FCC RF Test Report

APPLICANT	:	Motorola Mobility, LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	9894
FCC ID	:	IHDT56WB1
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

This is a variant report which is only valid together with the original test report. The product was received on Mar. 31, 2017 and testing was completed on Apr. 24, 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.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG733129-02A	Rev. 01	Initial issue of report	May 09, 2017
FG733129-02A	Rev. 02	Revising frequency range information of CDMA BC0 in section 1.6.	Jun. 20, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(2)	Effective Radiated Power	< 7 Watts		
	§24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts		
3.5	§24.232(d)	Peak-to-Average Ratio	< 13 dB	PASS	-
3.6	§2.1049 §22.917(b) §24.238(b)	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a)	Band Edge Measurement	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a)	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		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	Under limit 20.42 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	9894
FCC ID	IHDT56WB1
IMEI Code	353310080024686 (for Radiation) 353310080024744 (for Conducted)
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	DVT2
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This is a variant report. Except conducted output power, GSM850, WCDMA Band 5, CDMA BC0, and CMDA BC1, FG733129-02A report reuses test data from the FG733129A report.

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 :	SNN5986A
Battery 2	Brand Name :	Motorola
	Model Name :	SNN5897A
Earphone	Brand Name :	Motorola
	Model Name :	SH38C16618
USB Cable	Brand Name :	Motorola
	Model Name :	SKN6473A
USB-C Data Cable	Brand Name :	Motorola
	Model Name :	SKN6474A

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 **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 **CDMA2000:** BC0: 869.70 MHz ~ 893.31 MHz BC1: 1931.25 MHz ~ 1988.75 MHz
Maximum Output Power to Antenna	**GSM/GPRS/EDGE:** 850: 33.00 dBm 1900: 29.43 dBm **WCDMA:** Band V: 22.80 dBm Band II: 22.42 dBm **CDMA2000:** BC0: 23.92 dBm BC1: 23.52 dBm
Antenna Type	Fixed Internal Antenna
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 GPRS class 8	GMSK	1.0351	0.0084 ppm	248KGXW
Part 22	824.2 ~848.8	GSM850 EDGE class 8	8PSK	0.2046	0.0120 ppm	240KG7W
Part 22	826.4 ~846.6	WCDMA Band V RMC 12.2Kbps	BPSK	0.0989	0.0143 ppm	4M13F9W
Part 22	824.70 ~ 848.31	CDMA2000 BC0 1xRTT	QPSK	0.1276	0.0203 ppm	1M27F9W
Part 22	824.70 ~ 848.31	CDMA2000 BC0 1xEV-DO Rev. A	QPSK	0.1279	0.0215 ppm	1M28F9W
Part 24	1850.2 ~1909.8	GSM1900 GPRS class 8	GMSK	0.9397	-	-
Part 24	1850.2 ~1909.8	GSM1900 EDGE class 8	8PSK	0.3396	-	-
Part 24	1852.4 ~ 1907.6	WCDMA Band II RMC 12.2Kbps	BPSK	0.1854	-	-
Part 24	1851.25 ~ 1908.75	CDMA2000 BC1 1xRTT	QPSK	0.2404	0.0090 ppm	1M27F9W
Part 24	1851.25 ~ 1908.75	CDMA2000 BC1 1xEV-DO Rev. A	QPSK	0.2410	0.0053 ppm	1M28F9W

1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW0007 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 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH03-HY

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH12-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)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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 19100 MHz for GSM1900 and WCDMA Band II and CDMA BC1.

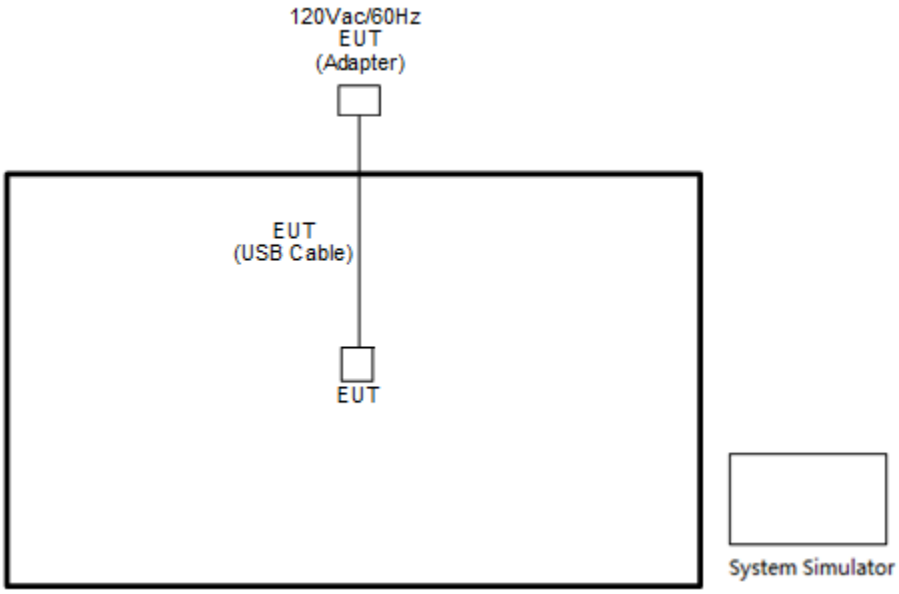
All modes and data rates and positions were investigated.

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

Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
GSM 850	■ GPRS class 8 Link ■ EDGE class 8 Link	■ GPRS class 8 Link ■ EDGE class 8 Link
GSM 1900	■ GPRS class 8 Link ■ EDGE class 8 Link	-
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	-
CDMA BC0	■ 1xEV-DO Rev. A Link	■ 1xEV-DO Rev. A Link
CDMA BC1	■ 1xEV-DO Rev. A Link	■ 1xEV-DO Rev. A Link

Remark: All the radiated test cases were performance with Adapter 1 and Battery 2.

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 :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

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	-	-
	Frequency	1850.2	-	-
WCDMA Band II	Channel	-	9400	9538
	Frequency	-	1880.0	1907.6
CDMA200 BC0	Channel	1013	384	777
	Frequency	824.7	836.52	848.31
CDMA200 BC1	Channel	25	600	1175
	Frequency	1851.25	1880.0	1908.75

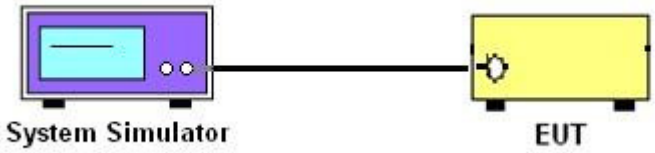
3 Conducted Test Result

3.1 Measuring Instruments

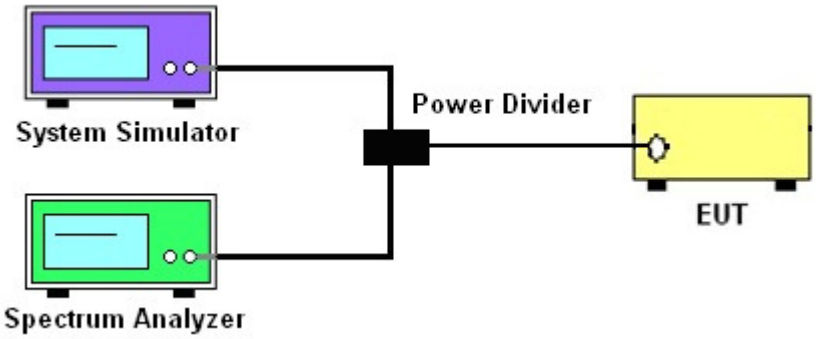
See list of measuring instruments of this test report.

3.2 Test Setup

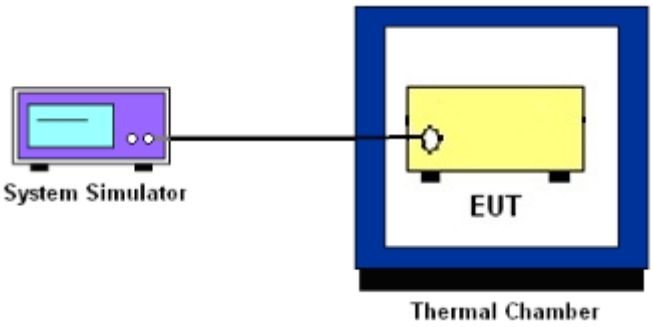
3.2.1 Conducted Output Power



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 and ERP/EIRP

3.4.1 Description of the Conducted Output Power and ERP/EIRP

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.

The ERP of mobile transmitters must not exceed 7 Watts for GSM850 and WCDMA Band V and CDMA BC0.

The EIRP of mobile transmitters must not exceed 2 Watts for GSM1900 and WCDMA Band II and CMDA BC1.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

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 + 10log(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 + 10log(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 ±0.00025% (±2.5ppm) 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±5° 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.

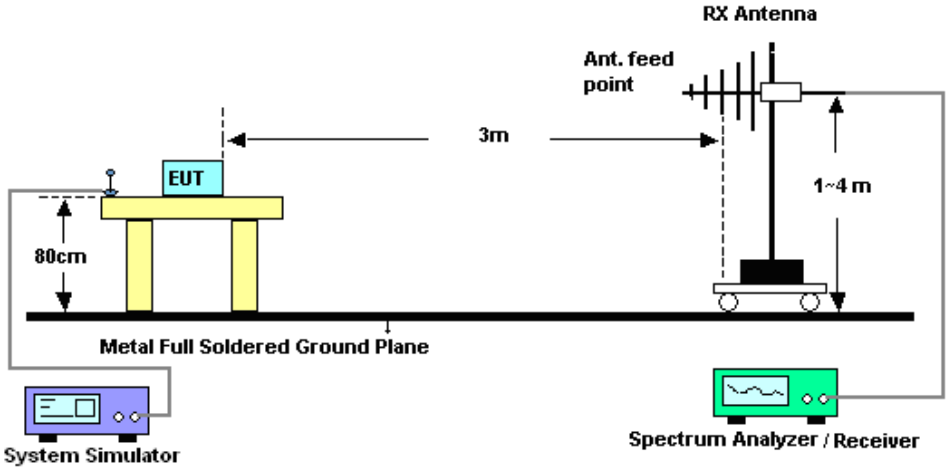
4 Radiated Test Items

4.1 Measuring Instruments

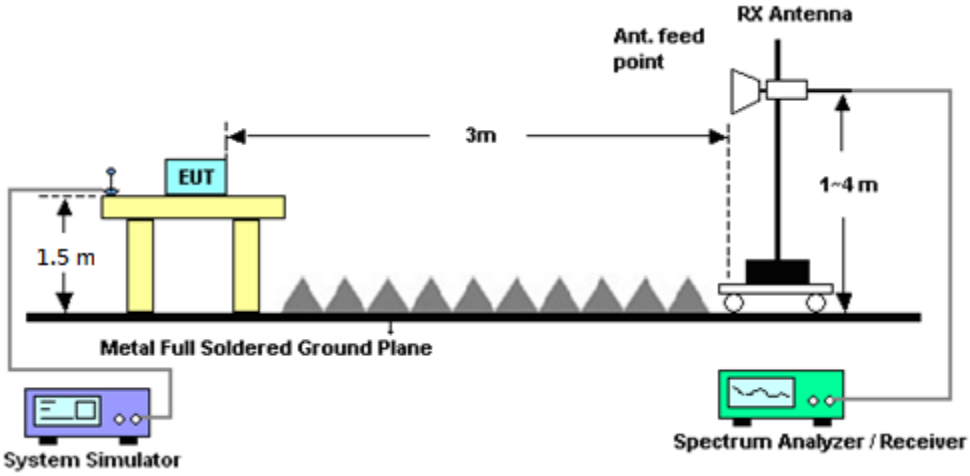
See list of measuring instruments of this test report.

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 Field Strength of Spurious Radiation Measurement

4.4.1 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.

4.4.2 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 (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (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 + 10log(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	Apr. 18, 2017~ Apr. 21, 2017	Jun. 26, 2017	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30℃ ~70℃	Nov. 16, 2016	Apr. 18, 2017~ Apr. 21, 2017	Nov. 15, 2017	Conducted (TH03-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL883644	Voltage:0~20V;Current:0~5A	Nov. 22, 2016	Apr. 18, 2017~ Apr. 21, 2017	Nov. 21, 2017	Conducted (TH03-HY)
Base Station (Measure)	Rohde & Schwarz	CMU200	117997	GSM / GPRS / WCDMA / CDMA	Aug. 05, 2016	Apr. 18, 2017~ Apr. 21, 2017	Aug. 04, 2017	Conducted (TH03-HY)
Bilog Antenna	TESEQ	CBL 6111D&008	37059&01	30MHz~1GHz	Oct. 15, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Oct. 14, 2017	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Oct. 25, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Oct. 24, 2017	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 23, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Dec. 22, 2017	Radiation (03CH12-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Apr. 20, 2017 ~ Apr. 24, 2017	Sep. 01, 2017	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-1	1815698	1GHz~18GHz	Dec. 01, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Nov. 30, 2017	Radiation (03CH12-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Nov. 10, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Nov. 09, 2017	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Mar. 23, 2017	Apr. 20, 2017 ~ Apr. 24, 2017	Mar. 22, 2018	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-450 0-B	N/A	1m~4m	N/A	Apr. 20, 2017 ~ Apr. 24, 2017	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Apr. 20, 2017 ~ Apr. 24, 2017	N/A	Radiation (03CH12-HY)
Preamplifier	MITEQ	JS44-18004 000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Jun. 13, 2017	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	18GHz- 40GHz	Nov. 08, 2016	Apr. 20, 2017 ~ Apr. 24, 2017	Nov. 07, 2017	Radiation (03CH12-HY)
Signal Generator	Anritsu	MG3694C	163401	0.1Hz~40GHz	Jan. 04, 2017	Apr. 20, 2017 ~ Apr. 24, 2017	Jan. 03, 2018	Radiation (03CH12-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))	3.36

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.70

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.98

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	32.95	32.91	32.73	29.24	29.24	29.42
GPRS class 8	32.99	32.92	33.00	29.43	29.15	29.27
GPRS class 10	28.52	28.52	28.50	25.86	25.62	25.84
GPRS class 11	26.85	26.80	26.83	23.83	23.75	23.77
GPRS class 12	26.10	25.98	25.86	22.62	22.59	22.50
EGPRS class 8	25.77	25.96	25.67	25.02	25.10	25.01
EGPRS class 10	25.55	25.28	25.31	24.70	24.80	24.66
EGPRS class 11	24.78	24.49	24.68	23.64	23.69	23.59
EGPRS class 12	23.25	23.19	23.00	22.14	22.16	22.10

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	22.80	22.58	22.40	22.34	22.42	22.38
HSDPA Subtest-1	21.72	21.68	21.41	21.53	21.40	21.71
HSDPA Subtest-2	21.74	21.61	21.43	21.57	21.63	21.31
HSDPA Subtest-3	21.25	21.11	21.00	21.05	20.93	21.23
HSDPA Subtest-4	21.27	21.13	21.02	20.87	20.92	20.81
HSUPA Subtest-1	21.72	21.68	21.40	21.34	21.39	21.30
HSUPA Subtest-2	19.82	19.72	19.68	19.33	19.34	19.35
HSUPA Subtest-3	20.73	20.68	20.58	20.35	20.42	20.38
HSUPA Subtest-4	19.72	19.65	19.60	19.38	19.41	19.36
HSUPA Subtest-5	21.74	21.62	21.42	21.56	21.41	21.74

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	23.91	23.64	23.53	23.51	23.14	23.46
1xRTT RC3 SO55	23.91	23.76	23.52	23.42	23.02	23.45
1xRTT RC3 SO32 (+ F-SCH)	23.91	23.66	23.53	23.48	23.05	23.44
1xRTT RC3 SO32 (+SCH)	23.90	23.70	23.52	23.47	23.06	23.42
1xEVDO RTAP 153.6Kbps	23.91	23.67	23.54	23.50	23.12	23.46
1xEVDO RETAP 4096Bits	23.92	23.76	23.54	23.52	23.16	23.46

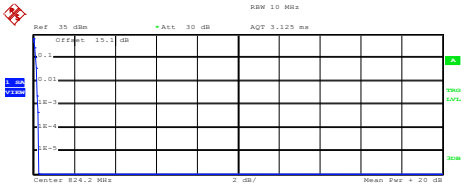
A1. GSM

Peak-to-Average Ratio

Mode	GSM850		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.24	3.28	PASS
Middle CH	0.24	3.20	
Highest CH	0.24	3.28	

GSM850 (GPRS class 8)

Lowest Channel



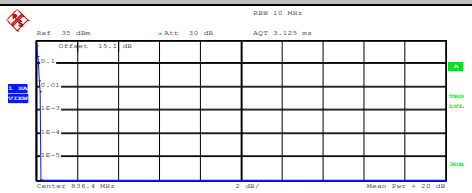
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 31.27 dBm
Peak 31.51 dBm
Crest 0.25 dB

10 % 0.12 dB
1 % 0.20 dB
.1 % 0.24 dB
.01 % 0.28 dB

Date: 18.APR.2017 09:33:50

Middle Channel



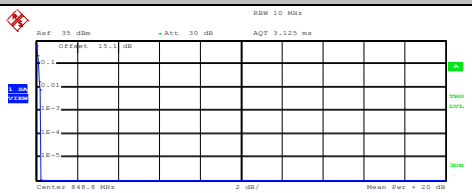
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 31.15 dBm
Peak 31.37 dBm
Crest 0.22 dB

10 % 0.12 dB
1 % 0.20 dB
.1 % 0.24 dB
.01 % 0.24 dB

Date: 18.APR.2017 09:34:16

Highest Channel



Complementary Cumulative Distribution Function (100000 samples)

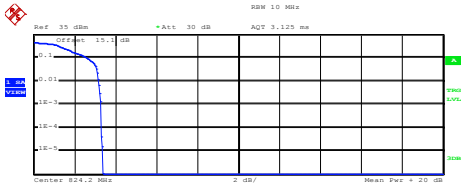
Trace 1
Mean 31.43 dBm
Peak 31.66 dBm
Crest 0.23 dB

10 % 0.12 dB
1 % 0.20 dB
.1 % 0.24 dB
.01 % 0.24 dB

Date: 18.APR.2017 09:34:43

GSM850 (EDGE class 8)

Lowest Channel



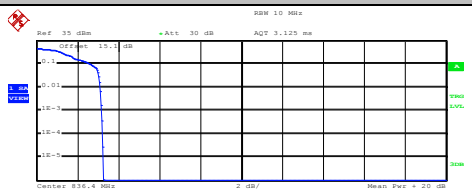
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 25.03 dBm
Peak 28.41 dBm
Crest 3.38 dB

10 % 2.64 dB
1 % 3.16 dB
.1 % 3.28 dB
.01 % 3.32 dB

Date: 18.APR.2017 09:57:40

Middle Channel



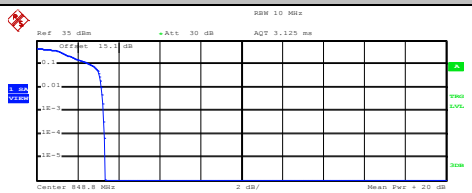
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 25.00 dBm
Peak 28.27 dBm
Crest 3.27 dB

10 % 2.64 dB
1 % 3.12 dB
.1 % 3.20 dB
.01 % 3.24 dB

Date: 18.APR.2017 09:58:07

Highest Channel



Complementary Cumulative Distribution Function (100000 samples)

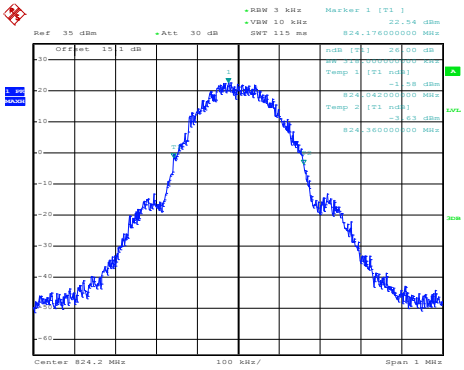
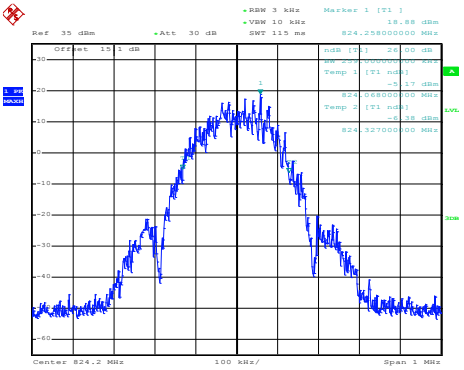
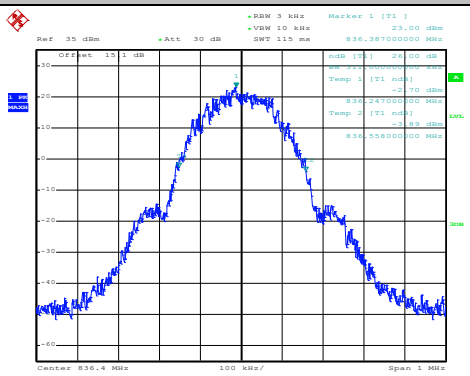
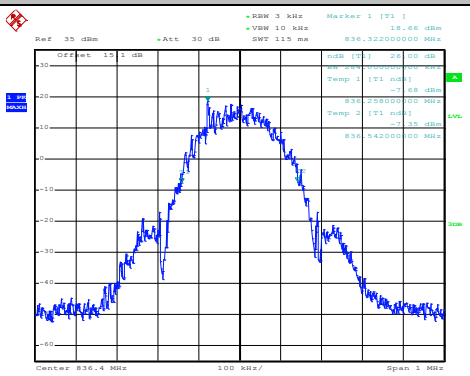
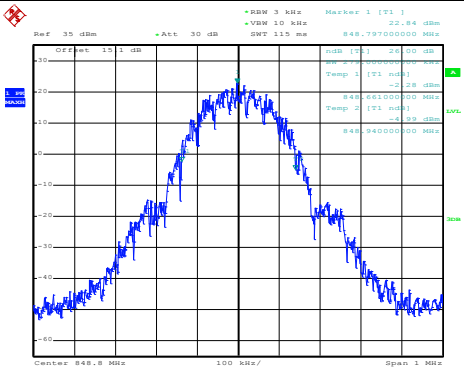
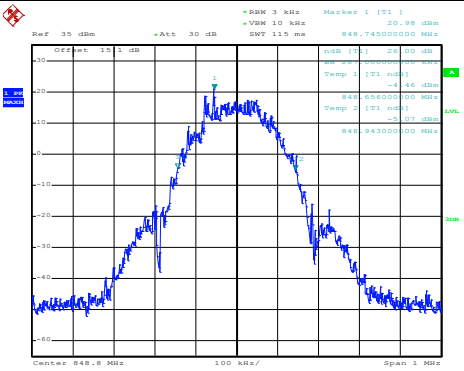
Trace 1
Mean 25.06 dBm
Peak 28.41 dBm
Crest 3.35 dB

10 % 2.64 dB
1 % 3.16 dB
.1 % 3.28 dB
.01 % 3.32 dB

Date: 18.APR.2017 10:11:22

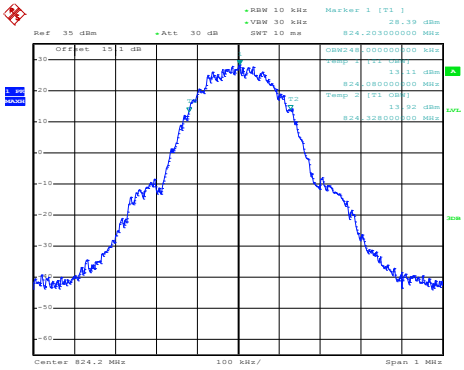
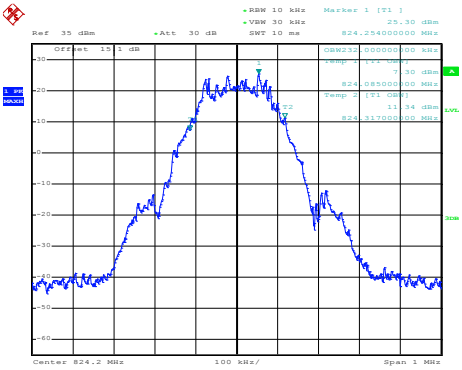
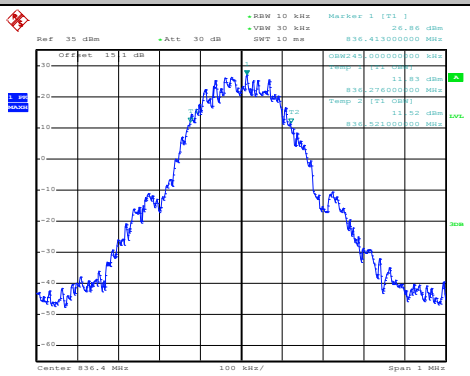
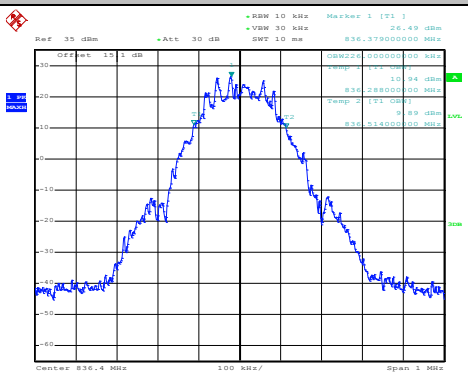
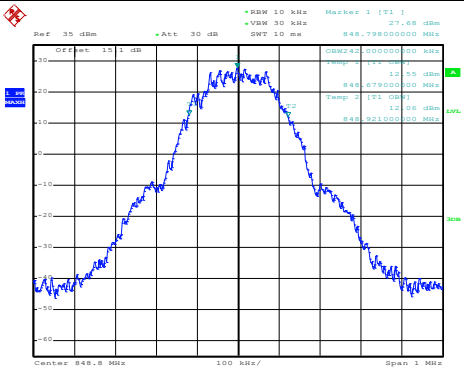
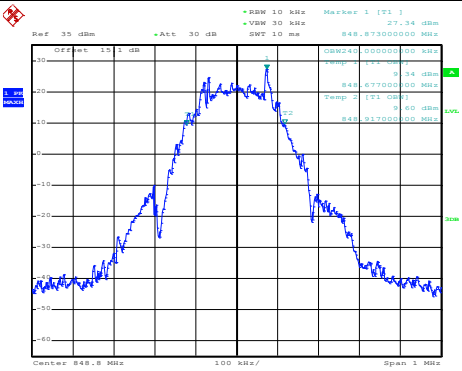
26dB Bandwidth

Mode	GSM850	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.318	0.259
Middle CH	0.311	0.284
Highest CH	0.279	0.287

GSM850 (GPRS class 8)	GSM850 (EDGE class 8)
Lowest Channel	**Lowest Channel**
 Date: 18.APR.2017 09:23:47	 Date: 18.APR.2017 09:43:09
Middle Channel	**Middle Channel**
 Date: 18.APR.2017 09:24:15	 Date: 18.APR.2017 09:43:38
Highest Channel	**Highest Channel**
 Date: 18.APR.2017 09:24:44	 Date: 18.APR.2017 09:44:06

Occupied Bandwidth

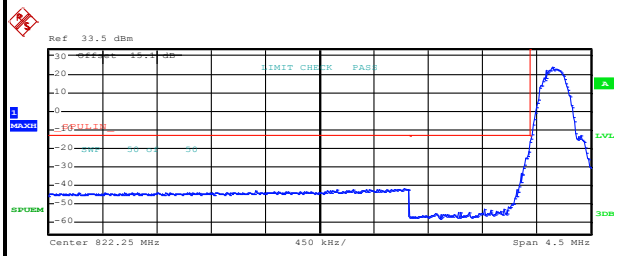
Mode	GSM850	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.248	0.232
Middle CH	0.245	0.226
Highest CH	0.242	0.240

GSM850 (GPRS class 8)	GSM850 (EDGE class 8)
Lowest Channel	**Lowest Channel**
 Date: 18.APR.2017 09:25:17	 Date: 18.APR.2017 09:44:50
Middle Channel	**Middle Channel**
 Date: 18.APR.2017 09:25:45	 Date: 18.APR.2017 09:45:19
Highest Channel	**Highest Channel**
 Date: 18.APR.2017 09:26:13	 Date: 18.APR.2017 09:45:47

Conducted Band Edge

GSM850 (GPRS class 8)

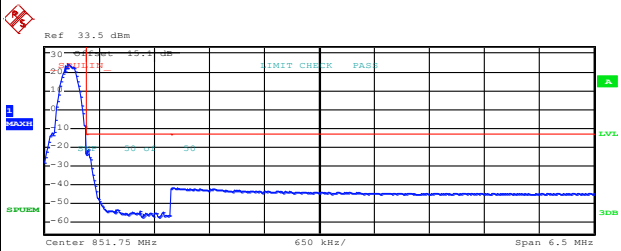
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.946000 M	-41.94	-28.94
823.000 M	824.000 M	3.00 k	823.984000 M	-21.91	-8.91
824.000 M	824.500 M	10.00 k	824.180500 M	23.57	-11.43

Date: 18.APR.2017 09:27:42

Highest Band Edge

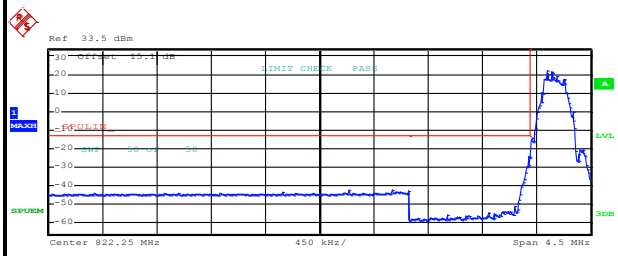


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
848.500 M	849.000 M	10.00 k	848.778000 M	24.25	-10.75
849.000 M	850.000 M	3.00 k	849.020000 M	-21.44	-8.44
850.000 M	855.000 M	100.00 k	850.015000 M	-41.80	-28.80

Date: 18.APR.2017 09:29:10

GSM850 (EDGE class 8)

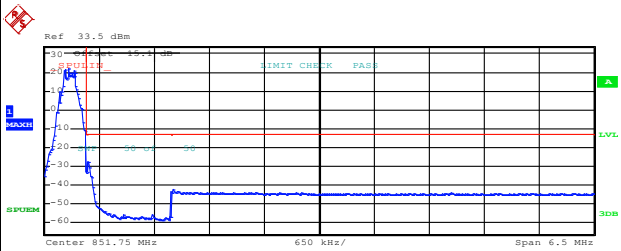
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.853000 M	-41.99	-28.99
823.000 M	824.000 M	3.00 k	823.992000 M	-24.22	-11.22
824.000 M	824.500 M	10.00 k	824.144000 M	21.88	-13.12

Date: 18.APR.2017 09:47:16

Highest Band Edge



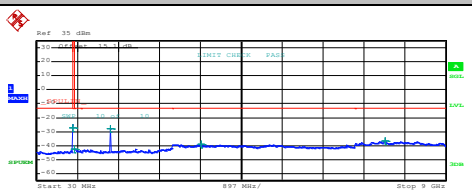
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
848.500 M	849.000 M	10.00 k	848.782000 M	22.15	-12.85
849.000 M	850.000 M	3.00 k	849.008000 M	-27.41	-14.41
850.000 M	855.000 M	100.00 k	850.010000 M	-42.49	-29.49

Date: 18.APR.2017 09:48:43

Conducted Spurious Emission

GSM850 (GPRS class 8)

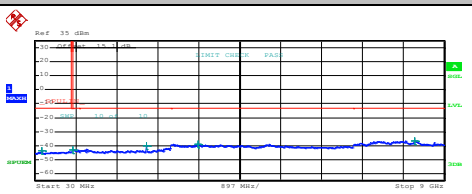
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	819.802500 M	-27.13	-14.13
855.000 M	1.000 G	1.00 M	857.175000 M	-42.66	-29.66
1.000 G	3.000 G	1.00 M	1.648500 G	-28.03	-15.03
3.000 G	7.000 G	1.00 M	3.638000 G	-39.21	-26.21
7.000 G	9.000 G	1.00 M	7.676500 G	-36.80	-23.80

Date: 18.APR.2017 09:29:59

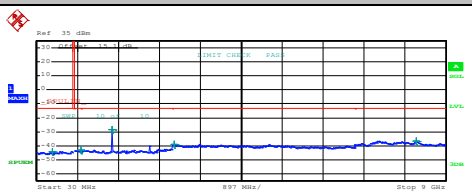
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	167.460000 M	-43.92	-30.92
855.000 M	1.000 G	1.00 M	859.930000 M	-43.14	-30.14
1.000 G	3.000 G	1.00 M	2.472500 G	-40.03	-27.03
3.000 G	7.000 G	1.00 M	3.607000 G	-38.89	-25.89
7.000 G	9.000 G	1.00 M	8.357500 G	-36.83	-23.83

Date: 18.APR.2017 09:49:36

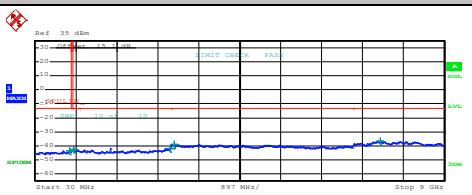
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	366.737500 M	-44.00	-31.00
855.000 M	1.000 G	1.00 M	999.166260 M	-42.91	-29.91
1.000 G	3.000 G	1.00 M	1.673000 G	-28.48	-15.48
3.000 G	7.000 G	1.00 M	3.048000 G	-39.12	-26.12
7.000 G	9.000 G	1.00 M	8.348500 G	-36.72	-23.72

Date: 18.APR.2017 09:30:45

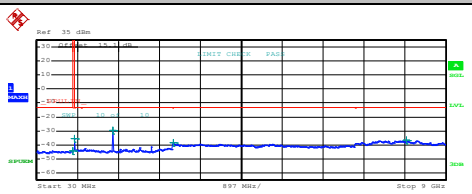
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	774.575000 M	-43.60	-30.60
855.000 M	1.000 G	1.00 M	864.425001 M	-42.72	-29.72
1.000 G	3.000 G	1.00 M	2.995500 G	-41.96	-28.96
3.000 G	7.000 G	1.00 M	3.077000 G	-39.01	-26.01
7.000 G	9.000 G	1.00 M	7.598000 G	-36.44	-23.44

Date: 18.APR.2017 09:50:21

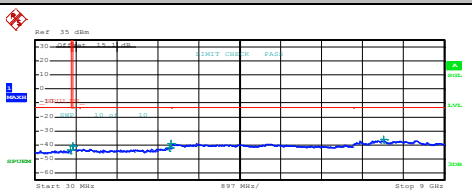
Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	811.705000 M	-43.99	-30.99
855.000 M	1.000 G	1.00 M	855.036250 M	-35.57	-22.57
1.000 G	3.000 G	1.00 M	1.697500 G	-29.81	-16.81
3.000 G	7.000 G	1.00 M	3.029000 G	-38.63	-25.63
7.000 G	9.000 G	1.00 M	8.143500 G	-36.92	-23.92

Date: 18.APR.2017 09:31:31

Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	801.632500 M	-43.76	-30.76
855.000 M	1.000 G	1.00 M	855.072500 M	-40.87	-27.87
1.000 G	3.000 G	1.00 M	2.977500 G	-41.77	-28.77
3.000 G	7.000 G	1.00 M	3.009000 G	-39.04	-26.04
7.000 G	9.000 G	1.00 M	7.673000 G	-36.14	-23.14

Date: 18.APR.2017 09:51:07

Frequency Stability

Test Conditions	Middle Channel	GSM850 (GPRS class 8)	GSM850 (EDGE class 8)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0084	0.0060	PASS
40	Normal Voltage	0.0012	0.0012	
30	Normal Voltage	0.0036	0.0096	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0048	0.0048	
0	Normal Voltage	0.0060	0.0012	
-10	Normal Voltage	0.0024	0.0024	
-20	Normal Voltage	0.0036	0.0120	
-30	Normal Voltage	0.0036	0.0060	
20	Maximum Voltage	0.0060	0.0012	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0000	0.0072	

Note:

1. Normal Voltage = 3.8V. ；Battery End Point (BEP) = 3.4 V.；Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block.

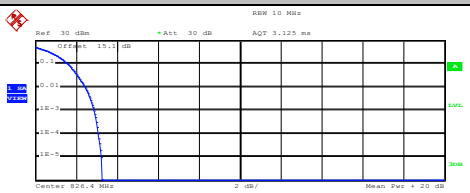
A2. WCDMA

Peak-to-Average Ratio

Mode	WCDMA Band V	Limit: 13dB
Mod.	RMC 12.2Kbps	Result
Lowest CH	2.88	PASS
Middle CH	3.00	
Highest CH	3.04	

WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



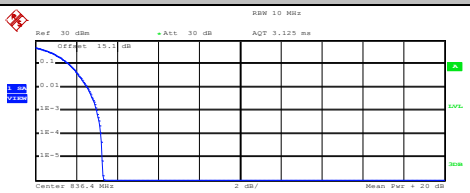
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	22.12 dBm
Peak	25.39 dBm
Crest	3.27 dB
10 %	1.60 dB
1 %	2.44 dB
.1 %	2.88 dB
.01 %	3.08 dB

Date: 18.APR.2017 10:28:36

Middle Channel



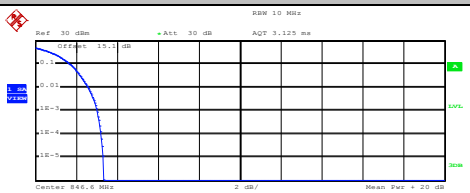
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	21.92 dBm
Peak	25.24 dBm
Crest	3.33 dB
10 %	1.64 dB
1 %	2.52 dB
.1 %	3.00 dB
.01 %	3.20 dB

Date: 18.APR.2017 10:28:44

Highest Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	21.68 dBm
Peak	25.03 dBm
Crest	3.36 dB
10 %	1.72 dB
1 %	2.60 dB
.1 %	3.04 dB
.01 %	3.20 dB

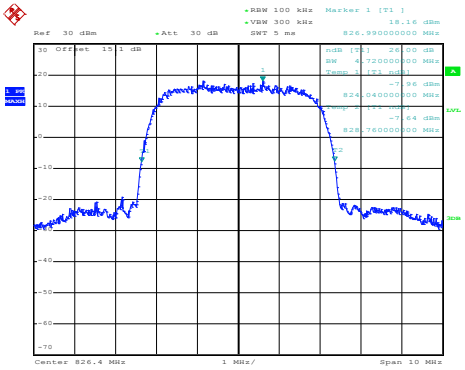
Date: 18.APR.2017 10:28:54

26dB Bandwidth

Mode	WCDMA Band V
Mod.	RMC 12.2Kbps
Lowest CH	4.72
Middle CH	4.72
Highest CH	4.73

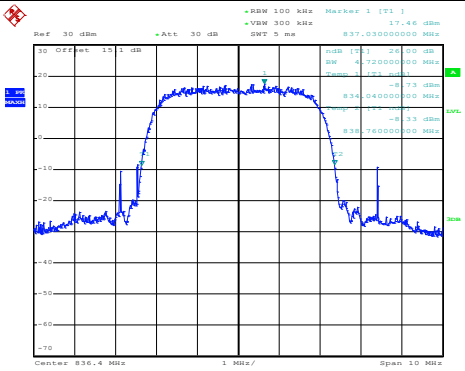
WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



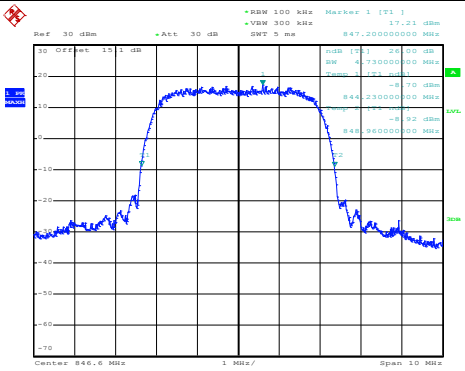
Date: 18.APR.2017 10:15:34

Middle Channel



Date: 18.APR.2017 10:16:02

Highest Channel



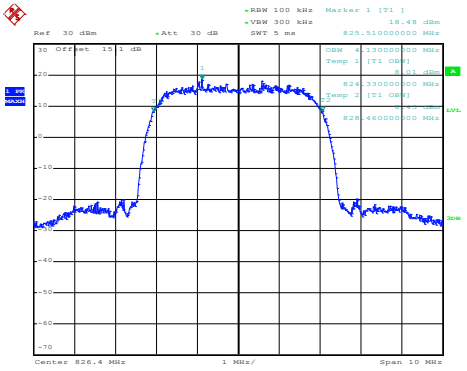
Date: 18.APR.2017 10:16:30

Occupied Bandwidth

Mode	WCDMA Band V
Mod.	RMC 12.2Kbps
Lowest CH	4.13
Middle CH	4.12
Highest CH	4.12

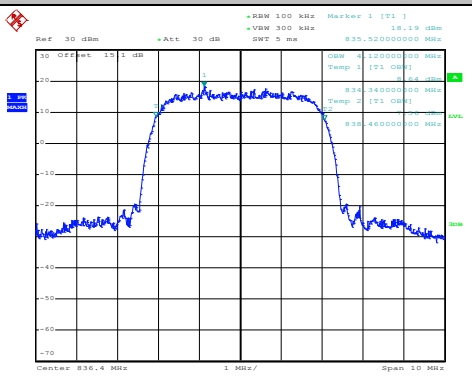
WCDMA Band V (RMC 12.2Kbps)

Lowest Channel



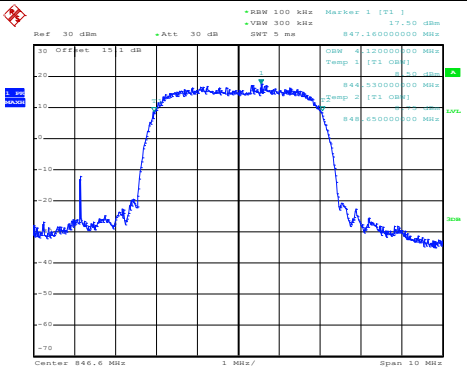
Date: 18.APR.2017 10:17:40

Middle Channel



Date: 18.APR.2017 10:18:08

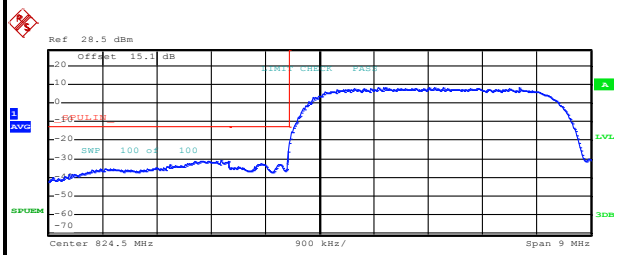
Highest Channel



Date: 18.APR.2017 10:18:36

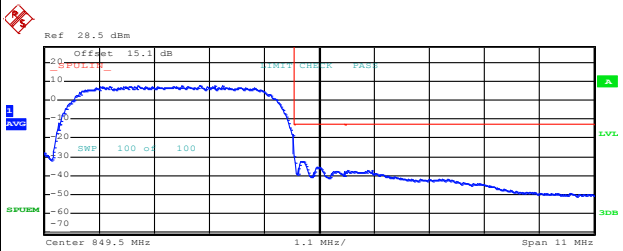
Conducted Band Edge

WCDMA Band V (RMC 12.2Kbps)	
Lowest Band Edge	**Highest Band Edge**



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.865000 M	-30.94	-17.94
823.000 M	824.000 M	50.00 k	823.996000 M	-27.31	-14.31
824.000 M	829.000 M	100.00 k	826.395000 M	8.42	-26.58

Date: 18.APR.2017 10:21:54



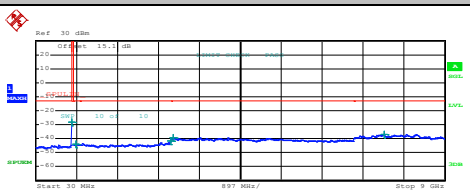
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
844.000 M	849.000 M	100.00 k	847.555000 M	7.84	-27.16
849.000 M	850.000 M	50.00 k	849.004000 M	-30.30	-17.30
850.000 M	855.000 M	100.00 k	850.075000 M	-37.42	-24.42

Date: 18.APR.2017 10:24:36

Conducted Spurious Emission

WCDMA Band V (RMC 12.2Kbps)

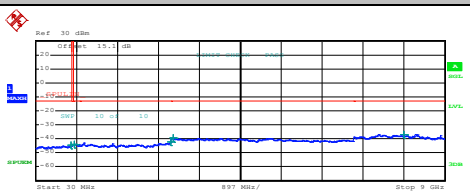
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	820.000 M	1.00 M	818.815000 M	-28.11	-15.11
855.000 M	1.000 G	1.00 M	900.638753 M	-43.86	-30.86
1.000 G	3.000 G	1.00 M	2.999000 G	-41.55	-28.55
3.000 G	7.000 G	1.00 M	3.044000 G	-39.26	-26.26
7.000 G	9.000 G	1.00 M	7.675000 G	-36.81	-23.81

Date: 18.APR.2017 10:25:26

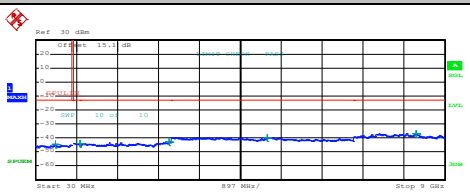
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	820.000 M	1.00 M	806.175000 M	-44.61	-31.61
855.000 M	1.000 G	1.00 M	867.651251 M	-44.05	-31.05
1.000 G	3.000 G	1.00 M	2.982000 G	-42.04	-29.04
3.000 G	7.000 G	1.00 M	3.036000 G	-39.56	-26.56
7.000 G	9.000 G	1.00 M	8.099000 G	-36.91	-23.91

Date: 18.APR.2017 10:26:12

Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	820.000 M	1.00 M	456.007500 M	-44.46	-31.46
855.000 M	1.000 G	1.00 M	995.758760 M	-43.80	-30.80
1.000 G	3.000 G	1.00 M	2.948500 G	-42.64	-29.64
3.000 G	7.000 G	1.00 M	5.115000 G	-39.67	-26.67
7.000 G	9.000 G	1.00 M	8.369000 G	-37.06	-24.06

Date: 18.APR.2017 10:26:57

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	0.0012	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0132	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0048	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0024	
-20	Normal Voltage	0.0036	
-30	Normal Voltage	0.0143	
20	Maximum Voltage	0.0012	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0012	

Note:

1. Normal Voltage = 3.8V. ；Battery End Point (BEP) = 3.4 V.；Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block.

A3. CDMA

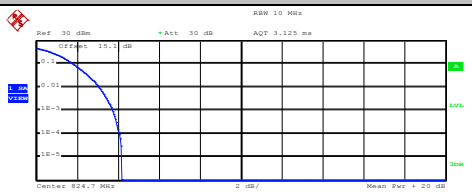
Peak-to-Average Ratio

Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xRTT	1xRTT	Result
Lowest CH	3.76	4.16	PASS
Middle CH	4.20	4.32	
Highest CH	3.48	4.28	

Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xEV-DO Rev. A	1xEV-DO Rev. A	Result
Lowest CH	5.04	5.88	PASS
Middle CH	5.32	6.08	
Highest CH	4.48	4.76	

CDMA BC0 (1xRTT)

Lowest Channel

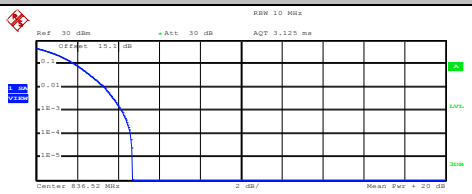


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.17 dBm
Peak	27.36 dBm
Crest	4.19 dB
10 %	1.80 dB
1 %	3.08 dB
.1 %	3.76 dB
.01 %	4.08 dB

Date: 20.APR.2017 09:43:56

Middle Channel

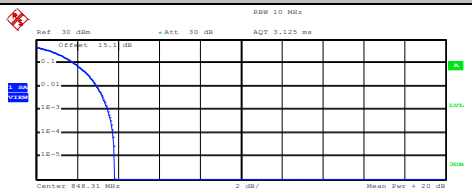


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.00 dBm
Peak	27.71 dBm
Crest	4.71 dB
10 %	1.88 dB
1 %	3.32 dB
.1 %	4.20 dB
.01 %	4.60 dB

Date: 20.APR.2017 09:44:10

Highest Channel



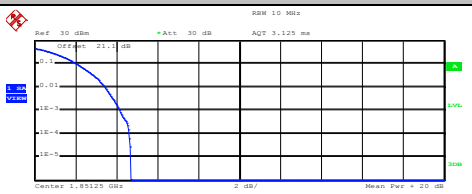
Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.82 dBm
Peak	26.66 dBm
Crest	3.83 dB
10 %	1.84 dB
1 %	2.96 dB
.1 %	3.48 dB
.01 %	3.76 dB

Date: 20.APR.2017 09:44:34

CDMA BC1 (1xRTT)

Lowest Channel

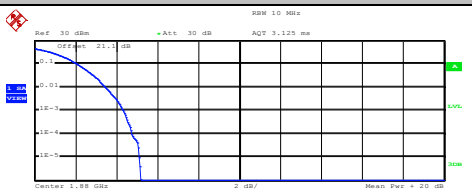


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.97 dBm
Peak	26.67 dBm
Crest	4.70 dB
10 %	2.08 dB
1 %	3.44 dB
.1 %	4.16 dB
.01 %	4.64 dB

Date: 20.APR.2017 11:57:16

Middle Channel

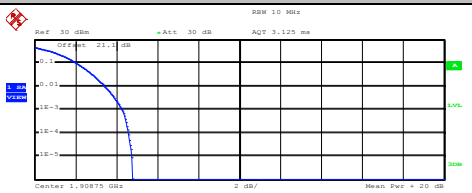


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.13 dBm
Peak	27.31 dBm
Crest	5.18 dB
10 %	2.08 dB
1 %	3.48 dB
.1 %	4.32 dB
.01 %	4.76 dB

Date: 20.APR.2017 11:57:25

Highest Channel



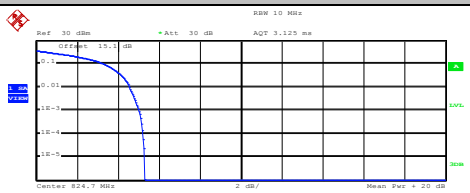
Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.89 dBm
Peak	26.67 dBm
Crest	4.78 dB
10 %	2.08 dB
1 %	3.44 dB
.1 %	4.28 dB
.01 %	4.60 dB

Date: 20.APR.2017 11:57:35

CDMA BC0 (1xEV-DO Rev. A)

Lowest Channel

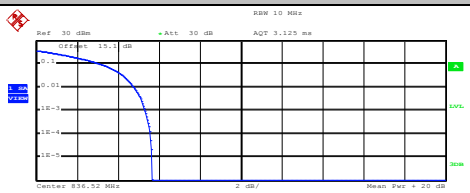


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.91 dBm
Peak	28.21 dBm
Crest	5.30 dB
10 %	3.36 dB
1 %	4.56 dB
.1 %	5.04 dB
.01 %	5.24 dB

Date: 20.APR.2017 10:02:19

Middle Channel

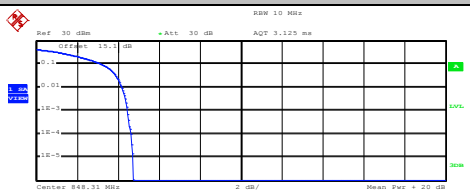


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.12 dBm
Peak	28.77 dBm
Crest	5.65 dB
10 %	3.20 dB
1 %	4.76 dB
.1 %	5.32 dB
.01 %	5.56 dB

Date: 20.APR.2017 10:02:40

Highest Channel



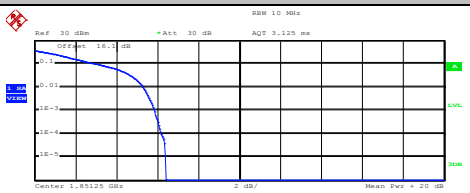
Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.69 dBm
Peak	27.43 dBm
Crest	4.74 dB
10 %	3.24 dB
1 %	4.20 dB
.1 %	4.48 dB
.01 %	4.64 dB

Date: 20.APR.2017 10:03:10

CDMA BC1 (1xEV-DO Rev. A)

Lowest Channel

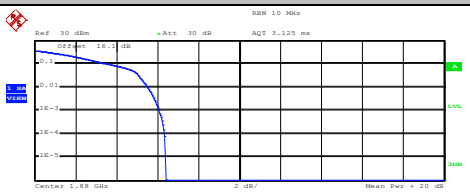


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.16 dBm
Peak	28.56 dBm
Crest	6.40 dB
10 %	3.12 dB
1 %	5.32 dB
.1 %	5.88 dB
.01 %	6.20 dB

Date: 20.APR.2017 10:28:37

Middle Channel

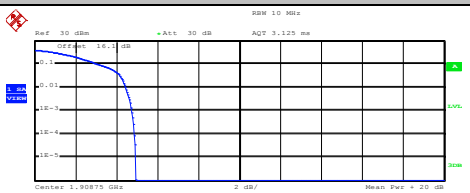


Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	22.52 dBm
Peak	28.91 dBm
Crest	6.39 dB
10 %	3.72 dB
1 %	5.52 dB
.1 %	6.08 dB
.01 %	6.36 dB

Date: 20.APR.2017 10:28:53

Highest Channel



Complementary Cumulative Distribution Function (100000 samples)

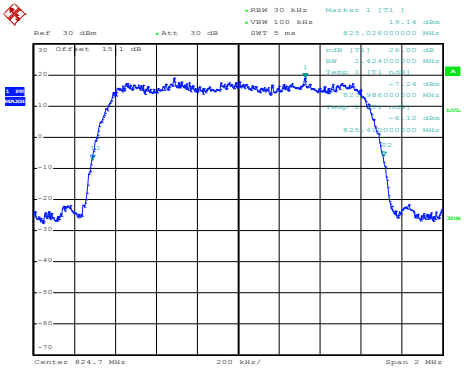
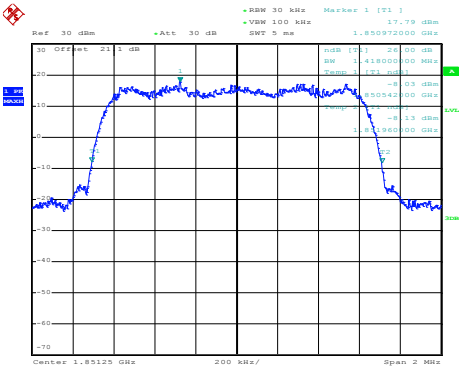
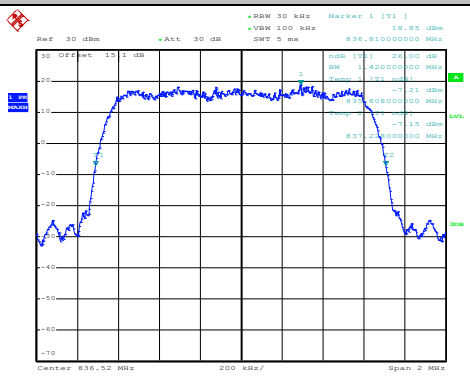
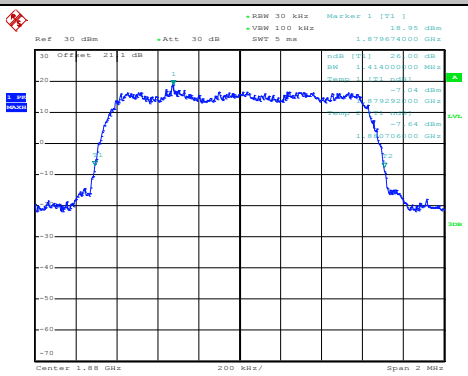
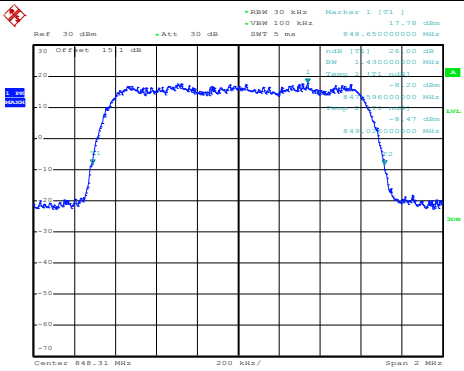
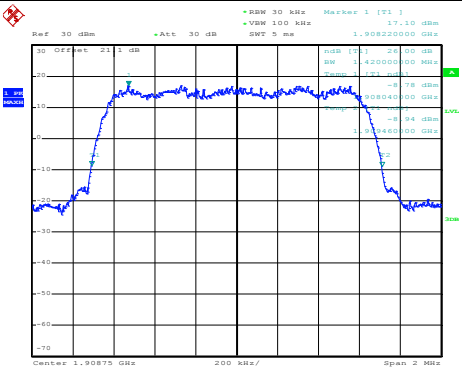
	Trace 1
Mean	22.63 dBm
Peak	27.57 dBm
Crest	4.94 dB
10 %	3.16 dB
1 %	4.44 dB
.1 %	4.76 dB
.01 %	4.88 dB

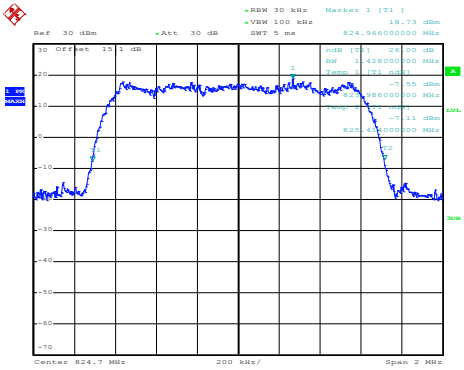
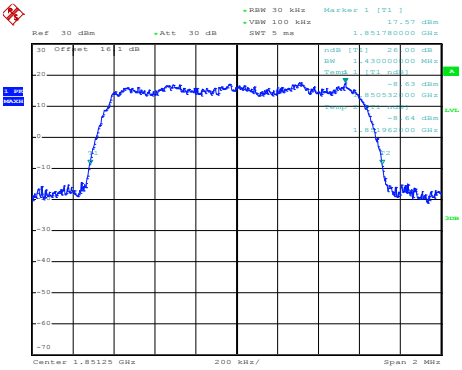
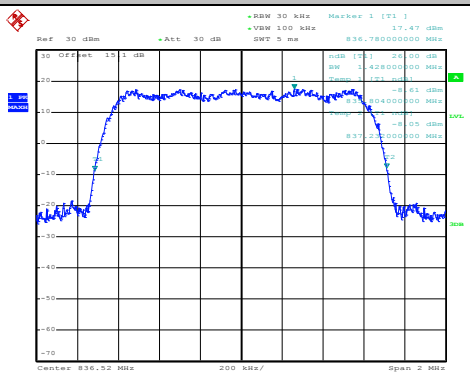
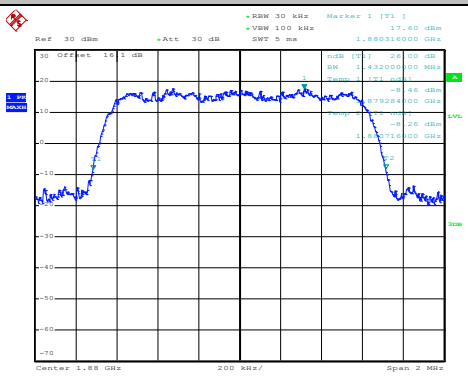
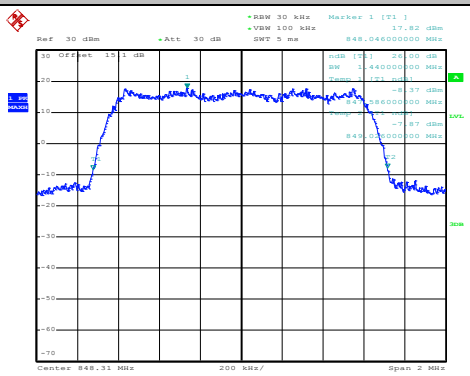
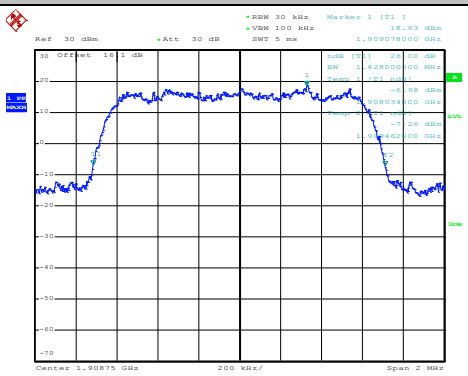
Date: 20.APR.2017 10:29:14

26dB Bandwidth

Mode	CDMA BC0	CDMA BC1
Mod.	1xRTT	1xRTT
Lowest CH	1.42	1.42
Middle CH	1.42	1.41
Highest CH	1.43	1.42

Mode	CDMA BC0	CDMA BC1
Mod.	1xEV-DO Rev. A	1xEV-DO Rev. A
Lowest CH	1.43	1.43
Middle CH	1.43	1.43
Highest CH	1.44	1.43

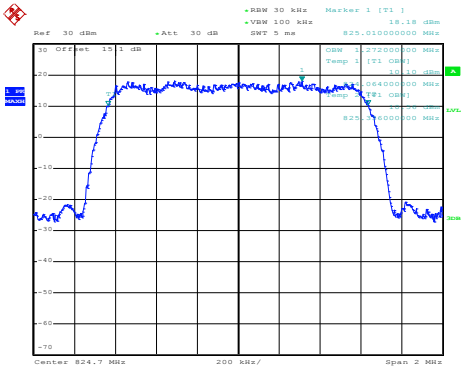
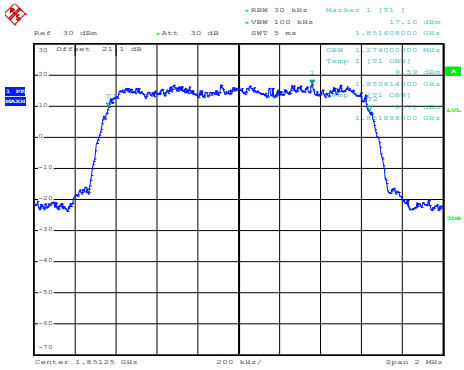
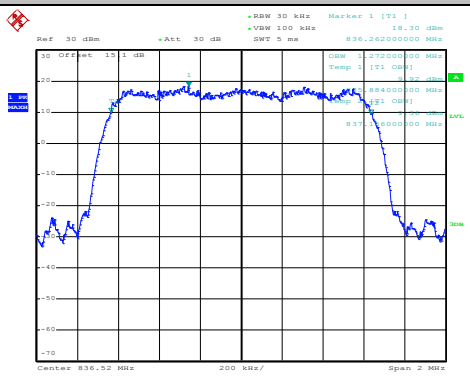
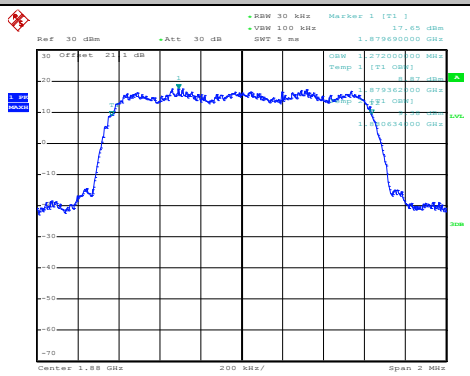
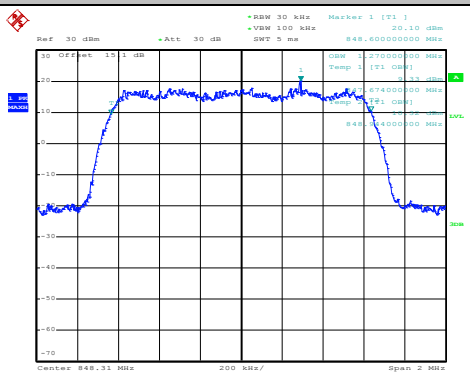
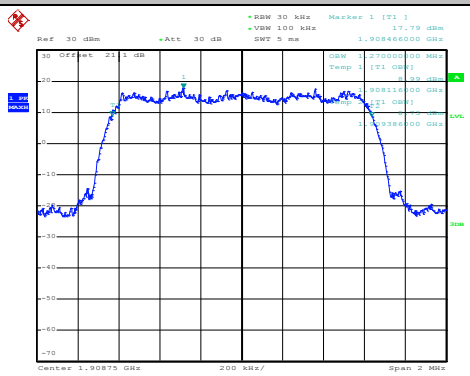
CDMA BC0 (1xRTT)	CDMA BC1 (1xRTT)
Lowest Channel	**Lowest Channel**
 Date: 20.APR.2017 09:32:19	 Date: 20.APR.2017 11:46:45
Middle Channel	**Middle Channel**
 Date: 20.APR.2017 09:32:47	 Date: 20.APR.2017 11:47:13
Highest Channel	**Highest Channel**
 Date: 20.APR.2017 09:33:15	 Date: 20.APR.2017 11:47:40

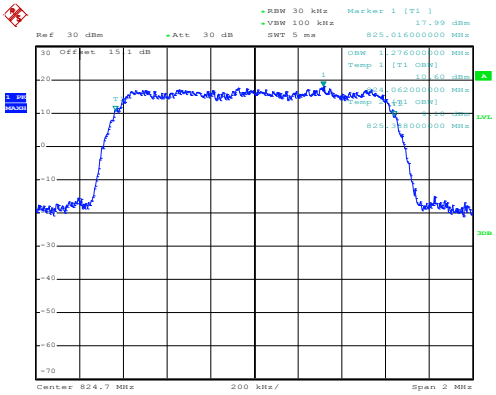
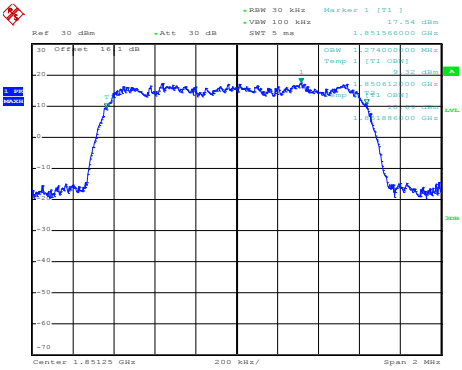
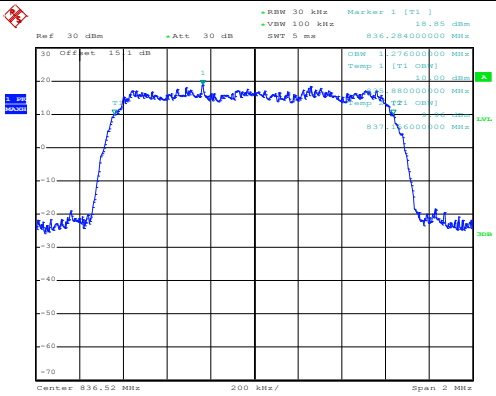
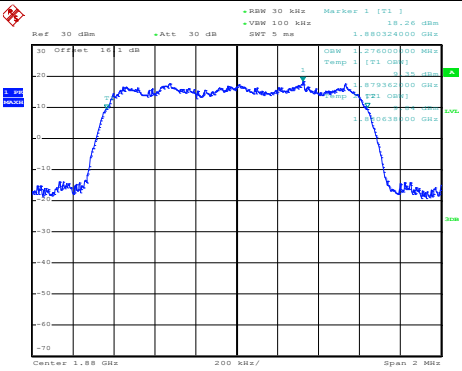
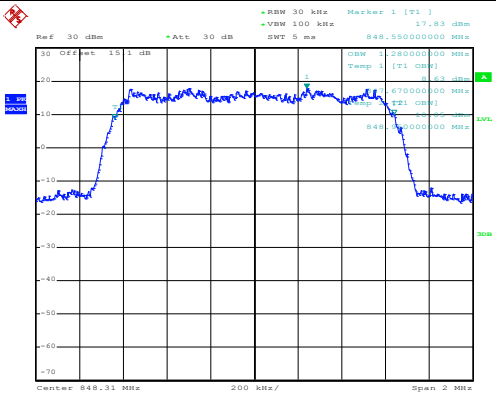
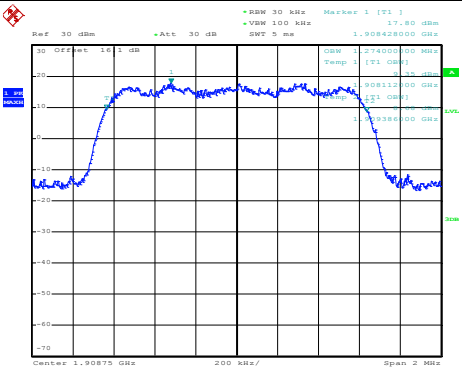
CDMA BC0 (1xEV-DO Rev. A)	CDMA BC1 (1xEV-DO Rev. A)
Lowest Channel	**Lowest Channel**
 Date: 20.APR.2017 09:48:54	 Date: 20.APR.2017 10:15:55
Middle Channel	**Middle Channel**
 Date: 20.APR.2017 09:49:26	 Date: 20.APR.2017 10:16:30
Highest Channel	**Highest Channel**
 Date: 20.APR.2017 09:49:59	 Date: 20.APR.2017 10:17:04

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. A	1xEV-DO Rev. A
Lowest CH	1.28	1.27
Middle CH	1.28	1.28
Highest CH	1.28	1.27

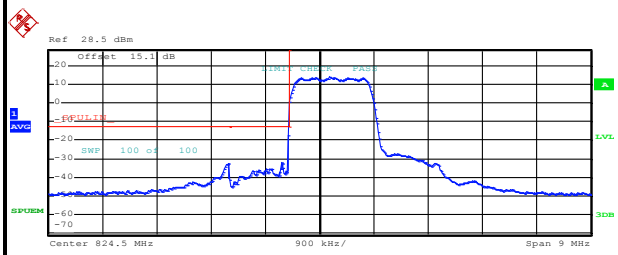
CDMA BC0 (1xRTT)	CDMA BC1 (1xRTT)
Lowest Channel	**Lowest Channel**
 Date: 20.APR.2017 09:33:49	 Date: 20.APR.2017 11:48:14
Middle Channel	**Middle Channel**
 Date: 20.APR.2017 09:34:17	 Date: 20.APR.2017 11:48:42
Highest Channel	**Highest Channel**
 Date: 20.APR.2017 09:34:45	 Date: 20.APR.2017 11:49:10

CDMA BC0 (1xEV-DO Rev. A)	CDMA BC1 (1xEV-DO Rev. A)
Lowest Channel	**Lowest Channel**
 Date: 20.APR.2017 09:57:46	 Date: 20.APR.2017 10:17:43
Middle Channel	**Middle Channel**
 Date: 20.APR.2017 09:58:19	 Date: 20.APR.2017 10:18:32
Highest Channel	**Highest Channel**
 Date: 20.APR.2017 09:59:13	 Date: 20.APR.2017 10:19:16

Conducted Band Edge

CDMA BC0 (1xRTT)

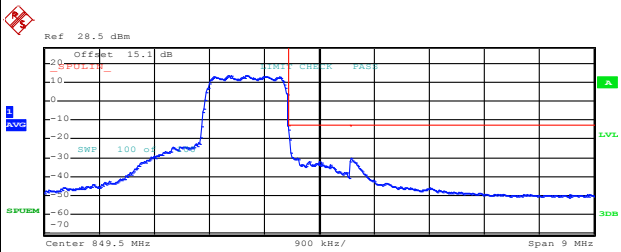
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.985000 M	-32.67	-19.67
823.000 M	824.000 M	14.00 k	823.996000 M	-20.91	-7.91
824.000 M	829.000 M	100.00 k	824.660000 M	13.88	-21.12

Date: 20.APR.2017 09:37:31

Highest Band Edge

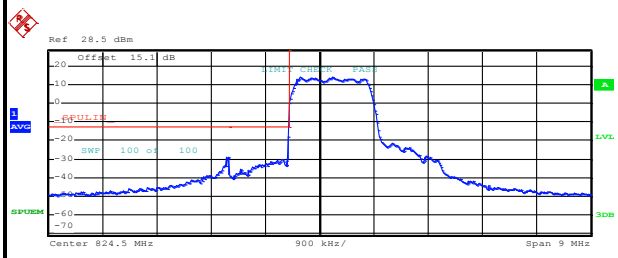


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
845.000 M	849.000 M	100.00 k	848.308000 M	13.82	-21.18
849.000 M	850.000 M	14.00 k	849.004000 M	-15.90	-2.90
850.000 M	854.000 M	100.00 k	850.024000 M	-30.49	-17.49

Date: 20.APR.2017 09:40:13

CDMA BC0 (1xEV-DO Rev. A)

Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.949000 M	-29.24	-16.24
823.000 M	824.000 M	14.00 k	823.996000 M	-19.42	-6.42
824.000 M	829.000 M	100.00 k	824.705000 M	14.16	-20.84

Date: 20.APR.2017 09:52:50

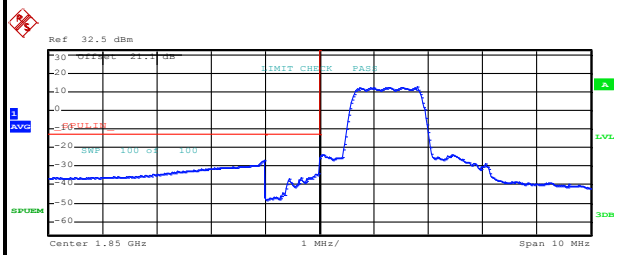
Highest Band Edge

Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
845.000 M	849.000 M	100.00 k	848.352000 M	14.15	-20.85
849.000 M	850.000 M	14.00 k	849.004000 M	-14.71	-1.71
850.000 M	854.000 M	100.00 k	850.036000 M	-26.11	-13.11

Date: 20.APR.2017 09:57:04

CDMA BC1 (1xRTT)

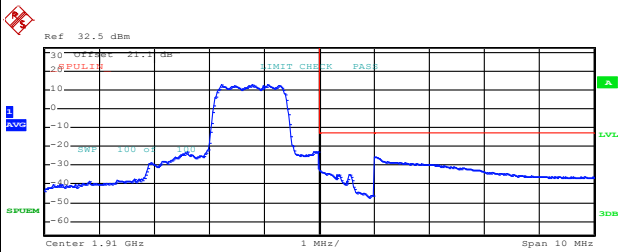
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.845 G	1.849 G	1.00 M	1.849000 G	-26.73	-13.73
1.849 G	1.850 G	14.00 k	1.849996 G	-34.01	-21.01
1.850 G	1.855 G	100.00 k	1.851795 G	12.99	-22.01

Date: 20.APR.2017 11:51:54

Highest Band Edge

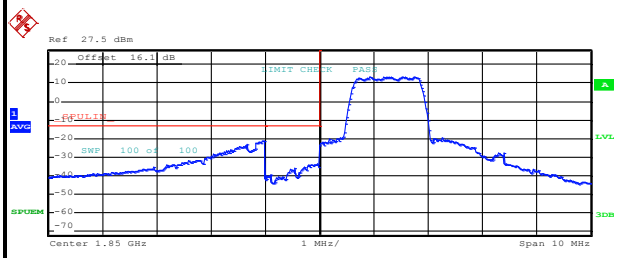


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.905 G	1.910 G	100.00 k	1.908215 G	12.74	-22.26
1.910 G	1.911 G	14.00 k	1.910024 G	-32.25	-19.25
1.911 G	1.915 G	1.00 M	1.911020 G	-25.55	-12.55

Date: 20.APR.2017 11:54:36

CDMA BC1 (1xEV-DO Rev. A)

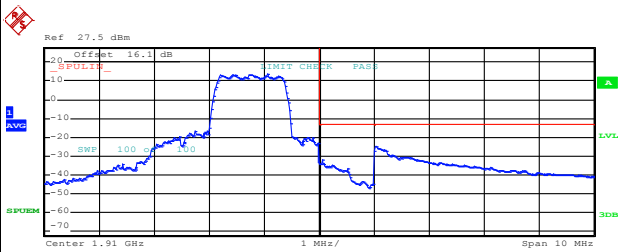
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.845 G	1.849 G	1.00 M	1.848944 G	-21.51	-8.51
1.849 G	1.850 G	14.00 k	1.849952 G	-33.74	-20.74
1.850 G	1.855 G	100.00 k	1.851275 G	13.46	-21.54

Date: 20.APR.2017 10:22:01

Highest Band Edge



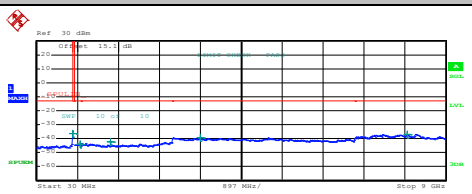
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.905 G	1.910 G	100.00 k	1.909055 G	13.47	-21.53
1.910 G	1.911 G	14.00 k	1.910056 G	-32.10	-19.10
1.911 G	1.915 G	1.00 M	1.911036 G	-24.97	-11.97

Date: 20.APR.2017 10:24:50

Conducted Spurious Emission

CDMA BC0 (1xRTT)

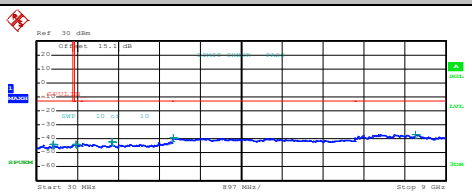
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	819.802500 M	-36.23	-23.25
855.000 M	1.000 G	1.00 M	985.645009 M	-44.26	-31.26
1.000 G	3.000 G	1.00 M	1.649500 G	-42.03	-29.03
3.000 G	7.000 G	1.00 M	3.615000 G	-39.39	-26.39
7.000 G	9.000 G	1.00 M	8.150000 G	-36.82	-23.82

Date: 20.APR.2017 09:41:24

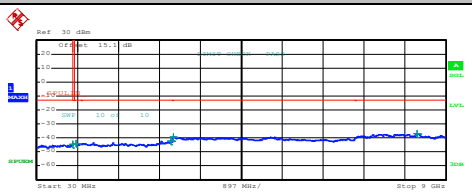
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	395.770000 M	-44.23	-31.23
855.000 M	1.000 G	1.00 M	886.718752 M	-44.12	-31.12
1.000 G	3.000 G	1.00 M	1.672500 G	-42.42	-29.42
3.000 G	7.000 G	1.00 M	3.027000 G	-39.24	-26.24
7.000 G	9.000 G	1.00 M	8.335500 G	-36.98	-23.98

Date: 20.APR.2017 09:42:09

Highest Channel

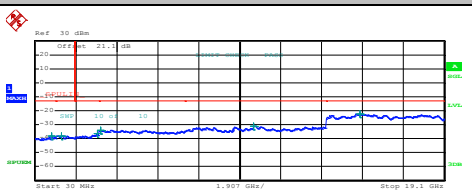


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	819.012500 M	-44.32	-31.32
855.000 M	1.000 G	1.00 M	884.181252 M	-43.88	-30.88
1.000 G	3.000 G	1.00 M	2.978000 G	-42.16	-29.16
3.000 G	7.000 G	1.00 M	3.027000 G	-39.19	-26.19
7.000 G	9.000 G	1.00 M	8.366500 G	-36.82	-23.82

Date: 20.APR.2017 09:42:55

CDMA BC1 (1xRTT)

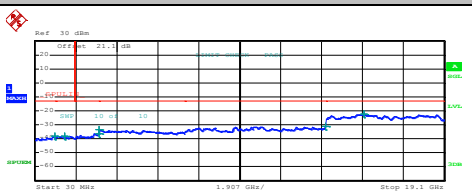
Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	804.302500 M	-38.30	-25.30
1.000 G	1.845 G	1.00 M	1.265964 G	-37.84	-24.84
1.915 G	3.000 G	1.00 M	2.923236 G	-36.25	-23.25
3.000 G	7.000 G	1.00 M	3.079000 G	-34.14	-21.14
7.000 G	13.600 G	1.00 M	10.210075 G	-30.88	-17.88
13.600 G	19.100 G	1.00 M	15.181938 G	-22.16	-9.16

Date: 20.APR.2017 11:55:28

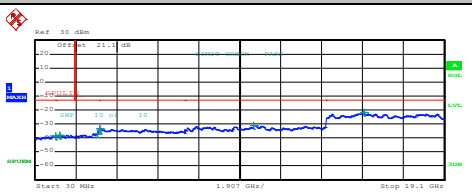
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	956.350000 M	-38.32	-25.32
1.000 G	1.845 G	1.00 M	1.404966 G	-38.03	-25.03
1.915 G	3.000 G	1.00 M	2.992134 G	-36.34	-23.34
3.000 G	7.000 G	1.00 M	3.005000 G	-33.69	-20.69
7.000 G	13.600 G	1.00 M	13.557925 G	-31.39	-18.39
13.600 G	19.100 G	1.00 M	15.371000 G	-22.61	-9.61

Date: 20.APR.2017 11:56:13

Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	973.567500 M	-38.44	-25.44
1.000 G	1.845 G	1.00 M	1.188435 G	-37.92	-24.92
1.915 G	3.000 G	1.00 M	2.937884 G	-36.68	-23.68
3.000 G	7.000 G	1.00 M	3.031000 G	-33.63	-20.63
7.000 G	13.600 G	1.00 M	10.210075 G	-31.03	-18.03
13.600 G	19.100 G	1.00 M	15.347625 G	-22.03	-9.03

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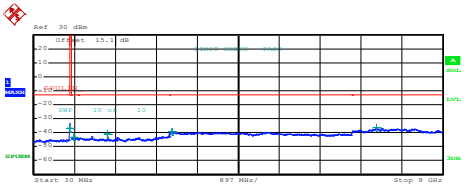
CDMA BC0 (1xEV-DO Rev. A)

Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	817.827500 M	-36.76	-23.76
855.000 M	1.000 G	1.00 M	908.106254 M	-43.25	-30.25
1.000 G	3.000 G	1.00 M	1.649500 G	-40.82	-27.82
3.000 G	7.000 G	1.00 M	3.056000 G	-39.17	-26.17
7.000 G	9.000 G	1.00 M	7.543000 G	-36.54	-23.54

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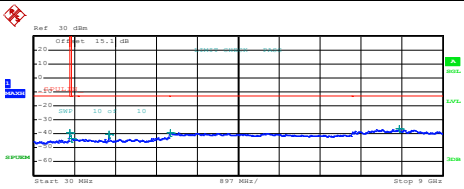
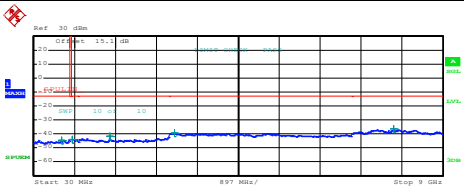
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	819.012500 M	-39.58	-26.58
855.000 M	1.000 G	1.00 M	862.830001 M	-43.63	-30.63
1.000 G	3.000 G	1.00 M	1.673500 G	-40.64	-27.64
3.000 G	7.000 G	1.00 M	3.030000 G	-39.33	-26.33
7.000 G	9.000 G	1.00 M	8.041000 G	-36.36	-23.36

Date: 20.APR.2017 10:00:59

Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	630.992500 M	-44.54	-31.54
855.000 M	1.000 G	1.00 M	877.910002 M	-43.70	-30.70
1.000 G	3.000 G	1.00 M	1.696500 G	-41.66	-28.66
3.000 G	7.000 G	1.00 M	3.119000 G	-39.56	-26.56
7.000 G	9.000 G	1.00 M	7.915500 G	-36.66	-23.66

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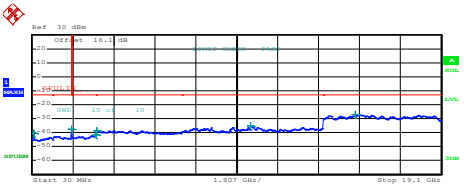
CDMA BC1 (1xEV-DO Rev. A)

Lowest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	112.935000 M	-40.21	-27.21
1.000 G	1.845 G	1.00 M	1.844366 G	-37.59	-24.59
1.915 G	3.000 G	1.00 M	2.995389 G	-41.41	-28.41
3.000 G	7.000 G	1.00 M	3.027000 G	-38.56	-25.56
7.000 G	13.600 G	1.00 M	10.217500 G	-35.24	-22.24
13.600 G	19.100 G	1.00 M	15.084312 G	-26.74	-13.74

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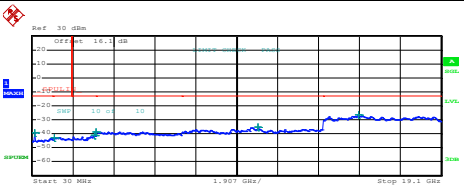
Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	142.035000 M	-39.53	-26.53
1.000 G	1.845 G	1.00 M	1.047743 G	-42.56	-29.56
1.915 G	3.000 G	1.00 M	2.931916 G	-41.10	-28.10
3.000 G	7.000 G	1.00 M	3.004000 G	-38.61	-25.61
7.000 G	13.600 G	1.00 M	10.572250 G	-35.46	-22.46
13.600 G	19.100 G	1.00 M	15.264438 G	-26.57	-13.57

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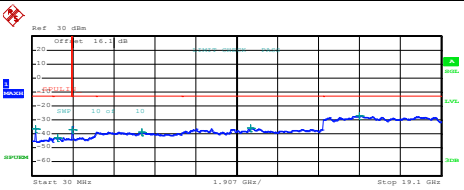
Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	170.650000 M	-36.49	-23.49
1.000 G	1.845 G	1.00 M	1.227516 G	-42.62	-29.62
1.915 G	3.000 G	1.00 M	1.915814 G	-36.92	-23.92
3.000 G	7.000 G	1.00 M	5.137000 G	-38.70	-25.70
7.000 G	13.600 G	1.00 M	10.208425 G	-35.69	-22.69
13.600 G	19.100 G	1.00 M	15.305000 G	-27.28	-14.28

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Frequency Stability

Test Conditions	Middle Channel	CDMA BC0 (1xRTT)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0203	PASS
40	Normal Voltage	0.0143	
30	Normal Voltage	0.0191	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0143	
-10	Normal Voltage	0.0048	
-20	Normal Voltage	0.0036	
-30	Normal Voltage	0.0012	
20	Maximum Voltage	0.0024	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0155	

Test Conditions	Middle Channel	CDMA BC1 (1xRTT)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0069	PASS
40	Normal Voltage	0.0037	
30	Normal Voltage	0.0085	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0011	
0	Normal Voltage	0.0027	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0090	
-30	Normal Voltage	0.0027	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0011	

Test Conditions	Middle Channel	CDMA BC0 (1xEV-DO Rev. A)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0012	PASS
40	Normal Voltage	0.0048	
30	Normal Voltage	0.0024	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0048	
0	Normal Voltage	0.0215	
-10	Normal Voltage	0.0024	
-20	Normal Voltage	0.0036	
-30	Normal Voltage	0.0167	
20	Maximum Voltage	0.0000	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0191	

Test Conditions	Middle Channel	CDMA BC1 (1xEV-DO Rev. A)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0037	PASS
40	Normal Voltage	0.0053	
30	Normal Voltage	0.0021	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0032	
0	Normal Voltage	0.0043	
-10	Normal Voltage	0.0016	
-20	Normal Voltage	0.0011	
-30	Normal Voltage	0.0000	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0032	

Note:

1. Normal Voltage = 3.8V. ；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	Conducted		ERP	
		Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	GSM850	32.99	1.9907	30.14	1.0328
Middle	GPRS class 8	32.92	1.9588	30.07	1.0162
Highest	(GT - LC = -0.7 dB)	33.00	1.9953	30.15	1.0351
Lowest	GSM850	25.77	0.3776	22.92	0.1959
Middle	EDGE class 8	25.96	0.3945	23.11	0.2046
Highest	(GT - LC = -0.7 dB)	25.67	0.3690	22.82	0.1914
Lowest	WCDMA Band V	22.80	0.1905	19.95	0.0989
Middle	AMR 12.2Kbps	22.58	0.1811	19.73	0.0940
Highest	(GT - LC = -0.7 dB)	22.40	0.1738	19.55	0.0902
Lowest	CDMA BC0	23.91	0.2460	21.06	0.1276
Middle	1xRTT	23.64	0.2312	20.79	0.1199
Highest	(GT - LC = -0.7 dB)	23.53	0.2254	20.68	0.1169
Lowest	CDMA BC0	23.92	0.2466	21.07	0.1279
Middle	1xEV-DO	23.76	0.2377	20.91	0.1233
Highest	(GT - LC = -0.7 dB)	23.54	0.2259	20.69	0.1172
Limit	ERP < 7W	Result		PASS	

Channel	Mode	Conducted		EIRP	
		Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	GSM1900 GPRS class 8 (GT - LC = 0.3 dB)	29.43	0.8770	29.73	0.9397
Highest	GSM1900 EDGE class 8 (GT - LC = 0.3 dB)	25.01	0.3170	25.31	0.3396
Highest	WCDMA Band II AMR 12.2Kbps (GT - LC = 0.3 dB)	22.38	0.1730	22.68	0.1854
Lowest	CDMA BC1	23.51	0.2244	23.81	0.2404
Middle	1xRTT	23.14	0.2061	23.44	0.2208
Highest	(GT - LC = 0.3 dB)	23.46	0.2218	23.76	0.2377
Lowest	CDMA BC1	23.52	0.2249	23.82	0.2410
Middle	1xEV-DO	23.16	0.2070	23.46	0.2218
Highest	(GT - LC = 0.3 dB)	23.46	0.2218	23.76	0.2377
Limit	EIRP < 2W	Result		PASS	

Radiated Spurious Emission

Part22H GPRS 850

Mode 1_GPRS 850									
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	-37.11	-13	-24.11	-23.79	-38.87	0.98	4.89	H
	2472	-46.89	-13	-33.89	-37.4	-48.77	1.28	5.32	H
	3296	-67.71	-13	-54.71	-60.65	-71.12	1.54	7.10	H
	4120	-66.22	-13	-53.22	-60.85	-70.86	1.83	8.62	H
									H
									H
	1648	-37.48	-13	-24.48	-24.33	-39.24	0.98	4.89	V
	2472	-48.42	-13	-35.42	-38.95	-50.30	1.28	5.32	V
	3296	-67.60	-13	-54.60	-60.32	-71.01	1.54	7.10	V
	4120	-66.67	-13	-53.67	-61.11	-71.31	1.83	8.62	V
									V
									V
Middle	1672	-36.72	-13	-23.72	-23.56	-38.40	0.99	4.82	H
	2512	-46.33	-13	-33.33	-36.97	-48.30	1.29	5.41	H
	3344	-68.11	-13	-55.11	-61.16	-71.72	1.56	7.31	H
	4184	-64.40	-13	-51.40	-59.25	-69.02	1.87	8.64	H
									H
									H
	1672	-33.42	-13	-20.42	-20.36	-35.10	0.99	4.82	V
	2512	-46.75	-13	-33.75	-37.43	-48.72	1.29	5.41	V
	3344	-67.16	-13	-54.16	-59.96	-70.77	1.56	7.31	V
									V
									V
									V

Highest	1696	-38.31	-13	-25.31	-25.23	-39.91	1.00	4.75	H
	2544	-46.22	-13	-33.22	-36.98	-48.20	1.30	5.44	H
	3392	-68.34	-13	-55.34	-61.49	-72.14	1.57	7.52	H
									H
									H
									H
									H
	1696	-38.53	-13	-25.53	-25.52	-40.13	1.00	4.75	V
	2544	-49.18	-13	-36.18	-39.97	-51.16	1.30	5.44	V
	3392	-68.38	-13	-55.38	-61.27	-72.18	1.57	7.52	V
									V
									V
									V
									V

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

Part22H EDGE 850

Mode 2_EDGE 850									
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	-48.92	-13	-35.92	-35.6	-50.68	0.98	4.89	H
	2472	-60.08	-13	-47.08	-50.59	-61.96	1.28	5.32	H
	3296	-68.22	-13	-55.22	-61.16	-71.63	1.54	7.10	H
									H
									H
									H
									H
	1648	-48.78	-13	-35.78	-35.63	-50.54	0.98	4.89	V
	2472	-62.48	-13	-49.48	-53.01	-64.36	1.28	5.32	V
	3296	-68.54	-13	-55.54	-61.26	-71.95	1.54	7.10	V
									V
									V
									V
									V
Middle	1672	-46.16	-13	-33.16	-33	-47.84	0.99	4.82	H
	2512	-57.97	-13	-44.97	-48.61	-59.94	1.29	5.41	H
	3344	-68.22	-13	-55.22	-61.27	-71.83	1.56	7.31	H
									H
									H
									H
									H
	1672	-45.81	-13	-32.81	-32.75	-47.49	0.99	4.82	V
	2512	-61.43	-13	-48.43	-52.11	-63.40	1.29	5.41	V
	3344	-68.35	-13	-55.35	-61.15	-71.96	1.56	7.31	V
									V
									V
									V
									V

Highest	1696	-46.87	-13	-33.87	-33.79	-48.47	1.00	4.75	H
	2544	-57.49	-13	-44.49	-48.25	-59.47	1.30	5.44	H
	3392	-68.24	-13	-55.24	-61.39	-72.04	1.57	7.52	H
									H
									H
									H
									H
	1696	-49.63	-13	-36.63	-36.62	-51.23	1.00	4.75	V
	2544	-60.22	-13	-47.22	-51.01	-62.20	1.30	5.44	V
	3392	-68.14	-13	-55.14	-61.03	-71.94	1.57	7.52	V
									V
									V
									V
									V

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

Part22H WCDMA 850

Mode 3_WCDMA 850									
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	-55.64	-13	-42.64	-42.4	-57.37	0.98	4.86	H
	2480	-64.46	-13	-51.46	-54.97	-66.37	1.28	5.34	H
	3304	-68.21	-13	-55.21	-61.19	-71.65	1.54	7.14	H
									H
									H
									H
									H
	1656	-54.16	-13	-41.16	-41.06	-55.89	0.98	4.86	V
	2480	-67.16	-13	-54.16	-57.69	-69.07	1.28	5.34	V
	3304	-68.55	-13	-55.55	-61.3	-71.99	1.54	7.14	V
									V
									V
									V
									V
Middle	1672	-53.77	-13	-40.77	-40.61	-55.45	0.99	4.82	H
	2504	-64.33	-13	-51.33	-54.91	-66.29	1.29	5.40	H
	3344	-68.21	-13	-55.21	-61.26	-71.82	1.56	7.31	H
									H
									H
									H
									H
	1672	-51.50	-13	-38.50	-38.44	-53.18	0.99	4.82	V
	2504	-65.29	-13	-52.29	-55.91	-67.25	1.29	5.40	V
	3344	-68.40	-13	-55.40	-61.2	-72.01	1.56	7.31	V
									V
									V
									V
									V

Highest	1688	-55.87	-13	-42.87	-42.71	-57.50	1.00	4.77	H
	2536	-63.18	-13	-50.18	-53.88	-65.16	1.30	5.43	H
	3384	-68.21	-13	-55.21	-61.33	-71.98	1.57	7.49	H
									H
									H
									H
									H
	1688	-53.39	-13	-40.39	-40.33	-55.02	1.00	4.77	V
	2536	-65.06	-13	-52.06	-55.79	-67.04	1.30	5.43	V
	3384	-68.21	-13	-55.21	-61.07	-71.98	1.57	7.49	V
									V
									V
									V
									V

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

Part22H CDMA 850 1xRTT

Mode 4_CDMA 850 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	-50.09	-13	-37.09	-36.77	-51.85	0.98	4.89	H
	2472	-64.32	-13	-51.32	-54.83	-66.20	1.28	5.32	H
	3296	-68.48	-13	-55.48	-61.42	-71.89	1.54	7.10	H
									H
									H
									H
									H
	1648	-50.64	-13	-37.64	-37.49	-52.40	0.98	4.89	V
	2472	-65.83	-13	-52.83	-56.36	-67.71	1.28	5.32	V
	3296	-68.31	-13	-55.31	-61.03	-71.72	1.54	7.10	V
									V
									V
									V
									V
Middle	1672	-48.19	-13	-35.19	-35.03	-49.87	0.99	4.82	H
	2512	-62.87	-13	-49.87	-53.51	-64.84	1.29	5.41	H
	3344	-67.74	-13	-54.74	-60.79	-71.35	1.56	7.31	H
									H
									H
									H
									H
	1672	-47.51	-13	-34.51	-34.45	-49.19	0.99	4.82	V
	2512	-64.36	-13	-51.36	-55.04	-66.33	1.29	5.41	V
	3344	-68.25	-13	-55.25	-61.05	-71.86	1.56	7.31	V
									V
									V
									V
									V

Highest	1696	-49.41	-13	-36.41	-36.33	-51.01	1.00	4.75	H
	2544	-61.13	-13	-48.13	-51.89	-63.11	1.30	5.44	H
	3392	-68.24	-13	-55.24	-61.39	-72.04	1.57	7.52	H
									H
									H
									H
									H
	1696	-49.25	-13	-36.25	-36.24	-50.85	1.00	4.75	V
	2544	-61.68	-13	-48.68	-52.47	-63.66	1.30	5.44	V
	3392	-68.37	-13	-55.37	-61.26	-72.17	1.57	7.52	V
									V
									V
									V
									V

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

Part22H CDMA 850 1xEVDO

Mode 5_CDMA 850 1xEVDO									
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	-49.35	-13	-36.35	-36.03	-51.11	0.98	4.89	H
	2472	-64.62	-13	-51.62	-55.13	-66.50	1.28	5.32	H
	3296	-68.36	-13	-55.36	-61.3	-71.77	1.54	7.10	H
									H
									H
									H
									H
	1648	-49.18	-13	-36.18	-36.03	-50.94	0.98	4.89	V
	2472	-64.82	-13	-51.82	-55.35	-66.70	1.28	5.32	V
	3296	-68.56	-13	-55.56	-61.28	-71.97	1.54	7.10	V
									V
									V
									V
									V
Middle	1672	-46.64	-13	-33.64	-33.48	-48.32	0.99	4.82	H
	2512	-62.54	-13	-49.54	-53.18	-64.51	1.29	5.41	H
	3344	-68.23	-13	-55.23	-61.28	-71.84	1.56	7.31	H
									H
									H
									H
									H
	1672	-45.23	-13	-32.23	-32.17	-46.91	0.99	4.82	V
	2512	-63.26	-13	-50.26	-53.94	-65.23	1.29	5.41	V
	3344	-68.54	-13	-55.54	-61.34	-72.15	1.56	7.31	V
									V
									V
									V
									V

Highest	1696	-48.75	-13	-35.75	-35.67	-50.35	1.00	4.75	H
	2544	-60.44	-13	-47.44	-51.2	-62.42	1.30	5.44	H
	3384	-68.30	-13	-55.30	-61.42	-72.07	1.57	7.49	H
									H
									H
									H
									H
	1696	-47.17	-13	-34.17	-34.16	-48.77	1.00	4.75	V
	2544	-61.37	-13	-48.37	-52.16	-63.35	1.30	5.44	V
	3384	-68.39	-13	-55.39	-61.25	-72.16	1.57	7.49	V
									V
									V
									V
									V

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

Part24E GSM 1900

Mode 1_GSM 1900									
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)
Highest	3819	-63.70	-13	-50.70	-57.52	-70.38	1.70	8.38	H
	5730	-55.20	-13	-42.20	-56.15	-62.23	2.76	9.79	H
	7641	-57.05	-13	-44.05	-63.57	-66.55	2.38	11.88	H
	11454	-49.99	-13	-36.99	-65.12	-59.63	2.68	12.32	H
									H
									H
									H
	3819	-59.12	-13	-46.12	-52.74	-65.80	1.70	8.38	V
	5730	-56.29	-13	-43.29	-57.17	-63.32	2.76	9.79	V
	11454	-54.28	-13	-41.28	-69.33	-63.92	2.68	12.32	V
									V
									V
									V
									V

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

Part24E EDGE 1900

Mode 2_EDGE 1900									
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)
Highest	3819	-66.14	-13	-53.14	-59.96	-72.82	1.70	8.38	H
	5730	-63.24	-13	-50.24	-64.19	-70.27	2.76	9.79	H
	7641	-58.96	-13	-45.96	-65.48	-68.46	2.38	11.88	H
									H
									H
									H
									H
	3819	-65.55	-13	-52.55	-59.17	-72.23	1.70	8.38	V
	5730	-63.18	-13	-50.18	-64.06	-70.21	2.76	9.79	V
	7641	-58.80	-13	-45.80	-65.55	-68.30	2.38	11.88	V
									V
									V
									V
									V

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

Part24E WCDMA 1900

Mode 3_WCDMA 1900									
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)
Middle	3763	-67.56	-13	-54.56	-61.31	-74.19	1.69	8.32	H
	5639	-63.79	-13	-50.79	-64.54	-70.84	2.71	9.76	H
	11282	-48.59	-13	-35.59	-63.57	-58.29	2.68	12.39	H
									H
									H
									H
									H
	3763	-67.70	-13	-54.70	-61.23	-74.33	1.69	8.32	V
	5639	-64.22	-13	-51.22	-64.91	-71.27	2.71	9.76	V
	11282	-53.55	-13	-40.55	-68.32	-63.25	2.68	12.39	V
									V
									V
									V
									V

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

Part24E CDMA 1900 1xRTT

Mode 4_CDMA 1900 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	3700	-67.50	-13	-54.50	-61.16	-74.07	1.67	8.24	H
	5555	-63.38	-13	-50.38	-63.93	-70.45	2.66	9.72	H
	11111	-49.50	-13	-36.50	-64.33	-59.27	2.69	12.46	H
	12955	-49.41	-13	-36.41	-66.71	-59.44	2.92	12.95	H
	14807	-52.57	-13	-39.57	-70.21	-62.42	3.52	13.37	H
									H
									H
	3700	-66.79	-13	-53.79	-60.2	-73.36	1.67	8.24	V
	5555	-63.61	-13	-50.61	-64.12	-70.68	2.66	9.72	V
	11111	-54.41	-13	-41.41	-68.89	-64.18	2.69	12.46	V
	14807	-52.62	-13	-39.62	-71.4	-62.47	3.52	13.37	V
									V
									V
									V
Middle	3763	-67.37	-13	-54.37	-61.12	-74.00	1.69	8.32	H
	5639	-63.74	-13	-50.74	-64.49	-70.79	2.71	9.76	H
	11282	-46.85	-13	-33.85	-61.83	-56.55	2.68	12.39	H
	13163	-49.56	-13	-36.56	-67.4	-59.82	2.97	13.23	H
	15035	-51.75	-13	-38.75	-69.81	-61.79	3.61	13.65	H
									H
									H
	3763	-67.62	-13	-54.62	-61.15	-74.25	1.69	8.32	V
	5639	-64.03	-13	-51.03	-64.72	-71.08	2.71	9.76	V
	11282	-52.10	-13	-39.10	-66.87	-61.80	2.68	12.39	V
	15035	-52.25	-13	-39.25	-71.91	-62.29	3.61	13.65	V
									V
									V
									V

Highest	3819	-67.68	-13	-54.68	-61.5	-74.36	1.70	8.38	H
	5723	-62.80	-13	-49.80	-63.75	-69.84	2.75	9.79	H
	11453	-46.93	-13	-33.93	-62.06	-56.57	2.68	12.32	H
	13363	-50.01	-13	-37.01	-68.31	-60.50	3.02	13.51	H
	15272	-51.90	-13	-38.90	-71.16	-62.17	3.71	13.98	H
									H
									H
	3819	-68.09	-13	-55.09	-61.71	-74.77	1.70	8.38	V
	5723	-61.54	-13	-48.54	-62.42	-68.58	2.75	9.79	V
	11453	-50.74	-13	-37.74	-65.79	-60.38	2.68	12.32	V
	15272	-51.82	-13	-38.82	-71.54	-62.09	3.71	13.98	V
									V
									V
									V

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

Part24E CDMA 1900 1xEVDO

Mode 5_1900 1xEVDO									
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	-67.66	-13	-54.66	-61.32	-74.23	1.67	8.24	H
	5555	-61.67	-13	-48.67	-62.22	-68.74	2.66	9.72	H
	11111	-48.32	-13	-35.32	-63.15	-58.09	2.69	12.46	H
	12955	-50.81	-13	-37.81	-68.11	-60.84	2.92	12.95	H
	14807	-51.32	-13	-38.32	-68.96	-61.17	3.52	13.37	H
									H
									H
	3700	-67.36	-13	-54.36	-60.77	-73.93	1.67	8.24	V
	5555	-62.79	-13	-49.79	-63.3	-69.86	2.66	9.72	V
	11111	-54.41	-13	-41.41	-68.89	-64.18	2.69	12.46	V
	14807	-52.80	-13	-39.80	-71.58	-62.65	3.52	13.37	V
									V
									V
									V
Middle	3763	-67.28	-13	-54.28	-61.03	-73.91	1.69	8.32	H
	5639	-61.10	-13	-48.10	-61.85	-68.15	2.71	9.76	H
	11282	-44.80	-13	-31.80	-59.78	-54.50	2.68	12.39	H
	13163	-50.00	-13	-37.00	-67.84	-60.26	2.97	13.23	H
	15044	-50.96	-13	-37.96	-69.02	-61.01	3.62	13.66	H
									H
									H
	3763	-67.59	-13	-54.59	-61.12	-74.22	1.69	8.32	V
	5639	-63.79	-13	-50.79	-64.48	-70.84	2.71	9.76	V
	11282	-50.20	-13	-37.20	-64.97	-59.90	2.68	12.39	V
	15044	-52.11	-13	-39.11	-71.77	-62.16	3.62	13.66	V
									V
									V
									V

Highest	3819	-67.70	-13	-54.70	-61.52	-74.38	1.70	8.38	H
	5723	-62.81	-13	-49.81	-63.76	-69.85	2.75	9.79	H
	11453	-43.70	-13	-30.70	-58.83	-53.34	2.68	12.32	H
	13363	-50.09	-13	-37.09	-68.39	-60.58	3.02	13.51	H
	15272	-51.21	-13	-38.21	-70.47	-61.48	3.71	13.98	H
									H
									H
	3819	-67.81	-13	-54.81	-61.43	-74.49	1.70	8.38	V
	5723	-63.16	-13	-50.16	-64.04	-70.20	2.75	9.79	V
	11453	-50.93	-13	-37.93	-65.98	-60.57	2.68	12.32	V
	15272	-52.07	-13	-39.07	-71.79	-62.34	3.71	13.98	V
									V
									V
									V

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

Appendix C. Original Report

Please refer to Sporton report number FG733129A.