FCC TEST REPORT

(PART 24)

Applicant:	SIMCom Wireless Solutions Limited
Address:	8F,Building3,No.289,Linhong Road,Changning District,Shanghai, P.R.China

Manufacturer or Supplier:	SIMCom Wireless Solutions Limited
Address:	8F,Building3,No.289,Linhong Road,Changning District,Shanghai, P.R.China
Product:	SIM7672G
Brand Name:	SIMCom
Model Name:	SIM7672G
FCC ID:	2AJYU-8XS0001
Date of tests:	Aug. 22, 2023 ~ Sep. 11, 2023

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

☒ **FCC PART 24, Subpart E** ☒ **FCC PART 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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: Sep. 11, 2023	Luke Lu Date: Sep. 11, 2023

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P23070009RF02	Original release	Sep. 11, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2		
STANDARD SECTION	**TEST TYPE**	**RESULT**
§2.1046	Conducted Output Power	Compliance
§24.232(c)	Equivalent Isotropic Radiated Power	Compliance
§2.1055 §24.235	Frequency Stability	Compliance
§2.1049	Occupied Bandwidth	Compliance
§24.232(d)	Peak to average ratio	Compliance
§24.238(a)(b)	Band Edge Measurements	Compliance
§2.1051 §24.238(a)(b)	Conducted Spurious Emissions	Compliance
§2.1053 §24.238(a)(b)	Radiated Spurious Emissions	Compliance

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
Frequency Stability	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB
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	Mar. 28,23	Mar. 27,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.10,23	May.09,24
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,22	Sep.02,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.02,23	Sep.01,24
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 18,23	Feb. 17,24
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 18,23	Feb. 17,24
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.04, 22	Sep.03, 23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.03, 23	Sep.02, 24
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,23	Feb. 13,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,23	May. 05,24
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.10,23	May.09,24
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,23	Feb.16,24
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 22, 23	May. 21,26
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	50HF-010-SMA	May. 06,23	May. 05,24
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,23	Feb. 13,24
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,23	Feb. 13,24
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,23	May. 05,24
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,23	Feb. 13,24
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.10,23	May.09,24
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 11,23	Aug. 10,24

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	SIM7672G	
BRAND NAME	SIMCom	
MODEL NAME	SIM7672G	
NOMINAL VOLTAGE	EUT 3.8V	
MODULATION TYPE	**LTE Band 2/25:** QPSK, 16QAM	
FREQUENCY RANGE	**LTE Band 2** **Channel Bandwidth: 1.4MHz**	1850.7MHz ~ 1909.3MHz
	LTE Band 2 **Channel Bandwidth: 3MHz**	1851.5MHz ~ 1908.5MHz
	LTE Band 2 **Channel Bandwidth: 5MHz**	1852.5MHz ~ 1907.5MHz
	LTE Band 2 **Channel Bandwidth: 10MHz**	1855.0MHz ~ 1905.0MHz
	LTE Band 2 **Channel Bandwidth: 15MHz**	1857.5MHz ~ 1902.5MHz
	LTE Band 2 **Channel Bandwidth: 20MHz**	1860.0MHz ~ 1900.0MHz
	LTE Band 25 **Channel Bandwidth: 1.4MHz**	1850.7MHz ~ 1914.3MHz
	LTE Band 25 **Channel Bandwidth: 3MHz**	1851.5MHz ~ 1913.5MHz
	LTE Band 25 **Channel Bandwidth: 5MHz**	1852.5MHz ~ 1912.5MHz
	LTE Band 25 **Channel Bandwidth: 10MHz**	1855.0MHz ~ 1910.0MHz
	LTE Band 25 **Channel Bandwidth: 15MHz**	1857.5MHz ~ 1907.5MHz
	LTE Band 25 **Channel Bandwidth: 20MHz**	1860.0MHz ~ 1905.0MHz

MAX. EIRP POWER	**LTE Band 2 Channel Bandwidth: 1.4MHz**	481.95mW
	LTE Band 2 Channel Bandwidth: 3MHz	481.95mW
	LTE Band 2 Channel Bandwidth: 5MHz	492.04mW
	LTE Band 2 Channel Bandwidth: 10MHz	490.91mW
	LTE Band 2 Channel Bandwidth: 15MHz	489.78mW
	LTE Band 2 Channel Bandwidth: 20MHz	493.17mW
	LTE Band 25 Channel Bandwidth: 1.4MHz	453.94mW
	LTE Band 25 Channel Bandwidth: 3MHz	460.26mW
	LTE Band 25 Channel Bandwidth: 5MHz	452.9mW
	LTE Band 25 Channel Bandwidth: 10MHz	459.2mW
	LTE Band 25 Channel Bandwidth: 15MHz	454.99mW
	LTE Band 25 Channel Bandwidth: 20MHz	461.32mW
EMISSION DESIGNATOR	**LTE Band 25 Channel Bandwidth: 1.4MHz**	QPSK: 1M10G7D 16QAM: 1M10W7D
	LTE Band 25 Channel Bandwidth: 3MHz	QPSK: 2M71G7D 16QAM: 2M71W7D
	LTE Band 25 Channel Bandwidth: 5MHz	QPSK: 4M52G7D 16QAM: 4M51W7D
	LTE Band 25 Channel Bandwidth: 10MHz	QPSK: 9M00G7D 16QAM: 4M86W7D

	LTE Band 25 Channel Bandwidth: 15MHz	QPSK: 13M5G7D 16QAM: 4M88W7D
	LTE Band 25 Channel Bandwidth: 20MHz	QPSK: 18M0G7D 16QAM: 4M90W7D
ANTENNA TYPE	Monopole Antenna with 1.87dBi gain for LTE B2/ LTE B25	
HW VERSION	V2.02	
SW VERSION	SIM7672M5A	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-10-55 ℃	
EXTREME VOLTAGE	3.2V - 4.2V	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

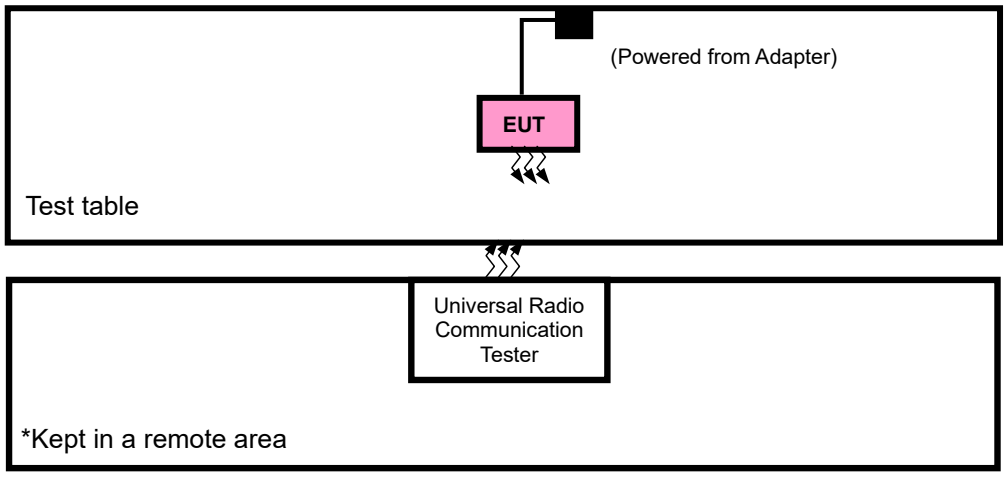
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

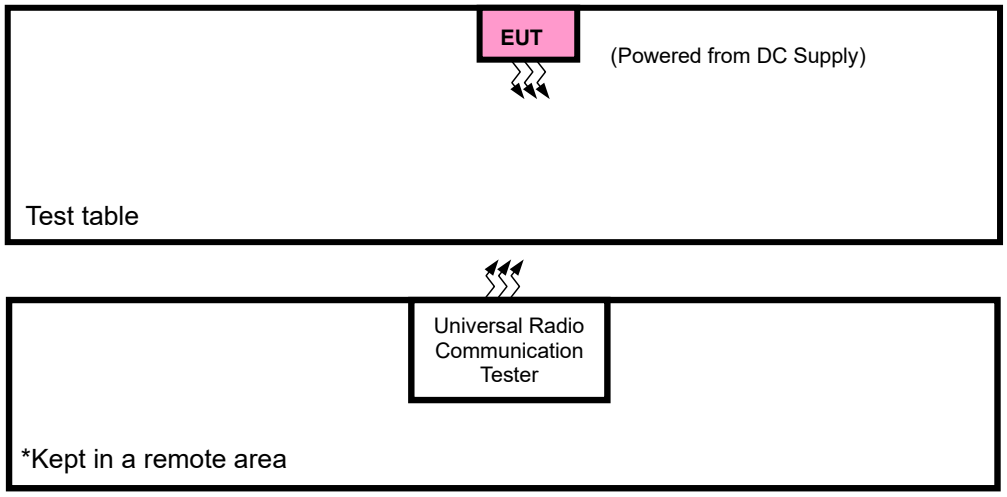
MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

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

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	Kikusui/JP	PMX18-5A	0000001	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

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 in EIRP and radiated emission was found when positioned on X-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter with LTE link
B	EUT + DC Supply with LTE link

LTE BAND 2 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset

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

2. LTE Band 2 are covered by LTE Band 25, Because it is a subset of LTE Band 25 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 25

LTE BAND 25 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26140 to 26590	26140, 26365, 26590	20MHz	QPSK	Full RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM	Full RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM	Full RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM	Full RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM	Full RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM	Full RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	Full RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset

A	BAND EDGE	26047 to 26683	26047	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			26683	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						Full RB / 0 RB Offset
		26055 to 26675	26055	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			26675	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						Full RB / 0 RB Offset
		26065 to 26665	26065	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			26665	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						Full RB / 0 RB Offset
		26090 to 26640	26090	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			26640	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						Full RB / 0 RB Offset
		26115 to 26615	26115	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			26615	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						Full RB / 0 RB Offset
		26140 to 26590	26140	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			26590	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
						Full RB / 0 RB Offset
A	CONDCUDETED EMISSION	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 57%RH	EUT 3.8V	Jace Hu
FREQUENCY STABILITY	23deg. C, 61%RH	DC 3.2V/3.8V/4.2V By DC Supply	James Fu
OCCUPIED BANDWIDTH	23deg. C, 61%RH	EUT 3.8V	James Fu
PEAK TO AVERAGE RATIO	23deg. C, 61%RH	EUT 3.8V	James Fu
BAND EDGE	23deg. C, 61%RH	EUT 3.8V	James Fu
CONDCUDETED EMISSION	23deg. C, 61%RH	EUT 3.8V	James Fu
RADIATED EMISSION	23deg. C, 70%RH	EUT 3.8V	Jace Hu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 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 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP.

3.1.2 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.

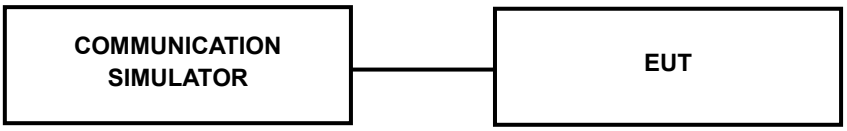
CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE BAND 2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18607	Mid CH 18900	High CH 19193
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1909.3 MHz
2/ 1.4	QPSK	1	0	22.86	23.28	24.28
		1	2	24.96	23.24	22.80
		1	5	23.57	24.58	23.89
		3	0	23.46	22.34	23.39
		3	1	24.18	22.71	22.63
		3	3	23.89	23.39	22.71
		6	0	23.23	22.49	22.45
	16QAM	1	0	21.71	22.54	23.63
		1	2	24.08	22.49	22.04
		1	5	22.48	23.84	23.16
		3	0	22.00	22.31	23.62
		3	1	23.95	22.32	22.10
		3	3	22.95	23.75	22.95
		6	0	21.07	21.17	22.44

Band/BW	Modulation	RB Size	RB Offset	Low CH 18615	Mid CH 18900	High CH 19185
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1908.5 MHz
2/ 3	QPSK	1	0	22.84	23.23	24.36
		1	7	24.96	23.22	22.79
		1	14	23.51	24.59	23.95
		8	0	22.96	21.91	22.94
		8	3	23.71	22.12	22.08
		8	7	23.42	22.84	22.21
		15	0	23.20	22.48	22.47
	16QAM	1	0	21.70	22.54	23.67
		1	7	24.10	22.54	22.01
		1	14	22.56	23.88	23.21
		8	0	21.82	22.10	23.35
		8	3	23.79	22.10	21.91
		8	7	22.76	23.47	22.82
		15	0	21.08	21.10	22.37

Band/BW	Modulation	RB Size	RB Offset	Low CH 18625	Mid CH 18900	High CH 19175
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz
2/ 5	QPSK	1	0	22.78	23.23	24.27
		1	12	25.05	23.14	22.74
		1	24	23.54	24.57	24.00
		12	0	22.91	21.89	22.93
		12	6	23.70	22.21	22.08
		12	13	23.42	22.88	22.23
		25	0	23.14	22.43	22.46
	16QAM	1	0	21.65	22.48	23.69
		1	12	24.07	22.46	22.04
		1	24	22.51	23.91	23.24
		12	0	21.77	22.09	23.38
		12	6	23.74	22.13	21.94
		12	13	22.77	23.50	22.82
		25	0	21.15	21.19	22.42

Band/BW	Modulation	RB Size	RB Offset	Low CH 18650	Mid CH 18900	High CH 19150
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1905 MHz
2/ 10	QPSK	1	0	22.84	23.25	24.28
		1	24	25.04	23.20	22.71
		1	49	23.57	24.57	23.94
		25	0	22.97	21.91	22.93
		25	12	23.78	22.21	22.14
		25	25	23.45	22.89	22.20
		50	0	23.16	22.47	22.42
	16QAM	1	0	21.63	22.51	23.63
		1	24	24.00	22.51	22.02
		1	49	22.51	23.94	23.26
		12	0	21.81	22.14	23.44
		12	17	23.77	22.10	21.94
		12	36	22.84	23.55	22.79
		27	0	21.10	21.19	22.47

Band/BW	Modulation	RB Size	RB Offset	Low CH 18675	Mid CH 18900	High CH 19125
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1902.5 MHz
2/ 15	QPSK	1	0	22.77	23.30	24.35
		1	37	25.03	23.19	22.71
		1	74	23.59	24.53	23.95
		36	0	22.91	21.84	22.97
		36	19	23.71	22.12	22.10
		36	39	23.42	22.91	22.15
		75	0	23.16	22.42	22.51
	16QAM	1	0	21.66	22.54	23.70
		1	37	24.09	22.46	22.02
		1	74	22.57	23.89	23.20
		12	0	21.82	22.14	23.43
		12	30	23.78	22.11	21.90
		12	61	22.85	23.44	22.86
		27	0	21.08	21.13	22.37

Band/BW	Modulation	RB Size	RB Offset	Low CH 18700	Mid CH 18900	High CH 19100
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1900 MHz
2/ 20	QPSK	1	0	22.87	23.32	24.38
		1	50	25.06	23.25	22.82
		1	99	23.60	24.65	24.00
		50	0	22.99	21.93	23.01
		50	25	23.78	22.22	22.17
		50	50	23.45	22.94	22.27
		100	0	23.26	22.52	22.53
	16QAM	1	0	21.72	22.55	23.71
		1	50	24.10	22.56	22.13
		1	99	22.59	23.96	23.28
		12	0	21.84	22.17	23.46
		12	42	23.86	22.20	22.00
		12	86	22.86	23.56	22.86
		27	0	21.17	21.21	22.48

LTE BAND 25

Band/BW	Modulation	RB Size	RB Offset	Low CH 26047	Mid CH 26365	High CH 26683
				Frequency 1850.7 MHz	Frequency 1882.5 MHz	Frequency 1914.3 MHz
25/ 1.4	QPSK	1	0	22.35	23.14	23.18
		1	2	24.70	23.11	22.48
		1	5	23.01	24.65	22.65
		3	0	23.16	22.40	21.97
		3	1	23.96	22.83	22.25
		3	3	23.76	23.63	23.08
		6	0	22.97	22.43	21.92
	16QAM	1	0	21.11	22.51	22.50
		1	2	23.72	22.32	21.80
		1	5	22.10	23.91	22.04
		3	0	21.81	22.68	22.60
		3	1	23.88	22.76	22.04
		3	3	23.01	24.09	23.04
		6	0	20.65	20.88	20.74

Band/BW	Modulation	RB Size	RB Offset	Low CH 26055	Mid CH 26365	High CH 26675
				Frequency 1851.5 MHz	Frequency 1882.5 MHz	Frequency 1913.5 MHz
25/ 3	QPSK	1	0	22.32	23.19	23.15
		1	7	24.76	23.12	22.38
		1	14	23.05	24.72	22.54
		8	0	22.54	21.86	21.39
		8	3	23.34	22.18	21.63
		8	7	23.11	22.94	22.47
		15	0	22.89	22.42	21.91
	16QAM	1	0	21.16	22.40	22.58
		1	7	23.65	22.34	21.79
		1	14	22.04	23.88	22.04
		8	0	21.29	22.13	21.97
		8	3	23.28	22.07	21.45
		8	7	22.46	23.50	22.52
		15	0	20.53	20.90	20.79

Band/BW	Modulation	RB Size	RB Offset	Low CH 26065	Mid CH 26365	High CH 26665
				Frequency 1852.5 MHz	Frequency 1882.5 MHz	Frequency 1912.5 MHz
25/ 5	QPSK	1	0	22.30	23.14	23.18
		1	12	24.69	23.12	22.40
		1	24	23.08	24.62	22.63
		12	0	22.56	21.77	21.36
		12	6	23.38	22.24	21.65
		12	13	23.10	22.99	22.42
		25	0	22.90	22.49	21.94
	16QAM	1	0	21.15	22.51	22.55
		1	12	23.68	22.34	21.79
		1	24	22.05	23.92	22.13
		12	0	21.24	22.09	22.04
		12	6	23.26	22.12	21.43
		12	13	22.41	23.47	22.51
		25	0	20.64	20.89	20.75

Band/BW	Modulation	RB Size	RB Offset	Low CH 26090	Mid CH 26365	High CH 26640
				Frequency 1855 MHz	Frequency 1882.5 MHz	Frequency 1910 MHz
25/ 10	QPSK	1	0	22.38	23.14	23.16
		1	24	24.75	23.09	22.37
		1	49	23.09	24.70	22.62
		25	0	22.45	21.79	21.37
		25	12	23.35	22.22	21.62
		25	25	23.10	22.96	22.40
		50	0	22.88	22.47	21.93
	16QAM	1	0	21.18	22.48	22.54
		1	24	23.66	22.41	21.81
		1	49	22.06	23.95	22.06
		12	0	21.27	22.07	22.00
		12	17	23.31	22.06	21.47
		12	36	22.47	23.54	22.52
		27	0	20.57	20.87	20.71

Band/BW	Modulation	RB Size	RB Offset	Low CH 26115	Mid CH 26365	High CH 26615
				Frequency 1857.5 MHz	Frequency 1882.5 MHz	Frequency 1907.5 MHz
25/ 15	QPSK	1	0	22.37	23.11	23.12
		1	37	24.70	23.12	22.45
		1	74	23.04	24.71	22.59
		36	0	22.53	21.80	21.34
		36	19	23.37	22.17	21.69
		36	39	23.19	22.98	22.36
		75	0	22.96	22.51	21.95
	16QAM	1	0	21.18	22.45	22.52
		1	37	23.67	22.40	21.83
		1	74	22.02	23.97	22.12
		12	0	21.23	22.06	21.97
		12	30	23.35	22.16	21.47
		12	61	22.49	23.50	22.43
		27	0	20.60	20.89	20.78

Band/BW	Modulation	RB Size	RB Offset	Low CH 26140	Mid CH 26365	High CH 26590
				Frequency 1860 MHz	Frequency 1882.5 MHz	Frequency 1905 MHz
25/ 20	QPSK	1	0	22.40	23.19	23.23
		1	50	24.77	23.18	22.48
		1	99	23.11	24.73	22.65
		50	0	22.56	21.88	21.42
		50	25	23.43	22.25	21.74
		50	50	23.21	23.05	22.48
		100	0	22.97	22.53	21.98
	16QAM	1	0	21.22	22.52	22.60
		1	50	23.76	22.42	21.84
		1	99	22.12	24.00	22.13
		12	0	21.31	22.14	22.05
		12	42	23.36	22.16	21.51
		12	86	22.49	23.58	22.53
		27	0	20.65	20.97	20.80

EIRP POWER (dBm)

LTE BAND 2

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	24.96	1.87	26.83	481.95	2
18900	1880.0	24.58	1.87	26.45	441.57	2
19193	1909.3	24.28	1.87	26.15	412.1	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	24.08	1.87	25.95	393.55	2
18900	1880.0	23.84	1.87	25.71	372.39	2
19193	1909.3	23.63	1.87	25.5	354.81	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	24.96	1.87	26.83	481.95	2
18900	1880.0	24.59	1.87	26.46	442.59	2
19185	1908.5	24.36	1.87	26.23	419.76	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	24.1	1.87	25.97	395.37	2
18900	1880.0	23.88	1.87	25.75	375.84	2
19185	1908.5	23.67	1.87	25.54	358.1	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	25.05	1.87	26.92	492.04	2
18900	1880.0	24.57	1.87	26.44	440.55	2
19175	1907.5	24.27	1.87	26.14	411.15	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	24.07	1.87	25.94	392.64	2
18900	1880.0	23.91	1.87	25.78	378.44	2
19175	1907.5	23.69	1.87	25.56	359.75	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	25.04	1.87	26.91	490.91	2
18900	1880.0	24.57	1.87	26.44	440.55	2
19150	1905.0	24.28	1.87	26.15	412.1	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	24	1.87	25.87	386.37	2
18900	1880.0	23.94	1.87	25.81	381.07	2
19150	1905.0	23.63	1.87	25.5	354.81	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	25.03	1.87	26.9	489.78	2
18900	1880.0	24.53	1.87	26.4	436.52	2
19125	1902.5	24.35	1.87	26.22	418.79	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	24.09	1.87	25.96	394.46	2
18900	1880.0	23.89	1.87	25.76	376.7	2
19125	1902.5	23.7	1.87	25.57	360.58	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	25.06	1.87	26.93	493.17	2
18900	1880	24.65	1.87	26.52	448.75	2
19100	1900	24.38	1.87	26.25	421.7	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	24.1	1.87	25.97	395.37	2
18900	1880	23.96	1.87	25.83	382.82	2
19100	1900	23.71	1.87	25.58	361.41	2

LTE BAND 25

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	24.7	1.87	26.57	453.94	2
26365	1882.5	24.65	1.87	26.52	448.75	2
26683	1914.3	23.18	1.87	25.05	319.89	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	23.88	1.87	25.75	375.84	2
26365	1882.5	24.09	1.87	25.96	394.46	2
26683	1914.3	23.04	1.87	24.91	309.74	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	24.76	1.87	26.63	460.26	2
26365	1882.5	24.72	1.87	26.59	456.04	2
26675	1913.5	23.15	1.87	25.02	317.69	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	23.65	1.87	25.52	356.45	2
26365	1882.5	23.88	1.87	25.75	375.84	2
26675	1913.5	22.58	1.87	24.45	278.61	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	24.69	1.87	26.56	452.9	2
26365	1882.5	24.62	1.87	26.49	445.66	2
26665	1912.5	23.18	1.87	25.05	319.89	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	23.68	1.87	25.55	358.92	2
26365	1882.5	23.92	1.87	25.79	379.31	2
26665	1912.5	22.55	1.87	24.42	276.69	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855	24.75	1.87	26.62	459.2	2
26365	1882.5	24.7	1.87	26.57	453.94	2
26640	1910	23.16	1.87	25.03	318.42	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855	23.66	1.87	25.53	357.27	2
26365	1882.5	23.95	1.87	25.82	381.94	2
26640	1910	22.54	1.87	24.41	276.06	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	24.7	1.87	26.57	453.94	2
26365	1882.5	24.71	1.87	26.58	454.99	2
26615	1907.5	23.12	1.87	24.99	315.5	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	23.67	1.87	25.54	358.1	2
26365	1882.5	23.97	1.87	25.84	383.71	2
26615	1907.5	22.52	1.87	24.39	274.79	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860	24.77	1.87	26.64	461.32	2
26365	1882.5	24.73	1.87	26.6	457.09	2
26590	1905	23.23	1.87	25.1	323.59	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860	23.76	1.87	25.63	365.59	2
26365	1882.5	24	1.87	25.87	386.37	2
26590	1905	22.6	1.87	24.47	279.9	2

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

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

3.2.2 TEST PROCEDURE

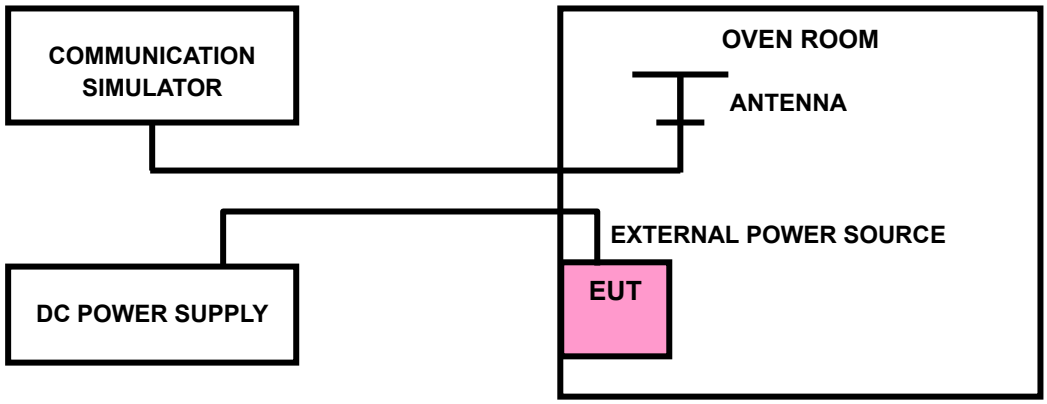
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

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.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

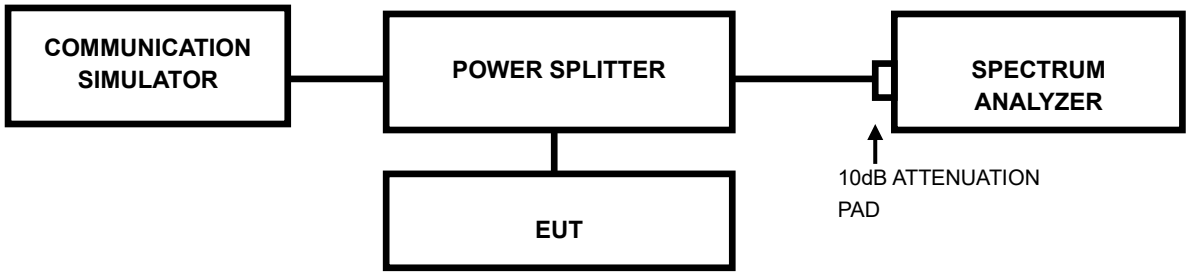
Note: VL = Low voltage(3.2V); VN/NV = Normal voltage(3.8V); VH = High voltage(4.2V);
NT = Normal temperature (25℃)

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF 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.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

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.

3.3.4 TEST RESULTS

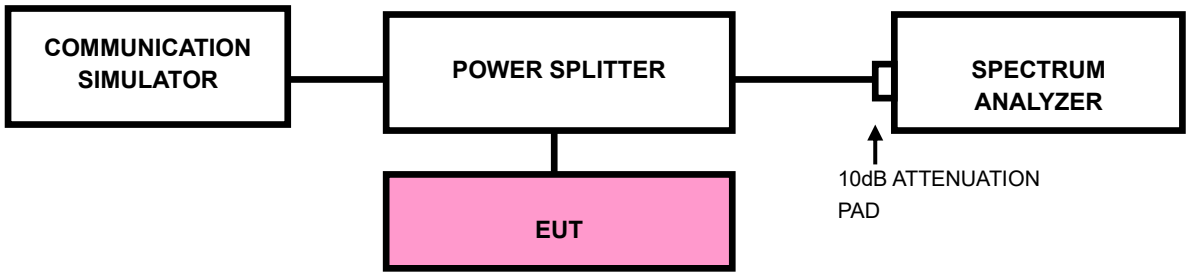
Please Refer to Appendix Of this test report.

3.4 BAND EDGE MEASUREMENTC

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

a) All measurements were done at low and high operational frequency range.

b) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.

c) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW)

d) Set the resolution bandwidth (RBW) ≧ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.

e) Beyond the 1MHz band from the band edge, RBW=1MHz was used.

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

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

h) Set the number of measurement points to ≧ 1001.

i) Use auto-coupled sweep time.

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

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

l) Record the max trace plot into the test report.

3.4.4. TEST RESULTS

Please Refer to Appendix Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

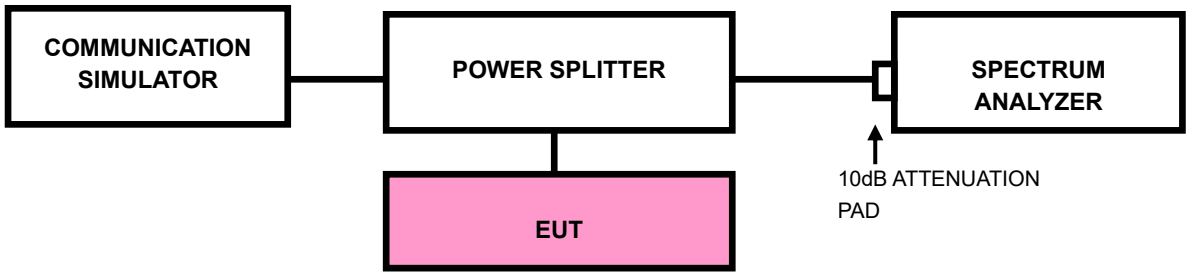
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

3.5.2 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 30MHz up to a frequency including its 10^{th} harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 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.

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 emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

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 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 horn 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.

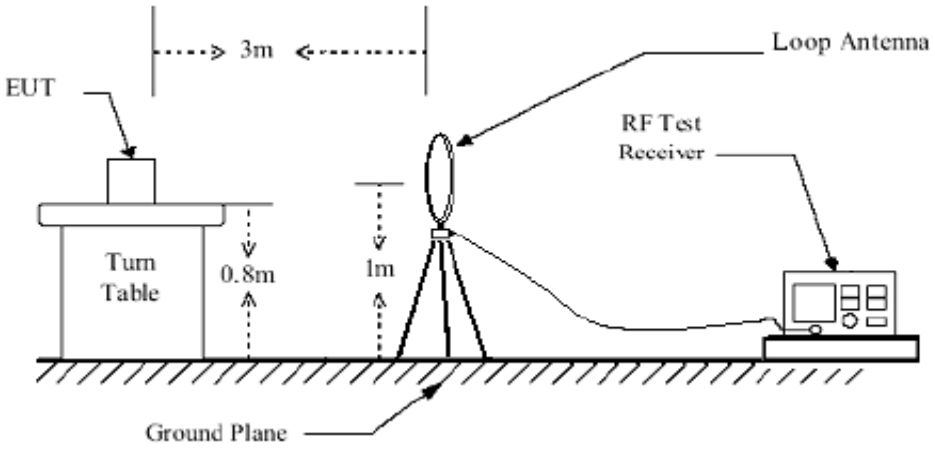
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

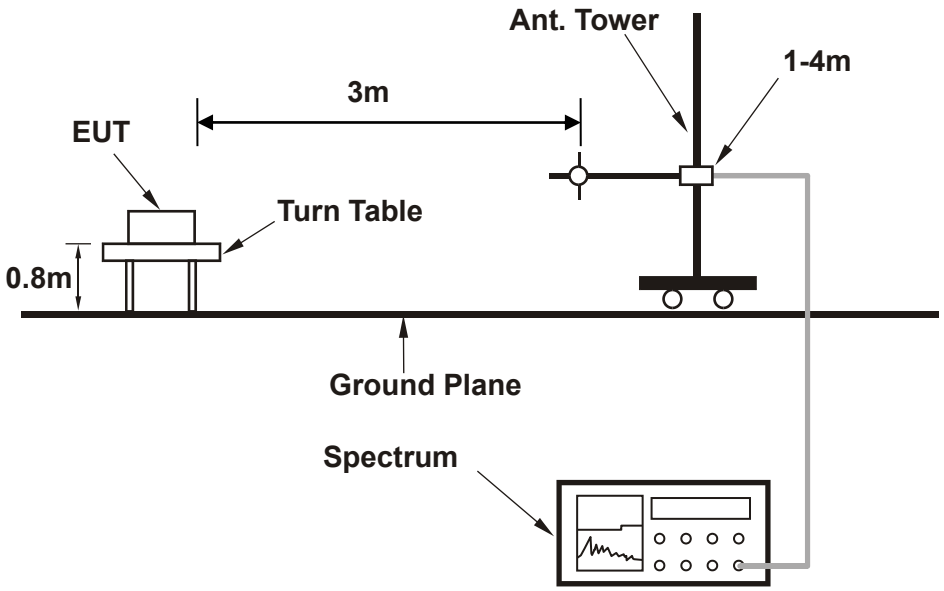
No deviation

3.6.4 TEST SETUP

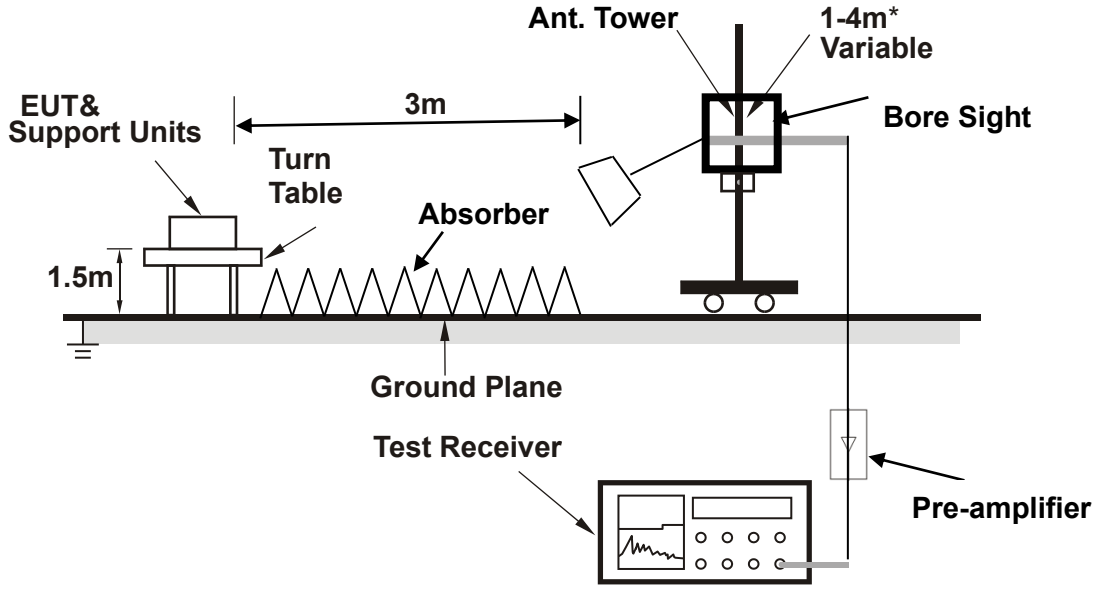
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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.

BELOW 1GHz WORST-CASE DATA

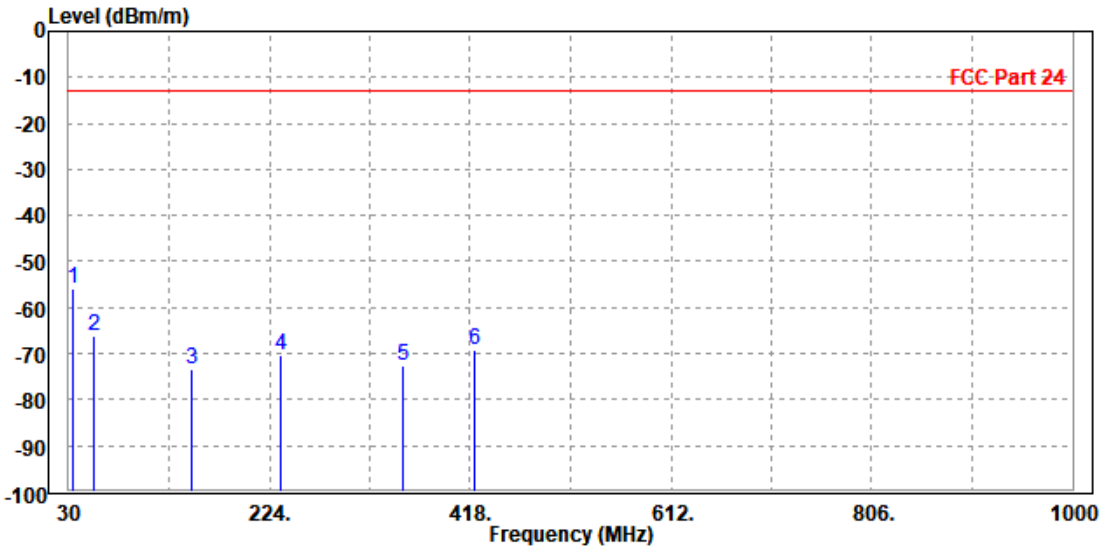
30 MHz – 1GHz data:

LTE Band 25:

CHANNEL BANDWIDTH: 10MHz / QPSK

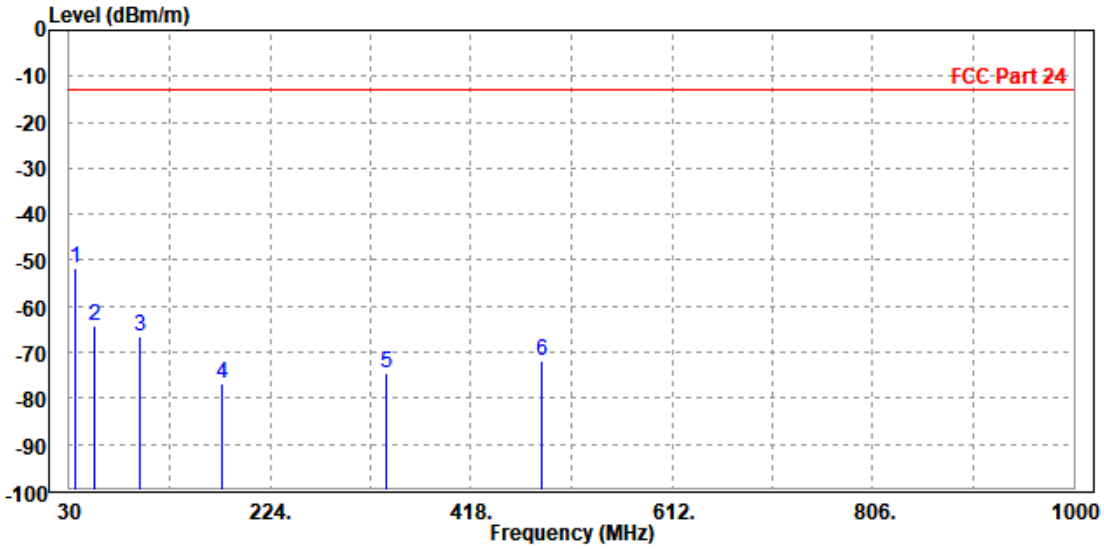
MODE	TX channel 26640	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 34.850	-55.81	-43.77	-13.00	-42.81	-12.04	Peak	Horizontal
2	55.220	-66.31	-48.41	-13.00	-53.31	-17.90	Peak	Horizontal
3	148.340	-73.49	-54.35	-13.00	-60.49	-19.14	Peak	Horizontal
4	235.640	-70.36	-57.19	-13.00	-57.36	-13.17	Peak	Horizontal
5	353.010	-72.67	-61.50	-13.00	-59.67	-11.17	Peak	Horizontal
6	422.850	-69.39	-59.77	-13.00	-56.39	-9.62	Peak	Horizontal



MODE	TX channel 26640	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 PP	35.820	-51.74	-30.36	-13.00	-38.74	-21.38	Peak	Vertical
2	54.250	-64.43	-39.84	-13.00	-51.43	-24.59	Peak	Vertical
3	98.870	-66.56	-59.14	-13.00	-53.56	-7.42	Peak	Vertical
4	177.440	-76.69	-58.22	-13.00	-63.69	-18.47	Peak	Vertical
5	335.550	-74.38	-64.21	-13.00	-61.38	-10.17	Peak	Vertical
6	486.870	-71.95	-63.75	-13.00	-58.95	-8.20	Peak	Vertical



ABOVE 1GHz DATA

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

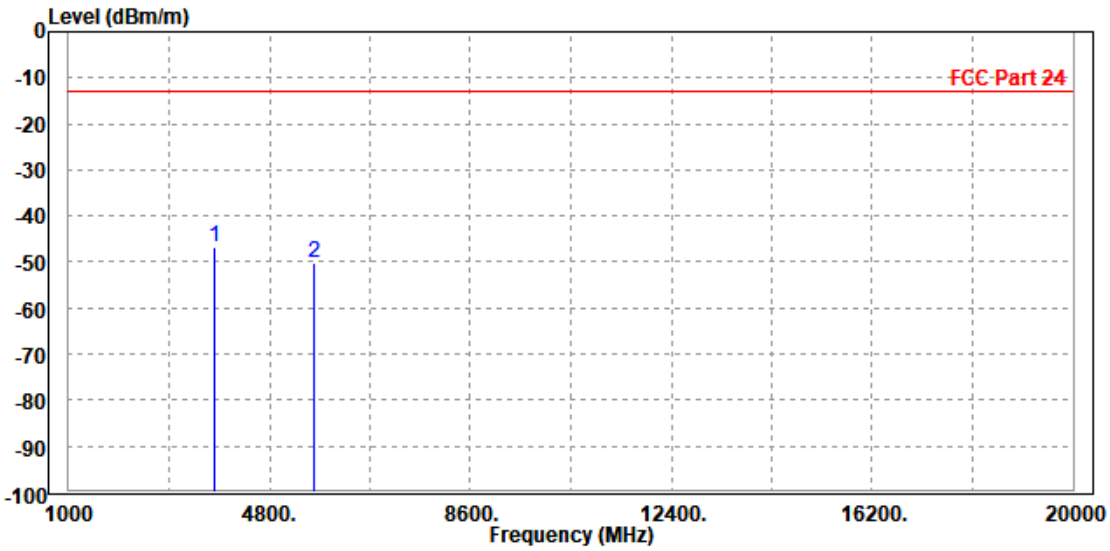
WORST-CASE DATA

LTE Band 25

CHANNEL BANDWIDTH: 1.4MHz / QPSK

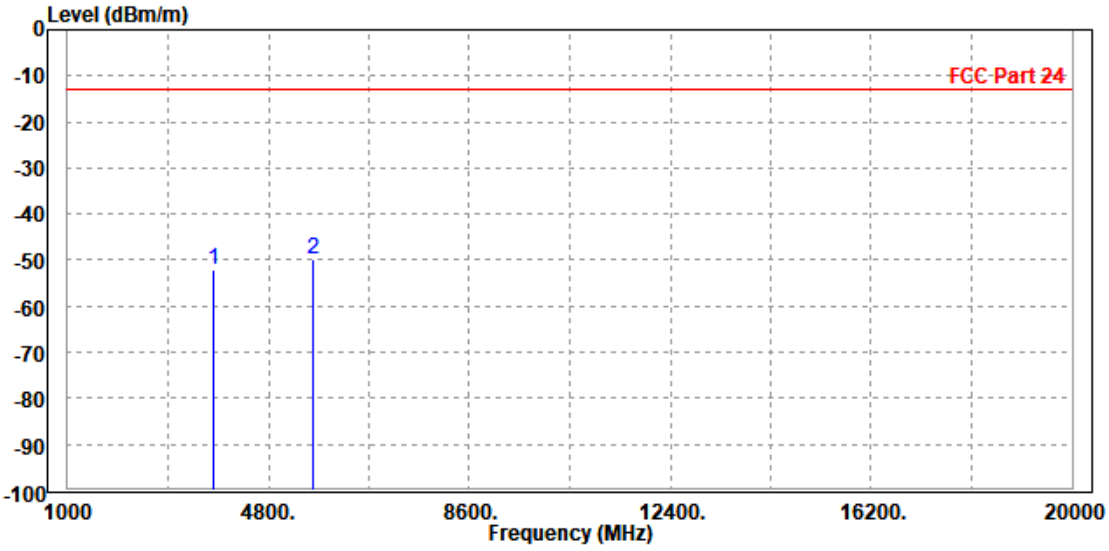
MODE	TX channel 26365	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3774.000	-46.92	-54.94	-13.00	-33.92	8.02	Peak	Horizontal
2	5647.500	-50.04	-60.80	-13.00	-37.04	10.76	Peak	Horizontal



MODE	TX channel 26365	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			

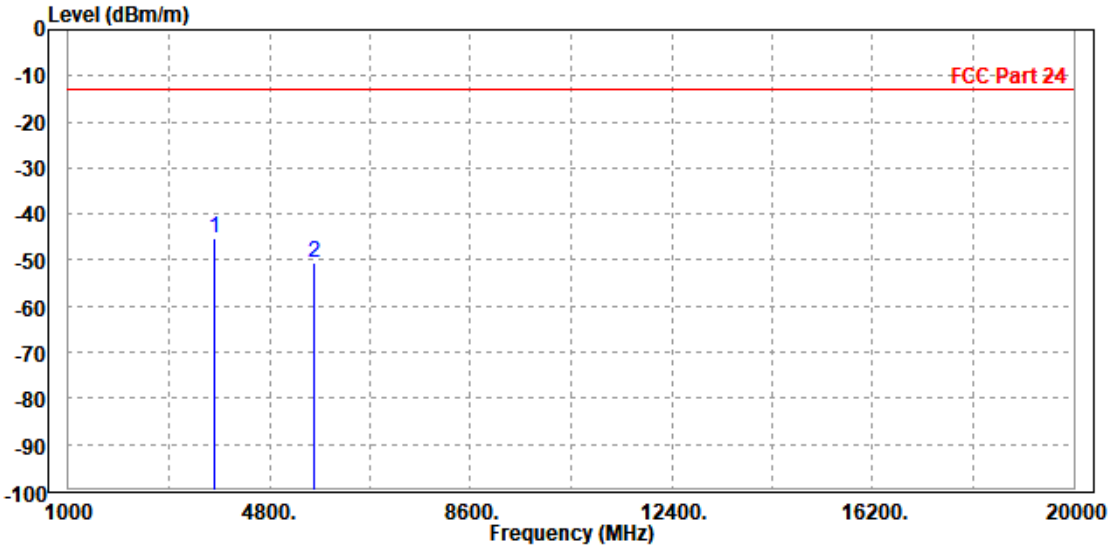
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-51.96	-59.66	-13.00	-38.96	7.70	Peak	Vertical
2 PP	5655.000	-49.71	-60.88	-13.00	-36.71	11.17	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

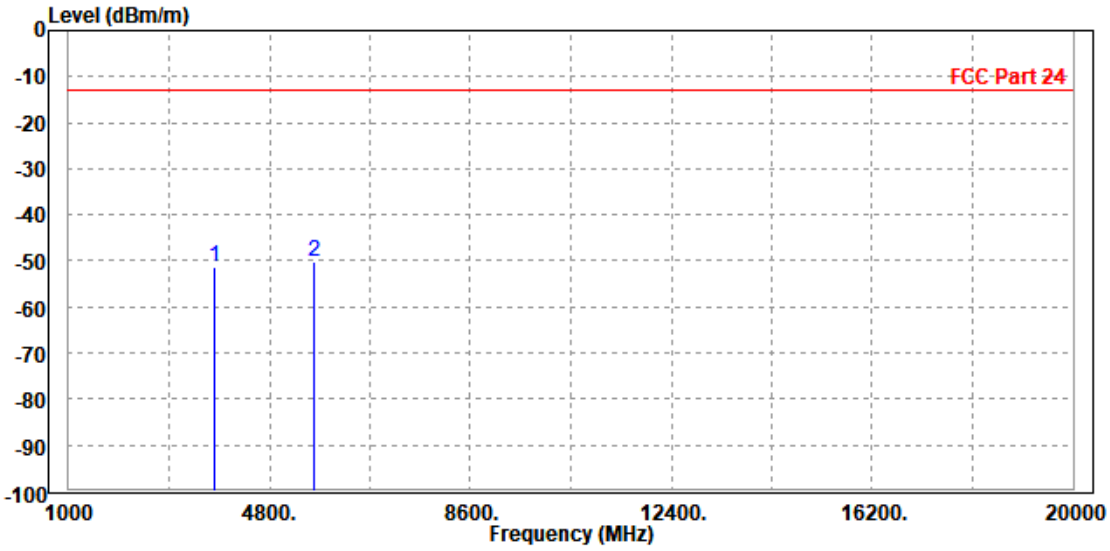
MODE	TX channel 26365	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3765.000	-45.20	-53.20	-13.00	-32.20	8.00	Peak	Horizontal
2	5655.000	-50.50	-61.27	-13.00	-37.50	10.77	Peak	Horizontal



MODE	TX channel 26365	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			

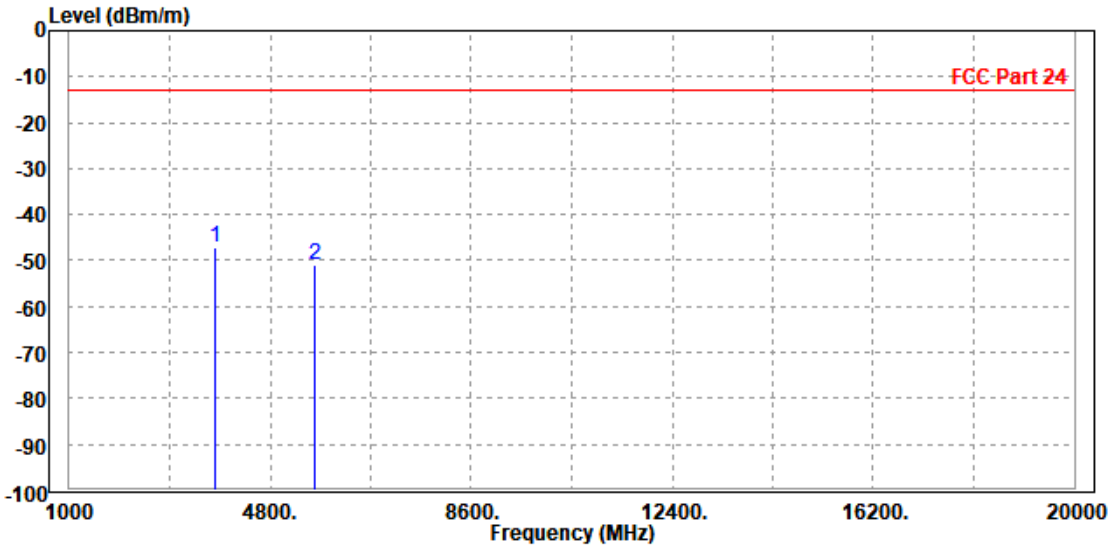
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-51.38	-59.10	-13.00	-38.38	7.72	Peak	Vertical
2 PP	5647.500	-50.26	-61.41	-13.00	-37.26	11.15	Peak	Vertical



CHANNEL BANDWIDTH: 5MHz / QPSK

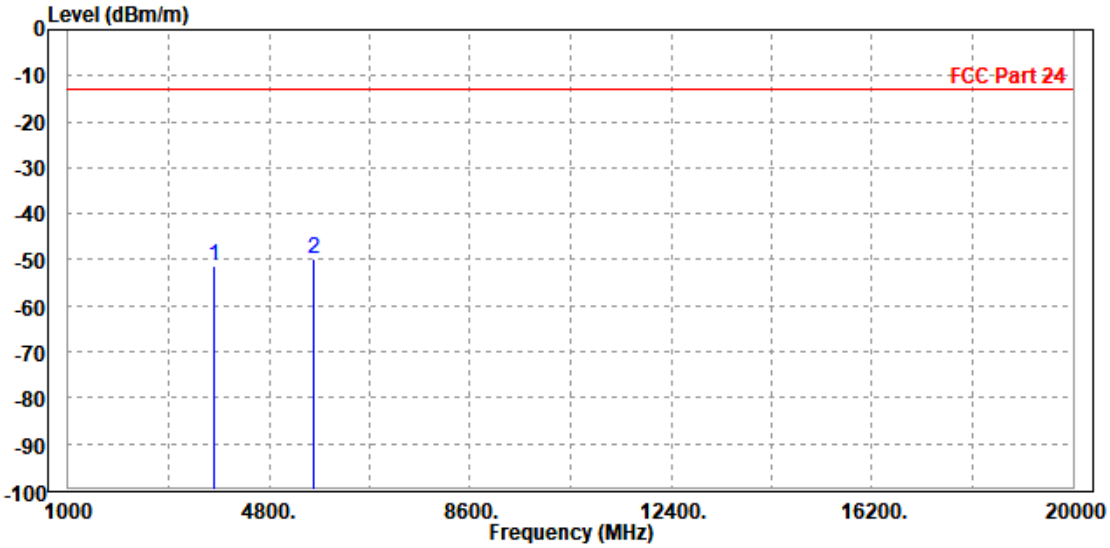
MODE	TX channel 26365	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3774.000	-46.97	-54.99	-13.00	-33.97	8.02	Peak	Horizontal
2	5647.500	-50.98	-61.74	-13.00	-37.98	10.76	Peak	Horizontal



MODE	TX channel 26365	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			

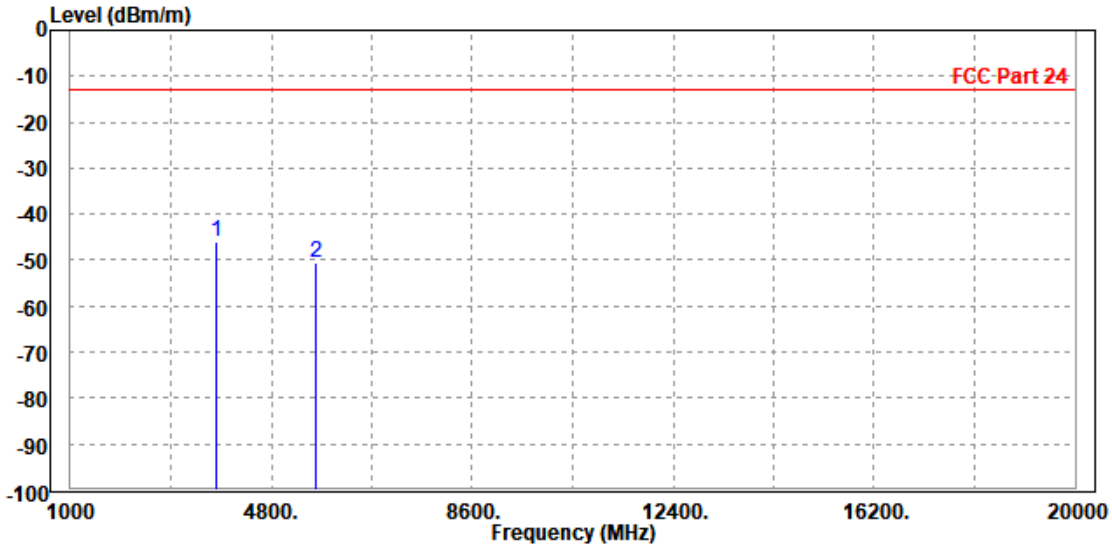
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-51.23	-58.93	-13.00	-38.23	7.70	Peak	Vertical
2 PP	5655.000	-49.75	-60.92	-13.00	-36.75	11.17	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

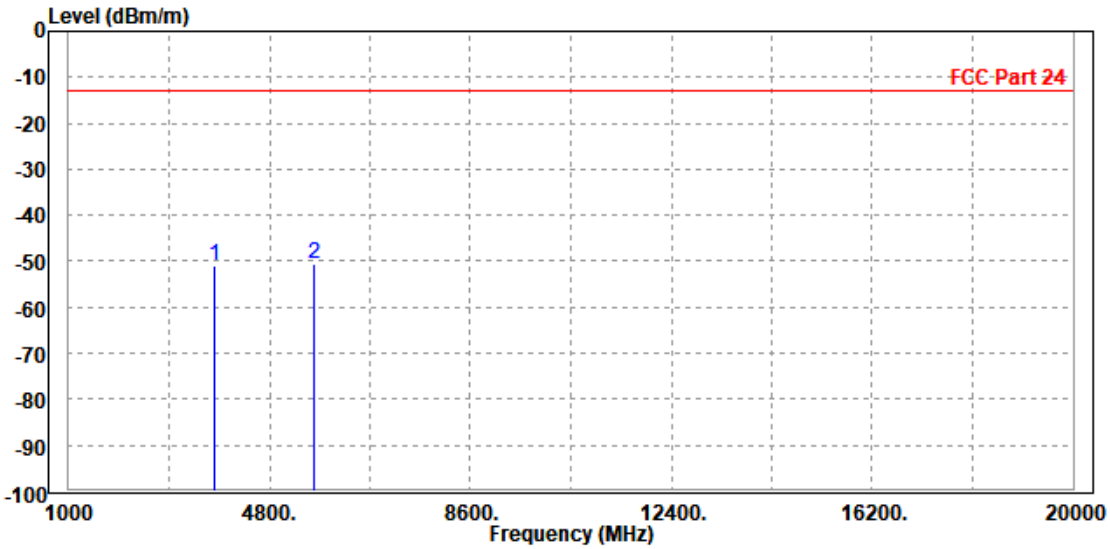
MODE	TX channel 26365	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3765.000	-45.89	-53.89	-13.00	-32.89	8.00	Peak	Horizontal
2	5655.000	-50.42	-61.19	-13.00	-37.42	10.77	Peak	Horizontal



MODE	TX channel 26365	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	3774.000	-50.89	-58.61	-13.00	-37.89	7.72	Peak	Vertical
2 PP	5647.500	-50.59	-61.74	-13.00	-37.59	11.15	Peak	Vertical

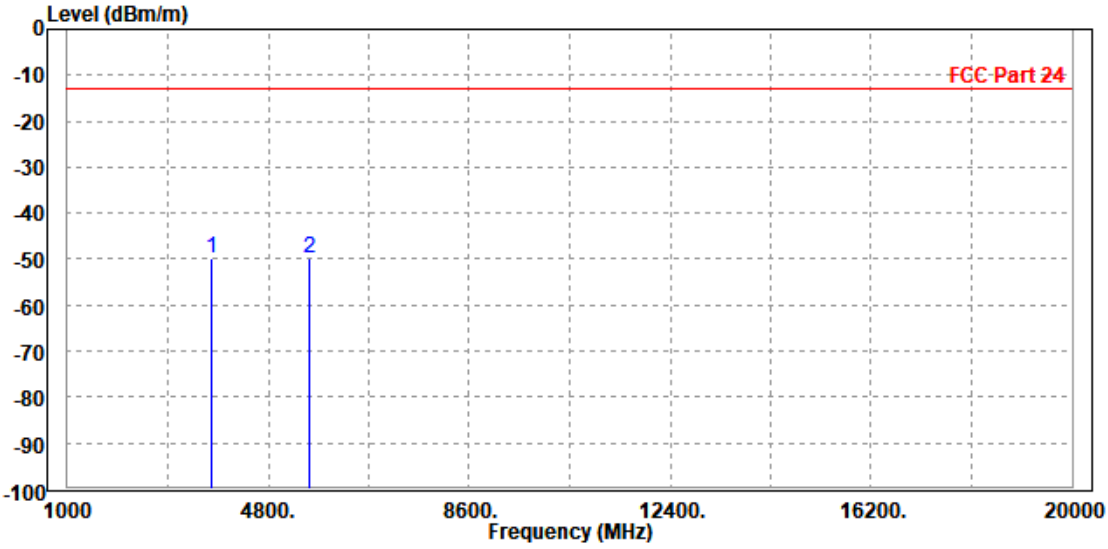


CHANNEL BANDWIDTH: 15MHz / QPSK

CH 26115

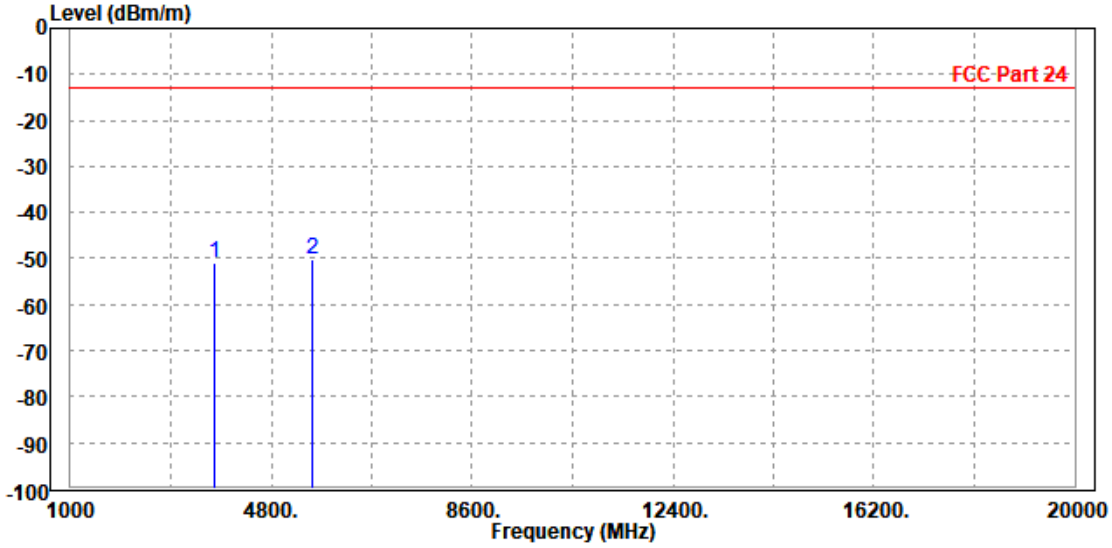
MODE	TX channel 26115	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3715.000	-49.96	-57.83	-13.00	-36.96	7.87	Peak	Horizontal
2 PP	5579.000	-49.94	-60.57	-13.00	-36.94	10.63	Peak	Horizontal



MODE	TX channel 26115	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			

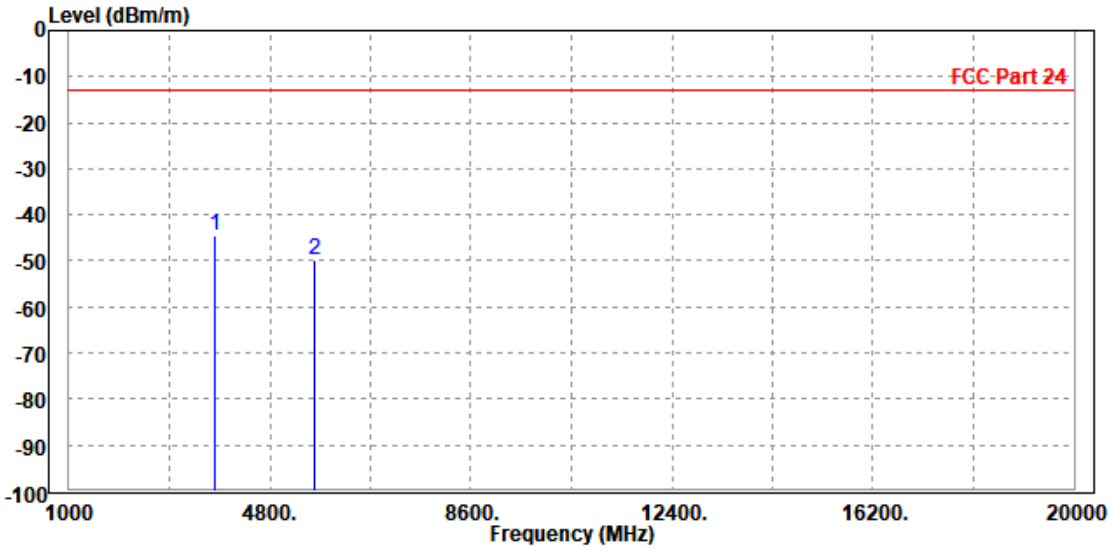
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3717.000	-50.89	-58.52	-13.00	-37.89	7.63	Peak	Vertical
2 PP	5572.500	-50.31	-61.24	-13.00	-37.31	10.93	Peak	Vertical



CH 26365

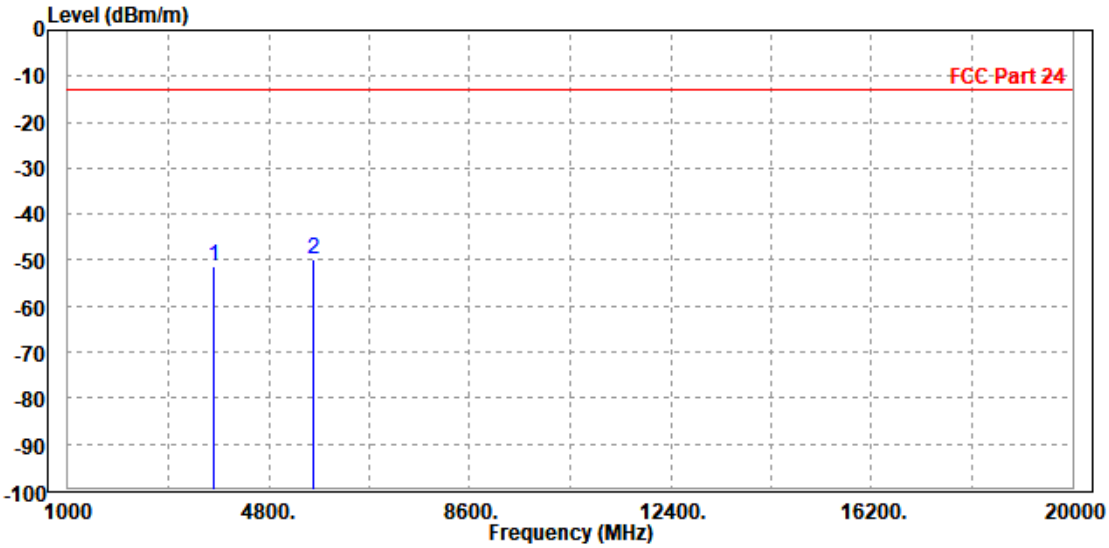
MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3765.000	-44.42	-52.42	-13.00	-31.42	8.00	Peak	Horizontal
2	5655.000	-49.95	-60.72	-13.00	-36.95	10.77	Peak	Horizontal



MODE	TX channel 26365	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			

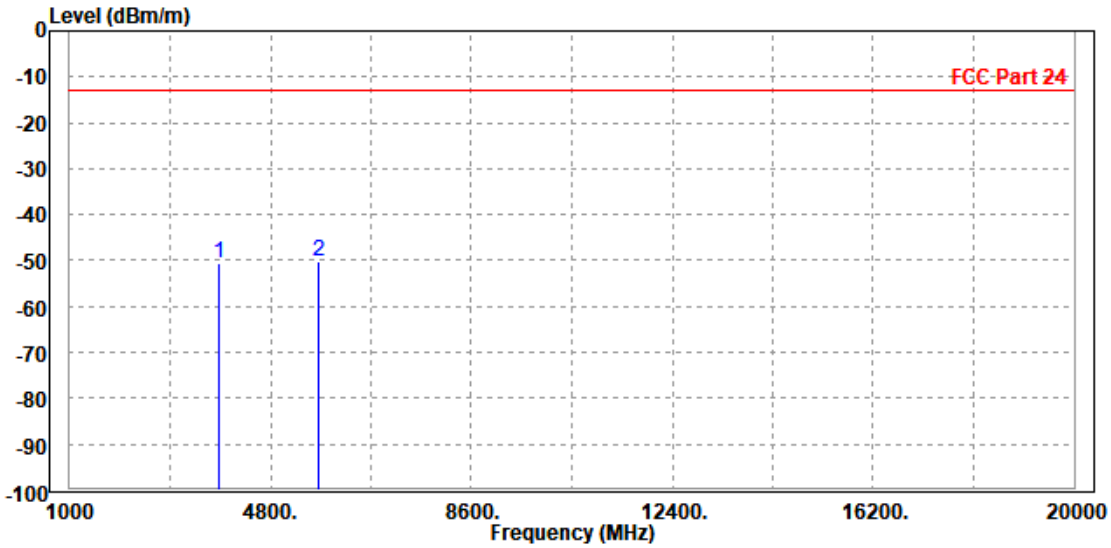
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-51.48	-59.20	-13.00	-38.48	7.72	Peak	Vertical
2 PP	5647.500	-49.72	-60.87	-13.00	-36.72	11.15	Peak	Vertical



CH 26615

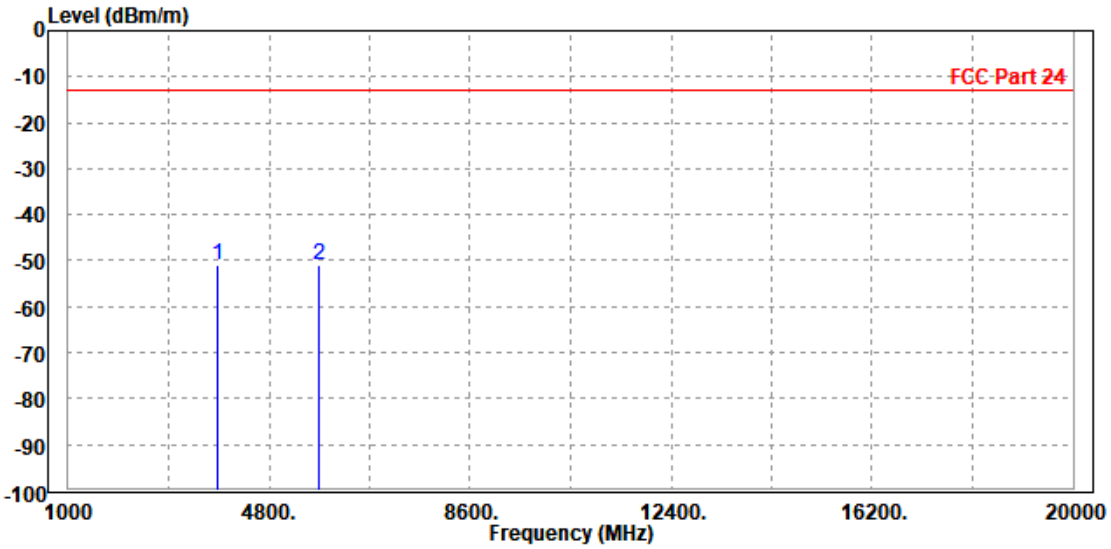
MODE	TX channel 26615	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3812.000	-50.60	-58.72	-13.00	-37.60	8.12	Peak	Horizontal
2 PP	5722.500	-50.27	-61.17	-13.00	-37.27	10.90	Peak	Horizontal



MODE	TX channel 26615	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			

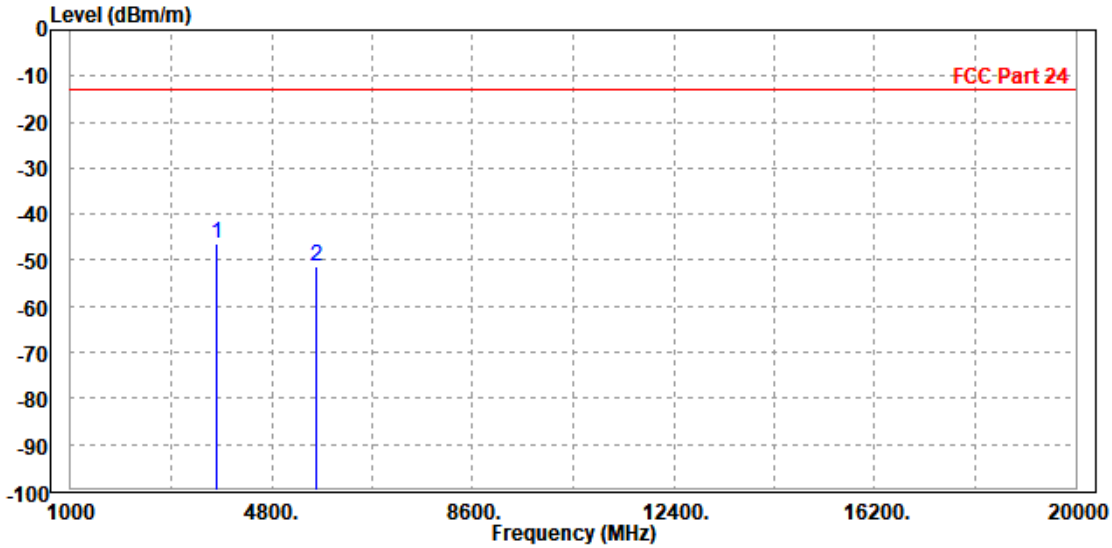
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3815.000	-50.93	-58.71	-13.00	-37.93	7.78	Peak	Vertical
2 PP	5731.000	-50.85	-62.24	-13.00	-37.85	11.39	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

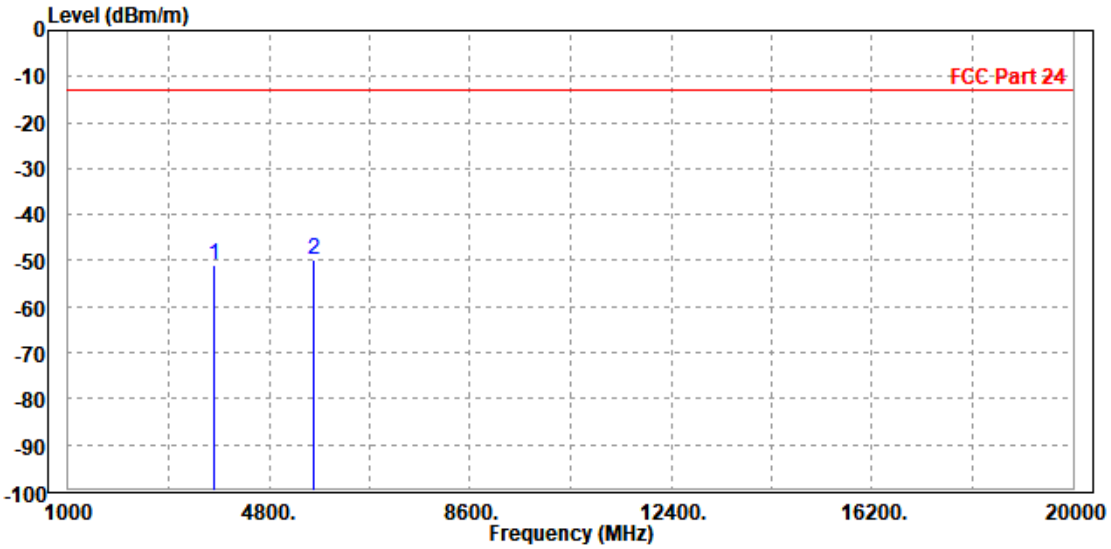
MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3774.000	-46.48	-54.50	-13.00	-33.48	8.02	Peak	Horizontal
2	5647.500	-51.31	-62.07	-13.00	-38.31	10.76	Peak	Horizontal



MODE	TX channel 26365	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	3765.000	-51.11	-58.81	-13.00	-38.11	7.70	Peak	Vertical
2 PP	5655.000	-49.72	-60.89	-13.00	-36.72	11.17	Peak	Vertical

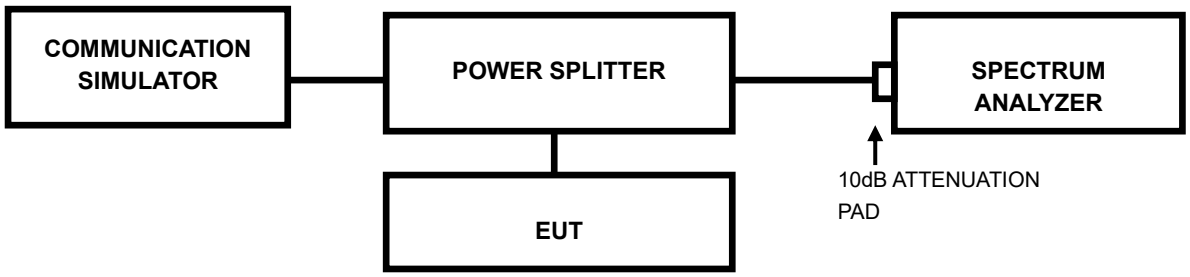


3.7 PEAK TO AVERAGE RATIO

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@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

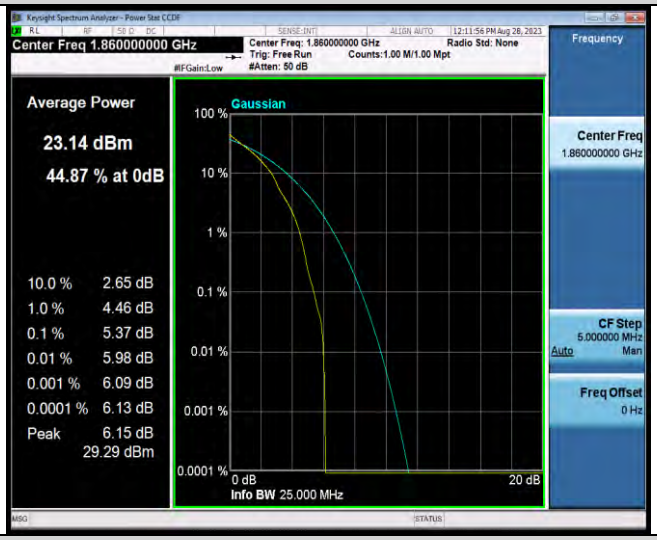
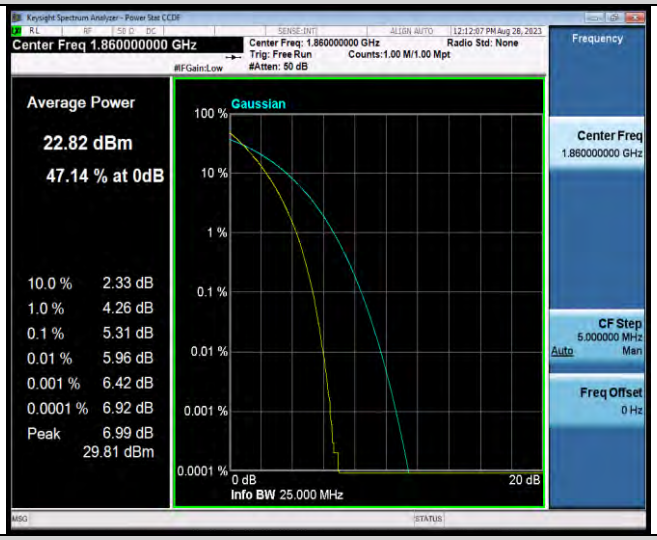
LTE BAND 25

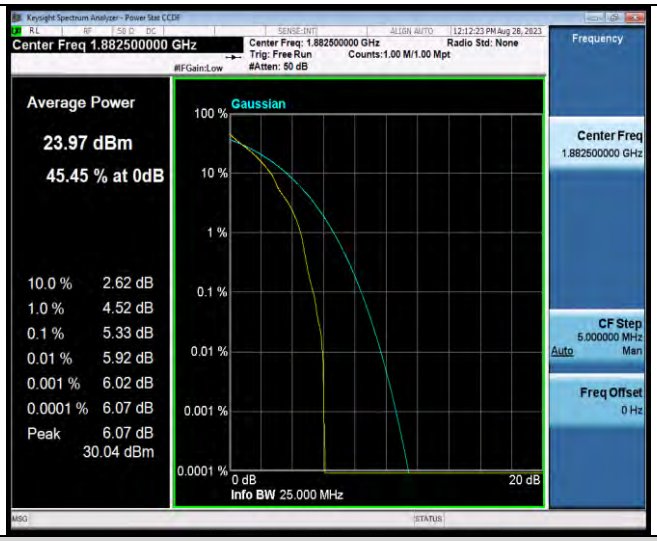
PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

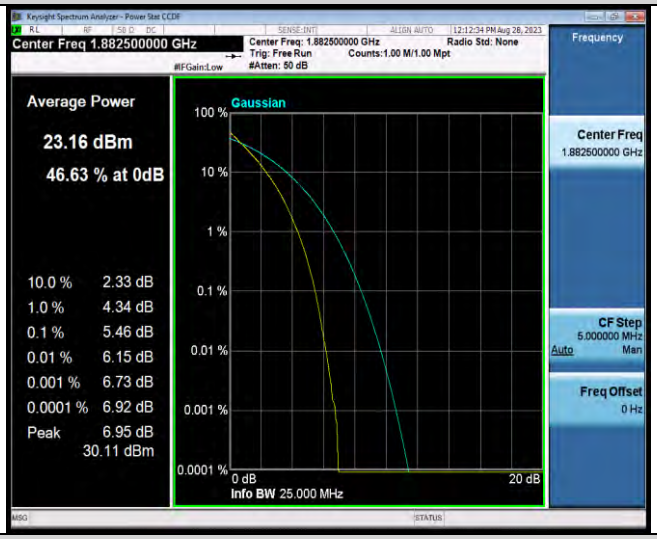
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band25	20MHz	QPSK	26140	1RB#0	5.37	13	PASS
Band25	20MHz	QPSK	26140	100RB#0	5.31	13	PASS
Band25	20MHz	QPSK	26365	1RB#0	5.33	13	PASS
Band25	20MHz	QPSK	26365	100RB#0	5.46	13	PASS
Band25	20MHz	QPSK	26590	1RB#0	4.84	13	PASS
Band25	20MHz	QPSK	26590	100RB#0	5.37	13	PASS
Band25	20MHz	16QAM	26140	1RB#0	6.08	13	PASS
Band25	20MHz	16QAM	26140	27RB#0	6.35	13	PASS
Band25	20MHz	16QAM	26365	1RB#0	6.06	13	PASS
Band25	20MHz	16QAM	26365	27RB#0	6.28	13	PASS
Band25	20MHz	16QAM	26590	1RB#0	5.91	13	PASS
Band25	20MHz	16QAM	26590	27RB#0	6.22	13	PASS

Test Graphs

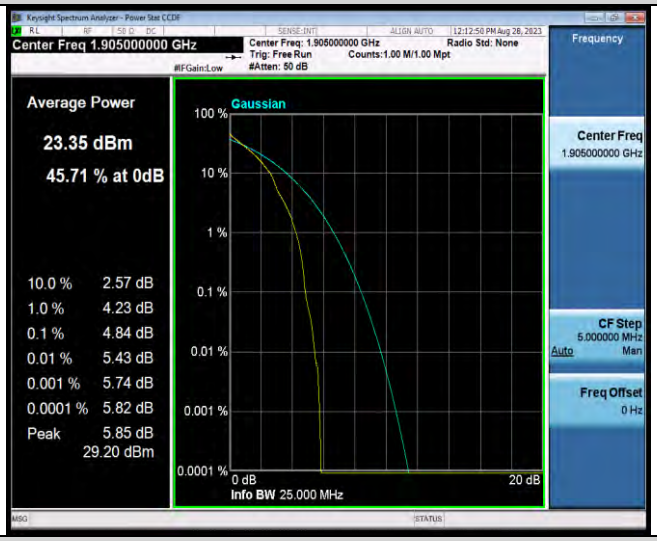
Band25-20MHz-QPSK-26140-1RB#0

Band25-20MHz-QPSK-26140-100RB#0

Band25-20MHz-QPSK-26365-1RB#0



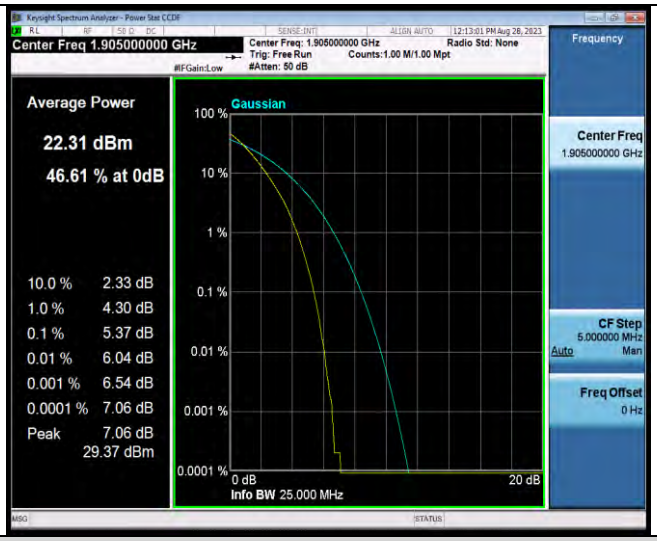
Band25-20MHz-QPSK-26365-100RB#0



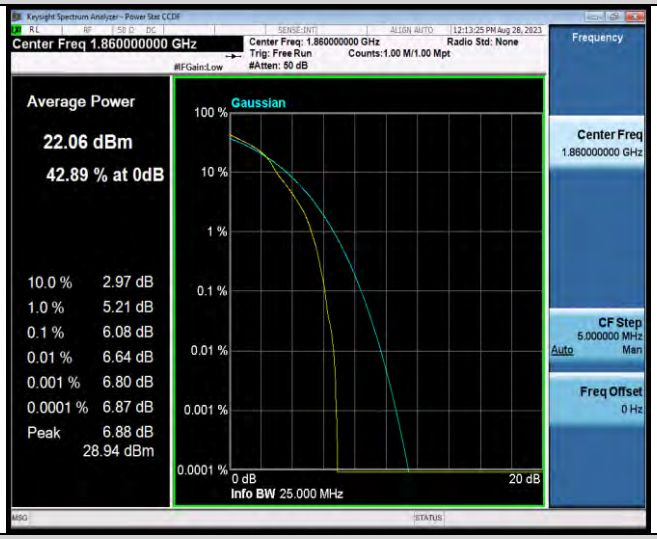
Band25-20MHz-QPSK-26590-1RB#0



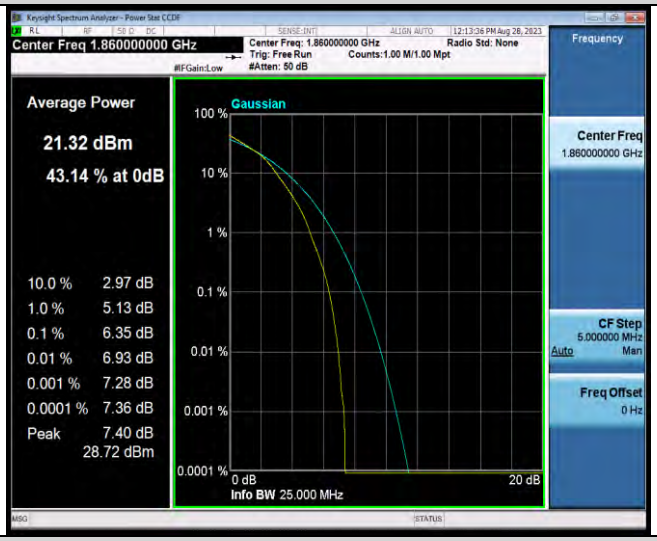
Band25-20MHz-QPSK-26590-100RB#0



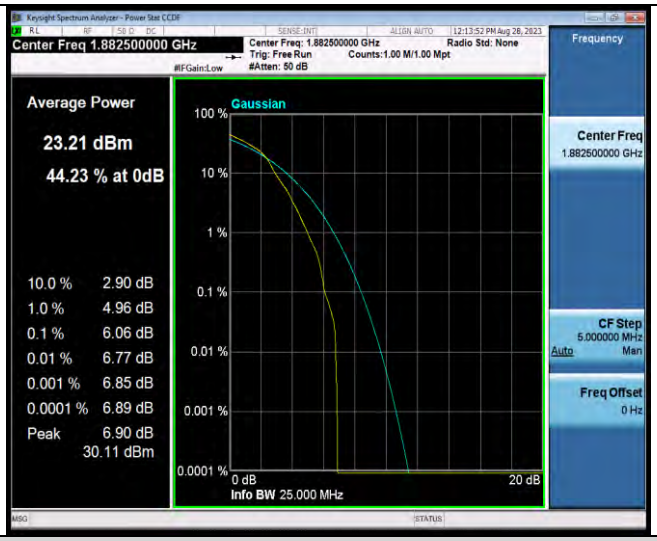
Band25-20MHz-16QAM-26140-1RB#0



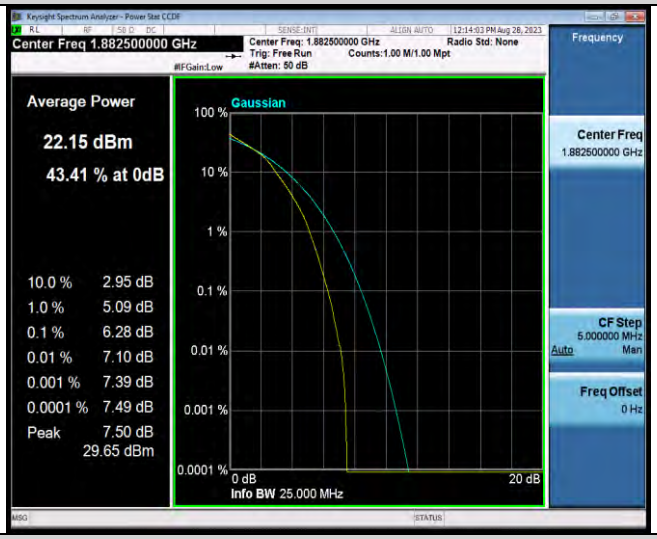
Band25-20MHz-16QAM-26140-27RB#0



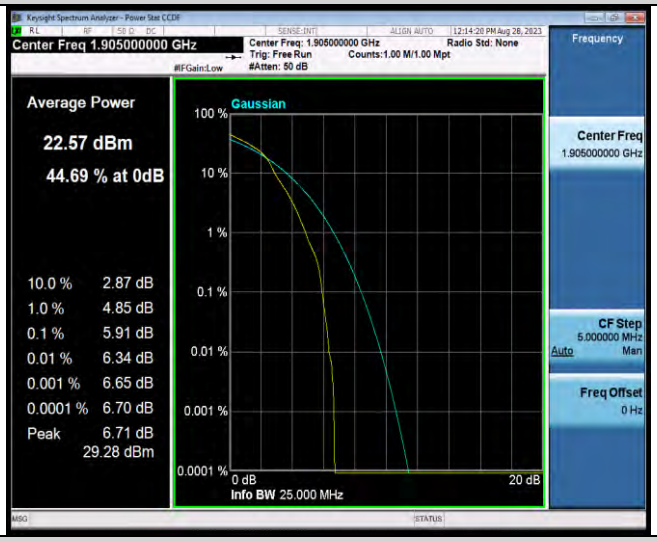
Band25-20MHz-16QAM-26365-1RB#0



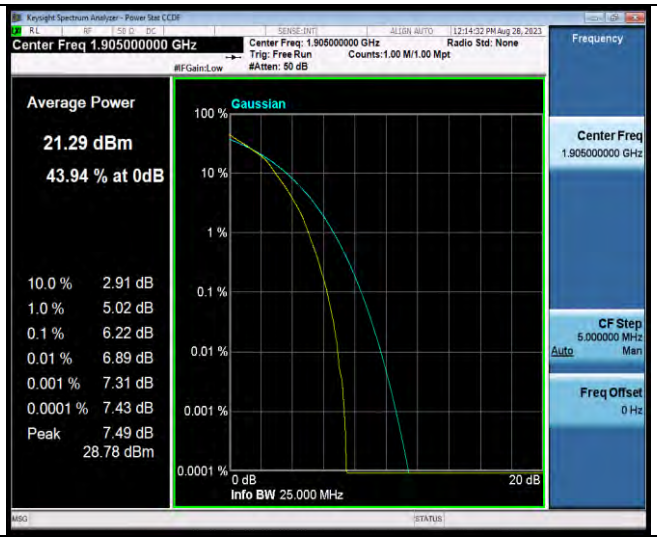
Band25-20MHz-16QAM-26365-27RB#0



Band25-20MHz-16QAM-26590-1RB#0



Band25-20MHz-16QAM-26590-27RB#0


Keysight Spectrum Analyzer - Power Stat CCDF
Center Freq 1.905000000 GHz
Center Freq: 1.905000000 GHz
Trig: Free Run
#Atten: 50 dB
Counts:1.00 M/1.00 Mpt
Radio Std: None
#IFGain:Low
Frequency
Average Power
21.29 dBm
43.94 % at 0dB
10.0 % 2.91 dB
1.0 % 5.02 dB
0.1 % 6.22 dB
0.01 % 6.89 dB
0.001 % 7.31 dB
0.0001 % 7.43 dB
Peak 7.49 dB
28.78 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 25.000 MHz
Center Freq
1.905000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band25	1.4MHz	QPSK	26047	6RB#0	1.0939	1.303	PASS
Band25	1.4MHz	QPSK	26365	6RB#0	1.0928	1.301	PASS
Band25	1.4MHz	QPSK	26683	6RB#0	1.0963	1.387	PASS
Band25	1.4MHz	16QAM	26047	6RB#0	1.0985	1.314	PASS
Band25	1.4MHz	16QAM	26365	6RB#0	1.0955	1.340	PASS
Band25	1.4MHz	16QAM	26683	6RB#0	1.0967	1.375	PASS
Band25	3MHz	QPSK	26055	15RB#0	2.7010	2.993	PASS
Band25	3MHz	QPSK	26365	15RB#0	2.7019	3.020	PASS
Band25	3MHz	QPSK	26675	15RB#0	2.7059	3.030	PASS
Band25	3MHz	16QAM	26055	15RB#0	2.6983	3.003	PASS
Band25	3MHz	16QAM	26365	15RB#0	2.7053	3.020	PASS
Band25	3MHz	16QAM	26675	15RB#0	2.7106	3.068	PASS
Band25	5MHz	QPSK	26065	25RB#0	4.4931	5.060	PASS
Band25	5MHz	QPSK	26365	25RB#0	4.5180	5.125	PASS
Band25	5MHz	QPSK	26665	25RB#0	4.5128	5.073	PASS
Band25	5MHz	16QAM	26065	25RB#0	4.4973	5.062	PASS
Band25	5MHz	16QAM	26365	25RB#0	4.4994	5.043	PASS
Band25	5MHz	16QAM	26665	25RB#0	4.5051	5.092	PASS
Band25	10MHz	QPSK	26090	50RB#0	8.9830	10.21	PASS
Band25	10MHz	QPSK	26365	50RB#0	8.9900	10.21	PASS
Band25	10MHz	QPSK	26640	50RB#0	8.9695	10.17	PASS
Band25	10MHz	16QAM	26090	27RB#0	4.8517	5.610	PASS
Band25	10MHz	16QAM	26365	27RB#0	4.8625	5.545	PASS
Band25	10MHz	16QAM	26640	27RB#0	4.8435	5.522	PASS
Band25	15MHz	QPSK	26115	75RB#0	13.472	15.02	PASS
Band25	15MHz	QPSK	26365	75RB#0	13.527	15.31	PASS
Band25	15MHz	QPSK	26615	75RB#0	13.490	15.36	PASS
Band25	15MHz	16QAM	26115	27RB#0	4.8676	5.633	PASS
Band25	15MHz	16QAM	26365	27RB#0	4.8663	5.736	PASS
Band25	15MHz	16QAM	26615	27RB#0	4.8793	5.725	PASS
Band25	20MHz	QPSK	26140	100RB#0	17.894	19.90	PASS
Band25	20MHz	QPSK	26365	100RB#0	17.979	19.87	PASS
Band25	20MHz	QPSK	26590	100RB#0	17.937	20.00	PASS
Band25	20MHz	16QAM	26140	27RB#0	4.8886	5.756	PASS
Band25	20MHz	16QAM	26365	27RB#0	4.8889	5.665	PASS
Band25	20MHz	16QAM	26590	27RB#0	4.9009	5.606	PASS

Test Graphs

Band25-1.4MHz-QPSK-26047-6RB#0

Band25-1.4MHz-QPSK-26365-6RB#0

Band25-1.4MHz-QPSK-26683-6RB#0

Band25-1.4MHz-16QAM-26047-6RB#0

Band25-1.4MHz-16QAM-26365-6RB#0

Band25-1.4MHz-16QAM-26683-6RB#0

Band25-3MHz-QPSK-26055-15RB#0

Band25-3MHz-QPSK-26365-15RB#0

Band25-3MHz-QPSK-26675-15RB#0

Band25-3MHz-16QAM-26055-15RB#0

Band25-3MHz-16QAM-26365-15RB#0

Band25-3MHz-16QAM-26675-15RB#0

Band25-5MHz-QPSK-26065-25RB#0

Band25-5MHz-QPSK-26365-25RB#0

Band25-5MHz-QPSK-26665-25RB#0

Band25-5MHz-16QAM-26065-25RB#0

Band25-5MHz-16QAM-26365-25RB#0

Band25-5MHz-16QAM-26665-25RB#0

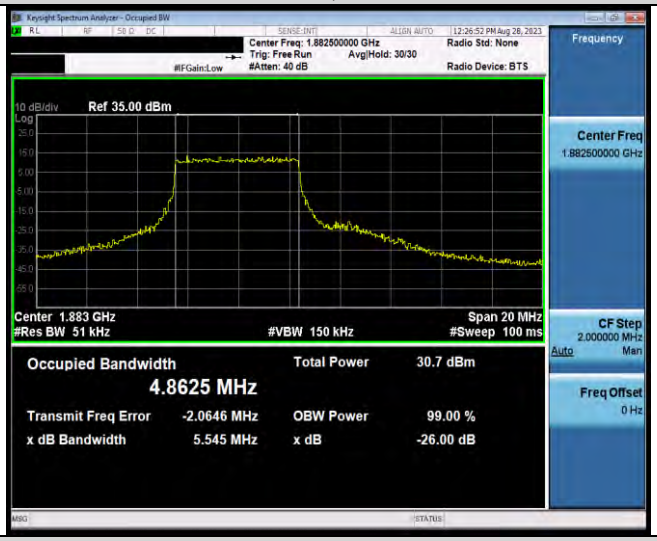
Band25-10MHz-QPSK-26090-50RB#0

Band25-10MHz-QPSK-26365-50RB#0

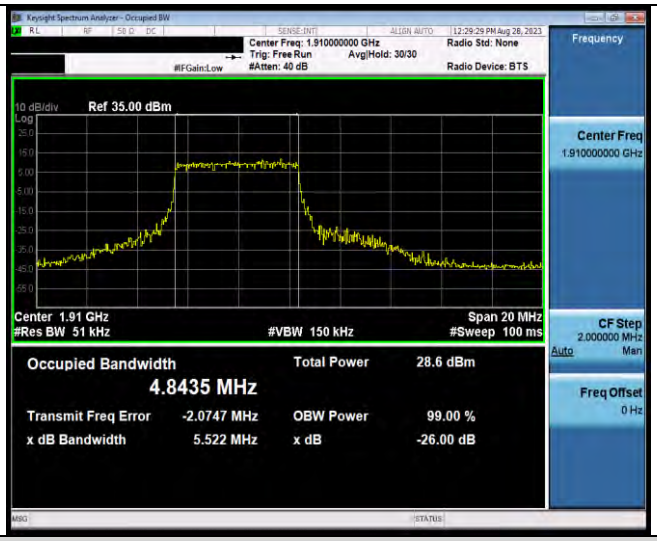
Band25-10MHz-QPSK-26640-50RB#0

Band25-10MHz-16QAM-26090-27RB#0

Band25-10MHz-16QAM-26365-27RB#0



Band25-10MHz-16QAM-26640-27RB#0



Band25-15MHz-QPSK-26115-75RB#0

Band25-15MHz-QPSK-26365-75RB#0

Band25-15MHz-QPSK-26615-75RB#0

Band25-15MHz-16QAM-26115-27RB#0

Band25-15MHz-16QAM-26365-27RB#0

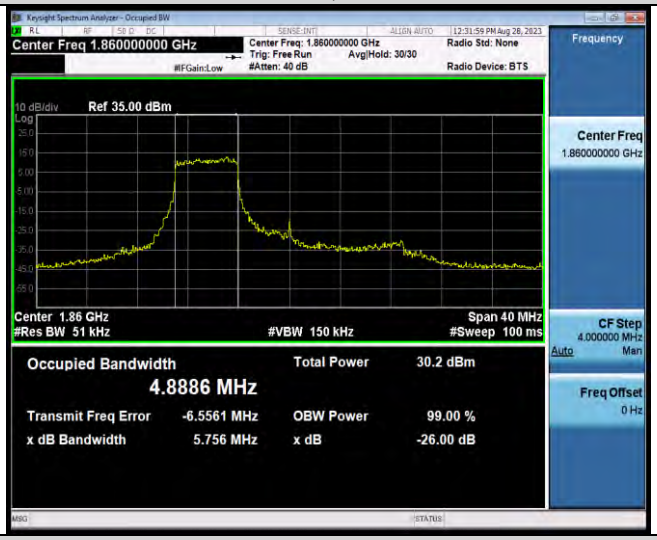
Band25-15MHz-16QAM-26615-27RB#0

Band25-20MHz-QPSK-26140-100RB#0

Band25-20MHz-QPSK-26365-100RB#0

Band25-20MHz-QPSK-26590-100RB#0

Band25-20MHz-16QAM-26140-27RB#0



Band25-20MHz-16QAM-26365-27RB#0

Band25-20MHz-16QAM-26590-27RB#0


Keysight Spectrum Analyzer - Occupied BW
Center Freq 1.905000000 GHz
Center Freq: 1.905000000 GHz
Trig: Free Run
Avg|Hold: 30/30
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
12:32:22 PM Aug 28, 2023
Frequency
10 dB/div
Ref 35.00 dBm
Log
Center Freq
1.905000000 GHz
Center 1.905 GHz
#Res BW 51 kHz
#VBW 150 kHz
Span 40 MHz
#Sweep 100 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
4.9009 MHz
Total Power
29.8 dBm
Transmit Freq Error
-6.5618 MHz
OBW Power
99.00 %
x dB Bandwidth
5.606 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

BAND EDGE

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band25	1.4MHz	QPSK	26047	1RB#0	-22.78,-22.72	PASS
Band25	1.4MHz	QPSK	26047	6RB#0	-25.31,-22.41	PASS
Band25	1.4MHz	QPSK	26683	1RB#5	-26.48,-22.19	PASS
Band25	1.4MHz	QPSK	26683	6RB#0	-21.37,-25.81	PASS
Band25	1.4MHz	16QAM	26047	1RB#0	-24.68,-26.36	PASS
Band25	1.4MHz	16QAM	26047	6RB#0	-27.52,-23.51	PASS
Band25	1.4MHz	16QAM	26683	1RB#5	-29.87,-23.94	PASS
Band25	1.4MHz	16QAM	26683	6RB#0	-23.44,-29.31	PASS
Band25	3MHz	QPSK	26055	1RB#0	-31.48,-20.43	PASS
Band25	3MHz	QPSK	26055	15RB#0	-26.63,-23.89	PASS
Band25	3MHz	QPSK	26675	1RB#14	-21.15,-35.33	PASS
Band25	3MHz	QPSK	26675	15RB#0	-23.53,-25.57	PASS
Band25	3MHz	16QAM	26055	1RB#0	-33.57,-20.16	PASS
Band25	3MHz	16QAM	26055	15RB#0	-26.44,-25.12	PASS
Band25	3MHz	16QAM	26675	1RB#14	-20.50,-36.26	PASS
Band25	3MHz	16QAM	26675	15RB#0	-24.58,-27.30	PASS
Band25	5MHz	QPSK	26065	1RB#0	-35.35,-19.08	PASS
Band25	5MHz	QPSK	26065	25RB#0	-29.09,-29.71	PASS
Band25	5MHz	QPSK	26665	1RB#24	-21.81,-38.37	PASS
Band25	5MHz	QPSK	26665	25RB#0	-29.24,-25.99	PASS
Band25	5MHz	16QAM	26065	1RB#0	-36.97,-20.59	PASS
Band25	5MHz	16QAM	26065	25RB#0	-29.41,-30.31	PASS
Band25	5MHz	16QAM	26665	1RB#24	-22.79,-39.15	PASS
Band25	5MHz	16QAM	26665	25RB#0	-29.57,-27.20	PASS
Band25	10MHz	QPSK	26090	1RB#0	-40.47,-24.25	PASS
Band25	10MHz	QPSK	26090	50RB#0	-31.31,-33.93	PASS
Band25	10MHz	QPSK	26640	1RB#49	-27.19,-40.86	PASS
Band25	10MHz	QPSK	26640	50RB#0	-30.53,-28.17	PASS
Band25	10MHz	16QAM	26090	1RB#0	-41.34,-25.48	PASS
Band25	10MHz	16QAM	26090	27RB#0	-31.66,-31.74	PASS
Band25	10MHz	16QAM	26640	1RB#49	-26.25,-41.55	PASS
Band25	10MHz	16QAM	26640	27RB#23	-29.25,-27.16	PASS
Band25	15MHz	QPSK	26115	1RB#0	-39.40,-28.30	PASS
Band25	15MHz	QPSK	26115	75RB#0	-51.72,-31.88	PASS
Band25	15MHz	QPSK	26615	1RB#74	-28.97,-41.62	PASS
Band25	15MHz	QPSK	26615	75RB#0	-32.74,-29.77	PASS
Band25	15MHz	16QAM	26115	1RB#0	-40.24,-28.35	PASS
Band25	15MHz	16QAM	26115	27RB#0	-32.99,-33.27	PASS
Band25	15MHz	16QAM	26615	1RB#74	-30.18,-42.59	PASS
Band25	15MHz	16QAM	26615	27RB#48	-29.05,-27.29	PASS
Band25	20MHz	QPSK	26140	1RB#0	-38.53,-32.00	PASS
Band25	20MHz	QPSK	26140	100RB#0	-33.57,-37.60	PASS
Band25	20MHz	QPSK	26590	1RB#99	-31.80,-43.14	PASS

Band25	20MHz	QPSK	26590	100RB#0	-36.13,-33.55	PASS
Band25	20MHz	16QAM	26140	1RB#0	-39.37,-33.53	PASS
Band25	20MHz	16QAM	26140	27RB#0	-34.72,-35.40	PASS
Band25	20MHz	16QAM	26590	1RB#99	-33.60,-43.97	PASS
Band25	20MHz	16QAM	26590	27RB#73	-29.64,-27.89	PASS

Test Graphs

Band25-1.4MHz-QPSK-26047-1RB#0

Band25-1.4MHz-QPSK-26047-6RB#0

Band25-1.4MHz-QPSK-26683-1RB#5

Band25-1.4MHz-QPSK-26683-6RB#0

Band25-1.4MHz-16QAM-26047-1RB#0

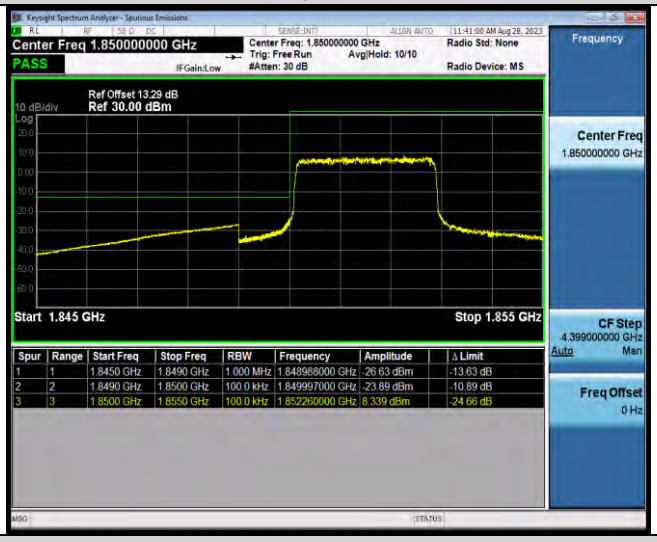
Band25-1.4MHz-16QAM-26047-6RB#0

Band25-1.4MHz-16QAM-26683-1RB#5

Band25-1.4MHz-16QAM-26683-6RB#0

Band25-3MHz-QPSK-26055-1RB#0

Band25-3MHz-QPSK-26055-15RB#0



Band25-3MHz-QPSK-26675-1RB#14

Band25-3MHz-QPSK-26675-15RB#0

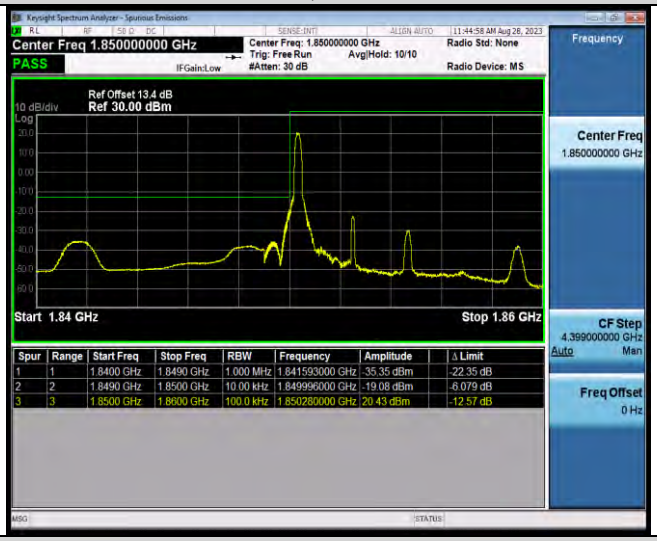
Band25-3MHz-16QAM-26055-1RB#0

Band25-3MHz-16QAM-26055-15RB#0

Band25-3MHz-16QAM-26675-1RB#14

Band25-3MHz-16QAM-26675-15RB#0

Band25-5MHz-QPSK-26065-1RB#0

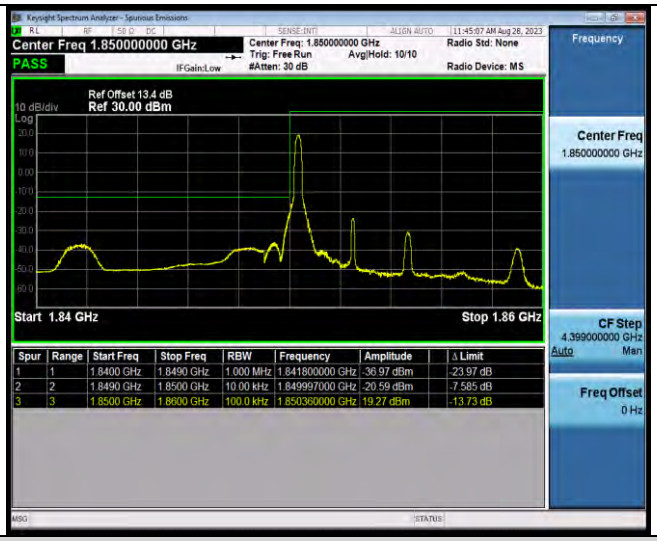


Band25-5MHz-QPSK-26065-25RB#0

Band25-5MHz-QPSK-26665-1RB#24

Band25-5MHz-QPSK-26665-25RB#0

Band25-5MHz-16QAM-26065-1RB#0

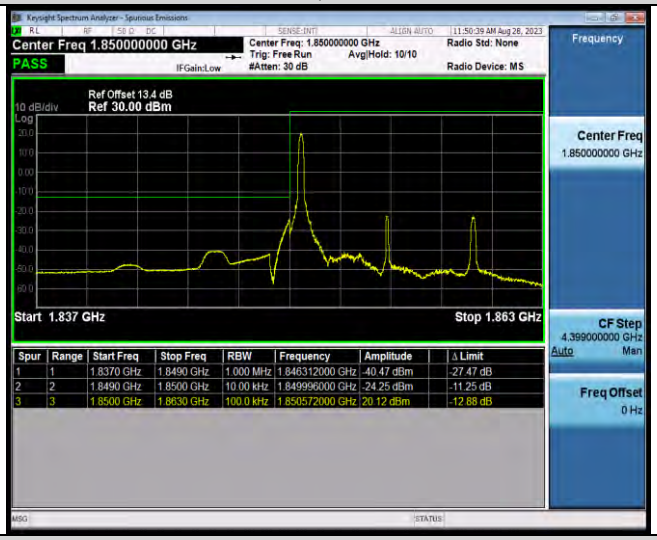


Band25-5MHz-16QAM-26065-25RB#0

Band25-5MHz-16QAM-26665-1RB#24

Band25-5MHz-16QAM-26665-25RB#0

Band25-10MHz-QPSK-26090-1RB#0



Band25-10MHz-QPSK-26090-50RB#0

Band25-10MHz-QPSK-26640-1RB#49

Band25-10MHz-QPSK-26640-50RB#0

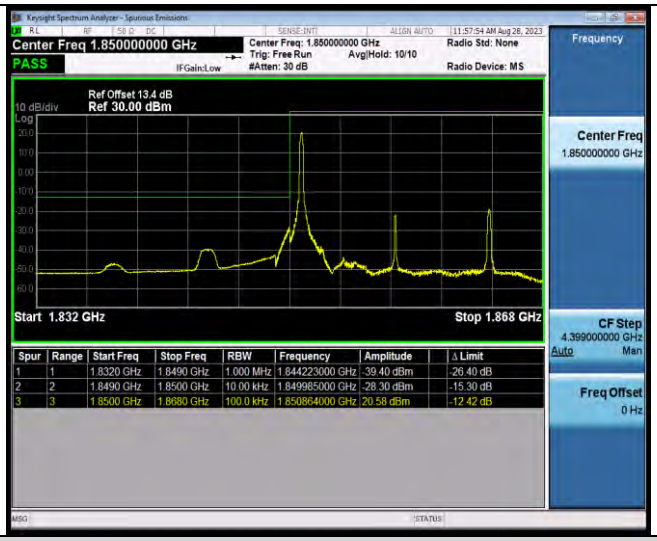
Band25-10MHz-16QAM-26090-1RB#0

Band25-10MHz-16QAM-26090-27RB#0

Band25-10MHz-16QAM-26640-1RB#49

Band25-10MHz-16QAM-26640-27RB#23

Band25-15MHz-QPSK-26115-1RB#0

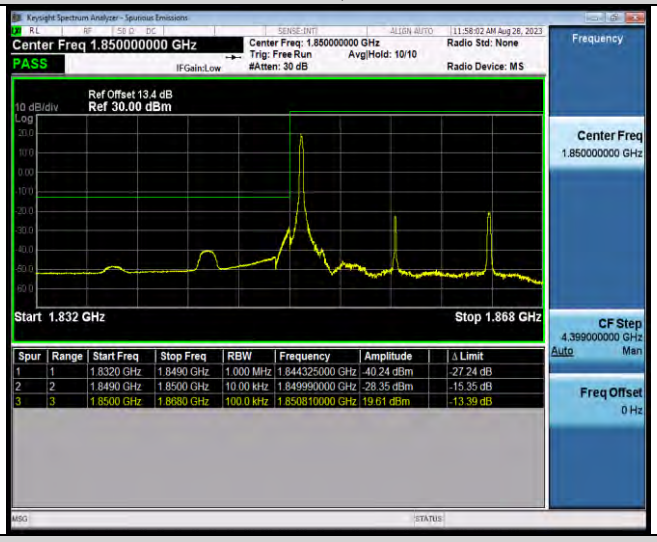


Band25-15MHz-QPSK-26115-75RB#0

Band25-15MHz-QPSK-26615-1RB#74

Band25-15MHz-QPSK-26615-75RB#0

Band25-15MHz-16QAM-26115-1RB#0

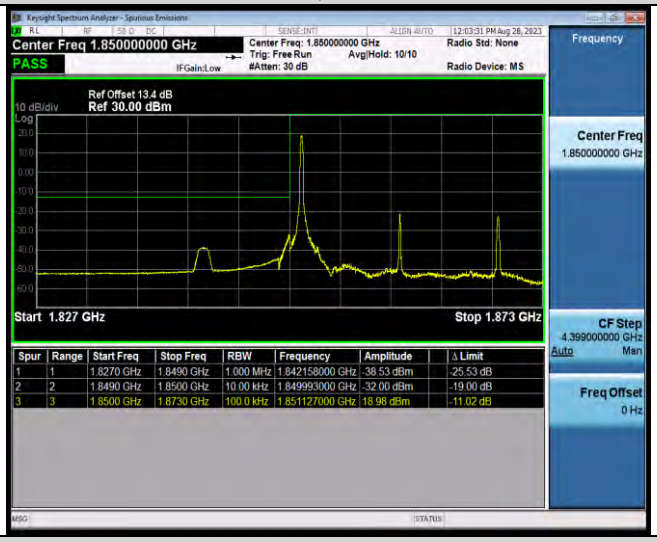


Band25-15MHz-16QAM-26115-27RB#0

Band25-15MHz-16QAM-26615-1RB#74

Band25-15MHz-16QAM-26615-27RB#48

Band25-20MHz-QPSK-26140-1RB#0

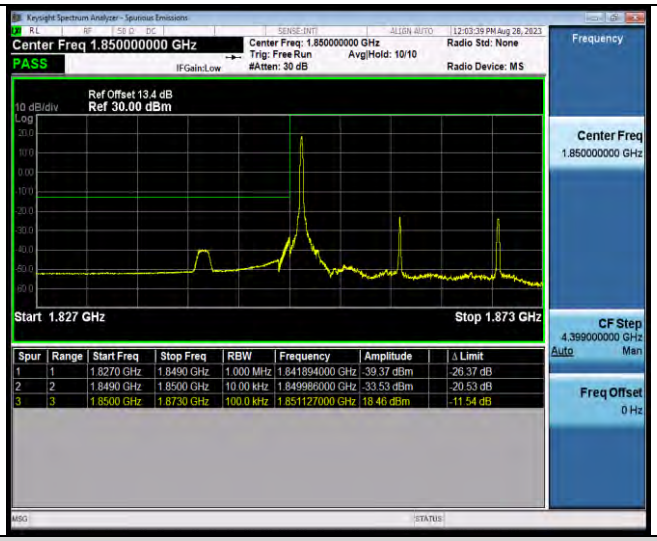


Band25-20MHz-QPSK-26140-100RB#0

Band25-20MHz-QPSK-26590-1RB#99

Band25-20MHz-QPSK-26590-100RB#0

Band25-20MHz-16QAM-26140-1RB#0



Band25-20MHz-16QAM-26140-27RB#0

Band25-20MHz-16QAM-26590-1RB#99

Band25-20MHz-16QAM-26590-27RB#73


Keysight Spectrum Analyzer - Spurious Emissions
Center Freq 1.915000000 GHz
PASS
Center Freq: 1.915000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Radio Std: None
Radio Device: MS
Ref Offset 13.45 dB
10 dB/div
Ref 30.00 dBm
Start 1.892 GHz
Stop 1.938 GHz
Frequency
Center Freq
1.915000000 GHz
CF Step
4.399000000 GHz
Auto
Man
Freq Offset
0 Hz
Spur | Range | Start Freq | Stop Freq | RBW | Frequency | Amplitude | Δ Limit
1 | 1 | 1.8920 GHz | 1.9150 GHz | 300.0 kHz | 1.909687000 GHz | 8.649 dBm | -21.35 dB
2 | 2 | 1.9150 GHz | 1.9160 GHz | 300.0 kHz | 1.915029000 GHz | -29.64 dBm | -16.64 dB
3 | 3 | 1.9160 GHz | 1.9380 GHz | 1.000 MHz | 1.916022000 GHz | -27.89 dBm | -14.89 dB

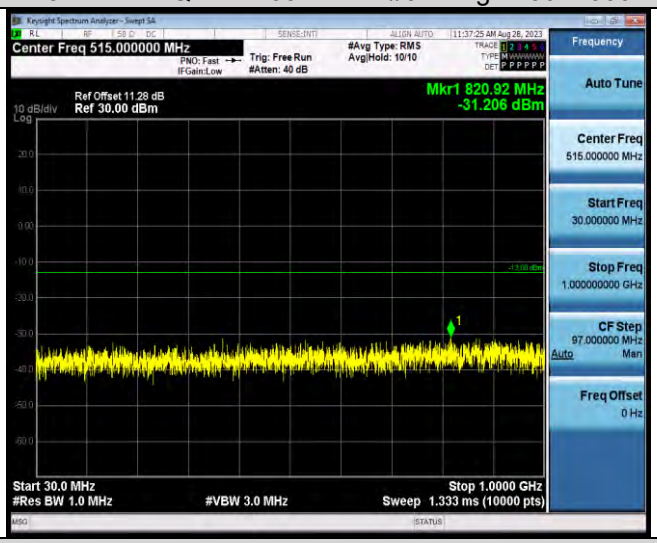
CONDUCTED SPURIOUS EMISSION

Test Result

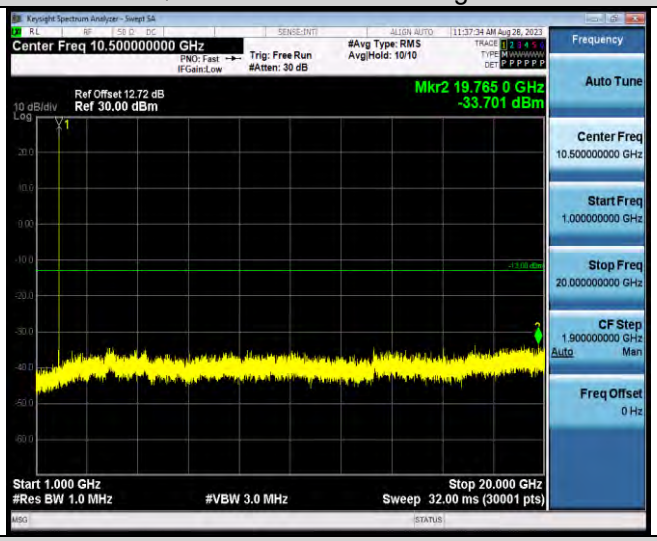
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band25	1.4MHz	QPSK	26047	1RB#0	Range1:30~1000MHz	-31.21	PASS
Band25	1.4MHz	QPSK	26047	1RB#0	Range2:1000~20000MHz	-33.7	PASS
Band25	1.4MHz	QPSK	26365	1RB#0	Range1:30~1000MHz	-30.57	PASS
Band25	1.4MHz	QPSK	26365	1RB#0	Range2:1000~20000MHz	-33.55	PASS
Band25	1.4MHz	QPSK	26683	1RB#0	Range1:30~1000MHz	-30.15	PASS
Band25	1.4MHz	QPSK	26683	1RB#0	Range2:1000~20000MHz	-32.95	PASS
Band25	3MHz	QPSK	26055	1RB#0	Range1:30~1000MHz	-30.71	PASS
Band25	3MHz	QPSK	26055	1RB#0	Range2:1000~20000MHz	-33.3	PASS
Band25	3MHz	QPSK	26365	1RB#0	Range1:30~1000MHz	-30.98	PASS
Band25	3MHz	QPSK	26365	1RB#0	Range2:1000~20000MHz	-32.95	PASS
Band25	3MHz	QPSK	26675	1RB#0	Range1:30~1000MHz	-30.94	PASS
Band25	3MHz	QPSK	26675	1RB#0	Range2:1000~20000MHz	-33.2	PASS
Band25	5MHz	QPSK	26065	1RB#0	Range1:30~1000MHz	-30.63	PASS
Band25	5MHz	QPSK	26065	1RB#0	Range2:1000~20000MHz	-33.2	PASS
Band25	5MHz	QPSK	26365	1RB#0	Range1:30~1000MHz	-30.76	PASS
Band25	5MHz	QPSK	26365	1RB#0	Range2:1000~20000MHz	-32.9	PASS
Band25	5MHz	QPSK	26665	1RB#0	Range1:30~1000MHz	-30.69	PASS
Band25	5MHz	QPSK	26665	1RB#0	Range2:1000~20000MHz	-33.06	PASS
Band25	10MHz	QPSK	26090	1RB#0	Range1:30~1000MHz	-29.16	PASS
Band25	10MHz	QPSK	26090	1RB#0	Range2:1000~20000MHz	-33.59	PASS
Band25	10MHz	QPSK	26365	1RB#0	Range1:30~1000MHz	-30.16	PASS
Band25	10MHz	QPSK	26365	1RB#0	Range2:1000~20000MHz	-33.38	PASS
Band25	10MHz	QPSK	26640	1RB#0	Range1:30~1000MHz	-30.57	PASS
Band25	10MHz	QPSK	26640	1RB#0	Range2:1000~20000MHz	-33.21	PASS
Band25	15MHz	QPSK	26115	1RB#0	Range1:30~1000MHz	-30.9	PASS
Band25	15MHz	QPSK	26115	1RB#0	Range2:1000~20000MHz	-33.37	PASS
Band25	15MHz	QPSK	26365	1RB#0	Range1:30~1000MHz	-30.31	PASS
Band25	15MHz	QPSK	26365	1RB#0	Range2:1000~20000MHz	-32.31	PASS
Band25	15MHz	QPSK	26615	1RB#0	Range1:30~1000MHz	-31.03	PASS
Band25	15MHz	QPSK	26615	1RB#0	Range2:1000~20000MHz	-33.95	PASS
Band25	20MHz	QPSK	26140	1RB#0	Range1:30~1000MHz	-30.3	PASS
Band25	20MHz	QPSK	26140	1RB#0	Range2:1000~20000MHz	-33.35	PASS
Band25	20MHz	QPSK	26365	1RB#0	Range1:30~1000MHz	-30.72	PASS
Band25	20MHz	QPSK	26365	1RB#0	Range2:1000~20000MHz	-31.97	PASS
Band25	20MHz	QPSK	26590	1RB#0	Range1:30~1000MHz	-30.93	PASS
Band25	20MHz	QPSK	26590	1RB#0	Range2:1000~20000MHz	-33.44	PASS

Test Graphs

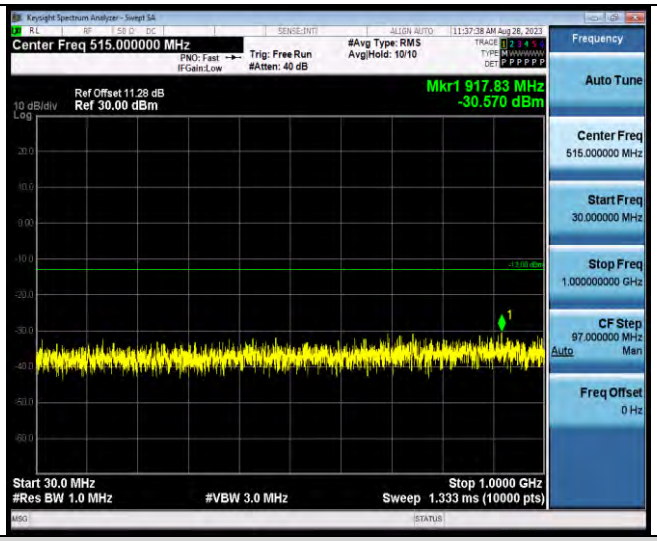
Band25-1.4MHz-QPSK-26047-1RB#0-Range1:30~1000MHz



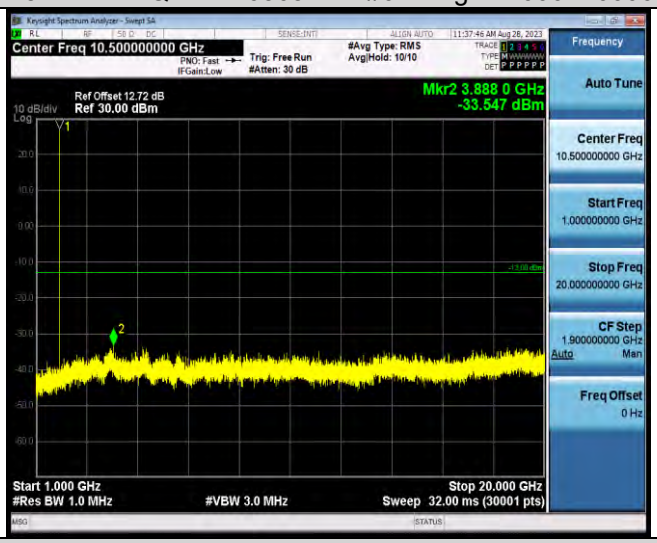
Band25-1.4MHz-QPSK-26047-1RB#0-Range2:1000~20000MHz



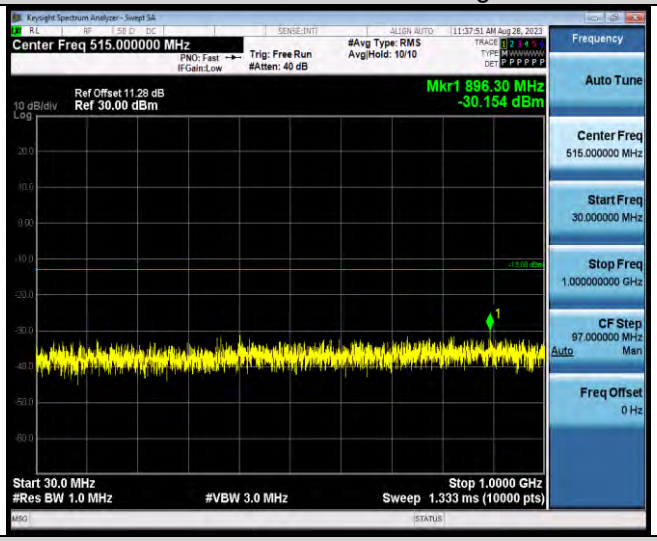
Band25-1.4MHz-QPSK-26365-1RB#0-Range1:30~1000MHz



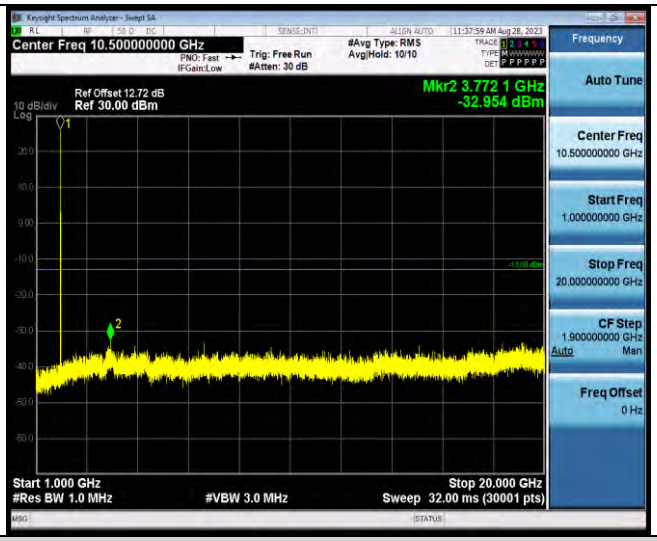
Band25-1.4MHz-QPSK-26365-1RB#0-Range2:1000~20000MHz



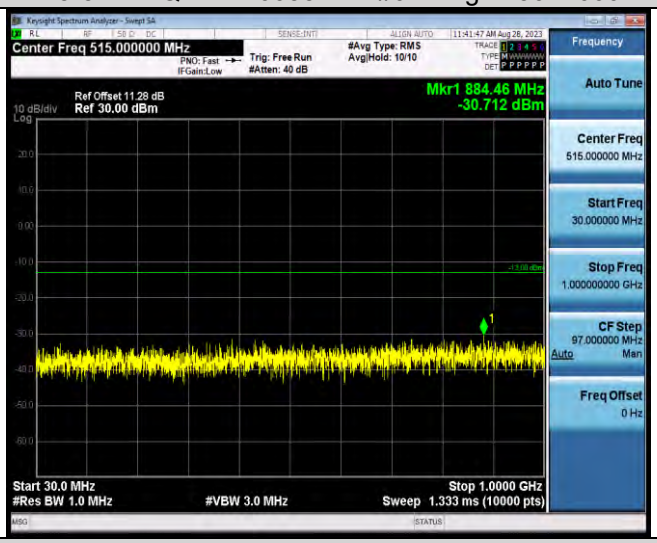
Band25-1.4MHz-QPSK-26683-1RB#0-Range1:30~1000MHz



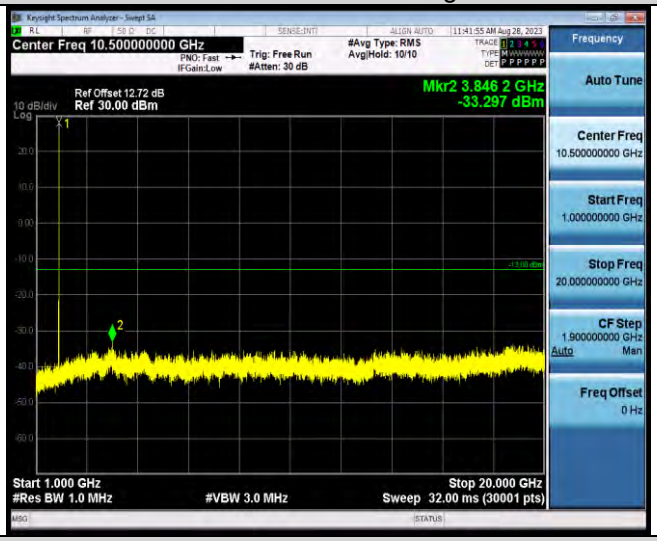
Band25-1.4MHz-QPSK-26683-1RB#0-Range2:1000~20000MHz



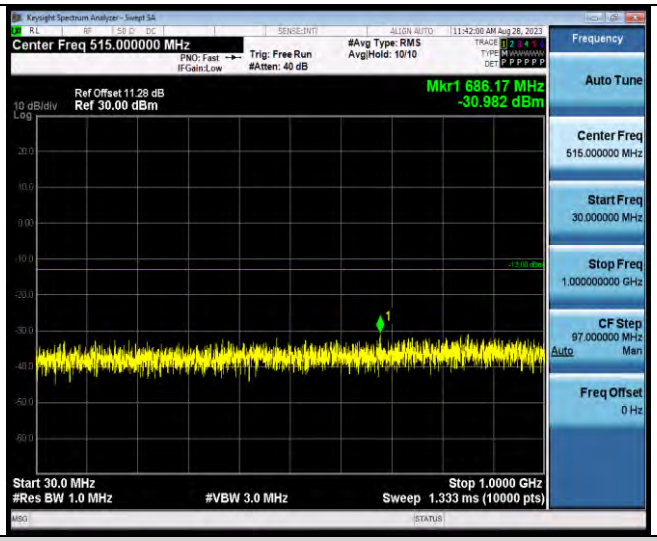
Band25-3MHz-QPSK-26055-1RB#0-Range1:30~1000MHz



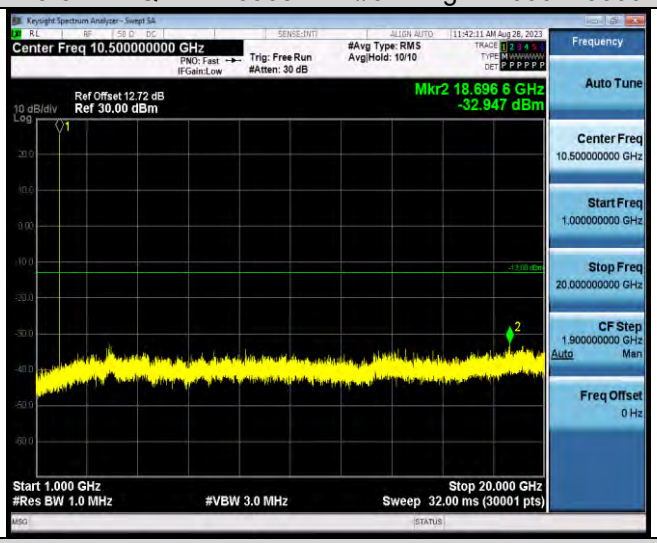
Band25-3MHz-QPSK-26055-1RB#0-Range2:1000~20000MHz



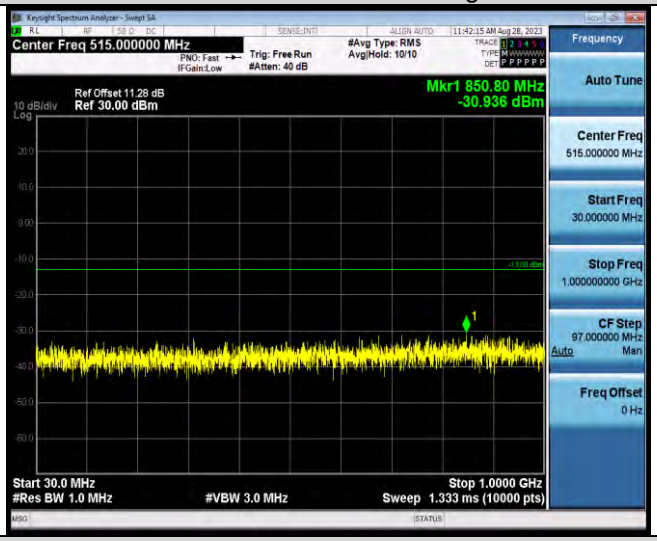
Band25-3MHz-QPSK-26365-1RB#0-Range1:30~1000MHz



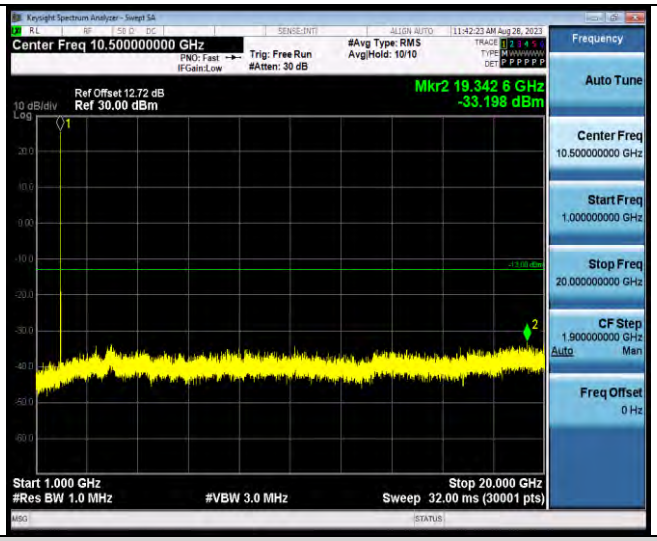
Band25-3MHz-QPSK-26365-1RB#0-Range2:1000~20000MHz



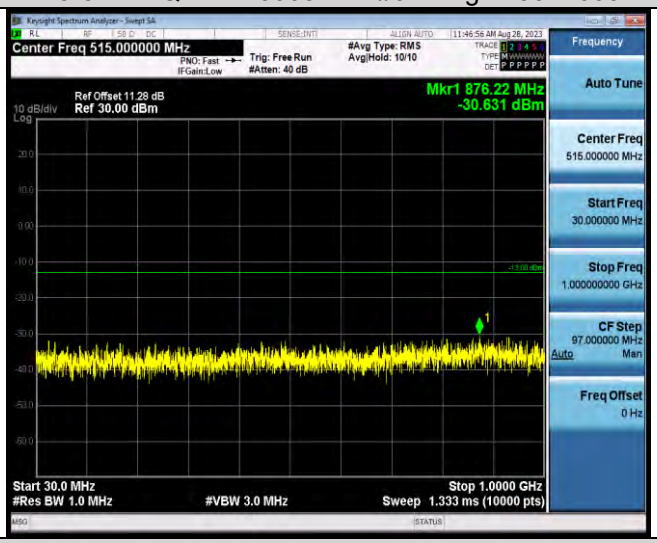
Band25-3MHz-QPSK-26675-1RB#0-Range1:30~1000MHz



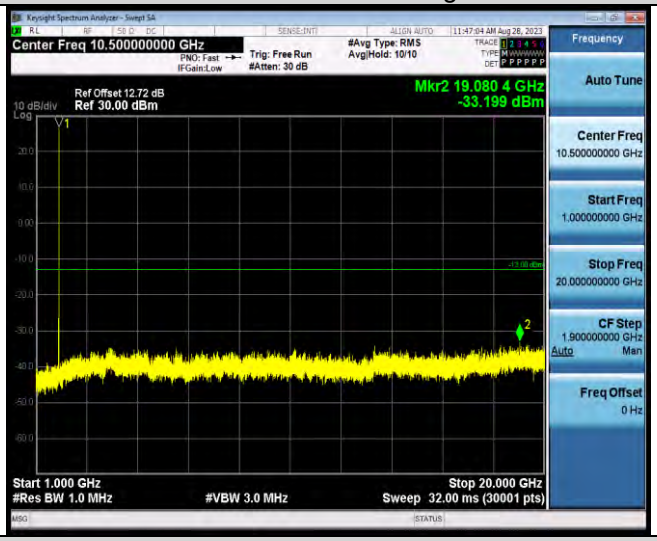
Band25-3MHz-QPSK-26675-1RB#0-Range2:1000~20000MHz



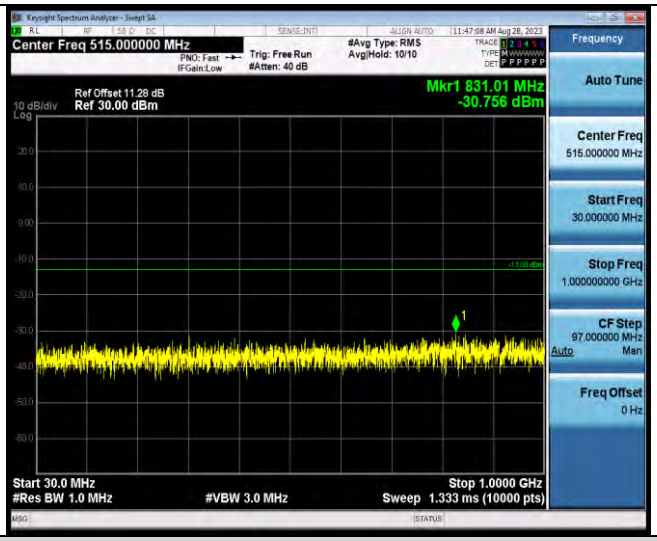
Band25-5MHz-QPSK-26065-1RB#0-Range1:30~1000MHz



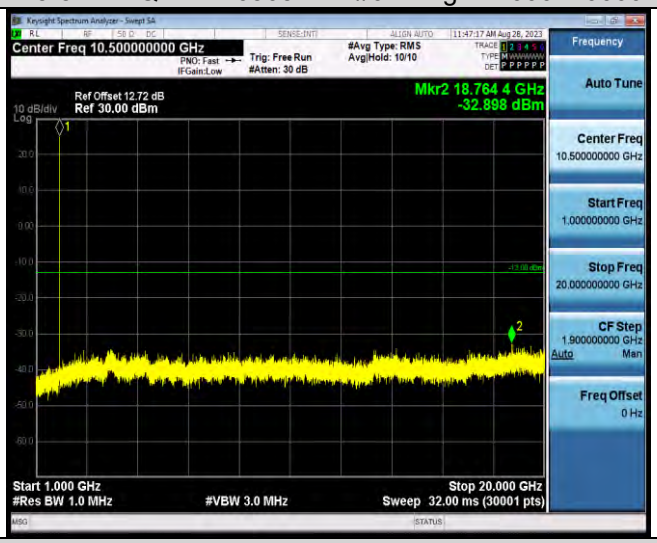
Band25-5MHz-QPSK-26065-1RB#0-Range2:1000~20000MHz



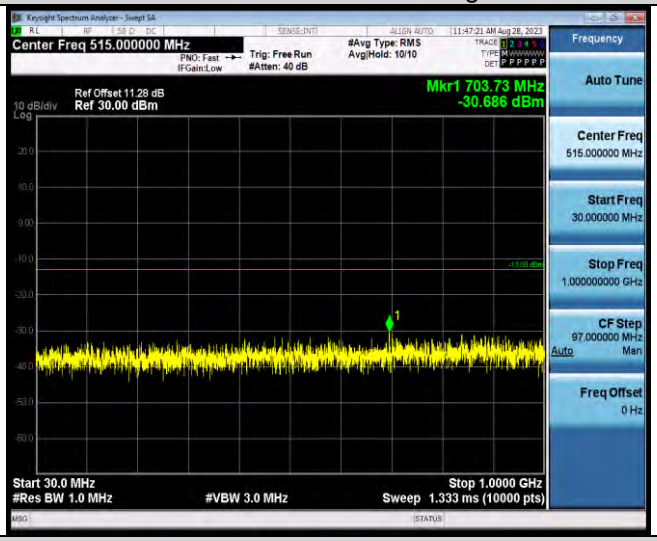
Band25-5MHz-QPSK-26365-1RB#0-Range1:30~1000MHz



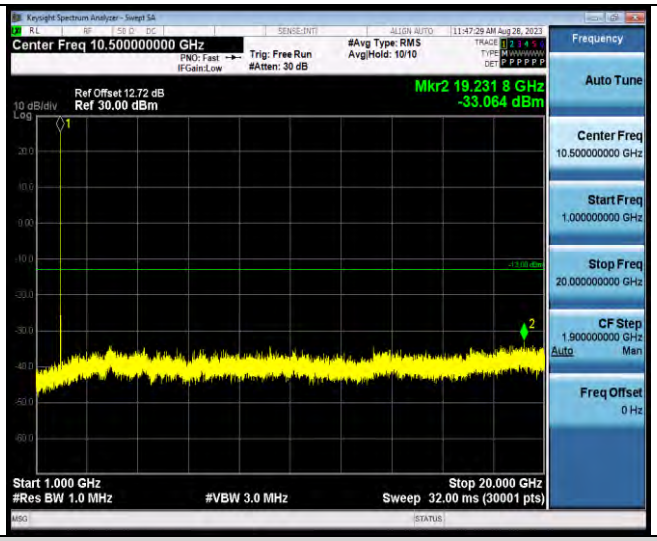
Band25-5MHz-QPSK-26365-1RB#0-Range2:1000~20000MHz



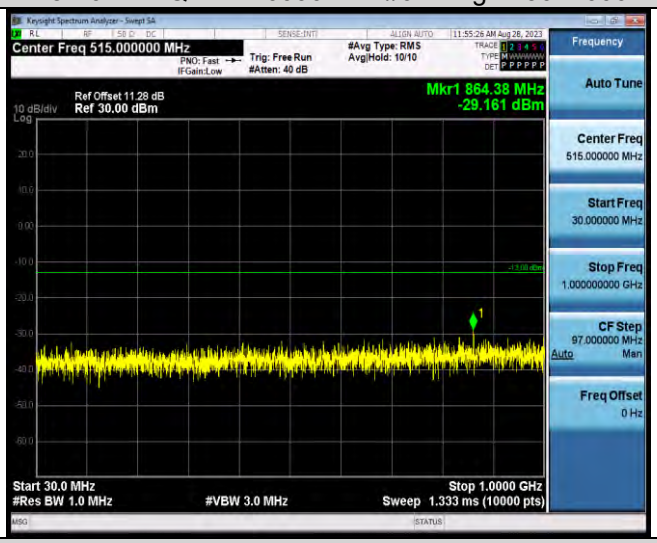
Band25-5MHz-QPSK-26665-1RB#0-Range1:30~1000MHz



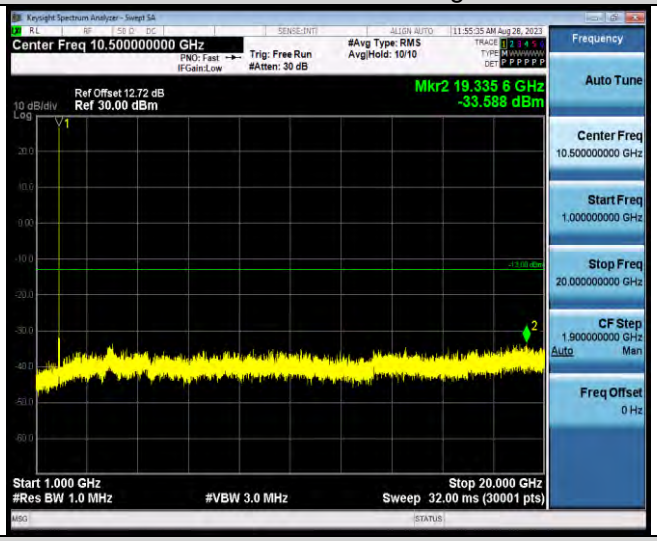
Band25-5MHz-QPSK-26665-1RB#0-Range2:1000~20000MHz



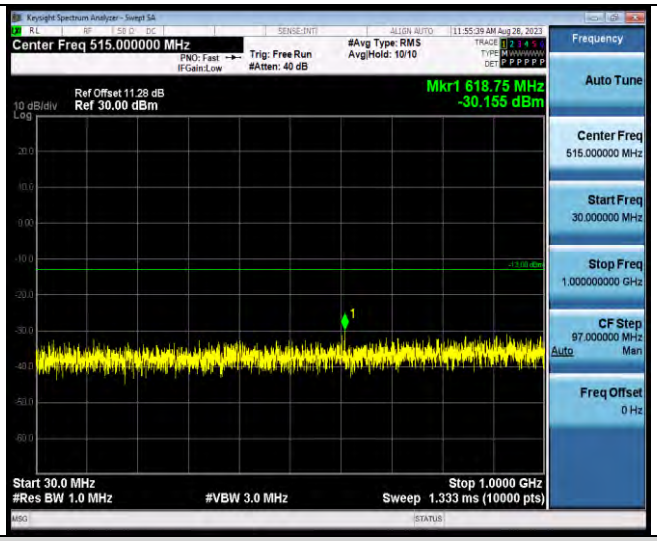
Band25-10MHz-QPSK-26090-1RB#0-Range1:30~1000MHz



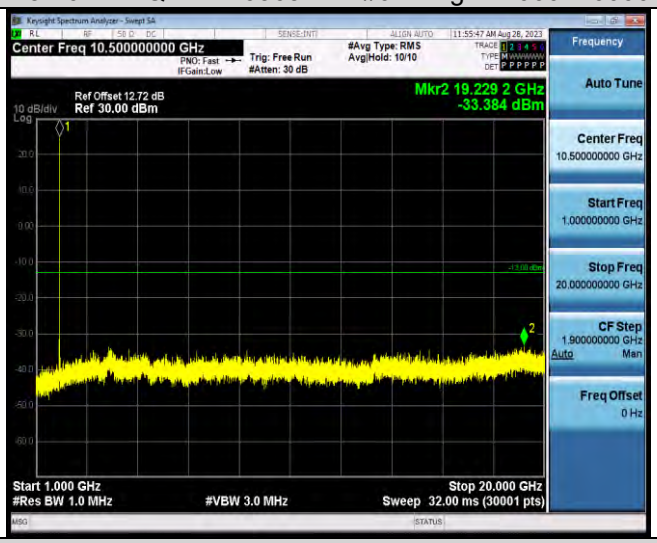
Band25-10MHz-QPSK-26090-1RB#0-Range2:1000~20000MHz



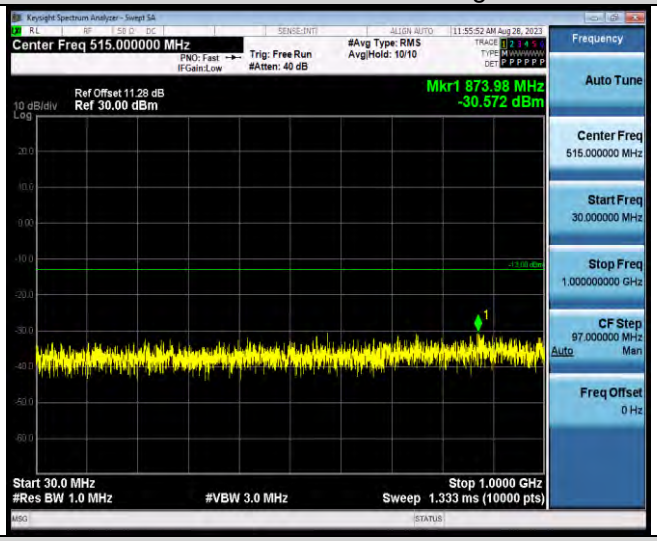
Band25-10MHz-QPSK-26365-1RB#0-Range1:30~1000MHz



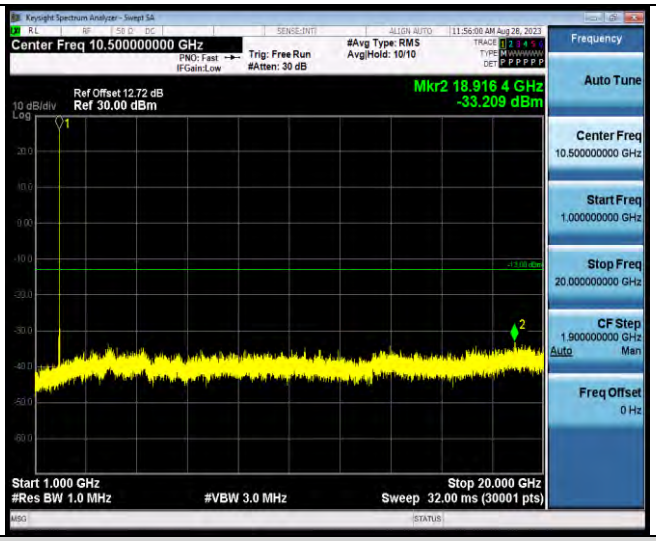
Band25-10MHz-QPSK-26365-1RB#0-Range2:1000~20000MHz



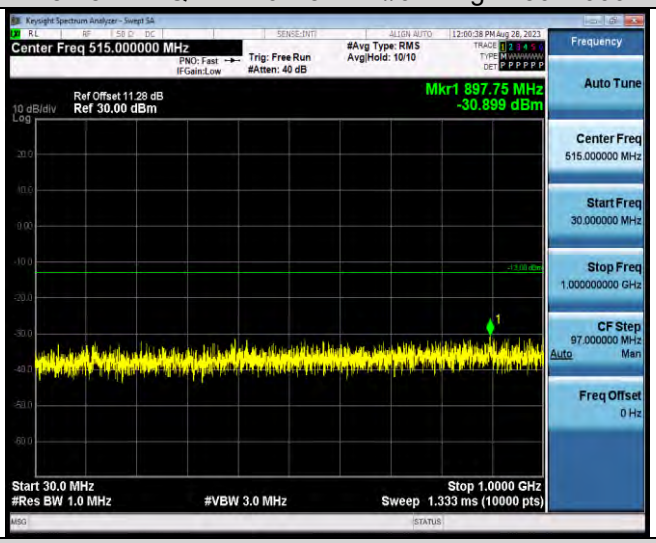
Band25-10MHz-QPSK-26640-1RB#0-Range1:30~1000MHz



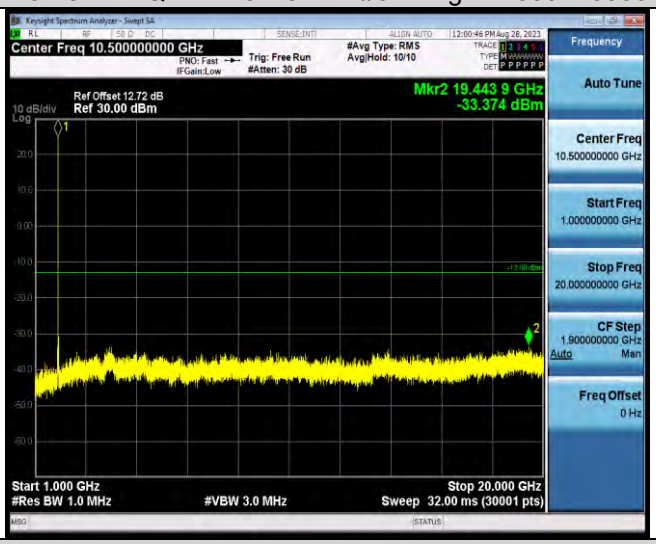
Band25-10MHz-QPSK-26640-1RB#0-Range2:1000~20000MHz



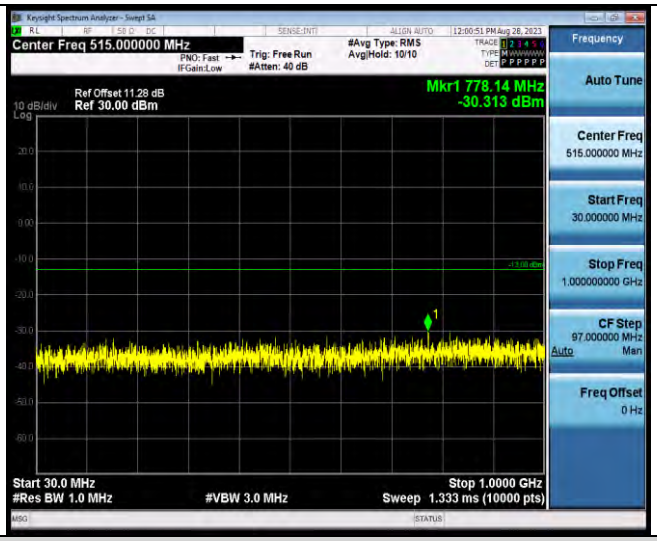
Band25-15MHz-QPSK-26115-1RB#0-Range1:30~1000MHz



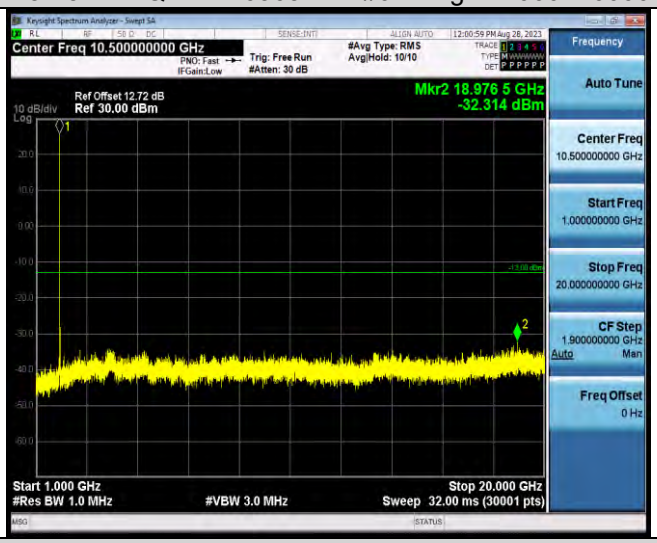
Band25-15MHz-QPSK-26115-1RB#0-Range2:1000~20000MHz



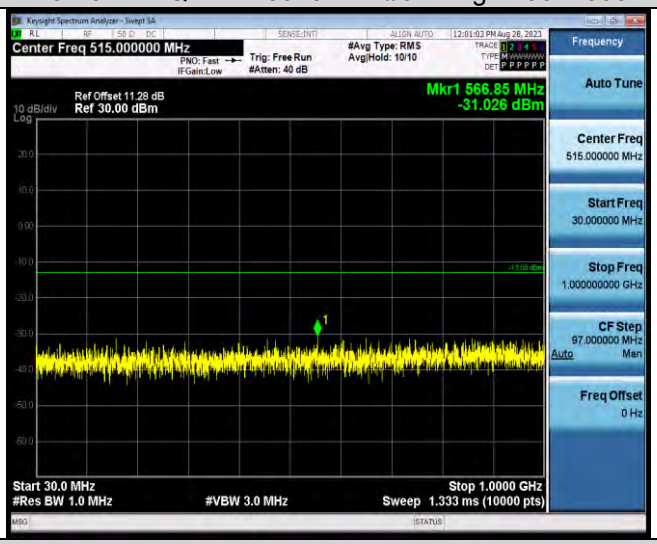
Band25-15MHz-QPSK-26365-1RB#0-Range1:30~1000MHz



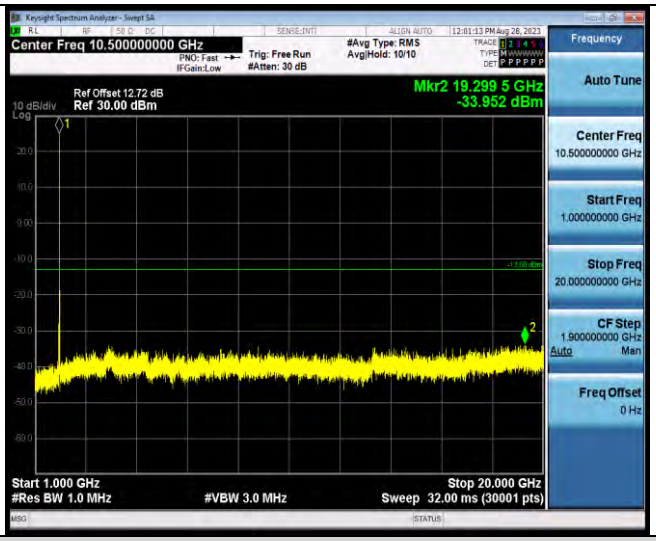
Band25-15MHz-QPSK-26365-1RB#0-Range2:1000~20000MHz



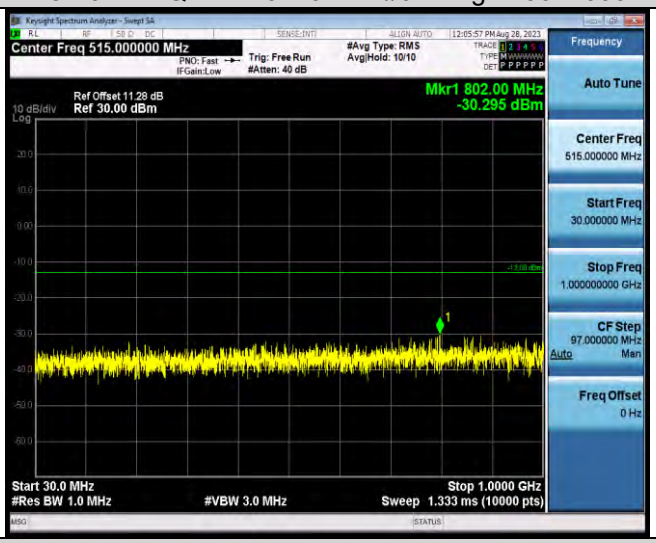
Band25-15MHz-QPSK-26615-1RB#0-Range1:30~1000MHz



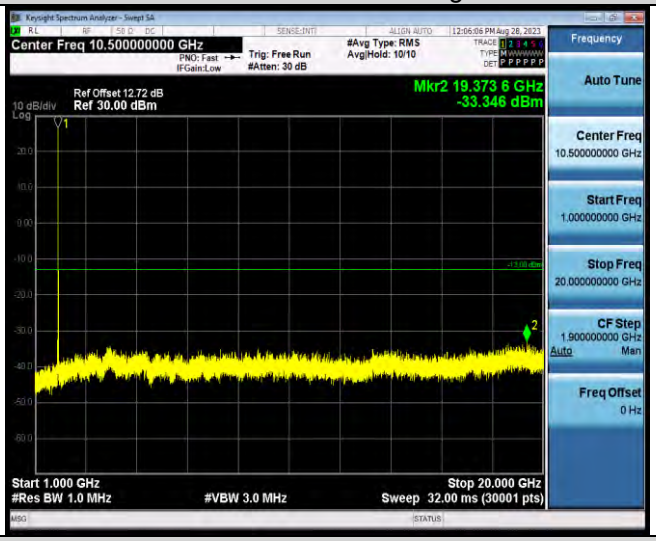
Band25-15MHz-QPSK-26615-1RB#0-Range2:1000~20000MHz



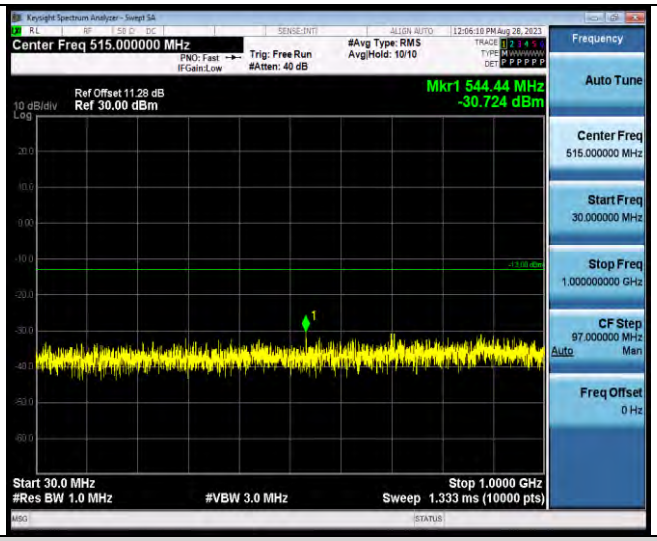
Band25-20MHz-QPSK-26140-1RB#0-Range1:30~1000MHz



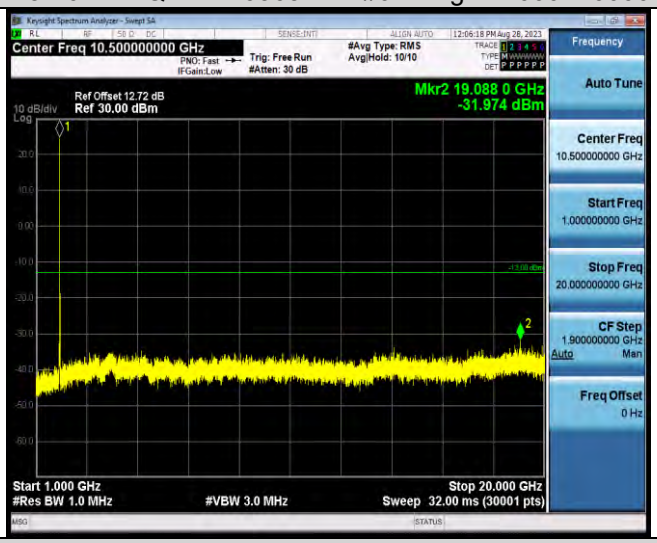
Band25-20MHz-QPSK-26140-1RB#0-Range2:1000~20000MHz



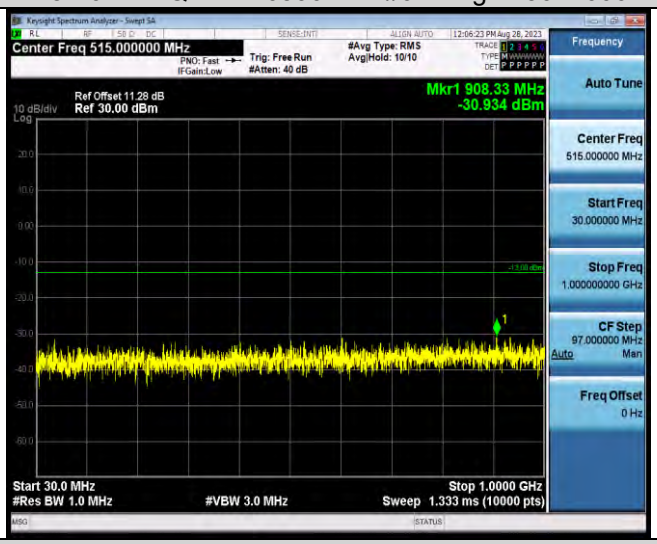
Band25-20MHz-QPSK-26365-1RB#0-Range1:30~1000MHz



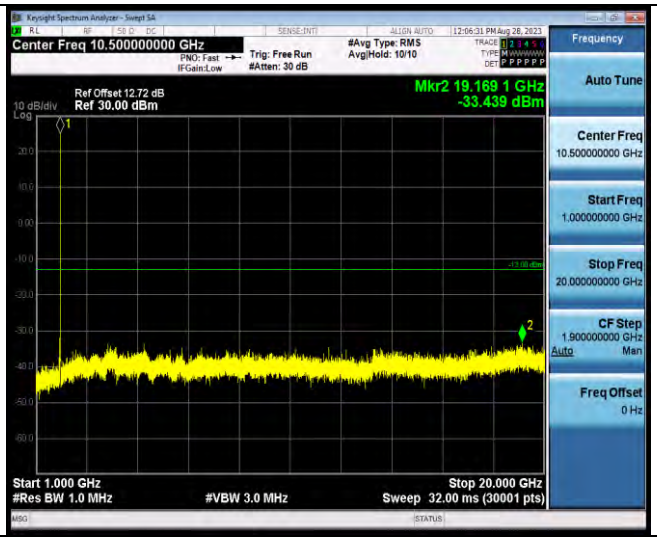
Band25-20MHz-QPSK-26365-1RB#0-Range2:1000~20000MHz



Band25-20MHz-QPSK-26590-1RB#0-Range1:30~1000MHz



Band25-20MHz-QPSK-26590-1RB#0-Range2:1000~20000MHz


Keysight Spectrum Analyzer - Swept SA
Center Freq 10.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
12:06:31 PM Aug 28, 2023
Ref Offset 12.72 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 19.169 1 GHz
-33.439 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 20.000 GHz
Sweep 32.00 ms (30001 pts)
Frequency
Auto Tune
Center Freq
10.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
20.000000000 GHz
CF Step
1.900000000 GHz
Auto
Man
Freq Offset
0 Hz

FREQUENCY STABILITY

Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band25	20MHz	QPSK	26140	100RB#0	VL	NT	-10.30	-0.005538	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	VN	NT	-6.04	-0.003247	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	VH	NT	-5.48	-0.002946	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	VL	NT	-6.45	-0.003426	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	VN	NT	-5.68	-0.003017	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	VH	NT	-5.54	-0.002943	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	VL	NT	-9.47	-0.004971	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	VN	NT	5.68	0.002982	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	VH	NT	6.59	0.003459	±2.5	PASS

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band25	20MHz	QPSK	26140	100RB#0	NV	-30	-7.91	-0.004253	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	-20	-6.94	-0.003731	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	-10	-7.65	-0.004113	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	0	-5.24	-0.002817	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	10	-6.15	-0.003306	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	20	-5.76	-0.003097	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	30	-6.78	-0.003645	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	40	-8.45	-0.004543	±2.5	PASS
Band25	20MHz	QPSK	26140	100RB#0	NV	50	3.89	0.002091	±2.5	PASS

Band25	20MHz	QPSK	26365	100RB#0	NV	-30	-8.13	-0.004319	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	-20	-7.40	-0.003931	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	-10	-6.54	-0.003474	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	0	7.74	0.004112	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	10	-9.06	-0.004813	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	20	6.58	0.003495	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	30	4.52	0.002401	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	40	-5.54	-0.002943	±2.5	PASS
Band25	20MHz	QPSK	26365	100RB#0	NV	50	3.56	0.001891	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	-30	-7.64	-0.004010	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	-20	-9.54	-0.005008	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	-10	4.38	0.002299	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	0	-3.49	-0.001832	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	10	4.06	0.002131	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	20	4.32	0.002268	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	30	-6.71	-0.003522	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	40	3.56	0.001869	±2.5	PASS
Band25	20MHz	QPSK	26590	100RB#0	NV	50	-5.06	-0.002656	±2.5	PASS

MAX Deviation calculation

Frequency Stability	Frequency (MHz)	Limit Line(MHz)	Result
fL-|MAX(△f)|	1851.052989	≥1850	PASS
fH+|MAX(△f)|	1,913.968490	≤1915	

Note：1. |MAX(△f)| = Max Deviation
2. fL = Occ low channel fl(-13dBm/MHz)
3. fH = Occ High channel fH(-13dBm/MHz)
4. |MAX(△f)| =10.3 Hz.

--END--