FCC TEST REPORT

(PART 27)

Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

Manufacturer or Supplier:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Product:	Mobile Phone
Brand Name:	POCO
Model Name:	2310FPCA4G
FCC ID:	2AFZZCA4G
Date of tests:	Aug. 07, 2023 ~ Sep. 23, 2023

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

☒ **FCC Part 27** ☒ **ANSI/TIA/EIA-603-D**
☒ **FCC Part 2** ☒ **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. 23, 2023	Luke Lu Date: Sep. 23, 2023

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P23080017RF06	Original release	Sep. 23, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 27 & PART 2			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**LAB**
§2.1046	Conducted Output Power	Compliance	A
§27.50(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (WCMDA Band 4)(Band 7)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(h) §27.53(m)(4)	Conducted Band Edge Measurements (WCMDA Band 4) (Band 7)	Compliance	A
§2.1051 §27.53(h) §27.53(m)(4)	Conducted Spurious Emissions (WCMDA Band 4)(Band 7)	Compliance	A
§2.1053 §27.53(h) §27.53(m)(4)	Radiated Spurious Emissions (WCMDA Band 4)(Band 7)	Compliance	A
NA	Peak to average ratio	Compliance	A

Note: This report refers to the data of W7L-P23080006RF06 (model: 23100RN82L), the difference of 23100RN82L and 2310FPCA4G is model and FCC-ID, 2310FPCA4G remove some components and LTE B13&26, add NFC function. This report verifies power and RSE worse case (LTE B41). The verification result of RSE worse case is in another report W7L-P23080017RF07. So this report only updates power.

Test Lab Information Reference:
Lab A

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

Lab Address:

No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Accredited Test Lab Cert 3939.01
The FCC Site Registration No. is 525120; The Designation No. is CN1171.

1.1 MEASREMENT 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

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. 12,22	Aug. 11,23
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	Mobile Phone	
BRAND NAME	POCO	
MODEL NAME	2310FPCA4G	
MODULATION TECHNOLOGY	**WCDMA IV**	BPSK, QPSK
	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	**WCDMA IV**	1712.4MHz ~ 1752.6MHz
	LTE Band 7 Channel Bandwidth: 5MHz	2502.5MHz ~ 2567.5MHz
	LTE Band 7 Channel Bandwidth: 10MHz	2505MHz ~ 2565MHz
	LTE Band 7 Channel Bandwidth: 15MHz	2507.5MHz ~ 2562.5MHz
	LTE Band 7 Channel Bandwidth: 20MHz	2510MHz ~ 2560MHz
MAX. EIRP POWER	**WCDMA IV**	123.31mW
	LTE Band 7 Channel Bandwidth: 5MHz	458.14mW
	LTE Band 7 Channel Bandwidth: 10MHz	456.04mW
	LTE Band 7 Channel Bandwidth: 15MHz	456.04mW
	LTE Band 7 Channel Bandwidth: 20MHz	460.26mW
EMISSION DESIGNATOR	**WCDMA IV**	4M18F9W
	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK:9M02G7D
		16QAM: 8M99W7D
		64QAM: 9M01W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 18M0W7D

		64QAM: 18M0W7D
ANTENNA TYPE	ANT 0(UP): PIFA Antenna with -4.3dBi gain for WCDMA IV PIFA Antenna with -1.8dBi gain for LTE7 ANT 1(DOWN): PIFA Antenna with -3.5dBi gain for WCDMA IV PIFA Antenna with 2dBi gain for LTE7	
HW VERSION	LLDM572	
SW VERSION	MIUI 14	
IMEI	861440060049166 861440060064348 861440060081649	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	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	0-40 ℃	
EXTREME VOLTAGE	3.6V - 4.25V	

NOTE:

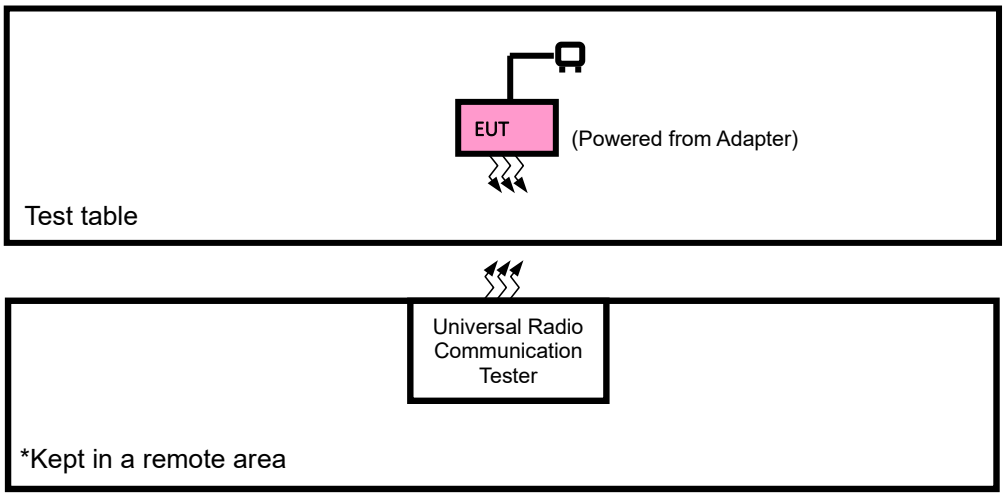
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Physically, the EUT provides two completed transmitter and two receiver.

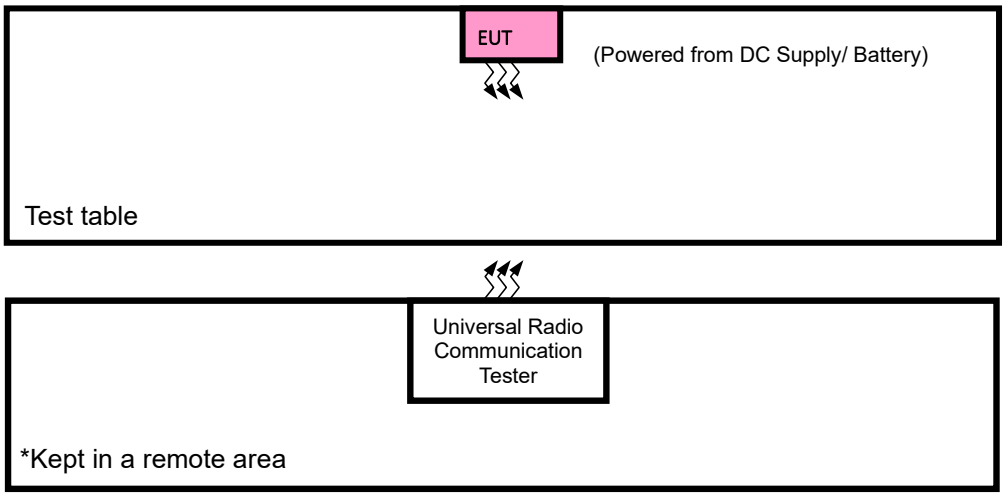
MODULATION MODE	TX FUNCTION
WCDMA	2TX/2RX
LTE	2TX/2RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in the 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	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 WCDMA or LTE link
B	EUT + DC source with GSM or WCDMA or LTE link

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
B	FREQUENCY STABILITY	1312 to 1513	1312, 1413, 1513	WCDMA
A	OCCUPIED BANDWIDTH	1312 to 1513	1312, 1413, 1513	WCDMA
A	BAND EDGE	1312 to 1513	1312, 1513	WCDMA
A	PEAK TO AVERAGE RATIO	1312 to 1513	1312, 1413, 1513	WCDMA
A	CONDCUDETED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA
A	RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA

LTE BAND 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	20850 to 21350	20850, 21100, 21350	20MHz	QPSK	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20800 to 21400	20800	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		20825 to 21375	20825	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20850 to 21350	20850	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDCUDETED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0 RB Offset
		20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	21100	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
ERP&EIRP	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	See Note	DC 3.6/3.84/4.25 By DC Source	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	James Fu
CONDCUDETED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5V By Adapter	James Fu

Note: LV = Low voltage (3.6V); NV = Normal voltage (3.84V); HV= High voltage (4.25V).
NT = Normal temperature (25℃)

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 27

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

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “User stations are limited to 2 watts” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1-watt EIRP

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).

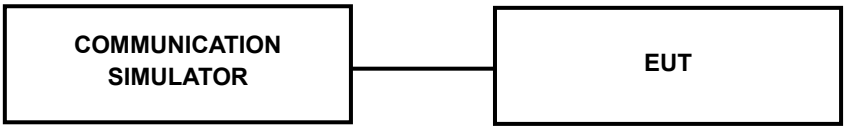
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

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.

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

ANT0(UP):

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.27	**24.40**	24.31
HSDPA Subtest-1	23.18	23.37	23.22
HSDPA Subtest-2	23.22	23.40	23.26
HSDPA Subtest-3	22.20	22.37	22.20
HSDPA Subtest-4	22.25	22.43	22.22
DC-HSDPA Subtest-1	23.24	23.40	23.30
DC-HSDPA Subtest-2	23.18	23.41	23.28
DC-HSDPA Subtest-3	22.18	22.45	22.31
DC-HSDPA Subtest-4	22.22	22.46	22.25
HSUPA Subtest-1	21.67	21.94	21.73
HSUPA Subtest-2	21.20	21.39	21.27
HSUPA Subtest-3	22.23	22.35	22.25
HSUPA Subtest-4	20.75	20.94	20.71
HSUPA Subtest-5	22.24	22.36	22.25
HSPA+ Subtest-1	21.24	21.44	21.23

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775 Frequency 2502.5 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21425 Frequency 2567.5 MHz
7/ 5	QPSK	1	0	24.05	24.01	24.10
		1	12	24.25	24.41	24.46
		1	24	24.00	24.06	24.08
		12	0	23.03	23.16	23.13
		12	6	23.20	23.18	23.38
		12	13	23.25	23.20	23.29
		25	0	23.10	23.20	23.36
	16QAM	1	0	23.09	23.12	23.14
		1	12	23.37	23.38	23.41
		1	24	23.21	23.11	23.18
		12	0	22.02	22.01	22.14
		12	6	22.17	22.19	22.34
		12	13	22.09	22.15	22.23
		25	0	22.10	22.13	22.21
	64QAM	1	0	22.02	22.04	22.06
		1	12	22.34	22.39	22.35
		1	24	22.06	22.21	22.17
		12	0	20.96	20.99	20.99
		12	6	21.04	21.05	21.10
		12	13	20.95	21.06	21.14
		25	0	20.98	21.08	21.11

Band/BW	Modulation	RB Size	RB Offset	Low CH 20800	Mid CH 21100	High CH 21400
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz
7/ 10	QPSK	1	0	24.03	24.00	24.05
		1	24	24.27	24.34	24.43
		1	49	23.98	24.06	24.13
		25	0	23.09	23.18	23.22
		25	12	23.23	23.25	23.30
		25	25	23.21	23.16	23.26
		50	0	23.05	23.23	23.33
	16QAM	1	0	23.02	23.06	23.22
		1	24	23.34	23.44	23.46
		1	49	23.10	23.16	23.15
		25	0	22.09	22.04	22.13
		25	12	22.19	22.22	22.28
		25	25	22.08	22.13	22.25
		50	0	22.07	22.21	22.26
	64QAM	1	0	21.98	22.08	22.12
		1	24	22.28	22.38	22.38
		1	49	22.08	22.11	22.24
		25	0	20.96	20.95	20.94
		25	12	21.06	21.14	21.18
		25	25	20.95	21.00	21.09
		50	0	20.92	21.08	21.06

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825 Frequency 2507.5 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21375 Frequency 2562.5 MHz
7/ 15	QPSK	1	0	23.96	24.03	24.07
		1	37	24.26	24.37	24.36
		1	74	24.01	23.98	24.09
		36	0	23.06	23.20	23.13
		36	19	23.27	23.20	23.33
		36	39	23.17	23.23	23.22
		75	0	23.11	23.16	23.25
	16QAM	1	0	23.07	23.17	23.16
		1	37	23.31	23.36	23.44
		1	74	23.17	23.12	23.22
		36	0	22.10	21.99	22.11
		36	19	22.15	22.21	22.35
		36	39	22.08	22.11	22.25
		75	0	22.12	22.25	22.20
	64QAM	1	0	22.02	22.07	22.08
		1	37	22.33	22.39	22.33
		1	74	22.18	22.13	22.15
		36	0	20.97	21.04	21.00
		36	19	21.12	21.08	21.09
		36	39	20.96	21.02	21.17
		75	0	21.01	21.07	21.14

Band/BW	Modulation	RB Size	RB Offset	Low CH 20850	Mid CH 21100	High CH 21350
				Frequency 2510 MHz	Frequency 2535 MHz	Frequency 2560 MHz
7/ 20	QPSK	1	0	24.06	24.12	24.16
		1	50	24.36	24.41	24.45
		1	99	24.07	24.08	24.16
		50	0	23.11	23.21	23.24
		50	25	23.28	23.28	23.39
		50	50	23.25	23.26	23.31
		100	0	23.17	23.26	23.36
	16QAM	1	0	23.11	23.17	23.25
		1	50	23.42	23.45	23.47
		1	99	23.21	23.22	23.23
		50	0	22.14	22.09	22.15
		50	25	22.26	22.31	22.40
		50	50	22.15	22.23	22.30
		100	0	22.17	22.25	22.27
	64QAM	1	0	22.08	22.13	22.14
		1	50	22.39	22.46	22.44
		1	99	22.18	22.22	22.25
		50	0	20.97	21.05	21.06
		50	25	21.15	21.16	21.20
		50	50	21.06	21.09	21.20
		100	0	21.01	21.16	21.16

ANT1(DOWN):

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.35	**24.41**	24.35
HSDPA Subtest-1	23.33	23.38	23.33
HSDPA Subtest-2	23.24	23.40	23.33
HSDPA Subtest-3	22.28	22.38	22.25
HSDPA Subtest-4	22.31	22.40	22.31
DC-HSDPA Subtest-1	23.29	23.45	23.26
DC-HSDPA Subtest-2	23.35	23.39	23.26
DC-HSDPA Subtest-3	22.27	22.40	22.32
DC-HSDPA Subtest-4	22.30	22.43	22.25
HSUPA Subtest-1	21.80	21.94	21.83
HSUPA Subtest-2	21.33	21.45	21.27
HSUPA Subtest-3	22.30	22.44	22.29
HSUPA Subtest-4	20.81	20.92	20.79
HSUPA Subtest-5	22.28	22.47	22.29
HSPA+ Subtest-1	21.35	21.38	21.32

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775 Frequency 2502.5 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21425 Frequency 2567.5 MHz
7/ 5	QPSK	1	0	24.09	24.14	24.15
		1	12	24.37	24.43	24.51
		1	24	24.16	24.08	24.26
		12	0	23.21	23.18	23.35
		12	6	23.42	23.43	23.42
		12	13	23.40	23.30	23.42
		25	0	23.24	23.20	23.42
	16QAM	1	0	23.30	23.27	23.27
		1	12	23.59	23.39	23.62
		1	24	23.27	23.33	23.39
		12	0	22.14	22.11	22.23
		12	6	22.38	22.24	22.42
		12	13	22.35	22.30	22.35
		25	0	22.28	22.16	22.37
	64QAM	1	0	22.05	22.07	22.09
		1	12	22.43	22.36	22.50
		1	24	22.15	22.11	22.29
		12	0	21.14	21.02	21.04
		12	6	21.17	21.10	21.29
		12	13	21.23	21.16	21.28
		25	0	21.13	21.09	21.16

Band/BW	Modulation	RB Size	RB Offset	Low CH 20800	Mid CH 21100	High CH 21400
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz
7/ 10	QPSK	1	0	24.18	24.10	24.16
		1	24	24.44	24.39	24.49
		1	49	24.20	24.04	24.21
		25	0	23.24	23.12	23.31
		25	12	23.42	23.38	23.47
		25	25	23.43	23.28	23.44
		50	0	23.33	23.20	23.38
	16QAM	1	0	23.21	23.25	23.26
		1	24	23.63	23.39	23.58
		1	49	23.28	23.24	23.34
		25	0	22.15	22.11	22.22
		25	12	22.46	22.32	22.42
		25	25	22.37	22.31	22.38
		50	0	22.23	22.25	22.35
	64QAM	1	0	22.06	22.04	22.08
		1	24	22.42	22.34	22.50
		1	49	22.20	22.11	22.29
		25	0	21.14	20.94	21.06
		25	12	21.21	21.11	21.30
		25	25	21.25	21.14	21.33
		50	0	21.20	21.08	21.17

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825 Frequency 2507.5 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21375 Frequency 2562.5 MHz
7/ 15	QPSK	1	0	24.11	24.08	24.18
		1	37	24.45	24.46	24.49
		1	74	24.16	24.14	24.18
		36	0	23.19	23.11	23.37
		36	19	23.45	23.37	23.35
		36	39	23.43	23.35	23.39
		75	0	23.32	23.21	23.35
	16QAM	1	0	23.30	23.18	23.31
		1	37	23.56	23.39	23.55
		1	74	23.35	23.25	23.33
		36	0	22.21	22.18	22.19
		36	19	22.39	22.34	22.49
		36	39	22.36	22.34	22.36
		75	0	22.28	22.14	22.38
	64QAM	1	0	22.06	22.08	22.09
		1	37	22.37	22.32	22.51
		1	74	22.24	22.18	22.26
		36	0	21.11	21.00	21.02
		36	19	21.27	21.16	21.20
		36	39	21.24	21.19	21.32
		75	0	21.12	21.13	21.19

Band/BW	Modulation	RB Size	RB Offset	Low CH 20850 Frequency 2510 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21350 Frequency 2560 MHz
7/ 20	QPSK	1	0	24.19	24.14	24.22
		1	50	24.46	24.47	24.53
		1	99	24.23	24.15	24.26
		50	0	23.26	23.19	23.37
		50	25	23.52	23.47	23.47
		50	50	23.45	23.39	23.48
		100	0	23.35	23.27	23.43
	16QAM	1	0	23.32	23.28	23.34
		1	50	23.63	23.50	23.65
		1	99	23.38	23.33	23.40
		50	0	22.23	22.20	22.26
		50	25	22.48	22.35	22.49
		50	50	22.45	22.39	22.40
		100	0	22.33	22.26	22.44
	64QAM	1	0	22.17	22.13	22.15
		1	50	22.45	22.39	22.57
		1	99	22.25	22.20	22.32
		50	0	21.15	21.04	21.10
		50	25	21.27	21.20	21.30
		50	50	21.31	21.26	21.34
		100	0	21.22	21.19	21.20

EIRP
ANT0(UP):

WCDMA IV

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	24.27	-4.3	19.97	99.31	1
1413	1732.6	24.4	-4.3	20.1	102.33	1
1513	1752.6	24.31	-4.3	20.01	100.23	1

LTE BAND 7
CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	24.25	-1.8	22.45	175.79	2
21100	2535.0	24.41	-1.8	22.61	182.39	2
21425	2567.5	24.46	-1.8	22.66	184.5	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	23.37	-1.8	21.57	143.55	2
21100	2535.0	23.38	-1.8	21.58	143.88	2
21425	2567.5	23.41	-1.8	21.61	144.88	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	22.34	-1.8	20.54	113.24	2
21100	2535	22.39	-1.8	20.59	114.55	2
21425	2567.5	22.35	-1.8	20.55	113.5	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	24.27	-1.8	22.47	176.6	2
21100	2535.0	24.34	-1.8	22.54	179.47	2
21400	2565.0	24.43	-1.8	22.63	183.23	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	23.34	-1.8	21.54	142.56	2
21100	2535.0	23.44	-1.8	21.64	145.88	2
21400	2565.0	23.46	-1.8	21.66	146.55	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	22.28	-1.8	20.48	111.69	2
21100	2535	22.38	-1.8	20.58	114.29	2
21400	2565	22.38	-1.8	20.58	114.29	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	24.26	-1.8	22.46	176.2	2
21100	2535.0	24.37	-1.8	22.57	180.72	2
21375	2562.5	24.36	-1.8	22.56	180.3	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	23.31	-1.8	21.51	141.58	2
21100	2535.0	23.36	-1.8	21.56	143.22	2
21375	2562.5	23.44	-1.8	21.64	145.88	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	22.33	-1.8	20.53	112.98	2
21100	2535	22.39	-1.8	20.59	114.55	2
21375	2562.5	22.33	-1.8	20.53	112.98	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	24.36	-1.8	22.56	180.3	2
21100	2535.0	24.41	-1.8	22.61	182.39	2
21350	2560.0	24.45	-1.8	22.65	184.08	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	23.42	-1.8	21.62	145.21	2
21100	2535.0	23.45	-1.8	21.65	146.22	2
21350	2560.0	23.47	-1.8	21.67	146.89	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.39	-1.8	20.59	114.55	2
21100	2535	22.46	-1.8	20.66	116.41	2
21350	2560	22.44	-1.8	20.64	115.88	2

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

ANT1(DOWN):

WCDMA IV

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	24.41	-3.5	20.91	123.31	1
1413	1732.6	24.35	-3.5	20.85	121.62	1
1513	1752.6	24.35	-3.5	20.85	121.62	1

LTE BAND 7
CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	24.47	2	26.47	443.61	2
21100	2535.0	24.53	2	26.53	449.78	2
21425	2567.5	24.61	2	26.61	458.14	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	23.69	2	25.69	370.68	2
21100	2535.0	23.49	2	25.49	354	2
21425	2567.5	23.72	2	25.72	373.25	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	22.53	2	24.53	283.79	2
21100	2535	22.46	2	24.46	279.25	2
21425	2567.5	22.6	2	24.6	288.4	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	24.54	2	26.54	450.82	2
21100	2535.0	24.49	2	26.49	445.66	2
21400	2565.0	24.59	2	26.59	456.04	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	23.73	2	25.73	374.11	2
21100	2535.0	23.49	2	25.49	354	2
21400	2565.0	23.68	2	25.68	369.83	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	22.52	2	24.52	283.14	2
21100	2535	22.44	2	24.44	277.97	2
21400	2565	22.6	2	24.6	288.4	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	24.55	2	26.55	451.86	2
21100	2535.0	24.56	2	26.56	452.9	2
21375	2562.5	24.59	2	26.59	456.04	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	23.66	2	25.66	368.13	2
21100	2535.0	23.49	2	25.49	354	2
21375	2562.5	23.65	2	25.65	367.28	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	22.47	2	24.47	279.9	2
21100	2535	22.42	2	24.42	276.69	2
21375	2562.5	22.61	2	24.61	289.07	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	24.56	2	26.56	452.9	2
21100	2535.0	24.57	2	26.57	453.94	2
21350	2560.0	24.63	2	26.63	460.26	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	23.73	2	25.73	374.11	2
21100	2535.0	23.6	2	25.6	363.08	2
21350	2560.0	23.75	2	25.75	375.84	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.55	2	24.55	285.1	2
21100	2535	22.49	2	24.49	281.19	2
21350	2560	22.67	2	24.67	293.09	2

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

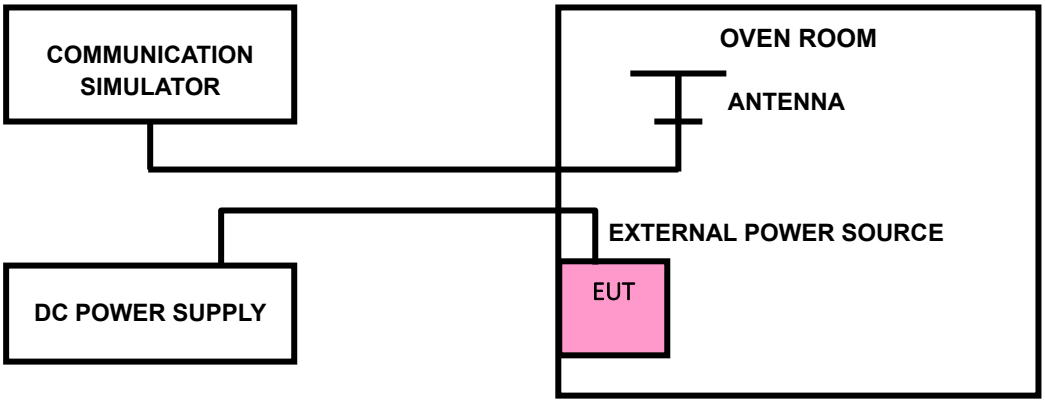
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

a. The device is placed at the oven room. The oven room could control the temperatures and humidity. Power warms 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 recording the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be holding ±0.5℃ during the measurement testing. 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

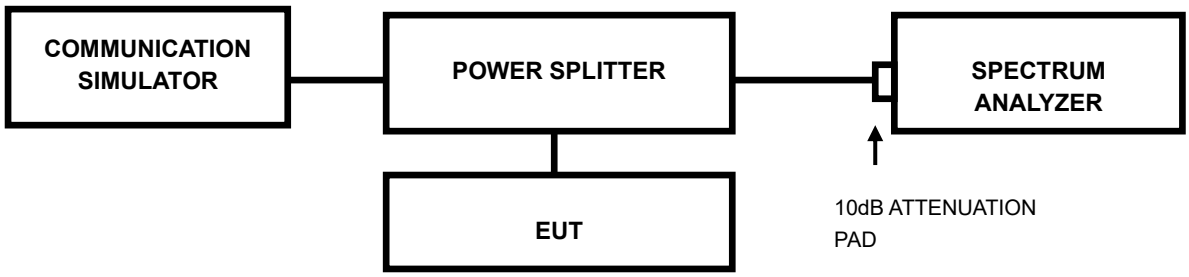
Please Refer to Appendix Of this test report.

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band is 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.

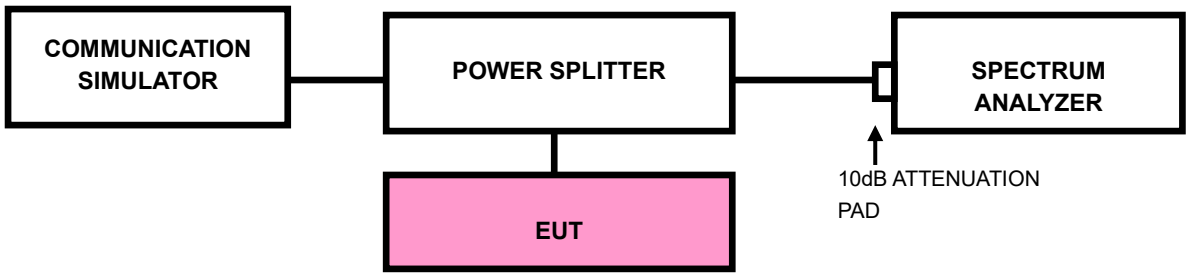
3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC 27.53(h) specified that For operations in the 1710-1755 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. However, in the 1-megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1-megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent 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 30/100KHz.

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 is equal to –13dBm.

For: LTE Band7

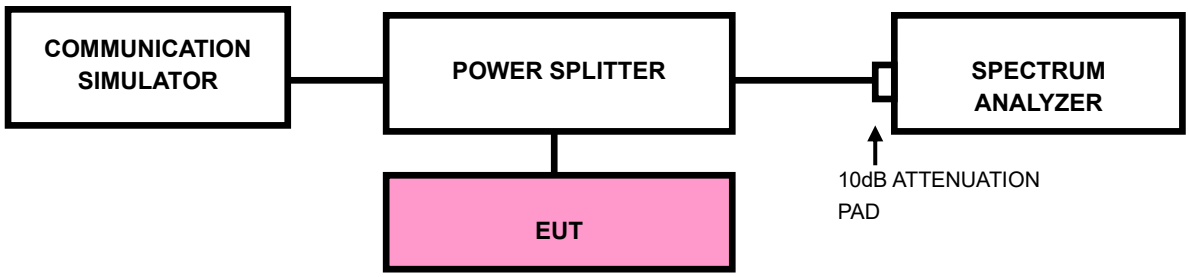
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

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 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are 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

For operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

For: LTE Band7

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

3.6.2 TEST PROCEDURES

a. The substitute 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 exports the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved the 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 from E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

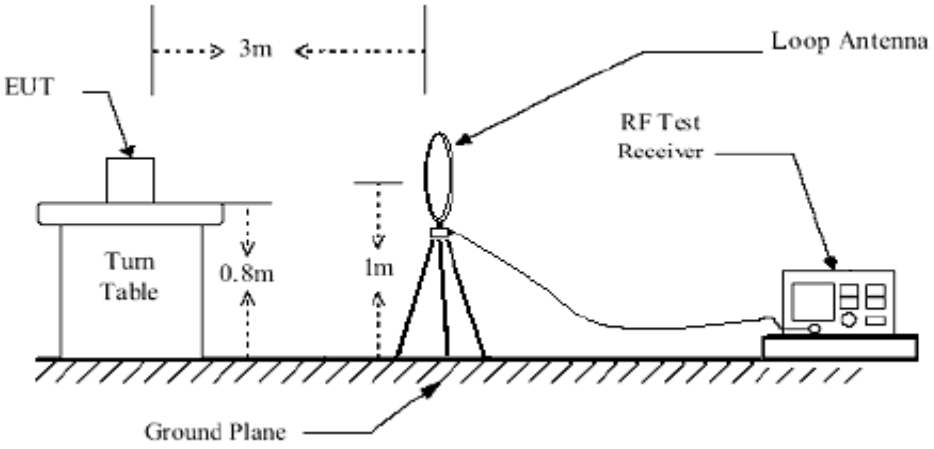
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz, and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

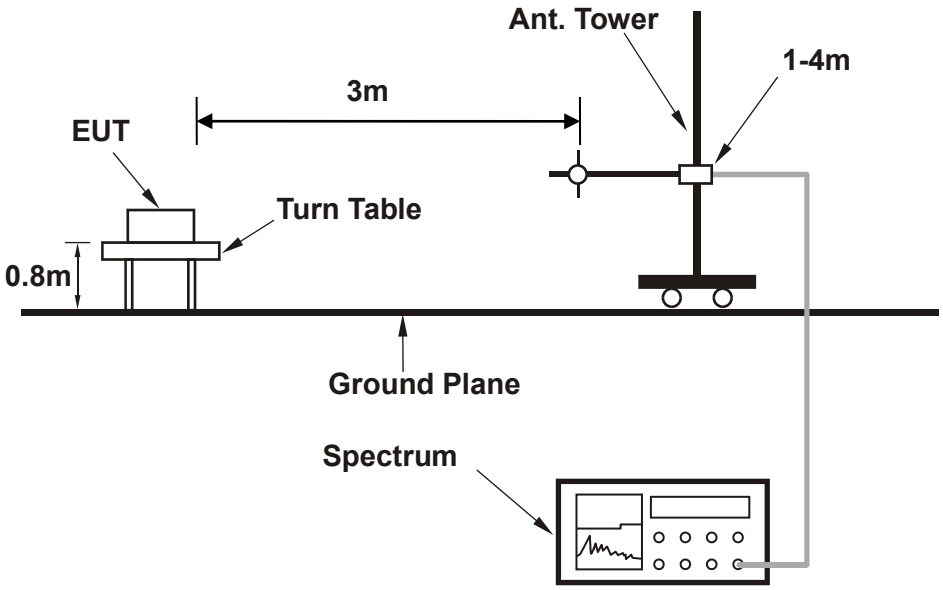
No deviation

3.6.4 TEST SETUP

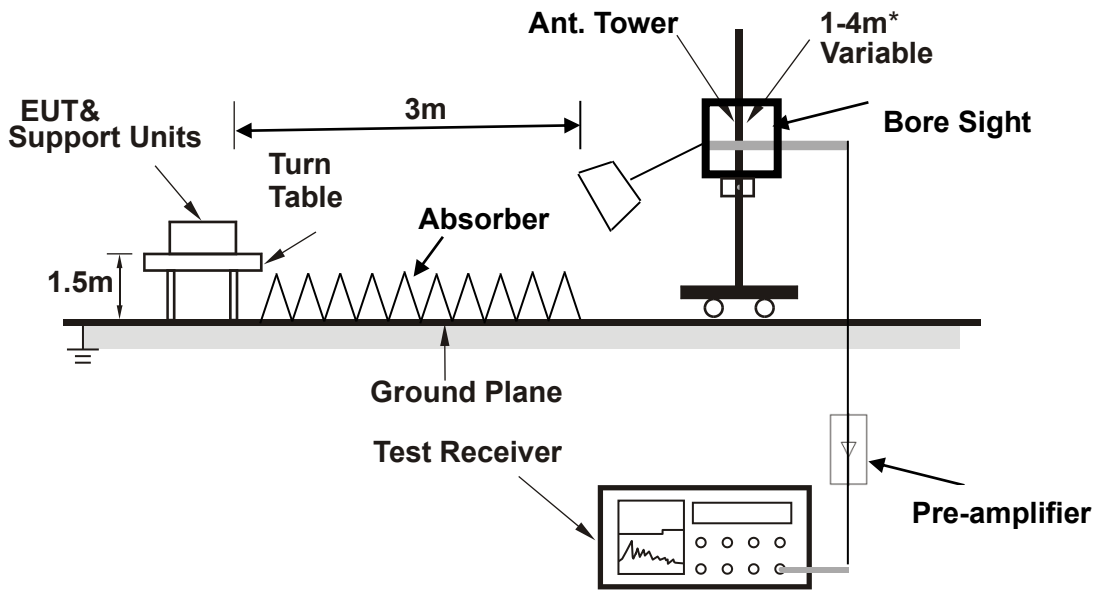
< Frequency Range below 30MHz >



< 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.

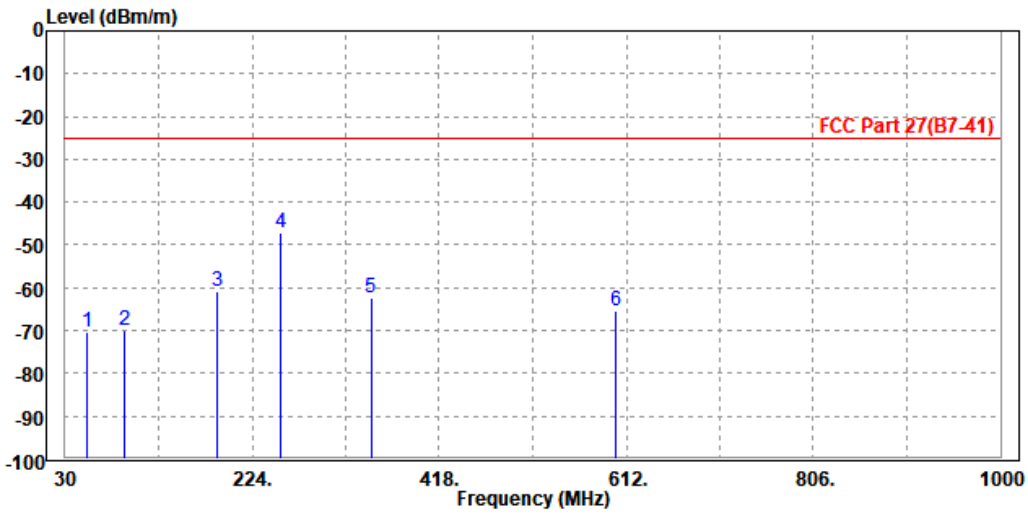
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE Band 7(Ant0) (UP):
CHANNEL BANDWIDTH: 5MHz / QPSK

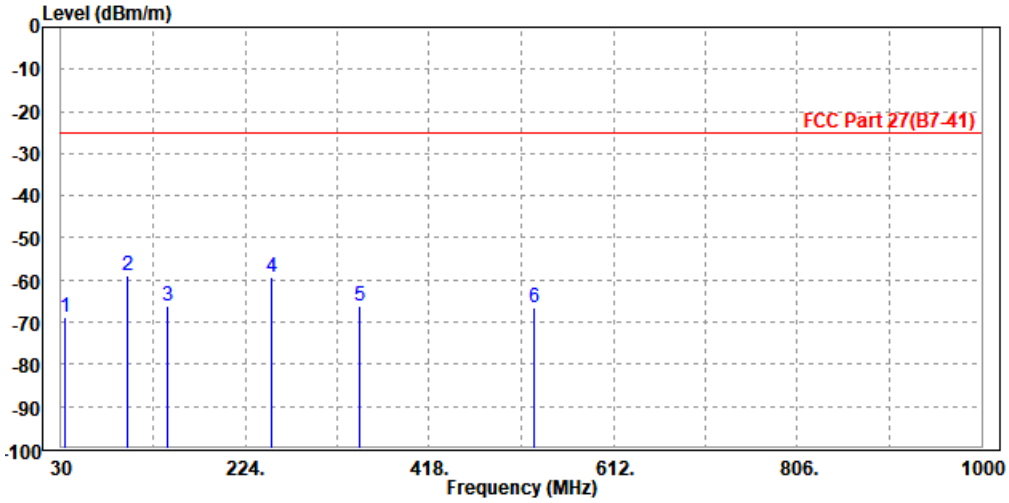
MODE	TX channel 21100	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		52.310	-70.17	-52.80	-25.00	-45.17	-17.37	Peak	Horizontal
2		91.110	-69.80	-48.78	-25.00	-44.80	-21.02	Peak	Horizontal
3		187.140	-61.02	-42.45	-25.00	-36.02	-18.57	Peak	Horizontal
4	PP	253.100	-47.25	-35.74	-25.00	-22.25	-11.51	Peak	Horizontal
5		347.190	-62.54	-51.23	-25.00	-37.54	-11.31	Peak	Horizontal
6		600.360	-65.33	-61.28	-25.00	-40.33	-4.05	Peak	Horizontal



MODE	TX channel 21100	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		33.880	-68.73	-48.97	-25.00	-43.73	-19.76	Peak	Vertical
2	PP	100.810	-58.77	-52.07	-25.00	-33.77	-6.70	Peak	Vertical
3		142.520	-66.23	-51.98	-25.00	-41.23	-14.25	Peak	Vertical
4		252.130	-59.41	-45.93	-25.00	-34.41	-13.48	Peak	Vertical
5		345.250	-66.20	-56.21	-25.00	-41.20	-9.99	Peak	Vertical
6		528.580	-66.55	-59.03	-25.00	-41.55	-7.52	Peak	Vertical



ABOVE 1GHz

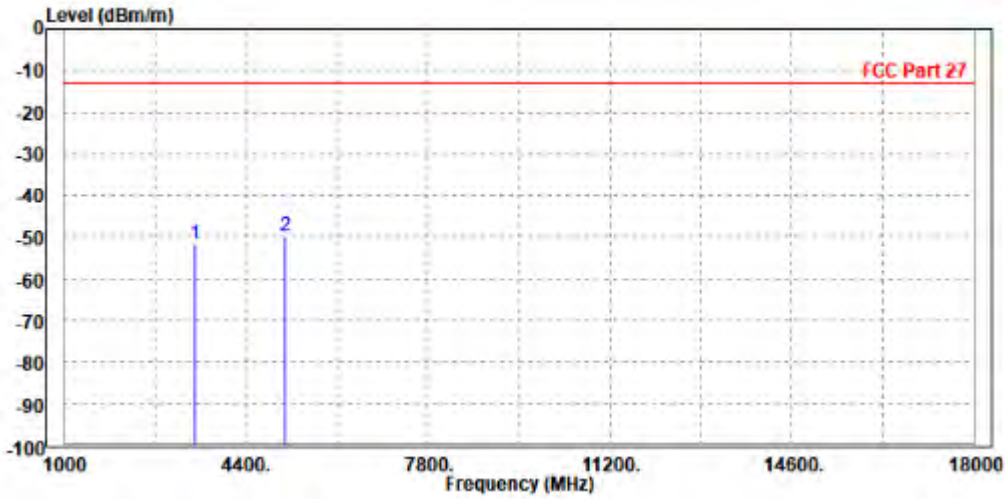
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band IV(Ant0) (UP):

CH 1312

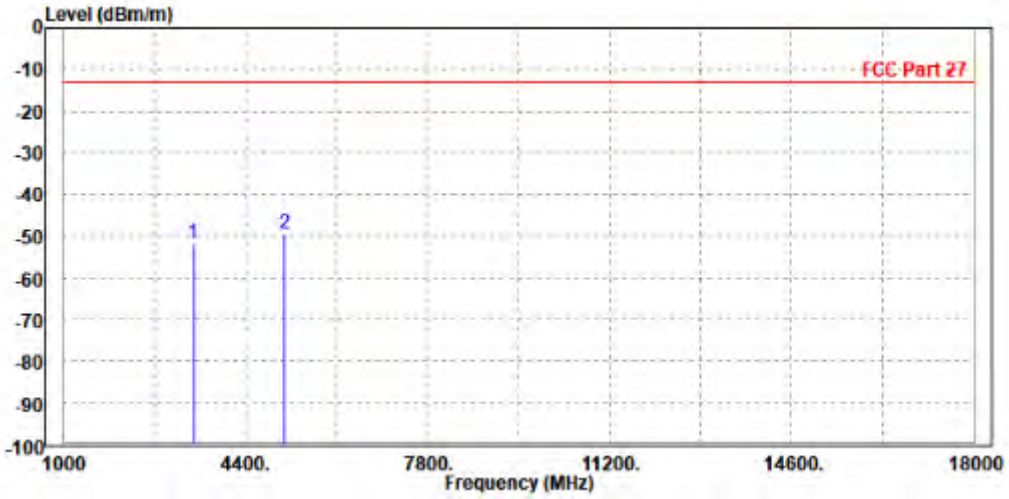
MODE	TX channel 1312	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3431.000	-51.77	-59.00	-13.00	-38.77	7.23	Peak	Horizontal
2 PP	5137.200	-49.67	-59.57	-13.00	-36.67	9.90	Peak	Horizontal



MODE	TX channel 1312	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			

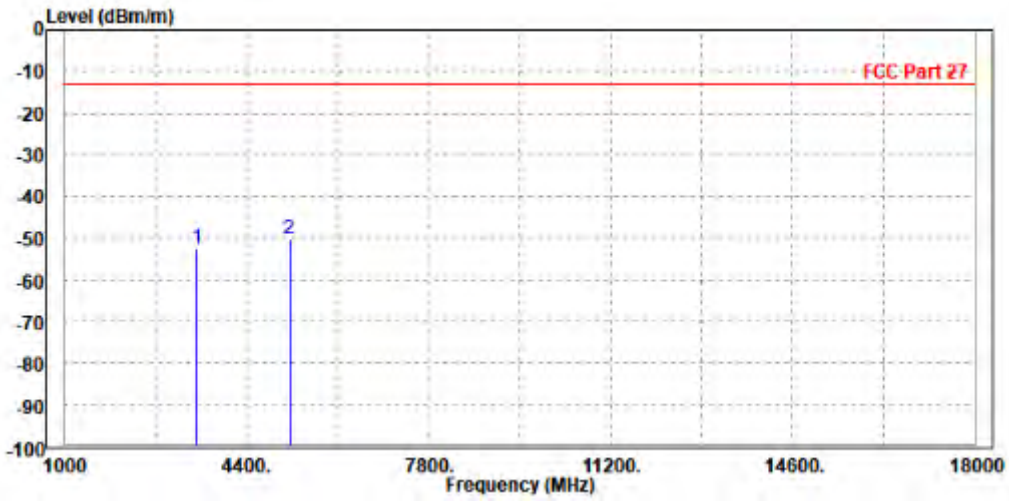
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3424.800	-51.86	-59.06	-13.00	-38.86	7.20	Peak	Vertical
2	PP	5131.000	-49.33	-59.72	-13.00	-36.33	10.39	Peak	Vertical



CH 1413

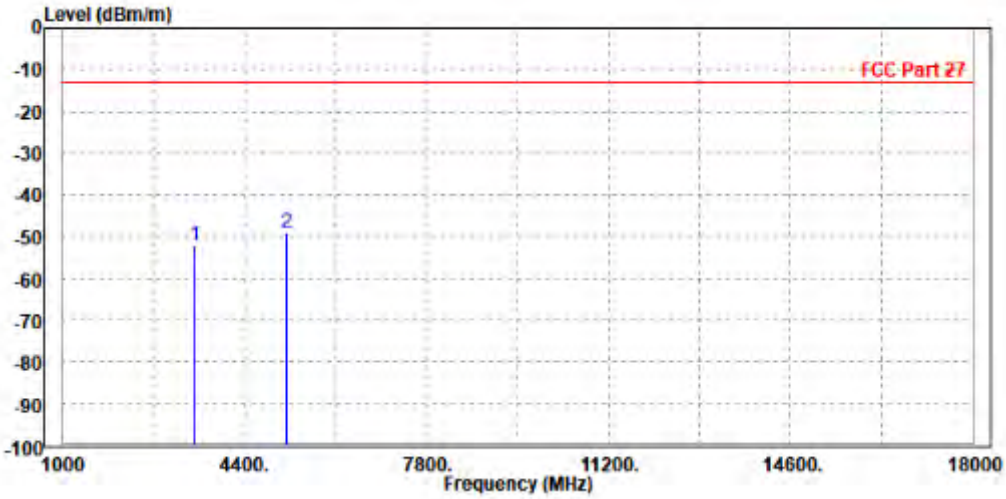
MODE	TX channel 1413	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3462.500	-52.28	-59.55	-13.00	-39.28	7.27	Peak	Horizontal
2 PP	5199.000	-50.33	-60.33	-13.00	-37.33	10.00	Peak	Horizontal



MODE	TX channel 1413	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			

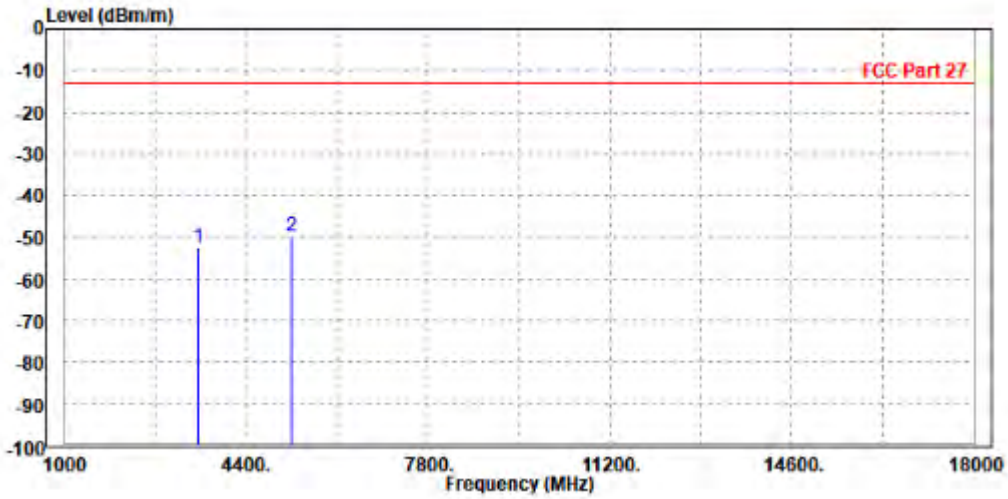
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3465.000	-52.03	-59.29	-13.00	-39.03	7.26	Peak	Vertical
2 PP	5197.800	-49.06	-59.51	-13.00	-36.06	10.45	Peak	Vertical



CH 1513

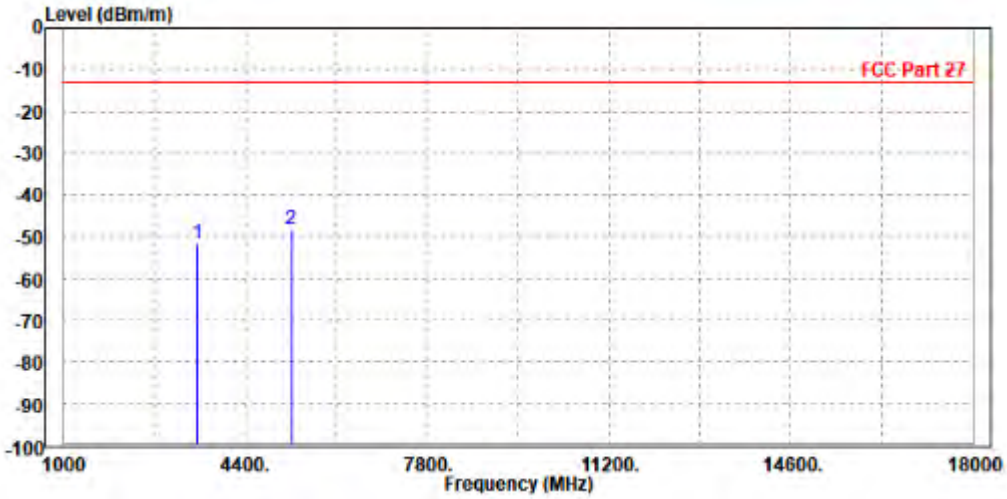
MODE	TX channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3505.200	-52.37	-59.71	-13.00	-39.37	7.34	Peak	Horizontal
2 PP	5250.000	-49.65	-59.73	-13.00	-36.65	10.08	Peak	Horizontal



MODE	TX channel 1513	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			

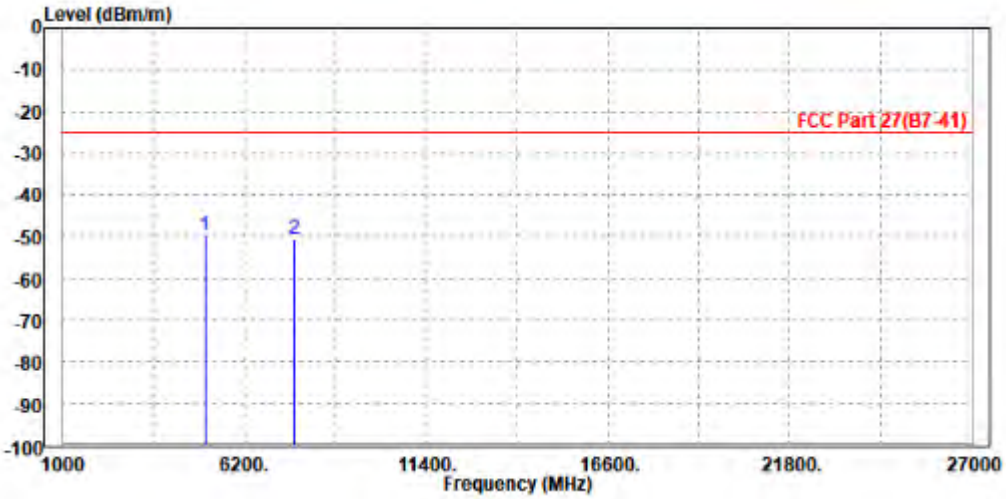
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3499.000	-51.62	-58.94	-13.00	-38.62	7.32	Peak	Vertical
2	PP	5257.800	-48.31	-58.81	-13.00	-35.31	10.50	Peak	Vertical



LTE Band 7(Ant0) (UP):
CHANNEL BANDWIDTH: 5MHz / QPSK

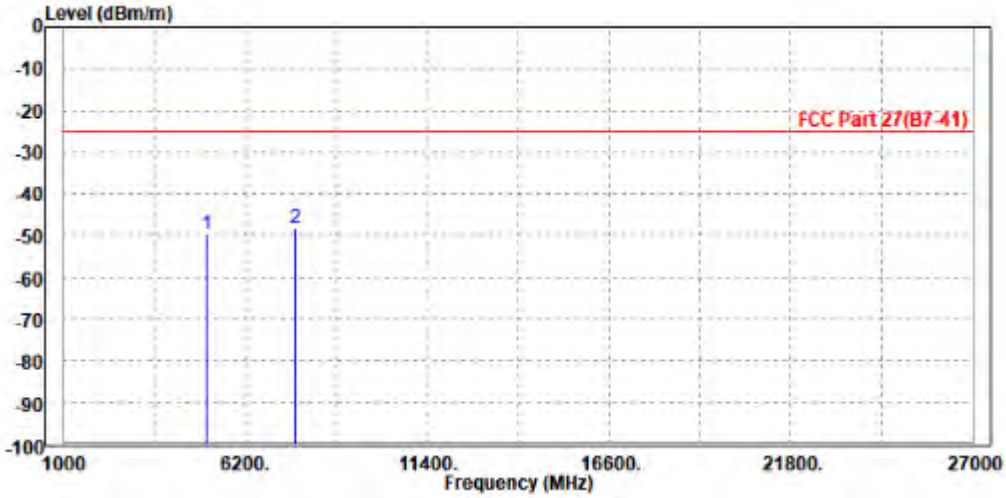
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5070.000	-49.90	-59.70	-25.00	-24.90	9.80	Peak	Horizontal
2		7604.000	-50.56	-62.73	-25.00	-25.56	12.17	Peak	Horizontal



MODE	TX channel 21100	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		5082.000	-49.75	-60.09	-25.00	-24.75	10.34	Peak	Vertical
2	PP	7605.000	-48.12	-62.97	-25.00	-23.12	14.85	Peak	Vertical

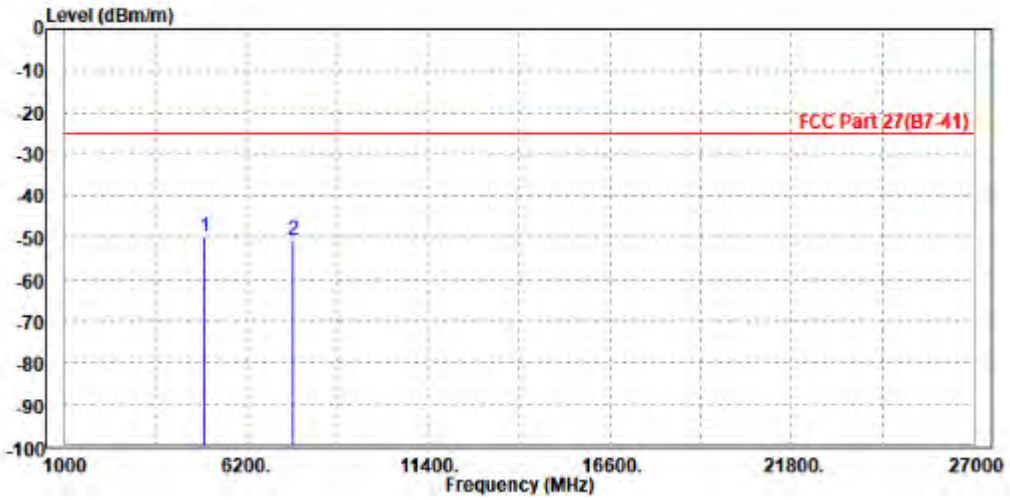


CHANNEL BANDWIDTH: 10MHz / QPSK

CH 20800

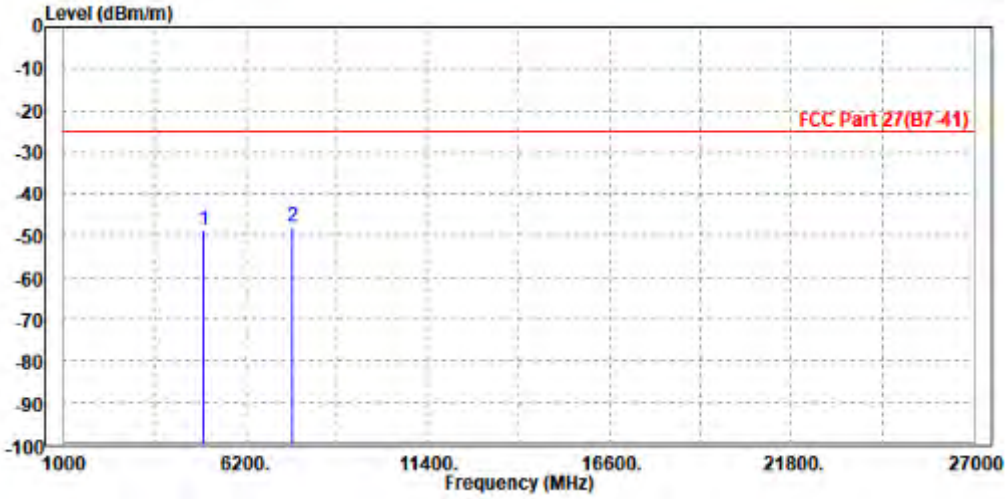
MODE	TX channel 20800	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5004.000	-49.77	-59.47	-25.00	-24.77	9.70	Peak	Horizontal
2	7515.000	-50.51	-62.04	-25.00	-25.51	11.53	Peak	Horizontal



MODE	TX channel 20800	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			

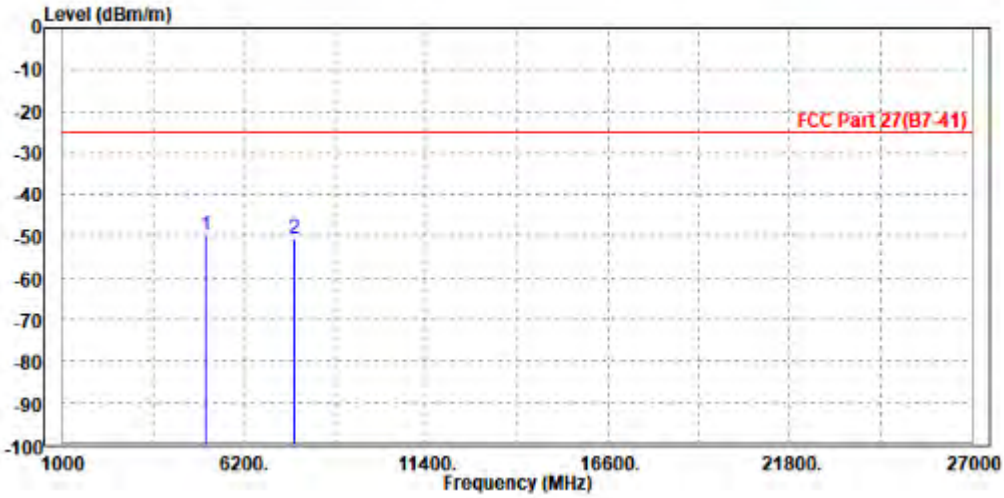
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		5010.000	-48.59	-58.87	-25.00	-23.59	10.28	Peak	Vertical
2	PP	7526.000	-47.93	-62.67	-25.00	-22.93	14.74	Peak	Vertical



CH 21100

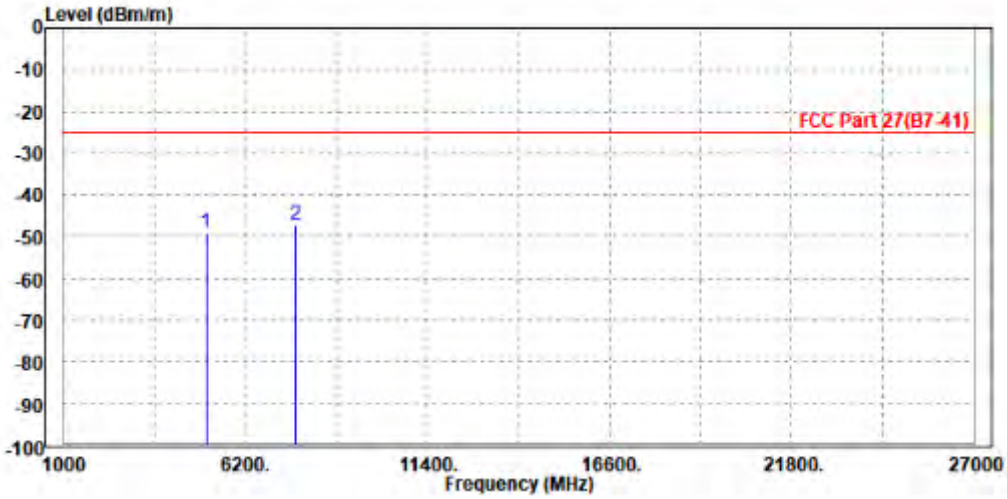
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5082.000	-49.92	-59.74	-25.00	-24.92	9.82	Peak	Horizontal
2	7605.000	-50.61	-62.79	-25.00	-25.61	12.18	Peak	Horizontal



MODE	TX channel 21100	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			

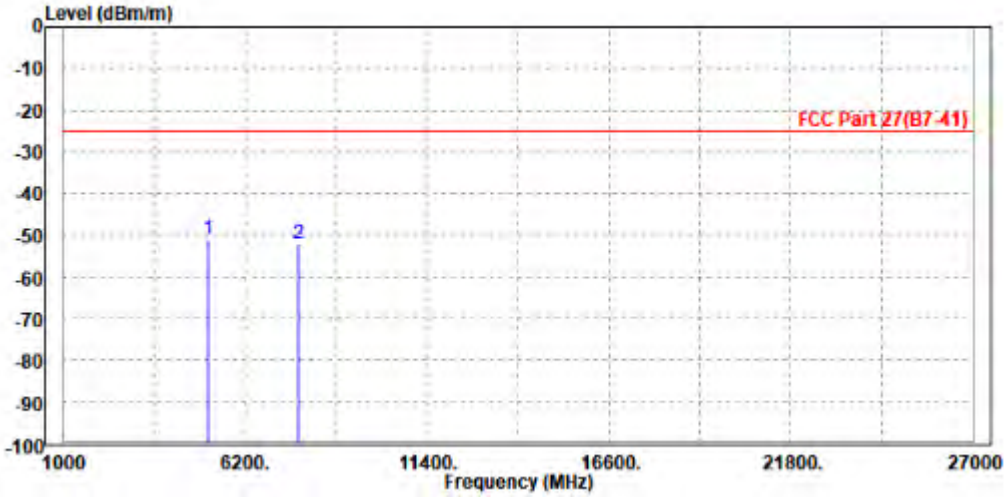
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		5070.000	-49.04	-59.37	-25.00	-24.04	10.33	Peak	Vertical
2	PP	7604.000	-47.22	-62.07	-25.00	-22.22	14.85	Peak	Vertical



CH 21400

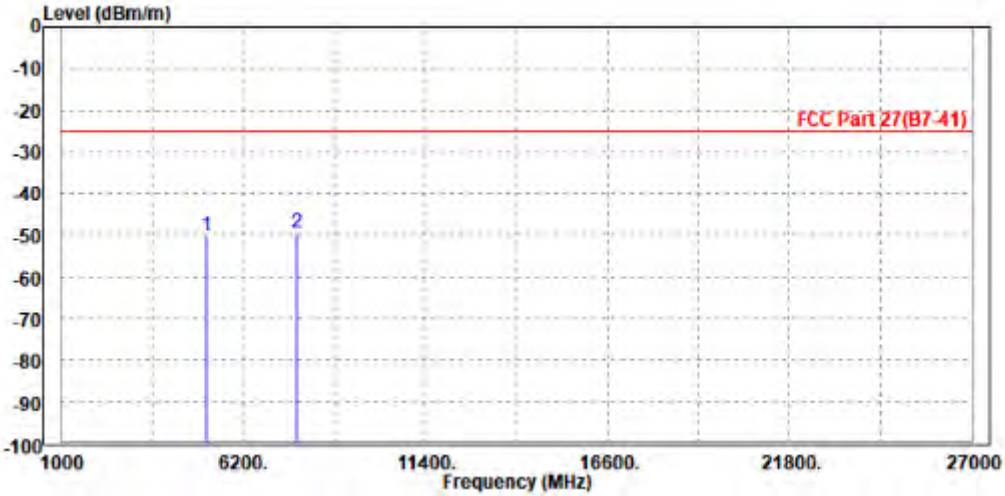
MODE	TX channel 21400	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5130.000	-50.77	-60.66	-25.00	-25.77	9.89	Peak	Horizontal
2	7708.000	-52.10	-65.03	-25.00	-27.10	12.93	Peak	Horizontal



MODE	TX channel 21400	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			

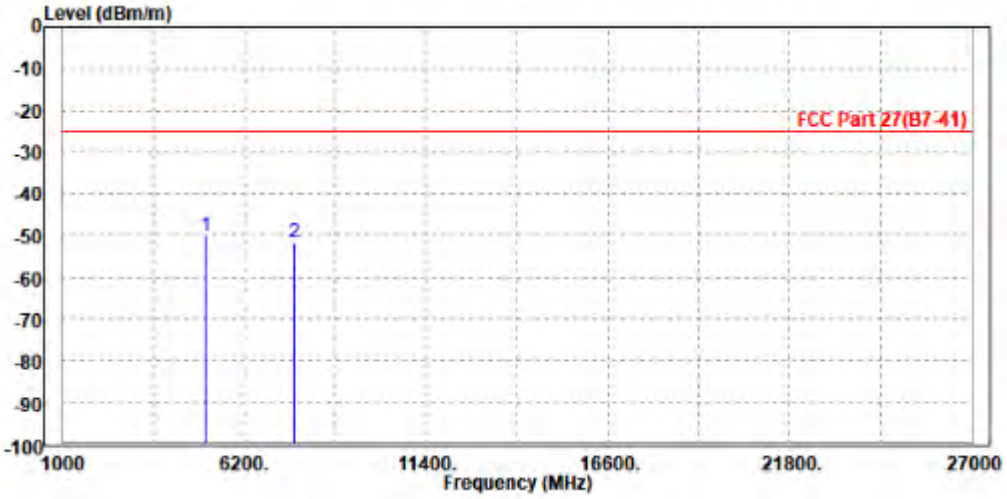
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		5134.000	-50.09	-60.48	-25.00	-25.09	10.39	Peak	Vertical
2	PP	7695.000	-49.40	-64.39	-25.00	-24.40	14.99	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

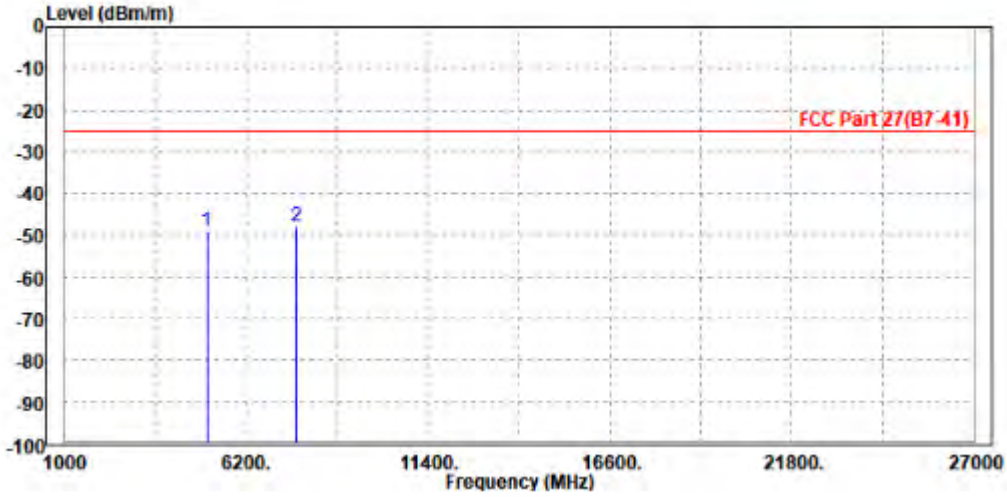
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5082.000	-50.37	-60.19	-25.00	-25.37	9.82	Peak	Horizontal
2		7605.000	-51.72	-63.90	-25.00	-26.72	12.18	Peak	Horizontal



MODE	TX channel 21100	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			

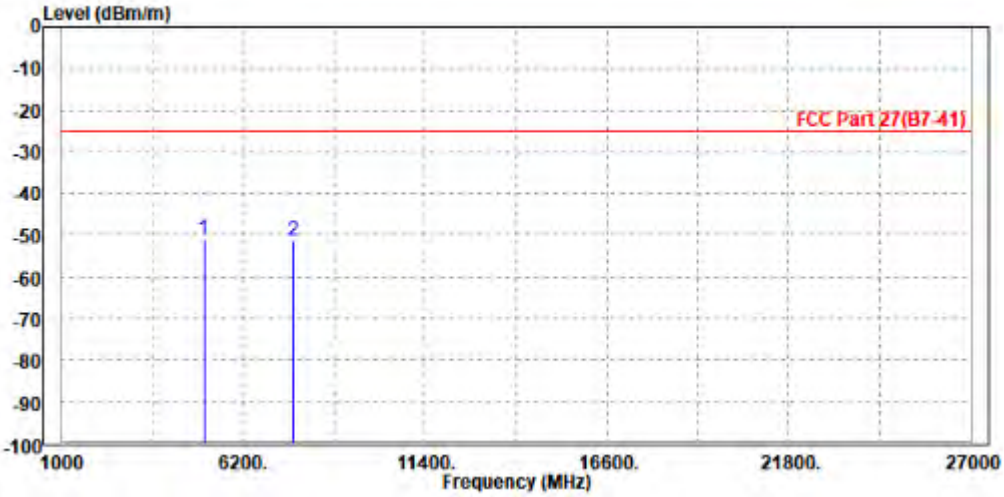
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5070.000	-48.93	-59.26	-25.00	-23.93	10.33	Peak	Vertical
2 PP	7604.000	-47.77	-62.62	-25.00	-22.77	14.85	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

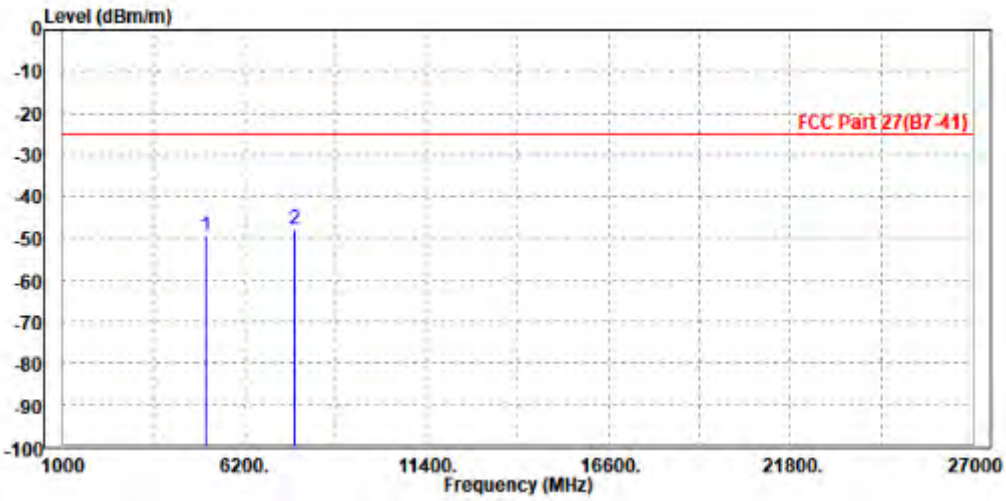
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5070.000	-50.84	-60.64	-25.00	-25.84	9.80	Peak	Horizontal
2	7604.000	-51.23	-63.40	-25.00	-26.23	12.17	Peak	Horizontal



MODE	TX channel 21100	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		5082.000	-49.56	-59.90	-25.00	-24.56	10.34	Peak	Vertical
2	PP	7605.000	-47.75	-62.60	-25.00	-22.75	14.85	Peak	Vertical

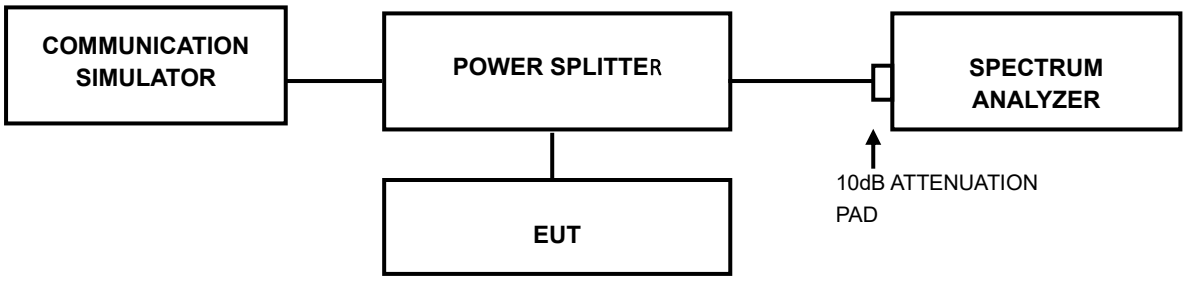


3.7 PEAK TO AVERAGE RATIO

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 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

5 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.

6 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.

7 APPENDIX

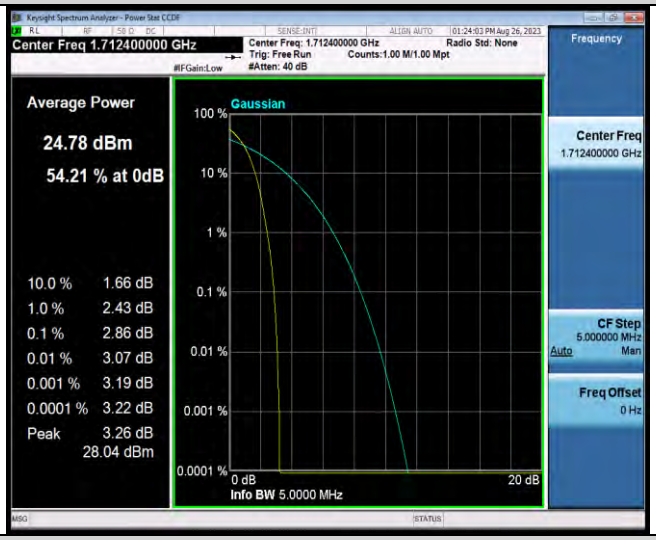
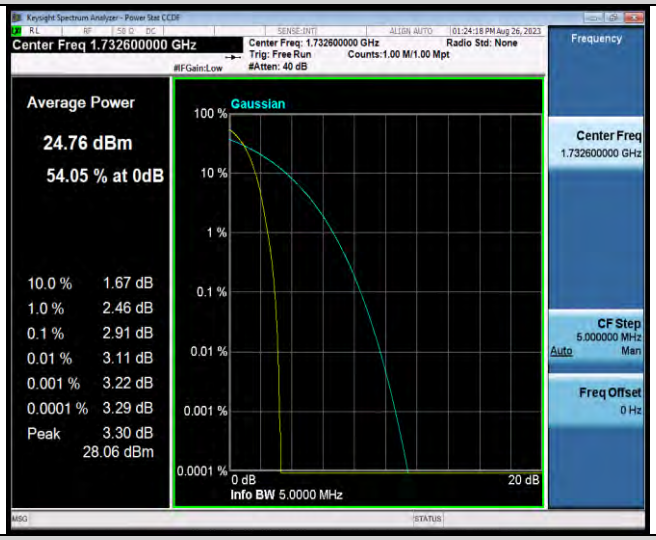
WCDMA BAND4

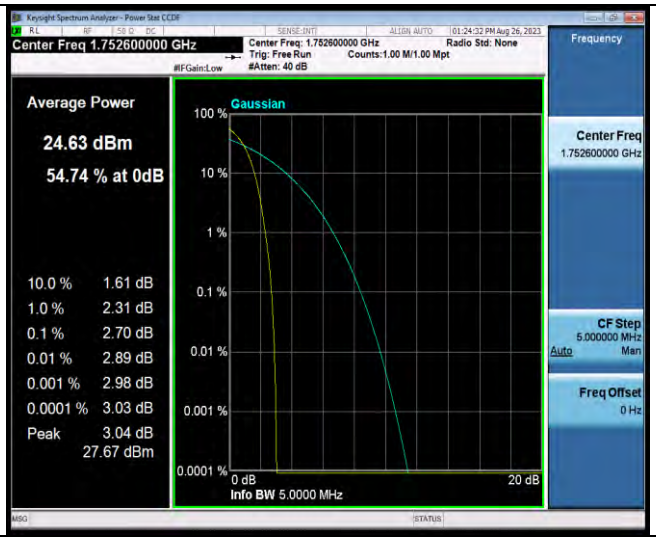
PEAK-TO-AVERAGE RATIO

Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band4	1312	2.86	13	PASS
Band4	1413	2.91	13	PASS
Band4	1513	2.7	13	PASS

Test Graphs

Band4-1312

Band4-1413

Band4-1513


Keysight Spectrum Analyzer - Power Stat CCDF
Center Freq 1.752600000 GHz
Center Freq: 1.752600000 GHz
Trig: Free Run
Counts:1.00 M/1.00 Mpt
#Atten: 40 dB
Radio Std: None
Frequency
Average Power
24.63 dBm
54.74 % at 0dB
10.0 % 1.61 dB
1.0 % 2.31 dB
0.1 % 2.70 dB
0.01 % 2.89 dB
0.001 % 2.98 dB
0.0001 % 3.03 dB
Peak 3.04 dB
27.67 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 5.0000 MHz
Center Freq
1.752600000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band4	1312	4.1801	4.720	---	PASS
Band4	1413	4.1801	4.707	---	PASS
Band4	1513	4.1802	4.724	---	PASS

Test Graphs

Band4-1312

Band4-1413

Band4-1513

Keysight Spectrum Analyzer - Occupied BW
Center Freq 1.752600000 GHz
Center Freq: 1.752600000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 13.18 dB
10 dB/div
Ref 30.00 dBm
Log
Center Freq
1.752600000 GHz
Center 1.753 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
#Sweep 100 ms
CF Step
1.000000 MHz
Auto
Man
Occupied Bandwidth
4.1802 MHz
Total Power
22.2 dBm
Transmit Freq Error
-2.905 kHz
OBW Power
99.00 %
x dB Bandwidth
4.724 MHz
x dB
-26.00 dB
Freq Offset
0 Hz

BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band4	1312	1709.88	-27.40	-13	PASS
Band4	1513	1755.09	-28.13	-13	PASS

Test Graphs

Band4-1312

Band4-1513

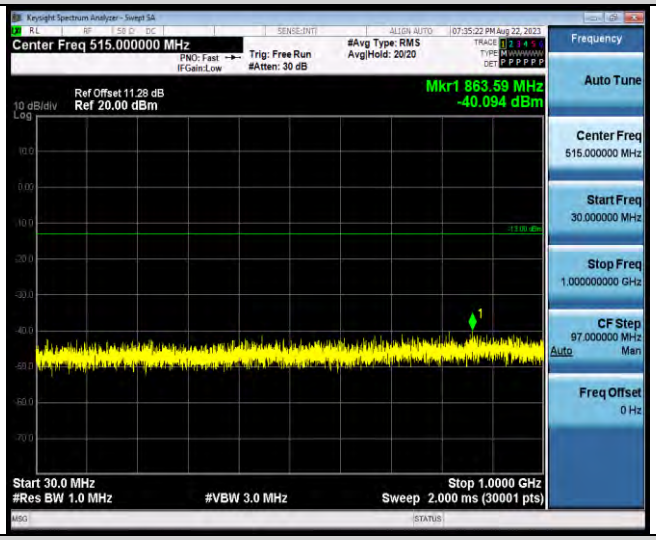
CONDUCTED SPURIOUS EMISSION

Test Result

Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band4	1312	30~1000MHz	863.59	-40.09	-13	PASS
Band4	1312	1000~20000MHz	19941.73	-32.18	-13	PASS
Band4	1413	30~1000MHz	882.34	-38.99	-13	PASS
Band4	1413	1000~20000MHz	18780.2	-31.61	-13	PASS
Band4	1513	30~1000MHz	856.57	-39.7	-13	PASS
Band4	1513	1000~20000MHz	19115.23	-32.38	-13	PASS

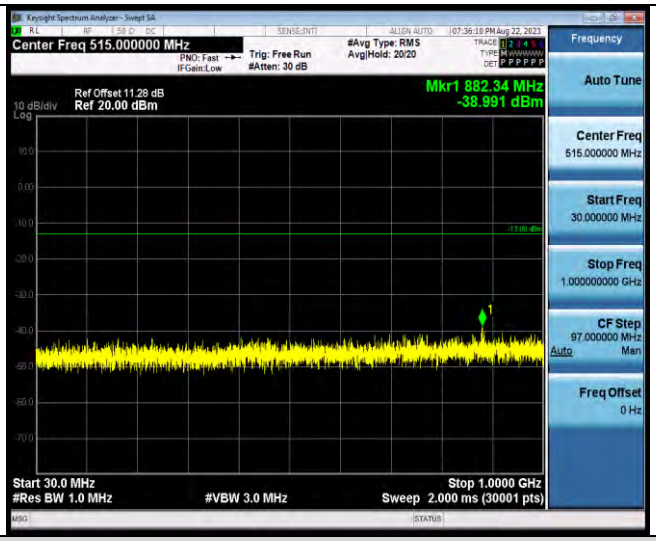
Test Graphs

Band4-1312-30~1000MHz



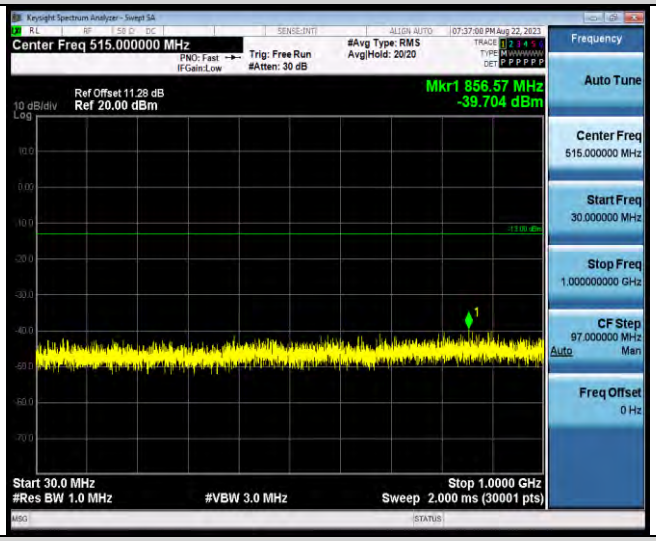
Band4-1312-1000~20000MHz

Band4-1413-30~1000MHz



Band4-1413-1000~20000MHz

Band4-1513-30~1000MHz



Band4-1513-1000~20000MHz

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
07:37:38 PM Aug 22, 2023
Ref Offset 12.72 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 19.115 2 GHz
-32.384 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 20.000 GHz
#Sweep 3.000 s (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	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band4	1312	LV	NT	-9.70	-0.005665	±2.5	PASS
Band4	1312	NV	NT	-9.04	-0.005279	±2.5	PASS
Band4	1312	HV	NT	-9.99	-0.005834	±2.5	PASS
Band4	1413	LV	NT	-10.60	-0.006118	±2.5	PASS
Band4	1413	NV	NT	-10.18	-0.005876	±2.5	PASS
Band4	1413	HV	NT	-12.29	-0.007093	±2.5	PASS
Band4	1513	LV	NT	-7.67	-0.004376	±2.5	PASS
Band4	1513	NV	NT	-6.48	-0.003697	±2.5	PASS
Band4	1513	HV	NT	-4.50	-0.002568	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band4	1312	NV	-30	-10.20	-0.005957	±2.5	PASS
Band4	1312	NV	-20	-13.10	-0.007650	±2.5	PASS
Band4	1312	NV	-10	-11.30	-0.006599	±2.5	PASS
Band4	1312	NV	0	-13.19	-0.007703	±2.5	PASS
Band4	1312	NV	10	-12.17	-0.007107	±2.5	PASS
Band4	1312	NV	20	-13.35	-0.007796	±2.5	PASS
Band4	1312	NV	30	-11.87	-0.006932	±2.5	PASS
Band4	1312	NV	40	-12.24	-0.007148	±2.5	PASS
Band4	1312	NV	50	-12.52	-0.007311	±2.5	PASS
Band4	1413	NV	-30	-7.14	-0.004121	±2.5	PASS
Band4	1413	NV	-20	-11.59	-0.006689	±2.5	PASS
Band4	1413	NV	-10	-14.20	-0.008196	±2.5	PASS
Band4	1413	NV	0	-15.30	-0.008831	±2.5	PASS
Band4	1413	NV	10	-11.79	-0.006805	±2.5	PASS
Band4	1413	NV	20	-15.31	-0.008836	±2.5	PASS
Band4	1413	NV	30	-10.35	-0.005974	±2.5	PASS
Band4	1413	NV	40	-14.29	-0.008248	±2.5	PASS
Band4	1413	NV	50	-13.68	-0.007896	±2.5	PASS
Band4	1513	NV	-30	-6.07	-0.003463	±2.5	PASS
Band4	1513	NV	-20	-8.29	-0.004730	±2.5	PASS
Band4	1513	NV	-10	-8.93	-0.005095	±2.5	PASS
Band4	1513	NV	0	-9.28	-0.005295	±2.5	PASS
Band4	1513	NV	10	-8.67	-0.004947	±2.5	PASS
Band4	1513	NV	20	-11.12	-0.006345	±2.5	PASS
Band4	1513	NV	30	-9.23	-0.005266	±2.5	PASS
Band4	1513	NV	40	-6.52	-0.003720	±2.5	PASS
Band4	1513	NV	50	-6.44	-0.003675	±2.5	PASS

MAX Deviation calculation

Frequency Stability	Frequency (MHz)	Limit Line(MHz)	Result
fL-|MAX(△f)|	1710.309934	≥1710	PASS
fH+|MAX(△f)|	1754.690116	≤1755	

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)| = 15.31Hz.

LTE BAND7

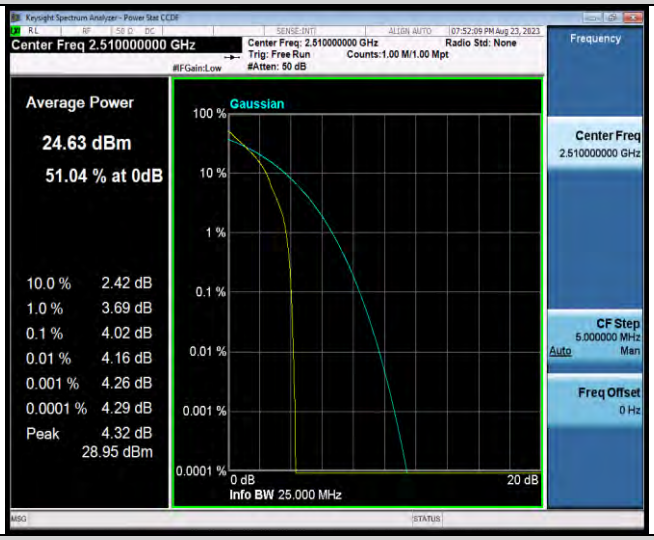
PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

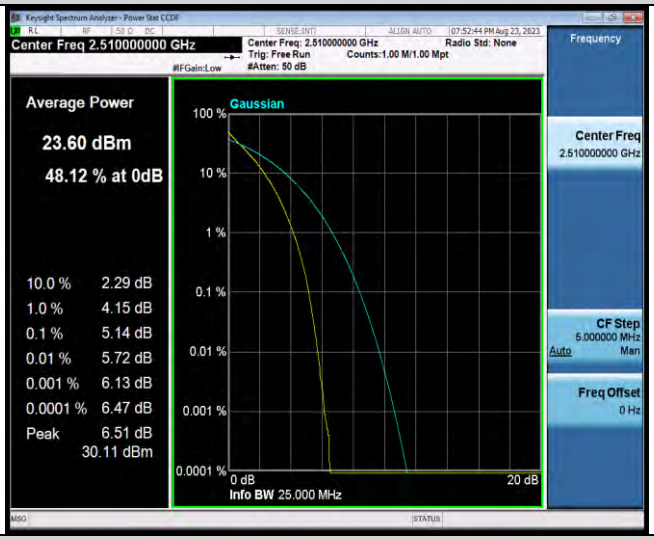
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	20MHz	QPSK	20850	1RB#0	4.02	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	5.14	13	PASS
Band7	20MHz	QPSK	21100	1RB#0	3.89	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	5.12	13	PASS
Band7	20MHz	QPSK	21350	1RB#0	4.00	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	5.11	13	PASS
Band7	20MHz	16QAM	20850	1RB#0	4.77	13	PASS
Band7	20MHz	16QAM	20850	100RB#0	5.94	13	PASS
Band7	20MHz	16QAM	21100	1RB#0	4.69	13	PASS
Band7	20MHz	16QAM	21100	100RB#0	5.90	13	PASS
Band7	20MHz	16QAM	21350	1RB#0	4.82	13	PASS
Band7	20MHz	16QAM	21350	100RB#0	5.90	13	PASS
Band7	20MHz	64QAM	20850	1RB#0	4.74	13	PASS
Band7	20MHz	64QAM	20850	100RB#0	5.95	13	PASS
Band7	20MHz	64QAM	21100	1RB#0	4.59	13	PASS
Band7	20MHz	64QAM	21100	100RB#0	5.89	13	PASS
Band7	20MHz	64QAM	21350	1RB#0	4.76	13	PASS
Band7	20MHz	64QAM	21350	100RB#0	5.90	13	PASS

Test Graphs

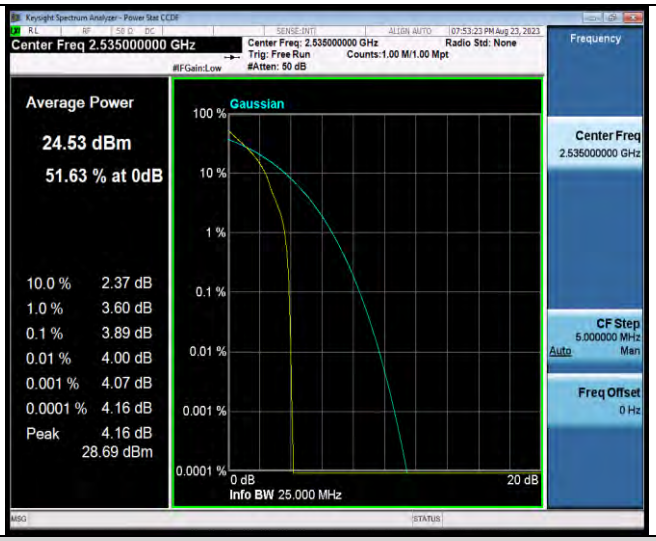
Band7-20MHz-QPSK-20850-1RB#0



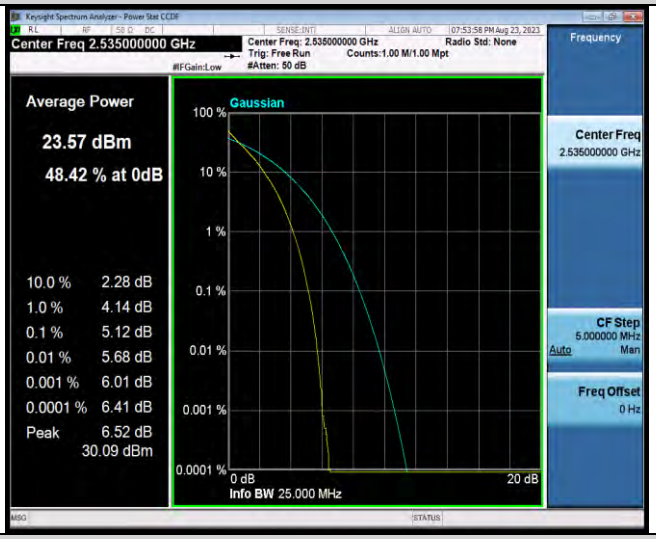
Band7-20MHz-QPSK-20850-100RB#0



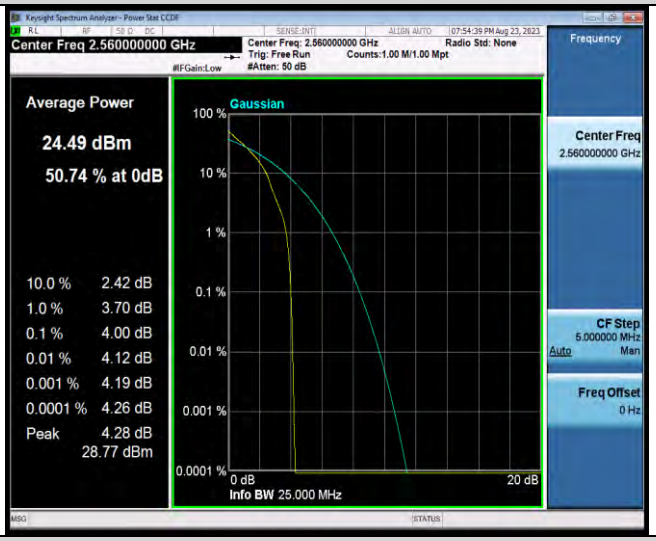
Band7-20MHz-QPSK-21100-1RB#0



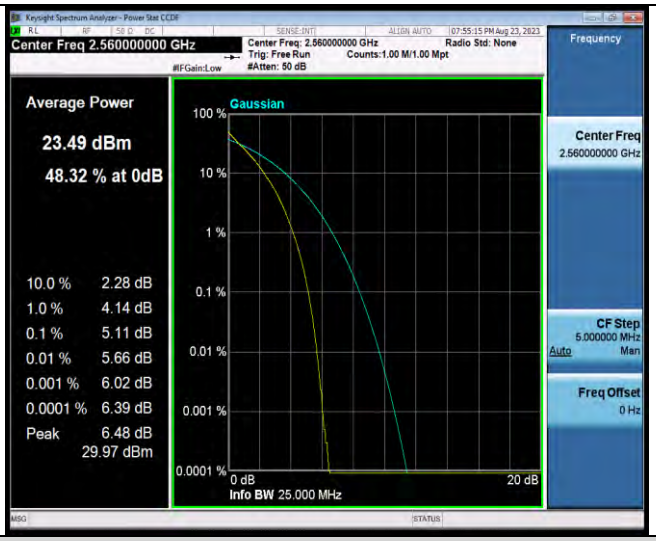
Band7-20MHz-QPSK-21100-100RB#0



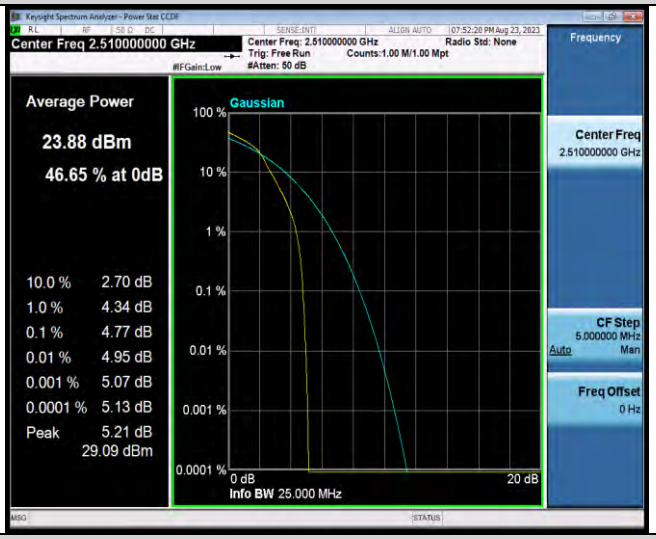
Band7-20MHz-QPSK-21350-1RB#0



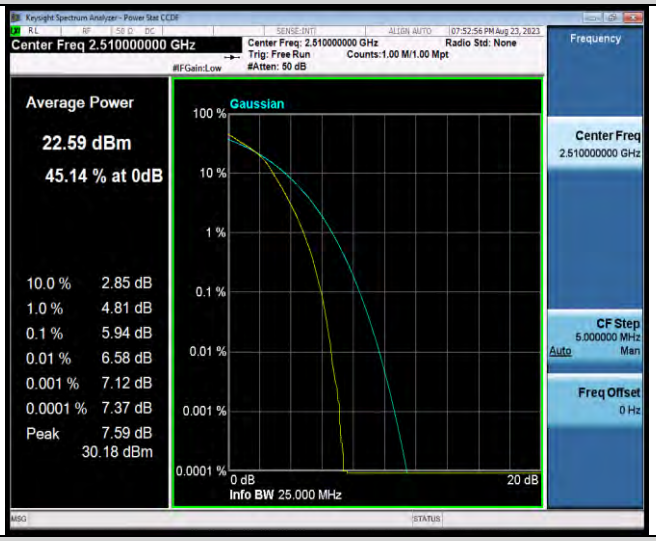
Band7-20MHz-QPSK-21350-100RB#0



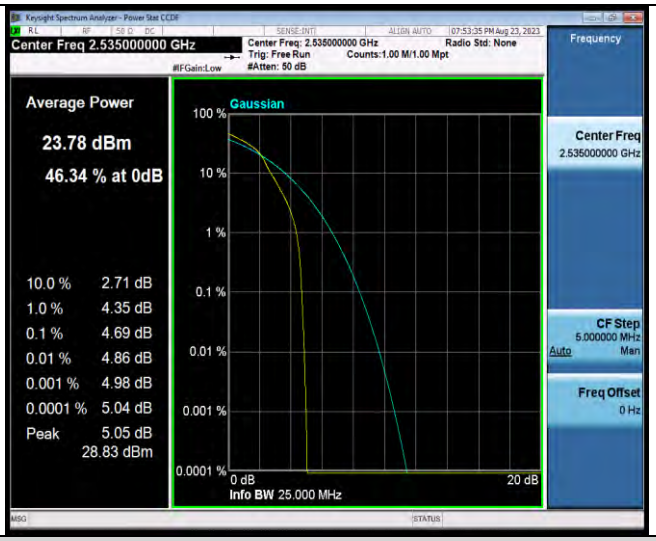
Band7-20MHz-16QAM-20850-1RB#0



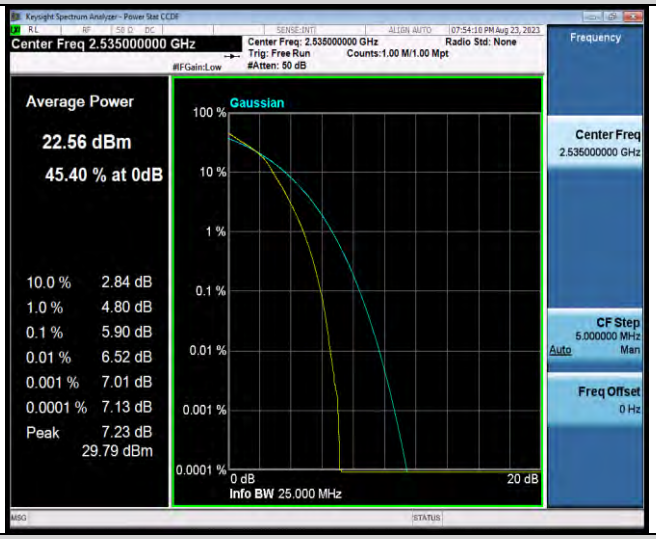
Band7-20MHz-16QAM-20850-100RB#0



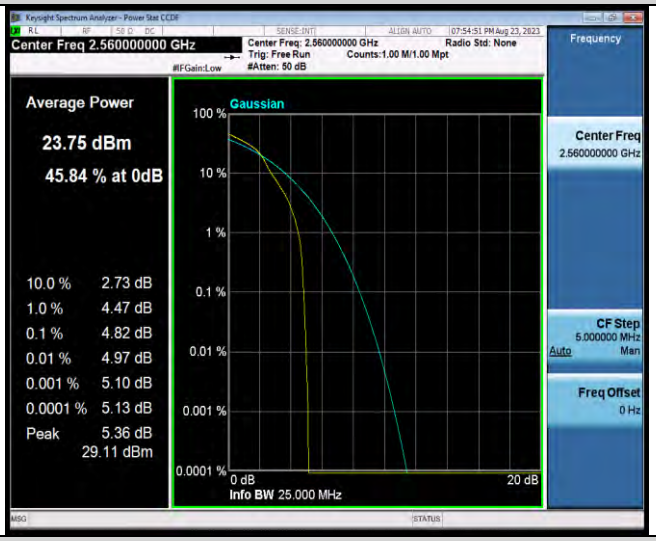
Band7-20MHz-16QAM-21100-1RB#0



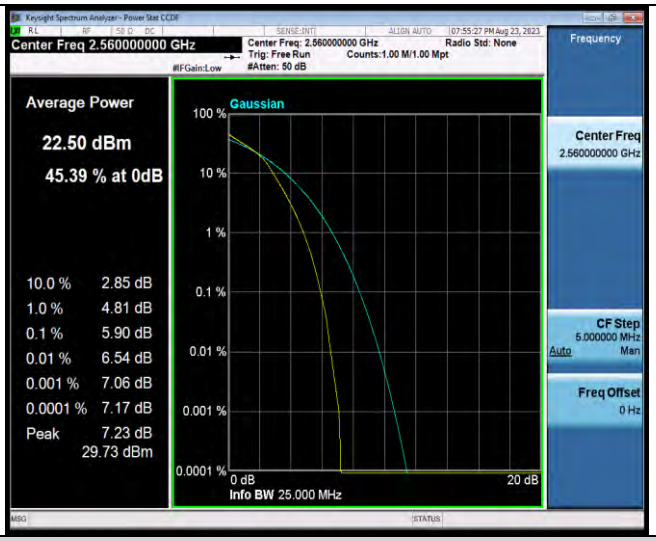
Band7-20MHz-16QAM-21100-100RB#0



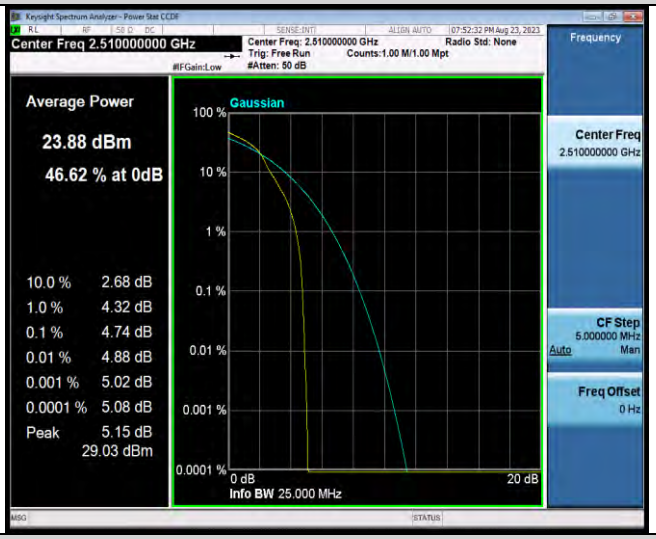
Band7-20MHz-16QAM-21350-1RB#0



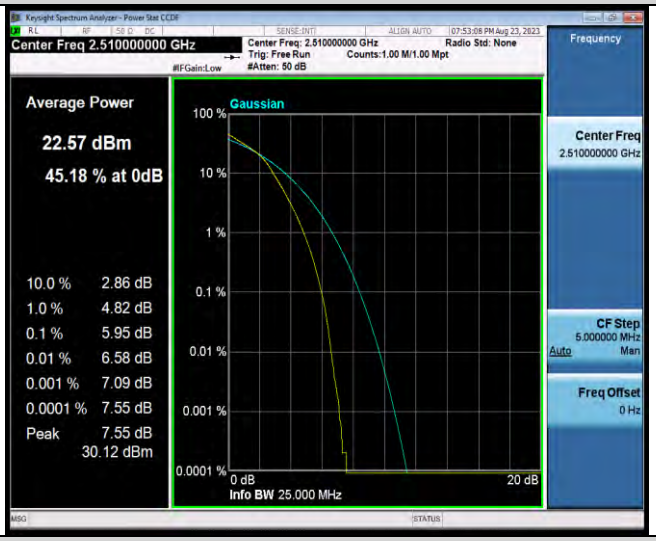
Band7-20MHz-16QAM-21350-100RB#0



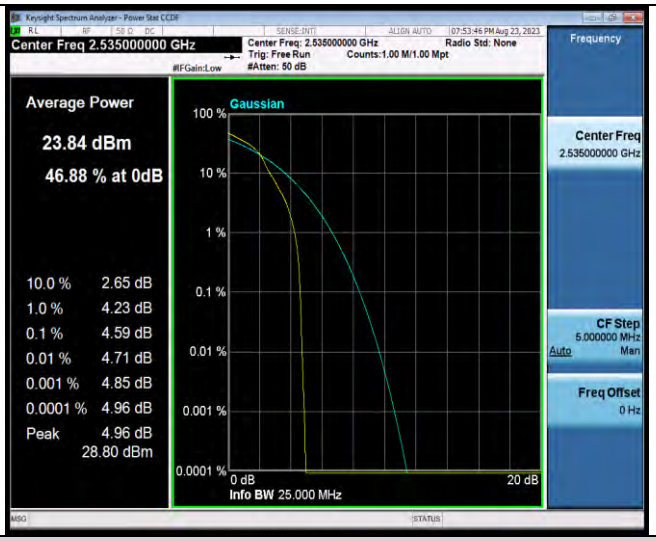
Band7-20MHz-64QAM-20850-1RB#0



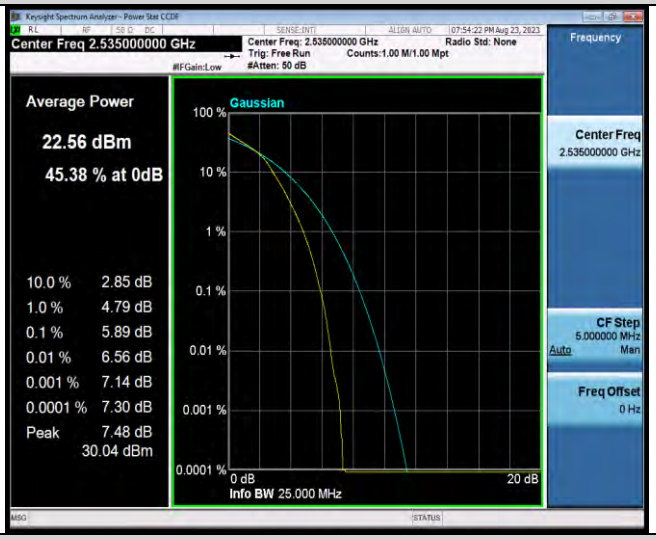
Band7-20MHz-64QAM-20850-100RB#0



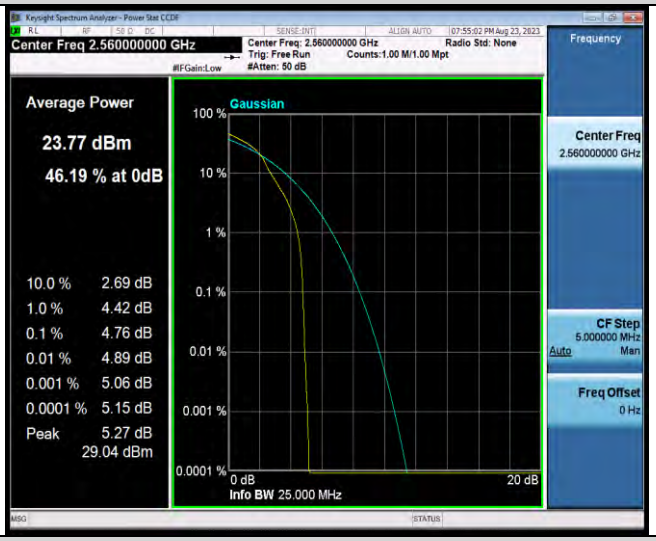
Band7-20MHz-64QAM-21100-1RB#0



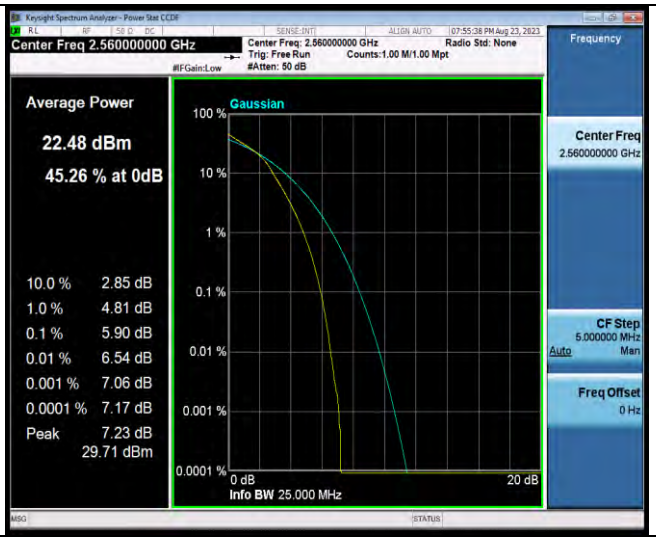
Band7-20MHz-64QAM-21100-100RB#0



Band7-20MHz-64QAM-21350-1RB#0



Band7-20MHz-64QAM-21350-100RB#0


Keysight Spectrum Analyzer - Power Stat CCDF
Center Freq 2.560000000 GHz
Center Freq: 2.560000000 GHz
Trig: Free Run
Counts:1.00 M/1.00 Mpt
#Atten: 50 dB
Radio Std: None
Frequency
Average Power
22.48 dBm
45.26 % at 0dB
10.0 % 2.85 dB
1.0 % 4.81 dB
0.1 % 5.90 dB
0.01 % 6.54 dB
0.001 % 7.06 dB
0.0001 % 7.17 dB
Peak 7.23 dB
29.71 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 25.000 MHz
Center Freq
2.560000000 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
Band7	5MHz	QPSK	20775	25RB#0	4.4970	5.014	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.4976	4.908	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.4951	5.065	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.5009	4.955	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.5021	4.939	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.5007	4.953	PASS
Band7	5MHz	64QAM	20775	25RB#0	4.5011	4.957	PASS
Band7	5MHz	64QAM	21100	25RB#0	4.5002	4.955	PASS
Band7	5MHz	64QAM	21425	25RB#0	4.5049	4.938	PASS
Band7	10MHz	QPSK	20800	50RB#0	9.0164	9.929	PASS
Band7	10MHz	QPSK	21100	50RB#0	9.0055	9.853	PASS
Band7	10MHz	QPSK	21400	50RB#0	9.0097	9.870	PASS
Band7	10MHz	16QAM	20800	50RB#0	8.9823	9.796	PASS
Band7	10MHz	16QAM	21100	50RB#0	8.9866	9.799	PASS
Band7	10MHz	16QAM	21400	50RB#0	8.9941	9.756	PASS
Band7	10MHz	64QAM	20800	50RB#0	8.9771	9.756	PASS
Band7	10MHz	64QAM	21100	50RB#0	9.0055	9.800	PASS
Band7	10MHz	64QAM	21400	50RB#0	8.9913	9.804	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.503	15.67	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.480	14.73	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.495	14.76	PASS
Band7	15MHz	16QAM	20825	75RB#0	13.492	16.63	PASS
Band7	15MHz	16QAM	21100	75RB#0	13.488	14.56	PASS
Band7	15MHz	16QAM	21375	75RB#0	13.500	14.65	PASS
Band7	15MHz	64QAM	20825	75RB#0	13.481	16.39	PASS
Band7	15MHz	64QAM	21100	75RB#0	13.490	14.66	PASS
Band7	15MHz	64QAM	21375	75RB#0	13.472	14.67	PASS
Band7	20MHz	QPSK	20850	100RB#0	17.972	21.58	PASS
Band7	20MHz	QPSK	21100	100RB#0	17.969	19.54	PASS
Band7	20MHz	QPSK	21350	100RB#0	17.966	19.45	PASS
Band7	20MHz	16QAM	20850	100RB#0	17.934	19.40	PASS
Band7	20MHz	16QAM	21100	100RB#0	17.969	19.32	PASS
Band7	20MHz	16QAM	21350	100RB#0	17.939	19.37	PASS
Band7	20MHz	64QAM	20850	100RB#0	17.930	19.37	PASS
Band7	20MHz	64QAM	21100	100RB#0	17.972	19.37	PASS
Band7	20MHz	64QAM	21350	100RB#0	17.982	19.71	PASS

Test Graphs

Band7-5MHz-QPSK-20775-25RB#0
Band7-5MHz-QPSK-21100-25RB#0
Band7-5MHz-QPSK-21425-25RB#0

Band7-5MHz-16QAM-20775-25RB#0

Band7-5MHz-16QAM-21100-25RB#0

Band7-5MHz-16QAM-21425-25RB#0

Band7-5MHz-64QAM-20775-25RB#0

Band7-5MHz-64QAM-21100-25RB#0

Band7-5MHz-64QAM-21425-25RB#0

Band7-10MHz-QPSK-20800-50RB#0

Band7-10MHz-QPSK-21100-50RB#0

Band7-10MHz-QPSK-21400-50RB#0

Band7-10MHz-16QAM-20800-50RB#0

Band7-10MHz-16QAM-21100-50RB#0

Band7-10MHz-16QAM-21400-50RB#0

Band7-10MHz-64QAM-20800-50RB#0

Band7-10MHz-64QAM-21100-50RB#0

Band7-10MHz-64QAM-21400-50RB#0

Band7-15MHz-QPSK-20825-75RB#0

Band7-15MHz-QPSK-21100-75RB#0

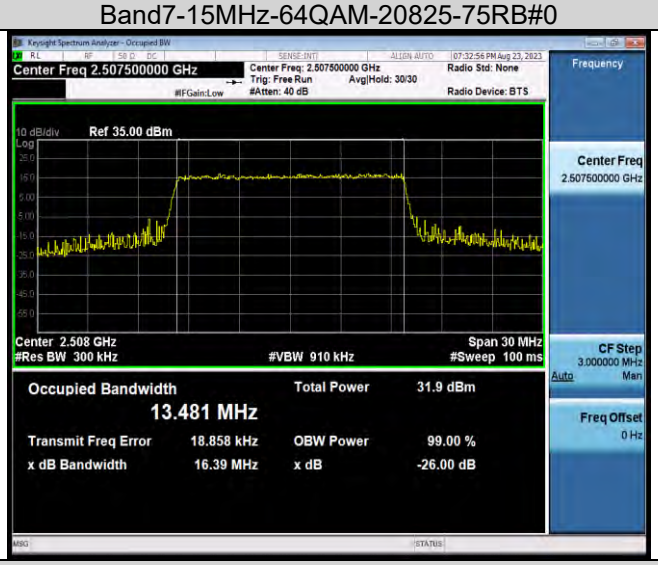
Band7-15MHz-QPSK-21375-75RB#0

Band7-15MHz-16QAM-20825-75RB#0

Band7-15MHz-16QAM-21100-75RB#0

Band7-15MHz-16QAM-21375-75RB#0

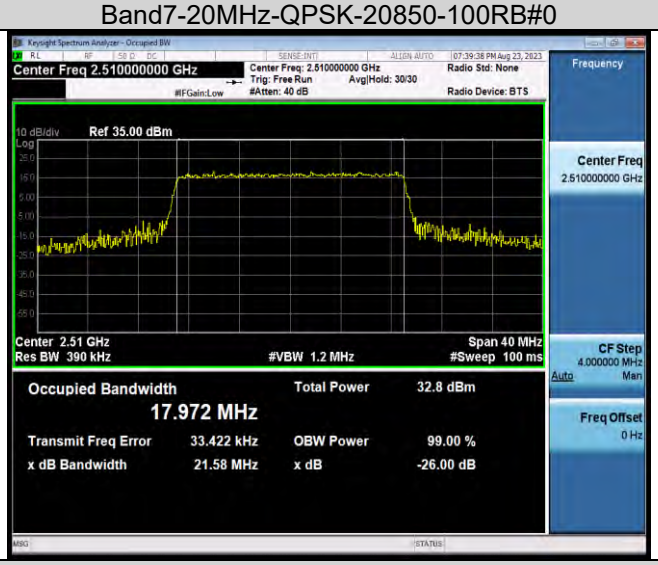
Band7-15MHz-64QAM-20825-75RB#0



Band7-15MHz-64QAM-21100-75RB#0

Band7-15MHz-64QAM-21375-75RB#0

Band7-20MHz-QPSK-20850-100RB#0



Band7-20MHz-QPSK-21100-100RB#0

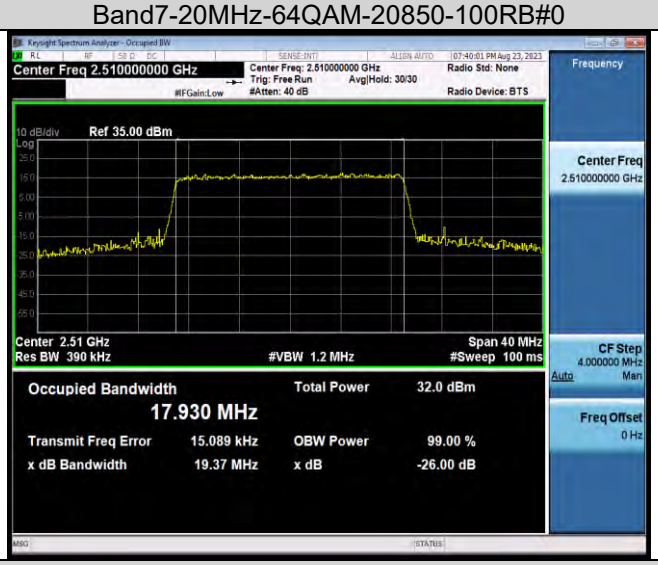
Band7-20MHz-QPSK-21350-100RB#0

Band7-20MHz-16QAM-20850-100RB#0

Band7-20MHz-16QAM-21100-100RB#0

Band7-20MHz-16QAM-21350-100RB#0

Band7-20MHz-64QAM-20850-100RB#0



Band7-20MHz-64QAM-21100-100RB#0

Band7-20MHz-64QAM-21350-100RB#0

Keysight Spectrum Analyzer - Occupied BW
Center Freq 2.560000000 GHz
Center Freq: 2.560000000 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
2.560000000 GHz
Center 2.56 GHz
Res BW 390 kHz
#VBW 1.2 MHz
Span 40 MHz
#Sweep 100 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
17.982 MHz
Total Power
31.8 dBm
Transmit Freq Error
1.880 kHz
OBW Power
99.00 %
x dB Bandwidth
19.71 MHz
x dB
-26.00 dB
Freq Offset
0 Hz