CFR 47 FCC PART 02
CFR 47 FCC PART 22 H
CFR 47 FCC PART 24 E
CFR 47 FCC PART 27
RSS-130, RSS-132, RSS-133
RSS-139

TEST REPORT

For

Mobile Payment Terminal

MODEL NUMBER: D195

REPORT NUMBER: 4791059475-1-RF-6

ISSUE DATE: December 26, 2023

FCC ID: V5PD195
IC: 11689A-D195

Prepared for

PAX Technology Limited
Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	December 26, 2023	Initial Issue	

Note:
1.This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 22 H >< CFR 47 FCC PART 24 E>< CFR 47 FCC PART 27 > < RSS-130, RSS-132, RSS-133, RSS-139>when <Accuracy Method> decision rule is applied.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	PAX Technology Limited
Address:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

Manufacturer Information

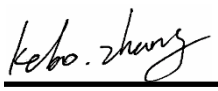
Company Name:	PAX Computer Technology (Shenzhen) Co., Ltd.
Address:	401 and 402,Building 3, Shenzhen Software Park, Nanshan District, Shenzhen City, Guangdong Province, P.R.C

EUT Information

EUT Name:	Mobile Payment Terminal
Model:	D195
Brand:	PAX
Sample Received Date:	November 2, 2023
Sample Status:	Normal
Sample ID:	6613116
Date of Tested:	November 2, 2023 to December 25, 2023

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 22 H	PASS
CFR 47 FCC PART 24 E	PASS
CFR 47 FCC PART 27	PASS
RSS-132 Issue 4, RSS-133 Issue 6, RSS-130 Issue 2, RSS-139 Issue 4	PASS

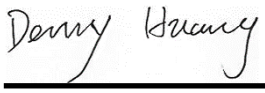
Prepared By:



Kebo Zhang

Senior Project Engineer

Checked By:



Denny Huang

Senior Project Engineer

Approved By:

Stephen Guo

Operations Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.26-2015, 971168 D01 Power Meas License Digital Systems v03r01, 971168 D02 Misc Rev Approv License Devices v02r02, 412172 D01 v01r01 Determining ERP and EIRP, CFR 47 FCC Part 2, Part 22 H, Part 24 E, Part 27, RSS-130, RSS-132, RSS-133, RSS-139

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 40 GHz)	5.78 dB (1 GHz-18 GHz)
	5.23dB (18 GHz-26 GHz)
	5.64 dB (26 GHz-40 GHz)
Bandwidth	1.1 %
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Mobile Payment Terminal
Model	D195
Rated Input:	DC 5 V, 1 A
Battery:	3.7V/2100mAh

5.2. TEST CHANNEL CONFIGURATION

Mode	TX	Low	Middle	High
LTE Band 2	TX (1.4 MHz)	18607	18900	19193
		1850.7 MHz	1880 MHz	1909.3 MHz
	TX (3 MHz)	18615	18900	19185
		1851.5 MHz	1880 MHz	1908.5 MHz
	TX (5 MHz)	18625	18900	19175
		1852.5 MHz	1880 MHz	1907.5 MHz
	TX (10 MHz)	18650	18900	19150
		1855 MHz	1880 MHz	1905 MHz
	TX (15 MHz)	18675	18900	19125
		1857.5 MHz	1880 MHz	1902.5 MHz
	TX (20 MHz)	18700	18900	19100
		1860 MHz	1880 MHz	1900 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 4	TX (1.4 MHz)	19957	20175	20393
		1710.7 MHz	1732.5 MHz	1754.3 MHz
	TX (3 MHz)	19965	20175	20385
		1711.5 MHz	1732.5 MHz	1753.5 MHz
	TX (5 MHz)	19975	20175	20375
		1712.5 MHz	1732.5 MHz	1752.5 MHz
	TX (10 MHz)	20000	20175	20350
		1715 MHz	1732.5 MHz	1750 MHz
	TX (15 MHz)	20025	20175	20325
		1717.5 MHz	1732.5 MHz	1747.5 MHz
	TX (20 MHz)	20050	20175	20300
		1720 MHz	1732.5 MHz	1745 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 5	TX (1.4 MHz)	20407	20525	20643
		824.7 MHz	836.5 MHz	848.3 MHz
	TX (3 MHz)	20415	20525	20635
		825.5 MHz	836.5 MHz	847.5 MHz
	TX (5 MHz)	20425	20525	20625
		826.5 MHz	836.5 MHz	846.5 MHz
	TX (10 MHz)	20450	20525	20600
		829.0 MHz	836.5 MHz	844.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 12	TX (1.4 MHz)	23017	23095	23173
		699.7 MHz	707.5 MHz	715.3 MHz
	TX (3 MHz)	23025	23095	23165
		700.5 MHz	707.5 MHz	714.5 MHz
	TX (5 MHz)	23035	23095	23155
		701.5 MHz	707.5 MHz	713.5 MHz
	TX (10 MHz)	23060	23095	23130
		704.0 MHz	707.5 MHz	711.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 13	TX (5 MHz)	23205	23230	23255
		779.5 MHz	782.0 MHz	784.5 MHz
	TX (10 MHz)	23230	23230	23230
		782.0 MHz	782.0 MHz	782.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 17	TX (5 MHz)	23755	23790	23825
		706.5 MHz	710.0 MHz	713.5 MHz
	TX (10 MHz)	23780	23790	23800
		709.0 MHz	710.0 MHz	711.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 66	TX (1.4 MHz)	131979	132322	132665
		1710.7 MHz	1745.0 MHz	1779.3 MHz
	TX (3 MHz)	131987	132322	132657
		1711.5 MHz	1745.0 MHz	1778.5 MHz
	TX (5 MHz)	131997	132322	132647
		1712.5 MHz	1745.0 MHz	1777.5 MHz
	TX (10 MHz)	132022	132322	132622
		1715.0 MHz	1745.0 MHz	1775.0 MHz
	TX (15 MHz)	132047	132322	132597
		1717.5 MHz	1745.0 MHz	1772.5 MHz
	TX (20 MHz)	132072	132322	132572
		1720.0 MHz	1745.0 MHz	1770.0 MHz

5.3. MAXIMUM AVERAGE OUTPUT POWER

LTE Band 2

Part 24/RSS-133	
EIRP Limit(W)	2
Antenna Gain (dBi)	2.59

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	1850.7	1909.3	22.84	25.43	0.35	1.086	1M09G7W
	16QAM			21.98	24.57	0.29	1.084	1M08D7W
3	QPSK	1851.5	1908.5	22.71	25.30	0.34	2.684	2M68G7W
	16QAM			21.62	24.21	0.26	2.685	2M69D7W
5	QPSK	1852.5	1907.5	22.61	25.20	0.33	4.486	4M49G7W
	16QAM			22.1	24.69	0.29	4.485	4M49D7W
10	QPSK	1855.0	1905.0	22.59	25.18	0.33	8.954	8M95G7W
15	QPSK	1857.5	1902.5	22.54	25.13	0.33	13.453	13M5G7W
20	QPSK	1860.0	1900.0	22.43	25.02	0.32	17.997	18M0G7W

LTE Band 4

Part 27/RSS-139	
EIRP Limit(W)	1.00
Antenna Gain (dBi)	3.13

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	1710.7	1754.3	22.85	25.98	0.40	1.083	1M08G7W
	16QAM			22.05	25.18	0.33	1.085	1M09D7W
3	QPSK	1711.5	1753.5	22.72	25.85	0.38	2.685	2M69G7W
	16QAM			22.27	25.40	0.35	2.686	2M69D7W
5	QPSK	1712.5	1752.5	22.85	25.98	0.40	4.486	4M49G7W
	16QAM			21.61	24.74	0.30	4.485	4M49D7W
10	QPSK	1715.0	1750.0	22.85	25.98	0.40	8.94	8M94G7W
15	QPSK	1717.5	1747.5	22.66	25.79	0.38	13.42	13M4G7W
20	QPSK	1720.0	1745.0	22.92	26.05	0.40	17.926	17M9G7W

LTE Band 5

Part 22H/RSS-132	
ERP Limit(W)	7.00
Antenna Gain (dBi)	-2.42

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	824.7	848.3	23.34	18.28	0.07	1.086	1M09G7W
	16QAM			22.66	17.48	0.06	1.083	1M08D7W
3	QPSK	825.5	847.5	23.23	18.15	0.07	2.685	2M69G7W
	16QAM			22.57	17.70	0.06	2.686	2M69D7W
5	QPSK	826.5	846.5	23.45	18.28	0.07	4.484	4M48G7W
	16QAM			22.53	17.04	0.05	4.483	4M48D7W
10	QPSK	829.0	844.0	23.39	18.28	0.07	8.941	8M94G7W

LTE Band12

Part 27/RSS-130	
ERP Limit(W)	3.00
Antenna Gain (dBi)	-3.29

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	699.7	715.3	23.57	18.13	0.07	1.086	1M09G7W
	16QAM			22.77	17.33	0.05	1.083	1M08D7W
3	QPSK	700.5	714.5	23.81	18.37	0.07	2.683	2M68G7W
	16QAM			22.64	17.20	0.05	2.684	2M68D7W
5	QPSK	701.5	713.5	23.42	17.98	0.06	4.486	4M49G7W
	16QAM			22.47	17.03	0.05	4.485	4M49D7W
10	QPSK	704.0	711.0	23.55	18.11	0.06	8.958	8M96G7W

LTE Band 13

Part 27/RSS-130	
ERP Limit(W)	3.00
Antenna Gain (dBi)	-2.5

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
5	QPSK	779.5	784.5	23.26	18.61	0.07	4.476	4M48G7W
	16QAM			22.5	17.85	0.06	4.48	4M48D7W
10	QPSK	782	782	23.06	18.41	0.07	8.935	8M94G7W

LTE Band 17

Part 27/RSS-130	
ERP Limit(W)	3.00
Antenna Gain (dBi)	-3.29

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
5	QPSK	706.5	713.5	23.42	17.98	0.06	4.481	4M48G7W
	16QAM			22.67	17.23	0.05	4.483	4M48D7W
10	QPSK	709.0	711.0	23.54	18.10	0.06	8.933	8M93G7W

LTE Band 66

Part 24/RSS-133	
EIRP Limit(W)	1
Antenna Gain (dBi)	3.23

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	1710.7	1779.3	22.63	25.86	0.39	1.088	1M09G7W
	16QAM			21.45	24.68	0.29	1.084	1M08D7W
3	QPSK	1711.5	1778.5	22.34	25.57	0.36	2.685	2M69G7W
	16QAM			21.27	24.50	0.28	2.685	2M69D7W
5	QPSK	1712.5	1777.5	22.36	25.59	0.36	4.486	4M49G7W
	16QAM			21.61	24.84	0.30	4.483	4M48D7W
10	QPSK	1715.0	1775.0	22.52	25.75	0.38	8.945	8M95G7W
15	QPSK	1717.5	1772.5	23.25	26.48	0.44	13.424	13M4G7W
20	QPSK	1720.0	1770.0	22.69	25.92	0.39	17.935	18M0G7W

5.4. WORST-CASE CONFIGURATION AND MODE

During all testing, EUT is in link mode with base station emulator at maximum power level. The worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM. All testing was performed using QPSK and 16QAM modulations to represent the worst case.

The radiated spurious emissions measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT was investigated in three orthogonal orientations X,Y and Z. It was determined that X orientation was the worst-case.

Radiated spurious emissions were investigated below 30 MHz, 30 MHz - 1 GHz and above 1 GHz. There were no emissions found on below 1GHz and above 18 GHz, the emissions between 1 GHz – 18 GHz were tested the highest transmitting power channel and the worse configuration.

Test Items	Worst case test configuration			
Description	Modulation	Channel	Bandwidth (MHz)	RB Configuration
Radiated Spurious Emissions	QPSK	L, M, H	Maximum BW	RB size=1, RB Location= Low

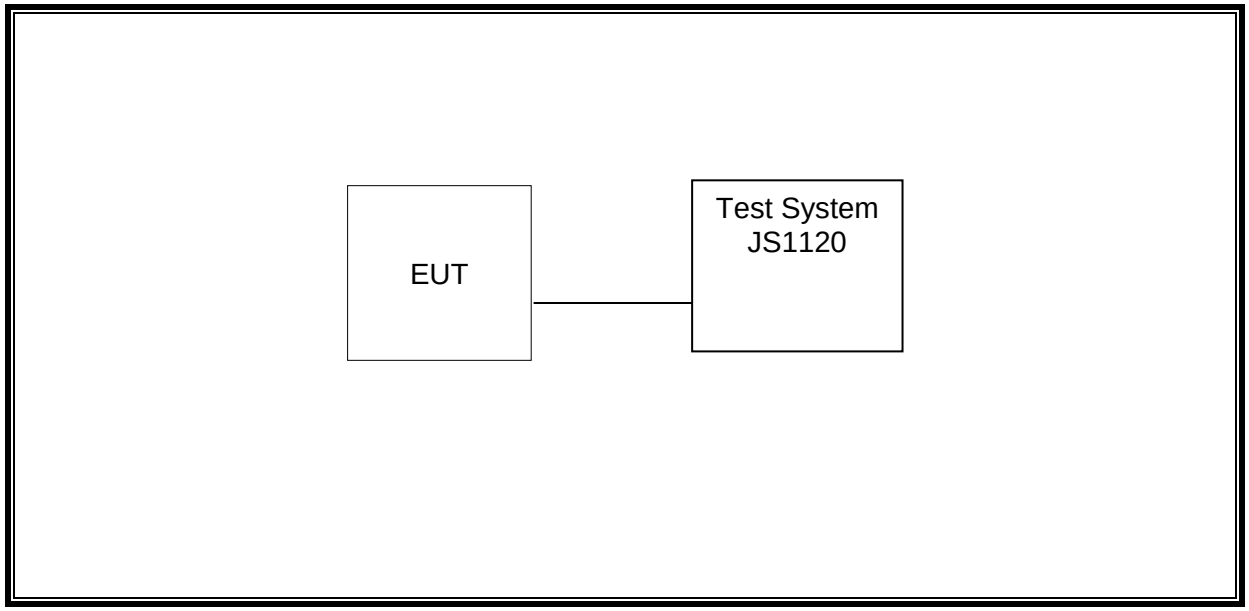
5.5. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Band	Antenna Type	MAX Antenna Gain (dBi)
1	LTE Band 2	FPC	2.59
1	LTE Band 4	FPC	3.13
1	LTE Band 5	FPC	-2.42
1	LTE Band 12	FPC	-3.29
1	LTE Band 13	FPC	-2.5
1	LTE Band 17	FPC	-3.29
1	LTE Band 66	FPC	3.23

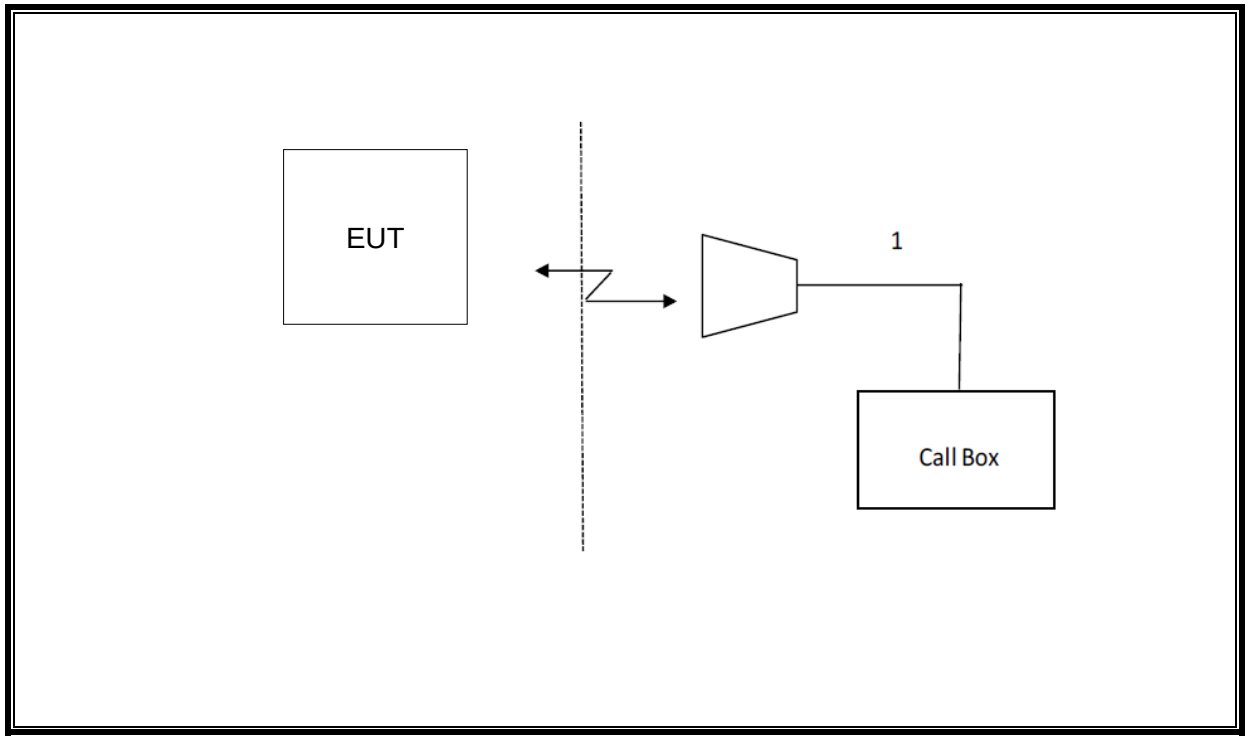
Band	Transmit and Receive Mode	Description
LTE Band 2	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna
LTE Band 4	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna
LTE Band 5	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna
LTE Band 12	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna
LTE Band 13	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna
LTE Band 17	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna
LTE Band 66	☒1TX, 1RX	Main antenna can be used as transmitting/receiving antenna

Note: The value of the antenna gain was declared by customer.

5.6. DESCRIPTION OF TEST SETUP



Radiated



6. MEASURING INSTRUMENT AND SOFTWARE USED

Antenna Terminal Test						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	R&S	FSV40	S422060001	Oct.12, 2023	Oct.11, 2024
☑	Wideband Radio Communication Tester	R&S	CMW500	155523	Oct.12, 2023	Oct.11, 2024
☑	DC Power Supply	Array	3662A	A1512015	Oct.12, 2023	Oct.11, 2024
Software						
Used	Description		Manufacturer	Name		Version
☑	Tonsend Cellular Test System		Tonsend	JS1120 RF Auto Test System		3.1.46
Radiated Test						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.12, 2023	Oct.11, 2024
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Aug.02, 2021	Aug.01, 2024
☑	Preamplifier	HP	8447D	2944A09099	Oct.12, 2023	Oct.11, 2024
☑	EMI Measurement Receiver	R&S	ESR26	101377	Oct.12, 2023	Oct.11, 2024
☑	Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024
☑	Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00067	Oct.12, 2023	Oct.11, 2024
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.12, 2023	Oct.11, 2024
☑	Loop antenna	Schwarzbeck	1519B	00008	Dec.14, 2021	Dec.13, 2024
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Oct.12, 2023	Oct.11, 2024
Software						
Used	Description		Manufacturer	Name		Version
☑	Test Software for Radiated disturbance		Farad	EZ-EMC		Ver. UL-3A1

7. ANTENNA TERMINAL TEST RESULTS

7.1. EFFECTIVE (ISOTROPIC) RADIATED POWER OF TRANSMITTER

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
24.232(c) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.
27.50(c) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.
27.50(d) 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 watts EIRP.
27.50(h) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

RSS-130
The transmitter output power shall be measured in terms of average power. In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

Frequency bands 617-652 MHz and 663-698 MHz
The e.r.p. shall not exceed 3 watts for mobile equipment, fixed subscriber equipment and portable equipment.

Frequency bands 698-756 MHz and 777-787 MHz
The e.r.p. shall not exceed 30 watts for mobile equipment and outdoor fixed subscriber equipment. The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

RSS-132
The transmitter output power shall be measured in terms of average power. The equivalent radiated power (e.r.p.) shall not exceed 7 watts for mobile equipment and 3 watts for portable equipment.

In addition, 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.

RSS-133
The equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits 2W.

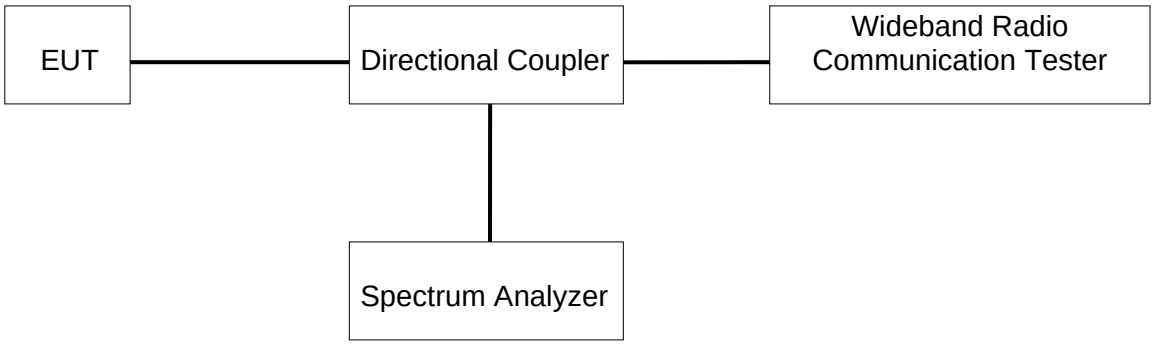
In addition, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

RSS-139
The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt.
In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

TEST PROCEDURE

Refer to ANSI C63.26:2015 and KDB 971168 D01 Section 5.6
ERP/ EIRP = PMeas + GT − LC
where:
ERP or EIRP = effective or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = 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
The transmitter has a maximum radiated ERP / EIRP output powers as follows:

TEST SETUP



TEST ENVIRONMENT

Temperature	22.1°C	Relative Humidity	54.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 5 V

RESULTS

Please refer to Appendix A.

7.2. PEAK TO AVERAGE RADIO

LIMITS

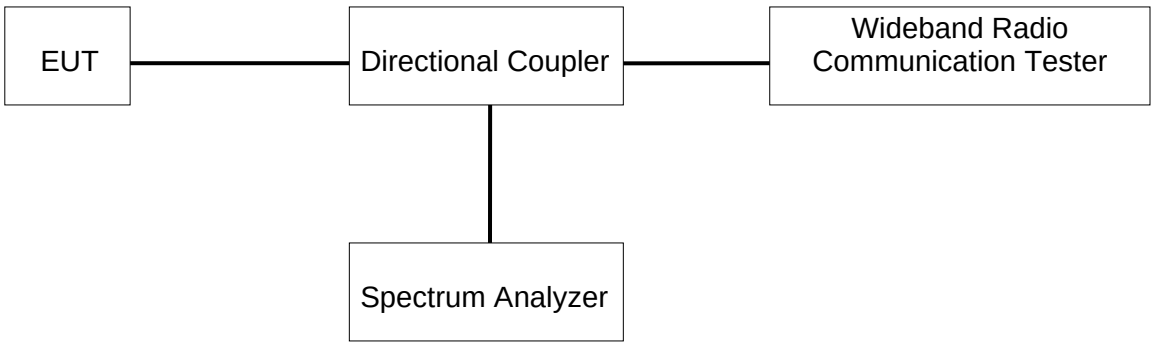
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The PAR was measured on the Spectrum Analyzer.

TEST SETUP



TEST ENVIRONMENT

Temperature	22.1°C	Relative Humidity	54.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 5 V

RESULTS

Please refer to Appendix B.

7.3. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049, RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

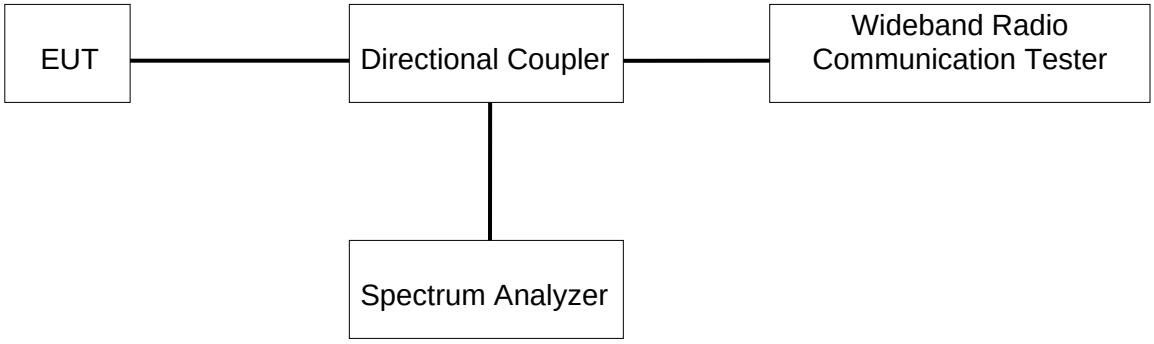
For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01)

TEST SETUP



TEST ENVIRONMENT

Temperature	22.1°C	Relative Humidity	54.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 5 V

RESULTS

Please refer to Appendix C.

7.4. BAND EDGE EMISSIONS

RULE PART(S)

FCC §2.1051, §22.917, §24.238, §27.53
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

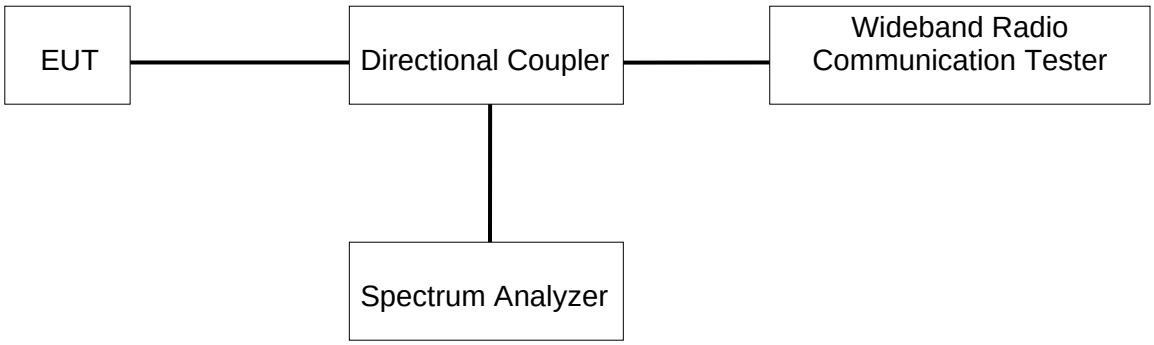
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01
The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

a) Set the RBW = 1 ~ 1.5 % of OBW (Typically limited to a minimum RBW of 1% of the OBW)
b) Set VBW ≥ 3 × RBW;
c) Set span ≥ 1.5 times the OBW;
d) Sweep time = Auto;
e) Detector = RMS;
f) Ensure that the number of measurement points ≥ 2*Span/RBW;
g) Trace mode = Average (100);

TEST SETUP



TEST ENVIRONMENT

Temperature	22.1°C	Relative Humidity	54.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 5 V

RESULTS

Please refer to Appendix D.

7.5. SPURIOUS EMISSION AT ANTENNA TERMINAL

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

FCC: §22.901, §22.917, §24.238
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.

RSS-132 section 5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.
(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.

RSS-133 section 6.5.1
Equipment shall comply with the limits in (i) and (ii) below.
(i) 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).
(ii) 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.

RSS-139 section 5.6
Unwanted emissions shall be measured in terms of average values.
For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Table 6: Unwanted emission limits

Offset from the edge of the frequency block or frequency block group	Unwanted emission limits
1 MHz	-13 dBm/(1% of OB*)
>1 MHz	-13 dBm/MHz

*OB is the occupied bandwidth.

RSS-130 section 4.7.1
General unwanted emissions limits
The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10 log10 p (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

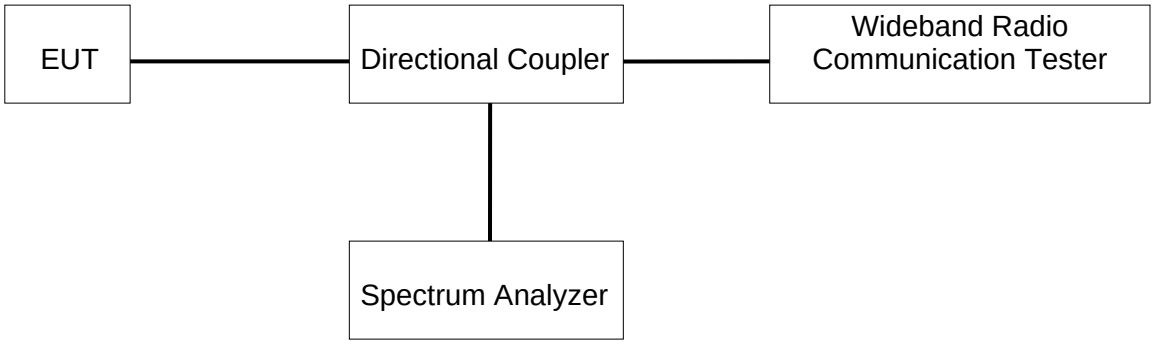
TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

a) Set the RBW = 100 kHz for emission below 1GHz and 1MHz for emissions above 1GHz (Tests were performed 1 MHz [Worst case], to sweep 1 time for all frequency range)
b) Set VBW ≥ 3 × RBW;
c) Set span ≥ 1.5 times the OBW;
d) Sweep time = auto couple;
e) Detector = rms;
f) Ensure that the number of measurement points = Max (40001);
g) Trace mode = average (LTE 5), Maxhold (LTE Band7);

Note: Please refer to section 5.4 for bandwidth and RB setting about LTE bands.

TEST SETUP



TEST ENVIRONMENT

Temperature	22.1°C	Relative Humidity	54.8%
Atmosphere Pressure	101kPa	Test Voltage	DC 5 V

RESULTS

Please refer to Appendix E.

7.6. FREQUENCY STABILITY

Rule Part:
FCC: §2.1055, §22.355, §24.235, §27.54
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 and §27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-130 section 4.5
For equipment that is capable of transmitting numerous channels simultaneously for different applications (e.g. LTE and narrowband – Internet of Things (IoT)), the occupied bandwidth shall be the bandwidth representing the sum of the occupied bandwidths of these channels.
The frequency stability shall be sufficient to ensure that the occupied bandwidth remains within each frequency block range when tested at the temperature and supply voltage variations specified in RSS-Gen.

RSS-132 section 5.3
The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at the temperature and supply voltage variations specified in RSS-Gen.

RSS-133 section 6.3
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.
In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS-139 section 6.4
The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

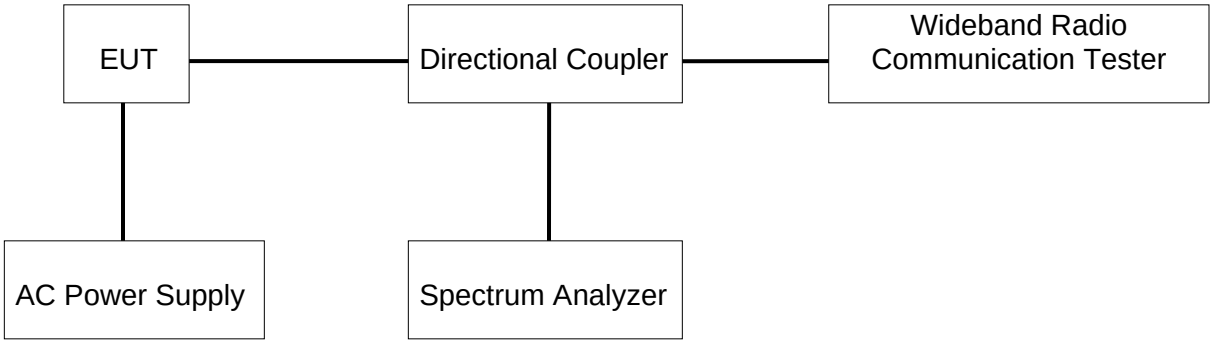
TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

Relative Humidity	45 % - 75 %	/
Atmospheric Pressure	100 kPa ~102 kPa	/
Temperature	T_N (Normal Temperature): 24.3 °C	T_L (Low Temperature): 0 °C
		T_H (High Temperature): 50 °C
Supply Voltage 1	V_N (Normal Voltage): DC 5V	V_L (Low Voltage): DC 4.25 V
		V_H (High Voltage): DC 5.75 V
Supply Voltage 2	V_N (Normal Voltage): AC 120V	V_L (Low Voltage): AC 102 V
		V_H (High Voltage): AC 138 V

Note: Two ways power supply voltage have been tested, only the worst data supply voltage 1 was recorded in the report.

TEST SETUP



RESULTS

Please refer to Appendix F.

8. APPENDIX

8.1. Appendix A: Effective (Isotropic) Radiated Power Output Data

LTE FDD B2				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193
1.4MHz	QPSK	1	0	22.3	22.79	22.19
		1	2	22.26	22.78	22.45
		1	5	22.24	**22.84**	22.5
		3	0	22.22	22.65	22.15
		3	1	22.19	22.59	22.16
		3	3	22.19	22.67	22.12
		6	0	21.33	21.63	21.07
	16QAM	1	0	21.26	21.77	21.34
		1	2	21.48	**21.98**	21.4
		1	5	21.67	21.73	21.25
		3	0	21.4	21.47	21.27
		3	1	21.38	21.48	21.25
		3	3	21.4	21.5	20.88
		6	0	20.18	20.56	20.17
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185
3MHz	QPSK	1	0	22.31	22.7	22.03
		1	8	22.06	22.61	21.87
		1	14	22.33	**22.71**	22.08
		8	0	21.34	21.56	20.99
		8	4	21.23	21.58	20.95
		8	7	21.35	21.57	21.14
		15	0	21.42	21.58	21.1
	16QAM	1	0	21.58	21.11	21.31
		1	8	20.96	21.18	21.3
		1	14	21.31	**21.62**	21.21
		8	0	20.5	20.65	20.26
		8	4	20.52	20.67	20.08
		8	7	20.58	20.66	20.26
		15	0	20.31	20.82	20.19
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175
5MHz	QPSK	1	0	22.31	**22.61**	21.93
		1	12	22.2	22.45	22.06
		1	24	22.02	22.58	22.13
		12	0	21.16	21.46	20.95
		12	6	21.16	21.39	20.94
		12	13	21.3	21.52	21.05
		25	0	21.2	21.48	20.97

	16QAM	1	0	21.22	20.97	20.84
		1	12	21.1	21.42	21.25
		1	24	21.11	**22.1**	21.34
		12	0	20.07	20.47	20.06
		12	6	20.23	20.27	20.08
		12	13	19.96	20.56	20.1
		25	0	20.35	20.55	20.07
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18650	18900	19150
10MHz	QPSK	1	0	22.18	22.43	21.84
		1	24	22.14	22.48	22.25
		1	49	22.03	**22.59**	21.84
		25	0	21.36	21.63	20.91
		25	12	21.17	21.56	20.96
		25	25	21.26	21.54	21.07
		50	0	21.3	21.51	21.08
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18675	18900	19125
15MHz	QPSK	1	0	21.88	22.28	22.35
		1	38	22.05	**22.54**	21.73
		1	74	22.07	22.27	21.96
		36	0	21.22	21.52	21.06
		36	18	21.16	21.43	21.04
		36	37	21.25	21.42	21.05
		75	0	21.3	21.56	21.12
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18700	18900	19100
20MHz	QPSK	1	0	**22.43**	22.36	22.03
		1	49	22.37	22.27	22.01
		1	99	22.19	22.29	22
		50	0	21.37	21.45	21.07
		50	25	21.44	21.47	21.17
		50	50	21.3	21.5	20.91
		100	0	21.45	21.32	21.07

LTE FDD B4				**Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19957	20175	20393
1.4MHz	QPSK	1	0	21.46	**22.85**	22.41
		1	2	22.65	**22.85**	22.84
		1	5	22.58	22.65	22.78
		3	0	22.33	22.61	22.69
		3	1	22.58	22.64	22.26
		3	3	22.36	22.61	22.39
		6	0	21.26	21.57	21.52
	16QAM	1	0	21.81	21.72	22.03

		1	2	21.68	22	22.02
		1	5	21.34	21.68	**22.05**
		3	0	20.84	21.51	20.92
		3	1	21.35	21.44	21.08
		3	3	21.67	21.42	21.26
		6	0	20.26	20.78	20.59
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19965	20175	20385
3MHz	QPSK	1	0	22.33	22.55	22.45
		1	8	22.6	22.19	22.68
		1	14	22.44	**22.72**	22.58
		8	0	21.43	21.61	21.53
		8	4	21.5	21.68	21.55
		8	7	21.5	21.48	21.41
		15	0	21.44	21.6	21.38
	16QAM	1	0	21.41	21.54	21.23
		1	8	20.93	21.6	21.35
		1	14	21.38	**22.27**	21.56
		8	0	20.54	20.9	20.57
		8	4	20.54	20.79	20.67
		8	7	20.52	20.57	20.63
		15	0	20.63	20.56	20.58
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19975	20175	20375
5MHz	QPSK	1	0	22.21	22.52	22.38
		1	12	**22.85**	22.44	22.57
		1	24	22.42	22.51	22.69
		12	0	21.3	21.77	21.36
		12	6	21.45	21.7	21.38
		12	13	21.39	21.55	21.8
		25	0	21.4	21.64	21.56
	16QAM	1	0	21.26	21.56	21.23
		1	12	20.81	21.5	20.9
		1	24	20.77	21.47	**21.61**
		12	0	20.51	20.51	20.43
		12	6	20.35	20.79	20.25
		12	13	20.45	20.63	20.51
		25	0	20.3	20.71	20.63
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0	21.52	22.52	22.54
		1	24	22.34	22.6	22.82
		1	49	22.22	22.73	**22.85**
		25	0	21.78	21.48	21.69
		25	12	21.93	21.98	21.57
		25	25	21.52	21.68	21.75

		50	0	21.56	21.62	21.54
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20025	20175	20325
15MHz	QPSK	1	0	22.34	22.4	**22.66**
		1	38	22.3	22.38	22.23
		1	74	22.41	22.55	22.6
		36	0	21.29	21.66	20.87
		36	18	21.26	21.29	21.29
		36	37	21.45	21.14	21.63
		75	0	21.41	21.52	21.24
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
20MHz	QPSK	1	0	22.51	22.29	22.79
		1	49	22.27	22.46	22.69
		1	99	**22.92**	22.54	22.69
		50	0	21.38	21.62	21.54
		50	25	21.36	21.69	21.59
		50	50	21.64	21.29	21.3
		100	0	21.51	21.5	21.43

LTE FDD B5				**Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20407	20525	20643
1.4MHz	QPSK	1	0	23	23.07	23.23
		1	2	23.02	23.09	**23.34**
		1	5	22.93	23.14	23.26
		3	0	22.89	23.03	23.03
		3	1	22.83	22.93	23.03
		3	3	22.87	22.94	22.97
		6	0	21.76	22.15	21.94
	16QAM	1	0	22.18	22.08	22.35
		1	2	22.48	22.33	**22.66**
		1	5	22.16	22.12	22.28
		3	0	21.61	22.19	21.96
		3	1	21.62	22.02	21.96
		3	3	21.81	22.24	21.97
		6	0	20.86	20.91	21.26
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20415	20525	20635
3MHz	QPSK	1	0	22.78	23.19	22.83
		1	8	22.68	22.98	22.82
		1	14	22.88	**23.23**	22.79
		8	0	21.98	22.13	22.11
		8	4	22	22.06	22.12
		8	7	21.91	22.2	22.1
		15	0	22.07	22.12	22.01

	16QAM	1	0	22.03	22.46	22.13
		1	8	21.92	22	22.24
		1	14	22.02	**22.57**	22.49
		8	0	20.78	21	21.13
		8	4	20.91	21.3	21.04
		8	7	21	21.26	21.18
		15	0	21.13	21.11	21.08
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20425	20525	20625
5MHz	QPSK	1	0	22.78	22.66	23.03
		1	12	22.72	23.07	22.97
		1	24	22.8	**23.45**	22.73
		12	0	22.02	21.91	22.18
		12	6	21.95	21.98	22.19
		12	13	21.87	22.19	22.04
		25	0	21.97	22.11	22.13
	16QAM	1	0	21.95	22.34	22
		1	12	21.81	22.1	21.53
		1	24	21.82	**22.53**	21.79
		12	0	21.06	21.08	21.06
		12	6	20.98	20.99	20.96
		12	13	21.01	21.2	21.09
		25	0	21.1	21.23	21.14
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20450	20525	20600
10MHz	QPSK	1	0	22.66	22.96	23.33
		1	24	22.93	22.96	23.05
		1	49	22.95	23.21	**23.39**
		25	0	22.13	21.98	22.19
		25	12	22.06	22.09	22.24
		25	25	22	22.29	22.12
		50	0	22.07	22.19	22.34

LTE FDD B12				**Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23017	23095	23173
1.4MHz	QPSK	1	0	23.51	23.13	23.37
		1	2	**23.57**	23.49	23.24
		1	5	23.38	23.38	23.29
		3	0	23.26	23.22	23.22
		3	1	23.24	23.22	23.29
		3	3	23.28	23.25	23.2
		6	0	22.2	22.16	22.34
	16QAM	1	0	22.51	22.58	22.7
		1	2	22.74	**22.77**	22.61
		1	5	22.42	22.45	22.43

		3	0	22.18	22.11	22.52
		3	1	22.13	22.1	22.35
		3	3	22.26	22.13	22.3
		6	0	21.42	21.56	21.24
Bandwidth	Modulation	RB size	RB offset	Channel 23025	Channel 23095	Channel 23165
3MHz	QPSK	1	0	23.2	23.63	23.41
		1	8	23.31	23.17	23.14
		1	14	23.19	**23.81**	23.22
		8	0	22.32	22.16	22.44
		8	4	22.32	22.46	22.41
		8	7	22.34	22.28	22.34
		15	0	22.3	22.24	22.5
	16QAM	1	0	22.12	**22.64**	22.48
		1	8	21.82	22.21	22.46
		1	14	22.27	22.56	22.43
		8	0	21.4	21.53	21.72
		8	4	21.4	21.25	21.35
		8	7	21.42	21.35	21.58
		15	0	21.29	21.21	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 23035	Channel 23095	Channel 23155
5MHz	QPSK	1	0	23.33	23.32	**23.42**
		1	12	23.05	23.03	23.05
		1	24	23.1	23.39	23.26
		12	0	22.23	22.15	22.38
		12	6	22.25	22.16	22.41
		12	13	22.25	22.35	22.35
		25	0	22.27	22.26	22.26
	16QAM	1	0	22.11	22.46	22.41
		1	12	22.19	22.15	22.36
		1	24	22.08	22.39	**22.47**
		12	0	21.3	21.37	21.1
		12	6	21.31	21.37	21.2
		12	13	21.28	21.19	21.24
		25	0	21.22	21.31	21.35
Bandwidth	Modulation	RB size	RB offset	Channel 23060	Channel 23095	Channel 23130
10MHz	QPSK	1	0	23.31	**23.55**	23.04
		1	24	23.15	23.08	23.45
		1	49	23.02	23.41	23.09
		25	0	22.25	22.09	22.12
		25	12	22.29	22.08	22.21
		25	25	22.1	22.33	22.29
		50	0	22.25	22.1	22.26

LTE FDD B13				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23205	23230	23255
5MHz	QPSK	1	0	23.07	**23.26**	23.18
		1	12	23	22.92	23.06
		1	24	22.88	23	23.19
		12	0	22.16	22.17	22.12
		12	6	22.14	22.17	22.06
		12	13	22.07	22.2	22.24
		25	0	22.1	22.19	22.06
	16QAM	1	0	22.33	22.45	21.97
		1	12	22.04	22.45	21.77
		1	24	22.05	22.26	**22.5**
		12	0	21.04	21.13	21.17
		12	6	21.23	21.13	21.08
		12	13	21.15	21.15	21.26
		25	0	21.03	21.14	21.12
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23230		
10MHz	QPSK	1	0	23.05		
		1	24	**23.06**		
		1	49	22.97		
		25	0	22		
		25	12	22.01		
		25	25	22.17		
		50	0	22.12		

LTE FDD B17				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23755	23790	23825
5MHz	QPSK	1	0	22.95	**23.42**	23.24
		1	12	23.11	23.22	23.15
		1	24	23.23	23.26	23.2
		12	0	22.22	22.29	22.33
		12	6	22.23	22.2	22.27
		12	13	22.3	22.32	22.22
		25	0	22.24	22.26	22.25
	16QAM	1	0	21.99	**22.67**	22.51
		1	12	21.74	22.49	22.26
		1	24	21.68	22.53	22.5
		12	0	21.2	21.19	21.12
		12	6	21.21	21.19	21.29
		12	13	21.26	21.41	21.22
		25	0	21.31	21.29	21.1
Bandwidth	Modulation			Channel	Channel	Channel

		RB size	RB offset	23780	23790	23800
10MHz	QPSK	1	0	23.22	23.25	23.25
		1	24	23.12	23.49	**23.54**
		1	49	23.21	22.91	23.05
		25	0	22.22	22.18	22.2
		25	12	22.46	22.16	22.19
		25	25	22.39	22.27	22.27
		50	0	22.21	22.21	22.24

LTE FDD B66				**Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131979	132322	132665
1.4MHz	QPSK	1	0	**22.63**	22.15	22.05
		1	2	22.4	22.29	22.04
		1	5	22.3	22.09	21.89
		3	0	22.21	22.16	21.79
		3	1	22.2	22.11	21.8
		3	3	22.09	22.03	21.75
		6	0	21.03	20.9	20.65
	16QAM	1	0	**21.45**	20.86	20.99
		1	2	**21.45**	21.34	21.18
		1	5	21.23	21.17	21.09
		3	0	20.97	21.08	20.39
		3	1	20.97	21.07	20.39
		3	3	21.03	21.08	20.68
		6	0	20.2	19.94	19.96
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				191987	132322	132657
3MHz	QPSK	1	0	21.87	22.26	22.05
		1	8	22.04	21.95	21.59
		1	14	21.85	**22.34**	21.7
		8	0	20.91	21.22	20.96
		8	4	20.91	21.28	21.11
		8	7	20.98	21.35	20.82
		15	0	20.96	21.45	20.99
	16QAM	1	0	21	21.12	20.98
		1	8	20.49	20.71	20.86
		1	14	21.07	**21.27**	21.12
		8	0	19.78	20.46	20.13
		8	4	20.13	20.31	20.19
		8	7	19.83	20.53	20.07
		15	0	20.14	20.55	19.98
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131997	132322	132647
5MHz	QPSK	1	0	22.34	22.29	22.06

		1	12	21.97	22.33	21.76
		1	24	22.1	**22.36**	22.13
		12	0	21.44	21.6	21
		12	6	21.28	21.44	21
		12	13	21.15	21.46	20.98
		25	0	21.26	21.38	20.96
	16QAM	1	0	21.19	21.35	21.02
		1	12	20.76	21.02	20.32
		1	24	**21.61**	21.34	20.99
		12	0	20.32	20.38	20.07
		12	6	20.28	20.45	20.03
		12	13	20.25	20.42	20.11
		25	0	20.17	20.39	19.98
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132022	132322	132622
10MHz	QPSK	1	0	22.33	22.38	22.3
		1	24	22.18	**22.52**	21.86
		1	49	22.25	22.43	21.97
		25	0	21.31	21.37	21.12
		25	12	21.27	21.37	21.13
		25	25	21.35	21.55	20.92
		50	0	21.24	21.6	21.01
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132047	132322	132597
15MHz	QPSK	1	0	22.33	22.5	22.33
		1	38	22.44	22.42	21.88
		1	74	22.64	**23.25**	21.94
		36	0	21.37	21.59	21.32
		36	18	21.34	21.21	21.23
		36	37	21.32	21.43	21.32
		75	0	21.47	21.55	21.19
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132072	132322	232572
20MHz	QPSK	1	0	22.64	22.64	22.5
		1	49	22.11	22.57	21.92
		1	99	**22.69**	22.63	21.58
		50	0	21.16	21.33	21.01
		50	25	21.14	21.38	21
		50	50	21.44	21.36	20.73
		100	0	21.48	21.23	20.89

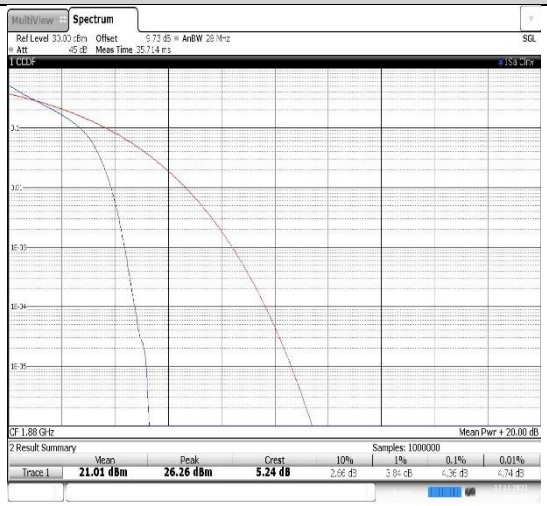
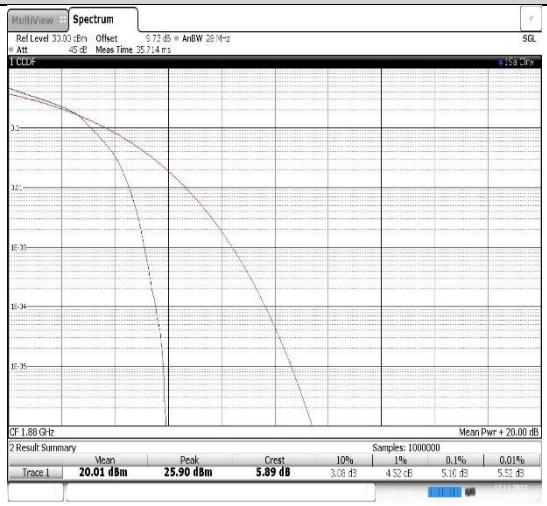
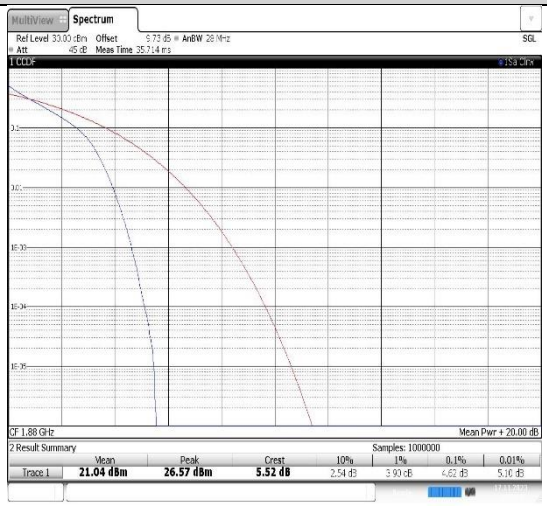
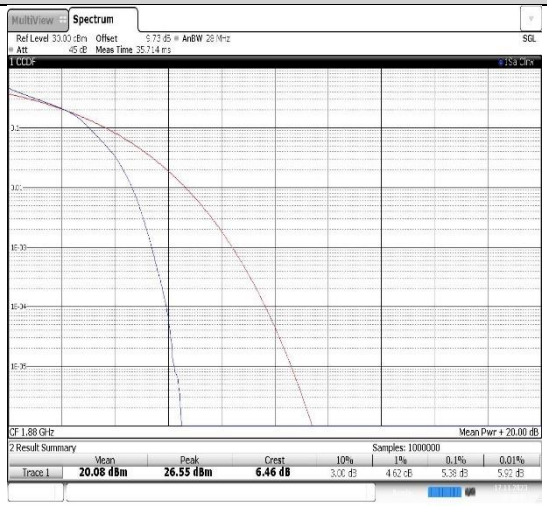
8.2. Appendix B: Peak-to-Average Ratio(CCDF)

8.2.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band2	1.4MHz	QPSK	18900	6RB#0	4.36	13	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	5.10	13	PASS
Band2	3MHz	QPSK	18900	15RB#0	4.62	13	PASS
Band2	3MHz	16QAM	18900	15RB#0	5.38	13	PASS
Band2	5MHz	QPSK	18900	25RB#0	4.60	13	PASS
Band2	5MHz	16QAM	18900	25RB#0	5.42	13	PASS
Band2	10MHz	QPSK	18900	50RB#0	4.86	13	PASS
Band2	15MHz	QPSK	18900	75RB#0	4.90	13	PASS
Band2	20MHz	QPSK	18900	100RB#0	4.80	13	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	4.46	13	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	5.24	13	PASS
Band4	3MHz	QPSK	20175	15RB#0	4.68	13	PASS
Band4	3MHz	16QAM	20175	15RB#0	5.62	13	PASS
Band4	5MHz	QPSK	20175	25RB#0	4.62	13	PASS
Band4	5MHz	16QAM	20175	25RB#0	5.38	13	PASS
Band4	10MHz	QPSK	20175	50RB#0	4.70	13	PASS
Band4	15MHz	QPSK	20175	75RB#0	4.70	13	PASS
Band4	20MHz	QPSK	20175	100RB#0	4.62	13	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	5.16	13	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	5.98	13	PASS
Band5	3MHz	QPSK	20525	15RB#0	5.24	13	PASS
Band5	3MHz	16QAM	20525	15RB#0	6.10	13	PASS
Band5	5MHz	QPSK	20525	25RB#0	5.20	13	PASS
Band5	5MHz	16QAM	20525	25RB#0	5.98	13	PASS
Band5	10MHz	QPSK	20525	50RB#0	5.16	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	5.16	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	5.96	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	5.18	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	6.04	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	5.16	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	5.94	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	5.22	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	5.14	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.94	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	5.14	13	PASS
Band17	5MHz	QPSK	23790	25RB#0	5.14	13	PASS
Band17	5MHz	16QAM	23790	25RB#0	5.94	13	PASS
Band17	10MHz	QPSK	23790	50RB#0	5.14	13	PASS
Band66	1.4MHz	QPSK	132322	6RB#0	5.58	13	PASS
Band66	1.4MHz	16QAM	132322	6RB#0	6.44	13	PASS
Band66	3MHz	QPSK	132322	15RB#0	5.66	13	PASS
Band66	3MHz	16QAM	132322	15RB#0	6.48	13	PASS
Band66	5MHz	QPSK	132322	1RB#0	4.98	13	PASS
Band66	5MHz	QPSK	132322	25RB#0	5.70	13	PASS
Band66	5MHz	16QAM	132322	1RB#0	5.88	13	PASS

Band66	5MHz	16QAM	132322	25RB#0	6.38	13	PASS
Band66	10MHz	QPSK	132322	50RB#0	5.62	13	PASS
Band66	15MHz	QPSK	132322	75RB#0	5.70	13	PASS
Band66	20MHz	QPSK	132322	100RB#0	5.42	13	PASS

8.2.2. Test Graphs

Band2-1.4MHz-QPSK-18900-6RB#0	Band2-1.4MHz-16QAM-18900-6RB#0
	
Band2-3MHz-QPSK-18900-15RB#0	Band2-3MHz-16QAM-18900-15RB#0
	
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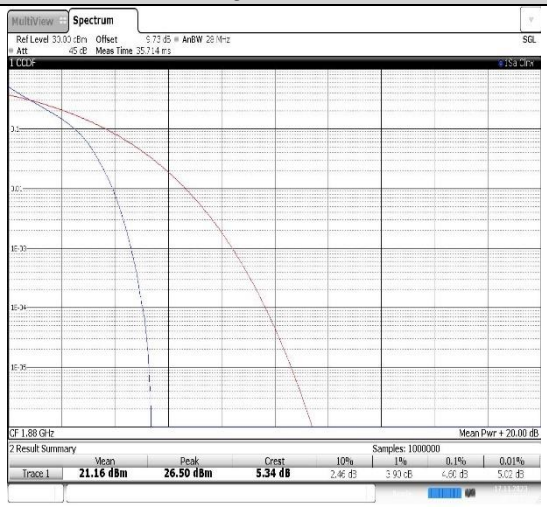
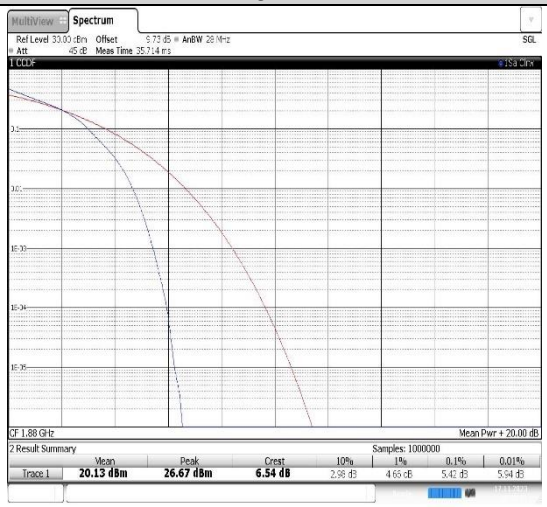
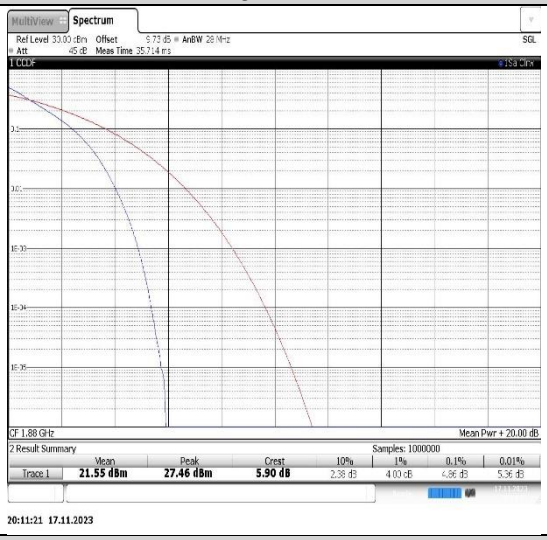
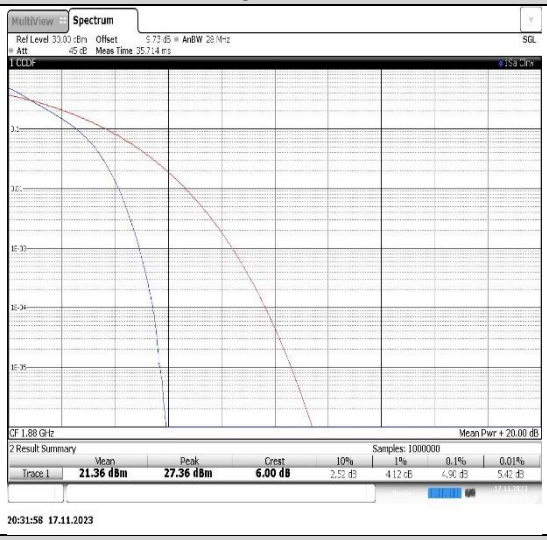
	

Band2-10MHz-QPSK-18900-50RB#0	Band2-15MHz-QPSK-18900-75RB#0
	
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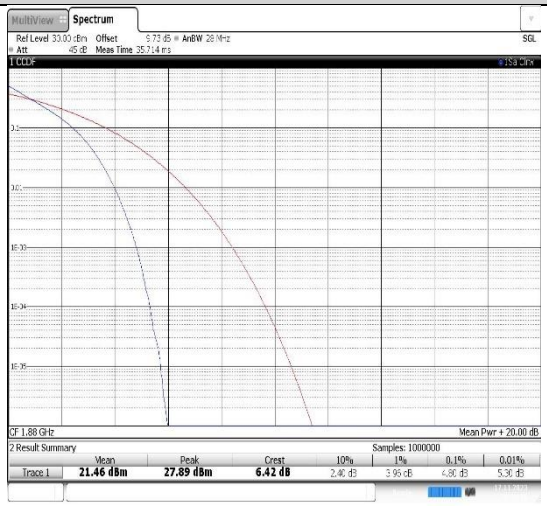	
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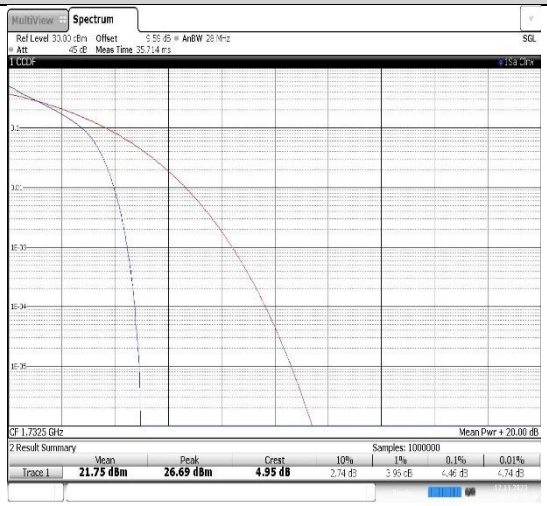	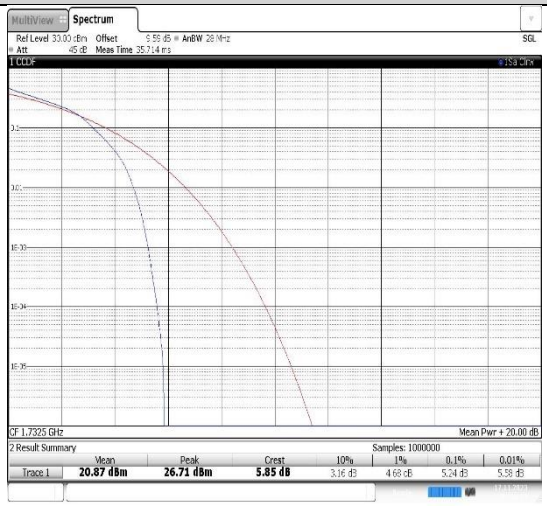
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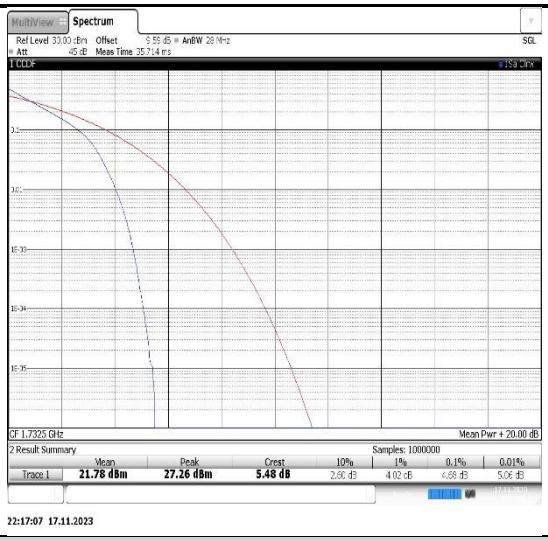

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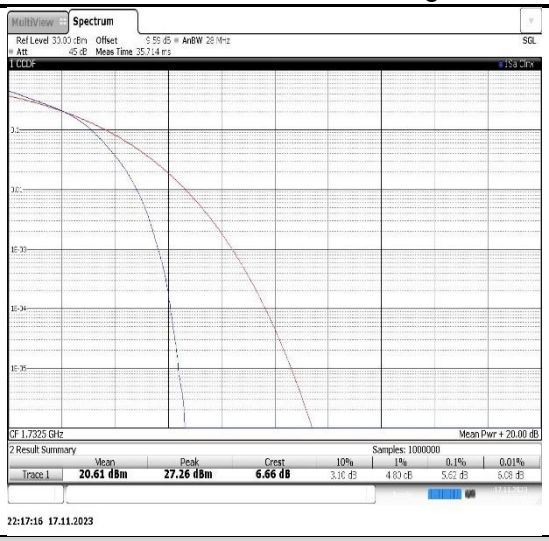
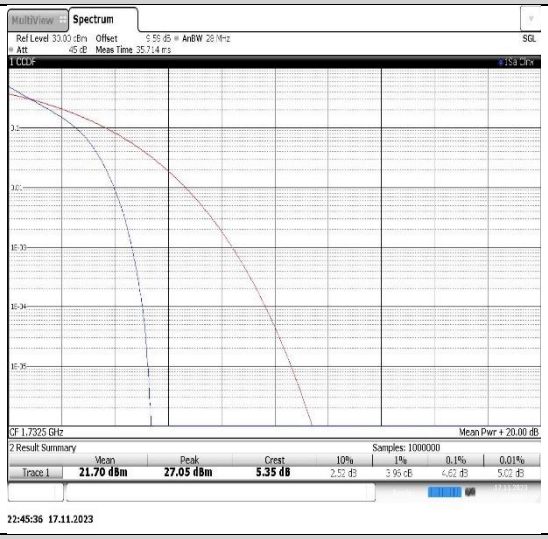
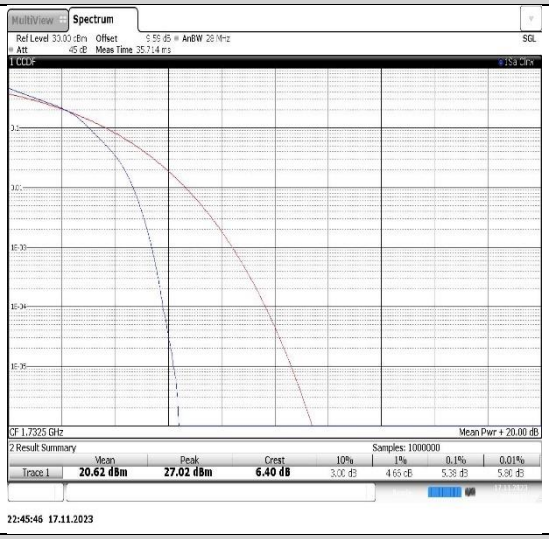


Band4-5MHz-16QAM-20175-25RB#0



Band4-10MHz-QPSK-20175-50RB#0



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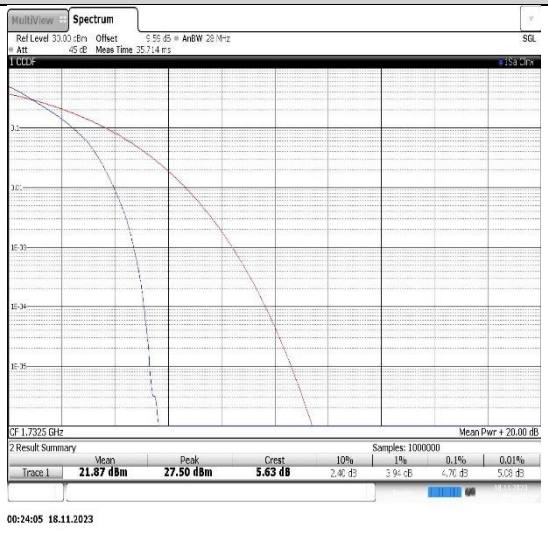
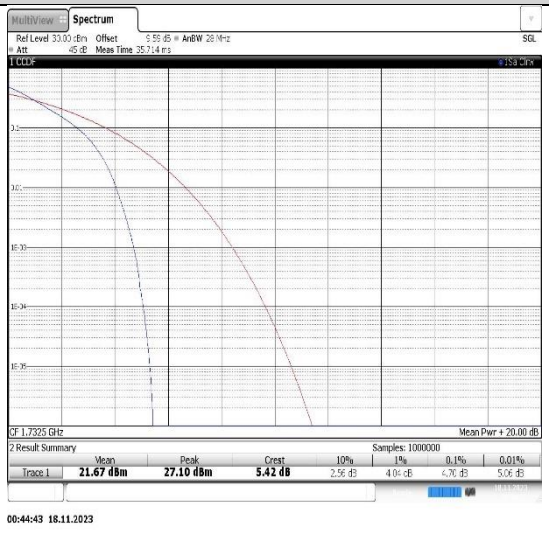
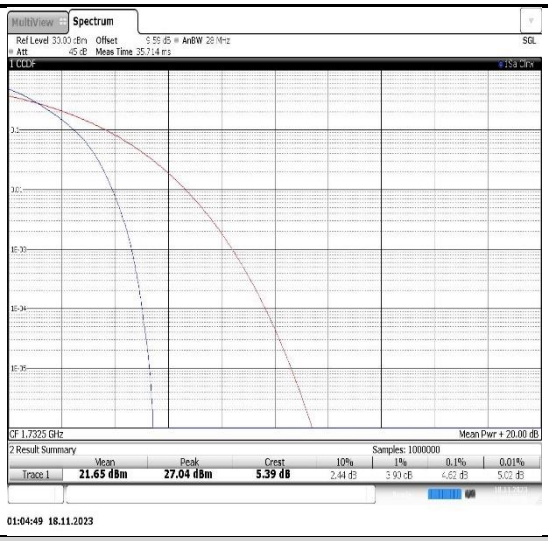


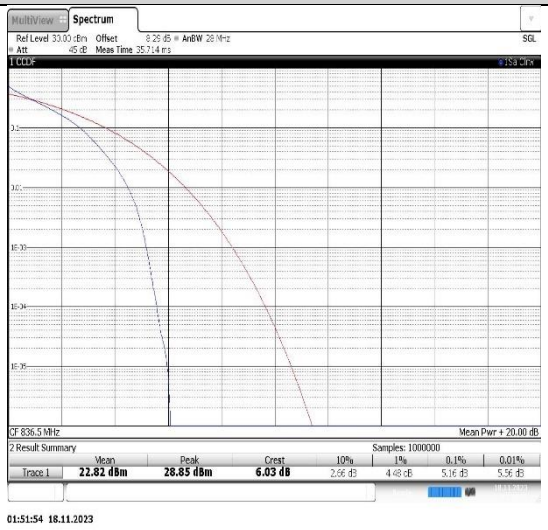
Band4-20MHz-QPSK-20175-100RB#0





Band5-1.4MHz-QPSK-20525-6RB#0

Band5-1.4MHz-16QAM-20525-6RB#0



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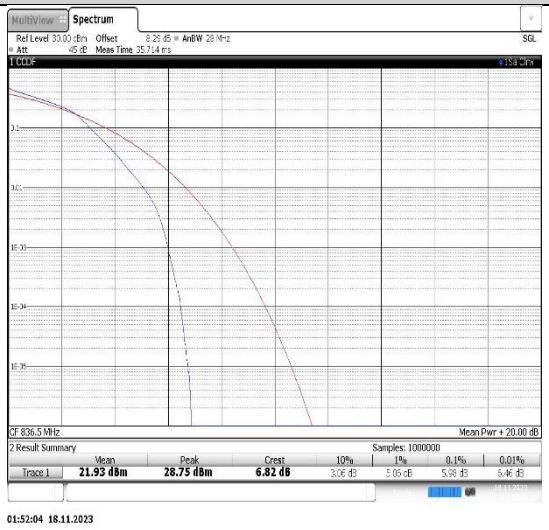

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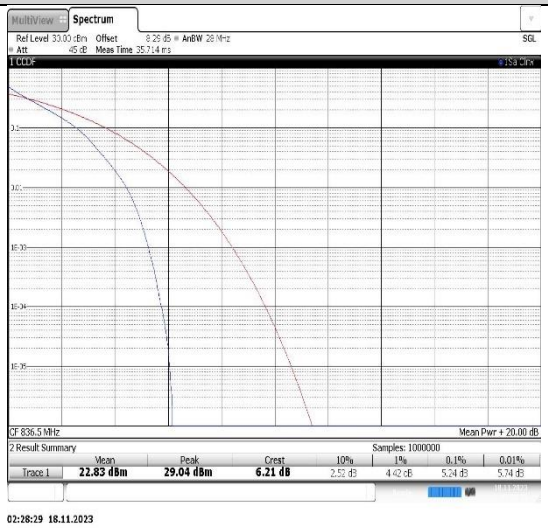
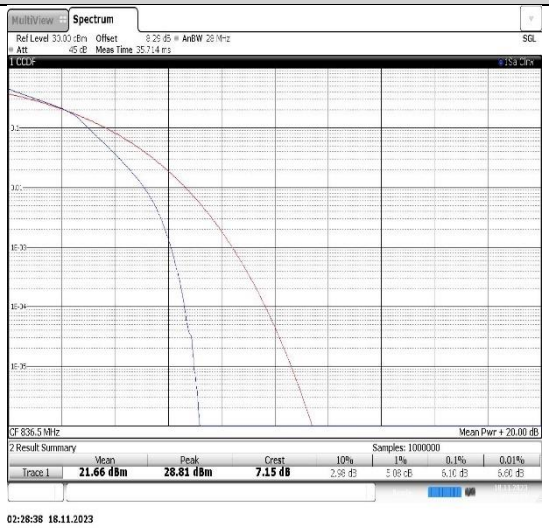


Band5-5MHz-QPSK-20525-25RB#0



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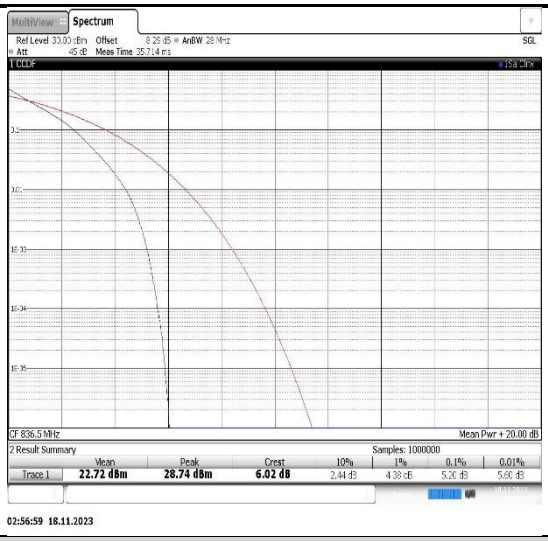

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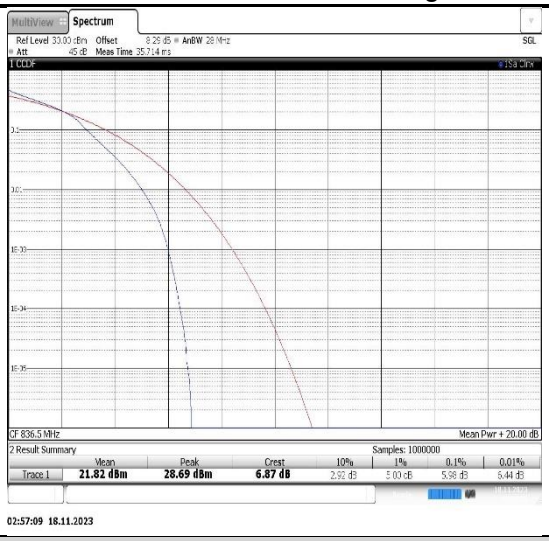
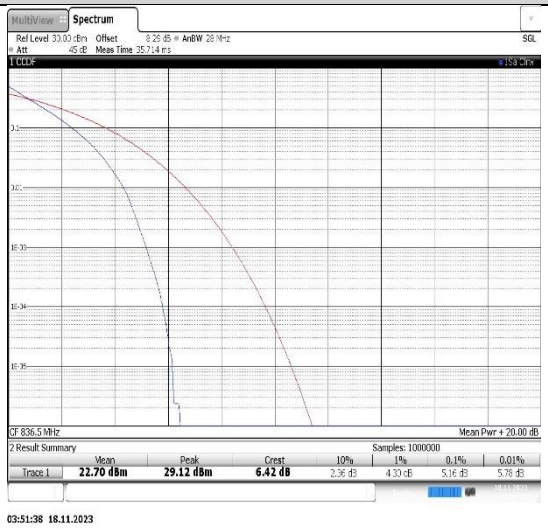
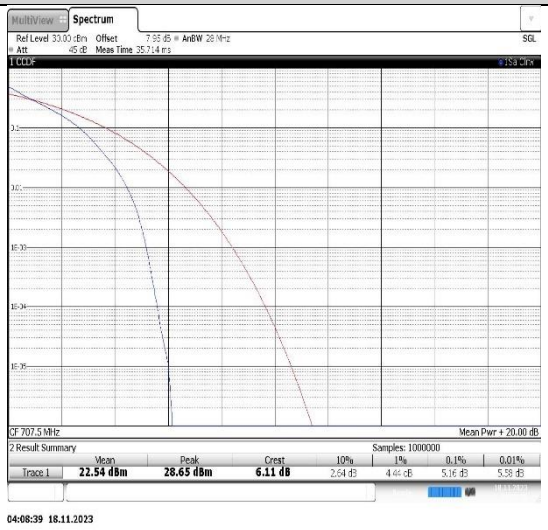




Band12-1.4MHz-QPSK-23095-6RB#0

Band12-1.4MHz-16QAM-23095-6RB#0



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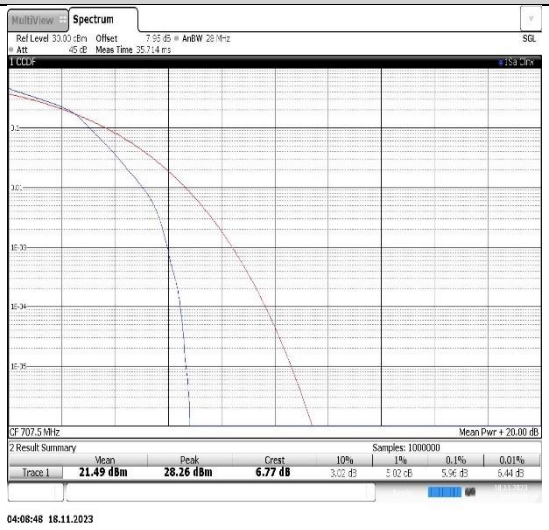
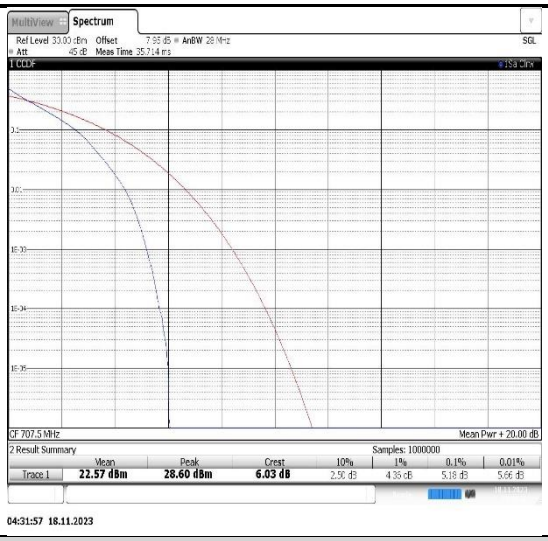
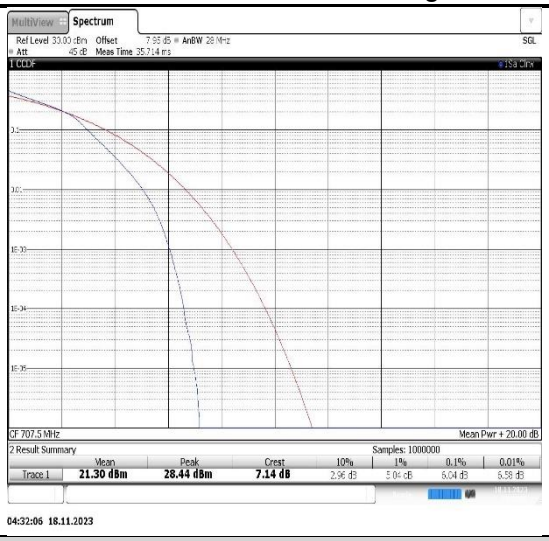


Band12-3MHz-16QAM-23095-15RB#0



Band12-5MHz-QPSK-23095-25RB#0



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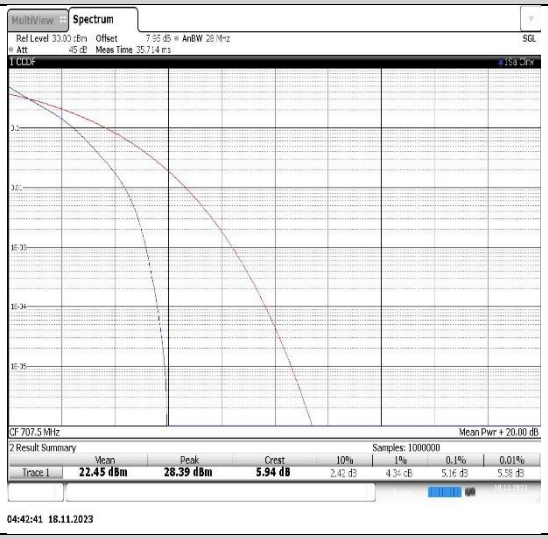

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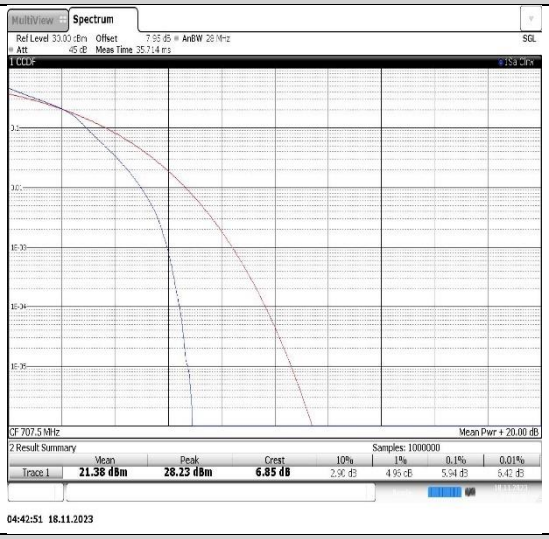
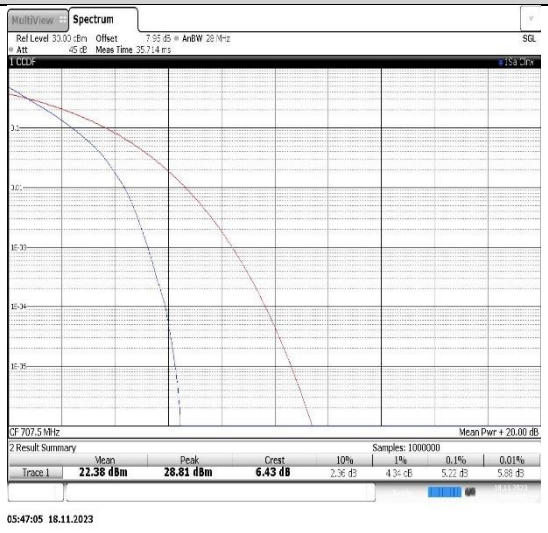
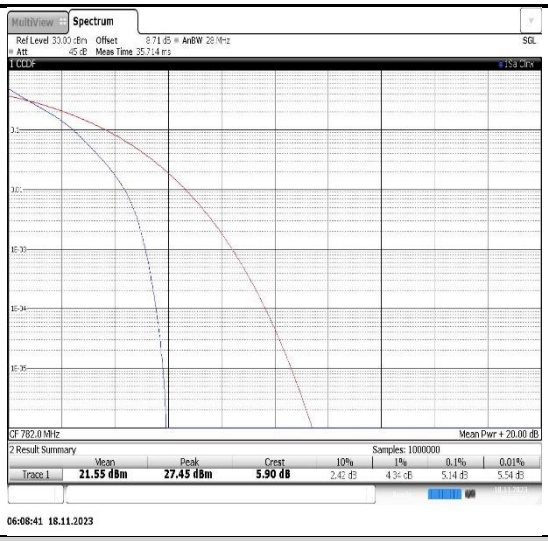
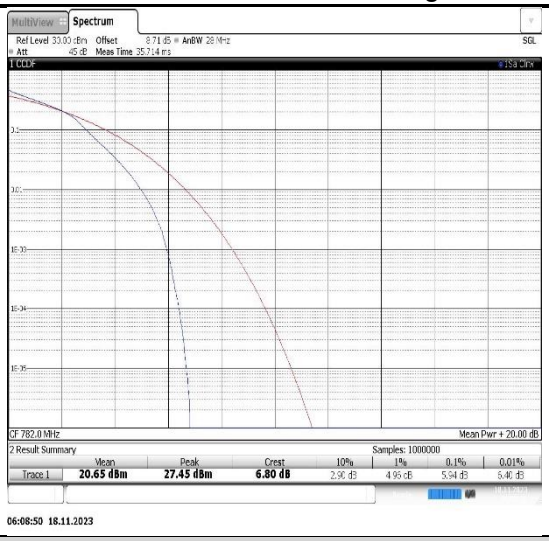




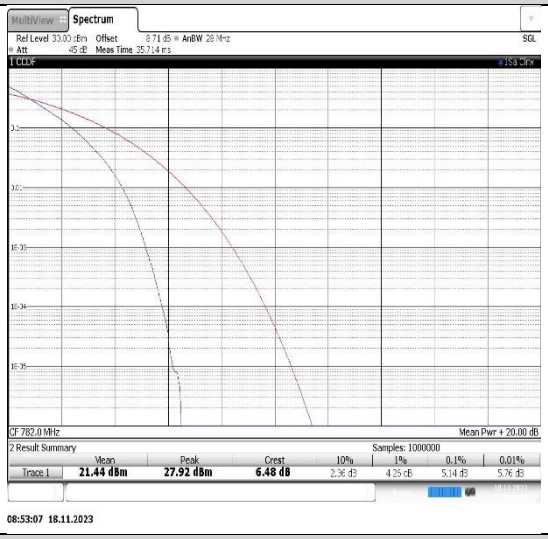
Band13-5MHz-QPSK-23230-25RB#0

Band13-5MHz-16QAM-23230-25RB#0



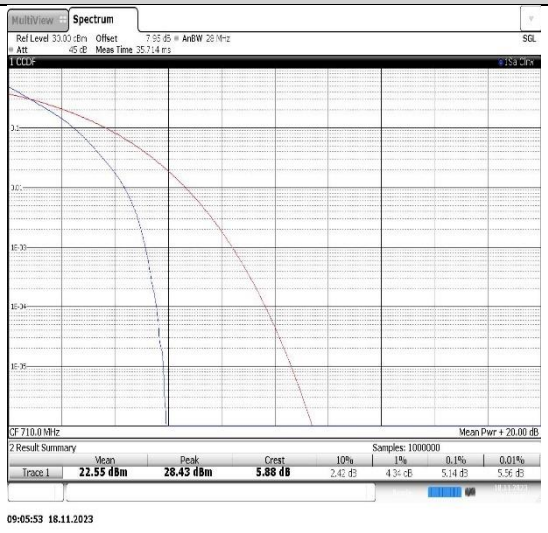


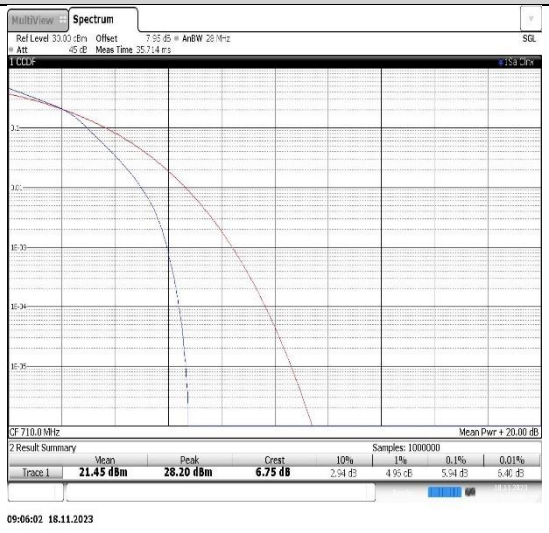
Band13-10MHz-QPSK-23230-50RB#0



Band17-5MHz-QPSK-23790-25RB#0

Band17-5MHz-16QAM-23790-25RB#0





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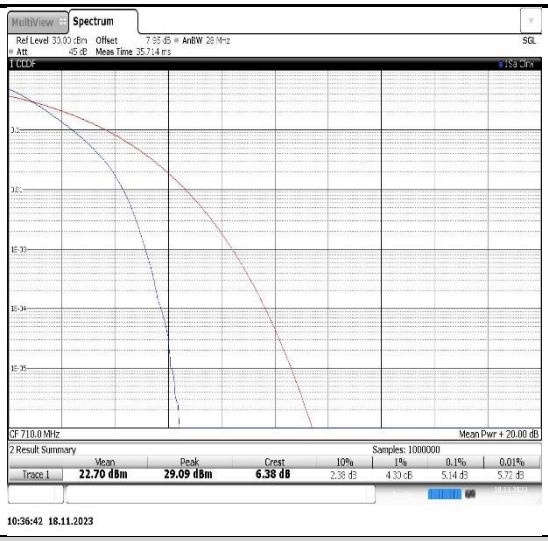
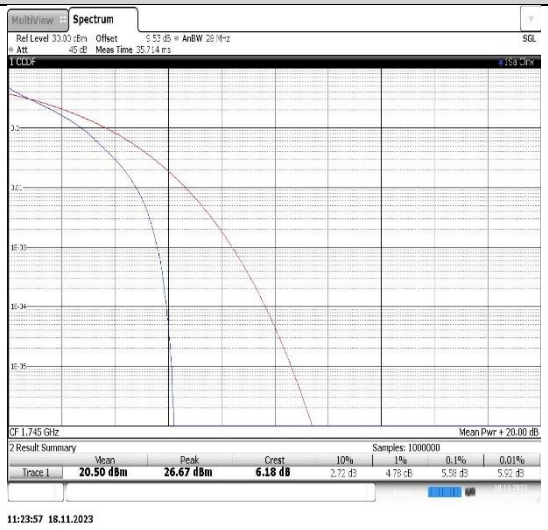
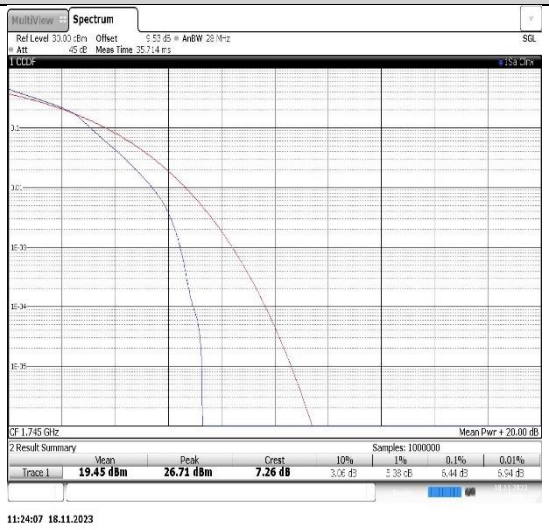


Band66-1.4MHz-QPSK-132322-6RB#0

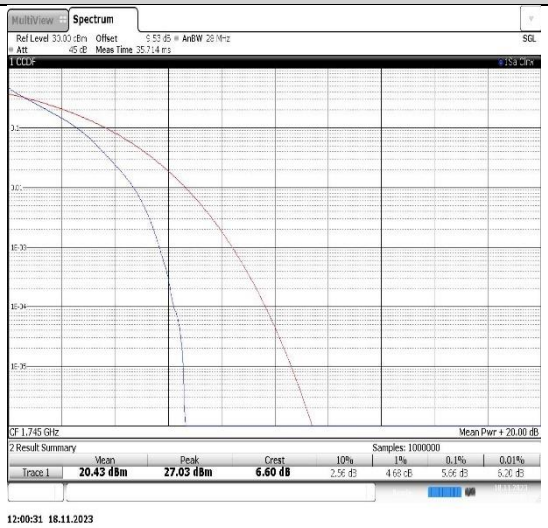
Band66-1.4MHz-16QAM-132322-6RB#0

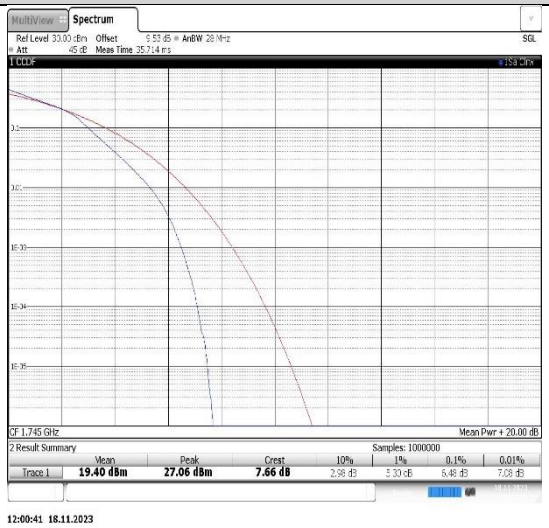




Band66-3MHz-QPSK-132322-15RB#0

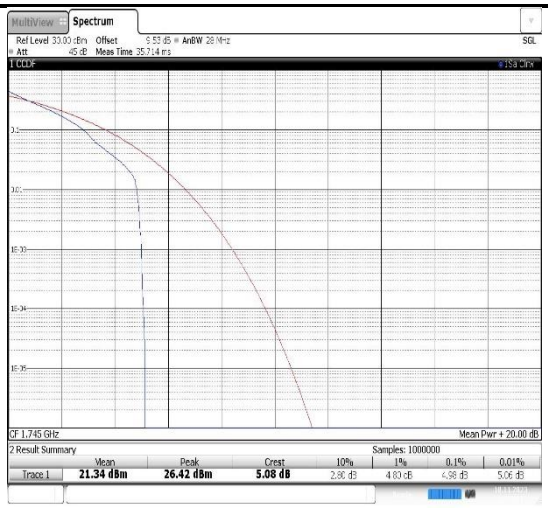
Band66-3MHz-16QAM-132322-15RB#0



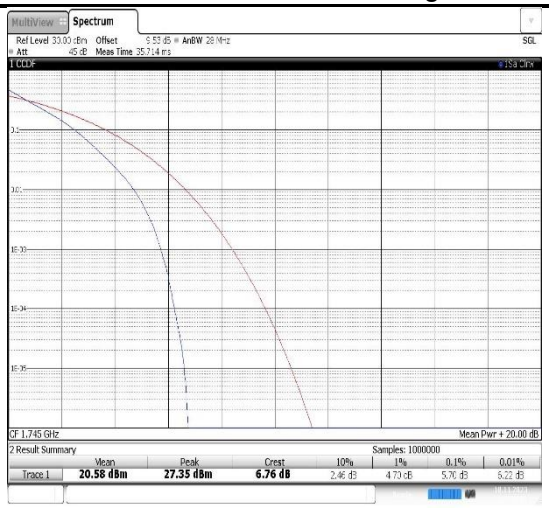


Band66-5MHz-QPSK-132322-1RB#0

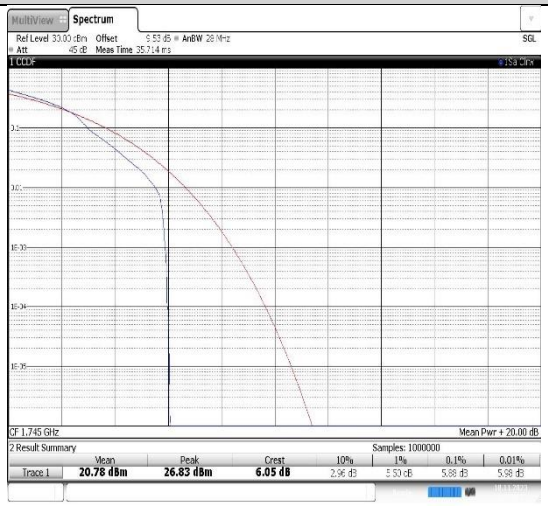
Band66-5MHz-QPSK-132322-25RB#0



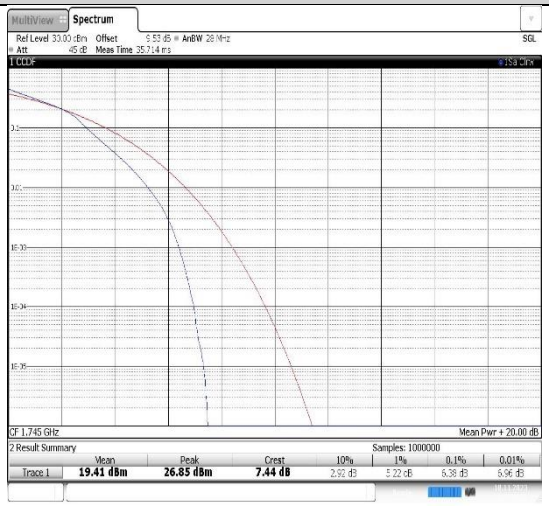
Band66-5MHz-16QAM-132322-1RB#0



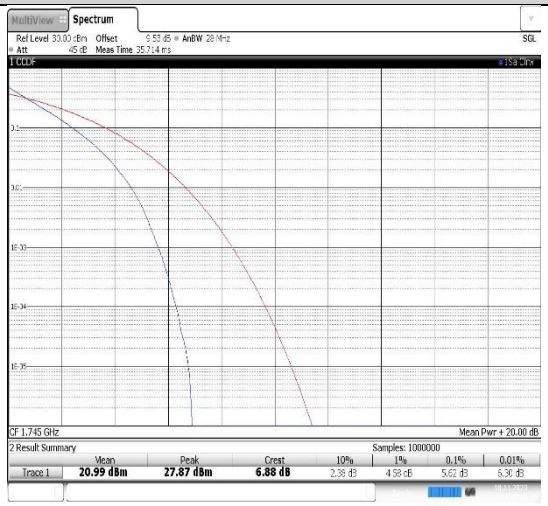
Band66-5MHz-16QAM-132322-25RB#0



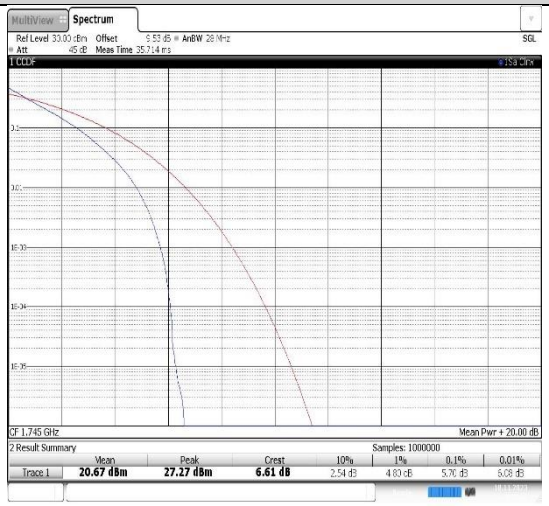
Band66-10MHz-QPSK-132322-50RB#0

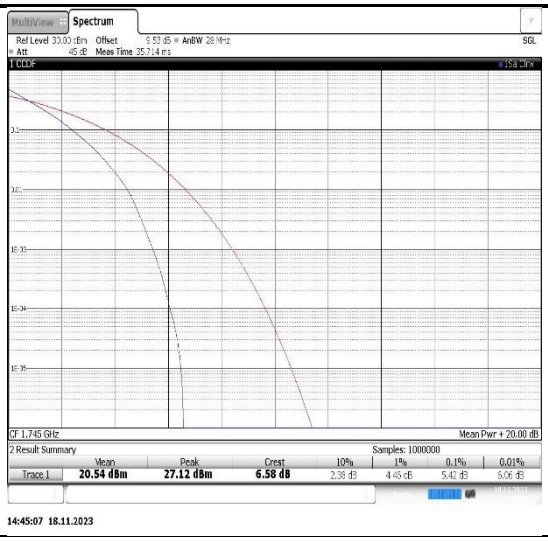


Band66-15MHz-QPSK-132322-75RB#0



Band66-20MHz-QPSK-132322-100RB#0





8.3. Appendix C: 26dB Bandwidth and Occupied Bandwidth

8.3.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band2	1.4MHz	QPSK	18900	6RB#0	1.086	1.28	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	1.084	1.28	PASS
Band2	3MHz	QPSK	18900	15RB#0	2.684	2.93	PASS
Band2	3MHz	16QAM	18900	15RB#0	2.685	2.93	PASS
Band2	5MHz	QPSK	18900	25RB#0	4.486	4.87	PASS
Band2	5MHz	16QAM	18900	25RB#0	4.485	4.84	PASS
Band2	10MHz	QPSK	18900	50RB#0	8.954	9.67	PASS
Band2	15MHz	QPSK	18900	75RB#0	13.453	14.40	PASS
Band2	20MHz	QPSK	18900	100RB#0	17.997	19.40	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	1.083	1.29	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	1.085	1.28	PASS
Band4	3MHz	QPSK	20175	15RB#0	2.685	2.92	PASS
Band4	3MHz	16QAM	20175	15RB#0	2.686	2.92	PASS
Band4	5MHz	QPSK	20175	25RB#0	4.486	4.86	PASS
Band4	5MHz	16QAM	20175	25RB#0	4.485	4.84	PASS
Band4	10MHz	QPSK	20175	50RB#0	8.94	9.60	PASS
Band4	15MHz	QPSK	20175	75RB#0	13.42	14.35	PASS
Band4	20MHz	QPSK	20175	100RB#0	17.926	19.27	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	1.086	1.26	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	1.083	1.26	PASS
Band5	3MHz	QPSK	20525	15RB#0	2.685	2.91	PASS
Band5	3MHz	16QAM	20525	15RB#0	2.686	2.91	PASS
Band5	5MHz	QPSK	20525	25RB#0	4.484	4.82	PASS
Band5	5MHz	16QAM	20525	25RB#0	4.483	4.83	PASS
Band5	10MHz	QPSK	20525	50RB#0	8.941	9.53	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	1.086	1.26	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	1.083	1.26	PASS
Band12	3MHz	QPSK	23095	15RB#0	2.683	2.93	PASS
Band12	3MHz	16QAM	23095	15RB#0	2.684	2.90	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.486	4.83	PASS
Band12	5MHz	16QAM	23095	25RB#0	4.485	4.82	PASS
Band12	10MHz	QPSK	23095	50RB#0	8.958	9.57	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.476	4.80	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.48	4.83	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.935	9.53	PASS
Band17	5MHz	QPSK	23790	25RB#0	4.481	4.80	PASS
Band17	5MHz	16QAM	23790	25RB#0	4.483	4.82	PASS
Band17	10MHz	QPSK	23790	50RB#0	8.933	9.53	PASS
Band66	1.4MHz	QPSK	132322	6RB#0	1.088	1.27	PASS
Band66	1.4MHz	16QAM	132322	6RB#0	1.084	1.27	PASS
Band66	3MHz	QPSK	132322	15RB#0	2.685	2.92	PASS
Band66	3MHz	16QAM	132322	15RB#0	2.685	2.91	PASS
Band66	5MHz	QPSK	132322	25RB#0	4.486	4.82	PASS

Band66	5MHz	16QAM	132322	25RB#0	4.483	4.81	PASS
Band66	10MHz	QPSK	132322	50RB#0	8.945	9.57	PASS
Band66	15MHz	QPSK	132322	75RB#0	13.424	14.30	PASS
Band66	20MHz	QPSK	132322	100RB#0	17.935	19.33	PASS