Industrial Internet Innovation Center (Shanghai) Co.,Ltd.

FCC/IC GSM TEST REPORT

PRODUCT	Smart POS system
BRAND	SUNMI
MODEL	T6900
APPLICANT	Shanghai Sunmi Technology Co.,Ltd.
FCC ID	2AH25T6900P2
IC	22621-T6900P2
ISSUE DATE	January 11,2023
STANDARD(S)	FCC Part 2, FCC Part 22, FCC Part 24, RSS-Gen Issue 5, RSS-132 Issue 3, RSS-133 Issue 6

Prepared by: Wu Rui	***Reviewed by: Yang Fan***	***Approved by: Zhang Min***

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1. Summary of Test Report

1.1 Test Standard (s)

No.	Test Standard（Include the version of standard）	Title	Version
1	FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS	2021-10-01
2	FCC Part 22	PUBLIC MOBILE SERVICES	2021-10-01
3	FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	2021-10-01
4	RSS-Gen Issue 5	RSS-Gen —General Requirements for Compliance of Radio Apparatus	2021-02
5	RSS-132 Issue 3	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz	2013-01
6	RSS-133 Issue 6	2 GHz Personal Communications Services	2018-01

1.2 Reference Documents

No.	Test Standard（Include the version of standard）	Title	Version
1	ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
2	ANSI C63.26	American National Standard of Procedures for Compliance Testing of Licensed Transmitters Used in Licensed Radio	2015
3	KDB 971168 D01	Measurement Guidance for Certification of Licensed Digital Transmitters	v03r01

1.3 Summary of Test Results

Measurement Items	Sub-clause of FCC	Sub-clause of IC	Verdict
Output Power	2.1046/22.913(a)/24.232(c)	RSS-132 5.4 RSS-133 6.4	Pass
Peak-to-Average Ratio	24.232(d)	RSS-132 5.4 RSS-133 6.4	Pass
99%Occupied Bandwidth	2.1049(h)(i)/ 22.917(b)	RSS-Gen 6.7	Pass
-26dB Emission Bandwidth	22.917(b)/24.238(b)	RSS-Gen 6.7	Pass
Band Edge at antenna terminals	22.917(a)/24.238(a)	RSS-132 5.5 RSS-133 6.5	Pass

Frequency stability	2.1055/24.235	RSS-132 5.3 RSS-133 6.3	Pass
Conducted Spurious mission	2.1053/22.917(a)/24.238(a)	RSS-132 5.5 RSS-133 6.5	Pass
Emission Limit	2.1051/22.917/24.238/22.913/24.232	RSS-132 5.5 RSS-133 6.5	Pass

Note:

The T6900, manufactured by Shanghai Sunmi Technology Co.,Ltd. is a new product for testing.

The following configurations were tested for radiation spurious emission:

T6900			
Main Supply:**Configuration1**(fingerprint &scanner&standard)			
Name	Model	Manufacturer	Spec
PCB	STM-5	SHENZHEN SUNTAK MULTILAYER PCB CO LTD	V-0 130℃
LCD	HS55ET10P63B	Huashi Opto-Electronic Co., Ltd.	720X (RGB)(H) X 1440(V) dots TFT Type 3.25mm thickness
Rear camera	HNO0458	Holitech science Technology Co., Ltd.	Sensor:Hi556 1/5" Lens:DULE DL5280 VCM:RuienPF8526-44 F.NO:2.2 FOV:>77° Connection method: BTB
Battery	P2	Guangdong Fenghua New Energy Co,.Ltd.	2480mAh/7.6V
Printer	ATP2XEP6RTWENA	Xiamen Pinnacle Electrical Co.,Ltd	Thermal dot printing print 4.0-9.5V， 384dot，Dimension 67.3*18.25*30.0mm
Button cell	CR2032	Yichang Power Glory Technology Co.,Ltd.	Nominal Discharge current 0.2mA Nominal Voltage 3V Nominal Capacity 245(mAh)
Adapter	TPA-23A050200UU01	SHENZHEN TIANYIN ELECTRONICS CO.,LTD.	5V 2A
Secondary Supply: Configuration2 (fingerprint & standard)			
Name	Model	Manufacturer	Spec
PCB	HF01	JIANGXI ZHIBOXIN TECHNOLOGY CO LTD	V-0 130℃
LCD	JL-P055H030-05	SICHUAN JINGLONG PHOTOELECTRIC SCIENCE AND TECHNOLOGY CO.,LTD	720X (RGB)(H) X 1440(V) dots TFT Type 3.25mm thickness
Rear camera	VM25C27	Shenzhen Chengxiangtong technology Co.,Ltd.	Sensor: GC05A2 1/5" Lens: Horui TR0517B

			VCM: Hozel VA26F502 F.NO:2.2 FOV:>77° Connection method: BTB
Battery	P2	DongGuan Veken Battery Co.,Ltd.	2480mAh/7.6V
Printer	LTP02-245-G2	Seiko Instruments Inc.	Thermal line dot printing print 5.5-9.5V， 384dot，Dimension 67.3*18.1*30.0mm
Button cell	CR2032	SHANGHAI LONGYOUNG CORPORATION.	Nominal Discharge current 0.2mA Nominal Voltage 3V Nominal Capacity 220(mAh)
Adapter	UC13US	Jiangsu Chenyang Electron Co.,Ltd.	5V2A
Third Supply:**Configuration3(Based on configuration 1)** (fingerprint & standard)			
Name	Model	Manufacturer	Spec
PCB			
LCD			
Rear camera			
Battery	P2 Max	Guangdong Fenghua New Energy Co,.Ltd.	3000mAh/7.6V
Printer			
Button cell			
Adapter			
Note: Hardware Version Id Number (HVIN): 1)T6900P2 - 1:Configuration1-fingerprint 2)T6900P2 - 2:Configuration1-scanner 3)T6900P2 - 3:Configuration1-standard 4)T6900P2 - 4:Configuration2-fingerprint 5)T6900P2 - 5:Configuration2-standard			

Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 1.3.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 5.3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 6 of this test report.

1.4 Data Provided by Applicant

No.	Item(s)	Data
1	GSM 850	-3.2 dBi
2	PCS 1900	-0.7 dBi

2. General Information of The Laboratory

2.1 Testing Laboratory

Lab Name	Industrial Internet Innovation Center (Shanghai) Co.,Ltd.
Address	Building 4，No. 766，Jingang Road，Pudong，Shanghai，China
Telephone	021-68866880
FCC Registration No.	958356
FCC Designation No.	CN1177
IC Designation No.	10766A
CAB identifier	CN0067

2.2 Laboratory Environmental Requirements

Temperature	15℃~35℃
Relative Humidity	25%RH~75%RH
Atmospheric Pressure	101kPa

2.3 Project Information

Project Manager	Gao Hongning
Test Date	October 10, 2022 to January 10, 2023

3. General Information of The Customer

3.1 Applicant

Company	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, No.388,Song Hu Road, Yang Pu District, Shanghai, China
Telephone	+86-17302160204

3.2 Manufacturer

Company	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, No.388,Song Hu Road, Yang Pu District, Shanghai, China

4. General Information of The Product

4.1 Product Description for Equipment under Test (EUT)

Product	Smart POS system
Model	T6900
Date of Receipt	S03aa/S05aa / S06aa/ S08aa / S14aa/ S16aa: September 26,2022 S18aa: September 27,2022 S21aa : November 3,2022
EUT ID*	standard version:S03aa/S05aa/S06aa scan code version supported:S21aa fingerprint version supported:S08aa/S14aa/S16aa
SN/IMEI	S03aa: 869325026812009 869325026812017 S05aa: 869325026811662 869325026811670 S06aa: 869325026810920 869325026810938 S08aa: 869325026801002 869325026801010 S14aa: 869325026801267 869325026801275 S16aa: 869325026800780 869325026800798 S18aa:869325026801085 869325026801093 S21aa : 862318060012757 862318060012765
Supported Radio Technology and Bands	GSM850/GSM900/DCS1800/PCS1900 WCDMA Band I/II/IV/V/VIII LTE Band 1/2/3/4/5/7/17/28/38/41 BT 4.2 BR/EDR ,BLE WLAN 802.11b/g/n WLAN 802.11a/n GPS NFC
Hardware Version	B1691_MAIN_PCB
Software Version	SP6359A-20220922115332
FCC ID	2AH25T6900P2
IC	22621-T6900P2
NOTE： EUT ID is the internal identification code of the laboratory.	

4.2 Description for Auxiliary Equipment (AE)

AE ID*	Description	Model	SN/Remark

AE1	RF Cable	N/A	N/A
NOTE： AE ID is the internal identification code of the laboratory.			

4.3 Additional Information

GPRS	GMSK	Support	GPRS Multislot Class	12
EGPRS	GMSK	Support	EGPRS Multislot Class	12
			8PSK on the uplink	No

5. Test Configuration Information

5.1 Laboratory Environmental Conditions

5.1.1 Permanent Facilities

Relative Humidity	Min. = 45%, Max. = 55 %		
Atmospheric Pressure	101kPa		
Temperature	Normal	Minimum	Maximum
	25℃	0℃	45℃
Working Voltage of EUT	Normal	Minimum	Maximum
	7.2V	6.8V	8.4V

5.2 Test Equipments Utilized

Radiated emission test system

No.	Name	Model	S/N	Manufacturer	Cal. Date	Cal. Interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	October 17,2022	1Year
					May 10,2021	1.5 Years
2	Universal Radio Communication Tester	CMW500	104178	R&S	October 17,2022	1Year
					May 10,2021	1.5 Years
3	EMI Test Receiver	ESU40	100307	R&S	February 23, 2022	1 Year
4	TRILOG Broadband Antenna	VULB9163	VULB9163-515	Schwarzbeck	March 11, 2022	1 Year
5	Double- ridged Waveguide Antenna	ETS-3117	00135890	ETS	March 9, 2022	2 Years
6	2-Line V-Network	ENV216	101380	R&S	February 21, 2022	1 Year
7	EMI Test Software	EMC32 V9.15.00	N/A	R&S	N/A	N/A

Anechoic chamber

Fully anechoic chamber by ETS.

Conducted Test System

No.	Name	Model	S/N	Manufacturer	Cal. Date	Cal. Interval
1	Universal Radio Communication Tester	CMW500	148874	R&S	August. 23,2022	1 Year

2	Vector Signal Analyzer	FSQ26	101091	R&S	August. 23,2022	1 Year
3	Programmable power supply	Keithley 2303	4039070	Keithley	July 12,2022	1 Year
4	Eagle Test Software	Eagle V3.3	N/A	ECIT	N/A	N/A
5	Temperature Chamber	B-TF-107C	BTF107C-201804107	BoYi	June 30,2022	1Year

5.3 Measurement Uncertainty

Measurement uncertainty for all the testing in this report are within the limit specified in 3IN documents. The detailed measurement uncertainty is defined in 3IN documents.

Measurement Items	Range	Confidence Level	Calculated Uncertainty
Maximum Peak Output Power	30MHz-3600MHz	95%	±0.544dB
EBW and VBW	30MHz-3600MHz	95%	±62.04Hz
Transmitter Spurious Emission-Conducted	30MHz-2GHz	95%	±0.90dB
Transmitter Spurious Emission-Conducted	2GHz-3.6GHz	95%	±0.88dB
Transmitter Spurious Emission-Conducted	3.6GHz-8GHz	95%	±0.96dB
Transmitter Spurious Emission-Conducted	8GHz-20GHz	95%	±0.94dB
Transmitter Spurious Emission-Radiated	9KHz-30MHz	95%	±5.66dB
Transmitter Spurious Emission-Radiated	30MHz-1000MHz	95%	±4.98dB
Transmitter Spurious Emission-Radiated	1000MHz -18000MHz	95%	±5.06dB
Transmitter Spurious Emission-Radiated	18000MHz -40000MHz	95%	±5.20dB
Frequency stability	1MHz-16GHz	95%	±62.04Hz

6. Test Results

6.1 Output Power

6.1.1 Summary

During the process of testing, the EUT was controlled Rhode & Schwarz Digital Radio. Communication tester to ensure max power transmission and proper modulation.
This result contains peak output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

6.1.2 Conducted

6.1.2.1Method of Measurements

Method of measurements please refer to KDB971168 D01 v03 clause 5.
The EUT was set up for the max output power with pseudo random data modulation.
The power was measured with Rhode & Schwarz Spectrum Analyzer FSQ(peak).
These measurements were done at 3 frequencies, 1850.2 MHz, 1880.0MHz and 1909.8MHz for PCS1900 band; 824.2MHz, 836.6MHz and 848.8MHz for GSM850 band. (bottom, middle and top of operational frequency range).

6.1.2.2 Test procedures

The transmitter output port was connected to base station.
Set the EUT at maximum power through base station.
Select lowest, middle, and highest channels for each band and different modulation.
Measure maximum average power for other modulation signal.

6.1.2.3 Limit

22.913(a) Mobile stations are limited to 7 watts.
24.232(c) Mobile and portable stations are limited to 2 watts.
Rule RSS-132 5.4 specifies that “The transmitter output power shall be measured in terms of average power. The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.”Limit ≤ 11.5 W (40.6 dBm)
Rule RSS-133 6.4 specifies that " Mobile stations and hand-held portables are limited to 2 watts maximum e.i.r.p. The equipment shall employ means to limit the power to the minimum necessary for successful communication”.Limit ≤ 2 W (33 dBm)

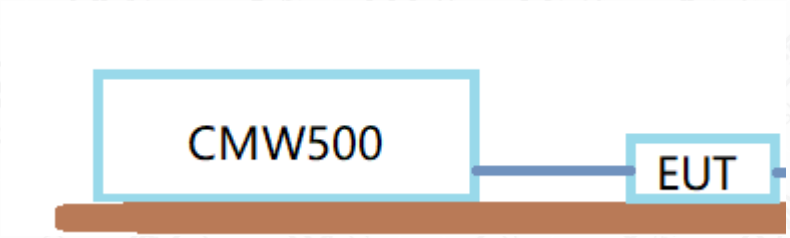
6.1.2.4 Test Proceduer

The transmitter output power was connected to calibrated attenuator, the other end of which was connected to signal analyzer. Transmitter output power was read off the power in dBm. The power outputs at the transmitter antenna port was determined by adding the value of attenuator to the signal analyzer reading.

6.1.2.5 GSM Test Condition

RBW	VBW	Sweep time	Span
3MHz	10MHz	Auto	50MHz

6.1.2.6 Test Setup



6.1.2.7 Measurement results

GPRS 850 (GMSK 1 Slot)	
Channel/fc(MHz)	**Peak power (dBm)**
Mid 189/836.4	33.02
Low 128/824.2	32.98
High 251/848.8	32.99
GPRS 1900 (GMSK 1 Slot)	
Channel/fc(MHz)	**Peak power (dBm)**
Mid 661/1880	31.09
Low 512/1850.2	30.43
High 810/1909.8	31.13

6.2 Peak-to-Average Power Ratio

Method of test measurements please refer to KDB971168 D01 v03 clause 5.7.

6.2.1 PAPR Limit

The peak-to-average power ratio (PAPR) of the transmission may not exceed 13Db.

Rule RSS-132: 5.4: the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission. Limit ≤ 13dB

Rule RSS-133 6.4 specifies that " the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission." Limit≤ 13dB

6.2.2 Test procedures

The EUT was connected to the spectrum analyzer and system simulator via a power divider.

Select the spectrum analyzer CCDF function.

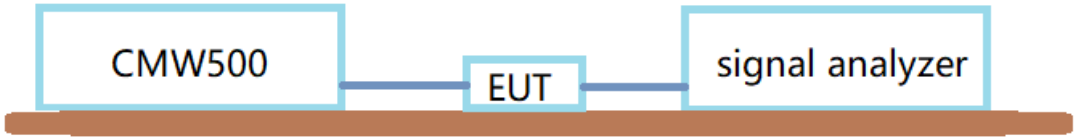
Set RBW ≥ signal's occupied bandwidth.

Set the number of counts to a value that stabilizes the measured CCDF cure;

Sweep time ≥ 1s.

Record the maximum PAPR level associated with a probability of 0.1%.

6.2.3Test Setup



6.2.4 Test results:

GPRS850			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	10.64	10.64	10.67
EDGE 850			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8

PAPR(dB)	8.72	7.66	7.63
GPRS1900			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	7.69	10.06	10.64
EDGE 1900			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	7.69	10.67	10.67

6.3 99% Occupied Bandwidth

Method of test please refer to KDB971168 D01 v03 clause 4.0.

No specific occupied bandwidth requirements in RSS-Gen: 6.6.

6.3.1. Occupied Bandwidth

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of GSM850, PCS1900.

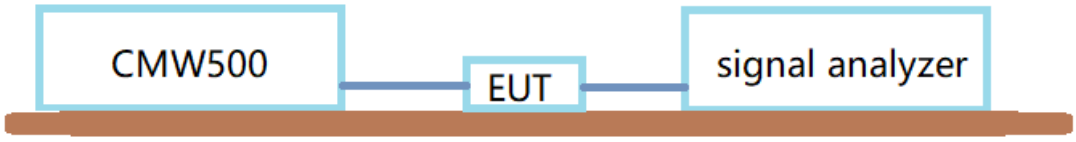
6.3.2 Test Procedure

The EUT output RF connector was connected with a short cable to the signal analyzer.

RBW was set to about 1% of emission BW, VBW >= 3 times RBW,.

99% bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

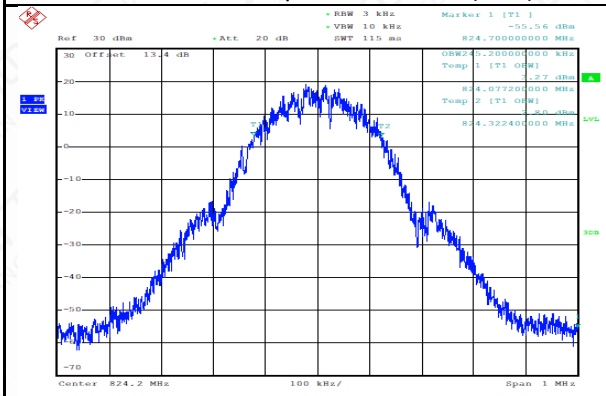
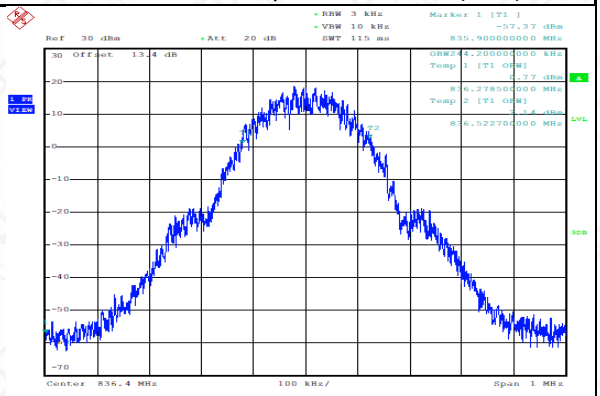
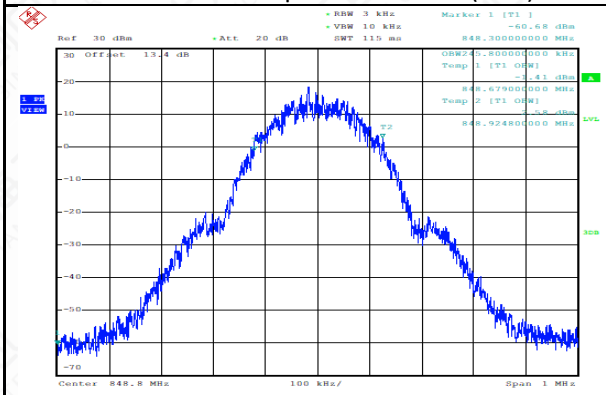
6.3.3 Test Setup

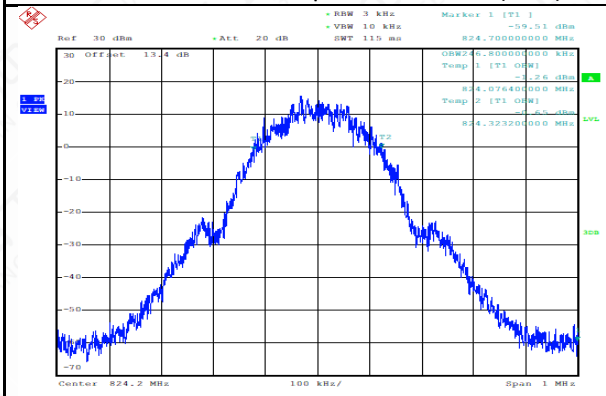
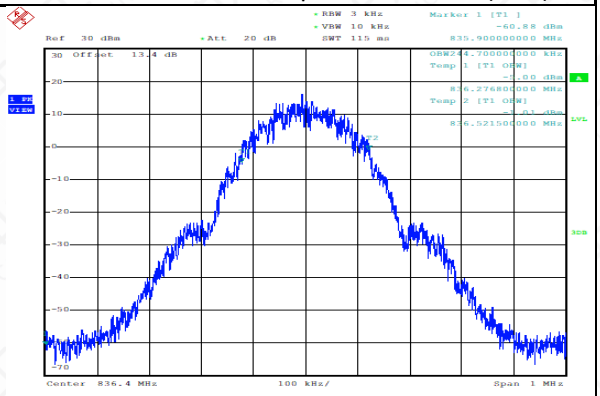
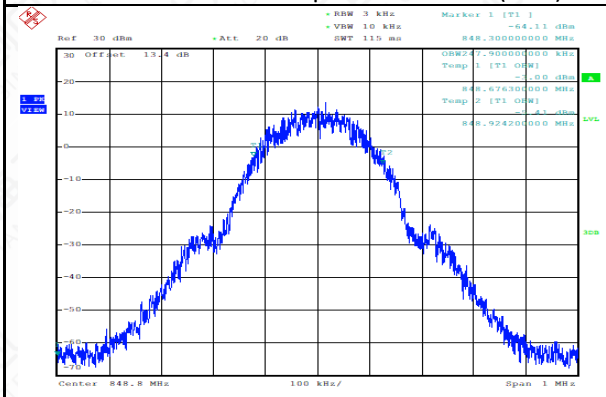


6.3.4 Test result

GPRS850		
Test channel	**Frequency (MHz)**	**99% Occupied Bandwidth(kHz)**
Mid 189	836.4	244.20
Low 128	824.2	245.20
High 251	848.8	245.80
EDGE850		
Test channel	**Frequency (MHz)**	**99% Occupied Bandwidth(kHz)**
Mid 189	836.4	244.70
Low 128	824.2	246.80
High 251	848.8	247.90

Conclusion: PASS

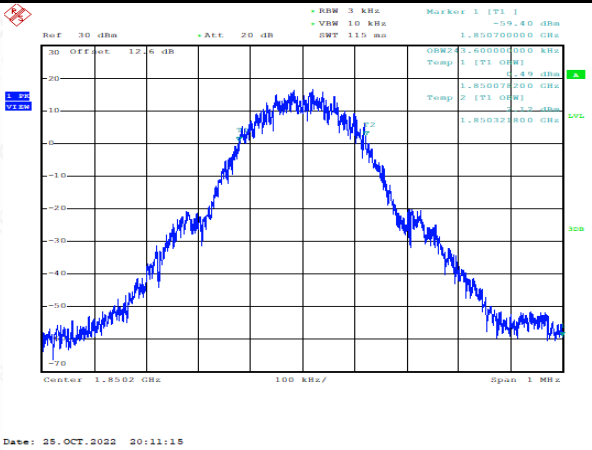
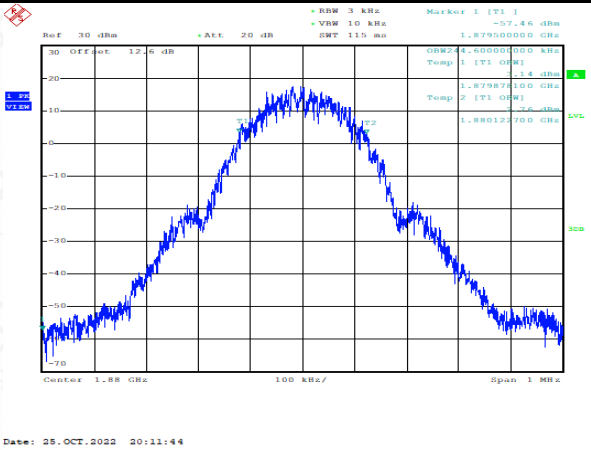
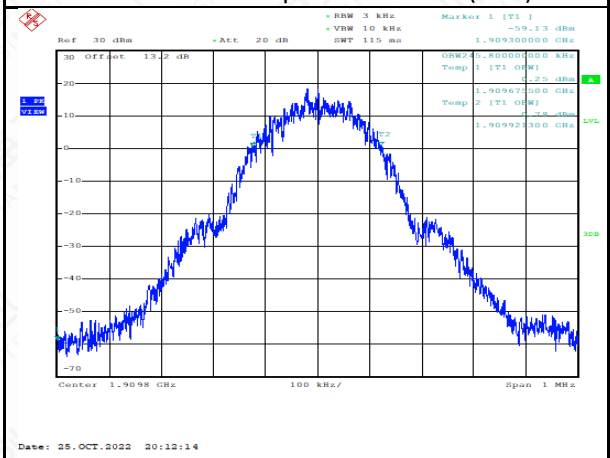
GPRS 850	
Channel 128-Occupied Bandwidth (99%)	Channel 189-Occupied Bandwidth (99%)
	
Channel 251-Occupied Bandwidth (99%)	/
	/

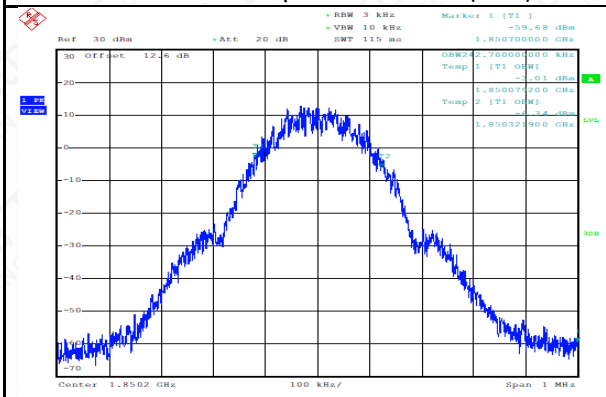
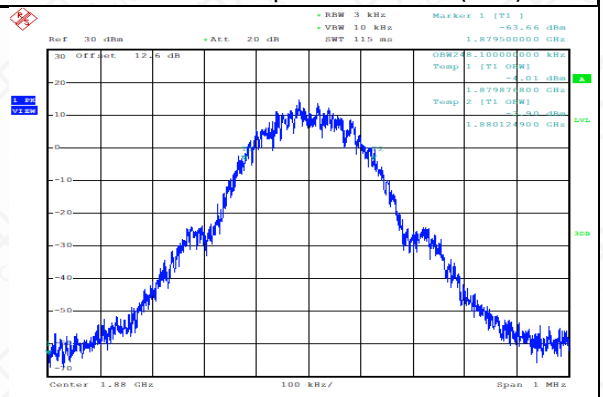
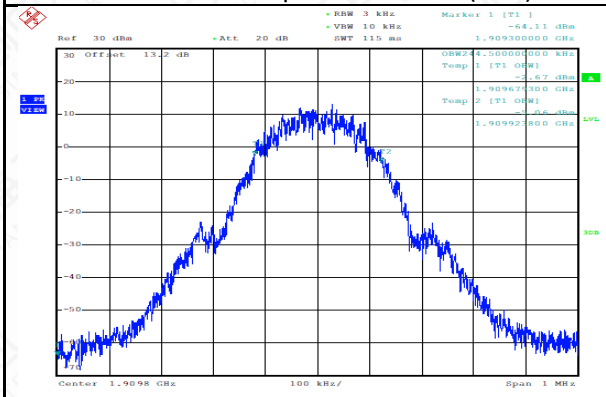
EDGE 850	
Channel 128-Occupied Bandwidth (99%)	Channel 189-Occupied Bandwidth (99%)
	
Channel 251-Occupied Bandwidth (99%)	/
	/

GPRS1900		
Test channel	**Frequency (MHz)**	**99% Occupied Bandwidth(kHz)**
Mid 661	1880	244.60
Low 512	1850.2	243.60
High 810	1909.8	245.80

EDGE1900		
Test channel	**Frequency (MHz)**	**99% Occupied Bandwidth(kHz)**
Mid 661	1880	248.10
Low 512	1850.2	242.70
High 810	1909.8	244.50

Conclusion: PASS

GPRS 1900	
Channel 512-Occupied Bandwidth (99%)	Channel 661-Occupied Bandwidth (99%)
	
Channel 810-Occupied Bandwidth (99%)	/
	/

EDGE 1900	
Channel 512-Occupied Bandwidth (99%)	Channel 661-Occupied Bandwidth (99%)
	
Channel 810-Occupied Bandwidth (99%)	/
	/

6.4 -26dB Emission Bandwidth

Method of test please refer to KDB971168 D01 v03 clause 4.0.

No specific occupied bandwidth requirements in RSS-Gen: 6.6.

6.4.1. -26dB Emission Bandwidth

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of WCDMA BANDII.

6.4.2 Test Procedure:

The EUT output RF connector was connected with a short cable to the signal analyzer.

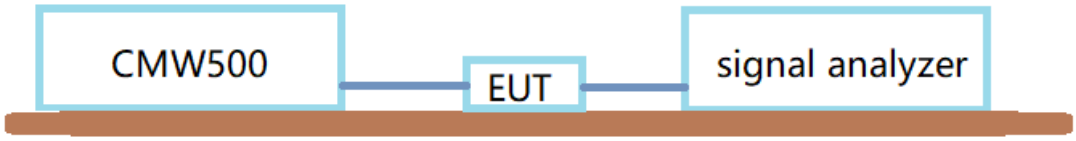
RBW was set to about 1% of emission BW, VBW >= 3 times RBW,.

26dB bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

6.4.3 Measurement methods:

For GSM: signal analyzer setting as: RBW= 3KHz; VBW=10KHz; Span=1MHz.

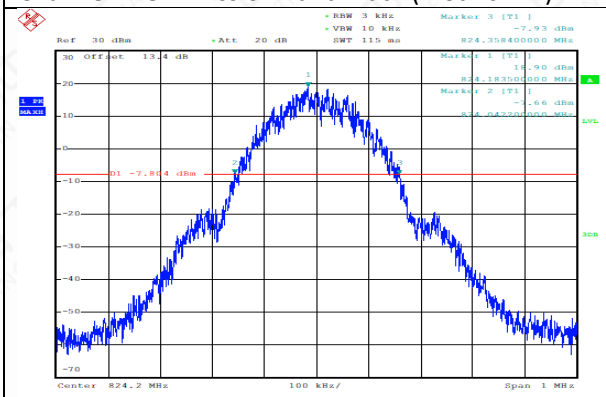
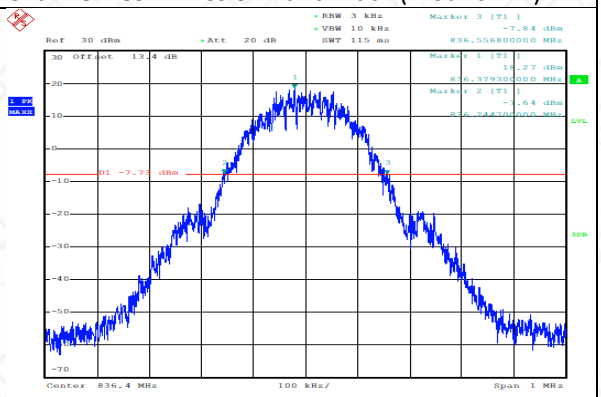
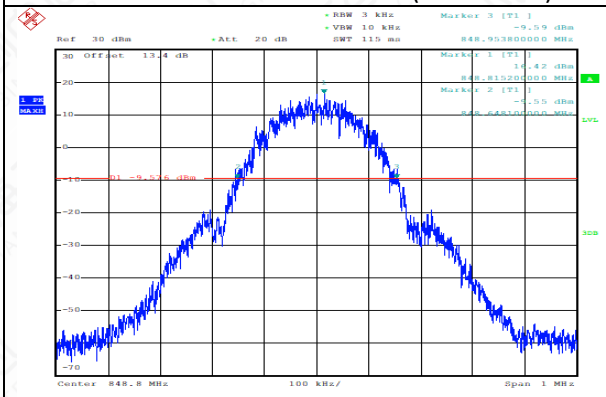
6.4.4 Test Setup

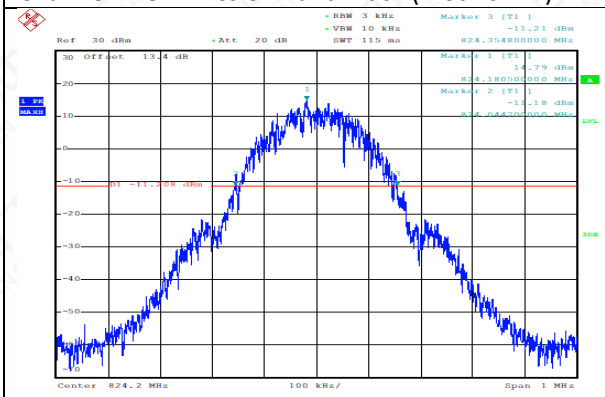
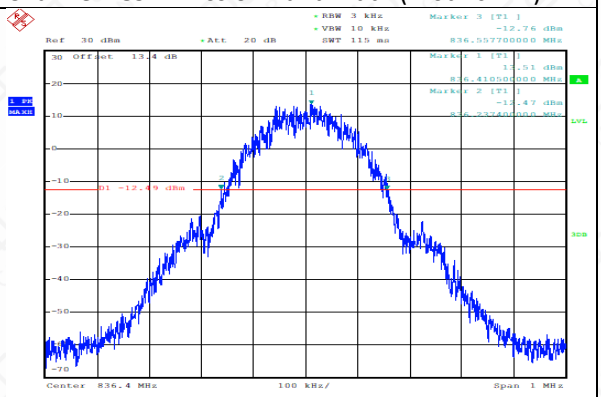
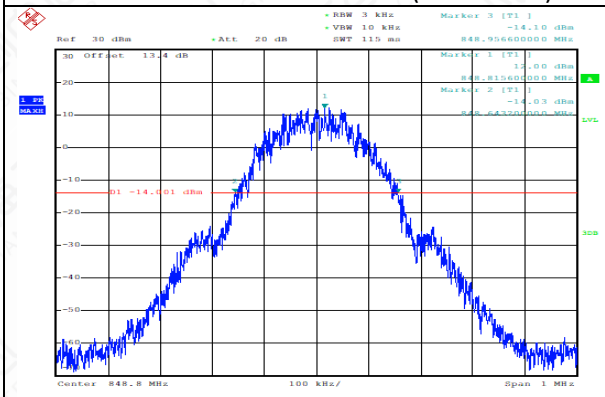


6.4.5 Test results:

GPRS 850		
Test channel	**Frequency (MHz)**	**–26dBc Emission Bandwidth(kHz)**
Mid 189	836.4	312.00
Low 128	824.2	316.00
High 251	848.8	306.00
EDGE 850		
Test channel	**Frequency (MHz)**	**–26dBc Emission Bandwidth(kHz)**
Mid 189	836.4	320.00
Low 128	824.2	310.00
High 251	848.8	313.00

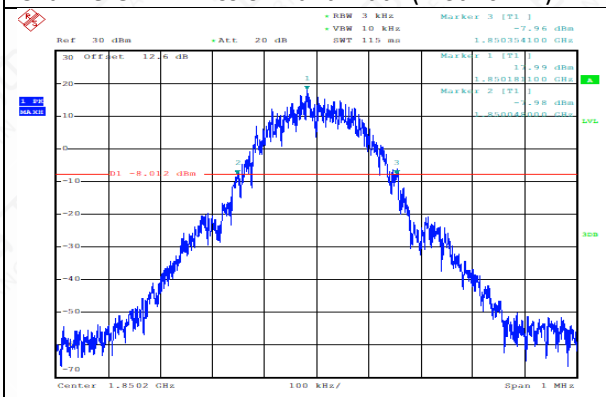
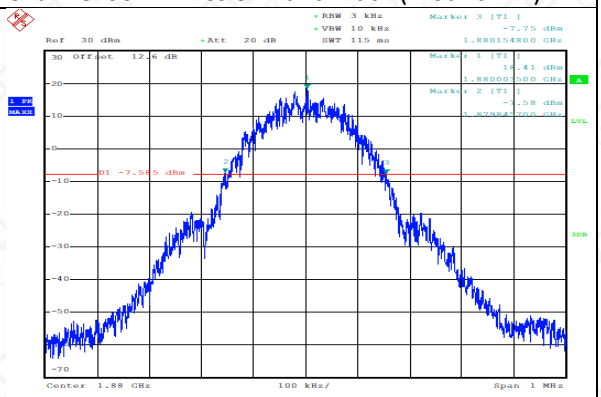
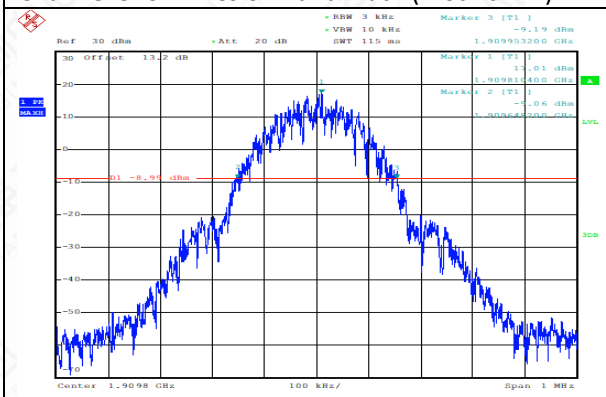
Conclusion: PASS

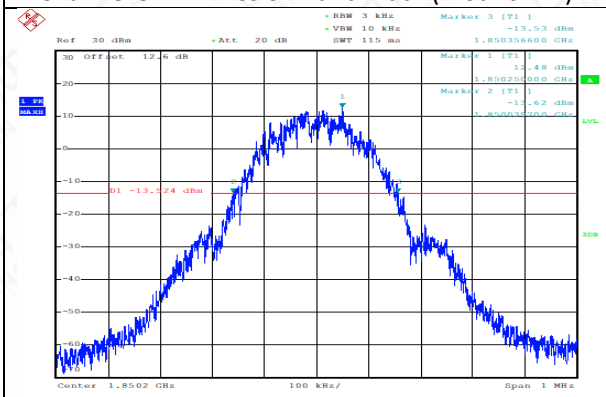
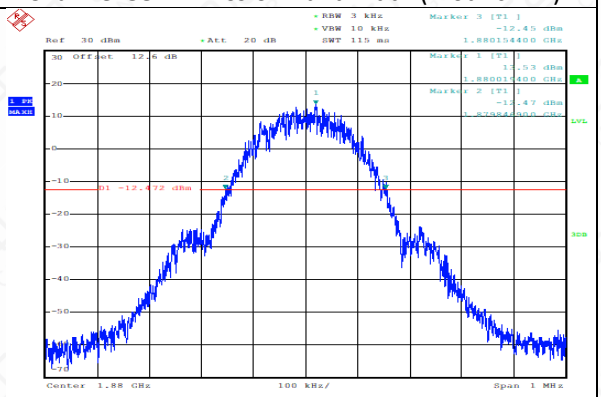
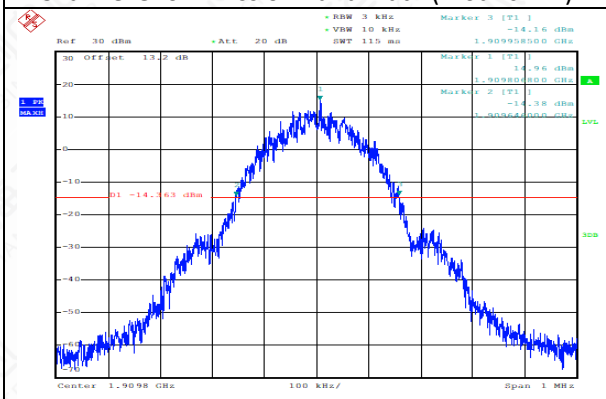
GPRS 850	
Channel 128- Emission Bandwidth (-26dBc BW)	Channel 189- Emission Bandwidth (-26dBc BW)
	
Channel 251- Emission Bandwidth (-26dBc BW)	/
	/

EDGE 850	
Channel 128- Emission Bandwidth (-26dBc BW)	Channel 189- Emission Bandwidth (-26dBc BW)
	
Channel 251- Emission Bandwidth (-26dBc BW)	/
	/

GPRS1900		
Test channel	**Frequency (MHz)**	**–26dBc Emission Bandwidth(kHz)**
Mid 661	1880	309.00
Low 512	1850.2	306.00
High 810	1909.8	305.00
EDGE1900		
Test channel	**Frequency (MHz)**	**–26dBc Emission Bandwidth(kHz)**
Mid 661	1880	307.00
Low 512	1850.2	317.00
High 810	1909.8	312.00

Conclusion: PASS

GPRS 1900	
Channel 512- Emission Bandwidth (-26dBc BW)	Channel 661- Emission Bandwidth (-26dBc BW)
	
Channel 810- Emission Bandwidth (-26dBc BW)	/
	/

EDGE 1900	
Channel 512- Emission Bandwidth (-26dBc BW)	Channel 881- Emission Bandwidth (-26dBc BW)
	
Channel 810- Emission Bandwidth (-26dBc BW)	/
	/

6.5 Band Edge at antenna terminals

Method of test measurements please refer to KDB971168 D01 v03 clause 6

6.5.1 Limit:

Part 22.917(a),24.238(a) state that The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Rule RSS-132: 5.5: (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

(ii)After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required. Limit-13 dBm

Rule RSS-133 6.5 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required."Limit -13 dBm

6.5.2 Test procedure:

The RF output of the transceiver was connected to a signal analyzer through appropriate attenuation.

In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band

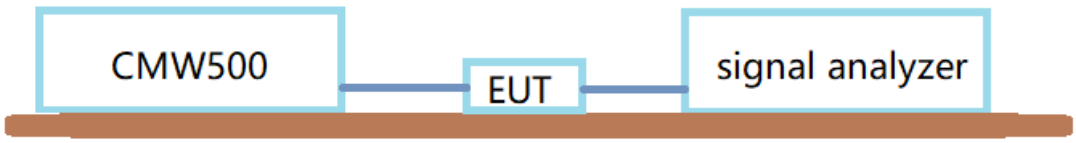
The limit line is derived from 43+10log(P) Db below the transmitter power P(Watts)

=P(W)-[43+10log(P)](Db)

=[30+10log(P)](dBm)-[43+10log(P)](Db)

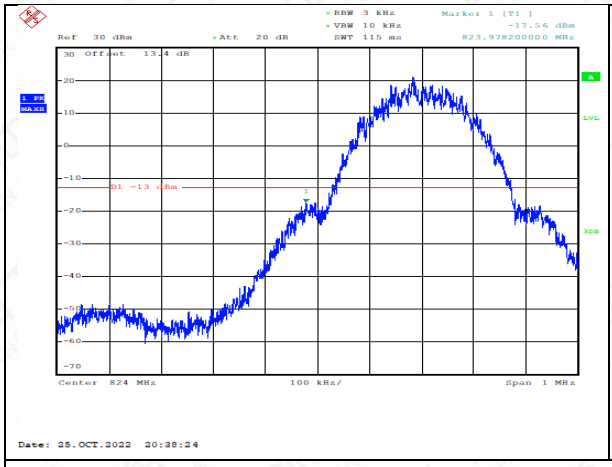
=-13dBm

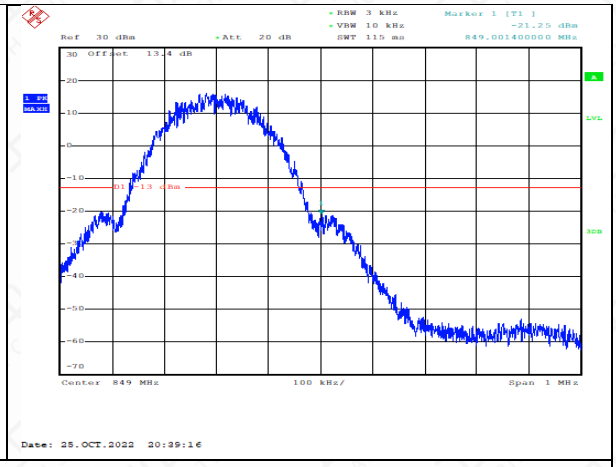
6.5.3 Test Setup



6.5.4 Test Result:

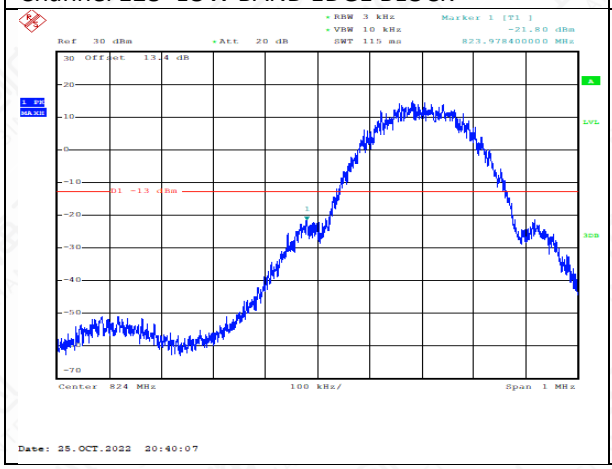
GPRS 850	
Channel 128- LOW BAND EDGE BLOCK	Channel 251- LOW BAND EDGE BLOCK



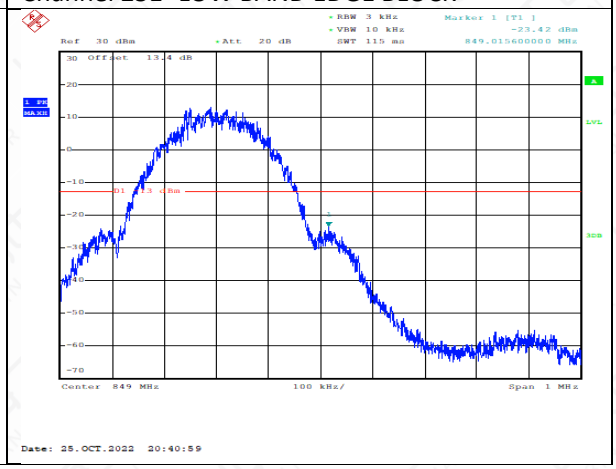


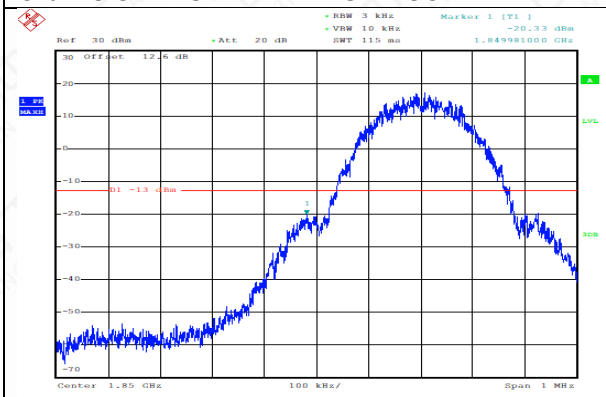
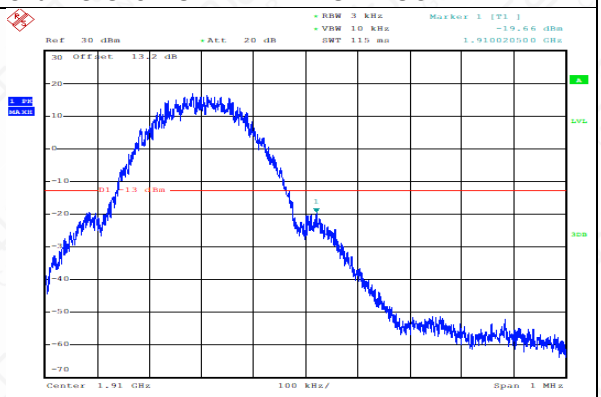
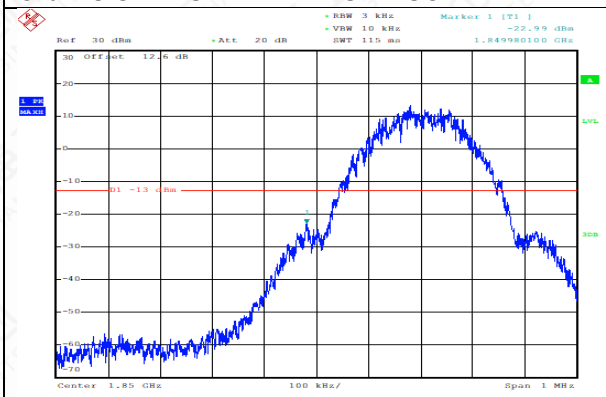
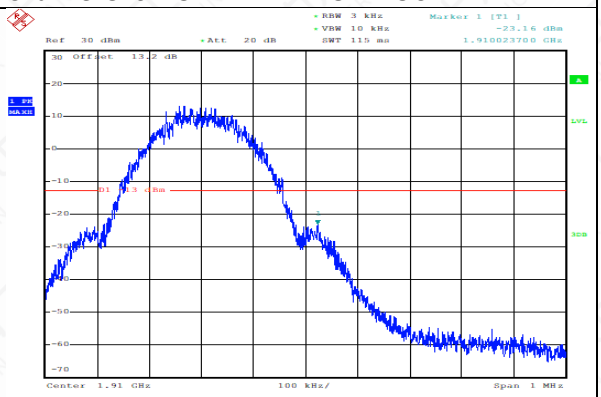
EDGE 850

Channel 128- LOW BAND EDGE BLOCK



Channel 251- LOW BAND EDGE BLOCK



GPRS 1900	
Channel 512- LOW BAND EDGE BLOCK	Channel 810- LOW BAND EDGE BLOCK
	
Date: 25.OCT.2022 20:46:07	Date: 25.OCT.2022 20:46:59
EDGE 1900	
Channel 512- LOW BAND EDGE BLOCK	Channel 810- LOW BAND EDGE BLOCK
	
Date: 25.OCT.2022 20:47:51	Date: 25.OCT.2022 20:48:42

6.6 Frequency Stability

Method of test measurements please refer to KDB971168 D01 v03 clause 9

6.6.1 Method of Measurement and test procedures

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMU200 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -10℃.
3. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on mid channel of GSM850, PCS1900, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at -10℃ increments from -10℃ to +50℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50℃.
7. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 C increments from +50℃ to -10℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

6.6.2. Measurement Limit

6.6.2.1. For Hand carried battery powered equipment

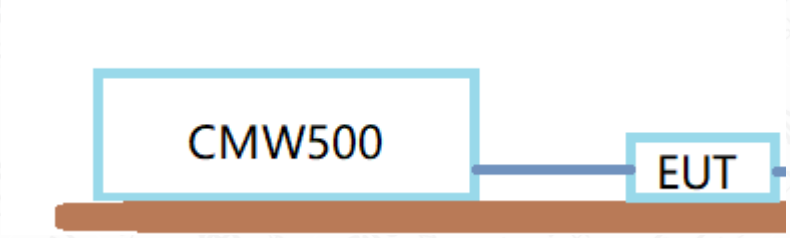
According to the JTC standard the GSM frequency stability of the carrier shall be accurate to within 0.1ppm of the received frequency from the base station. And the WCDMA is 2.5ppm. This accuracy is sufficient to meet Sec.24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.6VDC and 4.35VDC, with a nominal voltage of 3.8VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages was varied from 85% to 115%.

6.6.2.2. For equipment powered by primary supply voltage

According to the JTC standard the GSM frequency stability of the carrier shall be accurate to within 0.1ppm of the received frequency from the base station. And the WCDMA is 2.5ppm. This accuracy is sufficient to meet Sec.24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for

other than hand carried battery equipment.

6.3.3 Test Setup



6.6.4 Test results

GPRS850Mid Channel/Fc (MHz) 189/836.4

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.6	-30	5.29	84
7.6	-20	6.04	84
7.6	-10	7.91	84
7.6	0	3.62	84
7.6	10	4.04	84
7.6	20	7.78	84
7.6	30	6.10	84
7.6	45	5.71	84
7.6	50	6.65	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.2V	25	8.17	84
7.6V	25	7.39	84
8.7V	25	5.29	84

EDGE850Mid Channel/Fc (MHz) 189/836.4

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.6	-30	8.17	84
7.6	-20	7.39	84
7.6	-10	9.27	84
7.6	0	5.49	84
7.6	10	6.68	84
7.6	20	6.97	84
7.6	30	7.68	84
7.6	45	7.01	84
7.6	50	5.91	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.2V	25	7.07	84
7.6V	25	7.43	84
8.7V	25	3.78	84

GPRS1900 Mid Channel/fc(MHz) 661/1880

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.6	-30	19.79	84
7.6	-20	29.44	84
7.6	-10	20.40	84
7.6	0	26.57	84
7.6	10	24.99	84
7.6	20	24.09	84
7.6	30	22.86	84
7.6	45	28.38	84
7.6	50	27.35	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.2V	25	22.89	84
7.6V	25	18.79	84
8.7V	25	28.93	84

EDGE1900 Mid Channel/fc(MHz) 661/1880

Frequency Error VS Temperature

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.6	-30	20.95	84
7.6	-20	25.96	84
7.6	-10	23.70	84
7.6	0	25.57	84
7.6	10	22.28	84
7.6	20	27.60	84
7.6	30	29.02	84
7.6	45	25.09	84
7.6	50	23.12	84

Frequency Error VS Voltage

Power Supply (VDc)	Environment Temperature(℃)	Frequency error(Hz)	Limit (Hz)
7.2V	25	17.82	84
7.6V	25	33.19	84
8.7V	25	22.63	84

6.7 Conducted Spurious Emission

6.7.1 GSM Measurement Method and test procedures

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data taken from 30 MHz to 20 GHz. For GSM850, data taken from 30 MHz to 10 GHz.
2. The sweep time is set automatically by instrument itself. That should be the optimal sweep time for the span and the RBW. If the sweep time is too short, that is sweep is too fast, the sweep result is not accurate; If the sweep time is too long, that is sweep is too low, some frequency components may be lost. The instrument will give a optimal sweep time according the selected span and RBW.
3. The procedure to get the conducted spurious emission is as follows:
The trace mode is set to MaxHold to get the highest signal at each frequency;
Wait 25 seconds; Get the result.
4. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

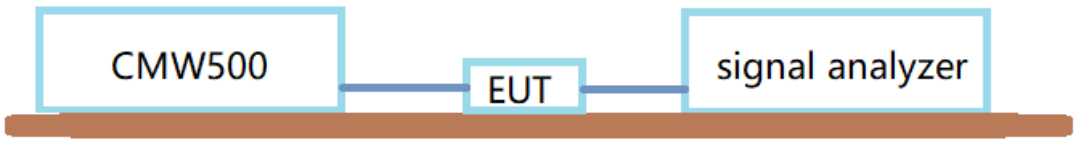
GSM 850 Transmitter

Channel	Frequency(MHz)
128	824.2
189	836.4
251	848.8

PCS 1900 Transmitter

Channel	Frequency(MHz)
512	1850.2
661	1880.0
810	1909.8

6.7.1.1 Test Setup



6.7.1.2 Measurement result

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

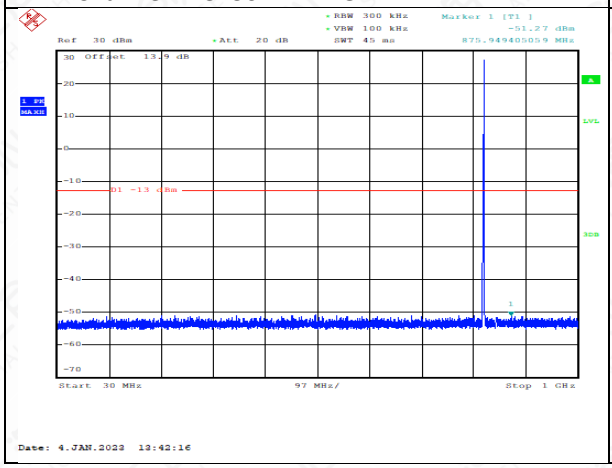
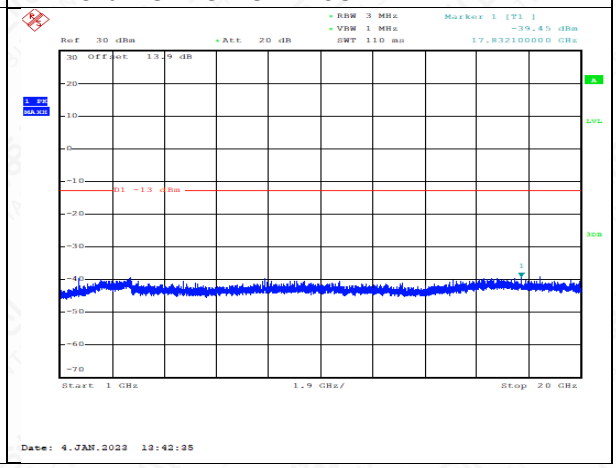
The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Rule RSS-132 5.5 specifies that " In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

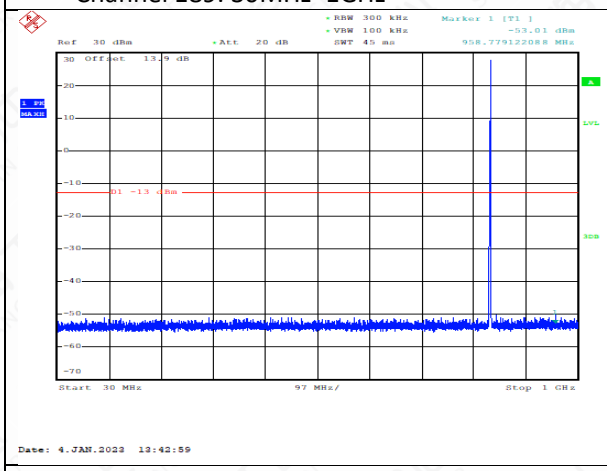
(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required." Limit -13 dBm

Rule RSS-133 6.5 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm.

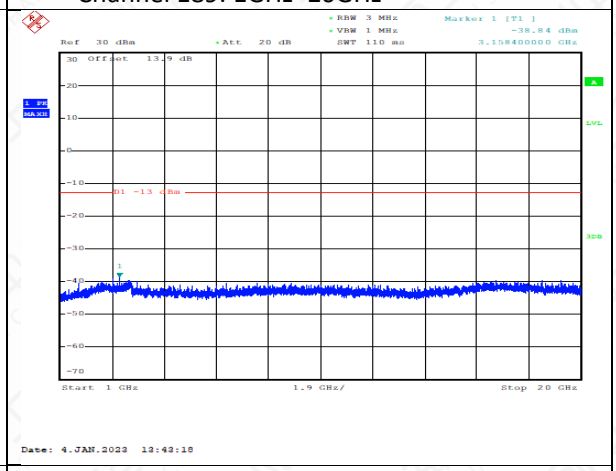
Note: peak above the limit line is the carrier frequency.

GPRS850	
Channel 128: 30MHz~1GHz	Channel 128: 1GHz~20GHz
	

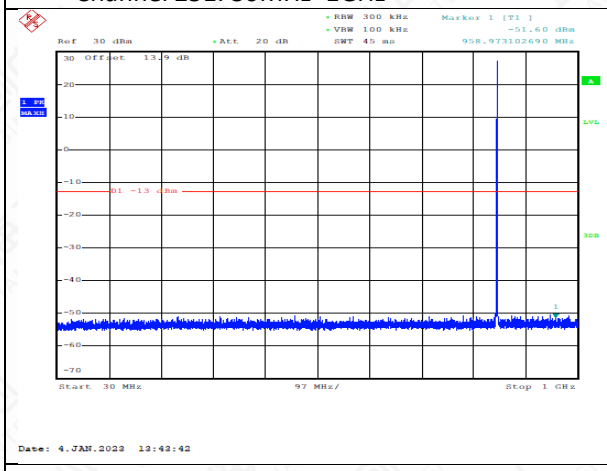
Channel 189: 30MHz~1GHz



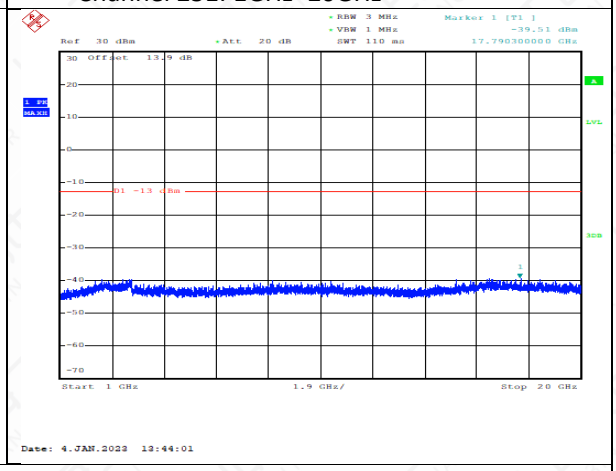
Channel 189: 1GHz~20GHz



Channel 251: 30MHz~1GHz

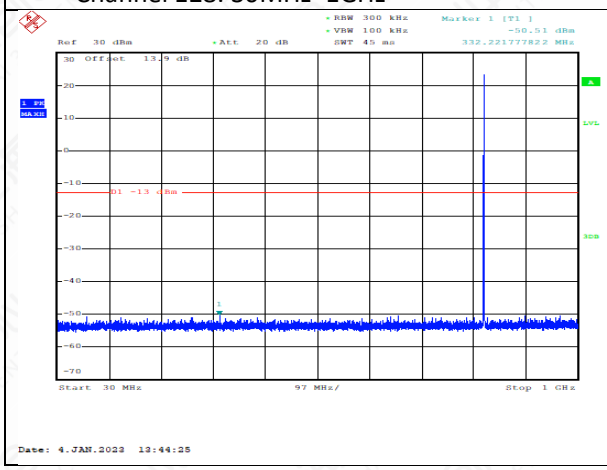


Channel 251: 1GHz~20GHz

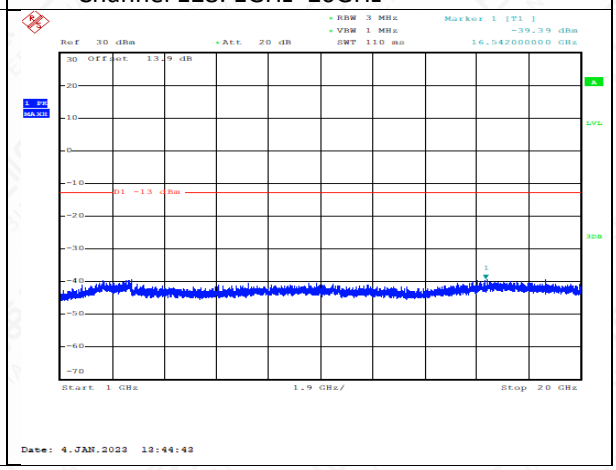


EDGE850

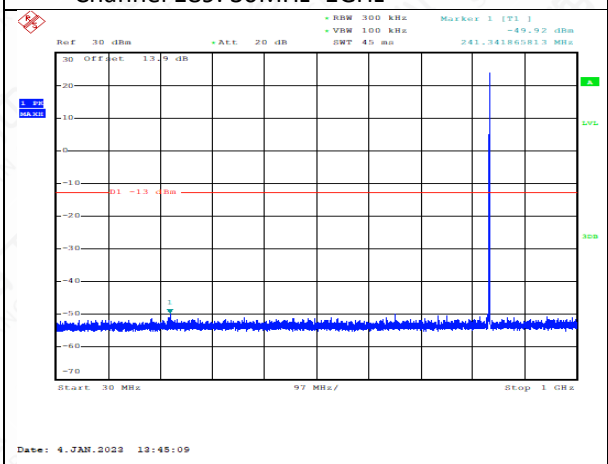
Channel 128: 30MHz~1GHz



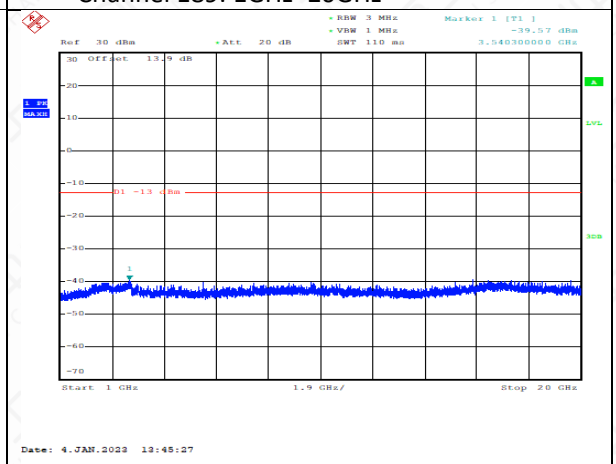
Channel 128: 1GHz~20GHz



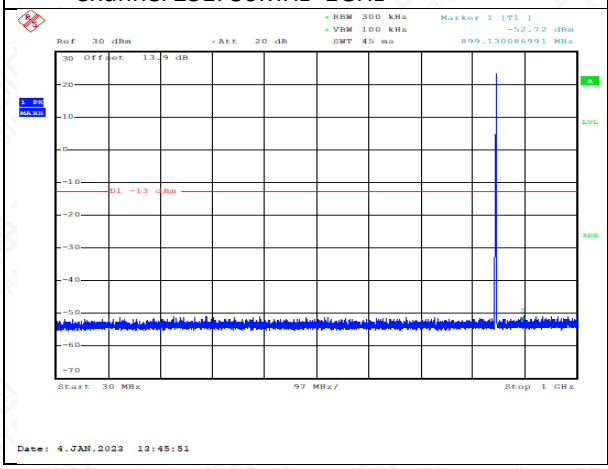
Channel 189: 30MHz~1GHz



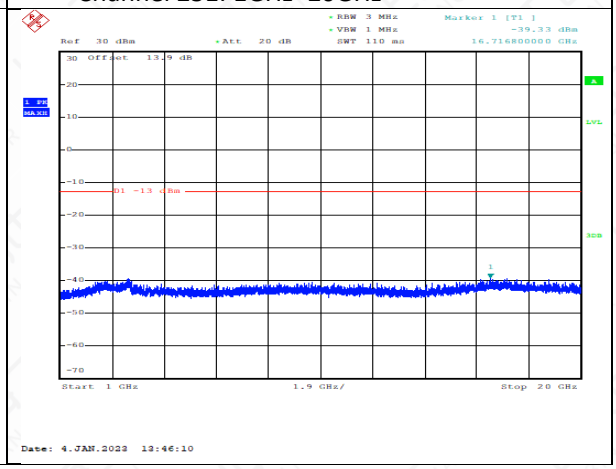
Channel 189: 1GHz~20GHz



Channel 251: 30MHz~1GHz

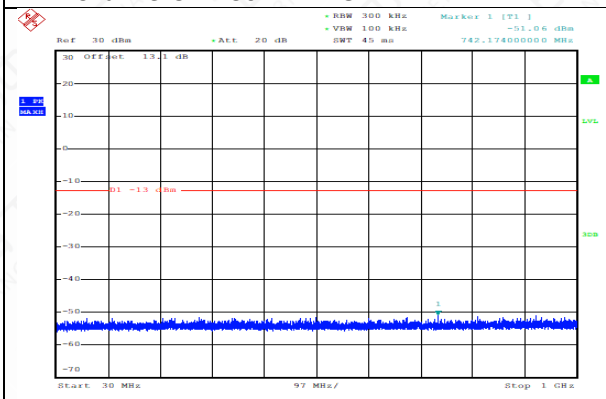


Channel 251: 1GHz~20GHz

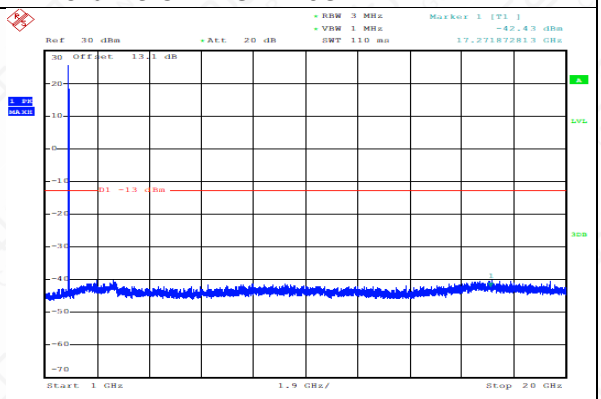


GPRS1900

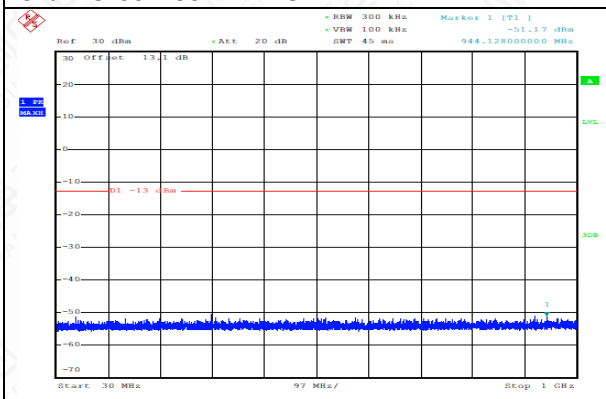
Channel 512: 30MHz~1GHz



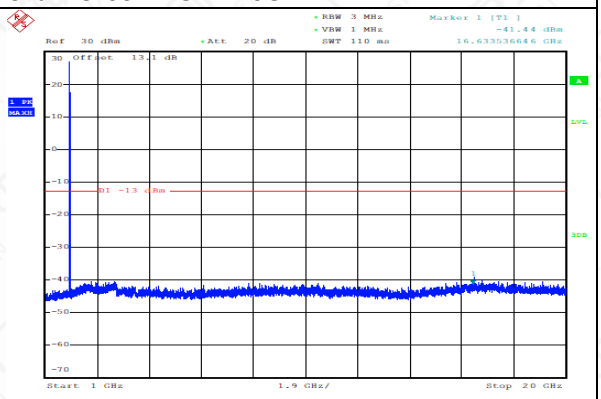
Channel 512: 1GHz~20GHz



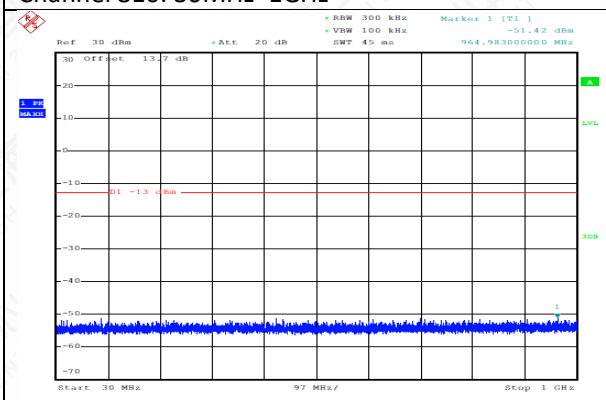
Channel 661: 30MHz~1GHz



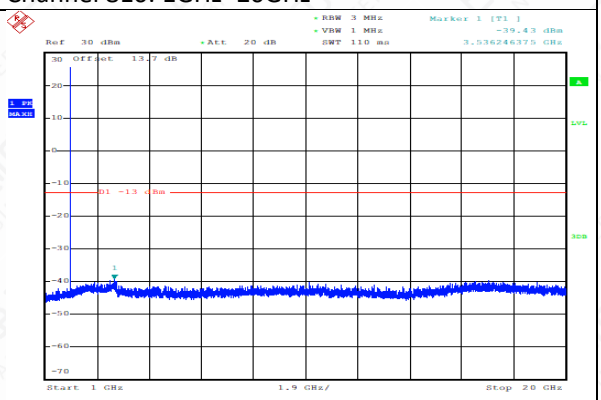
Channel 661: 1GHz~20GHz



Channel 810: 30MHz~1GHz

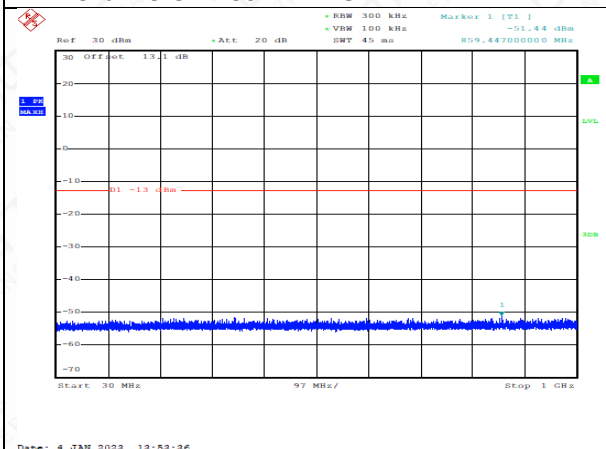


Channel 810: 1GHz~20GHz

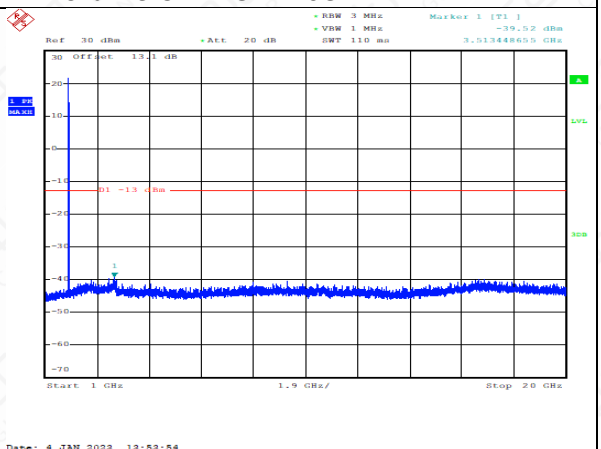


EDGE1900

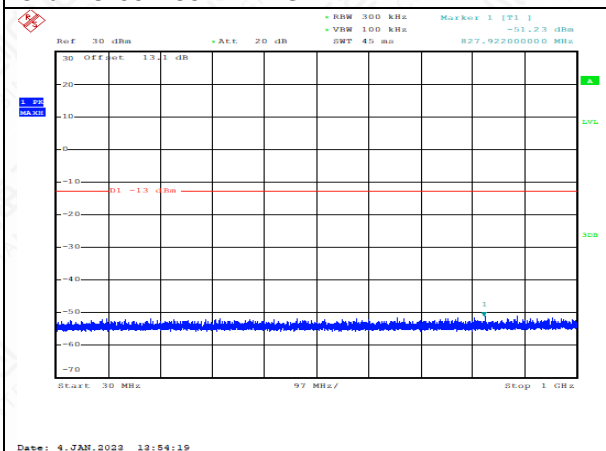
Channel 512: 30MHz~1GHz



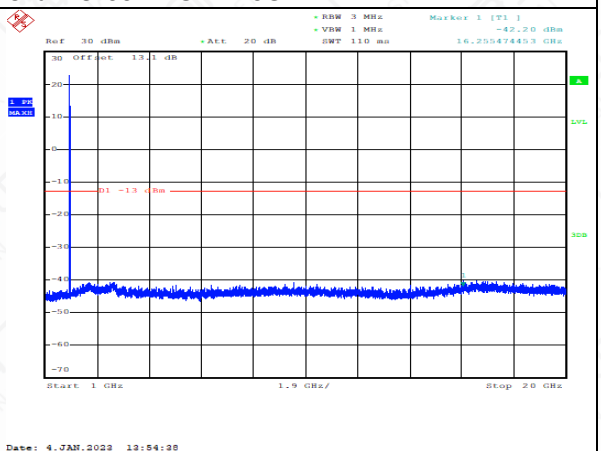
Channel 512: 1GHz~20GHz



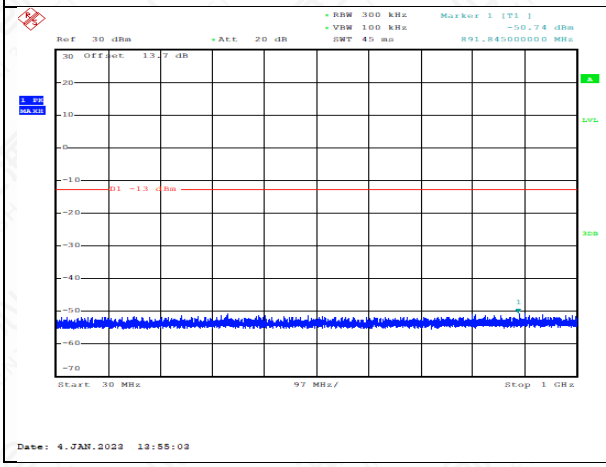
Channel 661: 30MHz~1GHz



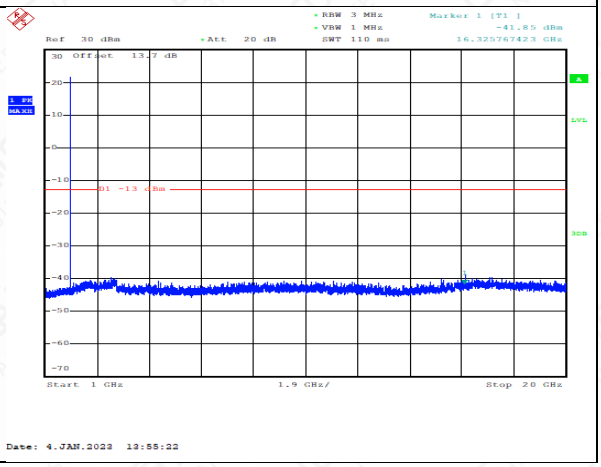
Channel 661: 1GHz~20GHz



Channel 810: 30MHz~1GHz



Channel 810: 1GHz~20GHz



6.8 Radiated

6.8.1 EIRP

6.8.1.1 GSM EIRP

6.8.1.1.1. Description

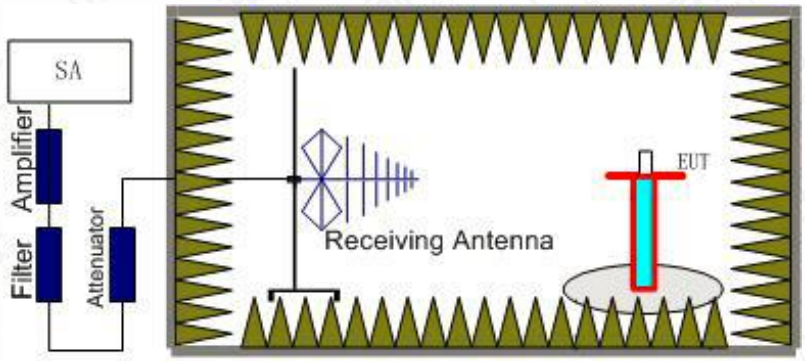
This is the test for the maximum radiated power from the EUT.

Rule Part 24.232(c) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage." Rule Part 22.913(a) specifies " The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

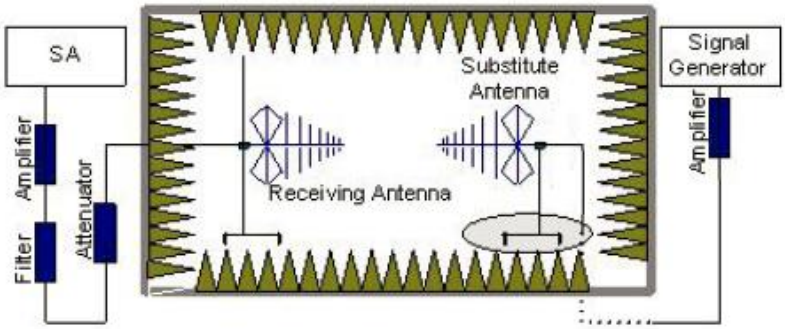
6.8.1.1.2. Method of Measurement

The measurements procedures in TIA-603E-2016 are used.

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the

substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna.

The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

The measurement results are obtained as described below:

Power (EIRP)=PMea+ PAg -Pcl+ Ga

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.

6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.

6.8.1.1.3. Method of Measurement

Rule 2.1051/22.917/24.238/22.913/24.232 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm

Rule 2.1051/22.917/24.238/22.913/24.232 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm

Rule RSS-132 5.5 specifies that " In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required." Limit -13 dBm

Rule RSS-133 6.5 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required. Limit -13 dBm

6.8.1.1.4.Measurement result

GSM850

GPRS(GMSK)

Frequency(MHz)	Peak EIRP (dBm)	Peak ERP (dBm)	Polarization
824.2	29.34	27.19	H
836.6	29.53	27.38	H
848.8	29.63	27.48	H

PCS 1900

GPRS (GMSK)

Frequency(MHz)	Peak EIRP (dBm)	Polarization
1850.2	29.73	V
1880.0	30.39	H
1909.8	30.43	V

6.8.2 EMISSION LIMIT

6.8.2.1 GSM Measurement Method

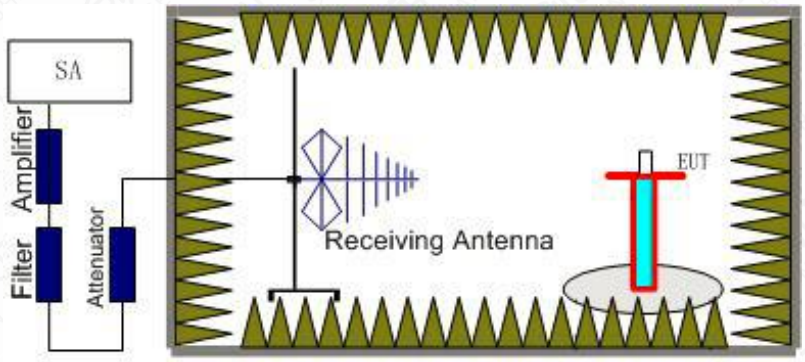
The measurements procedures in TIA-603E-2016 are used.

The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set as outlined in Part 24.238 and Part 24.917.

The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of PCS1900 and GSM850.

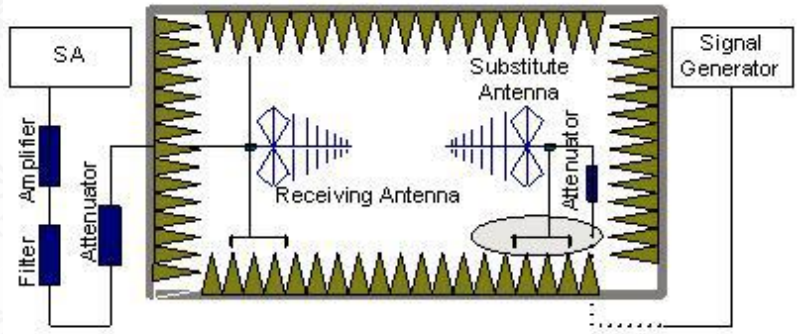
6.8.2.2 The procedure of radiated spurious emissions is as follows

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10thharmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).

3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss (Ppl) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain (Ga) should be recorded after test.

A amplifier should be connected in for the test.

The Path loss (Ppl) is the summation of the cable loss .

The measurement results are obtained as described below:

Power(EIRP)=PMea- Ppl+ Ga

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.

6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi

6.8.2.3 Measurement Limit

Rule 2.1051/22.917/24.238/22.913/24.232 specifies that " In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required." Limit -13 dBm

Rule 2.1051/22.917/24.238/22.913/24.232 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the

transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm

6.8.2.4 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the PCS1900 band (1850.2 MHz, 1880 MHz and 1909.8 MHz) and GSM850 band (824.2MHz, 836.6MHz, 848.8MHz) . It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the PCS1900 ,GSM850 into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

6.8.2.5 Measurement Results Table

Frequency	Channel	Frequency Range	Result
GSM850	Low	30MHz~10GHz	Pass
	Middle	30MHz~10GHz	Pass
	High	30MHz~10GHz	Pass
GSM1900	Low	30MHz~20GHz	Pass
	Middle	30MHz~20GHz	Pass
	High	30MHz~20GHz	Pass

Note:

Power(ERP)= Pmea-Pcl+Ga

This method Applicable to the following table.

Standard version

Main Supply

RSE-GPRS850-S03aa-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
2436.4	-34.82	5.3	5.6	-34.52	-13	V
4185.0	-49.58	7.0	8.9	-47.68	-13	V
5859.2	-44.63	8.4	10.2	-42.83	-13	H
7216.9	-49.49	9.5	11.4	-47.59	-13	H
8369.2	-49.44	10.1	12.4	-47.14	-13	V
9207.7	-37.85	10.5	12.6	-35.75	-13	V

RSE-GPRS850-S03aa-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization

2577.9	-40.82	5.5	5.6	-40.72	-13	H
4183.8	-48.02	7.0	8.9	-46.12	-13	H
5550.0	-50.21	8.2	9.8	-48.61	-13	H
6693.8	-49.36	9.1	10.9	-47.56	-13	V
7533.8	-49.22	9.7	11.6	-47.32	-13	V
8370.8	-49.7	10.1	12.4	-47.4	-13	V

RSE-GPRS850-S03aa-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2427.9	-37.71	5.3	5.6	-37.41	-13	H
4185.0	-47.1	7.0	8.9	-45.2	-13	V
5859.2	-45.65	8.4	10.2	-43.85	-13	H
7384.6	-49.44	9.7	11.6	-47.54	-13	H
8370.8	-50.07	10.1	12.4	-47.77	-13	V
9207.7	-44.65	10.5	12.6	-42.55	-13	H

RSE-EGPRS850-S03aa-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2453.6	-38.79	5.4	5.6	-38.59	-13	H
4185.0	-49.61	7.0	8.9	-47.71	-13	H
5163.5	-48.72	7.9	9.4	-47.22	-13	V
6329.2	-48.99	8.8	10.3	-47.49	-13	H
7503.1	-50.21	9.7	11.6	-48.31	-13	H
8943.1	-48.91	10.4	12.6	-46.71	-13	V

RSE-EGPRS850-S03aa-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2735.4	-41.04	5.7	6.1	-40.64	-13	H
4185.0	-49.11	7.0	8.9	-47.21	-13	H
5213.1	-47.88	8.0	9.4	-46.48	-13	H
6695.4	-49.32	9.1	10.9	-47.52	-13	V
8007.7	-50.59	9.9	12.2	-48.29	-13	H

9207.7	-45.82	10.5	12.6	-43.72	-13	V

RSE-EGPRS850-S03aa-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
2791.1	-39.46	5.7	6.1	-39.06	-13	H
4185.0	-51.65	7.0	8.9	-49.75	-13	V
5209.6	-47.9	8.0	9.4	-46.5	-13	H
6384.6	-48.81	8.9	10.6	-47.11	-13	V
7646.2	-50.15	9.7	11.8	-48.05	-13	V
9207.7	-47.34	10.5	12.6	-45.24	-13	V

RSE-GPRS1900-M-S03aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-48.51	6.7	7.9	-47.31	-13	H
5729.4	-20.58	8.5	10.2	-18.88	-13	V
7639.2	-45.27	9.7	11.8	-43.17	-13	H
9548.4	-34	10.7	12.7	-32	-13	V
11458.8	-32.87	12.3	12.3	-32.87	-13	H
13368.0	-30.45	13.7	12.3	-31.85	-13	V

RSE-GPRS1900-L-S03aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-48.24	6.7	7.9	-47.04	-13	H
5729.4	-19.53	8.5	10.2	-17.83	-13	V
7638.0	-43.98	9.7	11.8	-41.88	-13	H
9547.2	-34.71	10.7	12.7	-32.71	-13	V
11457.6	-34.49	12.3	12.3	-34.49	-13	H
13368.0	-29.05	13.7	12.3	-30.45	-13	V

RSE-GPRS1900-H-S03aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
4282.8	-53.81	7.1	8.9	-52.01	-13	H
5729.4	-18.86	8.5	10.2	-17.16	-13	H
7638.0	-46.82	9.7	11.8	-44.72	-13	H

9548.4	-33.84	10.7	12.7	-31.84	-13	H
11458.8	-35.94	12.3	12.3	-35.94	-13	H
13368.0	-27.77	13.7	12.3	-29.17	-13	H

RSE-EGPRS1900-S03aa-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3820.2	-50.66	6.7	7.9	-49.46	-13	H
5729.4	-25.08	8.5	10.2	-23.38	-13	H
7639.2	-45.12	9.7	11.8	-43.02	-13	H
9549.6	-41.95	10.7	12.7	-39.95	-13	V
11458.8	-32.79	12.3	12.3	-32.79	-13	V
13369.2	-30.27	13.7	12.3	-31.67	-13	V

RSE-EGPRS1900-S03aa-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3818.4	-48.74	6.7	7.9	-47.54	-13	H
5729.4	-21.66	8.5	10.2	-19.96	-13	V
7638.0	-45.44	9.7	11.8	-43.34	-13	H
9548.4	-43.05	10.7	12.7	-41.05	-13	V
11458.8	-32.33	12.3	12.3	-32.33	-13	V
13369.2	-30.28	13.7	12.3	-31.68	-13	V

RSE-EGPRS1900-S03aa-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3819.0	-44.64	6.7	7.9	-43.44	-13	H
5728.8	-25.57	8.5	10.2	-23.87	-13	V
7639.2	-47.69	9.7	11.8	-45.59	-13	V
9548.4	-42.13	10.7	12.7	-40.13	-13	V
11458.8	-35.61	12.3	12.3	-35.61	-13	H
13369.2	-29.68	13.7	12.3	-31.08	-13	V

Secondary Supply

RSE-GPRS1900-H-S05aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-47.71	6.7	7.9	-46.51	-13	H
5729.4	-18.19	8.5	10.2	-16.49	-13	V
7639.2	-42.64	9.7	11.8	-40.54	-13	V
9549.6	-34.63	10.7	12.7	-32.63	-13	V
11458.8	-33.74	12.3	12.3	-33.74	-13	H
13368.0	-29.59	13.7	12.3	-30.99	-13	V

RSE-GPRS1900-L-S05aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3760.2	-50.08	6.6	7.9	-48.78	-13	V
5639.4	-19.93	8.3	10.2	-18.03	-13	H
7519.2	-41.15	9.7	11.6	-39.25	-13	V
9398.4	-35.47	10.7	12.7	-33.47	-13	H
11280.0	-31.32	12.1	12.3	-31.12	-13	H
13159.2	-28.15	13.0	12.3	-28.85	-13	V

RSE-GPRS1900-M-S05aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3759.6	-48.7	6.6	7.9	-47.4	-13	H
5640.0	-19.92	8.3	10.2	-18.02	-13	H
7520.4	-40.65	9.7	11.6	-38.75	-13	V
9399.6	-33.13	10.7	12.7	-31.13	-13	H
11280.0	-30.23	12.1	12.3	-30.03	-13	V
13159.2	-32.02	13.0	12.3	-32.72	-13	V

Third Supply

RSE-GPRS1900-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-49.29	6.7	7.9	-48.09	-13	H
5728.8	-20.3	8.5	10.2	-18.6	-13	V

7638.0	-46.25	9.7	11.8	-44.15	-13	H
9548.4	-39.34	10.7	12.7	-37.34	-13	V
11458.8	-36.14	12.3	12.3	-36.14	-13	V
13369.2	-31.49	13.7	12.3	-32.89	-13	V

RSE-GPRS1900-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3700.2	-48.59	6.6	7.9	-47.29	-13	V
5550.0	-20.67	8.2	9.8	-19.07	-13	V
7400.4	-46.08	9.7	11.6	-44.18	-13	H
9249.6	-31.67	10.5	12.6	-29.57	-13	V
11101.2	-36.87	12.1	12.3	-36.67	-13	H
12950.4	-35.5	13.2	12.3	-36.4	-13	V

RSE-GPRS1900-M-S03aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3759.6	-48.9	6.6	7.9	-47.6	-13	V
5640.0	-22.04	8.3	10.2	-20.14	-13	V
7520.4	-44.53	9.7	11.6	-42.63	-13	H
9398.4	-36.56	10.7	12.7	-34.56	-13	V
11280.0	-33.3	12.1	12.3	-33.1	-13	H
13160.4	-32.44	13.0	12.3	-33.14	-13	H

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Main Supply

RSE-EGPRS850-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2467.5	-42.27	5.4	5.6	-42.07	-13	V
4182.7	-49.96	7.0	8.9	-48.06	-13	H
5222.3	-46.94	8.0	9.4	-45.54	-13	V
6692.3	-48.77	9.1	10.9	-46.97	-13	H
8006.2	-50.15	9.9	12.2	-47.85	-13	V

9201.5	-40.51	10.5	12.6	-38.41	-13	H

RSE-EGPRS850-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2528.6	-26.49	5.4	5.6	-26.29	-13	V
4776.9	-49.02	7.6	9.0	-47.62	-13	H
5785.4	-49.95	8.4	10.2	-48.15	-13	H
6815.4	-49	9.2	10.9	-47.3	-13	H
8216.9	-51.24	10.1	12.4	-48.94	-13	V
9203.1	-43.54	10.5	12.6	-41.44	-13	V

RSE-EGPRS850-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
1947.9	-44.79	4.7	4.5	-44.99	-13	H
4542.7	-48.95	7.4	8.7	-47.65	-13	H
6326.2	-49.04	8.8	10.3	-47.54	-13	H
7129.2	-50.34	9.4	11.4	-48.34	-13	V
8346.2	-49.1	10.1	12.4	-46.8	-13	V
9203.1	-43.61	10.5	12.6	-41.51	-13	V

RSE-EGPRS1900-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3700.2	-44.61	6.6	7.9	-43.31	-13	V
5550.6	-36.79	8.2	9.8	-35.19	-13	H
7400.4	-47.14	9.7	11.6	-45.24	-13	V
9250.8	-39.25	10.7	12.7	-37.25	-13	H
11101.2	-39.29	12.1	12.3	-39.09	-13	V
12950.4	-22.35	13.2	12.3	-23.25	-13	V

RSE-EGPRS1900-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization

3699.6	-46.83	6.6	7.9	-45.53	-13	V
5550.6	-36.93	8.2	9.8	-35.33	-13	H
7400.4	-48.74	9.7	11.6	-46.84	-13	H
9250.8	-40.82	10.7	12.7	-38.82	-13	H
11101.2	-36.81	12.1	12.3	-36.61	-13	V
12950.4	-23.83	13.2	12.3	-24.73	-13	V

RSE-EGPRS1900-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3700.2	-44.93	6.6	7.9	-43.63	-13	V
5550.6	-36.75	8.2	9.8	-35.15	-13	H
7401.6	-47.96	9.7	11.6	-46.06	-13	V
9250.8	-36.73	10.7	12.7	-34.73	-13	H
11101.2	-35.77	12.1	12.3	-35.57	-13	V
12950.4	-23.44	13.2	12.3	-24.34	-13	V

RSE-GPRS850-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
1738.9	-40.52	4.5	4.7	-40.32	-13	H
4183.8	-46.82	7.0	8.9	-44.92	-13	V
5299.6	-49.79	8.0	9.4	-48.39	-13	V
6549.2	-50.12	9.0	10.6	-48.52	-13	H
7884.6	-49.4	9.9	12.2	-47.1	-13	V
9203.1	-42.71	10.5	12.6	-40.61	-13	H

RSE-GPRS850-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2510.4	-38.24	5.4	5.6	-38.04	-13	H
4182.7	-47.32	7.0	8.9	-45.42	-13	H
5547.7	-48.97	8.2	9.8	-47.37	-13	H

6930.8	-48.95	9.3	11.1	-47.15	-13	H
8364.6	-47.73	10.1	12.4	-45.43	-13	V
9203.1	-37.78	10.5	12.6	-35.68	-13	V

RSE-GPRS850-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
1740.0	-36.55	4.5	4.7	-36.35	-13	V
3346.2	-48.34	6.2	6.9	-47.64	-13	H
4182.7	-44.34	7.0	8.9	-42.44	-13	H
6369.2	-48.66	8.8	10.3	-47.16	-13	H
7529.2	-47.9	9.7	11.6	-46	-13	H
9203.1	-43.68	10.5	12.6	-41.58	-13	V

RSE-GPRS1900-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3700.8	-41.53	6.6	7.9	-40.23	-13	V
5550.6	-26.26	8.2	9.8	-24.66	-13	H
7400.4	-45.33	9.7	11.6	-43.43	-13	V
9250.8	-31.51	10.7	12.7	-29.51	-13	H
11101.2	-38.91	12.1	12.3	-38.71	-13	H
12951.6	-20.76	13.2	12.3	-21.66	-13	V

RSE-GPRS1900-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3700.8	-42.25	6.6	7.9	-40.95	-13	V
5550.6	-25.95	8.2	9.8	-24.35	-13	H
7400.4	-47.08	9.7	11.6	-45.18	-13	V
9249.6	-33.52	10.5	12.6	-31.42	-13	V
11101.2	-38.43	12.1	12.3	-38.23	-13	V
12951.6	-19.61	13.2	12.3	-20.51	-13	V

RSEGPRS1900-M-X

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3700.2	-41.49	6.6	7.9	-40.19	-13	V
5550.6	-29.1	8.2	9.8	-27.5	-13	V
7400.4	-47.33	9.7	11.6	-45.43	-13	H
9250.8	-32.81	10.7	12.7	-30.81	-13	V
11101.2	-42.27	12.1	12.3	-42.07	-13	H
12951.6	-22.18	13.2	12.3	-23.08	-13	H

RSE-GPRS1900-M-Y

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3700.2	-40.17	6.6	7.9	-38.87	-13	V
5551.2	-30.27	8.2	9.8	-28.67	-13	H
7400.4	-44.92	9.7	11.6	-43.02	-13	V
9250.8	-31.12	10.7	12.7	-29.12	-13	H
11101.2	-37.01	12.1	12.3	-36.81	-13	H
12951.6	-19.58	13.2	12.3	-20.48	-13	V

RSEGPRS1900-M-Z

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3700.2	-42.64	6.6	7.9	-41.34	-13	H
5551.2	-27	8.2	9.8	-25.4	-13	V
7400.4	-48.8	9.7	11.6	-46.9	-13	V
9250.8	-31.56	10.7	12.7	-29.56	-13	V
11101.2	-43.13	12.1	12.3	-42.93	-13	V
12951.6	-27.93	13.2	12.3	-28.83	-13	V

Fingerprint version supported:

Main Supply

RSE-GPRS1900-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization

3759.6	-51.22	6.6	7.9	-49.92	-13	H
5640.0	-19.12	8.3	10.2	-17.22	-13	H
7519.2	-51.1	9.7	11.6	-49.2	-13	V
9400.8	-32.36	10.7	12.7	-30.36	-13	V
11280.0	-39.19	12.1	12.3	-38.99	-13	H
13159.2	-32.58	13.0	12.3	-33.28	-13	H

RSE-GPRS1900-L-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-50	6.7	7.9	-48.8	-13	H
5729.4	-18.28	8.5	10.2	-16.58	-13	H
7639.2	-51.05	9.7	11.8	-48.95	-13	H
9548.4	-35.15	10.7	12.7	-33.15	-13	H
11458.8	-40.36	12.3	12.3	-40.36	-13	V
13369.2	-31.77	13.7	12.3	-33.17	-13	V

RSE-GPRS1900-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-50.83	6.7	7.9	-49.63	-13	H
5165.4	-51.75	7.9	9.4	-50.25	-13	H
5729.4	-19.51	8.5	10.2	-17.81	-13	H
9548.4	-35.64	10.7	12.7	-33.64	-13	V
11458.8	-39.48	12.3	12.3	-39.48	-13	V
13368.0	-30.1	13.7	12.3	-31.5	-13	H

RSE-GPRS850-M-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
2570.4	-35.41	5.4	5.6	-35.21	-13	H
3834.2	-50.12	6.7	7.9	-48.92	-13	H
5199.2	-48.14	8.0	9.4	-46.74	-13	V

6767.7	-49.11	9.2	10.9	-47.41	-13	H
8370.8	-44.86	10.1	12.4	-42.56	-13	H
9421.5	-47.87	10.7	12.7	-45.87	-13	V

RSE-GPRS850-L-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
1672.5	-44.05	4.5	4.7	-43.85	-13	H
4185.0	-48.56	7.0	8.9	-46.66	-13	H
5492.3	-49.6	8.2	9.8	-48	-13	V
6695.4	-49.08	9.1	10.9	-47.28	-13	H
8370.8	-48.65	10.1	12.4	-46.35	-13	V
9207.7	-47.28	10.5	12.6	-45.18	-13	H

RSE-GPRS850-H-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
1673.6	-44.87	4.5	4.7	-44.67	-13	H
2463.2	-36.73	5.4	5.6	-36.53	-13	V
4805.8	-49.79	7.6	9.0	-48.39	-13	H
6844.6	-49.83	9.2	10.9	-48.13	-13	H
8369.2	-45.89	10.1	12.4	-43.59	-13	H
9207.7	-44.08	10.5	12.6	-41.98	-13	V

RSE-EGPRS1900-M-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3759.6	-51.15	6.6	7.9	-49.85	-13	V
5640.0	-21.44	8.3	10.2	-19.54	-13	V
7519.2	-49.84	9.7	11.6	-47.94	-13	H
9399.6	-35.12	10.7	12.7	-33.12	-13	H
11280.0	-36.24	12.1	12.3	-36.04	-13	H
13161.6	-31.43	13.0	12.3	-32.13	-13	H

RSE-EGPRS1900-L-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3700.2	-47.81	6.6	7.9	-46.51	-13	V
5550.6	-20.87	8.2	9.8	-19.27	-13	V
7400.4	-48.76	9.7	11.6	-46.86	-13	H
9250.8	-33.25	10.7	12.7	-31.25	-13	H
11101.2	-36.19	12.1	12.3	-35.99	-13	V
12951.6	-28.02	13.2	12.3	-28.92	-13	H

RSE-EGPRS1900-H-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-49.34	6.7	7.9	-48.14	-13	H
5729.4	-22.89	8.5	10.2	-21.19	-13	V
7639.2	-45.41	9.7	11.8	-43.31	-13	H
9549.6	-36.75	10.7	12.7	-34.75	-13	V
11458.8	-36	12.3	12.3	-36	-13	H
13368.0	-25.67	13.7	12.3	-27.07	-13	H

RSE-EGPRS850-M-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
2528.6	-32.93	5.4	5.6	-32.73	-13	H
3860.8	-50.72	6.7	7.9	-49.52	-13	V
5192.3	-47.72	8.0	9.4	-46.32	-13	V
6710.8	-50.16	9.1	10.9	-48.36	-13	H
7892.3	-50.35	9.9	12.2	-48.05	-13	V
9207.7	-48.37	10.5	12.6	-46.27	-13	V

RSE-EGPRS850-L-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
2716.1	-41.1	5.6	6.1	-40.6	-13	V
4269.2	-50.2	7.1	8.9	-48.4	-13	H

5904.2	-50.03	8.5	10.2	-48.33	-13	V
7413.8	-49.74	9.7	11.6	-47.84	-13	V
8370.8	-50.34	10.1	12.4	-48.04	-13	H
9390.8	-48.5	10.7	12.7	-46.5	-13	H

RSE-EGPRS850-H-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
2472.9	-36.66	5.4	5.6	-36.46	-13	V
3561.9	-50.63	6.4	7.8	-49.23	-13	V
4466.5	-51.05	7.3	8.7	-49.65	-13	H
5754.2	-50.23	8.5	10.2	-48.53	-13	H
6921.5	-50.14	9.3	11.1	-48.34	-13	V
7967.7	-50.17	9.8	12.2	-47.77	-13	V

Secondary Supply

RSE-GPRS1900-H-S16aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3819.0	-45.76	6.7	7.9	-44.56	-13	V
5729.4	-20.12	8.5	10.2	-18.42	-13	H
7638.0	-40.75	9.7	11.8	-38.65	-13	H
9549.6	-31.22	10.7	12.7	-29.22	-13	H
11457.6	-34.79	12.3	12.3	-34.79	-13	V
13368.0	-29.16	13.7	12.3	-30.56	-13	H

RSE-GPRS1900-L-S16aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit（dBm）	Polarization
3819.6	-47.28	6.7	7.9	-46.08	-13	H
5729.4	-19.57	8.5	10.2	-17.87	-13	V
7638.0	-43.8	9.7	11.8	-41.7	-13	H
9549.6	-36.65	10.7	12.7	-34.65	-13	V
11458.8	-37.09	12.3	12.3	-37.09	-13	H

13368.0	-31.24	13.7	12.3	-32.64	-13	V

RSE-GPRS1900-M-S16aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3759.6	-43.32	6.6	7.9	-42.02	-13	H
5640.6	-21.24	8.3	10.2	-19.34	-13	V
7519.2	-42.02	9.7	11.6	-40.12	-13	H
9399.6	-34.5	10.7	12.7	-32.5	-13	V
11280.0	-35.37	12.1	12.3	-35.17	-13	V
13159.2	-33.09	13.0	12.3	-33.79	-13	H

Third Supply

RSE-GPRS1900-H Y

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-47.4	6.7	7.9	-46.2	-13	V
5729.4	-21.19	8.5	10.2	-19.49	-13	H
7639.2	-47.25	9.7	11.8	-45.15	-13	V
9548.4	-29.37	10.7	12.7	-27.37	-13	H
11458.8	-34.01	12.3	12.3	-34.01	-13	V
13369.2	-27.71	13.7	12.3	-29.11	-13	V

RSE-GPRS1900-L-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-50.88	6.7	7.9	-49.68	-13	V
5730.0	-22.83	8.5	10.2	-21.13	-13	H
7639.2	-49.03	9.7	11.8	-46.93	-13	H
9548.4	-34.32	10.7	12.7	-32.32	-13	H
11458.8	-33.96	12.3	12.3	-33.96	-13	V
13368.0	-28.43	13.7	12.3	-29.83	-13	V

RSE-GPRS1900-M-S08aa

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit （dBm）	Polarization
3819.6	-50.99	6.7	7.9	-49.79	-13	V
5730.0	-22.38	8.5	10.2	-20.68	-13	H
7639.2	-46.81	9.7	11.8	-44.71	-13	V
9549.6	-33.08	10.7	12.7	-31.08	-13	H
11458.8	-33.94	12.3	12.3	-33.94	-13	V
13369.2	-28.54	13.7	12.3	-29.94	-13	V

Note: Partial versions test all, and partial versions test the worst mode.

Annex A: Revised History

Version	Revised Content
V00	Initial
V01	Modify and update some data
V02	Changed the equipment information and reference standard version
V03	Modify equipment calibration date and test time

Annex B: Accreditation Certificate

ilac-MRA A2LA

Accredited Laboratory

A2LA has accredited

INDUSTRIAL INTERNET INNOVATION CENTER (SHANGHAI) CO., LTD.

Shanghai, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 12th day of April 2021.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3682.01
Valid to February 28, 2023

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.