

VARIANT FCC TEST REPORT

(PART 27)

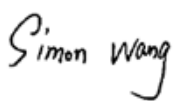
Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

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:	2410FPCC5G
FCC ID:	2AFZZPCC5G
Date of tests:	May. 11, 2024 ~ Jul. 11, 2024

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
 Date: Nov.15, 2024	 Date: Nov.15, 2024

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 SUMMARY OF TEST RESULTS	5
1.1 MEASUREMENT UNCERTAINTY	6
1.2 TEST SITE AND INSTRUMENTS	7
2 GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 CONFIGURATION OF SYSTEM UNDER TEST	10
2.3 DESCRIPTION OF SUPPORT UNITS	11
2.4 TEST ITEM AND TEST CONFIGURATION	11
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	14
3 TEST TYPES AND RESULTS	15
3.1 OUTPUT POWER MEASUREMENT	15
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	15
3.1.2 TEST PROCEDURES	15
3.1.3 TEST SETUP	16
3.1.4 TEST RESULTS	17
3.2 FREQUENCY STABILITY MEASUREMENT	35
3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	35
3.2.2 TEST PROCEDURE	35
3.2.3 TEST SETUP	35
3.2.4 TEST RESULTS	36
3.3 OCCUPIED BANDWIDTH MEASUREMENT	37
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT	37
3.3.2 TEST SETUP	37
3.3.3 TEST PROCEDURES	37
3.3.4 TEST RESULTS	38
3.4 BAND EDGE MEASUREMENT	39
3.4.1 LIMITS OF BAND EDGE MEASUREMENT	39
3.4.2 TEST SETUP	40
3.4.3 TEST PROCEDURES	41
3.4.4 TEST RESULTS	42
3.5 CONDUCTED SPURIOUS EMISSIONS	43
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	43
3.5.2 TEST PROCEDURE	43
3.5.3 TEST SETUP	43
3.5.4 TEST RESULTS	44
3.6 RADIATED EMISSION MEASUREMENT	45
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT	45
3.6.2 TEST PROCEDURES	45
3.6.3 DEVIATION FROM TEST STANDARD	45
3.6.4 TEST SETUP	46
3.6.5 TEST RESULTS	48
3.7 PEAK TO AVERAGE RATIO	68
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT	68
3.7.2 TEST SETUP	68
3.7.3 TEST PROCEDURES	68
3.7.4 TEST RESULTS	69
4 PHOTOGRAPHS OF THE TEST CONFIGURATION	70



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VERITAS**

Test Report No.: W7L-P24100005RF07

5 INFORMATION ON THE TESTING LABORATORIES	71
6 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB...	72
7 APPENDIX	73
WCDMA BAND 4.....	73
LTE BAND B7.....	84



Test Report No.: W7L-P24100005RF07

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P24050016RF07	Original release	Jul. 11, 2024
W7L-P24100005RF07	Based on the original product add 2 nd materials, 5 th and 6 th screens. This report doesn't change any data.	Nov.15, 2024

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(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (WCMDA Band 4)(Band 7)	Compliance
§2.1055 §27.54	Frequency Stability	Compliance
§2.1049	Occupied Bandwidth	Compliance
§2.1051 §27.53(h) §27.53(m)(4)	Conducted Band Edge Measurements (WCMDA Band 4) (Band 7)	Compliance
§2.1051 §27.53(h) §27.53(m)(4)	Conducted Spurious Emissions (WCMDA Band 4)(Band 7)	Compliance
§2.1053 §27.53(h) §27.53(m)(4)	Radiated Spurious Emissions (WCMDA Band 4)(Band 7)	Compliance
NA	Peak to average ratio	Compliance

1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
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	Mar. 28,24	Mar. 27,25
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.10,24	May.09,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,23	Sep.02,24
Bilog Antenna	ETS-LINDGRE N	3143B	00161965	Feb. 18,24	Feb. 17,25
Horn Antenna	ETS-LINDGRE N	3117	00168692	Feb. 18,24	Feb. 17,25
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K- SG/QMS-00361	15433	Sep.04, 23	Sep.03, 24
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,24	Feb. 13,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,24	May. 05,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.10,24	May.09,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,24	Feb.16,25
3m Semi-anechoic Chamber	ETS-LINDGRE N	9m*6m*6m	Euroshieldpn- CT0001143-121 6	Nov. 14,23	Nov. 13,26
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. 06,24	May. 05,25
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,24	Feb. 13,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,24	Feb. 13,25
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,24	May. 05,25
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,24	Feb. 13,25
Base station R&S CMW500	Rohde&Schwa rz	CMW500	153085	May.10,24	May.09,25
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	2410FPCC5G	
NOMINAL VOLTAGE	5/3.6~11Vdc(adapter or host equipment) 3.84Vdc (Li-ion, battery)	
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	197.7mW
	LTE Band 7 Channel Bandwidth: 5MHz	228.56mW
	LTE Band 7 Channel Bandwidth: 10MHz	230.14mW
	LTE Band 7 Channel Bandwidth: 15MHz	231.74mW
	LTE Band 7 Channel Bandwidth: 20MHz	233.35mW
EMISSION DESIGNATOR	WCDMA IV	4M17F9W
	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 9M00G7D
		16QAM: 9M01W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 17M9W7D



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Test Report No.: W7L-P24100005RF07

ANTENNA TYPE	ANT 0(UP): PIFA Antenna with -1.5dBi gain for WCDMA IV PIFA Antenna with -1dBi gain for LTE7 ANT 1(DOWN): PIFA Antenna with -1.5dBi gain for WCDMA IV PIFA Antenna with -0.5dBi gain for LTE7
HW VERSION	135100C3N
SW VERSION	Xiaomi HyperOS 1.0
IMEI	864624070035805
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 USB cable3: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable4: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable5: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable6: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable7: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable8: non-shielded cable, with w/o ferrite core, 1.0 meter
EXTREME TEMPERATURE	0-40 °C
EXTREME VOLTAGE	3.6V - 4.4V

NOTE:

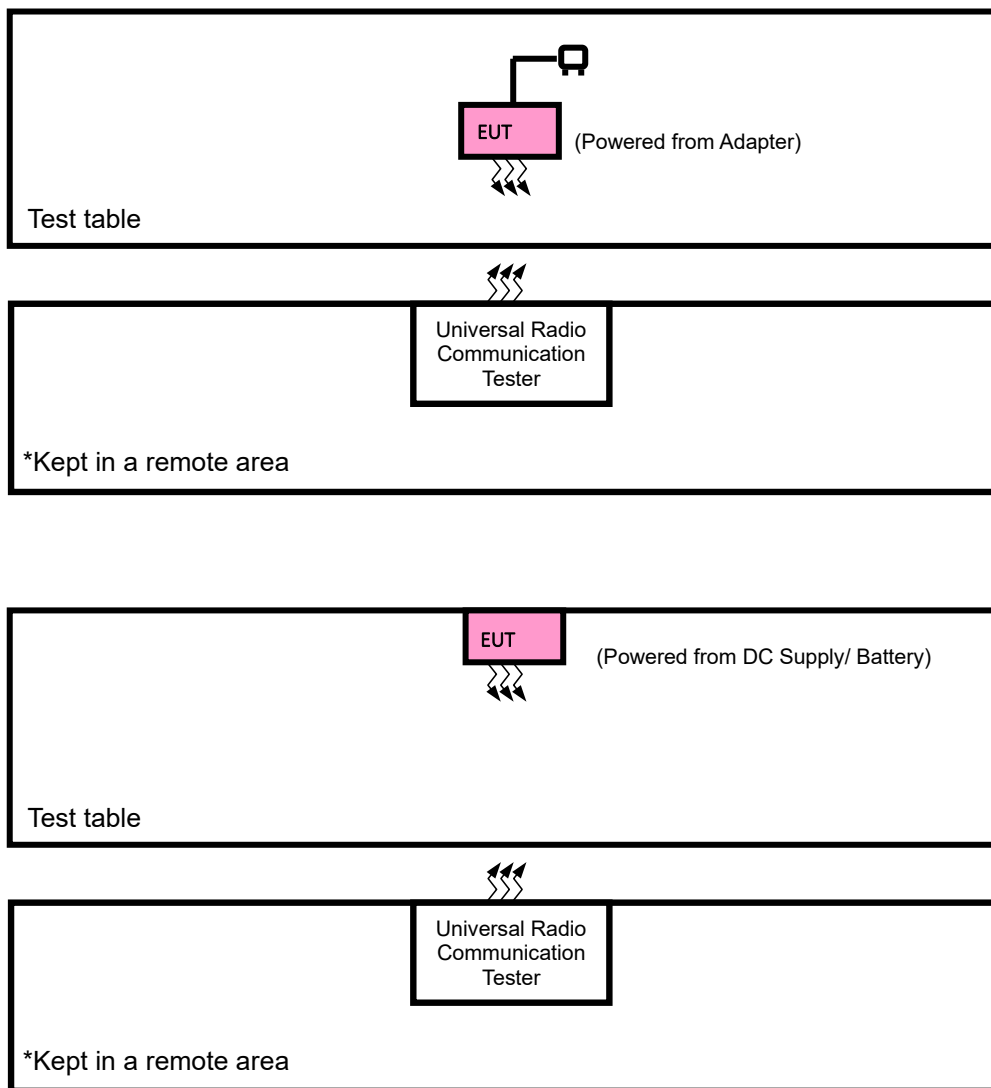
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Physically, the EUT provides two completed transmitter and two receiver.

MODULATION MODE	TX FUNCTION
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.
4. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

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	CONDUCTED 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 BANDWIDT H	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	25 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			21425	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		20800 to 21400	20800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			21400	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset
		20825 to 21375	20825	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
			21375	15MHz	QPSK, 16QAM	1 RB / 74 RB Offset 75 RB / 0 RB Offset
		20850 to 21350	20850	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
			21350	20MHz	QPSK, 16QAM	1 RB / 99 RB Offset 100 RB / 0 RB Offset
A	CONDCUDE TED 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	21100	10MHz	QPSK	1 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	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 Report No.: W7L-P24100005RF07

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	DC 5/3.6~11V By Adapter	Jace Hu
FREQUENCY STABILITY	See Note	DC 3.6/3.84/4.4 By DC Source	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5/3.6~11V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5/3.6~11V By Adapter	James Fu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 5/3.6~11V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 5/3.6~11V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5/3.6~11V By Adapter	James Fu



Test Report No.: W7L-P24100005RF07

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:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , typically dBW or dBm).

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW.

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

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

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

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	24.46	24.44	24.41
HSDPA Subtest-1	23.64	23.61	23.54
HSDPA Subtest-2	23.56	23.58	23.56
HSDPA Subtest-3	23.16	23.12	23.03
HSDPA Subtest-4	23.15	23.11	23.06
DC-HSDPA Subtest-1	23.59	23.56	23.58
DC-HSDPA Subtest-2	23.65	23.57	23.54
DC-HSDPA Subtest-3	23.13	23.12	23.08
DC-HSDPA Subtest-4	23.12	23.09	23.04
HSUPA Subtest-1	21.78	21.76	21.71
HSUPA Subtest-2	21.52	21.44	21.41
HSUPA Subtest-3	22.43	22.35	22.40
HSUPA Subtest-4	21.23	21.14	21.11
HSUPA Subtest-5	22.36	22.33	22.33
HSPA+ Subtest-1	21.65	21.67	21.71

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/ 5	QPSK	1	0	23.10	23.09	23.17
		1	12	23.20	23.22	23.20
		1	24	23.17	23.14	23.09
		12	0	22.22	22.03	22.16
		12	6	22.34	22.08	22.06
		12	13	22.33	22.21	22.24
		25	0	22.23	22.14	22.24
	16QAM	1	0	22.34	22.04	22.18
		1	12	22.45	22.19	22.28
		1	24	22.04	22.16	22.08
		12	0	21.28	21.16	21.09
		12	6	21.20	21.25	21.13
		12	13	21.35	21.09	21.15
		25	0	21.23	21.22	21.21
	64QAM	1	0	21.26	21.05	21.16
		1	12	21.37	21.16	21.24
		1	24	21.10	21.13	21.17
		12	0	20.13	20.06	20.23
		12	6	20.26	20.22	20.16
		12	13	20.28	20.14	20.24
		25	0	20.19	20.12	20.16

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	23.10	23.14	23.08
		1	24	23.27	23.14	23.13
		1	49	23.12	23.08	23.08
		25	0	22.21	22.15	22.17
		25	12	22.33	22.09	22.10
		25	25	22.28	22.19	22.34
		50	0	22.30	22.06	22.16
	16QAM	1	0	22.26	22.11	22.11
		1	24	22.42	22.29	22.24
		1	49	22.11	22.09	22.12
		25	0	21.15	21.09	21.12
		25	12	21.22	21.26	21.08
		25	25	21.23	21.17	21.21
		50	0	21.21	21.14	21.19
	64QAM	1	0	21.30	21.14	21.04
		1	24	21.32	21.12	21.16
		1	49	21.19	21.14	21.19
		25	0	20.27	20.03	20.20
		25	12	20.26	20.24	20.13
		25	25	20.36	20.13	20.17
		50	0	20.21	20.15	20.05

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825	Mid CH 21100	High CH 21375
				Frequency 2507.5 MHz	Frequency 2535 MHz	Frequency 2562.5 MHz
7/ 15	QPSK	1	0	23.04	23.15	23.07
		1	37	23.29	23.17	23.19
		1	74	23.11	23.09	23.02
		36	0	22.18	22.05	22.14
		36	19	22.31	22.12	22.10
		36	39	22.35	22.21	22.38
		75	0	22.35	22.06	22.15
	16QAM	1	0	22.25	22.05	22.11
		1	37	22.47	22.21	22.17
		1	74	22.05	22.10	22.19
		36	0	21.24	21.21	21.11
		36	19	21.23	21.13	21.06
		36	39	21.35	21.08	21.13
		75	0	21.22	21.19	21.30
	64QAM	1	0	21.27	21.04	21.04
		1	37	21.34	21.21	21.17
		1	74	21.10	21.14	21.27
		36	0	20.22	20.13	20.10
		36	19	20.16	20.22	20.21
		36	39	20.34	20.09	20.27
		75	0	20.27	20.12	20.10

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	23.16	23.19	23.21
		1	50	23.33	23.27	23.24
		1	99	23.18	23.21	23.15
		50	0	22.32	22.17	22.24
		50	25	22.37	22.13	22.15
		50	50	22.42	22.24	22.39
		100	0	22.36	22.21	22.25
	16QAM	1	0	22.40	22.16	22.22
		1	50	22.56	22.33	22.29
		1	99	22.14	22.19	22.21
		50	0	21.29	21.22	21.23
		50	25	21.32	21.27	21.19
		50	50	21.38	21.19	21.28
		100	0	21.34	21.28	21.31
	64QAM	1	0	21.38	21.17	21.19
		1	50	21.44	21.24	21.25
		1	99	21.23	21.19	21.30
		50	0	20.28	20.17	20.25
		50	25	20.30	20.28	20.27
		50	50	20.37	20.19	20.32
		100	0	20.30	20.22	20.18

ANT1(DOWN):

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.31	24.34	24.30
HSDPA Subtest-1	23.41	23.47	23.47
HSDPA Subtest-2	23.50	23.44	23.39
HSDPA Subtest-3	22.94	22.94	22.96
HSDPA Subtest-4	22.98	22.97	22.90
DC-HSDPA Subtest-1	23.41	23.52	23.47
DC-HSDPA Subtest-2	23.47	23.44	23.43
DC-HSDPA Subtest-3	22.98	22.97	22.93
DC-HSDPA Subtest-4	22.96	22.94	22.98
HSUPA Subtest-1	21.67	21.64	21.65
HSUPA Subtest-2	21.39	21.41	21.35
HSUPA Subtest-3	22.27	22.31	22.19
HSUPA Subtest-4	21.05	21.17	21.03
HSUPA Subtest-5	22.21	22.27	22.25
HSPA+ Subtest-1	21.53	21.55	21.50

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/ 5	QPSK	1	0	23.82	23.72	23.78
		1	12	24.09	23.95	24.04
		1	24	23.69	23.55	23.54
		12	0	23.22	23.06	23.02
		12	6	23.06	23.07	23.03
		12	13	23.09	22.87	22.86
		25	0	23.04	23.00	22.86
	16QAM	1	0	23.08	22.95	23.05
		1	12	23.31	23.12	23.25
		1	24	22.93	22.75	22.86
		12	0	22.19	22.03	21.92
		12	6	22.13	22.05	21.93
		12	13	22.11	21.83	21.96
		25	0	22.10	21.88	21.93
	64QAM	1	0	22.07	21.86	21.97
		1	12	22.31	22.10	22.25
		1	24	21.91	21.77	21.69
		12	0	21.18	20.93	20.92
		12	6	21.09	21.02	21.00
		12	13	20.99	20.84	20.92
		25	0	21.12	20.95	20.91

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	23.85	23.70	23.74
		1	24	24.12	23.95	24.02
		1	49	23.63	23.62	23.59
		25	0	23.21	22.99	23.01
		25	12	23.16	23.05	23.05
		25	25	23.13	22.90	22.97
		50	0	23.04	22.93	22.91
	16QAM	1	0	23.09	23.05	23.01
		1	24	23.31	23.24	23.29
		1	49	22.96	22.73	22.82
		25	0	22.06	21.96	22.00
		25	12	22.11	22.02	21.93
		25	25	22.05	21.91	21.93
		50	0	22.09	21.85	21.97
	64QAM	1	0	22.12	22.00	21.99
		1	24	22.29	22.12	22.18
		1	49	21.84	21.83	21.71
		25	0	21.16	20.84	20.98
		25	12	21.10	20.99	20.91
		25	25	21.08	20.82	20.81
		50	0	21.07	20.84	20.94

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825	Mid CH 21100	High CH 21375
				Frequency 2507.5 MHz	Frequency 2535 MHz	Frequency 2562.5 MHz
7/ 15	QPSK	1	0	23.81	23.80	23.68
		1	37	24.15	23.91	24.09
		1	74	23.70	23.57	23.62
		36	0	23.14	23.02	22.99
		36	19	23.17	23.01	23.01
		36	39	23.19	22.83	22.91
		75	0	23.09	22.90	22.94
	16QAM	1	0	22.99	22.95	23.00
		1	37	23.28	23.23	23.29
		1	74	22.96	22.84	22.79
		36	0	22.10	22.05	22.06
		36	19	22.09	22.00	21.92
		36	39	22.10	21.85	21.93
		75	0	22.02	21.91	21.86
	64QAM	1	0	22.08	21.91	21.88
		1	37	22.28	22.14	22.30
		1	74	21.84	21.78	21.68
		36	0	21.13	20.91	21.03
		36	19	21.16	20.98	21.02
		36	39	21.08	20.82	20.83
		75	0	21.00	20.95	20.93

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	23.89	23.81	23.80
		1	50	24.18	24.02	24.10
		1	99	23.73	23.70	23.67
		50	0	23.20	23.11	23.07
		50	25	23.23	23.13	23.11
		50	50	23.22	22.98	23.01
		100	0	23.18	23.02	23.00
	16QAM	1	0	23.11	23.10	23.08
		1	50	23.34	23.27	23.31
		1	99	23.03	22.87	22.91
		50	0	22.21	22.10	22.07
		50	25	22.20	22.12	22.06
		50	50	22.17	21.98	22.00
		100	0	22.15	22.00	21.98
	64QAM	1	0	22.20	22.01	22.02
		1	50	22.37	22.19	22.32
		1	99	21.94	21.92	21.76
		50	0	21.19	20.97	21.05
		50	25	21.17	21.09	21.04
		50	50	21.14	20.96	20.93
		100	0	21.13	20.98	20.99

**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	24.46	-1.5	22.96	197.7	1
1413	1732.6	24.44	-1.5	22.94	196.79	1
1513	1752.6	24.41	-1.5	22.91	195.43	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	23.2	-1	22.2	165.96	2
21100	2535.0	23.22	-1	22.22	166.72	2
21425	2567.5	23.2	-1	22.2	165.96	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	22.45	-1	21.45	139.64	2
21100	2535.0	22.19	-1	21.19	131.52	2
21425	2567.5	22.28	-1	21.28	134.28	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	21.37	-1	20.37	108.89	2
21100	2535	21.16	-1	20.16	103.75	2
21425	2567.5	21.24	-1	20.24	105.68	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	23.27	-1	22.27	168.66	2
21100	2535.0	23.14	-1	22.14	163.68	2
21400	2565.0	23.13	-1	22.13	163.31	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	22.42	-1	21.42	138.68	2
21100	2535.0	22.29	-1	21.29	134.59	2
21400	2565.0	22.24	-1	21.24	133.05	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	21.32	-1	20.32	107.65	2
21100	2535	21.14	-1	20.14	103.28	2
21400	2565	21.19	-1	20.19	104.47	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	23.29	-1	22.29	169.43	2
21100	2535.0	23.17	-1	22.17	164.82	2
21375	2562.5	23.19	-1	22.19	165.58	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	22.47	-1	21.47	140.28	2
21100	2535.0	22.21	-1	21.21	132.13	2
21375	2562.5	22.19	-1	21.19	131.52	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	21.34	-1	20.34	108.14	2
21100	2535	21.21	-1	20.21	104.95	2
21375	2562.5	21.27	-1	20.27	106.41	2



BUREAU
VERITAS

Test Report No.: W7L-P24100005RF07

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	23.33	-1	22.33	171	2
21100	2535.0	23.27	-1	22.27	168.66	2
21350	2560.0	23.24	-1	22.24	167.49	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	22.56	-1	21.56	143.22	2
21100	2535.0	22.33	-1	21.33	135.83	2
21350	2560.0	22.29	-1	21.29	134.59	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21.44	-1	20.44	110.66	2
21100	2535	21.24	-1	20.24	105.68	2
21350	2560	21.3	-1	20.3	107.15	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	24.31	-1.5	22.81	190.99	1
1413	1732.6	24.34	-1.5	22.84	192.31	1
1513	1752.6	24.3	-1.5	22.8	190.55	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	24.09	-0.5	23.59	228.56	2
21100	2535.0	23.95	-0.5	23.45	221.31	2
21425	2567.5	24.04	-0.5	23.54	225.94	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	23.31	-0.5	22.81	190.99	2
21100	2535.0	23.12	-0.5	22.62	182.81	2
21425	2567.5	23.25	-0.5	22.75	188.36	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	22.31	-0.5	21.81	151.71	2
21100	2535	22.1	-0.5	21.6	144.54	2
21425	2567.5	22.25	-0.5	21.75	149.62	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	24.12	-0.5	23.62	230.14	2
21100	2535.0	23.95	-0.5	23.45	221.31	2
21400	2565.0	24.02	-0.5	23.52	224.91	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	23.31	-0.5	22.81	190.99	2
21100	2535.0	23.24	-0.5	22.74	187.93	2
21400	2565.0	23.29	-0.5	22.79	190.11	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	22.29	-0.5	21.79	151.01	2
21100	2535	22.12	-0.5	21.62	145.21	2
21400	2565	22.18	-0.5	21.68	147.23	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	24.15	-0.5	23.65	231.74	2
21100	2535.0	23.91	-0.5	23.41	219.28	2
21375	2562.5	24.09	-0.5	23.59	228.56	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	23.28	-0.5	22.78	189.67	2
21100	2535.0	23.23	-0.5	22.73	187.5	2
21375	2562.5	23.29	-0.5	22.79	190.11	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	22.28	-0.5	21.78	150.66	2
21100	2535	22.14	-0.5	21.64	145.88	2
21375	2562.5	22.3	-0.5	21.8	151.36	2



**BUREAU
VERITAS**

Test Report No.: W7L-P24100005RF07

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	24.18	-0.5	23.68	233.35	2
21100	2535.0	24.02	-0.5	23.52	224.91	2
21350	2560.0	24.1	-0.5	23.6	229.09	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	23.34	-0.5	22.84	192.31	2
21100	2535.0	23.27	-0.5	22.77	189.23	2
21350	2560.0	23.31	-0.5	22.81	190.99	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.37	-0.5	21.87	153.82	2
21100	2535	22.19	-0.5	21.69	147.57	2
21350	2560	22.32	-0.5	21.82	152.05	2

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

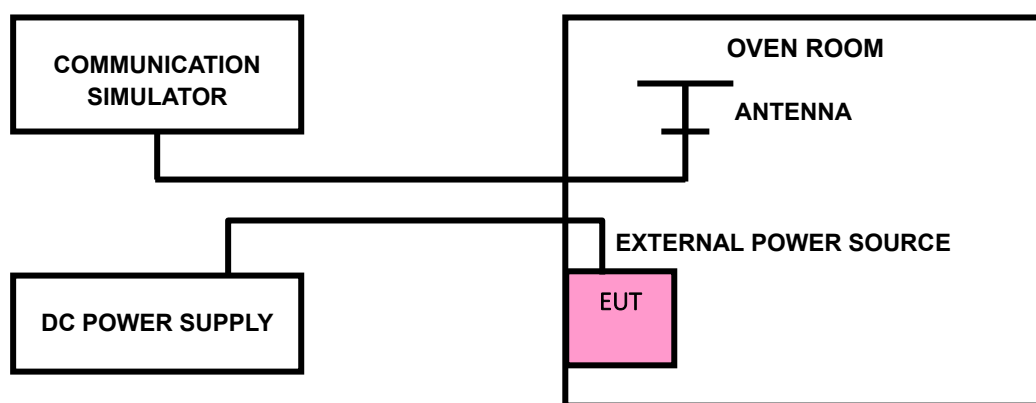
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

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





Test Report No.: W7L-P24100005RF07

3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

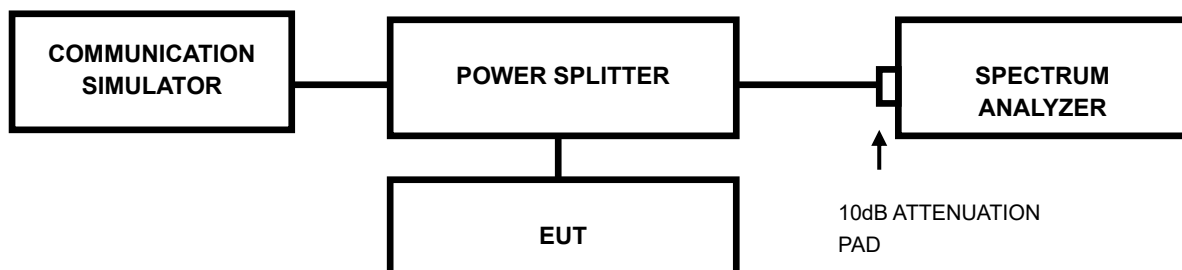
Note: LV = Low voltage (3.6V); NV = Normal voltage (3.84V); HV= High voltage (4.4V).
NT = Normal temperature (25°C)

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

- 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.



Test Report No.: W7L-P24100005RF07

3.3.4 TEST RESULTS

Please Refer to Appendix Of this test report.

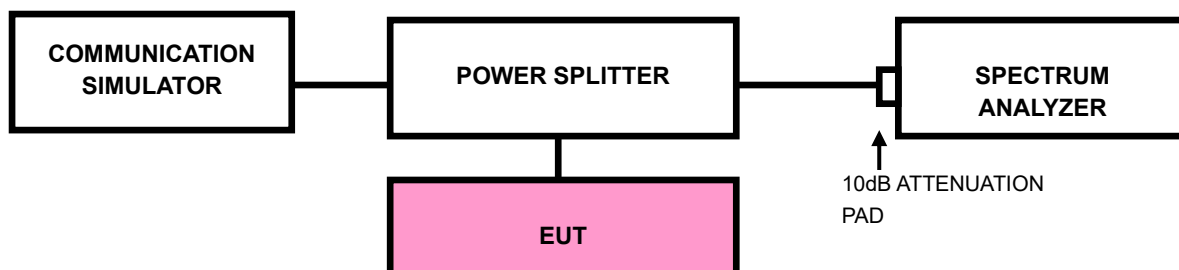
3.4 BAND EDGE MEASUREMENT

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) $\geq 1\%$ 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 $\geq 3 \times$ 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.



Test Report No.: W7L-P24100005RF07

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 .

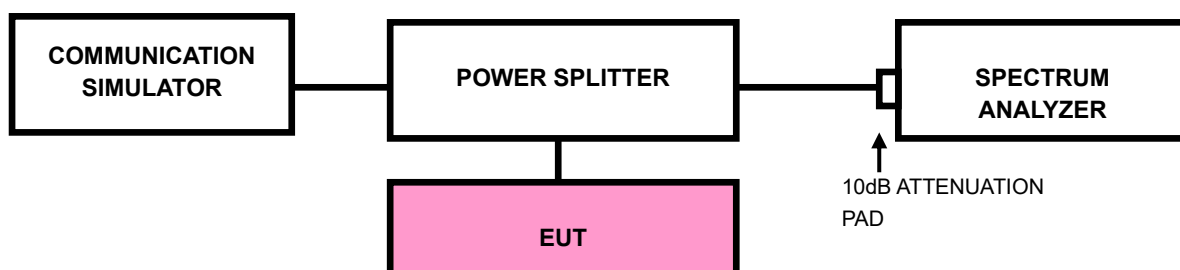
For: LTE Band7

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ 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 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





Test Report No.: W7L-P24100005RF07

3.5.4 TEST RESULTS

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

Please Refer to Appendix Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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 $55 + 10 \log_{10}(P)$ 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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$.

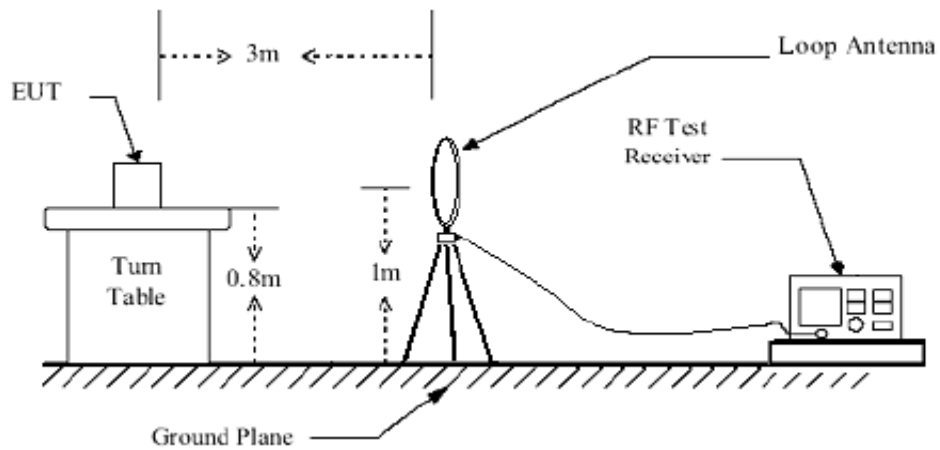
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz, and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

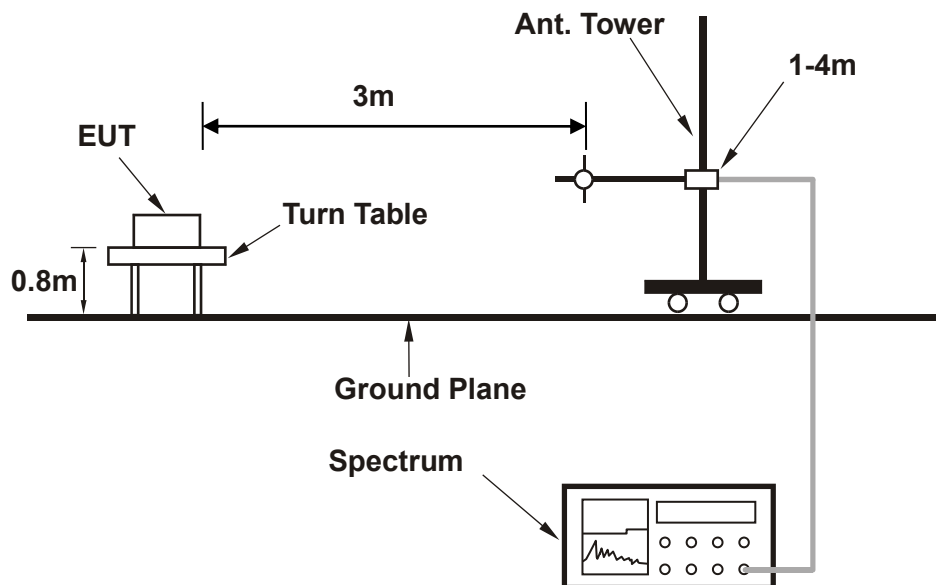
No deviation

3.6.4 TEST SETUP

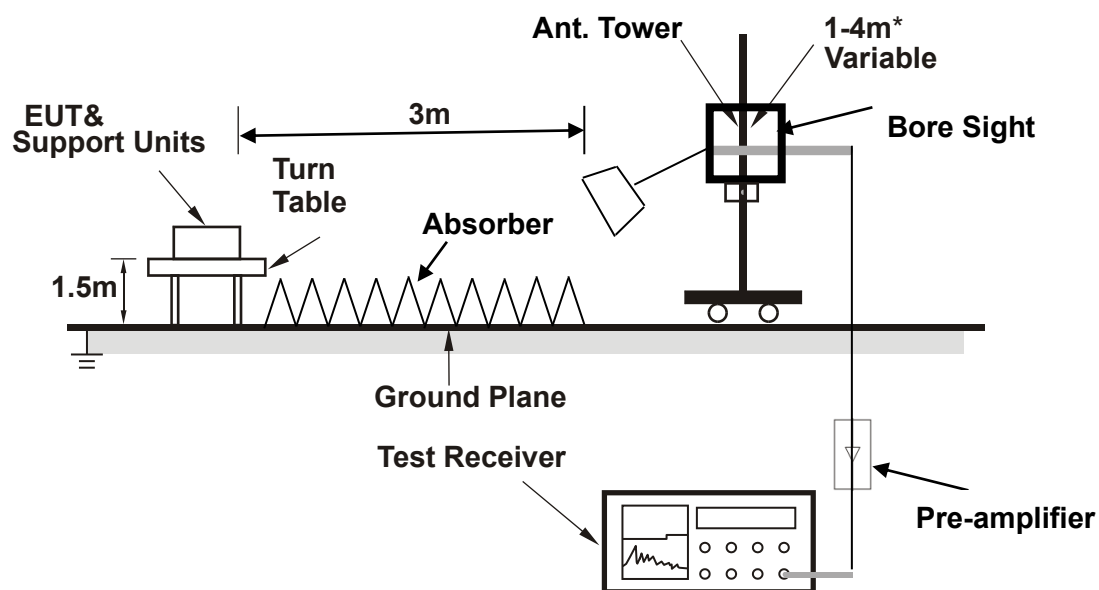
< Frequency Range below 30MHz >



< 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

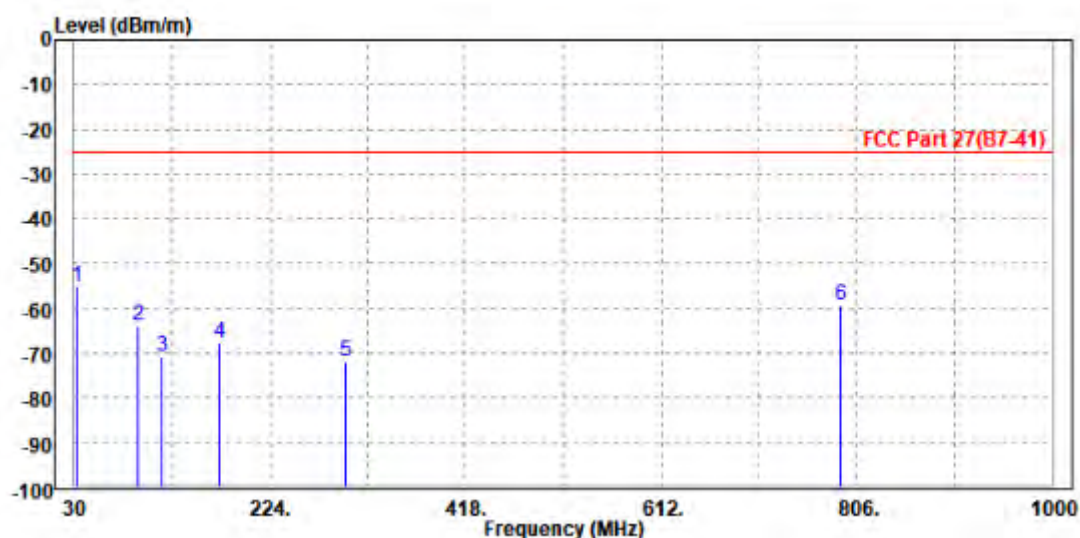
30 MHz – 1GHz data:

LTE Band 7(Ant0) (UP):

CHANNEL BANDWIDTH: 15MHz / QPSK

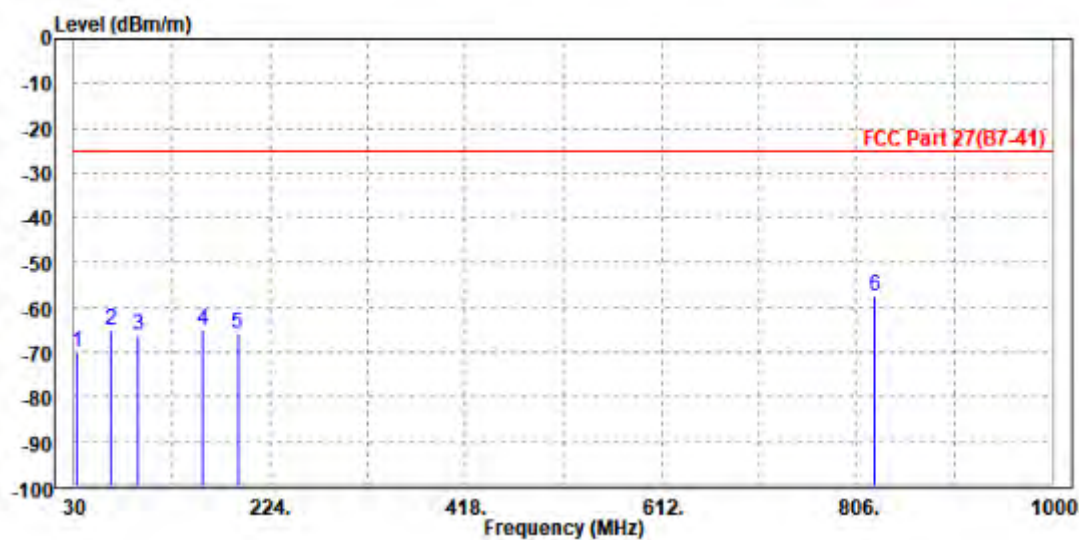
MODE	TX channel 21100	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	31.940	-55.08	-52.04	-25.00	-30.08	-3.04	Peak	Horizontal
2	94.020	-63.91	-51.08	-25.00	-38.91	-12.83	Peak	Horizontal
3	116.330	-70.81	-55.59	-25.00	-45.81	-15.22	Peak	Horizontal
4	173.560	-67.51	-50.91	-25.00	-42.51	-16.60	Peak	Horizontal
5	298.690	-71.77	-62.91	-25.00	-46.77	-8.86	Peak	Horizontal
6	790.480	-59.30	-64.43	-25.00	-34.30	5.13	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	31.940	-70.05	-48.64	-25.00	-45.05	-21.41	Peak	Vertical
2	65.890	-65.06	-45.44	-25.00	-40.06	-19.62	Peak	Vertical
3	93.050	-66.14	-49.00	-25.00	-41.14	-17.14	Peak	Vertical
4	157.070	-65.09	-53.85	-25.00	-40.09	-11.24	Peak	Vertical
5	191.990	-65.62	-58.57	-25.00	-40.62	-7.05	Peak	Vertical
6 PP	823.460	-57.60	-64.28	-25.00	-32.60	6.68	Peak	Vertical





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Test Report No.: W7L-P24100005RF07

ABOVE 1GHz

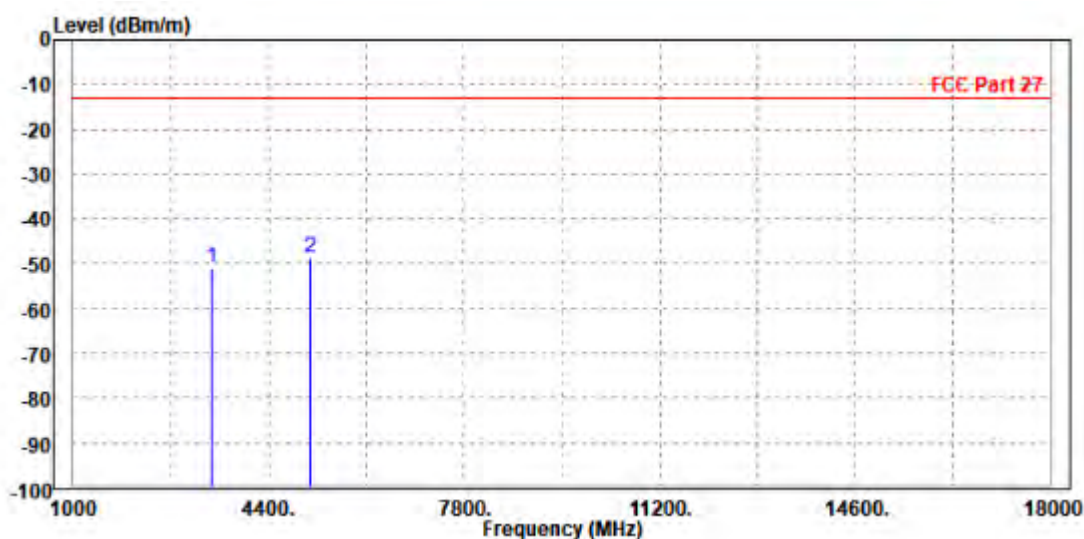
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band IV(Ant1) (DOWN):

CH 1312

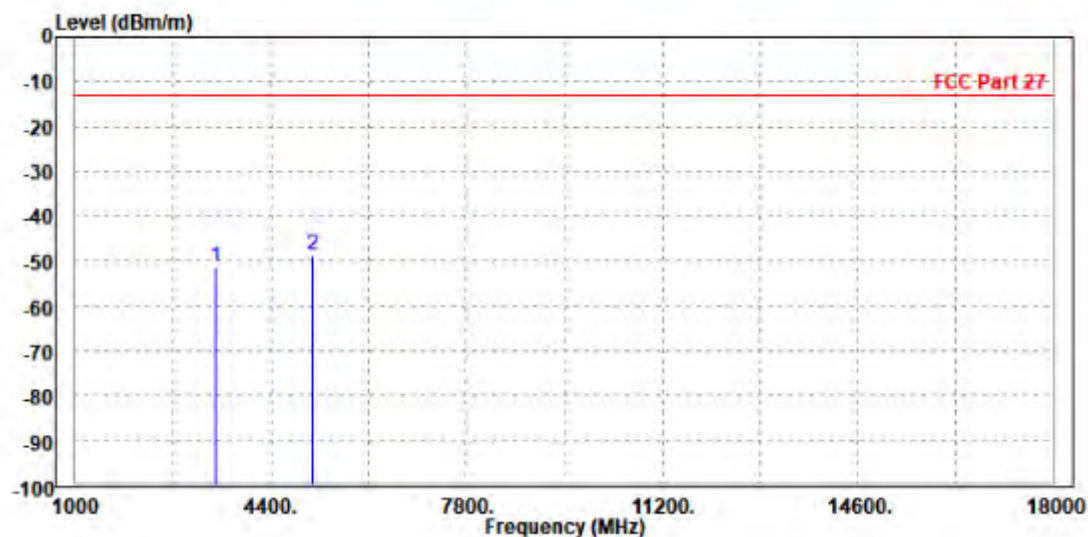
MODE	TX channel 1312	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3424.000	-51.08	-59.59	-13.00	-38.08	8.51	Peak	Horizontal
2 PP	5131.000	-48.61	-59.86	-13.00	-35.61	11.25	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			

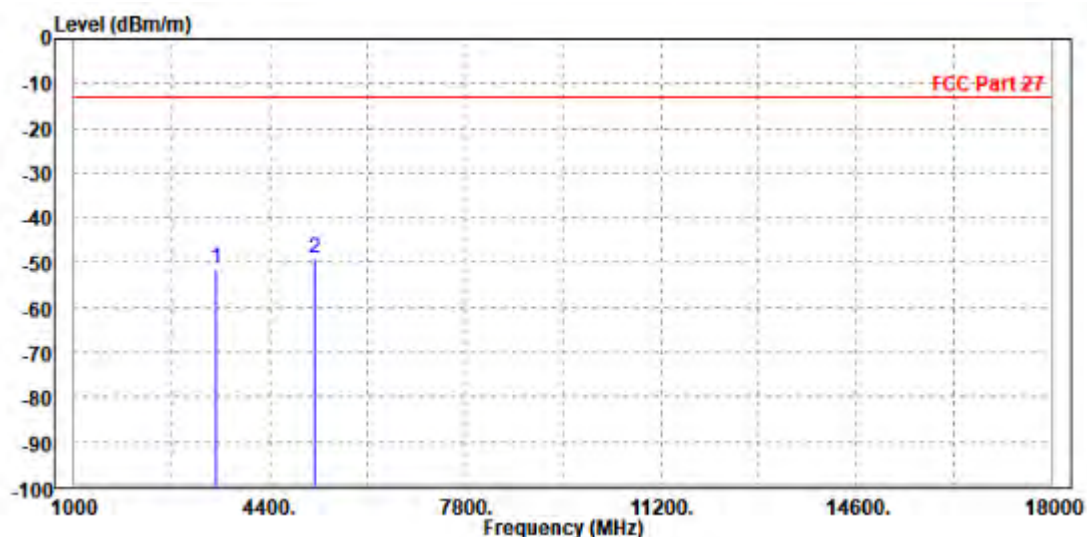
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3431.000	-51.24	-59.91	-13.00	-38.24	8.67	Peak	Vertical
2 PP	5136.000	-48.60	-60.23	-13.00	-35.60	11.63	Peak	Vertical



CH 1413

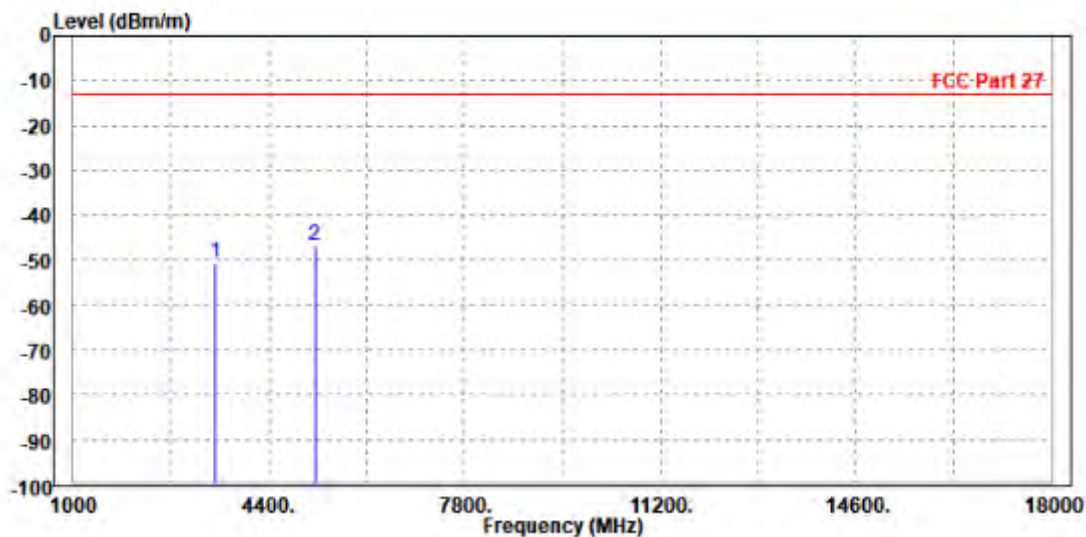
MODE	TX channel 1413	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3465.000	-51.18	-59.72	-13.00	-38.18	8.54	Peak	Horizontal
2 PP	5196.000	-48.90	-60.25	-13.00	-35.90	11.35	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			

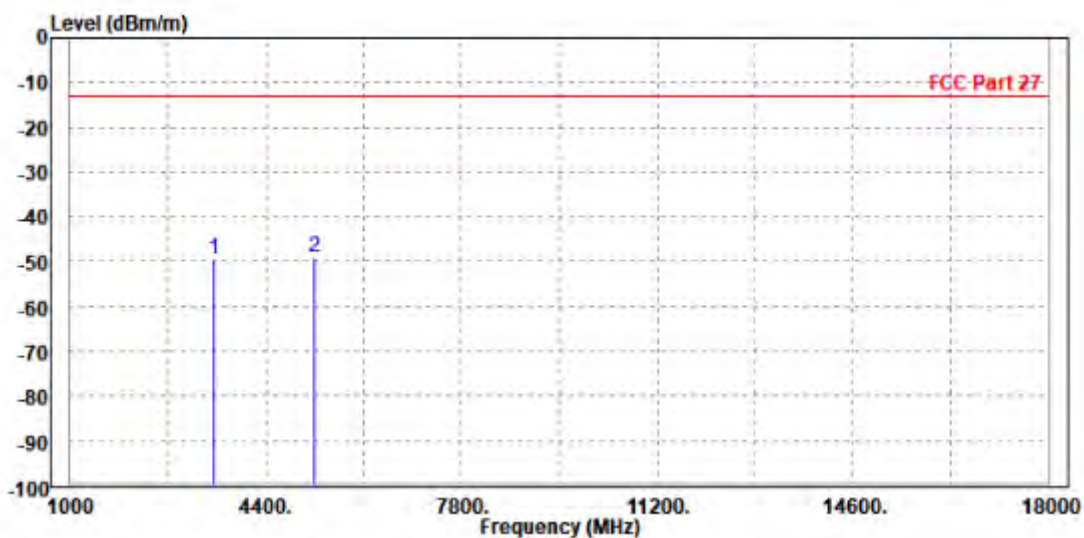
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3464.000	-50.64	-59.29	-13.00	-37.64	8.65	Peak	Vertical
2	PP 5199.000	-46.69	-58.45	-13.00	-33.69	11.76	Peak	Vertical



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	3499.000	-49.47	-58.03	-13.00	-36.47	8.56	Peak	Horizontal
2 PP	5256.000	-49.01	-60.45	-13.00	-36.01	11.44	Peak	Horizontal



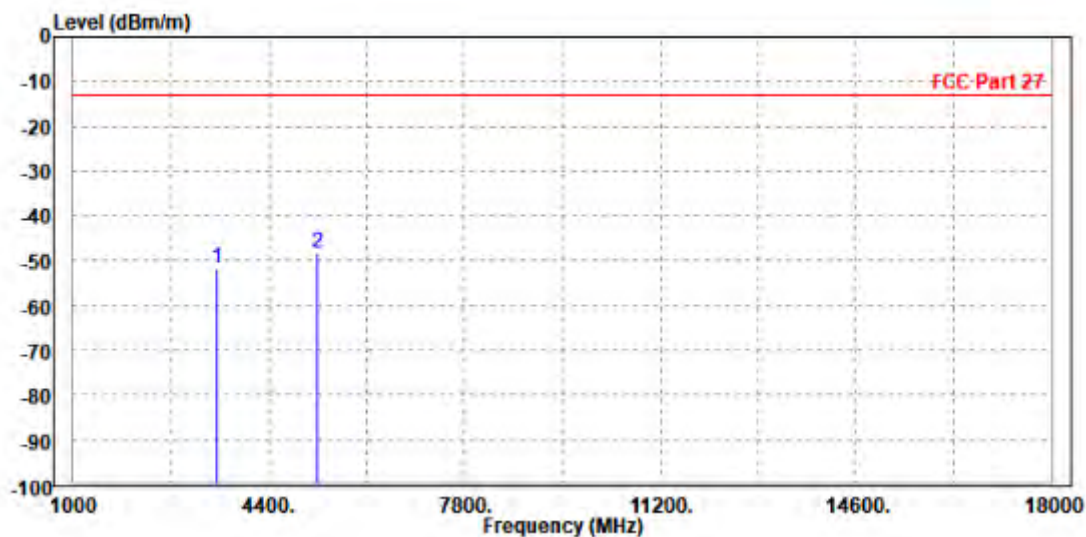


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Test Report No.: W7L-P24100005RF07

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			

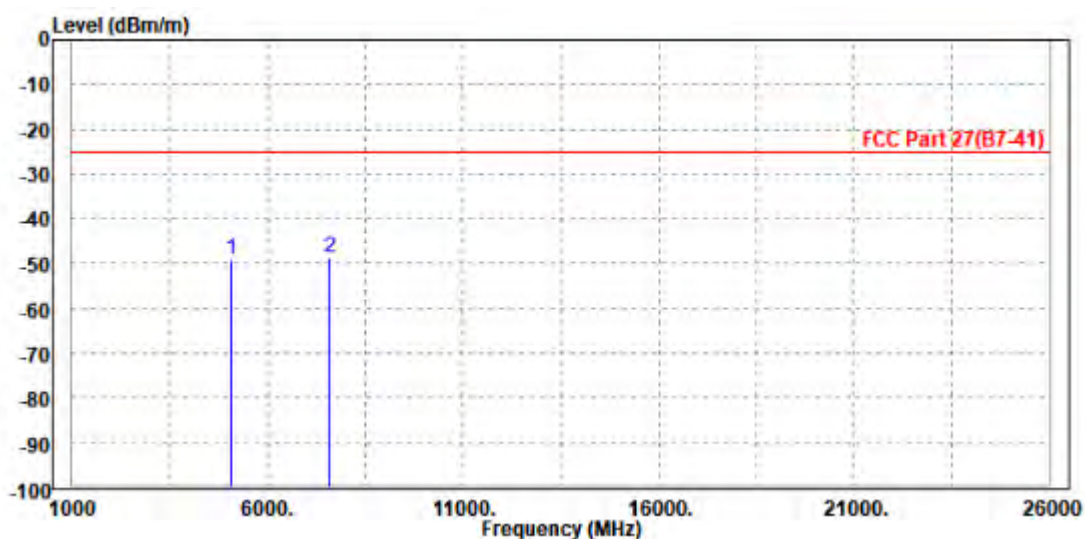
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3504.000	-51.68	-60.32	-13.00	-38.68	8.64	Peak	Vertical
2 PP	5250.000	-48.19	-60.04	-13.00	-35.19	11.85	Peak	Vertical



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	5075.000	-49.06	-60.23	-25.00	-24.06	11.17	Peak	Horizontal
2 PP	7605.000	-48.63	-63.15	-25.00	-23.63	14.52	Peak	Horizontal

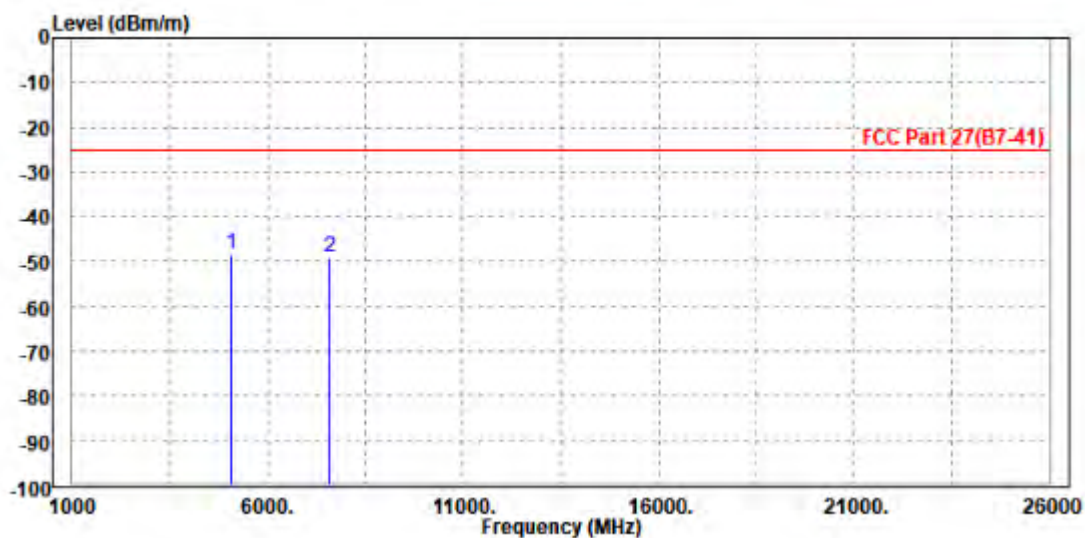




Test Report No.: W7L-P24100005RF07

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			

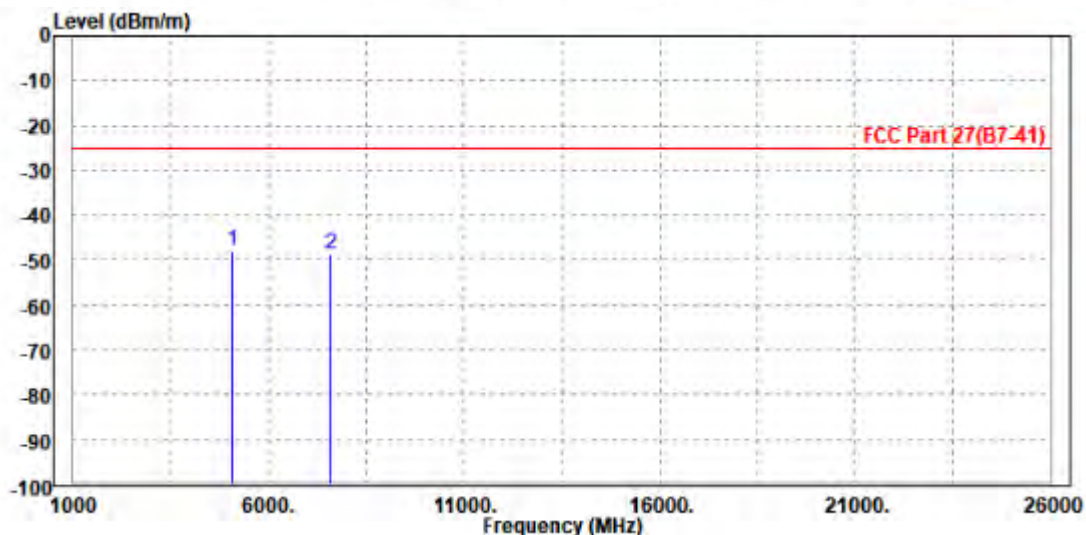
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5070.000	-48.37	-59.88	-25.00	-23.37	11.51	Peak	Vertical
2		7600.000	-49.19	-62.64	-25.00	-24.19	13.45	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

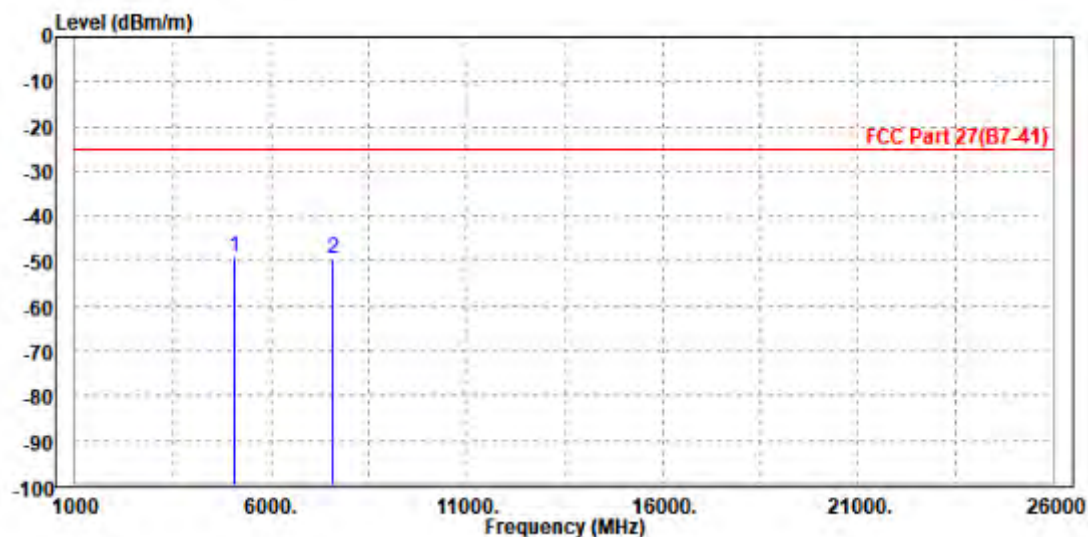
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	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	-48.02	-59.18	-25.00	-23.02	11.16	Peak	Horizontal
2	7600.000	-48.61	-63.12	-25.00	-23.61	14.51	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 5075.000	-49.05	-60.57	-25.00	-24.05	11.52	Peak	Vertical
2	7605.000	-49.40	-62.88	-25.00	-24.40	13.48	Peak	Vertical





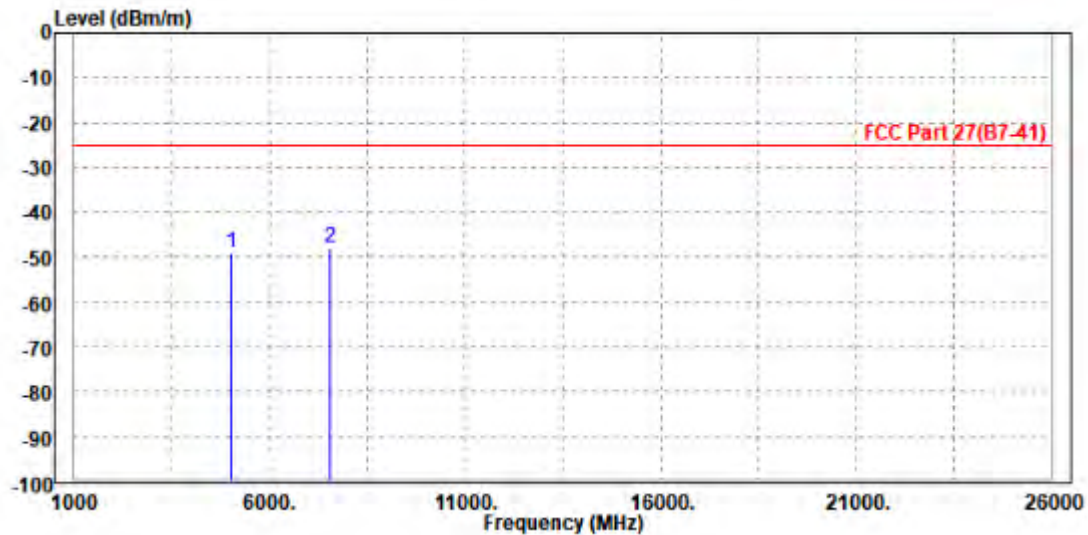
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Test Report No.: W7L-P24100005RF07

CHANNEL BANDWIDTH: 15MHz / QPSK
CH 20825

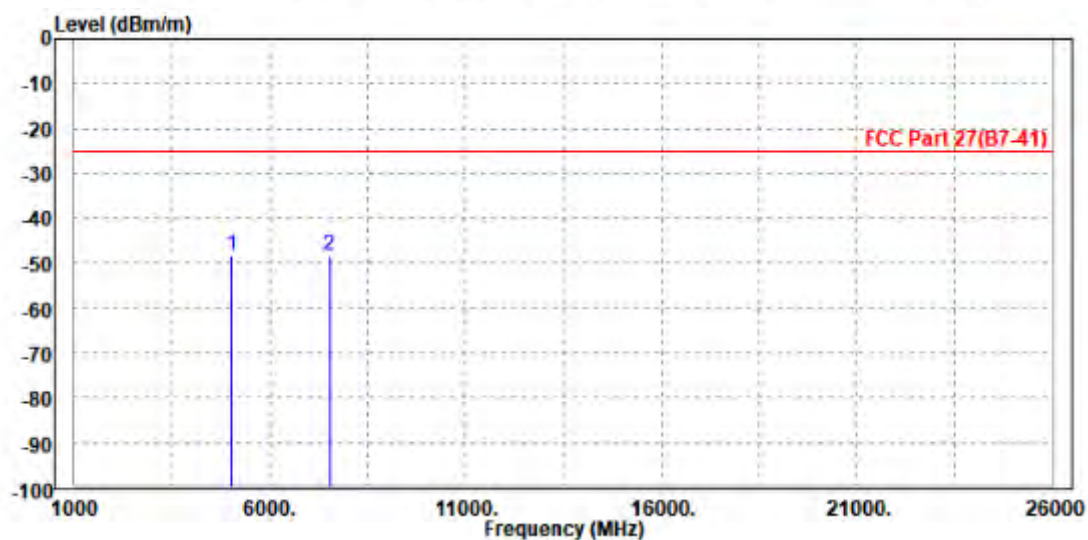
MODE	TX channel 20825	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5015.000	-48.90	-59.98	-25.00	-23.90	11.08	Peak	Horizontal
2 PP	7525.000	-47.91	-62.29	-25.00	-22.91	14.38	Peak	Horizontal



MODE	TX channel 20825	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 5025.000	-48.21	-59.63	-25.00	-23.21	11.42	Peak	Vertical
2	7522.500	-48.36	-61.48	-25.00	-23.36	13.12	Peak	Vertical





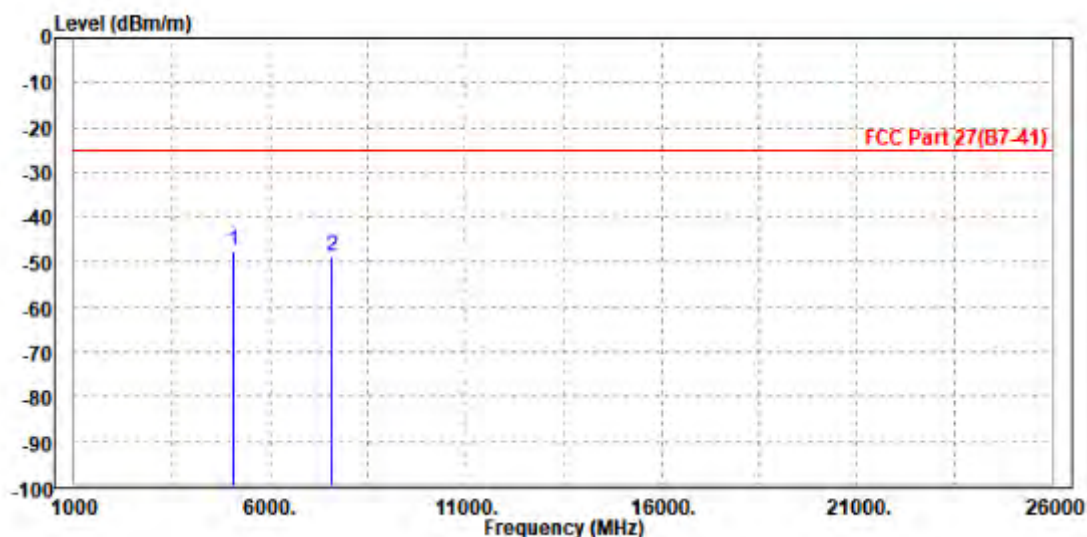
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Test Report No.: W7L-P24100005RF07

CH21100

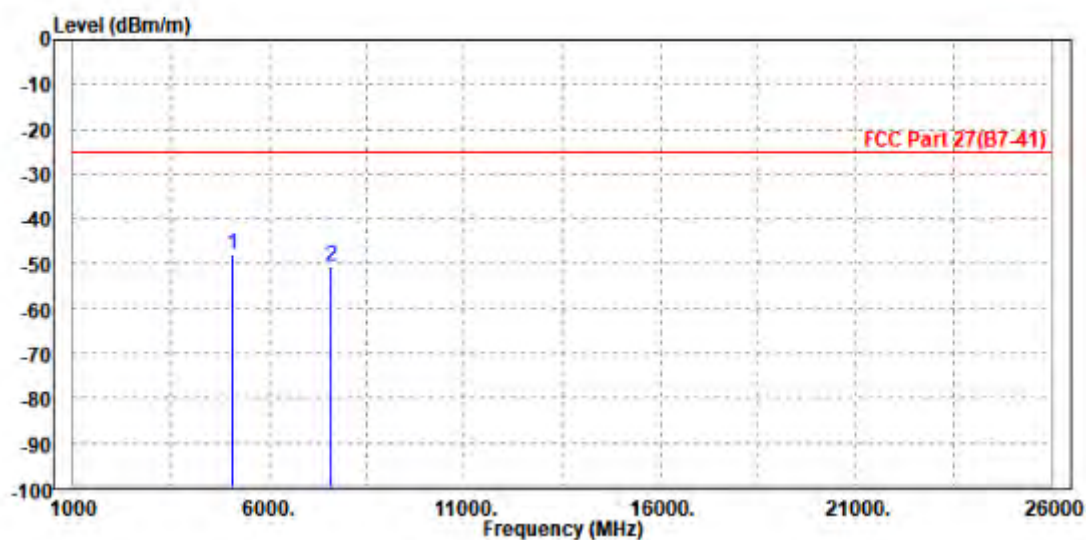
CH21100			
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	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	-47.70	-58.86	-25.00	-22.70	11.16	Peak	Horizontal
2	7600.000	-48.63	-63.14	-25.00	-23.63	14.51	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 5075.000	-47.92	-59.44	-25.00	-22.92	11.52	Peak	Vertical
2	7605.000	-50.49	-63.97	-25.00	-25.49	13.48	Peak	Vertical





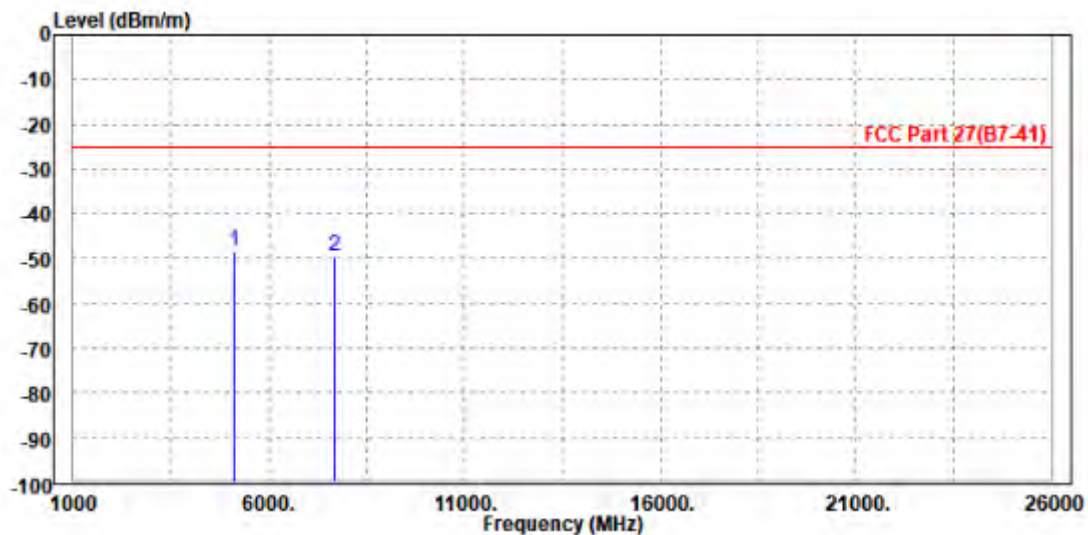
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Test Report No.: W7L-P24100005RF07

CH 21375

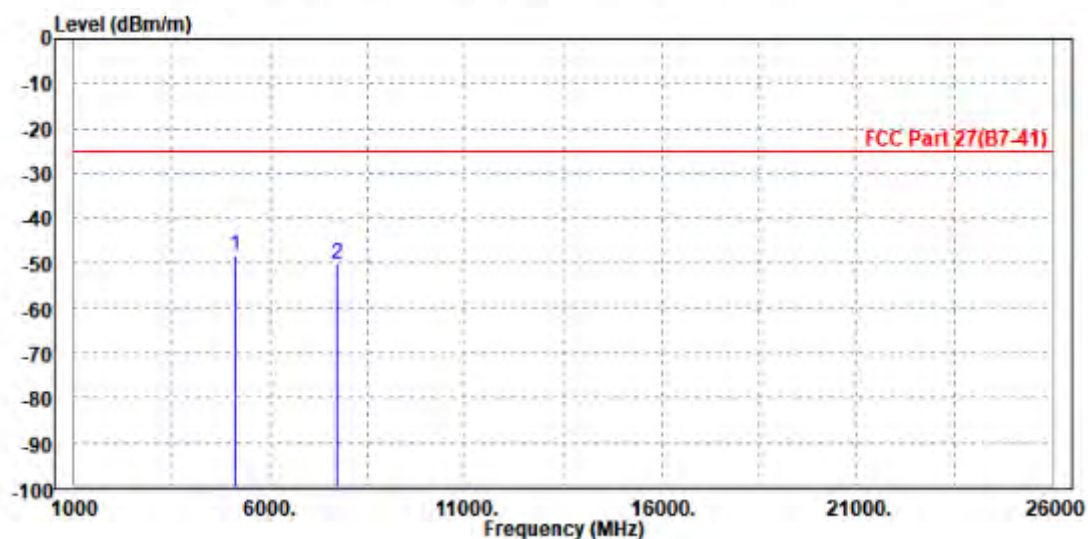
MODE	TX channel 21375	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 5125.000	-48.26	-59.51	-25.00	-23.26	11.25	Peak	Horizontal
2	7687.500	-49.29	-63.95	-25.00	-24.29	14.66	Peak	Horizontal



MODE	TX channel 21375	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	5125.000	-48.23	-59.84	-25.00	-23.23	11.61	Peak	Vertical
2		7700.000	-50.28	-64.17	-25.00	-25.28	13.89	Peak	Vertical





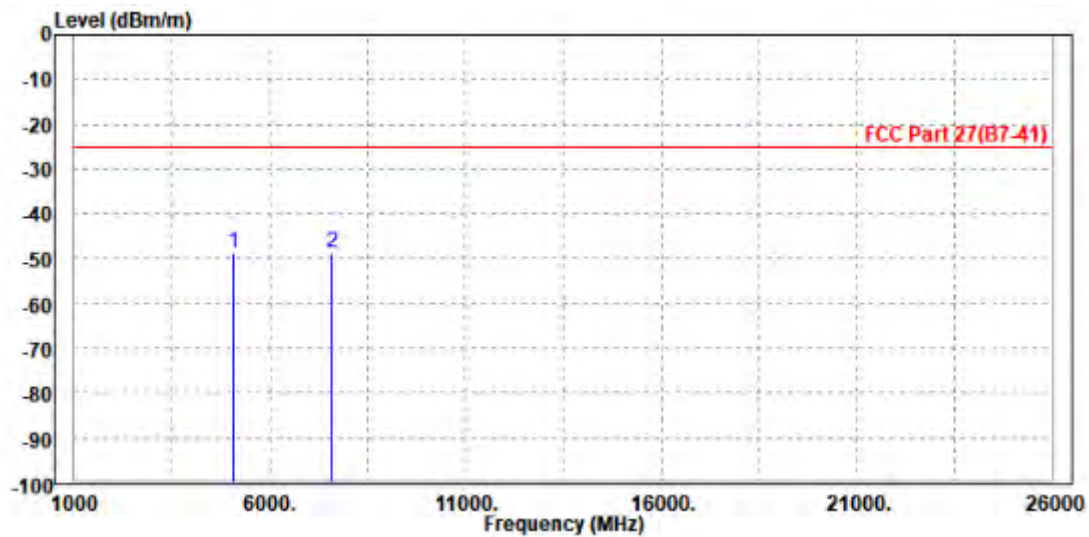
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Test Report No.: W7L-P24100005RF07

CHANNEL BANDWIDTH: 20MHz / QPSK

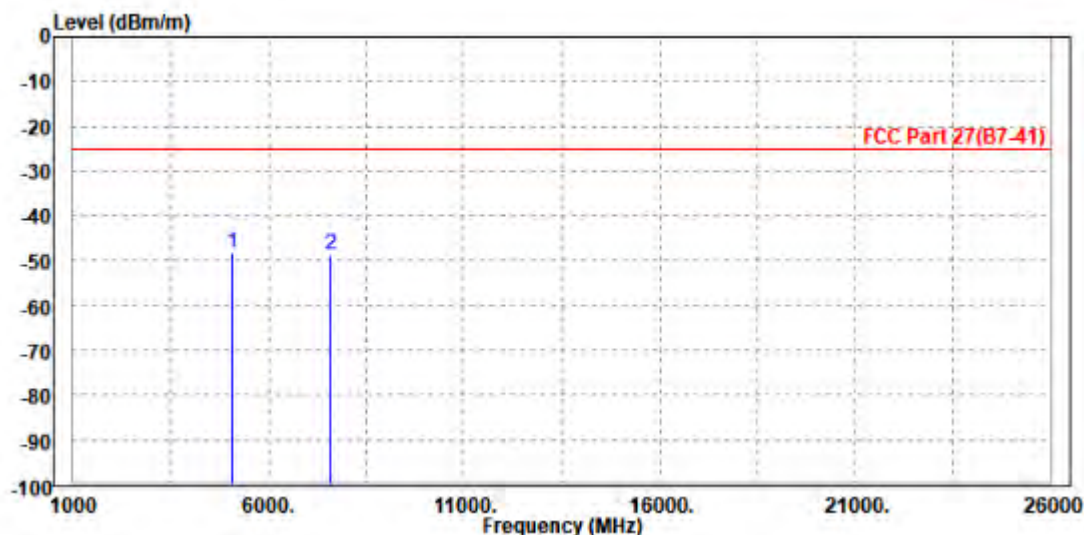
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5075.000	-48.71	-59.88	-25.00	-23.71	11.17	Peak	Horizontal
2		7605.000	-48.73	-63.25	-25.00	-23.73	14.52	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 5070.000	-48.18	-59.69	-25.00	-23.18	11.51	Peak	Vertical
2	7600.000	-48.70	-62.15	-25.00	-23.70	13.45	Peak	Vertical

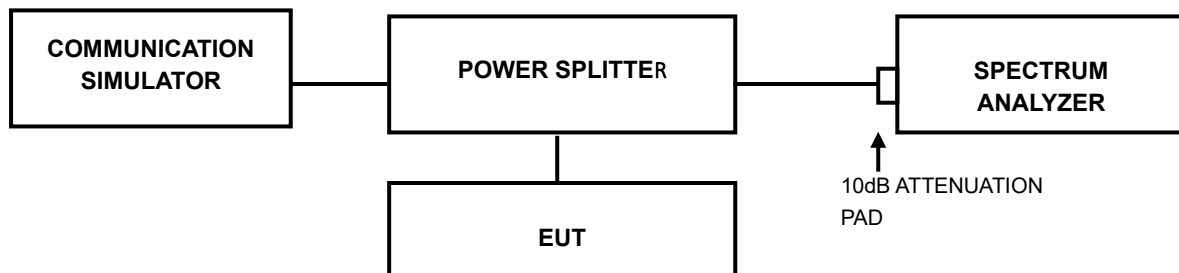


3.7 PEAK TO AVERAGE RATIO

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-P24100005RF07

3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



Test Report No.: W7L-P24100005RF07

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



Test Report No.: W7L-P24100005RF07

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:

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



Test Report No.: W7L-P24100005RF07

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.



Test Report No.: W7L-P24100005RF07

7 APPENDIX

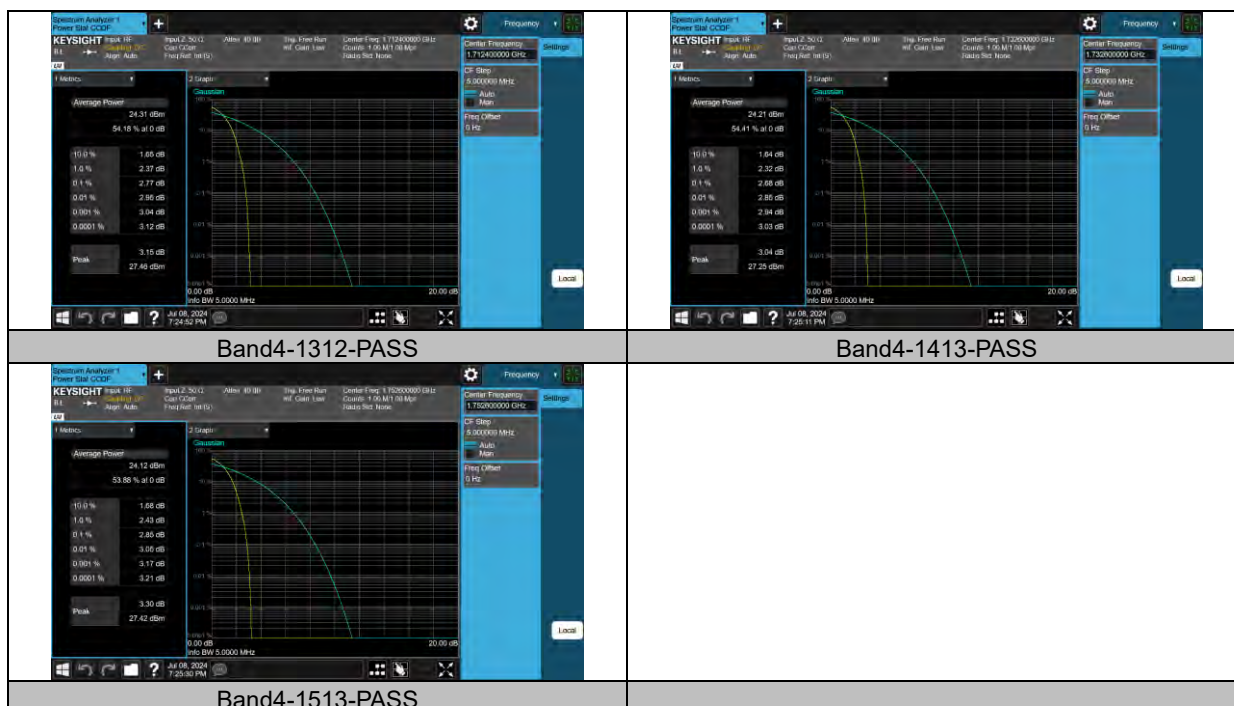
WCDMA BAND 4

PEAK-TO-AVERAGE RATIO

Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band4	1312	2.77	13	PASS
Band4	1413	2.68	13	PASS
Band4	1513	2.85	13	PASS

Test Graphs





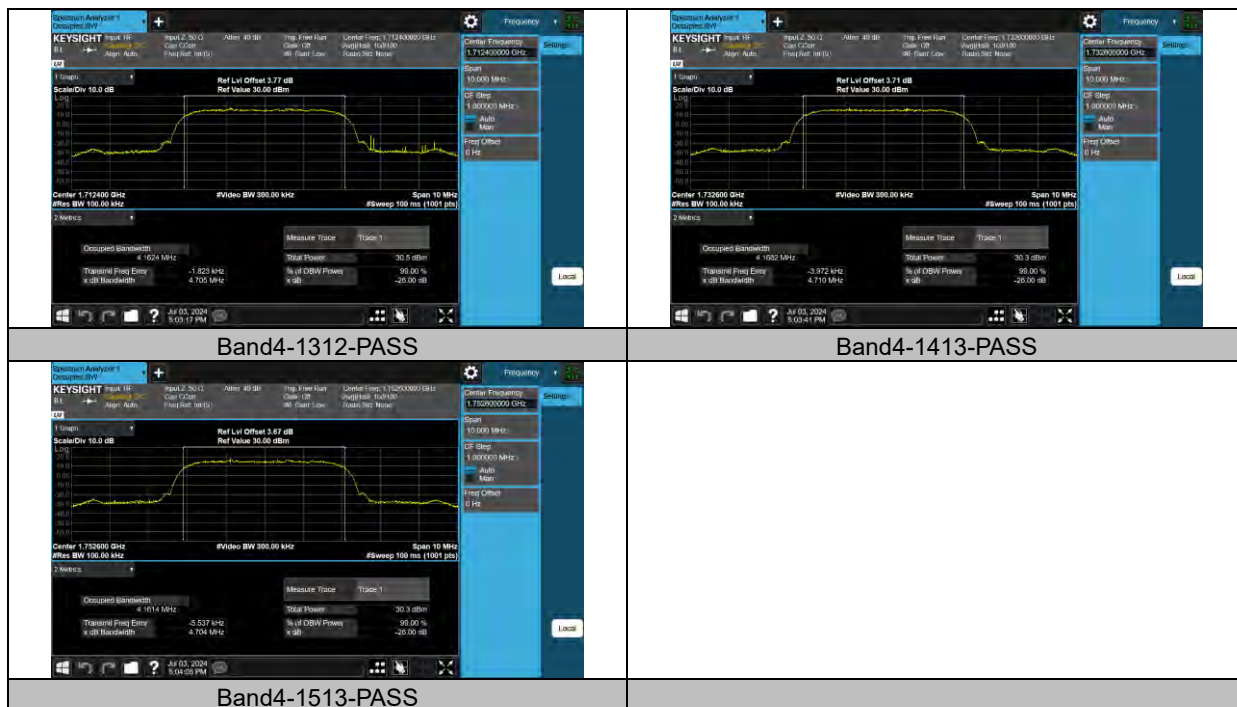
Test Report No.: W7L-P24100005RF07

26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(MHz)	Verdict
Band4	1312	4.1624	4.705	---	PASS
Band4	1413	4.1682	4.710	---	PASS
Band4	1513	4.1614	4.704	---	PASS

Test Graphs





Test Report No.: W7L-P24100005RF07

BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band4	1312	1709.87	-30.02	-13	PASS
Band4	1513	1755.13	-30.69	-13	PASS

Test Graphs

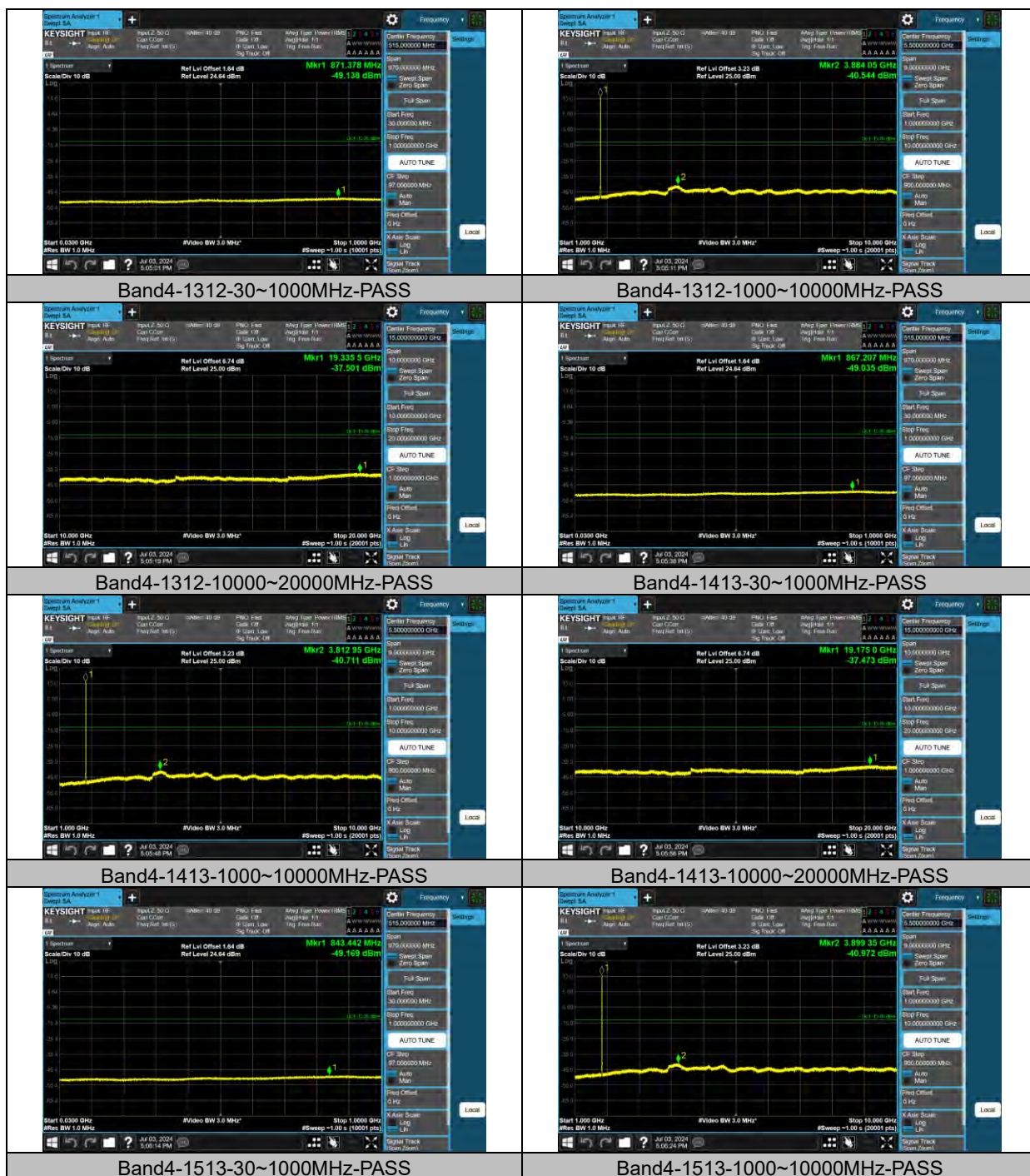


CONDUCTED SPURIOUS EMISSION

Test Result

Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band4	1312	30~1000MHz	871.38	-49.14	-13	PASS
Band4	1312	1000~10000MHz	3884.05	-40.54	-13	PASS
Band4	1312	10000~20000MHz	19335.5	-37.5	-13	PASS
Band4	1413	30~1000MHz	867.21	-49.04	-13	PASS
Band4	1413	1000~10000MHz	3812.95	-40.71	-13	PASS
Band4	1413	10000~20000MHz	19175	-37.47	-13	PASS
Band4	1513	30~1000MHz	843.44	-49.17	-13	PASS
Band4	1513	1000~10000MHz	3899.35	-40.97	-13	PASS
Band4	1513	10000~20000MHz	19368	-37.35	-13	PASS

Test Graphs





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VERITAS

Test Report No.: W7L-P24100005RF07



Band4-1513-10000~20000MHz-PASS

FREQUENCY STABILITY

Test Result

Voltage									
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
Band4	1312	VN	NT	1250.00	0.729970	1710.3142	---	1710-1910	PASS
Band4	1312	VL	NT	-270.00	-0.157673	1710.31293	---	1710-1910	PASS
Band4	1312	VH	NT	-2240.00	-1.308106	1710.31401	---	1710-1910	PASS
Band4	1513	VN	NT	-7400.00	-4.222298	---	1754.6732	1710-1910	PASS
Band4	1513	VL	NT	-9340.00	-5.329225	---	1754.67391	1710-1910	PASS
Band4	1513	VH	NT	-1890.00	-1.078398	---	1754.68311	1710-1910	PASS

Temperature									
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
Band4	1312	NV	-30	-550.00	-0.321187	1710.3165	---	1710-1910	PASS
Band4	1312	NV	-20	-800.00	-0.467181	1710.31655	---	1710-1910	PASS
Band4	1312	NV	-10	2900.00	1.693530	1710.31955	---	1710-1910	PASS
Band4	1312	NV	0	1520.00	0.887643	1710.31877	---	1710-1910	PASS
Band4	1312	NV	10	60.00	0.035039	1710.31981	---	1710-1910	PASS
Band4	1312	NV	20	490.00	0.286148	1710.31664	---	1710-1910	PASS
Band4	1312	NV	30	-670.00	-0.391264	1710.31308	---	1710-1910	PASS
Band4	1312	NV	40	-2860.00	-1.670171	1710.31739	---	1710-1910	PASS
Band4	1312	NV	50	-2040.00	-1.191310	1710.31611	---	1710-1910	PASS
Band4	1513	NV	-30	-2930.00	-1.671802	---	1754.68307	1710-1910	PASS
Band4	1513	NV	-20	2580.00	1.472099	---	1754.68983	1710-1910	PASS
Band4	1513	NV	-10	-1950.00	-1.112633	---	1754.68135	1710-1910	PASS
Band4	1513	NV	0	-710.00	-0.405112	---	1754.68544	1710-1910	PASS



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VERITAS

Test Report No.: W7L-P24100005RF07

Band4	1513	NV	10	-1100.0 0	-0.6276 39	---	1754.6 8425	1710-1 910	PASS
Band4	1513	NV	20	-1450.0 0	-0.8273 42	---	1754.6 828	1710-1 910	PASS
Band4	1513	NV	30	-6550.0 0	-3.7373 05	---	1754.6 7535	1710-1 910	PASS
Band4	1513	NV	40	-3630.0 0	-2.0712 08	---	1754.6 8122	1710-1 910	PASS
Band4	1513	NV	50	1220.0 0	0.6961 09	---	1754.6 8962	1710-1 910	PASS



Test Report No.: W7L-P24100005RF07

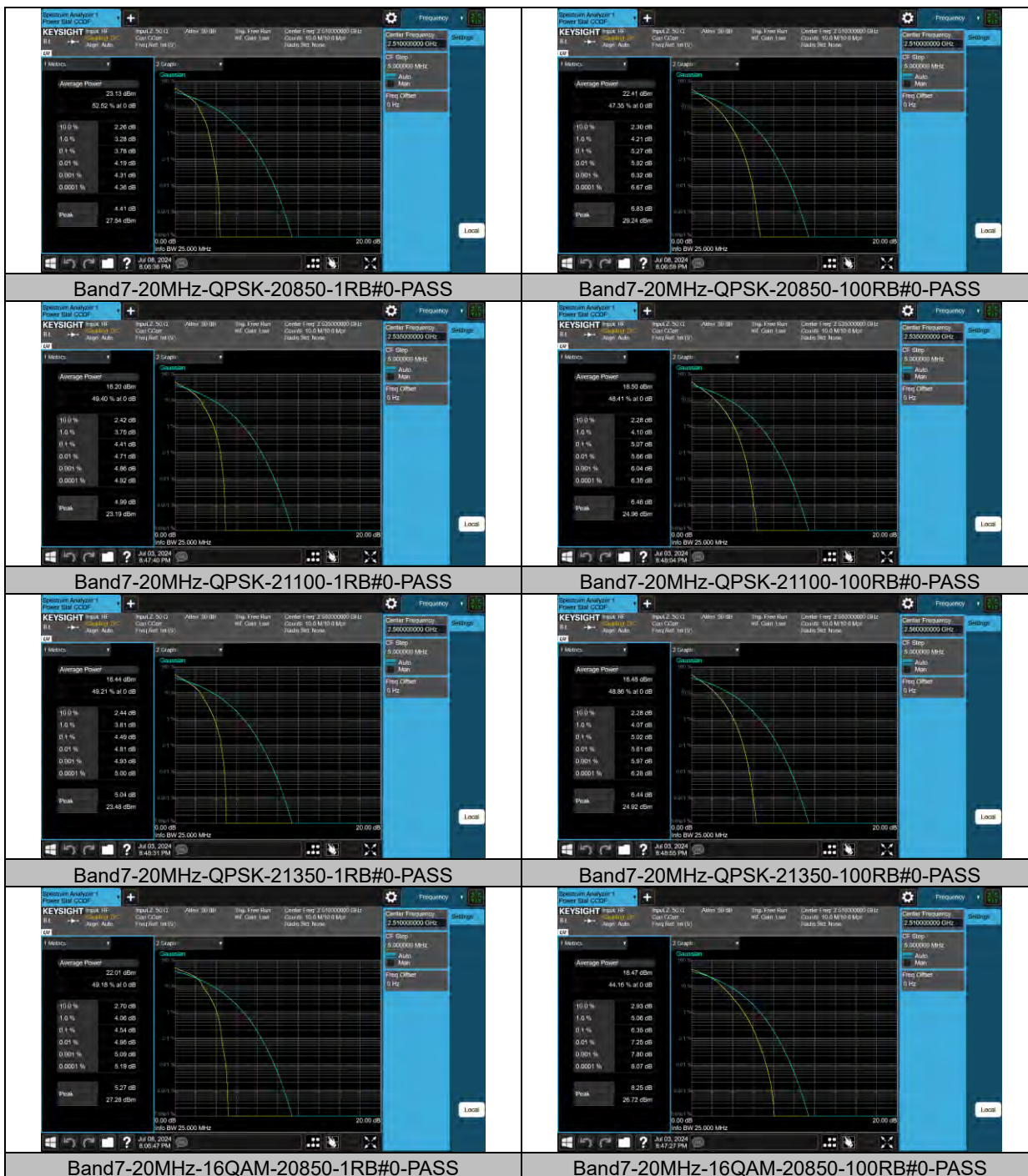
LTE BAND B7

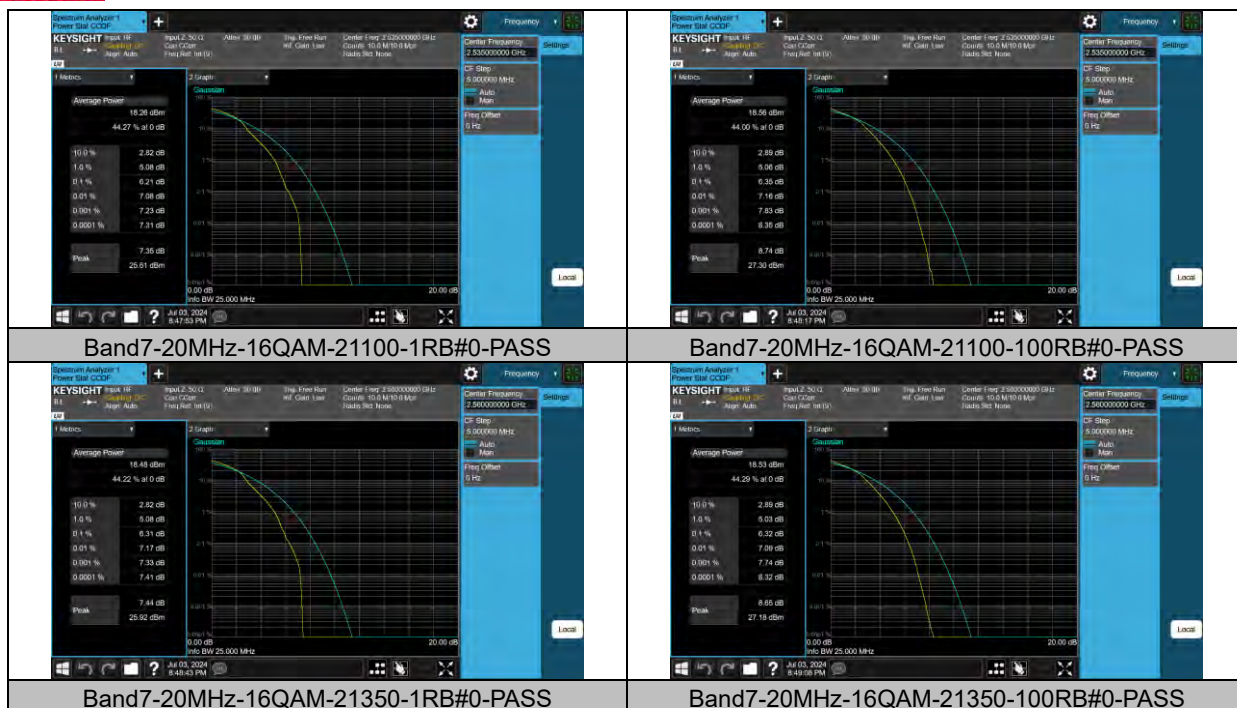
PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	20MHz	QPSK	20850	1RB#0	3.78	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	5.27	13	PASS
Band7	20MHz	QPSK	21100	1RB#0	4.41	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	5.07	13	PASS
Band7	20MHz	QPSK	21350	1RB#0	4.49	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	5.02	13	PASS
Band7	20MHz	16QAM	20850	1RB#0	4.54	13	PASS
Band7	20MHz	16QAM	20850	100RB#0	6.35	13	PASS
Band7	20MHz	16QAM	21100	1RB#0	6.21	13	PASS
Band7	20MHz	16QAM	21100	100RB#0	6.35	13	PASS
Band7	20MHz	16QAM	21350	1RB#0	6.31	13	PASS
Band7	20MHz	16QAM	21350	100RB#0	6.32	13	PASS

Test Graphs



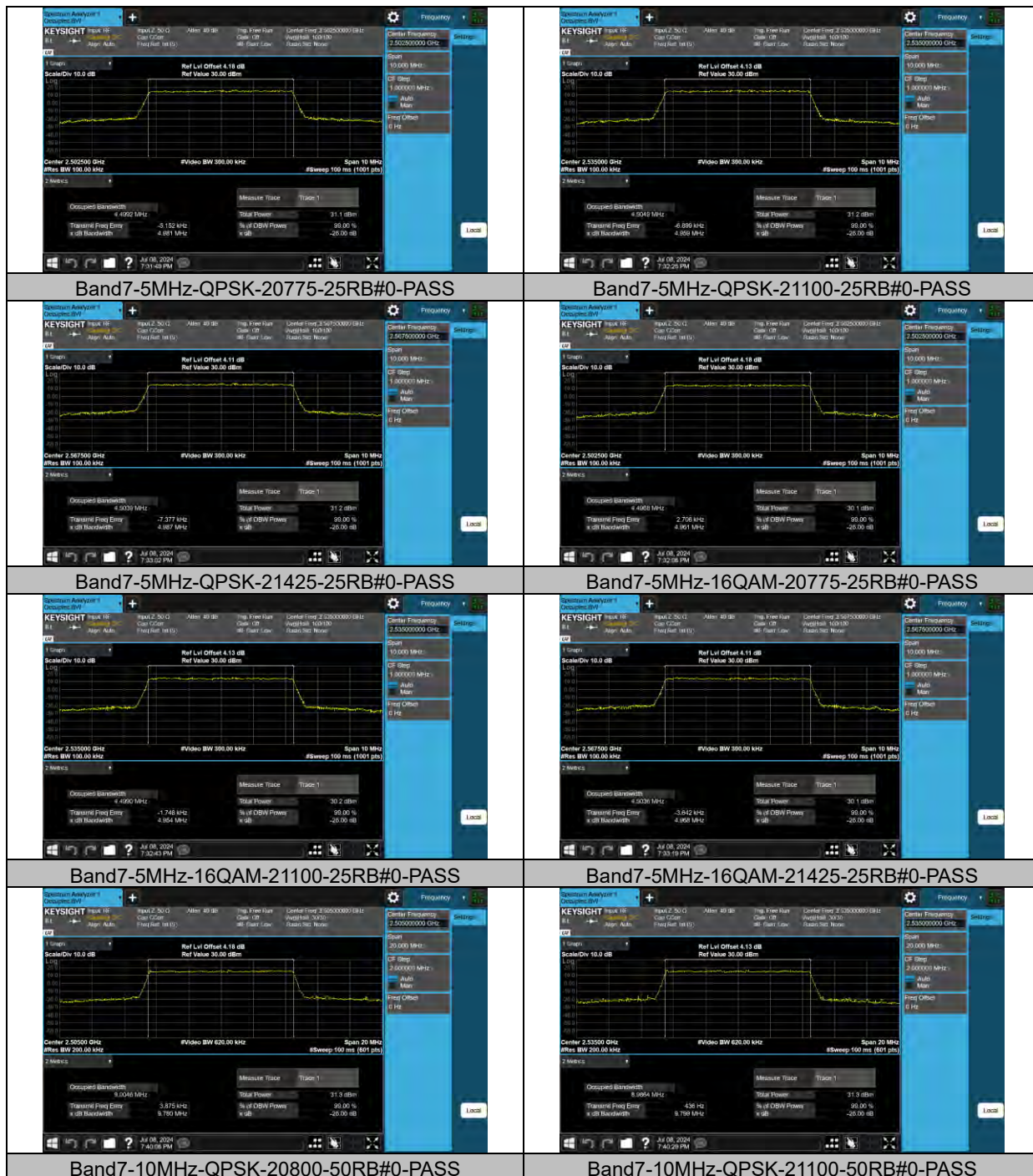


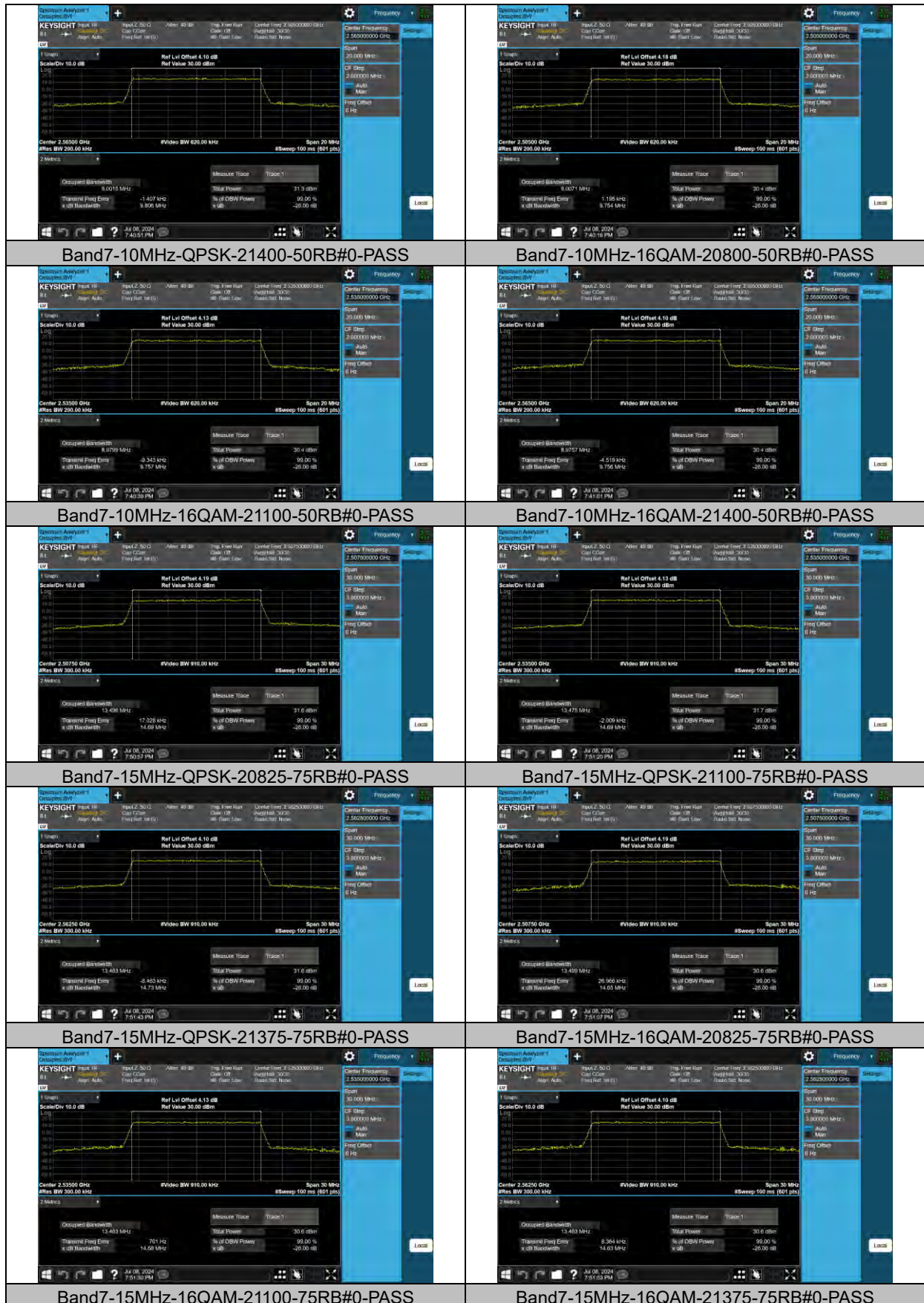
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

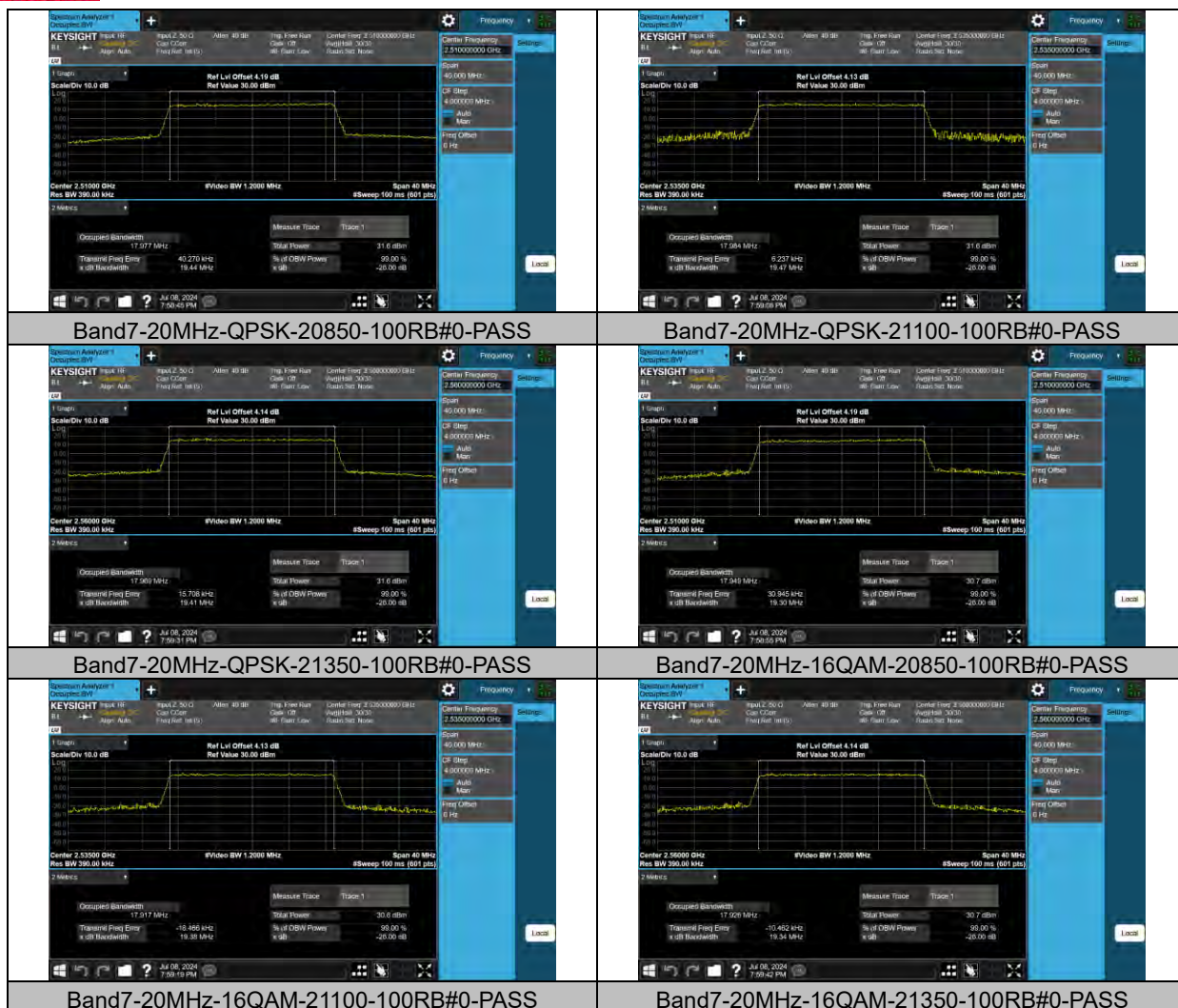
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.4992	4.981	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.5049	4.959	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.5039	4.987	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.4968	4.961	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.4990	4.954	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.5036	4.968	PASS
Band7	10MHz	QPSK	20800	50RB#0	9.0046	9.780	PASS
Band7	10MHz	QPSK	21100	50RB#0	8.9864	9.799	PASS
Band7	10MHz	QPSK	21400	50RB#0	9.0015	9.806	PASS
Band7	10MHz	16QAM	20800	50RB#0	9.0071	9.754	PASS
Band7	10MHz	16QAM	21100	50RB#0	8.9799	9.757	PASS
Band7	10MHz	16QAM	21400	50RB#0	8.9757	9.756	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.496	14.69	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.475	14.69	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.463	14.73	PASS
Band7	15MHz	16QAM	20825	75RB#0	13.499	14.65	PASS
Band7	15MHz	16QAM	21100	75RB#0	13.463	14.68	PASS
Band7	15MHz	16QAM	21375	75RB#0	13.463	14.63	PASS
Band7	20MHz	QPSK	20850	100RB#0	17.977	19.44	PASS
Band7	20MHz	QPSK	21100	100RB#0	17.984	19.47	PASS
Band7	20MHz	QPSK	21350	100RB#0	17.969	19.41	PASS
Band7	20MHz	16QAM	20850	100RB#0	17.949	19.30	PASS
Band7	20MHz	16QAM	21100	100RB#0	17.917	19.38	PASS
Band7	20MHz	16QAM	21350	100RB#0	17.926	19.34	PASS

Test Graphs





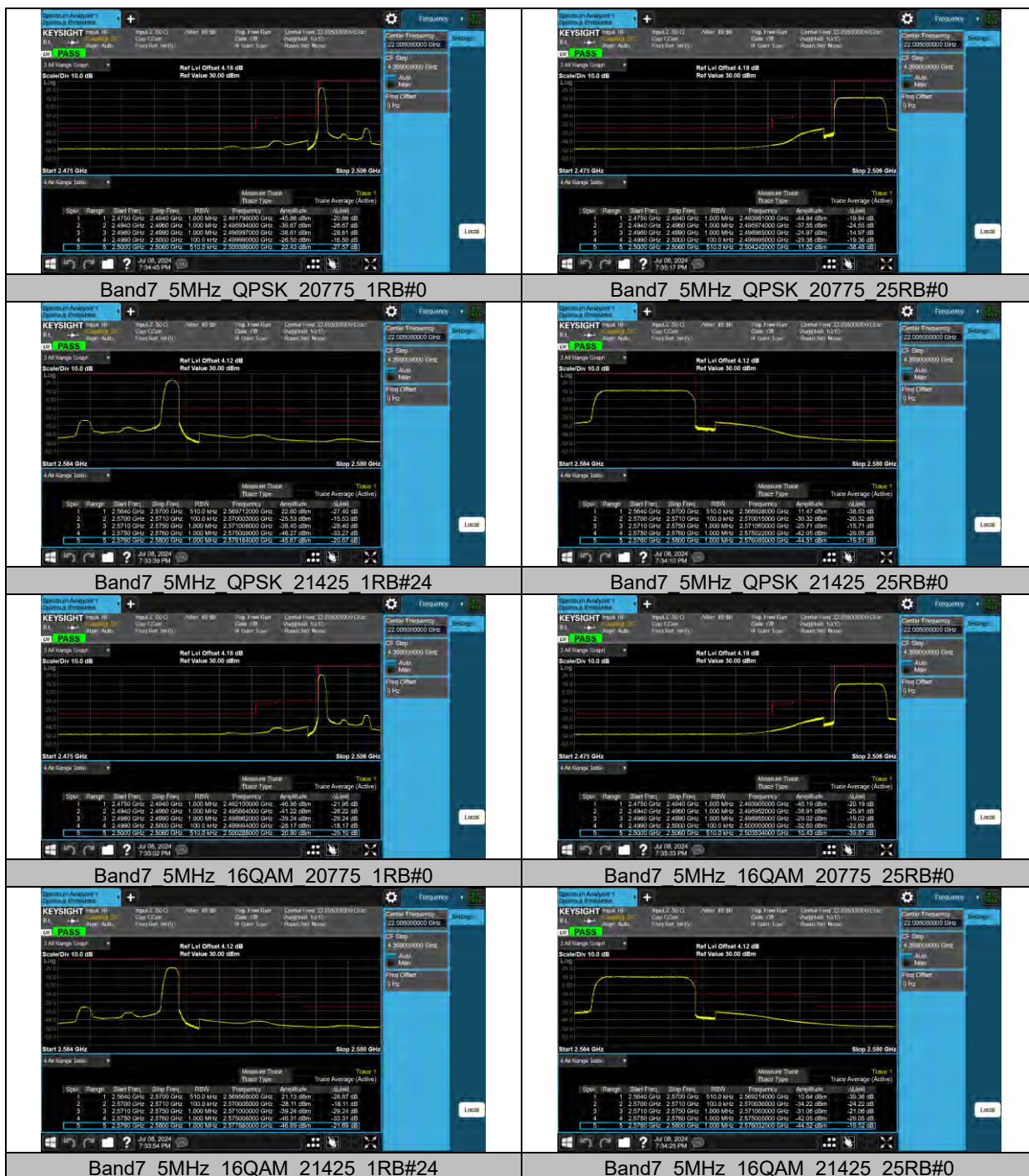


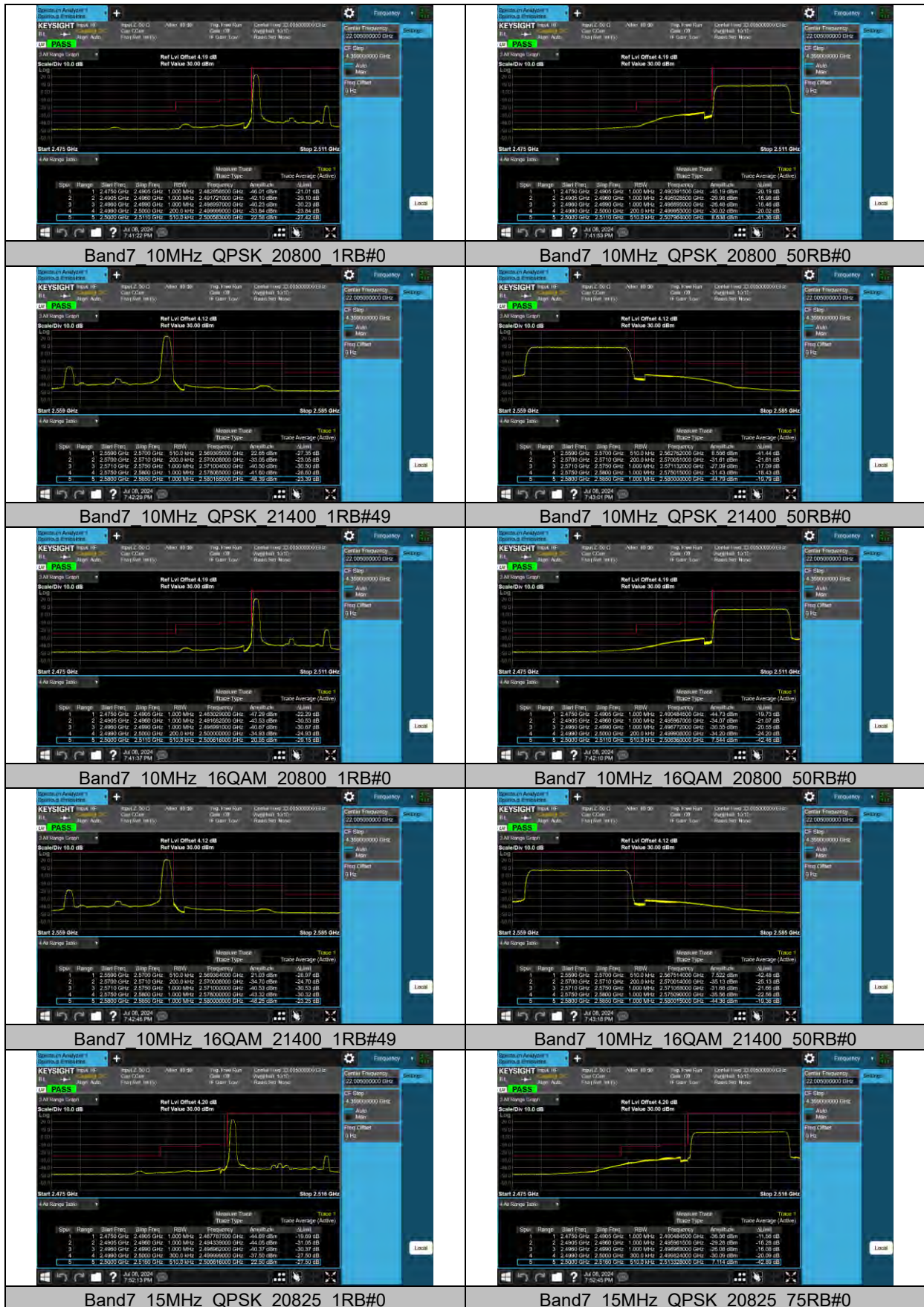
BAND EDGE

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	-26.50	PASS
Band7	5MHz	QPSK	20775	25RB#0	-24.97	PASS
Band7	5MHz	QPSK	21425	1RB#24	-25.53	PASS
Band7	5MHz	QPSK	21425	25RB#0	-25.71	PASS
Band7	5MHz	16QAM	20775	1RB#0	-28.17	PASS
Band7	5MHz	16QAM	20775	25RB#0	-29.02	PASS
Band7	5MHz	16QAM	21425	1RB#24	-28.11	PASS
Band7	5MHz	16QAM	21425	25RB#0	-44.52	PASS
Band7	10MHz	QPSK	20800	1RB#0	-46.01	PASS
Band7	10MHz	QPSK	20800	50RB#0	-26.46	PASS
Band7	10MHz	QPSK	21400	1RB#49	-33.05	PASS
Band7	10MHz	QPSK	21400	50RB#0	-27.09	PASS
Band7	10MHz	16QAM	20800	1RB#0	-47.29	PASS
Band7	10MHz	16QAM	20800	50RB#0	-44.73	PASS
Band7	10MHz	16QAM	21400	1RB#49	-48.25	PASS
Band7	10MHz	16QAM	21400	50RB#0	-44.36	PASS
Band7	15MHz	QPSK	20825	1RB#0	-44.69	PASS
Band7	15MHz	QPSK	20825	75RB#0	-36.56	PASS
Band7	15MHz	QPSK	21375	1RB#74	-48.65	PASS
Band7	15MHz	QPSK	21375	75RB#0	-26.09	PASS
Band7	15MHz	16QAM	20825	1RB#0	-45.85	PASS
Band7	15MHz	16QAM	20825	75RB#0	-40.01	PASS
Band7	15MHz	16QAM	21375	1RB#74	-48.65	PASS
Band7	15MHz	16QAM	21375	75RB#0	-33.52	PASS
Band7	20MHz	QPSK	20850	1RB#0	-44.91	PASS
Band7	20MHz	QPSK	20850	100RB#0	-36.70	PASS
Band7	20MHz	QPSK	21350	1RB#99	-48.53	PASS
Band7	20MHz	QPSK	21350	100RB#0	-32.19	PASS
Band7	20MHz	16QAM	20850	1RB#0	-46.17	PASS
Band7	20MHz	16QAM	20850	100RB#0	-40.36	PASS
Band7	20MHz	16QAM	21350	1RB#99	-48.63	PASS
Band7	20MHz	16QAM	21350	100RB#0	-36.41	PASS

Test Graphs

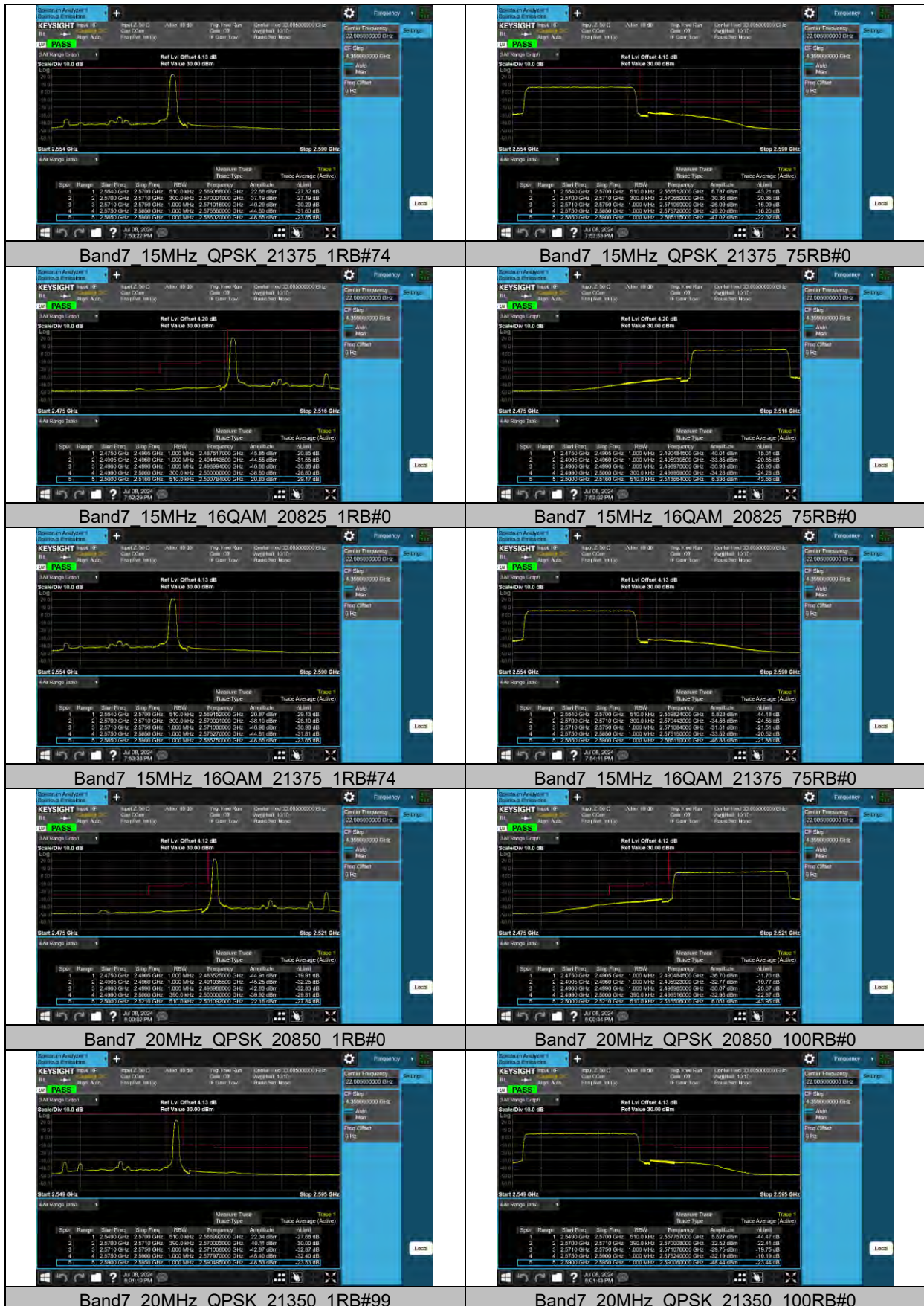






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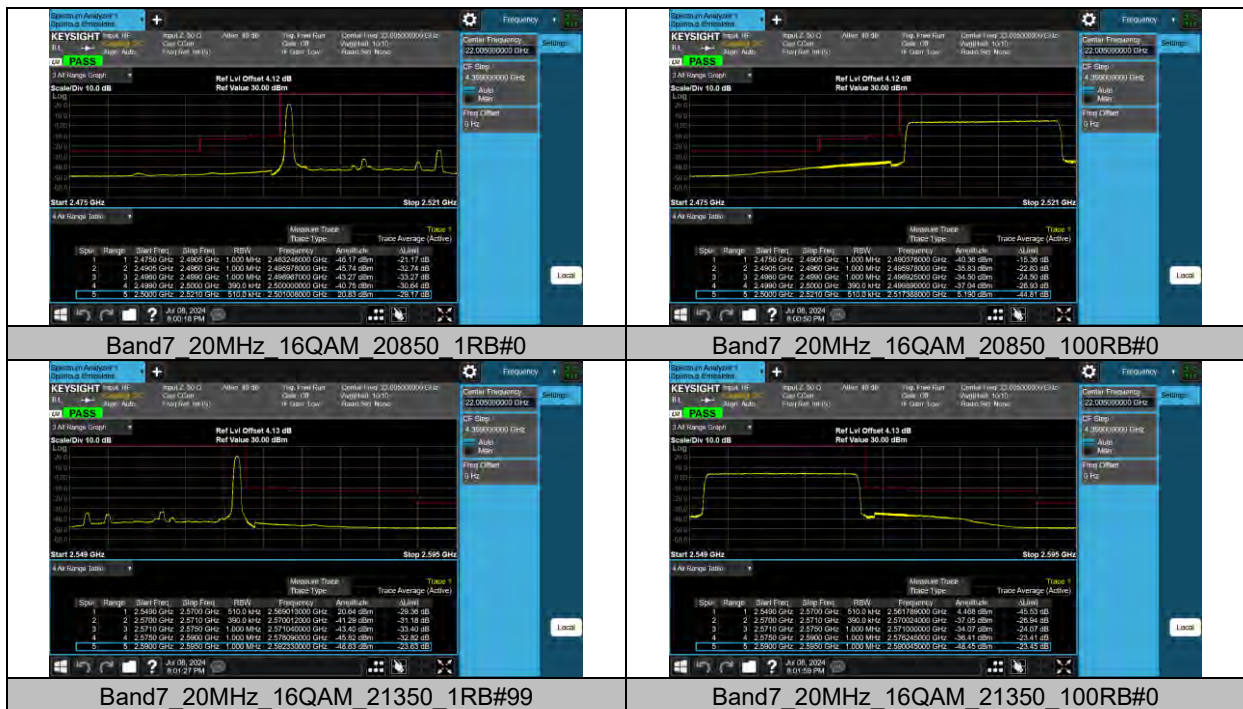
Test Report No.: W7L-P24100005RF07





**BUREAU
VERITAS**

Test Report No.: W7L-P24100005RF07



CONDUCTED SPURIOUS EMISSION

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	30~1000	-58.05	PASS
Band7	5MHz	QPSK	20775	1RB#0	1000~10000	-48.08	PASS
Band7	5MHz	QPSK	20775	1RB#0	10000~20000	-55.77	PASS
Band7	5MHz	QPSK	20775	1RB#0	20000~27000	-53.68	PASS
Band7	5MHz	QPSK	21100	1RB#0	30~1000	-58.00	PASS
Band7	5MHz	QPSK	21100	1RB#0	1000~10000	-48.06	PASS
Band7	5MHz	QPSK	21100	1RB#0	10000~20000	-55.70	PASS
Band7	5MHz	QPSK	21100	1RB#0	20000~27000	-53.55	PASS
Band7	5MHz	QPSK	21425	1RB#0	30~1000	-58.01	PASS
Band7	5MHz	QPSK	21425	1RB#0	1000~10000	-48.10	PASS
Band7	5MHz	QPSK	21425	1RB#0	10000~20000	-55.70	PASS
Band7	5MHz	QPSK	21425	1RB#0	20000~27000	-53.67	PASS
Band7	10MHz	QPSK	20800	1RB#0	30~1000	-58.05	PASS
Band7	10MHz	QPSK	20800	1RB#0	1000~10000	-48.07	PASS
Band7	10MHz	QPSK	20800	1RB#0	10000~20000	-55.83	PASS
Band7	10MHz	QPSK	20800	1RB#0	20000~27000	-53.68	PASS
Band7	10MHz	QPSK	21100	1RB#0	30~1000	-58.00	PASS
Band7	10MHz	QPSK	21100	1RB#0	1000~10000	-47.98	PASS
Band7	10MHz	QPSK	21100	1RB#0	10000~20000	-55.76	PASS
Band7	10MHz	QPSK	21100	1RB#0	20000~27000	-53.65	PASS
Band7	10MHz	QPSK	21400	1RB#0	30~1000	-57.97	PASS
Band7	10MHz	QPSK	21400	1RB#0	1000~10000	-47.13	PASS
Band7	10MHz	QPSK	21400	1RB#0	10000~20000	-55.77	PASS
Band7	10MHz	QPSK	21400	1RB#0	20000~27000	-53.50	PASS
Band7	15MHz	QPSK	20825	1RB#0	30~1000	-57.99	PASS
Band7	15MHz	QPSK	20825	1RB#0	1000~10000	-47.95	PASS
Band7	15MHz	QPSK	20825	1RB#0	10000~20000	-55.74	PASS
Band7	15MHz	QPSK	20825	1RB#0	20000~27000	-53.53	PASS
Band7	15MHz	QPSK	21100	1RB#0	30~1000	-58.00	PASS
Band7	15MHz	QPSK	21100	1RB#0	1000~10000	-48.08	PASS
Band7	15MHz	QPSK	21100	1RB#0	10000~20000	-55.52	PASS
Band7	15MHz	QPSK	21100	1RB#0	20000~27000	-53.57	PASS
Band7	15MHz	QPSK	21375	1RB#0	30~1000	-58.02	PASS
Band7	15MHz	QPSK	21375	1RB#0	1000~10000	-46.38	PASS
Band7	15MHz	QPSK	21375	1RB#0	10000~20000	-55.65	PASS
Band7	15MHz	QPSK	21375	1RB#0	20000~27000	-53.61	PASS
Band7	20MHz	QPSK	20850	1RB#0	30~1000	-58.08	PASS
Band7	20MHz	QPSK	20850	1RB#0	1000~10000	-48.05	PASS
Band7	20MHz	QPSK	20850	1RB#0	10000~20000	-55.64	PASS
Band7	20MHz	QPSK	20850	1RB#0	20000~27000	-53.65	PASS
Band7	20MHz	QPSK	21100	1RB#0	30~1000	-58.02	PASS
Band7	20MHz	QPSK	21100	1RB#0	1000~10000	-47.94	PASS
Band7	20MHz	QPSK	21100	1RB#0	10000~20000	-55.69	PASS
Band7	20MHz	QPSK	21100	1RB#0	20000~27000	-53.71	PASS

Band7	20MHz	QPSK	21350	1RB#0	30~1000	-57.99	PASS
Band7	20MHz	QPSK	21350	1RB#0	1000~10000	-46.97	PASS
Band7	20MHz	QPSK	21350	1RB#0	10000~20000	-55.74	PASS
Band7	20MHz	QPSK	21350	1RB#0	20000~27000	-53.71	PASS

Test Graphs



Band7 5MHz QPSK 20775 1RB#0 30~1000 30~1000



Band7 5MHz QPSK 20775 1RB#0 1000~10000 1000~10000



Band7 5MHz QPSK 20775 1RB#0 10000~20000 10000~20000



Band7 5MHz QPSK 20775 1RB#0 20000~27000 20000~27000



Band7 5MHz QPSK 21100 1RB#0 30~1000 30~1000



Band7 5MHz QPSK 21100 1RB#0 1000~10000 1000~10000



Band7 5MHz QPSK 21100 1RB#0 10000~20000 10000~20000



Band7 5MHz QPSK 21100 1RB#0 20000~27000 20000~27000



Band7 5MHz QPSK 21425 1RB#0 30~1000 30~1000



Band7 5MHz QPSK 21425 1RB#0 1000~10000 1000~10000



Band7 5MHz QPSK 21425 1RB#0 10000~20000 10000~20000



Band7 5MHz QPSK 21425 1RB#0 20000~27000 20000~27000



Band7 10MHz QPSK 20800 1RB#0 30~1000 30~1000



Band7 10MHz QPSK 20800 1RB#0 1000~10000 1000~10000



Band7 10MHz QPSK 20800 1RB#0 10000~20000 10000~20000



Band7 10MHz QPSK 20800 1RB#0 20000~27000 20000~27000



Band7 10MHz QPSK 21100 1RB#0 30~1000 30~1000



Band7 10MHz QPSK 21100 1RB#0 1000~10000 1000~10000



Band7 10MHz QPSK 21100 1RB#0 10000~20000 10000~20000

Band7 10MHz QPSK 21100 1RB#0 20000~27000 20000~27000



Band7 10MHz QPSK 21400 1RB#0 30~1000 30~1000

Band7 10MHz QPSK 21400 1RB#0 1000~10000 1000~10000



Band7 10MHz QPSK 21400 1RB#0 10000~20000 10000~20000

Band7 10MHz QPSK 21400 1RB#0 20000~27000 20000~27000



Band7 15MHz QPSK 20825 1RB#0 30~1000 30~1000

Band7 15MHz QPSK 20825 1RB#0 1000~10000 1000~10000



Band7 15MHz QPSK 20825 1RB#0 10000~20000 10000~20000

Band7 15MHz QPSK 20825 1RB#0 20000~27000 20000~27000





Band7	20MHz	QPSK	20850	1RB#0	20000~27000	20000~27000
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Band7 20MHz QPSK 21100 1RB#0 1000~10000 1000~10000



Band7	20MHz	QPSK	21100	1RB#0	20000~27000	20000~27000
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Band7 20MHz QPSK 21350 1RB#0 1000~10000 1000~10000



Band7	20MHz	QPSK	21350	1RB#0	20000~27000	20000~27000
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FREQUENCY STABILITY

Test Result

Voltage												
Band	Bandwidth	Modulation	Channel	RB Configuration	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
Band7	10MHz	QPSK	20800	50RB #0	VN	NT	-3.02	-0.001206	2500.028988	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	VL	NT	-16.95	-0.006766	2500.041517	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	VH	NT	-19.28	-0.007697	2500.096891	---	2500-2570	PASS
Band7	10MHz	QPSK	21400	50RB #0	VN	NT	-17.54	-0.006838	---	2569.857562	2500-2570	PASS
Band7	10MHz	QPSK	21400	50RB #0	VL	NT	-18.45	-0.007193	---	2569.923985	2500-2570	PASS
Band7	10MHz	QPSK	21400	50RB #0	VH	NT	-11.12	-0.004335	---	2569.656999	2500-2570	PASS

Temperature												
Band	Bandwidth	Modulation	Channel	RB Configuration	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
Band7	10MHz	QPSK	20800	50RB #0	NV	-30	-9.10	-0.003633	2500.0365474	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	NV	-20	-18.07	-0.007214	2500.055121	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	NV	-10	-17.34	-0.006922	2500.036383	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	NV	0	-17.37	-0.006934	2500.035468	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	NV	10	3.79	0.001513	2500.012497	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB #0	NV	20	-13.78	-0.005501	2500.037042	---	2500-2570	PASS
Band7	10MHz	QPSK	20800	50RB	NV	30	-14.93	-0.005	2500.	---	2500-	PASS



**BUREAU
VERITAS**

Test Report No.: W7L-P24100005RF07

	z			#0				960	12449 6		2570	
Band7	10MH z	QPSK	20800	50RB #0	NV	40	-5.54	-0.002 212	2500. 02356 5	---	2500- 2570	PASS
Band7	10MH z	QPSK	20800	50RB #0	NV	50	18.11	0.007 230	2500. 01256 1	---	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	-30	-13.65	-0.005 322	---	2569. 85517 6	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	-20	-19.54	-0.007 618	---	2569. 85483 4	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	-10	-19.23	-0.007 497	---	2569. 95785 9	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	0	-14.61	-0.005 696	---	2569. 83986 7	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	10	5.12	0.001 996	---	2569. 89650 8	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	20	-17.42	-0.006 791	---	2569. 66589 8	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	30	-16.71	-0.006 515	---	2569. 75523 3	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	40	-15.34	-0.005 981	---	2569. 75784 1	2500- 2570	PASS
Band7	10MH z	QPSK	21400	50RB #0	NV	50	5.79	0.002 257	---	2569. 57587 3	2500- 2570	PASS

---END---