



# FCC RADIO TEST REPORT

FCC ID : A4RG1F8F  
Equipment : Phone  
Model Name : G1F8F  
Applicant : Google LLC  
1600 Amphitheatre Parkway,  
Mountain View, California, 94043 USA  
Standard : FCC 47 CFR Part 2, 22(H), 24(E), 27(L)

The product was received on Dec. 11, 2020 and testing was started from Dec. 14, 2020 and completed on Jan. 21, 2021. We, Sporton International Inc. EMC & Wireless Communications Laboratory, 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 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.

*Louis Wu*

Approved by: Louis Wu

**Sporton International Inc. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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**Appendix A. Test Results of Conducted and ERP/EIRP Test**

**Appendix B. Test Results of Radiated Test**



### History of this test report

Report No.	Version	Description	Issued Date
FG093032-02A	01	Initial issue of report	Mar. 15, 2021
FG093032-02A	02	1. Revise summary 2. Revise List of Measuring Equipment	Apr. 12, 2021



## 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)(5)	Effective Radiated Power (GSM850) (WCDMA Band V) (CDMA BC0)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (GSM1900) (WCDMA Band II) (CDMA BC1)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (WCDMA Band IV)		
3.3	§24.232 (d)	Peak-to-Average Ratio	Pass	
3.4	§2.1049	Occupied Bandwidth (GSM850) (WCDMA Band V) (CDMA BC0) (GSM1900) (WCDMA Band II) (CDMA BC1) (WCDMA Band IV)	Pass	-
	§22.917 (b)			
	§24.238 (b)			
	§27.53 (g)			
3.5	§2.1051	Band Edge Measurement (GSM850) (WCDMA Band V) (CDMA BC0) (GSM1900) (WCDMA Band II) (CDMA BC1) (WCDMA Band IV)	Pass	-
	§22.917 (a)			
	§24.238 (a)			
	§27.53 (g)			
3.6	§2.1051	Conducted Emission (GSM850) (WCDMA Band V) (CDMA BC0) (GSM1900) (WCDMA Band II) (CDMA BC1) (WCDMA Band IV)	Pass	-
	§22.917 (a)			
	§24.238 (a)			
	§27.53 (g)			
3.7	§2.1055	Frequency Stability Temperature & Voltage	Pass	-
	§22.355			
	§24.235			
	§27.54			
4.4	§2.1053	Field Strength of Spurious Radiation (GSM850) (WCDMA Band V) (CDMA BC0) (GSM1900) (WCDMA Band II) (CDMA BC1) (WCDMA Band IV)	Pass	Under limit 27.09 dB at 2544.000 MHz for Primary Antenna Under limit 33.01 dB at 5550.000 MHz for ASDIV Antenna
	§22.917 (a)			
	§24.238 (a)			
	§27.53 (h)			

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by: Wii Chang**

**Report Producer: Tina Chuang**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Phone
Model Name	G1F8F
FCC ID	A4RG1F8F
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/ NFC/GNSS WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE

Remark: The above EUT's information was declared by manufacturer.

EUT Information List	
S/N	Performed Test Item
0B271FQCB00078	Conducted Measurement ERP/EIRP
0C031FQCB00084 0C111FQCB00072	Radiated Spurious Emission

## 1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	<b>GSM/GPRS/EDGE:</b> 850: 824.2 MHz ~ 848.8 MHz 1900: 1850.2 MHz ~ 1909.8 MHz <b>CDMA/EV-DO</b> BC0 824.70 MHz ~ 848.31 MHz BC1: 1851.25 MHz ~ 1908.75 MHz <b>WCDMA:</b> Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz Band IV: 1712.4 MHz ~ 1752.6 MHz
Rx Frequency	<b>GSM/GPRS/EDGE:</b> 850: 869.2 MHz ~ 893.8 MHz 1900: 1930.2 MHz ~ 1989.8 MHz <b>CDMA/EV-DO</b> BC0 869.70 MHz ~ 893.31 MHz BC1: 1931.25 MHz ~ 1988.75 MHz <b>WCDMA:</b> Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz Band IV: 2112.4 MHz ~ 2152.6 MHz



Product Specification subjective to this standard	
Maximum Output Power to Antenna	<p><b>&lt;Primary Antenna&gt;</b>  <b>GSM/GPRS/EDGE:</b>            850: 32.63 dBm            1900: 29.78 dBm  <b>CDMA/EV-DO</b>            BC0 23.98 dBm            BC1: 24.42 dBm  <b>WCDMA:</b>            Band V: 24.43 dBm            Band II: 25.00 dBm            Band IV: 24.81 dBm</p> <p><b>&lt;ASDIV Antenna&gt;</b>  <b>GSM/GPRS/EDGE:</b>            850: 31.61 dBm            1900: 29.64 dBm  <b>CDMA/EV-DO</b>            BC0 23.71 dBm            BC1: 23.77 dBm  <b>WCDMA:</b>            Band V: 23.11 dBm            Band II: 23.60 dBm            Band IV: 23.74 dBm</p>
Antenna Type	<p><b>&lt;Primary Antenna&gt;</b>  <b>&lt;Ant. 0&gt;</b>: Monopole with aperture Antenna type  <b>&lt;Ant. 2&gt;</b>: IFA Antenna type  <b>&lt;ASDIV Antenna&gt;</b>  <b>&lt;Ant. 0&gt;</b>: Monopole with aperture Antenna type  <b>&lt;Ant. 1&gt;</b>: Monopole with aperture Antenna type</p>
Type of Modulation	<p>GSM / GPRS: GMSK            EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK            WCDMA: QPSK (Uplink)            HSDPA: 64QAM (Downlink)            HSUPA: QPSK (Uplink)            CDMA2000 1xRTT: QPSK            CDMA2000 1xEV-DO: QPSK/8PSK</p>

**<Primary Antenna>**

Radio Tech	Band Number	Antenna name	Gain
GSM	850	Ant 0	-5.7
GSM	1900	Ant 2	1
CDMA	BC0	Ant 0	-5.7
CDMA	BC1	Ant 2	1
WCDMA	B2	Ant 2	1
WCDMA	B4	Ant 2	-0.6
WCDMA	B5	Ant 0	-5.7

**<ASDIV Antenna>**

Radio Tech	Band Number	Antenna name	Gain
GSM	850	Ant 1	-6.5
GSM	1900	Ant 0	-3.6
CDMA	BC0	Ant 1	-6.5
CDMA	BC1	Ant 0	-3.6
WCDMA	B2	Ant 0	-3.6
WCDMA	B4	Ant 0	-3.5
WCDMA	B5	Ant 1	-6.5

**Remark:** The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

### 1.3 Modification of EUT

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



### 1.4 Testing Location

<b>Test Site</b>	Sporton International Inc. EMC & Wireless Communications Laboratory
<b>Test Site Location</b>	No.52 , Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
<b>Test Site No.</b>	<b>Sporton Site No.</b>
	TH03-HY
<b>Test Engineer</b>	Oscar Chi
<b>Temperature</b>	21~24°C
<b>Relative Humidity</b>	51~55%

<b>Test Site</b>	Sporton International Inc. Wensan Laboratory.
<b>Test Site Location</b>	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
<b>Test Site No.</b>	<b>Sporton Site No.</b>
	03CH13-HY (TAF Code: 3786)
<b>Test Engineer</b>	Daniel Lee, Jacky Hung and Wilson Wu
<b>Temperature</b>	20~25°C
<b>Relative Humidity</b>	50~60%
<b>Remark</b>	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

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

FCC Designation No.: TW1190 and TW0007





## **1.5 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
- ♦ FCC 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
- ♦ FCC KDB 414788 D01 Radiated Test Site 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.
3. The TAF code is not including all the FCC KDB listed without accreditation.



## 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 (Primary Antenna: X Plane for Cellular Band, Z Plane for PCS Band, Y Plane for AWS Band; ASDIV Antenna: Y Plane for Cellular Band and PCS Band, X 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

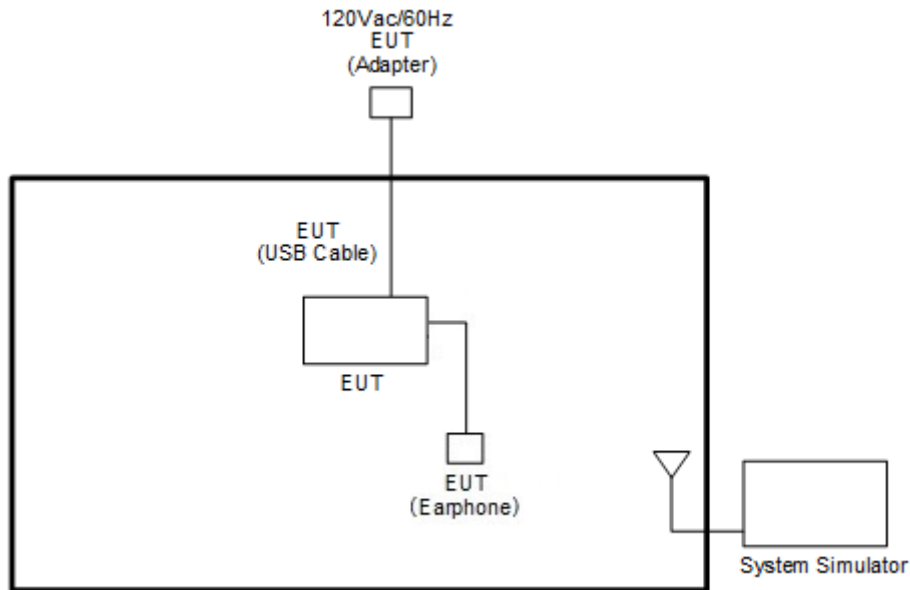
All modes, data rates and positions were investigated.

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

Test Modes		
Band	Radiated TCs	Conducted TCs
GSM850	<ul style="list-style-type: none"> <li>■ GPRS Class 8 Link</li> <li>■ EDGE Class 8 Link</li> </ul>	<ul style="list-style-type: none"> <li>■ GPRS Class 8 Link</li> <li>■ EDGE Class 8 Link</li> </ul>
GSM1900	<ul style="list-style-type: none"> <li>■ GPRS Class 8 Link</li> <li>■ EDGE Class 8 Link</li> </ul>	<ul style="list-style-type: none"> <li>■ GPRS Class 8 Link</li> <li>■ EDGE Class 8 Link</li> </ul>
WCDMA Band V	<ul style="list-style-type: none"> <li>■ RMC 12.2Kbps Link</li> </ul>	<ul style="list-style-type: none"> <li>■ RMC 12.2Kbps Link</li> </ul>
WCDMA Band II	<ul style="list-style-type: none"> <li>■ RMC 12.2Kbps Link</li> </ul>	<ul style="list-style-type: none"> <li>■ RMC 12.2Kbps Link</li> </ul>
WCDMA Band IV	<ul style="list-style-type: none"> <li>■ RMC 12.2Kbps Link</li> </ul>	<ul style="list-style-type: none"> <li>■ RMC 12.2Kbps Link</li> </ul>
CDMA BC0	<ul style="list-style-type: none"> <li>■ 1xRTT Link</li> </ul>	<ul style="list-style-type: none"> <li>■ 1xRTT Link</li> </ul>
CDMA BC1	<ul style="list-style-type: none"> <li>■ 1xRTT Link</li> </ul>	<ul style="list-style-type: none"> <li>■ 1xRTT Link</li> </ul>

**Remark:** All the radiated test cases were performed with Adapter 1 and USB Cable 1.

## 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration

Item	Equipment	Brand 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 10 dB 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

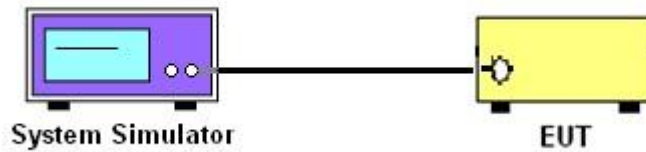
### 3 Conducted Test Result

#### 3.1 Measuring Instruments

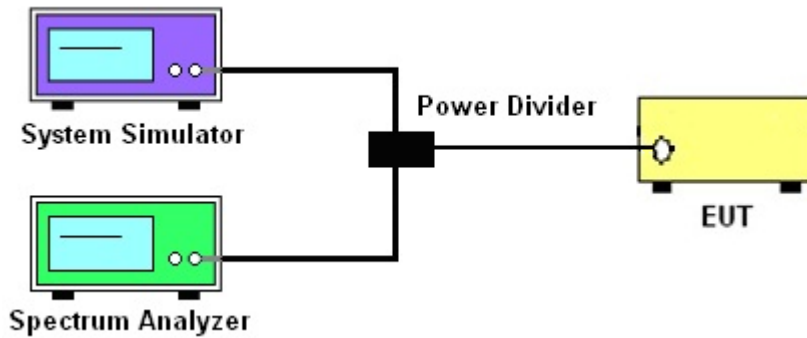
See list of measuring instruments of this test report.

##### 3.1.1 Test Setup

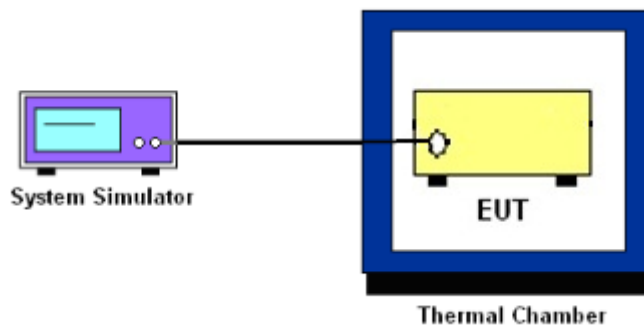
##### 3.1.2 Conducted Output Power



##### 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 and CDMA BC0

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

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 the lowest, middle, and the 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 ANSI C63.26-2015 Section 5.2.6

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 ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

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 6.1.

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 10<sup>th</sup> harmonic.

### **3.6.2 Test Procedures**

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

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  $-30^{\circ}\text{C}$  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  $10^{\circ}\text{C}$  steps up to  $50^{\circ}\text{C}$ . 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

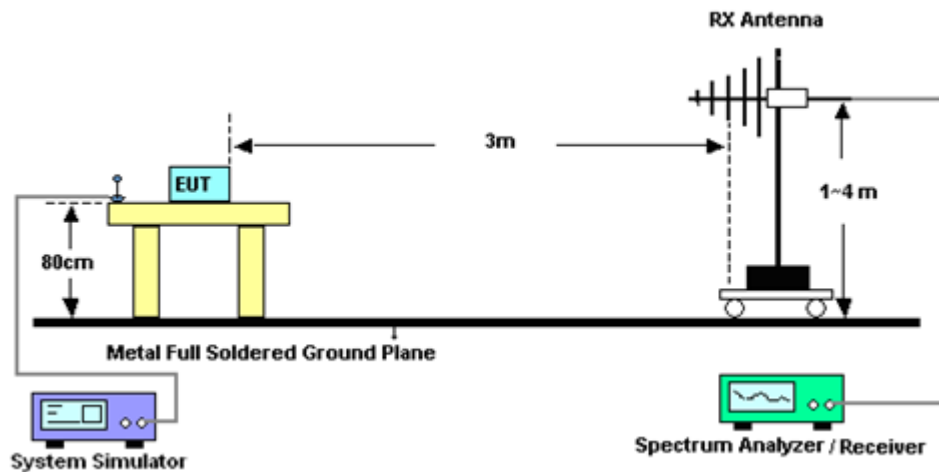
See list of measuring instruments of this test report.

### 4.2 Test Setup

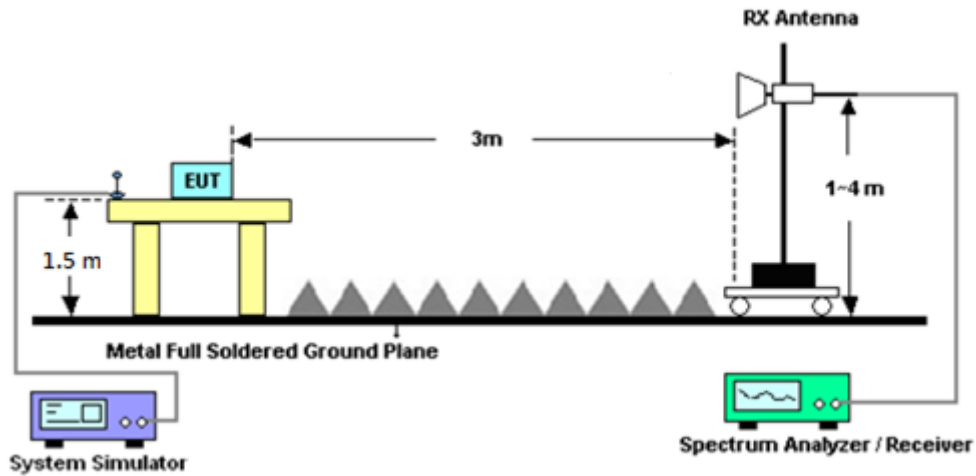
For radiated test below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



### 4.3 Test Result of Radiated Test

Please refer to Appendix B.

**Note:**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



## **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 7 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 1 GHz and 1.5 meter for frequency above 1 GHz 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 = 1 MHz, VBW = 3 MHz, 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. Take the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10.  $EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain$
11.  $ERP (dBm) = EIRP - 2.15$
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	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 16, 2020	Dec. 24, 2020~ Jan. 21, 2021	Dec. 15, 2021	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Apr. 29, 2020	Dec. 24, 2020~ Jan. 21, 2021	Apr. 28, 2021	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	41912 & 07	30MHz to 1GHz	Apr. 29, 2020	Dec. 24, 2020~ Jan. 21, 2021	Apr. 28, 2021	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1212	1GHz ~ 18GHz	May 20, 2020	Dec. 24, 2020~ Jan. 21, 2021	May 19, 2021	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1241	1GHz ~ 18GHz	Jul. 15, 2020	Dec. 24, 2020~ Jan. 21, 2021	Jul. 14, 2021	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 19, 2020	Dec. 24, 2020~ Jan. 21, 2021	May 18, 2021	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Oct. 28, 2020	Dec. 24, 2020~ Jan. 21, 2021	Oct. 27, 2021	Radiation (03CH13-HY)
Signal Generator	Anritsu	MG3694C	163401	0.1Hz~40GHz	Feb. 15, 2020	Dec. 24, 2020~ Jan. 21, 2021	Feb. 14, 2021	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 20, 2020	Dec. 24, 2020~ Jan. 21, 2021	Mar. 19, 2021	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Dec. 24, 2020~ Jan. 21, 2021	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Dec. 24, 2020~ Jan. 21, 2021	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Dec. 24, 2020~ Jan. 21, 2021	N/A	Radiation (03CH13-HY)
Software	Audix	E3 6.2009-8-24	RK-000992	N/A	N/A	Dec. 24, 2020~ Jan. 21, 2021	N/A	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 11, 2020	Dec. 24, 2020~ Jan. 21, 2021	Dec. 10, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Feb. 12, 2020	Dec. 24, 2020~ Jan. 21, 2021	Feb. 11, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30M-18G	Feb. 12, 2020	Dec. 24, 2020~ Jan. 21, 2021	Feb. 11, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 25, 2020	Dec. 24, 2020~ Jan. 21, 2021	Feb. 24, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30M~40GHz	Mar. 12, 2020	Dec. 24, 2020~ Jan. 21, 2021	Mar. 11, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/4	30M-18G	Feb. 12, 2020	Dec. 24, 2020~ Jan. 21, 2021	Feb. 11, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 12, 2020	Dec. 24, 2020~ Jan. 21, 2021	Mar. 11, 2021	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917058 4	18GHz- 40GHz	Dec. 11, 2020	Dec. 24, 2020~ Jan. 21, 2021	Dec. 10, 2021	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917098 0	18GHz~40GHz	Jan. 10, 2020	Dec. 24, 2020~ Jan. 08, 2021	Jan. 09, 2021	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917098 0	18GHz~40GHz	Jan. 11, 2021	Jan. 11, 2021~ Jan. 21, 2021	Jan. 10, 2022	Radiation (03CH13-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0SS	SN2	3GHz High Pass Filter	Jul. 13, 2020	Dec. 24, 2020~ Jan. 21, 2021	Jul. 12, 2021	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-1080 -1200-15000-6 0SS	SN3	1.2GHz High Pass Filter	Jul. 02, 2020	Dec. 24, 2020~ Jan. 21, 2021	Jul. 01, 2021	Radiation (03CH13-HY)
Hygrometer	TECPEL	DTM-303A	TP190075	N/A	Apr. 23, 2020	Dec. 24, 2020~ Jan. 21, 2021	Apr. 22, 2021	Radiation (03CH13-HY)
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Dec. 14, 2020~ Dec. 18, 2020	Mar. 01, 2021	Conducted (TH03-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Sep. 03, 2020	Dec. 14, 2020~ Dec. 18, 2020	Sep. 02, 2021	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40°C ~90°C	Sep. 14, 2020	Dec. 14, 2020~ Dec. 18, 2020	Sep. 13, 2021	Conducted (TH03-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890001	1V~20V 0.5A~4A	Oct. 05, 2020	Dec. 14, 2020~ Dec. 18, 2020	Oct. 04, 2021	Conducted (TH03-HY)
Base Station (Measure)	Rohde & Schwarz	CMU200	117995	GSM / GPRS / WCDMA / CDMA	Sep. 07, 2020	Dec. 14, 2020~ Dec. 18, 2020	Sep. 06, 2021	Conducted (TH03-HY)
Power Divider	Warison	WCOU-0.4-26. 5S-20	#A	N/A	Nov. 03, 2020	Dec. 14, 2020~ Dec. 18, 2020	Nov. 02, 2021	Conducted (TH03-HY)





## 6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.10
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.12
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### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.77
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## Appendix A. Test Results of Conducted Test

### Conducted Output Power(Average power) & ERP / EIRP

#### <Primary Antenna>

GSM850 Maximum Average Power [dBm] (GT - LC = -5.7 dB)					
Channel	128	189	251	ERP (dBm)	ERP (W)
Frequency	824.2	836.4	848.8		
GSM	32.29	32.58	32.00	24.78	0.3006
GPRS class 8	32.32	<b>32.63</b>	32.02		
GPRS class 10	31.39	31.24	31.06		
GPRS class 11	29.37	28.92	28.71		
GPRS class 12	28.27	28.07	28.09		
EGPRS class 8	26.25	<b>26.28</b>	26.09	18.43	0.0697
EGPRS class 10	25.71	25.80	25.59		
EGPRS class 11	23.91	23.86	23.81		
EGPRS class 12	21.81	22.05	21.48		
Limit	ERP < 7W			Result	Pass

GSM1900 Maximum Average Power [dBm] (GT - LC = 1 dB)					
Channel	512	661	810	EIRP (dBm)	EIRP (W)
Frequency	1850.2	1880	1909.8		
GSM	29.32	29.76	29.62	30.78	1.1967
GPRS class 8	29.34	<b>29.78</b>	29.70		
GPRS class 10	28.88	29.36	29.32		
GPRS class 11	26.78	27.06	27.24		
GPRS class 12	26.00	26.20	26.07		
EGPRS class 8	25.45	<b>25.65</b>	25.62	26.65	0.4624
EGPRS class 10	24.81	24.93	25.09		
EGPRS class 11	23.60	23.64	23.80		
EGPRS class 12	22.57	22.88	22.79		
Limit	EIRP < 2W			Result	Pass



WCDMA Band V Maximum Average Power [dBm] (GT - LC = -5.7 dB)							
Channel	4132	4182	4233	ERP (dBm)	ERP (W)		
Frequency	826.4	836.4	846.6				
RMC 12.2K	24.41	24.43	24.35	16.58	0.0455		
HSDPA Subtest-1	23.40	23.44	23.34				
HSDPA Subtest-2	23.44	23.46	23.40				
HSDPA Subtest-3	22.91	22.96	22.91				
HSDPA Subtest-4	22.91	22.95	22.86				
HSUPA Subtest-1	23.42	23.45	23.36				
HSUPA Subtest-2	21.41	21.43	21.38				
HSUPA Subtest-3	22.40	22.40	22.37				
HSUPA Subtest-4	21.46	21.46	21.38				
HSUPA Subtest-5	23.50	23.40	23.30				
Limit	ERP < 7W					Result	Pass

WCDMA Band II Maximum Average Power [dBm] (GT - LC = 1 dB)							
Channel	9262	9400	9538	EIRP (dBm)	EIRP (W)		
Frequency	1852.4	1880	1907.6				
RMC 12.2K	24.63	24.81	25.00	26.00	0.3981		
HSDPA Subtest-1	23.68	23.86	24.07				
HSDPA Subtest-2	23.69	23.69	23.69				
HSDPA Subtest-3	23.14	23.19	23.20				
HSDPA Subtest-4	23.17	23.17	23.14				
HSUPA Subtest-1	23.65	23.63	23.70				
HSUPA Subtest-2	21.64	21.67	21.72				
HSUPA Subtest-3	22.70	22.70	22.69				
HSUPA Subtest-4	21.65	21.67	21.63				
HSUPA Subtest-5	23.65	23.71	23.73				
Limit	EIRP < 2W					Result	Pass

WCDMA Band IV Maximum Average Power [dBm] (GT - LC = -0.6 dB)							
Channel	1312	1413	1513	EIRP (dBm)	EIRP (W)		
Frequency	1712.4	1732.6	1752.6				
RMC 12.2K	24.68	24.81	24.72	24.21	0.2636		
HSDPA Subtest-1	23.67	23.82	23.76				
HSDPA Subtest-2	23.71	23.78	23.76				
HSDPA Subtest-3	23.20	23.31	23.26				
HSDPA Subtest-4	23.21	23.36	23.25				
HSUPA Subtest-1	23.63	23.80	23.69				
HSUPA Subtest-2	21.68	21.74	21.71				
HSUPA Subtest-3	22.71	22.79	22.75				
HSUPA Subtest-4	21.67	21.75	21.71				
HSUPA Subtest-5	23.70	23.80	23.80				
Limit	EIRP < 1W					Result	Pass



CDMA 2000 BC0 Maximum Average Power [dBm] (GT - LC = -5.7 dB)					
Channel	1013	384	777	ERP (dBm)	ERP (W)
Frequency	824.7	836.52	848.31		
1xRTT RC1 SO55	23.85	23.91	23.81	16.10	0.0407
1xRTT RC3 SO55	23.89	23.93	23.91		
1xRTT RC3 SO32 (+ F-SCH)	23.87	23.95	23.92		
1xRTT RC3 SO32 (+SCH)	23.83	23.87	23.86		
1xEVDO RTAP 153.6Kbps	23.91	23.98	23.95	16.13	0.0410
1xEVDO RETAP 4096Bits	23.82	23.93	23.85		
Limit	ERP < 7W			Result	Pass

CDMA 2000 BC1 Maximum Average Power [dBm] (GT - LC = 1 dB)					
Channel	25	600	1175	EIRP (dBm)	EIRP (W)
Frequency	1851.25	1880	1908.75		
1xRTT RC1 SO55	23.98	24.16	24.36	25.38	0.3451
1xRTT RC3 SO55	24.00	24.21	24.38		
1xRTT RC3 SO32 (+ F-SCH)	23.95	24.15	24.38		
1xRTT RC3 SO32 (+SCH)	23.99	24.13	24.38		
1xEVDO RTAP 153.6Kbps	24.00	24.23	24.42	25.42	0.3483
1xEVDO RETAP 4096Bits	23.98	24.20	24.37		
Limit	EIRP < 2W			Result	Pass



<ASDIV Antenna>

GSM850 Maximum Average Power [dBm] (GT - LC = -6.5 dB)					
Channel	128	189	251	ERP (dBm)	ERP (W)
Frequency	824.2	836.4	848.8		
GSM	31.49	31.58	31.05	22.96	0.1977
GPRS class 8	31.54	31.61	31.07		
GPRS class 10	30.49	30.39	29.99		
GPRS class 11	28.67	28.12	27.45		
GPRS class 12	27.23	27.18	27.10		
EGPRS class 8	25.34	25.50	25.26	16.85	0.0484
EGPRS class 10	24.89	25.02	24.67		
EGPRS class 11	23.04	23.14	22.75		
EGPRS class 12	20.90	21.07	20.66		
Limit	ERP < 7W			Result	Pass

GSM1900 Maximum Average Power [dBm] (GT - LC = -3.6 dB)					
Channel	512	661	810	EIRP (dBm)	EIRP (W)
Frequency	1850.2	1880	1909.8		
GSM	29.15	29.60	29.56	26.04	0.4018
GPRS class 8	29.18	29.64	29.60		
GPRS class 10	28.56	28.91	29.11		
GPRS class 11	26.55	26.97	26.78		
GPRS class 12	25.73	25.93	25.84		
EGPRS class 8	25.21	25.34	25.46	21.86	0.1535
EGPRS class 10	24.62	24.77	24.69		
EGPRS class 11	23.46	23.51	23.54		
EGPRS class 12	22.52	22.49	22.62		
Limit	EIRP < 2W			Result	Pass



WCDMA Band V Maximum Average Power [dBm] (GT - LC = -6.5 dB)							
Channel	4132	4182	4233	ERP (dBm)	ERP (W)		
Frequency	826.4	836.4	846.6				
RMC 12.2K	23.08	23.11	23.06	14.46	0.0279		
HSDPA Subtest-1	22.16	22.16	22.10				
HSDPA Subtest-2	22.11	22.17	22.09				
HSDPA Subtest-3	21.70	21.68	21.64				
HSDPA Subtest-4	21.64	21.65	21.60				
HSUPA Subtest-1	22.08	22.15	22.12				
HSUPA Subtest-2	20.00	20.07	19.96				
HSUPA Subtest-3	21.06	21.13	21.02				
HSUPA Subtest-4	20.06	20.04	19.98				
HSUPA Subtest-5	22.02	22.04	21.96				
Limit	ERP < 7W					Result	Pass

WCDMA Band II Maximum Average Power [dBm] (GT - LC = -3.6 dB)							
Channel	9262	9400	9538	EIRP (dBm)	EIRP (W)		
Frequency	1852.4	1880	1907.6				
RMC 12.2K	23.50	23.54	23.60	20.00	0.1000		
HSDPA Subtest-1	22.38	22.58	22.63				
HSDPA Subtest-2	22.38	22.58	22.62				
HSDPA Subtest-3	21.88	22.06	22.17				
HSDPA Subtest-4	21.85	22.07	22.12				
HSUPA Subtest-1	22.37	22.62	22.67				
HSUPA Subtest-2	20.43	20.62	20.62				
HSUPA Subtest-3	21.43	21.58	21.65				
HSUPA Subtest-4	20.42	20.59	20.65				
HSUPA Subtest-5	22.30	22.50	22.70				
Limit	EIRP < 2W					Result	Pass

WCDMA Band IV Maximum Average Power [dBm] (GT - LC = -3.5 dB)							
Channel	1312	1413	1513	EIRP (dBm)	EIRP (W)		
Frequency	1712.4	1732.6	1752.6				
RMC 12.2K	23.73	23.74	23.66	20.24	0.1057		
HSDPA Subtest-1	22.70	22.73	22.69				
HSDPA Subtest-2	22.71	22.80	22.66				
HSDPA Subtest-3	22.22	22.20	22.15				
HSDPA Subtest-4	22.19	22.27	22.18				
HSUPA Subtest-1	22.72	22.72	22.64				
HSUPA Subtest-2	20.74	20.74	20.68				
HSUPA Subtest-3	21.71	21.70	21.67				
HSUPA Subtest-4	20.67	20.74	20.68				
HSUPA Subtest-5	22.70	22.80	22.70				
Limit	EIRP < 1W					Result	Pass



CDMA 2000 BC0 Maximum Average Power [dBm] (GT - LC = -6.5 dB)					
Channel	1013	384	777	ERP (dBm)	ERP (W)
Frequency	824.7	836.52	848.31		
1xRTT RC1 SO55	23.60	23.55	23.51	15.06	0.0321
1xRTT RC3 SO55	23.57	23.59	23.52		
1xRTT RC3 SO32 (+ F-SCH)	23.62	23.71	23.59		
1xRTT RC3 SO32 (+SCH)	23.62	23.60	23.53		
1xEVDO RTAP 153.6Kbps	23.61	23.65	23.50	15.00	0.0316
1xEVDO RETAP 4096Bits	23.50	23.54	23.56		
Limit	ERP < 7W			Result	Pass

CDMA 2000 BC1 Maximum Average Power [dBm] (GT - LC = -3.6 dB)					
Channel	25	600	1175	EIRP (dBm)	EIRP (W)
Frequency	1851.25	1880	1908.75		
1xRTT RC1 SO55	23.52	23.55	23.63	20.17	0.1040
1xRTT RC3 SO55	23.60	23.53	23.62		
1xRTT RC3 SO32 (+ F-SCH)	23.65	23.63	23.77		
1xRTT RC3 SO32 (+SCH)	23.66	23.51	23.68		
1xEVDO RTAP 153.6Kbps	23.51	23.58	23.67	20.15	0.1035
1xEVDO RETAP 4096Bits	23.57	23.63	23.75		
Limit	EIRP < 2W			Result	Pass



## A2. GSM

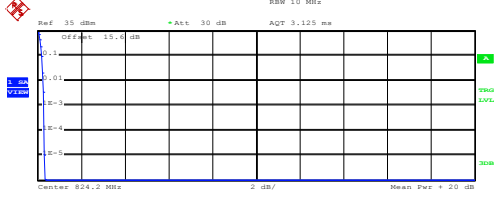
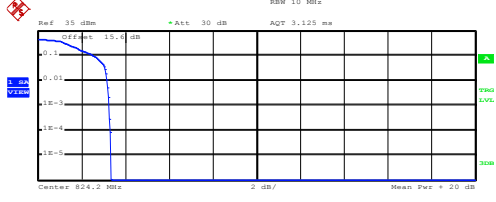
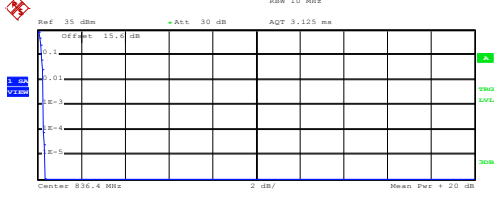
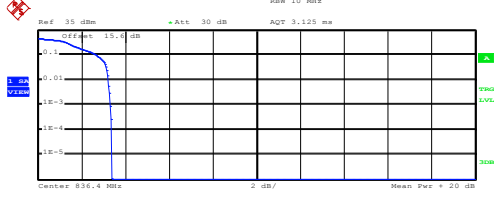
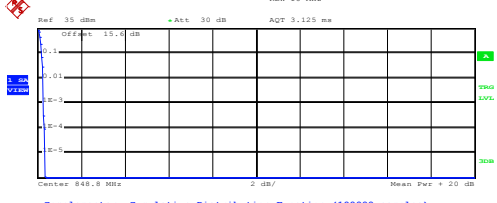
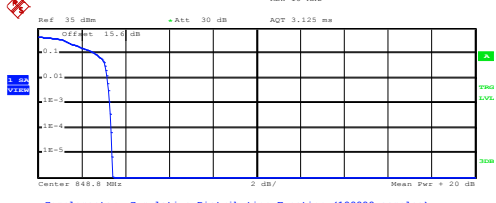
### Peak-to-Average Ratio

Mode	GSM850		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.32	3.28	PASS
Middle CH	0.28	3.32	
Highest CH	0.28	3.28	

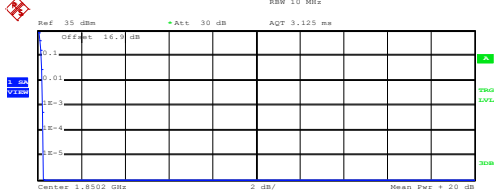
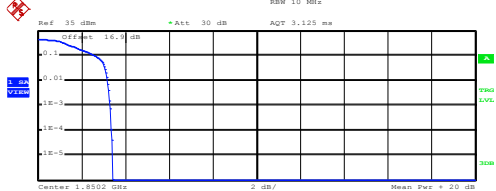
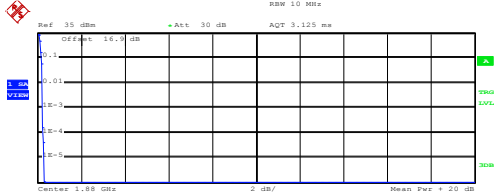
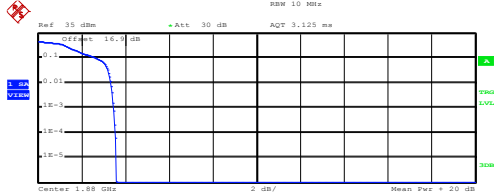
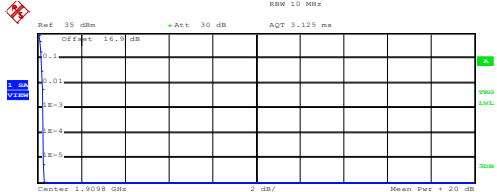
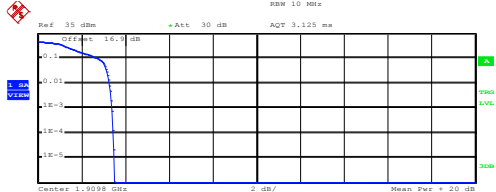
Mode	GSM1900		Limit: 13dB
Mod.	GPRS class 8	EDGE class 8	Result
Lowest CH	0.24	3.32	PASS
Middle CH	0.24	3.48	
Highest CH	0.28	3.40	





GSM850 (GPRS class 8)	GSM850 (EDGE class 8)
<p align="center"><b>Lowest Channel</b></p>  <p>Center 824.2 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 31.08 dBm Peak 31.44 dBm Crest 0.36 dB</p> <p>10 % 0.20 dB 1 % 0.28 dB .1 % 0.32 dB .01 % 0.32 dB</p> <p>Date: 14.DEC.2020 11:47:05</p>	<p align="center"><b>Lowest Channel</b></p>  <p>Center 824.2 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 25.56 dBm Peak 28.90 dBm Crest 3.35 dB</p> <p>10 % 2.56 dB 1 % 3.16 dB .1 % 3.28 dB .01 % 3.32 dB</p> <p>Date: 14.DEC.2020 15:25:16</p>
<p align="center"><b>Middle Channel</b></p>  <p>Center 836.4 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 31.31 dBm Peak 31.65 dBm Crest 0.34 dB</p> <p>10 % 0.20 dB 1 % 0.28 dB .1 % 0.28 dB .01 % 0.28 dB</p> <p>Date: 14.DEC.2020 11:47:39</p>	<p align="center"><b>Middle Channel</b></p>  <p>Center 836.4 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 25.53 dBm Peak 28.90 dBm Crest 3.37 dB</p> <p>10 % 2.68 dB 1 % 3.24 dB .1 % 3.32 dB .01 % 3.40 dB</p> <p>Date: 14.DEC.2020 15:25:35</p>
<p align="center"><b>Highest Channel</b></p>  <p>Center 848.8 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 31.25 dBm Peak 31.58 dBm Crest 0.34 dB</p> <p>10 % 0.20 dB 1 % 0.28 dB .1 % 0.28 dB .01 % 0.32 dB</p> <p>Date: 14.DEC.2020 11:48:01</p>	<p align="center"><b>Highest Channel</b></p>  <p>Center 848.8 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 25.57 dBm Peak 28.97 dBm Crest 3.40 dB</p> <p>10 % 2.64 dB 1 % 3.16 dB .1 % 3.28 dB .01 % 3.36 dB</p> <p>Date: 14.DEC.2020 15:25:54</p>



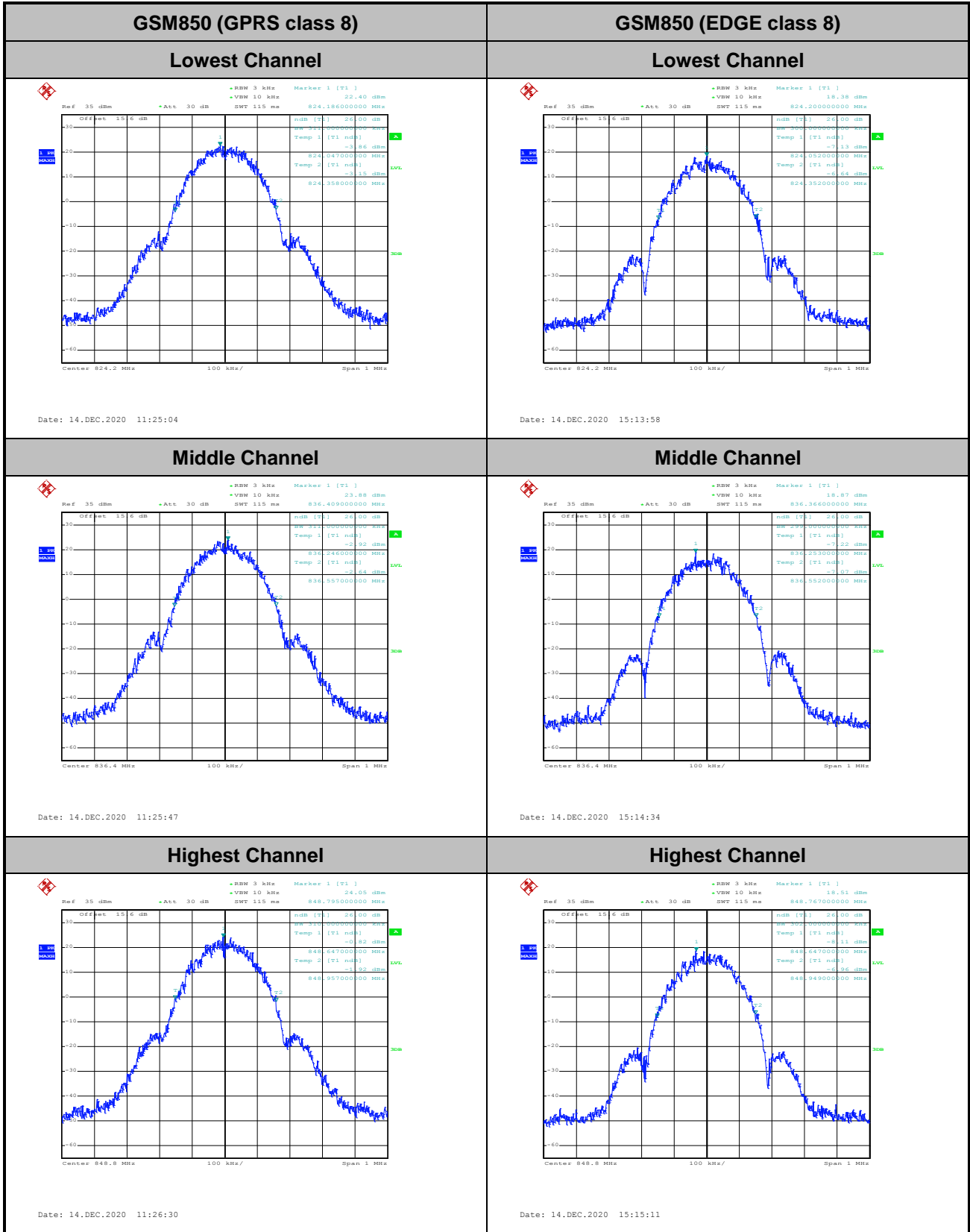
GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
<p style="text-align: center;"><b>Lowest Channel</b></p>  <p>Center 1.8502 GHz    2 dB/    Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 27.28 dBm Peak 27.56 dBm Crest 0.28 dB</p> <p>10 % 0.20 dB 1 % 0.24 dB .1 % 0.24 dB .01 % 0.28 dB</p> <p>Date: 14.DEC.2020 13:44:30</p>	<p style="text-align: center;"><b>Lowest Channel</b></p>  <p>Center 1.8502 GHz    2 dB/    Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 23.09 dBm Peak 26.50 dBm Crest 3.42 dB</p> <p>10 % 2.64 dB 1 % 3.20 dB .1 % 3.32 dB .01 % 3.36 dB</p> <p>Date: 14.DEC.2020 15:40:52</p>
<p style="text-align: center;"><b>Middle Channel</b></p>  <p>Center 1.88 GHz    2 dB/    Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 27.34 dBm Peak 27.63 dBm Crest 0.29 dB</p> <p>10 % 0.20 dB 1 % 0.24 dB .1 % 0.24 dB .01 % 0.28 dB</p> <p>Date: 14.DEC.2020 13:44:50</p>	<p style="text-align: center;"><b>Middle Channel</b></p>  <p>Center 1.88 GHz    2 dB/    Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 23.00 dBm Peak 26.57 dBm Crest 3.57 dB</p> <p>10 % 2.72 dB 1 % 3.32 dB .1 % 3.48 dB .01 % 3.56 dB</p> <p>Date: 14.DEC.2020 15:41:12</p>
<p style="text-align: center;"><b>Highest Channel</b></p>  <p>Center 1.9098 GHz    2 dB/    Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 27.24 dBm Peak 27.56 dBm Crest 0.32 dB</p> <p>10 % 0.20 dB 1 % 0.24 dB .1 % 0.28 dB .01 % 0.28 dB</p> <p>Date: 14.DEC.2020 13:45:10</p>	<p style="text-align: center;"><b>Highest Channel</b></p>  <p>Center 1.9098 GHz    2 dB/    Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 23.16 dBm Peak 26.64 dBm Crest 3.48 dB</p> <p>10 % 2.76 dB 1 % 3.28 dB .1 % 3.40 dB .01 % 3.44 dB</p> <p>Date: 14.DEC.2020 15:41:32</p>

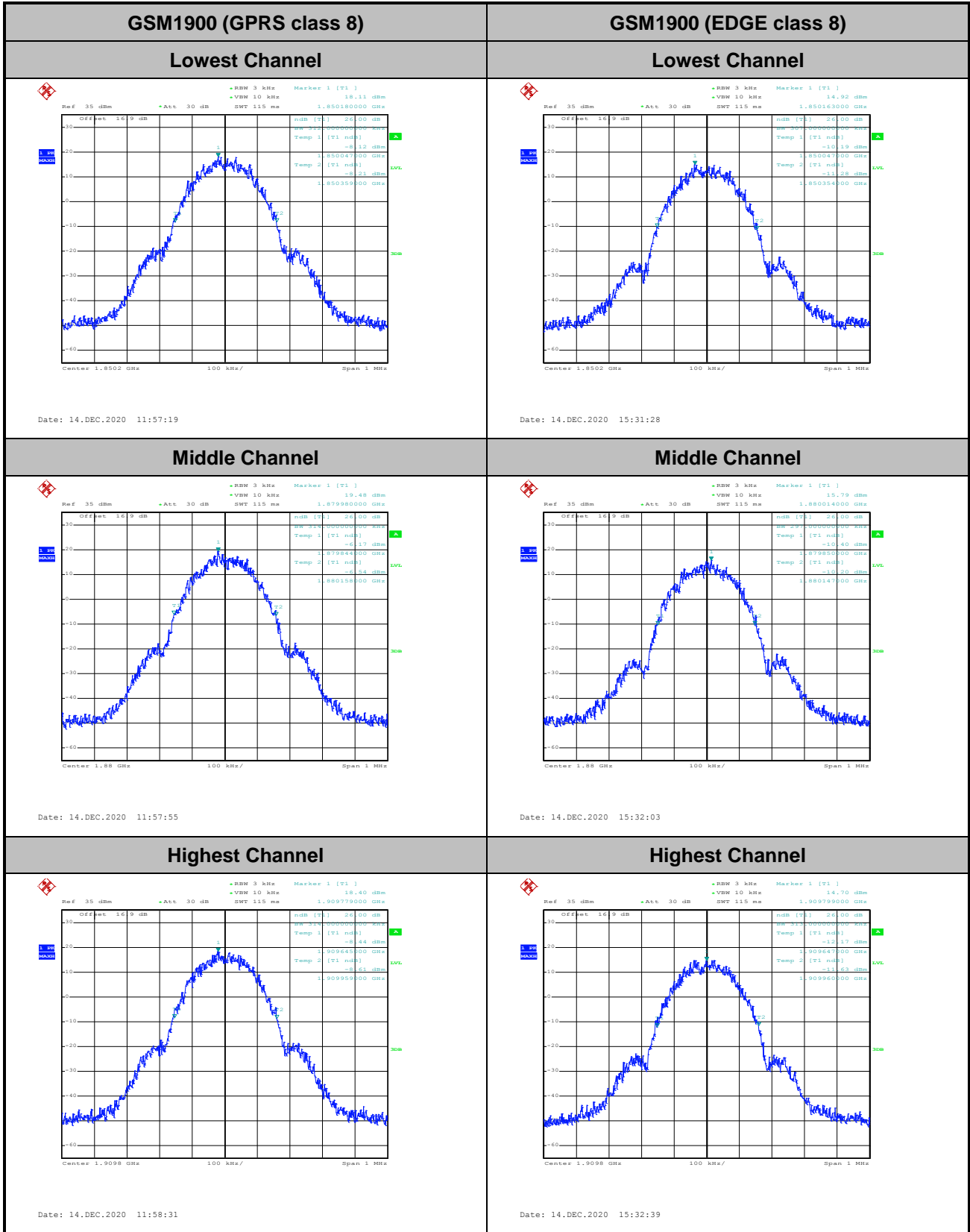


**26dB Bandwidth**

Mode	GSM850: 26dB BW(MHz)	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.311	0.300
Middle CH	0.311	0.299
Highest CH	0.310	0.302

Mode	GSM1900: 26dB BW(MHz)	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.312	0.307
Middle CH	0.314	0.297
Highest CH	0.314	0.313



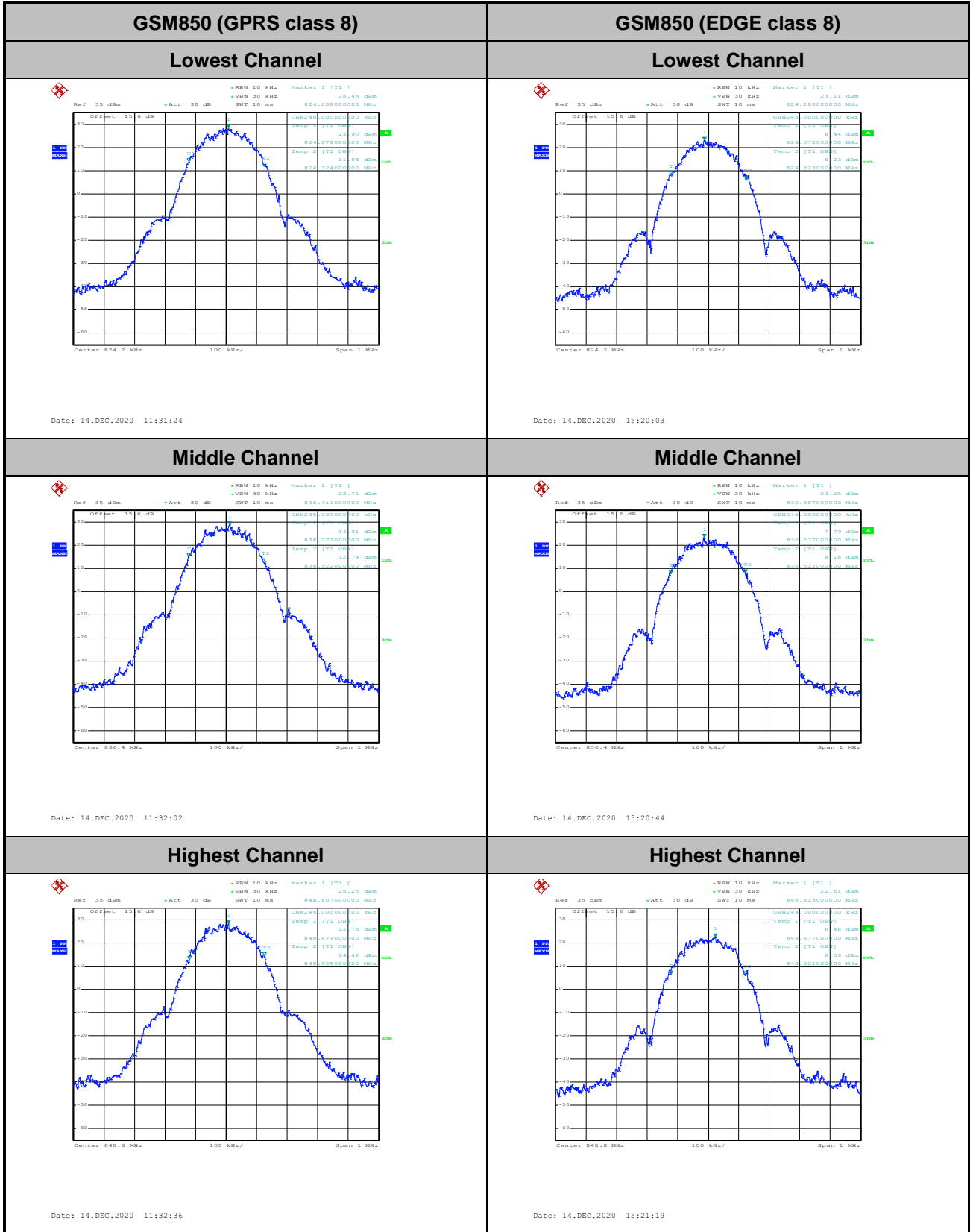




### Occupied Bandwidth

Mode	GSM850: 99% OBW (MHz)	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.246	0.245
Middle CH	0.245	0.245
Highest CH	0.246	0.244

Mode	GSM1900: 99% OBW (MHz)	
Mod.	GPRS class 8	EDGE class 8
Lowest CH	0.247	0.244
Middle CH	0.243	0.242
Highest CH	0.240	0.244



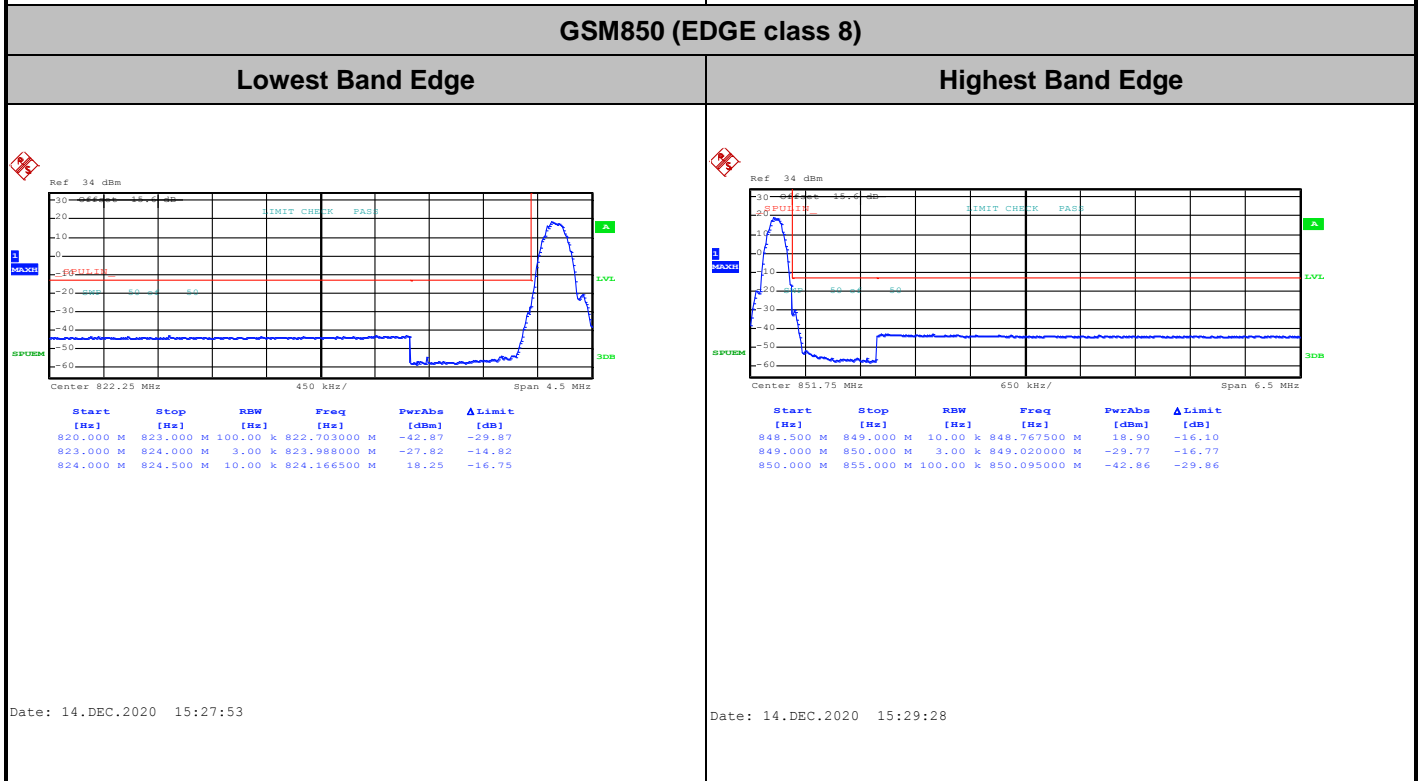
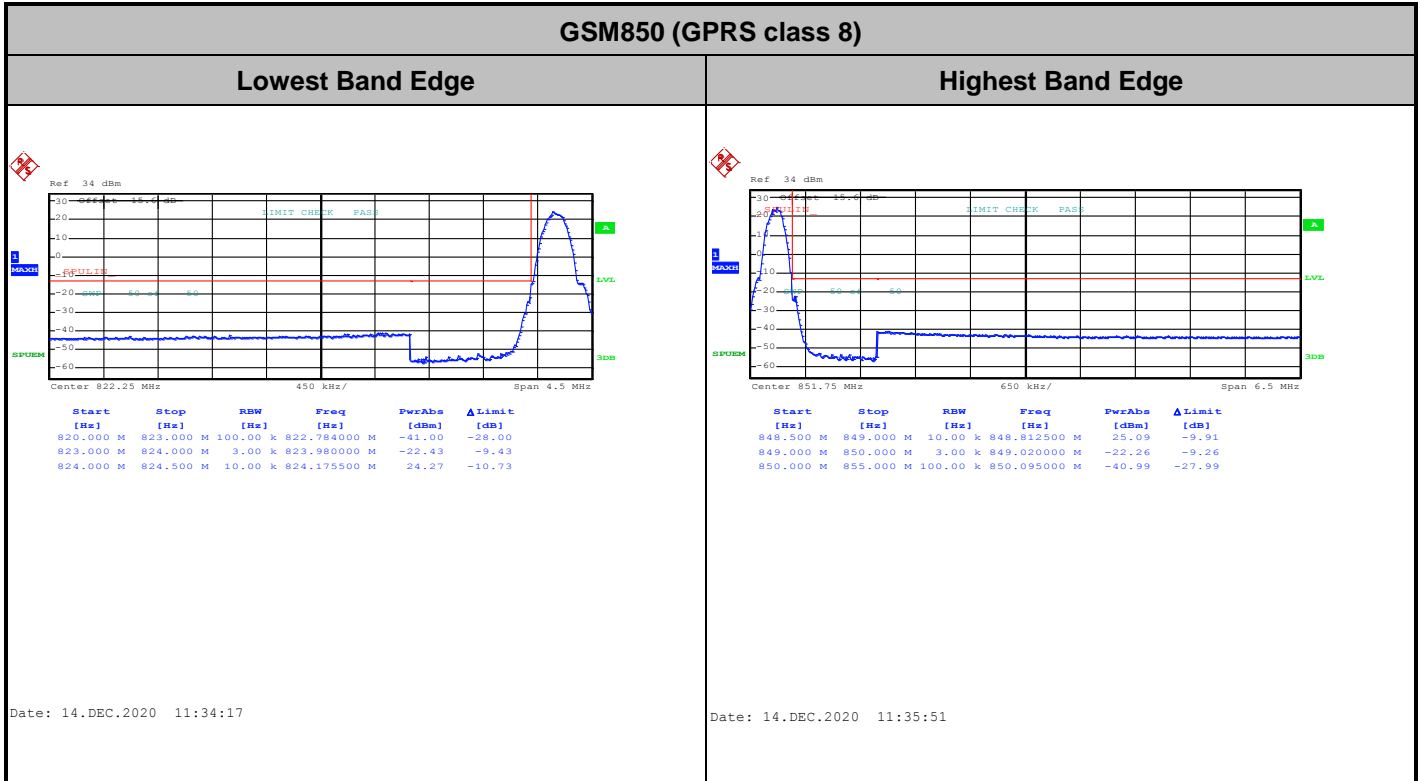


GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)
<p align="center"><b>Lowest Channel</b></p> <p>Date: 14.DEC.2020 13:37:52</p>	<p align="center"><b>Lowest Channel</b></p> <p>Date: 14.DEC.2020 15:36:04</p>
<p align="center"><b>Middle Channel</b></p> <p>Date: 14.DEC.2020 13:38:26</p>	<p align="center"><b>Middle Channel</b></p> <p>Date: 14.DEC.2020 15:36:38</p>
<p align="center"><b>Highest Channel</b></p> <p>Date: 14.DEC.2020 13:39:02</p>	<p align="center"><b>Highest Channel</b></p> <p>Date: 14.DEC.2020 15:37:13</p>





# Conducted Band Edge

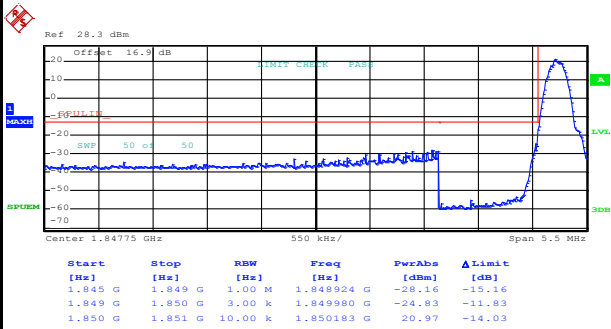




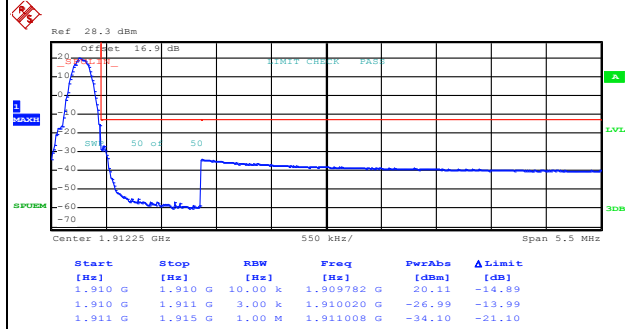
GSM1900 (GPRS class 8)

Lowest Band Edge

Highest Band Edge



Date: 14.DEC.2020 13:40:43

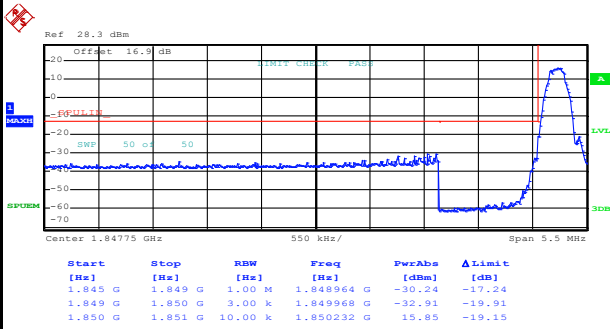


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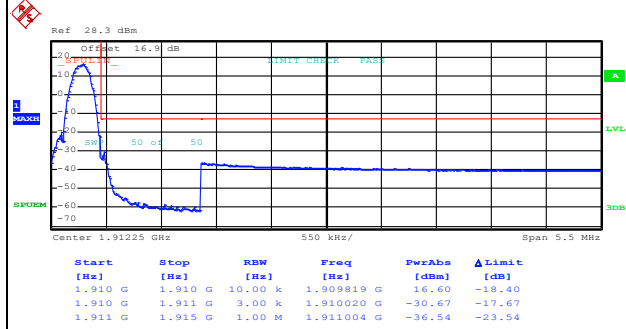
GSM1900 (EDGE class 8)

Lowest Band Edge

Highest Band Edge



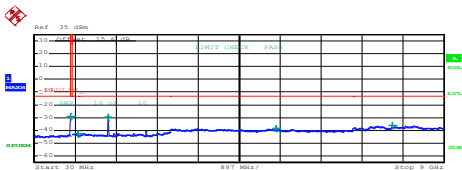
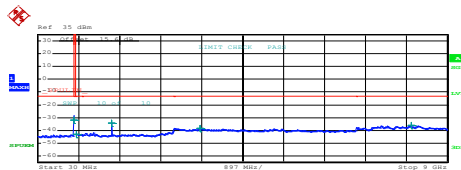
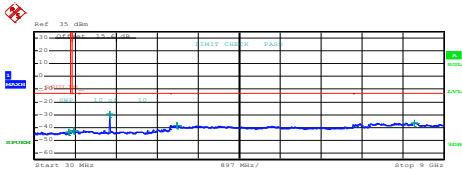
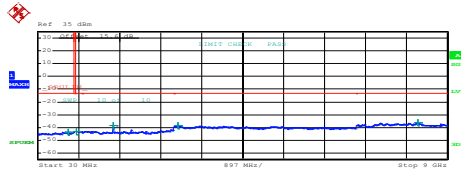
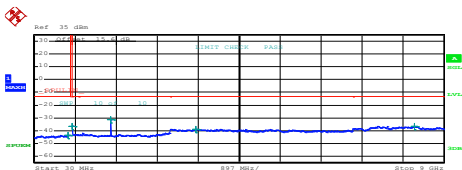
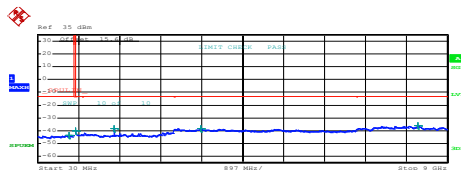
Date: 14.DEC.2020 15:38:53



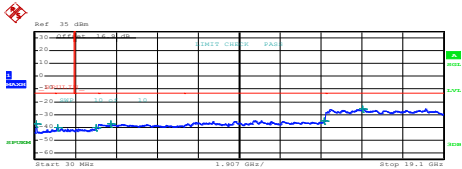
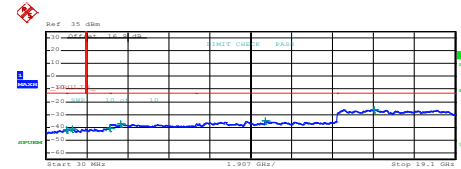
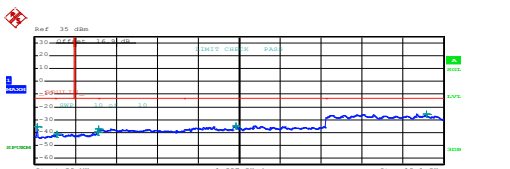
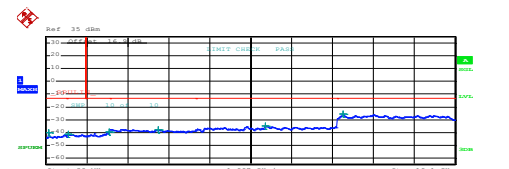
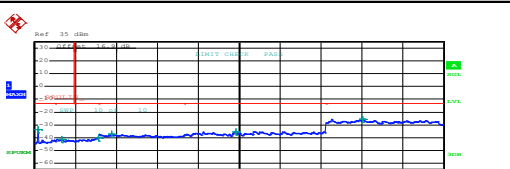
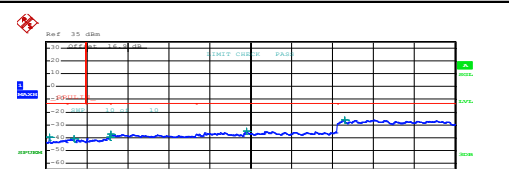
Date: 14.DEC.2020 15:40:27



Conducted Spurious Emission

GSM850 (GPRS class 8)	GSM850 (EDGE class 8)																																																																								
Lowest Channel	Lowest Channel																																																																								
 <table border="1"> <thead> <tr> <th>Start [MHz]</th> <th>Stop [MHz]</th> <th>RW [MHz]</th> <th>Freq [MHz]</th> <th>PwrAbs [dBm]</th> <th>ΔLimit [dB]</th> </tr> </thead> <tbody> <tr> <td>30.0000 M</td> <td>820.0000 M</td> <td>1.00 M</td> <td>810.000000 M</td> <td>-29.29</td> <td>-16.25</td> </tr> <tr> <td>855.0000 M</td> <td>1.0000 G</td> <td>1.00 M</td> <td>973.000000 M</td> <td>-42.74</td> <td>-29.74</td> </tr> <tr> <td>1.0000 G</td> <td>3.0000 G</td> <td>1.00 M</td> <td>1.648500 G</td> <td>-29.86</td> <td>-16.86</td> </tr> <tr> <td>3.0000 G</td> <td>7.0000 G</td> <td>1.00 M</td> <td>6.262300 G</td> <td>-38.63</td> <td>-25.63</td> </tr> <tr> <td>7.0000 G</td> <td>9.0000 G</td> <td>1.00 M</td> <td>7.870500 G</td> <td>-36.03</td> <td>-23.03</td> </tr> </tbody> </table> <p>Date: 14.DEC.2020 11:27:31</p>	Start [MHz]	Stop [MHz]	RW [MHz]	Freq [MHz]	PwrAbs [dBm]	ΔLimit [dB]	30.0000 M	820.0000 M	1.00 M	810.000000 M	-29.29	-16.25	855.0000 M	1.0000 G	1.00 M	973.000000 M	-42.74	-29.74	1.0000 G	3.0000 G	1.00 M	1.648500 G	-29.86	-16.86	3.0000 G	7.0000 G	1.00 M	6.262300 G	-38.63	-25.63	7.0000 G	9.0000 G	1.00 M	7.870500 G	-36.03	-23.03	 <table border="1"> <thead> <tr> <th>Start [MHz]</th> <th>Stop [MHz]</th> <th>RW [MHz]</th> <th>Freq [MHz]</th> <th>PwrAbs [dBm]</th> <th>ΔLimit [dB]</th> </tr> </thead> <tbody> <tr> <td>30.0000 M</td> <td>820.0000 M</td> <td>1.00 M</td> <td>810.000000 M</td> <td>-31.95</td> <td>-18.95</td> </tr> <tr> <td>855.0000 M</td> <td>1.0000 G</td> <td>1.00 M</td> <td>973.216251 M</td> <td>-42.93</td> <td>-29.93</td> </tr> <tr> <td>1.0000 G</td> <td>3.0000 G</td> <td>1.00 M</td> <td>1.648500 G</td> <td>-34.12</td> <td>-21.12</td> </tr> <tr> <td>3.0000 G</td> <td>7.0000 G</td> <td>1.00 M</td> <td>3.551000 G</td> <td>-38.44</td> <td>-25.44</td> </tr> <tr> <td>7.0000 G</td> <td>9.0000 G</td> <td>1.00 M</td> <td>8.216000 G</td> <td>-36.26</td> <td>-23.26</td> </tr> </tbody> </table> <p>Date: 14.DEC.2020 15:17:18</p>	Start [MHz]	Stop [MHz]	RW [MHz]	Freq [MHz]	PwrAbs [dBm]	ΔLimit [dB]	30.0000 M	820.0000 M	1.00 M	810.000000 M	-31.95	-18.95	855.0000 M	1.0000 G	1.00 M	973.216251 M	-42.93	-29.93	1.0000 G	3.0000 G	1.00 M	1.648500 G	-34.12	-21.12	3.0000 G	7.0000 G	1.00 M	3.551000 G	-38.44	-25.44	7.0000 G	9.0000 G	1.00 M	8.216000 G	-36.26	-23.26
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Start [MHz]	Stop [MHz]	RW [MHz]	Freq [MHz]	PwrAbs [dBm]	ΔLimit [dB]																																																																				
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**Frequency Stability**

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



Test Conditions Temperature (°C)	Middle Channel Voltage (Volt)	GSM1900 (GPRS class 8)	GSM1900 (EDGE class 8)	Limit Note 2.
		Deviation (ppm)		
50	Normal Voltage	0.0314	0.0059	PASS
40	Normal Voltage	0.0112	0.0059	
30	Normal Voltage	0.0059	0.0053	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0005	0.0000	
0	Normal Voltage	0.0011	0.0000	
-10	Normal Voltage	0.0011	0.0005	
-20	Normal Voltage	0.0005	0.0011	
-30	Normal Voltage	0.0011	0.0011	
20	Maximum Voltage	0.0053	0.0032	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0059	0.0037	

**Note:**

- 1. Normal Voltage = 3.85V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage =4.45 V
- 2. The frequency fundamental emissions stay within the authorized frequency block.

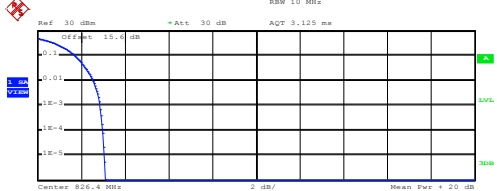
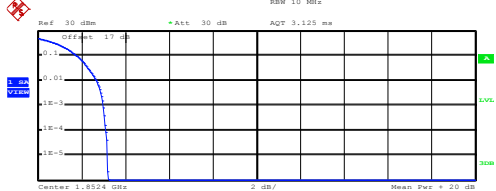
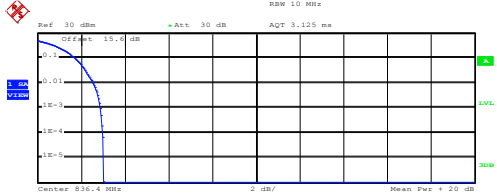
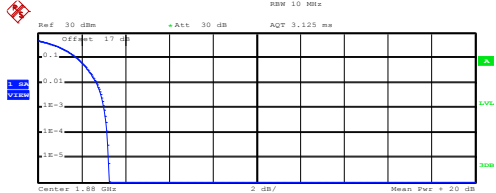
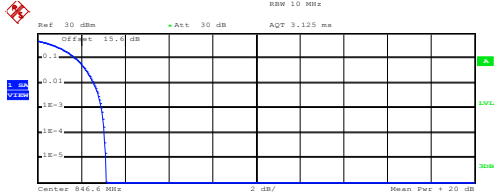
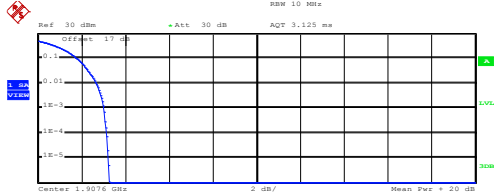


### A3. WCDMA

#### Peak-to-Average Ratio

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



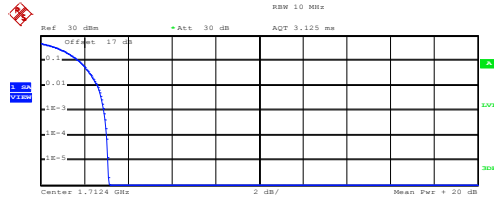
WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)
<p style="text-align: center;"><b>Lowest Channel</b></p>  <p>Center 826.4 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.30 dBm Peak 25.38 dBm Crest 3.09 dB</p> <p>10 % 1.72 dB 1 % 2.56 dB .1 % 2.88 dB .01 % 3.00 dB</p> <p>Date: 14.DEC.2020 14:39:10</p>	<p style="text-align: center;"><b>Lowest Channel</b></p>  <p>Center 1.8524 GHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 21.76 dBm Peak 24.96 dBm Crest 3.20 dB</p> <p>10 % 1.80 dB 1 % 2.68 dB .1 % 3.00 dB .01 % 3.12 dB</p> <p>Date: 14.DEC.2020 14:04:31</p>
<p style="text-align: center;"><b>Middle Channel</b></p>  <p>Center 836.4 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.42 dBm Peak 25.45 dBm Crest 3.03 dB</p> <p>10 % 1.72 dB 1 % 2.56 dB .1 % 2.88 dB .01 % 3.00 dB</p> <p>Date: 14.DEC.2020 14:39:30</p>	<p style="text-align: center;"><b>Middle Channel</b></p>  <p>Center 1.88 GHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.67 dBm Peak 25.95 dBm Crest 3.28 dB</p> <p>10 % 1.80 dB 1 % 2.68 dB .1 % 3.04 dB .01 % 3.16 dB</p> <p>Date: 14.DEC.2020 14:04:50</p>
<p style="text-align: center;"><b>Highest Channel</b></p>  <p>Center 846.4 MHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.32 dBm Peak 25.45 dBm Crest 3.14 dB</p> <p>10 % 1.76 dB 1 % 2.56 dB .1 % 2.92 dB .01 % 3.08 dB</p> <p>Date: 14.DEC.2020 14:39:50</p>	<p style="text-align: center;"><b>Highest Channel</b></p>  <p>Center 1.9076 GHz      2 dB/      Mean Pwr + 20 dB</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.61 dBm Peak 25.88 dBm Crest 3.27 dB</p> <p>10 % 1.80 dB 1 % 2.68 dB .1 % 3.00 dB .01 % 3.16 dB</p> <p>Date: 14.DEC.2020 14:05:08</p>





WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



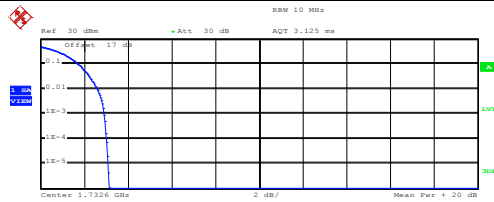
Complementary Cumulative Distribution Function (100000 samples)

Trace 1  
 Mean 21.84 dBm  
 Peak 24.96 dBm  
 Crest 3.12 dB

10 %	1.76 dB
1 %	2.60 dB
.1 %	2.92 dB
.01 %	3.04 dB

Date: 14.DEC.2020 14:18:57

Middle Channel



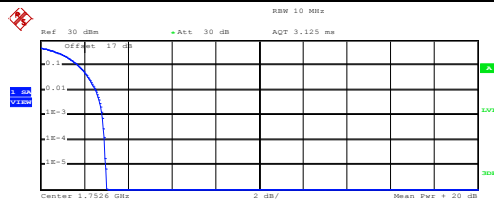
Complementary Cumulative Distribution Function (100000 samples)

Trace 1  
 Mean 21.98 dBm  
 Peak 25.10 dBm  
 Crest 3.12 dB

10 %	1.72 dB
1 %	2.60 dB
.1 %	2.92 dB
.01 %	3.04 dB

Date: 14.DEC.2020 14:19:21

Highest Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1  
 Mean 21.94 dBm  
 Peak 24.96 dBm  
 Crest 3.02 dB

10 %	1.72 dB
1 %	2.52 dB
.1 %	2.84 dB
.01 %	2.92 dB

Date: 14.DEC.2020 14:19:40



**26dB Bandwidth**

Mode	WCDMA Band V: 26dB BW(MHz)	WCDMA Band II: 26dB BW(MHz)	WCDMA Band IV: 26dB BW(MHz)
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.75	4.71	4.71
Middle CH	4.73	4.73	4.70
Highest CH	4.72	4.70	4.72

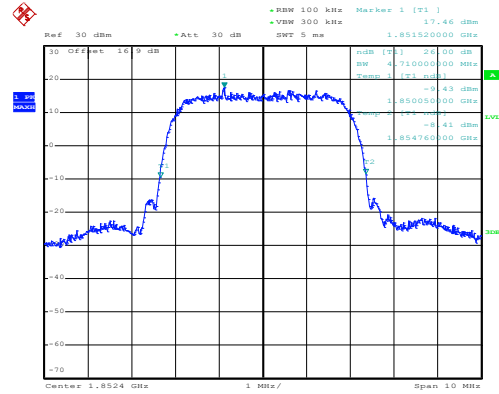
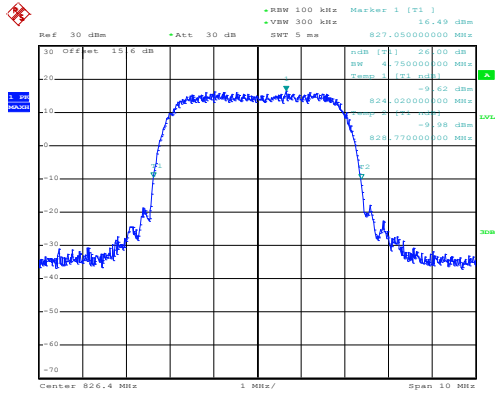


WCDMA Band V (RMC 12.2Kbps)

WCDMA Band II (RMC 12.2Kbps)

Lowest Channel

Lowest Channel

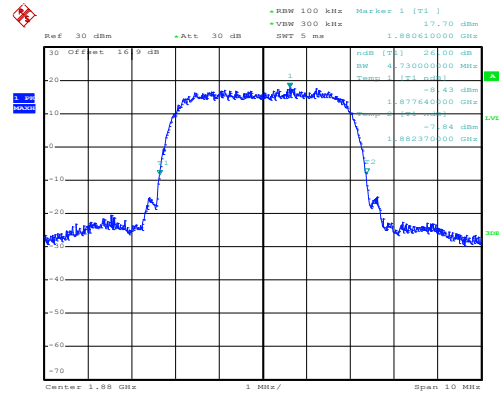
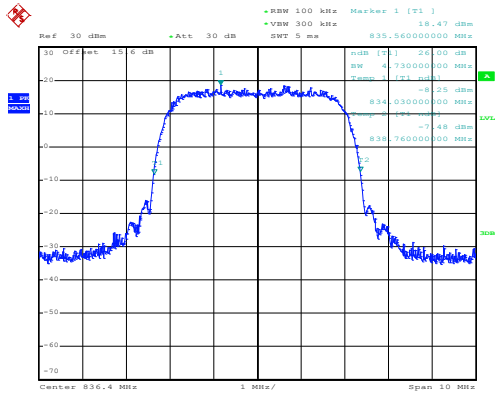


Date: 14.DEC.2020 14:26:04

Date: 14.DEC.2020 13:48:36

Middle Channel

Middle Channel

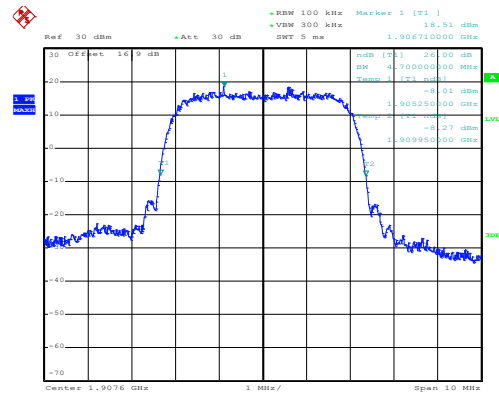
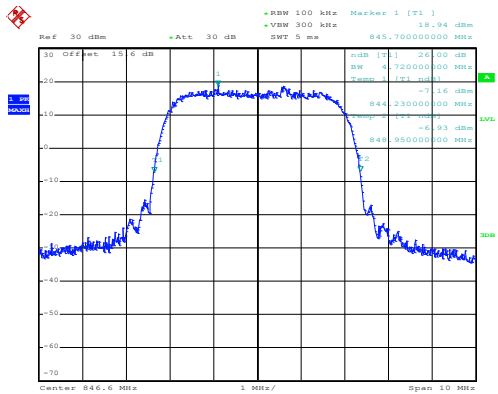


Date: 14.DEC.2020 14:26:45

Date: 14.DEC.2020 13:49:17

Highest Channel

Highest Channel



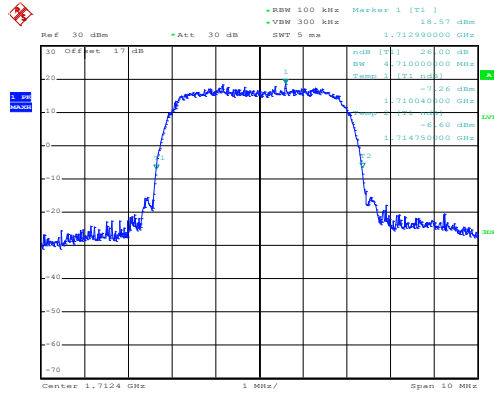
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Date: 14.DEC.2020 13:49:56



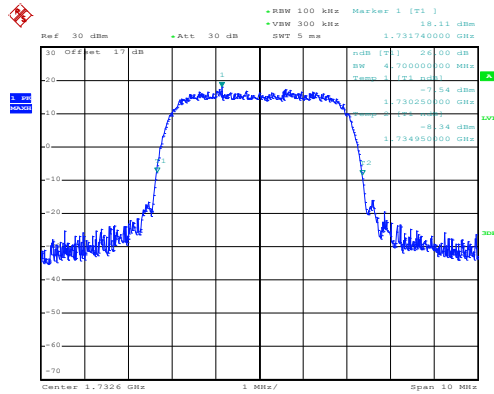
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



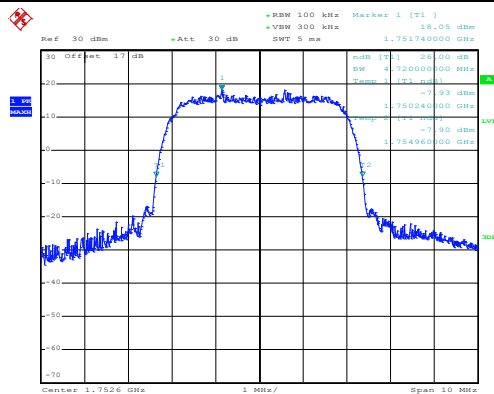
Date: 14.DEC.2020 14:06:12

Middle Channel



Date: 14.DEC.2020 14:06:49

Highest Channel



Date: 14.DEC.2020 14:07:27



**Occupied Bandwidth**

Mode	WCDMA Band V: 99% OBW(MHz)	WCDMA Band II: 99% OBW(MHz)	WCDMA Band IV: 99% OBW(MHz)
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.15	4.15	4.16
Middle CH	4.15	4.15	4.15
Highest CH	4.16	4.14	4.15

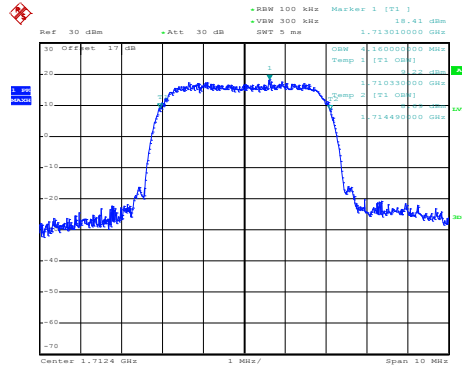


WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)
<p style="text-align: center;"><b>Lowest Channel</b></p> <p style="text-align: right;">Date: 14.DEC.2020 14:31:25</p>	<p style="text-align: center;"><b>Lowest Channel</b></p> <p style="text-align: right;">Date: 14.DEC.2020 13:56:46</p>
<p style="text-align: center;"><b>Middle Channel</b></p> <p style="text-align: right;">Date: 14.DEC.2020 14:32:07</p>	<p style="text-align: center;"><b>Middle Channel</b></p> <p style="text-align: right;">Date: 14.DEC.2020 13:57:23</p>
<p style="text-align: center;"><b>Highest Channel</b></p> <p style="text-align: right;">Date: 14.DEC.2020 14:32:44</p>	<p style="text-align: center;"><b>Highest Channel</b></p> <p style="text-align: right;">Date: 14.DEC.2020 13:58:06</p>



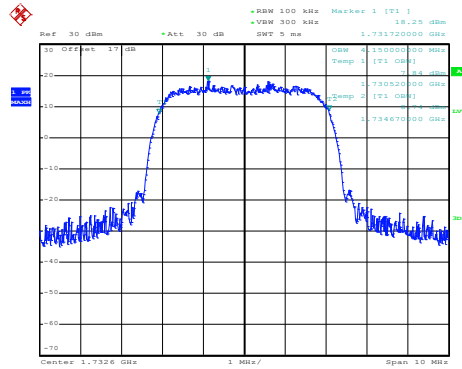
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



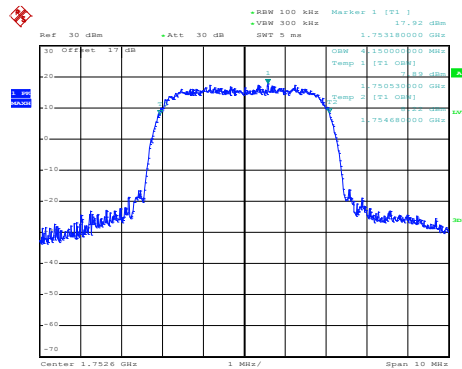
Date: 14.DEC.2020 14:11:05

Middle Channel



Date: 14.DEC.2020 14:11:44

Highest Channel



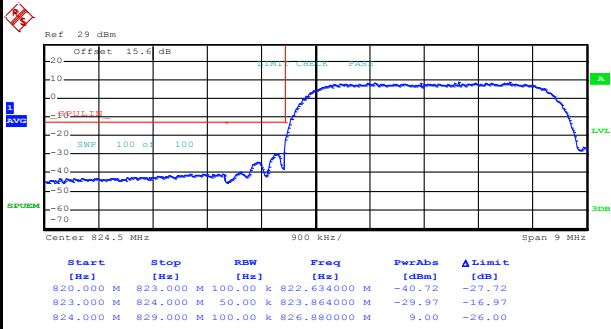
Date: 14.DEC.2020 14:12:21



# Conducted Band Edge

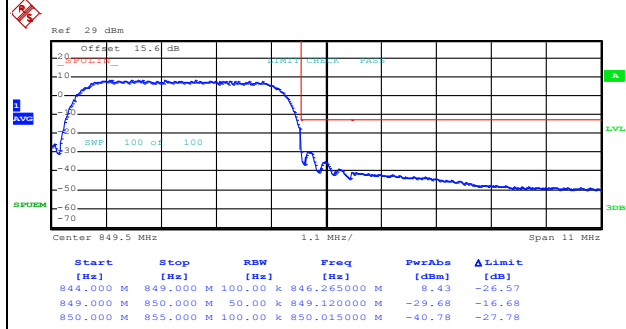
## WCDMA Band V (RMC 12.2Kbps)

### Lowest Band Edge



Date: 14.DEC.2020 14:35:46

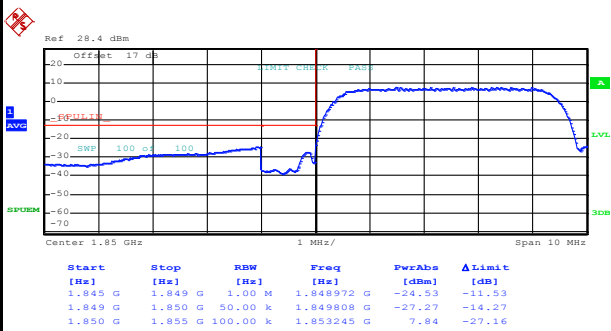
### Highest Band Edge



Date: 14.DEC.2020 14:38:39

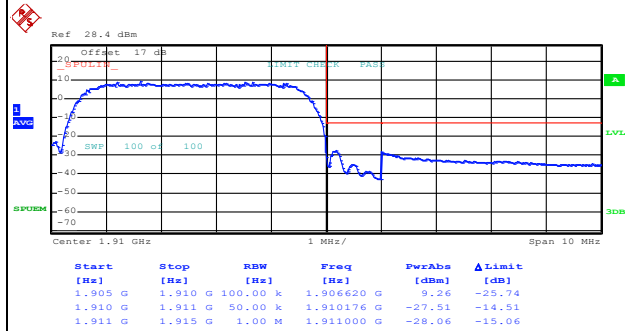
## WCDMA Band II (RMC 12.2Kbps)

### Lowest Band Edge



Date: 14.DEC.2020 14:01:02

### Highest Band Edge



Date: 14.DEC.2020 14:04:01

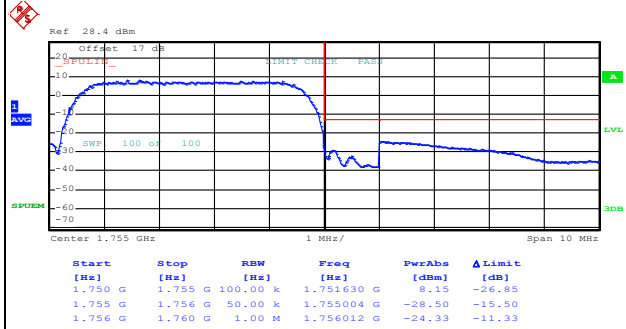
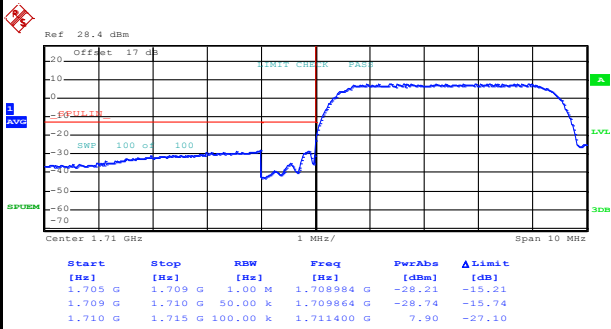




WCDMA Band IV (RMC 12.2Kbps)

Lowest Band Edge

Highest Band Edge

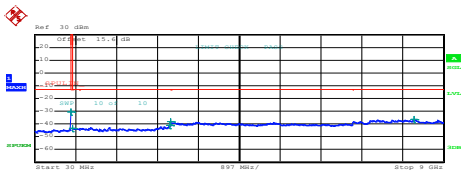
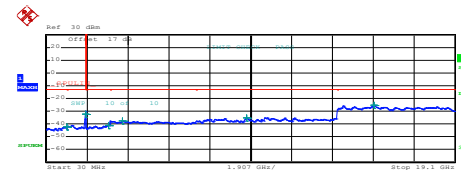
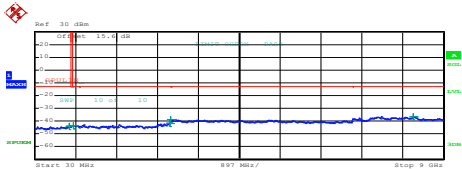
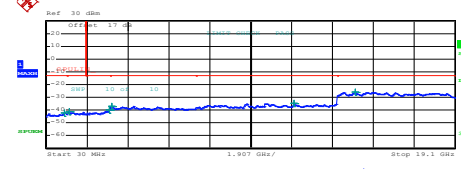
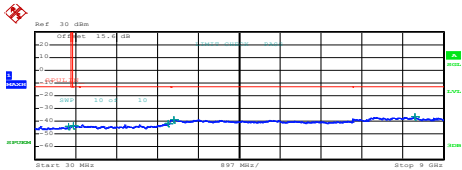
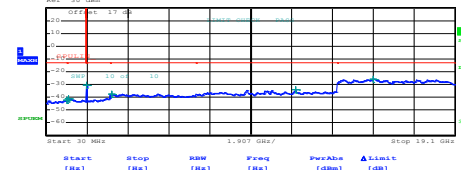


Date: 14.DEC.2020 14:15:31

Date: 14.DEC.2020 14:18:28



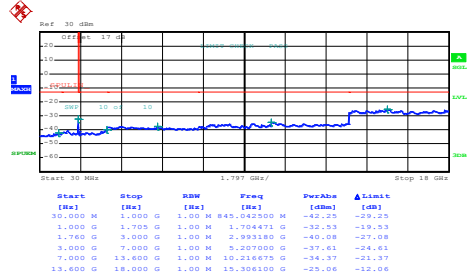
# Conducted Spurious Emission

WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)																																																																														
Lowest Channel	Lowest Channel																																																																														
 <table border="1"> <thead> <tr> <th>Start [MHz]</th> <th>Stop [MHz]</th> <th>RW [MHz]</th> <th>Freq [MHz]</th> <th>PreAbs [dBm]</th> <th>ΔLimit [dB]</th> </tr> </thead> <tbody> <tr> <td>30.0000 M</td> <td>820.0000 M</td> <td>1.000 M</td> <td>818.400000 M</td> <td>-30.44</td> <td>-37.44</td> </tr> <tr> <td>855.0000 M</td> <td>1.0000 G</td> <td>1.000 M</td> <td>857.5073750 M</td> <td>-43.63</td> <td>-30.63</td> </tr> <tr> <td>1.0000 G</td> <td>3.0000 G</td> <td>1.000 M</td> <td>2.9890000 G</td> <td>-41.08</td> <td>-28.08</td> </tr> <tr> <td>3.0000 G</td> <td>7.0000 G</td> <td>1.000 M</td> <td>3.0070000 G</td> <td>-38.23</td> <td>-25.23</td> </tr> <tr> <td>7.0000 G</td> <td>9.0000 G</td> <td>1.000 M</td> <td>8.3620000 G</td> <td>-36.55</td> <td>-23.55</td> </tr> </tbody> </table> <p>Date: 14.DEC.2020 14:28:41</p>	Start [MHz]	Stop [MHz]	RW [MHz]	Freq [MHz]	PreAbs [dBm]	ΔLimit [dB]	30.0000 M	820.0000 M	1.000 M	818.400000 M	-30.44	-37.44	855.0000 M	1.0000 G	1.000 M	857.5073750 M	-43.63	-30.63	1.0000 G	3.0000 G	1.000 M	2.9890000 G	-41.08	-28.08	3.0000 G	7.0000 G	1.000 M	3.0070000 G	-38.23	-25.23	7.0000 G	9.0000 G	1.000 M	8.3620000 G	-36.55	-23.55	 <table border="1"> <thead> <tr> <th>Start [MHz]</th> <th>Stop [MHz]</th> <th>RW [MHz]</th> <th>Freq [MHz]</th> <th>PreAbs [dBm]</th> <th>ΔLimit [dB]</th> </tr> </thead> <tbody> <tr> <td>30.0000 M</td> <td>3.0000 G</td> <td>1.000 M</td> <td>885.2007500 M</td> <td>-42.34</td> <td>-29.34</td> </tr> <tr> <td>1.0000 G</td> <td>3.0000 G</td> <td>1.000 M</td> <td>1.8447889 G</td> <td>-32.24</td> <td>-19.24</td> </tr> <tr> <td>1.915 G</td> <td>3.0000 G</td> <td>1.000 M</td> <td>2.9818800 G</td> <td>-40.84</td> <td>-27.84</td> </tr> <tr> <td>3.0000 G</td> <td>7.0000 G</td> <td>1.000 M</td> <td>3.5510000 G</td> <td>-37.56</td> <td>-24.56</td> </tr> <tr> <td>7.0000 G</td> <td>13.0000 G</td> <td>1.000 M</td> <td>9.3743350 G</td> <td>-34.94</td> <td>-21.94</td> </tr> <tr> <td>13.0000 G</td> <td>19.1000 G</td> <td>1.000 M</td> <td>15.3311888 G</td> <td>-25.38</td> <td>-12.38</td> </tr> </tbody> </table> <p>Date: 14.DEC.2020 13:54:04</p>	Start [MHz]	Stop [MHz]	RW [MHz]	Freq [MHz]	PreAbs [dBm]	ΔLimit [dB]	30.0000 M	3.0000 G	1.000 M	885.2007500 M	-42.34	-29.34	1.0000 G	3.0000 G	1.000 M	1.8447889 G	-32.24	-19.24	1.915 G	3.0000 G	1.000 M	2.9818800 G	-40.84	-27.84	3.0000 G	7.0000 G	1.000 M	3.5510000 G	-37.56	-24.56	7.0000 G	13.0000 G	1.000 M	9.3743350 G	-34.94	-21.94	13.0000 G	19.1000 G	1.000 M	15.3311888 G	-25.38	-12.38
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3.0000 G	7.0000 G	1.000 M	3.5510000 G	-37.56	-24.56																																																																										
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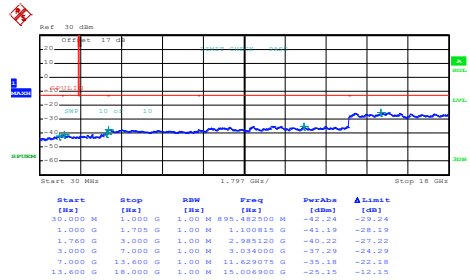
WCDMA Band IV (RMC 12.2Kbps)

Lowest Channel



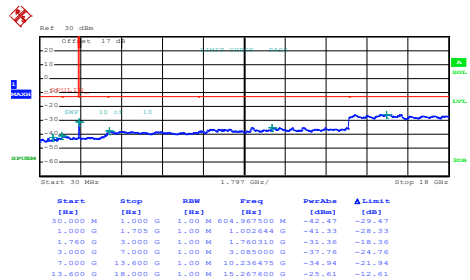
Date: 14.DEC.2020 14:08:28

Middle Channel



Date: 14.DEC.2020 14:09:26

Highest Channel



Date: 14.DEC.2020 14:10:21



**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	0.0048	PASS
40	Normal Voltage	0.0024	
30	Normal Voltage	0.0000	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0084	
0	Normal Voltage	0.0108	
-10	Normal Voltage	0.0143	
-20	Normal Voltage	0.0143	
-30	Normal Voltage	0.0155	
20	Maximum Voltage	0.0024	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0012	



Test Conditions	Middle Channel	WCDMA Band II (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0005	PASS
40	Normal Voltage	0.0005	
30	Normal Voltage	0.0005	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0000	
0	Normal Voltage	0.0005	
-10	Normal Voltage	0.0011	
-20	Normal Voltage	0.0005	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0021	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0005	

**Note:**

1. Normal Voltage = 3.85V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage =4.45 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



Test Conditions	Middle Channel	WCDMA Band IV (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0046	PASS
40	Normal Voltage	0.0040	
30	Normal Voltage	0.0035	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0012	
0	Normal Voltage	0.0040	
-10	Normal Voltage	0.0087	
-20	Normal Voltage	0.0110	
-30	Normal Voltage	0.0110	
20	Maximum Voltage	0.0035	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0017	

**Note:**

1. Normal Voltage = 3.85V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage =4.45 V
2. The frequency fundamental emissions stay within the authorized frequency block.

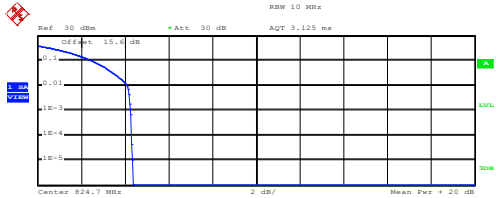
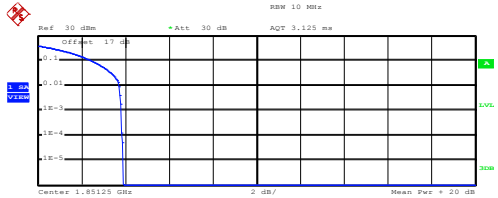
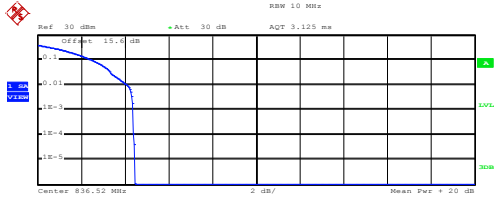
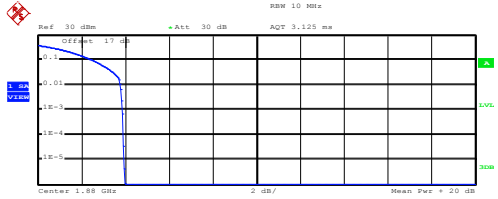
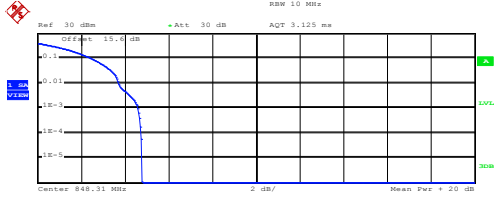
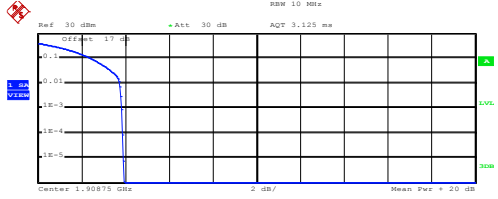


## A4. CDMA

### Peak-to-Average Ratio

Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xRTT	1xRTT	Result
Lowest CH	4.28	3.84	PASS
Middle CH	4.40	3.88	
Highest CH	4.60	3.84	



CDMA BC0 (1xRTT)	CDMA BC1 (1xRTT)
<p style="text-align: center;"><b>Lowest Channel</b></p>  <p>Center 824.7 MHz</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.41 dBm Peak 26.77 dBm Crest 4.36 dB</p> <p>10 % 2.52 dB 1 % 4.12 dB .1 % 4.28 dB .01 % 4.32 dB</p> <p>Date: 18.DEC.2020 16:27:33</p>	<p style="text-align: center;"><b>Lowest Channel</b></p>  <p>Center 1.85125 GHz</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 23.01 dBm Peak 26.91 dBm Crest 3.90 dB</p> <p>10 % 2.52 dB 1 % 3.72 dB .1 % 3.84 dB .01 % 3.84 dB</p> <p>Date: 18.DEC.2020 15:58:14</p>
<p style="text-align: center;"><b>Middle Channel</b></p>  <p>Center 836.52 MHz</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 21.67 dBm Peak 26.13 dBm Crest 4.46 dB</p> <p>10 % 2.52 dB 1 % 4.08 dB .1 % 4.40 dB .01 % 4.40 dB</p> <p>Date: 18.DEC.2020 16:28:04</p>	<p style="text-align: center;"><b>Middle Channel</b></p>  <p>Center 1.88 GHz</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.93 dBm Peak 26.91 dBm Crest 3.98 dB</p> <p>10 % 2.52 dB 1 % 3.76 dB .1 % 3.88 dB .01 % 3.92 dB</p> <p>Date: 18.DEC.2020 15:58:40</p>
<p style="text-align: center;"><b>Highest Channel</b></p>  <p>Center 848.31 MHz</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 21.58 dBm Peak 26.35 dBm Crest 4.77 dB</p> <p>10 % 2.48 dB 1 % 3.72 dB .1 % 4.60 dB .01 % 4.76 dB</p> <p>Date: 18.DEC.2020 16:28:40</p>	<p style="text-align: center;"><b>Highest Channel</b></p>  <p>Center 1.90875 GHz</p> <p>Complementary Cumulative Distribution Function (100000 samples)</p> <p>Trace 1</p> <p>Mean 22.99 dBm Peak 26.91 dBm Crest 3.92 dB</p> <p>10 % 2.44 dB 1 % 3.72 dB .1 % 3.84 dB .01 % 3.88 dB</p> <p>Date: 18.DEC.2020 15:59:05</p>





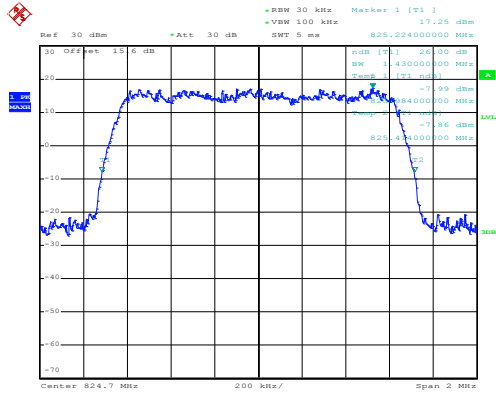
**26dB Bandwidth**

Mode	CDMA BC0: 26dB BW(MHz)	CDMA BC1: 26dB BW(MHz)
Mod.	1xRTT	1xRTT
Lowest CH	1.43	1.44
Middle CH	1.42	1.43
Highest CH	1.43	1.43



CDMA BC0 (1xRTT)

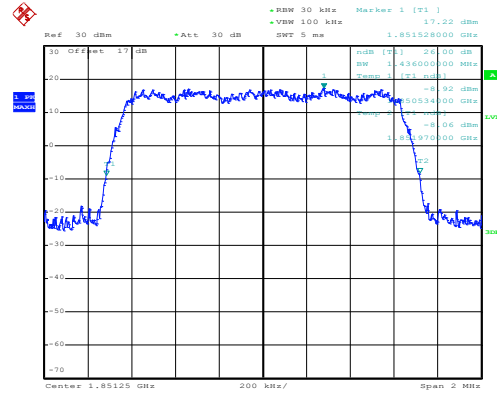
Lowest Channel



Date: 18.DEC.2020 16:12:25

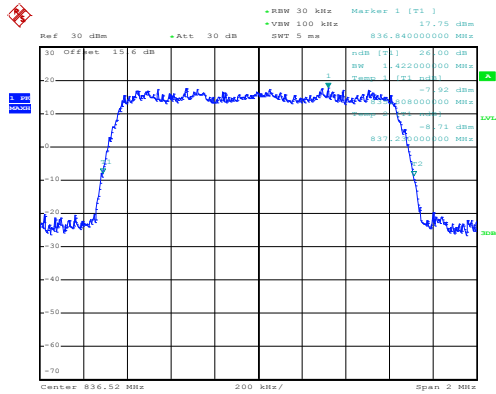
CDMA BC1 (1xRTT)

Lowest Channel



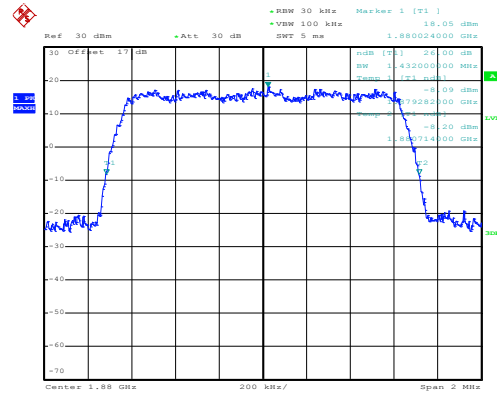
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Middle Channel



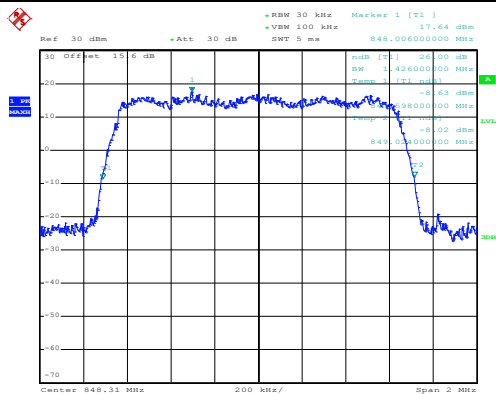
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Middle Channel



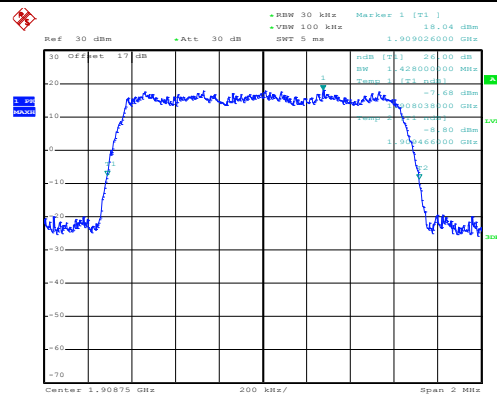
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Highest Channel



Date: 18.DEC.2020 16:14:03

Highest Channel



Date: 18.DEC.2020 15:42:23



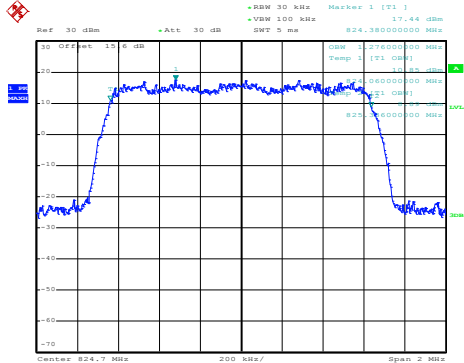
**Occupied Bandwidth**

Mode	CDMA BC0: 99% OBW(MHz)	CDMA BC1: 99% OBW(MHz)
Mod.	1xRTT	1xRTT
Lowest CH	1.28	1.28
Middle CH	1.28	1.28
Highest CH	1.28	1.28



CDMA BC0 (1xRTT)

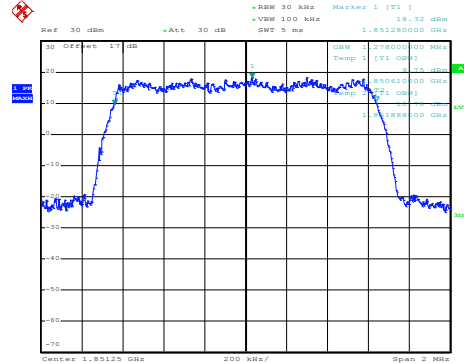
Lowest Channel



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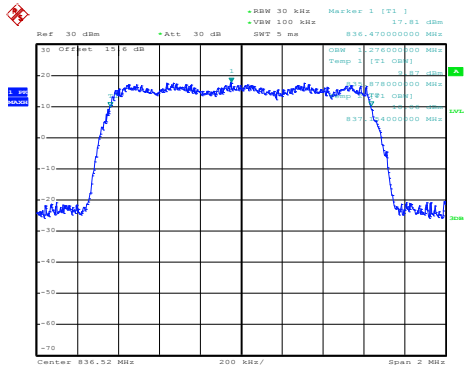
CDMA BC1 (1xRTT)

Lowest Channel



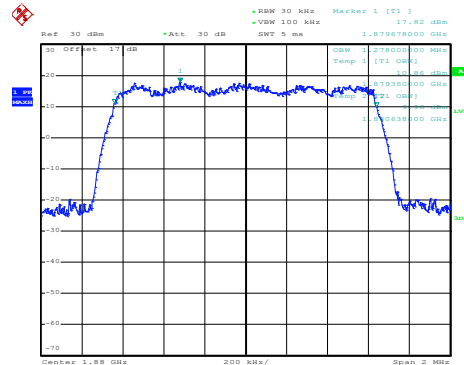
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Middle Channel



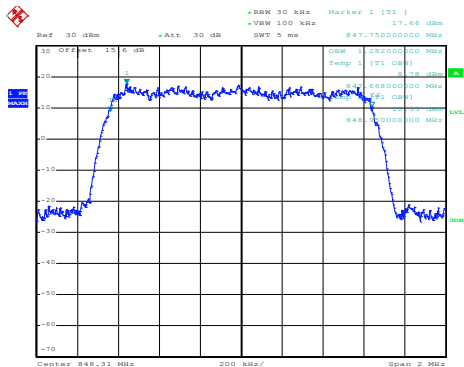
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Middle Channel



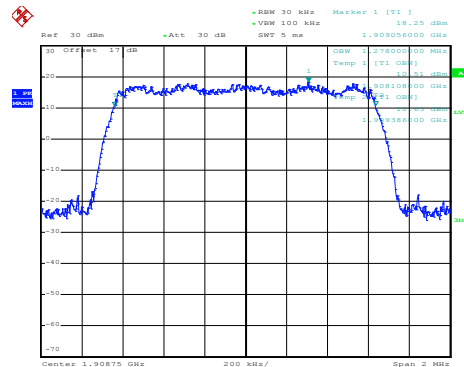
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Highest Channel



Date: 18.DEC.2020 16:20:52

Highest Channel



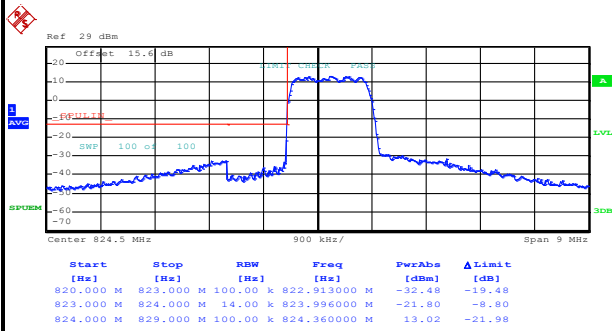
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# Conducted Band Edge

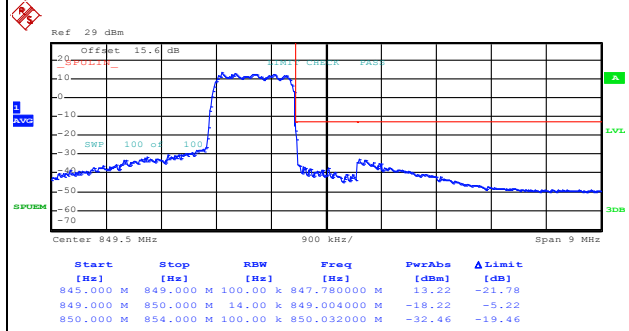
## CDMA BC0 (1xRTT)

### Lowest Band Edge



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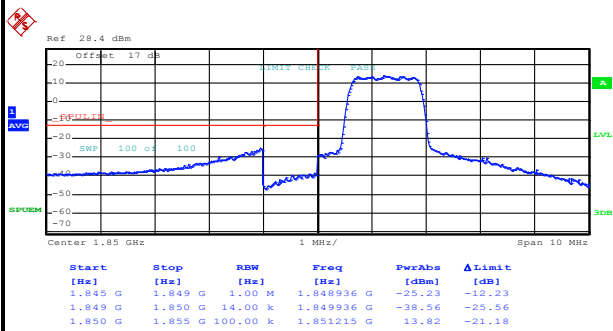
### Highest Band Edge



Date: 18.DEC.2020 16:27:02

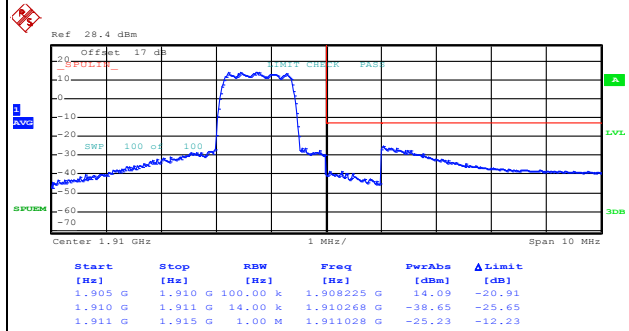
## CDMA BC1 (1xRTT)

### Lowest Band Edge



Date: 18.DEC.2020 15:54:34

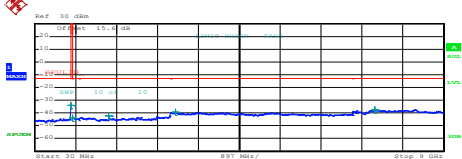
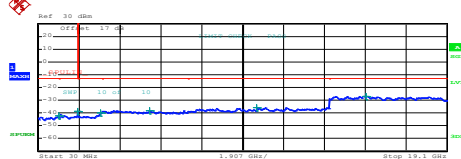
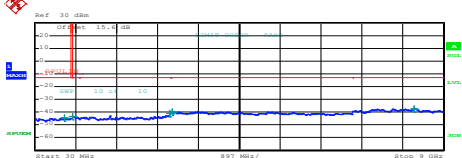
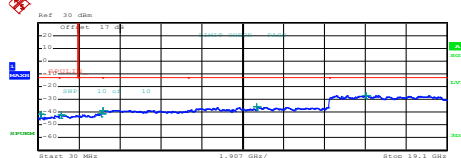
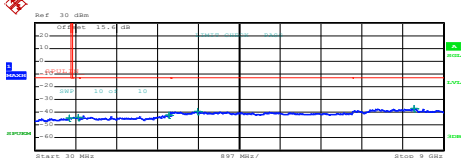
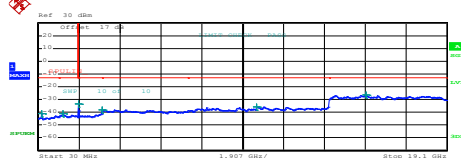
### Highest Band Edge



Date: 18.DEC.2020 15:57:35



Conducted Spurious Emission

CDMA BC0 (1xRTT)	CDMA BC1 (1xRTT)																																																																														
Lowest Channel	Lowest Channel																																																																														
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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	0.0072	PASS
40	Normal Voltage	0.0036	
30	Normal Voltage	0.0036	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0036	
0	Normal Voltage	0.0502	
-10	Normal Voltage	0.0538	
-20	Normal Voltage	0.0514	
-30	Normal Voltage	0.0526	
20	Maximum Voltage	0.0084	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0514	



Test Conditions	Middle Channel	CDMA BC1 (1xRTT)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0053	PASS
40	Normal Voltage	0.0053	
30	Normal Voltage	0.0048	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0027	
0	Normal Voltage	0.0090	
-10	Normal Voltage	0.0101	
-20	Normal Voltage	0.0117	
-30	Normal Voltage	0.0122	
20	Maximum Voltage	0.0021	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0011	

**Note:**

1. Normal Voltage = 3.85V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage =4.45 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 Radiated Test

<Primary Antenna>

<Ant. 0>

### GPRS 850

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	-45.28	-13	-32.28	-57.56	-50.67	1.23	8.76	H
	2472	-45.89	-13	-32.89	-62.03	-52.78	1.44	10.48	H
	3296	-58.39	-13	-45.39	-76.29	-66.33	1.70	11.79	H
									H
									H
									H
	1648	-48.59	-13	-35.59	-60.75	-53.98	1.23	8.76	V
	2472	-43.54	-13	-30.54	-59.97	-50.43	1.44	10.48	V
	3296	-57.69	-13	-44.69	-75.99	-65.63	1.70	11.79	V
									V
									V
									V
Middle	1672	-47.36	-13	-34.36	-59.72	-52.83	1.24	8.85	H
	2512	-42.47	-13	-29.47	-58.56	-49.39	1.44	10.51	H
	4184	-56.11	-13	-43.11	-75.7	-63.99	2.07	12.10	H
									H
									H
									H
	1672	-48.96	-13	-35.96	-61.21	-54.43	1.24	8.85	V
	2512	-43.76	-13	-30.76	-60.04	-50.68	1.44	10.51	V
	4184	-54.39	-13	-41.39	-74.64	-62.27	2.07	12.10	V
									V
									V
									V



Highest	1696	-48.04	-13	-35.04	-60.46	-53.59	1.24	8.94	H
	2544	-40.09	-13	-27.09	-56.22	-47.03	1.44	10.54	H
	4248	-55.75	-13	-42.75	-75.57	-63.65	2.05	12.10	H
									H
									H
									H
	1696	-53.54	-13	-40.54	-65.87	-59.09	1.24	8.94	V
	2544	-40.46	-13	-27.46	-56.8	-47.40	1.44	10.54	V
	4248	-52.81	-13	-39.81	-73.33	-60.71	2.05	12.10	V
									V
									V
									V

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



**CDMA BC0**

CDMA BC0									
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	-57.83	-13	-44.83	-70.11	-63.22	1.23	8.76	H
	2472	-51.47	-13	-38.47	-67.61	-58.36	1.44	10.48	H
	3296	-58.42	-13	-45.42	-76.32	-66.36	1.70	11.79	H
									H
									H
									H
	1648	-58.51	-13	-45.51	-70.67	-63.90	1.23	8.76	V
	2472	-48.58	-13	-35.58	-65.01	-55.47	1.44	10.48	V
	3296	-57.90	-13	-44.90	-76.2	-65.84	1.70	11.79	V
									V
									V
									V
Middle	1672	-57.66	-13	-44.66	-70.02	-63.13	1.24	8.85	H
	2512	-56.86	-13	-43.86	-72.95	-63.78	1.44	10.51	H
	3344	-58.66	-13	-45.66	-76.24	-66.70	1.74	11.93	H
									H
									H
									H
	1672	-60.63	-13	-47.63	-72.88	-66.10	1.24	8.85	V
	2512	-57.76	-13	-44.76	-74.04	-64.68	1.44	10.51	V
	3344	-58.07	-13	-45.07	-76.18	-66.11	1.74	11.93	V
									V
									V
									V



Highest	1696	-59.77	-13	-46.77	-72.19	-65.32	1.24	8.94	H
	2544	-46.14	-13	-33.14	-62.27	-53.08	1.44	10.54	H
	3393	-59.08	-13	-46.08	-76.34	-67.23	1.78	12.08	H
									H
									H
									H
	1696	-60.04	-13	-47.04	-72.37	-65.59	1.24	8.94	V
	2544	-57.84	-13	-44.84	-74.18	-64.78	1.44	10.54	V
	3393	-58.35	-13	-45.35	-76.27	-66.50	1.78	12.08	V
									V
									V
									V

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



**WCDMA 850**

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	-62.81	-13	-49.81	-75.12	-68.22	1.23	8.79	H
	2480	-50.21	-13	-37.21	-66.34	-57.11	1.44	10.48	H
	3304	-58.27	-13	-45.27	-76.12	-66.22	1.71	11.81	H
									H
									H
									H
	1656	-63.02	-13	-50.02	-75.2	-68.43	1.23	8.79	V
	2480	-55.36	-13	-42.36	-71.75	-62.26	1.44	10.48	V
	3304	-58.27	-13	-45.27	-76.53	-66.22	1.71	11.81	V
									V
									V
									V
Middle	1672	-62.70	-13	-49.70	-75.06	-68.17	1.24	8.85	H
	2509	-51.00	-13	-38.00	-67.09	-57.92	1.44	10.51	H
	3344	-58.63	-13	-45.63	-76.21	-66.67	1.74	11.93	H
									H
									H
									H
	1672	-62.77	-13	-49.77	-75.02	-68.24	1.24	8.85	V
	2509	-51.67	-13	-38.67	-67.95	-58.59	1.44	10.51	V
	3344	-57.86	-13	-44.86	-75.97	-65.90	1.74	11.93	V
									V
									V
									V



Highest	1693	-61.70	-13	-48.70	-74.12	-67.24	1.24	8.93	H
	2539	-52.65	-13	-39.65	-68.77	-59.59	1.44	10.53	H
	3386	-58.89	-13	-45.89	-76.19	-67.02	1.78	12.06	H
									H
									H
									H
	1693	-62.38	-13	-49.38	-74.71	-67.92	1.24	8.93	V
	2539	-50.20	-13	-37.20	-66.54	-57.14	1.44	10.53	V
	3386	-58.21	-13	-45.21	-76.15	-66.34	1.78	12.06	V
									V
									V
									V

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



<Ant. 2>

**GPRS 1900**

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	-56.31	-13	-43.31	-76.25	-66.62	1.97	12.28	H
	5550	-49.88	-13	-36.88	-72.83	-60.01	2.14	12.27	H
	7400	-48.44	-13	-35.44	-76.03	-56.44	2.18	10.18	H
									H
									H
									H
	3700	-54.15	-13	-41.15	-74.61	-64.46	1.97	12.28	V
	5550	-46.01	-13	-33.01	-69.58	-56.14	2.14	12.27	V
	7400	-48.69	-13	-35.69	-76.25	-56.69	2.18	10.18	V
									V
									V
									V
Middle	3760	-56.05	-13	-43.05	-76.15	-66.29	2.01	12.24	H
	5640	-49.84	-13	-36.84	-72.88	-60.11	2.12	12.40	H
	7520	-48.62	-13	-35.62	-75.82	-56.58	2.11	10.07	H
									H
									H
									H
	3760	-54.54	-13	-41.54	-75.13	-64.78	2.01	12.24	V
	5640	-47.66	-13	-34.66	-71.33	-57.93	2.12	12.40	V
	7520	-49.21	-13	-36.21	-76.3	-57.17	2.11	10.07	V
									V
									V
									V



Highest	3815	-52.86	-13	-39.86	-73.08	-63.04	2.03	12.21	H
	5722	-51.35	-13	-38.35	-74.82	-61.76	2.10	12.51	H
	7630	-49.28	-13	-36.28	-75.93	-57.63	2.11	10.47	H
									H
									H
									H
	3815	-53.58	-13	-40.58	-74.27	-63.76	2.03	12.21	V
	5722	-51.39	-13	-38.39	-75.41	-61.80	2.10	12.51	V
	7630	-48.87	-13	-35.87	-75.56	-57.22	2.11	10.47	V
									V
									V
									V

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





**CDMA BC1**

CDMA BC1									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-56.61	-13	-43.61	-76.54	-66.91	1.98	12.28	H
	5553	-53.41	-13	-40.41	-76.35	-63.54	2.14	12.27	H
	7405	-48.17	-13	-35.17	-75.75	-56.17	2.17	10.17	H
									H
									H
									H
	3702	-55.37	-13	-42.37	-75.82	-65.67	1.98	12.28	V
	5553	-52.37	-13	-39.37	-75.93	-62.50	2.14	12.27	V
	7405	-48.46	-13	-35.46	-76.01	-56.46	2.17	10.17	V
									V
									V
									V
Middle	3760	-55.86	-13	-42.86	-75.96	-66.10	2.01	12.24	H
	5640	-51.45	-13	-38.45	-74.49	-61.72	2.12	12.40	H
	7520	-48.83	-13	-35.83	-76.03	-56.79	2.11	10.07	H
									H
									H
									H
	3760	-55.58	-13	-42.58	-76.17	-65.82	2.01	12.24	V
	5640	-49.75	-13	-36.75	-73.42	-60.02	2.12	12.40	V
	7520	-48.65	-13	-35.65	-75.74	-56.61	2.11	10.07	V
									V
									V
									V



Highest	3819	-55.48	-13	-42.48	-75.7	-65.65	2.04	12.21	H
	5726	-47.81	-13	-34.81	-71.3	-58.22	2.10	12.52	H
	7635	-48.09	-13	-35.09	-74.75	-56.46	2.11	10.49	H
									H
									H
									H
	3819	-55.40	-13	-42.40	-76.09	-65.57	2.04	12.21	V
	5726	-49.95	-13	-36.95	-74	-60.36	2.10	12.52	V
	7635	-48.78	-13	-35.78	-75.48	-57.15	2.11	10.49	V
									V
									V
									V

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



**WCDMA 1900**

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	3704	-56.16	-13	-43.16	-76.1	-66.46	1.98	12.28	H
	5557	-53.42	-13	-40.42	-76.36	-63.56	2.14	12.28	H
	7409	-48.44	-13	-35.44	-76.01	-56.43	2.17	10.16	H
									H
									H
									H
	3704	-55.82	-13	-42.82	-76.28	-66.12	1.98	12.28	V
	5557	-52.89	-13	-39.89	-76.45	-63.03	2.14	12.28	V
	7409	-48.42	-13	-35.42	-75.94	-56.41	2.17	10.16	V
									V
									V
									V
Middle	3760	-56.20	-13	-43.20	-76.3	-66.44	2.01	12.24	H
	5640	-53.27	-13	-40.27	-76.31	-63.54	2.12	12.40	H
	7520	-48.83	-13	-35.83	-76.03	-56.79	2.11	10.07	H
									H
									H
									H
	3760	-55.59	-13	-42.59	-76.18	-65.83	2.01	12.24	V
	5640	-52.65	-13	-39.65	-76.32	-62.92	2.12	12.40	V
	7520	-48.50	-13	-35.50	-75.59	-56.46	2.11	10.07	V
									V
									V
									V



Highest	3815	-55.45	-13	-42.45	-75.67	-65.63	2.03	12.21	H
	5723	-52.43	-13	-39.43	-75.9	-62.84	2.10	12.51	H
	7630	-48.92	-13	-35.92	-75.57	-57.27	2.11	10.47	H
									H
									H
									H
	3815	-54.54	-13	-41.54	-75.23	-64.72	2.03	12.21	V
	5723	-52.34	-13	-39.34	-76.36	-62.75	2.10	12.51	V
	7630	-49.08	-13	-36.08	-75.77	-57.43	2.11	10.47	V
									V
									V
									V

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



**WCDMA 1700**

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	3424	-57.97	-13	-44.97	-76.3	-68.33	1.81	12.17	H
	5137	-53.69	-13	-40.69	-76.47	-63.51	2.30	12.13	H
	6849	-50.98	-13	-37.98	-76.69	-59.66	2.37	11.05	H
									H
									H
									H
	3424	-57.43	-13	-44.43	-76.39	-67.79	1.81	12.17	V
	5137	-53.06	-13	-40.06	-76.41	-62.88	2.30	12.13	V
	6849	-50.07	-13	-37.07	-76.34	-58.75	2.37	11.05	V
									V
									V
									V
Middle	3465	-57.50	-13	-44.50	-76.23	-67.95	1.84	12.30	H
	5198	-54.14	-13	-41.14	-77	-64.00	2.28	12.14	H
	6930	-50.49	-13	-37.49	-76.38	-59.06	2.40	10.97	H
									H
									H
									H
	3465	-56.97	-13	-43.97	-76.23	-67.42	1.84	12.30	V
	5198	-53.61	-13	-40.61	-77.02	-63.47	2.28	12.14	V
	6930	-50.17	-13	-37.17	-76.68	-58.74	2.40	10.97	V
									V
									V
									V



Highest	3505	-57.16	-13	-44.16	-76.26	-67.68	1.87	12.40	H
	5258	-54.44	-13	-41.44	-77.35	-64.34	2.25	12.15	H
	7010	-49.40	-13	-36.40	-75.51	-57.87	2.41	10.88	H
									H
									H
									H
	3505	-56.83	-13	-43.83	-76.38	-67.35	1.87	12.40	V
	5258	-53.64	-13	-40.64	-77.08	-63.54	2.25	12.15	V
	7010	-49.15	-13	-36.15	-75.92	-57.62	2.41	10.88	V
									V
									V
									V

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



<ASDIV Antenna>

<Ant. 0>

**GPRS 1900**

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	-43.87	-13	-30.87	-63.81	-54.18	1.97	12.28	H
	5550	-53.35	-13	-40.35	-76.3	-63.48	2.14	12.27	H
	7400	-48.21	-13	-35.21	-75.8	-56.21	2.18	10.18	H
									H
									H
									H
	3700	-45.00	-13	-32.00	-65.46	-55.31	1.97	12.28	V
	5550	-52.98	-13	-39.98	-76.55	-63.11	2.14	12.27	V
	7400	-48.29	-13	-35.29	-75.85	-56.29	2.18	10.18	V
									V
									V
									V
Middle	3760	-41.35	-13	-28.35	-61.45	-51.59	2.01	12.24	H
	5640	-49.59	-13	-36.59	-72.63	-59.86	2.12	12.40	H
	7520	-48.55	-13	-35.55	-75.75	-56.51	2.11	10.07	H
									H
									H
									H
	3760	-45.38	-13	-32.38	-65.97	-55.62	2.01	12.24	V
	5640	-50.81	-13	-37.81	-74.48	-61.08	2.12	12.40	V
	7520	-48.33	-13	-35.33	-75.42	-56.29	2.11	10.07	V
									V
									V
									V



Highest	3819	-41.00	-13	-28.00	-61.22	-51.17	2.04	12.21	H
	5730	-51.19	-13	-38.19	-74.7	-61.61	2.10	12.52	H
	7639	-48.57	-13	-35.57	-75.24	-56.96	2.11	10.50	H
									H
									H
									H
	3819	-45.45	-13	-32.45	-66.14	-55.62	2.04	12.21	V
	5730	-49.01	-13	-36.01	-73.07	-59.43	2.10	12.52	V
	7639	-48.74	-13	-35.74	-75.45	-57.13	2.11	10.50	V
									V
									V
									V

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





**CDMA BC1**

CDMA BC1									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-51.83	-13	-38.83	-71.76	-62.13	1.98	12.28	H
	5553	-53.45	-13	-40.45	-76.39	-63.58	2.14	12.27	H
	7405	-48.14	-13	-35.14	-75.72	-56.14	2.17	10.17	H
									H
									H
									H
	3702	-53.95	-13	-40.95	-74.4	-64.25	1.98	12.28	V
	5553	-52.98	-13	-39.98	-76.54	-63.11	2.14	12.27	V
	7405	-48.30	-13	-35.30	-75.85	-56.30	2.17	10.17	V
									V
									V
									V
Middle	3760	-48.87	-13	-35.87	-68.97	-59.11	2.01	12.24	H
	5640	-52.65	-13	-39.65	-75.69	-62.92	2.12	12.40	H
	7520	-47.89	-13	-34.89	-75.09	-55.85	2.11	10.07	H
									H
									H
									H
	3760	-52.51	-13	-39.51	-73.1	-62.75	2.01	12.24	V
	5640	-52.31	-13	-39.31	-75.98	-62.58	2.12	12.40	V
	7520	-48.04	-13	-35.04	-75.13	-56.00	2.11	10.07	V
									V
									V
									V



Highest	3819	-49.84	-13	-36.84	-70.06	-60.01	2.04	12.21	H
	5726	-52.88	-13	-39.88	-76.37	-63.29	2.10	12.52	H
	7635	-48.61	-13	-35.61	-75.27	-56.98	2.11	10.49	H
									H
									H
									H
	3819	-52.40	-13	-39.40	-73.09	-62.57	2.04	12.21	V
	5726	-52.11	-13	-39.11	-76.16	-62.52	2.10	12.52	V
	7635	-48.54	-13	-35.54	-75.24	-56.91	2.11	10.49	V
									V
									V
									V

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



**WCDMA 1900**

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	3705	-53.24	-13	-40.24	-73.18	-63.54	1.98	12.28	H
	5557	-53.66	-13	-40.66	-76.6	-63.80	2.14	12.28	H
	7410	-48.32	-13	-35.32	-75.88	-56.31	2.17	10.16	H
									H
									H
									H
	3705	-53.75	-13	-40.75	-74.21	-64.05	1.98	12.28	V
	5557	-52.66	-13	-39.66	-76.22	-62.80	2.14	12.28	V
	7410	-48.24	-13	-35.24	-75.76	-56.23	2.17	10.16	V
									V
									V
									V
Middle	3760	-51.69	-13	-38.69	-71.79	-61.93	2.01	12.24	H
	5640	-53.57	-13	-40.57	-76.61	-63.84	2.12	12.40	H
	7520	-48.49	-13	-35.49	-75.69	-56.45	2.11	10.07	H
									H
									H
									H
	3760	-53.75	-13	-40.75	-74.34	-63.99	2.01	12.24	V
	5640	-52.37	-13	-39.37	-76.04	-62.64	2.12	12.40	V
	7520	-48.53	-13	-35.53	-75.62	-56.49	2.11	10.07	V
									V
									V
									V



Highest	3815	-51.89	-13	-38.89	-72.11	-62.07	2.03	12.21	H
	5723	-52.87	-13	-39.87	-76.34	-63.28	2.10	12.51	H
	7630	-48.58	-13	-35.58	-75.23	-56.93	2.11	10.47	H
									H
									H
									H
	3815	-53.17	-13	-40.17	-73.86	-63.35	2.03	12.21	V
	5723	-51.75	-13	-38.75	-75.78	-62.16	2.10	12.51	V
	7630	-48.78	-13	-35.78	-75.47	-57.13	2.11	10.47	V
									V
									V
									V

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



**WCDMA 1700**

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	3424	-57.75	-13	-44.75	-76.08	-68.11	1.81	12.17	H
	5137	-53.70	-13	-40.70	-76.48	-63.52	2.30	12.13	H
	6849	-50.28	-13	-37.28	-75.99	-58.96	2.37	11.05	H
									H
									H
									H
	3424	-57.19	-13	-44.19	-76.15	-67.55	1.81	12.17	V
	5137	-52.94	-13	-39.94	-76.29	-62.76	2.30	12.13	V
	6849	-49.87	-13	-36.87	-76.14	-58.55	2.37	11.05	V
									V
									V
									V
Middle	3465	-56.88	-13	-43.88	-75.61	-67.33	1.84	12.30	H
	5197	-54.08	-13	-41.08	-76.94	-63.94	2.28	12.14	H
	6930	-50.34	-13	-37.34	-76.23	-58.91	2.40	10.97	H
									H
									H
									H
	3465	-56.89	-13	-43.89	-76.15	-67.34	1.84	12.30	V
	5197	-53.65	-13	-40.65	-77.06	-63.51	2.28	12.14	V
	6930	-49.47	-13	-36.47	-75.98	-58.04	2.40	10.97	V
									V
									V
									V



Highest	3505	-56.88	-13	-43.88	-75.98	-67.40	1.87	12.40	H
	5257	-54.22	-13	-41.22	-77.13	-64.12	2.25	12.15	H
	7010	-49.64	-13	-36.64	-75.75	-58.11	2.41	10.88	H
									H
									H
									H
	3505	-56.63	-13	-43.63	-76.18	-67.15	1.87	12.40	V
	5257	-53.59	-13	-40.59	-77.03	-63.49	2.25	12.15	V
	7010	-48.86	-13	-35.86	-75.63	-57.33	2.41	10.88	V
									V
									V
									V

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



<Ant. 1>

**GPRS 850**

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	-63.22	-13	-50.22	-75.5	-68.61	1.23	8.76	H
	2472	-56.96	-13	-43.96	-73.1	-63.85	1.44	10.48	H
	3296	-57.71	-13	-44.71	-75.61	-65.65	1.70	11.79	H
									H
									H
									H
	1648	-63.30	-13	-50.30	-75.46	-68.69	1.23	8.76	V
	2472	-59.05	-13	-46.05	-75.48	-65.94	1.44	10.48	V
	3296	-57.68	-13	-44.68	-75.98	-65.62	1.70	11.79	V
									V
									V
									V
Middle	1672	-62.55	-13	-49.55	-74.91	-68.02	1.24	8.85	H
	2509	-59.88	-13	-46.88	-75.97	-66.80	1.44	10.51	H
	3345	-58.62	-13	-45.62	-76.19	-66.66	1.74	11.94	H
									H
									H
									H
	1672	-62.99	-13	-49.99	-75.24	-68.46	1.24	8.85	V
	2509	-58.44	-13	-45.44	-74.72	-65.36	1.44	10.51	V
	3345	-57.91	-13	-44.91	-76.01	-65.95	1.74	11.94	V
									V
									V
									V



Highest	1696	-62.39	-13	-49.39	-74.81	-67.94	1.24	8.94	H
	2544	-59.85	-13	-46.85	-75.98	-66.79	1.44	10.54	H
	3393	-58.74	-13	-45.74	-76	-66.89	1.78	12.08	H
									H
									H
									H
	1696	-62.89	-13	-49.89	-75.22	-68.44	1.24	8.94	V
	2544	-59.12	-13	-46.12	-75.46	-66.06	1.44	10.54	V
	3393	-58.40	-13	-45.40	-76.32	-66.55	1.78	12.08	V
									V
									V
									V

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





**CDMA BC0**

CDMA BC0									
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	-63.07	-13	-50.07	-75.36	-68.46	1.23	8.77	H
	2474	-59.93	-13	-46.93	-76.07	-66.82	1.44	10.48	H
	3298	-58.20	-13	-45.20	-76.09	-66.14	1.70	11.79	H
									H
									H
									H
	1649	-63.24	-13	-50.24	-75.4	-68.63	1.23	8.77	V
	2474	-60.06	-13	-47.06	-76.48	-66.95	1.44	10.48	V
	3298	-57.96	-13	-44.96	-76.25	-65.90	1.70	11.79	V
									V
									V
									V
Middle	1672	-62.45	-13	-49.45	-74.81	-67.92	1.24	8.85	H
	2512	-58.82	-13	-45.82	-74.91	-65.74	1.44	10.51	H
	3344	-57.90	-13	-44.90	-75.48	-65.94	1.74	11.93	H
									H
									H
									H
	1672	-62.65	-13	-49.65	-74.9	-68.12	1.24	8.85	V
	2512	-58.82	-13	-45.82	-75.1	-65.74	1.44	10.51	V
	3344	-57.74	-13	-44.74	-75.85	-65.78	1.74	11.93	V
									V
									V
									V



Highest	1696	-62.39	-13	-49.39	-74.81	-67.94	1.24	8.94	H
	2544	-59.85	-13	-46.85	-75.98	-66.79	1.44	10.54	H
	3393	-58.74	-13	-45.74	-76	-66.89	1.78	12.08	H
									H
									H
									H
	1696	-62.89	-13	-49.89	-75.22	-68.44	1.24	8.94	V
	2544	-59.12	-13	-46.12	-75.46	-66.06	1.44	10.54	V
	3393	-58.40	-13	-45.40	-76.32	-66.55	1.78	12.08	V
									V
									V
									V

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



**WCDMA 850**

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	1652	-62.86	-13	-49.86	-75.16	-68.26	1.23	8.78	H
	2479	-59.70	-13	-46.70	-75.83	-66.60	1.44	10.48	H
	3305	-58.57	-13	-45.57	-76.41	-66.52	1.71	11.82	H
									H
									H
									H
	1652	-63.29	-13	-50.29	-75.46	-68.69	1.23	8.78	V
	2479	-59.43	-13	-46.43	-75.83	-66.33	1.44	10.48	V
	3305	-58.40	-13	-45.40	-76.66	-66.35	1.71	11.82	V
									V
									V
									V
Middle	1672	-62.44	-13	-49.44	-74.8	-67.91	1.24	8.85	H
	2509	-59.92	-13	-46.92	-76.01	-66.84	1.44	10.51	H
	3345	-58.57	-13	-45.57	-76.14	-66.61	1.74	11.94	H
									H
									H
									H
	1672	-63.19	-13	-50.19	-75.44	-68.66	1.24	8.85	V
	2509	-59.90	-13	-46.90	-76.18	-66.82	1.44	10.51	V
	3345	-57.71	-13	-44.71	-75.81	-65.75	1.74	11.94	V
									V
									V
									V



Highest	1693	-62.70	-13	-49.70	-75.12	-68.24	1.24	8.93	H
	2540	-59.33	-13	-46.33	-75.45	-66.27	1.44	10.53	H
	3386	-59.20	-13	-46.20	-76.5	-67.33	1.78	12.06	H
									H
									H
									H
	1693	-62.52	-13	-49.52	-74.85	-68.06	1.24	8.93	V
	2540	-59.43	-13	-46.43	-75.77	-66.37	1.44	10.53	V
	3386	-58.09	-13	-45.09	-76.03	-66.22	1.78	12.06	V
									V
									V
									V

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

—THE END—