FCC TEST REPORT
(PART 96)

Applicant:	i.safe MOBILE GmbH
Address:	i_Park Tauberfranken 10 97922 Lauda-Koenigshofen Germany

Manufacturer or Supplier:	i.safe MOBILE GmbH
Address:	i_Park Tauberfranken 10 97922 Lauda-Koenigshofen Germany
Product:	Smartphone
Brand Name:	i.safe MOBILE
Model Name:	M540A01
Marketing Name:	IS540.1,IS540.M1,IS540.2,IS540.RG
FCC ID:	2AACZ-M540A01
Date of tests:	Nov. 24, 2022 ~ Feb. 06, 2023

The tests have been carried out according to the requirements of the following standard:

☒ **47 CFR FCC Part 96**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Simon Wang Date: Feb. 06, 2023	Luke Lu Date: Feb. 06, 2023

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RELEASE CONTROL RECORD

ISSUE NO.	DESCRIPTION	DATE ISSUED
W7L-P22110036RF11	Original release	Feb. 06, 2023

1 SUMMARY OF TEST RESULTS

47 CFR FCC PART 96		
FCC CLAUSE	**TEST ITEM**	**RESULT**
2.1046 96.41(b)	Maximum Peak Output Power and Maximum EIRP	Compliance
2.1046 96.41(e)	Conducted Band Edge	Compliance
2.1049	Occupied Bandwidth	Compliance
2.1055	Frequency Stability	Compliance
2.1051 96.41(e)	Conducted Spurious Emissions	Compliance
2.1053 96.41(e)	Radiated Spurious Emissions	Compliance
96.41(g)	Peak-to-Average Power Ratio	Compliance

Note:
Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Effective Radiated Power	±1.48dB
Frequency Stability	±39.27Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions	±4.98dB
Conducted emissions	±4.01 dB
Occupied Channel Bandwidth	±21.7KHz
Band Edge Measurements	±1.48dB
Peak to average ratio	±0.76dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 21,22	Feb. 20,23
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.15,22	May.14,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.04,22	Sep.03,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 06,22	Mar. 05,23
Horn Antenna	ETS-LINDGREN	3117	00168692	Mar. 06,22	Mar. 05,23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 24, 22	Aug. 23, 23
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 15,22	Feb. 14,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 21,22	Feb.20,23
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	May. 07,22	May. 06,23
Power Meter	Anritsu	ML2495A	1506002	Feb. 22,22	Feb. 21,23
Power Sensor	Anritsu	MA2411B	1339352	May. 07,22	May. 06,23
Temperature Chamber	ESPEC	SH-242	93000855	May. 12,22	May. 11,23
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 18,22	Feb. 17,23
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.12,22	May.11,23
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 24,22	Aug. 23,23

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Smartphone	
BRAND NAME	i.safe MOBILE	
MODEL NAME	M540A01	
MARKETING NAME	IS540.1,IS540.M1,IS540.2,IS540.RG	
NOMINAL VOLTAGE	5.0Vdc(adapter or host equipment) 3.7Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	**5G NR**	DFT-s-OFMA(Pi/2 BPSK,QPSK,16QAM,64QAM,256QAM); CP-OFMA(QPSK,16QAM,64QAM,256QAM);
SUPPORT ENDC COMBINE	**NR Band n48**	2A_n48
		5A_n48
		13A_n48
		66A_n48
FREQUENCY RANGE	**NR Band n48**	3555 MHz ~ 3694.98MHz
EMISSION DESIGNATOR	**NR Band n48** **Channel Bandwidth: 10MHz**	Pi/2BPSK: 9M00G7D QPSK: 9M00G7D 16QAM: 9M00W7D 64QAM: 8M95W7D 256QAM: 8M98W7D
	NR Band n48 **Channel Bandwidth: 20MHz**	Pi/2BPSK: 17M9G7D QPSK: 17M9G7D 16QAM: 17M9W7D 64QAM: 17M9W7D 256QAM: 17M9W7D
	NR Band n48 **Channel Bandwidth: 40MHz**	Pi/2BPSK: 35M6G7D QPSK: 35M6G7D 16QAM: 35M7W7D 64QAM: 35M7W7D 256QAM: 35M6W7D
MAX. EIRP POWER	**NR Band n48** **Channel Bandwidth: 10MHz**	171.79mW
	NR Band n48 **Channel Bandwidth: 20MHz z**	170.61mW

	NR Band n48 Channel Bandwidth: 40MHz	178.38mW
ANTENNA GAIN	PIFA Antenna with -1.3dBi gain for NR Band n48	
HW VERSION	V02	
SW VERSION	IS540_ROW_00.00_1_20221017	
I/O PORTS	Refer to user's manual	
DATA CABLE	USB cable1: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable2: non-shielded cable, with w/o ferrite core, 1.0 meter	
EXTREME TEMPERATURE	-10-50 ℃	
EXTREME VOLTAGE	3.6V - 4.2V	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and four receiver.

MODULATION MODE	TX FUNCTION
NR	1TX/4RX

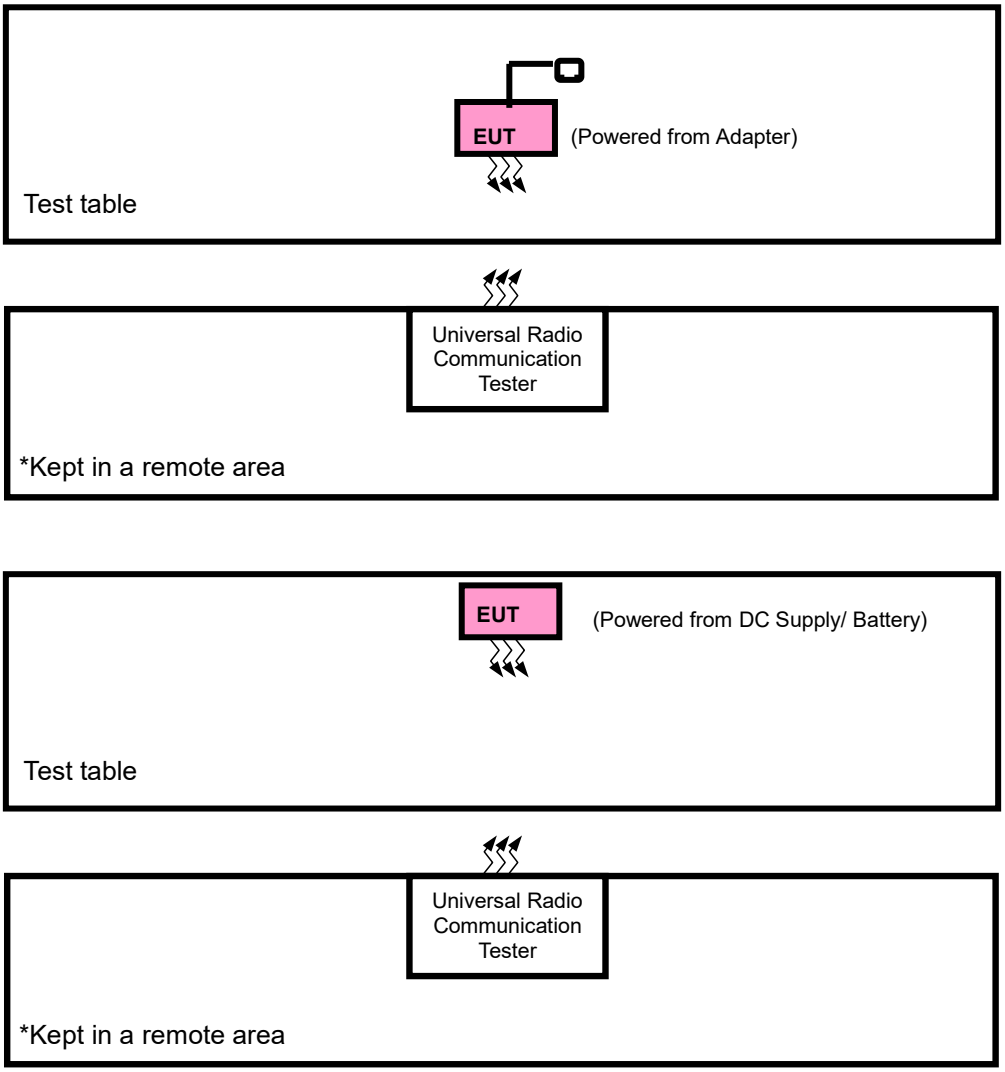
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	N/A	FPR Connectivity Technology Inc.	MBP540A01	Capacity：3.7Vdc, 4400mAh
AC Adapter	N/A	SHENZHEN SHI YINGYUAN POWER SUPPLY TECHNOLOGY CO., LTD.	ICP12-050-2000B	I/P: 100-240Vac, 0.3A, O/P: 5.0Vdc, 2A
USB Cable 1	N/A	Winpower Technology Co., LTD	PROTECTOR 2.0	Signal Line,1.0meter
USB Cable 2	N/A	Winpower Technology Co., LTD	USB2.0	Signal Line,1.0meter

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.8m

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case was found when positioned on Y-plane for EIRP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with 5G NR link
B	EUT + DC Supply with 5G NR link

5G NR n48 MODE (SA_n25, DC_2A_n48, DC_5A_n48, DC_13A_n48, DC_66A_n48,)

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CP-OFDM CHANNEL	AVAILABLE DFT-S-OFDM CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(DFT-S-OFDM) (INCLUDE CP-OFDM)
A	EIRP	637000 to 646332	637000 to 646332	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		637334 to 646000	637334 to 646000	Low, Middle, High	20MHz	QPSK,	1RB/ 0RB Offset
		638000 to 645332	638000 to 645332	Low, Middle, High	40MHz	Pi/2BPSK,QPSK, 16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
B	FREQUENCY STABILITY	637334 to 646000	637334 to 646000	Low, Middle, High	20MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	637334 to 646000	637334 to 646000	Low, Middle, High	20MHz	QPSK	Outer_ Full
A	OCCUPIED BANDWIDTH	637000 to 646332	637000 to 646332	Middle	10MHz	Pi/2BPSK,QPSK, 16QAM, 64QAM, 256QAM	Outer_ Full
		637334 to 646000	637334 to 646000	Middle	20MHz	Pi/2BPSK,QPSK, 16QAM, 64QAM, 256QAM	Outer_ Full
		638000 to 645332	638000 to 645332	Middle	40MHz	Pi/2BPSK,QPSK, 16QAM, 64QAM, 256QAM	Outer_ Full

A	BAND EDGE	637000 to 646332	637000 to 646332	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ max Offset
							Outer_ Full
		637334 to 646000	637334 to 646000	Low	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	20MHz	QPSK	1RB/ max Offset
							Outer_ Full
		638000 to 645332	638000 to 645332	Low	40MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	40MHz	QPSK	1RB/ max Offset
							Outer_ Full
A	CONDUCTED EMISSION	637000 to 646332	637000 to 646332	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
A		637334 to 646000	637334 to 646000	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
A		638000 to 645332	638000 to 645332	Low, Middle, High	40MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	637000 to 646332	637000 to 646332	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
A		637334 to 646000	637334 to 646000	Middle	20MHz	QPSK	1RB/ 0RB Offset
A		638000 to 645332	638000 to 645332	Middle,	40MHz	QPSK	1RB/ 0RB Offset
A	ACLR	637000 to 646332	637000 to 646332	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ max Offset
							Outer_ Full
		637334 to 646000	637334 to 646000	Low	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	20MHz	QPSK	1RB/ max Offset
							Outer_ Full
		638000 to 645332	638000 to 645332	Low	40MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	40MHz	QPSK	1RB/ max Offset
							Outer_ Full

Note: 1.This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

2. The test data presented in the report from worst SA_n48

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/3.7V/4.2V By DC Supply	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC5V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	James Fu
CONDCUDETED EMISSION	23deg. C, 70%RH	DC5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC5V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC5V By Adapter	James Fu

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 96

KDB 971168 D02 Power Meas License Digital Systems v02r02

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

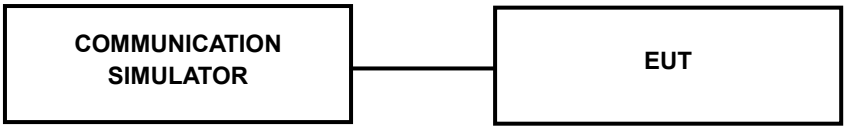
3 TEST TYPES AND RESULTS

3.1 MAXIMUM EIRP MEASUREMENT

3.1.1 LIMITS OF MAXIMUM EIRP MEASUREMENT

Device	Maximum EIRP (dBm/10 MHz)
End User Device	23
Category A CBSD	30
Category B CBSD	47

3.1.2 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.1.3 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = $P_{Meas} + G_T – L_C$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically 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;

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

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

CONDUCTED POWER MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.

3.1.5 TEST RESULTS

5G SA

N48

BW	MCS Index	RB Size	RB Offset	Low CH 637000	Mid CH 641666	High CH 646332
				Frequency 3555MHz	Frequency 3624.99MHz	Frequency 3694.98MHz
10M	CP-OFDM QPSK	1	1	22.13	22.14	22.09

BW	MCS Index	RB Size	RB Offset	Low CH 637334	Mid CH 641666	High CH 646000
				Frequency 3560.01MHz	Frequency 3624.99MHz	Frequency 3690MHz
20M	CP-OFDM QPSK	1	1	22.09	22.09	22.18

BW	MCS Index	RB Size	RB Offset	Low CH 638000	Mid CH 641666	High CH 645332
				Frequency 3570MHz	Frequency 3624.99MHz	Frequency 3679.98MHz
40M	CP-OFDM QPSK	1	1	22.13	22.15	22.17

BW	MCS Index	RB Size	RB Offset	Low CH 637000	Mid CH 641666	High CH 646332
				Frequency 3555MHz	Frequency 3624.99MHz	Frequency 3694.98MHz
10M	DFT-s-OFDM QPSK	1	1	23.63	23.65	23.59

BW	MCS Index	RB Size	RB Offset	Low CH 637334	Mid CH 641666	High CH 646000
				Frequency 3560.01MHz	Frequency 3624.99MHz	Frequency 3690MHz
20M	DFT-s-OFDM QPSK	1	1	23.60	23.62	23.58

BW	MCS Index	RB Size	RB Offset	Low CH 638000	Mid CH 641666	High CH 645332
				Frequency 3570MHz	Frequency 3624.99MHz	Frequency 3679.98MHz
40M	DFT-s-OFDM Pi/2 BPSK	1	1	23.57	23.65	23.67
		1	53	23.41	23.51	23.46
		1	104	23.39	23.57	23.48
		50	0	23.01	23.11	23.10
		50	28	23.35	23.50	23.42
		50	56	22.97	23.10	23.08
		100	0	22.95	23.12	23.04
	DFT-s-OFDM QPSK	1	1	23.63	23.69	23.65
		1	53	23.32	23.45	23.38
		1	104	23.38	23.53	23.44
		50	0	22.46	22.54	22.56
		50	28	23.43	23.53	23.48
		50	56	22.46	22.63	22.55
		100	0	22.41	22.46	22.47
	DFT-s-OFDM 16QAM	1	1	22.29	22.39	22.38
	DFT-s-OFDM 64QAM	1	1	20.48	20.63	20.55
	DFT-s-OFDM 256QAM	1	1	18.54	18.67	18.65

EIRP

N48

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MH)
637000	3555.00	23.63	-1.3	22.33	171	23
641666	3624.99	23.65	-1.3	22.35	171.79	23
646332	3694.98	23.59	-1.3	22.29	169.43	23

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MHz)
637334	3560.01	23.6	-1.3	22.3	169.82	23
641666	3624.99	23.62	-1.3	22.32	170.61	23
646000	3690.00	23.58	-1.3	22.28	169.04	23

CHANNEL BANDWIDTH: 40MHz Pi/2 BPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MHz)
638000	3570.00	23.57	-1.3	22.27	168.66	23
641666	3624.99	23.65	-1.3	22.35	171.79	23
645332	3679.98	23.67	-1.3	22.37	172.58	23

CHANNEL BANDWIDTH: 40MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MHz)
638000	3570.00	23.63	-1.3	22.33	171	23
641666	3624.99	23.69	-1.3	22.39	173.38	23
645332	3679.98	23.65	-1.3	22.35	171.79	23

CHANNEL BANDWIDTH: 40MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MHz)
638000	3570.00	22.29	-1.3	20.99	125.6	23
641666	3624.99	22.39	-1.3	21.09	128.53	23
645332	3679.98	22.38	-1.3	21.08	128.23	23

CHANNEL BANDWIDTH: 40MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MHz)
638000	3570.00	20.48	-1.3	19.18	82.79	23
641666	3624.99	20.63	-1.3	19.33	85.7	23
645332	3679.98	20.55	-1.3	19.25	84.14	23

CHANNEL BANDWIDTH: 40MHz 256QAM

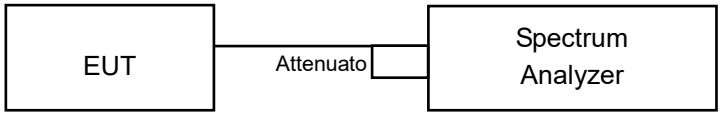
Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (dBm/10MHz)
638000	3570.00	18.54	-1.3	17.24	52.97	23
641666	3624.99	18.67	-1.3	17.37	54.58	23
645332	3679.98	18.65	-1.3	17.35	54.33	23

3.2 CONDUCTED BAND EDGE

3.2.1 LIMITS OF CONDUCTED BAND EDGE MEASUREMENT

The conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed-13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within O to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed -25 dBm/MHz. Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.

3.2.2 TEST SETUP



3.2.3 TEST INSTRUMENTS

Refer to section 1.2 to get information of above instrument.

3.2.4 TEST PROCEDURE

For the Conducted Band Edge:

a. Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
b. Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).

c. Set the resolution bandwidth (RBW) ≧ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
d. Beyond the 1MHz band from the band edge, RBW=1MHz was used.

e. Set the video bandwidth (VBW) to ≧3 x RBW.

f. Select the average power (RMS) display detector.

g. Set the number of measurement points to ≧ 1001.

h. Use auto-coupled sweep time.

i. Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.

j. The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.

k. Record the max trace plot into the test report.

For Adjacent Channel Leakage Ratio (ACLR) measurement:

1. The Adjacent Channel Leakage Ratio (ACLR) is the ratio of the average power in the assigned aggregated channel bandwidth to the average power over the equivalent adjacent channel bandwidth.

2. The option ACLR of spectrum analyzer is used and measures the ACLR ratio by setting equivalent channel bandwidth.

3. The measured ACLR ratio shall be at least 30 dB.

3.2.5 DEVIATION FROM TEST STANDARD

No deviation.

3.2.6 TEST RESULTS

Please Refer to Appendix Of this test report.

3.3 FREQUENCY STABILITY MEASUREMENT

3.3.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

3.3.2 TEST PROCEDURE

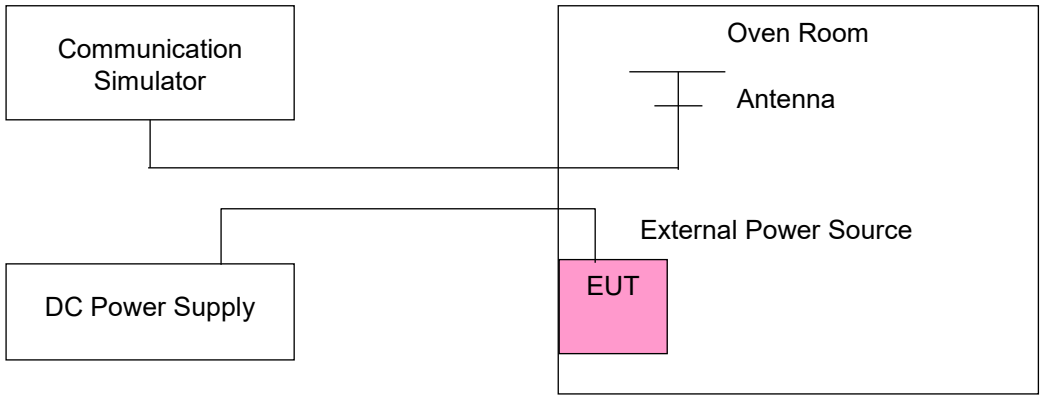
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.3.3 TEST SETUP



3.3.4 TEST RESULTS

Please Refer to Appendix Of this test report.

LTE BAND CA_48C

LTE BAND CA_48C channel and Frequency List					
BW(MHz)	**Channel/Frequcncy(MHz)**		**Lowest**	**Middle**	**Highest**
5+20	PCC	channel	55273	55898	56523
		Frequcncy	3553.3	3615.8	3678.3
	SCC	channel	55390	56015	56640
		Frequcncy	3565	3627.5	3690
10+20	PCC	channel	55295	55896	56496
		Frequcncy	3555.5	3615.6	3675.6
	SCC	channel	55439	56040	56640
		Frequcncy	3569.9	3630	3690
15+20	PCC	channel	55318	55893	56496
		Frequcncy	3557.8	3615.3	3672.9
	SCC	channel	55489	55064	56640
		Frequcncy	3574.9	3632.4	3690
20+5	PCC	channel	55340	55965	56590
		Frequcncy	3560	3622.5	3685
	SCC	channel	55457	56082	56707
		Frequcncy	3571.7	3634.2	3696.7
20+10	PCC	channel	55340	55941	56541
		Frequcncy	3560	3620.1	3680.1
	SCC	channel	55484	56085	56685
		Frequcncy	3574.4	3634.5	3694.5
20+15	PCC	channel	55340	55916	56491
		Frequcncy	3560	3617.6	3675.1
	SCC	channel	55511	56087	56662
		Frequcncy	3577.1	3634.7	3692.2
20+20	PCC	channel	55340	55891	56442
		Frequcncy	3560	3615.1	3670.2

	SCC	channel	55538	56089	56640
		Frequcncy	3579.8	3634.9	3690

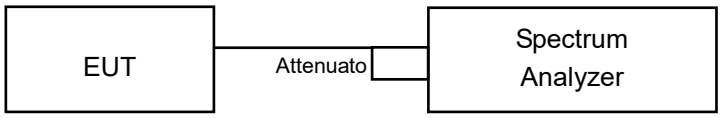
Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.7V); VH = High voltage(4.2V);
NT = Normal temperature (25℃)

3.4 OCCUPIED BANDWIDTH MEASUREMENT

3.4.1 OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage
0.5 %of the total mean power of a given emission.

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 1.2 to get information of above instrument.

3.4.4 TEST PROCEDURE

a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 TEST RESULT

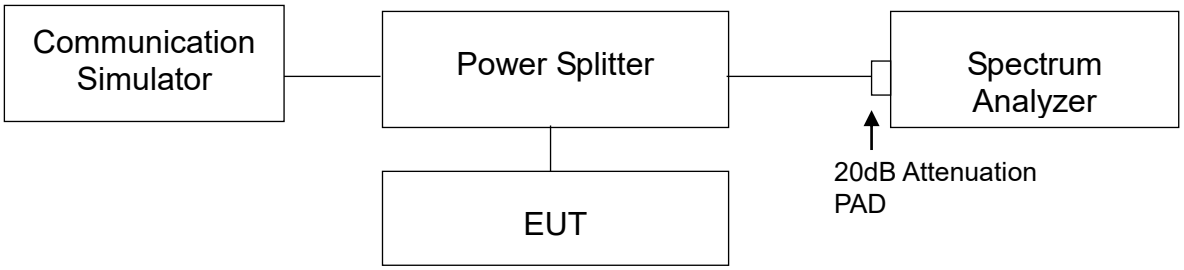
Please Refer to Appendix Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

3.5.2 TEST SETUP



3.5.3 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9 kHz to 40 GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.4 TEST RESULTS

Please Refer to Appendix Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

3.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The substitution antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

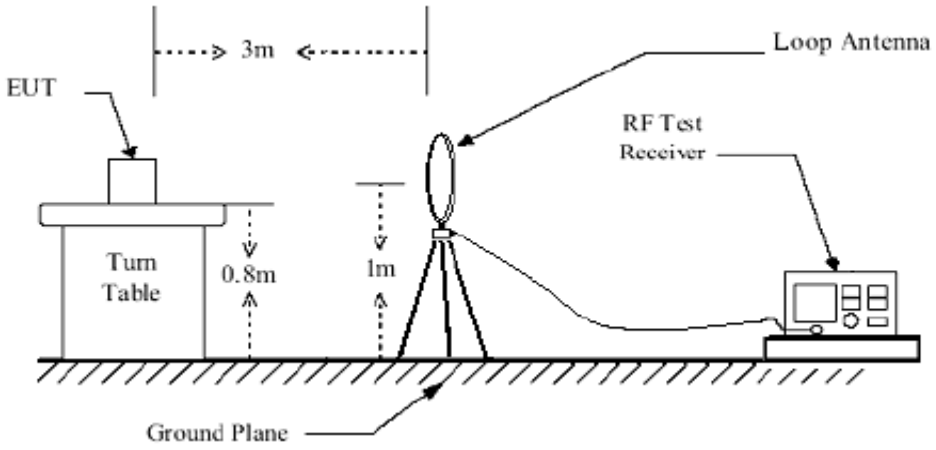
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

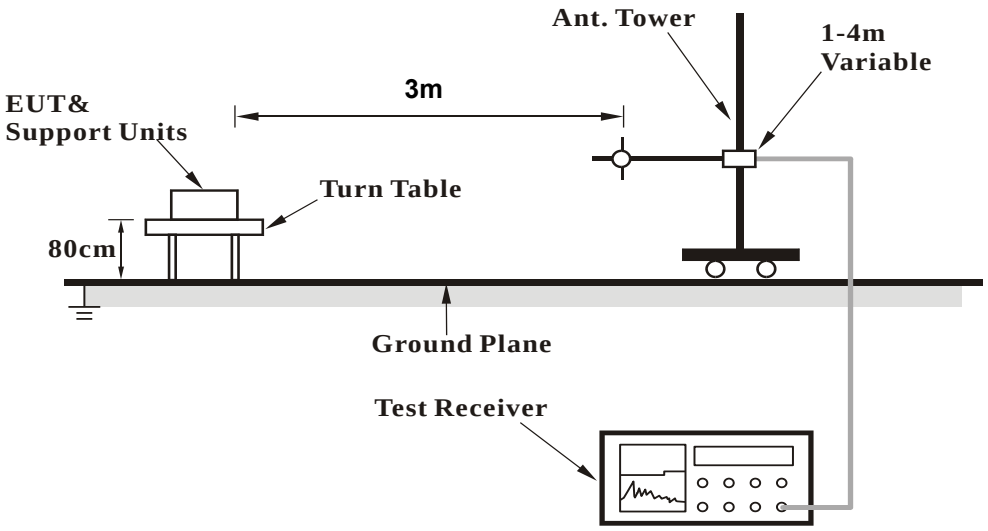
No deviation.

3.6.4 TEST SET UP

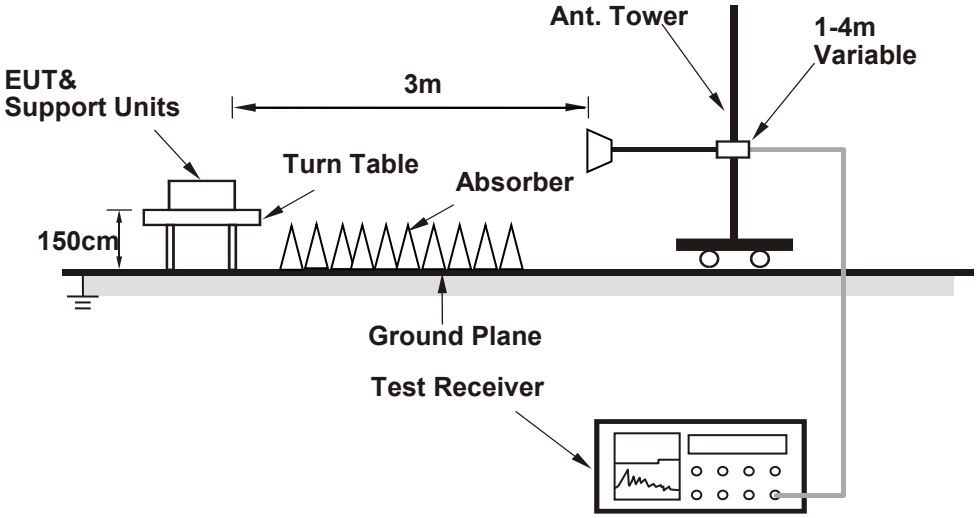
< Frequency Range below 30MHz >



<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.6.5 TEST RESULTS

NOTE ： The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

5G SA BELOW 1GHz WORST-CASE DATA

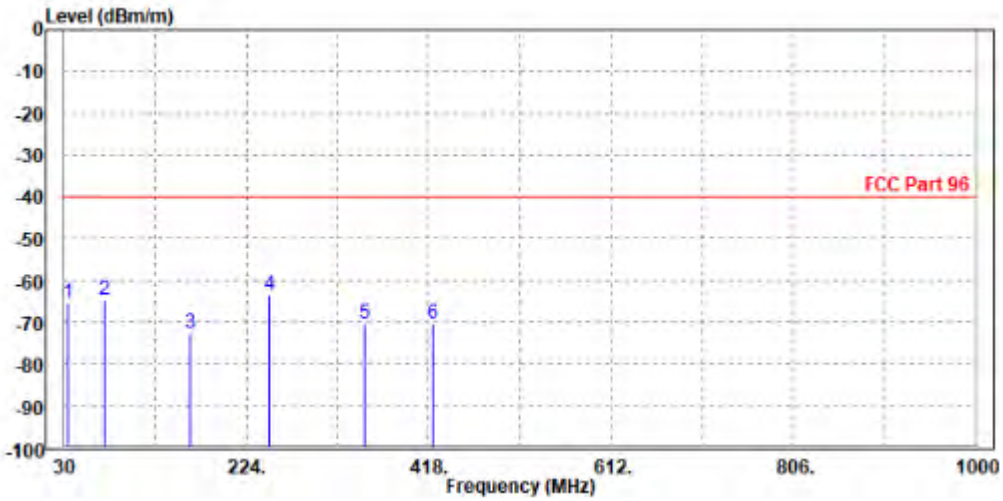
30 MHz – 1GHz data:

N48

CHANNEL BANDWIDTH: 10MHz / QPSK

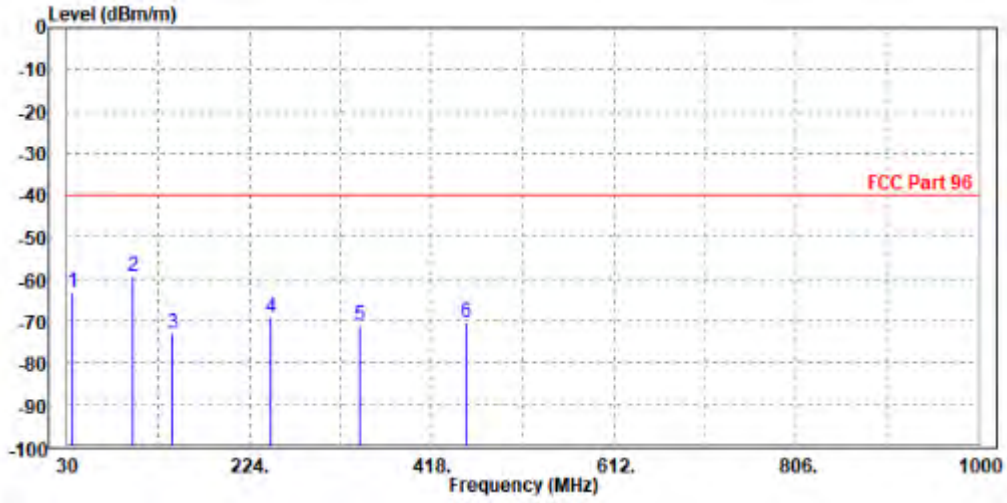
MODE	TX channel 646332	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		34.850	-65.39	-53.35	-40.00	-25.39	-12.04	Peak	Horizontal
2		72.680	-64.64	-43.39	-40.00	-24.64	-21.25	Peak	Horizontal
3		164.830	-72.53	-56.41	-40.00	-32.53	-16.12	Peak	Horizontal
4	PP	248.250	-63.52	-51.86	-40.00	-23.52	-11.66	Peak	Horizontal
5		349.130	-70.32	-59.05	-40.00	-30.32	-11.27	Peak	Horizontal
6		422.850	-70.30	-60.68	-40.00	-30.30	-9.62	Peak	Horizontal



MODE	TX channel 646332	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	35.820	-63.23	-41.85	-40.00	-23.23	-21.38	Peak	Vertical
2 PP	99.840	-59.31	-52.80	-40.00	-19.31	-6.51	Peak	Vertical
3	142.520	-73.16	-58.91	-40.00	-33.16	-14.25	Peak	Vertical
4	247.280	-69.20	-55.36	-40.00	-29.20	-13.84	Peak	Vertical
5	341.370	-71.28	-61.22	-40.00	-31.28	-10.06	Peak	Vertical
6	454.860	-70.41	-61.92	-40.00	-30.41	-8.49	Peak	Vertical



ABOVE 1GHz

Note: For higher frequency, the emission is too low to be detected.

N48

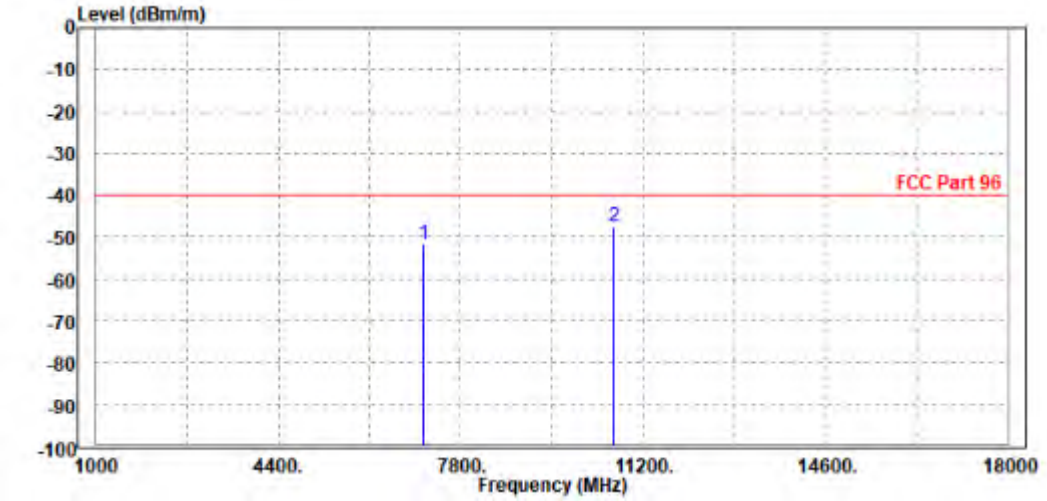
Note: For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL BANDWIDTH: 10MHz / QPSK

CH637000

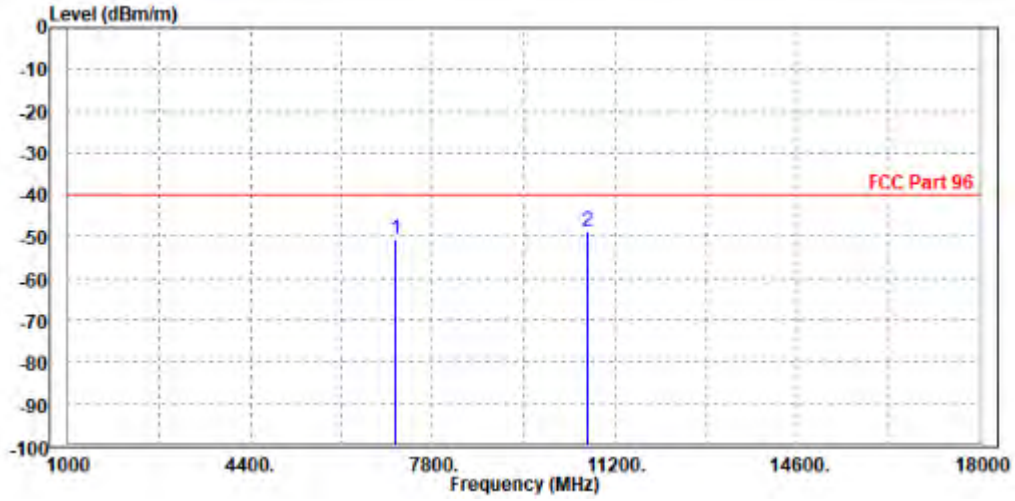
MODE	TX channel 637000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7103.000	-51.58	-63.64	-40.00	-11.58	12.06	Peak	Horizontal
2	PP10665.000	-47.36	-66.40	-40.00	-7.36	19.04	Peak	Horizontal



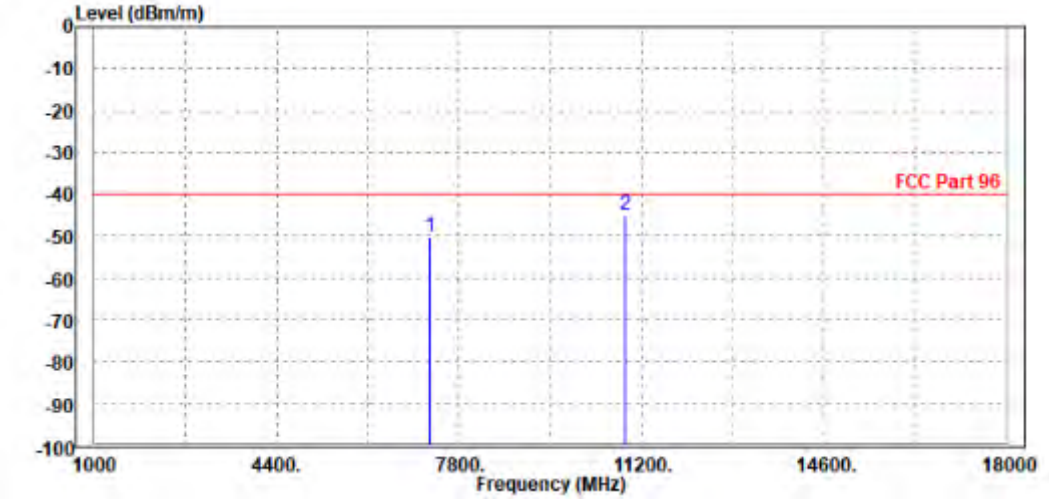
MODE	TX channel 637000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7110.000	-50.48	-63.64	-40.00	-10.48	13.16	Peak	Vertical
2	PP10673.000	-48.77	-67.49	-40.00	-8.77	18.72	Peak	Vertical



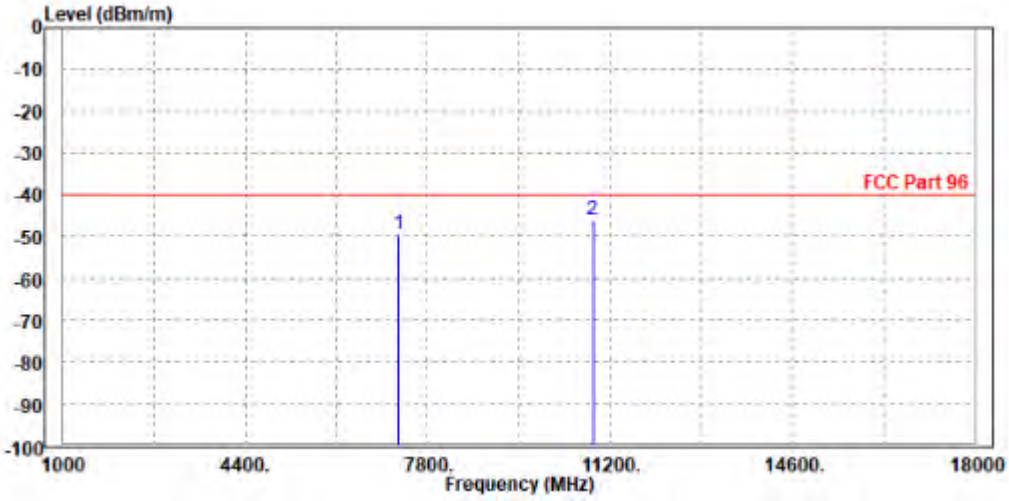
MODE	TX channel 641666	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7249.980	-50.12	-61.94	-40.00	-10.12	11.82	Peak	Horizontal
2	PP10877.000	-44.98	-64.60	-40.00	-4.98	19.62	Peak	Horizontal



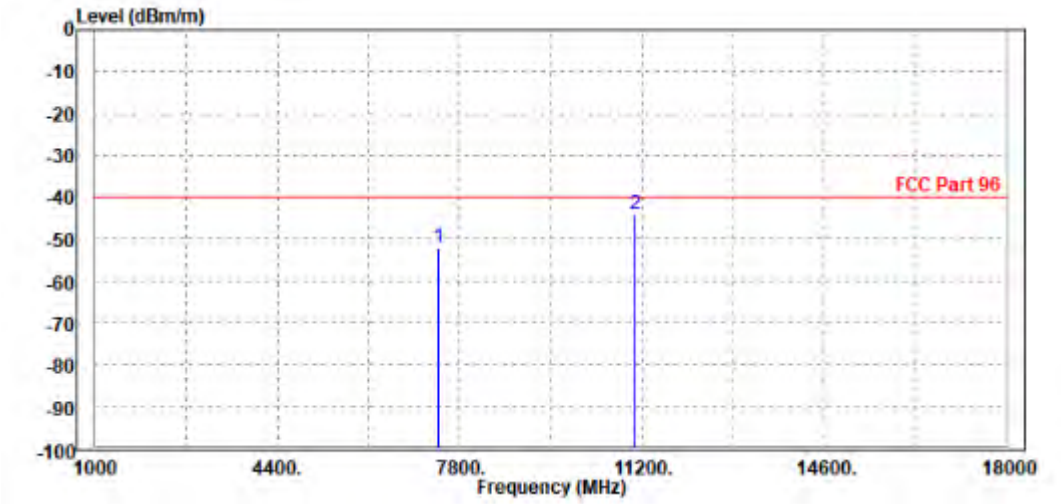
MODE	TX channel 641666	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7256.000	-49.49	-63.23	-40.00	-9.49	13.74	Peak	Vertical
2	PP10874.970	-46.15	-65.82	-40.00	-6.15	19.67	Peak	Vertical



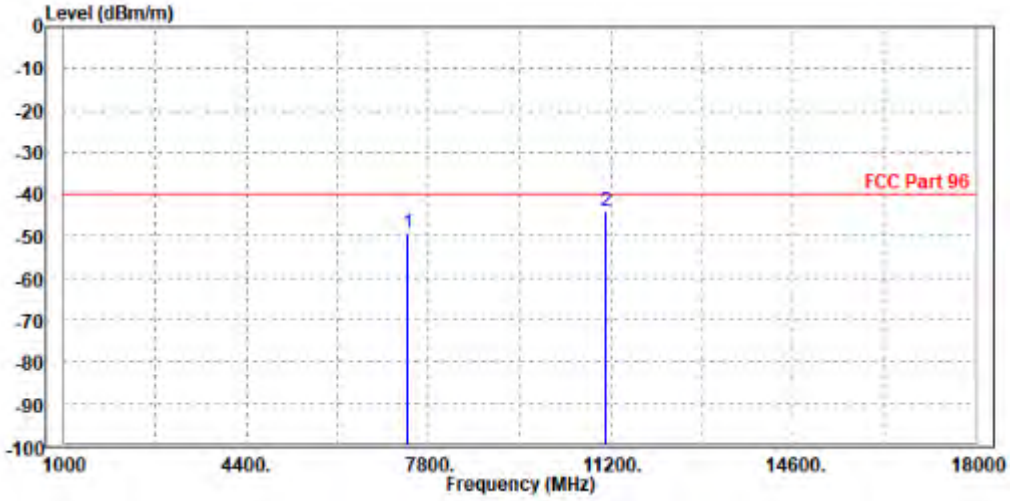
MODE	TX channel 646332	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7389.960	-52.15	-63.75	-40.00	-12.15	11.60	Peak	Horizontal
2	PP11081.000	-44.14	-64.20	-40.00	-4.14	20.06	Peak	Horizontal



MODE	TX channel 646332	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

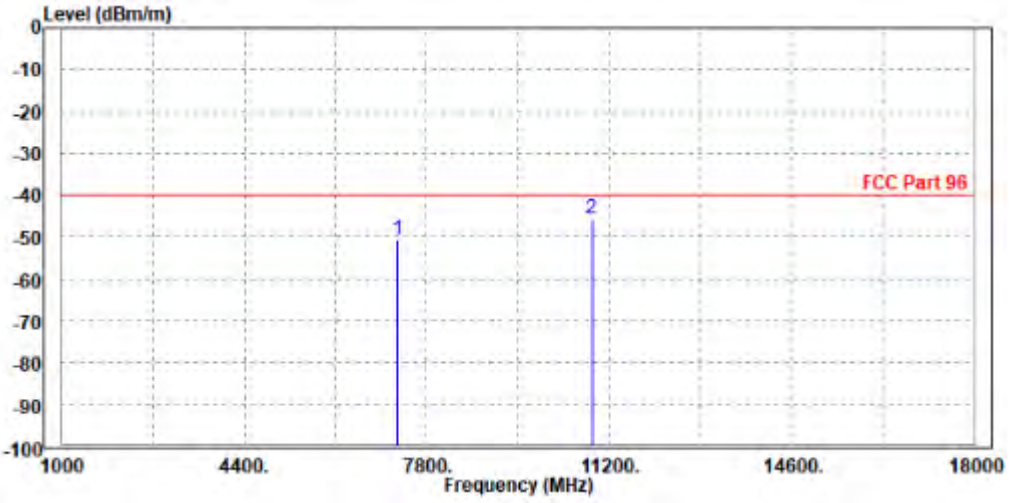
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7392.000	-49.49	-63.76	-40.00	-9.49	14.27	Peak	Vertical
2	PP11084.940	-43.97	-63.77	-40.00	-3.97	19.80	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

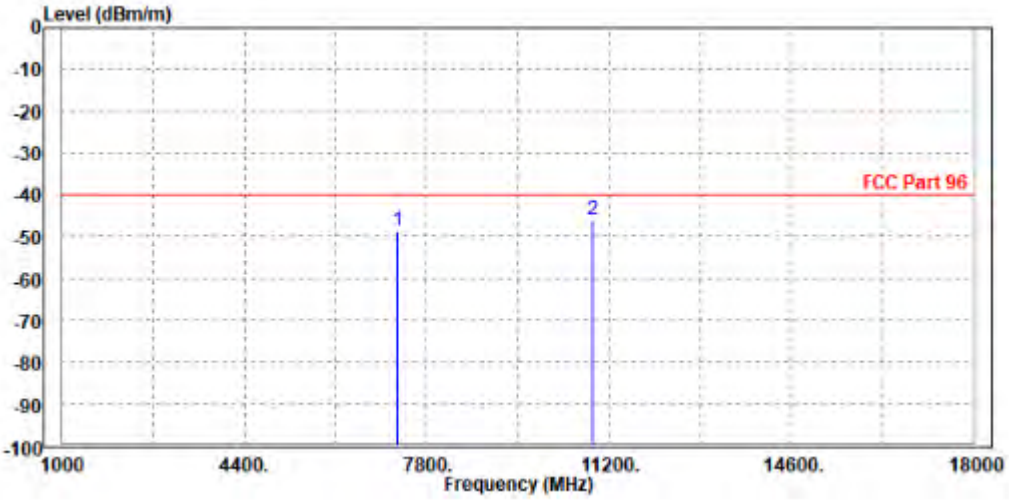
MODE	TX channel 641666	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7256.000	-50.49	-62.30	-40.00	-10.49	11.81	Peak	Horizontal
2	PP10874.970	-45.54	-65.15	-40.00	-5.54	19.61	Peak	Horizontal



MODE	TX channel 641666	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

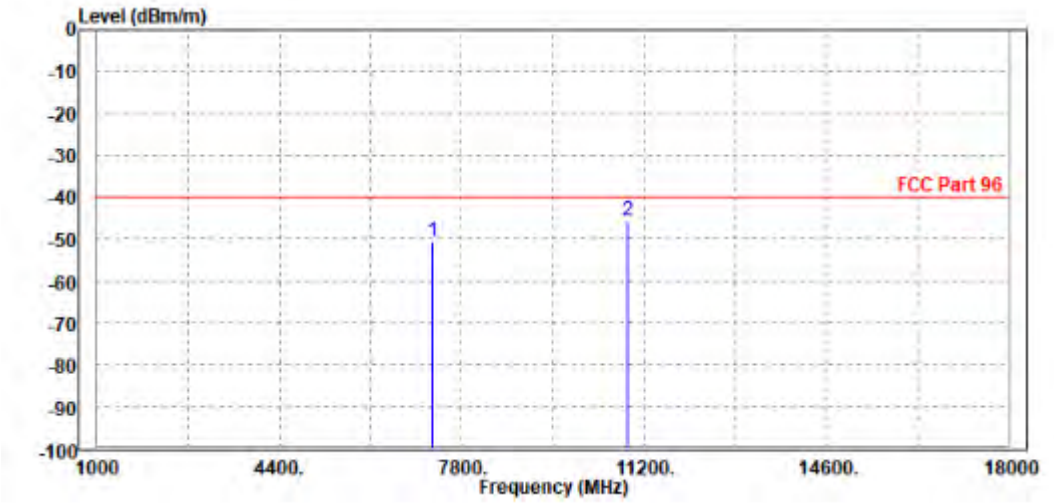
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7249.970	-48.74	-62.45	-40.00	-8.74	13.71	Peak	Vertical
2	PP10877.000	-45.98	-65.66	-40.00	-5.98	19.68	Peak	Vertical



CHANNEL BANDWIDTH: 40MHz / QPSK

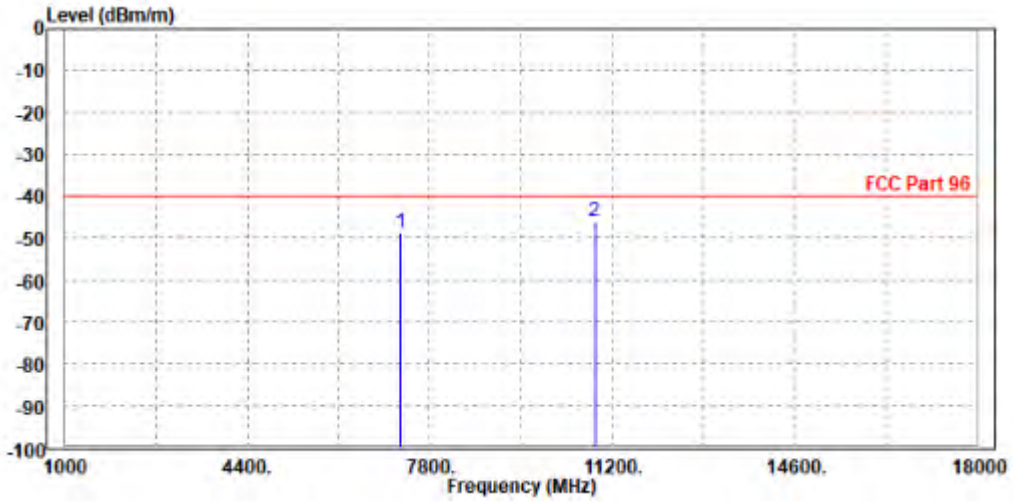
MODE	TX channel 641666	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7249.980	-50.53	-62.35	-40.00	-10.53	11.82	Peak	Horizontal
2	PP10877.000	-45.71	-65.33	-40.00	-5.71	19.62	Peak	Horizontal



MODE	TX channel 641666	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	7256.000	-48.53	-62.27	-40.00	-8.53	13.74	Peak	Vertical
2	PP10874.970	-46.05	-65.72	-40.00	-6.05	19.67	Peak	Vertical

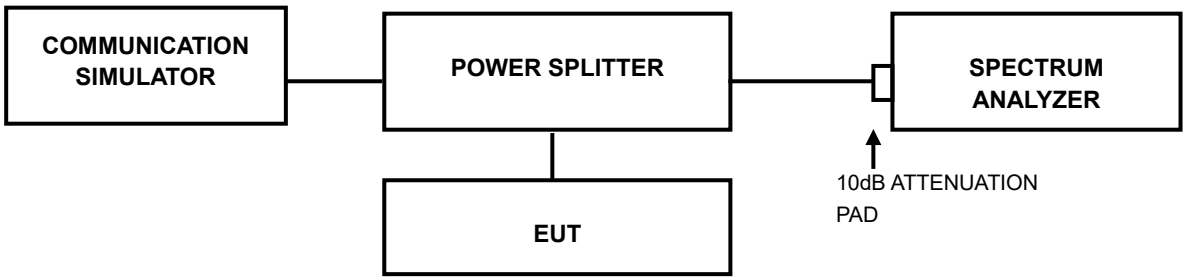


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.

4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Shenzhen EMC/RF Lab:
Tel: +86-755-88696566
Fax: +86-755-88696577

Email: customerservice.sw@cn.bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

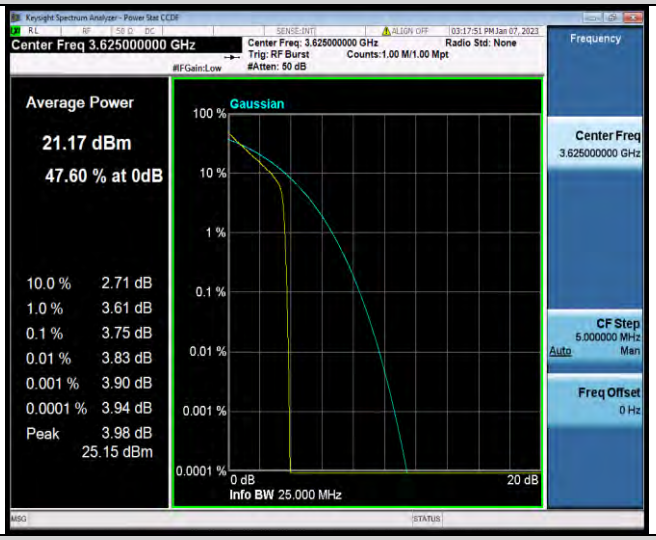
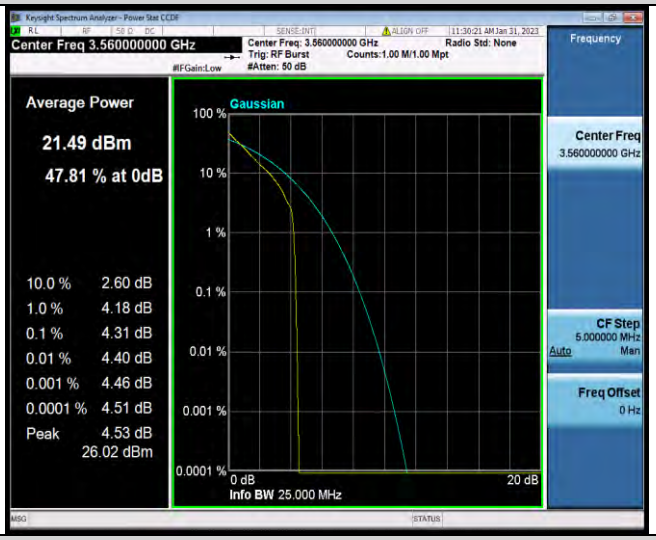
No any modifications are made to the EUT by the lab during the test.

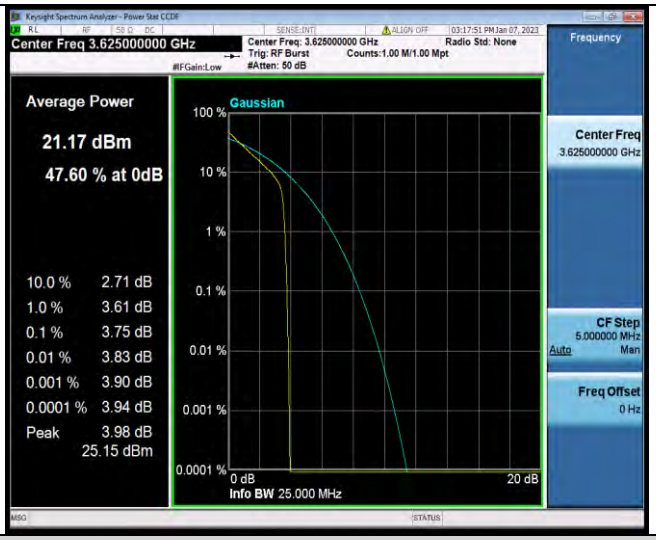
6 Appendix

NR BAND N48
PEAK-TO-AVERAGE RATIO(CCDF)
TEST RESULT

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
N48	20MHz	QPSK	637334	1RB#0	4.31	13	PASS
N48	20MHz	QPSK	637334	50RB#0	4.70	13	PASS
N48	20MHz	QPSK	641666	1RB#0	3.75	13	PASS
N48	20MHz	QPSK	641666	50RB#0	4.88	13	PASS
N48	20MHz	QPSK	646000	1RB#0	3.97	13	PASS
N48	20MHz	QPSK	646000	50RB#0	4.57	13	PASS

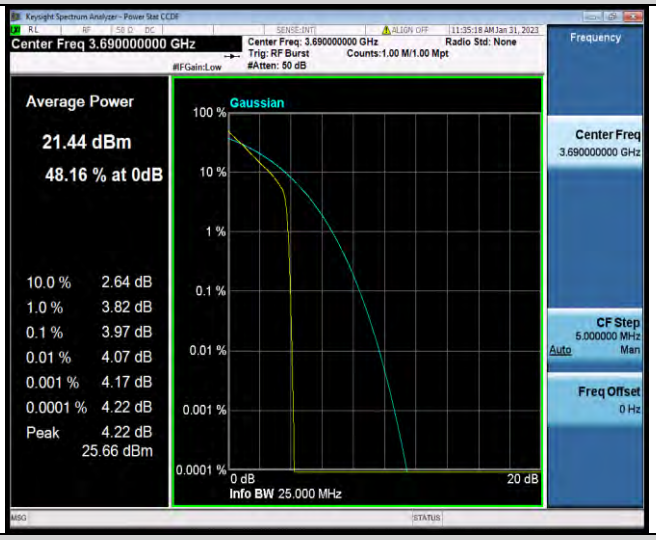
TEST GRAPHS

N48-20MHz-QPSK-637334-1RB#0

N48-20MHz-QPSK-637334-50RB#0

N48-20MHz-QPSK-641666-1RB#0

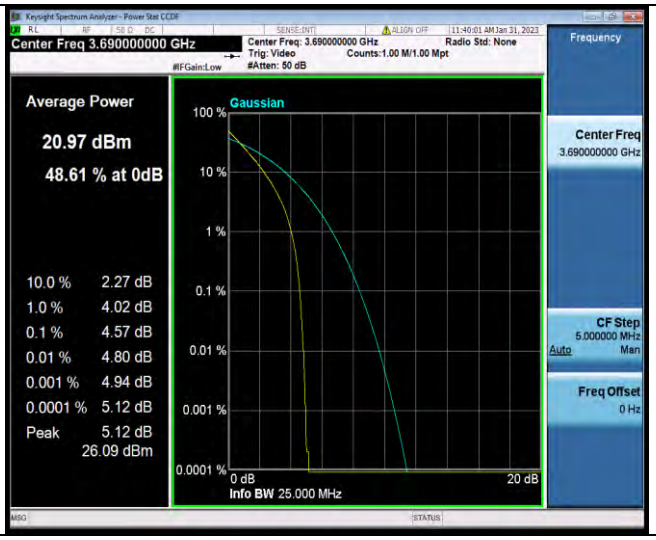


N48-20MHz-QPSK-641666-50RB#0

N48-20MHz-QPSK-646000-1RB#0



N48-20MHz-QPSK-646000-50RB#0


Center Freq 3.690000000 GHz
Center Freq: 3.690000000 GHz
Trig: Video
#Atten: 50 dB
Radio Std: None
Counts:1.00 M/1.00 Mpt
Frequency
Average Power
20.97 dBm
48.61 % at 0dB
10.0 % 2.27 dB
1.0 % 4.02 dB
0.1 % 4.57 dB
0.01 % 4.80 dB
0.001 % 4.94 dB
0.0001 % 5.12 dB
Peak 5.12 dB
26.09 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 25.000 MHz
Center Freq
3.690000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

26DB BANDWIDTH AND OCCUPIED BANDWIDTH
TEST RESULT

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
N48	10MHz	QPSK	641666	25RB#0	9.0064	9.699	PASS
N48	10MHz	16QAM	641666	25RB#0	8.9992	9.682	PASS
N48	10MHz	64QAM	641666	25RB#0	8.9542	9.604	PASS
N48	10MHz	256QAM	641666	25RB#0	8.9754	9.659	PASS
N48	10MHz	BPSK	641666	25RB#0	9.0018	9.706	PASS
N48	20MHz	QPSK	641666	50RB#0	17.881	18.79	PASS
N48	20MHz	16QAM	641666	50RB#0	17.872	18.82	PASS
N48	20MHz	64QAM	641666	50RB#0	17.872	18.82	PASS
N48	20MHz	256QAM	641666	50RB#0	17.870	18.75	PASS
N48	20MHz	BPSK	641666	50RB#0	17.877	18.79	PASS
N48	40MHz	QPSK	641666	100RB#0	35.636	37.00	PASS
N48	40MHz	16QAM	641666	100RB#0	35.688	37.05	PASS
N48	40MHz	64QAM	641666	100RB#0	35.681	37.04	PASS
N48	40MHz	256QAM	641666	100RB#0	35.602	36.99	PASS
N48	40MHz	BPSK	641666	100RB#0	35.632	37.01	PASS

TEST GRAPHS

N48-10MHz-QPSK-641666-25RB#0

N48-10MHz-16QAM-641666-25RB#0

N48-10MHz-64QAM-641666-25RB#0

N48-10MHz-256QAM-641666-25RB#0

N48-10MHz-BPSK-641666-25RB#0

N48-20MHz-QPSK-641666-50RB#0

N48-20MHz-16QAM-641666-50RB#0

N48-20MHz-64QAM-641666-50RB#0

N48-20MHz-256QAM-641666-50RB#0

N48-20MHz-BPSK-641666-50RB#0

N48-40MHz-QPSK-641666-100RB#0

N48-40MHz-16QAM-641666-100RB#0

N48-40MHz-64QAM-641666-100RB#0

N48-40MHz-256QAM-641666-100RB#0

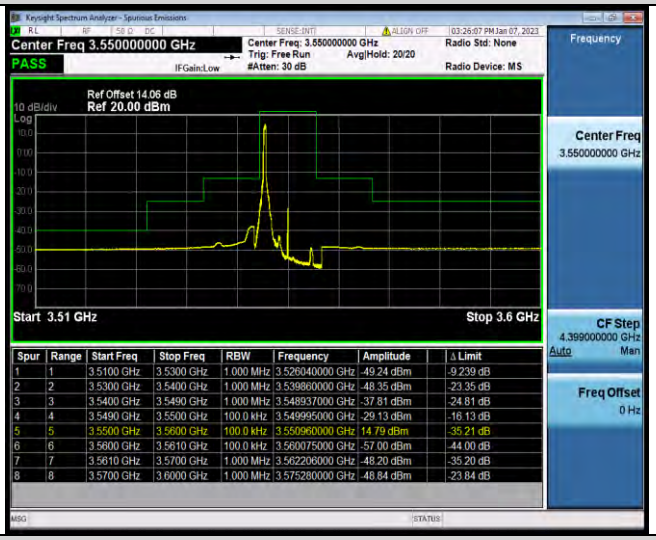
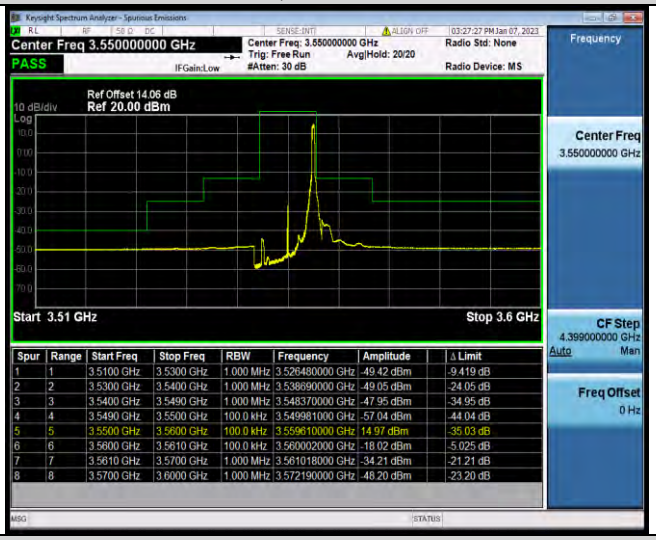
N48-40MHz-BPSK-641666-100RB#0


Keysight Spectrum Analyzer - Occupied BW
Center Freq: 3.625000000 GHz
Trig: Free Run
Avg|Hold: 30/30
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Ref 35.00 dBm
Center Freq
3.625000000 GHz
Center 3.625 GHz
#Res BW 390 kHz
#VBW 1.2 MHz
Span 80 MHz
#Sweep 100 ms
CF Step
8.000000 MHz
Auto
Man
Occupied Bandwidth
35.632 MHz
Total Power
21.9 dBm
Transmit Freq Error
-1.0972 MHz
OBW Power
99.00 %
x dB Bandwidth
37.01 MHz
x dB
-26.00 dB
Freq Offset
0 Hz

BAND EDGE
TEST RESULT

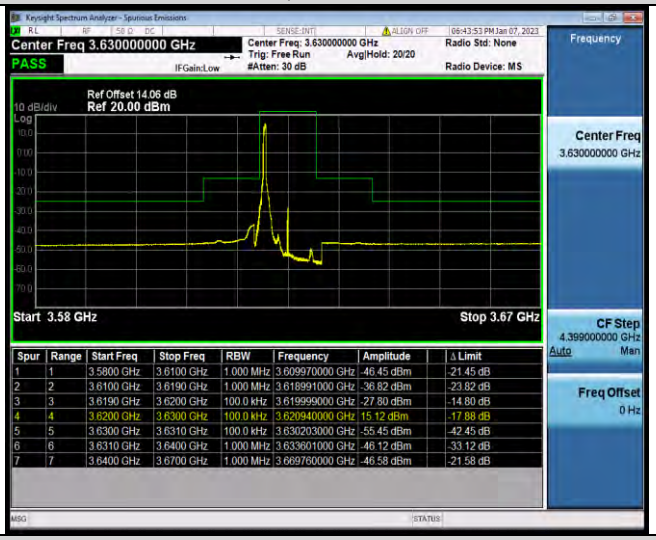
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
N48	10MHz	QPSK	637000	1RB#0	-49.24,-48.35,-37.81,-29.13	PASS
N48	10MHz	QPSK	637000	1RB#24	-49.42,-49.05,-47.95,-57.04	PASS
N48	10MHz	QPSK	637000	25RB#0	-43.77,-38.22,-25.99,-33.48	PASS
N48	10MHz	QPSK	641666	1RB#0	-55.45,-46.12,-46.58	PASS
N48	10MHz	QPSK	641666	1RB#24	-19.04,-33.99,-46.18	PASS
N48	10MHz	QPSK	641666	25RB#0	-30.88,-26.72,-38.54	PASS
N48	10MHz	QPSK	646332	1RB#0	-54.50,-45.29,-45.72,-45.72	PASS
N48	10MHz	QPSK	646332	1RB#24	-21.64,-35.25,-45.43,-45.68	PASS
N48	10MHz	QPSK	646332	25RB#0	-30.92,-26.85,-39.43,-43.42	PASS
N48	20MHz	QPSK	637334	1RB#0	-49.12,-48.23,-38.24,-31.53	PASS
N48	20MHz	QPSK	637334	1RB#50	-49.31,-48.70,-48.87,-55.47	PASS
N48	20MHz	QPSK	637334	50RB#0	-40.65,-31.89	PASS
N48	20MHz	QPSK	641666	1RB#0	-53.22,-53.01,-46.53	PASS
N48	20MHz	QPSK	641666	1RB#50	-31.95,-39.89,-46.45	PASS
N48	20MHz	QPSK	641666	50RB#0	-35.19,-35.73,-40.62	PASS
N48	20MHz	QPSK	646000	1RB#0	-52.32,-45.68,-45.57,-45.56	PASS
N48	20MHz	QPSK	646000	1RB#50	-32.90,-38.56,-45.26,-45.60	PASS
N48	20MHz	QPSK	646000	50RB#0	-36.44,-31.30,-35.74,-41.60	PASS
N48	40MHz	QPSK	638000	1RB#0	-49.10,-48.25,-36.66,-32.16	PASS
N48	40MHz	QPSK	638000	1RB#104	-49.05,-49.11,-48.84,-53.36	PASS
N48	40MHz	QPSK	638000	100RB#0	-43.97,-40.54,-37.60,-39.71	PASS
N48	40MHz	QPSK	641666	1RB#0	-50.65,-45.99,-45.91	PASS
N48	40MHz	QPSK	641666	1RB#104	-35.68,-35.87,-45.94	PASS
N48	40MHz	QPSK	641666	100RB#0	-36.01,-32.58,-42.53	PASS
N48	40MHz	QPSK	645332	1RB#0	-50.10,-45.88,-45.66,-45.59	PASS
N48	40MHz	QPSK	645332	1RB#104	-35.13,-36.38,-44.53,-45.56	PASS
N48	40MHz	QPSK	645332	100RB#0	-39.56,-37.21,-40.38,-43.36	PASS

TEST GRAPHS

N48-10MHz-QPSK-637000-1RB#0

N48-10MHz-QPSK-637000-1RB#24

N48-10MHz-QPSK-637000-25RB#0

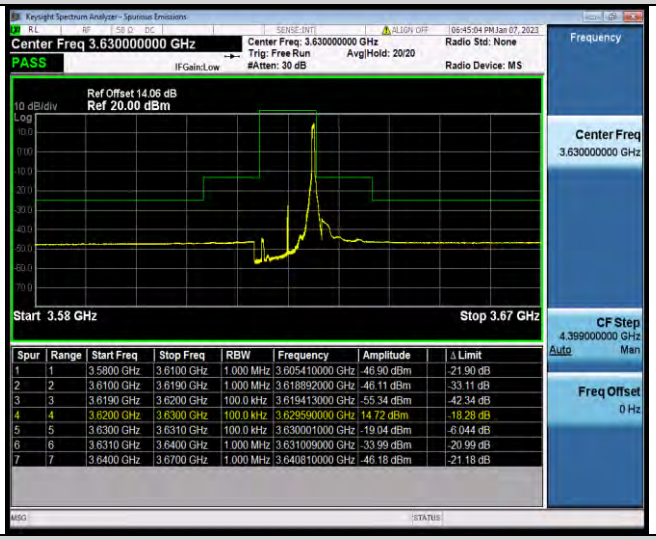
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.529760000 GHz	-43.77 dBm	-3.769 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.538490000 GHz	-38.22 dBm	-13.22 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548946000 GHz	-25.99 dBm	-12.99 dB
4	4	3.5490 GHz	3.5500 GHz	100.0 kHz	3.549985000 GHz	-33.48 dBm	-20.48 dB
5	5	3.5500 GHz	3.5600 GHz	100.0 kHz	3.552940000 GHz	1.810 dBm	-48.19 dB
6	6	3.5600 GHz	3.5610 GHz	100.0 kHz	3.560014000 GHz	-30.12 dBm	-17.12 dB
7	7	3.5610 GHz	3.5700 GHz	1.000 MHz	3.561117000 GHz	-25.47 dBm	-12.47 dB
8	8	3.5700 GHz	3.6000 GHz	1.000 MHz	3.571770000 GHz	-37.79 dBm	-12.79 dB

N48-10MHz-QPSK-641666-1RB#0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5800 GHz	3.6100 GHz	1.000 MHz	3.609970000 GHz	-46.45 dBm	-21.45 dB
2	2	3.6100 GHz	3.6190 GHz	1.000 MHz	3.618991000 GHz	-36.82 dBm	-23.82 dB
3	3	3.6190 GHz	3.6200 GHz	100.0 kHz	3.619999000 GHz	-27.80 dBm	-14.80 dB
4	4	3.6200 GHz	3.6300 GHz	100.0 kHz	3.620940000 GHz	15.12 dBm	-17.88 dB
5	5	3.6300 GHz	3.6310 GHz	100.0 kHz	3.630203000 GHz	-55.45 dBm	-42.45 dB
6	6	3.6310 GHz	3.6400 GHz	1.000 MHz	3.633601000 GHz	-46.12 dBm	-33.12 dB
7	7	3.6400 GHz	3.6700 GHz	1.000 MHz	3.669760000 GHz	-46.58 dBm	-21.58 dB

N48-10MHz-QPSK-641666-1RB#24



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5800 GHz	3.6100 GHz	1.000 MHz	3.605410000 GHz	-46.90 dBm	-21.90 dB
2	2	3.6100 GHz	3.6190 GHz	1.000 MHz	3.618892000 GHz	-46.11 dBm	-33.11 dB
3	3	3.6190 GHz	3.6200 GHz	100.0 kHz	3.619413000 GHz	-55.34 dBm	-42.34 dB
4	4	3.6200 GHz	3.6300 GHz	100.0 kHz	3.629590000 GHz	14.72 dBm	-18.28 dB
5	5	3.6300 GHz	3.6310 GHz	100.0 kHz	3.630001000 GHz	-19.04 dBm	-6.044 dB
6	6	3.6310 GHz	3.6400 GHz	1.000 MHz	3.631009000 GHz	-33.99 dBm	-20.99 dB
7	7	3.6400 GHz	3.6700 GHz	1.000 MHz	3.640810000 GHz	-46.18 dBm	-21.18 dB

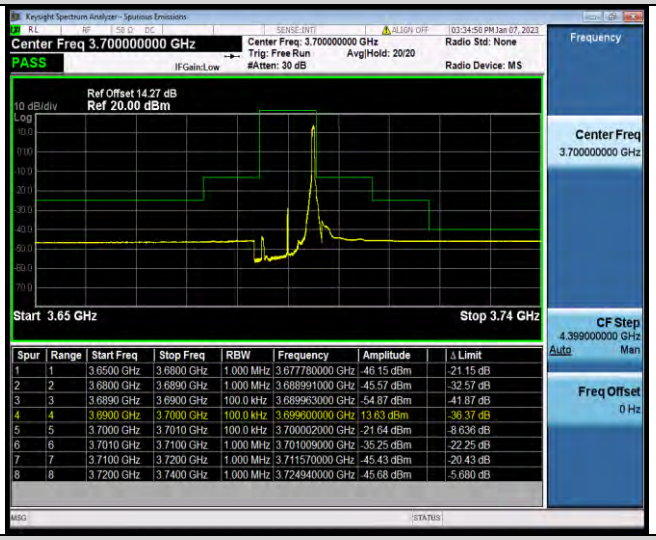
N48-10MHz-QPSK-641666-25RB#0

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5800 GHz	3.6100 GHz	1.000 MHz	3.608410000 GHz	-39.19 dBm	-14.19 dB
2	2	3.6100 GHz	3.6190 GHz	1.000 MHz	3.618955000 GHz	-27.13 dBm	-14.13 dB
3	3	3.6190 GHz	3.6200 GHz	100.0 kHz	3.619977000 GHz	-34.34 dBm	-21.34 dB
4	4	3.6200 GHz	3.6300 GHz	100.0 kHz	3.627760000 GHz	1.542 dBm	-31.46 dB
5	5	3.6300 GHz	3.6310 GHz	100.0 kHz	3.630007000 GHz	-30.88 dBm	-17.88 dB
6	6	3.6310 GHz	3.6400 GHz	1.000 MHz	3.631234000 GHz	-26.72 dBm	-13.72 dB
7	7	3.6400 GHz	3.6700 GHz	1.000 MHz	3.641620000 GHz	-38.54 dBm	-13.54 dB

N48-10MHz-QPSK-646332-1RB#0

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6500 GHz	3.6800 GHz	1.000 MHz	3.679700000 GHz	-45.73 dBm	-20.73 dB
2	2	3.6800 GHz	3.6890 GHz	1.000 MHz	3.688982000 GHz	-36.91 dBm	-23.91 dB
3	3	3.6890 GHz	3.6900 GHz	100.0 kHz	3.689993000 GHz	-28.05 dBm	-15.05 dB
4	4	3.6900 GHz	3.7000 GHz	100.0 kHz	3.690930000 GHz	15.18 dBm	-34.82 dB
5	5	3.7000 GHz	3.7010 GHz	100.0 kHz	3.700301000 GHz	-54.50 dBm	-41.50 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.702206000 GHz	-45.29 dBm	-32.29 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.710670000 GHz	-45.72 dBm	-20.72 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.739200000 GHz	-45.72 dBm	-5.724 dB

N48-10MHz-QPSK-646332-1RB#24



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6500 GHz	3.6800 GHz	1.000 MHz	3.677780000 GHz	-46.15 dBm	-21.15 dB
2	2	3.6800 GHz	3.6890 GHz	1.000 MHz	3.688991000 GHz	-45.57 dBm	-32.57 dB
3	3	3.6890 GHz	3.6900 GHz	100.0 kHz	3.689963000 GHz	-54.87 dBm	-41.87 dB
4	4	3.6900 GHz	3.7000 GHz	100.0 kHz	3.699600000 GHz	13.63 dBm	-36.37 dB
5	5	3.7000 GHz	3.7010 GHz	100.0 kHz	3.700002000 GHz	-21.64 dBm	-8.636 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701009000 GHz	-35.25 dBm	-22.25 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.711570000 GHz	-45.43 dBm	-20.43 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.724940000 GHz	-45.68 dBm	-5.680 dB

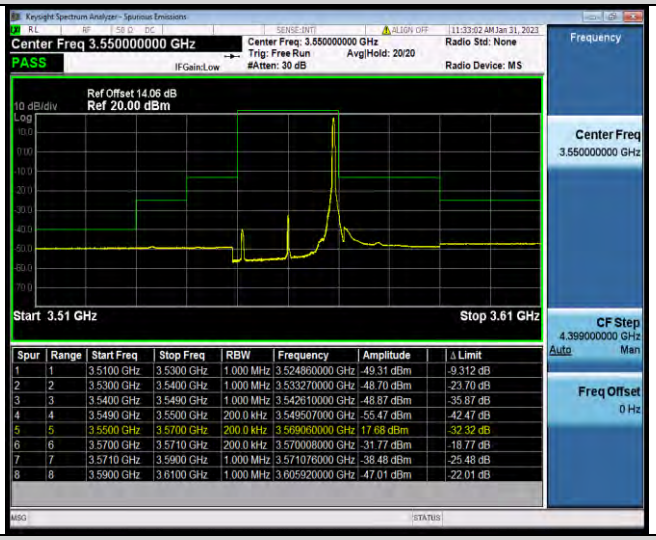
N48-10MHz-QPSK-646332-25RB#0

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6500 GHz	3.6800 GHz	1.000 MHz	3.678530000 GHz	-39.77 dBm	-14.77 dB
2	2	3.6800 GHz	3.6890 GHz	1.000 MHz	3.688955000 GHz	-27.62 dBm	-14.62 dB
3	3	3.6890 GHz	3.6900 GHz	100.0 kHz	3.689966000 GHz	-34.02 dBm	-21.02 dB
4	4	3.6900 GHz	3.7000 GHz	100.0 kHz	3.697760000 GHz	1.676 dBm	-48.32 dB
5	5	3.7000 GHz	3.7010 GHz	100.0 kHz	3.700002000 GHz	-30.92 dBm	-17.92 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701261000 GHz	-26.85 dBm	-13.85 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.711590000 GHz	-39.43 dBm	-14.43 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.720200000 GHz	-43.42 dBm	-3.417 dB

N48-20MHz-QPSK-637334-1RB#0

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.529960000 GHz	-49.12 dBm	-9.121 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539990000 GHz	-48.23 dBm	-23.23 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548982000 GHz	-38.24 dBm	-25.24 dB
4	4	3.5490 GHz	3.5500 GHz	200.0 kHz	3.549988000 GHz	-31.53 dBm	-18.53 dB
5	5	3.5500 GHz	3.5700 GHz	200.0 kHz	3.551060000 GHz	17.52 dBm	-32.48 dB
6	6	3.5700 GHz	3.5710 GHz	200.0 kHz	3.570083000 GHz	-55.19 dBm	-42.19 dB
7	7	3.5710 GHz	3.5900 GHz	1.000 MHz	3.587074000 GHz	-48.27 dBm	-35.27 dB
8	8	3.5900 GHz	3.6100 GHz	1.000 MHz	3.604380000 GHz	-47.07 dBm	-22.07 dB

N48-20MHz-QPSK-637334-1RB#50

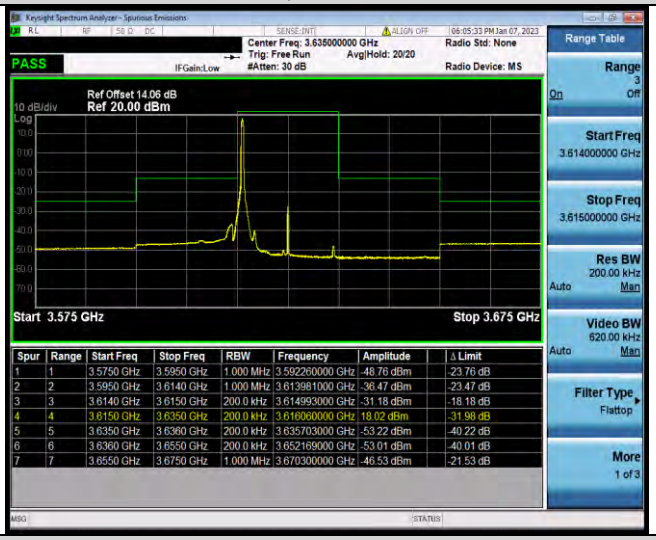


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.524860000 GHz	-49.31 dBm	-9.312 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.533270000 GHz	-48.70 dBm	-23.70 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.542610000 GHz	-48.87 dBm	-35.87 dB
4	4	3.5490 GHz	3.5500 GHz	200.0 kHz	3.549507000 GHz	-55.47 dBm	-42.47 dB
5	5	3.5500 GHz	3.5700 GHz	200.0 kHz	3.569060000 GHz	17.68 dBm	-32.32 dB
6	6	3.5700 GHz	3.5710 GHz	200.0 kHz	3.570008000 GHz	-31.77 dBm	-18.77 dB
7	7	3.5710 GHz	3.5900 GHz	1.000 MHz	3.571076000 GHz	-38.48 dBm	-25.48 dB
8	8	3.5900 GHz	3.6100 GHz	1.000 MHz	3.605920000 GHz	-47.01 dBm	-22.01 dB

N48-20MHz-QPSK-637334-50RB#0

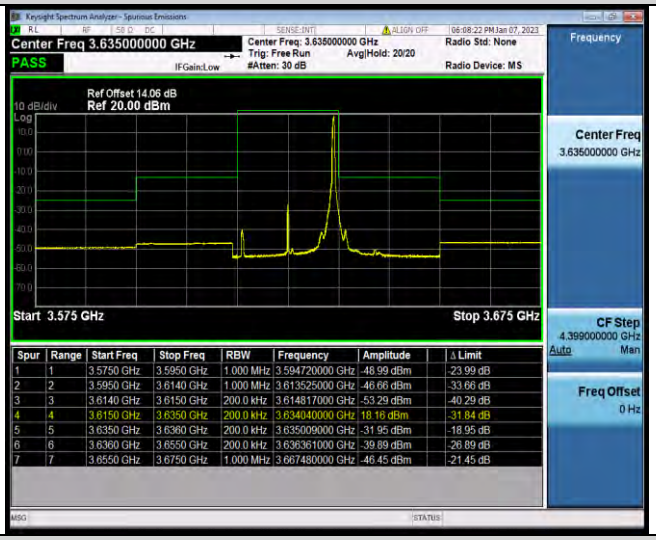
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.522940000 GHz	-40.65 dBm	-0.648 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539980000 GHz	-31.89 dBm	-6.894 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548973000 GHz	-29.30 dBm	-16.30 dB
4	4	3.5490 GHz	3.5500 GHz	200.0 kHz	3.549333000 GHz	-35.27 dBm	-22.27 dB
5	5	3.5500 GHz	3.5700 GHz	200.0 kHz	3.560180000 GHz	1.253 dBm	-48.75 dB
6	6	3.5700 GHz	3.5710 GHz	200.0 kHz	3.570205000 GHz	-35.23 dBm	-22.23 dB
7	7	3.5710 GHz	3.5900 GHz	1.000 MHz	3.571038000 GHz	-29.29 dBm	-16.29 dB
8	8	3.5900 GHz	3.6100 GHz	1.000 MHz	3.593480000 GHz	-40.34 dBm	-15.34 dB

N48-20MHz-QPSK-641666-1RB#0



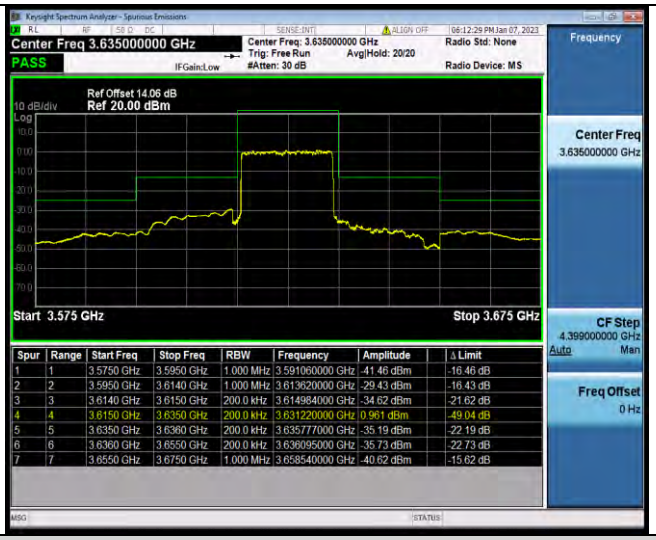
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5750 GHz	3.5950 GHz	1.000 MHz	3.592260000 GHz	-48.76 dBm	-23.76 dB
2	2	3.5950 GHz	3.6140 GHz	1.000 MHz	3.613981000 GHz	-36.47 dBm	-23.47 dB
3	3	3.6140 GHz	3.6150 GHz	200.0 kHz	3.614993000 GHz	-31.18 dBm	-18.18 dB
4	4	3.6150 GHz	3.6350 GHz	200.0 kHz	3.616060000 GHz	18.02 dBm	-31.98 dB
5	5	3.6350 GHz	3.6360 GHz	200.0 kHz	3.635703000 GHz	-53.22 dBm	-40.22 dB
6	6	3.6360 GHz	3.6550 GHz	200.0 kHz	3.652189000 GHz	-53.01 dBm	-40.01 dB
7	7	3.6550 GHz	3.6750 GHz	1.000 MHz	3.670300000 GHz	-46.53 dBm	-21.53 dB

N48-20MHz-QPSK-641666-1RB#50



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5750 GHz	3.5950 GHz	1.000 MHz	3.594720000 GHz	-48.99 dBm	-23.99 dB
2	2	3.5950 GHz	3.6140 GHz	1.000 MHz	3.613525000 GHz	-46.66 dBm	-33.66 dB
3	3	3.6140 GHz	3.6150 GHz	200.0 kHz	3.614817000 GHz	-53.29 dBm	-40.29 dB
4	4	3.6150 GHz	3.6350 GHz	200.0 kHz	3.634040000 GHz	18.16 dBm	-31.84 dB
5	5	3.6350 GHz	3.6360 GHz	200.0 kHz	3.635009000 GHz	-31.95 dBm	-18.95 dB
6	6	3.6360 GHz	3.6550 GHz	200.0 kHz	3.636361000 GHz	-39.89 dBm	-26.89 dB
7	7	3.6550 GHz	3.6750 GHz	1.000 MHz	3.667480000 GHz	-46.45 dBm	-21.45 dB

N48-20MHz-QPSK-641666-50RB#0

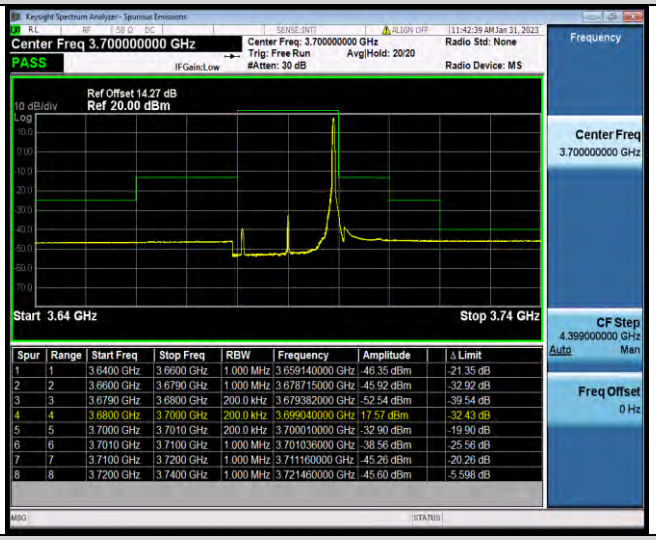


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5750 GHz	3.5950 GHz	1.000 MHz	3.591060000 GHz	-41.46 dBm	-16.46 dB
2	2	3.5950 GHz	3.6140 GHz	1.000 MHz	3.613620000 GHz	-29.43 dBm	-16.43 dB
3	3	3.6140 GHz	3.6150 GHz	200.0 kHz	3.614984000 GHz	-34.62 dBm	-21.62 dB
4	4	3.6150 GHz	3.6350 GHz	200.0 kHz	3.631220000 GHz	0.961 dBm	-49.04 dB
5	5	3.6350 GHz	3.6360 GHz	200.0 kHz	3.635777000 GHz	-35.19 dBm	-22.19 dB
6	6	3.6360 GHz	3.6550 GHz	200.0 kHz	3.636095000 GHz	-35.73 dBm	-22.73 dB
7	7	3.6550 GHz	3.6750 GHz	1.000 MHz	3.658540000 GHz	-40.62 dBm	-15.62 dB

N48-20MHz-QPSK-646000-1RB#0

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6400 GHz	3.6600 GHz	1.000 MHz	3.659520000 GHz	-46.23 dBm	-21.23 dB
2	2	3.6600 GHz	3.6790 GHz	1.000 MHz	3.678943000 GHz	-38.37 dBm	-25.37 dB
3	3	3.6790 GHz	3.6800 GHz	200.0 kHz	3.679995000 GHz	-31.16 dBm	-18.16 dB
4	4	3.6800 GHz	3.7000 GHz	200.0 kHz	3.681040000 GHz	17.24 dBm	-32.76 dB
5	5	3.7000 GHz	3.7010 GHz	200.0 kHz	3.700253000 GHz	-52.32 dBm	-39.32 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701567000 GHz	-45.68 dBm	-32.68 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.717060000 GHz	-45.57 dBm	-20.57 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.728860000 GHz	-45.56 dBm	-5.565 dB

N48-20MHz-QPSK-646000-1RB#50

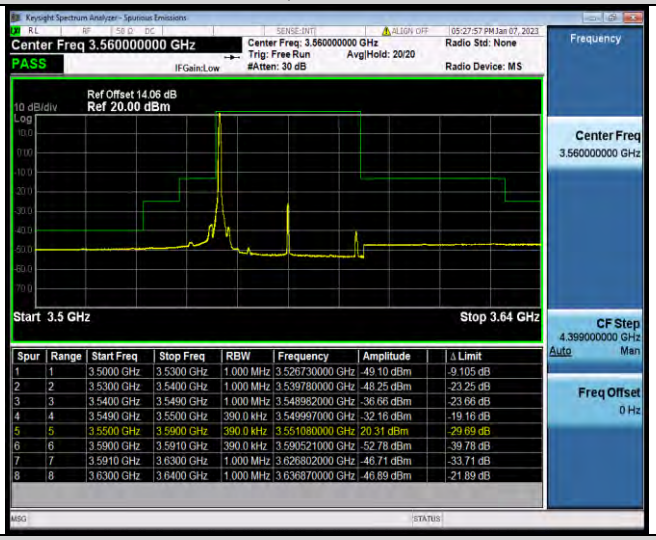


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6400 GHz	3.6600 GHz	1.000 MHz	3.659140000 GHz	-46.35 dBm	-21.35 dB
2	2	3.6600 GHz	3.6790 GHz	1.000 MHz	3.678715000 GHz	-45.92 dBm	-32.92 dB
3	3	3.6790 GHz	3.6800 GHz	200.0 kHz	3.679382000 GHz	-52.54 dBm	-39.54 dB
4	4	3.6800 GHz	3.7000 GHz	200.0 kHz	3.699040000 GHz	17.57 dBm	-32.43 dB
5	5	3.7000 GHz	3.7010 GHz	200.0 kHz	3.700010000 GHz	-32.90 dBm	-19.90 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701036000 GHz	-38.56 dBm	-25.56 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.711160000 GHz	-45.26 dBm	-20.26 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.721460000 GHz	-45.60 dBm	-5.598 dB

N48-20MHz-QPSK-646000-50RB#0

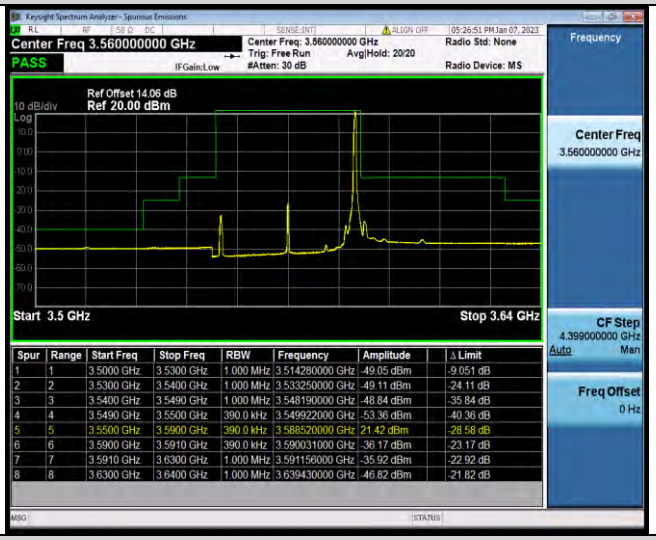
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6400 GHz	3.6600 GHz	1.000 MHz	3.652840000 GHz	-42.05 dBm	-17.05 dB
2	2	3.6600 GHz	3.6790 GHz	1.000 MHz	3.678924000 GHz	-31.48 dBm	-18.48 dB
3	3	3.6790 GHz	3.6800 GHz	200.0 kHz	3.679939000 GHz	-36.10 dBm	-23.10 dB
4	4	3.6800 GHz	3.7000 GHz	200.0 kHz	3.697300000 GHz	0.592 dBm	-49.41 dB
5	5	3.7000 GHz	3.7010 GHz	200.0 kHz	3.700445000 GHz	-36.44 dBm	-23.44 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701009000 GHz	-31.30 dBm	-18.30 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.712230000 GHz	-35.74 dBm	-10.74 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.726820000 GHz	-41.60 dBm	-1.598 dB

N48-40MHz-QPSK-638000-1RB#0



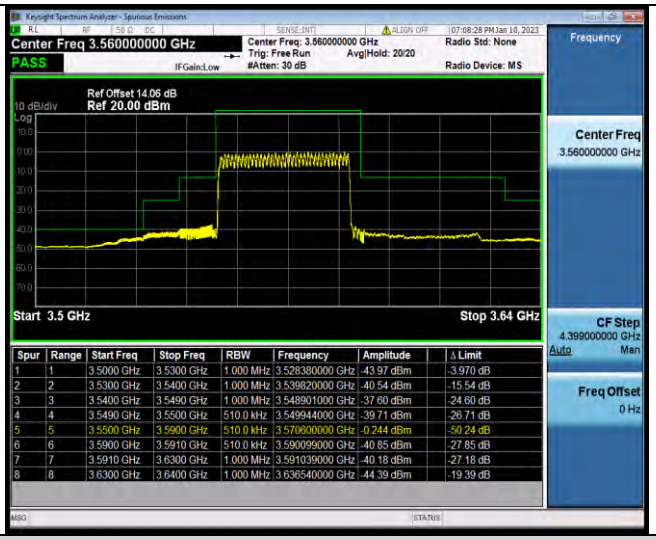
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5000 GHz	3.5300 GHz	1.000 MHz	3.526730000 GHz	-49.10 dBm	-9.105 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539780000 GHz	-48.25 dBm	-23.25 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548982000 GHz	-36.66 dBm	-23.66 dB
4	4	3.5490 GHz	3.5500 GHz	390.0 kHz	3.549997000 GHz	-32.16 dBm	-19.16 dB
5	5	3.5500 GHz	3.5900 GHz	390.0 kHz	3.551080000 GHz	20.31 dBm	-29.69 dB
6	6	3.5900 GHz	3.5910 GHz	390.0 kHz	3.590521000 GHz	-52.78 dBm	-39.78 dB
7	7	3.5910 GHz	3.6300 GHz	1.000 MHz	3.626802000 GHz	-46.71 dBm	-33.71 dB
8	8	3.6300 GHz	3.6400 GHz	1.000 MHz	3.636870000 GHz	-46.89 dBm	-21.89 dB

N48-40MHz-QPSK-638000-1RB#104

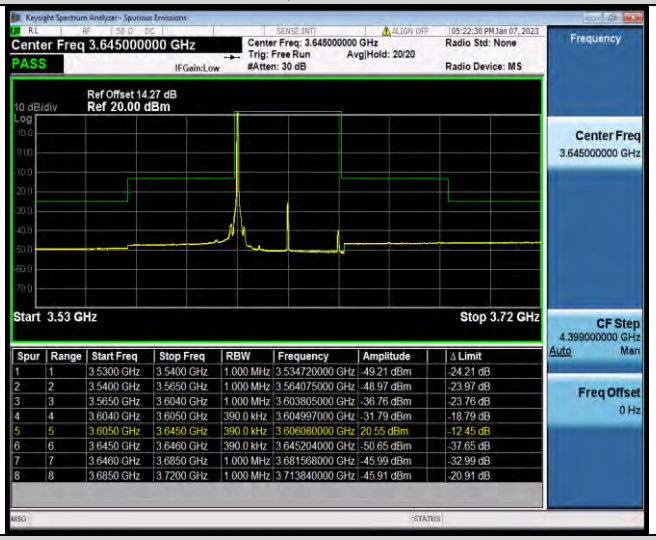


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5000 GHz	3.5300 GHz	1.000 MHz	3.514280000 GHz	-49.05 dBm	-9.051 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.533250000 GHz	-49.11 dBm	-24.11 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548190000 GHz	-48.84 dBm	-35.84 dB
4	4	3.5490 GHz	3.5500 GHz	390.0 kHz	3.549922000 GHz	-53.36 dBm	-40.36 dB
5	5	3.5500 GHz	3.5900 GHz	390.0 kHz	3.588520000 GHz	21.42 dBm	-28.58 dB
6	6	3.5900 GHz	3.5910 GHz	390.0 kHz	3.590031000 GHz	-36.17 dBm	-23.17 dB
7	7	3.5910 GHz	3.6300 GHz	1.000 MHz	3.591156000 GHz	-35.92 dBm	-22.92 dB
8	8	3.6300 GHz	3.6400 GHz	1.000 MHz	3.639430000 GHz	-46.82 dBm	-21.82 dB

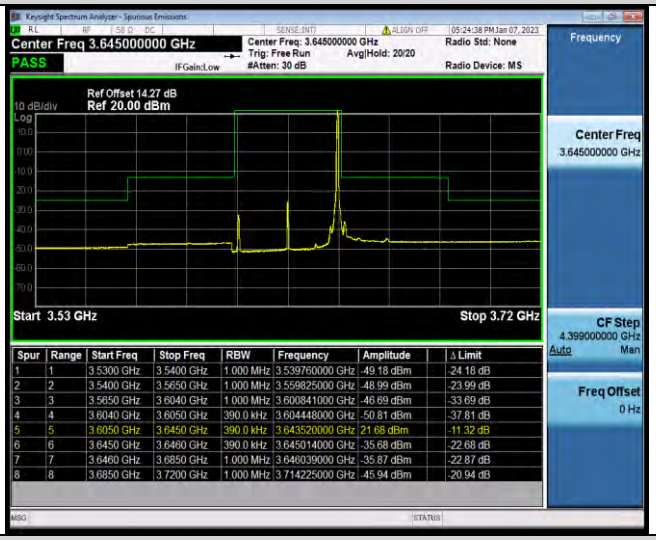
N48-40MHz-QPSK-638000-100RB#0



N48-40MHz-QPSK-641666-1RB#0



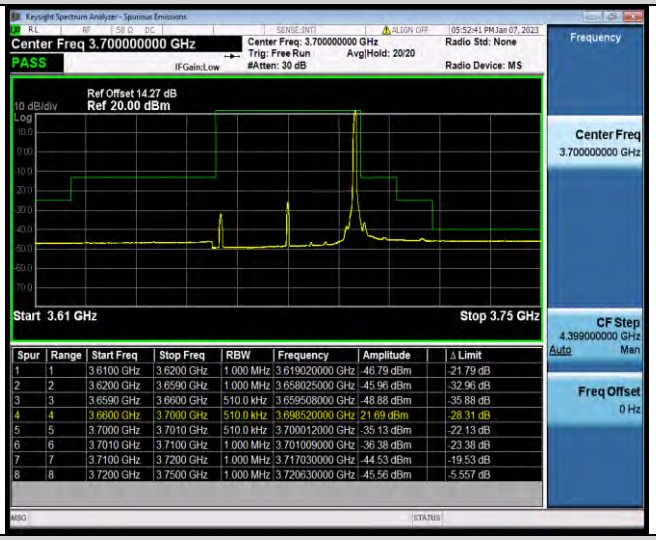
N48-40MHz-QPSK-641666-1RB#104



N48-40MHz-QPSK-641666-100RB#0

N48-40MHz-QPSK-645332-1RB#0

N48-40MHz-QPSK-645332-1RB#104



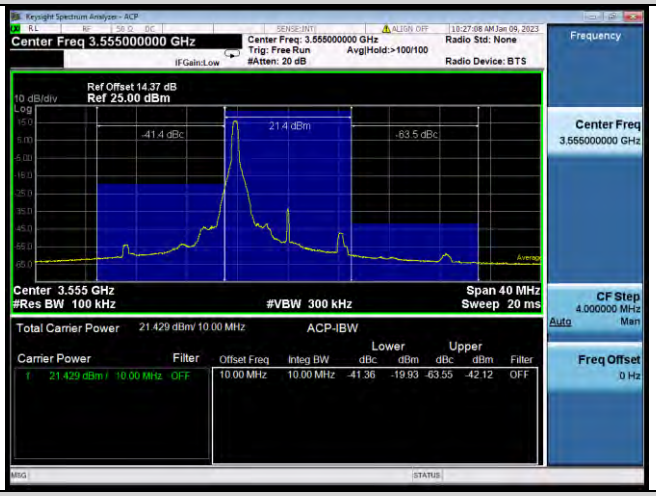
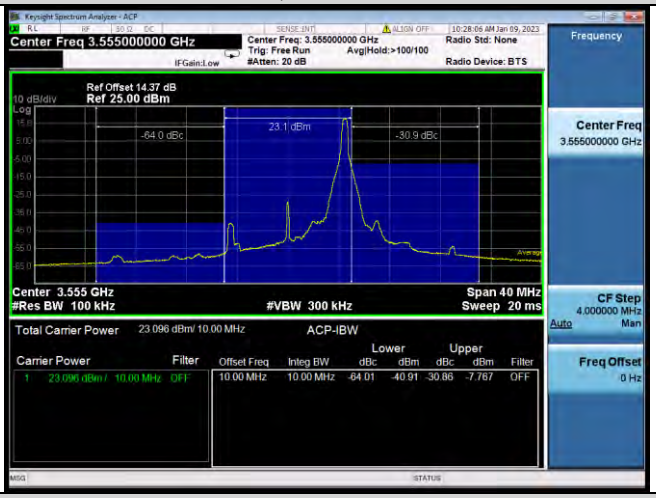
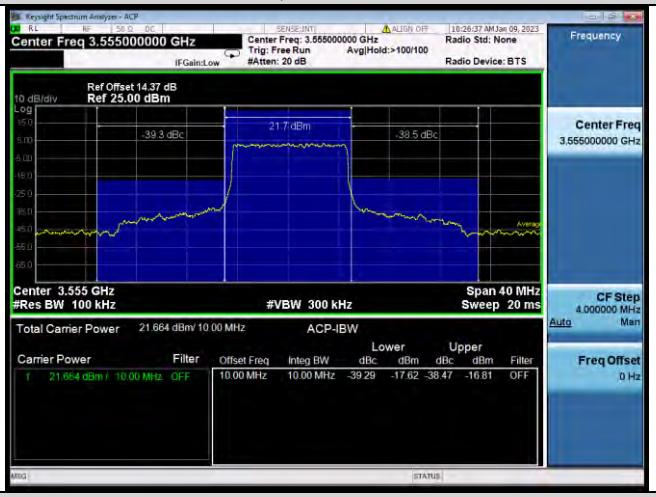
N48-40MHz-QPSK-645332-100RB#0

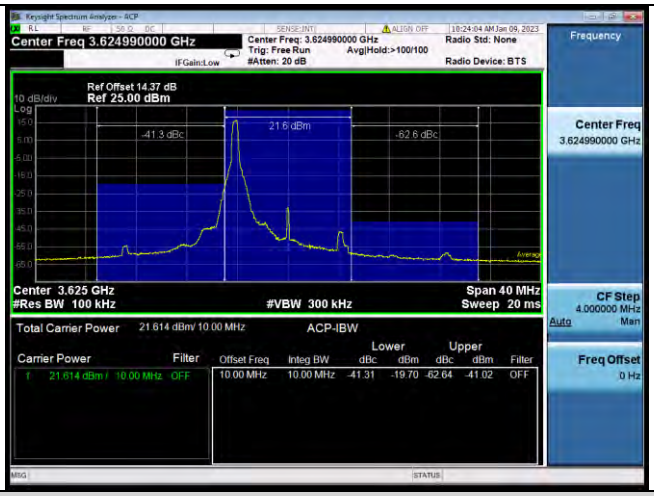
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6100 GHz	3.6200 GHz	1.000 MHz	3.618550000 GHz	-45.87 dBm	-20.87 dB
2	2	3.6200 GHz	3.6590 GHz	1.000 MHz	3.657245000 GHz	-36.67 dBm	-23.67 dB
3	3	3.6590 GHz	3.6600 GHz	510.0 kHz	3.659856000 GHz	-37.47 dBm	-24.47 dB
4	4	3.6800 GHz	3.7000 GHz	510.0 kHz	3.670360000 GHz	-1.722 dBm	-51.72 dB
5	5	3.7000 GHz	3.7010 GHz	510.0 kHz	3.700036000 GHz	-39.56 dBm	-26.56 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701216000 GHz	-37.21 dBm	-24.21 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.711180000 GHz	-40.38 dBm	-15.38 dB
8	8	3.7200 GHz	3.7500 GHz	1.000 MHz	3.720750000 GHz	-43.36 dBm	-3.363 dB

ACLR
TEST RESULT

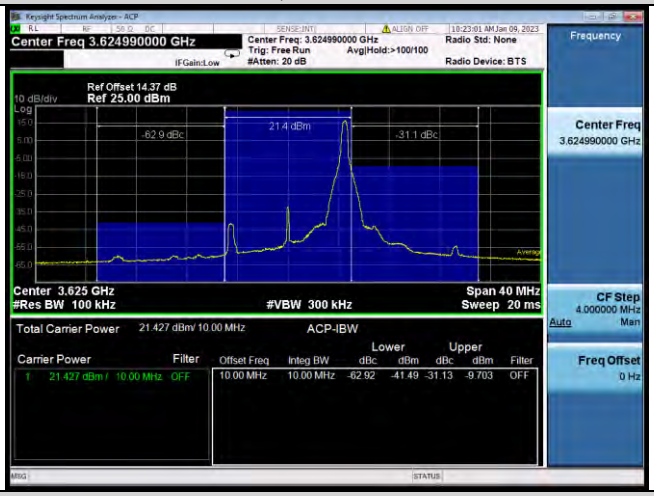
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
N48	10MHz	QPSK	637000	1RB#0	SeeGarph	PASS
N48	10MHz	QPSK	637000	1RB#24	SeeGarph	PASS
N48	10MHz	QPSK	637000	25RB#0	SeeGarph	PASS
N48	10MHz	QPSK	641666	1RB#0	SeeGarph	PASS
N48	10MHz	QPSK	641666	1RB#24	SeeGarph	PASS
N48	10MHz	QPSK	641666	25RB#0	SeeGarph	PASS
N48	10MHz	QPSK	646332	1RB#0	SeeGarph	PASS
N48	10MHz	QPSK	646332	1RB#24	SeeGarph	PASS
N48	10MHz	QPSK	646332	25RB#0	SeeGarph	PASS
N48	20MHz	QPSK	637334	1RB#0	SeeGarph	PASS
N48	20MHz	QPSK	637334	1RB#50	SeeGarph	PASS
N48	20MHz	QPSK	637334	50RB#0	SeeGarph	PASS
N48	20MHz	QPSK	641666	1RB#0	SeeGarph	PASS
N48	20MHz	QPSK	641666	1RB#50	SeeGarph	PASS
N48	20MHz	QPSK	641666	50RB#0	SeeGarph	PASS
N48	20MHz	QPSK	646000	1RB#0	SeeGarph	PASS
N48	20MHz	QPSK	646000	1RB#50	SeeGarph	PASS
N48	20MHz	QPSK	646000	50RB#0	SeeGarph	PASS
N48	40MHz	QPSK	638000	1RB#0	SeeGarph	PASS
N48	40MHz	QPSK	638000	1RB#104	SeeGarph	PASS
N48	40MHz	QPSK	638000	100RB#0	SeeGarph	PASS
N48	40MHz	QPSK	641666	1RB#0	SeeGarph	PASS
N48	40MHz	QPSK	641666	1RB#104	SeeGarph	PASS
N48	40MHz	QPSK	641666	100RB#0	SeeGarph	PASS
N48	40MHz	QPSK	645332	1RB#0	SeeGarph	PASS
N48	40MHz	QPSK	645332	1RB#104	SeeGarph	PASS
N48	40MHz	QPSK	645332	100RB#0	SeeGarph	PASS

TEST GRAPHS

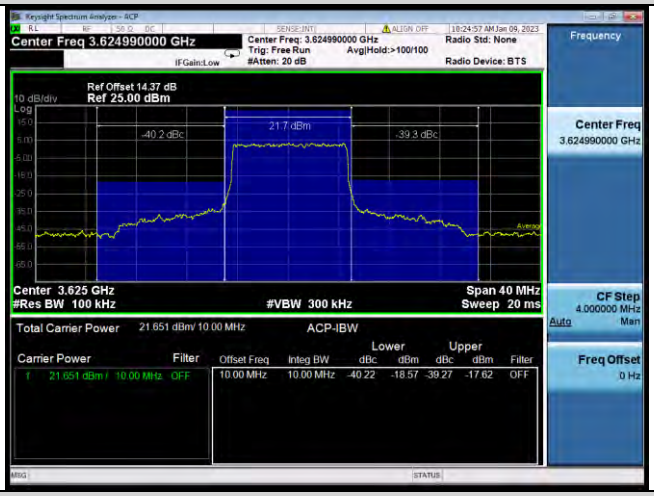
N48-10MHz-QPSK-637000-1RB#0

N48-10MHz-QPSK-637000-1RB#24

N48-10MHz-QPSK-637000-25RB#0

N48-10MHz-QPSK-641666-1RB#0



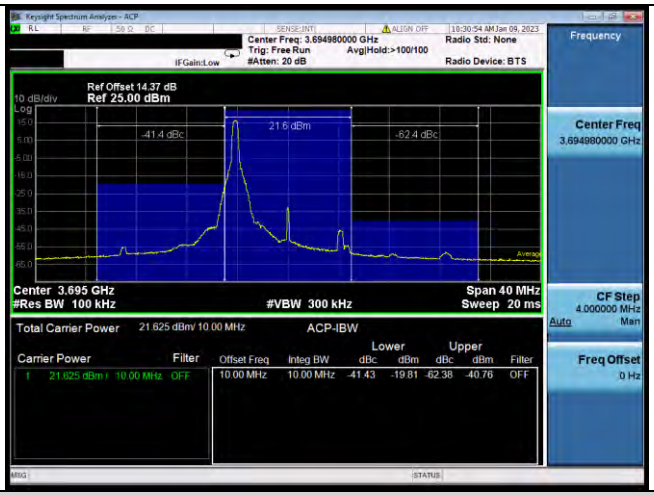
N48-10MHz-QPSK-641666-1RB#24



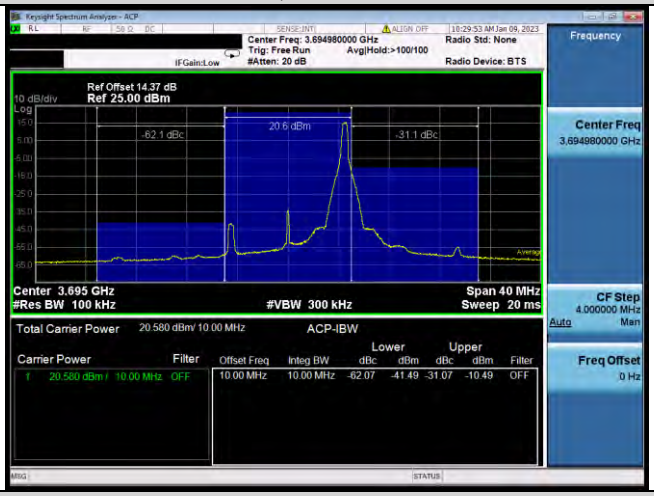
N48-10MHz-QPSK-641666-25RB#0



N48-10MHz-QPSK-646332-1RB#0

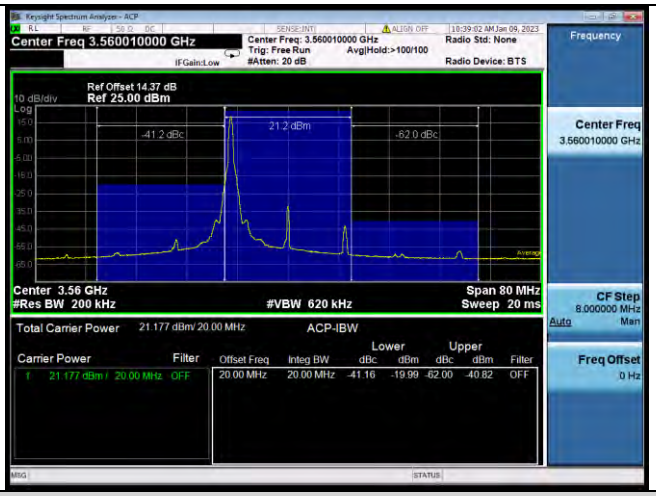


N48-10MHz-QPSK-646332-1RB#24

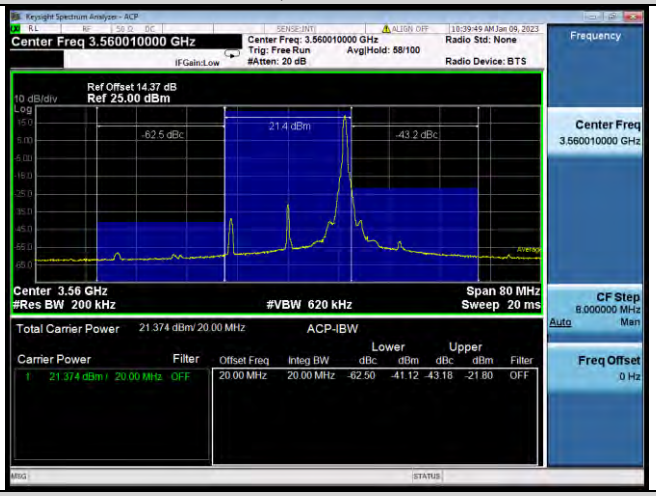


N48-10MHz-QPSK-646332-25RB#0

N48-20MHz-QPSK-637334-1RB#0

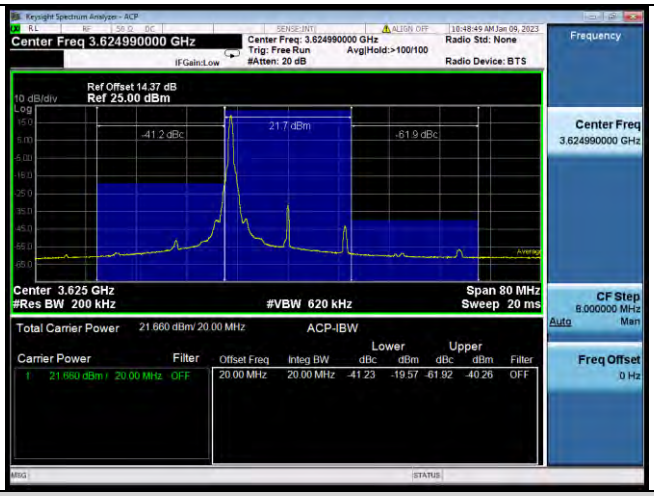


N48-20MHz-QPSK-637334-1RB#50

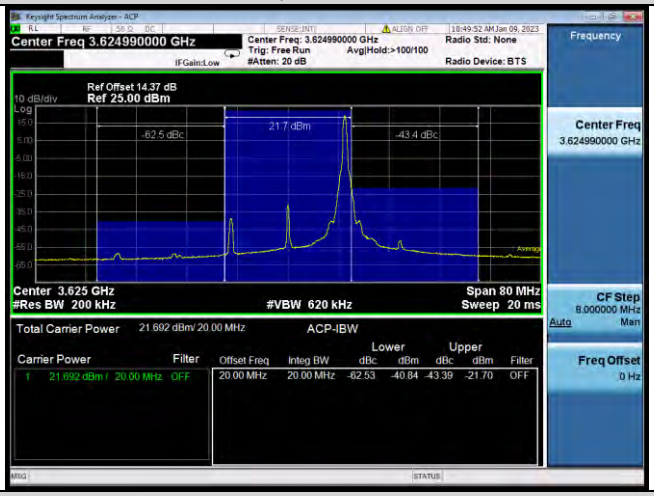


N48-20MHz-QPSK-637334-50RB#0

N48-20MHz-QPSK-641666-1RB#0

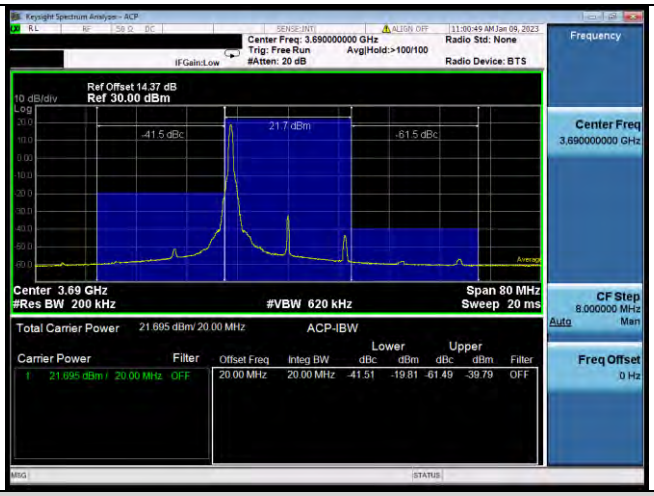


N48-20MHz-QPSK-641666-1RB#50

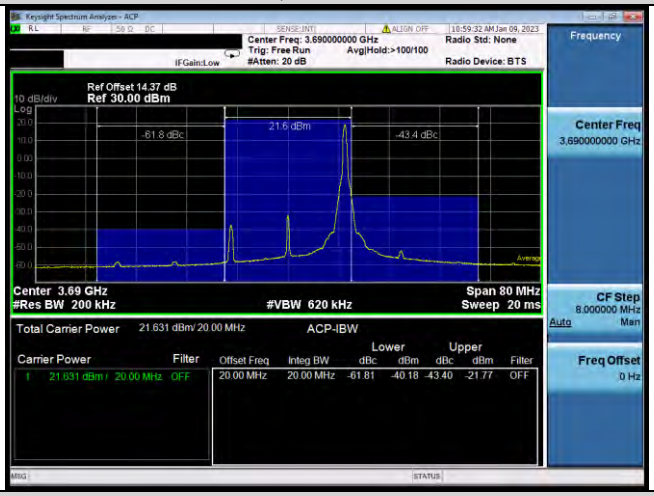


N48-20MHz-QPSK-641666-50RB#0

N48-20MHz-QPSK-646000-1RB#0

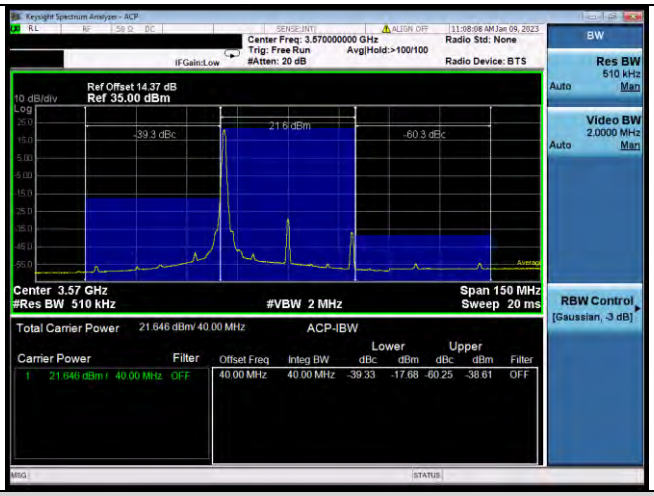


N48-20MHz-QPSK-646000-1RB#50

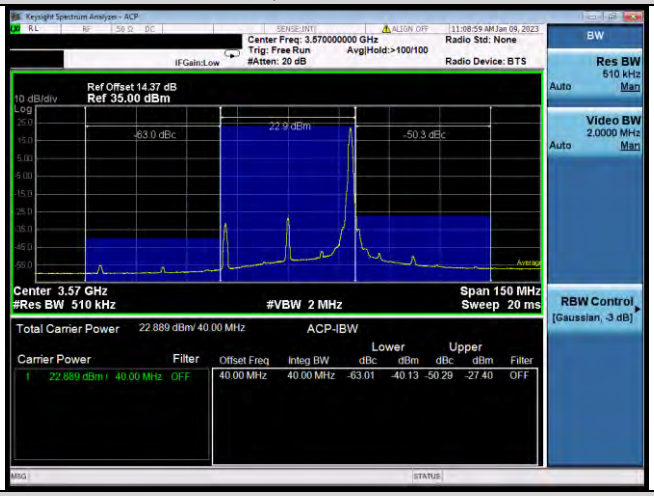


N48-20MHz-QPSK-646000-50RB#0

N48-40MHz-QPSK-638000-1RB#0

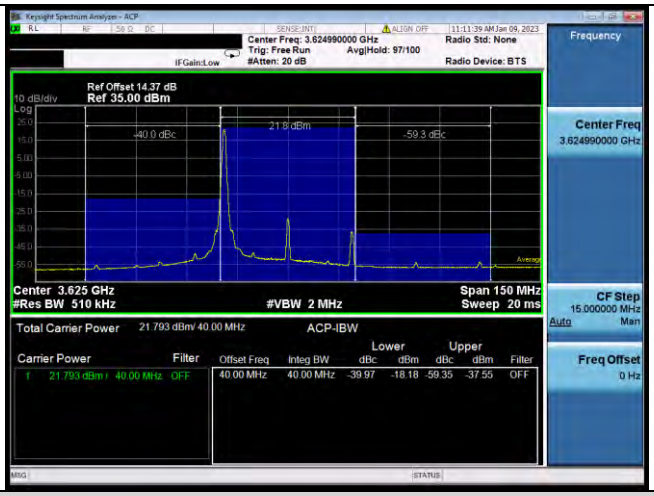


N48-40MHz-QPSK-638000-1RB#104

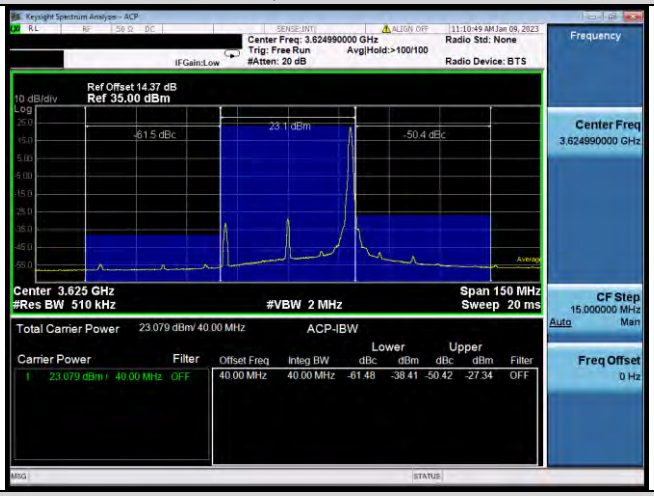


N48-40MHz-QPSK-638000-100RB#0

N48-40MHz-QPSK-641666-1RB#0

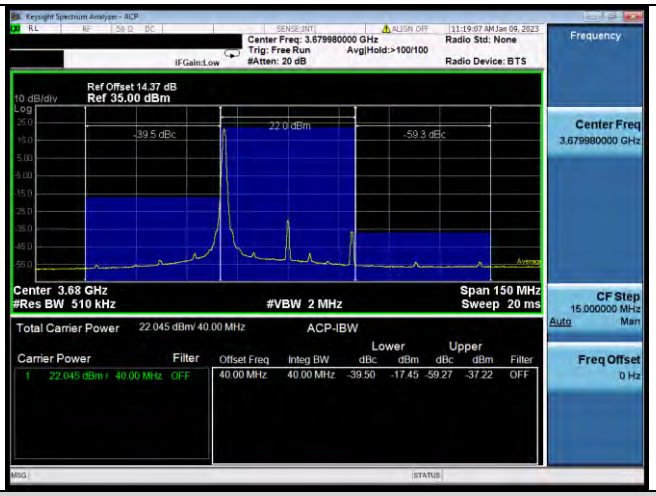


N48-40MHz-QPSK-641666-1RB#104

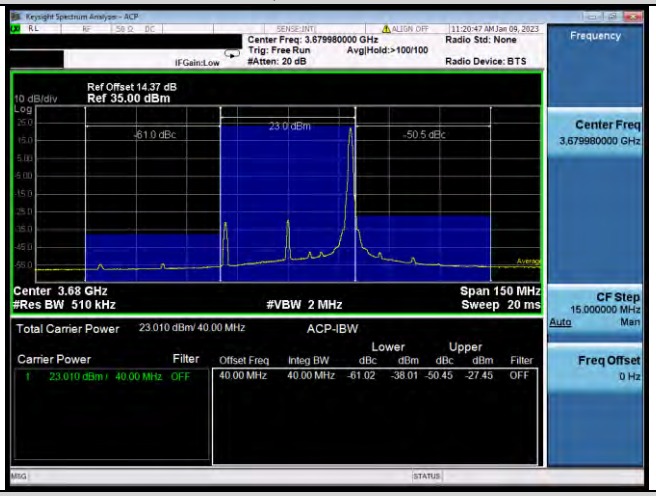


N48-40MHz-QPSK-641666-100RB#0

N48-40MHz-QPSK-645332-1RB#0



N48-40MHz-QPSK-645332-1RB#104



N48-40MHz-QPSK-645332-100RB#0

CONDUCTED SPURIOUS EMISSION
TEST RESULT

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
N48	10MHz	QPSK	637000	1RB#0	Range1:30~40000MHz	-47.62	PASS
N48	10MHz	QPSK	641666	1RB#0	Range1:30~40000MHz	-47.90	PASS
N48	10MHz	QPSK	646332	1RB#0	Range1:30~40000MHz	-47.67	PASS
N48	20MHz	QPSK	637334	1RB#0	Range1:30~40000MHz	-47.86	PASS
N48	20MHz	QPSK	641666	1RB#0	Range1:30~40000MHz	-46.77	PASS
N48	20MHz	QPSK	646000	1RB#0	Range1:30~40000MHz	-47.99	PASS
N48	40MHz	QPSK	638000	1RB#0	Range1:30~40000MHz	-48.10	PASS
N48	40MHz	QPSK	641666	1RB#0	Range1:30~40000MHz	-47.33	PASS
N48	40MHz	QPSK	645332	1RB#0	Range1:30~40000MHz	-47.47	PASS

TEST GRAPHS

N48-10MHz-QPSK-637000-1RB#0-Range1:30~40000MHz

N48-10MHz-QPSK-641666-1RB#0-Range1:30~40000MHz

N48-10MHz-QPSK-646332-1RB#0-Range1:30~40000MHz

N48-20MHz-QPSK-637334-1RB#0-Range1:30~40000MHz

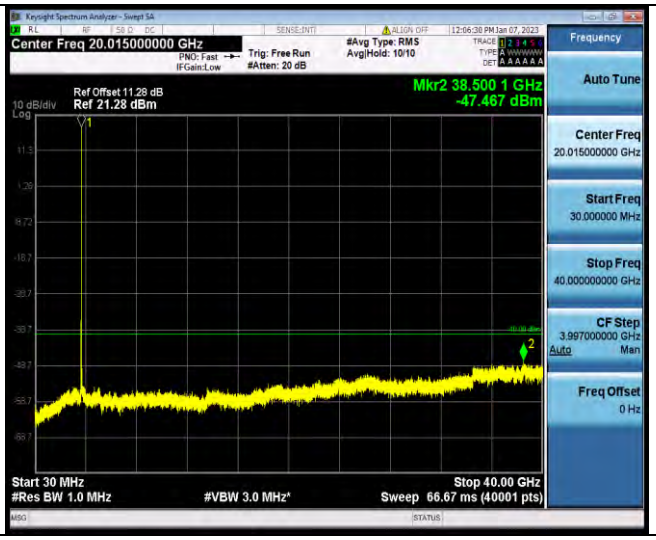
N48-20MHz-QPSK-641666-1RB#0-Range1:30~40000MHz

N48-20MHz-QPSK-646000-1RB#0-Range1:30~40000MHz

N48-40MHz-QPSK-638000-1RB#0-Range1:30~40000MHz

N48-40MHz-QPSK-641666-1RB#0-Range1:30~40000MHz

N48-40MHz-QPSK-645332-1RB#0-Range1:30~40000MHz


Keysight Spectrum Analyzer - Swept SA
Center Freq 20.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 10/10
12:06:38 PM Jan 07, 2023
Ref Offset 11.28 dB
10 dB/div
Log
Ref 21.28 dBm
Mkr2 38.500 1 GHz
-47.467 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 40.00 GHz
Sweep 66.67 ms (40001 pts)
Frequency
Auto Tune
Center Freq
20.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
40.000000000 GHz
CF Step
3.997000000 GHz
Auto
Man
Freq Offset
0 Hz

FREQUENCY STABILITY
TEST RESULT

Voltage&Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
N48	20MHz	QPSK	641666	50RB#0	VL	NT	23.24	0.006412	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	VN	NT	44.71	0.012334	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	VH	NT	31.82	0.008779	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	-30	45.35	0.012512	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	-20	34.27	0.009454	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	0	49.80	0.013738	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	10	40.22	0.011095	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	20	42.59	0.011749	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	30	47.02	0.012971	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	40	21.05	0.005806	±2.5	PASS
N48	20MHz	QPSK	641666	50RB#0	NV	50	22.08	0.006090	±2.5	PASS

---END---