



FCC RADIO TEST REPORT

FCC ID : 2AIP8-SR00300W
Equipment : Smartphone
Brand Name : SIRIN LABS
Model Name : SR00300-W
Applicant : SIRIN LABS AG
Freier Platz 10, 8200 Schaffhausen, Switzerland
Manufacturer : SIRIN LABS AG
Freier Platz 10, 8200 Schaffhausen, Switzerland
Standard : 47 CFR Part 2, 22(H), 24(E), 27(L)

The product was received on Oct. 05, 2018 and testing was started from Oct. 18, 2018 and completed on Nov. 12, 2018. 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-603-E and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Joseph Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FG8O0518A	01	Initial issue of report	Nov. 21, 2018

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
	§22.913 (a)(2)	Effective Radiated Power		
	§24.232 (c)	Equivalent Isotropic Radiated Power		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power		
3.3	§24.232 (d)	Peak-to-Average Ratio	Pass	-
3.4	§2.1049 §22.917 (b) §24.238 (b) §27.53 (g)	Occupied Bandwidth	Pass	-
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Band Edge Measurement	Pass	-
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Emission	Pass	-
3.7	§2.1055 §22.355	Frequency Stability Temperature & Voltage	Pass	-
	§2.1055 §24.235 §27.54			-
4.4	§2.1053 §22.917 (a) §24.238 (a) §27.53 (h)	Field Strength of Spurious Radiation	Pass	Under limit 15.11 dB at 1648.000 MHz

Reviewed by: Wii Chang

Report Producer: Nancy Yang



1 General Description

1.1 Product Feature of Equipment Under Test

GSM/CDMA/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, NFC, and GNSS

Product Specification subjective to this standard	
Antenna Type	WWAN: PIFA Antenna WLAN: <Ant. 1>: PIFA Antenna <Ant. 2>: PIFA Antenna Bluetooth: PIFA Antenna GPS / Glonass / BDS / Galileo: PIFA Antenna NFC: Loop Antenna

1.2 Modification of EUT

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

1.3 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and 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, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No.
	TH03-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

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

Note: The test site complies with ANSI C63.4 2014 requirement.



1.4 Applicable Standards

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

- ♦ ANSI C63.26-2015
- ♦ ANSI / TIA-603-E
- ♦ 47 CFR Part 2, 22(H), 24(E), 27(L)
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ 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 v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X Plane for Cellular Band and PCS Band, Z Plane for AWS Band) were recorded in this report.

Radiated emissions were investigated as following frequency range:

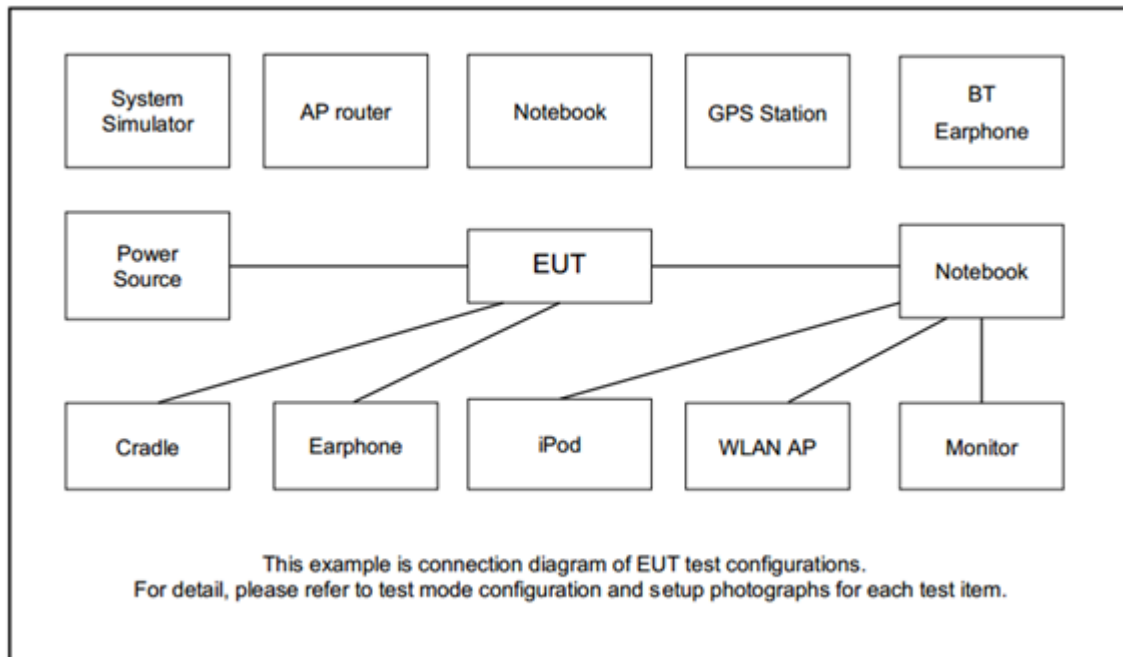
1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V and CDMA BC0.
2. 30 MHz to 18000 MHz for WCDMA Band IV.
3. 30 MHz to 19100 MHz for GSM1900 and WCDMA Band II and CDMA BC1.

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	■ GPRS Class 8 Link	■ GPRS Class 8 Link
	■ EDGE Class 8 Link	■ EDGE Class 8 Link
GSM 1900	■ GPRS Class 8 Link	■ GPRS Class 8 Link
	■ EDGE 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	■ 1xRTT Link
CDMA BC1	■ 1xRTT Link	■ 1xRTT Link

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

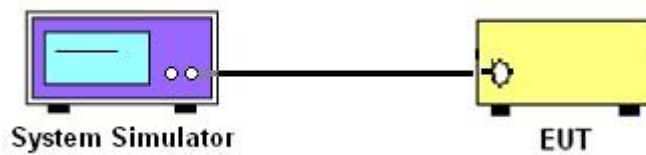
3 Conducted Test Result

3.1 Measuring Instruments

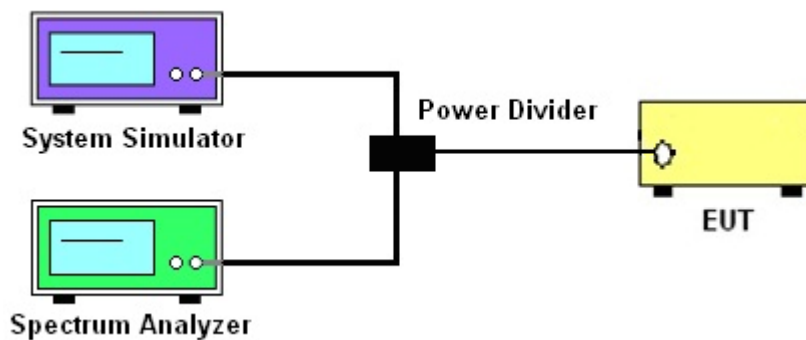
See list of measuring instruments of this test report.

3.1.1 Test Setup

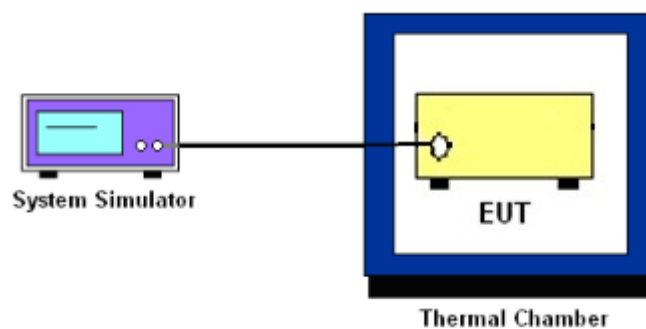
3.1.2 Conducted Output Power



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



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power and ERP/EIRP

3.2.1 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.

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

The EIRP of mobile transmitters must not exceed 1 Watts for WCDMA Band IV.

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

3.2.2 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.



3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

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

3.3.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 5.7.1

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

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 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.

3.4.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 4.2

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. 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.
4. Set the detection mode to peak, and the trace mode to max hold.
5. 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)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. 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.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.



3.5 Conducted Band Edge

3.5.1 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.

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.0.

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. 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.
3. The band edges of low and high channels for the highest RF powers were measured.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
5. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

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

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

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.0.

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. 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.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
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)

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

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.

24.235 & 27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. 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.
3. 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.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

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

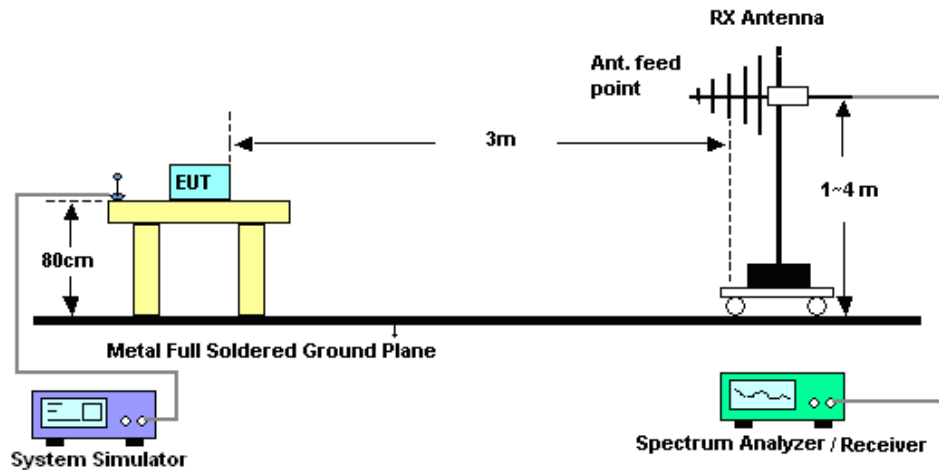
4 Radiated Test Items

4.1 Measuring Instruments

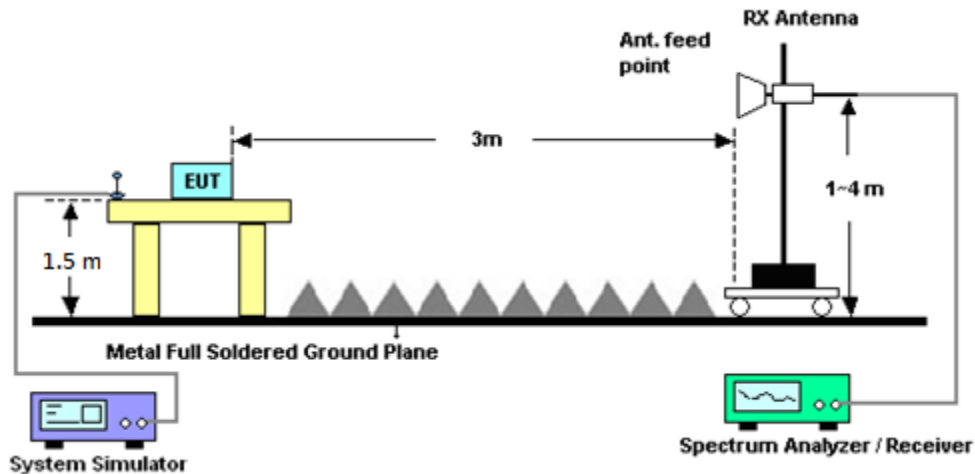
See list of measuring instruments of this test report.

4.2 Test Setup

For radiated test from 30MHz to 1GHz



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

The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI / TIA-603-E Section 2.2.12.

1. 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.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. 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.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. 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. 29, 2018	Oct. 26, 2018	Jun. 28, 2019	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SU-641	92013721	-30℃ ~70℃	Dec. 06, 2017	Oct. 26, 2018	Dec. 05, 2019	Conducted (TH03-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL883644	Voltage:0~20V; Current:0~5A	Dec. 06, 2017	Oct. 26, 2018	Dec. 05, 2019	Conducted (TH03-HY)
Base Station(Measure)	Rohde & Schwarz	CMU200	117995	GSM / GPRS / WCDMA / CDMA	Aug. 10, 2018	Oct. 26, 2018	Aug. 09, 2019	Conducted (TH03-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Nov. 23, 2017	Oct. 18, 2018 ~ Nov. 12, 2018	Nov. 22, 2018	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	47020&06	30MHz to 1GHz	Nov. 20, 2017	Oct. 18, 2018 ~ Nov. 12, 2018	Nov. 19, 2018	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-121 2	1GHz ~ 18GHz	May 10, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 09, 2019	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 584	18GHz ~ 40GHz	Nov. 27, 2017	Oct. 18, 2018 ~ Nov. 12, 2018	Nov. 26, 2018	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 26, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Mar. 25, 2019	Radiation (03CH12-HY)
Preamplifier	Keysight	83017A	MY532701 48	1GHz~26.5GHz	Jan. 15, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Jan. 14, 2019	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 21, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 20, 2019	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 05, 2017	Oct. 18, 2018 ~ Nov. 12, 2018	Dec. 04, 2018	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 25, 2017	Oct. 18, 2018 ~ Nov. 12, 2018	Dec. 24, 2018	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 15, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Mar. 14, 2019	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP161243	N/A	May 12, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 11, 2019	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-152 2	1GHz ~ 18GHz	May 10, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 09, 2019	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 21, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 20, 2019	Radiation (03CH12-HY)
Base Station	Rohde & Schwarz	CMU200	106656	GSM/GPRS/WC DMA/CDMA	Nov. 15, 2016	Oct. 18, 2018 ~ Nov. 12, 2018	Nov. 14, 2018	Radiation (03CH12-HY)
Base Station	Anritsu	MT8821C	620143281 6	GSM / GPRS /WCDMA / LTE FDD/TDD with 44) /LTE-3CC DLCA,2CC ULCA	May 02, 2017	Oct. 18, 2018 ~ Nov. 12, 2018	May 01, 2019	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-1 2SS	SN2	1.2GHz Low Pass	Mar. 21, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Mar. 20, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCD1800/2 000-20/40-10 SSK	SN1	LTE Band 25	Aug. 23, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Aug. 22, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WTRCD10-17 10-1785-20-4 0-40SSK	SN1	1710-1785	May 22, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 21, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT/800/96 0-0.2/40-8SS K	SN11	GSM850	Aug. 23, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Aug. 22, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT2300/2 500-20/40-10 SSK	SN1	2300/2500	May 23, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	May 22, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Mar. 14, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Mar. 13, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 16, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Oct. 15, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 16, 2018	Oct. 18, 2018 ~ Nov. 12, 2018	Oct. 15, 2019	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Oct. 18, 2018 ~ Nov. 12, 2018	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500- B	N/A	1m~4m	N/A	Oct. 18, 2018 ~ Nov. 12, 2018	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Oct. 18, 2018 ~ Nov. 12, 2018	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-00098 9	N/A	N/A	Oct. 18, 2018 ~ Nov. 12, 2018	N/A	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
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.70
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.98
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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	32.34	32.30	32.50	29.44	29.43	29.36
GPRS class 8	32.35	32.30	32.51	29.45	29.44	29.37
GPRS class 10	29.13	29.17	29.22	27.65	27.70	27.70
GPRS class 11	27.97	28.12	28.29	26.20	26.31	26.26
GPRS class 12	26.56	26.63	26.49	25.12	25.19	25.13
EGPRS class 8	26.15	26.30	26.30	24.76	24.89	24.91
EGPRS class 10	24.18	24.38	24.59	22.55	22.74	22.81
EGPRS class 11	23.05	23.00	23.39	21.50	21.63	21.59
EGPRS class 12	21.87	21.84	22.29	21.08	21.25	21.35

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	23.33	23.30	23.27	22.70	22.60	22.39
HSDPA Subtest-1	22.31	22.33	22.29	21.78	21.73	21.56
HSDPA Subtest-2	22.29	22.32	22.33	21.87	21.77	21.61
HSDPA Subtest-3	21.83	21.82	21.85	21.33	21.27	21.06
HSDPA Subtest-4	21.79	21.82	21.82	21.32	21.25	21.06
HSUPA Subtest-1	22.27	22.28	22.27	21.88	21.83	21.70
HSUPA Subtest-2	20.30	20.29	20.33	19.94	19.78	19.67
HSUPA Subtest-3	21.34	21.28	21.23	20.89	20.84	20.65
HSUPA Subtest-4	20.27	20.26	20.26	19.92	19.87	19.70
HSUPA Subtest-5	22.30	22.30	22.30	21.90	21.90	21.70



Conducted Power (*Unit: dBm)			
Band	WCDMA Band IV		
Channel	1312	1413	1513
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	22.82	22.63	22.56
HSDPA Subtest-1	21.93	21.78	21.71
HSDPA Subtest-2	21.99	21.77	21.68
HSDPA Subtest-3	21.42	21.32	21.18
HSDPA Subtest-4	21.44	21.26	21.17
HSUPA Subtest-1	21.91	21.85	21.78
HSUPA Subtest-2	19.94	19.79	19.81
HSUPA Subtest-3	20.91	20.76	20.76
HSUPA Subtest-4	19.90	19.76	19.77
HSUPA Subtest-5	21.90	21.80	21.80

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	24.32	24.42	24.33	22.28	22.21	22.01
1xRTT RC3 SO55	24.41	24.48	24.33	22.33	22.22	22.04
1xRTT RC3 SO32 (+ F-SCH)	24.34	24.49	24.30	22.32	22.22	22.02
1xRTT RC3 SO32 (+SCH)	24.33	24.44	24.26	22.30	22.21	22.02
1xEVDO RTAP 153.6Kbps	24.38	24.50	24.33	22.39	22.28	22.08
1xEVDO RETAP 4096Bits	24.31	24.41	24.29	22.35	22.25	22.05



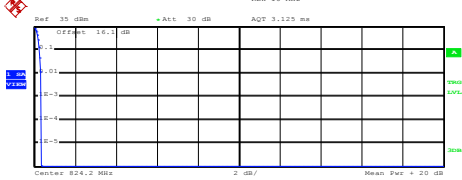
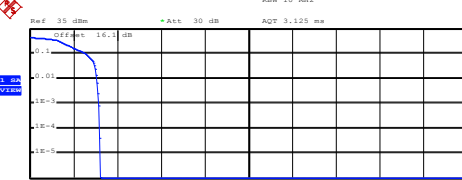
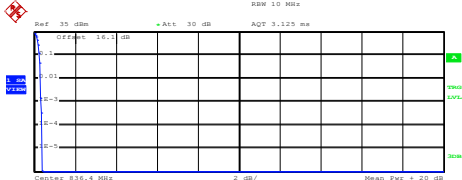
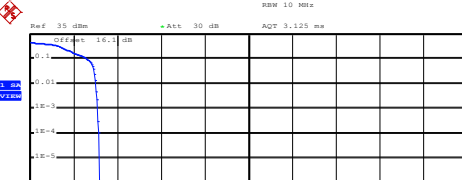
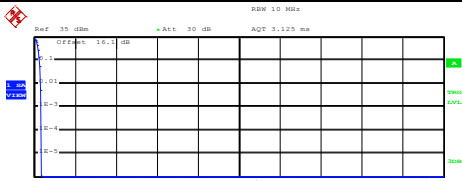
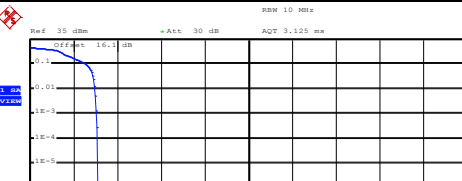
A2. GSM

Peak-to-Average Ratio

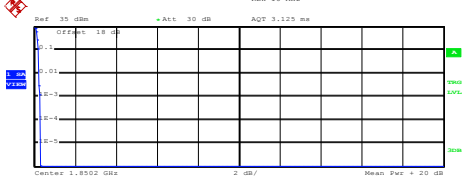
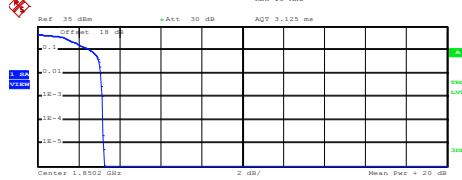
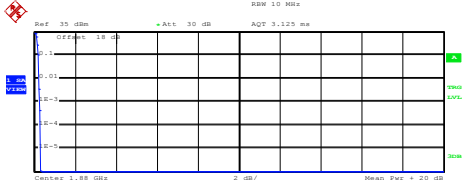
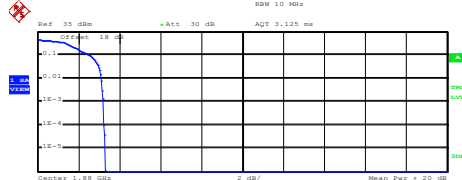
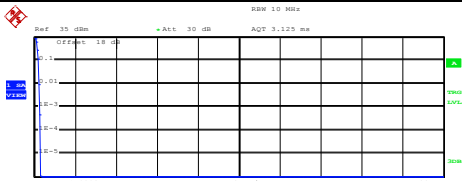
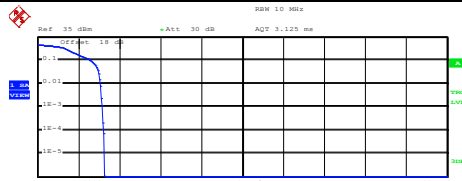
Mode	GSM850		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.36	3.16	PASS
Middle CH	0.32	3.12	
Highest CH	0.36	3.04	

Mode	GSM1900		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.28	3.16	PASS
Middle CH	0.28	3.20	
Highest CH	0.28	3.16	



GSM850 (GPRS class 8)		GSM850 (EDGE class 8)	
Lowest Channel		Lowest Channel	
 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 824.2 MHz 2 dB/ Mean Pwr: +20 dB Trace 1 Mean: 32.00 dBm Peak: 32.33 dBm Crest: 0.33 dB 10 % 0.24 dB 1 % 0.32 dB .1 % 0.36 dB .01 % 0.36 dB Date: 26.OCT.2018 15:45:15		 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 824.2 MHz 2 dB/ Mean Pwr: +20 dB Trace 1 Mean: 26.03 dBm Peak: 29.23 dBm Crest: 3.20 dB 10 % 2.56 dB 1 % 3.08 dB .1 % 3.16 dB .01 % 3.20 dB Date: 26.OCT.2018 16:17:48	
Middle Channel		Middle Channel	
 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 835.4 MHz 2 dB/ Mean Pwr: +20 dB Trace 1 Mean: 31.89 dBm Peak: 32.26 dBm Crest: 0.37 dB 10 % 0.24 dB 1 % 0.32 dB .1 % 0.32 dB .01 % 0.40 dB Date: 26.OCT.2018 15:45:29		 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 835.4 MHz 2 dB/ Mean Pwr: +20 dB Trace 1 Mean: 26.13 dBm Peak: 29.30 dBm Crest: 3.17 dB 10 % 2.64 dB 1 % 3.00 dB .1 % 3.12 dB .01 % 3.16 dB Date: 26.OCT.2018 16:18:05	
Highest Channel		Highest Channel	
 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 848.8 MHz 2 dB/ Mean Pwr: +20 dB Trace 1 Mean: 32.22 dBm Peak: 32.55 dBm Crest: 0.32 dB 10 % 0.28 dB 1 % 0.32 dB .1 % 0.36 dB .01 % 0.36 dB Date: 26.OCT.2018 15:45:41		 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 848.8 MHz 2 dB/ Mean Pwr: +20 dB Trace 1 Mean: 26.54 dBm Peak: 29.65 dBm Crest: 3.11 dB 10 % 2.56 dB 1 % 2.96 dB .1 % 3.04 dB .01 % 3.12 dB Date: 26.OCT.2018 16:18:23	

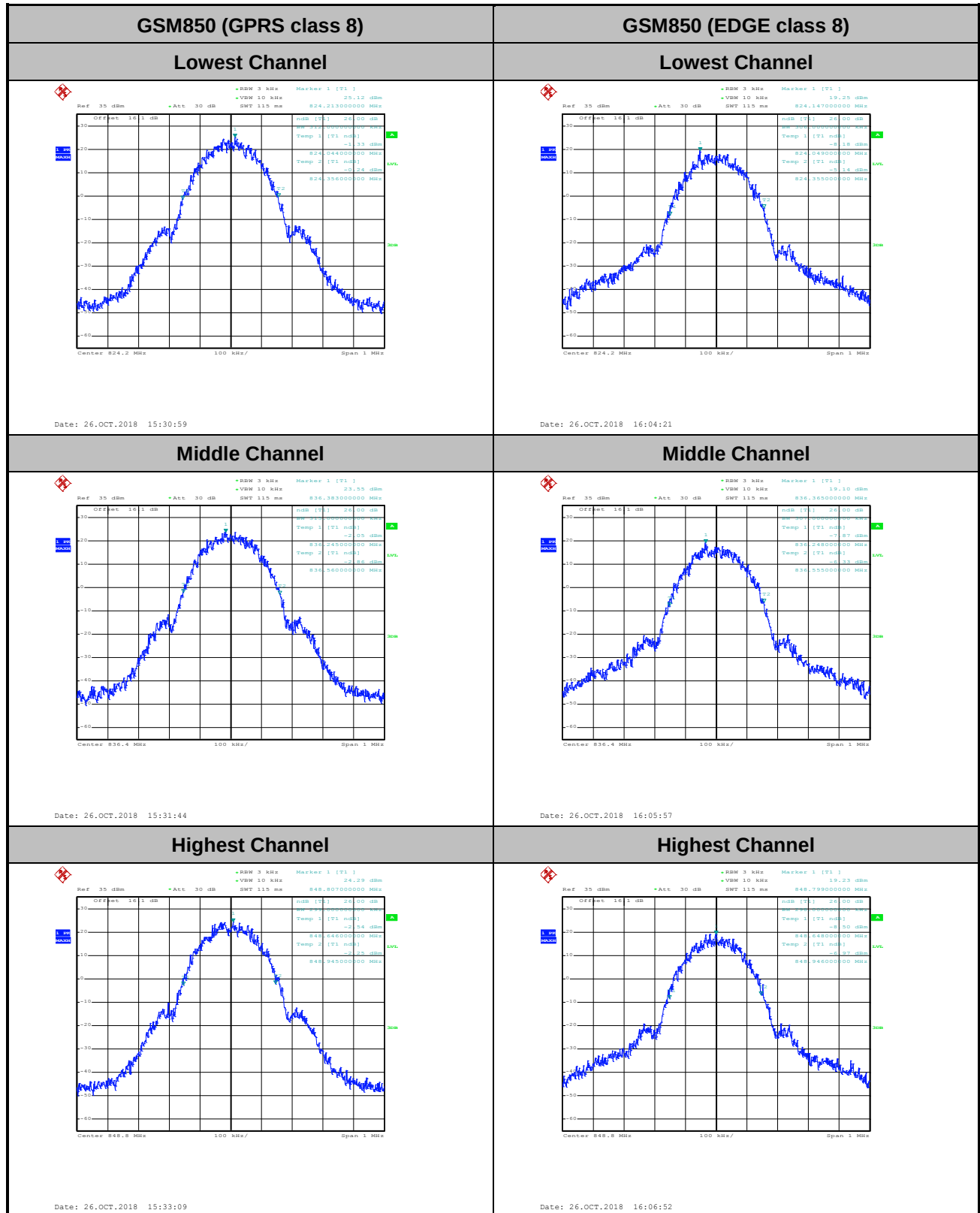


GSM1900 (GPRS class 8)		GSM1900 (EDGE class 8)	
Lowest Channel		Lowest Channel	
 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 1.8502 GHz 2 dB/ Mean: Per: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 29.56 dBm Peak: 29.87 dBm Crest: 0.31 dB 10 %: 0.20 dB 1 %: 0.24 dB .1 %: 0.28 dB .01 %: 0.32 dB Date: 26.OCT.2018 15:28:00		 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 1.8502 GHz 2 dB/ Mean: Per: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 24.78 dBm Peak: 28.03 dBm Crest: 3.25 dB 10 %: 2.60 dB 1 %: 3.08 dB .1 %: 3.16 dB .01 %: 3.20 dB Date: 26.OCT.2018 15:58:05	
Middle Channel		Middle Channel	
 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 1.85 GHz 2 dB/ Mean: Per: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 29.48 dBm Peak: 29.79 dBm Crest: 0.31 dB 10 %: 0.20 dB 1 %: 0.24 dB .1 %: 0.28 dB .01 %: 0.32 dB Date: 26.OCT.2018 15:28:12		 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 1.85 GHz 2 dB/ Mean: Per: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 24.87 dBm Peak: 28.17 dBm Crest: 3.30 dB 10 %: 2.56 dB 1 %: 3.12 dB .1 %: 3.20 dB .01 %: 3.24 dB Date: 26.OCT.2018 15:58:23	
Highest Channel		Highest Channel	
 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 1.9098 GHz 2 dB/ Mean: Per: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 29.41 dBm Peak: 29.72 dBm Crest: 0.31 dB 10 %: 0.20 dB 1 %: 0.24 dB .1 %: 0.28 dB .01 %: 0.32 dB Date: 26.OCT.2018 15:28:25		 Ref: 35 dBm Att: 30 dB AGT: 3.125 ms Center: 1.9098 GHz 2 dB/ Mean: Per: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean: 24.78 dBm Peak: 28.03 dBm Crest: 3.26 dB 10 %: 2.60 dB 1 %: 3.08 dB .1 %: 3.16 dB .01 %: 3.24 dB Date: 26.OCT.2018 15:58:41	

**26dB Bandwidth**

Mode	GSM850	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.312	0.306
Middle CH	0.315	0.307
Highest CH	0.299	0.298

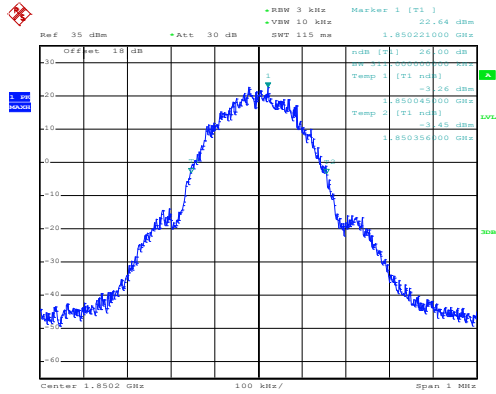
Mode	GSM1900	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.311	0.312
Middle CH	0.300	0.309
Highest CH	0.312	0.295





GSM1900 (GPRS class 8)

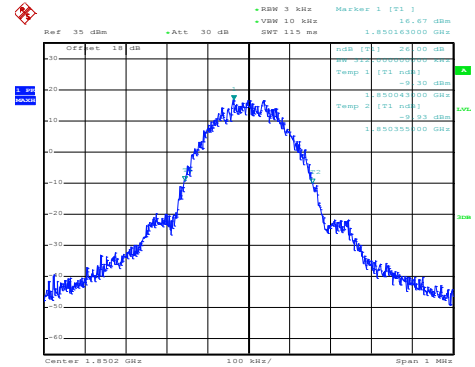
Lowest Channel



Date: 26.OCT.2018 15:18:28

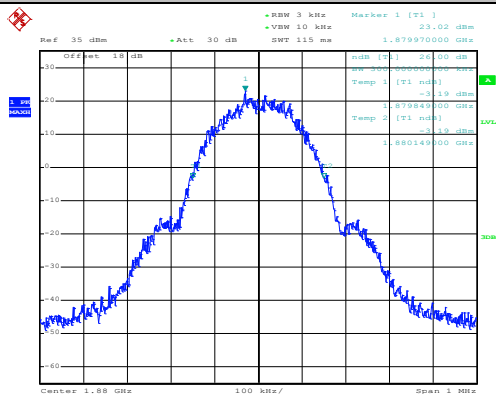
GSM1900 (EDGE class 8)

Lowest Channel



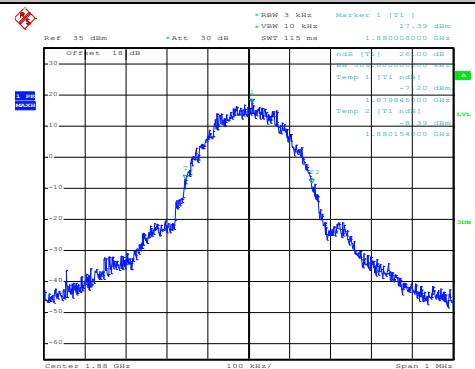
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Middle Channel



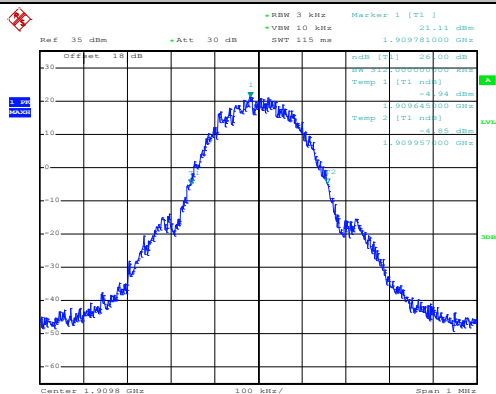
Date: 26.OCT.2018 15:18:59

Middle Channel



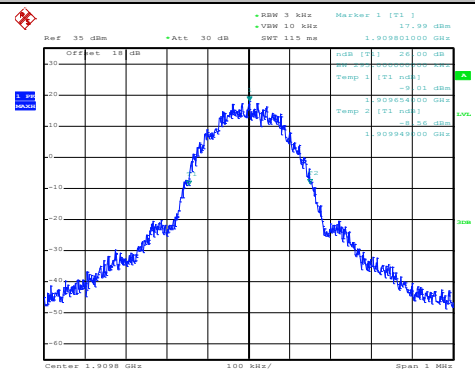
Date: 26.OCT.2018 15:49:37

Highest Channel



Date: 26.OCT.2018 15:19:32

Highest Channel

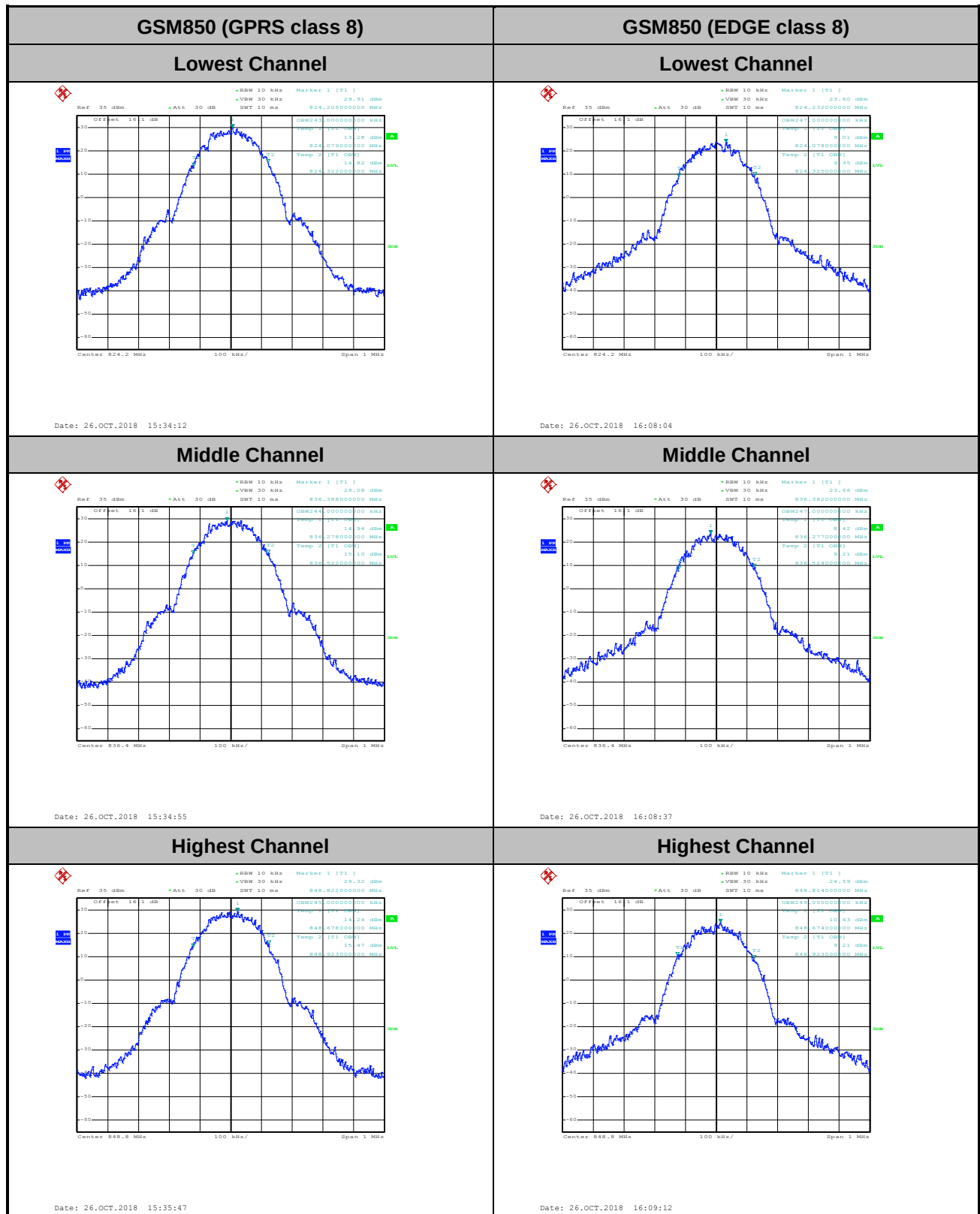


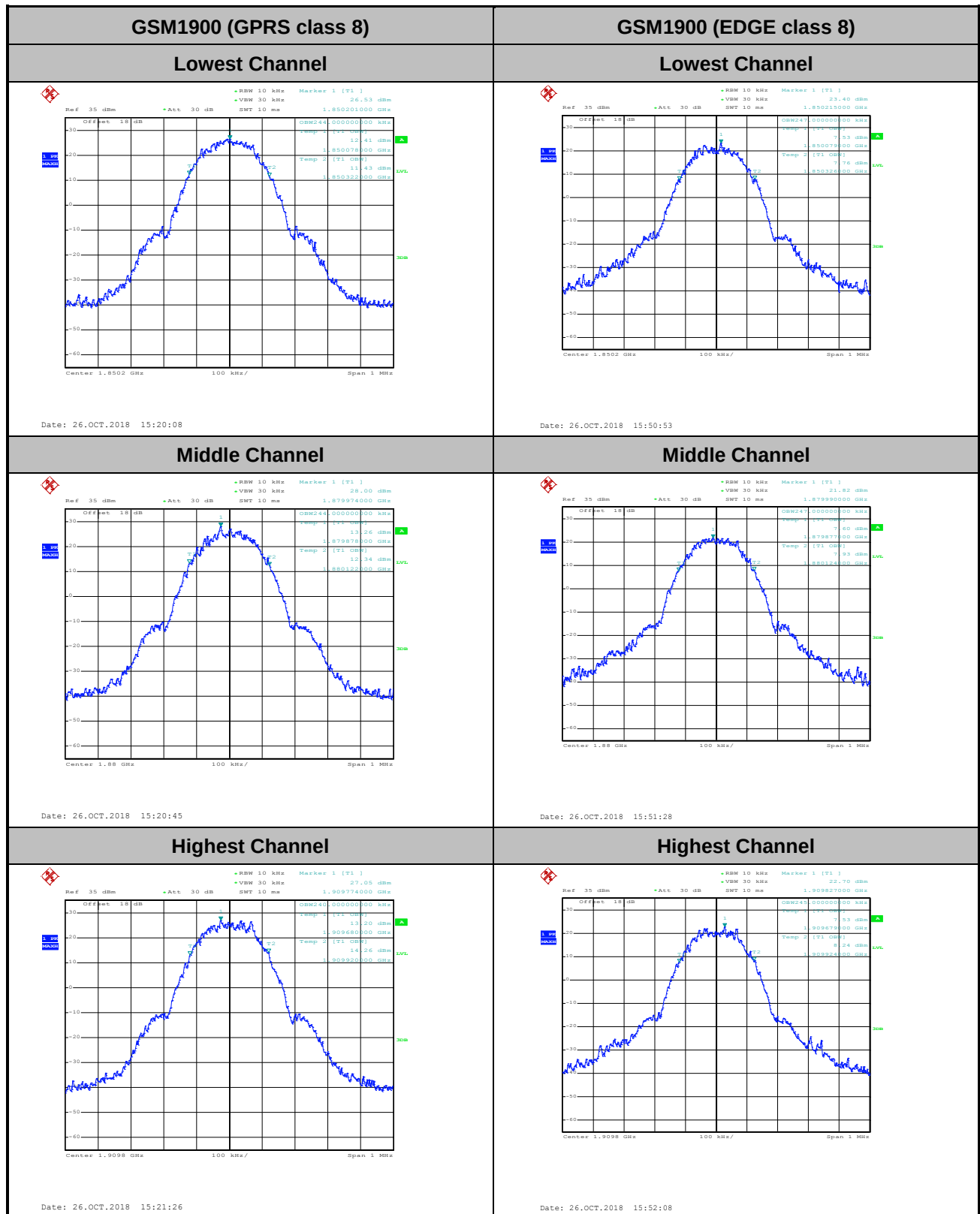
Date: 26.OCT.2018 15:50:10

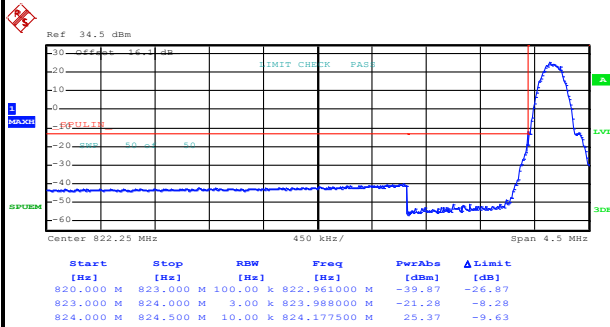
**Occupied Bandwidth**

Mode	GSM850	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.243	0.247
Middle CH	0.244	0.247
Highest CH	0.245	0.249

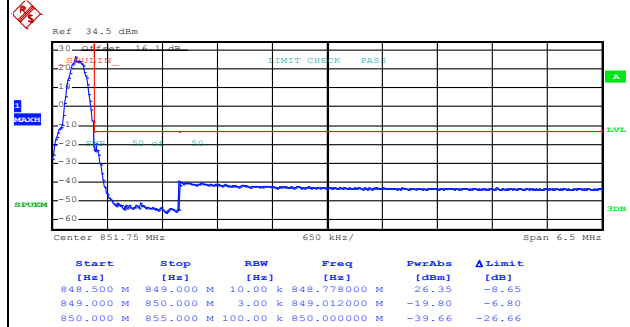
Mode	GSM1900	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.244	0.247
Middle CH	0.245	0.247
Highest CH	0.240	0.245



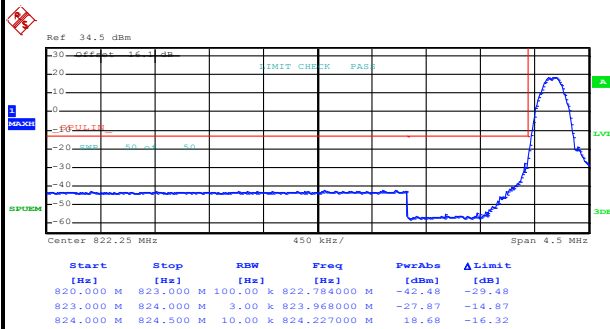


**Conducted Band Edge****GSM850 (GPRS class 8)****Lowest Band Edge**

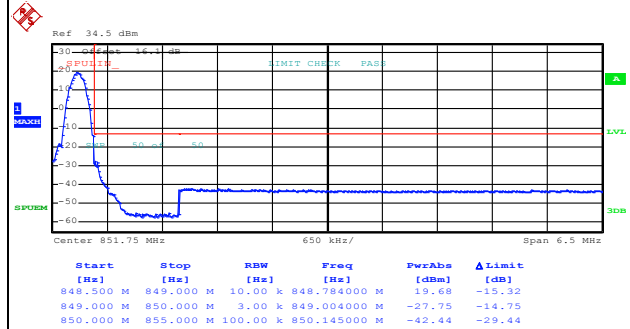
Date: 26.OCT.2018 15:37:54

Highest Band Edge

Date: 26.OCT.2018 15:39:23

GSM850 (EDGE class 8)**Lowest Band Edge**

Date: 26.OCT.2018 16:14:01

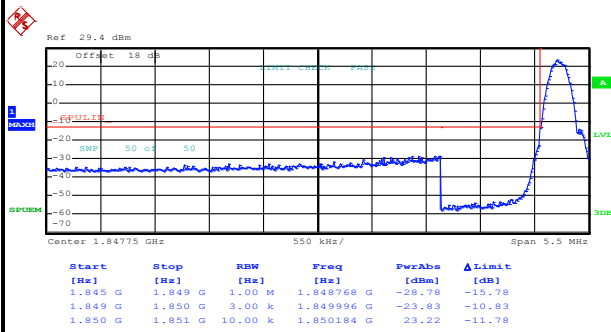
Highest Band Edge

Date: 26.OCT.2018 16:15:35



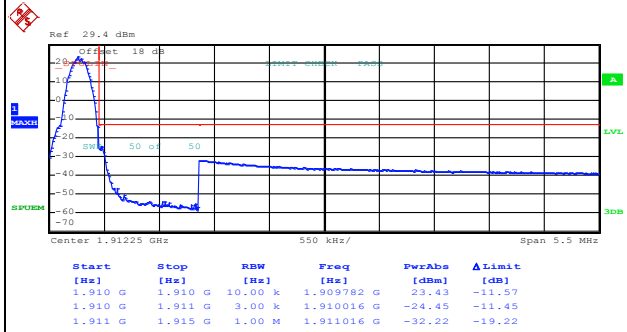
GSM1900 (GPRS class 8)

Lowest Band Edge



Date: 26.OCT.2018 15:22:55

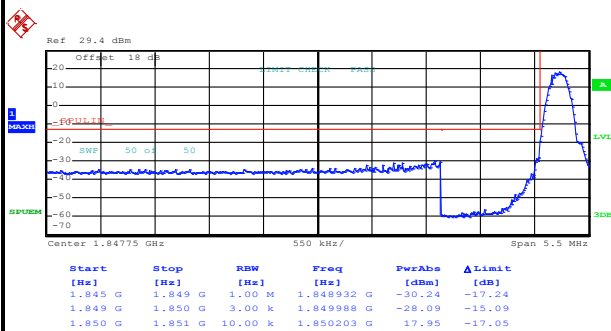
Highest Band Edge



Date: 26.OCT.2018 15:24:31

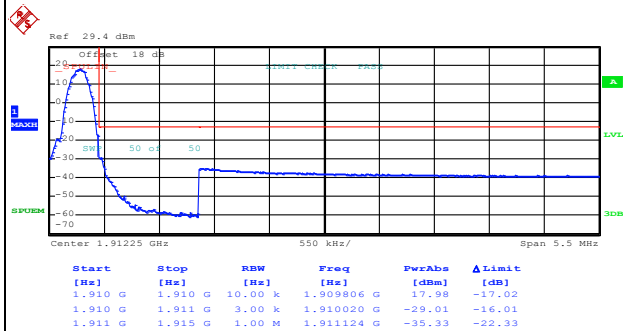
GSM1900 (EDGE class 8)

Lowest Band Edge



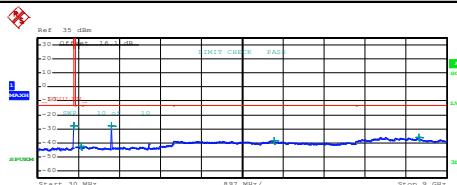
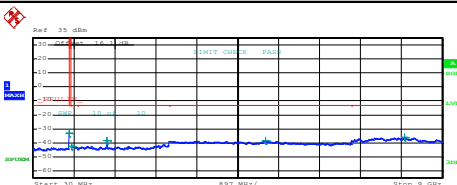
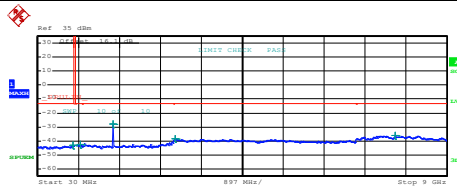
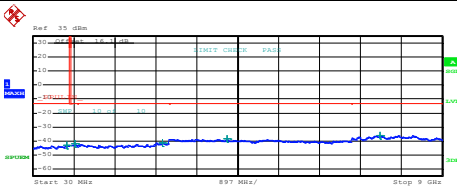
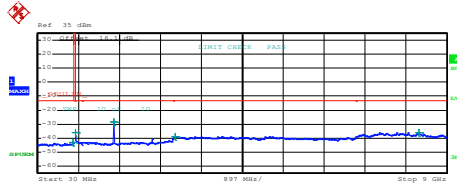
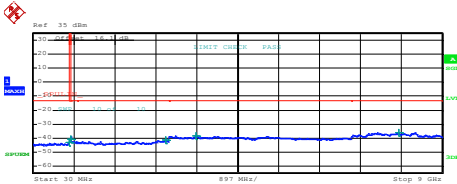
Date: 26.OCT.2018 15:53:45

Highest Band Edge



Date: 26.OCT.2018 15:55:13

Conducted Spurious Emission

GSM850 (GPRS class 8)	GSM850 (EDGE class 8)																																																																								
Lowest Channel	Lowest Channel																																																																								
 <table><thead><tr><th>Start [Hz]</th><th>Stop [Hz]</th><th>RBW [Hz]</th><th>Freq [Hz]</th><th>PwrAve [dBm]</th><th>Δ Limit [dB]</th></tr></thead><tbody><tr><td>30,000 M</td><td>820,000 M</td><td>1,00 M</td><td>819,802500 M</td><td>-27.97</td><td>-14.97</td></tr><tr><td>855,000 M</td><td>1,000 G</td><td>1,00 M</td><td>988,762500 M</td><td>-42.66</td><td>-29.66</td></tr><tr><td>1,000 G</td><td>3,000 G</td><td>1,00 M</td><td>1,648000 G</td><td>-27.79</td><td>-14.79</td></tr><tr><td>3,000 G</td><td>7,000 G</td><td>1,00 M</td><td>5,209000 G</td><td>-38.53</td><td>-25.53</td></tr><tr><td>7,000 G</td><td>9,000 G</td><td>1,00 M</td><td>8,383000 G</td><td>-35.76</td><td>-22.76</td></tr></tbody></table> Date: 26.OCT.2018 15:40:25	Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAve [dBm]	Δ Limit [dB]	30,000 M	820,000 M	1,00 M	819,802500 M	-27.97	-14.97	855,000 M	1,000 G	1,00 M	988,762500 M	-42.66	-29.66	1,000 G	3,000 G	1,00 M	1,648000 G	-27.79	-14.79	3,000 G	7,000 G	1,00 M	5,209000 G	-38.53	-25.53	7,000 G	9,000 G	1,00 M	8,383000 G	-35.76	-22.76	 <table><thead><tr><th>Start [Hz]</th><th>Stop [Hz]</th><th>RBW [Hz]</th><th>Freq [Hz]</th><th>PwrAve [dBm]</th><th>Δ Limit [dB]</th></tr></thead><tbody><tr><td>30,000 M</td><td>820,000 M</td><td>1,00 M</td><td>819,802500 M</td><td>-33.14</td><td>-20.14</td></tr><tr><td>855,000 M</td><td>1,000 G</td><td>1,00 M</td><td>972,726251 M</td><td>-42.75</td><td>-29.75</td></tr><tr><td>1,000 G</td><td>3,000 G</td><td>1,00 M</td><td>1,648000 G</td><td>-38.19</td><td>-25.19</td></tr><tr><td>3,000 G</td><td>7,000 G</td><td>1,00 M</td><td>5,124000 G</td><td>-38.45</td><td>-25.45</td></tr><tr><td>7,000 G</td><td>9,000 G</td><td>1,00 M</td><td>8,171000 G</td><td>-36.16</td><td>-23.16</td></tr></tbody></table> Date: 26.OCT.2018 16:10:16	Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAve [dBm]	Δ Limit [dB]	30,000 M	820,000 M	1,00 M	819,802500 M	-33.14	-20.14	855,000 M	1,000 G	1,00 M	972,726251 M	-42.75	-29.75	1,000 G	3,000 G	1,00 M	1,648000 G	-38.19	-25.19	3,000 G	7,000 G	1,00 M	5,124000 G	-38.45	-25.45	7,000 G	9,000 G	1,00 M	8,171000 G	-36.16	-23.16
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7,000 G	9,000 G	1,00 M	8,171000 G	-36.16	-23.16																																																																				
Middle Channel	Middle Channel																																																																								
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Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAve [dBm]	Δ Limit [dB]																																																																				
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GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
Lowest Channel	Lowest Channel

Frequency Stability

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

Test Conditions	Middle Channel	GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)	Limit
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Note 2.
50	Normal Voltage	0.0037	0.0005	PASS
40	Normal Voltage	0.0021	0.0005	
30	Normal Voltage	0.0043	0.0000	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0000	0.0000	
0	Normal Voltage	0.0016	0.0005	
-10	Normal Voltage	0.0005	0.0027	
-20	Normal Voltage	0.0027	0.0016	
-30	Normal Voltage	0.0027	0.0037	
20	Maximum Voltage	0.0005	0.0011	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0011	0.0011	

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.65 V. ; Maximum Voltage =4.3 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

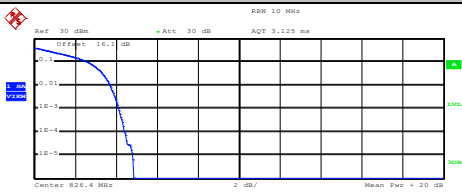
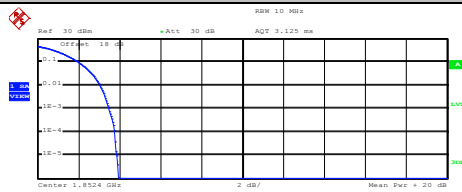
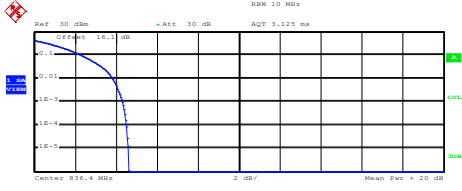
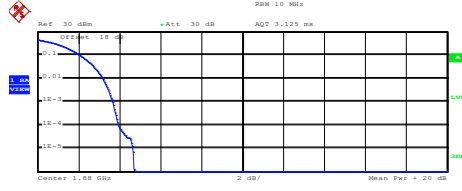
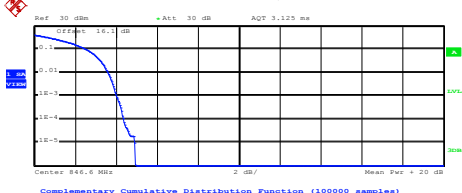
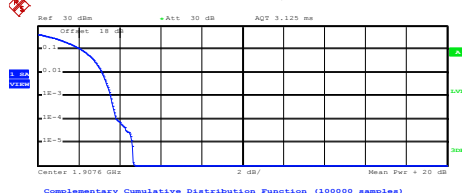


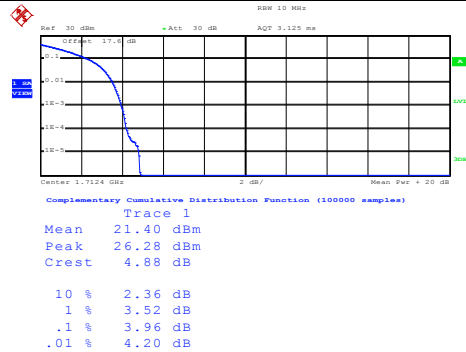
A3. WCDMA

Peak-to-Average Ratio

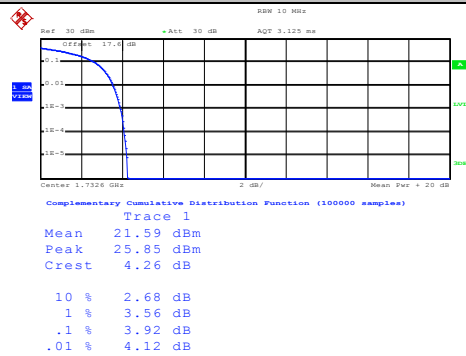
Mode	WCDMA Band V	WCDMA Band II	WCDMA Band IV	Limit: 13dB
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps	Result
Lowest CH	4.12	3.48	3.96	PASS
Middle CH	4.32	3.68	3.92	
Highest CH	4.04	3.56	3.96	



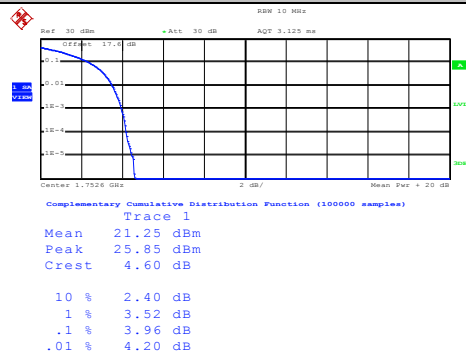
WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)																												
Lowest Channel	Lowest Channel																												
 Ref: 30 dBm, Att: 30 dB, AGT: 3.125 ms, RSW: 10 MHz, Center: 826.4 MHz, Mean: 21.26 dBm, Peak: 26.14 dBm, Crest: 4.88 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>21.26 dBm</td></tr><tr><td>Peak</td><td>26.14 dBm</td></tr><tr><td>Crest</td><td>4.88 dB</td></tr></table> <table><tr><td>10 %</td><td>2.64 dB</td></tr><tr><td>1 %</td><td>3.72 dB</td></tr><tr><td>.1 %</td><td>4.12 dB</td></tr><tr><td>.01 %</td><td>4.44 dB</td></tr></table> Date: 26.OCT.2018 17:59:39	Mean	21.26 dBm	Peak	26.14 dBm	Crest	4.88 dB	10 %	2.64 dB	1 %	3.72 dB	.1 %	4.12 dB	.01 %	4.44 dB	 Ref: 30 dBm, Att: 30 dB, AGT: 3.125 ms, RSW: 10 MHz, Center: 1.8524 GHz, Mean: 21.91 dBm, Peak: 25.85 dBm, Crest: 3.94 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>21.91 dBm</td></tr><tr><td>Peak</td><td>25.85 dBm</td></tr><tr><td>Crest</td><td>3.94 dB</td></tr></table> <table><tr><td>10 %</td><td>2.00 dB</td></tr><tr><td>1 %</td><td>3.04 dB</td></tr><tr><td>.1 %</td><td>3.48 dB</td></tr><tr><td>.01 %</td><td>3.76 dB</td></tr></table> Date: 26.OCT.2018 16:45:45	Mean	21.91 dBm	Peak	25.85 dBm	Crest	3.94 dB	10 %	2.00 dB	1 %	3.04 dB	.1 %	3.48 dB	.01 %	3.76 dB
Mean	21.26 dBm																												
Peak	26.14 dBm																												
Crest	4.88 dB																												
10 %	2.64 dB																												
1 %	3.72 dB																												
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1 %	3.04 dB																												
.1 %	3.48 dB																												
.01 %	3.76 dB																												
Middle Channel	Middle Channel																												
 Ref: 30 dBm, Att: 30 dB, AGT: 3.125 ms, RSW: 10 MHz, Center: 836.4 MHz, Mean: 20.88 dBm, Peak: 25.50 dBm, Crest: 4.62 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>20.88 dBm</td></tr><tr><td>Peak</td><td>25.50 dBm</td></tr><tr><td>Crest</td><td>4.62 dB</td></tr></table> <table><tr><td>10 %</td><td>2.32 dB</td></tr><tr><td>1 %</td><td>3.84 dB</td></tr><tr><td>.1 %</td><td>4.32 dB</td></tr><tr><td>.01 %</td><td>4.52 dB</td></tr></table> Date: 26.OCT.2018 17:59:51	Mean	20.88 dBm	Peak	25.50 dBm	Crest	4.62 dB	10 %	2.32 dB	1 %	3.84 dB	.1 %	4.32 dB	.01 %	4.52 dB	 Ref: 30 dBm, Att: 30 dB, AGT: 3.125 ms, RSW: 10 MHz, Center: 1.88 GHz, Mean: 22.05 dBm, Peak: 26.77 dBm, Crest: 4.72 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>22.05 dBm</td></tr><tr><td>Peak</td><td>26.77 dBm</td></tr><tr><td>Crest</td><td>4.72 dB</td></tr></table> <table><tr><td>10 %</td><td>2.08 dB</td></tr><tr><td>1 %</td><td>3.20 dB</td></tr><tr><td>.1 %</td><td>3.68 dB</td></tr><tr><td>.01 %</td><td>3.96 dB</td></tr></table> Date: 26.OCT.2018 16:45:59	Mean	22.05 dBm	Peak	26.77 dBm	Crest	4.72 dB	10 %	2.08 dB	1 %	3.20 dB	.1 %	3.68 dB	.01 %	3.96 dB
Mean	20.88 dBm																												
Peak	25.50 dBm																												
Crest	4.62 dB																												
10 %	2.32 dB																												
1 %	3.84 dB																												
.1 %	4.32 dB																												
.01 %	4.52 dB																												
Mean	22.05 dBm																												
Peak	26.77 dBm																												
Crest	4.72 dB																												
10 %	2.08 dB																												
1 %	3.20 dB																												
.1 %	3.68 dB																												
.01 %	3.96 dB																												
Highest Channel	Highest Channel																												
 Ref: 30 dBm, Att: 30 dB, AGT: 3.125 ms, RSW: 10 MHz, Center: 846.6 MHz, Mean: 21.19 dBm, Peak: 26.14 dBm, Crest: 4.95 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>21.19 dBm</td></tr><tr><td>Peak</td><td>26.14 dBm</td></tr><tr><td>Crest</td><td>4.95 dB</td></tr></table> <table><tr><td>10 %</td><td>2.56 dB</td></tr><tr><td>1 %</td><td>3.60 dB</td></tr><tr><td>.1 %</td><td>4.04 dB</td></tr><tr><td>.01 %</td><td>4.36 dB</td></tr></table> Date: 26.OCT.2018 18:00:00	Mean	21.19 dBm	Peak	26.14 dBm	Crest	4.95 dB	10 %	2.56 dB	1 %	3.60 dB	.1 %	4.04 dB	.01 %	4.36 dB	 Ref: 30 dBm, Att: 30 dB, AGT: 3.125 ms, RSW: 10 MHz, Center: 1.9076 GHz, Mean: 21.74 dBm, Peak: 26.42 dBm, Crest: 4.68 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>21.74 dBm</td></tr><tr><td>Peak</td><td>26.42 dBm</td></tr><tr><td>Crest</td><td>4.68 dB</td></tr></table> <table><tr><td>10 %</td><td>2.12 dB</td></tr><tr><td>1 %</td><td>3.16 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: 26.OCT.2018 16:46:12	Mean	21.74 dBm	Peak	26.42 dBm	Crest	4.68 dB	10 %	2.12 dB	1 %	3.16 dB	.1 %	3.56 dB	.01 %	3.84 dB
Mean	21.19 dBm																												
Peak	26.14 dBm																												
Crest	4.95 dB																												
10 %	2.56 dB																												
1 %	3.60 dB																												
.1 %	4.04 dB																												
.01 %	4.36 dB																												
Mean	21.74 dBm																												
Peak	26.42 dBm																												
Crest	4.68 dB																												
10 %	2.12 dB																												
1 %	3.16 dB																												
.1 %	3.56 dB																												
.01 %	3.84 dB																												

WCDMA Band IV (RMC 12.2Kbps)
Lowest Channel


Date: 26.OCT.2018 16:56:09

Middle Channel


Date: 26.OCT.2018 16:56:20

Highest Channel


Date: 26.OCT.2018 16:56:29

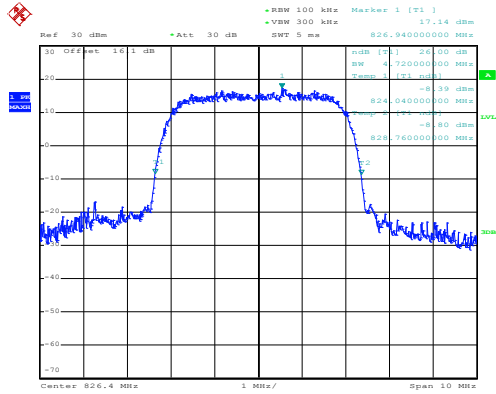
**26dB Bandwidth**

Mode	WCDMA Band V	WCDMA Band II	WCDMA Band IV
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.72	4.70	4.70
Middle CH	4.70	4.69	4.70
Highest CH	4.70	4.72	4.69



WCDMA Band V (RMC 12.2Kbps)

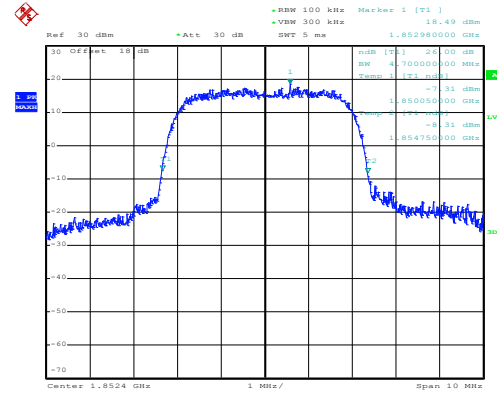
Lowest Channel



Date: 26.OCT.2018 17:37:13

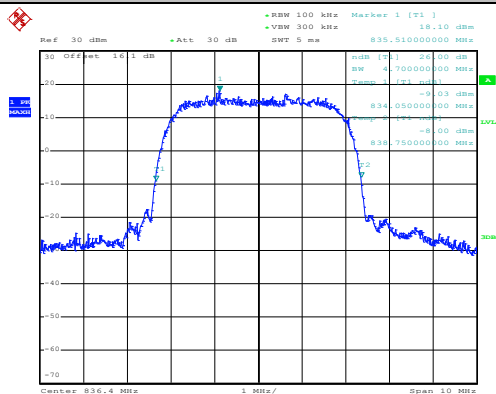
WCDMA Band II (RMC 12.2Kbps)

Lowest Channel



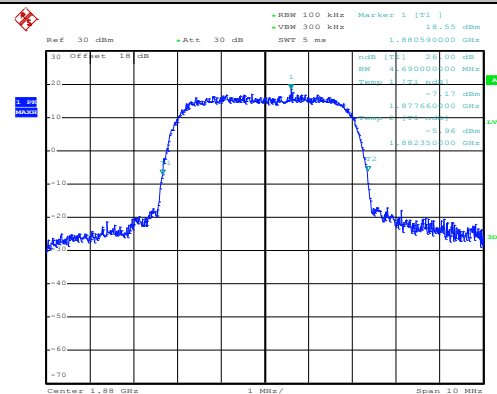
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Middle Channel



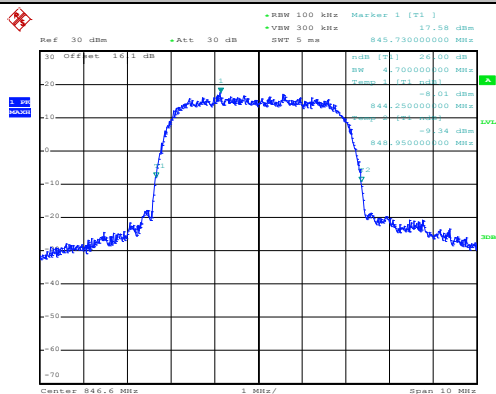
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Middle Channel



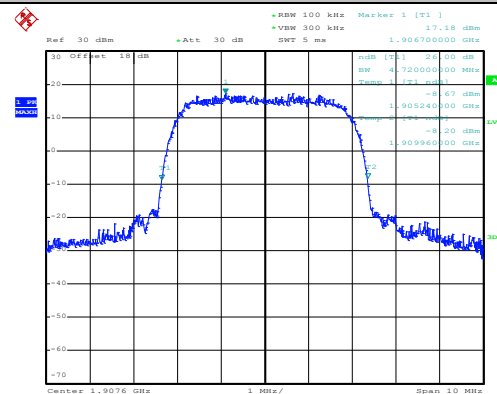
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Highest Channel



Date: 26.OCT.2018 17:38:16

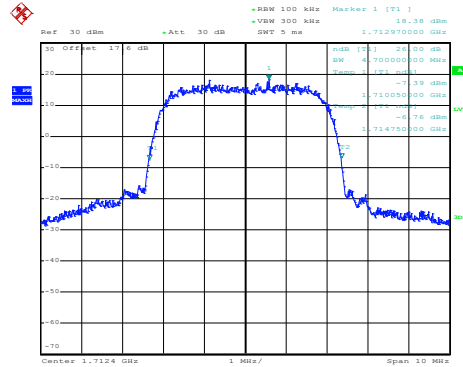
Highest Channel



Date: 26.OCT.2018 16:24:43

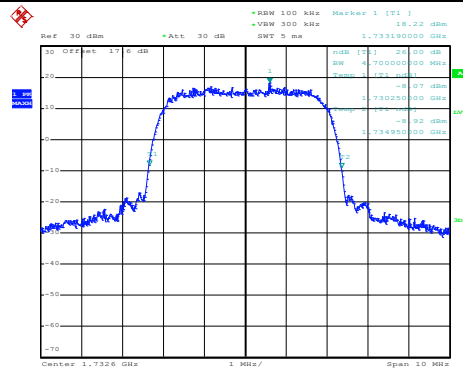
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



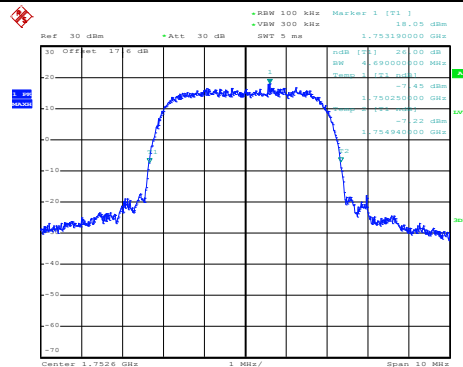
Date: 26.OCT.2018 16:50:07

Middle Channel



Date: 26.OCT.2018 16:50:40

Highest Channel



Date: 26.OCT.2018 16:51:11

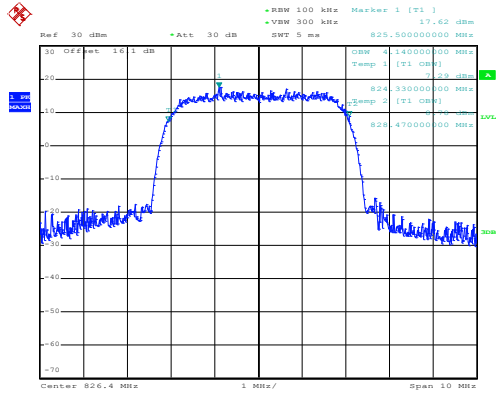
**Occupied Bandwidth**

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	4.14	4.14	4.14
Highest CH	4.13	4.13	4.13



WCDMA Band V (RMC 12.2Kbps)

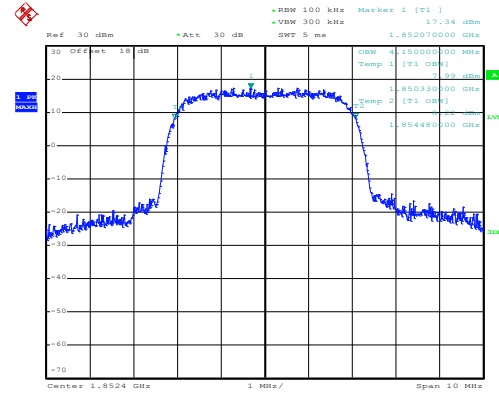
Lowest Channel



Date: 26.OCT.2018 17:38:52

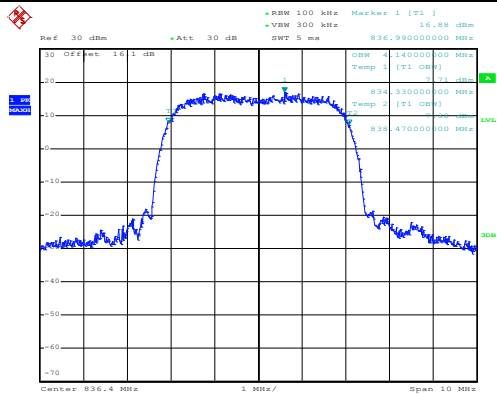
WCDMA Band II (RMC 12.2Kbps)

Lowest Channel



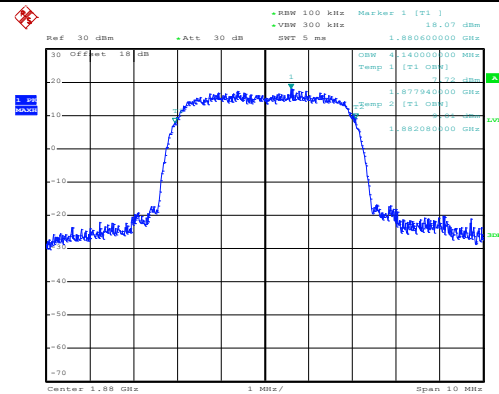
Date: 26.OCT.2018 16:25:20

Middle Channel



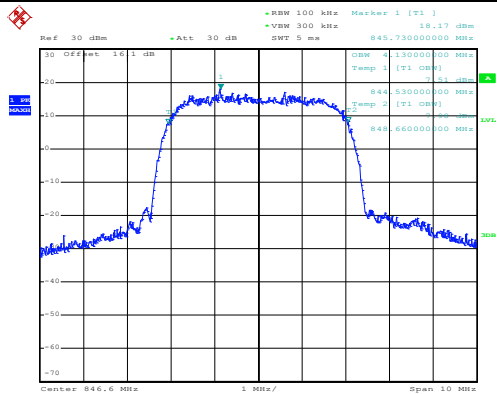
Date: 26.OCT.2018 17:39:27

Middle Channel



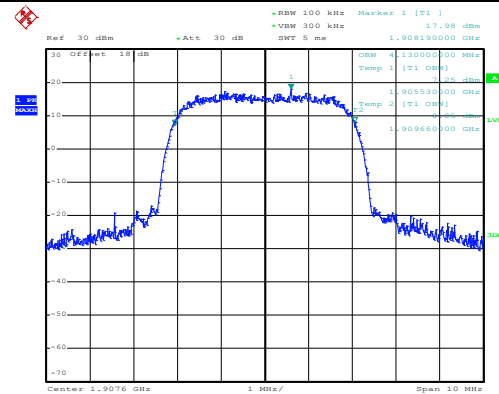
Date: 26.OCT.2018 16:26:52

Highest Channel



Date: 26.OCT.2018 17:40:00

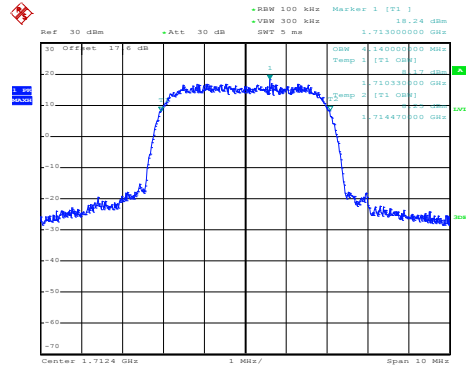
Highest Channel



Date: 26.OCT.2018 16:27:22

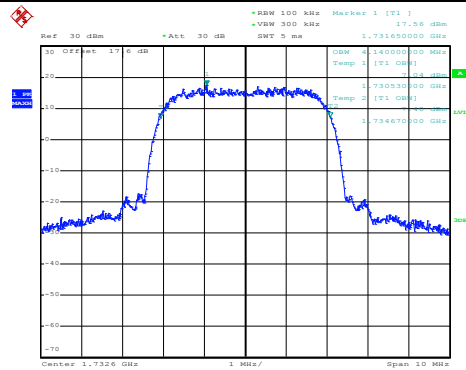
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



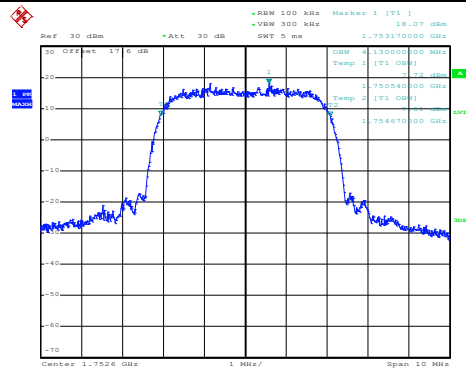
Date: 26.OCT.2018 16:52:00

Middle Channel

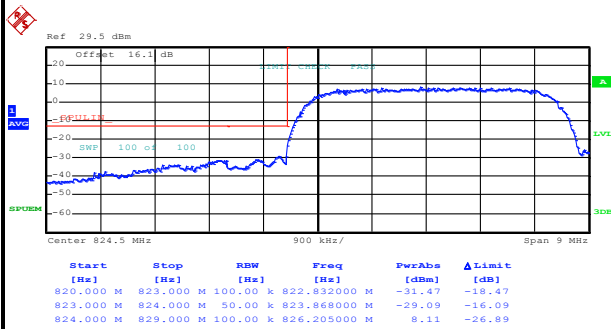


Date: 26.OCT.2018 16:52:36

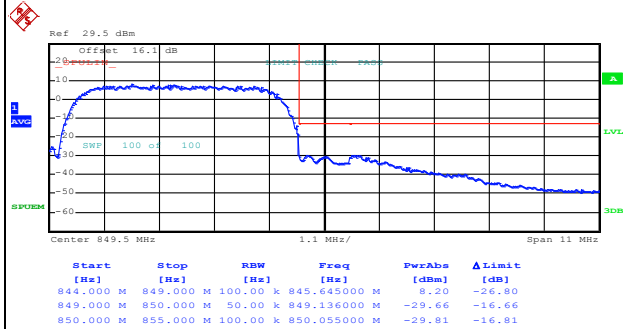
Highest Channel



Date: 26.OCT.2018 16:53:12

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

Date: 26.OCT.2018 17:42:43

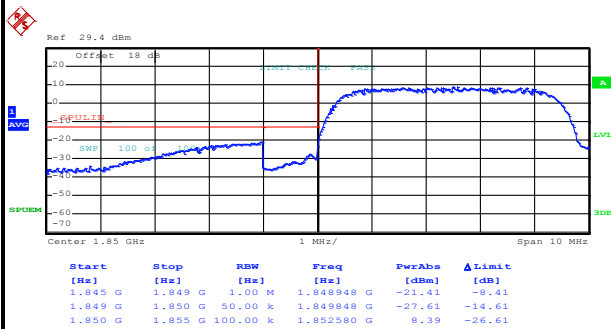
Highest Band Edge

Date: 26.OCT.2018 17:55:54



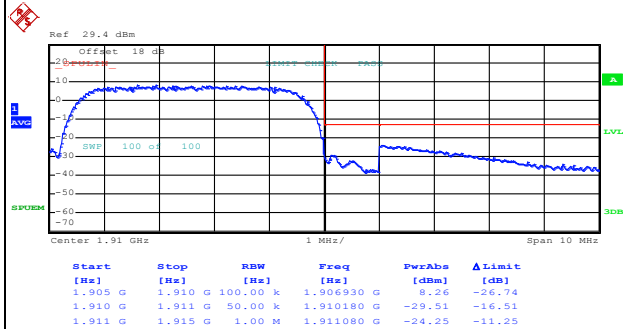
WCDMA Band II (RMC 12.2Kbps)

Lowest Band Edge



Date: 26.OCT.2018 16:30:12

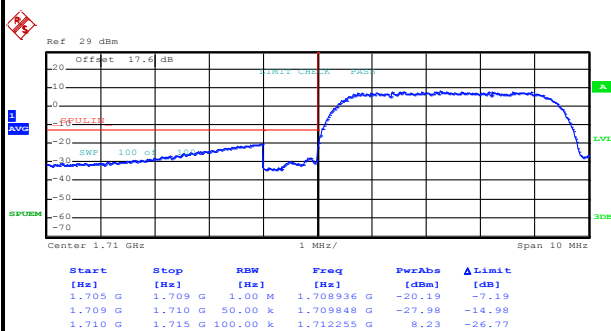
Highest Band Edge



Date: 26.OCT.2018 16:39:20

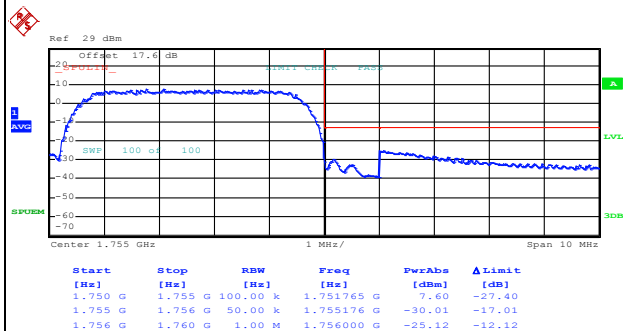
WCDMA Band IV (RMC 12.2Kbps)

Lowest Band Edge



Date: 26.OCT.2018 16:59:15

Highest Band Edge



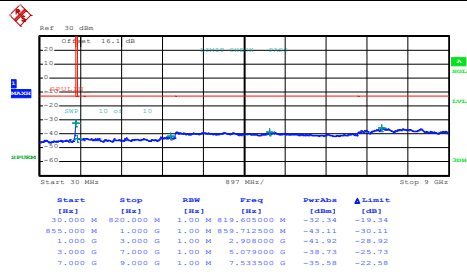
Date: 26.OCT.2018 17:02:03



Conducted Spurious Emission

WCDMA Band V (RMC 12.2Kbps)

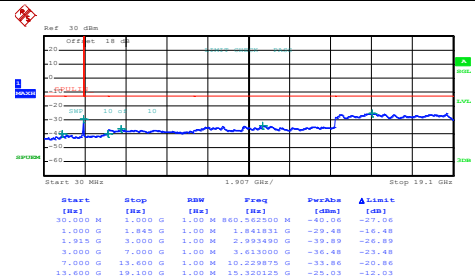
Lowest Channel



Date: 26.OCT.2018 17:57:19

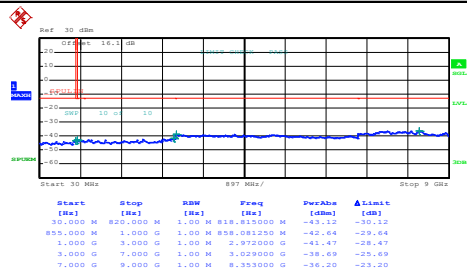
WCDMA Band II (RMC 12.2Kbps)

Lowest Channel



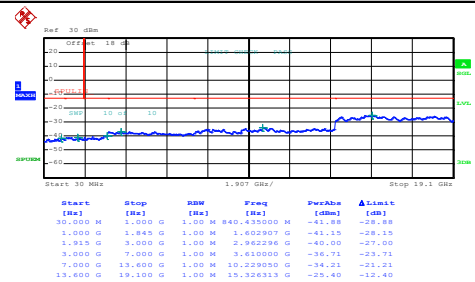
Date: 26.OCT.2018 16:40:16

Middle Channel



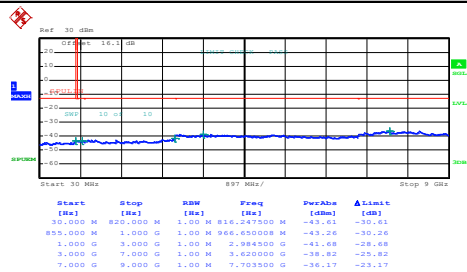
Date: 26.OCT.2018 17:58:27

Middle Channel



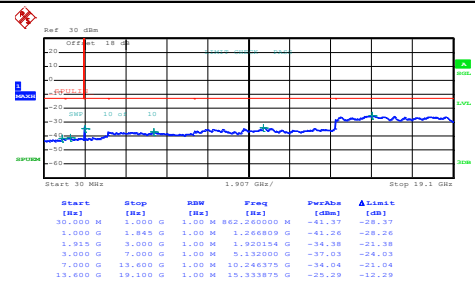
Date: 26.OCT.2018 16:43:29

Highest Channel



Date: 26.OCT.2018 17:59:24

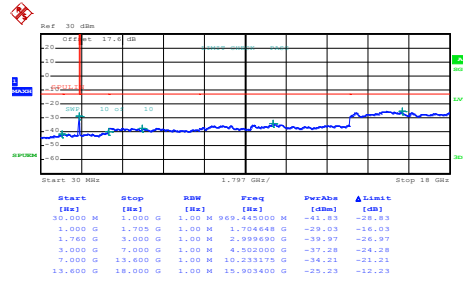
Highest Channel



Date: 26.OCT.2018 16:44:47

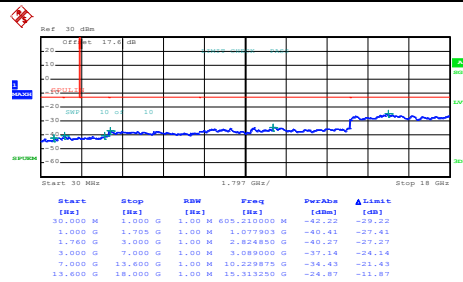
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



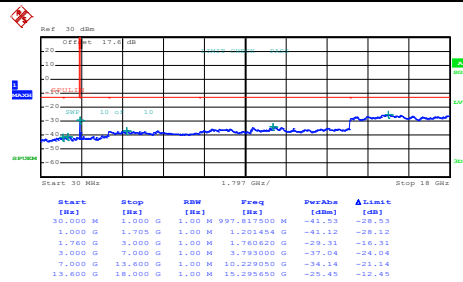
Date: 26.OCT.2018 16:54:12

Middle Channel



Date: 26.OCT.2018 16:55:02

Highest Channel



Date: 26.OCT.2018 16:55:53

**Frequency Stability**

Test Conditions	Middle Channel	WCDMA Band V (RMC 12.2Kbps)	Limit
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	2.5ppm Result
50	Normal Voltage	0.0191	PASS
40	Normal Voltage	0.0191	
30	Normal Voltage	0.0191	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0000	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0048	
-20	Normal Voltage	0.0072	
-30	Normal Voltage	0.0215	
20	Maximum Voltage	0.0191	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0000	

Test Conditions	Middle Channel	WCDMA Band II (RMC 12.2Kbps)	Limit
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Note 2. Result
50	Normal Voltage	0.0059	PASS
40	Normal Voltage	0.0048	
30	Normal Voltage	0.0032	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0048	
0	Normal Voltage	0.0059	
-10	Normal Voltage	0.0074	
-20	Normal Voltage	0.0096	
-30	Normal Voltage	0.0096	
20	Maximum Voltage	0.0048	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0032	



Test Conditions	Middle Channel	WCDMA Band IV (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0023	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0000	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0312	
-20	Normal Voltage	0.0294	
-30	Normal Voltage	0.0317	
20	Maximum Voltage	0.0075	
20	Normal Voltage	0.0063	
20	Battery End Point	0.0052	

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.65 V. ; Maximum Voltage =4.3 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

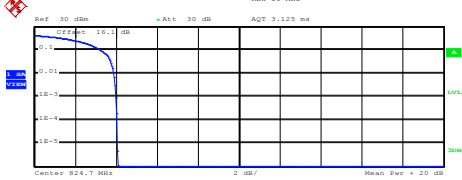
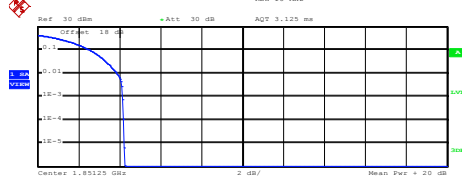
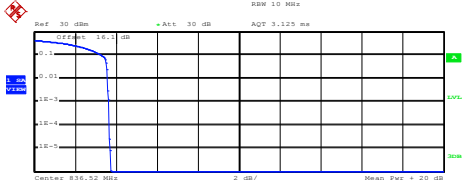
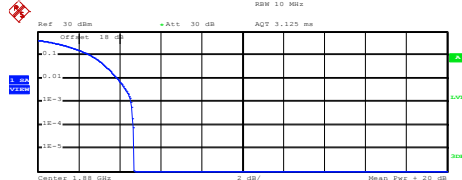
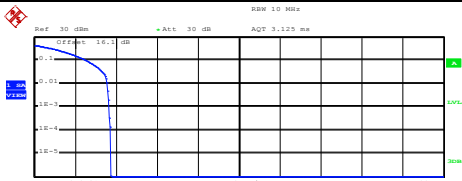
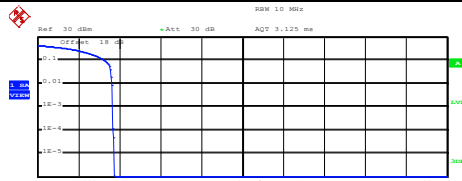


A4. CDMA

Peak-to-Average Ratio

Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xEV-DO Rev. 0	1xEV-DO Rev. 0	Result
Lowest CH	4.00	4.16	PASS
Middle CH	3.64	4.56	
Highest CH	3.68	3.68	



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, RBW: 10 MHz, Center: 824.7 MHz, 2 dB, Mean Pwr: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>24.32 dBm</td></tr><tr><td>Peak</td><td>28.39 dBm</td></tr><tr><td>Crest</td><td>4.07 dB</td></tr></table> <table><tr><td>10 %</td><td>3.24 dB</td></tr><tr><td>1 %</td><td>3.88 dB</td></tr><tr><td>.1 %</td><td>4.00 dB</td></tr><tr><td>.01 %</td><td>4.08 dB</td></tr></table> Date: 26.OCT.2018 19:49:10	Mean	24.32 dBm	Peak	28.39 dBm	Crest	4.07 dB	10 %	3.24 dB	1 %	3.88 dB	.1 %	4.00 dB	.01 %	4.08 dB	 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RBW: 10 MHz, Center: 1.85125 GHz, 2 dB, Mean Pwr: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>24.72 dBm</td></tr><tr><td>Peak</td><td>28.96 dBm</td></tr><tr><td>Crest</td><td>4.23 dB</td></tr></table> <table><tr><td>10 %</td><td>2.60 dB</td></tr><tr><td>1 %</td><td>3.88 dB</td></tr><tr><td>.1 %</td><td>4.16 dB</td></tr><tr><td>.01 %</td><td>4.20 dB</td></tr></table> Date: 26.OCT.2018 20:02:38	Mean	24.72 dBm	Peak	28.96 dBm	Crest	4.23 dB	10 %	2.60 dB	1 %	3.88 dB	.1 %	4.16 dB	.01 %	4.20 dB
Mean	24.32 dBm																												
Peak	28.39 dBm																												
Crest	4.07 dB																												
10 %	3.24 dB																												
1 %	3.88 dB																												
.1 %	4.00 dB																												
.01 %	4.08 dB																												
Mean	24.72 dBm																												
Peak	28.96 dBm																												
Crest	4.23 dB																												
10 %	2.60 dB																												
1 %	3.88 dB																												
.1 %	4.16 dB																												
.01 %	4.20 dB																												
Middle Channel	Middle Channel																												
 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RBW: 10 MHz, Center: 835.52 MHz, 2 dB, Mean Pwr: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>24.17 dBm</td></tr><tr><td>Peak</td><td>27.90 dBm</td></tr><tr><td>Crest</td><td>3.73 dB</td></tr></table> <table><tr><td>10 %</td><td>3.28 dB</td></tr><tr><td>1 %</td><td>3.60 dB</td></tr><tr><td>.1 %</td><td>3.64 dB</td></tr><tr><td>.01 %</td><td>3.68 dB</td></tr></table> Date: 26.OCT.2018 19:49:18	Mean	24.17 dBm	Peak	27.90 dBm	Crest	3.73 dB	10 %	3.28 dB	1 %	3.60 dB	.1 %	3.64 dB	.01 %	3.68 dB	 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RBW: 10 MHz, Center: 1.85 GHz, 2 dB, Mean Pwr: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>24.68 dBm</td></tr><tr><td>Peak</td><td>29.38 dBm</td></tr><tr><td>Crest</td><td>4.70 dB</td></tr></table> <table><tr><td>10 %</td><td>2.60 dB</td></tr><tr><td>1 %</td><td>3.88 dB</td></tr><tr><td>.1 %</td><td>4.56 dB</td></tr><tr><td>.01 %</td><td>4.68 dB</td></tr></table> Date: 26.OCT.2018 20:02:49	Mean	24.68 dBm	Peak	29.38 dBm	Crest	4.70 dB	10 %	2.60 dB	1 %	3.88 dB	.1 %	4.56 dB	.01 %	4.68 dB
Mean	24.17 dBm																												
Peak	27.90 dBm																												
Crest	3.73 dB																												
10 %	3.28 dB																												
1 %	3.60 dB																												
.1 %	3.64 dB																												
.01 %	3.68 dB																												
Mean	24.68 dBm																												
Peak	29.38 dBm																												
Crest	4.70 dB																												
10 %	2.60 dB																												
1 %	3.88 dB																												
.1 %	4.56 dB																												
.01 %	4.68 dB																												
Highest Channel	Highest Channel																												
 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RBW: 10 MHz, Center: 848.31 MHz, 2 dB, Mean Pwr: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>23.87 dBm</td></tr><tr><td>Peak</td><td>27.62 dBm</td></tr><tr><td>Crest</td><td>3.74 dB</td></tr></table> <table><tr><td>10 %</td><td>2.56 dB</td></tr><tr><td>1 %</td><td>3.56 dB</td></tr><tr><td>.1 %</td><td>3.68 dB</td></tr><tr><td>.01 %</td><td>3.72 dB</td></tr></table> Date: 26.OCT.2018 19:49:28	Mean	23.87 dBm	Peak	27.62 dBm	Crest	3.74 dB	10 %	2.56 dB	1 %	3.56 dB	.1 %	3.68 dB	.01 %	3.72 dB	 Ref: 30 dBm, Att: 30 dB, AQT: 3.125 ms, RBW: 10 MHz, Center: 1.90875 GHz, 2 dB, Mean Pwr: +20 dB Complementary Cumulative Distribution Function (100000 samples) Trace 1 <table><tr><td>Mean</td><td>24.44 dBm</td></tr><tr><td>Peak</td><td>28.18 dBm</td></tr><tr><td>Crest</td><td>3.74 dB</td></tr></table> <table><tr><td>10 %</td><td>3.28 dB</td></tr><tr><td>1 %</td><td>3.64 dB</td></tr><tr><td>.1 %</td><td>3.68 dB</td></tr><tr><td>.01 %</td><td>3.68 dB</td></tr></table> Date: 26.OCT.2018 20:02:58	Mean	24.44 dBm	Peak	28.18 dBm	Crest	3.74 dB	10 %	3.28 dB	1 %	3.64 dB	.1 %	3.68 dB	.01 %	3.68 dB
Mean	23.87 dBm																												
Peak	27.62 dBm																												
Crest	3.74 dB																												
10 %	2.56 dB																												
1 %	3.56 dB																												
.1 %	3.68 dB																												
.01 %	3.72 dB																												
Mean	24.44 dBm																												
Peak	28.18 dBm																												
Crest	3.74 dB																												
10 %	3.28 dB																												
1 %	3.64 dB																												
.1 %	3.68 dB																												
.01 %	3.68 dB																												



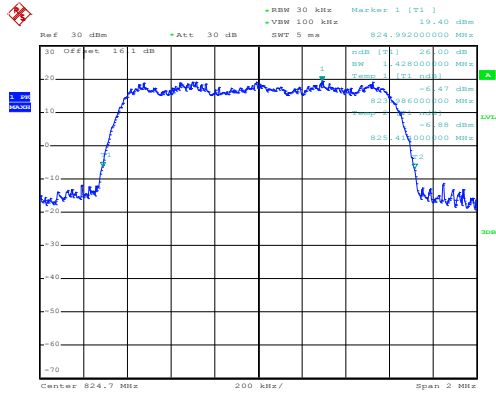
26dB Bandwidth

Mode	CDMA BC0	CDMA BC1
Mod.	1xEV-DO Rev. 0	1xEV-DO Rev. 0
Lowest CH	1.43	1.43
Middle CH	1.44	1.43
Highest CH	1.43	1.43



CDMA BC0 (1xEV-DO Rev. 0)

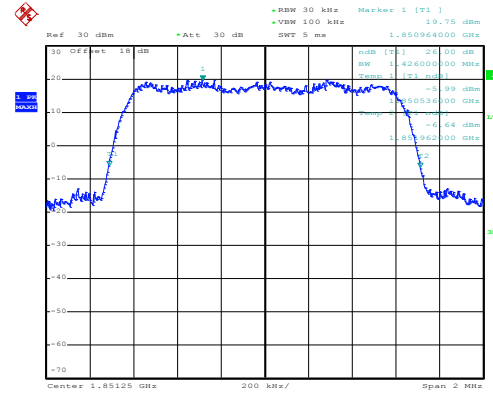
Lowest Channel



Date: 26.OCT.2018 19:43:40

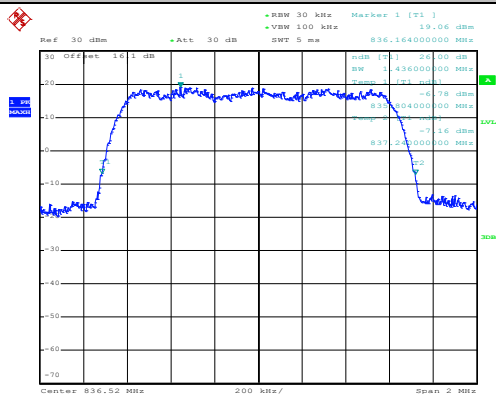
CDMA BC1 (1xEV-DO Rev. 0)

Lowest Channel



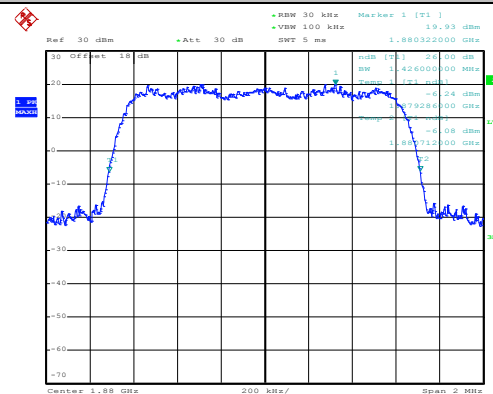
Date: 26.OCT.2018 19:56:52

Middle Channel



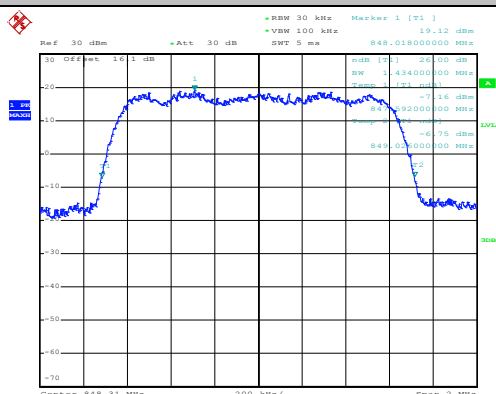
Date: 26.OCT.2018 19:44:13

Middle Channel



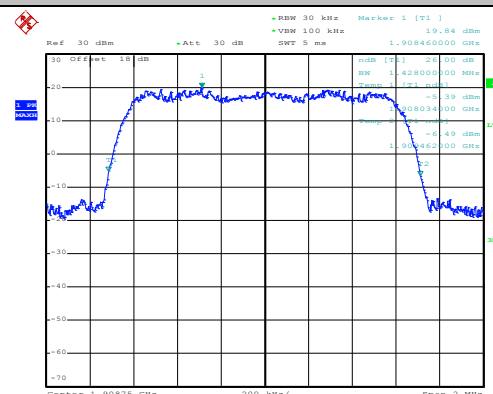
Date: 26.OCT.2018 19:57:25

Highest Channel



Date: 26.OCT.2018 19:44:46

Highest Channel



Date: 26.OCT.2018 19:57:59



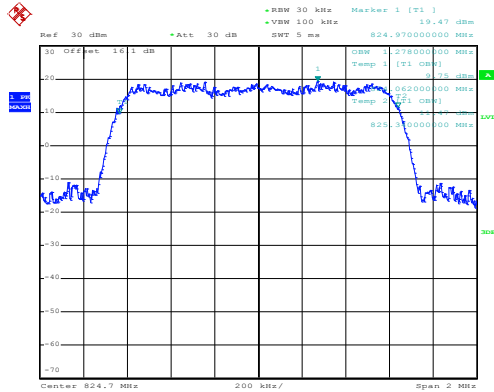
Occupied Bandwidth

Mode	CDMA BC0	CDMA BC1
Mod.	1xEV-DO Rev. 0	1xEV-DO Rev. 0
Lowest CH	1.28	1.27
Middle CH	1.28	1.28
Highest CH	1.28	1.28



CDMA BC0 (1xEV-DO Rev. 0)

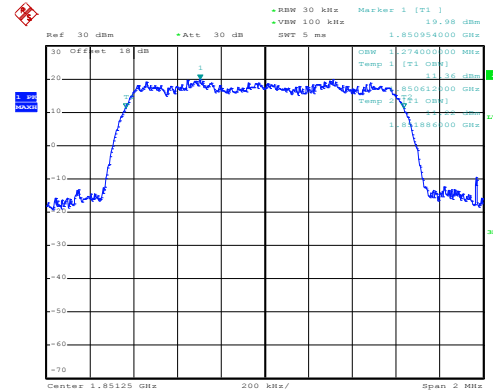
Lowest Channel



Date: 26.OCT.2018 19:45:21

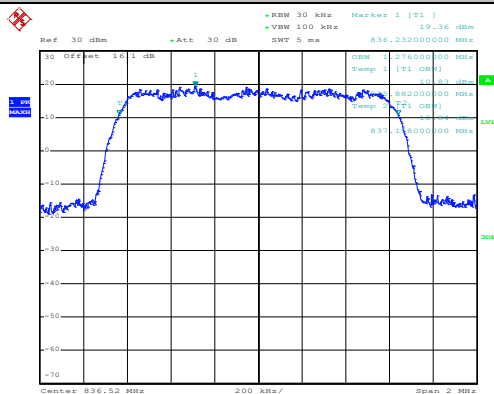
CDMA BC1 (1xEV-DO Rev. 0)

Lowest Channel



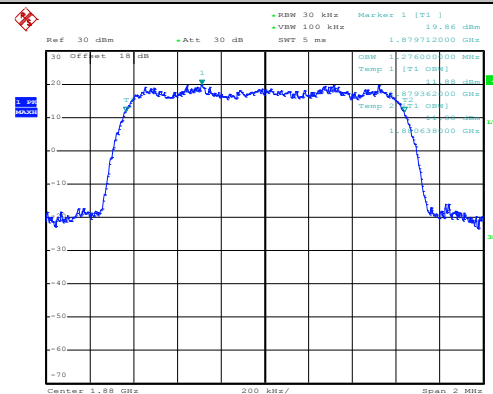
Date: 26.OCT.2018 19:58:35

Middle Channel



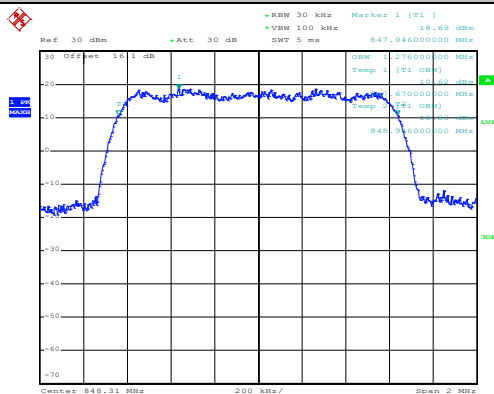
Date: 26.OCT.2018 19:45:57

Middle Channel



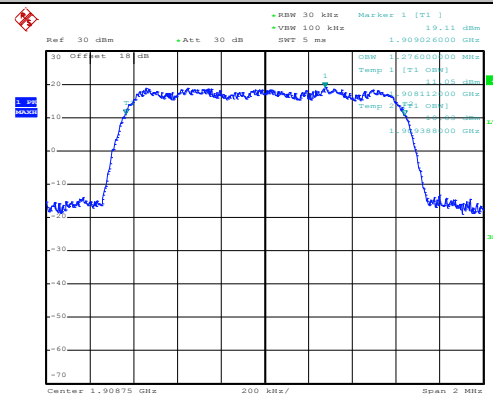
Date: 26.OCT.2018 19:59:13

Highest Channel



Date: 26.OCT.2018 19:46:26

Highest Channel



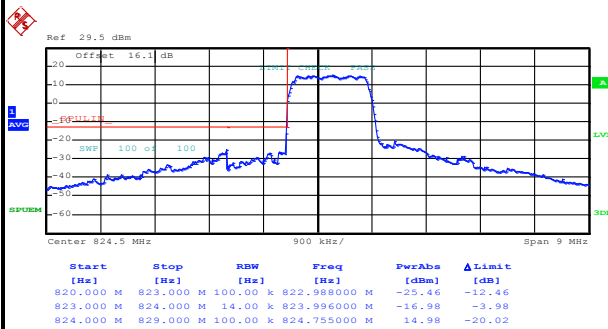
Date: 26.OCT.2018 19:59:51



Conducted Band Edge

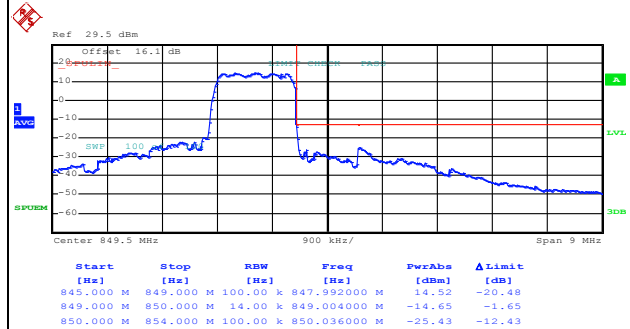
CDMA BC0 (1xEV-DO Rev. 0)

Lowest Band Edge



Date: 26.OCT.2018 19:52:15

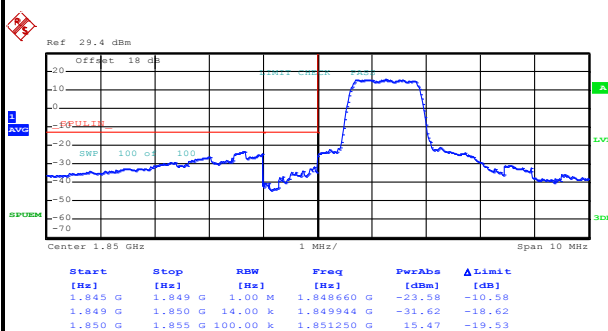
Highest Band Edge



Date: 26.OCT.2018 19:54:59

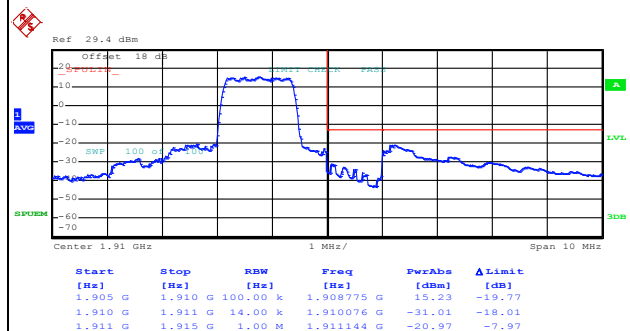
CDMA BC1 (1xEV-DO Rev. 0)

Lowest Band Edge

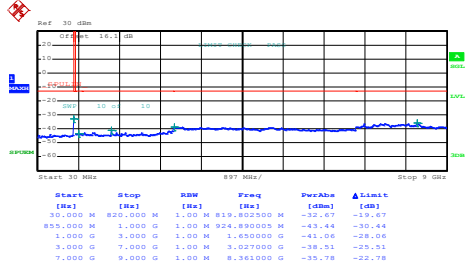


Date: 26.OCT.2018 20:05:45

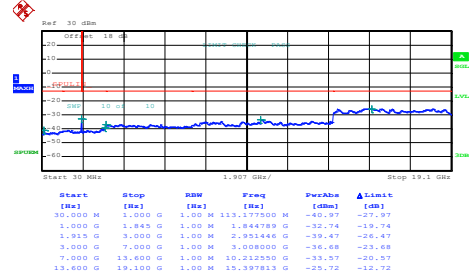
Highest Band Edge



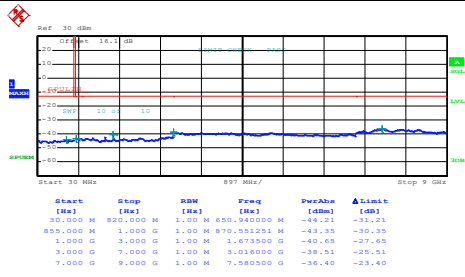
Date: 26.OCT.2018 20:08:33

**Conducted Spurious Emission****CDMA BC0 (1xEV-DO Rev. 0)****Lowest Channel**

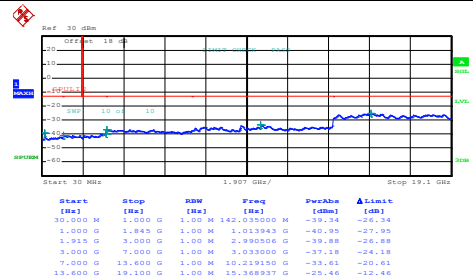
Date: 26.OCT.2018 19:47:17

CDMA BC1 (1xEV-DO Rev. 0)**Lowest Channel**

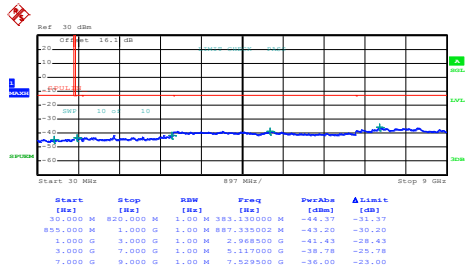
Date: 26.OCT.2018 20:00:50

Middle Channel

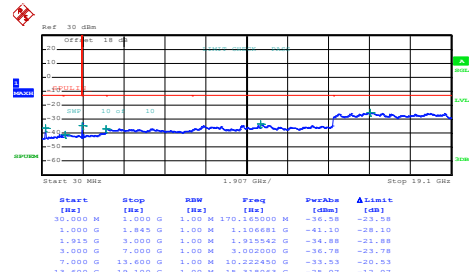
Date: 26.OCT.2018 19:48:04

Middle Channel

Date: 26.OCT.2018 20:01:39

Highest Channel

Date: 26.OCT.2018 19:48:50

Highest Channel

Date: 26.OCT.2018 20:02:28

**Frequency Stability**

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



Test Conditions	Middle Channel	CDMA BC1 (1xRTT)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0011	PASS
40	Normal Voltage	0.0011	
30	Normal Voltage	0.0005	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0027	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0021	
-30	Normal Voltage	0.0037	
20	Maximum Voltage	0.0005	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0000	

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.65 V. ; Maximum Voltage =4.3 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



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	32.35	1.7179	27.10	0.5129
Middle	GPRS class 8	32.30	1.6982	27.05	0.5070
Highest	(GT - LC = -3.1 dB)	32.51	1.7824	27.26	0.5321
Lowest	GSM850	26.15	0.4121	20.90	0.1230
Middle	EDGE class 8	26.30	0.4266	21.05	0.1274
Highest	(GT - LC = -3.1 dB)	26.30	0.4266	21.05	0.1274
Lowest	WCDMA Band V	23.33	0.2153	18.08	0.0643
Middle	RMC 12.2Kbps	23.30	0.2138	18.05	0.0638
Highest	(GT - LC = -3.1 dB)	23.27	0.2123	18.02	0.0634
Lowest	CDMA BC0	24.34	0.2716	19.09	0.0811
Middle	1xRTT	24.49	0.2812	19.24	0.0839
Highest	(GT - LC = -3.1 dB)	24.30	0.2692	19.05	0.0804
Lowest	CDMA BC0	24.38	0.2742	19.13	0.0818
Middle	1xEV-DO	24.50	0.2818	19.25	0.0841
Highest	(GT - LC = -3.1 dB)	24.33	0.2710	19.08	0.0809
Limit	ERP < 7W	Result		PASS	

Channel	Mode	Conducted		EIRP	
		Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	GSM1900	29.45	0.8810	31.55	1.4289
Middle	GPRS class 8	29.44	0.8790	31.54	1.4256
Highest	(GT - LC = 2.1 dB)	29.37	0.8650	31.47	1.4028
Lowest	GSM1900	24.76	0.2992	26.86	0.4853
Middle	EDGE class 8	24.89	0.3083	26.99	0.5000
Highest	(GT - LC = 2.1 dB)	24.91	0.3097	27.01	0.5023
Lowest	WCDMA Band II	22.70	0.1862	24.80	0.3020
Middle	RMC 12.2Kbps	22.60	0.1820	24.70	0.2951
Highest	(GT - LC = 2.1 dB)	22.39	0.1734	24.49	0.2812
Lowest	CDMA BC1	22.33	0.1710	24.43	0.2773
Middle	1xRTT	22.22	0.1667	24.32	0.2704
Highest	(GT - LC = 2.1 dB)	22.04	0.1600	24.14	0.2594
Lowest	CDMA BC1	22.39	0.1734	24.49	0.2812
Middle	1xEV-DO	22.28	0.1690	24.38	0.2742
Highest	(GT - LC = 2.1 dB)	22.08	0.1614	24.18	0.2618
Limit	EIRP < 2W	Result		PASS	

Channel	Mode	Conducted		EIRP	
		Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	WCDMA Band IV	22.82	0.1914	24.92	0.3105
Middle	RMC 12.2Kbps (GT - LC = 2.1 dB)	22.63	0.1832	24.73	0.2972
Highest		22.56	0.1803	24.66	0.2924
Limit	EIRP < 1W	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	-33.39	-13	-20.39	-44.63	-40.34	0.53	9.63	H
	2472	-38.05	-13	-25.05	-54.08	-46.03	0.65	10.78	H
	3296	-50.02	-13	-37.02	-67.75	-59.1	0.76	11.99	H
	4120	-50.33	-13	-37.33	-71.23	-59.67	0.86	12.35	H
	4944	-47.15	-13	-34.15	-70.86	-56.54	0.66	12.20	H
									H
									H
	1648	-42.49	-13	-29.49	-53.19	-49.44	0.53	9.63	V
	2472	-44.43	-13	-31.43	-60.64	-52.41	0.65	10.78	V
	3296	-52.95	-13	-39.95	-71.14	-62.03	0.76	11.99	V
	4120	-50.01	-13	-37.01	-70.98	-59.35	0.86	12.35	V
	4944	-50.60	-13	-37.60	-73.81	-59.99	0.66	12.20	V
									V
									V
Middle	1672	-34.55	-13	-21.55	-45.87	-41.55	0.53	9.68	H
	2512	-38.86	-13	-25.86	-54.91	-46.86	0.66	10.81	H
	3344	-43.68	-13	-30.68	-61.3	-52.9	0.76	12.13	H
	4184	-47.08	-13	-34.08	-68.05	-56.42	0.84	12.33	H
	5016	-43.10	-13	-30.10	-66.95	-52.24	0.94	12.23	H
									H
									H
	1672	-42.53	-13	-29.53	-53.19	-49.53	0.53	9.68	V
	2512	-45.24	-13	-32.24	-61.47	-53.24	0.66	10.81	V
	3344	-49.83	-13	-36.83	-67.9	-59.05	0.76	12.13	V
	4184	-49.52	-13	-36.52	-70.62	-58.86	0.84	12.33	V
	5016	-49.36	-13	-36.36	-72.78	-58.5	0.94	12.23	V
									V
									V



Highest	1696	-34.93	-13	-21.93	-46.3	-40.48	1.24	8.94	H
	2544	-43.97	-13	-30.97	-60.01	-50.91	1.44	10.54	H
	3392	-53.50	-13	-40.50	-70.97	-61.64	1.78	12.08	H
	4240	-52.46	-13	-39.46	-73.7	-60.36	2.05	12.10	H
	5088	-43.95	-13	-30.95	-67.8	-51.59	2.32	12.12	H
									H
									H
	1696	-41.01	-13	-28.01	-51.64	-46.56	1.24	8.94	V
	2544	-40.27	-13	-27.27	-56.4	-47.21	1.44	10.54	V
	3392	-55.09	-13	-42.09	-72.99	-63.23	1.78	12.08	V
	4240	-53.80	-13	-40.80	-75.1	-61.7	2.05	12.10	V
	5088	-47.77	-13	-34.77	-71.29	-55.41	2.32	12.12	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	-33.68	-13	-20.68	-44.92	-40.63	0.53	9.63	H
	2472	-39.29	-13	-26.29	-55.32	-47.27	0.65	10.78	H
	3296	-50.35	-13	-37.35	-68.08	-59.43	0.76	11.99	H
	4120	-50.11	-13	-37.11	-71.01	-59.45	0.86	12.35	H
	4944	-46.66	-13	-33.66	-70.37	-56.05	0.66	12.20	H
									H
									H
	1648	-28.11	-13	-15.11	-51.81	-35.06	0.53	9.63	V
	2472	-29.47	-13	-16.47	-58.68	-37.45	0.65	10.78	V
	3296	-40.53	-13	-27.53	-71.72	-49.61	0.76	11.99	V
	4120	-37.13	-13	-24.13	-71.1	-46.47	0.86	12.35	V
	4944	-36.75	-13	-23.75	-72.96	-46.14	0.66	12.20	V
									V
									V
Middle	1672	-43.11	-13	-30.11	-54.43	-50.11	0.53	9.68	H
	2509	-39.56	-13	-26.56	-55.61	-47.56	0.66	10.81	H
	3345	-44.85	-13	-31.85	-62.46	-54.07	0.76	12.14	H
	4182	-47.86	-13	-34.86	-68.83	-57.2	0.84	12.33	H
	5018	-45.25	-13	-32.25	-69.09	-54.39	0.94	12.24	H
									H
									H
	1672	-46.47	-13	-33.47	-57.13	-53.47	0.53	9.68	V
	2509	-42.63	-13	-29.63	-58.86	-50.63	0.66	10.81	V
	3345	-46.89	-13	-33.89	-64.95	-56.11	0.76	12.14	V
	4182	-52.62	-13	-39.62	-73.72	-61.96	0.84	12.33	V
	5018	-50.00	-13	-37.00	-73.41	-59.14	0.94	12.24	V
									V
									V



Highest	1696	-43.15	-13	-30.15	-54.52	-48.7	1.24	8.94	H
	2544	-42.69	-13	-29.69	-58.73	-49.63	1.44	10.54	H
	3393	-53.76	-13	-40.76	-71.24	-61.91	1.78	12.08	H
	4241	-51.75	-13	-38.75	-72.99	-59.65	2.05	12.10	H
	5089	-43.69	-13	-30.69	-67.55	-51.33	2.32	12.12	H
									H
									H
	1696	-47.36	-13	-34.36	-57.99	-52.91	1.24	8.94	V
	2544	-42.25	-13	-29.25	-58.38	-49.19	1.44	10.54	V
	3393	-52.82	-13	-39.82	-70.73	-60.97	1.78	12.08	V
	4241	-53.18	-13	-40.18	-74.48	-61.08	2.05	12.10	V
	5089	-49.07	-13	-36.07	-72.63	-56.71	2.32	12.12	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	1649	-53.97	-13	-40.97	-65.2	-60.92	0.53	9.63	H
	2474	-57.89	-13	-44.89	-73.92	-65.87	0.65	10.78	H
	3298	-56.74	-13	-43.74	-74.48	-65.83	0.76	11.99	H
									H
									H
									H
									H
	1649	-57.96	-13	-44.96	-68.65	-64.91	0.53	9.63	V
	2474	-58.01	-13	-45.01	-74.22	-65.99	0.65	10.78	V
	3298	-56.52	-13	-43.52	-74.72	-65.61	0.76	11.99	V
									V
									V
									V
									V
Middle	1672	-54.83	-13	-41.83	-66.15	-61.83	0.53	9.68	H
	2509	-57.98	-13	-44.98	-74.03	-65.98	0.66	10.81	H
	3345	-56.30	-13	-43.30	-73.91	-65.52	0.76	12.14	H
									H
									H
									H
									H
	1672	-58.59	-13	-45.59	-69.25	-65.59	0.53	9.68	V
	2509	-58.08	-13	-45.08	-74.31	-66.08	0.66	10.81	V
	3345	-56.35	-13	-43.35	-74.41	-65.57	0.76	12.14	V
									V
									V
									V
									V
									V



Highest	1696	-54.65	-13	-41.65	-66.02	-60.2	1.24	8.94	H
	2544	-58.12	-13	-45.12	-74.16	-65.06	1.44	10.54	H
	3393	-56.82	-13	-43.82	-74.3	-64.97	1.78	12.08	H
									H
									H
									H
									H
	1696	-59.38	-13	-46.38	-70.01	-64.93	1.24	8.94	V
	2544	-58.40	-13	-45.40	-74.53	-65.34	1.44	10.54	V
	3393	-56.59	-13	-43.59	-74.5	-64.74	1.78	12.08	V
									V
									V
									V
									V

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

**Part22H CDMA BC 0 1xEVDO**

Mode 4 CDMA BC 0 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	-52.57	-13	-39.57	-63.8	-59.52	0.53	9.63	H
	2472	-56.09	-13	-43.09	-72.11	-64.07	0.65	10.78	H
	3298	-56.31	-13	-43.31	-74.04	-65.4	0.76	11.99	H
									H
									H
									H
									H
	1648	-55.92	-13	-42.92	-66.61	-62.87	0.53	9.63	V
	2472	-56.79	-13	-43.79	-72.99	-64.77	0.65	10.78	V
	3298	-56.08	-13	-43.08	-74.27	-65.17	0.76	11.99	V
									V
									V
									V
									V
Middle	1672	-53.46	-13	-40.46	-64.77	-60.46	0.53	9.68	H
	2512	-52.20	-13	-39.20	-68.24	-60.2	0.66	10.81	H
	3346	-56.34	-13	-43.34	-73.95	-65.56	0.76	12.14	H
									H
									H
									H
									H
	1672	-56.91	-13	-43.91	-67.56	-63.91	0.53	9.68	V
	2512	-54.36	-13	-41.36	-70.58	-62.36	0.66	10.81	V
	3346	-56.01	-13	-43.01	-74.07	-65.23	0.76	12.14	V
									V
									V
									V
									V
									V



Highest	1696	-54.20	-13	-41.20	-65.57	-59.75	1.24	8.94	H
	2544	-51.86	-13	-38.86	-67.9	-58.8	1.44	10.54	H
	3393	-56.88	-13	-43.88	-74.35	-65.03	1.78	12.08	H
									H
									H
									H
									H
	1696	-55.83	-13	-42.83	-66.46	-61.38	1.24	8.94	V
	2544	-54.44	-13	-41.44	-70.57	-61.38	1.44	10.54	V
	3393	-56.64	-13	-43.64	-74.54	-64.79	1.78	12.08	V
									V
									V
									V
									V

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

**Part24E GPRS 1900**

Mode 1_GPRS 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)
Lowest	3700	-54.43	-13	-41.43	-74.62	-66.22	0.73	12.52	H
	5550	-48.82	-13	-35.82	-74.09	-60.99	1.00	13.17	H
	7403	-46.24	-13	-33.24	-74.58	-55.63	1.18	10.57	H
									H
									H
									H
									H
	3700	-54.45	-13	-41.45	-74.78	-66.24	0.73	12.52	V
	5550	-50.30	-13	-37.30	-75.09	-62.47	1.00	13.17	V
	7403	-46.32	-13	-33.32	-74.53	-55.71	1.18	10.57	V
									V
									V
									V
									V
Middle	3763	-54.17	-13	-41.17	-74.62	-65.98	0.69	12.49	H
	5640	-49.75	-13	-36.75	-75.01	-61.88	0.98	13.12	H
	7520	-46.38	-13	-33.38	-74.21	-55.66	1.18	10.46	H
									H
									H
									H
									H
	3763	-53.52	-13	-40.52	-74.19	-65.33	0.69	12.49	V
	5640	-50.73	-13	-37.73	-75.59	-62.86	0.98	13.12	V
	7520	-46.65	-13	-33.65	-74.44	-55.93	1.18	10.46	V
									V
									V
									V
									V



Highest	3819	-54.38	-13	-41.38	-75.02	-66.16	0.69	12.47	H
	5730	-41.91	-13	-28.91	-67.57	-53.98	0.99	13.06	H
	7641	-46.70	-13	-33.70	-74.21	-56.31	1.18	10.79	H
									H
									H
									H
									H
	3819	-53.83	-13	-40.83	-75.02	-65.61	0.69	12.47	V
	5730	-37.53	-13	-24.53	-62.55	-49.6	0.99	13.06	V
	7641	-46.58	-13	-33.58	-73.97	-56.19	1.18	10.79	V
									V
									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)
Lowest	3700	-53.01	-13	-40.01	-73.2	-64.8	0.73	12.52	H
	5550	-50.40	-13	-37.40	-75.67	-62.57	1.00	13.17	H
	7400	-46.25	-13	-33.25	-74.65	-55.65	1.18	10.58	H
									H
									H
									H
									H
	3700	-54.13	-13	-41.13	-74.46	-65.92	0.73	12.52	V
	5550	-50.38	-13	-37.38	-75.17	-62.55	1.00	13.17	V
	7400	-46.73	-13	-33.73	-74.97	-56.13	1.18	10.58	V
									V
									V
									V
									V
Middle	3763	-54.19	-13	-41.19	-74.64	-66	0.69	12.49	H
	5640	-49.36	-13	-36.36	-74.62	-61.49	0.98	13.12	H
	7520	-46.67	-13	-33.67	-74.5	-55.95	1.18	10.46	H
									H
									H
									H
									H
	3763	-54.26	-13	-41.26	-74.93	-66.07	0.69	12.49	V
	5640	-49.89	-13	-36.89	-74.75	-62.02	0.98	13.12	V
	7520	-46.89	-13	-33.89	-74.68	-56.17	1.18	10.46	V
									V
									V
									V
									V
									V



Highest	3819	-54.82	-13	-41.82	-75.46	-66.6	0.69	12.47	H
	5729	-48.94	-13	-35.94	-74.6	-61.01	0.99	13.06	H
	7641	-47.20	-13	-34.20	-74.71	-56.81	1.18	10.79	H
									H
									H
									H
									H
	3819	-54.20	-13	-41.20	-75.08	-65.98	0.69	12.47	V
	5729	-50.82	-13	-37.82	-75.84	-62.89	0.99	13.06	V
	7641	-47.77	-13	-34.77	-75.16	-57.38	1.18	10.79	V
									V
									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)
Lowest	3707	-52.99	-13	-39.99	-73.18	-64.79	0.72	12.52	H
	5555	-50.76	-13	-37.76	-76.01	-62.93	1.00	13.17	H
	7410	-46.46	-13	-33.46	-74.8	-55.84	1.18	10.56	H
									H
									H
									H
									H
	3707	-54.31	-13	-41.31	-74.64	-66.11	0.72	12.52	V
	5555	-50.88	-13	-37.88	-75.65	-63.05	1.00	13.17	V
	7410	-46.61	-13	-33.61	-74.81	-55.99	1.18	10.56	V
									V
									V
									V
									V
Middle	3763	-54.51	-13	-41.51	-74.96	-66.32	0.69	12.49	H
	5640	-50.92	-13	-37.92	-76.18	-63.05	0.98	13.12	H
	7520	-47.03	-13	-34.03	-74.86	-56.31	1.18	10.46	H
									H
									H
									H
									H
	3763	-54.51	-13	-41.51	-75.18	-66.32	0.69	12.49	V
	5640	-51.40	-13	-38.40	-76.26	-63.53	0.98	13.12	V
	7520	-46.49	-13	-33.49	-74.28	-55.77	1.18	10.46	V
									V
									V
									V
									V



Highest	3812	-54.60	-13	-41.60	-75.18	-66.39	0.68	12.48	H
	5723	-50.43	-13	-37.43	-76.09	-62.5	0.99	13.07	H
	7630	-47.34	-13	-34.34	-74.84	-56.92	1.18	10.76	H
									H
									H
									H
									H
	3812	-54.56	-13	-41.56	-75.41	-66.35	0.68	12.48	V
	5723	-50.64	-13	-37.64	-75.66	-62.71	0.99	13.07	V
	7630	-47.60	-13	-34.60	-75.01	-57.18	1.18	10.76	V
									V
									V
									V
									V

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

**Part24E CDMA BC 1 1xEVDO**

Mode 4 CDMA BC 1 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	-52.06	-13	-39.06	-72.25	-63.85	0.73	12.52	H
	5555	-50.35	-13	-37.35	-75.6	-62.52	1.00	13.17	H
	7405	-45.84	-13	-32.84	-74.18	-55.23	1.18	10.57	H
									H
									H
									H
									H
	3700	-53.57	-13	-40.57	-73.9	-65.36	0.73	12.52	V
	5555	-50.41	-13	-37.41	-75.18	-62.58	1.00	13.17	V
	7405	-46.35	-13	-33.35	-74.55	-55.74	1.18	10.57	V
									V
									V
									V
									V
Middle	3763	-52.45	-13	-39.45	-72.9	-64.26	0.69	12.49	H
	5639	-48.38	-13	-35.38	-73.64	-60.51	0.98	13.12	H
	7520	-46.68	-13	-33.68	-74.51	-55.96	1.18	10.46	H
									H
									H
									H
									H
	3763	-53.56	-13	-40.56	-74.23	-65.37	0.69	12.49	V
	5639	-46.27	-13	-33.27	-71.13	-58.4	0.98	13.12	V
	7520	-46.72	-13	-33.72	-74.51	-56	1.18	10.46	V
									V
									V
									V
									V



Highest	3819	-53.53	-13	-40.53	-74.17	-65.31	0.69	12.47	H
	5723	-48.51	-13	-35.51	-74.17	-60.58	0.99	13.07	H
	7635	-46.93	-13	-33.93	-74.43	-56.52	1.18	10.78	H
									H
									H
									H
									H
	3819	-54.13	-13	-41.13	-75.01	-65.91	0.69	12.47	V
	5723	-45.71	-13	-32.71	-70.73	-57.78	0.99	13.07	V
	7635	-47.14	-13	-34.14	-74.55	-56.73	1.18	10.78	V
									V
									V
									V
									V

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

**Part27L WCDMA 1700**

Mode 1_WCDMA 1700									
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	3427	-55.68	-13	-42.68	-74.09	-66.05	1.81	12.18	H
	5137	-51.40	-13	-38.40	-75.43	-61.22	2.30	12.13	H
	6849	-47.39	-13	-34.39	-74.6	-56.07	2.37	11.05	H
									H
									H
									H
									H
	3427	-55.32	-13	-42.32	-74.14	-65.69	1.81	12.18	V
	5137	-51.94	-13	-38.94	-75.72	-61.76	2.30	12.13	V
	6849	-48.24	-13	-35.24	-75.04	-56.92	2.37	11.05	V
									V
									V
									V
									V
Middle	3465	-55.66	-13	-42.66	-74.39	-66.11	1.84	12.30	H
	5197	-51.67	-13	-38.67	-75.72	-61.53	2.28	12.14	H
	6930	-47.43	-13	-34.43	-75.03	-56.00	2.40	10.97	H
									H
									H
									H
									H
	3465	-55.60	-13	-42.60	-74.71	-66.05	1.84	12.30	V
	5197	-52.11	-13	-39.11	-76	-61.97	2.28	12.14	V
	6930	-47.80	-13	-34.80	-74.94	-56.37	2.40	10.97	V
									V
									V
									V
									V



Highest	3504	-55.50	-13	-42.50	-74.52	-66.03	1.87	12.40	H
	5257	-52.26	-13	-39.26	-76.47	-62.16	2.25	12.15	H
	7010	-46.78	-13	-33.78	-74.74	-55.25	2.41	10.88	H
									H
									H
									H
									H
	3504	-55.04	-13	-42.04	-74.42	-65.57	1.87	12.40	V
	5257	-50.90	-13	-37.90	-74.88	-60.80	2.25	12.15	V
	7010	-47.19	-13	-34.19	-74.67	-55.66	2.41	10.88	V
									V
									V
									V
									V

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