



FCC RF Test Report

APPLICANT : Motorola Mobility, LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : 9653
FCC ID : IHDT56WA1
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 Feb. 03, 2017 and testing was completed on Feb. 17, 2017. 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-D-2010 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.

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Approved by: Jones Tsai / Manager



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FCC ID : IHDT56WA1

Page Number : 1 of 24

Report Issued Date : Apr. 05, 2017

Report Version : Rev. 02

Report Template No.: BU5-FG22/24/27 Version 1.2



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant.....	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	6
1.5 Modification of EUT	7
1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator	7
1.7 Testing Location	8
1.8 Applicable Standards	8
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1 Test Mode.....	9
2.2 Connection Diagram of Test System	10
2.3 Support Unit used in test configuration	10
2.4 Measurement Results Explanation Example	10
2.5 Frequency List of Low/Middle/High Channels.....	11
3 CONDUCTED TEST RESULT.....	12
3.1 Measuring Instruments.....	12
3.2 Test Setup	12
3.3 Test Result of Conducted Test.....	12
3.4 Conducted Output Power.....	13
3.5 Peak-to-Average Ratio	14
3.6 99% Occupied Bandwidth and 26dB Bandwidth Measurement.....	15
3.7 Conducted Band Edge	16
3.8 Conducted Spurious Emission	17
3.9 Frequency Stability	18
4 RADIATED TEST ITEMS	19
4.1 Measuring Instruments.....	19
4.2 Test Setup	19
4.3 Test Result of Radiated Test.....	19
4.4 Effective Radiated Power and Effective Isotropic Radiated Power Measurement	20
4.5 Field Strength of Spurious Radiation Measurement	22
5 LIST OF MEASURING EQUIPMENT	23
6 UNCERTAINTY OF EVALUATION	24
APPENDIX A. TEST RESULTS OF CONDUCTED TEST	
APPENDIX B. TEST RESULTS OF ERP/EIRP AND RADIATED TEST	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG720310A	Rev. 01	Initial issue of report	Mar. 20, 2017
FG720310A	Rev. 02	Revising frequency range of CDMA2000 BC0 in section 1.6.	Apr. 05, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	< 13 dB	PASS	-
3.6	§2.1049 §22.917(b) §24.238(b) §27.53(g)	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Band Edge Measurement	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Conducted Emission	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§2.1055 §24.235 §27.54		Within Authorized Band		
4.4	§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	-
4.5	§2.1053 §22.917(a) §24.238(a) §27.53(h)	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	Under limit 24.19 dB at 1672.000 MHz



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	9653
FCC ID	IHDT56WA1
IMEI Code	351884080020946 (for Radiation) 351884080020839 (for Conducted)
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/NFC/FM WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 Bluetooth BR/EDR/LE
HW Version	DVT2
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 1	Brand Name : Motorola
	Model Name : SPN5970A
AC Adapter 2	Brand Name : Motorola
	Model Name : SPN5993A
AC Adapter 3	Brand Name : Motorola
	Model Name : SPN5978A
Battery 1	Brand Name : Motorola
	Model Name : SNN5983A
Battery 2	Brand Name : Motorola
	Model Name : SNN5985A
Earphone	Brand Name : Motorola
	Model Name : SH38C16618
USB Cable	Brand Name : Motorola
	Model Name : SKN6473A



1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	GSM/GPRS/EDGE: 850: 824.2 MHz ~ 848.8 MHz 1900: 1850.2 MHz ~ 1909.8MHz WCDMA: Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz Band IV: 1712.4 MHz ~ 1752.6 MHz CDMA2000: BC0: 824.70 MHz ~ 848.31 MHz BC1: 1851.25 MHz ~ 1908.75 MHz
Rx Frequency	GSM/GPRS/EDGE: 850: 869.2 MHz ~ 893.8 MHz 1900: 1930.2 MHz ~ 1989.8 MHz WCDMA: Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz Band IV: 2112.4 MHz ~ 2152.6 MHz CDMA2000: BC0: 869.70 MHz ~ 893.31 MHz BC1: 1931.25 MHz ~ 1988.75 MHz
Maximum Output Power to Antenna	GSM/GPRS/EDGE: 850: 32.38 dBm 1900: 29.35 dBm WCDMA: Band V: 22.86 dBm Band II: 22.89 dBm Band IV: 22.93 dBm CDMA2000: BC0: 24.01 dBm BC1: 24.00 dBm
Antenna Type	Coupling type (LDS) Antenna
Antenna Gain	Cellular Band: -2.00 dBi PCS Band: -1.00 dBi AWS Band: -1.00 dBi
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: BPSK (Uplink) HSDPA: 64QAM (Downlink) HSUPA: QPSK (Uplink) CDMA2000 1xRTT: 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	Frequency Range (MHz)	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (ppm)	Emission Designator
Part 22	824.2 ~848.8	GSM850 GSM	GMSK	0.6531	0.0454 ppm	246KGXW
Part 22	824.2 ~848.8	GSM850 EDGE class 8	8PSK	0.1183	0.0108 ppm	242KG7W
Part 22	826.4 ~846.6	WCDMA Band V RMC 12.2Kbps	BPSK	0.1021	0.0323 ppm	4M15F9W
Part 22	824.70 ~ 848.31	CDMA2000 BC0 1xRTT	QPSK	0.1099	0.0048 ppm	1M27F9W
Part 22	824.70 ~ 848.31	CDMA2000 BC0 1xEV-DO Rev. 0	QPSK	0.0767	0.0239 ppm	1M27F9W
Part 24	1850.2 ~1909.8	GSM1900 GPRS class 8	GMSK	1.2531	0.0064 ppm	248KGXW
Part 24	1850.2 ~1909.8	GSM1900 EDGE class 8	8PSK	0.2965	0.0048 ppm	245KG7W
Part 24	1852.4 ~ 1907.6	WCDMA Band II RMC 12.2Kbps	BPSK	0.2328	0.0213 ppm	4M16F9W
Part 24	1851.25 ~ 1908.75	CDMA2000 BC1 1xRTT	QPSK	0.2223	0.0064 ppm	1M27F9W
Part 24	1851.25 ~ 1908.75	CDMA2000 BC1 1xEV-DO Rev. 0	QPSK	0.1950	0.0048 ppm	1M27F9W
Part 27	1712.4 ~ 1752.6	WCDMA Band IV RMC 12.2Kbps	BPSK	0.2432	0.0375 ppm	4M15F9W

1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 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	03CH07-HY

1.8 Applicable Standards

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

- 47 CFR Part 2, 22(H), 24(E), 27(L)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

Remark:

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

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

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

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V and CDMA BC0.
2. 30 MHz to 18000 MHz for WCDMA Band IV.
3. 30 MHz to 19100 MHz for GSM1900 and WCDMA Band II and CDMA BC1.

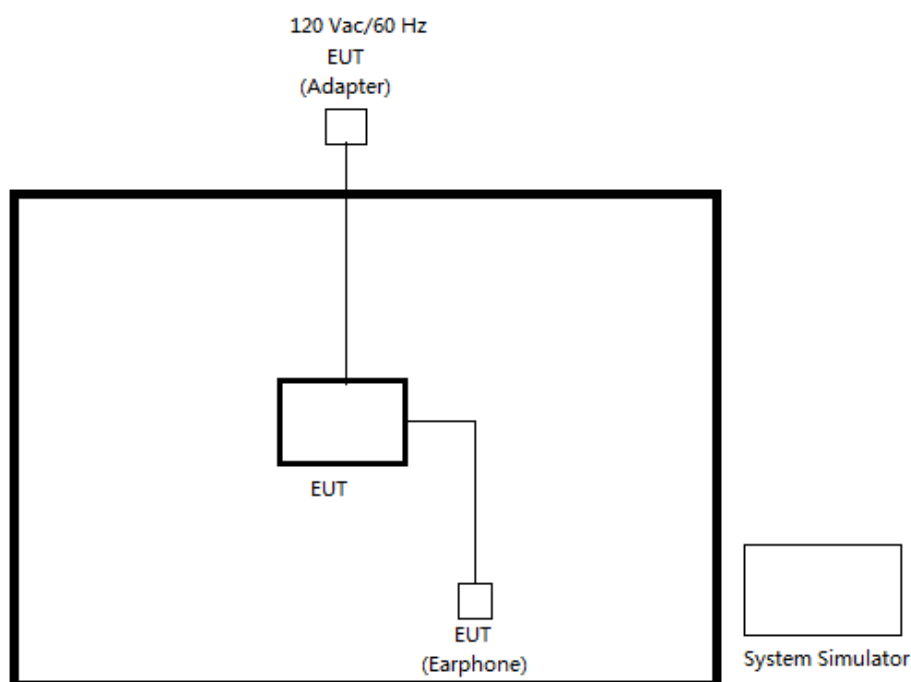
All modes and data rates and positions were investigated.

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
CDMA BC0	■ 1xRTT Link ■ 1xEV-DO Rev. 0 Link	■ 1xRTT Link ■ 1xEV-DO Rev. 0 Link
CDMA BC1	■ 1xRTT Link ■ 1xEV-DO Rev. 0 Link	■ 1xRTT Link ■ 1xEV-DO Rev. 0 Link

Remark: All the radiated test cases were performance with Adapter 1 and Battery 1.

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

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

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

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



2.5 Frequency List of Low/Middle/High Channels

Frequency List				
Band	Channel/Frequency(MHz)	Lowest	Middle	Highest
GSM850	Channel	128	189	251
	Frequency	824.2	836.4	848.8
WCDMA Band V	Channel	4132	4182	4233
	Frequency	826.4	836.4	846.6
GSM1900	Channel	512	661	810
	Frequency	1850.2	1880.0	1909.8
WCDMA Band II	Channel	9262	9400	9538
	Frequency	1852.4	1880.0	1907.6
WCDMA Band IV	Channel	1312	1413	1513
	Frequency	1712.4	1732.6	1752.6
CDMA2000 BC0	Channel	1013	384	777
	Frequency	824.7	836.52	848.31
CDMA2000 BC1	Channel	25	600	1175
	Frequency	1851.25	1880.0	1908.75

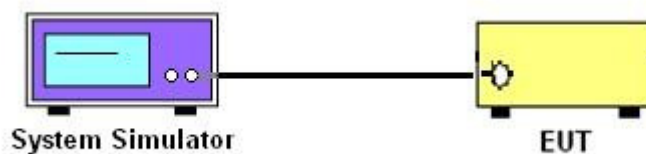
3 Conducted Test Result

3.1 Measuring Instruments

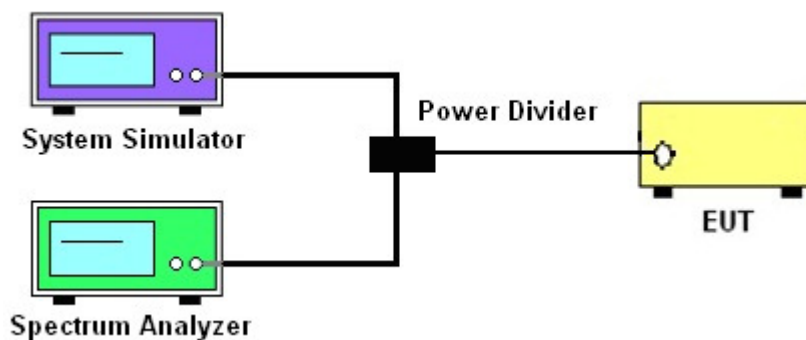
See list of measuring instruments of this test report.

3.2 Test Setup

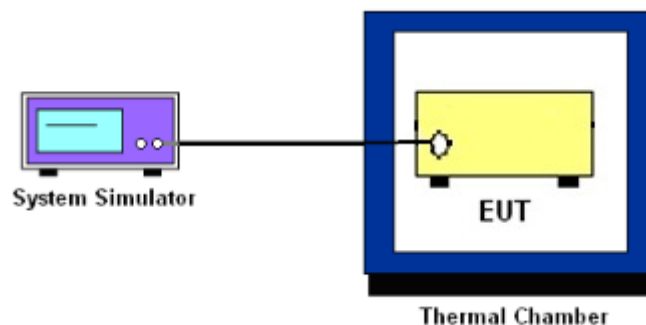
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.



3.4 Conducted Output Power

3.4.1 Description of the Conducted Output Power

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.

3.4.2 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.



3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

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

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. Set EUT to transmit at maximum output power.
4. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
5. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer.
Record the maximum PAPR level associated with a probability of 0.1%.

3.6 99% Occupied Bandwidth and 26dB Bandwidth Measurement

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

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

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.



3.7 Conducted Band Edge

3.7.1 Description of Conducted 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.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 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)

3.8 Conducted Spurious Emission

3.8.1 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.

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 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)

3.9 Frequency Stability

3.9.1 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.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01 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.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at $20\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

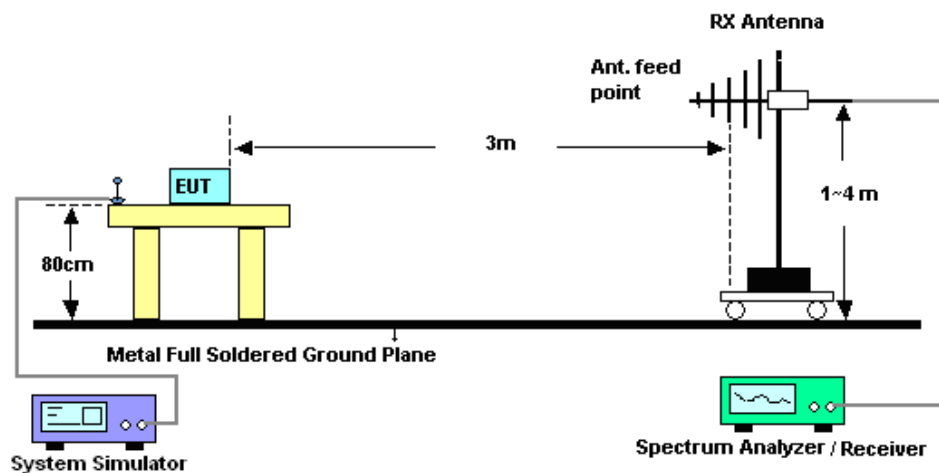
4 Radiated Test Items

4.1 Measuring Instruments

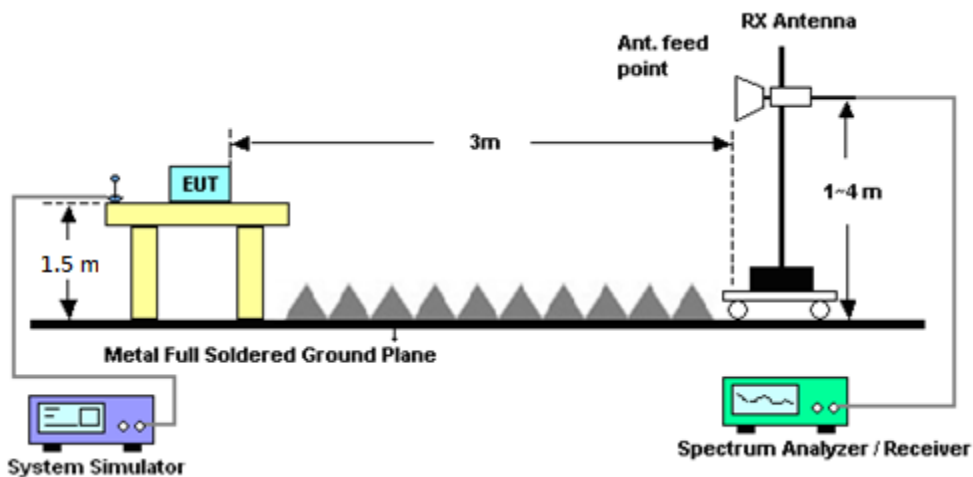
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

4.4.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-D-2010, 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 (Cellular Band) and the EIRP of mobile transmitters are limited to 2 Watts (PCS Band) and 1 Watts (AWS Band).

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-D-2010 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform (0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz) 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-D. 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	WCDMA/HSPA
SPAN	500kHz	10MHz
RBW	10kHz	100kHz
VBW	30kHz	300kHz
Detector	RMS	RMS
Trace	Average	Average
Average Type	Power	Power
Sweep Count	100	100

4.5 Field Strength of Spurious Radiation Measurement

4.5.1 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.

4.5.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz 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)



5 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. 27, 2016	Feb. 15, 2017 ~ Feb. 16, 2017	Jun. 26, 2017	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30℃ ~70℃	Nov. 16, 2016	Feb. 15, 2017 ~ Feb. 16, 2017	Nov. 15, 2017	Conducted (TH03-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL883644	Voltage:0~20V;Current:0~5A	Nov. 22, 2016	Feb. 15, 2017 ~ Feb. 16, 2017	Nov. 21, 2017	Conducted (TH03-HY)
Base Station (Measure)	Rohde & Schwarz	CMU200	117997	GSM / GPRS / WCDMA / CDMA	Aug. 05, 2016	Feb. 15, 2017 ~ Feb. 16, 2017	Aug. 04, 2017	Conducted (TH03-HY)
Bilog Antenna	TESEQ	CBL 6111D&008	35419&03	30MHz to 1GHz	Jan. 07, 2017	Feb. 08, 2017 ~ Feb. 17, 2017	Jan. 06, 2018	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Aug. 18, 2017	Radiation (03CH07-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20Hz ~ 8.4GHz	Oct. 26, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Oct. 25, 2017	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Feb. 08, 2017 ~ Feb. 17, 2017	Sep. 01, 2017	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-1	1590075	1GHz ~ 18GHz	Apr. 15, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Apr. 14, 2017	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 18, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Mar. 17, 2017	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Feb. 27, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Feb. 26, 2017	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Feb. 08, 2017 ~ Feb. 17, 2017	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Feb. 08, 2017 ~ Feb. 17, 2017	N/A	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-18004 000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Jun. 13, 2017	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917058 4	18GHz- 40GHz	Nov. 08, 2016	Feb. 08, 2017 ~ Feb. 17, 2017	Nov. 07, 2017	Radiation (03CH07-HY)
Signal Generator	Anritsu	MG3694C	163401	0.1Hz~40GHz	Jan. 04, 2017	Feb. 08, 2017 ~ Feb. 17, 2017	Jan. 03, 2018	Radiation (03CH07-HY)



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.7
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.5
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880	1909.8
GSM	32.38	32.37	32.36	29.27	29.34	29.26
GPRS class 8	32.37	32.36	32.33	29.32	29.35	29.29
GPRS class 10	29.15	29.19	29.19	26.00	26.01	25.90
GPRS class 11	27.03	27.11	27.03	24.05	24.00	23.89
GPRS class 12	25.69	25.72	25.71	22.75	22.63	22.61
EGPRS class 8	26.35	26.29	26.33	25.05	25.11	25.05
EGPRS class 10	26.18	26.17	26.17	24.90	24.96	24.87
EGPRS class 11	24.82	24.79	24.78	23.45	23.45	23.35
EGPRS class 12	23.41	23.39	23.31	22.00	22.03	21.95

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	1907.6
RMC 12.2K	22.62	22.86	22.58	22.70	22.73	22.89
HSDPA Subtest-1	21.72	21.85	21.69	21.42	21.73	21.74
HSDPA Subtest-2	21.62	21.94	21.72	21.40	21.54	21.69
HSDPA Subtest-3	21.13	21.35	21.10	20.90	20.96	21.12
HSDPA Subtest-4	21.14	21.33	21.12	20.92	20.97	21.12
HSUPA Subtest-1	21.42	21.68	21.38	21.60	21.69	21.80
HSUPA Subtest-2	19.44	19.64	19.38	19.69	19.72	19.83
HSUPA Subtest-3	20.48	20.63	20.44	20.41	20.44	20.61
HSUPA Subtest-4	19.45	19.66	19.32	19.40	19.44	19.61
HSUPA Subtest-5	21.65	21.87	21.61	21.43	21.45	21.71



Conducted Power (*Unit: dBm)			
Band	WCDMA Band IV		
Channel	1312	1413	1513
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	22.88	22.82	22.93
HSDPA Subtest-1	21.62	21.75	21.78
HSDPA Subtest-2	21.62	21.68	21.77
HSDPA Subtest-3	21.11	21.16	21.14
HSDPA Subtest-4	21.13	21.11	21.19
HSUPA Subtest-1	21.81	21.83	21.96
HSUPA Subtest-2	19.88	19.84	19.75
HSUPA Subtest-3	20.60	20.57	20.67
HSUPA Subtest-4	19.62	19.59	19.67
HSUPA Subtest-5	21.64	21.67	21.77

Conducted Power (*Unit: dBm)						
Band	CDMA 2000 BC0			CDMA 2000 BC1		
Channel	1013	384	777	25	600	1175
Frequency	824.7	836.52	848.31	1851.25	1880	1908.75
1xRTT RC1 SO55	23.82	23.96	23.95	23.55	23.79	23.72
1xRTT RC3 SO55	23.97	23.98	23.90	23.70	23.90	23.84
1xRTT RC3 SO32 (+ F-SCH)	23.96	23.98	24.01	23.78	24.00	23.96
1xRTT RC3 SO32 (+SCH)	23.97	24.01	23.91	23.68	23.88	23.82
1xEVDO RTAP 153.6Kbps	23.96	23.99	23.89	23.67	23.92	23.85
1xEVDO RETAP 4096Bits	23.75	23.77	23.71	23.51	23.68	23.67

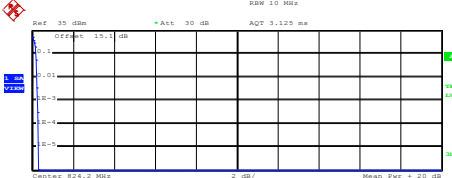
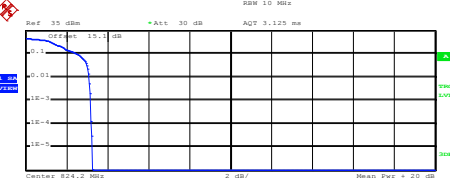
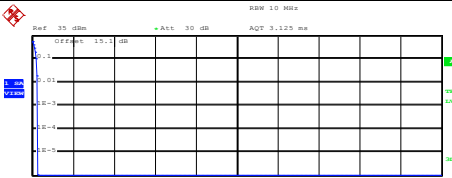
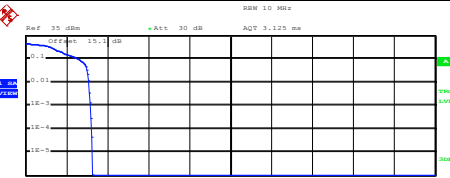
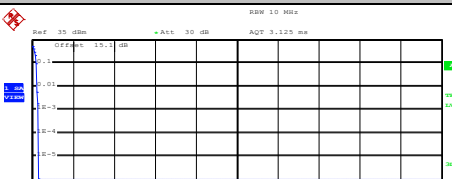
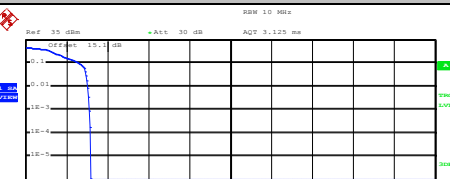


A2. GSM

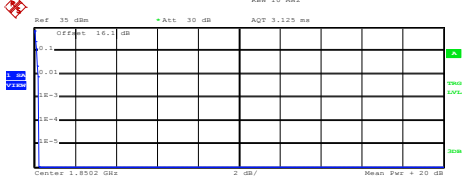
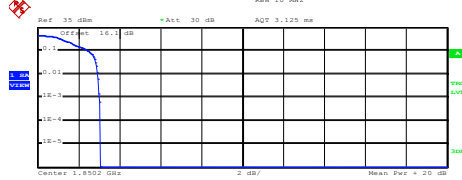
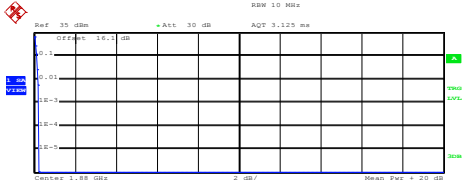
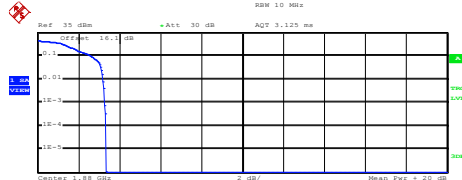
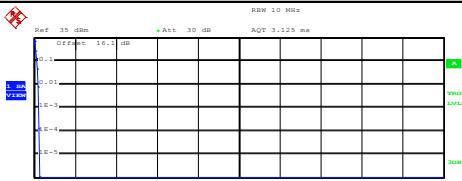
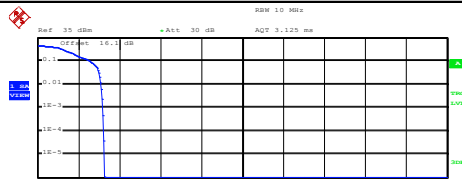
Peak-to-Average Ratio

Mode	GSM850		Limit: 13dB
Mod.	GSM	EDGE class 8	Result
Lowest CH	0.28	3.20	PASS
Middle CH	0.28	3.16	
Highest CH	0.28	3.12	

Mode	GSM1900		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.24	3.04	PASS
Middle CH	0.24	3.28	
Highest CH	0.24	3.20	

GSM850 (GSM)	GSM850 (EDGE class 8)																
Lowest Channel	Lowest Channel																
 Ref: 35 dBm Att: 30 dB AQT: 3.125 ms Center 824.2 MHz 2 dB/100 MHz Mean Pwr = 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 31.09 dBm Peak 31.37 dBm Crest 0.28 dB <table border="1"> <tr><td>10 %</td><td>0.20 dB</td></tr> <tr><td>1 %</td><td>0.24 dB</td></tr> <tr><td>.1 %</td><td>0.28 dB</td></tr> <tr><td>.01 %</td><td>0.32 dB</td></tr> </table> Date: 15.FEB.2017 10:01:10	10 %	0.20 dB	1 %	0.24 dB	.1 %	0.28 dB	.01 %	0.32 dB	 Ref: 35 dBm Att: 30 dB AQT: 3.125 ms Center 824.2 MHz 2 dB/100 MHz Mean Pwr = 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 25.57 dBm Peak 28.83 dBm Crest 3.27 dB <table border="1"> <tr><td>10 %</td><td>2.52 dB</td></tr> <tr><td>1 %</td><td>3.08 dB</td></tr> <tr><td>.1 %</td><td>3.20 dB</td></tr> <tr><td>.01 %</td><td>3.20 dB</td></tr> </table> Date: 15.FEB.2017 10:23:07	10 %	2.52 dB	1 %	3.08 dB	.1 %	3.20 dB	.01 %	3.20 dB
10 %	0.20 dB																
1 %	0.24 dB																
.1 %	0.28 dB																
.01 %	0.32 dB																
10 %	2.52 dB																
1 %	3.08 dB																
.1 %	3.20 dB																
.01 %	3.20 dB																
Middle Channel	Middle Channel																
 Ref: 35 dBm Att: 30 dB AQT: 3.125 ms Center 836.4 MHz 2 dB/100 MHz Mean Pwr = 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 30.98 dBm Peak 31.23 dBm Crest 0.25 dB <table border="1"> <tr><td>10 %</td><td>0.20 dB</td></tr> <tr><td>1 %</td><td>0.28 dB</td></tr> <tr><td>.1 %</td><td>0.28 dB</td></tr> <tr><td>.01 %</td><td>0.28 dB</td></tr> </table> Date: 15.FEB.2017 10:01:30	10 %	0.20 dB	1 %	0.28 dB	.1 %	0.28 dB	.01 %	0.28 dB	 Ref: 35 dBm Att: 30 dB AQT: 3.125 ms Center 836.4 MHz 2 dB/100 MHz Mean Pwr = 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 25.45 dBm Peak 28.69 dBm Crest 3.24 dB <table border="1"> <tr><td>10 %</td><td>2.60 dB</td></tr> <tr><td>1 %</td><td>3.08 dB</td></tr> <tr><td>.1 %</td><td>3.16 dB</td></tr> <tr><td>.01 %</td><td>3.24 dB</td></tr> </table> Date: 15.FEB.2017 10:23:33	10 %	2.60 dB	1 %	3.08 dB	.1 %	3.16 dB	.01 %	3.24 dB
10 %	0.20 dB																
1 %	0.28 dB																
.1 %	0.28 dB																
.01 %	0.28 dB																
10 %	2.60 dB																
1 %	3.08 dB																
.1 %	3.16 dB																
.01 %	3.24 dB																
Highest Channel	Highest Channel																
 Ref: 35 dBm Att: 30 dB AQT: 3.125 ms Center 848.8 MHz 2 dB/100 MHz Mean Pwr = 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 30.93 dBm Peak 31.23 dBm Crest 0.30 dB <table border="1"> <tr><td>10 %</td><td>0.20 dB</td></tr> <tr><td>1 %</td><td>0.24 dB</td></tr> <tr><td>.1 %</td><td>0.28 dB</td></tr> <tr><td>.01 %</td><td>0.32 dB</td></tr> </table> Date: 15.FEB.2017 10:01:56	10 %	0.20 dB	1 %	0.24 dB	.1 %	0.28 dB	.01 %	0.32 dB	 Ref: 35 dBm Att: 30 dB AQT: 3.125 ms Center 848.8 MHz 2 dB/100 MHz Mean Pwr = 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 25.53 dBm Peak 28.69 dBm Crest 3.16 dB <table border="1"> <tr><td>10 %</td><td>2.60 dB</td></tr> <tr><td>1 %</td><td>3.04 dB</td></tr> <tr><td>.1 %</td><td>3.12 dB</td></tr> <tr><td>.01 %</td><td>3.16 dB</td></tr> </table> Date: 15.FEB.2017 10:23:56	10 %	2.60 dB	1 %	3.04 dB	.1 %	3.12 dB	.01 %	3.16 dB
10 %	0.20 dB																
1 %	0.24 dB																
.1 %	0.28 dB																
.01 %	0.32 dB																
10 %	2.60 dB																
1 %	3.04 dB																
.1 %	3.12 dB																
.01 %	3.16 dB																

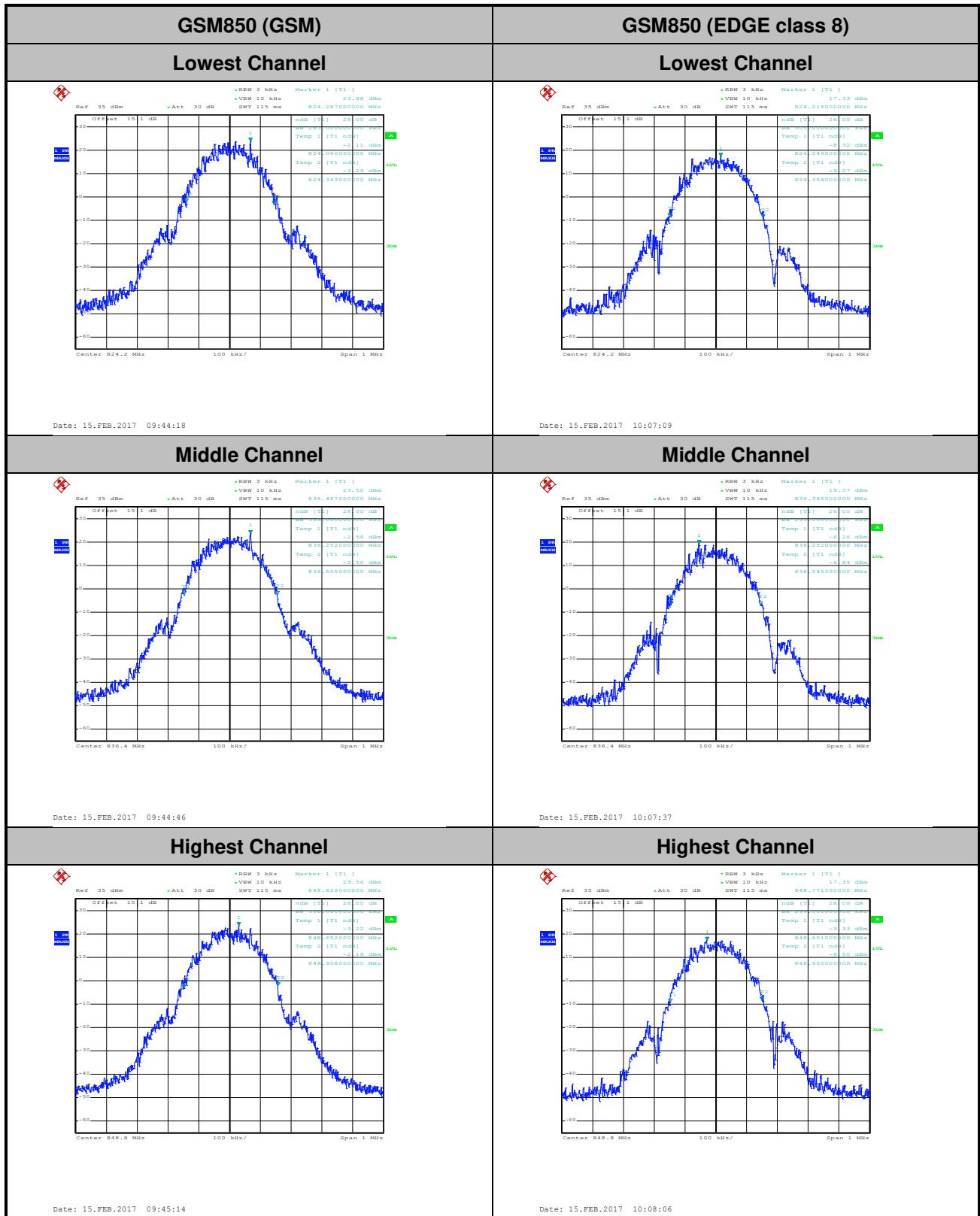


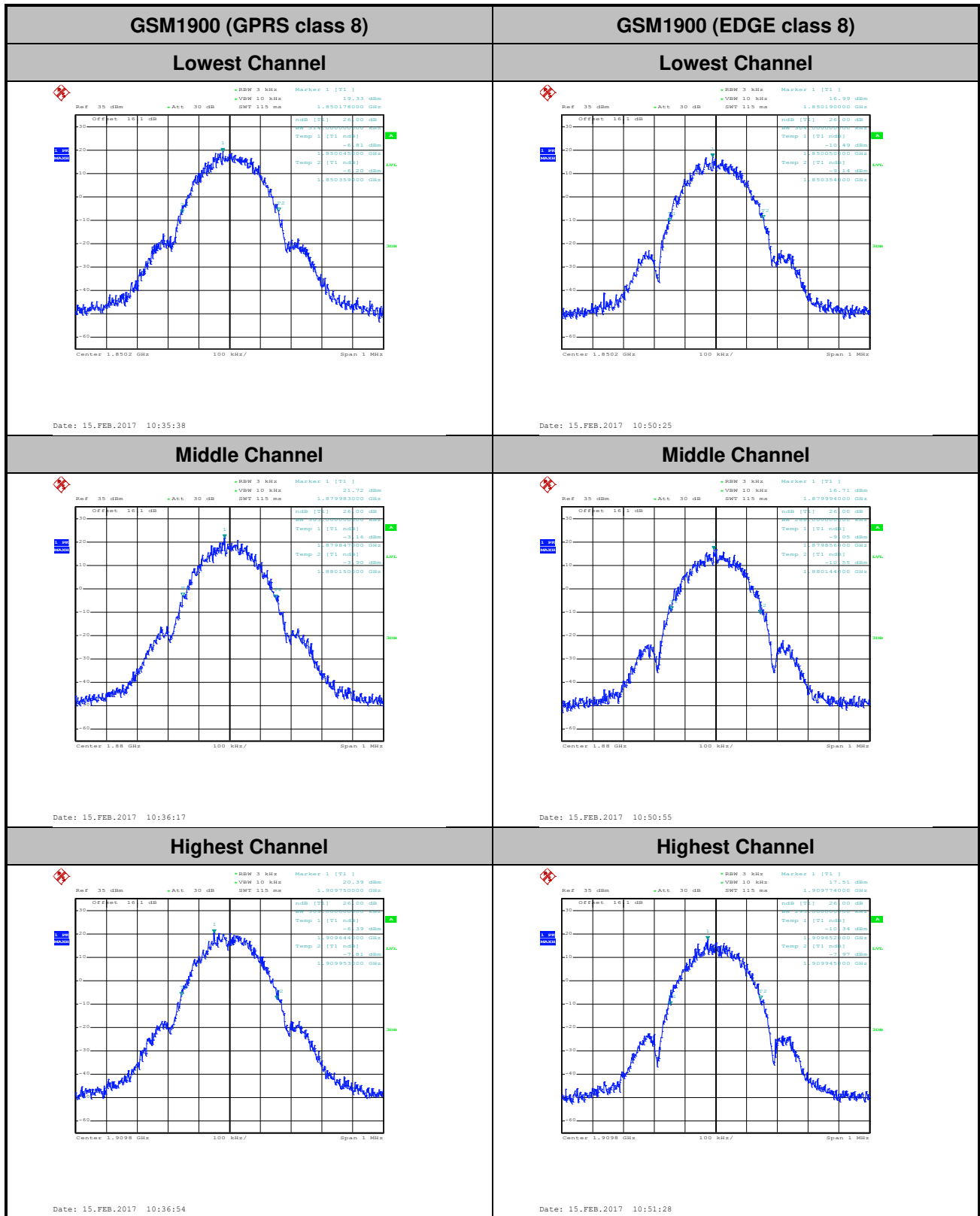
GSM1900 (GPRS class 8)		GSM1900 (EDGE class 8)	
Lowest Channel		Lowest Channel	
 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 27.83 dBm Peak 28.05 dBm Crest 0.22 dB 10 % 0.12 dB 1 % 0.20 dB .1 % 0.24 dB .01 % 0.24 dB Date: 15.FEB.2017 10:45:34		 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 24.00 dBm Peak 27.07 dBm Crest 3.06 dB 10 % 2.48 dB 1 % 2.92 dB .1 % 3.04 dB .01 % 3.08 dB Date: 15.FEB.2017 11:05:03	
Middle Channel		Middle Channel	
 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 27.96 dBm Peak 28.20 dBm Crest 0.24 dB 10 % 0.12 dB 1 % 0.20 dB .1 % 0.24 dB .01 % 0.24 dB Date: 15.FEB.2017 10:46:02		 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.80 dBm Peak 27.14 dBm Crest 3.34 dB 10 % 2.64 dB 1 % 3.20 dB .1 % 3.28 dB .01 % 3.36 dB Date: 15.FEB.2017 11:05:22	
Highest Channel		Highest Channel	
 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 27.92 dBm Peak 28.20 dBm Crest 0.28 dB 10 % 0.12 dB 1 % 0.20 dB .1 % 0.24 dB .01 % 0.24 dB Date: 15.FEB.2017 10:46:29		 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.86 dBm Peak 27.14 dBm Crest 3.27 dB 10 % 2.56 dB 1 % 3.08 dB .1 % 3.20 dB .01 % 3.24 dB Date: 15.FEB.2017 11:05:46	

**26dB Bandwidth**

Mode	GSM850	GSM850
Mod.	GSM	EDGE class 8
Lowest CH	0.283	0.305
Middle CH	0.303	0.293
Highest CH	0.306	0.299

Mode	GSM1900	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.314	0.304
Middle CH	0.303	0.288
Highest CH	0.309	0.293

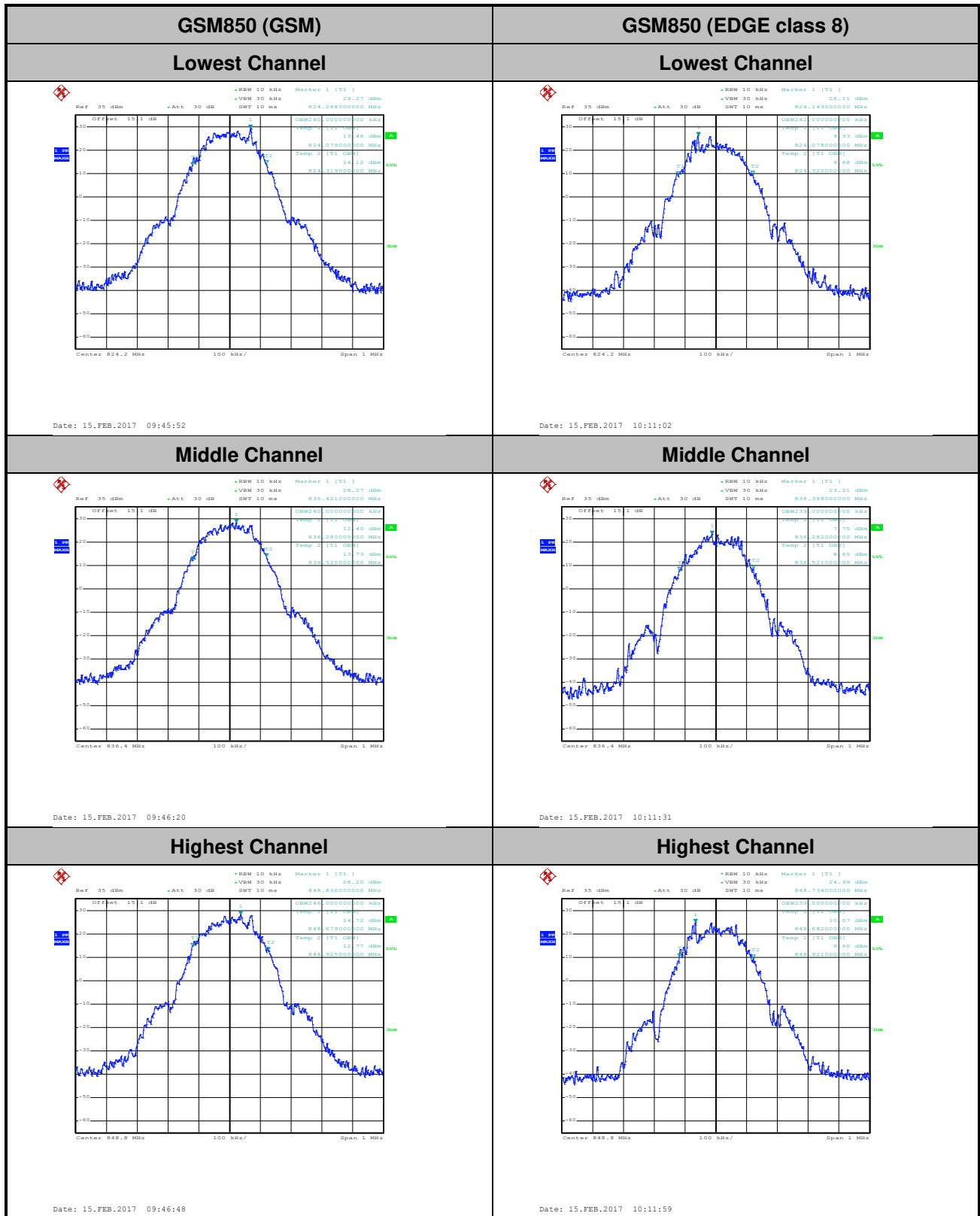


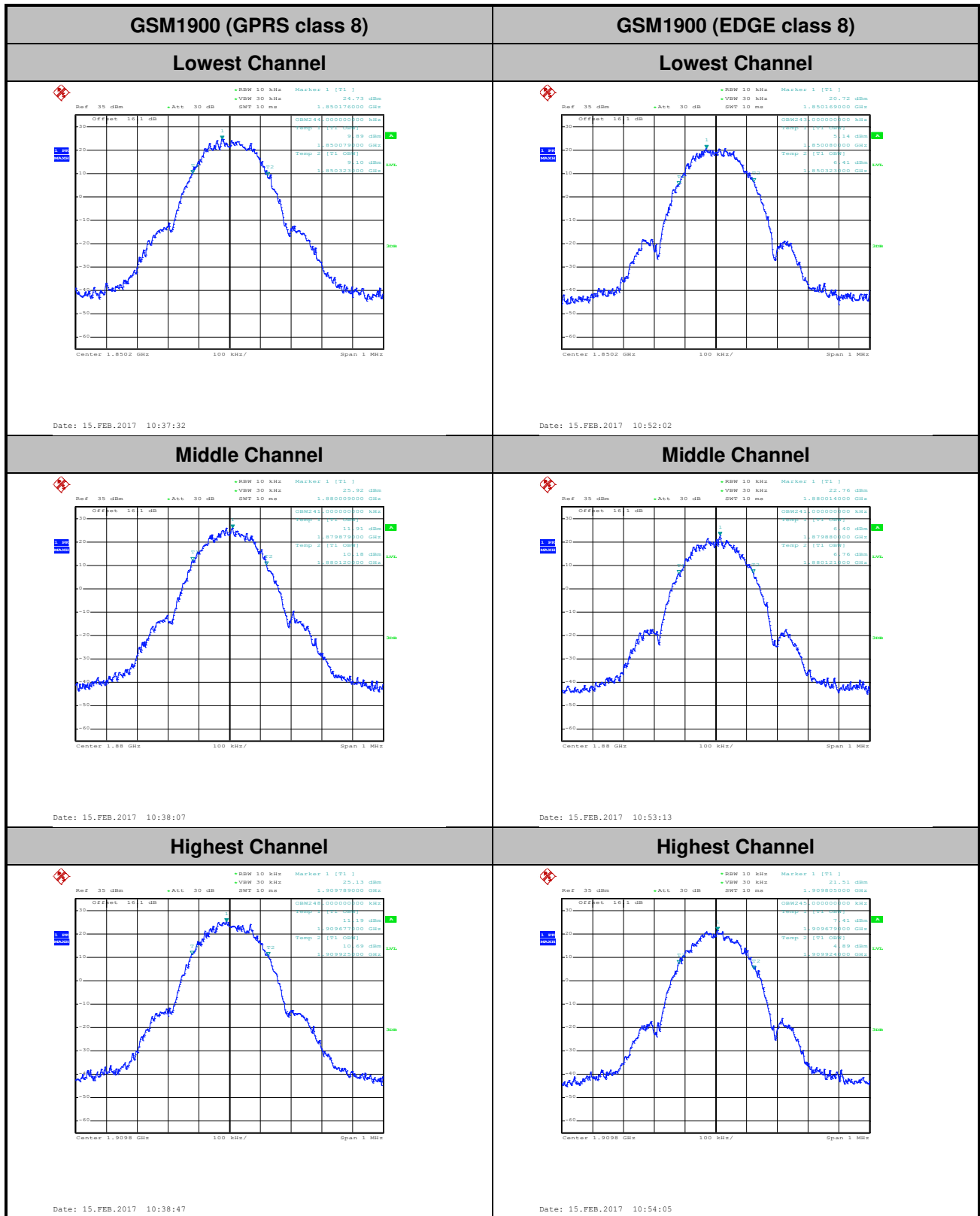


**Occupied Bandwidth**

Mode	GSM850	GSM850
Mod.	GSM	EDGE class 8
Lowest CH	0.240	0.242
Middle CH	0.240	0.239
Highest CH	0.246	0.239

Mode	GSM1900	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.244	0.243
Middle CH	0.241	0.241
Highest CH	0.248	0.245



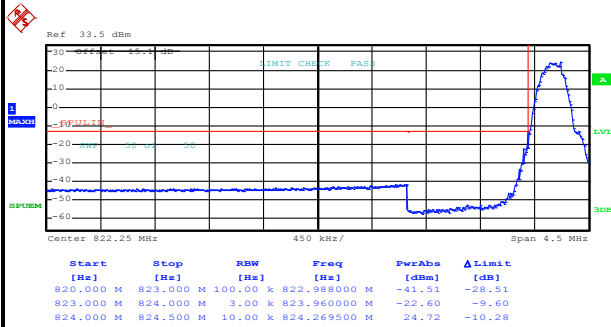




Conducted Band Edge

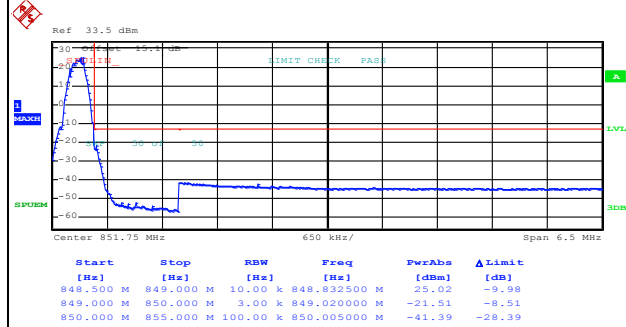
GSM850 (GSM)

Lowest Band Edge



Date: 15.FEB.2017 09:51:47

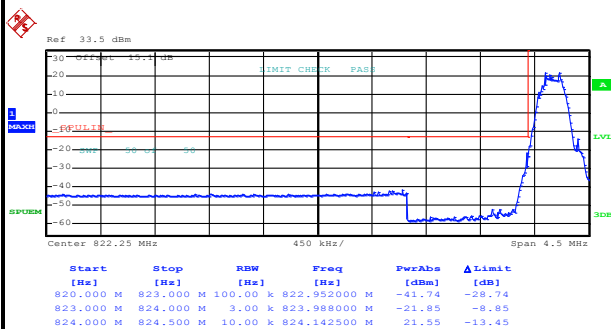
Highest Band Edge



Date: 15.FEB.2017 09:53:14

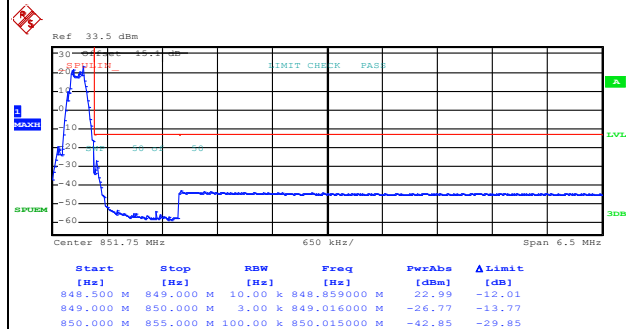
GSM850 (EDGE class 8)

Lowest Band Edge



Date: 15.FEB.2017 10:13:33

Highest Band Edge

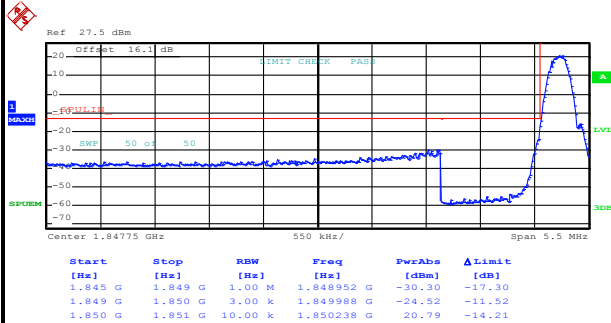


Date: 15.FEB.2017 10:15:01



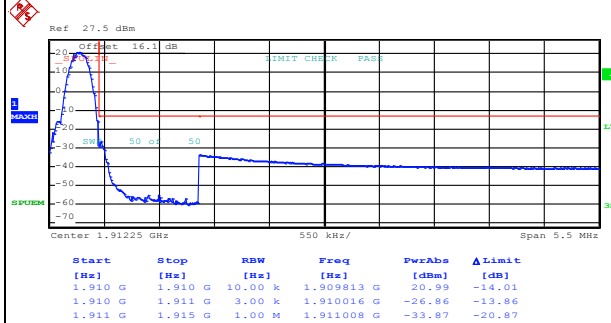
GSM1900 (GPRS class 8)

Lowest Band Edge



Date: 15.FEB.2017 10:40:33

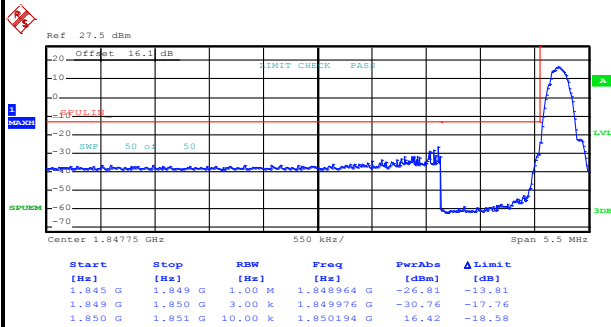
Highest Band Edge



Date: 15.FEB.2017 10:42:05

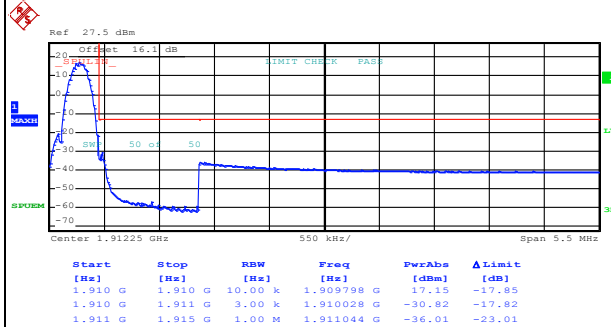
GSM1900 (EDGE class 8)

Lowest Band Edge



Date: 15.FEB.2017 10:55:40

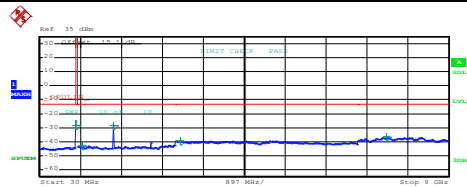
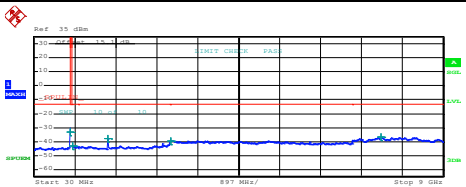
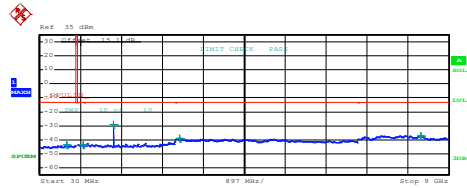
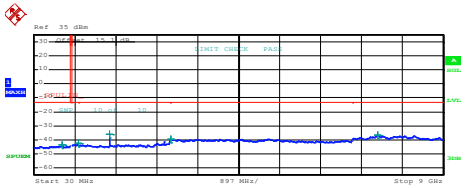
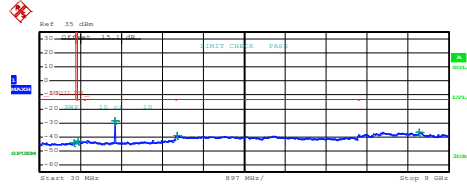
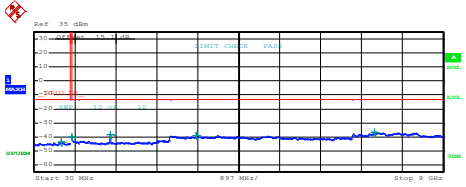
Highest Band Edge

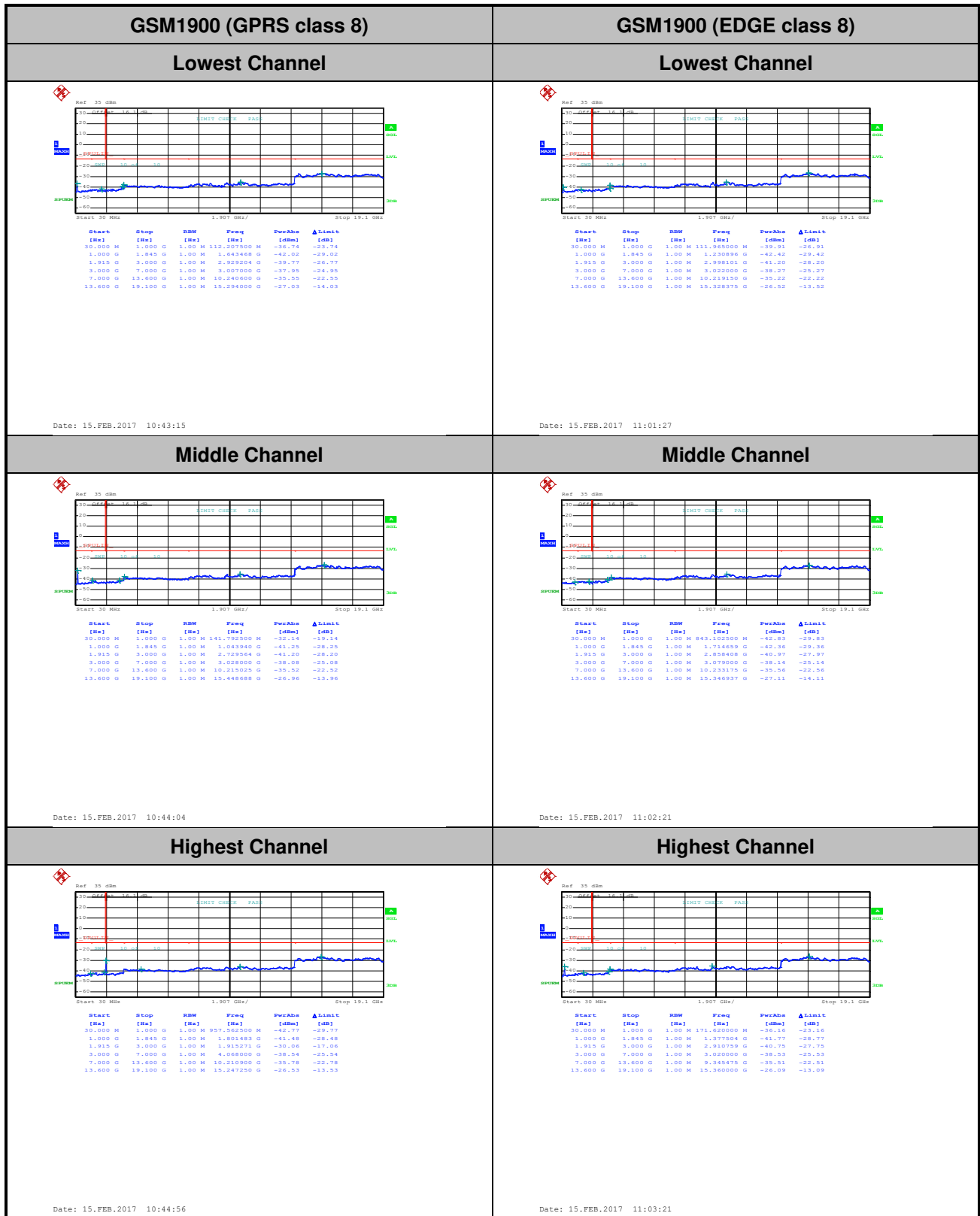


Date: 15.FEB.2017 11:00:36



Conducted Spurious Emission

GSM850 (GSM)		GSM850 (EDGE class 8)																																																																																					
Lowest Channel		Lowest Channel																																																																																					
 <table><tr><th>Start</th><th>Stop</th><th>RBW</th><th>Freq</th><th>PerAbn</th><th>ΔLimit</th></tr><tr><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[dBm]</th><th>[dB]</th></tr><tr><td>30.000 M</td><td>820.000 M</td><td>1.00 M</td><td>819.802500 M</td><td>-28.38</td><td>-15.38</td></tr><tr><td>850.000 M</td><td>1.000 G</td><td>1.00 M</td><td>955.195007 M</td><td>-43.03</td><td>-30.03</td></tr><tr><td>1.000 G</td><td>3.000 G</td><td>1.00 M</td><td>1.648500 G</td><td>-28.47</td><td>-25.47</td></tr><tr><td>3.000 G</td><td>7.000 G</td><td>1.00 M</td><td>3.114000 G</td><td>-39.52</td><td>-26.52</td></tr><tr><td>7.000 G</td><td>9.000 G</td><td>1.00 M</td><td>7.639000 G</td><td>-36.59</td><td>-23.59</td></tr></table> Date: 15.FEB.2017 09:54:14		Start	Stop	RBW	Freq	PerAbn	ΔLimit	[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]	30.000 M	820.000 M	1.00 M	819.802500 M	-28.38	-15.38	850.000 M	1.000 G	1.00 M	955.195007 M	-43.03	-30.03	1.000 G	3.000 G	1.00 M	1.648500 G	-28.47	-25.47	3.000 G	7.000 G	1.00 M	3.114000 G	-39.52	-26.52	7.000 G	9.000 G	1.00 M	7.639000 G	-36.59	-23.59	 <table><tr><th>Start</th><th>Stop</th><th>RBW</th><th>Freq</th><th>PerAbn</th><th>ΔLimit</th></tr><tr><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[dBm]</th><th>[dB]</th></tr><tr><td>30.000 M</td><td>820.000 M</td><td>1.00 M</td><td>819.802500 M</td><td>-28.21</td><td>-15.21</td></tr><tr><td>850.000 M</td><td>1.000 G</td><td>1.00 M</td><td>957.796251 M</td><td>-42.97</td><td>-29.97</td></tr><tr><td>1.000 G</td><td>3.000 G</td><td>1.00 M</td><td>1.648500 G</td><td>-27.69</td><td>-24.69</td></tr><tr><td>3.000 G</td><td>7.000 G</td><td>1.00 M</td><td>3.027000 G</td><td>-39.40</td><td>-26.40</td></tr><tr><td>7.000 G</td><td>9.000 G</td><td>1.00 M</td><td>7.642000 G</td><td>-36.65</td><td>-23.65</td></tr></table> Date: 15.FEB.2017 10:20:16		Start	Stop	RBW	Freq	PerAbn	ΔLimit	[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]	30.000 M	820.000 M	1.00 M	819.802500 M	-28.21	-15.21	850.000 M	1.000 G	1.00 M	957.796251 M	-42.97	-29.97	1.000 G	3.000 G	1.00 M	1.648500 G	-27.69	-24.69	3.000 G	7.000 G	1.00 M	3.027000 G	-39.40	-26.40	7.000 G	9.000 G	1.00 M	7.642000 G	-36.65	-23.65
Start	Stop	RBW	Freq	PerAbn	ΔLimit																																																																																		
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Start	Stop	RBW	Freq	PerAbn	ΔLimit																																																																																		
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Start	Stop	RBW	Freq	PerAbn	ΔLimit																																																																																		
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Frequency Stability

Test Conditions	Middle Channel	GSM850 (GSM)	GSM850 (EDGE class 8)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0012	0.0060	PASS
40	Normal Voltage	0.0036	0.0072	
30	Normal Voltage	0.0371	0.0024	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0430	0.0084	
0	Normal Voltage	0.0371	0.0036	
-10	Normal Voltage	0.0454	0.0096	
-20	Normal Voltage	0.0407	0.0024	
-30	Normal Voltage	0.0371	0.0024	
20	Maximum Voltage	0.0048	0.0072	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0371	0.0108	

Test Conditions	Middle Channel	GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0005	0.0011	PASS
40	Normal Voltage	0.0016	0.0016	
30	Normal Voltage	0.0021	0.0005	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0016	0.0048	
0	Normal Voltage	0.0032	0.0027	
-10	Normal Voltage	0.0053	0.0032	
-20	Normal Voltage	0.0064	0.0011	
-30	Normal Voltage	0.0037	0.0005	
20	Maximum Voltage	0.0032	0.0011	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0016	0.0048	

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.4 V. ; Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block.

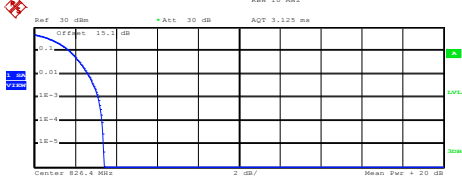
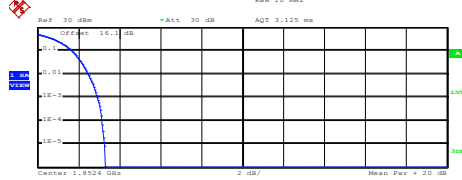
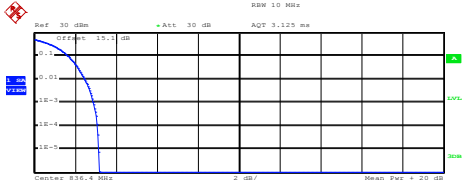
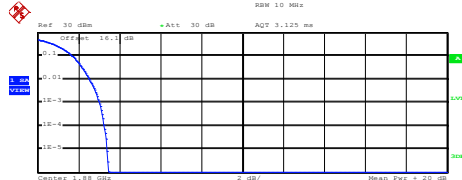
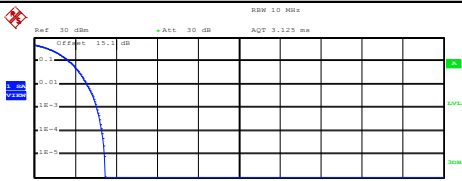
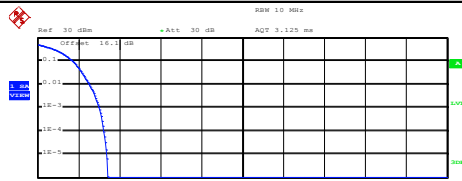


A3. WCDMA

Peak-to-Average Ratio

Mode	WCDMA Band V	WCDMA Band II	WCDMA Band IV	Limit: 13dB
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps	Result
Lowest CH	3.12	2.92	2.88	PASS
Middle CH	2.88	3.04	2.84	
Highest CH	3.08	3.00	2.92	

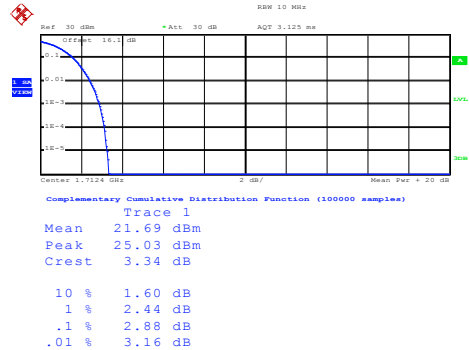


WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)																
Lowest Channel	Lowest Channel																
 Ref: 30 dBm Att: 30 dB AQT: 3.125 ms Center: 826.4 MHz 2 dB/ Mean: Per + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.05 dBm Peak: 25.45 dBm Crest: 3.40 dB <table><tr><td>10 %</td><td>1.72 dB</td></tr><tr><td>1 %</td><td>2.64 dB</td></tr><tr><td>.1 %</td><td>3.12 dB</td></tr><tr><td>.01 %</td><td>3.32 dB</td></tr></table> Date: 15.FEB.2017 12:00:41	10 %	1.72 dB	1 %	2.64 dB	.1 %	3.12 dB	.01 %	3.32 dB	 Ref: 30 dBm Att: 30 dB AQT: 3.125 ms Center: 1.8524 GHz 2 dB/ Mean: Per + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 21.45 dBm Peak: 24.75 dBm Crest: 3.30 dB <table><tr><td>10 %</td><td>1.68 dB</td></tr><tr><td>1 %</td><td>2.48 dB</td></tr><tr><td>.1 %</td><td>2.92 dB</td></tr><tr><td>.01 %</td><td>3.16 dB</td></tr></table> Date: 15.FEB.2017 11:25:15	10 %	1.68 dB	1 %	2.48 dB	.1 %	2.92 dB	.01 %	3.16 dB
10 %	1.72 dB																
1 %	2.64 dB																
.1 %	3.12 dB																
.01 %	3.32 dB																
10 %	1.68 dB																
1 %	2.48 dB																
.1 %	2.92 dB																
.01 %	3.16 dB																
Middle Channel	Middle Channel																
 Ref: 30 dBm Att: 30 dB AQT: 3.125 ms Center: 830.4 MHz 2 dB/ Mean: Per + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.22 dBm Peak: 25.38 dBm Crest: 3.16 dB <table><tr><td>10 %</td><td>1.68 dB</td></tr><tr><td>1 %</td><td>2.48 dB</td></tr><tr><td>.1 %</td><td>2.88 dB</td></tr><tr><td>.01 %</td><td>3.08 dB</td></tr></table> Date: 15.FEB.2017 12:01:01	10 %	1.68 dB	1 %	2.48 dB	.1 %	2.88 dB	.01 %	3.08 dB	 Ref: 30 dBm Att: 30 dB AQT: 3.125 ms Center: 1.85 GHz 2 dB/ Mean: Per + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 21.43 dBm Peak: 24.89 dBm Crest: 3.45 dB <table><tr><td>10 %</td><td>1.72 dB</td></tr><tr><td>1 %</td><td>2.52 dB</td></tr><tr><td>.1 %</td><td>3.04 dB</td></tr><tr><td>.01 %</td><td>3.24 dB</td></tr></table> Date: 15.FEB.2017 11:25:35	10 %	1.72 dB	1 %	2.52 dB	.1 %	3.04 dB	.01 %	3.24 dB
10 %	1.68 dB																
1 %	2.48 dB																
.1 %	2.88 dB																
.01 %	3.08 dB																
10 %	1.72 dB																
1 %	2.52 dB																
.1 %	3.04 dB																
.01 %	3.24 dB																
Highest Channel	Highest Channel																
 Ref: 30 dBm Att: 30 dB AQT: 3.125 ms Center: 846.6 MHz 2 dB/ Mean: Per + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.21 dBm Peak: 25.67 dBm Crest: 3.45 dB <table><tr><td>10 %</td><td>1.72 dB</td></tr><tr><td>1 %</td><td>2.56 dB</td></tr><tr><td>.1 %</td><td>3.08 dB</td></tr><tr><td>.01 %</td><td>3.32 dB</td></tr></table> Date: 15.FEB.2017 12:01:18	10 %	1.72 dB	1 %	2.56 dB	.1 %	3.08 dB	.01 %	3.32 dB	 Ref: 30 dBm Att: 30 dB AQT: 3.125 ms Center: 1.9076 GHz 2 dB/ Mean: Per + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 21.66 dBm Peak: 25.10 dBm Crest: 3.44 dB <table><tr><td>10 %</td><td>1.72 dB</td></tr><tr><td>1 %</td><td>2.52 dB</td></tr><tr><td>.1 %</td><td>3.00 dB</td></tr><tr><td>.01 %</td><td>3.24 dB</td></tr></table> Date: 15.FEB.2017 11:25:50	10 %	1.72 dB	1 %	2.52 dB	.1 %	3.00 dB	.01 %	3.24 dB
10 %	1.72 dB																
1 %	2.56 dB																
.1 %	3.08 dB																
.01 %	3.32 dB																
10 %	1.72 dB																
1 %	2.52 dB																
.1 %	3.00 dB																
.01 %	3.24 dB																



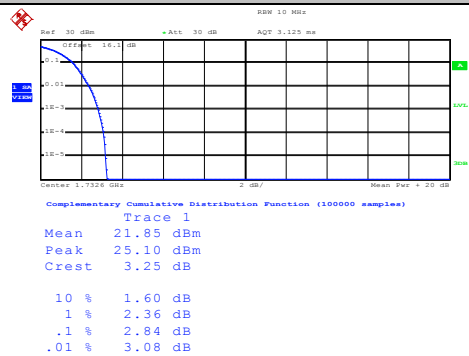
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



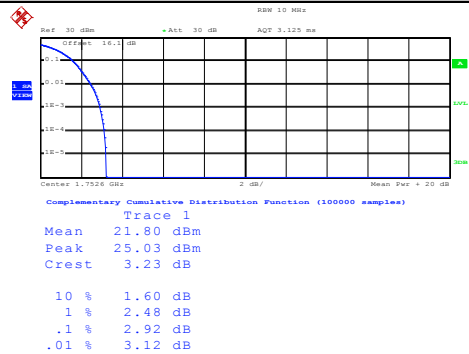
Date: 15.FEB.2017 11:40:24

Middle Channel



Date: 15.FEB.2017 11:40:53

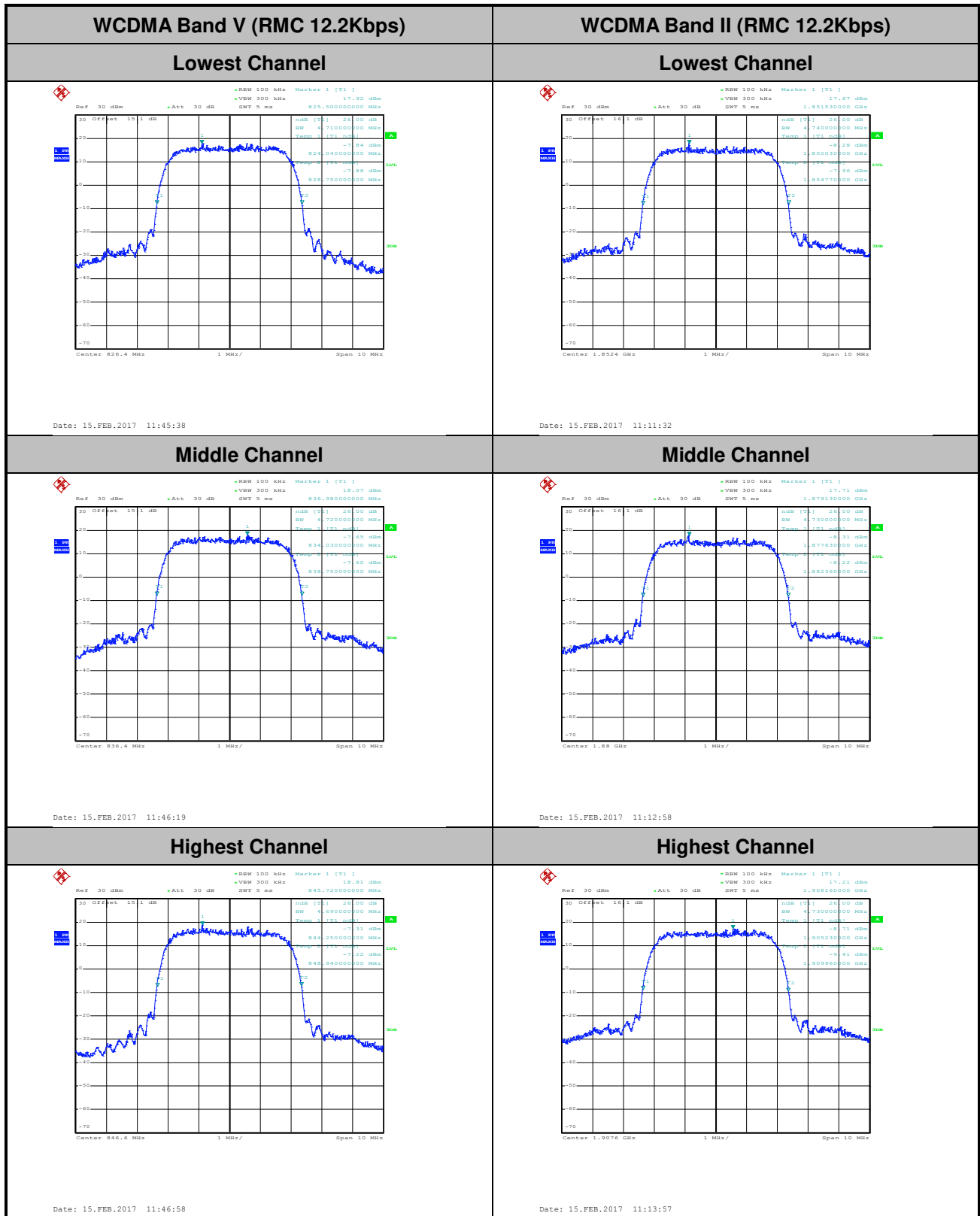
Highest Channel



Date: 15.FEB.2017 11:41:07

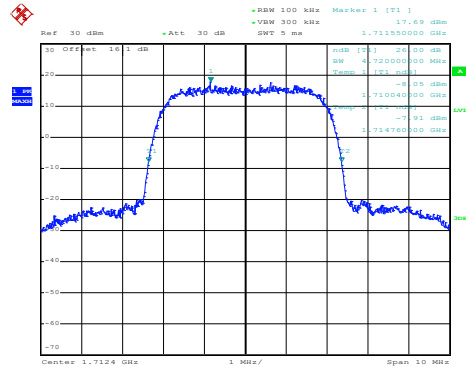
**26dB Bandwidth**

Mode	WCDMA Band V	WCDMA Band II	WCDMA Band IV
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.71	4.74	4.72
Middle CH	4.72	4.73	4.72
Highest CH	4.69	4.73	4.69



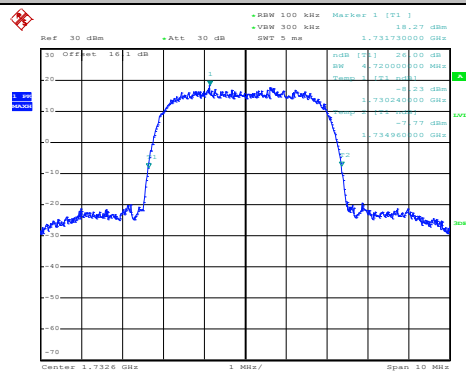
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



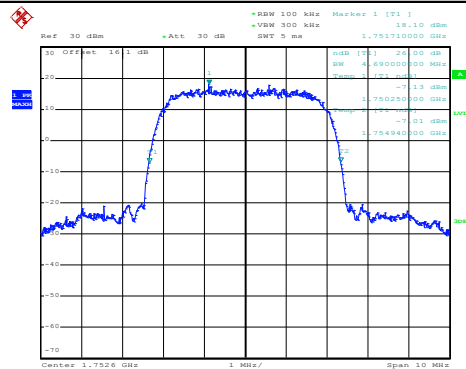
Date: 15.FEB.2017 11:27:37

Middle Channel



Date: 15.FEB.2017 11:28:58

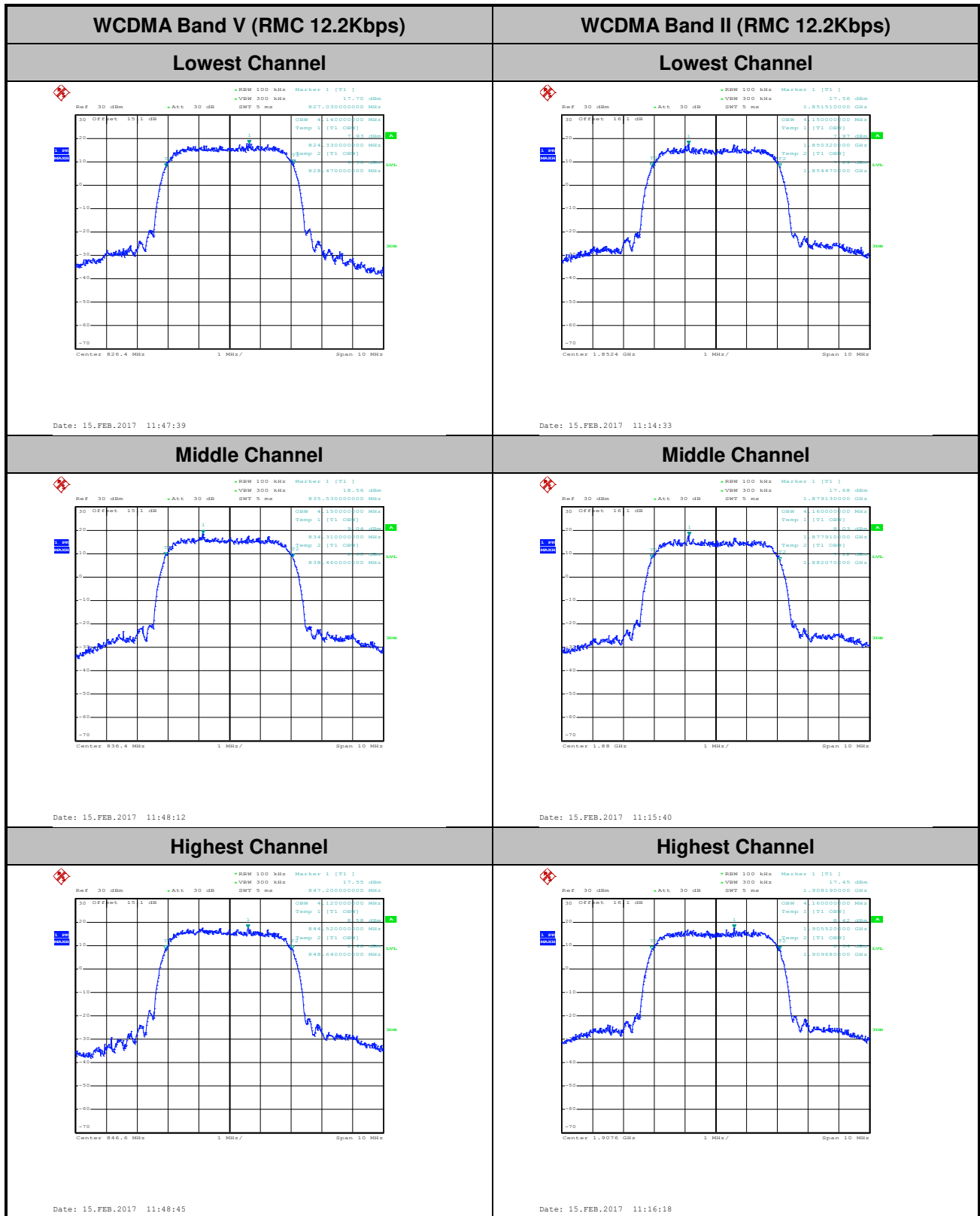
Highest Channel

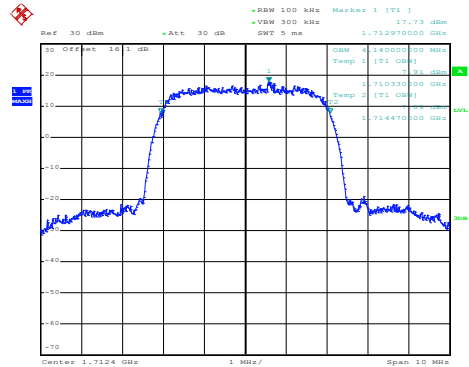


Date: 15.FEB.2017 11:29:33

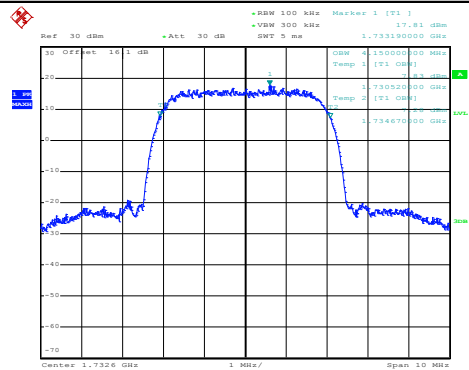
**Occupied Bandwidth**

Mode	WCDMA Band V	WCDMA Band II	WCDMA Band IV
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.14	4.15	4.14
Middle CH	4.15	4.16	4.15
Highest CH	4.12	4.16	4.14

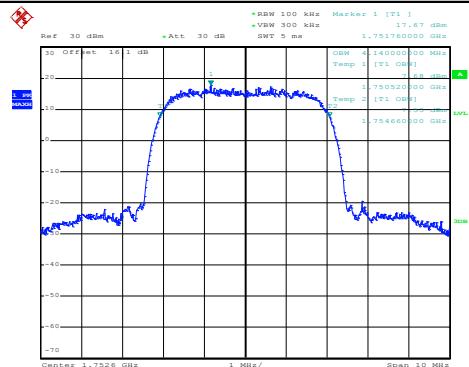


WCDMA Band IV (RMC 12.2Kbps)
Lowest Channel


Date: 15.FEB.2017 11:30:18

Middle Channel


Date: 15.FEB.2017 11:30:51

Highest Channel


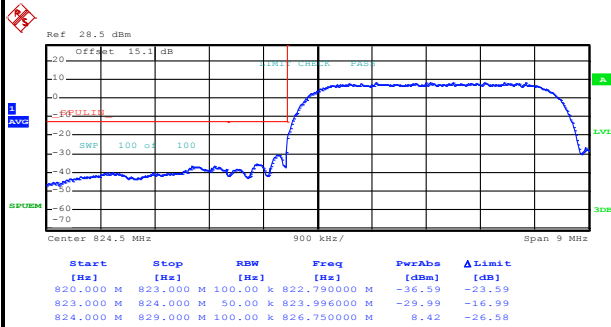
Date: 15.FEB.2017 11:31:24



Conducted Band Edge

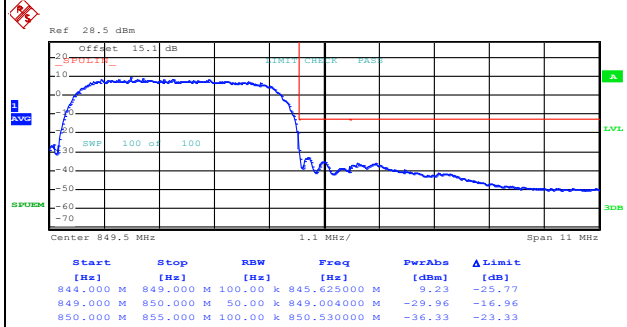
WCDMA Band V (RMC 12.2Kbps)

Lowest Band Edge



Date: 15.FEB.2017 11:51:48

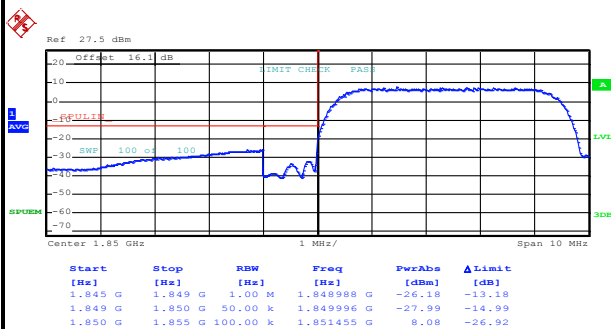
Highest Band Edge



Date: 15.FEB.2017 11:54:35

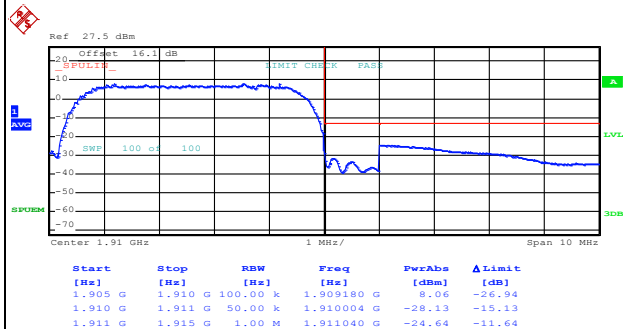
WCDMA Band II (RMC 12.2Kbps)

Lowest Band Edge



Date: 15.FEB.2017 11:19:08

Highest Band Edge

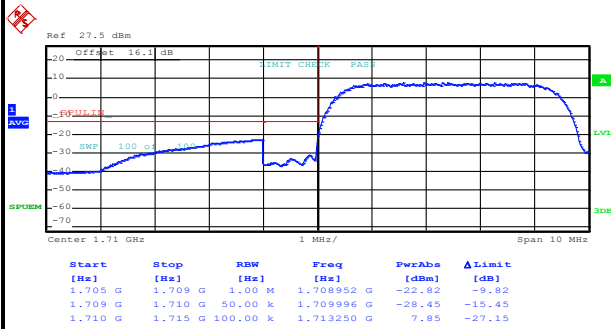


Date: 15.FEB.2017 11:21:58



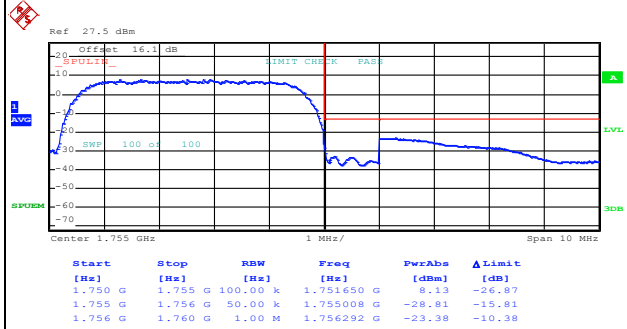
WCDMA Band IV (RMC 12.2Kbps)

Lowest Band Edge



Date: 15.FEB.2017 11:34:22

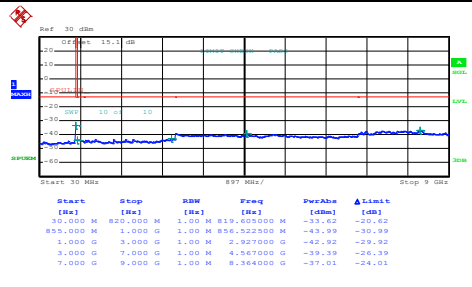
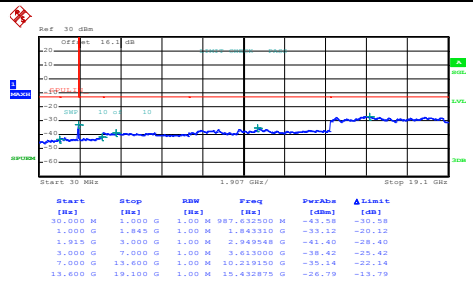
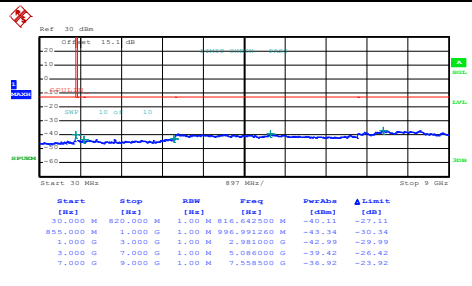
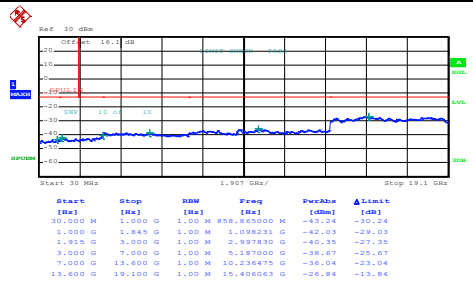
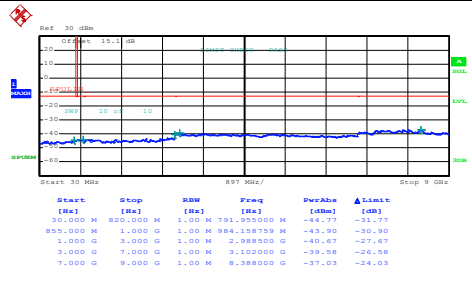
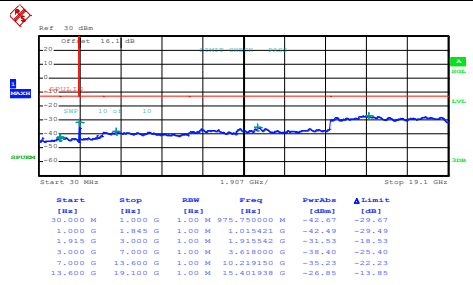
Highest Band Edge



Date: 15.FEB.2017 11:37:12

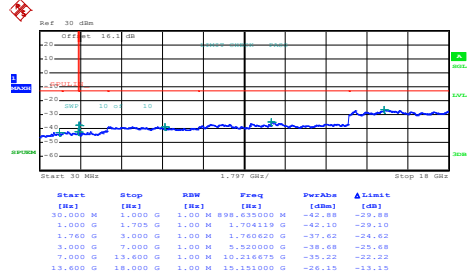


Conducted Spurious Emission

WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)																																																																																										
Lowest Channel	Lowest Channel																																																																																										
 <table><tr><th>Start</th><th>Stop</th><th>RBW</th><th>Freq</th><th>PerAbs</th><th>Δ Limit</th></tr><tr><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[dBm]</th><th>[dB]</th></tr><tr><td>30,000 M</td><td>820,000 M</td><td>1,00 M</td><td>816,000000 M</td><td>-33,62</td><td>-20,62</td></tr><tr><td>850,000 M</td><td>1,000 G</td><td>1,00 M</td><td>856,522000 M</td><td>-43,99</td><td>-30,99</td></tr><tr><td>1,000 G</td><td>3,000 G</td><td>1,00 M</td><td>2,9270000 G</td><td>-42,92</td><td>-29,92</td></tr><tr><td>3,000 G</td><td>7,000 G</td><td>1,00 M</td><td>4,5670000 G</td><td>-39,39</td><td>-26,39</td></tr><tr><td>7,000 G</td><td>9,000 G</td><td>1,00 M</td><td>8,3640000 G</td><td>-37,01</td><td>-24,01</td></tr></table> Date: 15.FEB.2017 11:58:23	Start	Stop	RBW	Freq	PerAbs	Δ Limit	[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]	30,000 M	820,000 M	1,00 M	816,000000 M	-33,62	-20,62	850,000 M	1,000 G	1,00 M	856,522000 M	-43,99	-30,99	1,000 G	3,000 G	1,00 M	2,9270000 G	-42,92	-29,92	3,000 G	7,000 G	1,00 M	4,5670000 G	-39,39	-26,39	7,000 G	9,000 G	1,00 M	8,3640000 G	-37,01	-24,01	 <table><tr><th>Start</th><th>Stop</th><th>RBW</th><th>Freq</th><th>PerAbs</th><th>Δ Limit</th></tr><tr><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[dBm]</th><th>[dB]</th></tr><tr><td>30,000 M</td><td>1,000 G</td><td>1,00 M</td><td>987,632000 M</td><td>-43,38</td><td>-30,38</td></tr><tr><td>1,000 G</td><td>1,845 G</td><td>1,00 M</td><td>1,843310 G</td><td>-33,12</td><td>-20,12</td></tr><tr><td>1,915 G</td><td>3,000 G</td><td>1,00 M</td><td>2,949000 G</td><td>-41,40</td><td>-28,40</td></tr><tr><td>3,000 G</td><td>7,000 G</td><td>1,00 M</td><td>3,613000 G</td><td>-38,42</td><td>-25,42</td></tr><tr><td>7,000 G</td><td>13,600 G</td><td>1,00 M</td><td>10,219100 G</td><td>-35,14</td><td>-22,14</td></tr><tr><td>13,600 G</td><td>19,100 G</td><td>1,00 M</td><td>15,432875 G</td><td>-26,79</td><td>-13,79</td></tr></table> Date: 15.FEB.2017 11:22:53	Start	Stop	RBW	Freq	PerAbs	Δ Limit	[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]	30,000 M	1,000 G	1,00 M	987,632000 M	-43,38	-30,38	1,000 G	1,845 G	1,00 M	1,843310 G	-33,12	-20,12	1,915 G	3,000 G	1,00 M	2,949000 G	-41,40	-28,40	3,000 G	7,000 G	1,00 M	3,613000 G	-38,42	-25,42	7,000 G	13,600 G	1,00 M	10,219100 G	-35,14	-22,14	13,600 G	19,100 G	1,00 M	15,432875 G	-26,79	-13,79
Start	Stop	RBW	Freq	PerAbs	Δ Limit																																																																																						
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]																																																																																						
30,000 M	820,000 M	1,00 M	816,000000 M	-33,62	-20,62																																																																																						
850,000 M	1,000 G	1,00 M	856,522000 M	-43,99	-30,99																																																																																						
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7,000 G	9,000 G	1,00 M	8,3640000 G	-37,01	-24,01																																																																																						
Start	Stop	RBW	Freq	PerAbs	Δ Limit																																																																																						
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]																																																																																						
30,000 M	1,000 G	1,00 M	987,632000 M	-43,38	-30,38																																																																																						
1,000 G	1,845 G	1,00 M	1,843310 G	-33,12	-20,12																																																																																						
1,915 G	3,000 G	1,00 M	2,949000 G	-41,40	-28,40																																																																																						
3,000 G	7,000 G	1,00 M	3,613000 G	-38,42	-25,42																																																																																						
7,000 G	13,600 G	1,00 M	10,219100 G	-35,14	-22,14																																																																																						
13,600 G	19,100 G	1,00 M	15,432875 G	-26,79	-13,79																																																																																						
Middle Channel	Middle Channel																																																																																										
 <table><tr><th>Start</th><th>Stop</th><th>RBW</th><th>Freq</th><th>PerAbs</th><th>Δ Limit</th></tr><tr><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[dBm]</th><th>[dB]</th></tr><tr><td>30,000 M</td><td>820,000 M</td><td>1,00 M</td><td>816,642000 M</td><td>-40,11</td><td>-27,11</td></tr><tr><td>850,000 M</td><td>1,000 G</td><td>1,00 M</td><td>996,993200 M</td><td>-43,34</td><td>-30,34</td></tr><tr><td>1,000 G</td><td>3,000 G</td><td>1,00 M</td><td>2,9810000 G</td><td>-42,99</td><td>-29,99</td></tr><tr><td>3,000 G</td><td>7,000 G</td><td>1,00 M</td><td>5,0860000 G</td><td>-39,42</td><td>-26,42</td></tr><tr><td>7,000 G</td><td>9,000 G</td><td>1,00 M</td><td>7,3890000 G</td><td>-38,92</td><td>-25,92</td></tr></table> Date: 15.FEB.2017 11:59:13	Start	Stop	RBW	Freq	PerAbs	Δ Limit	[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]	30,000 M	820,000 M	1,00 M	816,642000 M	-40,11	-27,11	850,000 M	1,000 G	1,00 M	996,993200 M	-43,34	-30,34	1,000 G	3,000 G	1,00 M	2,9810000 G	-42,99	-29,99	3,000 G	7,000 G	1,00 M	5,0860000 G	-39,42	-26,42	7,000 G	9,000 G	1,00 M	7,3890000 G	-38,92	-25,92	 <table><tr><th>Start</th><th>Stop</th><th>RBW</th><th>Freq</th><th>PerAbs</th><th>Δ Limit</th></tr><tr><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[Hz]</th><th>[dBm]</th><th>[dB]</th></tr><tr><td>30,000 M</td><td>1,000 G</td><td>1,00 M</td><td>898,865000 M</td><td>-43,24</td><td>-30,24</td></tr><tr><td>1,000 G</td><td>1,845 G</td><td>1,00 M</td><td>1,088231 G</td><td>-42,03</td><td>-29,03</td></tr><tr><td>1,915 G</td><td>3,000 G</td><td>1,00 M</td><td>2,997830 G</td><td>-40,35</td><td>-27,35</td></tr><tr><td>3,000 G</td><td>7,000 G</td><td>1,00 M</td><td>5,187000 G</td><td>-38,67</td><td>-25,67</td></tr><tr><td>7,000 G</td><td>13,600 G</td><td>1,00 M</td><td>10,236475 G</td><td>-36,04</td><td>-23,04</td></tr><tr><td>13,600 G</td><td>19,100 G</td><td>1,00 M</td><td>15,406063 G</td><td>-26,84</td><td>-13,84</td></tr></table> Date: 15.FEB.2017 11:23:44	Start	Stop	RBW	Freq	PerAbs	Δ Limit	[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]	30,000 M	1,000 G	1,00 M	898,865000 M	-43,24	-30,24	1,000 G	1,845 G	1,00 M	1,088231 G	-42,03	-29,03	1,915 G	3,000 G	1,00 M	2,997830 G	-40,35	-27,35	3,000 G	7,000 G	1,00 M	5,187000 G	-38,67	-25,67	7,000 G	13,600 G	1,00 M	10,236475 G	-36,04	-23,04	13,600 G	19,100 G	1,00 M	15,406063 G	-26,84	-13,84
Start	Stop	RBW	Freq	PerAbs	Δ Limit																																																																																						
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]																																																																																						
30,000 M	820,000 M	1,00 M	816,642000 M	-40,11	-27,11																																																																																						
850,000 M	1,000 G	1,00 M	996,993200 M	-43,34	-30,34																																																																																						
1,000 G	3,000 G	1,00 M	2,9810000 G	-42,99	-29,99																																																																																						
3,000 G	7,000 G	1,00 M	5,0860000 G	-39,42	-26,42																																																																																						
7,000 G	9,000 G	1,00 M	7,3890000 G	-38,92	-25,92																																																																																						
Start	Stop	RBW	Freq	PerAbs	Δ Limit																																																																																						
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]																																																																																						
30,000 M	1,000 G	1,00 M	898,865000 M	-43,24	-30,24																																																																																						
1,000 G	1,845 G	1,00 M	1,088231 G	-42,03	-29,03																																																																																						
1,915 G	3,000 G	1,00 M	2,997830 G	-40,35	-27,35																																																																																						
3,000 G	7,000 G	1,00 M	5,187000 G	-38,67	-25,67																																																																																						
7,000 G	13,600 G	1,00 M	10,236475 G	-36,04	-23,04																																																																																						
13,600 G	19,100 G	1,00 M	15,406063 G	-26,84	-13,84																																																																																						
Highest Channel	Highest Channel																																																																																										
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Start	Stop	RBW	Freq	PerAbs	Δ Limit																																																																																						
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]																																																																																						
30,000 M	820,000 M	1,00 M	791,953000 M	-44,77	-31,77																																																																																						
850,000 M	1,000 G	1,00 M	984,158759 M	-43,90	-30,90																																																																																						
1,000 G	3,000 G	1,00 M	2,9880000 G	-40,67	-27,67																																																																																						
3,000 G	7,000 G	1,00 M	5,1020000 G	-39,58	-26,58																																																																																						
7,000 G	9,000 G	1,00 M	8,3880000 G	-37,03	-24,03																																																																																						
Start	Stop	RBW	Freq	PerAbs	Δ Limit																																																																																						
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]																																																																																						
30,000 M	1,000 G	1,00 M	975,750000 M	-42,97	-29,97																																																																																						
1,000 G	1,845 G	1,00 M	1,015421 G	-42,49	-29,49																																																																																						
1,915 G	3,000 G	1,00 M	1,935042 G	-31,53	-18,53																																																																																						
3,000 G	7,000 G	1,00 M	3,618000 G	-38,40	-25,40																																																																																						
7,000 G	13,600 G	1,00 M	10,219100 G	-35,23	-22,23																																																																																						
13,600 G	19,100 G	1,00 M	15,401938 G	-26,85	-13,85																																																																																						

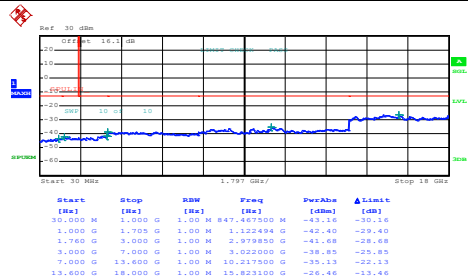
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



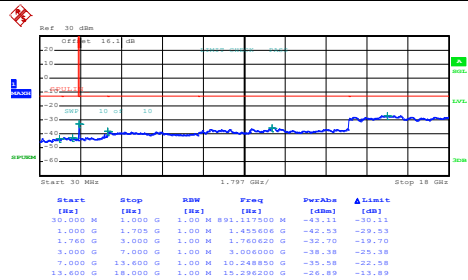
Date: 15.FEB.2017 11:38:05

Middle Channel



Date: 15.FEB.2017 11:38:52

Highest Channel



Date: 15.FEB.2017 11:40:00

**Frequency Stability**

Test Conditions	Middle Channel	WCDMA Band V (RMC 12.2Kbps)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0275	PASS
40	Normal Voltage	0.0287	
30	Normal Voltage	0.0263	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0036	
0	Normal Voltage	0.0287	
-10	Normal Voltage	0.0060	
-20	Normal Voltage	0.0096	
-30	Normal Voltage	0.0048	
20	Maximum Voltage	0.0263	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0323	

Test Conditions	Middle Channel	WCDMA Band II (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0027	PASS
40	Normal Voltage	0.0128	
30	Normal Voltage	0.0016	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0021	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0213	
-20	Normal Voltage	0.0197	
-30	Normal Voltage	0.0170	
20	Maximum Voltage	0.0021	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0197	

Test Conditions	Middle Channel	WCDMA Band IV (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0375	PASS
40	Normal Voltage	0.0364	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0364	
0	Normal Voltage	0.0029	
-10	Normal Voltage	0.0035	
-20	Normal Voltage	0.0046	
-30	Normal Voltage	0.0006	
20	Maximum Voltage	0.0058	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0012	

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.4 V. ; Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block.

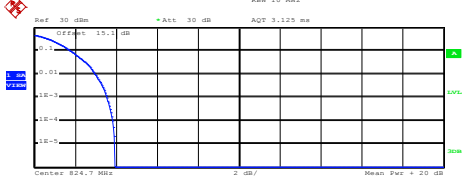
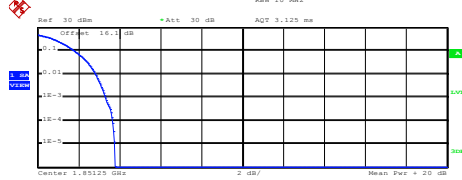
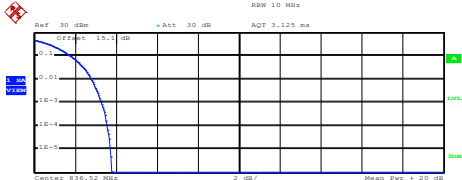
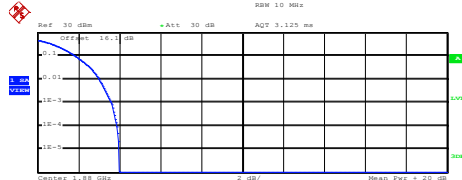
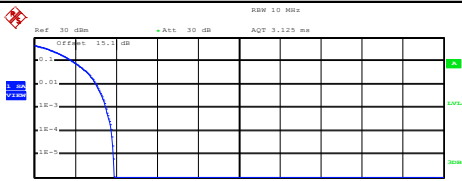
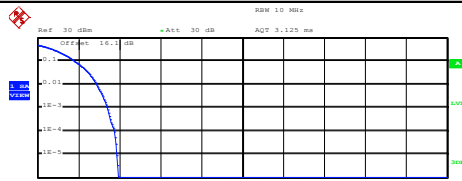
A4. CDMA

Peak-to-Average Ratio

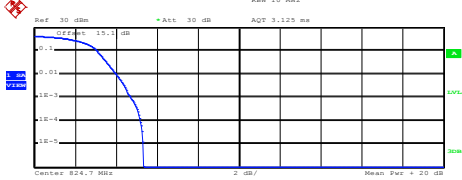
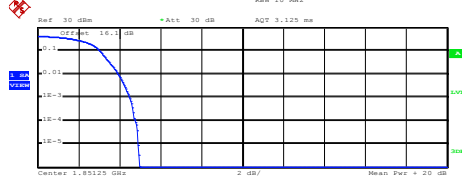
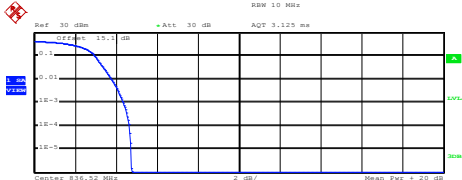
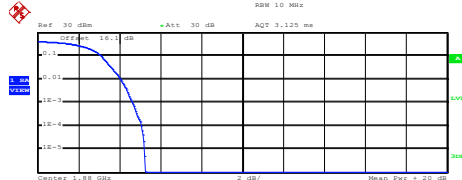
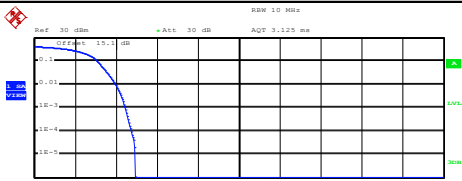
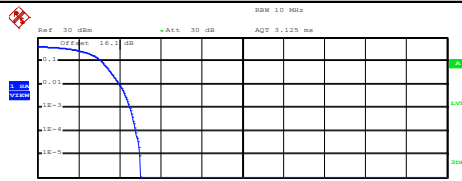
Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xRTT	1xRTT	Result
Lowest CH	3.56	3.32	PASS
Middle CH	3.28	3.60	
Highest CH	3.52	3.40	

Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xEV-DO Rev. 0	1xEV-DO Rev. 0	Result
Lowest CH	4.72	4.48	PASS
Middle CH	4.36	4.64	
Highest CH	4.44	4.52	



CDMA BC0 (1xRTT)	CDMA BC1 (1xRTT)																
Lowest Channel	Lowest Channel																
 Ref: 30 dBm RSW: 10 MHz AQT: 3.125 ms Center: 824.7 MHz 2 dB/ Mean: Pwr + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 23.28 dBm Peak: 27.22 dBm Crest: 3.94 dB <table><tr><td>10 %</td><td>1.80 dB</td></tr><tr><td>1 %</td><td>3.00 dB</td></tr><tr><td>.1 %</td><td>3.56 dB</td></tr><tr><td>.01 %</td><td>3.84 dB</td></tr></table> Date: 15.FEB.2017 15:47:56	10 %	1.80 dB	1 %	3.00 dB	.1 %	3.56 dB	.01 %	3.84 dB	 Ref: 30 dBm RSW: 10 MHz AQT: 3.125 ms Center: 1.85125 GHz 2 dB/ Mean: Pwr + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.38 dBm Peak: 26.16 dBm Crest: 3.77 dB <table><tr><td>10 %</td><td>1.80 dB</td></tr><tr><td>1 %</td><td>2.84 dB</td></tr><tr><td>.1 %</td><td>3.32 dB</td></tr><tr><td>.01 %</td><td>3.68 dB</td></tr></table> Date: 16.FEB.2017 09:50:37	10 %	1.80 dB	1 %	2.84 dB	.1 %	3.32 dB	.01 %	3.68 dB
10 %	1.80 dB																
1 %	3.00 dB																
.1 %	3.56 dB																
.01 %	3.84 dB																
10 %	1.80 dB																
1 %	2.84 dB																
.1 %	3.32 dB																
.01 %	3.68 dB																
Middle Channel	Middle Channel																
 Ref: 30 dBm RSW: 10 MHz AQT: 3.125 ms Center: 835.52 MHz 2 dB/ Mean: Pwr + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 23.15 dBm Peak: 26.94 dBm Crest: 3.79 dB <table><tr><td>10 %</td><td>1.80 dB</td></tr><tr><td>1 %</td><td>2.80 dB</td></tr><tr><td>.1 %</td><td>3.28 dB</td></tr><tr><td>.01 %</td><td>3.56 dB</td></tr></table> Date: 15.FEB.2017 15:48:20	10 %	1.80 dB	1 %	2.80 dB	.1 %	3.28 dB	.01 %	3.56 dB	 Ref: 30 dBm RSW: 10 MHz AQT: 3.125 ms Center: 1.85 GHz 2 dB/ Mean: Pwr + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.45 dBm Peak: 26.44 dBm Crest: 3.98 dB <table><tr><td>10 %</td><td>1.84 dB</td></tr><tr><td>1 %</td><td>3.00 dB</td></tr><tr><td>.1 %</td><td>3.60 dB</td></tr><tr><td>.01 %</td><td>3.88 dB</td></tr></table> Date: 16.FEB.2017 09:50:48	10 %	1.84 dB	1 %	3.00 dB	.1 %	3.60 dB	.01 %	3.88 dB
10 %	1.80 dB																
1 %	2.80 dB																
.1 %	3.28 dB																
.01 %	3.56 dB																
10 %	1.84 dB																
1 %	3.00 dB																
.1 %	3.60 dB																
.01 %	3.88 dB																
Highest Channel	Highest Channel																
 Ref: 30 dBm RSW: 10 MHz AQT: 3.125 ms Center: 848.31 MHz 2 dB/ Mean: Pwr + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 23.30 dBm Peak: 27.22 dBm Crest: 3.92 dB <table><tr><td>10 %</td><td>1.88 dB</td></tr><tr><td>1 %</td><td>3.04 dB</td></tr><tr><td>.1 %</td><td>3.52 dB</td></tr><tr><td>.01 %</td><td>3.76 dB</td></tr></table> Date: 15.FEB.2017 15:48:40	10 %	1.88 dB	1 %	3.04 dB	.1 %	3.52 dB	.01 %	3.76 dB	 Ref: 30 dBm RSW: 10 MHz AQT: 3.125 ms Center: 1.90875 GHz 2 dB/ Mean: Pwr + 20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.50 dBm Peak: 26.44 dBm Crest: 3.94 dB <table><tr><td>10 %</td><td>1.84 dB</td></tr><tr><td>1 %</td><td>2.88 dB</td></tr><tr><td>.1 %</td><td>3.40 dB</td></tr><tr><td>.01 %</td><td>3.76 dB</td></tr></table> Date: 16.FEB.2017 09:51:00	10 %	1.84 dB	1 %	2.88 dB	.1 %	3.40 dB	.01 %	3.76 dB
10 %	1.88 dB																
1 %	3.04 dB																
.1 %	3.52 dB																
.01 %	3.76 dB																
10 %	1.84 dB																
1 %	2.88 dB																
.1 %	3.40 dB																
.01 %	3.76 dB																



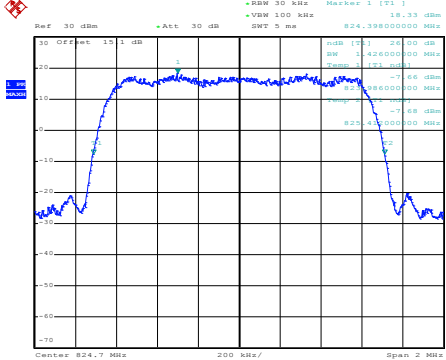
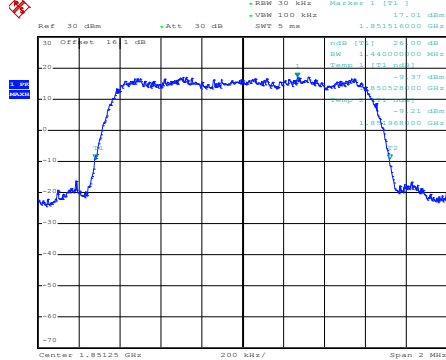
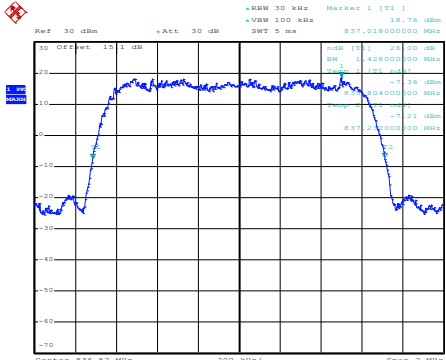
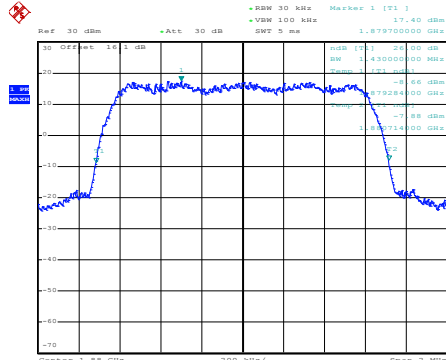
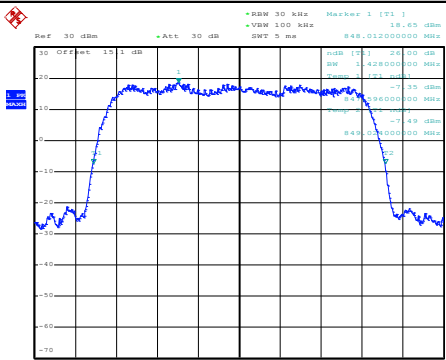
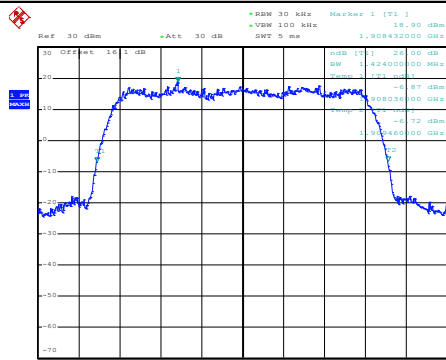
CDMA BC0 (1xEV-DO Rev. 0)	CDMA BC1 (1xEV-DO Rev. 0)																
Lowest Channel	Lowest Channel																
 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RSW: 10 MHz Center: 824.7 MHz, 2 dB/ Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.94 dBm Peak: 28.28 dBm Crest: 5.33 dB <table><tr><td>10 %</td><td>3.08 dB</td></tr><tr><td>1 %</td><td>4.00 dB</td></tr><tr><td>.1 %</td><td>4.72 dB</td></tr><tr><td>.01 %</td><td>5.20 dB</td></tr></table> Date: 15.FEB.2017 16:48:57	10 %	3.08 dB	1 %	4.00 dB	.1 %	4.72 dB	.01 %	5.20 dB	 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RSW: 10 MHz Center: 1.85125 GHz, 2 dB/ Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.24 dBm Peak: 27.22 dBm Crest: 4.98 dB <table><tr><td>10 %</td><td>3.04 dB</td></tr><tr><td>1 %</td><td>3.96 dB</td></tr><tr><td>.1 %</td><td>4.48 dB</td></tr><tr><td>.01 %</td><td>4.76 dB</td></tr></table> Date: 15.FEB.2017 17:56:10	10 %	3.04 dB	1 %	3.96 dB	.1 %	4.48 dB	.01 %	4.76 dB
10 %	3.08 dB																
1 %	4.00 dB																
.1 %	4.72 dB																
.01 %	5.20 dB																
10 %	3.04 dB																
1 %	3.96 dB																
.1 %	4.48 dB																
.01 %	4.76 dB																
Middle Channel	Middle Channel																
 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RSW: 10 MHz Center: 835.52 MHz, 2 dB/ Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.89 dBm Peak: 27.64 dBm Crest: 4.75 dB <table><tr><td>10 %</td><td>2.96 dB</td></tr><tr><td>1 %</td><td>3.80 dB</td></tr><tr><td>.1 %</td><td>4.36 dB</td></tr><tr><td>.01 %</td><td>4.64 dB</td></tr></table> Date: 15.FEB.2017 16:49:10	10 %	2.96 dB	1 %	3.80 dB	.1 %	4.36 dB	.01 %	4.64 dB	 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RSW: 10 MHz Center: 1.88 GHz, 2 dB/ Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.12 dBm Peak: 27.36 dBm Crest: 5.24 dB <table><tr><td>10 %</td><td>3.12 dB</td></tr><tr><td>1 %</td><td>4.04 dB</td></tr><tr><td>.1 %</td><td>4.64 dB</td></tr><tr><td>.01 %</td><td>5.08 dB</td></tr></table> Date: 15.FEB.2017 17:56:27	10 %	3.12 dB	1 %	4.04 dB	.1 %	4.64 dB	.01 %	5.08 dB
10 %	2.96 dB																
1 %	3.80 dB																
.1 %	4.36 dB																
.01 %	4.64 dB																
10 %	3.12 dB																
1 %	4.04 dB																
.1 %	4.64 dB																
.01 %	5.08 dB																
Highest Channel	Highest Channel																
 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RSW: 10 MHz Center: 848.31 MHz, 2 dB/ Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.98 dBm Peak: 27.92 dBm Crest: 4.95 dB <table><tr><td>10 %</td><td>3.08 dB</td></tr><tr><td>1 %</td><td>4.00 dB</td></tr><tr><td>.1 %</td><td>4.44 dB</td></tr><tr><td>.01 %</td><td>4.76 dB</td></tr></table> Date: 15.FEB.2017 16:49:21	10 %	3.08 dB	1 %	4.00 dB	.1 %	4.44 dB	.01 %	4.76 dB	 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RSW: 10 MHz Center: 1.90875 GHz, 2 dB/ Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 22.27 dBm Peak: 27.29 dBm Crest: 5.02 dB <table><tr><td>10 %</td><td>3.12 dB</td></tr><tr><td>1 %</td><td>4.00 dB</td></tr><tr><td>.1 %</td><td>4.52 dB</td></tr><tr><td>.01 %</td><td>4.80 dB</td></tr></table> Date: 15.FEB.2017 17:56:47	10 %	3.12 dB	1 %	4.00 dB	.1 %	4.52 dB	.01 %	4.80 dB
10 %	3.08 dB																
1 %	4.00 dB																
.1 %	4.44 dB																
.01 %	4.76 dB																
10 %	3.12 dB																
1 %	4.00 dB																
.1 %	4.52 dB																
.01 %	4.80 dB																

**26dB Bandwidth**

Mode	CDMA BC0	CDMA BC1
Mod.	1xRTT	1xRTT
Lowest CH	1.43	1.44
Middle CH	1.43	1.43
Highest CH	1.43	1.42

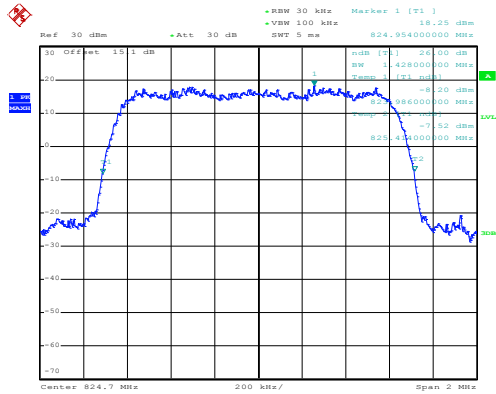
Mode	CDMA BC0	CDMA BC1
Mod.	1xEV-DO Rev. 0	1xEV-DO Rev. 0
Lowest CH	1.43	1.43
Middle CH	1.42	1.42
Highest CH	1.43	1.43



CDMA BC0 (1xRTT)	CDMA BC1 (1xRTT)
Lowest Channel	Lowest Channel
 Ref: 30 dBm Att: 30 dB BW: 30 kHz VM: 100 kHz SWT: 5 ms Marker 1 [T1]: 17.1 dBm dBm [T1]: 17.1 dBm BW: 30 kHz VM: 100 kHz SWT: 5 ms Center: 824.7 MHz Span: 2 MHz Date: 15.FEB.2017 15:35:26	 Ref: 30 dBm Att: 30 dB BW: 30 kHz VM: 100 kHz SWT: 5 ms Marker 1 [T1]: 17.1 dBm dBm [T1]: 17.1 dBm BW: 30 kHz VM: 100 kHz SWT: 5 ms Center: 1.85125 GHz Span: 2 MHz Date: 16.FEB.2017 09:34:53
Middle Channel	Middle Channel
 Ref: 30 dBm Att: 30 dB BW: 30 kHz VM: 100 kHz SWT: 5 ms Marker 1 [T1]: 17.1 dBm dBm [T1]: 17.1 dBm BW: 30 kHz VM: 100 kHz SWT: 5 ms Center: 836.52 MHz Span: 2 MHz Date: 15.FEB.2017 15:35:59	 Ref: 30 dBm Att: 30 dB BW: 30 kHz VM: 100 kHz SWT: 5 ms Marker 1 [T1]: 17.1 dBm dBm [T1]: 17.1 dBm BW: 30 kHz VM: 100 kHz SWT: 5 ms Center: 1.88 GHz Span: 2 MHz Date: 16.FEB.2017 09:36:20
Highest Channel	Highest Channel
 Ref: 30 dBm Att: 30 dB BW: 30 kHz VM: 100 kHz SWT: 5 ms Marker 1 [T1]: 17.1 dBm dBm [T1]: 17.1 dBm BW: 30 kHz VM: 100 kHz SWT: 5 ms Center: 848.31 MHz Span: 2 MHz Date: 15.FEB.2017 15:36:32	 Ref: 30 dBm Att: 30 dB BW: 30 kHz VM: 100 kHz SWT: 5 ms Marker 1 [T1]: 17.1 dBm dBm [T1]: 17.1 dBm BW: 30 kHz VM: 100 kHz SWT: 5 ms Center: 1.90875 GHz Span: 2 MHz Date: 16.FEB.2017 09:36:56

CDMA BC0 (1xEV-DO Rev. 0)

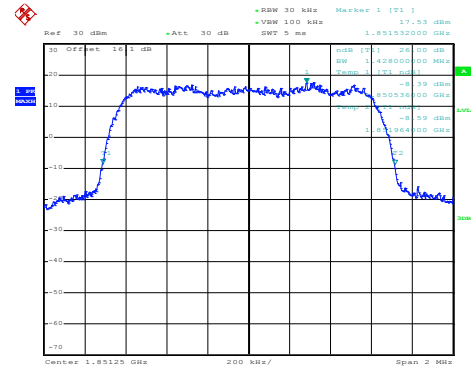
Lowest Channel



Date: 15.FEB.2017 16:32:01

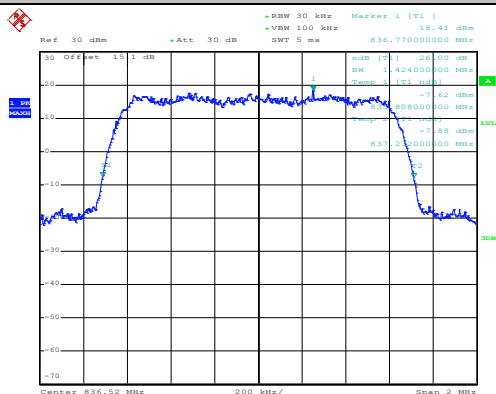
CDMA BC1 (1xEV-DO Rev. 0)

Lowest Channel



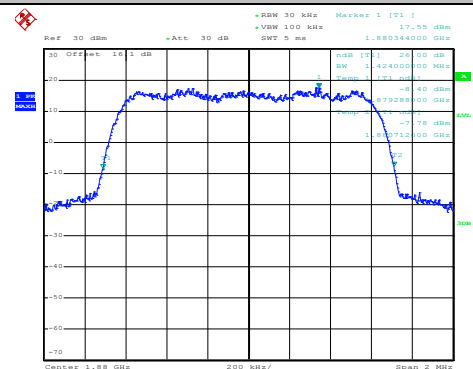
Date: 15.FEB.2017 17:44:06

Middle Channel



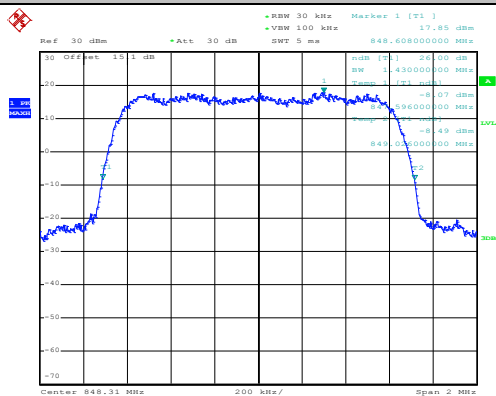
Date: 15.FEB.2017 16:32:48

Middle Channel



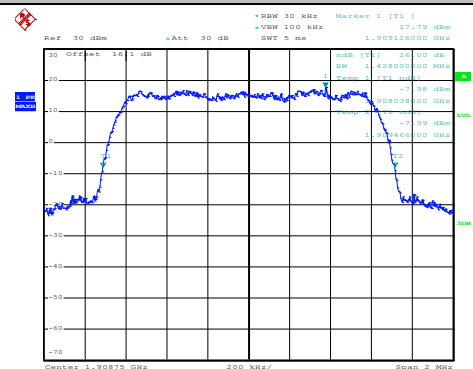
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Highest Channel



Date: 15.FEB.2017 16:33:24

Highest Channel

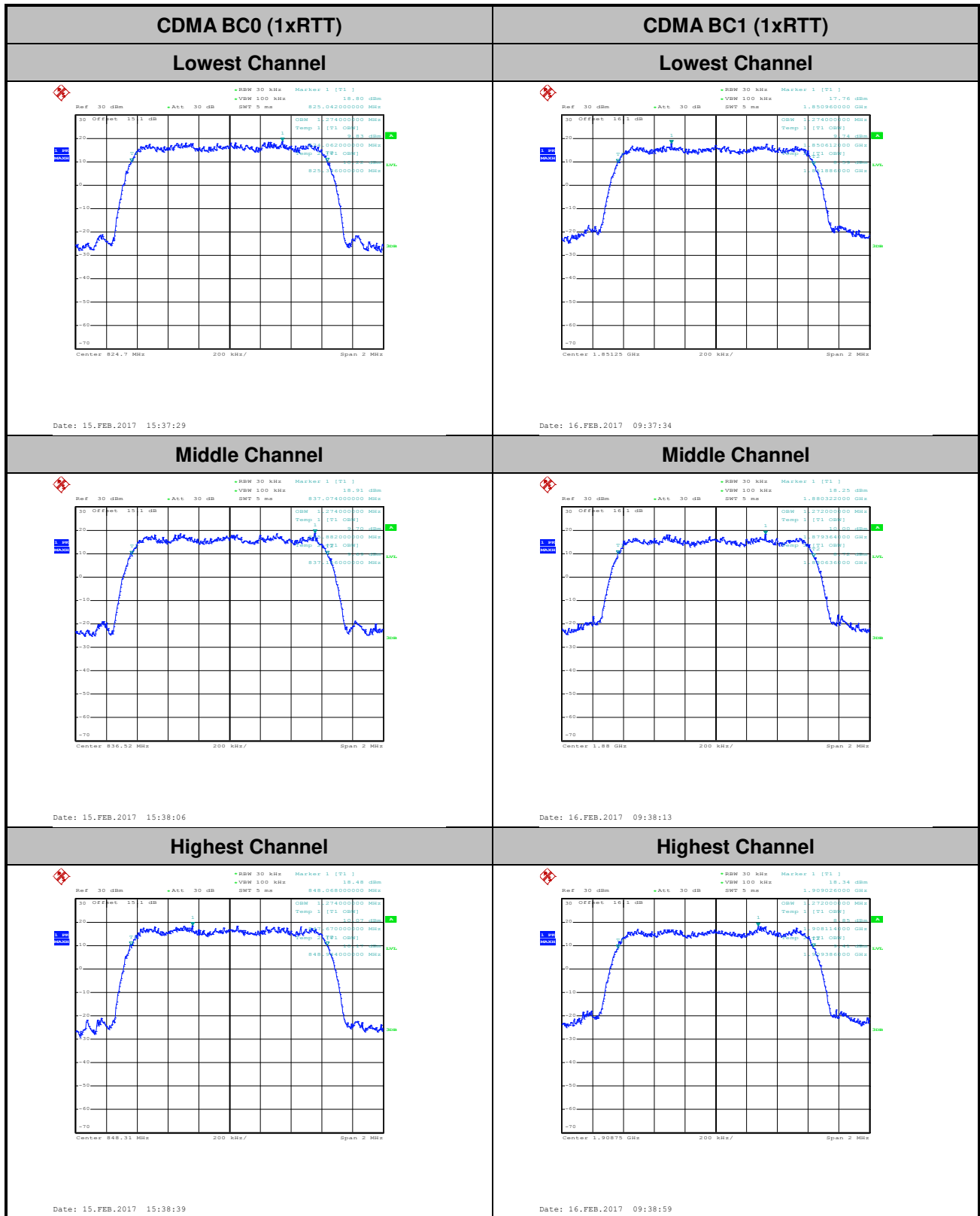


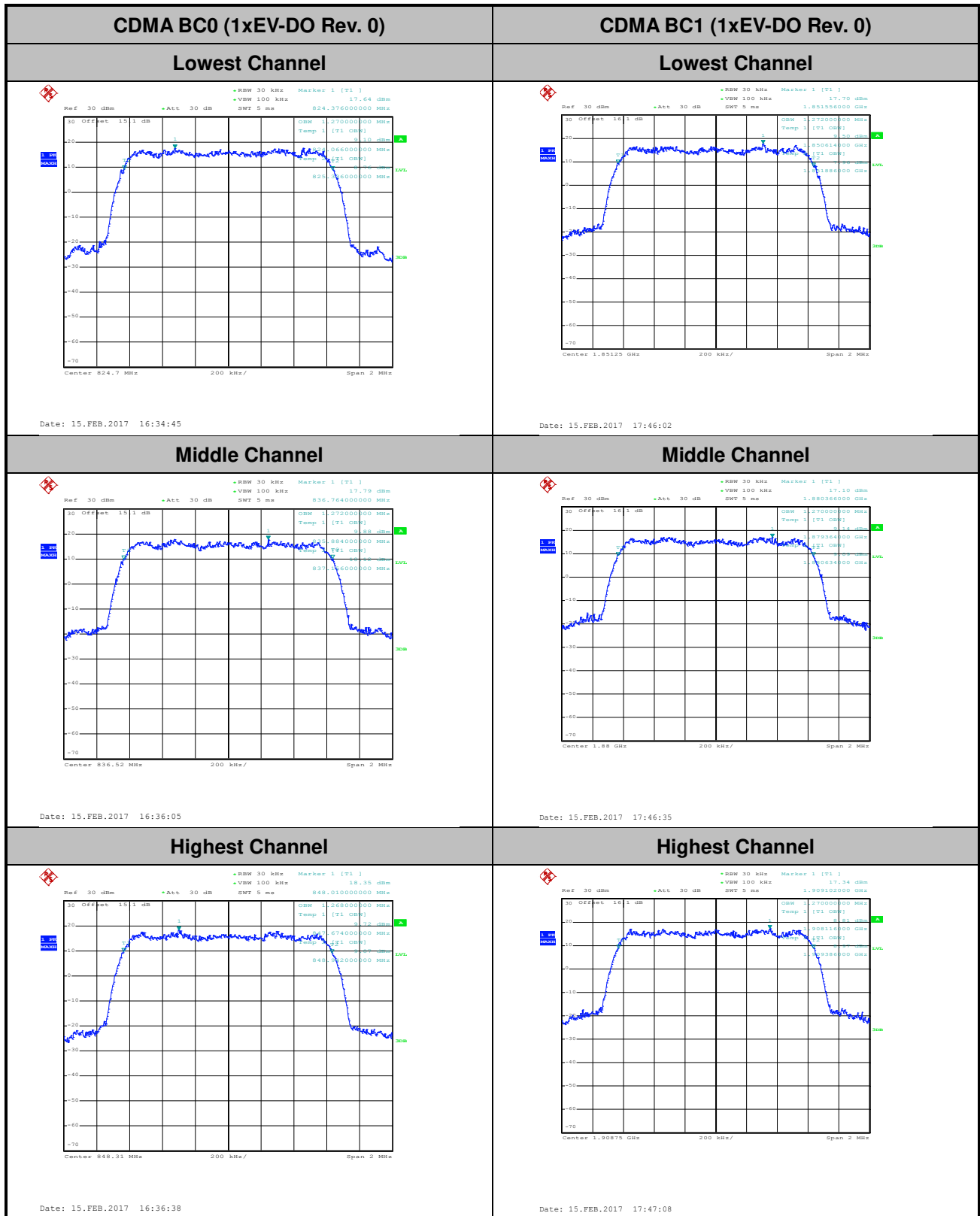
Date: 15.FEB.2017 17:45:26

Occupied Bandwidth

Mode	CDMA BC0	CDMA BC1
Mod.	1xRTT	1xRTT
Lowest CH	1.27	1.27
Middle CH	1.27	1.27
Highest CH	1.27	1.27

Mode	CDMA BC0	CDMA BC1
Mod.	1xEV-DO Rev. 0	1xEV-DO Rev. 0
Lowest CH	1.27	1.27
Middle CH	1.27	1.27
Highest CH	1.27	1.27



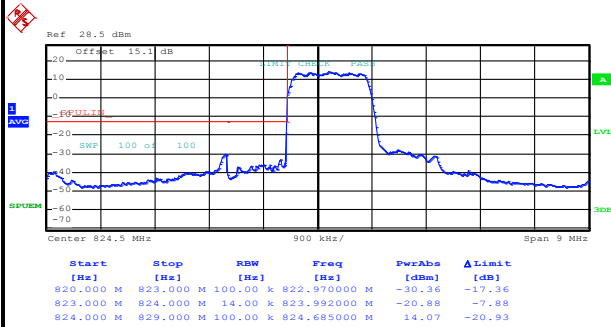




Conducted Band Edge

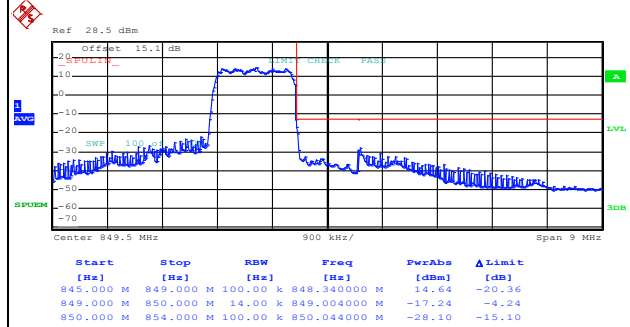
CDMA BC0 (1xRTT)

Lowest Band Edge



Date: 15.FEB.2017 15:41:33

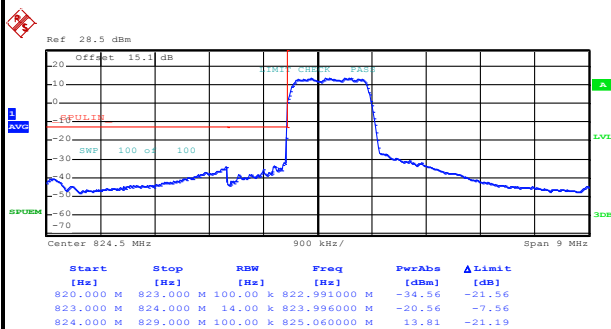
Highest Band Edge



Date: 15.FEB.2017 15:44:52

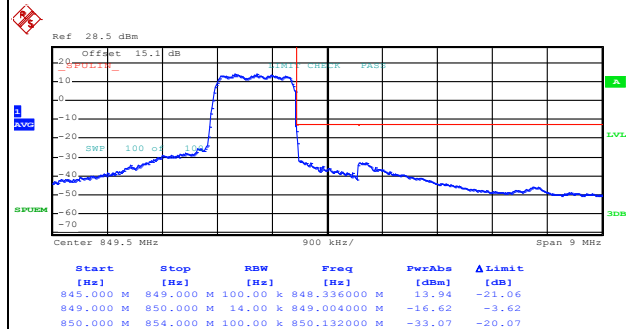
CDMA BC0 (1xEV-DO Rev. 0)

Lowest Band Edge



Date: 15.FEB.2017 16:39:48

Highest Band Edge

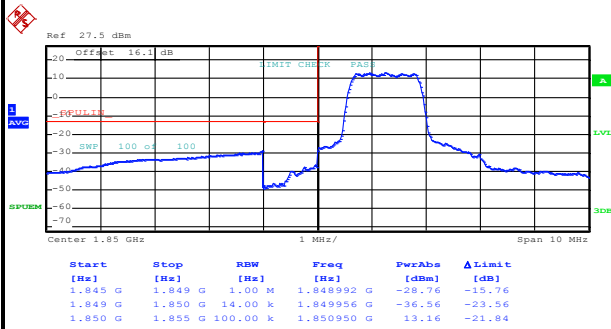


Date: 15.FEB.2017 16:42:38



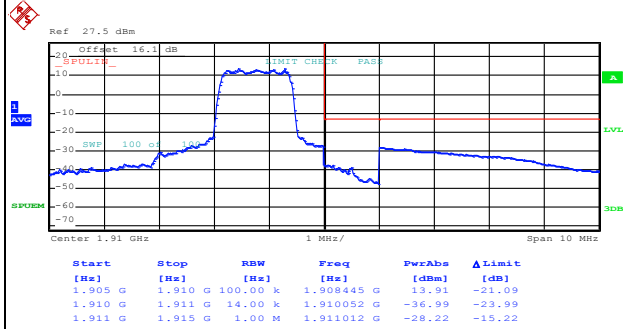
CDMA BC1 (1xRTT)

Lowest Band Edge



Date: 16.FEB.2017 09:41:56

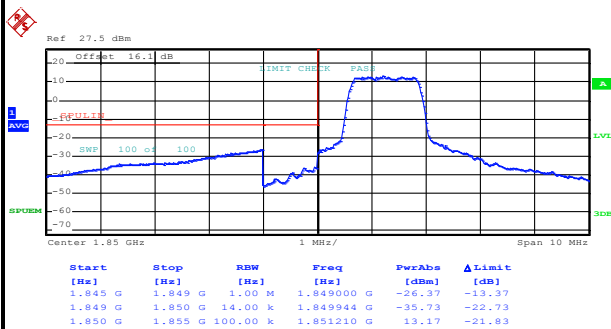
Highest Band Edge



Date: 16.FEB.2017 09:45:31

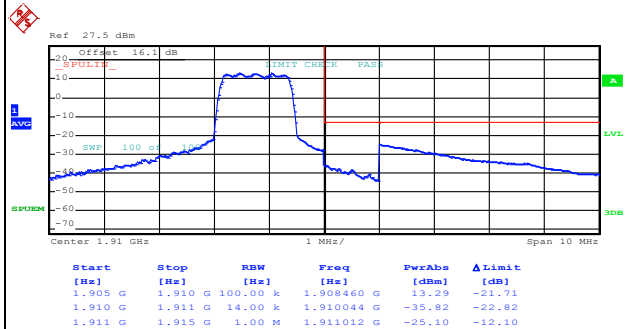
CDMA BC1 (1xEV-DO Rev. 0)

Lowest Band Edge



Date: 15.FEB.2017 17:49:58

Highest Band Edge



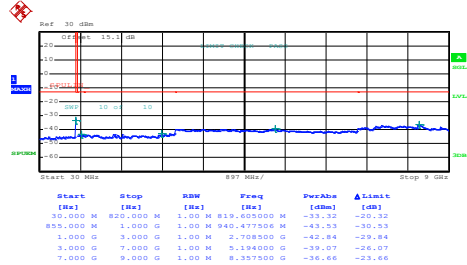
Date: 15.FEB.2017 17:52:49



Conducted Spurious Emission

CDMA BC0 (1xRTT)

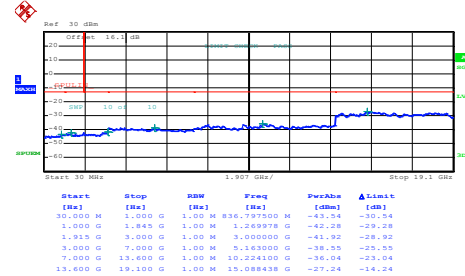
Lowest Channel



Date: 15.FEB.2017 15:45:53

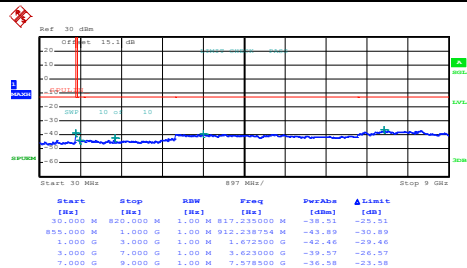
CDMA BC1 (1xRTT)

Lowest Channel



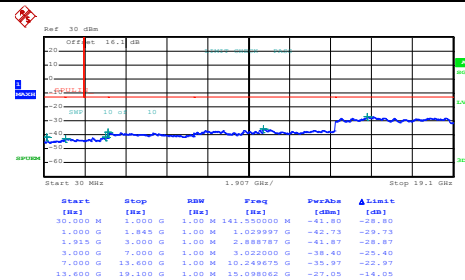
Date: 16.FEB.2017 09:48:02

Middle Channel



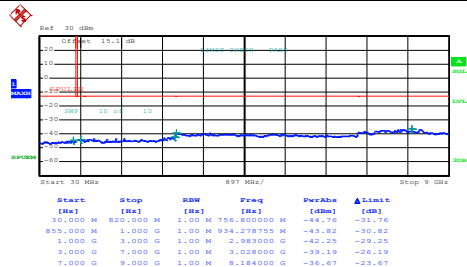
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Middle Channel



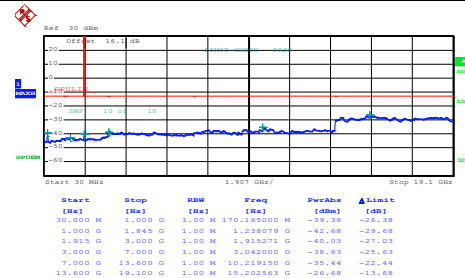
Date: 16.FEB.2017 09:49:22

Highest Channel



Date: 15.FEB.2017 15:47:35

Highest Channel

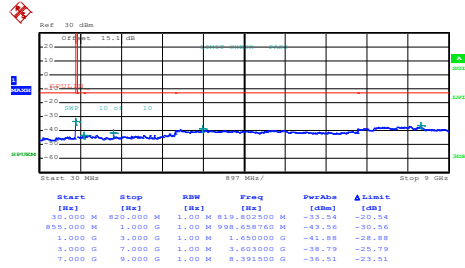


Date: 16.FEB.2017 09:50:15



CDMA BC0 (1xEV-DO Rev. 0)

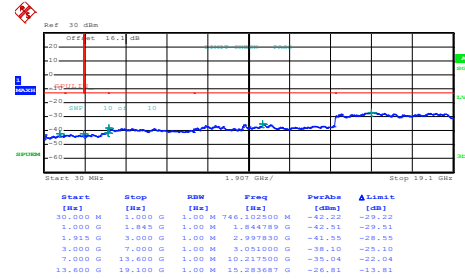
Lowest Channel



Date: 15.FEB.2017 16:43:52

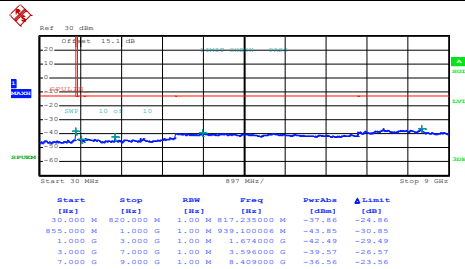
CDMA BC1 (1xEV-DO Rev. 0)

Lowest Channel



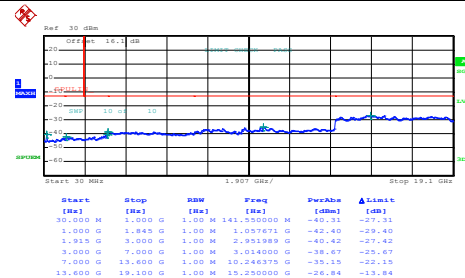
Date: 15.FEB.2017 17:53:50

Middle Channel



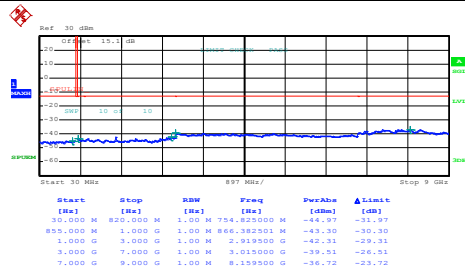
Date: 15.FEB.2017 16:44:44

Middle Channel



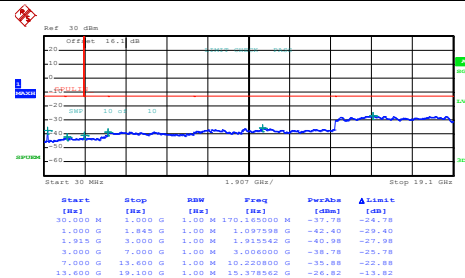
Date: 15.FEB.2017 17:54:41

Highest Channel



Date: 15.FEB.2017 16:47:09

Highest Channel



Date: 15.FEB.2017 17:55:47

**Frequency Stability**

Test Conditions	Middle Channel	CDMA BC0 (1xRTT)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0012	PASS
40	Normal Voltage	0.0036	
30	Normal Voltage	0.0036	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0048	
-10	Normal Voltage	0.0012	
-20	Normal Voltage	0.0012	
-30	Normal Voltage	0.0036	
20	Maximum Voltage	0.0012	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0000	

Test Conditions	Middle Channel	CDMA BC0 (1xEV-DO Rev. 0)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0024	PASS
40	Normal Voltage	0.0191	
30	Normal Voltage	0.0239	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0155	
-20	Normal Voltage	0.0131	
-30	Normal Voltage	0.0155	
20	Maximum Voltage	0.0155	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0024	

Test Conditions	Middle Channel	CDMA BC1 (1xRTT)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0027	PASS
40	Normal Voltage	0.0021	
30	Normal Voltage	0.0000	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0043	
0	Normal Voltage	0.0027	
-10	Normal Voltage	0.0064	
-20	Normal Voltage	0.0011	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0043	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0053	

Test Conditions	Middle Channel	CDMA BC1 (1xEV-DO Rev. 0)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0021	PASS
40	Normal Voltage	0.0011	
30	Normal Voltage	0.0000	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0021	
0	Normal Voltage	0.0011	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0048	
-30	Normal Voltage	0.0005	
20	Maximum Voltage	0.0011	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0021	

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.4 V. ; Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of ERP/EIRP and Radiated Test

ERP/EIRP

Channel	Mode	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	GSM850 GSM	27.40	0.5495	28.15	0.6531
Middle		24.52	0.2831	26.04	0.4018
Highest		24.15	0.2600	25.36	0.3436
Lowest	GSM850 EDGE class 8	17.73	0.0593	19.40	0.0871
Middle		19.26	0.0843	20.73	0.1183
Highest		18.49	0.0706	19.89	0.0975
Lowest	WCDMA Band V AMR 12.2Kbps	18.72	0.0745	20.09	0.1021
Middle		18.05	0.0638	19.58	0.0908
Highest		18.07	0.0641	19.30	0.0851
Lowest	CDMA BC0 1xRTT	19.04	0.0802	20.41	0.1099
Middle		18.34	0.0682	19.80	0.0955
Highest		18.49	0.0706	19.57	0.0906
Lowest	CDMA BC0 1xEV-DO	17.69	0.0587	18.85	0.0767
Middle		16.85	0.0484	18.10	0.0646
Highest		16.99	0.0500	17.91	0.0618
Limit	ERP < 7W	Result		PASS	

Channel	Mode	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	GSM1900 GPRS class 8	30.18	1.0423	29.59	0.9099
Middle		30.98	1.2531	30.32	1.0765
Highest		30.24	1.0568	30.11	1.0257
Lowest	GSM1900 EDGE class 8	24.64	0.2911	24.07	0.2553
Middle		24.72	0.2965	24.07	0.2553
Highest		24.06	0.2547	24.16	0.2606
Lowest	WCDMA Band II AMR 12.2Kbps	22.75	0.1884	22.08	0.1614
Middle		23.40	0.2188	22.54	0.1795
Highest		23.67	0.2328	23.15	0.2065
Lowest	CDMA BC1 1xRTT	22.55	0.1799	22.19	0.1656
Middle		23.27	0.2123	22.65	0.1841
Highest		23.47	0.2223	22.69	0.1858
Lowest	CDMA BC1 1xEV-DO	22.02	0.1592	21.71	0.1483
Middle		22.77	0.1892	22.09	0.1618
Highest		22.90	0.1950	22.04	0.1600
Limit	EIRP < 2W	Result		PASS	



Channel	Mode	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	WCDMA Band IV AMR 12.2Kbps	23.65	0.2317	23.39	0.2183
Middle		23.65	0.2317	23.65	0.2317
Highest		23.86	0.2432	23.56	0.2270
Limit	EIRP < 1W	Result		PASS	

**Radiated Spurious Emission**

GSM850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-45.57	-13	-32.57	-33.26	-47.33	0.98	4.89	H
	2474	-61.03	-13	-48.03	-54.08	-62.92	1.28	5.32	H
	3296	-65.87	-13	-52.87	-61.12	-69.28	1.54	7.10	H
	1648	-42.25	-13	-29.25	-30.44	-44.01	0.98	4.89	V
	2474	-58.04	-13	-45.04	-51.7	-59.93	1.28	5.32	V
	3296	-65.36	-13	-52.36	-60.84	-68.77	1.54	7.10	V
Middle	1672	-39.33	-13	-26.33	-27.32	-41.01	0.99	4.82	H
	2512	-55.85	-13	-42.85	-49.09	-57.82	1.29	5.41	H
	3345	-65.27	-13	-52.27	-60.56	-68.88	1.56	7.32	H
	1672	-37.19	-13	-24.19	-25.5	-38.87	0.99	4.82	V
	2512	-52.84	-13	-39.84	-46.5	-54.81	1.29	5.41	V
	3344	-64.54	-13	-51.54	-60.2	-68.15	1.56	7.31	V
Highest	1696	-40.95	-13	-27.95	-29.09	-42.55	1.00	4.75	H
	2544	-61.13	-13	-48.13	-54.53	-63.11	1.30	5.44	H
	3393	-65.21	-13	-52.21	-60.77	-69.02	1.57	7.53	H
	1696	-40.06	-13	-27.06	-28.66	-41.66	1.00	4.75	V
	2544	-59.01	-13	-46.01	-52.91	-60.99	1.30	5.44	V
	3393	-64.87	-13	-51.87	-60.55	-68.68	1.57	7.53	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



GSM850 (EDGE class 8)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-46.26	-13	-33.26	-34	-48.02	0.98	4.89	H
	2472	-60.67	-13	-47.67	-53.84	-62.55	1.28	5.32	H
	3298	-65.72	-13	-52.72	-61.01	-69.14	1.54	7.11	H
	1648	-45.12	-13	-32.12	-33.1	-46.88	0.98	4.89	V
	2472	-56.55	-13	-43.55	-50.19	-58.43	1.28	5.32	V
	3296	-65.41	-13	-52.41	-60.91	-68.82	1.54	7.10	V
Middle	1672	-39.76	-13	-26.76	-27.82	-41.44	0.99	4.82	H
	2512	-54.64	-13	-41.64	-47.94	-56.61	1.29	5.41	H
	3345	-64.81	-13	-51.81	-60.19	-68.42	1.56	7.32	H
	1672	-38.34	-13	-25.34	-26.88	-40.02	0.99	4.82	V
	2512	-54.75	-13	-41.75	-48.51	-56.72	1.29	5.41	V
	3344	-64.57	-13	-51.57	-60.3	-68.18	1.56	7.31	V
Highest	1696	-42.58	-13	-29.58	-30.76	-44.18	1.00	4.75	H
	2544	-62.44	-13	-49.44	-55.79	-64.42	1.30	5.44	H
	3393	-65.21	-13	-52.21	-60.75	-69.02	1.57	7.53	H
	1696	-41.95	-13	-28.95	-30.58	-43.55	1.00	4.75	V
	2544	-61.71	-13	-48.71	-55.52	-63.69	1.30	5.44	V
	3392	-64.92	-13	-51.92	-60.63	-68.72	1.57	7.52	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



GSM1900 (GPRS class 8)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3700	-65.28	-13	-52.28	-60.89	-71.85	1.67	8.24	H
	5550	-62.97	-13	-49.97	-65.44	-70.04	2.65	9.72	H
	7400	-63.82	-13	-50.82	-67.68	-72.96	2.46	11.60	H
	3700	-63.32	-13	-50.32	-65.62	-69.89	1.67	8.24	V
	5550	-63.69	-13	-50.69	-68.19	-70.76	2.65	9.72	V
	7400	-63.57	-13	-50.57	-67.7	-72.71	2.46	11.60	V
Middle	3760	-64.57	-13	-51.57	-60.05	-71.2	1.69	8.31	H
	5640	-63.04	-13	-50.04	-65.95	-70.09	2.71	9.76	H
	7520	-63.88	-13	-50.88	-67.88	-73.27	2.42	11.81	H
	3760	-64.34	-13	-51.34	-59.87	-70.97	1.69	8.31	V
	5640	-63.06	-13	-50.06	-65.93	-70.11	2.71	9.76	V
	7520	-63.58	-13	-50.58	-67.8	-72.97	2.42	11.81	V
Highest	3820	-64.94	-13	-51.94	-60.34	-71.62	1.70	8.38	H
	5730	-63.22	-13	-50.22	-66.54	-70.25	2.76	9.79	H
	7640	-63.34	-13	-50.34	-67.82	-72.84	2.38	11.88	H
	3820	-64.64	-13	-51.64	-60.1	-71.32	1.70	8.38	V
	5730	-63.11	-13	-50.11	-66.37	-70.14	2.76	9.79	V
	7640	-63.07	-13	-50.07	-67.82	-72.57	2.38	11.88	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



GSM1900 (EDGE class 8)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3700	-65.57	-13	-52.57	-61.17	-72.14	1.67	8.24	H
	5550	-63.48	-13	-50.48	-65.93	-70.55	2.65	9.72	H
	7400	-63.92	-13	-50.92	-67.9	-73.06	2.46	11.60	H
	3700	-65.30	-13	-52.30	-60.93	-71.87	1.67	8.24	V
	5550	-63.18	-13	-50.18	-65.64	-70.25	2.65	9.72	V
	7400	-63.92	-13	-50.92	-68.12	-73.06	2.46	11.60	V
Middle	3760	-64.45	-13	-51.45	-59.93	-71.08	1.69	8.31	H
	5640	-63.37	-13	-50.37	-66.18	-70.42	2.71	9.76	H
	7520	-63.65	-13	-50.65	-67.84	-73.04	2.42	11.81	H
	3760	-64.36	-13	-51.36	-59.91	-70.99	1.69	8.31	V
	5640	-63.24	-13	-50.24	-66.11	-70.29	2.71	9.76	V
	7520	-63.43	-13	-50.43	-67.67	-72.82	2.42	11.81	V
Highest	3820	-64.97	-13	-51.97	-60.42	-71.65	1.70	8.38	H
	5730	-63.34	-13	-50.34	-66.61	-70.37	2.76	9.79	H
	7640	-63.76	-13	-50.76	-68.22	-73.26	2.38	11.88	H
	3820	-64.98	-13	-51.98	-60.47	-71.66	1.70	8.38	V
	5730	-63.31	-13	-50.31	-66.55	-70.34	2.76	9.79	V
	7640	-63.42	-13	-50.42	-68.09	-72.92	2.38	11.88	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



WCDMA Band V (RMC 12.2Kbps)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1656	-57.06	-13	-44.06	-44.96	-58.79	0.98	4.86	H
	2480	-56.81	-13	-43.81	-49.93	-58.72	1.28	5.34	H
	3298	-66.02	-13	-53.02	-61.16	-69.44	1.54	7.11	H
	1656	-55.38	-13	-42.38	-43.67	-57.11	0.98	4.86	V
	2480	-55.90	-13	-42.90	-49.39	-57.81	1.28	5.34	V
	3296	-65.25	-13	-52.25	-60.69	-68.66	1.54	7.10	V
Middle	1672	-55.98	-13	-42.98	-43.97	-57.66	0.99	4.82	H
	2504	-58.85	-13	-45.85	-52.03	-60.81	1.29	5.40	H
	3345	-65.44	-13	-52.44	-60.78	-69.05	1.56	7.32	H
	1672	-54.33	-13	-41.33	-42.84	-56.01	0.99	4.82	V
	2504	-57.85	-13	-44.85	-51.44	-59.81	1.29	5.40	V
	3345	-64.94	-13	-51.94	-60.51	-68.55	1.56	7.32	V
Highest	1696	-57.62	-13	-44.62	-45.77	-59.22	1.00	4.75	H
	2536	-60.33	-13	-47.33	53.7	-62.31	1.30	5.43	H
	3393	-65.37	-13	-52.37	-61.01	-69.18	1.57	7.53	H
	1696	-56.42	-13	-43.42	-45.07	-58.02	1.00	4.75	V
	2536	-59.94	-13	-46.94	-53.74	-61.92	1.30	5.43	V
	3393	-65.07	-13	-52.07	-60.81	-68.88	1.57	7.53	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



WCDMA Band II (RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3704	-64.91	-13	-51.91	-60.51	-71.49	1.67	8.24	H
	5556	-60.28	-13	-47.28	-62.7	-67.35	2.66	9.72	H
	11110	-54.57	-13	-41.57	-65.5	-64.34	2.69	12.46	H
	3704	-65.04	-13	-52.04	-60.62	-71.62	1.67	8.24	V
	5556	-63.33	-13	-50.33	-65.69	-70.4	2.66	9.72	V
	11110	-54.87	-13	-41.87	-65.59	-64.64	2.69	12.46	V
Middle	3760	-64.68	-13	-51.68	-60.18	-71.31	1.69	8.31	H
	5640	-63.08	-13	-50.08	-65.97	-70.13	2.71	9.76	H
	7520	-63.94	-13	-50.94	-67.94	-73.33	2.42	11.81	H
	3760	-64.49	-13	-51.49	-59.97	-71.12	1.69	8.31	V
	5640	-63.17	-13	-50.17	-65.95	-70.22	2.71	9.76	V
	7520	-63.72	-13	-50.72	-67.95	-73.11	2.42	11.81	V
Highest	3816	-64.54	-13	-51.54	-60.14	-71.22	1.70	8.38	H
	5724	-62.01	-13	-49.01	-65.4	-69.05	2.75	9.79	H
	7635	-63.38	-13	-50.38	-67.77	-72.88	2.39	11.88	H
	11436	-57.38	-13	-44.38	-69.55	-67.02	2.68	12.33	H
	3816	-64.33	-13	-51.33	-59.87	-71.01	1.70	8.38	V
	5724	-62.84	-13	-49.84	-66.2	-69.88	2.75	9.79	V
	7635	-63.21	-13	-50.21	-67.91	-72.71	2.39	11.88	V
	11436	-54.85	-13	-41.85	-67.11	-64.49	2.68	12.33	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



WCDMA Band IV (RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3424	-65.26	-13	-52.26	-60.89	-71.35	1.58	7.67	H
	5137	-63.84	-13	-50.84	-64.16	-71.12	2.42	9.70	H
	6849	-63.38	-13	-50.38	-67.86	-71.36	2.64	10.62	H
	3424	-64.98	-13	-51.98	-60.64	-71.07	1.58	7.67	V
	5137	-64.18	-13	-51.18	-64.31	-71.46	2.42	9.70	V
	6849	-63.25	-13	-50.25	-67.72	-71.23	2.64	10.62	V
Middle	3465	-65.16	-13	-52.16	-60.85	-71.41	1.59	7.85	H
	5197	-63.84	-13	-50.84	-64.53	-71.09	2.45	9.70	H
	6930	-63.46	-13	-50.46	-67.84	-71.56	2.61	10.72	H
	3465	-65.12	-13	-52.12	-60.84	-71.37	1.59	7.85	V
	5197	-63.88	-13	-50.88	-64.43	-71.13	2.45	9.70	V
	6930	-63.46	-13	-50.46	-67.81	-71.56	2.61	10.72	V
Highest	3504	-64.33	-13	-51.33	-60.26	-70.73	1.61	8.00	H
	5257	-63.47	-13	-50.47	-64.47	-70.68	2.49	9.70	H
	10522	-59.26	-13	-46.26	-68	-68.97	2.69	12.40	H
	3504	-64.47	-13	-51.47	-60.24	-70.87	1.61	8.00	V
	5257	-63.88	-13	-50.88	-64.64	-71.09	2.49	9.70	V
	10522	-55.24	-13	-42.24	-63.9	-64.95	2.69	12.40	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



CDMA BC0 (1xRTT)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-51.45	-13	-38.45	-39.15	-53.21	0.98	4.89	H
	2472	-65.14	-13	-52.14	-58.3	-67.02	1.28	5.32	H
	3298	-66.24	-13	-53.24	-61.26	-69.66	1.54	7.11	H
	1648	-51.76	-13	-38.76	-39.96	-53.52	0.98	4.89	V
	2472	-64.23	-13	-51.23	-57.84	-66.11	1.28	5.32	V
	3298	-65.79	-13	-52.79	-61.27	-69.21	1.54	7.11	V
Middle	1672	-51.43	-13	-38.43	-39.47	-53.11	0.99	4.82	H
	2512	-53.54	-13	-40.54	-46.82	-55.51	1.29	5.41	H
	3344	-65.41	-13	-52.41	-60.89	-69.02	1.56	7.31	H
	1672	-51.01	-13	-38.01	-39.39	-52.69	0.99	4.82	V
	2512	-52.91	-13	-39.91	-46.61	-54.88	1.29	5.41	V
	3344	-65.05	-13	-52.05	-60.56	-68.66	1.56	7.31	V
Highest	1696	-54.41	-13	-41.41	-42.5	-56.01	1.00	4.75	H
	2544	-63.57	-13	-50.57	-56.86	-65.55	1.30	5.44	H
	3393	-65.48	-13	-52.48	-61.05	-69.29	1.57	7.53	H
	1696	-53.69	-13	-40.69	-42.36	-55.29	1.00	4.75	V
	2544	-63.53	-13	-50.53	-57.37	-65.51	1.30	5.44	V
	3392	-65.21	-13	-52.21	-60.91	-69.01	1.57	7.52	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



CDMA BC0 (1xEV-DO Rev. 0)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-52.35	-13	-39.35	-40.15	-54.11	0.98	4.89	H
	2472	-65.23	-13	-52.23	-58.38	-67.11	1.28	5.32	H
	3298	-66.17	-13	-53.17	-61.29	-69.59	1.54	7.11	H
	1648	-57.26	-13	-44.26	-45.41	-59.02	0.98	4.89	V
	2474	-59.82	-13	-46.82	-53.46	-61.71	1.28	5.32	V
	3296	-65.61	-13	-52.61	-61.02	-69.02	1.54	7.10	V
Middle	1672	-53.01	-13	-40.01	-41.1	-54.69	0.99	4.82	H
	2512	-58.69	-13	-45.69	-51.89	-60.66	1.29	5.41	H
	3344	-65.41	-13	-52.41	-60.9	-69.02	1.56	7.31	H
	1672	-52.01	-13	-39.01	-40.58	-53.69	0.99	4.82	V
	2512	-52.58	-13	-39.58	-46.33	-54.55	1.29	5.41	V
	3344	-65.41	-13	-52.41	-60.91	-69.02	1.56	7.31	V
Highest	1696	-54.42	-13	-41.42	-42.61	-56.02	1.00	4.75	H
	2544	-63.13	-13	-50.13	-56.47	-65.11	1.30	5.44	H
	3393	-65.61	-13	-52.61	-61.32	-69.42	1.57	7.53	H
	1696	-52.42	-13	-39.42	-41.07	-54.02	1.00	4.75	V
	2544	-61.28	-13	-48.28	-55.21	-63.26	1.30	5.44	V
	3393	-65.24	-13	-52.24	-60.87	-69.05	1.57	7.53	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



CDMA BC1 (1xRTT)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-63.07	-13	-50.07	-58.65	-69.64	1.67	8.24	H
	5556	-56.98	-13	-43.98	-59.47	-64.05	2.66	9.72	H
	11110	-52.97	-13	-39.97	-63.93	-62.74	2.69	12.46	H
	3702	-63.62	-13	-50.62	-59.14	-70.19	1.67	8.24	V
	5556	-61.32	-13	-48.32	-63.68	-68.39	2.66	9.72	V
	11110	-57.79	-13	-44.79	-68.38	-67.56	2.69	12.46	V
Middle	3762	-62.24	-13	-49.24	-57.72	-68.87	1.69	8.31	H
	5640	-59.91	-13	-46.91	-62.77	-66.96	2.71	9.76	H
	11278	-55.07	-13	-42.07	-66.64	-64.77	2.68	12.39	H
	3762	-63.97	-13	-50.97	-59.51	-70.6	1.69	8.31	V
	5640	-61.27	-13	-48.27	-64.04	-68.32	2.71	9.76	V
	11278	-53.46	-13	-40.46	-64.9	-63.16	2.68	12.39	V
Highest	3816	-63.88	-13	-50.88	-59.26	-70.56	1.70	8.38	H
	5724	-58.64	-13	-45.64	-61.89	-65.68	2.75	9.79	H
	11457	-57.20	-13	-44.20	-69.34	-66.83	2.68	12.32	H
	3816	-62.73	-13	-49.73	-58.17	-69.41	1.70	8.38	V
	5724	-62.20	-13	-49.20	-65.4	-69.24	2.75	9.79	V
	11457	-56.52	-13	-43.52	-68.63	-66.15	2.68	12.32	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



CDMA BC1 (1xEV-DO Rev. 0)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-63.24	-13	-50.24	-59.06	-69.81	1.67	8.24	H
	5557	-57.61	-13	-44.61	-60.14	-64.67	2.66	9.72	H
	7409	-63.61	-13	-50.61	-67.57	-72.77	2.46	11.62	H
	11110	-51.92	-13	-38.92	-62.91	-61.69	2.69	12.46	H
	3702	-64.25	-13	-51.25	-59.98	-70.82	1.67	8.24	V
	5557	-61.76	-13	-48.76	-64.3	-68.82	2.66	9.72	V
	7409	-63.61	-13	-50.61	-67.74	-72.77	2.46	11.62	V
	11110	-50.51	-13	-37.51	-61.46	-60.28	2.69	12.46	V
Middle	3762	-63.39	-13	-50.39	-58.91	-70.02	1.69	8.31	H
	5640	-59.96	-13	-46.96	-62.83	-67.01	2.71	9.76	H
	7518	-63.72	-13	-50.72	-67.85	-73.11	2.42	11.81	H
	3762	-51.03	-13	-38.03	-59.6	-57.66	1.69	8.31	V
	5640	-48.39	-13	-35.39	-64.36	-55.44	2.71	9.76	V
	7518	-63.42	-13	-50.42	-67.7	-72.81	2.42	11.81	V
Highest	3816	-63.64	-13	-50.64	-59.22	-70.32	1.70	8.38	H
	5726	-60.72	-13	-47.72	-64.06	-67.76	2.76	9.79	H
	7635	-63.39	-13	-50.39	-67.9	-72.89	2.39	11.88	H
	3816	-63.33	-13	-50.33	-58.83	-70.01	1.70	8.38	V
	5726	-62.07	-13	-49.07	-65.46	-69.11	2.76	9.79	V
	7635	-63.39	-13	-50.39	-67.99	-72.89	2.39	11.88	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.