel 1175 (1908.75 MHz)



Date: 3.JUN.2015 16:41:46

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

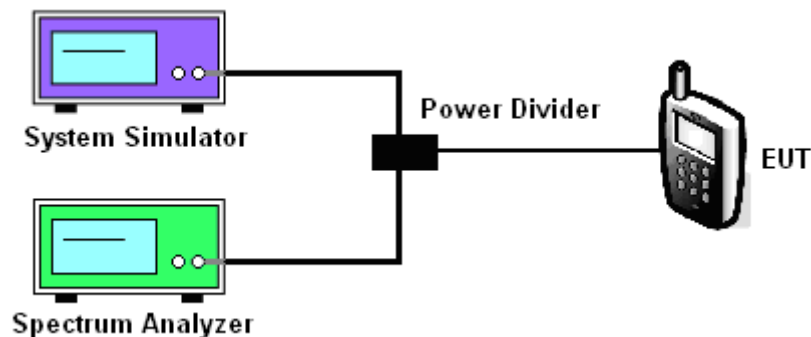
The measuring equipment is listed in the section 4 of this test report.

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 >

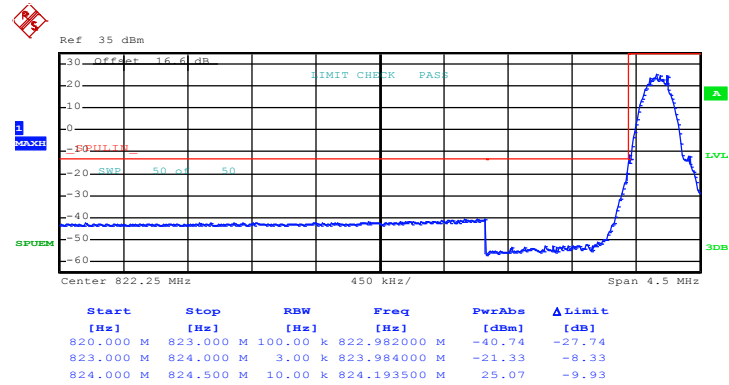




3.5.5 Test Result (Plots) of Conducted Band Edge

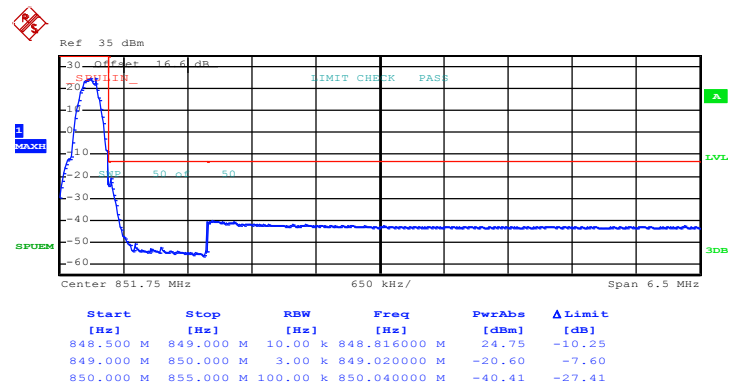
Band :	GSM850	Test Mode :	GSM Link (GMSK)
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Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:32:38

Higher Band Edge Plot on Channel 251 (848.8 MHz)

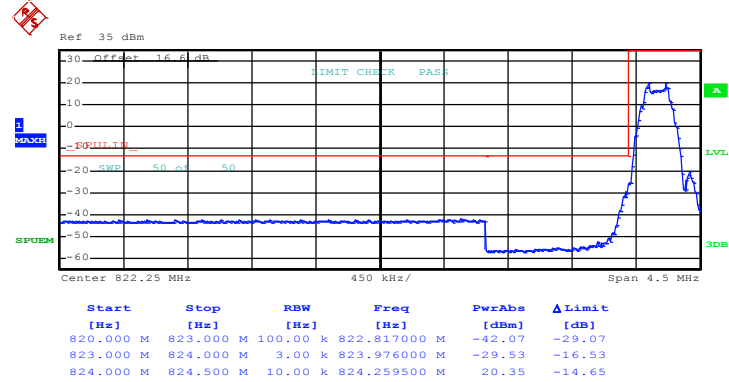


Date: 25.MAY.2015 10:34:00



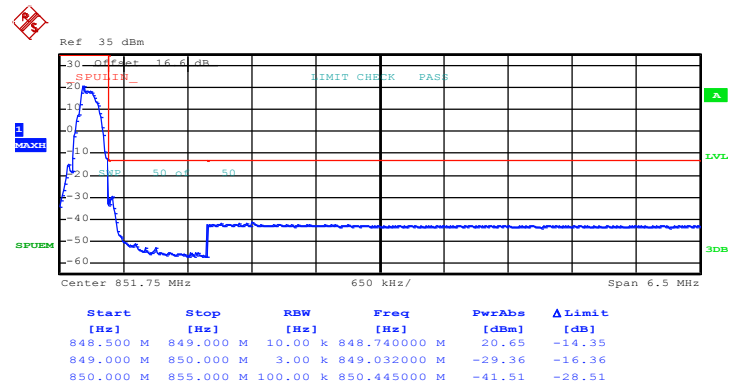
Band :	GSM850	Test Mode :	EDGE class 8 Link (8PSK)
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Lower Band Edge Plot on Channel 128 (824.2 MHz)



Date: 25.MAY.2015 10:42:17

Higher Band Edge Plot on Channel 251 (848.8 MHz)

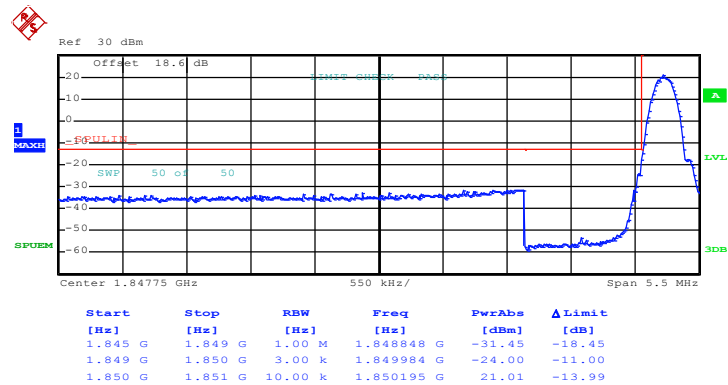


Date: 25.MAY.2015 10:43:40



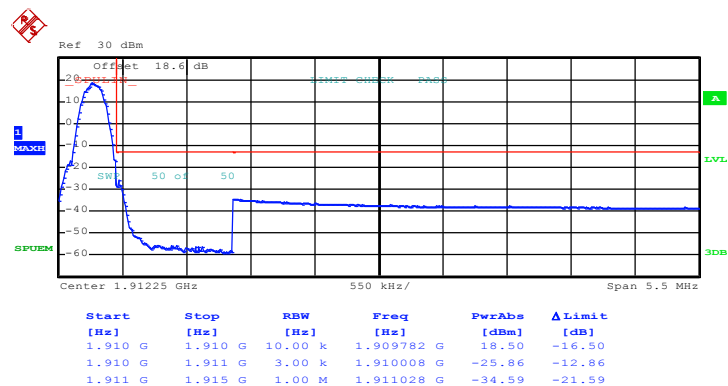
Band :	GSM1900	Test Mode :	GPRS class 8 Link (GMSK)
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Lower Band Edge Plot on Channel 512 (1850.2 MHz)



Date: 25.MAY.2015 11:10:12

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

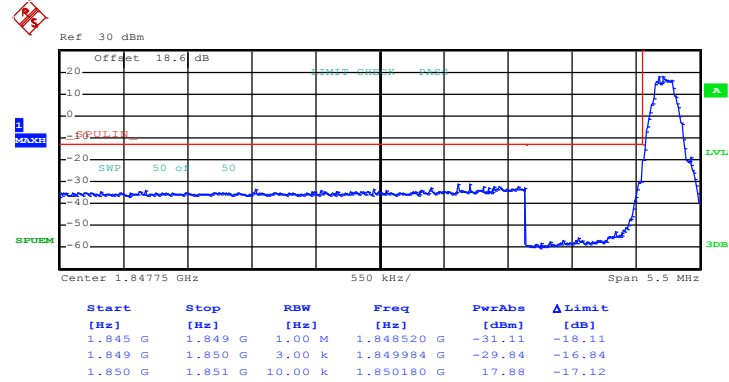


Date: 25.MAY.2015 11:11:35



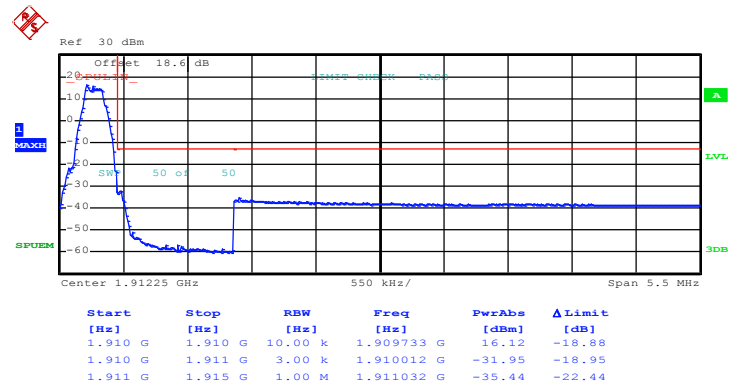
Band :	GSM1900	Test Mode :	EDGE class 8 Link (8PSK)
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Lower Band Edge Plot on Channel 512 (1850.2 MHz)



Date: 25.MAY.2015 11:20:17

Higher Band Edge Plot on Channel 810 (1909.8 MHz)

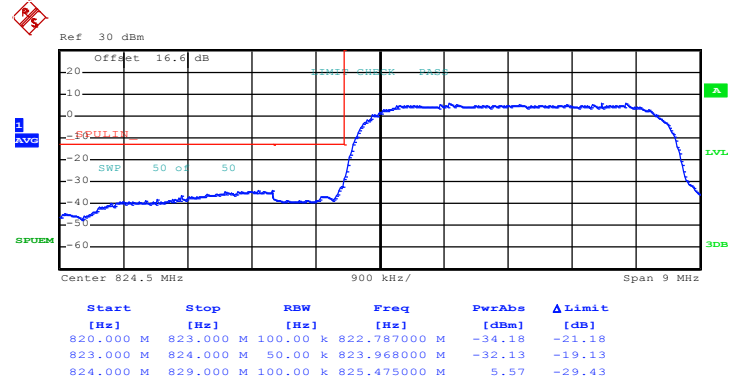


Date: 25.MAY.2015 11:21:40



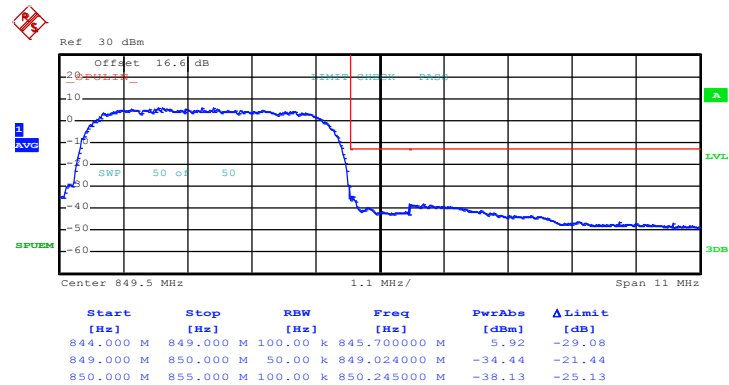
Band : WCDMA Band V Test Mode : RMC 12.2Kbps Link (QPSK)

Lower Band Edge Plot on Channel 4132 (826.4 MHz)



Date: 25.MAY.2015 13:33:51

Higher Band Edge Plot on Channel 4233 (846.6 MHz)

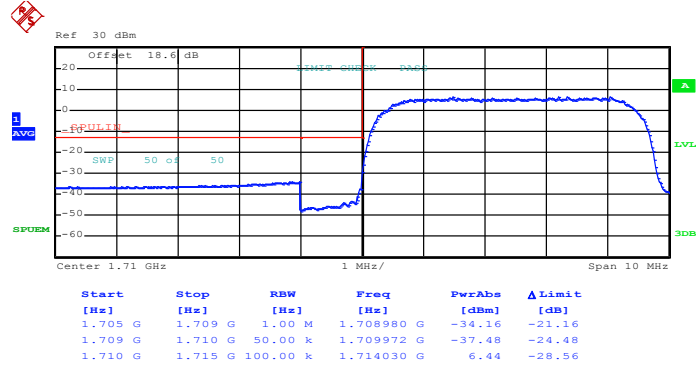


Date: 25.MAY.2015 13:35:13



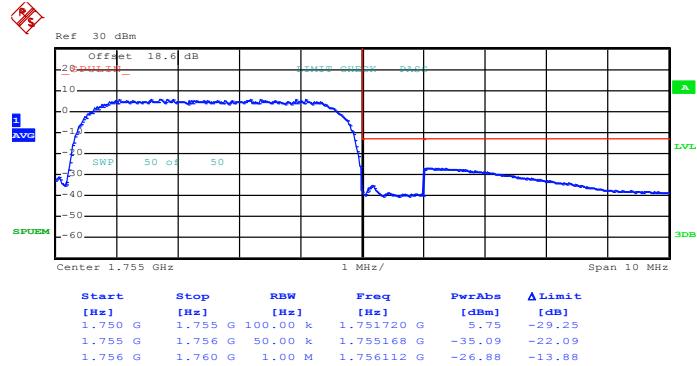
Band :	WCDMA Band IV	Test Mode :	RMC 12.2Kbps Link (QPSK)
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Lower Band Edge Plot on Channel 1312 (1712.4 MHz)



Date: 25.MAY.2015 11:54:31

Higher Band Edge Plot on Channel 1513 (1752.6 MHz)

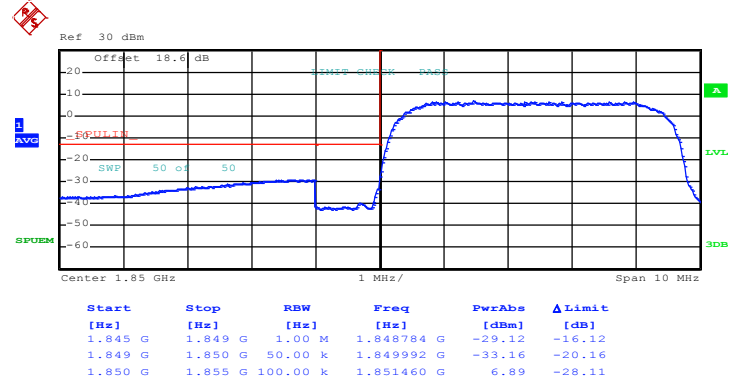


Date: 25.MAY.2015 11:55:53



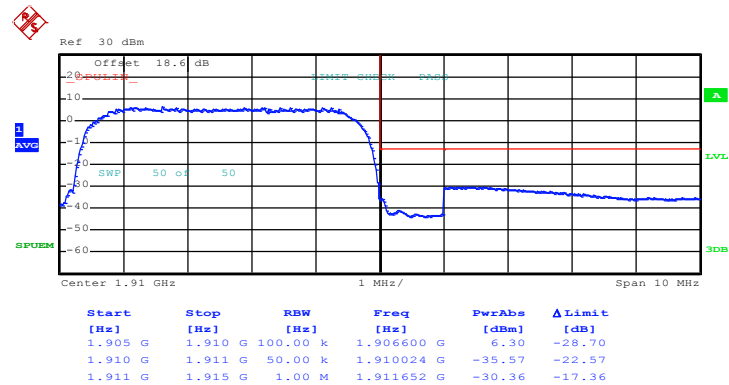
Band : WCDMA Band II Test Mode : RMC 12.2Kbps Link (QPSK)

Lower Band Edge Plot on Channel 9262 (1852.4 MHz)



Date: 25.MAY.2015 11:46:04

Higher Band Edge Plot on Channel 9538 (1907.6 MHz)

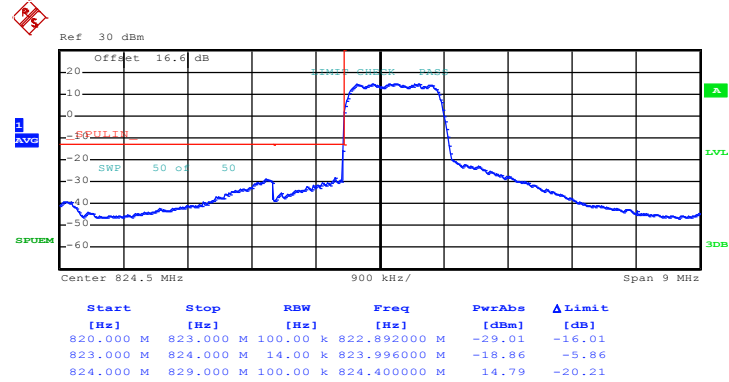


Date: 25.MAY.2015 11:47:26



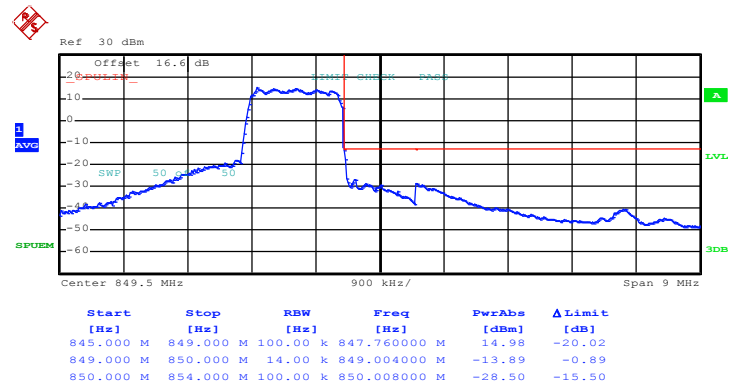
Band :	CDMA2000 BC0	Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)
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Lower Band Edge Plot on Channel 1013 (824.7 MHz)



Date: 3.JUN.2015 15:42:14

Higher Band Edge Plot on Channel 777 (848.31 MHz)

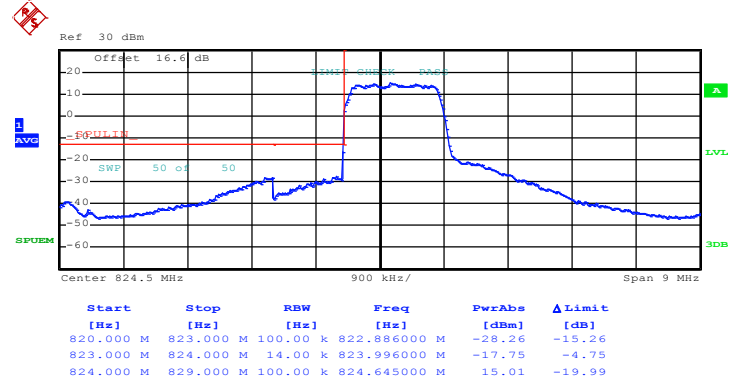


Date: 3.JUN.2015 15:57:14



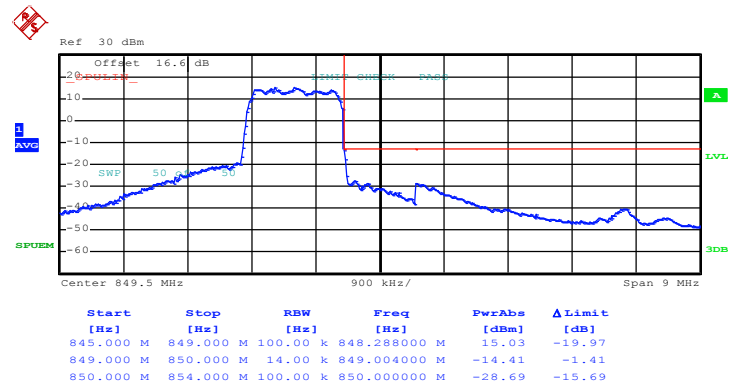
Band :	CDMA2000 BC0	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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Lower Band Edge Plot on Channel 1013 (824.7 MHz)



Date: 3.JUN.2015 15:36:31

Higher Band Edge Plot on Channel 777 (848.31 MHz)

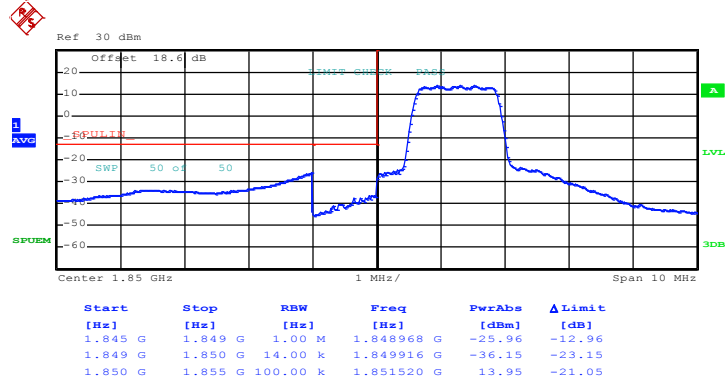


Date: 3.JUN.2015 15:53:13



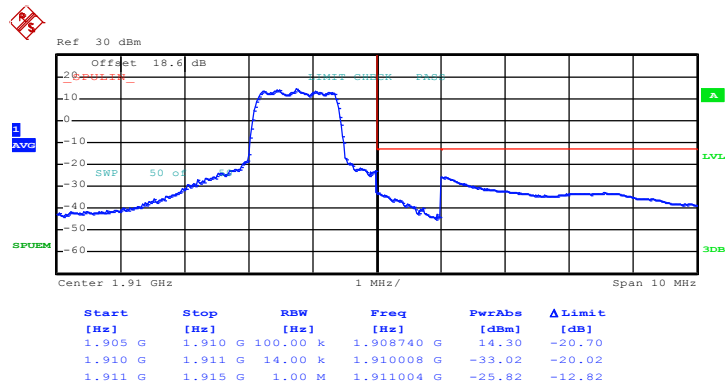
Band :	CDMA2000 BC1	Test Mode :	1xRTT_RC3+SO32 (QPSK)
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Lower Band Edge Plot on Channel 25 (1851.25 MHz)



Date: 3.JUN.2015 17:01:27

Higher Band Edge Plot on Channel 1175 (1908.75 MHz)

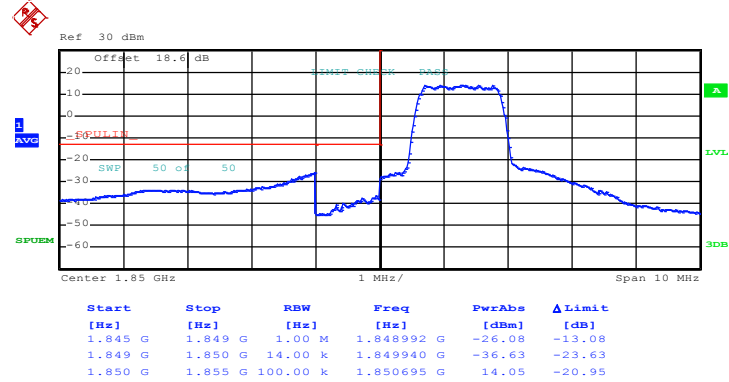


Date: 3.JUN.2015 17:16:45



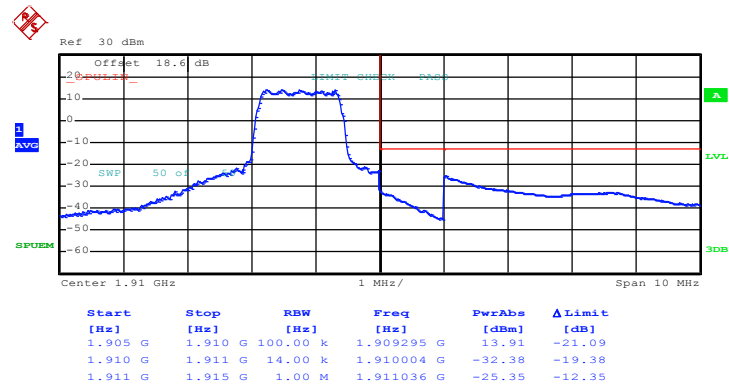
Band :	CDMA2000 BC1	Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)
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Lower Band Edge Plot on Channel 25 (1851.25 MHz)



Date: 3.JUN.2015 17:08:00

Higher Band Edge Plot on Channel 1175 (1908.75 MHz)



Date: 3.JUN.2015 17:28:36

3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

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

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

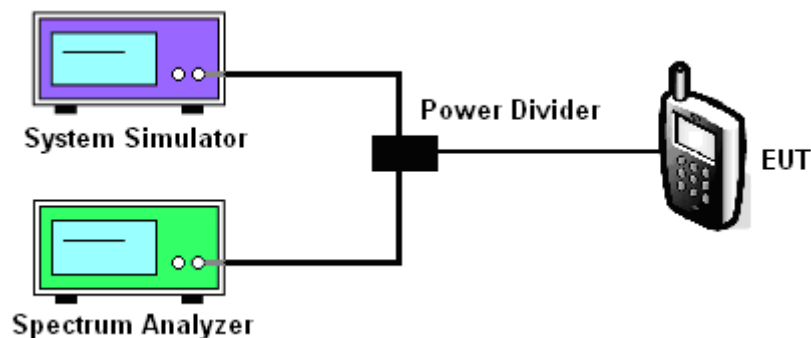
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

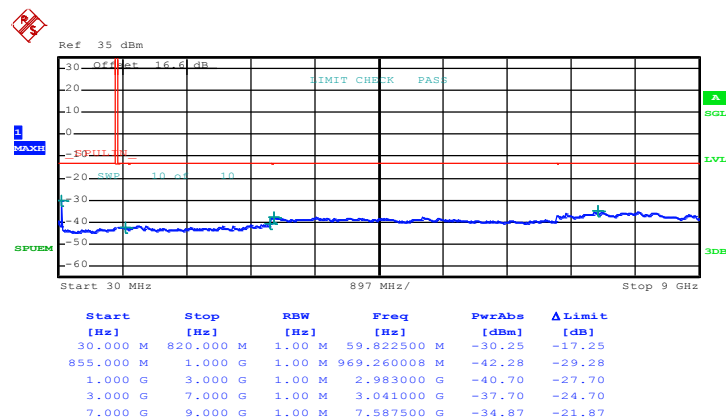
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

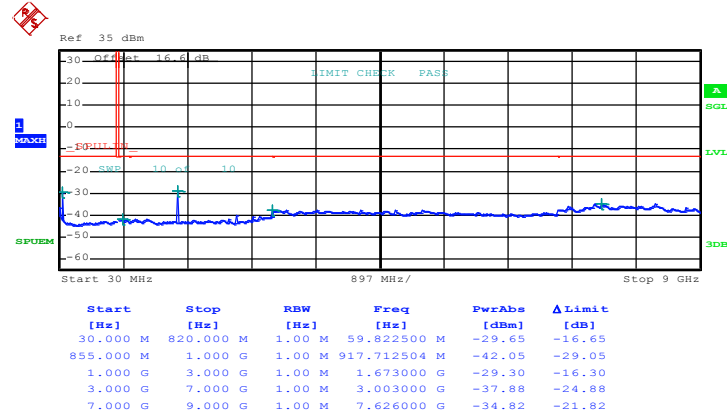


Date: 25.MAY.2015 10:35:06



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

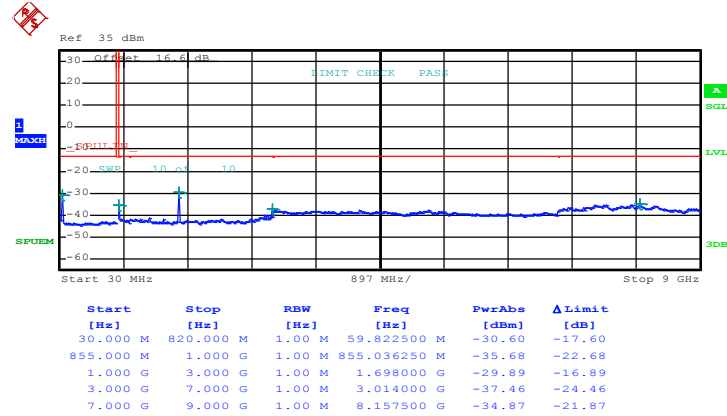


Date: 25.MAY.2015 10:35:31



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

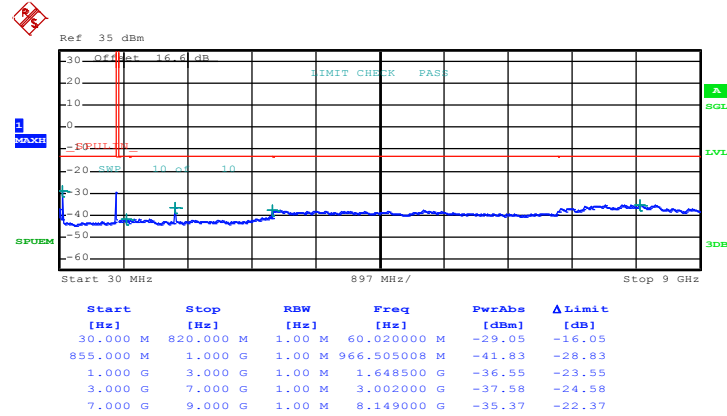


Date: 25.MAY.2015 10:35:56



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

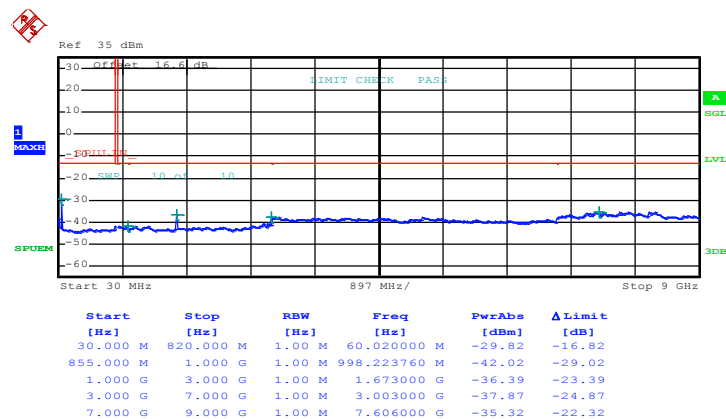


Date: 25.MAY.2015 10:44:57



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

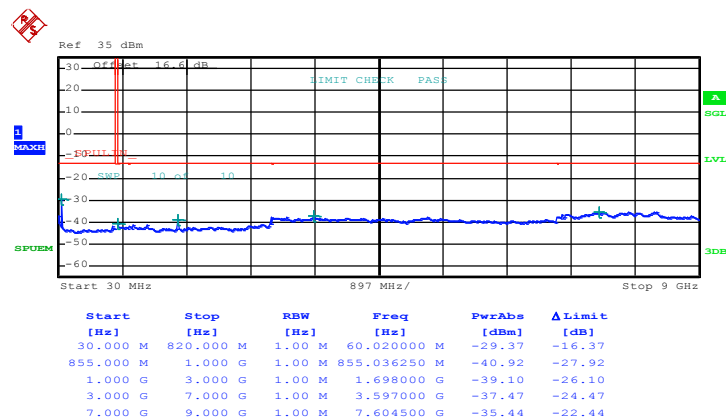


Date: 25.MAY.2015 10:45:23



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

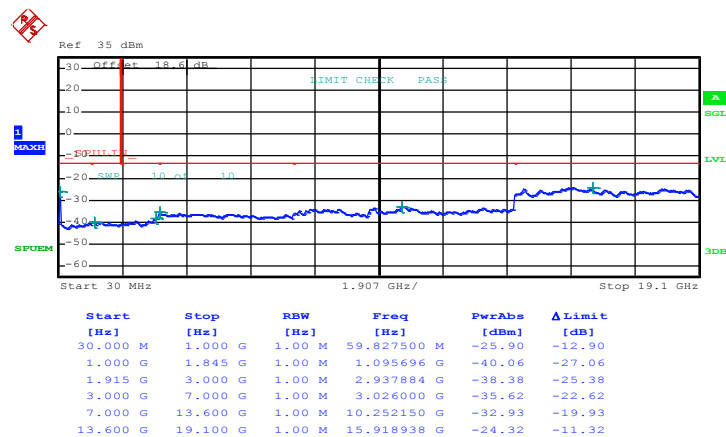


Date: 25.MAY.2015 10:45:48



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

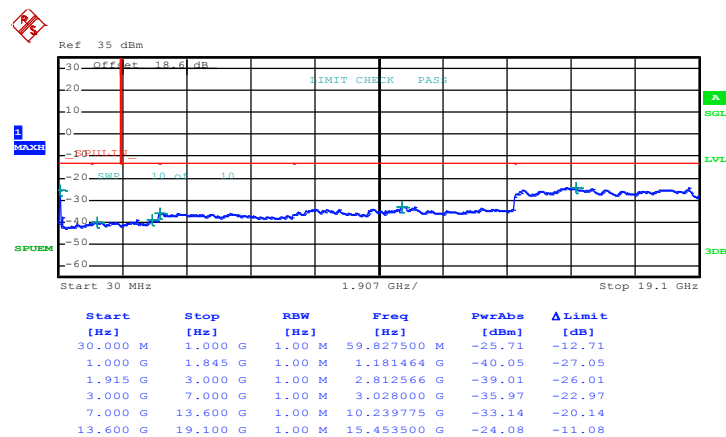


Date: 25.MAY.2015 11:12:27



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

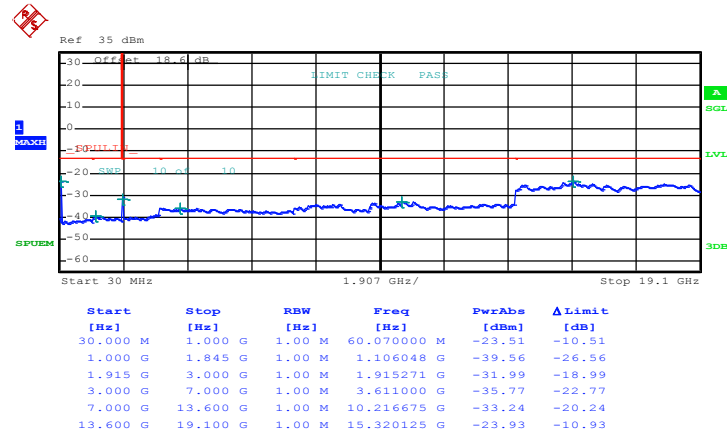


Date: 25.MAY.2015 11:12:53



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

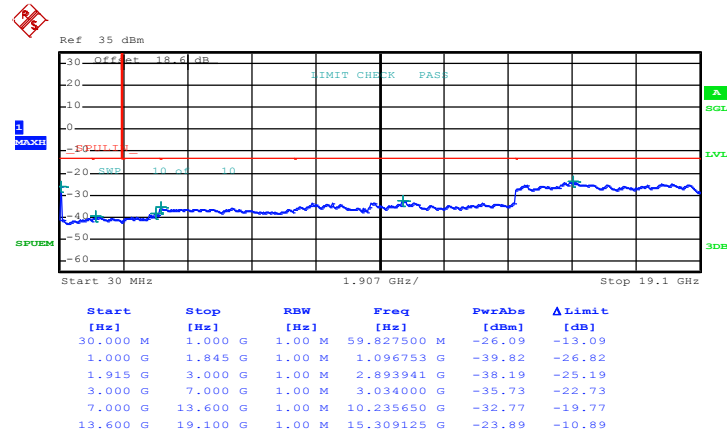


Date: 25.MAY.2015 11:13:18



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

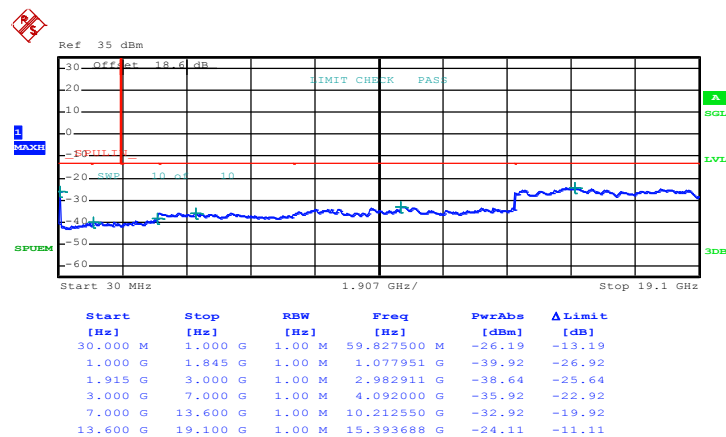


Date: 25.MAY.2015 11:23:41



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

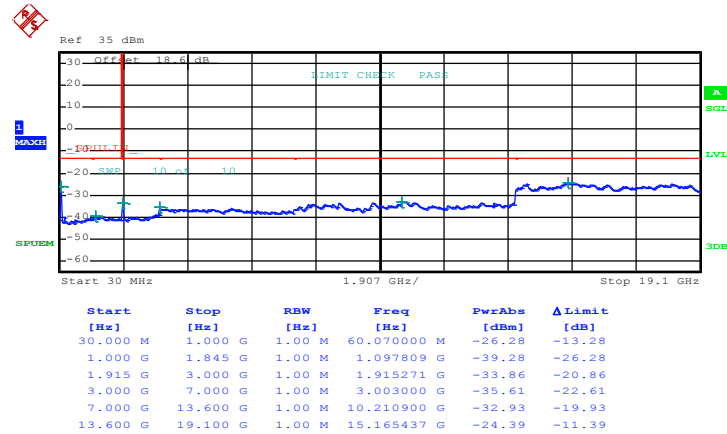


Date: 25.MAY.2015 11:24:07



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

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

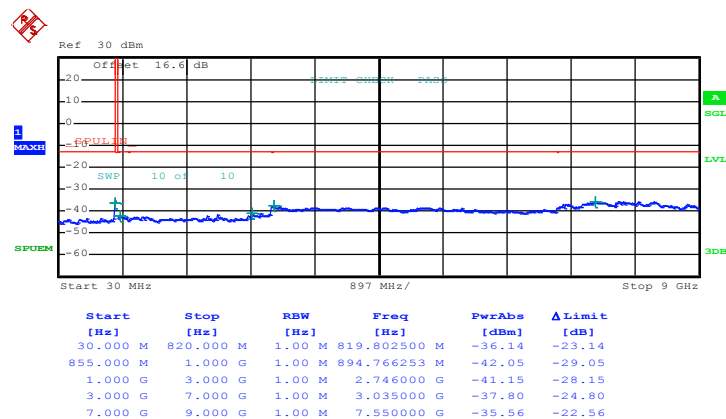


Date: 25.MAY.2015 11:24:32



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

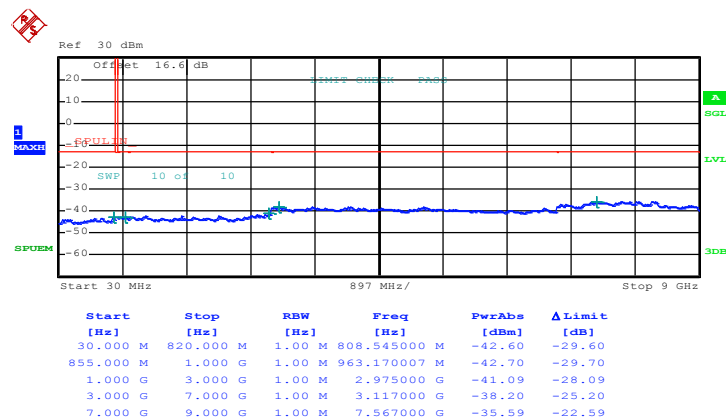


Date: 25.MAY.2015 13:35:47



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

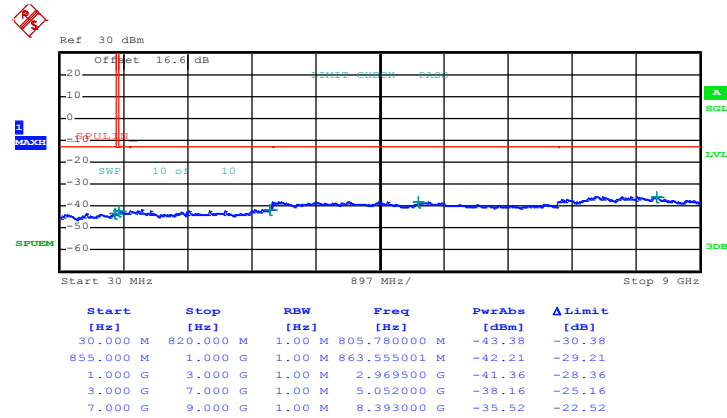


Date: 25.MAY.2015 13:36:12



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

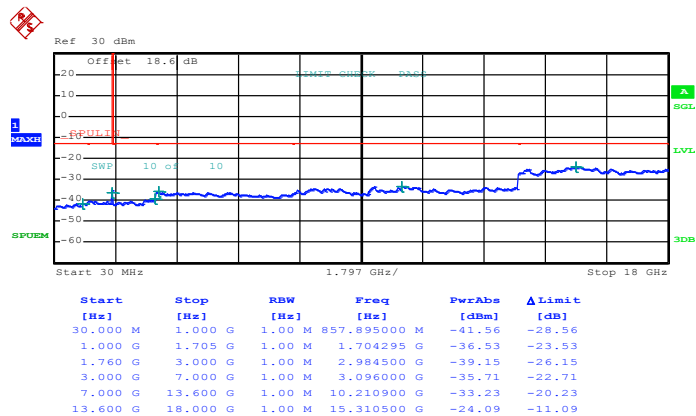


Date: 25.MAY.2015 13:36:37



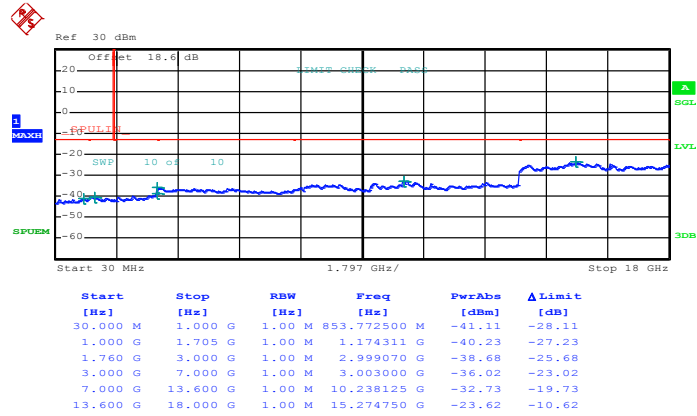
Band :	WCDMA Band IV	Channel :	CH1312
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1712.4 MHz

Conducted Spurious Emission Plot between 30MHz ~ 18GHz



Date: 25.MAY.2015 11:56:26

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

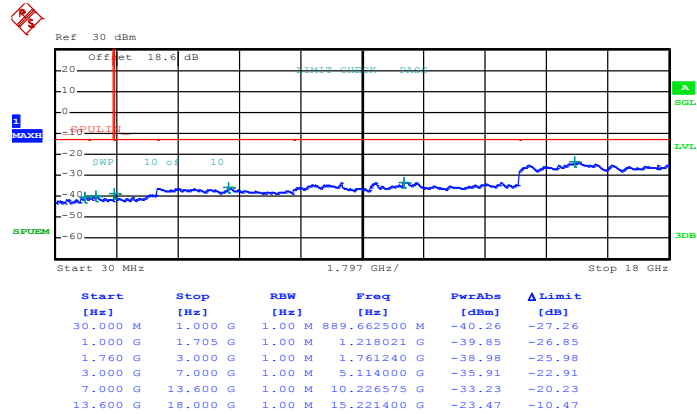
Conducted Spurious Emission Plot between 30MHz ~ 18GHz


Date: 25.MAY.2015 11:56:51



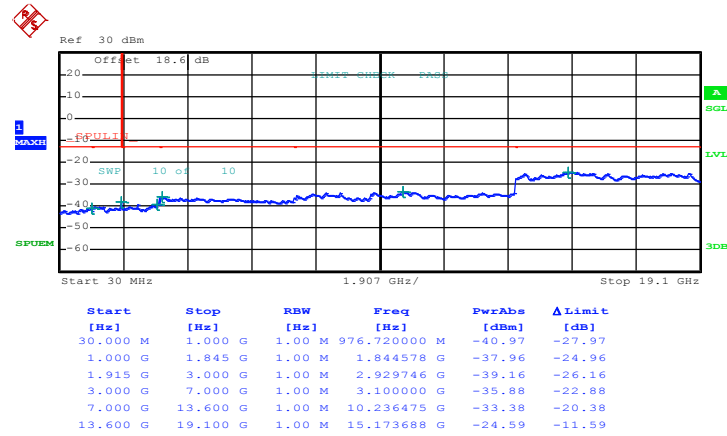
Band :	WCDMA Band IV	Channel :	CH1513
Test Mode :	RMC 12.2Kbps Link (QPSK)	Frequency :	1752.6 MHz

Conducted Spurious Emission Plot between 30MHz ~ 18GHz



Date: 25.MAY.2015 11:57:16

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

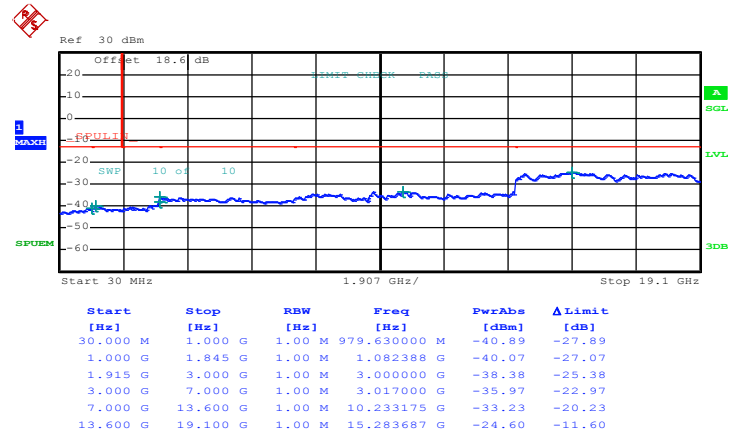
Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz


Date: 25.MAY.2015 11:48:09



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

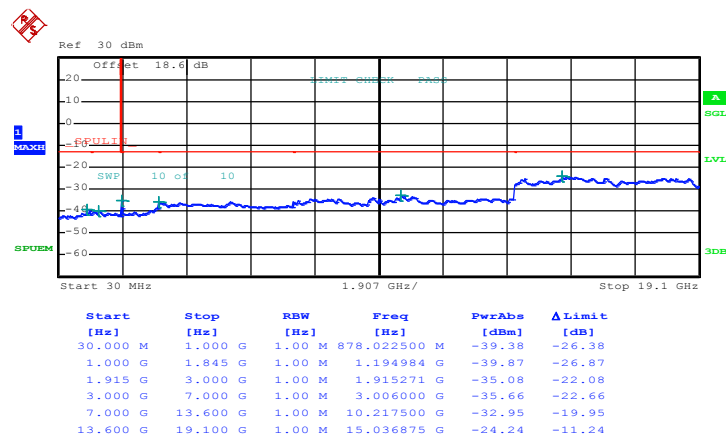


Date: 25.MAY.2015 11:48:34



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

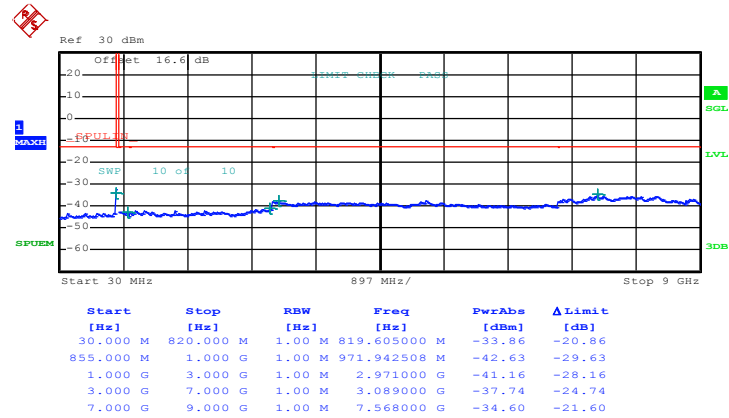


Date: 25.MAY.2015 11:48:59



Band :	CDMA2000 BC0	Channel :	CH1013
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)	Frequency :	824.7 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

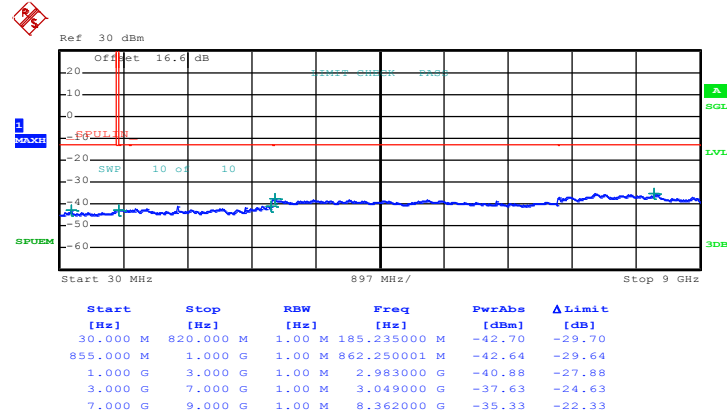


Date: 3.JUN.2015 15:17:07



Band :	CDMA2000 BC0	Channel :	CH384
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)	Frequency :	836.52 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

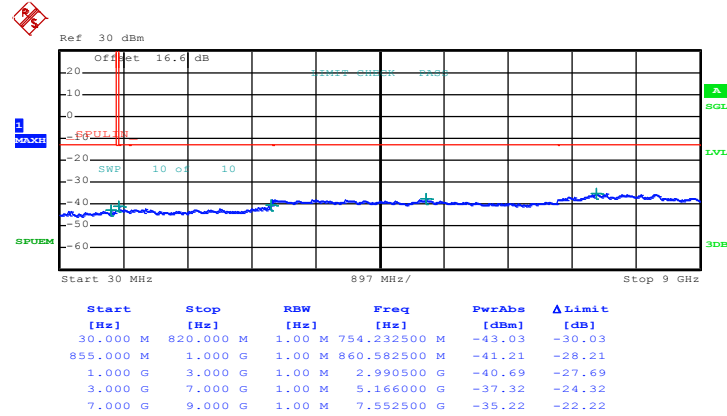


Date: 3.JUN.2015 15:18:02



Band :	CDMA2000 BC0	Channel :	CH777
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)	Frequency :	848.31 MHz

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

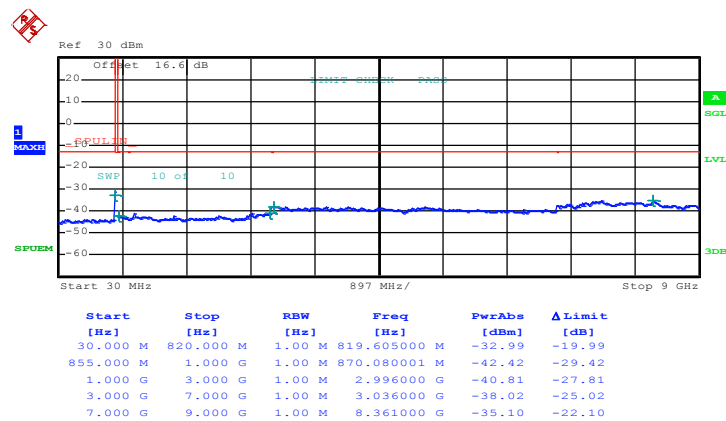


Date: 3.JUN.2015 15:19:10



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

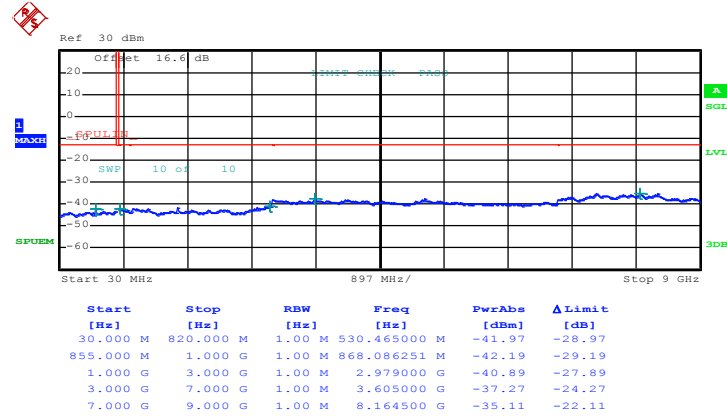


Date: 3.JUN.2015 14:50:13



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

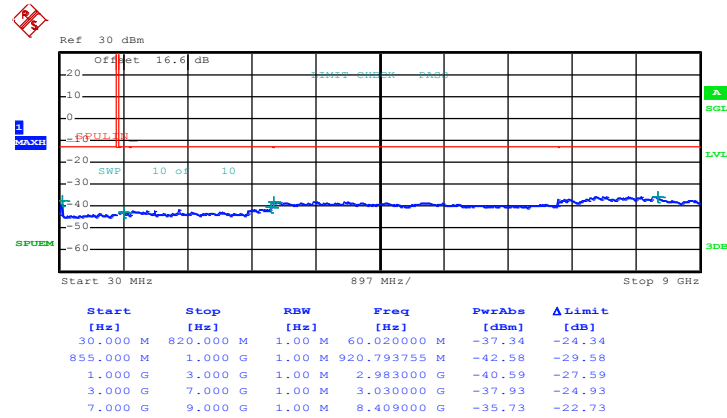


Date: 3.JUN.2015 14:50:44



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

Conducted Spurious Emission Plot between 30MHz ~ 9GHz

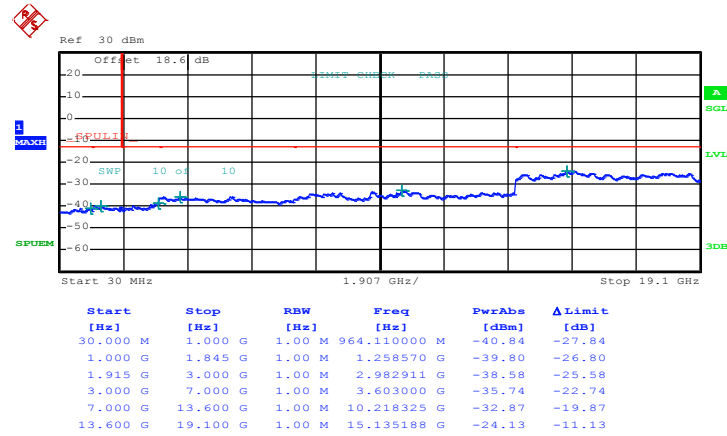


Date: 3.JUN.2015 14:52:18



Band :	CDMA2000 BC1	Channel :	CH25
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Frequency :	1851.25 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

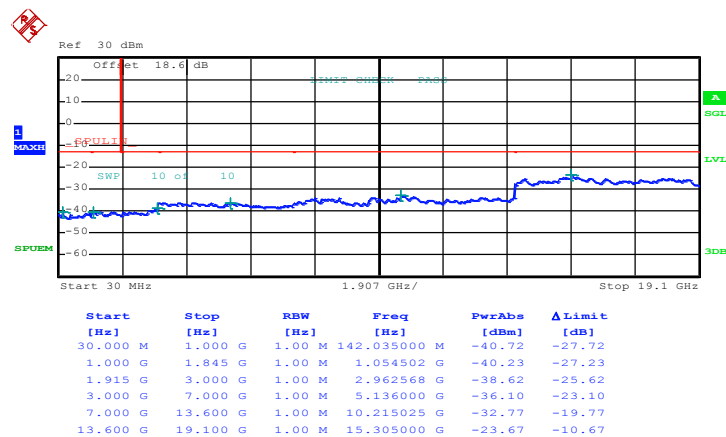


Date: 3.JUN.2015 16:27:46



Band :	CDMA2000 BC1	Channel :	CH600
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

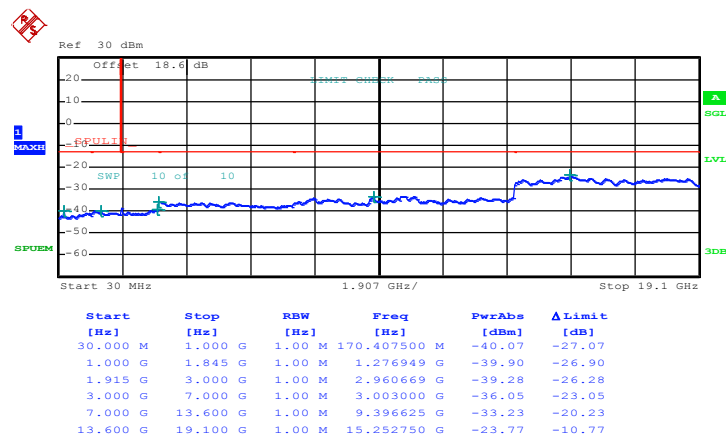


Date: 3.JUN.2015 16:28:16



Band :	CDMA2000 BC1	Channel :	CH1175
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Frequency :	1908.75 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

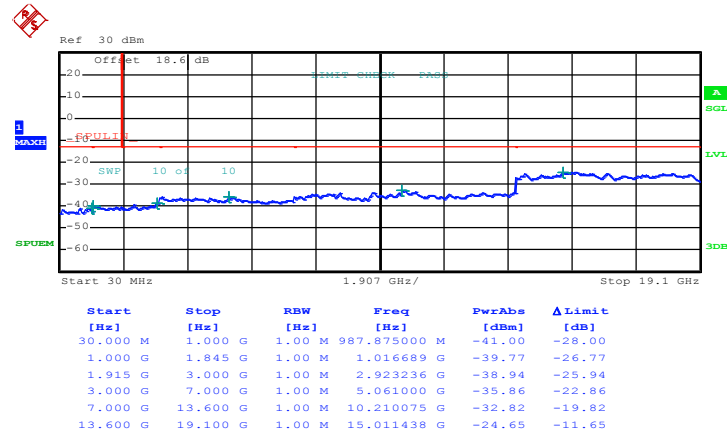


Date: 3.JUN.2015 16:28:45



Band :	CDMA2000 BC1	Channel :	CH25
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)	Frequency :	1851.25 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

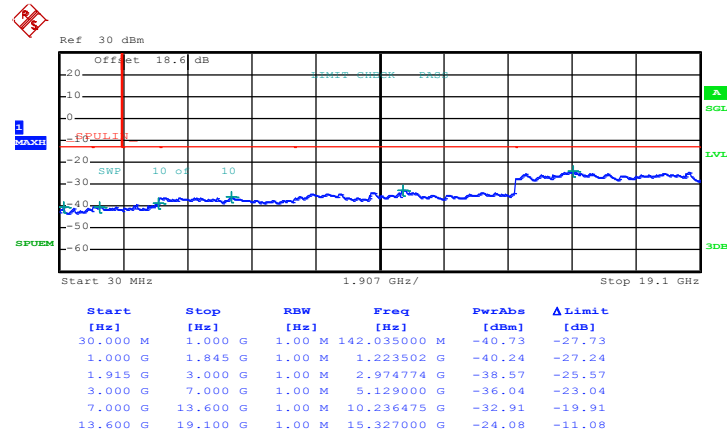


Date: 3.JUN.2015 16:44:31



Band :	CDMA2000 BC1	Channel :	CH600
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)	Frequency :	1880.0 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz

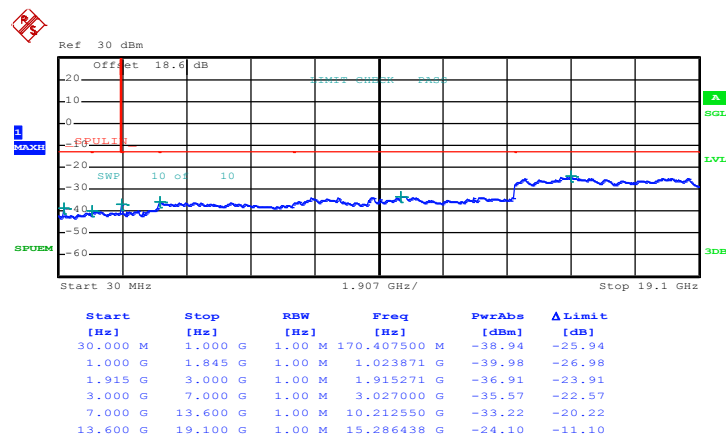


Date: 3.JUN.2015 16:45:42



Band :	CDMA2000 BC1	Channel :	CH1175
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)	Frequency :	1908.75 MHz

Conducted Spurious Emission Plot between 30MHz ~ 19.1GHz



Date: 3.JUN.2015 16:46:10

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

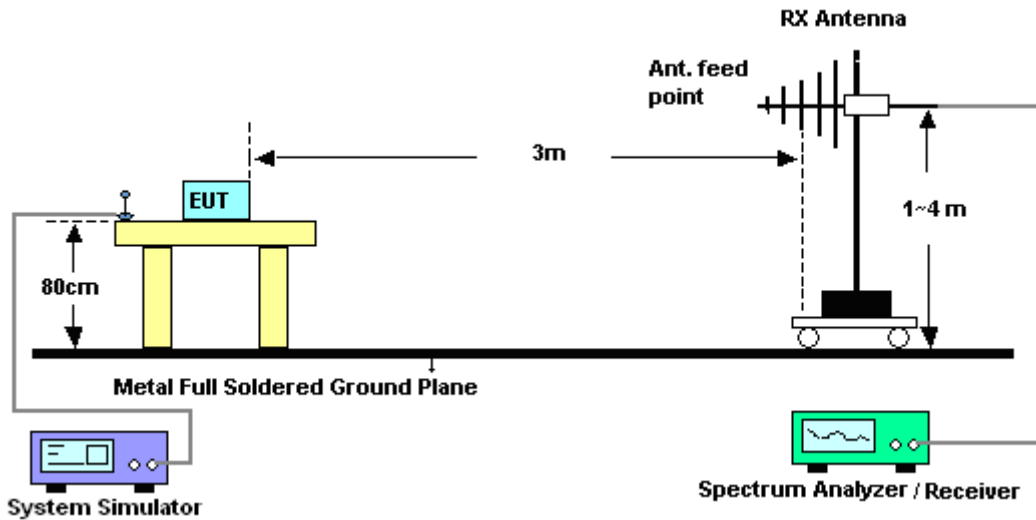
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

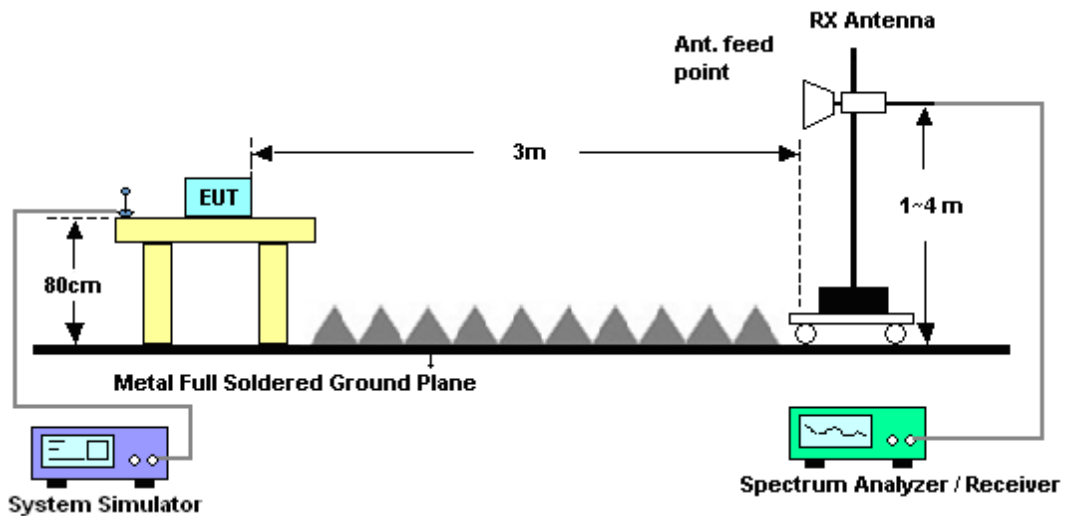
1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 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 :	23~25°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-43.78	-13	-30.78	-53.45	-45.53	0.98	4.88	H	Pass
2476	-50.22	-13	-37.22	-63.27	-52.11	1.28	5.33	H	Pass
3295	-60.18	-13	-47.18	-76.69	-63.59	1.54	7.10	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	
1651	-49.39	-13	-36.39	-57.05	-51.14	0.98	4.88	V	Pass
2476	-52.27	-13	-39.27	-67.59	-54.16	1.28	5.33	V	Pass
3295	-61.17	-13	-48.17	-76.49	-64.58	1.54	7.10	V	Pass



<Middle Channel>

Band :	GSM850					Temperature :	23~25°C		
Test Mode :	GSM Link (GMSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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	-50.72	-13	-37.72	-60.14	-52.39	0.99	4.81	H	Pass
2512	-49.65	-13	-36.65	-62.99	-51.62	1.29	5.41	H	Pass
3343	-60.28	-13	-47.28	-76.58	-63.88	1.56	7.31	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-55.80	-13	-42.80	-62.93	-57.47	0.99	4.81	V	Pass
2512	-50.58	-13	-37.58	-65.92	-52.55	1.29	5.41	V	Pass
3343	-61.34	-13	-48.34	-76.6	-64.94	1.56	7.31	V	Pass

**<High Channel>**

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1702	-54.28	-13	-41.28	-63.87	-55.86	1.00	4.73	H	Pass
2548	-56.94	-13	-43.94	-70.7	-58.92	1.31	5.44	H	Pass
3391	-60.07	-13	-47.07	-76.56	-63.87	1.57	7.52	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-56.65	-13	-43.65	-64.42	-58.23	1.00	4.73	V	Pass
2548	-58.21	-13	-45.21	-73.64	-60.19	1.31	5.44	V	Pass
3391	-60.85	-13	-47.85	-76.71	-64.65	1.57	7.52	V	Pass



<Low Channel>

Band :	GSM850					Temperature :	23~25°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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	-44.39	-13	-31.39	-54	-46.15	0.98	4.89	H	Pass
2472	-62.01	-13	-49.01	-75.08	-63.89	1.28	5.32	H	Pass
3296	-58.69	-13	-45.69	-75.42	-62.1	1.54	7.10	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-55.76	-13	-42.76	-63.34	-57.52	0.98	4.89	V	Pass
2472	-59.79	-13	-46.79	-75.12	-61.67	1.28	5.32	V	Pass
3296	-60.41	-13	-47.41	-75.76	-63.82	1.54	7.10	V	Pass

**<Middle Channel>**

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1672	-54.42	-13	-41.42	-63.77	-56.1	0.99	4.82	H	Pass
2512	-55.22	-13	-42.22	-68.49	-57.19	1.29	5.41	H	Pass
3344	-59.52	-13	-46.52	-75.78	-63.13	1.56	7.31	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-57.95	-13	-44.95	-65.17	-59.63	0.99	4.82	V	Pass
2512	-59.69	-13	-46.69	-75.03	-61.66	1.29	5.41	V	Pass
3344	-60.41	-13	-47.41	-75.65	-64.02	1.56	7.31	V	Pass



<High Channel>

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-62.58	-13	-49.58	-72.02	-64.16	1.00	4.73	H	Pass
2548	-62.30	-13	-49.30	-75.99	-64.28	1.31	5.44	H	Pass
3391	-60.34	-13	-47.34	-76.76	-64.14	1.57	7.52	H	Pass

Band :	GSM850	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-64.84	-13	-51.84	-72.47	-66.42	1.00	4.73	V	Pass
2548	-57.72	-13	-44.72	-73.14	-61.85	1.31	5.44	V	Pass
3391	-60.84	-13	-47.84	-76.73	-66.79	1.57	7.52	V	Pass



<Low Channel>

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)		
3700	-33.45	-13	-20.45	-52.04	-40.02	1.67	8.24	H	Pass
5548	-31.93	-13	-18.93	-55.56	-39	2.65	9.72	H	Pass
7403	-47.76	-13	-34.76	-76.59	-56.91	2.46	11.61	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-37.66	-13	-24.66	-56.16	-44.23	1.67	8.24	V	Pass
5548	-32.29	-13	-19.29	-54.49	-39.36	2.65	9.72	V	Pass
7403	-48.40	-13	-35.40	-76.45	-57.55	2.46	11.61	V	Pass

**<Middle Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-34.08	-13	-21.08	-53.15	-40.71	1.69	8.32	H	Pass
5639	-34.20	-13	-21.20	-57.87	-41.25	2.71	9.76	H	Pass
7522	-47.61	-13	-34.61	-76.25	-57	2.42	11.81	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	
3763	-38.53	-13	-25.53	-57.15	-45.16	1.69	8.32	V	Pass
5639	-35.61	-13	-22.61	-57.95	-42.66	2.71	9.76	V	Pass
7522	-48.49	-13	-35.49	-76.68	-57.88	2.42	11.81	V	Pass

**<High Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-34.58	-13	-21.58	-54.11	-41.26	1.70	8.38	H	Pass
5730	-35.30	-13	-22.30	-59.42	-42.33	2.76	9.79	H	Pass
7641	-48.06	-13	-35.06	-76.47	-57.56	2.38	11.88	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	GPRS class 8 Link (GMSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-35.64	-13	-22.64	-54.32	-42.32	1.70	8.38	V	Pass
5730	-35.71	-13	-22.71	-58.81	-42.74	2.76	9.79	V	Pass
7641	-48.68	-13	-35.68	-76.6	-58.18	2.38	11.88	V	Pass

**<Low Channel>**

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)		
3700	-44.07	-13	-31.07	-62.79	-50.64	1.67	8.24	H	Pass
5548	-39.32	-13	-26.32	-63.05	-46.39	2.65	9.72	H	Pass
7403	-47.70	-13	-34.70	-76.58	-56.85	2.46	11.61	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-47.62	-13	-34.62	-66.16	-54.19	1.67	8.24	V	Pass
5548	-39.11	-13	-26.11	-61.31	-46.18	2.65	9.72	V	Pass
7403	-48.47	-13	-35.47	-76.54	-57.62	2.46	11.61	V	Pass

**<Middle Channel>**

Band :	GSM1900					Temperature :	23~25°C		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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	-43.74	-13	-30.74	-62.85	-50.37	1.69	8.32	H	Pass
5639	-40.95	-13	-27.95	-64.64	-48	2.71	9.76	H	Pass
7522	-48.10	-13	-35.10	-76.72	-57.49	2.42	11.81	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-48.00	-13	-35.00	-66.6	-54.63	1.69	8.32	V	Pass
5639	-41.23	-13	-28.23	-63.52	-48.28	2.71	9.76	V	Pass
7522	-48.63	-13	-35.63	-76.89	-58.02	2.42	11.81	V	Pass



<High Channel>

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-42.14	-13	-29.14	-61.68	-48.82	1.70	8.38	H	Pass
5730	-45.11	-13	-32.11	-69.29	-52.14	2.76	9.79	H	Pass
7641	-47.79	-13	-34.79	-76.2	-57.29	2.38	11.88	H	Pass

Band :	GSM1900	Temperature :	23~25°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-42.86	-13	-29.86	-61.48	-49.54	1.70	8.38	V	Pass
5730	-46.06	-13	-33.06	-69.16	-53.09	2.76	9.79	V	Pass
7641	-48.54	-13	-35.54	-76.48	-58.04	2.38	11.88	V	Pass



<Low Channel>

Band :	WCDMA Band V					Temperature :	23~25°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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	-55.48	-13	-42.48	-65.07	-57.24	0.98	4.89	H	Pass
2472	-61.89	-13	-48.89	-74.97	-63.77	1.28	5.32	H	Pass
3296	-59.03	-13	-46.03	-75.55	-62.44	1.54	7.10	H	Pass

Band :	WCDMA Band V				Temperature :	23~25°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	52~54%			
Test Engineer :	Lewis He and Stan Hsieh				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	-63.07	-13	-50.07	-70.73	-64.83	0.98	4.89	V	Pass
2472	-59.68	-13	-46.68	-74.81	-61.56	1.28	5.32	V	Pass
3296	-60.32	-13	-47.32	-75.68	-63.73	1.54	7.10	V	Pass

**<Middle Channel>**

Band :	WCDMA Band V				Temperature :	23~25°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	52~54%			
Test Engineer :	Lewis He and Stan Hsieh				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	-61.64	-13	-48.64	-70.96	-63.32	0.99	4.82	H	Pass
2504	-53.99	-13	-40.99	-67.02	-55.95	1.29	5.40	H	Pass
3344	-59.53	-13	-46.53	-75.72	-63.14	1.56	7.31	H	Pass

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-65.90	-13	-52.90	-73.14	-67.58	0.99	4.82	V	Pass
2504	-59.56	-13	-46.56	-74.88	-61.52	1.29	5.40	V	Pass
3344	-60.40	-13	-47.40	-75.63	-64.01	1.56	7.31	V	Pass

**<High Channel>**

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	
1688	-59.57	-13	-46.57	-68.92	-61.2	1.00	4.77	H	Pass
2536	-61.58	-13	-48.58	-75.08	-63.56	1.30	5.43	H	Pass
3376	-59.04	-13	-46.04	-75.38	-62.78	1.57	7.45	H	Pass

Band :	WCDMA Band V	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	
1688	-64.20	-13	-51.20	-71.43	-65.83	1.00	4.77	V	Pass
2536	-59.77	-13	-46.77	-75.13	-61.75	1.30	5.43	V	Pass
3376	-59.92	-13	-46.92	-75.61	-63.66	1.57	7.45	V	Pass

**<Low Channel>**

Band :	WCDMA Band IV	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	
3420	-55.46	-13	-42.46	-72.09	-61.53	1.58	7.65	H	Pass
5135	-50.42	-13	-37.42	-73.26	-57.71	2.41	9.70	H	Pass
6857	-49.96	-13	-36.96	-76.89	-57.95	2.64	10.63	H	Pass

Band :	WCDMA Band IV					Temperature :	23~25°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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)	
3427	-50.78	-13	-37.78	-67.26	-56.88	1.58	7.68	V	Pass
5135	-52.55	-13	-39.55	-74.5	-59.84	2.41	9.70	V	Pass
6857	-50.48	-13	-37.48	-77.09	-58.47	2.64	10.63	V	Pass

**<Middle Channel>**

Band :	WCDMA Band IV				Temperature :	23~25°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	52~54%			
Test Engineer :	Lewis He and Stan Hsieh				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)	
3462	-50.76	-13	-37.76	-67.69	-57	1.59	7.83	H	Pass
5198	-41.04	-13	-28.04	-63.79	-48.29	2.45	9.70	H	Pass
6927	-49.05	-13	-36.05	-76.39	-57.15	2.61	10.71	H	Pass

Band :	WCDMA Band IV					Temperature :	23~25°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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)	
3462	-51.22	-13	-38.22	-68.18	-57.46	1.59	7.83	V	Pass
5198	-45.96	-13	-32.96	-68.13	-53.21	2.45	9.70	V	Pass
6927	-49.54	-13	-36.54	-76.57	-57.64	2.61	10.71	V	Pass



<High Channel>

Band :	WCDMA Band IV					Temperature :	23~25°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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)	
3511	-54.02	-13	-41.02	-71.43	-60.43	1.61	8.01	H	Pass
5254	-53.65	-13	-40.65	-76.11	-60.87	2.48	9.70	H	Pass
7011	-48.69	-13	-35.69	-76.2	-56.93	2.59	10.82	H	Pass

Band :	WCDMA Band IV					Temperature :	23~25°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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)	
3504	-55.93	-13	-42.93	-73.36	-62.33	1.61	8.00	V	Pass
5254	-53.56	-13	-40.56	-76.55	-60.78	2.48	9.70	V	Pass
7011	-48.87	-13	-35.87	-76.44	-57.11	2.59	10.82	V	Pass

**<Low Channel>**

Band :	WCDMA Band II					Temperature :	23~25°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	52~54%		
Test Engineer :	Lewis He and Stan Hsieh					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)	
3707	-43.06	-13	-30.06	-61.59	-49.64	1.67	8.25	H	Pass
5562	-52.33	-13	-39.33	-76.06	-59.39	2.66	9.72	H	Pass
7417	-47.39	-13	-34.39	-76.29	-56.57	2.46	11.63	H	Pass

Band :	WCDMA Band II				Temperature :	23~25°C			
Test Mode :	RMC 12.2Kbps Link (QPSK)				Relative Humidity :	52~54%			
Test Engineer :	Lewis He and Stan Hsieh				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)	
3707	-45.52	-13	-32.52	-64.06	-52.1	1.67	8.25	V	Pass
5562	-53.61	-13	-40.61	-75.8	-60.67	2.66	9.72	V	Pass
7417	-48.51	-13	-35.51	-76.49	-57.69	2.46	11.63	V	Pass



<Middle Channel>

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-42.92	-13	-29.92	-62.11	-49.55	1.69	8.32	H	Pass
5639	-52.23	-13	-39.23	-76.01	-59.28	2.71	9.76	H	Pass
7522	-47.94	-13	-34.94	-76.61	-57.33	2.42	11.81	H	Pass

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-44.87	-13	-31.87	-63.55	-51.5	1.69	8.32	V	Pass
5639	-53.26	-13	-40.26	-75.55	-60.31	2.71	9.76	V	Pass
7522	-48.38	-13	-35.38	-76.59	-57.77	2.42	11.81	V	Pass



<High Channel>

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-41.44	-13	-28.44	-61.02	-48.12	1.70	8.38	H	Pass
5730	-52.02	-13	-39.02	-76.17	-59.05	2.76	9.79	H	Pass
7641	-48.29	-13	-35.29	-76.61	-57.79	2.38	11.88	H	Pass

Band :	WCDMA Band II	Temperature :	23~25°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-44.20	-13	-31.20	-62.95	-50.88	1.70	8.38	V	Pass
5730	-53.09	-13	-40.09	-76.26	-60.12	2.76	9.79	V	Pass
7641	-48.72	-13	-35.72	-76.66	-58.22	2.38	11.88	V	Pass

**<Low Channel>**

Band :	CDMA2000 BC0	Temperature :	23~25°C						
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-52.01	-13	-39.01	-61.71	-53.77	0.98	4.89	H	Pass
2472	-58.24	-13	-45.24	-71.4	-60.12	1.28	5.32	H	Pass
3304	-58.12	-13	-45.12	-74.47	-61.56	1.54	7.14	H	Pass

Band :	CDMA2000 BC0	Temperature :	23~25°C						
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-58.27	-13	-45.27	-65.9	-60.03	0.98	4.89	V	Pass
2472	-59.26	-13	-46.26	-74.48	-61.14	1.28	5.32	V	Pass
3296	-59.59	-13	-46.59	-74.98	-63	1.54	7.10	V	Pass



<Middle Channel>

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-61.18	-13	-48.18	-70.58	-62.86	0.99	4.82	H	Pass
2512	-60.81	-13	-47.81	-74.14	-62.78	1.29	5.41	H	Pass
3344	-59.08	-13	-46.08	-75.4	-62.69	1.56	7.31	H	Pass

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-64.95	-13	-51.95	-72.16	-66.63	0.99	4.82	V	Pass
2512	-59.82	-13	-46.82	-75.16	-61.79	1.29	5.41	V	Pass
3344	-60.54	-13	-47.54	-75.76	-64.15	1.56	7.31	V	Pass

**<High Channel>**

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-55.12	-13	-42.12	-64.66	-56.72	1.00	4.75	H	Pass
2544	-60.38	-13	-47.38	-74.09	-62.36	1.30	5.44	H	Pass
3392	-59.52	-13	-46.52	-75.99	-63.32	1.57	7.52	H	Pass

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RTAP 153.6K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-59.14	-13	-46.14	-66.97	-60.74	1.00	4.75	V	Pass
2544	-59.97	-13	-46.97	-75.32	-61.95	1.30	5.44	V	Pass
3392	-60.40	-13	-47.40	-76.26	-64.2	1.57	7.52	V	Pass



<Low Channel>

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1648	-51.49	-13	-38.49	-61.14	-53.25	0.98	4.89	H	Pass
2472	-56.28	-13	-43.28	-69.39	-58.16	1.28	5.32	H	Pass
3296	-57.59	-13	-44.59	-74.09	-61	1.54	7.10	H	Pass

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-60.02	-13	-47.02	-67.63	-61.78	0.98	4.89	V	Pass
2472	-57.30	-13	-44.30	-72.55	-59.18	1.28	5.32	V	Pass
3296	-59.38	-13	-46.38	-74.86	-62.79	1.54	7.10	V	Pass



<Middle Channel>

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-59.41	-13	-46.41	-68.75	-61.09	0.99	4.82	H	Pass
2512	-58.90	-13	-45.90	-72.23	-60.87	1.29	5.41	H	Pass
3344	-57.92	-13	-44.92	-74.18	-61.53	1.56	7.31	H	Pass

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-64.35	-13	-51.35	-71.61	-66.03	0.99	4.82	V	Pass
2512	-58.97	-13	-45.97	-74.33	-60.94	1.29	5.41	V	Pass
3344	-60.05	-13	-47.05	-75.23	-63.66	1.56	7.31	V	Pass

**<High Channel>**

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-54.26	-13	-41.26	-63.75	-55.86	1.00	4.75	H	Pass
2544	-59.94	-13	-46.94	-73.7	-61.92	1.30	5.44	H	Pass
3392	-59.42	-13	-46.42	-75.84	-63.22	1.57	7.52	H	Pass

Band :	CDMA2000 BC0						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-61.51	-13	-48.51	-69.17	-63.11	1.00	4.75	V	Pass
2544	-56.84	-13	-43.84	-72.2	-58.82	1.30	5.44	V	Pass
3392	-59.65	-13	-46.65	-75.5	-63.45	1.57	7.52	V	Pass



<Low Channel>

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-41.88	-13	-28.88	-60.5	-48.45	1.67	8.24	H	Pass
5555	-50.44	-13	-37.44	-74.18	-57.51	2.66	9.72	H	Pass
7403	-47.95	-13	-34.95	-76.76	-57.1	2.46	11.61	H	Pass

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-42.32	-13	-29.32	-60.91	-48.89	1.67	8.24	V	Pass
5555	-51.48	-13	-38.48	-73.68	-58.55	2.66	9.72	V	Pass
7403	-48.85	-13	-35.85	-76.87	-58	2.46	11.61	V	Pass

**<Middle Channel>**

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-40.56	-13	-27.56	-59.68	-47.19	1.69	8.32	H	Pass
5639	-51.04	-13	-38.04	-74.81	-58.09	2.71	9.76	H	Pass
7522	-48.23	-13	-35.23	-77.04	-57.62	2.42	11.81	H	Pass

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-41.05	-13	-28.05	-59.72	-47.68	1.69	8.32	V	Pass
5639	-51.40	-13	-38.40	-73.69	-58.45	2.71	9.76	V	Pass
7522	-48.63	-13	-35.63	-76.89	-58.02	2.42	11.81	V	Pass

**<High Channel>**

Band :	CDMA2000 BC1	Temperature :	23~25°C						
Test Mode :	1xRTT_RC3+SO32 (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-36.84	-13	-23.84	-56.37	-43.52	1.70	8.38	H	Pass
5730	-49.35	-13	-36.35	-73.5	-56.38	2.76	9.79	H	Pass
7641	-48.09	-13	-35.09	-76.5	-57.59	2.38	11.88	H	Pass

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xRTT_RC3+SO32 (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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)	
3819	-39.88	-13	-26.88	-58.64	-46.56	1.70	8.38	V	Pass
5730	-50.94	-13	-37.94	-73.94	-57.97	2.76	9.79	V	Pass
7641	-48.88	-13	-35.88	-76.83	-58.38	2.38	11.88	V	Pass



<Low Channel>

Band :	CDMA2000 BC1	Temperature :	23~25°C						
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	
3700	-41.88	-13	-28.88	-60.55	-48.45	1.67	8.24	H	Pass
5555	-51.09	-13	-38.09	-74.73	-58.16	2.66	9.72	H	Pass
7403	-47.31	-13	-34.31	-76.2	-56.46	2.46	11.61	H	Pass

Band :	CDMA2000 BC1	Temperature :	23~25°C						
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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)	(dBm)	(dB)	(dBm)	(dBm)	(dBm)	(dB)	(dBi)		
3700	-41.92	-13	-28.92	-60.49	-48.49	1.67	8.24	V	Pass
5555	-52.24	-13	-39.24	-74.44	-59.31	2.66	9.72	V	Pass
7403	-48.48	-13	-35.48	-76.53	-57.63	2.46	11.61	V	Pass



<Middle Channel>

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-40.58	-13	-27.58	-59.66	-47.21	1.69	8.32	H	Pass
5639	-50.95	-13	-37.95	-74.66	-58	2.71	9.76	H	Pass
7522	-47.73	-13	-34.73	-76.4	-57.12	2.42	11.81	H	Pass

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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	-39.09	-13	-26.09	-57.74	-45.72	1.69	8.32	V	Pass
5639	-50.90	-13	-37.90	-73.11	-57.95	2.71	9.76	V	Pass
7522	-48.50	-13	-35.50	-76.69	-57.89	2.42	11.81	V	Pass

<High Channel>

Band :	CDMA2000 BC1	Temperature :	23~25°C						
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)	Relative Humidity :	52~54%						
Test Engineer :	Lewis He and Stan Hsieh	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	-37.24	-13	-24.24	-56.87	-43.92	1.70	8.38	H	Pass
5730	-50.91	-13	-37.91	-74.9	-57.94	2.76	9.79	H	Pass
7641	-48.22	-13	-35.22	-76.68	-57.72	2.38	11.88	H	Pass

Band :	CDMA2000 BC1						Temperature :	23~25°C	
Test Mode :	1xEV-DO Rev. 0_RETAP 4096K (QPSK)						Relative Humidity :	52~54%	
Test Engineer :	Lewis He and Stan Hsieh						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)	
3819	-39.58	-13	-26.58	-58.21	-46.26	1.70	8.38	V	Pass
5730	-51.40	-13	-38.40	-74.57	-58.43	2.76	9.79	V	Pass
7641	-48.60	-13	-35.60	-76.54	-58.1	2.38	11.88	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

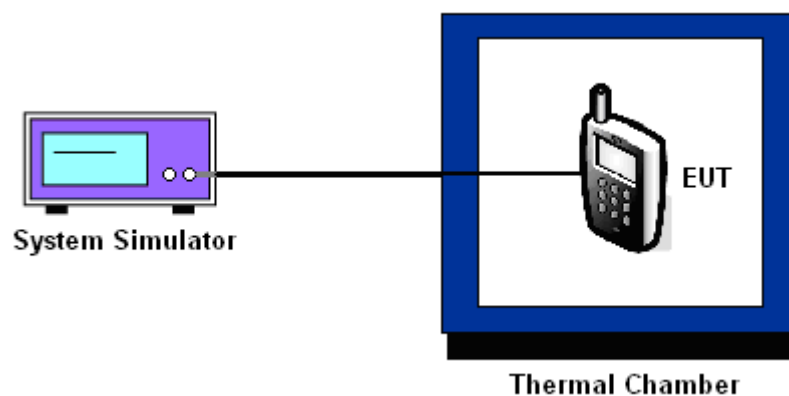
3.8.3 Test Procedures for Temperature Variation

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

3.8.4 Test Procedures for Voltage Variation

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

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation

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

Temperature (°C)	GSM	EDGE class 8	Result
	Deviation (ppm)	Deviation (ppm)	
50	0.0359	0.0096	PASS
40	0.0383	0.0072	
30	0.0299	0.0036	
20(Ref.)	0.0000	0.0000	
10	0.0024	0.0036	
0	0.0012	0.0072	
-10	0.0024	0.0048	
-20	0.0036	0.0084	
-30	0.0012	0.0096	

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	0.0037	0.0005	PASS
40	0.0027	0.0021	
30	0.0016	0.0016	
20(Ref.)	0.0000	0.0000	
10	0.0027	0.0005	
0	0.0032	0.0000	
-10	0.0011	0.0016	
-20	0.0048	0.0048	
-30	0.0000	0.0032	

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	0.0012	
20(Ref.)	0.0000	
10	0.0108	
0	0.0132	
-10	0.0120	
-20	0.0012	
-30	0.0012	

Band :	WCDMA Band IV	Channel :	1413
Limit (ppm) :	within authorized band	Frequency :	1732.6 MHz

Temperature (°C)	RMC 12.2Kbps	Result
	Deviation (ppm)	
50	0.0012	PASS
40	0.0006	
30	0.0012	
20(Ref.)	0.0000	
10	0.0162	
0	0.0179	
-10	0.0173	
-20	0.0156	
-30	0.0012	

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



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

Temperature (°C)	RMC 12.2Kbps	Result
	Deviation (ppm)	
50	0.0021	PASS
40	0.0011	
30	0.0011	
20(Ref.)	0.0000	
10	0.0069	
0	0.0069	
-10	0.0059	
-20	0.0074	
-30	0.0016	

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



Band :	CDMA2000 BC0 1xEV-DO Rev. 0_RTAP 153.6K	Channel :	384
Limit (ppm) :	2.5	Frequency :	836.52 MHz

Temperature (°C)	Deviation (ppm)	Result
50	0.0347	PASS
40	0.0323	
30	0.0311	
20(Ref.)	0.0000	
10	0.0299	
0	0.0048	
-10	0.0024	
-20	0.0000	
-30	0.0299	

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

Temperature (°C)	Deviation (ppm)	Result
50	0.0347	PASS
40	0.0371	
30	0.0359	
20(Ref.)	0.0000	
10	0.0311	
0	0.0012	
-10	0.0024	
-20	0.0060	
-30	0.0335	

Band :	CDMA2000 BC1 1xRTT_RC3+SO32	Channel :	600
Limit (ppm) :	within authorized band	Frequency :	1880.0 MHz

Temperature (°C)	Deviation (ppm)	Result
50	0.0271	PASS
40	0.0250	
30	0.0261	
20(Ref.)	0.0000	
10	0.0011	
0	0.0239	
-10	0.0229	
-20	0.0048	
-30	0.0202	

Band :	CDMA2000 BC1 1xEV-DO Rev. 0_RETAP 4096K	Channel :	600
Limit (ppm) :	within authorized band	Frequency :	1880.0 MHz

Temperature (°C)	Deviation (ppm)	Result
50	0.0250	PASS
40	0.0223	
30	0.0234	
20(Ref.)	0.0000	
10	0.0229	
0	0.0218	
-10	0.0011	
-20	0.0213	
-30	0.0181	

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

3.8.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GSM	4.35	0.0024	2.5	PASS
		3.95	0.0000		
		BEP	0.0012		
	EDGE class 8	4.35	0.0048		
		3.95	0.0072		
		BEP	0.0036		
GSM 1900 CH661	GPRS class 8	4.35	0.0043	(Note 3.)	
		3.95	0.0032		
		BEP	0.0021		
	EDGE class 8	4.35	0.0011		
		3.95	0.0005		
		BEP	0.0021		
WCDMA Band V CH4182	RMC 12.2Kbps	4.35	0.0024	2.5	
		3.95	0.0120		
		BEP	0.0000		
WCDMA Band IV CH1413	RMC 12.2Kbps	4.35	0.0167	(Note 3.)	
		3.95	0.0150		
		BEP	0.0156		
WCDMA Band II CH9400	RMC 12.2Kbps	4.35	0.0064	(Note 3.)	
		3.95	0.0005		
		BEP	0.0080		
CDMA2000 BC0 CH384	1xEV-DO Rev. 0 RTAP 153.6K	4.35	0.0012	2.5	
		3.95	0.0048		
		BEP	0.0036		
CDMA2000 BC0 CH384	1xRTT RC3+SO32	4.35	0.0323	2.5	
		3.95	0.0036		
		BEP	0.0048		
CDMA2000 BC1 CH600	1xRTT RC3+SO32	4.35	0.0245	(Note 3.)	
		3.95	0.0005		
		BEP	0.0234		
CDMA2000 BC1 CH600	1xEV-DO Rev. 0 RETAP 4096K	4.35	0.0223	(Note 3.)	
		3.95	0.0016		
		BEP	0.0213		

Note:

1. Normal Voltage = 3.95V.
2. Battery End Point (BEP) = 3.55 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 25, 2015~ Jun. 03, 2015	Jun. 13, 2015	Conducted (TH03-HY)
Signal Generator	Rohde & Schwarz	SMU200A	102502	9kHz~6GHz	Jul. 07, 2014	May 25, 2015~ Jun. 03, 2015	Jul. 06, 2015	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30~70°C	Dec. 01, 2014	May 25, 2015~ Jun. 03, 2015	Nov. 30, 2015	Conducted (TH03-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 24, 2014	May 23, 2015~ May 25, 2015	Nov. 23, 2015	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	35413	30MHz~1GHz	Oct. 24, 2014	May 23, 2015~ May 25, 2015	Oct. 23, 2015	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A	MY5413008 5	20Hz ~ 8.4GHz	Nov. 05, 2014	May 23, 2015~ May 25, 2015	Nov. 04, 2015	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBEC K	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Oct. 03, 2014	May 23, 2015~ May 25, 2015	Oct. 02, 2015	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY5327007 8	1GHz~26.5GHz	Nov. 20, 2014	May 23, 2015~ May 25, 2015	Nov. 19, 2015	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY5420048 5	10Hz ~ 44GHZ	Oct. 14, 2014	May 23, 2015~ May 25, 2015	Oct. 13, 2015	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-45 00-B	N/A	1~4m	NA	May 23, 2015~ May 25, 2015	NA	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0-360 degree	NA	May 23, 2015~ May 25, 2015	NA	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	35414	30MHz~1GHz	Oct. 24, 2014	May 23, 2015~ May 25, 2015	Oct. 23, 2015	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBEC K	BBHA 9120 D	9120D-1326	1GHz ~ 18GHz	Oct. 03, 2014	May 23, 2015~ May 25, 2015	Oct. 02, 2015	Radiation (03CH10-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 22, 2015	May 23, 2015~ May 25, 2015	May 21, 2016	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBEC K	BBHA 9170	BBHA91705 84	18GHz- 40GHz	Nov. 03, 2014	May 23, 2015~ May 25, 2015	Nov. 02, 2015	Radiation (03CH10-HY)



5 Uncertainty of Evaluation

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