

# FCC RF TEST REPORT

For

**Upper Arm Electronic Blood Pressure Monitor**

**Model Number: A02-SE4**

**FCC ID: 2BERFA02SE4002**

**Report Number : WT238002117**

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Inspection  
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**Revision History**

No	Date	Remark
V1.0	2024.07.25	Initial issue

## Test report declaration

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EUT Description : Upper Arm Electronic Blood Pressure Monitor  
Model No. : A02-SE4  
Trade mark : GoodlyMed  
FCC ID : 2BERFA02SE4002

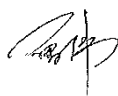
Test Standards:

**FCC 47 CFR PART 2, 22, 24, 27**

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.26 (2015) & KDB971168 and the energy emitted by the sample EUT tested as described in this report is in compliance with FCC Rules Part 2, 22, 24, 27.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

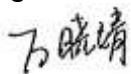
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(Zeng Wei 曾伟)

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## 1. TEST RESULTS SUMMARY

No.	Test Description	FCC Part No.	Test Result	Test Verdict
1	Conducted Power & Effective Radiated Power	2.1046 22.913 24.232 27.50	APPENDIX A	Pass
2	Peak to Average Ratio	2.1046 24.232 27.50	APPENDIX A	Pass
3	Occupied Bandwidth & Emission Bandwidth	2.1049 22.917 24.238 27.53	APPENDIX A	Pass
4	Conducted Band Edge	2.1051 22.917 24.238 27.53	APPENDIX A	Pass
5	Conducted Spurious Emissions	2.1051 22.917 24.238 27.53	APPENDIX A	Pass
6	Frequency Stability	2.1055 22.355 24.235 27.54	APPENDIX A	Pass
7	Radiated Spurious Emissions	2.1053 22.917 24.238 27.53	APPENDIX B	Pass

## **2. GENERAL INFORMATION**

### **2.1. Report information**

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The samples mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

The lab will not be liable for any loss or damage resulting from false, inaccurate, inappropriate or incomplete product information provided by the applicant/manufacturer.

### **2.2. Laboratory Accreditation and Relationship to Customer**

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Innovation, Science and Economic Development (ISED), and the registration number is 11177A.

The Laboratory is registered to perform emission tests with VCCI, and the registration number are C-20048, G20076, R-20077, R-20078, and T-20047.

The Laboratory is Accredited Testing Laboratory of American Association for Laboratory Accreditation (A2LA) and certificate number is 3292.01.

### 3. PRODUCT DESCRIPTION

#### 3.1.EUT Description

Specification of the Equipment under Test

Hardware Revision	BG95M3LAR02A03_01	
Software Revision	GA1.0	
Tx Frequency	LTE Band 2:	1850 ~ 1910 MHz
	LTE Band 4:	1710 ~ 1755 MHz
	LTE Band 5:	824 ~ 849 MHz
	LTE Band 12:	699 ~ 716 MHz
	LTE Band 13:	777 ~ 787 MHz
Rx Frequency	LTE Band 2:	1930 ~ 1990 MHz
	LTE Band 4:	2110 ~ 2155 MHz
	LTE Band 5:	869 ~ 894 MHz
	LTE Band 12:	729 ~ 746 MHz
	LTE Band 13:	746 ~ 756 MHz
Type(s) of Modulation	QPSK, 16QAM	
LTE Category	M1	
Power Supply Voltage	Low: 4.25V / normal: 5.0V / High: 6.6V  DC 6.0 V (4*1.5AA size batteries) AC Input:100 V to 240 V, 50 Hz/ 60 Hz (AC Adapter) AC Output: 5.0V / 1.0A (AC Adapter)	

Antenna		Gain (dBi)
LTE band 2	1850 - 1910 MHz	<b>3.26</b>
LTE band 4	1710 - 1755 MHz	<b>2.35</b>
LTE band 5	824 - 849 MHz	<b>-2.91</b>
LTE band 12	699 - 716 MHz	<b>-5.30</b>
LTE band 13	777 - 787 MHz	<b>-2.93</b>

NOTE:

1. The extreme test conditions for voltage and antenna gain were declared by the manufacturer.

#### 3.2.Identification of Accessory equipment

AE #	Type	Manufacturer	Model	Remark
--	Medical-Adapter	Shenzhen Longxc Power Supply Co., Ltd	LXCP12X-050100DH	Input: 100-240VAC, 50/60Hz, 0.5A Max Output: 5Vdc,1.0A

### 3.3.Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2BERFA02SE4002 filing to comply with FCC PART 2, 22, 24, 27.

### 3.4.Operating Condition of EUT

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission (X plane).

Radiated spurious emissions were investigated below 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found on below 30MHz and 30MHz-1GHz.

**TM1:** LTE Mode with QPSK Modulation

**TM2:** LTE Mode with 16QAM Modulation

Test Mode: QPSK						
Test Items	RB #			Test Channel		
	1RB#0	1RB#5	6RB#0	L	M	H
Max Power & E.R.P / E.I.R.P	v	v	v	v	v	v
Peak-to-Average Ratio	-	-	v	v	v	v
Occupied Bandwidth	-	-	v	v	v	v
Conducted Band Edge - Low Channel	v		v	v	-	-
Conducted Band Edge - High Channel	-	v	v	-	-	v
Conducted Spurious Emission	v	-	-	v	v	v
Frequency Stability - Temperature Variation	-	-	v	-	v	-
Frequency Stability - Voltage Variation			v	v	-	v
Radiated Spurious Emission	v	-	-	-	v	-

Test Mode: 16QAM							
Test Items	RB #				Test Channel		
	1RB#0	1RB#5	5RB#0	5RB#1	L	M	H
Max Power & E.R.P / E.I.R.P	v	v	v	-	v	v	v
Peak-to-Average Ratio	-	-	v	-	v	v	v
Occupied Bandwidth	-	-	v	-	v	v	v
Conducted Band Edge - Low Channel	v	-	v	-	v	-	-
Conducted Band Edge - High Channel	-	v	-	v	-	-	v

Note:

1. The mark "v" means that this configuration is chosen for testing
2. The mark "-" means that this bandwidth is not supported.



3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst cases emissions are reported.
4. All modulations have been tested, and only the worst test results are shown in the report.
5. All test items are based on engineering evaluation.

### 3.5. Frequency List

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
LTE Band 2	Low Range	1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
		10	18650	1855
		15	18675	1857.5
		20	18700	1860
	Middle Range	1.4/3/5/10/15/20	18900	1880
	High Range	1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
		10	19150	1905
		15	19125	1902.5
		20	19100	1900
LTE Band 4	Low Range	1.4	19957	1710.7
		3	19965	1711.5
		5	19975	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Middle Range	1.4/3/5/10/15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
		20	20300	1745
LTE Band 5	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Middle Range	1.4/3/5/10	20525	836.5

	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
		10	20600	844

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
LTE Band 12	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Middle Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
		10	23130	711
LTE Band 13	Low Range	5	23205	779.5
	Middle Range	5/10	23230	782
	High Range	5	23255	784.5

### 3.6. Max EIRP / ERP

Mode	Maximum EIRP/ERP (dBm)
LTE Band 2	23.87
LTE Band 4	22.45
LTE Band 5	15.65
LTE Band 12	13.00
LTE Band 13	15.63

### 3.7. Environmental Conditions

Date of test: 2023.12.25 – 2024.01.17, 2024.07.24

Date of EUT Receive: 2023.12.05

Temperature: (22-26) °C

Relative Humidity: (44-51) %

Air Pressure: (100.7-101.9) kPa

### 3.8. Special Accessories

Not available for this EUT intended for grant.

### 3.9. Equipment Modifications

Not available for this EUT intended for grant.

#### 4. TEST EQUIPMENT USED

##### Conducted test equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB18827	Wideband Radio communication Tester	Rohde & Schwarz	CMW500	2023.04.24	1 Year
SB18827	Wideband Radio communication Tester	Rohde & Schwarz	CMW500	2024.04.22	1 Year
SB9721/02	Signal Analyzer	Agilent	N9020A	2023.04.24	1 Year
SB20321/01	Signal Analyzer	Rohde & Schwarz	FSV3044	2023.04.24	1 Year
SB9721/07	DC Power Supply	Agilent	66319D	--	--
SB11818	Temperature & Humidity Test chamber	Espec	EH-010U	2023.11.28	1 Year
--	Test Software	Tonscend	JS1120 Ver.3.1.46	--	--

##### Radiated spurious test equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB8501/09	EMI Test Receiver	Rohde & Schwarz	ESU40	2023.01.19	1 Year
SB9054/08	Bilog Antenna	Schwarzbeck	VULB9163	2023.05.30	1 Year
SB3435	Horn Antenna	Rohde & Schwarz	HF906	2023.11.21	1 Year
SB8501/11	Horn Antenna	ETS-Lindgren	3160-09	2023.02.22	3 Year
SB8501/12	Horn Antenna	ETS-Lindgren	3160-10	2023.02.22	3 Year
SB8501/14	Preamplifier	Rohde & Schwarz	SCU-03	2023.01.31	1 Year
SB8501/17	Preamplifier	Rohde & Schwarz	SCU-18	2023.01.31	1 Year
SB8501/16	Preamplifier	Rohde & Schwarz	SCU-26	2023.01.31	1 Year
SB9059	Preamplifier	Rohde & Schwarz	SCU-40	2023.08.09	1 Year
SB12724/06	Wideband Radio communication Tester	Rohde & Schwarz	CMW500	2023.04.24	1 Year
--	Radiated Test Software Ver.9.26.01	Rohde & Schwarz	EMC 32	--	--
SB9555/02	Fully Anechoic Chamber	Albatross	10.0*5.2*5.4(m)	2023.08.15	1 Year
SB15044/01	Test Receiver	Rohde & Schwarz	ESW8	2023.09.12	1 Year
SB12944	Broadband Antenna	Rohde & Schwarz	VULB9163	2023.09.12	1 Year
SB18844	Semi Anechoic Chamber	Albatross	9×6×6(m)	2023.03.20	1 Year

## 5. MEASUREMENT UNCERTAINTY

For a 95% confidence level ( $k = 2$ ), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

26dB & Occupied Bandwidth:  $\pm 0.39\%$

Frequency Stability:  $\pm 0.42\%$

Peak to Average Ratio:  $\pm 0.45$  dB

Conducted power:  $\pm 0.3$  dB

Conducted Spurious Emissions:  $\pm 2.0$  dB

Conducted Band Edge:  $\pm 2.0$  dB

Temperature:  $\pm 0.698$  °C

Supply voltages:  $\pm 0.15\%$

Radiated Emission:

30MHz~1000MHz 4.5dB

1GHz~6GHz 4.6dB

6GHz~18GHz 5.1dB

18GHz~26.5GHz 5.1dB

## 6. TEST ITEMS

### 6.1. Conducted Power & Effective Radiated Power

#### 6.1.1. Test Standard

FCC: CFR47 Part 2.1046, Part 22.913, Part 24.232, Part 27.50

#### 6.1.2. Test Limit

22.913 (a) Effective radiated power limits.

The effective radiated power (ERP) of mobile transmitters must not exceed 7 Watts.

24.232 (c) mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

27.50(a) (3), for mobile and portable stations transmitting in the 2305-2315MHz band or the 2350-2360MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards.

27.50(b) (10), portable stations (hand-held devices) transmitting in the 746-757MHz, 776-788MHz, and 805-806MHz bands are limited to 3 watts ERP.

FCC section 27.50(c) (10), portable stations (hand-held devices) in the 600MHz uplink band and the 698-746MHz band, and fixed and mobile stations in the 600MHz uplink band are limited to 3 watts ERP.

27.50(d) (4), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications. (7) Fixed, mobile, and portable (hand-held) stations operating in the 2000-2020 MHz band are limited to 2 watts EIRP.

27.50(h) (2), for mobile and other user stations, mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

### 6.1.3. Test Procedure

KDB 971168 Section 5.6

$EIRP \text{ (dBm)} = ERP \text{ (dBm)} + 2.15 \text{ (dB)}$

$ERP/EIRP = P_{Meas} + GT - LC$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as  $P_{Meas}$ , typically dBW or dBm);

$P_{Meas}$  = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers.

### 6.1.4. Test Data

Please refer to Appendix A

## 6.2. Peak to Average Ratio

### 6.2.1. Test Standard

FCC: CFR47 Part 22.913, 24.232 & 27.50(d)

### 6.2.2. Test Limit

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

### 6.2.3. Test Procedure

According to KDB 971168 D01, there is CCDF procedure for PAPR:  
Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;

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

Set the measurement interval as follows:

for continuous transmissions, set to 1 ms,

for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

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

Alternate procedure for PAPR:

Use one of the procedures presented in 4.1 to measure the total peak power and record as PPk. Use one of the applicable procedures presented 4.2 to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$

### 6.2.4. Test Data

Please refer to Appendix A

### **6.3.Occupied Bandwidth & Emission Bandwidth**

#### **6.3.1.Test Standard**

FCC: CFR47 Part 2.1049

#### **6.3.2.Test Limit**

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable.

Transmitters employing digital modulation techniques-when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated.

#### **6.3.3.Test Procedure**

1. Connect the equipment as shown in the above diagram.
2. Adjust the settings of the Universal Radio Communication Tester (CMU/CMW) to set the EUT to its maximum power at the required channel.
3. Set the spectrum analyzer to measure the 99% occupied bandwidth. Record the value.
4. Set the spectrum analyzer to measure the -26 dB emission bandwidth. Record the value.
5. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

Spectrum analyzer settings: Measurement bandwidth of at least 1% of the occupied bandwidth.

#### **6.3.4.Test Data**

Please refer to Appendix A



## 6.4. Conducted Band Edge

### 6.4.1. Test Standard

FCC: CFR47 Part 2.1051 & 22.917(a) & 24.238(a) & 27.53

### 6.4.2. Test Limit

In the 1 MHz 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 emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a)

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. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

By a factor of not less than:  $43 + 10 \log(P)$  dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than  $55 + 10 \log(P)$  dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than  $61 + 10 \log(P)$  dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than  $67 + 10 \log(P)$  dB on all frequencies between 2328 and 2337MHz.

By a factor of not less than  $43 + 10 \log(P)$  dB on all frequencies between 2300 and 2305MHz,  $55 + 10 \log(P)$  dB on all frequencies between 2296 and 2300MHz,  $61 + 10 \log(P)$  dB on all frequencies between 2292 and 2296MHz,  $67 + 10 \log(P)$  dB on all frequencies between 2288 and 2292MHz, and  $70 + 10 \log(P)$  dB below 2288MHz.

By a factor of not less than  $43 + 10 \log(P)$  dB on all frequencies between 2360 and 2365MHz, and not less than  $70 + 10 \log(P)$  dB above 2365MHz.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;

On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;

On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less

than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations;

On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;

Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

#### FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

#### FCC § 27.53(h) (1)

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

#### FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

$40 + 10 \log P$  dB (–10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

$43 + 10 \log P$  dB (–13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

$55 + 10 \log P$  dB (–25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

#### 6.4.3.Test Procedure

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW  $\geq$  1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used and the measured power was integrated over the full required measurement bandwidth of 1 MHz.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating
8. frequency band.
9. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from  $43 + 10\log(P)$  dB below the transmitter power P(Watts)  
 $= P(W) - [43 + 10\log(P)]$  (dB)  
 $= [30 + 10\log(P)]$  (dBm) -  $[43 + 10\log(P)]$  (dB) = -13dBm.

#### 6.4.4.Test Data

Please refer to Appendix A

## 6.5. Conducted Spurious Emissions

### 6.5.1. Test Standard

FCC: CFR47 Part 2.1051 & 22.917(a) & 24.238(a) & 27.53

### 6.5.2. Test Limit

In the 1 MHz 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 emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

#### FCC § 22.917(a) & 24.238(a)

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. This is calculated to be -13 dBm.

#### FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

By a factor of not less than:  $43 + 10 \log(P)$  dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than  $55 + 10 \log(P)$  dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than  $61 + 10 \log(P)$  dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than  $67 + 10 \log(P)$  dB on all frequencies between 2328 and 2337MHz.

By a factor of not less than  $43 + 10 \log(P)$  dB on all frequencies between 2300 and 2305MHz,  $55 + 10 \log(P)$  dB on all frequencies between 2296 and 2300MHz,  $61 + 10 \log(P)$  dB on all frequencies between 2292 and 2296MHz,  $67 + 10 \log(P)$  dB on all frequencies between 2288 and 2292MHz, and  $70 + 10 \log(P)$  dB below 2288MHz.

By a factor of not less than  $43 + 10 \log(P)$  dB on all frequencies between 2360 and 2365MHz, and not less than  $70 + 10 \log(P)$  dB above 2365MHz.

#### FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;

On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;

On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less

than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations;

On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;

Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

#### FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

#### FCC § 27.53(h) (1)

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the

power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

#### FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

$40 + 10 \log P$  dB (–10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

$43 + 10 \log P$  dB (–13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

$55 + 10 \log P$  dB (–25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

#### 6.5.3. Test Procedure

1. Connect the equipment as shown in the above diagram.
  2. Set the spectrum analyzer to measure peak hold with the required settings.
  3. Set the signal generator to a known output power and record the path loss in dB (LOSS) for frequencies up to the tenth harmonic of the EUT's carrier frequency.  
 $\text{LOSS} = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$ .
  4. Replace the signal generator with the EUT.
  5. Adjust the settings of the Universal Radio Communication Tester to set the EUT to its maximum power at the required channel.
  6. Set the spectrum analyzer to measure peak hold with the required settings. Offset the spectrum analyzer reference level by the path loss measured above.
  7. Measure and record all spurious emissions up to the tenth harmonic of the carrier frequency.
  8. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.
  9. If necessary steps 6 and 7 may be performed with the spectrum analyzer set to average detector.
- (Note: Step 3 above is performed prior to testing and LOSS is recorded by test software. Steps 2, 6, and 7 above are performed with test software.)

#### 6.5.4. Test Data

Please refer to Appendix A

## 6.6. Frequency Stability

### 6.6.1. Test Standard

FCC: CFR47 Part 2.1055 & 22.355 & 24.235 & 27.54.

### 6.6.2. Test Limit

According to part 22.355, from 821MHz to 896MHz, for mobile device, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances 2.5ppm.

FCC: §24.235 & §27.54

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

#### Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size,

(1) With all power removed, the temperature was decreased to 0°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

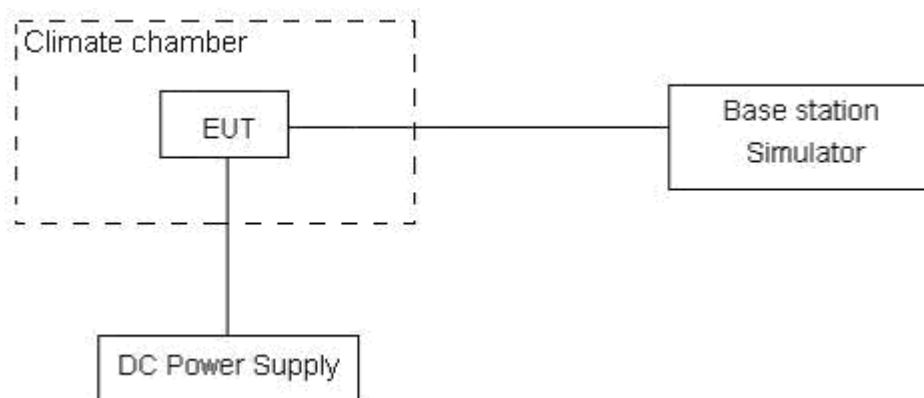
(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

#### Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.



### 6.6.3.Test Data

Please refer to Appendix A



## 6.7. Radiated Spurious Emissions

### 6.7.1. Test Standard

FCC: CFR47 Part 2.1051 & 22.917(a) & 24.238(a) & 27.53

### 6.7.2. Test Limit

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in FCC 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

(a) Out of band emissions. 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. For all power levels +30dBm to 0dBm, this becomes a constant specification of -13dBm.

#### §22.917:

The rules in this section govern the spectral characteristics of emissions in the Cellular Radio telephone Service.

(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

#### §24.238:

The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.

(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

§27.53:

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

(h) AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

(m)(4) For mobile digital stations, the attenuation factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge and  $55 + 10 \log (P)$  dB at 5.5 megahertz from the channel edges. (Channel edges are defined under §27.5 (i) Frequency assignment for the BRS/EBS band)

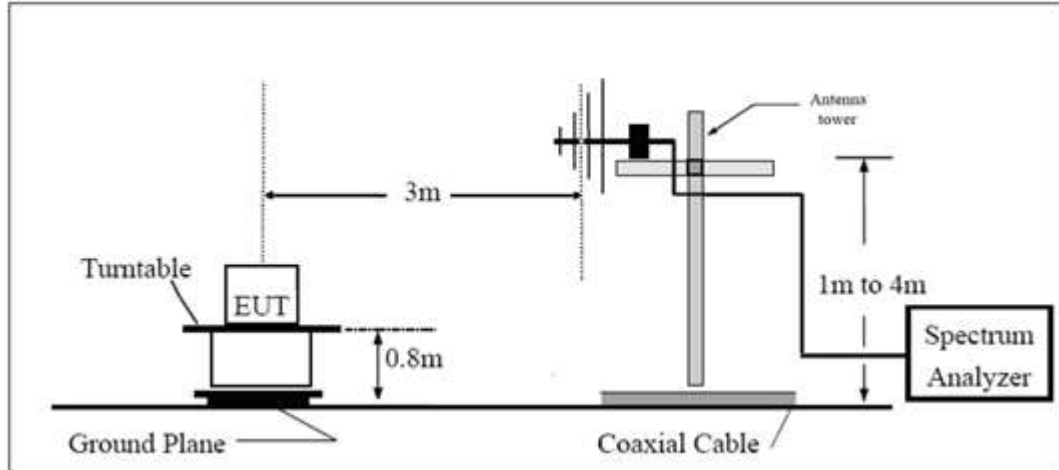
(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

### 6.7.3.Test Procedure

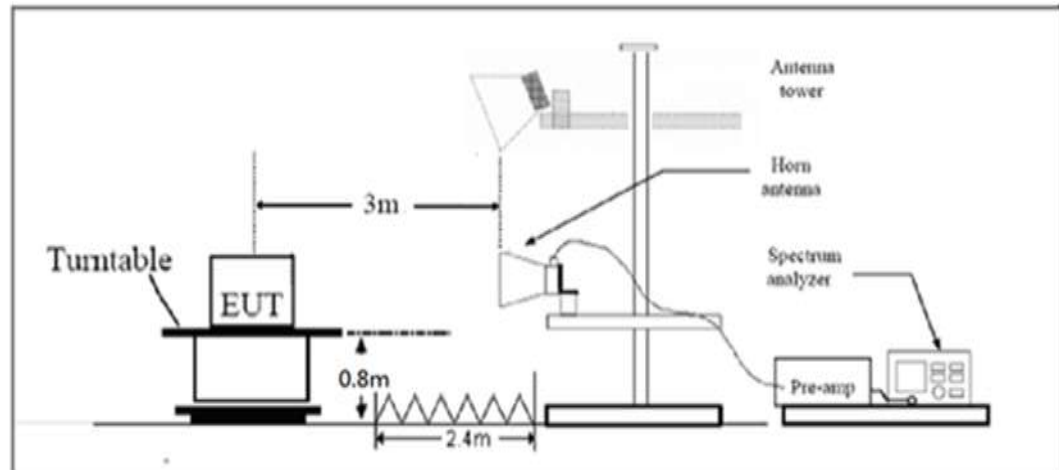
1. Connect the equipment as shown in the above diagram with the EUT's antenna in a horizontal orientation.
  2. Adjust the settings of the Wideband Radio Communication Tester (CMW500) to set the EUT to its maximum power at the required channel.
  3. Set the spectrum analyzer to measure peak hold with the required settings.
  4. Place the measurement antenna in a horizontal orientation. Rotate the EUT 360 . Raise the measurement antenna up to 4 meters in 0.5 meters increments and rotate the EUT 360 at each height to maximize all emissions. Measure and record all spurious emissions (LVL) up to the tenth harmonic of the carrier frequency.
  5. Replace the EUT with a horizontally polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.
  6. Connect the antenna to a signal generator with known output power and record the path loss in dB (LOSS).  $LOSS = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$ .
  7. Determine the level of spurious emissions using the following equation:  
 $\text{Spurious (dBm)} = \text{LVL (dBm)} + \text{LOSS (dB)}$
  8. Repeat steps 4, 5 and 6 with all antennas vertically polarized.
  9. Determine the level of spurious emissions using the following equation:  
 $\text{Spurious (dBm)} = \text{LVL (dBm)} + \text{LOSS (dB)}$
  10. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.
- (Note: Steps 5 and 6 above are performed prior to testing and LOSS is recorded by test software. Steps 3, 4 and 7 above are performed with test software.)
- Spectrum analyzer settings: RBW=VBW=1MHz

#### 6.7.4. Test Setup

For Radiated test from 30MHz to 1GHz



For Radiated test above 1GHz



#### 6.7.5. Test Data

Please refer to Appendix B

## **APPENDIX A. TEST RESULTS OF CONDUCTED TEST**

### **– UE category M1**

## Effective (Isotropic) Radiated Power Output Data for UE category M1

### Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Conducted Power(dBm)	ERP/EIRP (dBm)	Limit (dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1	0	Low	20.43	23.69	33	PASS
Band2	1.4MHz	QPSK	18607	1	5	Low	20.25	23.51	33	PASS
Band2	1.4MHz	QPSK	18607	6	0	Low	18.46	21.72	33	PASS
Band2	1.4MHz	QPSK	18900	1	0	Low	20.57	23.83	33	PASS
Band2	1.4MHz	QPSK	18900	1	5	Low	20.40	23.66	33	PASS
Band2	1.4MHz	QPSK	18900	6	0	Low	18.56	21.82	33	PASS
Band2	1.4MHz	QPSK	19193	1	0	High	20.54	23.8	33	PASS
Band2	1.4MHz	QPSK	19193	1	5	High	20.38	23.64	33	PASS
Band2	1.4MHz	QPSK	19193	6	0	High	18.53	21.79	33	PASS
Band2	1.4MHz	16QAM	18607	1	0	Low	19.85	23.11	33	PASS
Band2	1.4MHz	16QAM	18607	1	5	Low	19.68	22.94	33	PASS
Band2	1.4MHz	16QAM	18607	5	0	Low	18.00	21.26	33	PASS
Band2	1.4MHz	16QAM	18900	1	0	Low	19.93	23.19	33	PASS
Band2	1.4MHz	16QAM	18900	1	5	Low	19.85	23.11	33	PASS
Band2	1.4MHz	16QAM	18900	5	0	Low	18.30	21.56	33	PASS
Band2	1.4MHz	16QAM	19193	1	0	High	19.84	23.1	33	PASS
Band2	1.4MHz	16QAM	19193	1	5	High	19.53	22.79	33	PASS
Band2	1.4MHz	16QAM	19193	5	0	High	18.18	21.44	33	PASS
Band2	3MHz	QPSK	18615	1	0	Low	20.37	23.63	33	PASS
Band2	3MHz	QPSK	18615	1	5	Low	20.27	23.53	33	PASS
Band2	3MHz	QPSK	18615	6	0	Low	18.37	21.63	33	PASS
Band2	3MHz	QPSK	18900	1	0	Low	20.58	23.84	33	PASS
Band2	3MHz	QPSK	18900	1	5	Low	20.41	23.67	33	PASS
Band2	3MHz	QPSK	18900	6	0	Low	18.59	21.85	33	PASS
Band2	3MHz	QPSK	19185	1	0	High	20.46	23.72	33	PASS
Band2	3MHz	QPSK	19185	1	5	High	20.37	23.63	33	PASS
Band2	3MHz	QPSK	19185	6	0	High	18.52	21.78	33	PASS
Band2	3MHz	16QAM	18615	1	0	Low	19.64	22.9	33	PASS
Band2	3MHz	16QAM	18615	1	5	Low	19.43	22.69	33	PASS
Band2	3MHz	16QAM	18615	5	0	Low	18.10	21.36	33	PASS
Band2	3MHz	16QAM	18900	1	0	Low	19.84	23.1	33	PASS
Band2	3MHz	16QAM	18900	1	5	Low	19.57	22.83	33	PASS
Band2	3MHz	16QAM	18900	5	0	Low	18.30	21.56	33	PASS
Band2	3MHz	16QAM	19185	1	0	High	19.81	23.07	33	PASS
Band2	3MHz	16QAM	19185	1	5	High	19.65	22.91	33	PASS
Band2	3MHz	16QAM	19185	5	0	High	18.29	21.55	33	PASS
Band2	5MHz	QPSK	18625	1	0	Low	20.43	23.69	33	PASS

Band2	5MHz	QPSK	18625	1	5	Low	20.21	23.47	33	PASS
Band2	5MHz	QPSK	18625	6	0	Low	19.33	22.59	33	PASS
Band2	5MHz	QPSK	18900	1	0	Low	20.59	23.85	33	PASS
Band2	5MHz	QPSK	18900	1	5	Low	20.41	23.67	33	PASS
Band2	5MHz	QPSK	18900	6	0	Low	19.52	22.78	33	PASS
Band2	5MHz	QPSK	19175	1	0	High	20.55	23.81	33	PASS
Band2	5MHz	QPSK	19175	1	5	High	20.34	23.6	33	PASS
Band2	5MHz	QPSK	19175	6	0	High	19.43	22.69	33	PASS
Band2	5MHz	16QAM	18625	1	0	Low	20.29	23.55	33	PASS
Band2	5MHz	16QAM	18625	1	5	Low	20.03	23.29	33	PASS
Band2	5MHz	16QAM	18625	5	0	Low	19.13	22.39	33	PASS
Band2	5MHz	16QAM	18900	1	0	Low	20.49	23.75	33	PASS
Band2	5MHz	16QAM	18900	1	5	Low	20.25	23.51	33	PASS
Band2	5MHz	16QAM	18900	5	0	Low	19.35	22.61	33	PASS
Band2	5MHz	16QAM	19175	1	0	High	20.48	23.74	33	PASS
Band2	5MHz	16QAM	19175	1	5	High	20.23	23.49	33	PASS
Band2	5MHz	16QAM	19175	5	0	High	19.29	22.55	33	PASS
Band2	10MHz	QPSK	18650	1	0	Low	20.40	23.66	33	PASS
Band2	10MHz	QPSK	18650	1	5	Low	20.17	23.43	33	PASS
Band2	10MHz	QPSK	18650	6	0	Low	19.28	22.54	33	PASS
Band2	10MHz	QPSK	18900	1	0	Low	20.56	23.82	33	PASS
Band2	10MHz	QPSK	18900	1	5	Low	20.34	23.6	33	PASS
Band2	10MHz	QPSK	18900	6	0	Low	19.38	22.64	33	PASS
Band2	10MHz	QPSK	19150	1	0	High	20.50	23.76	33	PASS
Band2	10MHz	QPSK	19150	1	5	High	20.36	23.62	33	PASS
Band2	10MHz	QPSK	19150	6	0	High	19.44	22.7	33	PASS
Band2	10MHz	16QAM	18650	1	0	Low	20.15	23.41	33	PASS
Band2	10MHz	16QAM	18650	1	5	Low	20.02	23.28	33	PASS
Band2	10MHz	16QAM	18650	5	0	Low	20.03	23.29	33	PASS
Band2	10MHz	16QAM	18900	1	0	Low	20.40	23.66	33	PASS
Band2	10MHz	16QAM	18900	1	5	Low	20.19	23.45	33	PASS
Band2	10MHz	16QAM	18900	5	0	Low	20.34	23.6	33	PASS
Band2	10MHz	16QAM	19150	1	0	High	20.43	23.69	33	PASS
Band2	10MHz	16QAM	19150	1	5	High	20.29	23.55	33	PASS
Band2	10MHz	16QAM	19150	5	0	High	20.30	23.56	33	PASS
Band2	15MHz	QPSK	18675	1	0	Low	20.32	23.58	33	PASS
Band2	15MHz	QPSK	18675	1	5	Low	20.10	23.36	33	PASS
Band2	15MHz	QPSK	18675	6	0	Low	20.17	23.43	33	PASS
Band2	15MHz	QPSK	18900	1	0	Low	20.44	23.7	33	PASS
Band2	15MHz	QPSK	18900	1	5	Low	20.22	23.48	33	PASS
Band2	15MHz	QPSK	18900	6	0	Low	20.31	23.57	33	PASS
Band2	15MHz	QPSK	19125	1	0	High	20.61	23.87	33	PASS
Band2	15MHz	QPSK	19125	1	5	High	20.35	23.61	33	PASS

Band2	15MHz	QPSK	19125	6	0	High	20.47	23.73	33	PASS
Band2	15MHz	16QAM	18675	1	0	Low	20.17	23.43	33	PASS
Band2	15MHz	16QAM	18675	1	5	Low	19.97	23.23	33	PASS
Band2	15MHz	16QAM	18675	5	0	Low	20.22	23.48	33	PASS
Band2	15MHz	16QAM	18900	1	0	Low	20.24	23.5	33	PASS
Band2	15MHz	16QAM	18900	1	5	Low	20.11	23.37	33	PASS
Band2	15MHz	16QAM	18900	5	0	Low	20.34	23.6	33	PASS
Band2	15MHz	16QAM	19125	1	0	High	20.38	23.64	33	PASS
Band2	15MHz	16QAM	19125	1	5	High	20.14	23.4	33	PASS
Band2	15MHz	16QAM	19125	5	0	High	20.41	23.67	33	PASS
Band2	20MHz	QPSK	18700	1	0	Low	20.26	23.52	33	PASS
Band2	20MHz	QPSK	18700	1	5	Low	20.00	23.26	33	PASS
Band2	20MHz	QPSK	18700	6	0	Low	20.18	23.44	33	PASS
Band2	20MHz	QPSK	18900	1	0	Low	20.35	23.61	33	PASS
Band2	20MHz	QPSK	18900	1	5	Low	20.15	23.41	33	PASS
Band2	20MHz	QPSK	18900	6	0	Low	20.26	23.52	33	PASS
Band2	20MHz	QPSK	19100	1	0	High	20.50	23.76	33	PASS
Band2	20MHz	QPSK	19100	1	5	High	20.33	23.59	33	PASS
Band2	20MHz	QPSK	19100	6	0	High	20.46	23.72	33	PASS
Band2	20MHz	16QAM	18700	1	0	Low	20.11	23.37	33	PASS
Band2	20MHz	16QAM	18700	1	5	Low	19.88	23.14	33	PASS
Band2	20MHz	16QAM	18700	5	0	Low	20.14	23.4	33	PASS
Band2	20MHz	16QAM	18900	1	0	Low	20.27	23.53	33	PASS
Band2	20MHz	16QAM	18900	1	5	Low	20.03	23.29	33	PASS
Band2	20MHz	16QAM	18900	5	0	Low	20.16	23.42	33	PASS
Band2	20MHz	16QAM	19100	1	0	High	20.47	23.73	33	PASS
Band2	20MHz	16QAM	19100	1	5	High	20.25	23.51	33	PASS
Band2	20MHz	16QAM	19100	5	0	High	20.37	23.63	33	PASS
Band4	1.4MHz	QPSK	19957	1	0	Low	20.04	22.39	30	PASS
Band4	1.4MHz	QPSK	19957	1	5	Low	19.82	22.17	30	PASS
Band4	1.4MHz	QPSK	19957	6	0	Low	17.94	20.29	30	PASS
Band4	1.4MHz	QPSK	20175	1	0	Low	19.80	22.15	30	PASS
Band4	1.4MHz	QPSK	20175	1	5	Low	19.64	21.99	30	PASS
Band4	1.4MHz	QPSK	20175	6	0	Low	17.75	20.1	30	PASS
Band4	1.4MHz	QPSK	20393	1	0	High	19.67	22.02	30	PASS
Band4	1.4MHz	QPSK	20393	1	5	High	19.40	21.75	30	PASS
Band4	1.4MHz	QPSK	20393	6	0	High	17.49	19.84	30	PASS
Band4	1.4MHz	16QAM	19957	1	0	Low	19.09	21.44	30	PASS
Band4	1.4MHz	16QAM	19957	1	5	Low	18.94	21.29	30	PASS
Band4	1.4MHz	16QAM	19957	5	0	Low	18.04	20.39	30	PASS
Band4	1.4MHz	16QAM	20175	1	0	Low	18.92	21.27	30	PASS
Band4	1.4MHz	16QAM	20175	1	5	Low	18.77	21.12	30	PASS
Band4	1.4MHz	16QAM	20175	5	0	Low	17.79	20.14	30	PASS



Band4	1.4MHz	16QAM	20393	1	0	High	18.77	21.12	30	PASS
Band4	1.4MHz	16QAM	20393	1	5	High	18.77	21.12	30	PASS
Band4	1.4MHz	16QAM	20393	5	0	High	17.53	19.88	30	PASS
Band4	3MHz	QPSK	19965	1	0	Low	20.10	22.45	30	PASS
Band4	3MHz	QPSK	19965	1	5	Low	19.99	22.34	30	PASS
Band4	3MHz	QPSK	19965	6	0	Low	17.99	20.34	30	PASS
Band4	3MHz	QPSK	20175	1	0	Low	19.91	22.26	30	PASS
Band4	3MHz	QPSK	20175	1	5	Low	19.71	22.06	30	PASS
Band4	3MHz	QPSK	20175	6	0	Low	17.79	20.14	30	PASS
Band4	3MHz	QPSK	20385	1	0	High	19.61	21.96	30	PASS
Band4	3MHz	QPSK	20385	1	5	High	19.50	21.85	30	PASS
Band4	3MHz	QPSK	20385	6	0	High	17.52	19.87	30	PASS
Band4	3MHz	16QAM	19965	1	0	Low	19.40	21.75	30	PASS
Band4	3MHz	16QAM	19965	1	5	Low	19.75	22.1	30	PASS
Band4	3MHz	16QAM	19965	5	0	Low	18.07	20.42	30	PASS
Band4	3MHz	16QAM	20175	1	0	Low	19.08	21.43	30	PASS
Band4	3MHz	16QAM	20175	1	5	Low	18.78	21.13	30	PASS
Band4	3MHz	16QAM	20175	5	0	Low	17.77	20.12	30	PASS
Band4	3MHz	16QAM	20385	1	0	High	18.74	21.09	30	PASS
Band4	3MHz	16QAM	20385	1	5	High	18.61	20.96	30	PASS
Band4	3MHz	16QAM	20385	5	0	High	17.58	19.93	30	PASS
Band4	5MHz	QPSK	19975	1	0	Low	19.99	22.34	30	PASS
Band4	5MHz	QPSK	19975	1	5	Low	19.81	22.16	30	PASS
Band4	5MHz	QPSK	19975	6	0	Low	18.93	21.28	30	PASS
Band4	5MHz	QPSK	20175	1	0	Low	19.72	22.07	30	PASS
Band4	5MHz	QPSK	20175	1	5	Low	19.53	21.88	30	PASS
Band4	5MHz	QPSK	20175	6	0	Low	18.74	21.09	30	PASS
Band4	5MHz	QPSK	20375	1	0	High	19.58	21.93	30	PASS
Band4	5MHz	QPSK	20375	1	5	High	19.38	21.73	30	PASS
Band4	5MHz	QPSK	20375	6	0	High	18.50	20.85	30	PASS
Band4	5MHz	16QAM	19975	1	0	Low	19.85	22.2	30	PASS
Band4	5MHz	16QAM	19975	1	5	Low	19.61	21.96	30	PASS
Band4	5MHz	16QAM	19975	5	0	Low	18.84	21.19	30	PASS
Band4	5MHz	16QAM	20175	1	0	Low	19.61	21.96	30	PASS
Band4	5MHz	16QAM	20175	1	5	Low	19.35	21.7	30	PASS
Band4	5MHz	16QAM	20175	5	0	Low	18.70	21.05	30	PASS
Band4	5MHz	16QAM	20375	1	0	High	19.38	21.73	30	PASS
Band4	5MHz	16QAM	20375	1	5	High	19.27	21.62	30	PASS
Band4	5MHz	16QAM	20375	5	0	High	18.23	20.58	30	PASS
Band4	10MHz	QPSK	20000	1	0	Low	19.93	22.28	30	PASS
Band4	10MHz	QPSK	20000	1	5	Low	19.78	22.13	30	PASS
Band4	10MHz	QPSK	20000	6	0	Low	18.90	21.25	30	PASS
Band4	10MHz	QPSK	20175	1	0	Low	19.72	22.07	30	PASS

Band4	10MHz	QPSK	20175	1	5	Low	19.55	21.9	30	PASS
Band4	10MHz	QPSK	20175	6	0	Low	18.66	21.01	30	PASS
Band4	10MHz	QPSK	20350	1	0	High	19.51	21.86	30	PASS
Band4	10MHz	QPSK	20350	1	5	High	19.36	21.71	30	PASS
Band4	10MHz	QPSK	20350	6	0	High	18.53	20.88	30	PASS
Band4	10MHz	16QAM	20000	1	0	Low	19.63	21.98	30	PASS
Band4	10MHz	16QAM	20000	1	5	Low	19.47	21.82	30	PASS
Band4	10MHz	16QAM	20000	5	0	Low	19.76	22.11	30	PASS
Band4	10MHz	16QAM	20175	1	0	Low	19.51	21.86	30	PASS
Band4	10MHz	16QAM	20175	1	5	Low	19.35	21.7	30	PASS
Band4	10MHz	16QAM	20175	5	0	Low	19.61	21.96	30	PASS
Band4	10MHz	16QAM	20350	1	0	High	19.37	21.72	30	PASS
Band4	10MHz	16QAM	20350	1	5	High	19.20	21.55	30	PASS
Band4	10MHz	16QAM	20350	5	0	High	19.39	21.74	30	PASS
Band4	15MHz	QPSK	20025	1	0	Low	19.93	22.28	30	PASS
Band4	15MHz	QPSK	20025	1	5	Low	19.67	22.02	30	PASS
Band4	15MHz	QPSK	20025	6	0	Low	19.77	22.12	30	PASS
Band4	15MHz	QPSK	20175	1	0	Low	19.73	22.08	30	PASS
Band4	15MHz	QPSK	20175	1	5	Low	19.45	21.8	30	PASS
Band4	15MHz	QPSK	20175	6	0	Low	19.69	22.04	30	PASS
Band4	15MHz	QPSK	20325	1	0	High	19.62	21.97	30	PASS
Band4	15MHz	QPSK	20325	1	5	High	19.49	21.84	30	PASS
Band4	15MHz	QPSK	20325	6	0	High	19.52	21.87	30	PASS
Band4	15MHz	16QAM	20025	1	0	Low	19.64	21.99	30	PASS
Band4	15MHz	16QAM	20025	1	5	Low	19.48	21.83	30	PASS
Band4	15MHz	16QAM	20025	5	0	Low	19.76	22.11	30	PASS
Band4	15MHz	16QAM	20175	1	0	Low	19.49	21.84	30	PASS
Band4	15MHz	16QAM	20175	1	5	Low	19.34	21.69	30	PASS
Band4	15MHz	16QAM	20175	5	0	Low	19.65	22	30	PASS
Band4	15MHz	16QAM	20325	1	0	High	19.37	21.72	30	PASS
Band4	15MHz	16QAM	20325	1	5	High	19.16	21.51	30	PASS
Band4	15MHz	16QAM	20325	5	0	High	19.40	21.75	30	PASS
Band4	20MHz	QPSK	20050	1	0	Low	19.85	22.2	30	PASS
Band4	20MHz	QPSK	20050	1	5	Low	19.63	21.98	30	PASS
Band4	20MHz	QPSK	20050	6	0	Low	19.83	22.18	30	PASS
Band4	20MHz	QPSK	20175	1	0	Low	19.63	21.98	30	PASS
Band4	20MHz	QPSK	20175	1	5	Low	19.37	21.72	30	PASS
Band4	20MHz	QPSK	20175	6	0	Low	19.64	21.99	30	PASS
Band4	20MHz	QPSK	20300	1	0	High	19.61	21.96	30	PASS
Band4	20MHz	QPSK	20300	1	5	High	19.32	21.67	30	PASS
Band4	20MHz	QPSK	20300	6	0	High	19.43	21.78	30	PASS
Band4	20MHz	16QAM	20050	1	0	Low	19.70	22.05	30	PASS
Band4	20MHz	16QAM	20050	1	5	Low	19.45	21.8	30	PASS

Band4	20MHz	16QAM	20050	5	0	Low	19.76	22.11	30	PASS
Band4	20MHz	16QAM	20175	1	0	Low	19.45	21.8	30	PASS
Band4	20MHz	16QAM	20175	1	5	Low	19.29	21.64	30	PASS
Band4	20MHz	16QAM	20175	5	0	Low	19.71	22.06	30	PASS
Band4	20MHz	16QAM	20300	1	0	High	19.42	21.77	30	PASS
Band4	20MHz	16QAM	20300	1	5	High	19.24	21.59	30	PASS
Band4	20MHz	16QAM	20300	5	0	High	19.48	21.83	30	PASS
Band5	1.4MHz	QPSK	20407	1	0	Low	20.62	15.56	38.45	PASS
Band5	1.4MHz	QPSK	20407	1	5	Low	20.41	15.35	38.45	PASS
Band5	1.4MHz	QPSK	20407	6	0	Low	18.62	13.56	38.45	PASS
Band5	1.4MHz	QPSK	20525	1	0	Low	20.55	15.49	38.45	PASS
Band5	1.4MHz	QPSK	20525	1	5	Low	20.36	15.3	38.45	PASS
Band5	1.4MHz	QPSK	20525	6	0	Low	18.64	13.58	38.45	PASS
Band5	1.4MHz	QPSK	20643	1	0	High	20.61	15.55	38.45	PASS
Band5	1.4MHz	QPSK	20643	1	5	High	20.49	15.43	38.45	PASS
Band5	1.4MHz	QPSK	20643	6	0	High	18.71	13.65	38.45	PASS
Band5	1.4MHz	16QAM	20407	1	0	Low	19.69	14.63	38.45	PASS
Band5	1.4MHz	16QAM	20407	1	5	Low	19.47	14.41	38.45	PASS
Band5	1.4MHz	16QAM	20407	5	0	Low	18.32	13.26	38.45	PASS
Band5	1.4MHz	16QAM	20525	1	0	Low	19.42	14.36	38.45	PASS
Band5	1.4MHz	16QAM	20525	1	5	Low	19.49	14.43	38.45	PASS
Band5	1.4MHz	16QAM	20525	5	0	Low	18.30	13.24	38.45	PASS
Band5	1.4MHz	16QAM	20643	1	0	High	19.62	14.56	38.45	PASS
Band5	1.4MHz	16QAM	20643	1	5	High	19.44	14.38	38.45	PASS
Band5	1.4MHz	16QAM	20643	5	0	High	18.64	13.58	38.45	PASS
Band5	3MHz	QPSK	20415	1	0	Low	20.35	15.29	38.45	PASS
Band5	3MHz	QPSK	20415	1	5	Low	20.24	15.18	38.45	PASS
Band5	3MHz	QPSK	20415	6	0	Low	18.45	13.39	38.45	PASS
Band5	3MHz	QPSK	20525	1	0	Low	20.39	15.33	38.45	PASS
Band5	3MHz	QPSK	20525	1	5	Low	20.24	15.18	38.45	PASS
Band5	3MHz	QPSK	20525	6	0	Low	18.40	13.34	38.45	PASS
Band5	3MHz	QPSK	20635	1	0	High	20.50	15.44	38.45	PASS
Band5	3MHz	QPSK	20635	1	5	High	20.56	15.5	38.45	PASS
Band5	3MHz	QPSK	20635	6	0	High	18.51	13.45	38.45	PASS
Band5	3MHz	16QAM	20415	1	0	Low	19.37	14.31	38.45	PASS
Band5	3MHz	16QAM	20415	1	5	Low	19.33	14.27	38.45	PASS
Band5	3MHz	16QAM	20415	5	0	Low	18.32	13.26	38.45	PASS
Band5	3MHz	16QAM	20525	1	0	Low	19.42	14.36	38.45	PASS
Band5	3MHz	16QAM	20525	1	5	Low	19.35	14.29	38.45	PASS
Band5	3MHz	16QAM	20525	5	0	Low	18.59	13.53	38.45	PASS
Band5	3MHz	16QAM	20635	1	0	High	19.60	14.54	38.45	PASS
Band5	3MHz	16QAM	20635	1	5	High	19.52	14.46	38.45	PASS
Band5	3MHz	16QAM	20635	5	0	High	18.69	13.63	38.45	PASS

Band5	5MHz	QPSK	20425	1	0	Low	20.52	15.46	38.45	PASS
Band5	5MHz	QPSK	20425	1	5	Low	20.34	15.28	38.45	PASS
Band5	5MHz	QPSK	20425	6	0	Low	19.48	14.42	38.45	PASS
Band5	5MHz	QPSK	20525	1	0	Low	20.37	15.31	38.45	PASS
Band5	5MHz	QPSK	20525	1	5	Low	20.24	15.18	38.45	PASS
Band5	5MHz	QPSK	20525	6	0	Low	19.38	14.32	38.45	PASS
Band5	5MHz	QPSK	20625	1	0	High	20.69	15.63	38.45	PASS
Band5	5MHz	QPSK	20625	1	5	High	20.50	15.44	38.45	PASS
Band5	5MHz	QPSK	20625	6	0	High	19.46	14.4	38.45	PASS
Band5	5MHz	16QAM	20425	1	0	Low	20.64	15.58	38.45	PASS
Band5	5MHz	16QAM	20425	1	5	Low	20.51	15.45	38.45	PASS
Band5	5MHz	16QAM	20425	5	0	Low	19.57	14.51	38.45	PASS
Band5	5MHz	16QAM	20525	1	0	Low	20.52	15.46	38.45	PASS
Band5	5MHz	16QAM	20525	1	5	Low	20.26	15.2	38.45	PASS
Band5	5MHz	16QAM	20525	5	0	Low	19.54	14.48	38.45	PASS
Band5	5MHz	16QAM	20625	1	0	High	20.56	15.5	38.45	PASS
Band5	5MHz	16QAM	20625	1	5	High	20.28	15.22	38.45	PASS
Band5	5MHz	16QAM	20625	5	0	High	19.75	14.69	38.45	PASS
Band5	10MHz	QPSK	20450	1	0	Low	20.48	15.42	38.45	PASS
Band5	10MHz	QPSK	20450	1	5	Low	20.18	15.12	38.45	PASS
Band5	10MHz	QPSK	20450	6	0	Low	19.39	14.33	38.45	PASS
Band5	10MHz	QPSK	20525	1	0	Low	20.53	15.47	38.45	PASS
Band5	10MHz	QPSK	20525	1	5	Low	20.24	15.18	38.45	PASS
Band5	10MHz	QPSK	20525	6	0	Low	19.43	14.37	38.45	PASS
Band5	10MHz	QPSK	20600	1	0	High	20.55	15.49	38.45	PASS
Band5	10MHz	QPSK	20600	1	5	High	20.46	15.4	38.45	PASS
Band5	10MHz	QPSK	20600	6	0	High	19.39	14.33	38.45	PASS
Band5	10MHz	16QAM	20450	1	0	Low	20.43	15.37	38.45	PASS
Band5	10MHz	16QAM	20450	1	5	Low	20.32	15.26	38.45	PASS
Band5	10MHz	16QAM	20450	5	0	Low	20.60	15.54	38.45	PASS
Band5	10MHz	16QAM	20525	1	0	Low	20.52	15.46	38.45	PASS
Band5	10MHz	16QAM	20525	1	5	Low	20.32	15.26	38.45	PASS
Band5	10MHz	16QAM	20525	5	0	Low	20.68	15.62	38.45	PASS
Band5	10MHz	16QAM	20600	1	0	High	20.55	15.49	38.45	PASS
Band5	10MHz	16QAM	20600	1	5	High	20.36	15.3	38.45	PASS
Band5	10MHz	16QAM	20600	5	0	High	20.71	15.65	38.45	PASS
Band12	1.4MHz	QPSK	23017	1	0	Low	20.23	12.78	34.8	PASS
Band12	1.4MHz	QPSK	23017	1	5	Low	19.98	12.53	34.8	PASS
Band12	1.4MHz	QPSK	23017	6	0	Low	18.10	10.65	34.8	PASS
Band12	1.4MHz	QPSK	23095	1	0	Low	19.97	12.52	34.8	PASS
Band12	1.4MHz	QPSK	23095	1	5	Low	19.84	12.39	34.8	PASS
Band12	1.4MHz	QPSK	23095	6	0	Low	17.89	10.44	34.8	PASS
Band12	1.4MHz	QPSK	23173	1	0	High	20.11	12.66	34.8	PASS

Band12	1.4MHz	QPSK	23173	1	5	High	19.93	12.48	34.8	PASS
Band12	1.4MHz	QPSK	23173	6	0	High	18.06	10.61	34.8	PASS
Band12	1.4MHz	16QAM	23017	1	0	Low	19.19	11.74	34.8	PASS
Band12	1.4MHz	16QAM	23017	1	5	Low	18.97	11.52	34.8	PASS
Band12	1.4MHz	16QAM	23017	5	0	Low	18.10	10.65	34.8	PASS
Band12	1.4MHz	16QAM	23095	1	0	Low	18.78	11.33	34.8	PASS
Band12	1.4MHz	16QAM	23095	1	5	Low	18.81	11.36	34.8	PASS
Band12	1.4MHz	16QAM	23095	5	0	Low	17.96	10.51	34.8	PASS
Band12	1.4MHz	16QAM	23173	1	0	High	18.97	11.52	34.8	PASS
Band12	1.4MHz	16QAM	23173	1	5	High	18.93	11.48	34.8	PASS
Band12	1.4MHz	16QAM	23173	5	0	High	18.12	10.67	34.8	PASS
Band12	3MHz	QPSK	23025	1	0	Low	20.10	12.65	34.8	PASS
Band12	3MHz	QPSK	23025	1	5	Low	20.09	12.64	34.8	PASS
Band12	3MHz	QPSK	23025	6	0	Low	18.07	10.62	34.8	PASS
Band12	3MHz	QPSK	23095	1	0	Low	20.02	12.57	34.8	PASS
Band12	3MHz	QPSK	23095	1	5	Low	19.89	12.44	34.8	PASS
Band12	3MHz	QPSK	23095	6	0	Low	17.97	10.52	34.8	PASS
Band12	3MHz	QPSK	23165	1	0	High	20.16	12.71	34.8	PASS
Band12	3MHz	QPSK	23165	1	5	High	19.96	12.51	34.8	PASS
Band12	3MHz	QPSK	23165	6	0	High	17.99	10.54	34.8	PASS
Band12	3MHz	16QAM	23025	1	0	Low	19.07	11.62	34.8	PASS
Band12	3MHz	16QAM	23025	1	5	Low	18.94	11.49	34.8	PASS
Band12	3MHz	16QAM	23025	5	0	Low	17.97	10.52	34.8	PASS
Band12	3MHz	16QAM	23095	1	0	Low	18.96	11.51	34.8	PASS
Band12	3MHz	16QAM	23095	1	5	Low	18.87	11.42	34.8	PASS
Band12	3MHz	16QAM	23095	5	0	Low	17.88	10.43	34.8	PASS
Band12	3MHz	16QAM	23165	1	0	High	18.98	11.53	34.8	PASS
Band12	3MHz	16QAM	23165	1	5	High	18.75	11.3	34.8	PASS
Band12	3MHz	16QAM	23165	5	0	High	18.17	10.72	34.8	PASS
Band12	5MHz	QPSK	23035	1	0	Low	20.44	12.99	34.8	PASS
Band12	5MHz	QPSK	23035	1	5	Low	20.24	12.79	34.8	PASS
Band12	5MHz	QPSK	23035	6	0	Low	19.19	11.74	34.8	PASS
Band12	5MHz	QPSK	23095	1	0	Low	20.22	12.77	34.8	PASS
Band12	5MHz	QPSK	23095	1	5	Low	20.06	12.61	34.8	PASS
Band12	5MHz	QPSK	23095	6	0	Low	19.17	11.72	34.8	PASS
Band12	5MHz	QPSK	23155	1	0	High	20.22	12.77	34.8	PASS
Band12	5MHz	QPSK	23155	1	5	High	20.11	12.66	34.8	PASS
Band12	5MHz	QPSK	23155	6	0	High	19.21	11.76	34.8	PASS
Band12	5MHz	16QAM	23035	1	0	Low	20.20	12.75	34.8	PASS
Band12	5MHz	16QAM	23035	1	5	Low	20.26	12.81	34.8	PASS
Band12	5MHz	16QAM	23035	5	0	Low	19.10	11.65	34.8	PASS
Band12	5MHz	16QAM	23095	1	0	Low	20.19	12.74	34.8	PASS
Band12	5MHz	16QAM	23095	1	5	Low	19.97	12.52	34.8	PASS

Band12	5MHz	16QAM	23095	5	0	Low	18.99	11.54	34.8	PASS
Band12	5MHz	16QAM	23155	1	0	High	20.25	12.8	34.8	PASS
Band12	5MHz	16QAM	23155	1	5	High	20.06	12.61	34.8	PASS
Band12	5MHz	16QAM	23155	5	0	High	19.06	11.61	34.8	PASS
Band12	10MHz	QPSK	23060	1	0	Low	20.45	13	34.8	PASS
Band12	10MHz	QPSK	23060	1	5	Low	20.17	12.72	34.8	PASS
Band12	10MHz	QPSK	23060	6	0	Low	19.21	11.76	34.8	PASS
Band12	10MHz	QPSK	23095	1	0	Low	20.45	13	34.8	PASS
Band12	10MHz	QPSK	23095	1	5	Low	20.19	12.74	34.8	PASS
Band12	10MHz	QPSK	23095	6	0	Low	19.15	11.7	34.8	PASS
Band12	10MHz	QPSK	23130	1	0	High	20.18	12.73	34.8	PASS
Band12	10MHz	QPSK	23130	1	5	High	20.07	12.62	34.8	PASS
Band12	10MHz	QPSK	23130	6	0	High	19.18	11.73	34.8	PASS
Band12	10MHz	16QAM	23060	1	0	Low	20.20	12.75	34.8	PASS
Band12	10MHz	16QAM	23060	1	5	Low	20.01	12.56	34.8	PASS
Band12	10MHz	16QAM	23060	5	0	Low	20.24	12.79	34.8	PASS
Band12	10MHz	16QAM	23095	1	0	Low	20.19	12.74	34.8	PASS
Band12	10MHz	16QAM	23095	1	5	Low	19.99	12.54	34.8	PASS
Band12	10MHz	16QAM	23095	5	0	Low	20.13	12.68	34.8	PASS
Band12	10MHz	16QAM	23130	1	0	High	20.20	12.75	34.8	PASS
Band12	10MHz	16QAM	23130	1	5	High	20.13	12.68	34.8	PASS
Band12	10MHz	16QAM	23130	5	0	High	20.12	12.67	34.8	PASS
Band13	5MHz	QPSK	23205	1	0	Low	20.20	15.12	34.8	PASS
Band13	5MHz	QPSK	23205	1	5	Low	20.06	14.98	34.8	PASS
Band13	5MHz	QPSK	23205	6	0	Low	19.23	14.15	34.8	PASS
Band13	5MHz	QPSK	23230	1	0	Low	20.37	15.29	34.8	PASS
Band13	5MHz	QPSK	23230	1	5	Low	20.33	15.25	34.8	PASS
Band13	5MHz	QPSK	23230	6	0	Low	19.32	14.24	34.8	PASS
Band13	5MHz	QPSK	23255	1	0	High	20.08	15	34.8	PASS
Band13	5MHz	QPSK	23255	1	5	High	19.90	14.82	34.8	PASS
Band13	5MHz	QPSK	23255	6	0	High	19.07	13.99	34.8	PASS
Band13	5MHz	16QAM	23205	1	0	Low	20.46	15.38	34.8	PASS
Band13	5MHz	16QAM	23205	1	5	Low	20.39	15.31	34.8	PASS
Band13	5MHz	16QAM	23205	5	0	Low	19.11	14.03	34.8	PASS
Band13	5MHz	16QAM	23230	1	0	Low	20.71	15.63	34.8	PASS
Band13	5MHz	16QAM	23230	1	5	Low	20.52	15.44	34.8	PASS
Band13	5MHz	16QAM	23230	5	0	Low	19.24	14.16	34.8	PASS
Band13	5MHz	16QAM	23255	1	0	High	20.42	15.34	34.8	PASS
Band13	5MHz	16QAM	23255	1	5	High	20.14	15.06	34.8	PASS
Band13	5MHz	16QAM	23255	5	0	High	18.86	13.78	34.8	PASS
Band13	10MHz	QPSK	23230	1	0	Low	20.28	15.2	34.8	PASS
Band13	10MHz	QPSK	23230	1	5	Low	20.29	15.21	34.8	PASS
Band13	10MHz	QPSK	23230	6	0	Low	19.27	14.19	34.8	PASS

Band13	10MHz	16QAM	23230	1	0	Low	20.36	15.28	34.8	PASS
Band13	10MHz	16QAM	23230	1	5	Low	20.47	15.39	34.8	PASS
Band13	10MHz	16QAM	23230	5	0	Low	20.32	15.24	34.8	PASS

## Peak-to-Average Ratio for UE category M1

### Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Result (dB)	Limit (dB)	Verdict
Band2	1.4MHz	QPSK	18607	6	0	Low	11.50	<=13	PASS
Band2	1.4MHz	QPSK	18900	6	0	Low	9.96	<=13	PASS
Band2	1.4MHz	QPSK	19193	6	0	High	9.98	<=13	PASS
Band2	1.4MHz	16QAM	18607	5	0	Low	10.22	<=13	PASS
Band2	1.4MHz	16QAM	18900	5	0	Low	10.28	<=13	PASS
Band2	1.4MHz	16QAM	19193	5	0	High	10.46	<=13	PASS
Band2	3MHz	QPSK	18615	6	0	Low	9.78	<=13	PASS
Band2	3MHz	QPSK	18900	6	0	Low	9.90	<=13	PASS
Band2	3MHz	QPSK	19185	6	0	High	10.00	<=13	PASS
Band2	3MHz	16QAM	18615	5	0	Low	10.20	<=13	PASS
Band2	3MHz	16QAM	18900	5	0	Low	10.24	<=13	PASS
Band2	3MHz	16QAM	19185	5	0	High	10.42	<=13	PASS
Band2	5MHz	QPSK	18625	6	0	Low	9.38	<=13	PASS
Band2	5MHz	16QAM	18625	6	0	Low	8.22	<=13	PASS
Band2	5MHz	QPSK	18900	6	0	Low	9.50	<=13	PASS
Band2	5MHz	QPSK	19175	6	0	High	9.64	<=13	PASS
Band2	5MHz	16QAM	18625	5	0	Low	9.66	<=13	PASS
Band2	5MHz	16QAM	18900	5	0	Low	9.74	<=13	PASS
Band2	5MHz	16QAM	19175	5	0	High	9.94	<=13	PASS
Band2	10MHz	QPSK	18650	6	0	Low	9.30	<=13	PASS
Band2	10MHz	QPSK	18900	6	0	Low	9.42	<=13	PASS
Band2	10MHz	QPSK	19150	6	0	High	9.64	<=13	PASS
Band2	10MHz	16QAM	18650	5	0	Low	9.48	<=13	PASS
Band2	10MHz	16QAM	18900	5	0	Low	9.52	<=13	PASS
Band2	10MHz	16QAM	19150	5	0	High	9.58	<=13	PASS
Band2	15MHz	QPSK	18675	6	0	Low	6.00	<=13	PASS
Band2	15MHz	QPSK	18900	6	0	Low	5.94	<=13	PASS
Band2	15MHz	QPSK	19125	6	0	High	6.18	<=13	PASS
Band2	15MHz	16QAM	18675	5	0	Low	6.56	<=13	PASS
Band2	15MHz	16QAM	18900	5	0	Low	6.46	<=13	PASS
Band2	15MHz	16QAM	19125	5	0	High	8.58	<=13	PASS
Band2	20MHz	QPSK	18700	6	0	Low	5.86	<=13	PASS
Band2	20MHz	QPSK	18900	6	0	Low	5.96	<=13	PASS
Band2	20MHz	QPSK	19100	6	0	High	9.82	<=13	PASS
Band2	20MHz	16QAM	18700	5	0	Low	6.58	<=13	PASS
Band2	20MHz	16QAM	18900	5	0	Low	6.68	<=13	PASS

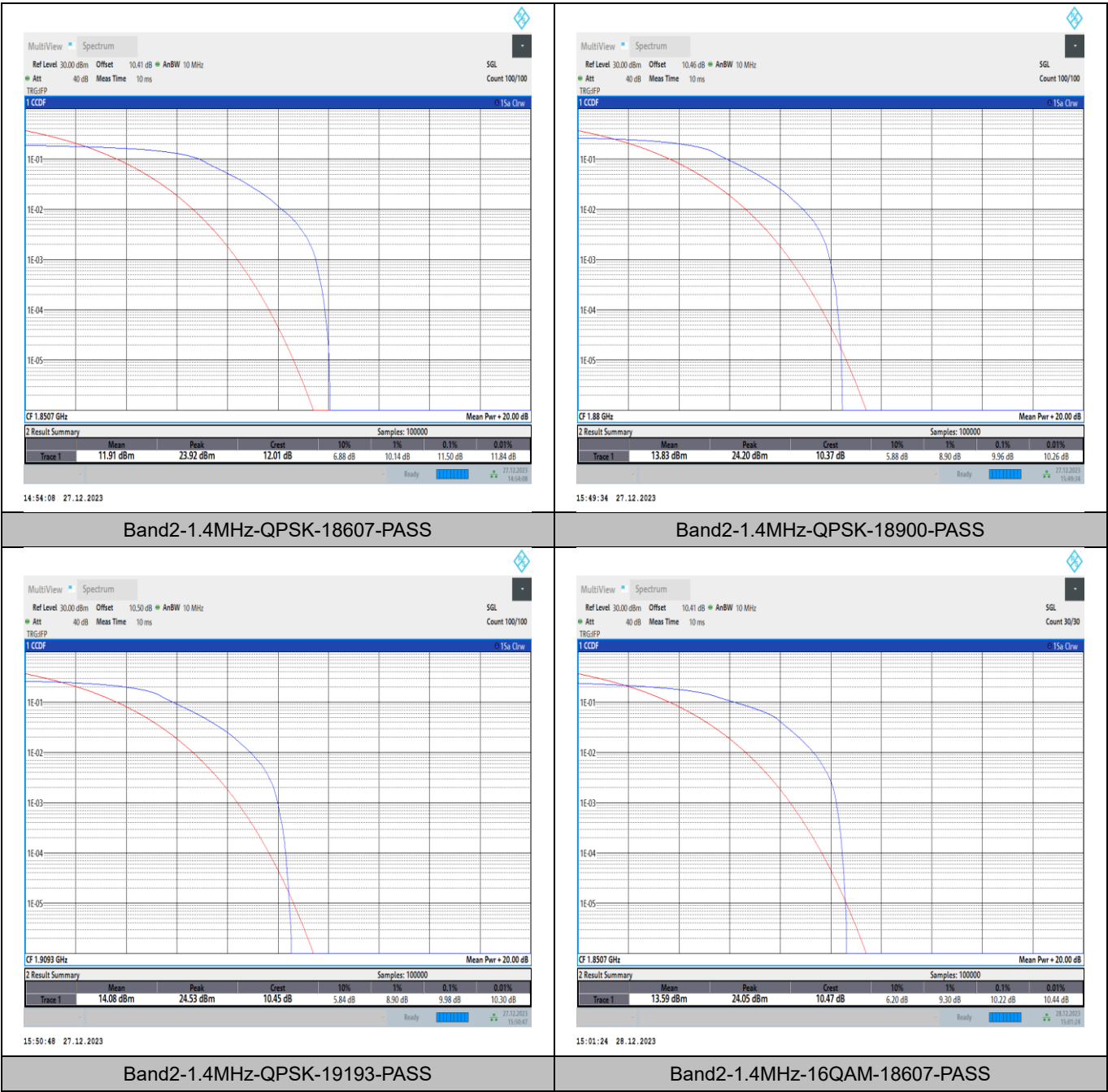


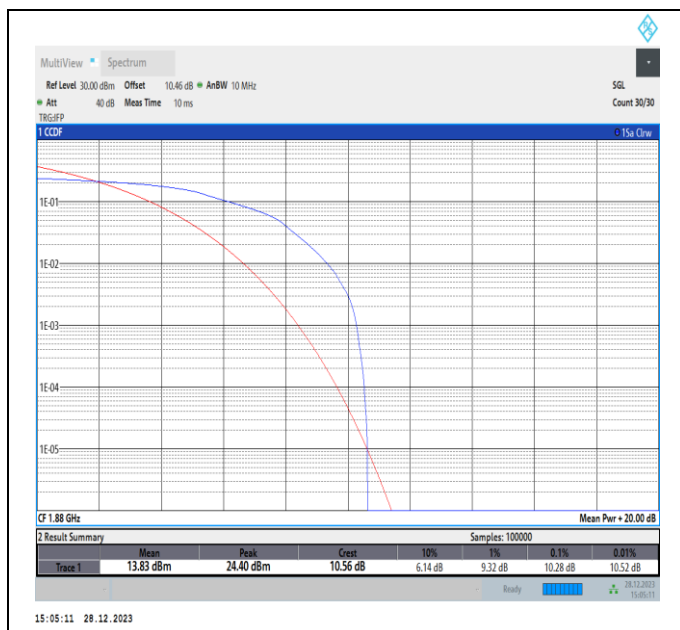
Band2	20MHz	16QAM	19100	5	0	High	6.44	<=13	PASS
Band4	1.4MHz	QPSK	19957	6	0	Low	9.68	<=13	PASS
Band4	1.4MHz	QPSK	20175	6	0	Low	9.76	<=13	PASS
Band4	1.4MHz	QPSK	20393	6	0	High	9.88	<=13	PASS
Band4	1.4MHz	16QAM	19957	5	0	Low	10.06	<=13	PASS
Band4	1.4MHz	16QAM	20175	5	0	Low	10.32	<=13	PASS
Band4	1.4MHz	16QAM	20393	5	0	High	10.40	<=13	PASS
Band4	3MHz	QPSK	19965	6	0	Low	9.90	<=13	PASS
Band4	3MHz	QPSK	20175	6	0	Low	9.88	<=13	PASS
Band4	3MHz	QPSK	20385	6	0	High	9.94	<=13	PASS
Band4	3MHz	16QAM	19965	5	0	Low	10.08	<=13	PASS
Band4	3MHz	16QAM	20175	5	0	Low	10.28	<=13	PASS
Band4	3MHz	16QAM	20385	5	0	High	10.36	<=13	PASS
Band4	5MHz	QPSK	19975	6	0	Low	9.36	<=13	PASS
Band4	5MHz	QPSK	20175	6	0	Low	9.62	<=13	PASS
Band4	5MHz	QPSK	20375	6	0	High	9.60	<=13	PASS
Band4	5MHz	16QAM	19975	5	0	Low	9.80	<=13	PASS
Band4	5MHz	16QAM	20175	5	0	Low	9.94	<=13	PASS
Band4	5MHz	16QAM	20375	5	0	High	10.04	<=13	PASS
Band4	10MHz	QPSK	20000	6	0	Low	9.36	<=13	PASS
Band4	10MHz	QPSK	20175	6	0	Low	9.52	<=13	PASS
Band4	10MHz	QPSK	20350	6	0	High	9.58	<=13	PASS
Band4	10MHz	16QAM	20000	5	0	Low	9.10	<=13	PASS
Band4	10MHz	16QAM	20175	5	0	Low	9.32	<=13	PASS
Band4	10MHz	16QAM	20350	5	0	High	9.48	<=13	PASS
Band4	15MHz	QPSK	20025	6	0	Low	9.96	<=13	PASS
Band4	15MHz	QPSK	20175	6	0	Low	12.14	<=13	PASS
Band4	15MHz	QPSK	20325	6	0	High	6.20	<=13	PASS
Band4	15MHz	16QAM	20025	5	0	Low	10.06	<=13	PASS
Band4	15MHz	16QAM	20175	5	0	Low	6.36	<=13	PASS
Band4	15MHz	16QAM	20325	5	0	High	6.50	<=13	PASS
Band4	20MHz	QPSK	20050	6	0	Low	5.82	<=13	PASS
Band4	20MHz	QPSK	20175	6	0	Low	6.00	<=13	PASS
Band4	20MHz	QPSK	20300	6	0	High	6.20	<=13	PASS
Band4	20MHz	16QAM	20050	5	0	Low	9.82	<=13	PASS
Band4	20MHz	16QAM	20175	5	0	Low	6.32	<=13	PASS
Band4	20MHz	16QAM	20300	5	0	High	6.50	<=13	PASS
Band5	1.4MHz	QPSK	20407	6	0	Low	10.02	<=13	PASS
Band5	1.4MHz	QPSK	20525	6	0	Low	10.02	<=13	PASS
Band5	1.4MHz	QPSK	20643	6	0	High	9.96	<=13	PASS
Band5	1.4MHz	16QAM	20407	5	0	Low	10.66	<=13	PASS
Band5	1.4MHz	16QAM	20525	1	0	Low	10.24	<=13	PASS
Band5	1.4MHz	16QAM	20525	5	0	Low	10.58	<=13	PASS

Band5	1.4MHz	16QAM	20643	5	0	High	10.48	<=13	PASS
Band5	3MHz	QPSK	20415	6	0	Low	10.10	<=13	PASS
Band5	3MHz	QPSK	20525	6	0	Low	10.04	<=13	PASS
Band5	3MHz	QPSK	20635	6	0	High	9.92	<=13	PASS
Band5	3MHz	16QAM	20415	5	0	Low	10.74	<=13	PASS
Band5	3MHz	16QAM	20525	5	0	Low	10.50	<=13	PASS
Band5	3MHz	16QAM	20635	5	0	High	10.56	<=13	PASS
Band5	5MHz	QPSK	20425	6	0	Low	9.80	<=13	PASS
Band5	5MHz	QPSK	20525	6	0	Low	9.68	<=13	PASS
Band5	5MHz	QPSK	20625	6	0	High	9.68	<=13	PASS
Band5	5MHz	16QAM	20425	5	0	Low	10.32	<=13	PASS
Band5	5MHz	16QAM	20525	5	0	Low	10.24	<=13	PASS
Band5	5MHz	16QAM	20625	5	0	High	10.08	<=13	PASS
Band5	10MHz	QPSK	20450	6	0	Low	9.86	<=13	PASS
Band5	10MHz	QPSK	20525	6	0	Low	9.72	<=13	PASS
Band5	10MHz	QPSK	20600	6	0	High	9.66	<=13	PASS
Band5	10MHz	16QAM	20450	5	0	Low	9.84	<=13	PASS
Band5	10MHz	16QAM	20525	5	0	Low	9.68	<=13	PASS
Band5	10MHz	16QAM	20600	5	0	High	9.56	<=13	PASS
Band12	1.4MHz	QPSK	23017	6	0	Low	9.52	<=13	PASS
Band12	1.4MHz	QPSK	23095	6	0	Low	9.52	<=13	PASS
Band12	1.4MHz	QPSK	23173	6	0	High	9.54	<=13	PASS
Band12	1.4MHz	16QAM	23017	5	0	Low	10.20	<=13	PASS
Band12	1.4MHz	16QAM	23095	5	0	Low	10.26	<=13	PASS
Band12	1.4MHz	16QAM	23173	5	0	High	10.20	<=13	PASS
Band12	3MHz	QPSK	23025	6	0	Low	9.56	<=13	PASS
Band12	3MHz	QPSK	23095	6	0	Low	9.60	<=13	PASS
Band12	3MHz	QPSK	23165	6	0	High	9.54	<=13	PASS
Band12	3MHz	16QAM	23025	5	0	Low	10.22	<=13	PASS
Band12	3MHz	16QAM	23095	5	0	Low	10.18	<=13	PASS
Band12	3MHz	16QAM	23165	5	0	High	10.16	<=13	PASS
Band12	5MHz	QPSK	23035	6	0	Low	9.36	<=13	PASS
Band12	5MHz	QPSK	23095	6	0	Low	9.50	<=13	PASS
Band12	5MHz	QPSK	23155	6	0	High	9.48	<=13	PASS
Band12	5MHz	16QAM	23035	5	0	Low	9.90	<=13	PASS
Band12	5MHz	16QAM	23095	5	0	Low	9.86	<=13	PASS
Band12	5MHz	16QAM	23155	5	0	High	9.90	<=13	PASS
Band12	10MHz	QPSK	23060	6	0	Low	9.36	<=13	PASS
Band12	10MHz	QPSK	23095	6	0	Low	9.46	<=13	PASS
Band12	10MHz	QPSK	23130	6	0	High	9.48	<=13	PASS
Band12	10MHz	16QAM	23060	5	0	Low	9.28	<=13	PASS
Band12	10MHz	16QAM	23095	5	0	Low	9.42	<=13	PASS
Band12	10MHz	16QAM	23130	5	0	High	9.40	<=13	PASS

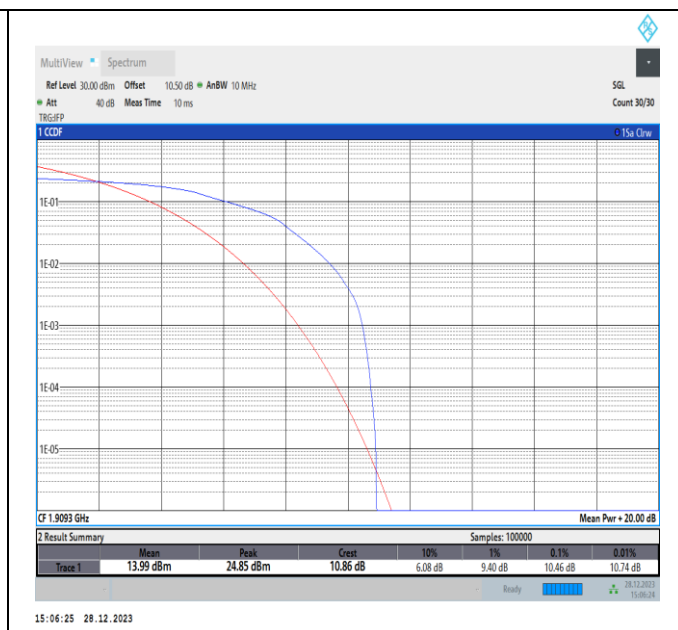
Band13	5MHz	QPSK	23205	6	0	Low	9.48	<=13	PASS
Band13	5MHz	QPSK	23230	6	0	Low	9.54	<=13	PASS
Band13	5MHz	QPSK	23255	6	0	High	9.68	<=13	PASS
Band13	5MHz	16QAM	23205	5	0	Low	10.02	<=13	PASS
Band13	5MHz	16QAM	23230	5	0	Low	10.06	<=13	PASS
Band13	5MHz	16QAM	23255	5	0	High	10.24	<=13	PASS
Band13	10MHz	QPSK	23230	6	0	Low	9.48	<=13	PASS
Band13	10MHz	16QAM	23230	5	0	Low	9.36	<=13	PASS

Test Graphs

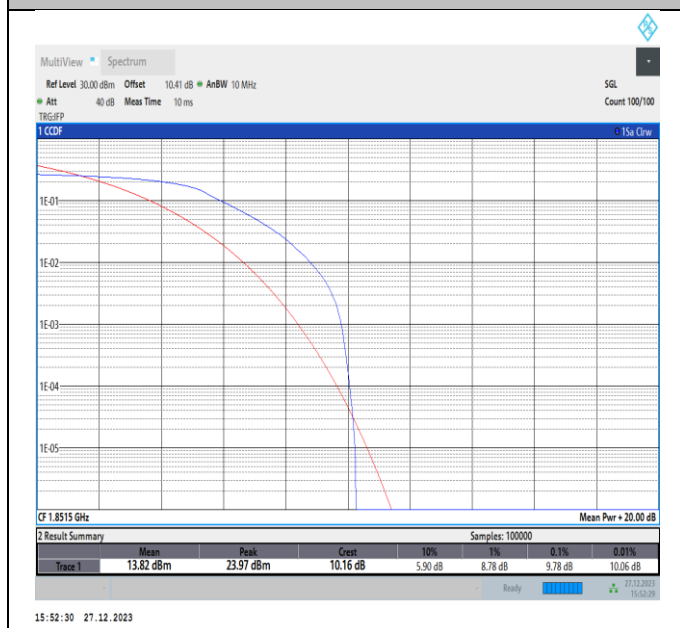




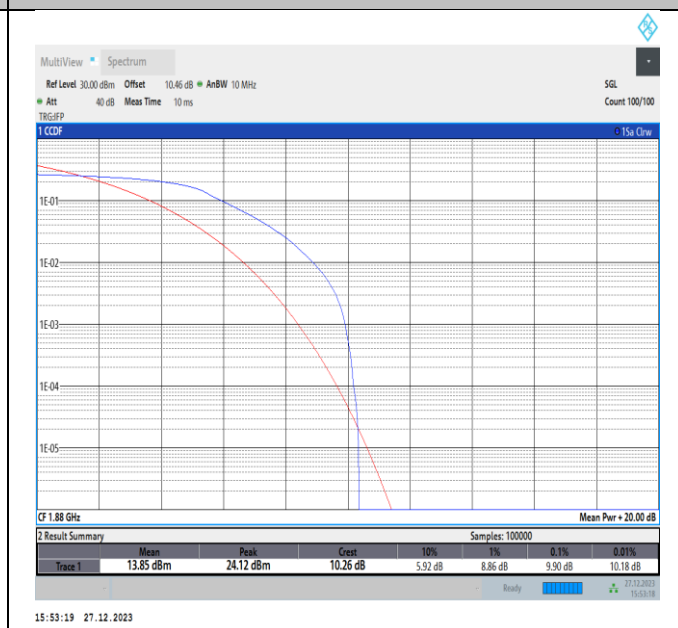
Band2-1.4MHz-16QAM-18900-PASS



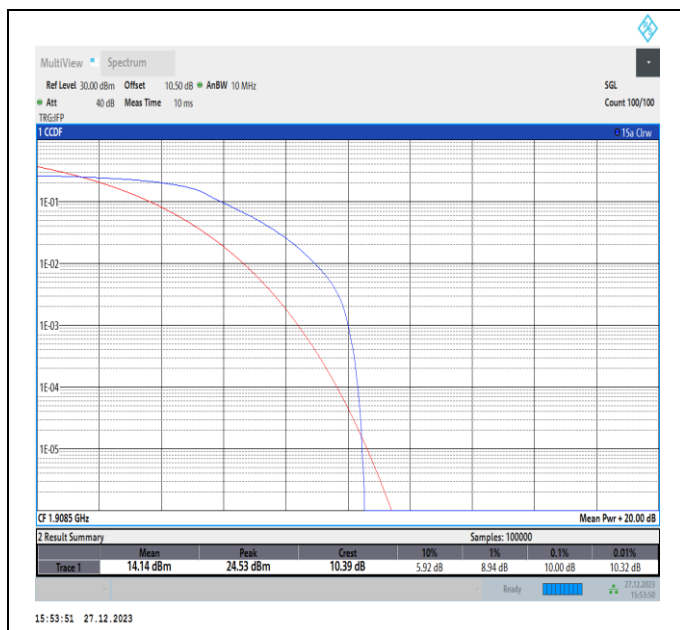
Band2-1.4MHz-16QAM-19193-PASS



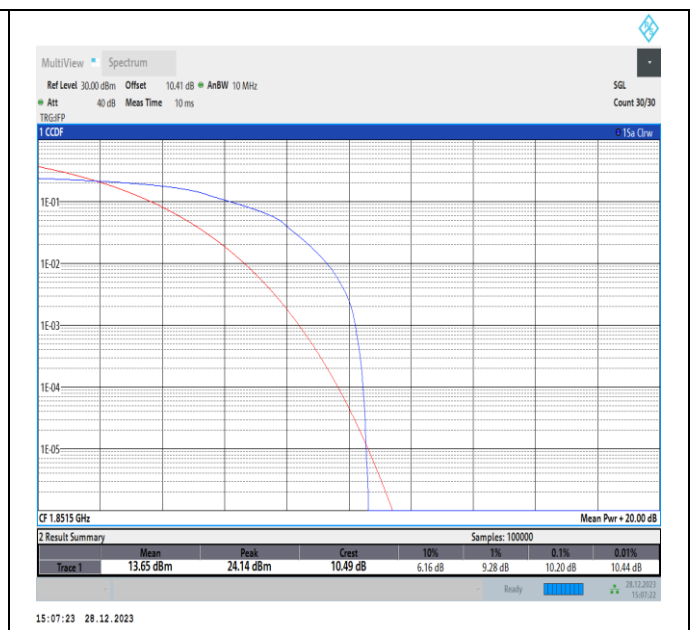
Band2-3MHz-QPSK-18615-PASS



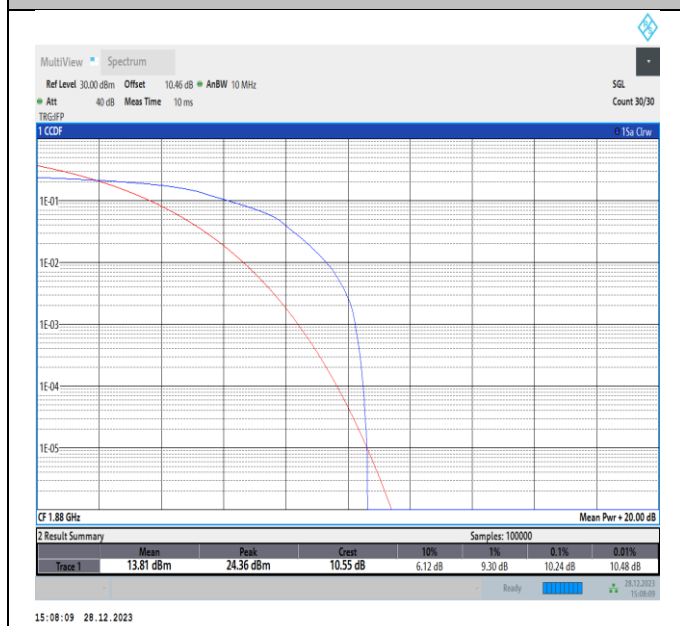
Band2-3MHz-QPSK-18900-PASS



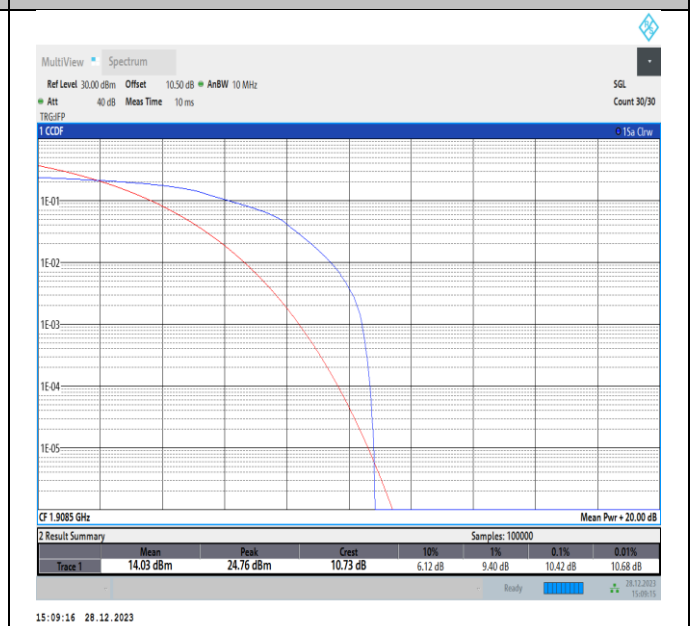
Band2-3MHz-QPSK-19185-PASS



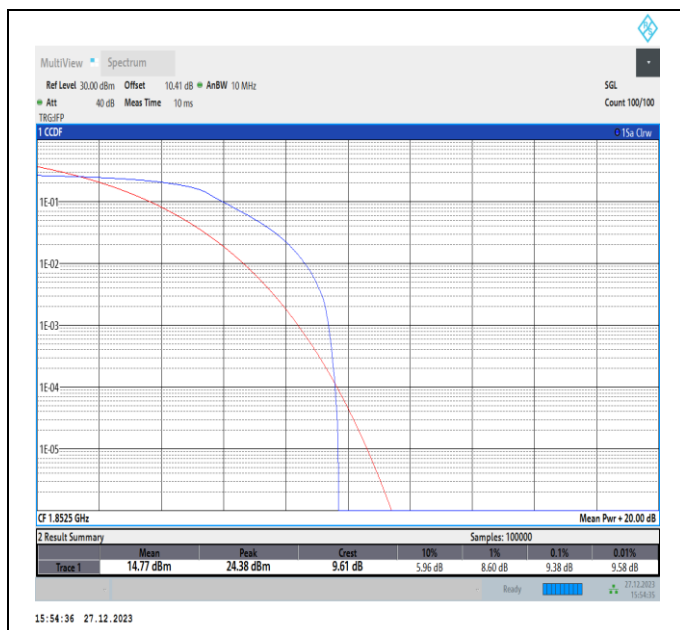
Band2-3MHz-16QAM-18615-PASS



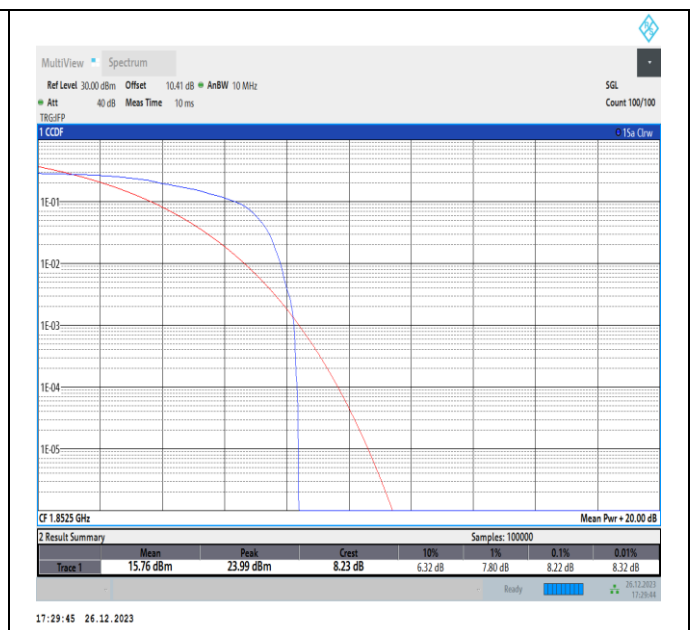
Band2-3MHz-16QAM-18900-PASS



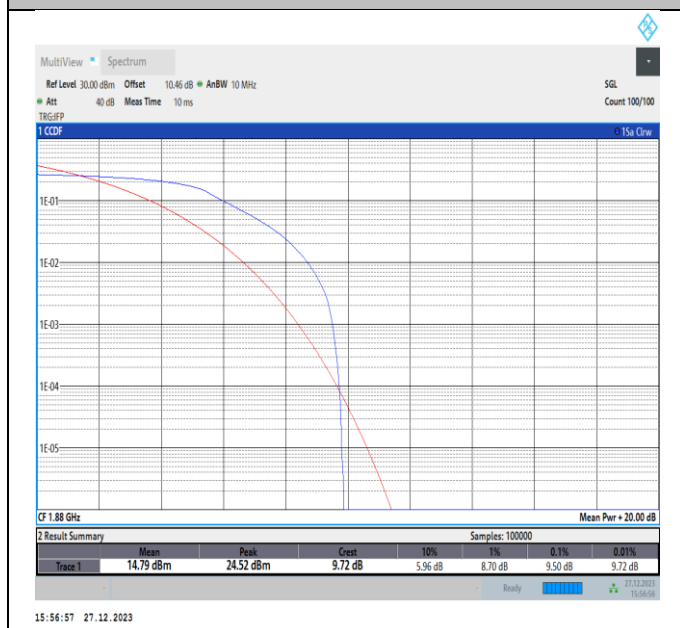
Band2-3MHz-16QAM-19185-PASS



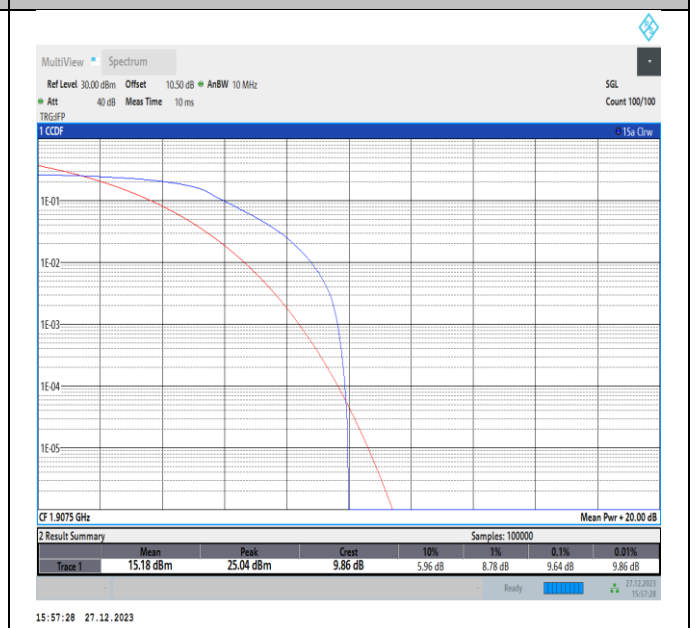
Band2-5MHz-QPSK-18625-PASS



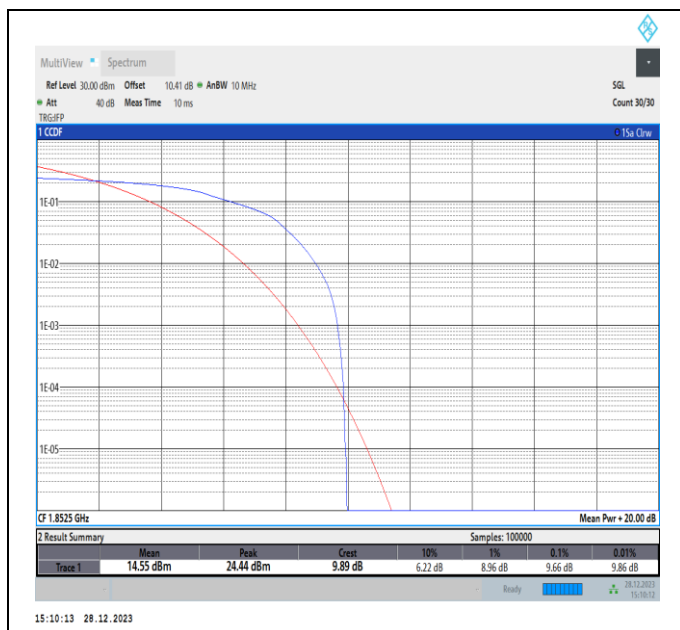
Band2-5MHz-16QAM-18625-PASS



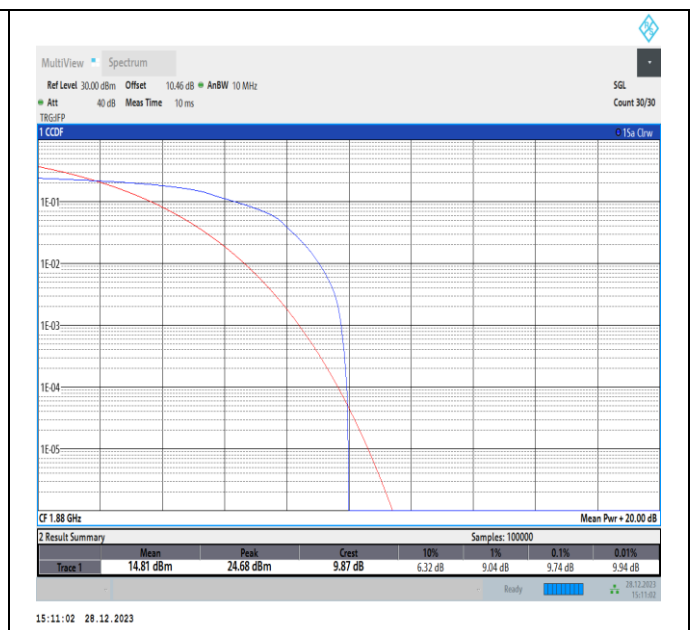
Band2-5MHz-QPSK-18900-PASS



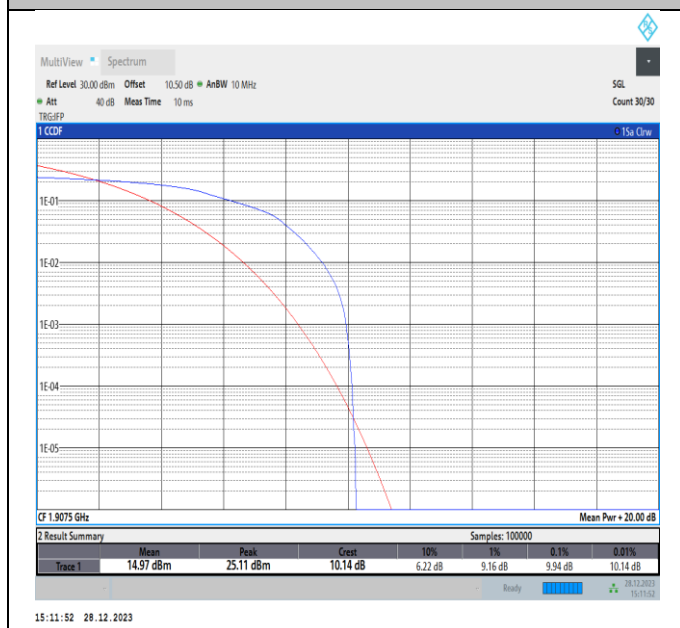
Band2-5MHz-QPSK-19175-PASS



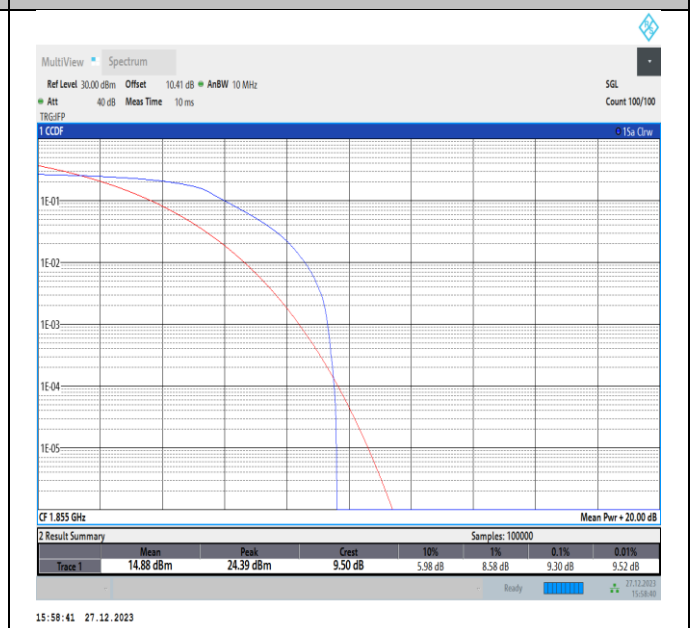
Band2-5MHz-16QAM-18625-PASS



Band2-5MHz-16QAM-18900-PASS

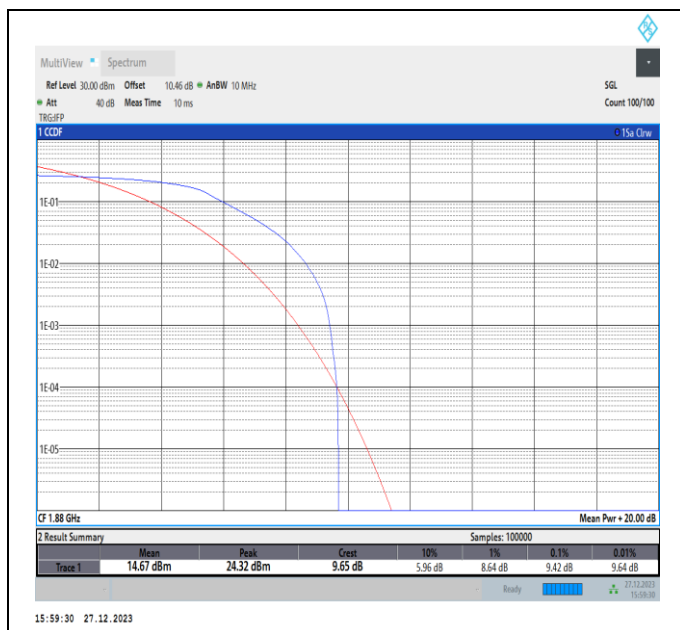


Band2-5MHz-16QAM-19175-PASS

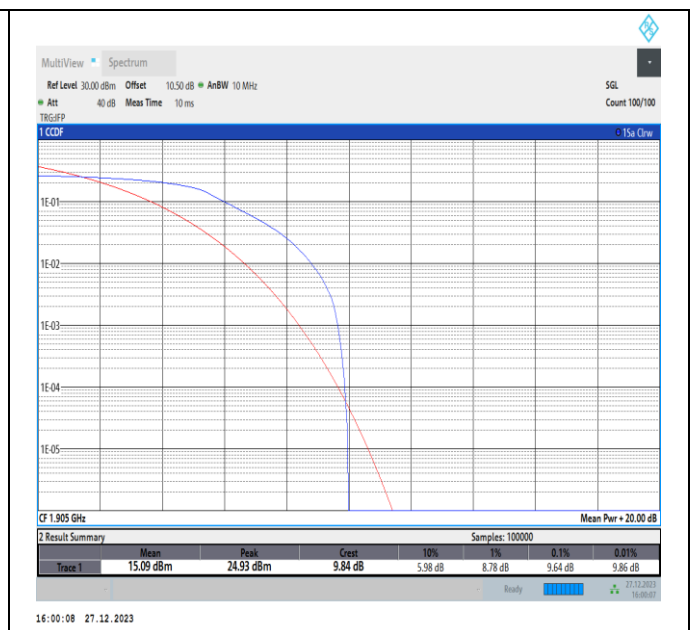


Band2-10MHz-QPSK-18650-PASS

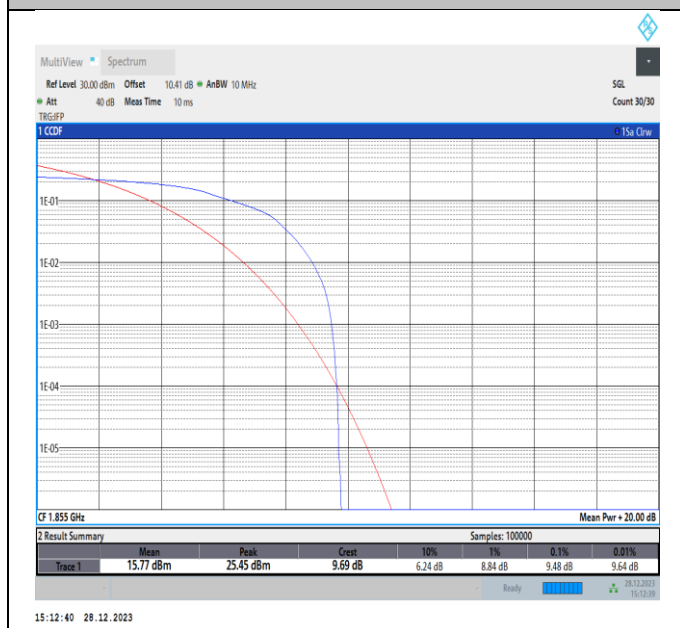




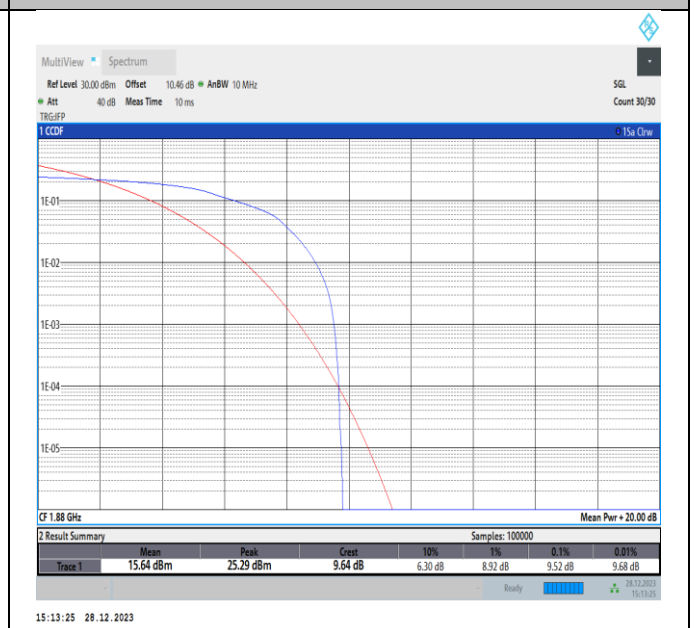
Band2-10MHz-QPSK-18900-PASS



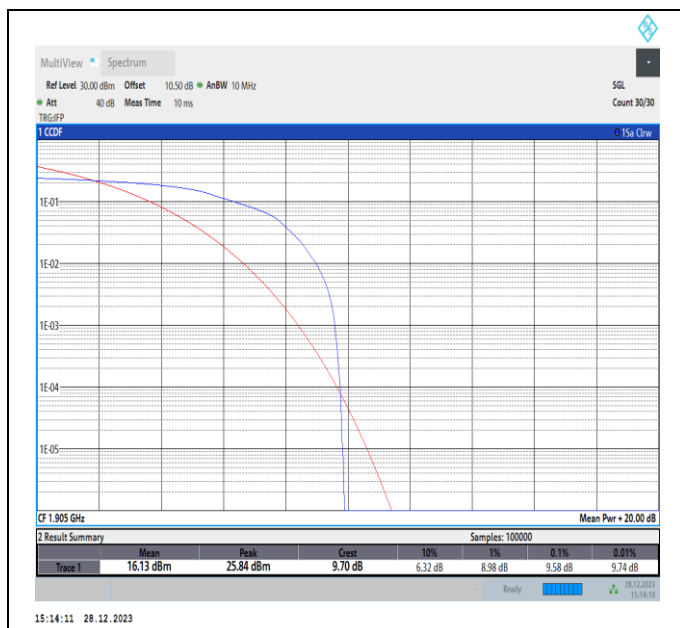
Band2-10MHz-QPSK-19150-PASS



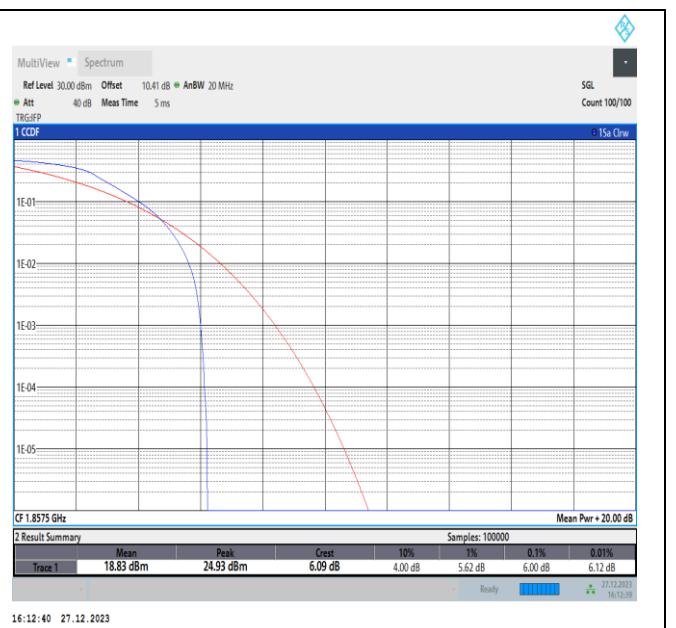
Band2-10MHz-16QAM-18650-PASS



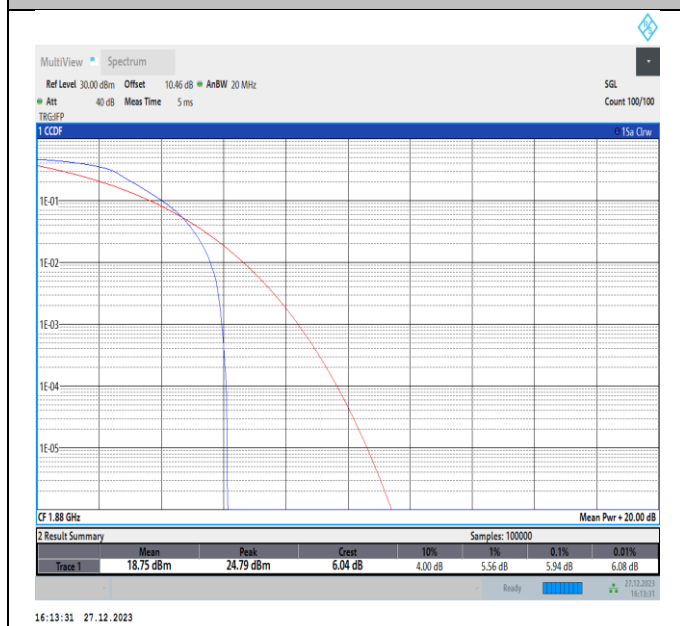
Band2-10MHz-16QAM-18900-PASS



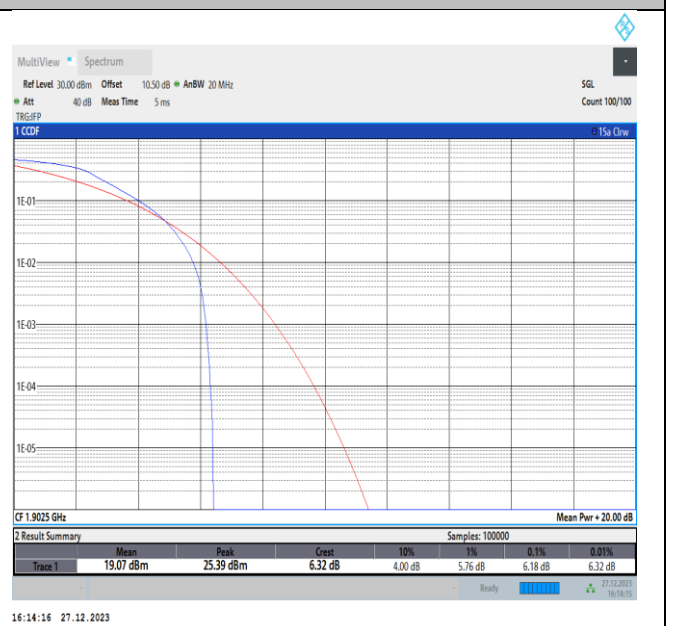
Band2-10MHz-16QAM-19150-PASS



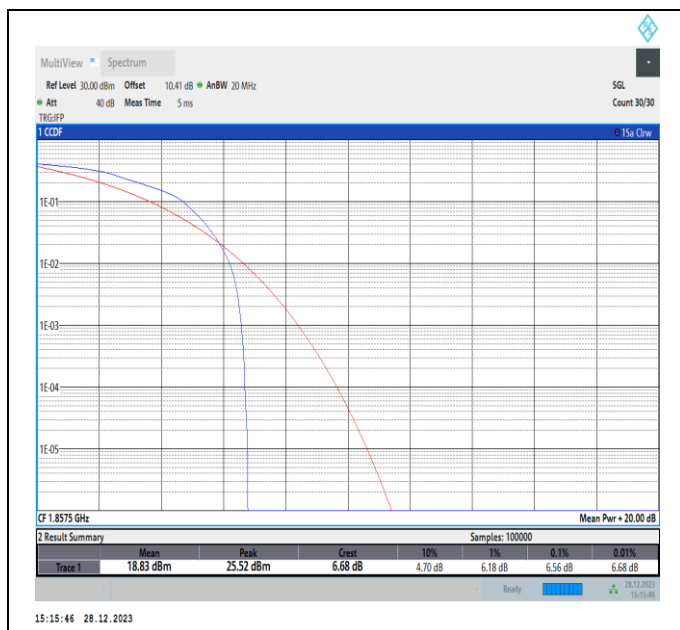
Band2-15MHz-QPSK-18675-PASS



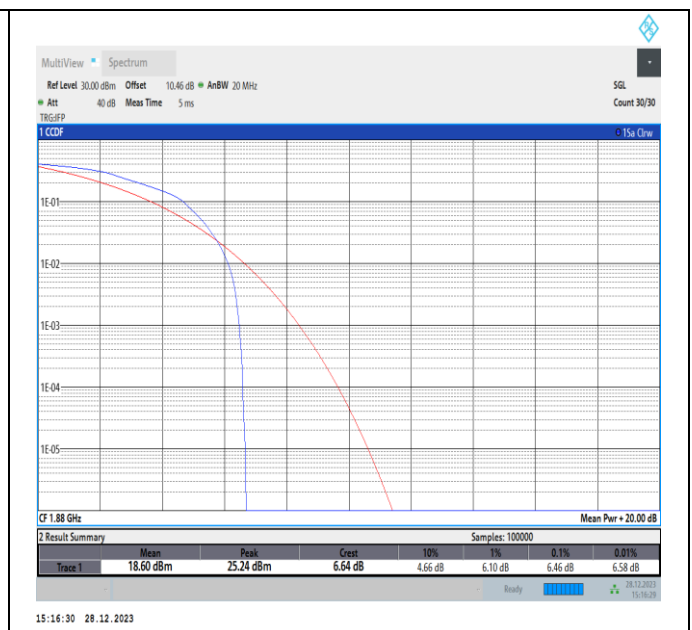
Band2-15MHz-QPSK-18900-PASS



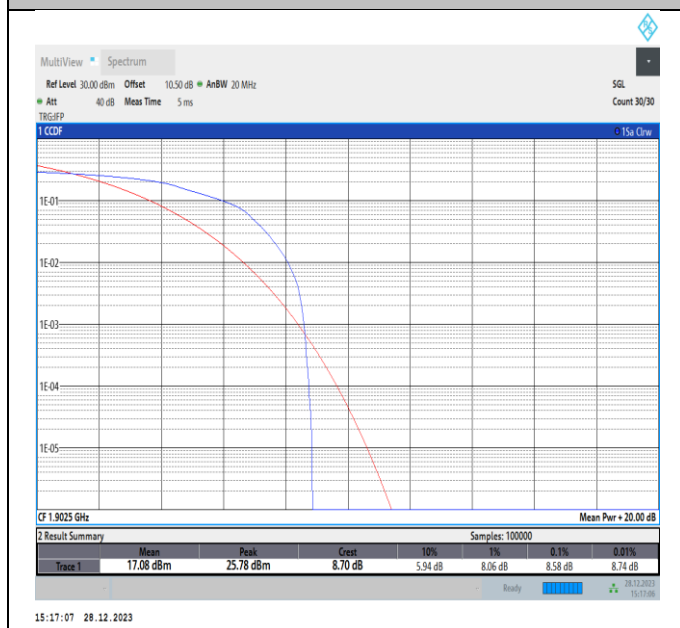
Band2-15MHz-QPSK-19125-PASS



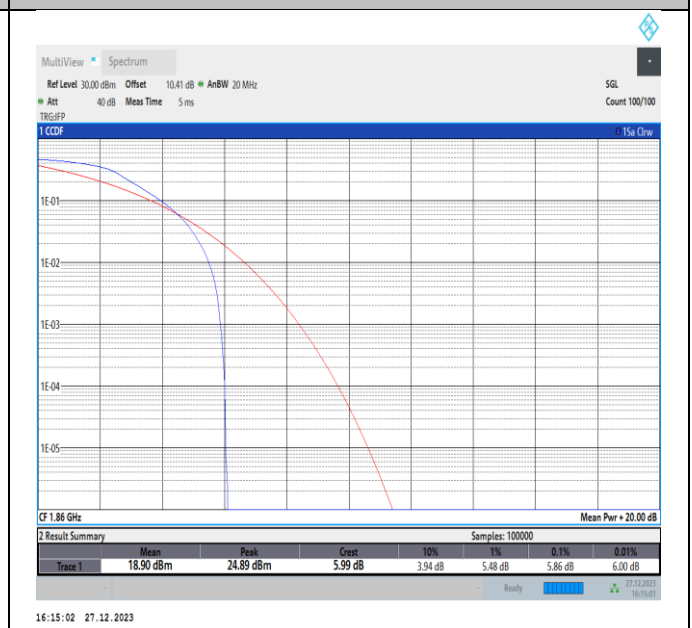
Band2-15MHz-16QAM-18675-PASS



Band2-15MHz-16QAM-18900-PASS



Band2-15MHz-16QAM-19125-PASS



Band2-20MHz-QPSK-18700-PASS