

FCC TEST REPORT

(PART 27)

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Product:	Multi-band GSM/WCDMA/LTE phone with Bluetooth&WLAN
Brand Name:	NOKIA
Model Name:	TA-1401
FCC ID:	2AJOTTA-1401
Date of tests:	Nov. 25, 2021 ~ Dec. 17, 2021

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

☒ **FCC Part 27, Subpart C, M** ☒ **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
	
Date: Dec. 17, 2021	Date: Dec. 17, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21100018-4RF06	Original release	Dec. 17, 2021

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
§2.1046	Conducted Output Power	Compliance
§27.50(h)(2)	Equivalent Isotropically Radiated Power	Compliance
§2.1055 §27.54	Frequency Stability	Compliance
§2.1049 §27.53(m)(6)	Occupied Bandwidth	Compliance
§2.1051 §27.53(m)(4)(6)	Band Edge Measurements	Compliance
§2.1051 §27.53(m)(4)(6)	Conducted Spurious Emissions	Compliance
§2.1053 §27.53(m)(4)(6)	Radiated Spurious Emissions	Compliance

Note: Except the data of RSE and power, other data please refer to APPENDIX.

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	$\pm 76.97\text{Hz}$
Radiated emissions & Radiated Power (30MHz~1GMHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GMHz ~18GMHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GMHz ~40GMHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

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	Apr. 22,21	Apr. 21,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Apr. 02,21	Apr. 01,22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 25,21	Feb. 24,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
Power Meter	Anritsu	ML2495A	1506002	Apr. 07,21	Apr. 06,22
Power Sensor	Anritsu	MA2411B	1339352	May. 07,21	May. 06,22
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 02,21	Jun. 01,22
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 05,21	Mar. 04,22
Power Divider	MCLI/USA	PS2-15	24880	N/A	N/A

- 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	Multi-band GSM/WCDMA/LTE phone with Bluetooth&WLAN	
BRAND NAME	NOKIA	
MODEL NAME	TA-1401	
NOMINAL VOLTAGE	5.0Vdc(adapter or host equipment) 3.85Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	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
	LTE Band 38 Channel Bandwidth: 5MHz	2572.5MHz ~ 2617.5MHz
	LTE Band 38 Channel Bandwidth: 10MHz	2575MHz ~ 2615MHz
	LTE Band 38 Channel Bandwidth: 15MHz	2577.5MHz ~ 2612.5MHz
	LTE Band 38 Channel Bandwidth: 20MHz	2580MHz ~ 2610MHz
	LTE Band 41 Channel Bandwidth: 5MHz	2498.5MHz ~ 2687.5MHz
	LTE Band 41 Channel Bandwidth: 10MHz	2501MHz ~ 2685MHz
	LTE Band 41 Channel Bandwidth: 15MHz	2503.5MHz ~ 2682.5MHz
	LTE Band 41 Channel Bandwidth: 20MHz	2506MHz ~ 2680MHz

MAX. EIRP POWER	LTE Band 7 Channel Bandwidth: 5MHz	195.43mW
	LTE Band 7 Channel Bandwidth: 10MHz	195.43mW
	LTE Band 7 Channel Bandwidth: 15MHz	197.70mW
	LTE Band 7 Channel Bandwidth: 20MHz	199.07mW
	LTE Band 38 Channel Bandwidth: 5MHz	165.58mW
	LTE Band 38 Channel Bandwidth: 10MHz	165.96mW
	LTE Band 38 Channel Bandwidth: 15MHz	164.06mW
	LTE Band 38 Channel Bandwidth: 20MHz	166.34mW
	LTE Band 41 Channel Bandwidth: 5MHz	200.91mW
	LTE Band 41 Channel Bandwidth: 10MHz	200.91mW
	LTE Band 41 Channel Bandwidth: 15MHz	199.53mW
	LTE Band 41 Channel Bandwidth: 20MHz	203.24mW
EMISSION DESIGNATOR	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 8M99G7D
		16QAM: 8M98W7D
		64QAM: 8M99W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 18M0W7D
		64QAM: 18M0W7D

EMISSION DESIGNATOR	LTE Band 38 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M49W7D
		64QAM: 4M50W7D
	LTE Band 38 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M98W7D
		64QAM: 8M99W7D
	LTE Band 38 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 38 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 18M0W7D
		64QAM: 18M0W7D
	LTE Band 41 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M49W7D
		64QAM: 4M50W7D
	LTE Band 41 Channel Bandwidth: 10MHz	QPSK: 9M00G7D
		16QAM: 8M98W7D
		64QAM: 8M98W7D
	LTE Band 41 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 41 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D

ANTENNA TYPE	Fixed Internal Antenna with -0.2 dBi gain for LTE7 Fixed Internal Antenna with -0.5 dBi gain for LTE38 Fixed Internal Antenna with -0.3 dBi gain for LTE41
HW VERSION	19655-1-11M12
SW VERSION	00WW_0_010
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB1 cable: unshielded without ferrite, 1.0meter USB2 cable: unshielded without ferrite, 1.0meter USB3 cable: unshielded without ferrite, 1.0meter Earphone1: non-shielded cable, with w/o ferrite core, 1.2 meter Earphone2: non-shielded cable, with w/o ferrite core, 1.2 meter
EXTREME TEMPERATURE	0-40 °C
EXTREME VOLTAGE	3.5V - 4.4V

NOTE:

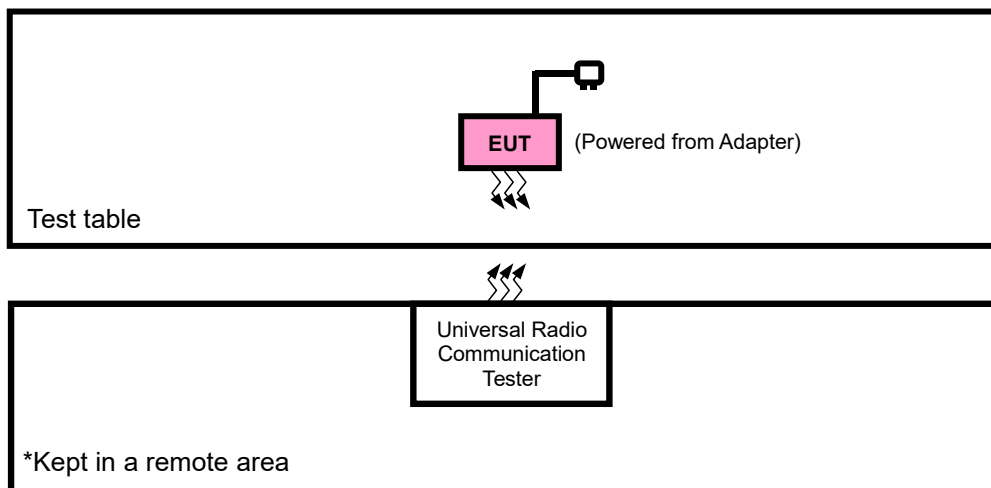
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	Nokia	Hunan Gaoyuan Battery Co., Ltd.	WT341	Capacity : 3.85 Vdc, 4900mAh
AC Adapter 1	Nokia	ShenZhenBaiJunDa ElectronicCO.,LTD.	AD-010U	I/P: 100-240Vac, 0.35A, O/P: 5.0Vdc, 2.0A
AC Adapter 2	Nokia	SHENZHEN TIANYIN ELECTRONICS CO., LTD.	CH-21U	I/P: 100-240Vac, 0.3A, O/P: 5.0Vdc, 2.0A
AC Adapter 3	Nokia	YuTong Electronics(HuiZhou) Co.,Ltd	PA-US5V2A-03 6	I/P: 100-240Vac, 0.5A, O/P: 5.0Vdc, 2.0A
AC Adapter 4	Nokia	Dongguan Aohai Technology Co., Ltd.	A829US	I/P: 100 - 240Vac, 0.5A, O/P:5.0 Vdc,3A/9.0 Vdc, 2.23 A/12.0 Vdc,1.67A
Earphone 1	Nokia	NEW LEADER INDUSTRY CO.,LTD	HS-34	Signal Line, 1.2meter
Earphone 2	Nokia	Guangdong Wivtak Technology Co., Ltd.	HS-34	Signal Line, 1.2meter
USB Cable 1	Nokia	HUIZHOU WASHIN ELECTRONICS CO.,LTD	CB-36A	Signal Line, 1.0meter
USB Cable 2	Nokia	Shenzhen BRL Technology Co.,Ltd.	CB-36A	Signal Line, 1.0meter
USB Cable 3	Nokia	Saibao(Jiangi) Communication Industial Co.,Ltd	CB-12A	Signal Line, 1.0meter

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

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

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

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

2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGUR E MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with LTE link
B	EUT + Battery with LTE link

LTE BAND 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	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	20775 to 21425	20775, 21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		20825 to 21375	20825, 21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	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
B	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



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						75 RB / 0 RB Offset
		20850 to 21350	20850	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
		21350	21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDCU DETED EMISSION	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
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
B	PEAK TO AVERAGE RATIO	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset

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

LTE BAND 38 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	37775 to 38225	37775, 38225	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37800 to 38200	37800, 38200	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		37825 to 38175	37825, 38175	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37850 to 38150	37850, 38150	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
B	BAND EDGE	37775 to 38225	37775	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			38825	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		37800 to 38200	37800	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			38200	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		37825 to 38175	37825	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			38175	15MHz	QPSK, 16QAM, 64QAM	1 RB / 74 RB Offset

						75 RB / 0 RB Offset
		37850 to38150	37850	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
		37850 to38150	38150	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDCU DETED EMISSION	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37850 to38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	37775 to 38225	38000	5MHz	QPSK	1 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK	1 RB / 0RB Offset
		37825 to 38175	38000	15MHz	QPSK	1 RB / 0 RB Offset
		37850 to38150	38000	20MHz	QPSK	1 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		37850 to38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset

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

LTE BAND 41 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	39675 to 41565	39675, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		39725 to 41515	39725, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
B	BAND EDGE	39675 to 41565	39675	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		39700 to 41540	39700	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		39725 to 41515	39725	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 74 RB Offset

						75 RB / 0 RB Offset
		39750 to 41490	39750	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDUCTED EMISSION	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620,41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	39675 to 41565	40620	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	40620	10MHz	QPSK	1 RB / 0RB Offset
		39725 to 41515	40620	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		39700 to 41540	39700, 40620,41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 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	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	3.5/3.85/4.4V By Battery	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC5V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	James Fu
CONDCUDED EMISSION	23deg. C, 70%RH	DC5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC5V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC5V By Adapter	James Fu



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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 determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

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

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

CONDUCTED POWER MEASUREMENT:

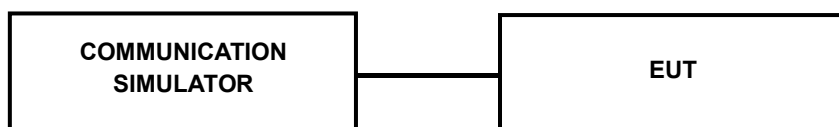
- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



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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

AVERAGE CONDUCTED OUTPUT POWER (dBm)

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425	MPR
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz	
7/ 5	QPSK	1	0	22.89	23.00	22.81	0
		1	12	23.04	23.11	22.96	0
		1	24	22.94	23.04	22.90	0
		12	0	21.97	22.09	21.88	1
		12	6	21.97	22.17	21.92	1
		12	13	21.99	22.11	21.94	1
		25	0	22.08	22.25	22.01	1
	16QAM	1	0	22.46	22.61	22.43	1
		1	12	22.54	22.73	22.49	1
		1	24	22.56	22.63	22.48	1
		12	0	21.10	21.25	21.02	2
		12	6	21.24	21.41	21.16	2
		12	13	21.20	21.35	21.17	2
		25	0	21.19	21.31	21.12	2
	64QAM	1	0	20.92	21.07	20.89	2
		1	12	21.03	21.22	20.97	2
		1	24	20.98	21.18	20.96	2
		12	0	19.77	19.89	19.65	3
		12	6	19.82	20.02	19.80	3
		12	13	19.80	19.92	19.68	3
		25	0	19.74	19.91	19.69	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 20800	Mid CH 21100	High CH 21400	MPR
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz	
7/ 10	QPSK	1	0	22.86	23.03	22.81	0
		1	24	23.04	23.11	22.97	0
		1	49	22.91	23.08	22.86	0
		25	0	21.98	22.08	21.91	1
		25	12	22.03	22.11	21.92	1
		25	25	21.97	22.08	21.93	1
		50	0	22.13	22.25	21.98	1
	16QAM	1	0	22.46	22.58	22.39	1
		1	24	22.59	22.69	22.52	1
		1	49	22.56	22.64	22.45	1
		25	0	21.12	21.23	21.08	2
		25	12	21.28	21.35	21.21	2
		25	25	21.19	21.36	21.14	2
		50	0	21.23	21.30	21.16	2
	64QAM	1	0	20.91	21.08	20.86	2
		1	24	21.08	21.18	21.01	2
		1	49	21.04	21.12	20.93	2
		25	0	19.75	19.86	19.71	3
		25	12	19.89	20.01	19.74	3
		25	25	19.79	19.89	19.70	3
		50	0	19.79	19.87	19.70	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825	Mid CH 21100	High CH 21375	MPR
				Frequency 2507.5 MHz	Frequency 2535 MHz	Frequency 2562.5 MHz	
7/ 15	QPSK	1	0	22.93	23.03	22.78	0
		1	37	23.02	23.16	22.92	0
		1	74	22.97	23.11	22.87	0
		36	0	21.95	22.09	21.92	1
		36	19	22.04	22.16	21.92	1
		36	39	21.95	22.09	21.93	1
		75	0	22.13	22.23	22.03	1
	16QAM	1	0	22.50	22.65	22.39	1
		1	37	22.58	22.70	22.52	1
		1	74	22.52	22.69	22.47	1
		36	0	21.16	21.23	21.09	2
		36	19	21.22	21.39	21.17	2
		36	39	21.24	21.34	21.17	2
		75	0	21.24	21.33	21.09	2
	64QAM	1	0	20.93	21.09	20.87	2
		1	37	21.09	21.17	20.98	2
		1	74	21.00	21.11	20.96	2
		36	0	19.80	19.92	19.65	3
		36	19	19.83	19.95	19.76	3
		36	39	19.82	19.96	19.72	3
		75	0	19.78	19.85	19.71	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 20850	Mid CH 21100	High CH 21350	MPR
				Frequency 2510 MHz	Frequency 2535 MHz	Frequency 2560 MHz	
7/ 20	QPSK	1	0	22.94	23.07	22.86	0
		1	50	23.06	23.19	22.98	0
		1	99	22.99	23.12	22.91	0
		50	0	22.01	22.14	21.93	1
		50	25	22.05	22.18	21.97	1
		50	50	22.03	22.16	21.95	1
		100	0	22.14	22.27	22.06	1
	16QAM	1	0	22.53	22.66	22.45	1
		1	50	22.62	22.75	22.54	1
		1	99	22.58	22.71	22.50	1
		50	0	21.18	21.31	21.10	2
		50	25	21.30	21.43	21.22	2
		50	50	21.27	21.40	21.19	2
		100	0	21.25	21.38	21.17	2
	64QAM	1	0	20.99	21.12	20.91	2
		1	50	21.11	21.24	21.03	2
		1	99	21.06	21.19	20.98	2
		50	0	19.81	19.94	19.73	3
		50	25	19.90	20.03	19.82	3
		50	50	19.84	19.97	19.76	3
		100	0	19.80	19.93	19.72	3

LTE Band 38

Band/BW	Modulation	RB Size	RB Offset	Low CH 37775	Mid CH 38000	High CH 38225	MPR
				Frequency 2572.5 MHz	Frequency 2595 MHz	Frequency 2617.5MHz	
38/ 5	QPSK	1	0	22.46	22.48	22.57	0
		1	12	22.58	22.56	22.69	0
		1	24	22.43	22.44	22.58	0
		12	0	21.49	21.52	21.59	1
		12	6	21.63	21.74	21.77	1
		12	13	21.58	21.61	21.72	1
		25	0	21.51	21.59	21.63	1
	16QAM	1	0	21.81	21.87	21.97	1
		1	12	21.77	21.87	21.91	1
		1	24	21.40	21.38	21.51	1
		12	0	20.53	20.59	20.64	2
		12	6	20.66	20.74	20.77	2
		12	13	20.67	20.73	20.83	2
		25	0	20.78	20.81	20.90	2
	64QAM	1	0	20.06	20.12	20.22	2
		1	12	19.93	20.03	20.06	2
		1	24	20.02	20.13	20.19	2
		12	0	19.82	19.85	19.89	3
		12	6	19.48	19.59	19.65	3
		12	13	19.60	19.63	19.67	3
		25	0	19.69	19.77	19.83	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 37800	Mid CH 38000	High CH 38200	MPR
				Frequency 2575 MHz	Frequency 2595 MHz	Frequency 2615 MHz	
38/ 10	QPSK	1	0	22.43	22.51	22.57	0
		1	24	22.58	22.56	22.70	0
		1	49	22.40	22.48	22.54	0
		25	0	21.50	21.51	21.62	1
		25	12	21.69	21.68	21.77	1
		25	25	21.56	21.58	21.71	1
		50	0	21.56	21.59	21.60	1
	16QAM	1	0	21.81	21.84	21.93	1
		1	24	21.82	21.83	21.94	1
		1	49	21.40	21.39	21.48	1
		25	0	20.55	20.57	20.70	2
		25	12	20.70	20.68	20.82	2
		25	25	20.66	20.74	20.80	2
		50	0	20.82	20.80	20.94	2
	64QAM	1	0	20.05	20.13	20.19	2
		1	24	19.98	19.99	20.10	2
		1	49	20.08	20.07	20.16	2
		25	0	19.80	19.82	19.95	3
		25	12	19.55	19.58	19.59	3
		25	25	19.59	19.60	19.69	3
		50	0	19.74	19.73	19.84	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 37825	Mid CH 38000	High CH 38175	MPR
				Frequency 2577.5 MHz	Frequency 2595 MHz	Frequency 2612.5MHz	
38/ 15	QPSK	1	0	22.50	22.51	22.54	0
		1	37	22.56	22.61	22.65	0
		1	74	22.46	22.51	22.55	0
		36	0	21.47	21.52	21.63	1
		36	19	21.70	21.73	21.77	1
		36	39	21.54	21.59	21.71	1
		75	0	21.56	21.57	21.65	1
	16QAM	1	0	21.85	21.91	21.93	1
		1	37	21.81	21.84	21.94	1
		1	74	21.36	21.44	21.50	1
		36	0	20.59	20.57	20.71	2
		36	19	20.64	20.72	20.78	2
		36	39	20.71	20.72	20.83	2
		75	0	20.83	20.83	20.87	2
	64QAM	1	0	20.07	20.14	20.20	2
		1	37	19.99	19.98	20.07	2
		1	74	20.04	20.06	20.19	2
		36	0	19.85	19.88	19.89	3
		36	19	19.49	19.52	19.61	3
		36	39	19.62	19.67	19.71	3
		75	0	19.73	19.71	19.85	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 37850	Mid CH 38000	High CH 38150	MPR
				Frequency 2580 MHz	Frequency 2595 MHz	Frequency 2610 MHz	
38/ 20	QPSK	1	0	22.51	22.55	22.62	0
		1	50	22.60	22.64	22.71	0
		1	99	22.48	22.52	22.59	0
		50	0	21.53	21.57	21.64	1
		50	25	21.71	21.75	21.82	1
		50	50	21.62	21.66	21.73	1
		100	0	21.57	21.61	21.68	1
	16QAM	1	0	21.88	21.92	21.99	1
		1	50	21.85	21.89	21.96	1
		1	99	21.42	21.46	21.53	1
		50	0	20.61	20.65	20.72	2
		50	25	20.72	20.76	20.83	2
		50	50	20.74	20.78	20.85	2
		100	0	20.84	20.88	20.95	2
	64QAM	1	0	20.13	20.17	20.24	2
		1	50	20.01	20.05	20.12	2
		1	99	20.10	20.14	20.21	2
		50	0	19.86	19.90	19.97	3
		50	25	19.56	19.60	19.67	3
		50	50	19.64	19.68	19.75	3
		100	0	19.75	19.79	19.86	3



**BUREAU
VERITAS**

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LTE Band 41

Band/BW	Modulation	RB Size	RB Offset	Low CH (39675)	Mid CH (40620)	High CH (41565)	MPR
				Frequency (2498.5)MHz	Frequency (2593)MHz	Frequency (2687.5)MHz	
41/ 5	QPSK	1	0	23.15	22.85	23.33	0
		1	12	23.02	22.68	23.20	0
		1	24	22.96	22.65	23.18	0
		12	0	22.11	21.82	22.28	1
		12	6	22.03	21.82	22.24	1
		12	13	22.04	21.75	22.25	1
		25	0	21.75	21.51	21.94	1
	16QAM	1	0	22.49	22.23	22.72	1
		1	12	22.41	22.19	22.62	1
		1	24	22.38	22.04	22.56	1
		12	0	21.34	21.08	21.52	2
		12	6	21.28	21.04	21.46	2
		12	13	21.21	20.95	21.44	2
		25	0	21.19	20.90	21.38	2
	64QAM	1	0	21.22	20.96	21.45	2
		1	12	21.09	20.87	21.29	2
		1	24	21.17	20.96	21.41	2
		12	0	20.66	20.37	20.80	3
		12	6	20.52	20.31	20.76	3
		12	13	20.51	20.22	20.65	3
		25	0	20.58	20.34	20.79	3

Band/BW	Modulation	RB Size	RB Offset	Low CH (39700)	Mid CH (40620)	High CH (41540)	MPR
				Frequency (2501)MHz	Frequency (2593)MHz	Frequency (2685)MHz	
41/ 10	QPSK	1	0	23.12	22.88	23.33	0
		1	24	23.02	22.68	23.21	0
		1	49	22.93	22.69	23.14	0
		25	0	22.12	21.81	22.31	1
		25	12	22.09	21.76	22.24	1
		25	25	22.02	21.72	22.24	1
		50	0	21.80	21.51	21.91	1
	16QAM	1	0	22.49	22.20	22.68	1
		1	24	22.46	22.15	22.65	1
		1	49	22.38	22.05	22.53	1
		25	0	21.36	21.06	21.58	2
		25	12	21.32	20.98	21.51	2
		25	25	21.20	20.96	21.41	2
		50	0	21.23	20.89	21.42	2
	64QAM	1	0	21.21	20.97	21.42	2
		1	24	21.14	20.83	21.33	2
		1	49	21.23	20.90	21.38	2
		25	0	20.64	20.34	20.86	3
		25	12	20.59	20.30	20.70	3
		25	25	20.50	20.19	20.67	3
		50	0	20.63	20.30	20.80	3

Band/BW	Modulation	RB Size	RB Offset	Low CH (39725)	Mid CH (40620)	High CH (41515)	MPR
				Frequency (2503.5)MHz	Frequency (2593)MHz	Frequency (2682.5)MHz	
41/ 15	QPSK	1	0	23.19	22.88	23.30	0
		1	37	23.00	22.73	23.16	0
		1	74	22.99	22.72	23.15	0
		36	0	22.09	21.82	22.32	1
		36	19	22.10	21.81	22.24	1
		36	39	22.00	21.73	22.24	1
		75	0	21.80	21.49	21.96	1
	16QAM	1	0	22.53	22.27	22.68	1
		1	37	22.45	22.16	22.65	1
		1	74	22.34	22.10	22.55	1
		36	0	21.40	21.06	21.59	2
		36	19	21.26	21.02	21.47	2
		36	39	21.25	20.94	21.44	2
		75	0	21.24	20.92	21.35	2
	64QAM	1	0	21.23	20.98	21.43	2
		1	37	21.15	20.82	21.30	2
		1	74	21.19	20.89	21.41	2
		36	0	20.69	20.40	20.80	3
		36	19	20.53	20.24	20.72	3
		36	39	20.53	20.26	20.69	3
		75	0	20.62	20.28	20.81	3

Band/BW	Modulation	RB Size	RB Offset	Low CH (39750)	Mid CH (40620)	High CH (41490)	MPR
				Frequency (2506)MHz	Frequency (2593)MHz	Frequency (2680)MHz	
41/ 20	QPSK	1	0	23.20	22.92	23.38	0
		1	50	23.04	22.76	23.22	0
		1	99	23.01	22.73	23.19	0
		50	0	22.15	21.87	22.33	1
		50	25	22.11	21.83	22.29	1
		50	50	22.08	21.80	22.26	1
		100	0	21.81	21.53	21.99	1
	16QAM	1	0	22.56	22.28	22.74	1
		1	50	22.49	22.21	22.67	1
		1	99	22.40	22.12	22.58	1
		50	0	21.42	21.14	21.60	2
		50	25	21.34	21.06	21.52	2
		50	50	21.28	21.00	21.46	2
		100	0	21.25	20.97	21.43	2
	64QAM	1	0	21.29	21.01	21.47	2
		1	50	21.17	20.89	21.35	2
		1	99	21.25	20.97	21.43	2
		50	0	20.70	20.42	20.88	3
		50	25	20.60	20.32	20.78	3
		50	50	20.55	20.27	20.73	3
		100	0	20.64	20.36	20.82	3

EIRP

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	23.04	-0.2	22.84	192.31	2
21100	2535.0	23.11	-0.2	22.91	195.43	2
21425	2567.5	22.96	-0.2	22.76	188.8	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	22.56	-0.2	22.36	172.19	2
21100	2535.0	22.73	-0.2	22.53	179.06	2
21425	2567.5	22.49	-0.2	22.29	169.43	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	21.03	-0.2	20.83	121.06	2
21100	2535	21.22	-0.2	21.02	126.47	2
21425	2567.5	20.97	-0.2	20.77	119.4	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	23.04	-0.2	22.84	192.31	2
21100	2535.0	23.11	-0.2	22.91	195.43	2
21400	2565.0	22.97	-0.2	22.77	189.23	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	22.59	-0.2	22.39	173.38	2
21100	2535.0	22.69	-0.2	22.49	177.42	2
21400	2565.0	22.52	-0.2	22.32	170.61	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	21.08	-0.2	20.88	122.46	2
21100	2535	21.18	-0.2	20.98	125.31	2
21400	2565	21.01	-0.2	20.81	120.5	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	23.02	-0.2	22.82	191.43	2
21100	2535.0	23.16	-0.2	22.96	197.7	2
21375	2562.5	22.92	-0.2	22.72	187.07	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	22.58	-0.2	22.38	172.98	2
21100	2535.0	22.7	-0.2	22.5	177.83	2
21375	2562.5	22.52	-0.2	22.32	170.61	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	21.09	-0.2	20.89	122.74	2
21100	2535	21.17	-0.2	20.97	125.03	2
21375	2562.5	20.98	-0.2	20.78	119.67	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	23.06	-0.2	22.86	193.2	2
21100	2535.0	23.19	-0.2	22.99	199.07	2
21350	2560.0	22.98	-0.2	22.78	189.67	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	22.62	-0.2	22.42	174.58	2
21100	2535.0	22.75	-0.2	22.55	179.89	2
21350	2560.0	22.54	-0.2	22.34	171.4	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21.11	-0.2	20.91	123.31	2
21100	2535	21.24	-0.2	21.04	127.06	2
21350	2560	21.03	-0.2	20.83	121.06	2

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

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CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	22.58	-0.5	22.08	161.44	2
38000	2595.0	22.56	-0.5	22.06	160.69	2
38225	2617.5	22.69	-0.5	22.19	165.58	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	21.81	-0.5	21.31	135.21	2
38000	2595.0	21.87	-0.5	21.37	137.09	2
38225	2617.5	21.97	-0.5	21.47	140.28	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	20.06	-0.5	19.56	90.36	2
38000	2595	20.13	-0.5	19.63	91.83	2
38225	2617.5	20.22	-0.5	19.72	93.76	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	22.58	-0.5	22.08	161.44	2
38000	2595.0	22.56	-0.5	22.06	160.69	2
38200	2615.0	22.7	-0.5	22.2	165.96	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	21.82	-0.5	21.32	135.52	2
38000	2595.0	21.84	-0.5	21.34	136.14	2
38200	2615.0	21.94	-0.5	21.44	139.32	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575	20.08	-0.5	19.58	90.78	2
38000	2595	20.13	-0.5	19.63	91.83	2
38200	2615	20.19	-0.5	19.69	93.11	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	22.56	-0.5	22.06	160.69	2
38000	2595.0	22.61	-0.5	22.11	162.55	2
38175	2612.5	22.65	-0.5	22.15	164.06	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	21.85	-0.5	21.35	136.46	2
38000	2595.0	21.91	-0.5	21.41	138.36	2
38175	2612.5	21.94	-0.5	21.44	139.32	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	20.07	-0.5	19.57	90.57	2
38000	2595	20.14	-0.5	19.64	92.04	2
38175	2612.5	20.2	-0.5	19.7	93.33	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	22.6	-0.5	22.1	162.18	2
38000	2595.0	22.64	-0.5	22.14	163.68	2
38150	2610.0	22.71	-0.5	22.21	166.34	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	21.88	-0.5	21.38	137.4	2
38000	2595.0	21.92	-0.5	21.42	138.68	2
38150	2610.0	21.99	-0.5	21.49	140.93	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580	20.13	-0.5	19.63	91.83	2
38000	2595	20.17	-0.5	19.67	92.68	2
38150	2610	20.24	-0.5	19.74	94.19	2



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CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	23.15	-0.3	22.85	192.75	2
40620	2593.0	22.85	-0.3	22.55	179.89	2
41565	2687.5	23.33	-0.3	23.03	200.91	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	22.49	-0.3	22.19	165.58	2
40620	2593.0	22.23	-0.3	21.93	155.96	2
41565	2687.5	22.72	-0.3	22.42	174.58	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	21.22	-0.3	20.92	123.59	2
40620	2593.0	20.96	-0.3	20.66	116.41	2
41565	2687.5	21.45	-0.3	21.15	130.32	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39700	2501.0	23.12	-0.3	22.82	191.43	2
40620	2593.0	22.88	-0.3	22.58	181.13	2
41540	2685.0	23.33	-0.3	23.03	200.91	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39700	2501.0	22.49	-0.3	22.19	165.58	2
40620	2593.0	22.2	-0.3	21.9	154.88	2
41540	2685.0	22.68	-0.3	22.38	172.98	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39700	2501.0	21.23	-0.3	20.93	123.88	2
40620	2593.0	20.97	-0.3	20.67	116.68	2
41540	2685.0	21.42	-0.3	21.12	129.42	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39725	2503.5	23.19	-0.3	22.89	194.54	2
40620	2593.0	22.88	-0.3	22.58	181.13	2
41515	2682.5	23.3	-0.3	23	199.53	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39725	2503.5	22.53	-0.3	22.23	167.11	2
40620	2593.0	22.27	-0.3	21.97	157.4	2
41515	2682.5	22.68	-0.3	22.38	172.98	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39725	2503.5	21.23	-0.3	20.93	123.88	2
40620	2593.0	20.98	-0.3	20.68	116.95	2
41515	2682.5	21.43	-0.3	21.13	129.72	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506.0	23.2	-0.3	22.9	194.98	2
40620	2593.0	22.92	-0.3	22.62	182.81	2
41490	2680.0	23.38	-0.3	23.08	203.24	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506.0	22.56	-0.3	22.26	168.27	2
40620	2593.0	22.28	-0.3	21.98	157.76	2
41490	2680.0	22.74	-0.3	22.44	175.39	2

CHANNEL BANDWIDTH: 20 MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506.0	21.29	-0.3	20.99	125.6	2
40620	2593.0	21.01	-0.3	20.71	117.76	2
41490	2680.0	21.47	-0.3	21.17	130.92	2

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

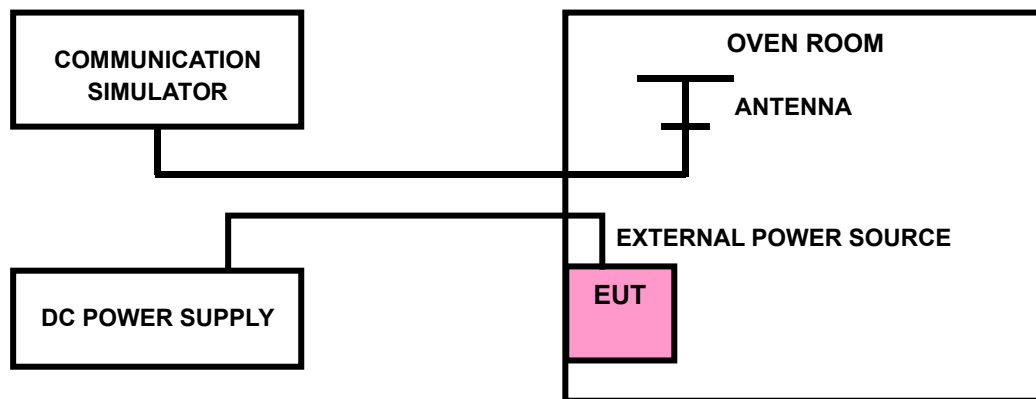
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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





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3.2.4 TEST RESULTS

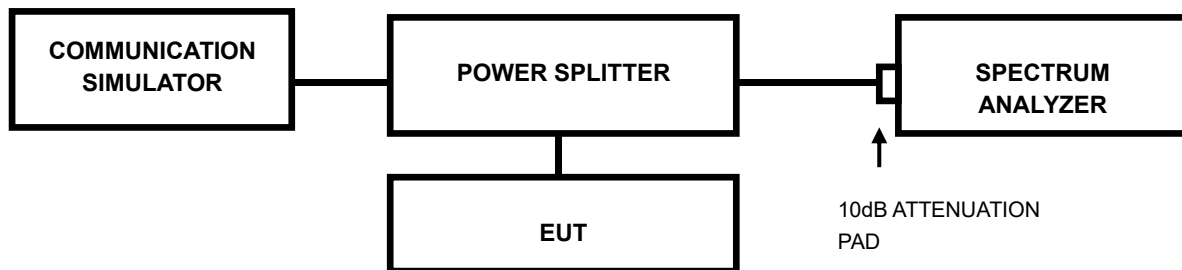
Please Refer to Appendix Of this test report.

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band 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

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



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3.3.4 TEST RESULTS

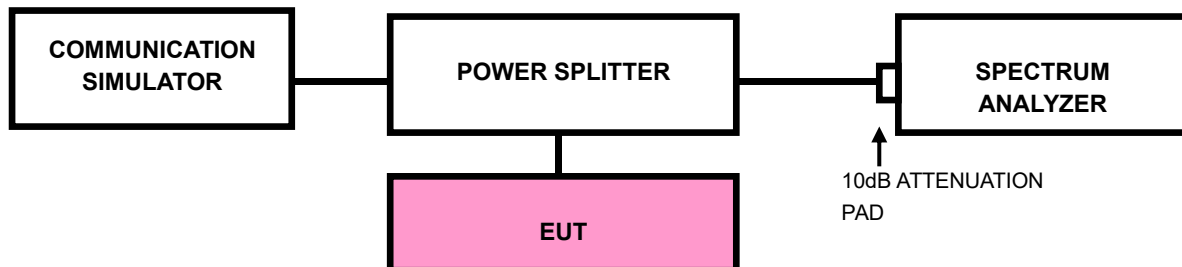
Please Refer to Appendix Of this test report.

3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC 27.53(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. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
- b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. The center frequency of spectrum is the band edge frequency and span is 35MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (Channel bandwidth 5MHz).
- d. The center frequency of spectrum is the band edge frequency and span is 50MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz (Channel bandwidth 10MHz).
- e. The center frequency of spectrum is the band edge frequency and span is 60MHz. RBW of the spectrum is 300kHz and VBW of the spectrum is 1MHz (Channel bandwidth 15MHz).
- f. The center frequency of spectrum is the band edge frequency and span is 80MHz. RBW of the spectrum is 500kHz and VBW of the spectrum is 2MHz (Channel bandwidth 20MHz).
- g. Record the max trace plot into the test report.



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3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

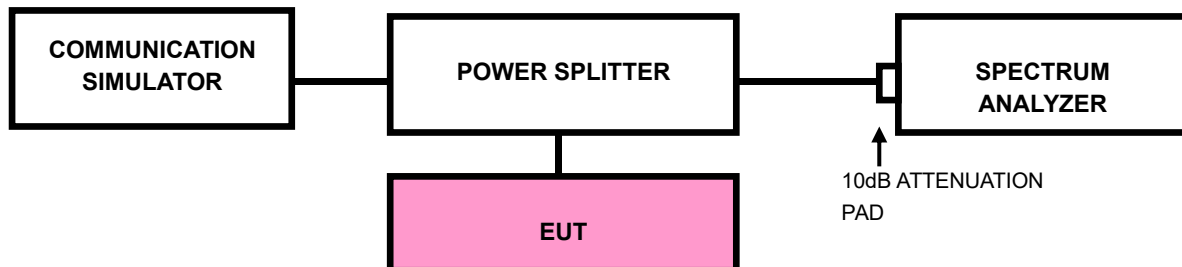
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ 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 30MHz~27GHz for LTE Band 7 & 30MHz~26.2GHz for LTE Band 38, 30MHz~27GHz for LTE Band 41. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

3.5.3 TEST SETUP





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3.5.4 TEST RESULTS

Please Refer to Appendix Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15dBi.$

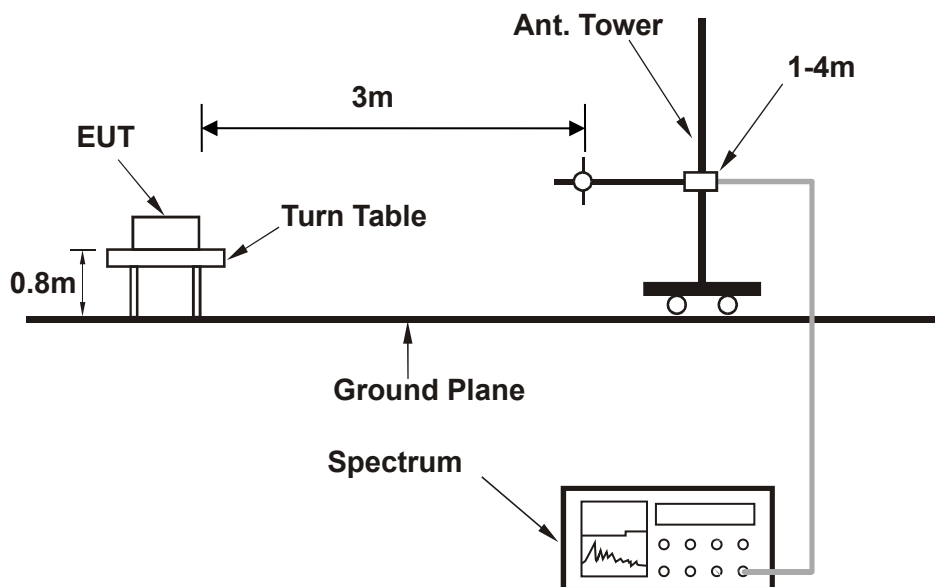
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

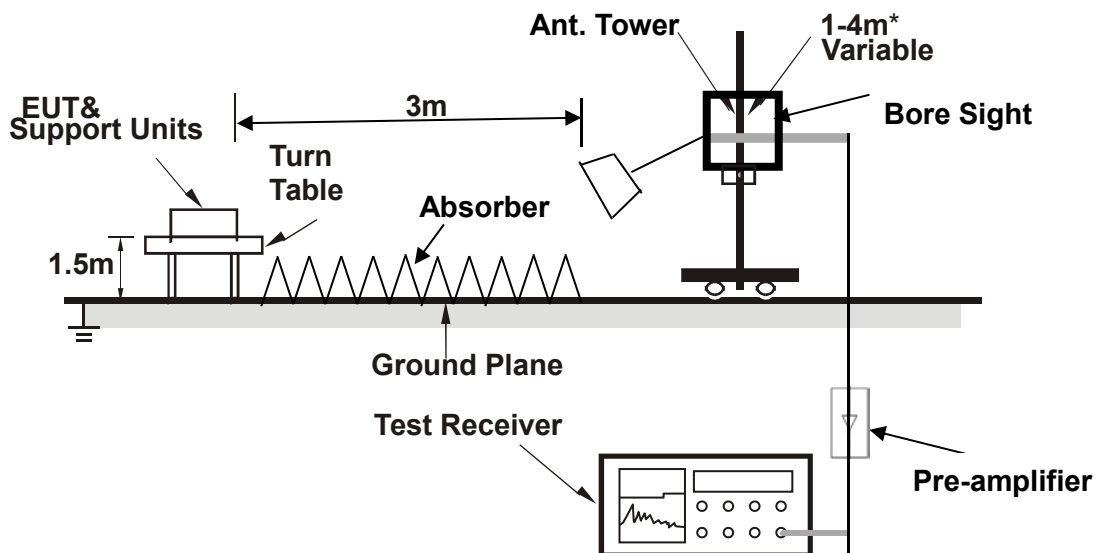
No deviation

3.6.4 TEST SETUP

< Frequency Range 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

BELOW 1GHz WORST-CASE DATA

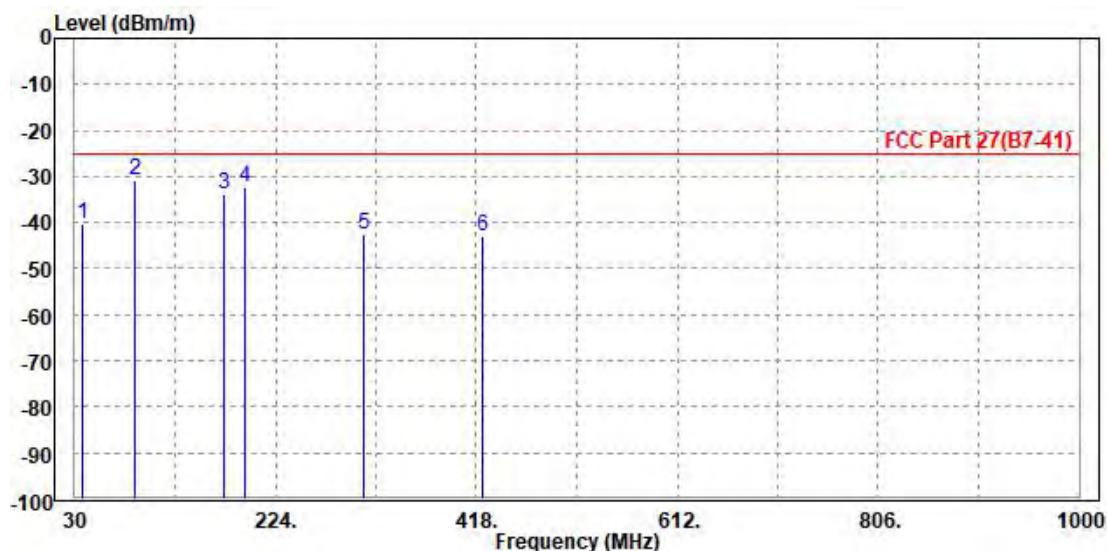
30 MHz – 1GHz data:

LTE Band 41

CHANNEL BANDWIDTH: 10MHz / QPSK

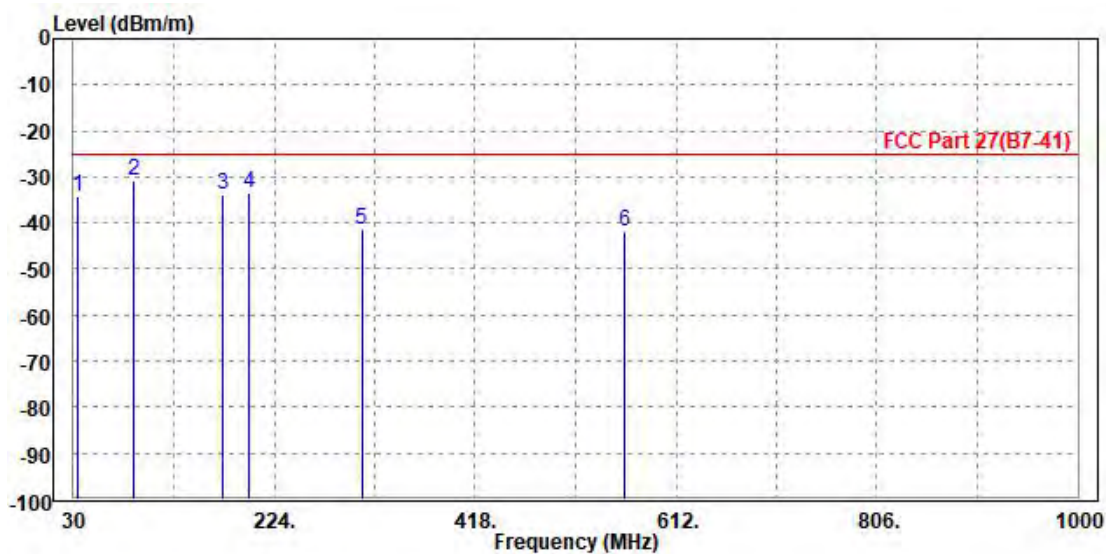
MODE	TX channel 40620	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	37.760	-40.17	-55.93	-25.00	-15.17	15.76	Peak	Horizontal
2 PP	88.200	-30.85	-38.67	-25.00	-5.85	7.82	Peak	Horizontal
3	173.560	-33.89	-44.32	-25.00	-8.89	10.43	Peak	Horizontal
4	193.930	-32.47	-43.23	-25.00	-7.47	10.76	Peak	Horizontal
5	309.360	-42.71	-56.98	-25.00	-17.71	14.27	Peak	Horizontal
6	423.820	-43.01	-60.34	-25.00	-18.01	17.33	Peak	Horizontal



MODE	TX channel 40620	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	-34.09	-52.58	-25.00	-9.09	18.49	Peak	Vertical
2 PP	88.200	-30.61	-39.07	-25.00	-5.61	8.46	Peak	Vertical
3	173.560	-33.97	-44.66	-25.00	-8.97	10.69	Peak	Vertical
4	198.780	-33.50	-44.93	-25.00	-8.50	11.43	Peak	Vertical
5	308.390	-41.56	-56.74	-25.00	-16.56	15.18	Peak	Vertical
6	561.560	-41.95	-62.16	-25.00	-16.95	20.21	Peak	Vertical





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Test Report No.: W7L-P21100018-4RF06

ABOVE 1GHz

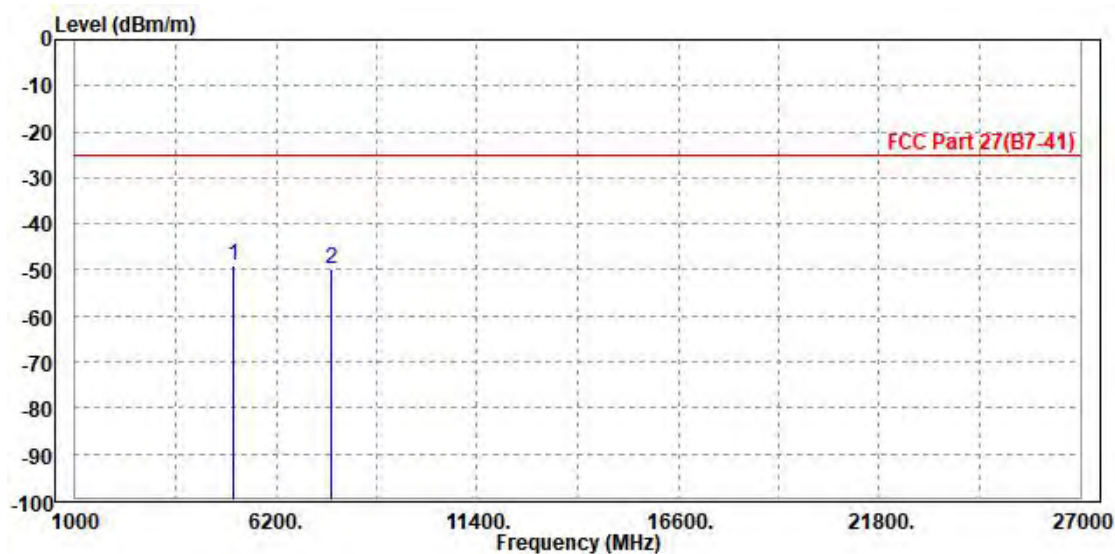
Note: For higher frequency, the emission is too low to be detected.

LTE Band 7

CHANNEL BANDWIDTH: 5MHz / QPSK

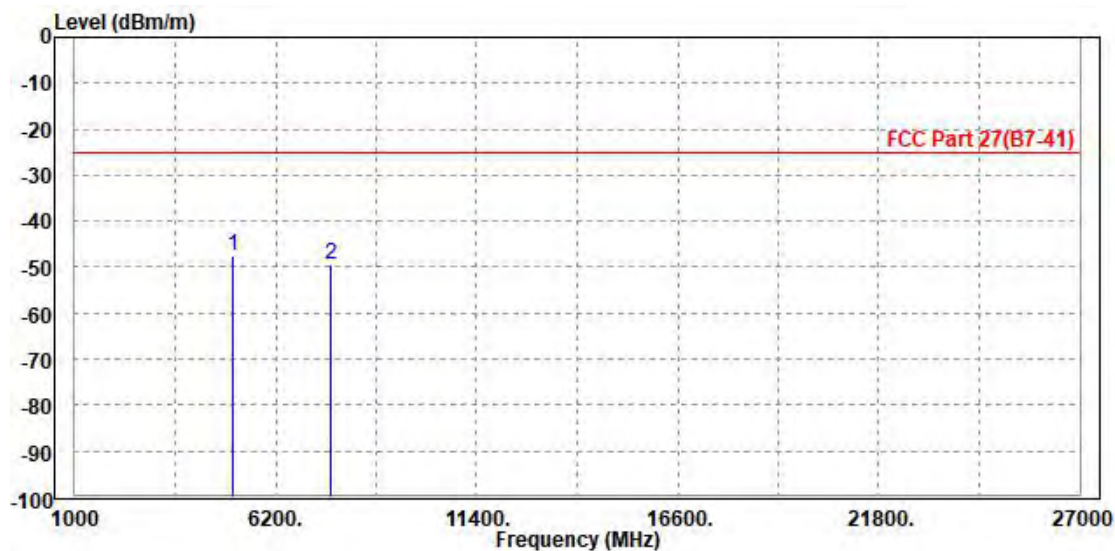
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5082.000	-49.24	-58.01	-25.00	-24.24	8.77	Peak	Horizontal
2		7605.000	-49.99	-61.39	-25.00	-24.99	11.40	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			

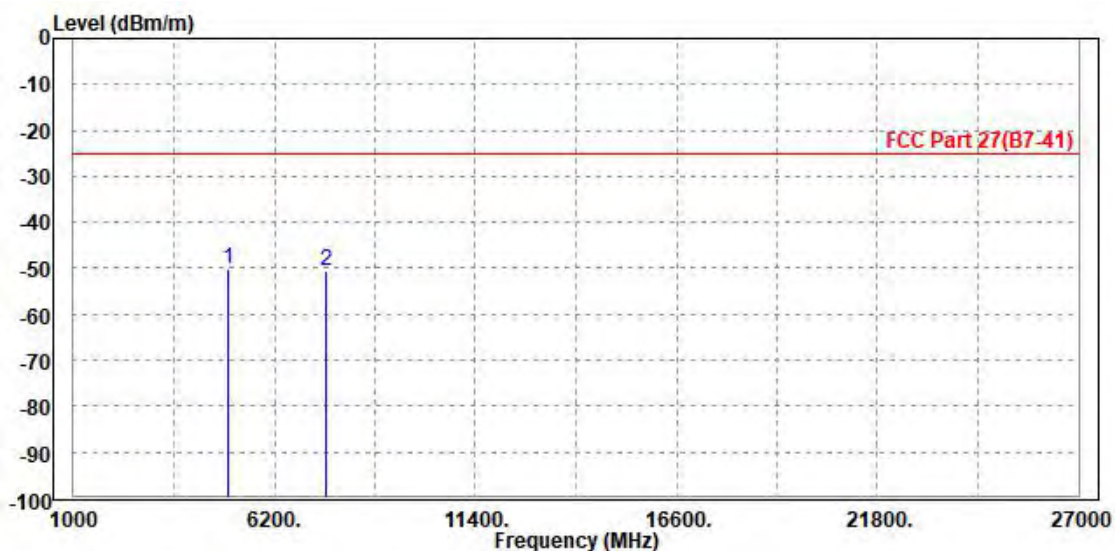
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5082.000	-47.65	-57.52	-25.00	-22.65	9.87	Peak	Vertical
2	7605.000	-49.41	-62.19	-25.00	-24.41	12.78	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK
CH20800

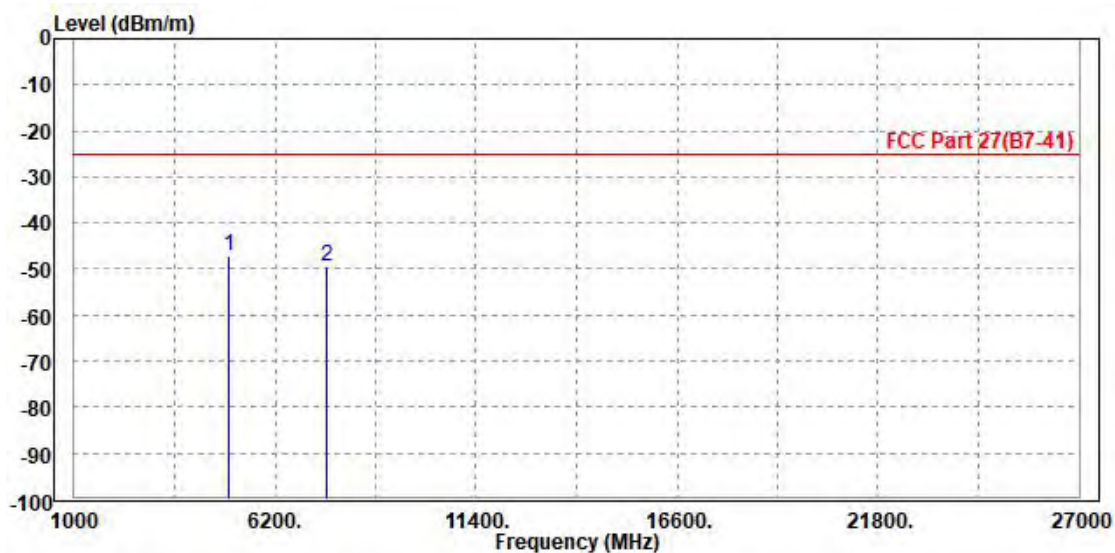
MODE	TX channel 20800	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	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	-50.12	-58.66	-25.00	-25.12	8.54	Peak	Horizontal
2	7515.000	-50.71	-62.08	-25.00	-25.71	11.37	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 PP	5004.000	-47.21	-57.11	-25.00	-22.21	9.90	Peak	Vertical
2	7515.000	-49.31	-62.05	-25.00	-24.31	12.74	Peak	Vertical





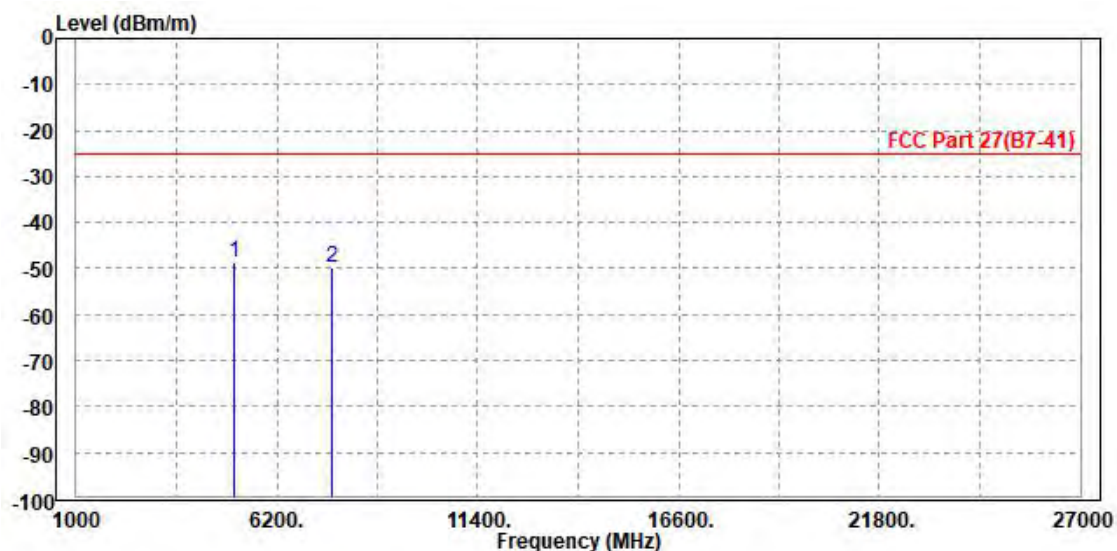
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VERITAS**

Test Report No.: W7L-P21100018-4RF06

CH 21100

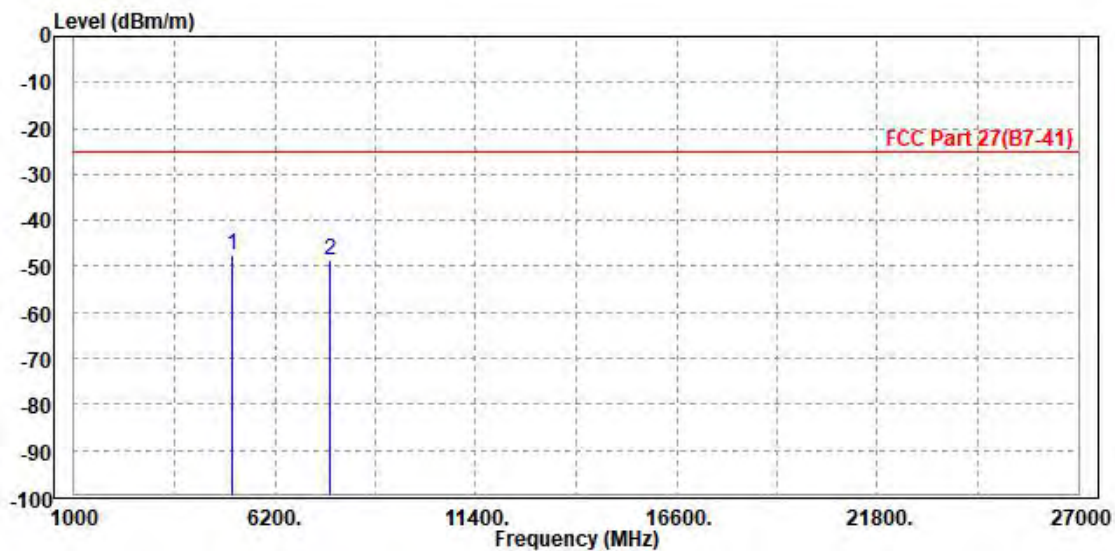
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	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	-48.73	-57.50	-25.00	-23.73	8.77	Peak	Horizontal
2	7605.000	-49.95	-61.35	-25.00	-24.95	11.40	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 PP	5082.000	-47.35	-57.22	-25.00	-22.35	9.87	Peak	Vertical
2	7605.000	-48.70	-61.48	-25.00	-23.70	12.78	Peak	Vertical





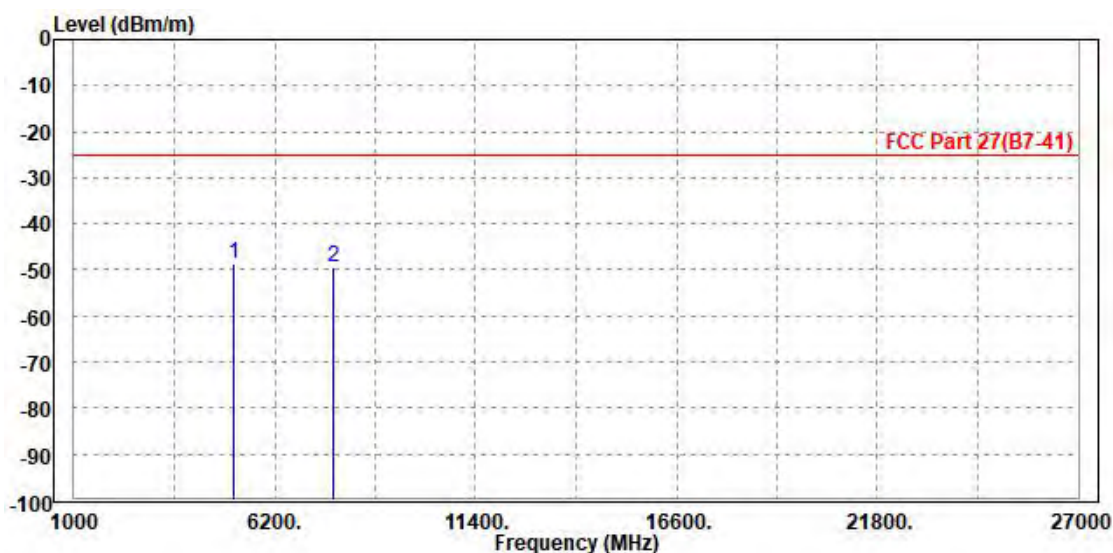
**BUREAU
VERITAS**

Test Report No.: W7L-P21100018-4RF06

CH 21400

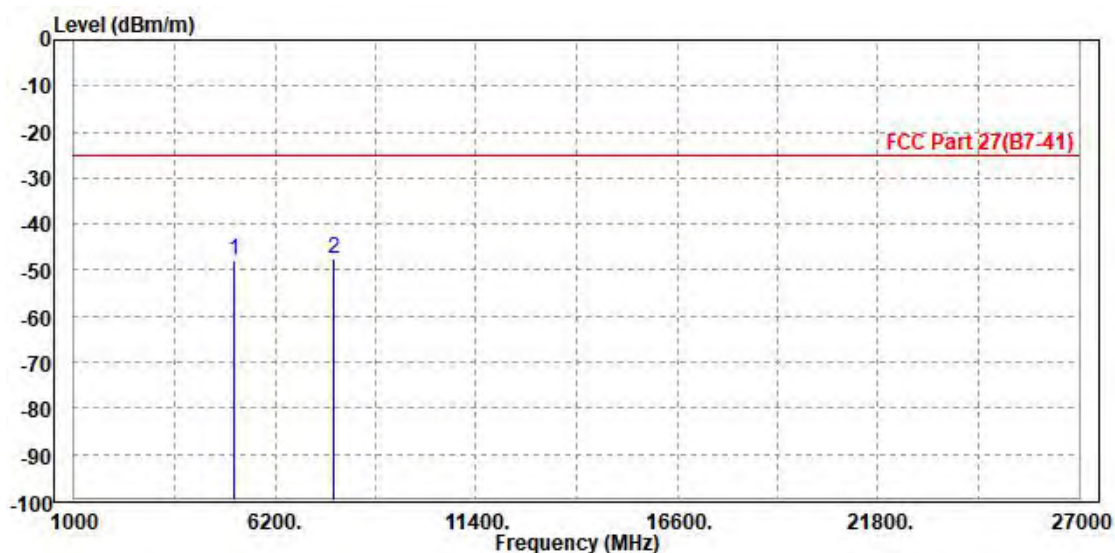
MODE	TX channel 21400	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5134.000	-48.76	-57.69	-25.00	-23.76	8.93	Peak	Horizontal
2		7695.000	-49.60	-61.04	-25.00	-24.60	11.44	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			

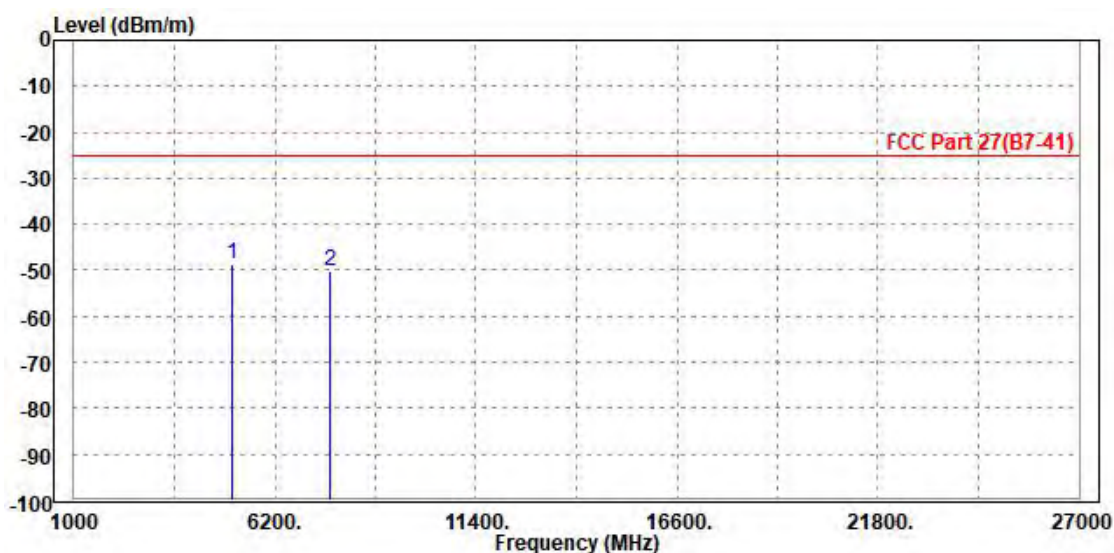
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5134.000	-47.93	-57.78	-25.00	-22.93	9.85	Peak	Vertical
2 PP	7695.000	-47.52	-60.33	-25.00	-22.52	12.81	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

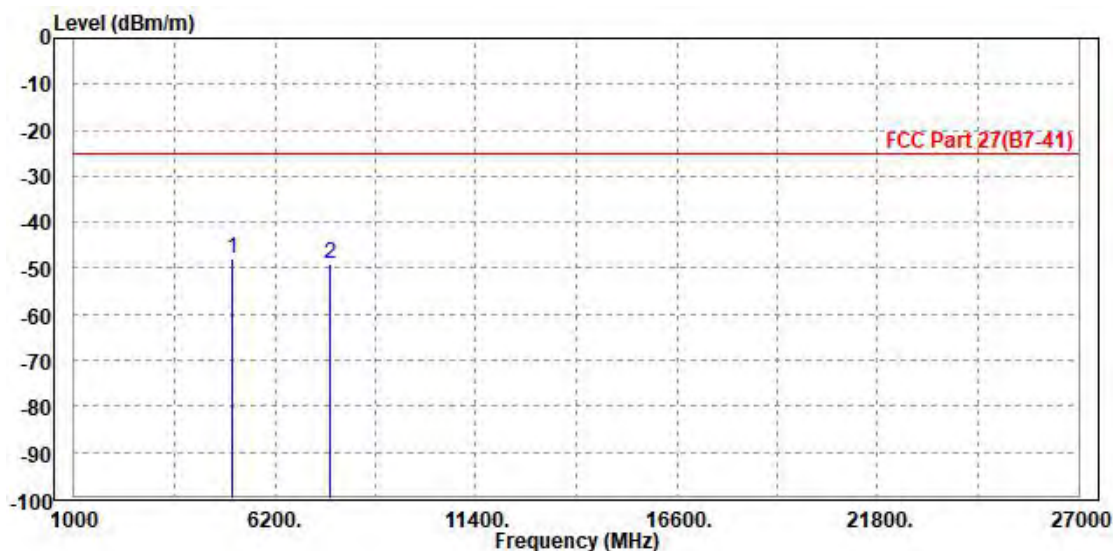
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	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	-48.61	-57.38	-25.00	-23.61	8.77	Peak	Horizontal
2	7605.000	-50.28	-61.68	-25.00	-25.28	11.40	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	PP 5082.000	-47.89	-57.76	-25.00	-22.89	9.87	Peak	Vertical
2	7605.000	-48.94	-61.72	-25.00	-23.94	12.78	Peak	Vertical





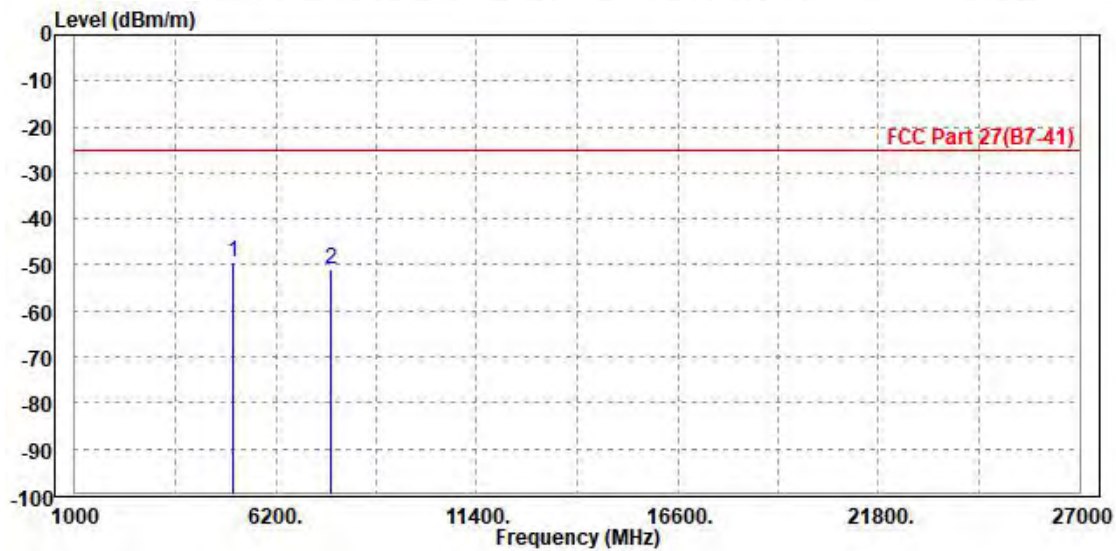
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Test Report No.: W7L-P21100018-4RF06

CHANNEL BANDWIDTH: 20MHz / QPSK

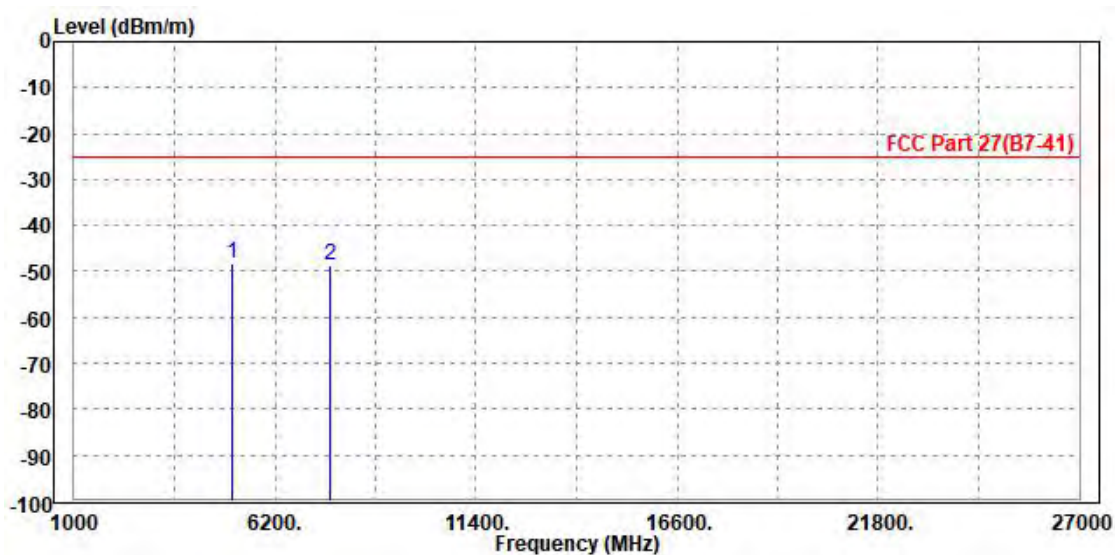
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 5082.000	-49.39	-58.16	-25.00	-24.39	8.77	Peak	Horizontal
2	7605.000	-50.79	-62.19	-25.00	-25.79	11.40	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	PP 5082.000	-48.32	-58.19	-25.00	-23.32	9.87	Peak	Vertical
2	7605.000	-48.51	-61.29	-25.00	-23.51	12.78	Peak	Vertical

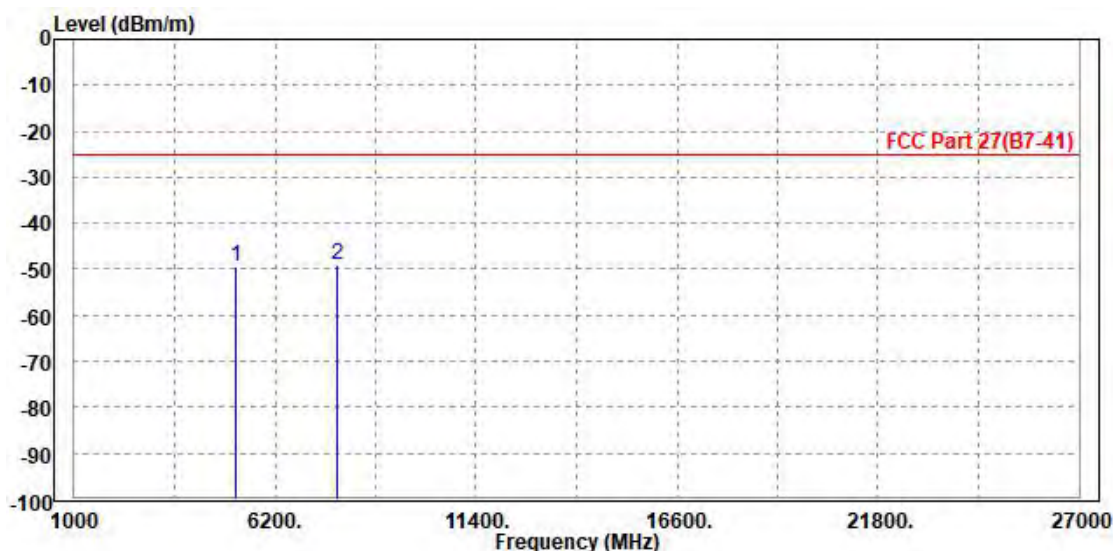


LTE Band 38

CHANNEL BANDWIDTH: 5MHz / QPSK

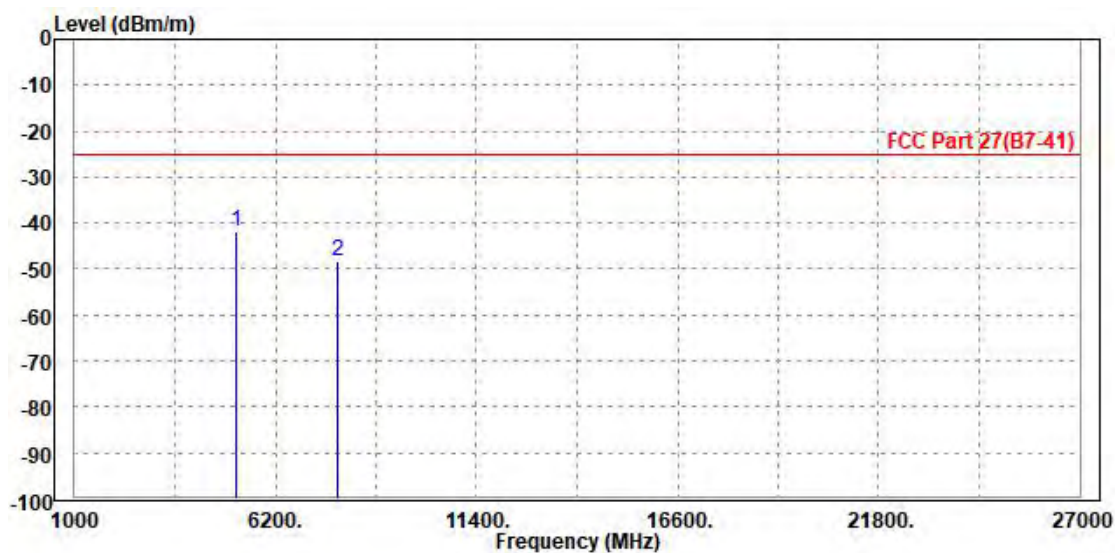
MODE	TX channel 38000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5190.000	-49.56	-58.65	-25.00	-24.56	9.09	Peak	Horizontal
2 PP	7786.000	-49.16	-60.64	-25.00	-24.16	11.48	Peak	Horizontal



MODE	TX channel 38000	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 PP	5186.000	-41.68	-51.51	-25.00	-16.68	9.83	Peak	Vertical
2	7785.000	-48.33	-61.18	-25.00	-23.33	12.85	Peak	Vertical





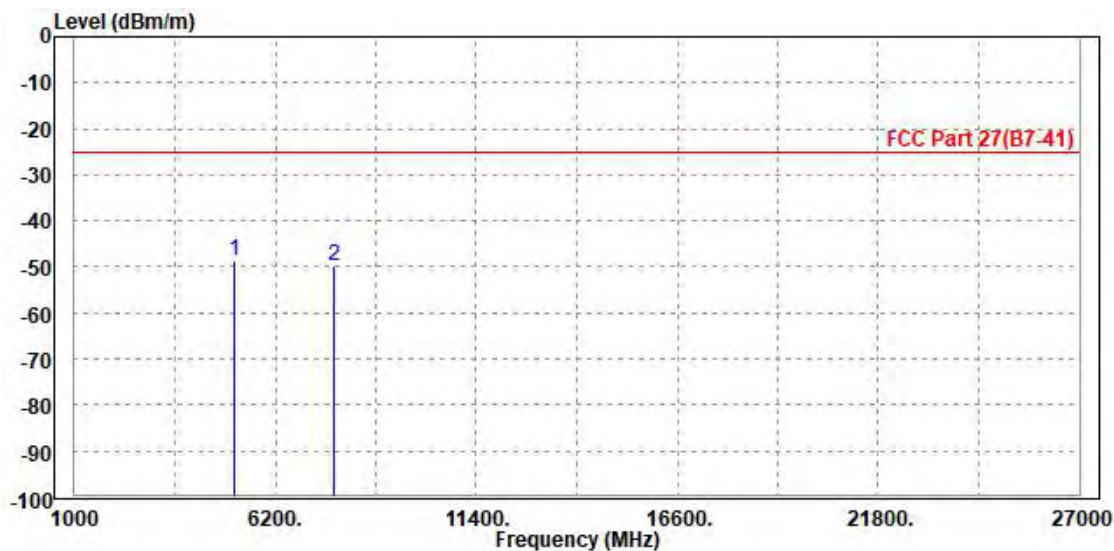
**BUREAU
VERITAS**

Test Report No.: W7L-P21100018-4RF06

**CHANNEL BANDWIDTH: 10MHz / QPSK
CH37800**

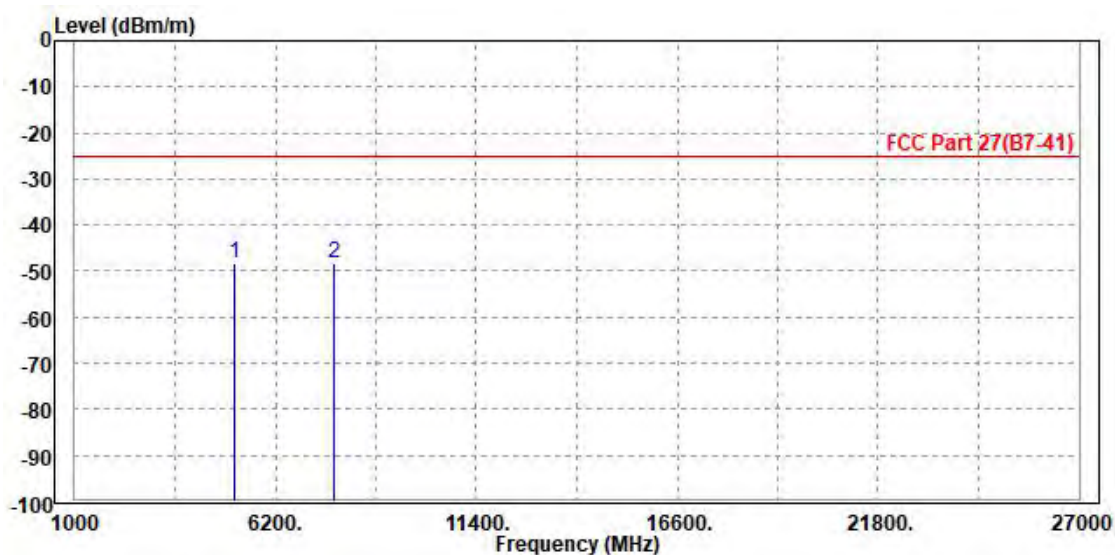
MODE	TX channel 37800	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5160.000	-48.79	-57.79	-25.00	-23.79	9.00	Peak	Horizontal
2	7725.000	-49.76	-61.21	-25.00	-24.76	11.45	Peak	Horizontal



MODE	TX channel 37800	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			

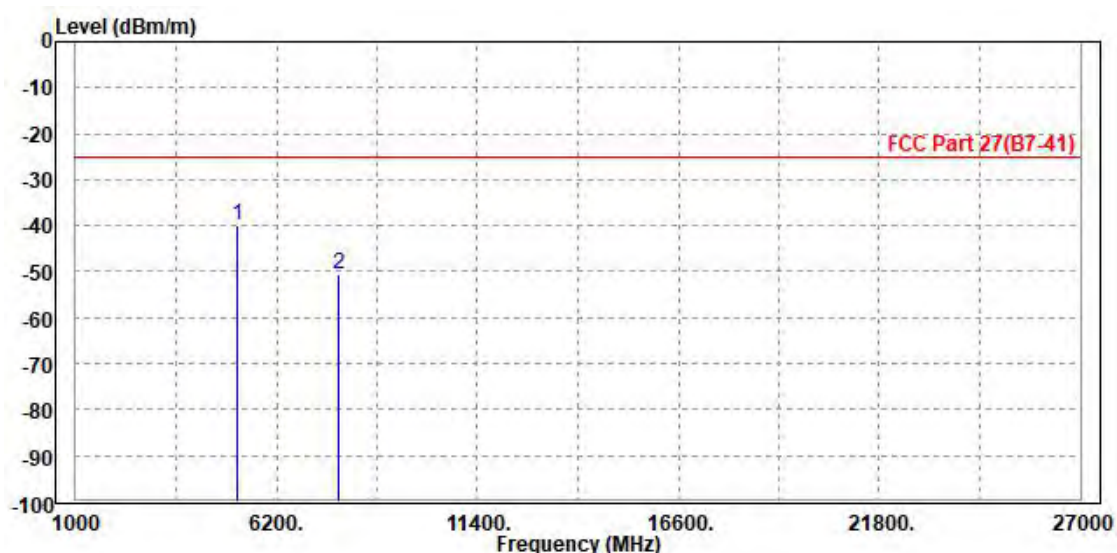
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5160.000	-48.37	-58.21	-25.00	-23.37	9.84	Peak	Vertical
2	7725.000	-48.47	-61.30	-25.00	-23.47	12.83	Peak	Vertical



CH38000

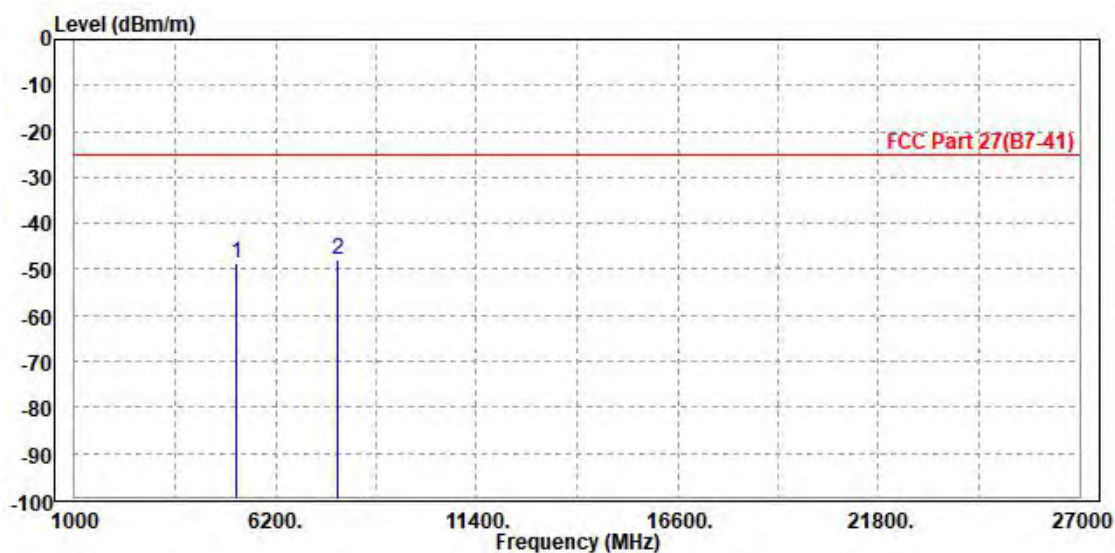
MODE	TX channel 38000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5186.000	-39.89	-48.97	-25.00	-14.89	9.08	Peak	Horizontal
2	7785.000	-50.75	-62.23	-25.00	-25.75	11.48	Peak	Horizontal



MODE	TX channel 38000	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	5186.000	-48.71	-58.54	-25.00	-23.71	9.83	Peak	Vertical
2 PP	7785.000	-48.01	-60.86	-25.00	-23.01	12.85	Peak	Vertical





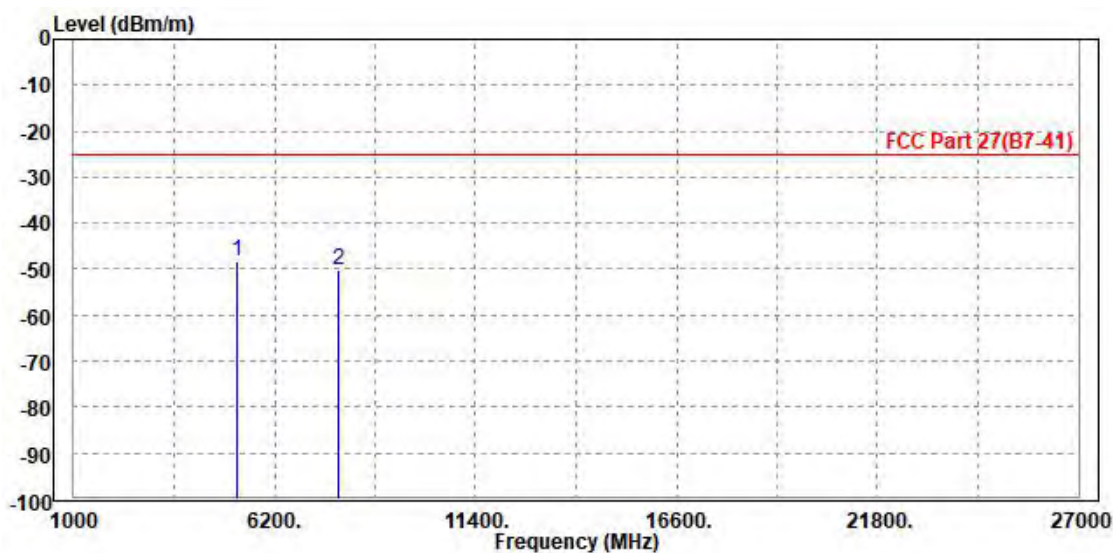
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Test Report No.: W7L-P21100018-4RF06

CH38200

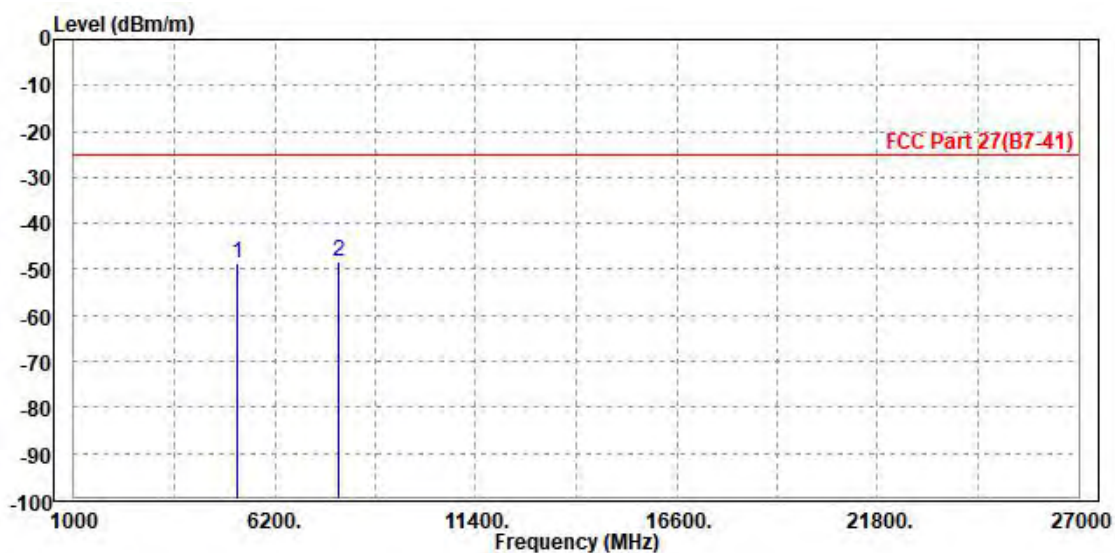
MODE	TX channel 38200	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5238.000	-48.26	-57.50	-25.00	-23.26	9.24	Peak	Horizontal
2	7845.000	-50.25	-61.75	-25.00	-25.25	11.50	Peak	Horizontal



MODE	TX channel 38200	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			

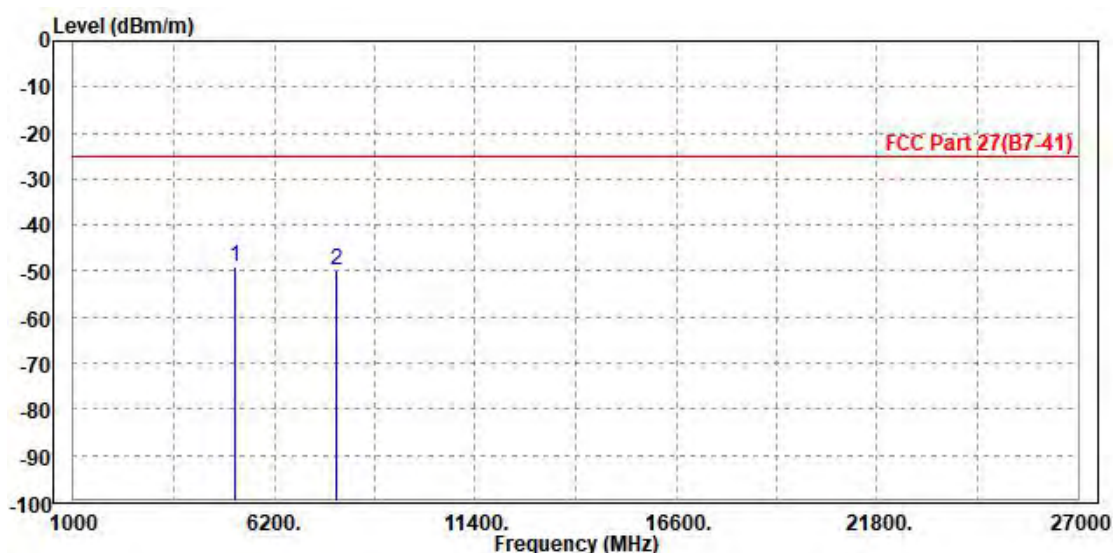
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5238.000	-48.48	-58.29	-25.00	-23.48	9.81	Peak	Vertical
2 PP	7845.000	-48.35	-61.22	-25.00	-23.35	12.87	Peak	Vertical



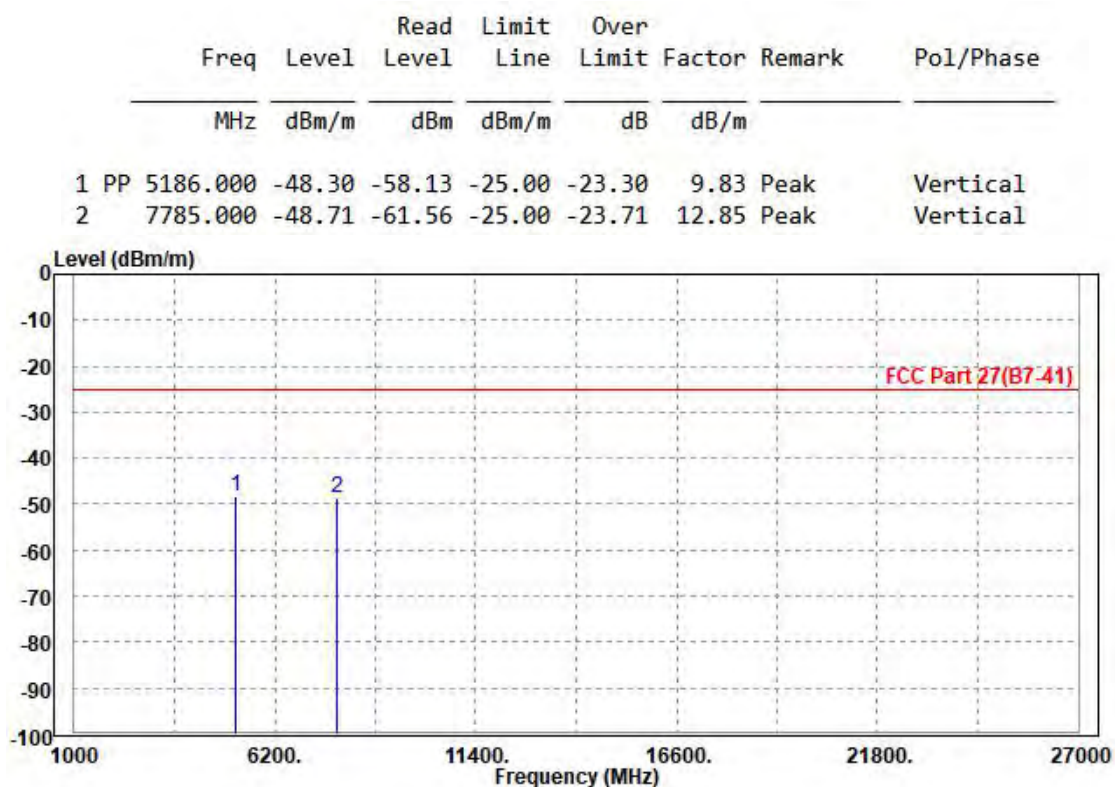
CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 38000	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	5190.000	-49.18	-58.27	-25.00	-24.18	9.09	Peak	Horizontal
2	7786.000	-49.62	-61.10	-25.00	-24.62	11.48	Peak	Horizontal



MODE	TX channel 38000	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			

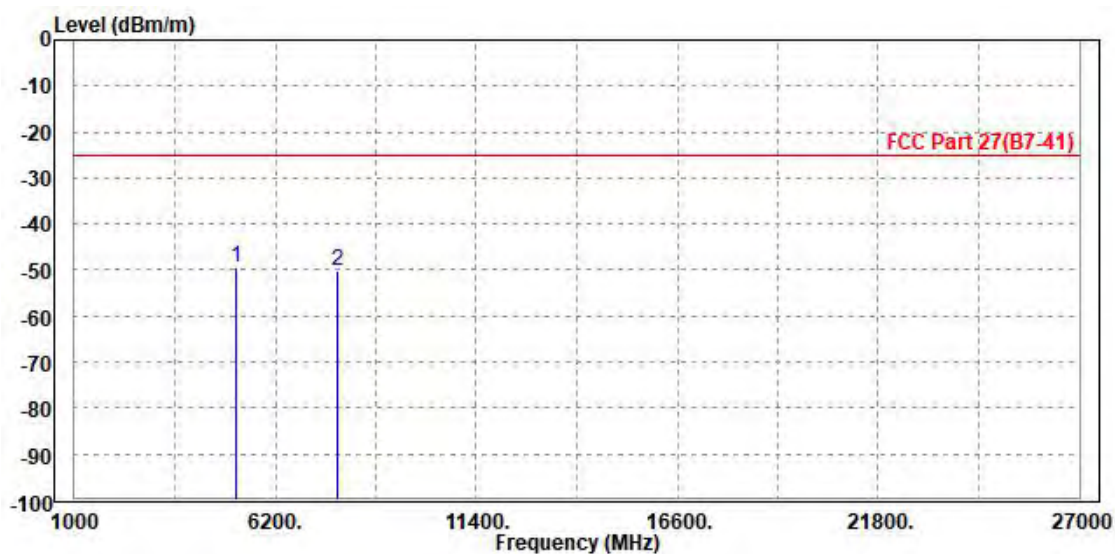


CHANNEL BANDWIDTH: 20MHz / QPSK

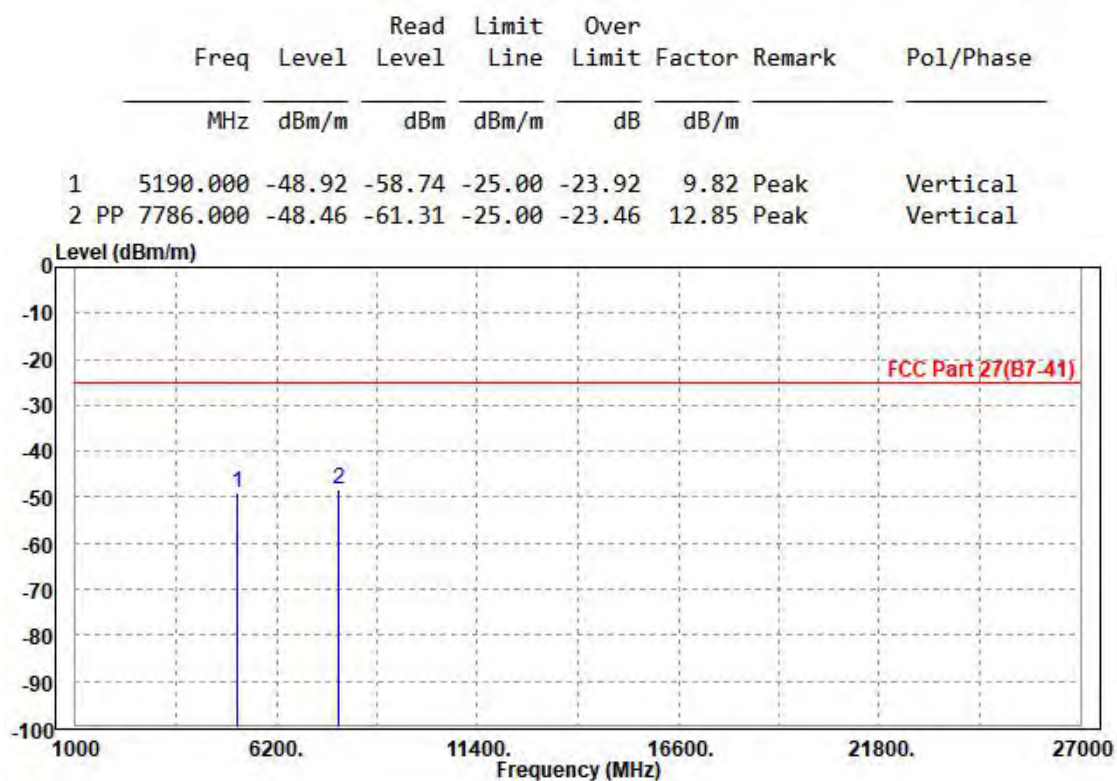
CH 38000

MODE	TX channel 38000	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	5186.000	-49.41	-58.49	-25.00	-24.41	9.08	Peak	Horizontal
2	7785.000	-50.32	-61.80	-25.00	-25.32	11.48	Peak	Horizontal



MODE	TX channel 38000	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			

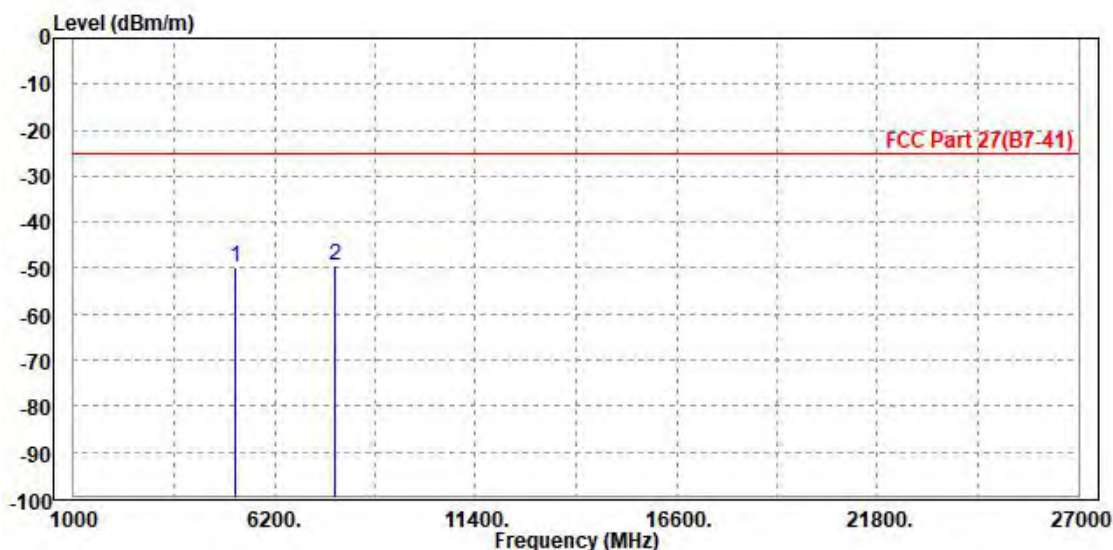


LTE BAND 41

CHANNEL BANDWIDTH: 5MHz / QPSK

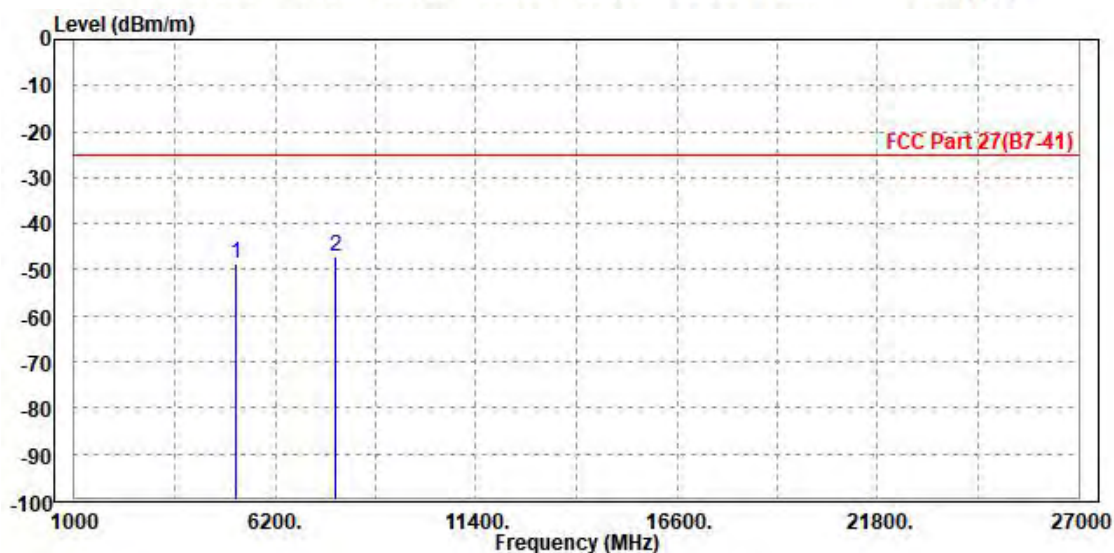
MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5186.000	-49.85	-58.93	-25.00	-24.85	9.08	Peak	Horizontal
2 PP	7779.000	-49.61	-61.08	-25.00	-24.61	11.47	Peak	Horizontal



MODE	TX channel 40620	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			

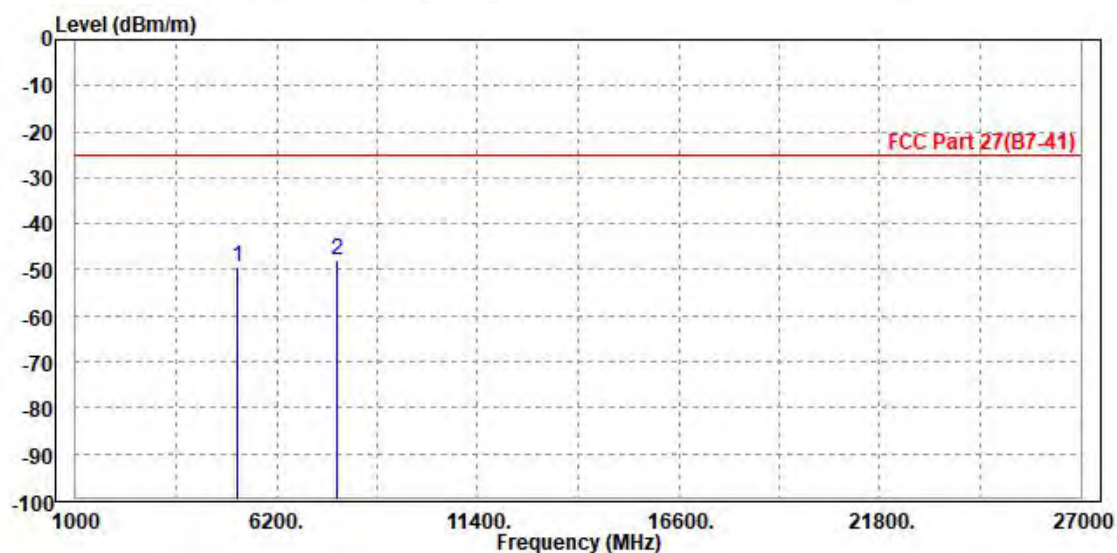
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5186.000	-48.59	-58.42	-25.00	-23.59	9.83	Peak	Vertical
2 PP	7779.000	-47.02	-59.87	-25.00	-22.02	12.85	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

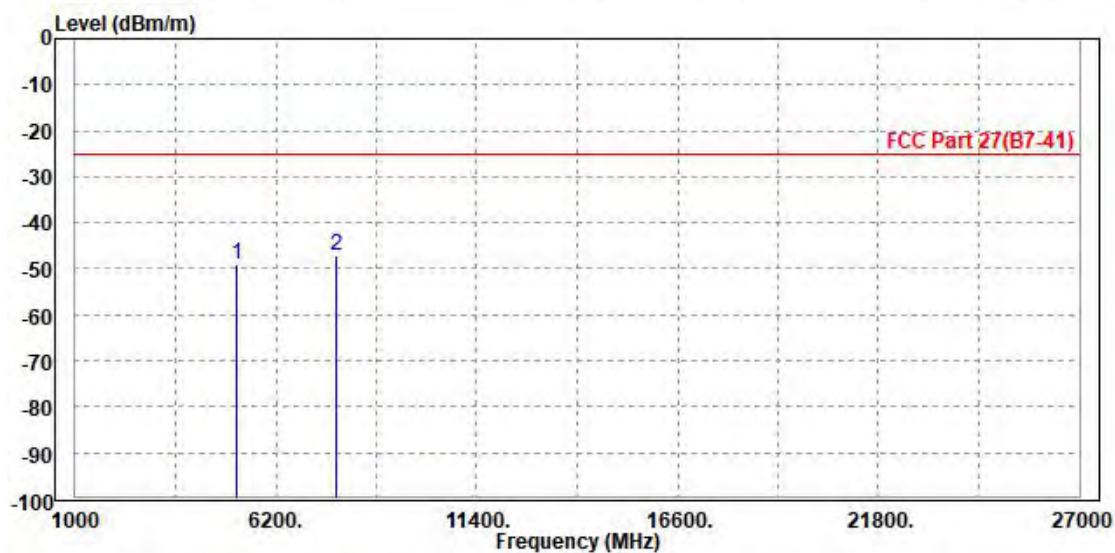
MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5186.000	-49.58	-58.66	-25.00	-24.58	9.08	Peak	Horizontal
2 PP	7779.000	-47.72	-59.19	-25.00	-22.72	11.47	Peak	Horizontal



MODE	TX channel 40620	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			

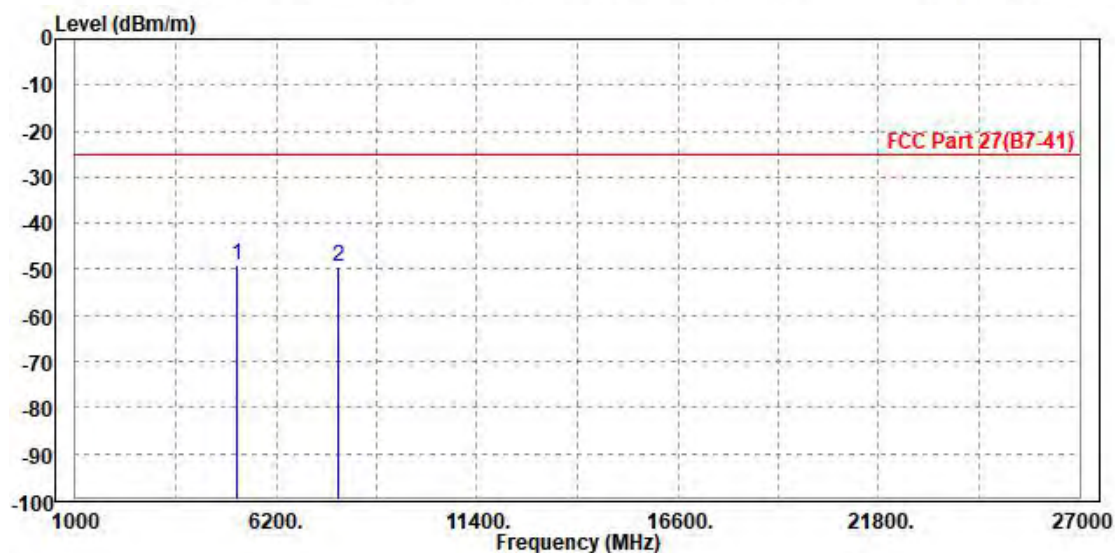
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5186.000	-49.16	-58.99	-25.00	-24.16	9.83	Peak	Vertical
2 PP	7779.000	-47.19	-60.04	-25.00	-22.19	12.85	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

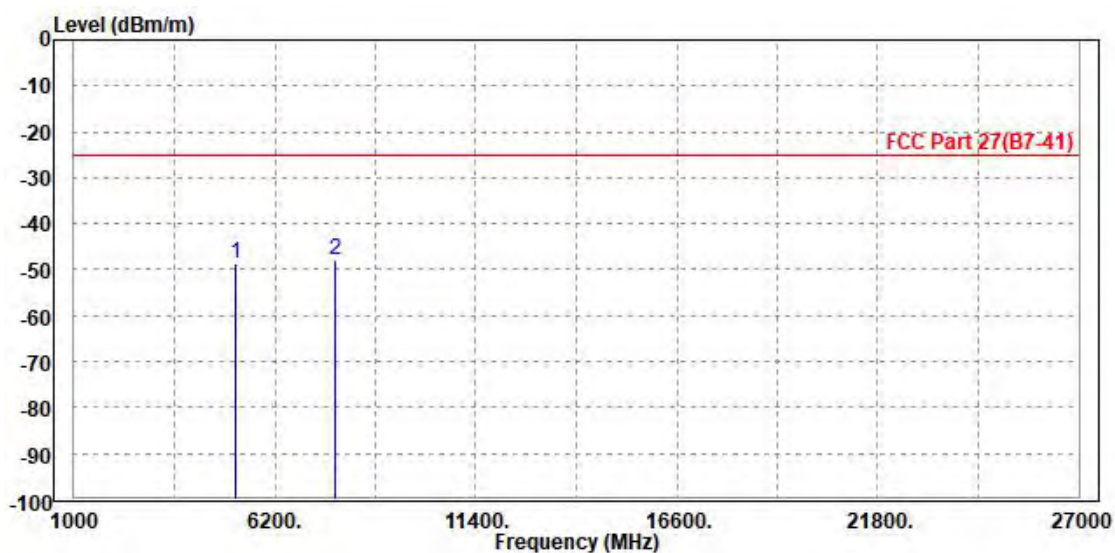
MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5186.000	-49.21	-58.29	-25.00	-24.21	9.08	Peak	Horizontal
2	7786.000	-49.49	-60.97	-25.00	-24.49	11.48	Peak	Horizontal



MODE	TX channel 40620	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	5186.000	-48.65	-58.48	-25.00	-23.65	9.83	Peak	Vertical
2 PP	7779.000	-47.96	-60.81	-25.00	-22.96	12.85	Peak	Vertical

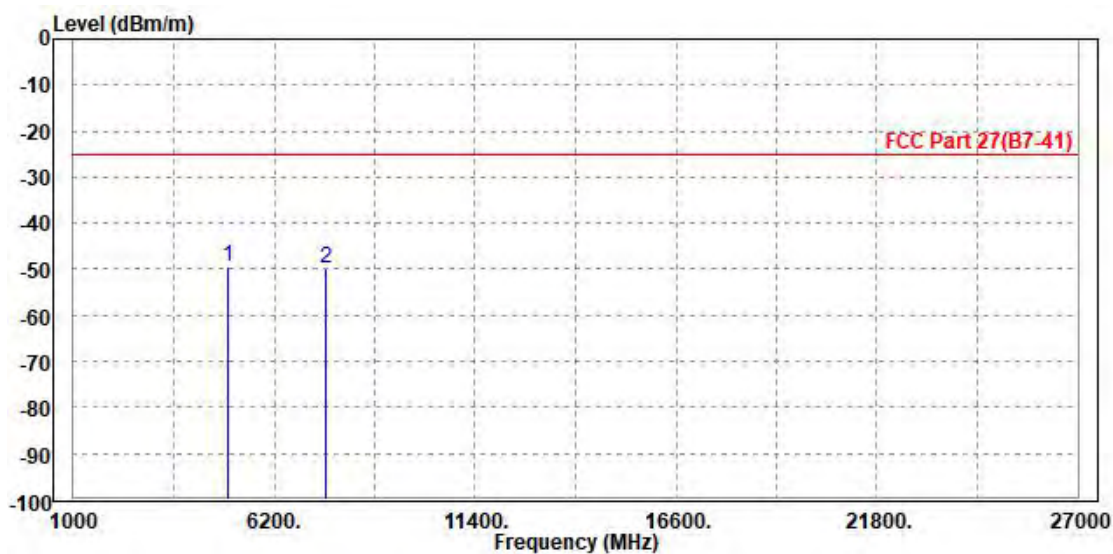


CHANNEL BANDWIDTH: 20MHz / QPSK

CH 39750

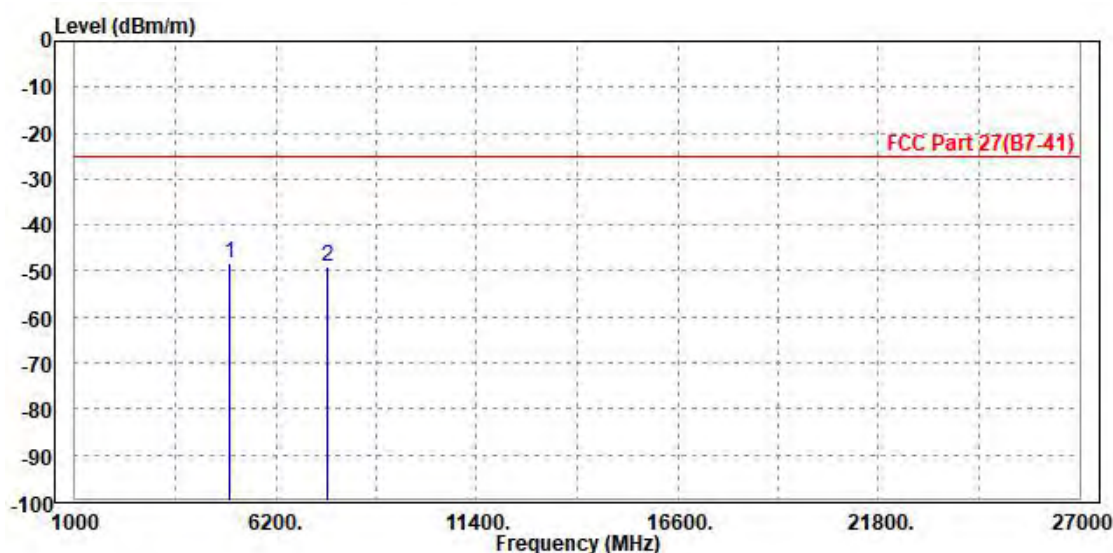
MODE	TX channel 39750	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		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	-49.50	-58.04	-25.00	-24.50	8.54	Peak	Horizontal
2		7518.000	-49.88	-61.25	-25.00	-24.88	11.37	Peak	Horizontal



MODE	TX channel 39750	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			

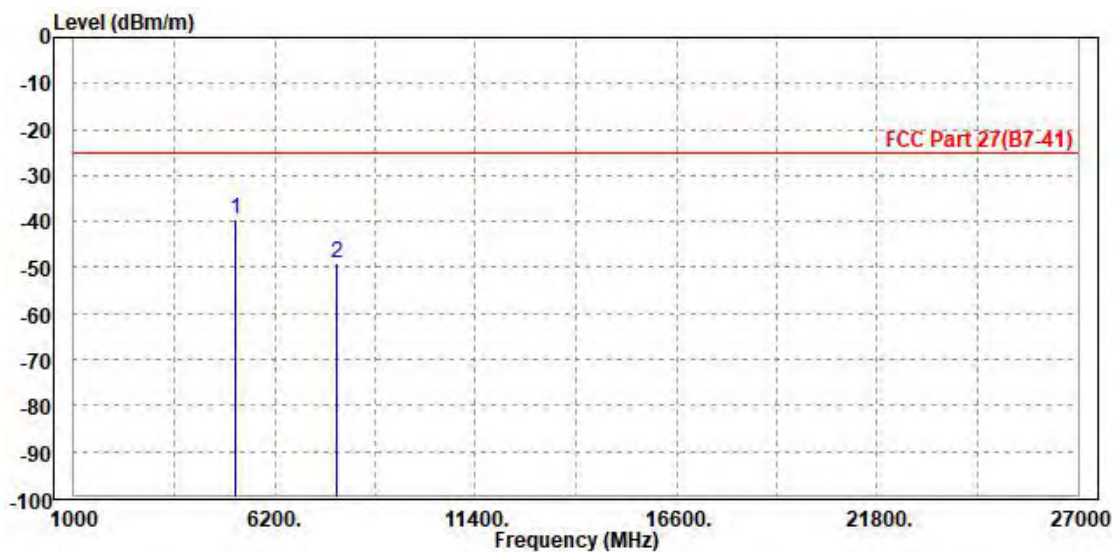
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5012.000	-48.43	-58.32	-25.00	-23.43	9.89	Peak	Vertical
2	7526.000	-48.95	-61.70	-25.00	-23.95	12.75	Peak	Vertical



CH40620

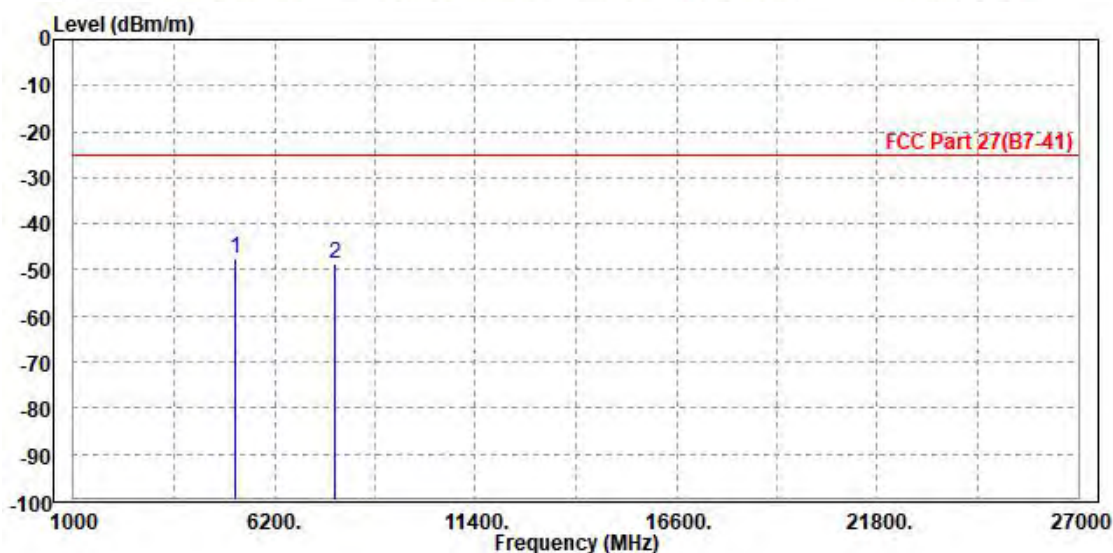
MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5186.000	-39.42	-48.50	-25.00	-14.42	9.08	Peak	Horizontal
2	7786.000	-48.87	-60.35	-25.00	-23.87	11.48	Peak	Horizontal



MODE	TX channel 40620	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			

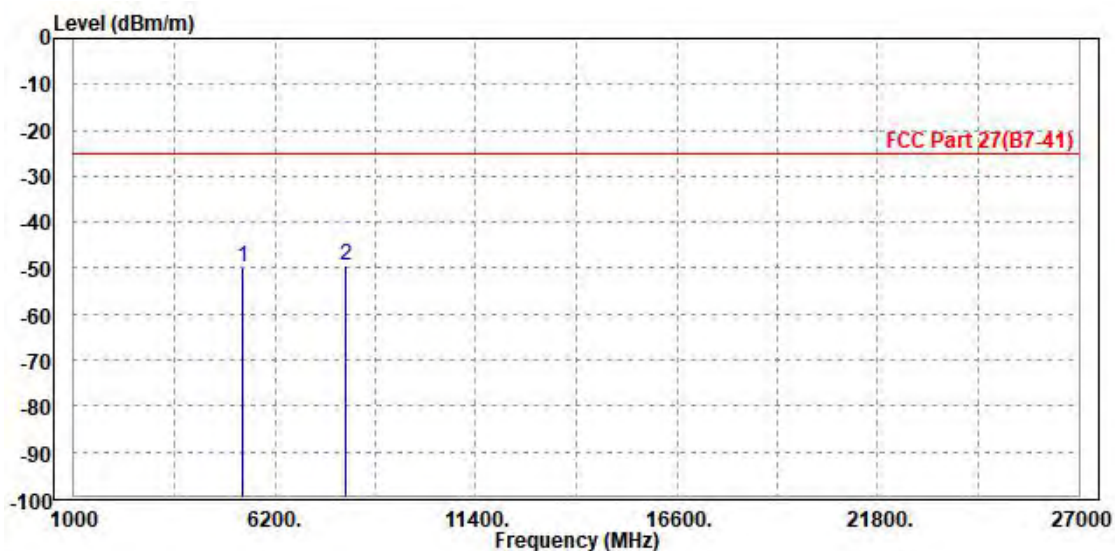
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5186.000	-47.49	-57.32	-25.00	-22.49	9.83	Peak	Vertical
2	7779.000	-48.55	-61.40	-25.00	-23.55	12.85	Peak	Vertical



CH41490

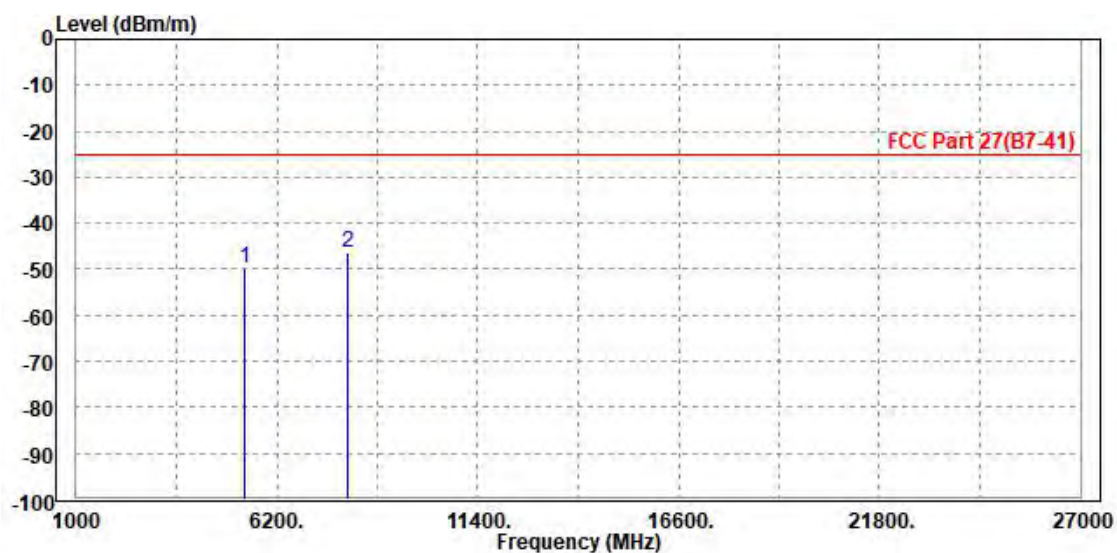
MODE	TX channel 41490	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5368.000	-49.80	-59.43	-25.00	-24.80	9.63	Peak	Horizontal
2 PP	8040.000	-49.61	-61.21	-25.00	-24.61	11.60	Peak	Horizontal



MODE	TX channel 41490	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	5368.000	-49.80	-59.56	-25.00	-24.80	9.76	Peak	Vertical
2 PP	8040.000	-46.44	-59.47	-25.00	-21.44	13.03	Peak	Vertical

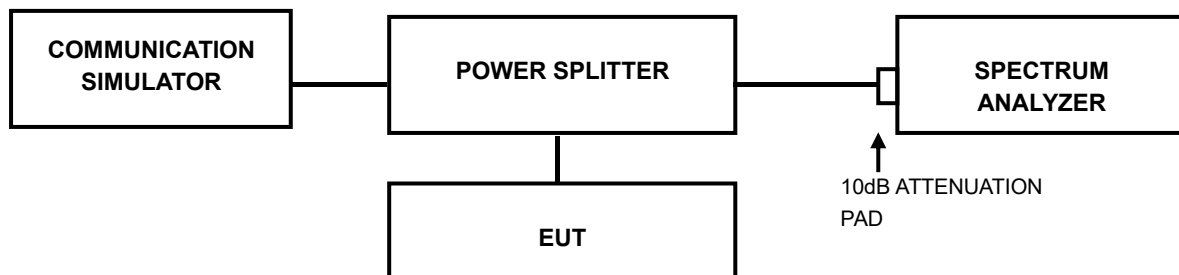


3.7 PEAK TO AVERAGE RATIO

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 $\geq$ 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%.



Test Report No.: W7L-P21100018-4RF06

3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



Test Report No.: W7L-P21100018-4RF06

4 INFORMATION ON THE TESTING LABORATORIES

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

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

Shenzhen EMC/RF Lab:

Tel: +86-755-88696566

Fax: +86-755-88696577

Email: customerservice.sw@cn.bureauveritas.com

Web Site: www.adt.com.tw

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



Test Report No.: W7L-P21100018-4RF06

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

Appendix A: LTE BAND 7

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	4.23	13	PASS
Band7	5MHz	QPSK	20775	25RB#0	4.99	13	PASS
Band7	5MHz	QPSK	21100	1RB#0	4.71	13	PASS
Band7	5MHz	QPSK	21100	25RB#0	5.01	13	PASS
Band7	5MHz	QPSK	21425	1RB#0	4.76	13	PASS
Band7	5MHz	QPSK	21425	25RB#0	5.07	13	PASS
Band7	5MHz	16QAM	20775	1RB#0	5.09	13	PASS
Band7	5MHz	16QAM	20775	25RB#0	5.77	13	PASS
Band7	5MHz	16QAM	21100	1RB#0	5.50	13	PASS
Band7	5MHz	16QAM	21100	25RB#0	5.70	13	PASS
Band7	5MHz	16QAM	21425	1RB#0	5.42	13	PASS
Band7	5MHz	16QAM	21425	25RB#0	5.83	13	PASS
Band7	5MHz	64QAM	20775	1RB#0	4.44	13	PASS
Band7	5MHz	64QAM	20775	25RB#0	5.28	13	PASS
Band7	5MHz	64QAM	21100	1RB#0	5.09	13	PASS
Band7	5MHz	64QAM	21100	25RB#0	5.28	13	PASS
Band7	5MHz	64QAM	21425	1RB#0	4.36	13	PASS
Band7	5MHz	64QAM	21425	25RB#0	4.74	13	PASS
Band7	10MHz	QPSK	20800	1RB#0	4.57	13	PASS
Band7	10MHz	QPSK	20800	50RB#0	5.12	13	PASS
Band7	10MHz	QPSK	21100	1RB#0	4.56	13	PASS
Band7	10MHz	QPSK	21100	50RB#0	5.10	13	PASS
Band7	10MHz	QPSK	21400	1RB#0	4.51	13	PASS
Band7	10MHz	QPSK	21400	50RB#0	5.06	13	PASS
Band7	10MHz	16QAM	20800	1RB#0	5.45	13	PASS
Band7	10MHz	16QAM	20800	50RB#0	5.88	13	PASS
Band7	10MHz	16QAM	21100	1RB#0	5.28	13	PASS
Band7	10MHz	16QAM	21100	50RB#0	5.77	13	PASS
Band7	10MHz	16QAM	21400	1RB#0	5.18	13	PASS
Band7	10MHz	16QAM	21400	50RB#0	5.78	13	PASS
Band7	10MHz	64QAM	20800	1RB#0	4.82	13	PASS
Band7	10MHz	64QAM	20800	50RB#0	5.35	13	PASS
Band7	10MHz	64QAM	21100	1RB#0	4.66	13	PASS
Band7	10MHz	64QAM	21100	50RB#0	5.35	13	PASS
Band7	10MHz	64QAM	21400	1RB#0	4.16	13	PASS
Band7	10MHz	64QAM	21400	50RB#0	5.04	13	PASS
Band7	15MHz	QPSK	20825	1RB#0	4.36	13	PASS
Band7	15MHz	QPSK	20825	75RB#0	5.54	13	PASS
Band7	15MHz	QPSK	21100	1RB#0	4.41	13	PASS
Band7	15MHz	QPSK	21100	75RB#0	5.43	13	PASS



BUREAU
VERITAS

Test Report No.: W7L-P21100018-4RF06

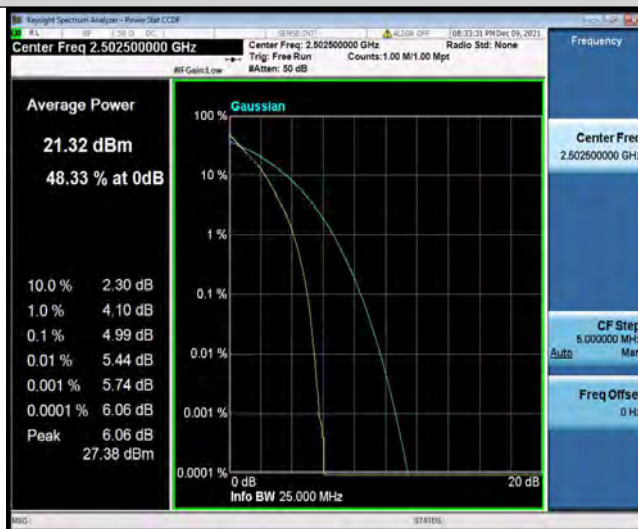
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Band7	15MHz	16QAM	20825	1RB#0	4.93	13	PASS
Band7	15MHz	16QAM	20825	75RB#0	6.04	13	PASS
Band7	15MHz	16QAM	21100	1RB#0	5.43	13	PASS
Band7	15MHz	16QAM	21100	75RB#0	5.95	13	PASS
Band7	15MHz	16QAM	21375	1RB#0	5.47	13	PASS
Band7	15MHz	16QAM	21375	75RB#0	5.96	13	PASS
Band7	15MHz	64QAM	20825	1RB#0	4.59	13	PASS
Band7	15MHz	64QAM	20825	75RB#0	5.63	13	PASS
Band7	15MHz	64QAM	21100	1RB#0	4.59	13	PASS
Band7	15MHz	64QAM	21100	75RB#0	5.55	13	PASS
Band7	15MHz	64QAM	21375	1RB#0	4.19	13	PASS
Band7	15MHz	64QAM	21375	75RB#0	5.20	13	PASS
Band7	20MHz	QPSK	20850	1RB#0	4.60	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	5.43	13	PASS
Band7	20MHz	QPSK	21100	1RB#0	4.46	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	5.35	13	PASS
Band7	20MHz	QPSK	21350	1RB#0	4.76	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	5.35	13	PASS
Band7	20MHz	16QAM	20850	1RB#0	5.00	13	PASS
Band7	20MHz	16QAM	20850	100RB#0	6.11	13	PASS
Band7	20MHz	16QAM	21100	1RB#0	5.29	13	PASS
Band7	20MHz	16QAM	21100	100RB#0	6.03	13	PASS
Band7	20MHz	16QAM	21350	1RB#0	5.47	13	PASS
Band7	20MHz	16QAM	21350	100RB#0	6.00	13	PASS
Band7	20MHz	64QAM	20850	1RB#0	4.67	13	PASS
Band7	20MHz	64QAM	20850	100RB#0	5.51	13	PASS
Band7	20MHz	64QAM	21100	1RB#0	4.37	13	PASS
Band7	20MHz	64QAM	21100	100RB#0	5.34	13	PASS
Band7	20MHz	64QAM	21350	1RB#0	4.05	13	PASS
Band7	20MHz	64QAM	21350	100RB#0	5.14	13	PASS

Test Graphs

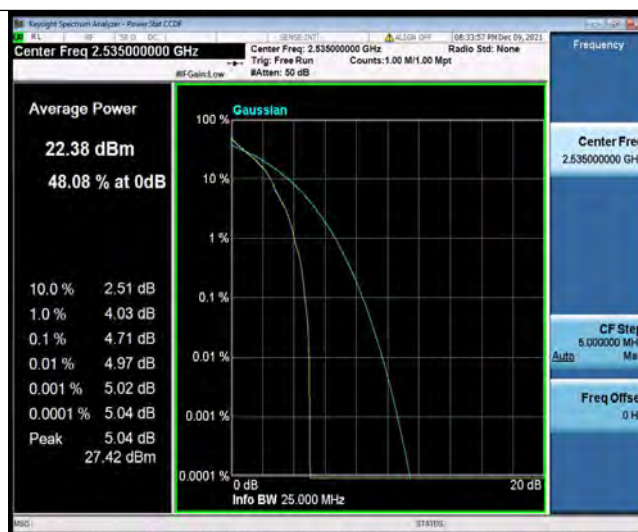
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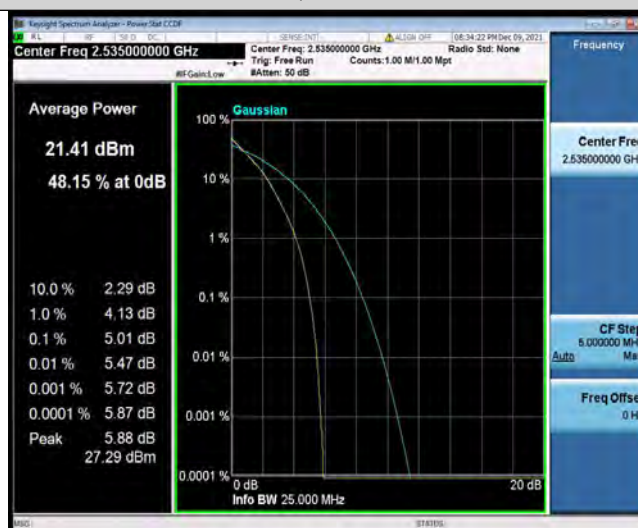
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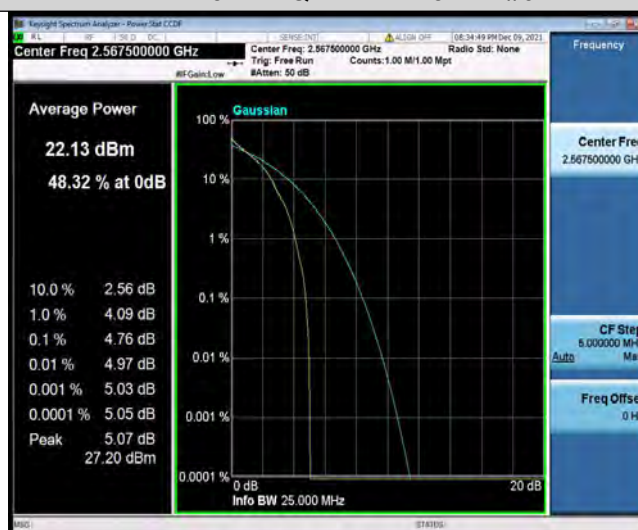
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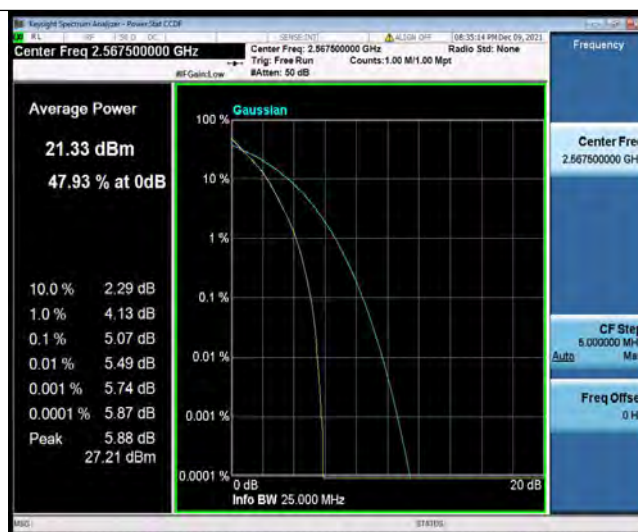
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Band7-5MHz-QPSK-21425-1RB#0



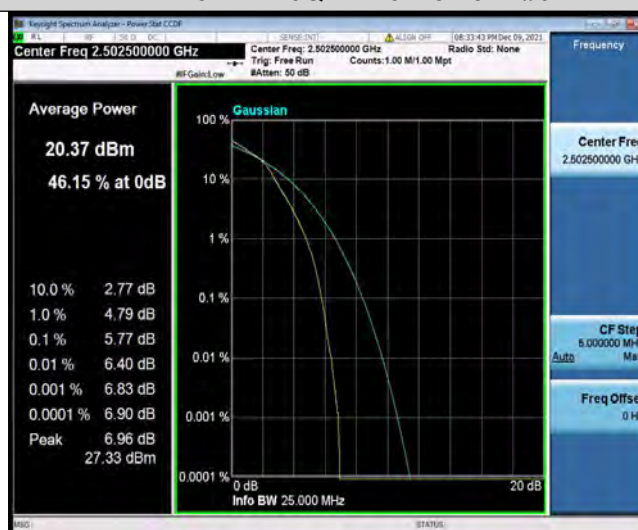
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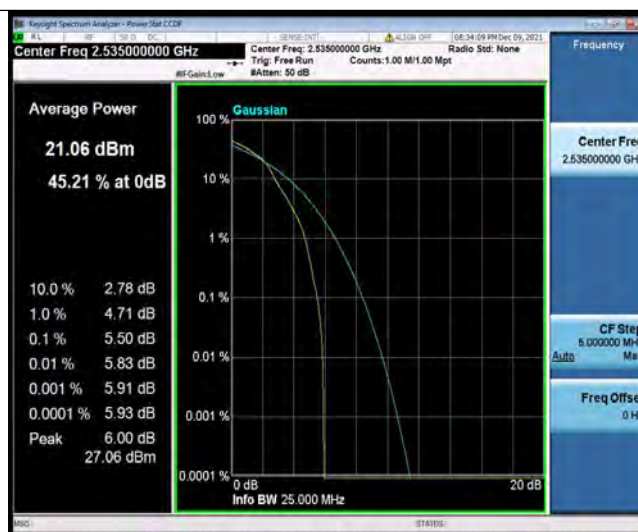
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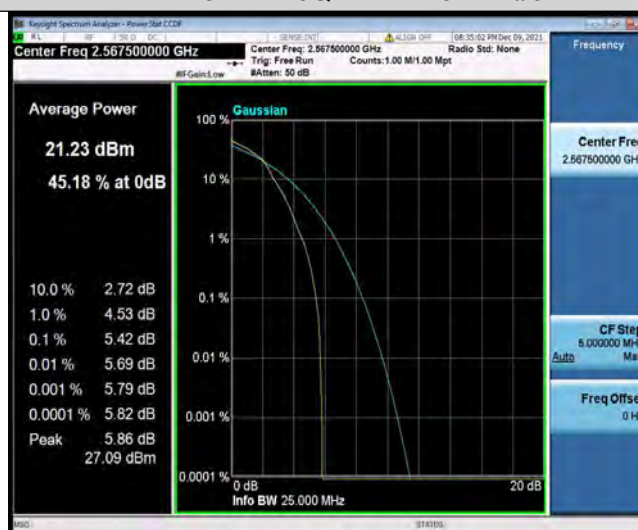
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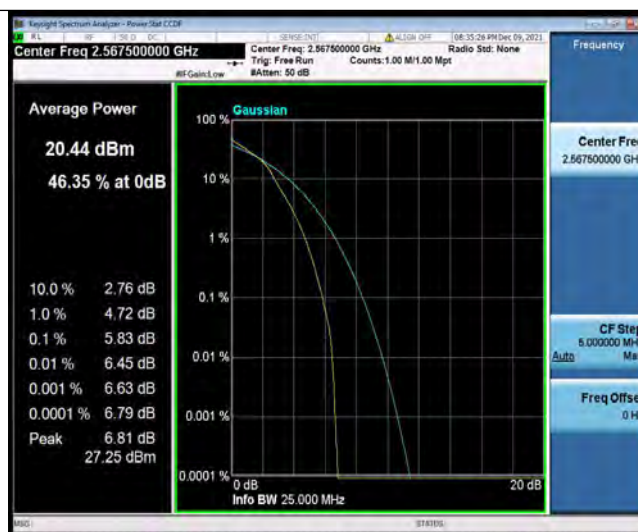
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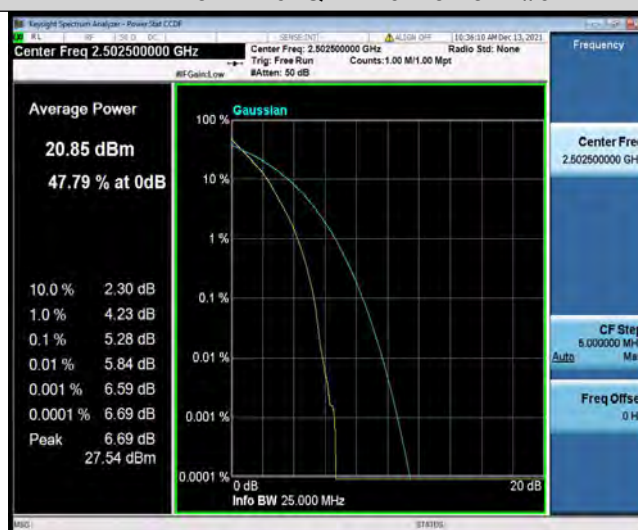
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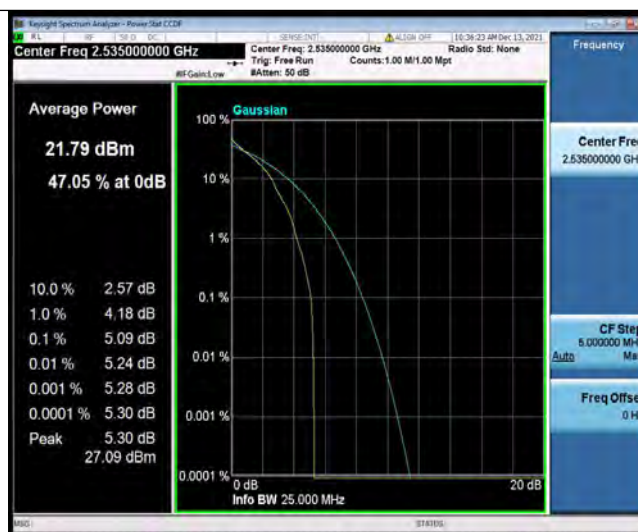
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Band7-5MHz-64QAM-21100-1RB#0



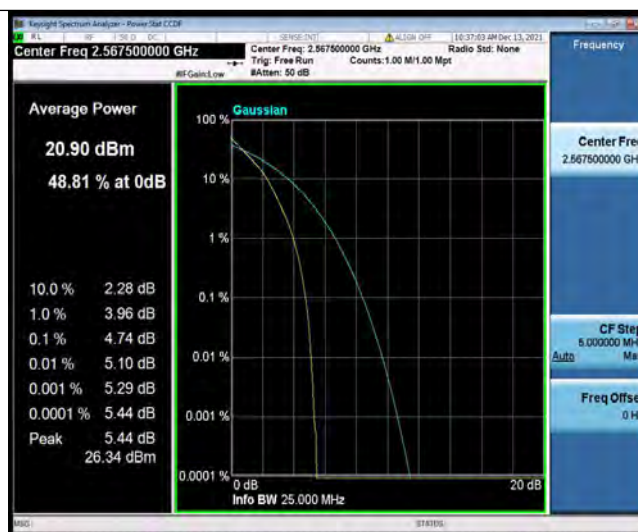
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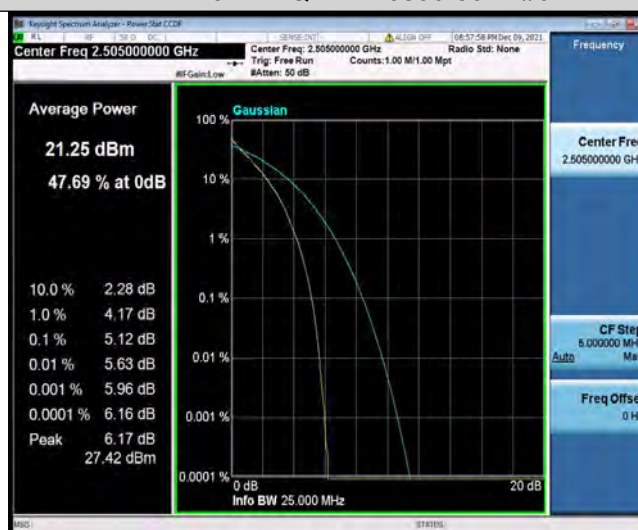
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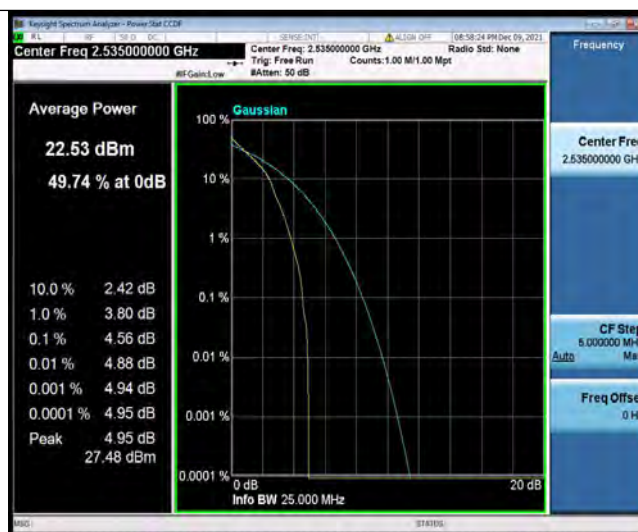
Band7-10MHz-QPSK-20800-1RB#0



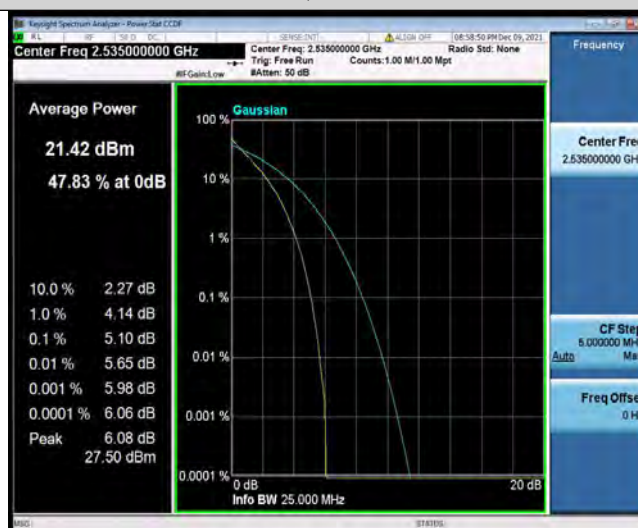
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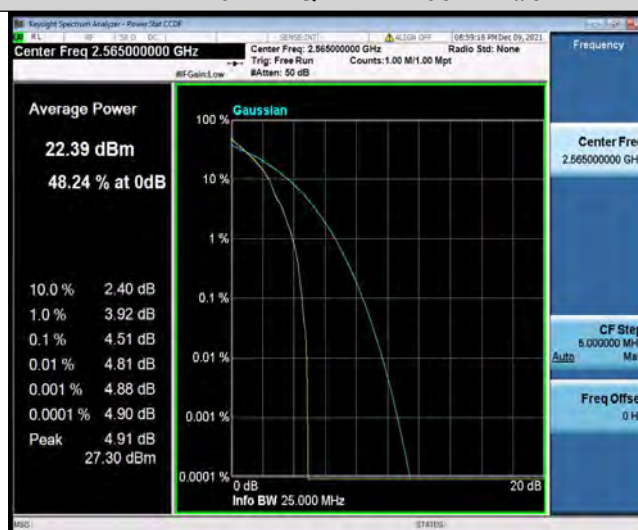
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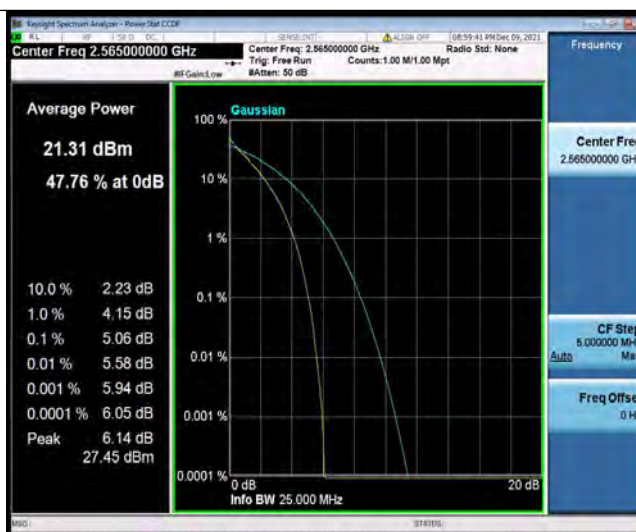
Band7-10MHz-QPSK-21100-50RB#0



Band7-10MHz-QPSK-21400-1RB#0



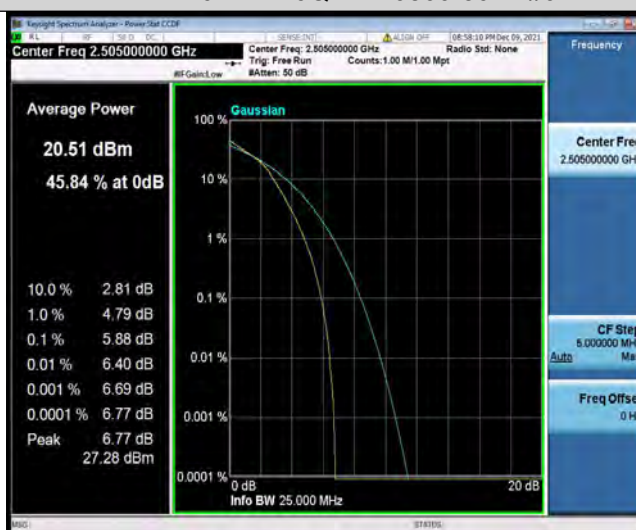
Band7-10MHz-QPSK-21400-50RB#0



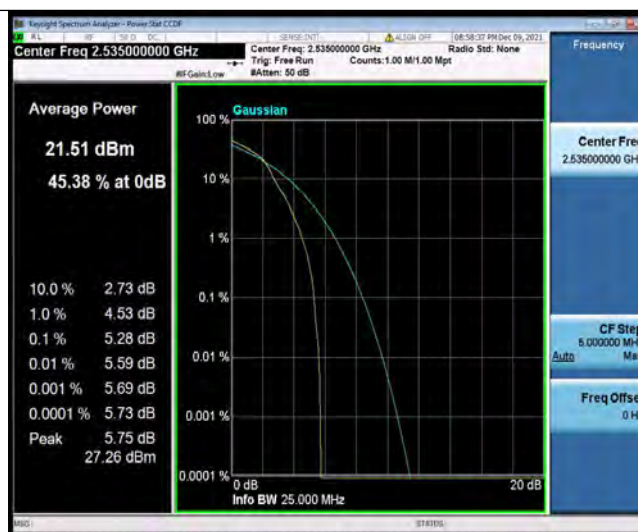
Band7-10MHz-16QAM-20800-1RB#0



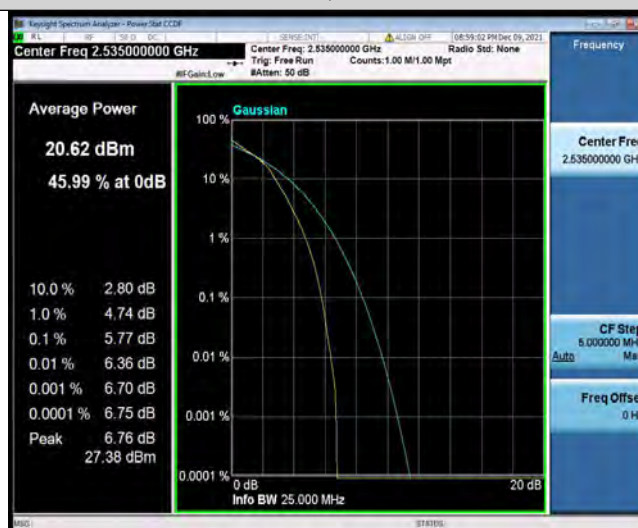
Band7-10MHz-16QAM-20800-50RB#0



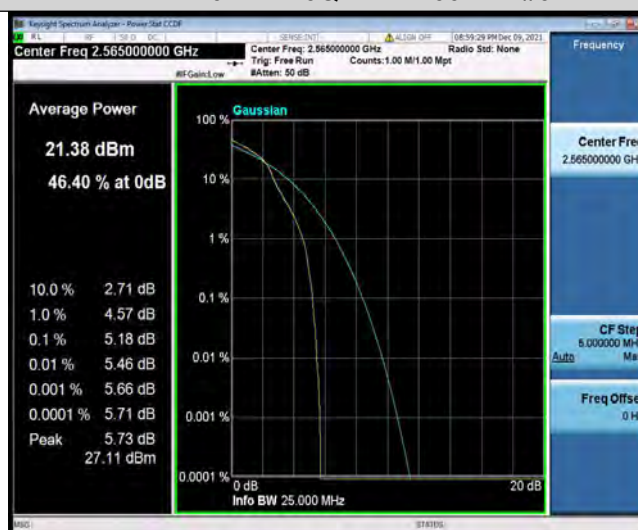
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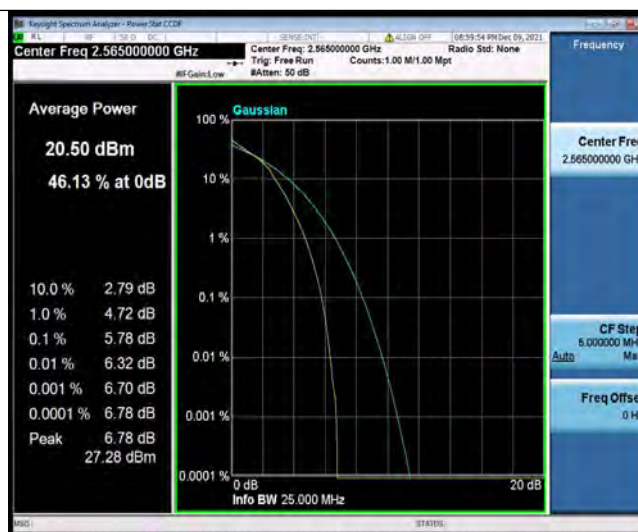
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Band7-10MHz-16QAM-21400-1RB#0



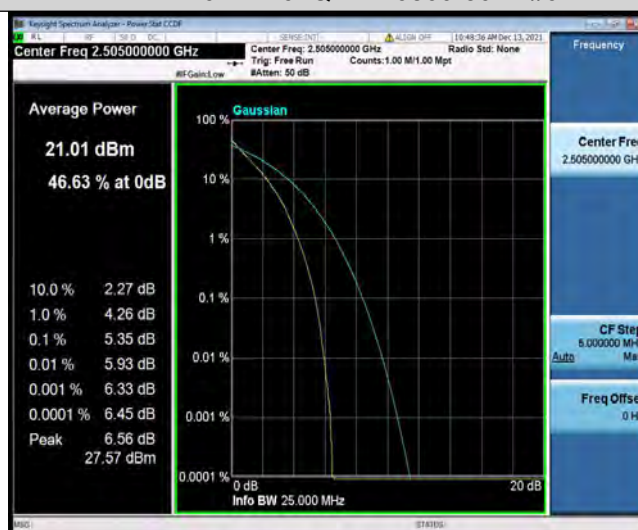
Band7-10MHz-16QAM-21400-50RB#0



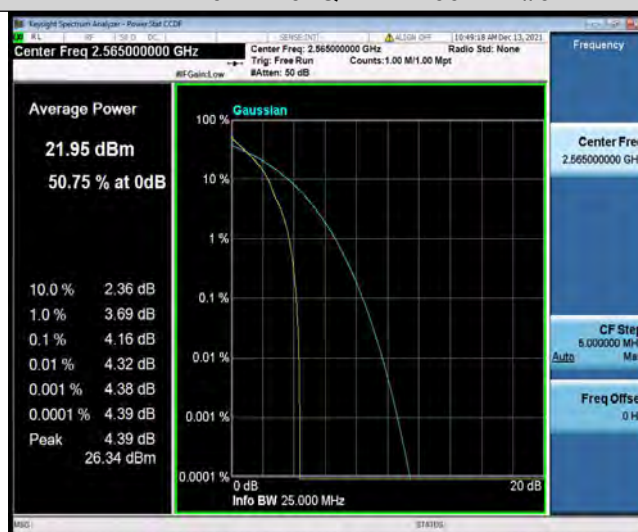
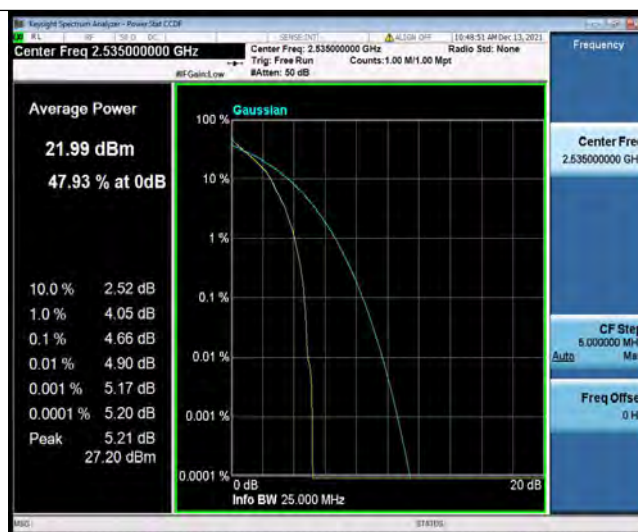
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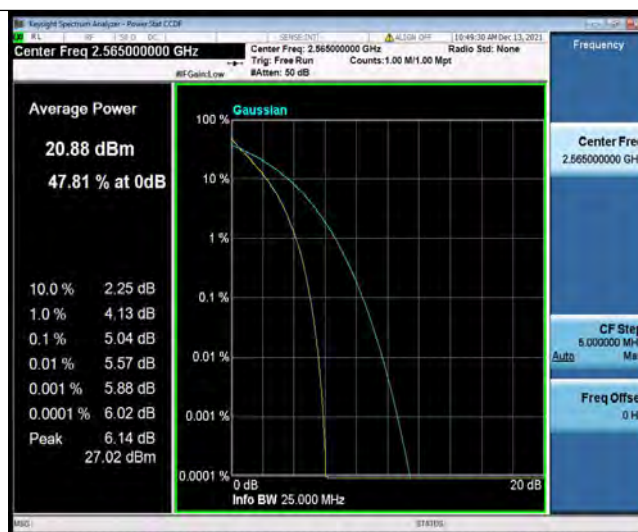


Band7-10MHz-64QAM-20800-50RB#0



Band7-10MHz-64QAM-21100-1RB#0





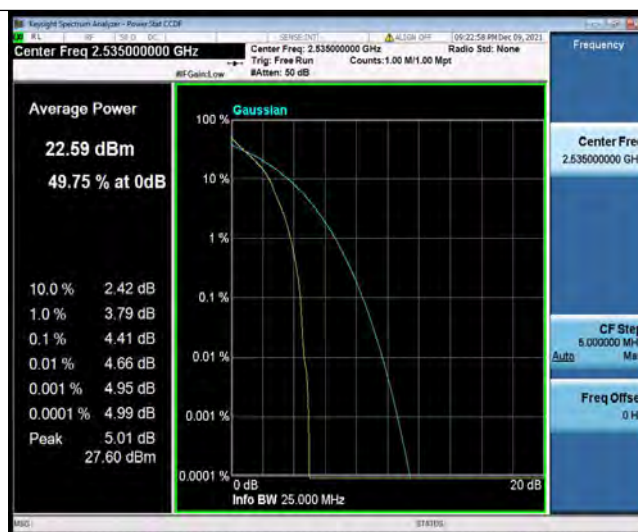
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Band7-15MHz-QPSK-20825-75RB#0



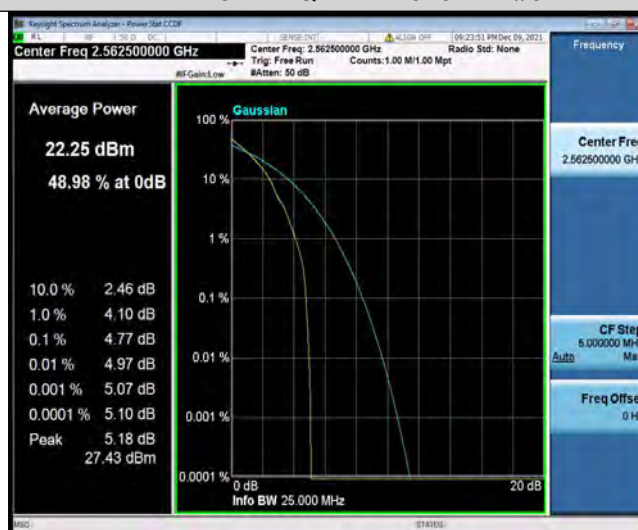
Band7-15MHz-QPSK-21100-1RB#0



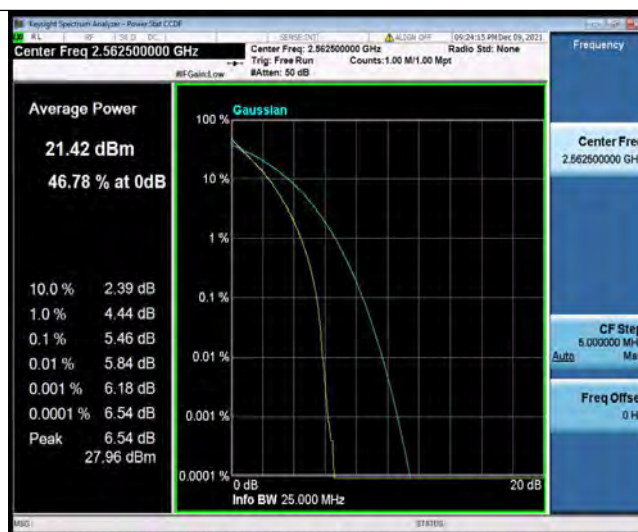
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Band7-15MHz-QPSK-21375-1RB#0



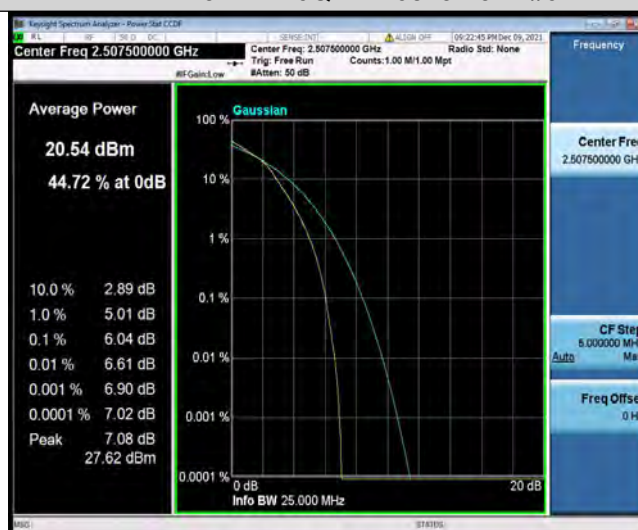
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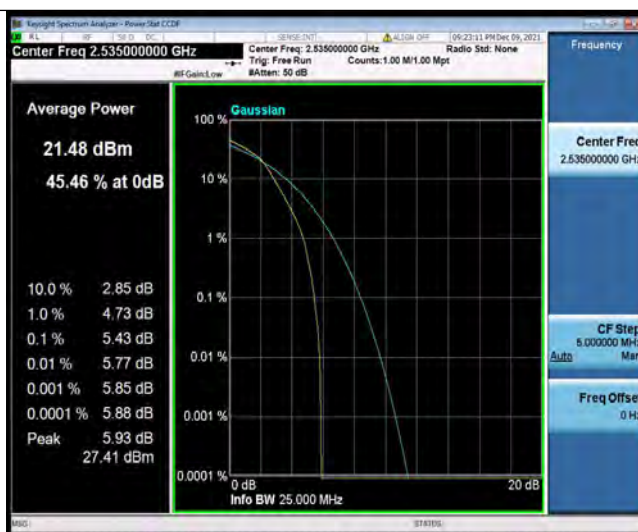
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Band7-15MHz-16QAM-20825-75RB#0



Band7-15MHz-16QAM-21100-1RB#0



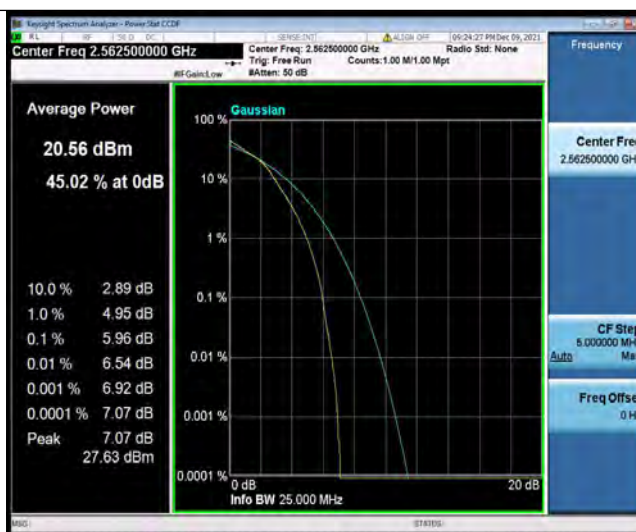
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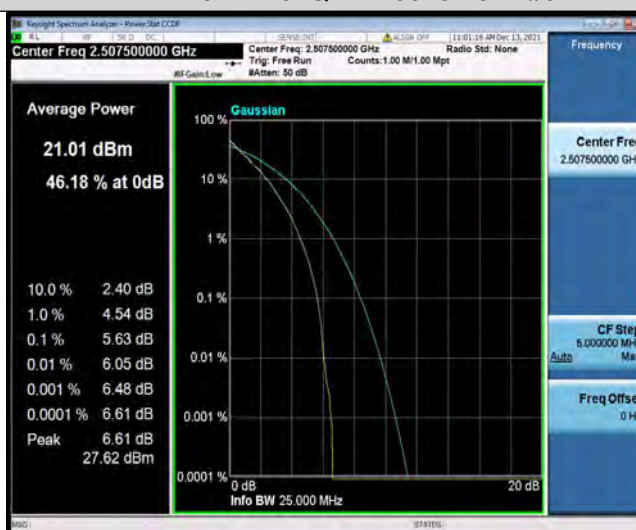
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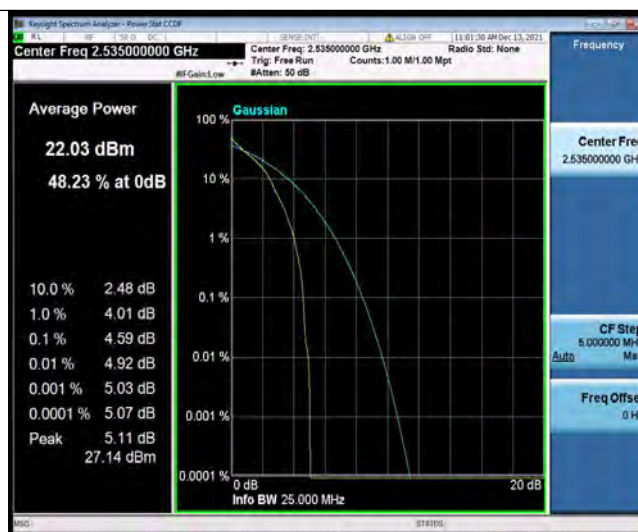
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Band7-15MHz-64QAM-21100-1RB#0



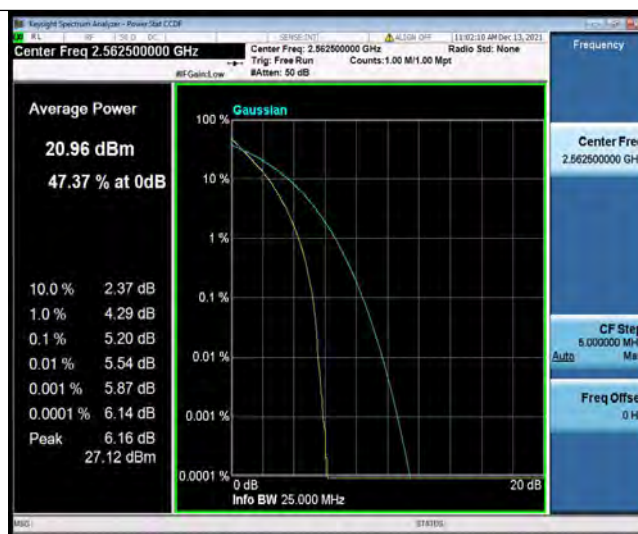
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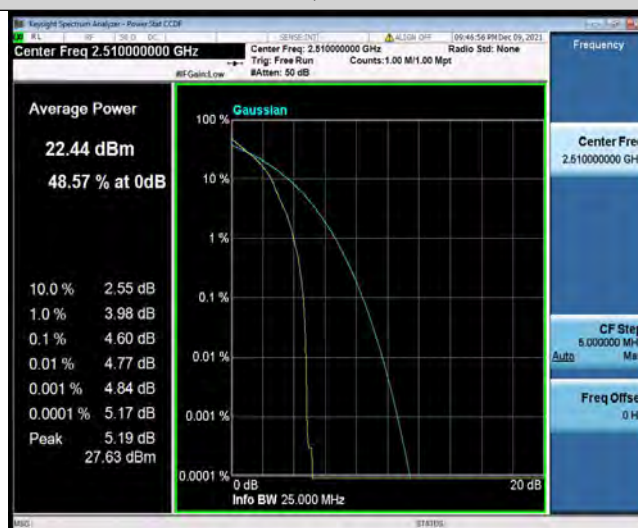
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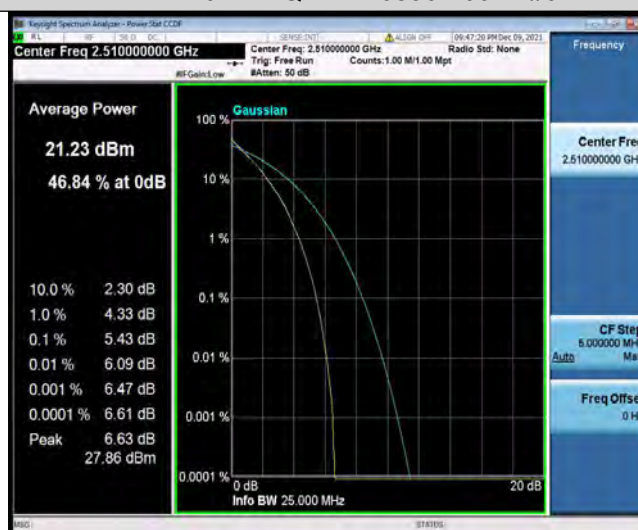
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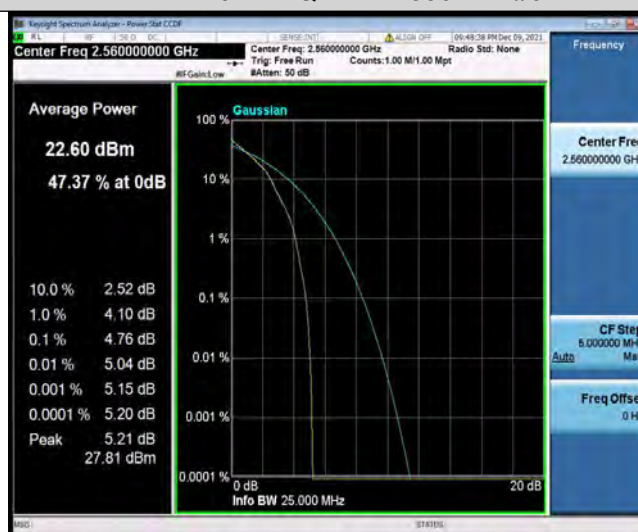
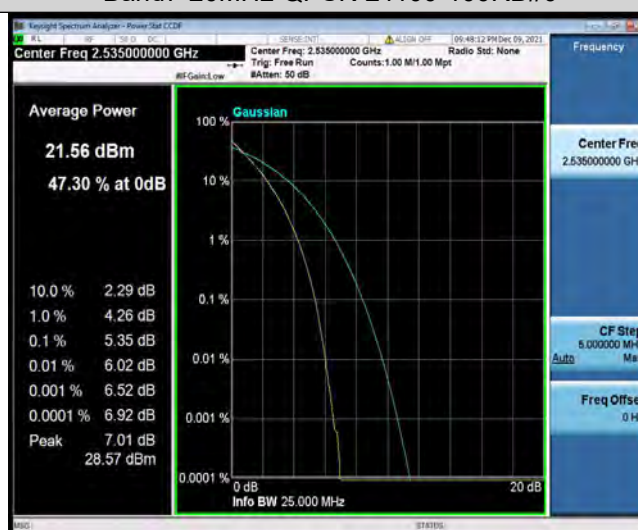
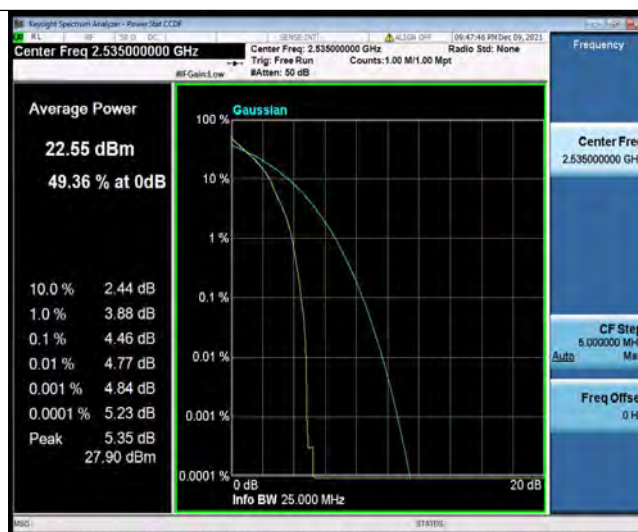
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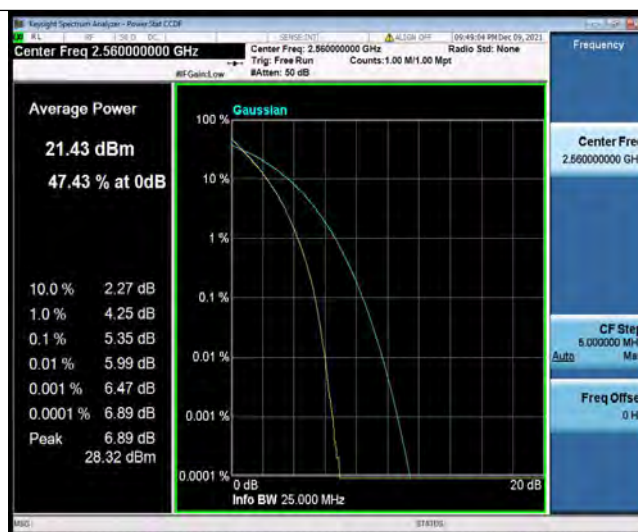


Band7-20MHz-QPSK-20850-100RB#0



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

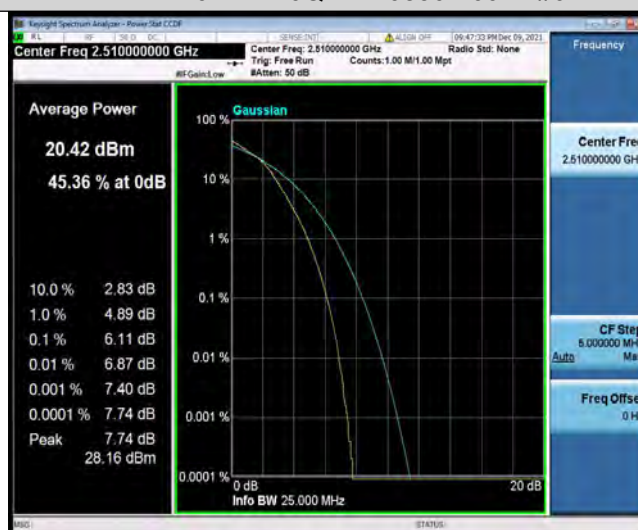




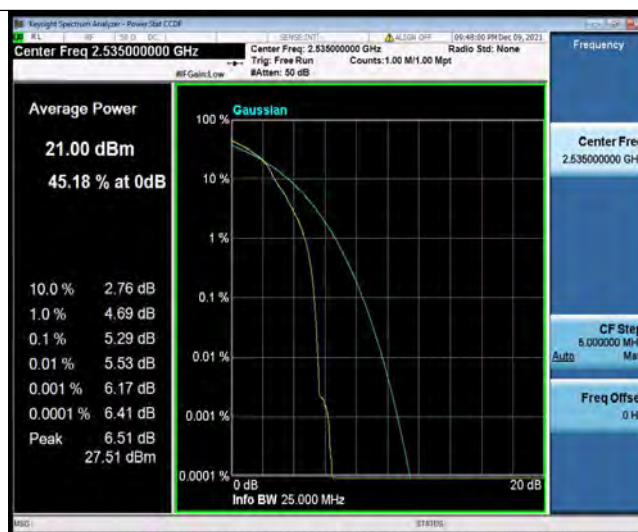
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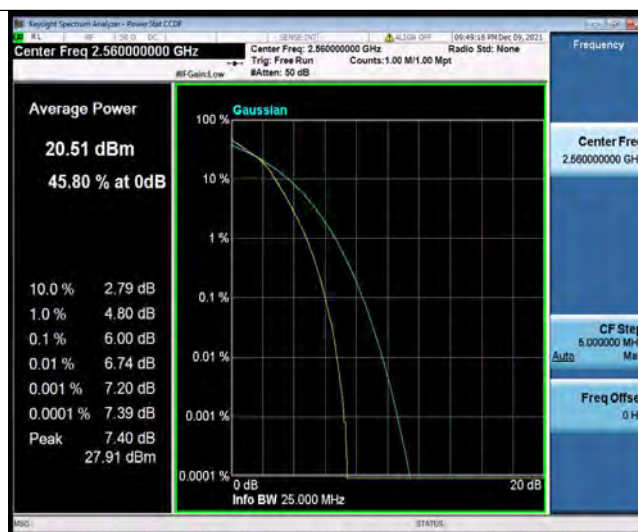
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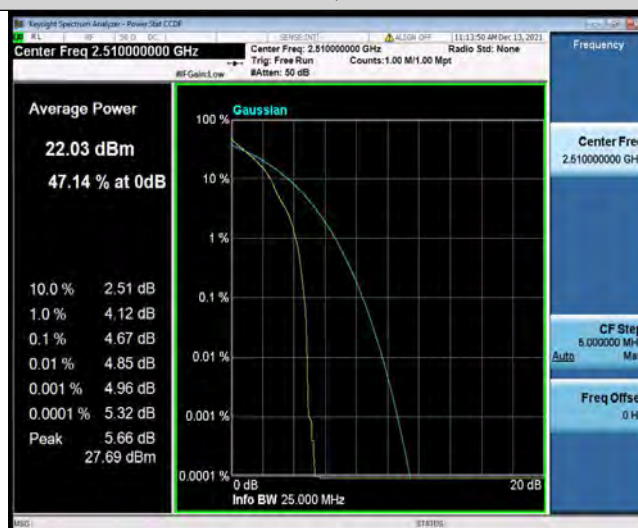
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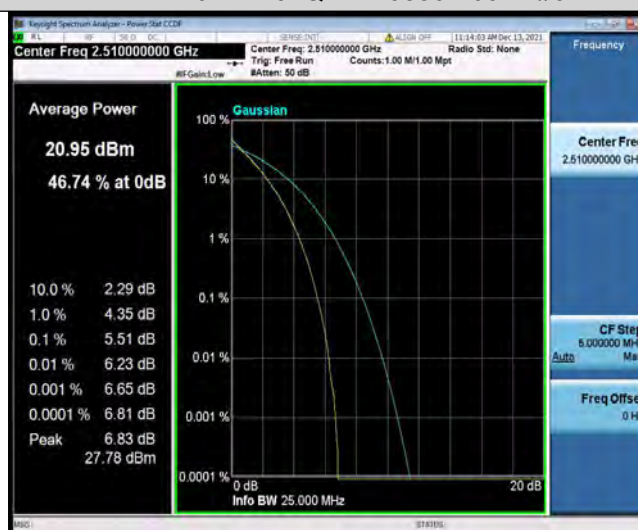
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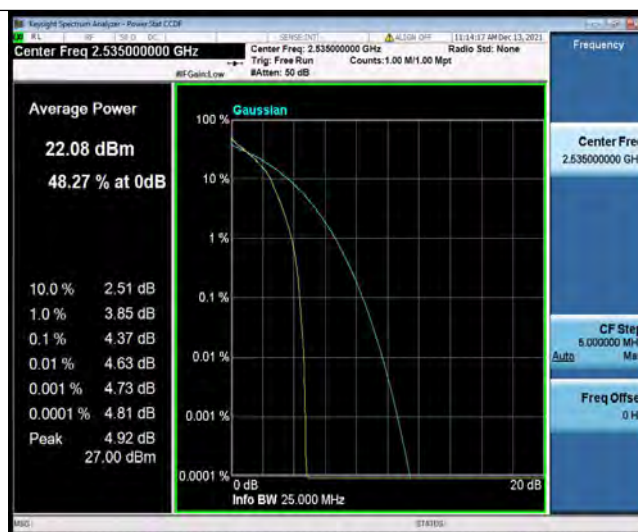
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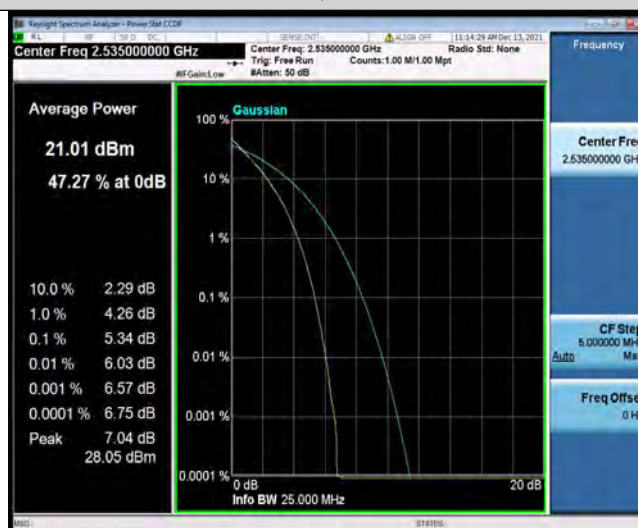
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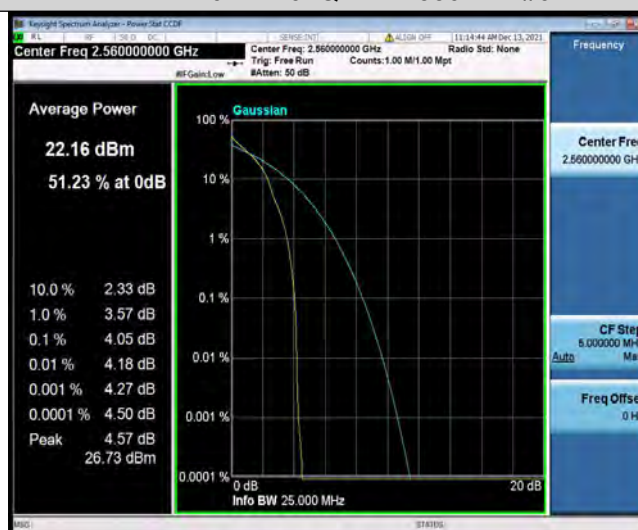
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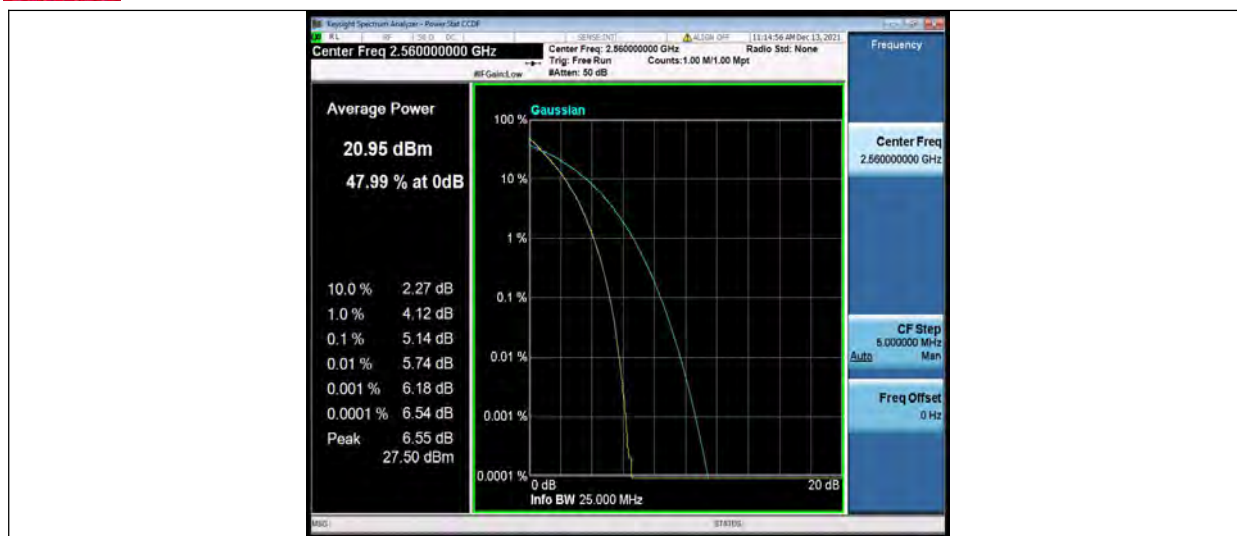
Band7-20MHz-64QAM-21100-100RB#0



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



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



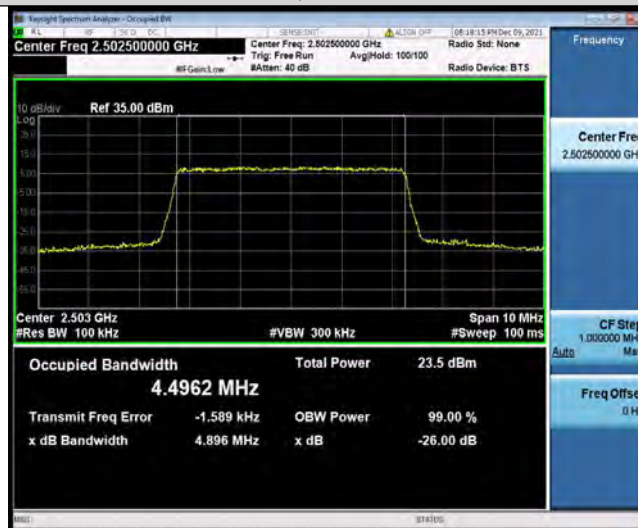
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.4962	4.896	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.4889	4.890	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.4979	4.882	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.4969	4.849	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.4979	4.905	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.4975	4.860	PASS
Band7	5MHz	64QAM	20775	25RB#0	4.5009	4.875	PASS
Band7	5MHz	64QAM	21100	25RB#0	4.4913	4.910	PASS
Band7	5MHz	64QAM	21425	25RB#0	4.5011	4.869	PASS
Band7	10MHz	QPSK	20800	50RB#0	8.9860	9.568	PASS
Band7	10MHz	QPSK	21100	50RB#0	8.9892	9.582	PASS
Band7	10MHz	QPSK	21400	50RB#0	8.9776	9.561	PASS
Band7	10MHz	16QAM	20800	50RB#0	8.9636	9.571	PASS
Band7	10MHz	16QAM	21100	50RB#0	8.9762	9.618	PASS
Band7	10MHz	16QAM	21400	50RB#0	8.9705	9.558	PASS
Band7	10MHz	64QAM	20800	50RB#0	8.9863	9.557	PASS
Band7	10MHz	64QAM	21100	50RB#0	8.9839	9.568	PASS
Band7	10MHz	64QAM	21400	50RB#0	8.9781	9.569	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.501	14.33	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.485	14.30	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.474	14.29	PASS
Band7	15MHz	16QAM	20825	75RB#0	13.484	14.38	PASS
Band7	15MHz	16QAM	21100	75RB#0	13.481	14.38	PASS
Band7	15MHz	16QAM	21375	75RB#0	13.488	14.34	PASS
Band7	15MHz	64QAM	20825	75RB#0	13.494	14.35	PASS
Band7	15MHz	64QAM	21100	75RB#0	13.493	14.32	PASS
Band7	15MHz	64QAM	21375	75RB#0	13.480	14.34	PASS
Band7	20MHz	QPSK	20850	100RB#0	17.972	19.02	PASS
Band7	20MHz	QPSK	21100	100RB#0	17.953	19.02	PASS
Band7	20MHz	QPSK	21350	100RB#0	17.945	19.02	PASS
Band7	20MHz	16QAM	20850	100RB#0	17.968	19.04	PASS
Band7	20MHz	16QAM	21100	100RB#0	17.962	19.00	PASS
Band7	20MHz	16QAM	21350	100RB#0	17.939	19.04	PASS
Band7	20MHz	64QAM	20850	100RB#0	17.967	19.01	PASS
Band7	20MHz	64QAM	21100	100RB#0	17.965	19.03	PASS
Band7	20MHz	64QAM	21350	100RB#0	17.944	18.99	PASS

Test Graphs

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



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



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



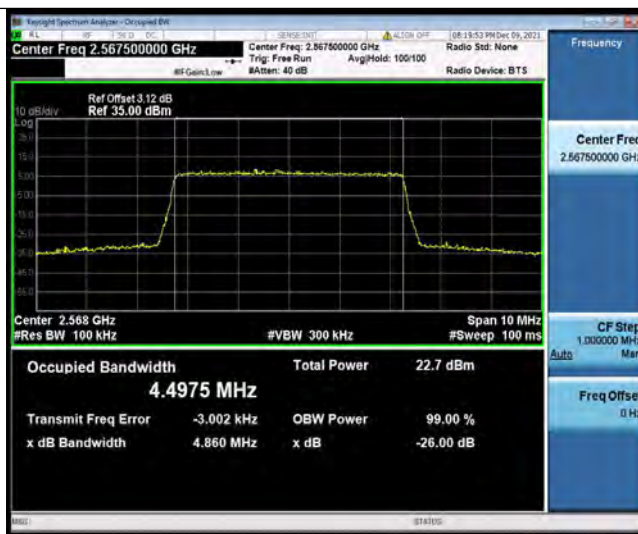
Band7-5MHz-16QAM-20775-25RB#0



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



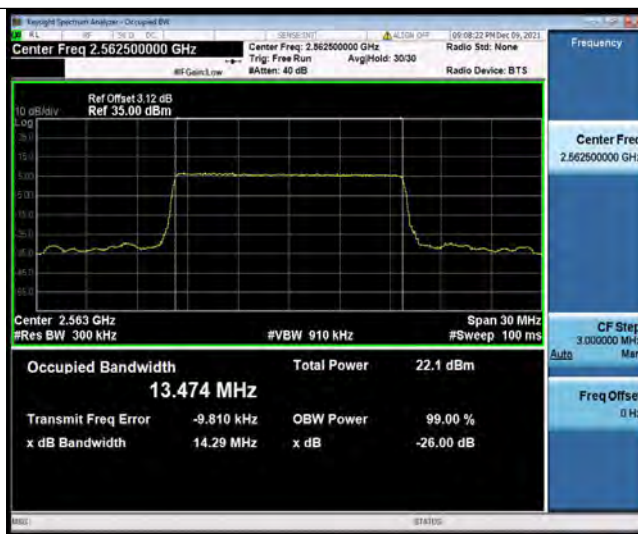
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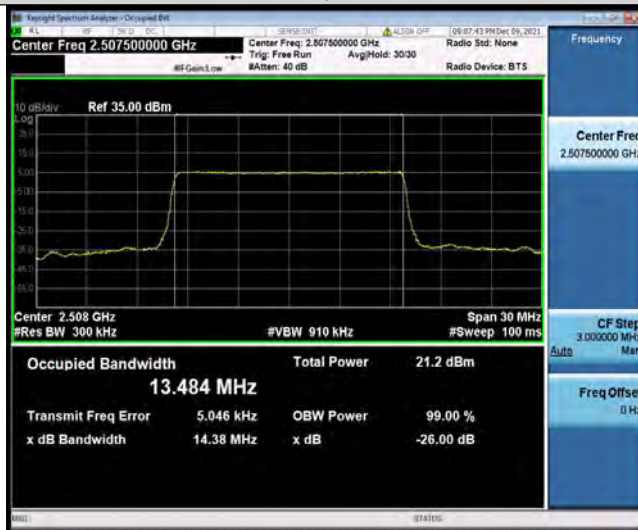
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Band7-15MHz-QPSK-21375-75RB#0



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



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



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