

FCC TEST REPORT

(PART 27)

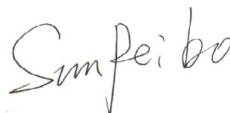
Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Product:	Mobile phone
Brand Name:	HMD
Model Name:	H1715V
FCC ID	2AJOTTA-1715
Date of tests	Jan. 13, 2025~Mar. 20, 2025

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

- | | |
|---|---|
| ☒ FCC Part 27 | ☒ ANSI/TIA/EIA-603-E |
| ☒ ANSI/TIA/EIA-603-D | ☒ ANSI C63.26-2015 |
| ☒ FCC Part 2 | |

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

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
	
Date: Mar. 20, 2025	Date: Mar. 20, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2412090210RF09	Original release	Mar. 20, 2025



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	TEST LAB*
§2.1046	Conducted Output Power	Compliance	A
§27.50(d)(4) §27.50(k)(3) §27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§2.1051 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§2.1053 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§27.50(d)(5) §27.50(k)(4)	Peak to average ratio	Compliance	A

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

*Test Lab Information Reference

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

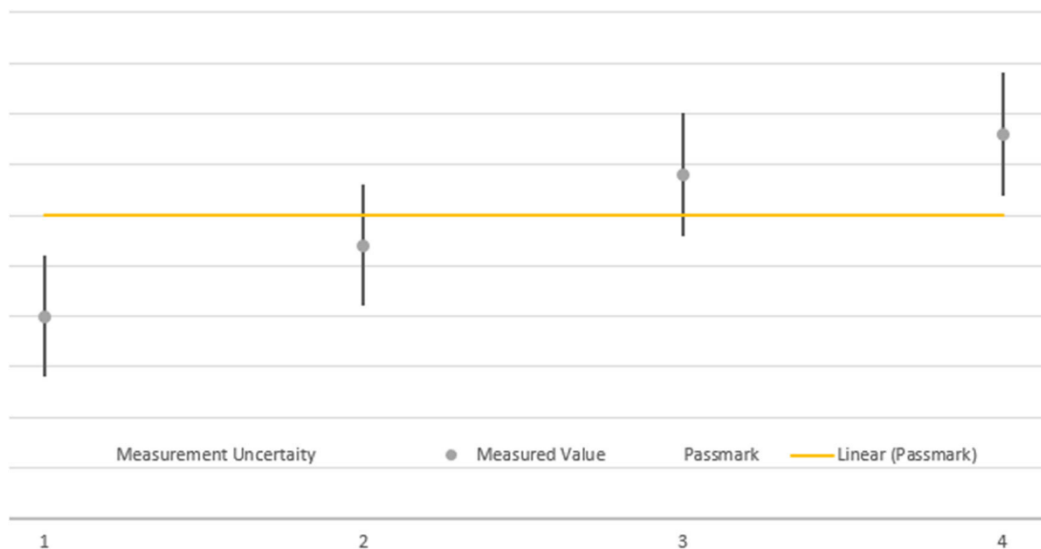


1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
Frequency Stability	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB

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



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.



1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.29,24	Aug.28,26
Pre-Amplifier	R&S	SCU08F1	101028	Sep.15,24	Sep.14,26
Vector Signal Generator	R&S	SMBV100B	102176	Feb.15,24	Feb.14,26
Signal Generator	R&S	SMB100A	182185	Feb.15,24	Feb.14,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Feb.24,24	Feb.23,26
EMI TEST Receiver	R&S	ESW44	101973	Feb.24,24	Feb.23,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.27,24	Feb.26,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.21,24	Aug.20,26
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.22,24	Feb.21,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.21,24	Aug.20,26
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.26,24	Jun.25,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Sep.30,24	Sep.39,26
DC Source	HYELEC	HY3010B	551016	Aug.30,24	Aug.29,26
Hygrothermograph	DELI	20210528	SZ014	Sep.05,24	Sep.04,26
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.26,24	Oct.25,25
CABLE	R&S	W12.14	N/A	Apr.26,24	Oct.25,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.26,24	Oct.25,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.26,24	Oct.25,25
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26

NOTE:

1. The calibration interval of the above test instruments is 6 months or 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 434559; The Designation No. is CN1325.



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Mobile phone	
BRAND NAME*	HMD	
MODEL NAME*	H1715V	
NOMINAL VOLTAGE*	3.87Vdc(Battery) 5.0Vdc(Adapter)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM, 256QAM
FREQUENCY RANGE	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1754.3MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~ 1753.5MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~ 1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715MHz ~ 1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5 MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~ 1745MHz
	LTE Band 66 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1779.3MHz
	LTE Band 66 Channel Bandwidth: 3MHz	1711.5MHz ~ 1778.5MHz
	LTE Band 66 Channel Bandwidth: 5MHz	1712.5MHz ~ 1777.5MHz
	LTE Band 66 Channel Bandwidth: 10MHz	1715MHz ~ 1775MHz
	LTE Band 66 Channel Bandwidth: 15MHz	1717.5MHz ~ 1772.5MHz
	LTE Band 66 Channel Bandwidth: 20MHz	1720MHz ~ 1770MHz
MAX. EIRP POWER	LTE Band 4 Channel Bandwidth: 1.4MHz	185.35mW
	LTE Band 4 Channel Bandwidth: 3MHz	184.50mW
	LTE Band 4 Channel Bandwidth: 5MHz	185.78mW
	LTE Band 4 Channel Bandwidth: 10MHz	183.23mW
	LTE Band 4 Channel Bandwidth: 15MHz	185.78mW
	LTE Band 4 Channel Bandwidth: 20MHz	190.11mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	185.35mW
	LTE Band 66 Channel Bandwidth: 3MHz	183.65mW



	LTE Band 66 Channel Bandwidth: 5MHz	188.36mW
	LTE Band 66 Channel Bandwidth: 10MHz	187.93mW
	LTE Band 66 Channel Bandwidth: 15MHz	188.36mW
	LTE Band 66 Channel Bandwidth: 20MHz	191.87mW
EMISSION DESIGNATOR	LTE Band 66 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
		256QAM: 1M10W7D
	LTE Band 66 Channel Bandwidth: 3MHz	QPSK: 2M70G7D
		16QAM: 2M70W7D
		64QAM: 2M70W7D
		256QAM: 2M71W7D
	LTE Band 66 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
		256QAM: 4M50W7D
	LTE Band 66 Channel Bandwidth: 10MHz	QPSK: 8M98G7D
		16QAM: 8M97W7D
		64QAM: 8M96W7D
		256QAM: 8M97W7D
	LTE Band 66 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
		256QAM: 13M5W7D
	LTE Band 66 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 18M0W7D
		256QAM: 17M9W7D
ANTENNA TYPE*	PIFA	
ANTENNA GAIN	LTE B4	-0.8dBi
	LTE B66	-0.7dBi
HW VERSION*	V1.0	
SW VERSION*	000T_0_310	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	N/A	



EXTREME TEMPERATURE*	-10°C -55°C
EXTREME VOLTAGE*	3.6V-4.45V

NOTE:

1. *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receivers.

MODULATION MODE	TX FUNCTION
LTE 66	1TX/1RX
LTE 4	1TX/1RX

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
5. The power of single LTE band is larger than that in CA, so single LTE band can cover the RSE risk of CA part.
6. The differences between the sample 1 and sample 2 as Listings below, others are the same. And only the worst case was shown in the test report.

Object	Sample 1 1 st source		Sample 2 2 nd source	
	Specifications	Supplier	Specifications	Supplier
Display	JL-P067P003-05	Jinglong	Y92321	Digital
Memory (RAM) Memory (ROM)	FLXC2004G-N1	Longsys	BWCGBX32N2A-32G	Biwin
	MEMDNN064G-M1D03	Longsys	BWCTAMV11X64G	Biwin
Motor	C0830H-C138ZN-021	KunWang	CY0830-05-FPC-182	Chaoying
FPS Side fingerprint	SA-FC15X00-1470-B0	Shenao	HT.ZN-2832B	Huate
Mic	SM2718B381YR2-01	Rayking	S150B381-155	Goertek
GPS LNA	AW5005EDNR	AWINIC	WS7916DE	WILL

List of Accessory:

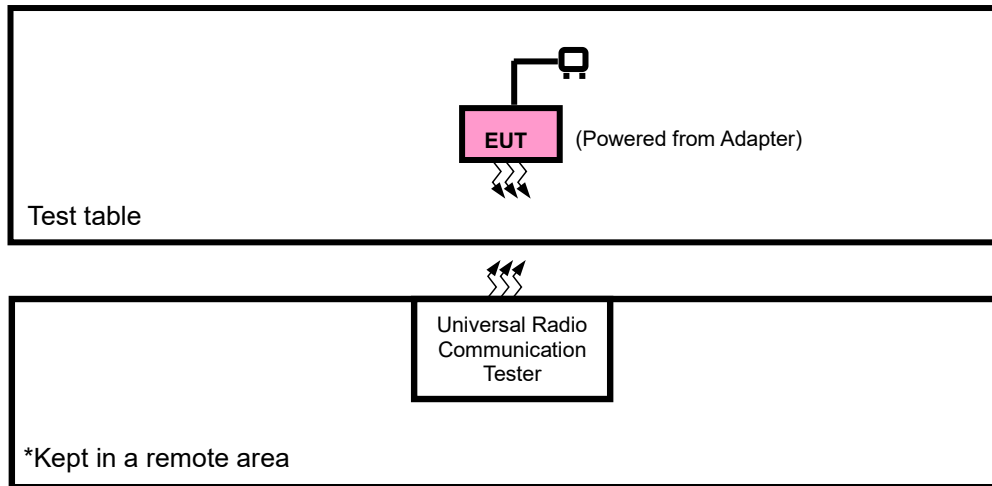
ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
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Battery	HMD	HUNAN GAOYUAN BATTERY CO.,LTD	CH426385	Capacity: 3.87Vdc, 4000mAh
USB Cable	Saibao	Saibao (Jiangxi) Industry Co.,Ltd.	SZN-A046A	Signal Line,1.0meter
USB Cable	Juwei	Huizhou Juwei Electronics Co.,Ltd	JWUB1913-ZN01H	Signal Line,1.0meter
Adapter	HMD	Shenzhen Baijunda Electronic Co., Ltd.	HAD-010U	I/P: 100- 240 Vac, 50/60Hz, 0.35 A, O/P: 5.0 Vdc, 2.0A 10.0W



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	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS				
1	NA				

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 with LTE link
B	EUT + DC Supply with LTE link

LTE BAND 4 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset

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

2. LTE Band 4 are covered by LTE Band 66, Because it is a subset of LTE Band 66 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 66.

LTE BAND 66 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset



		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM,64QAM,256QAM	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM,64QAM,256QAM	6 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM,64QAM,256QAM	15 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM,64QAM,256QAM	25 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM,64QAM,256QAM	50 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM,64QAM,256QAM	75 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM,64QAM,256QAM	100 RB / 0 RB Offset
A	BAND EDGE	131979 to 132322	131979	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	132322	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131997 to 132647	131987	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
		131997 to 132647	132657	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		132022 to 132622	131997	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		132022 to 132622	132647	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		132022 to 132622	132022	10MHz	QPSK,16QAM	1 RB / 0 RB Offset



						50 RB / 0 RB Offset
			132622	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			132597	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
		132072 to 132572				75 RB / 0 RB Offset
			132072	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			132572	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
A	CONDCUDETED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK	100 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK	1 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	132072 to 132572	132072,132322,132572	20MHz	QPSK	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	RADIATED EMISSION	131979 to 132665	132322	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	132322	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	132322	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	13022,132322,132622	10MHz	QPSK	1 RB / 0 RB Offset

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		132047 to 132597	132322	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132322	20MHz	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	DC 3.87V By Battery	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.87V By Battery	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.87V By Battery	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 3.87V By Battery	Hanwen Xu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 3.87V By Battery	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	AC 120V/60Hz	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 3.87V By Battery	Hanwen Xu



2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

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

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

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

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

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

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.

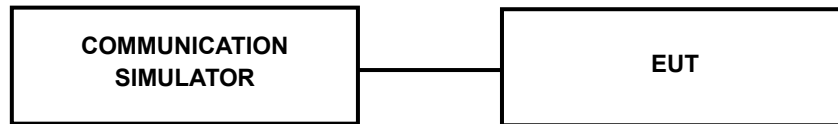
CONDUCTED POWER MEASUREMENT:

- 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)

LTE Band 66 (Ant1)

BW: 1.4M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		131979	132322	132665
		Frequency (MHz)		1710.70	1745	1779.30
1.4M	QPSK	1	0	23.38	22.93	23.27
		1	2	23.32	23.24	23.25
		1	5	23.33	23.37	23.12
		3	0	23.09	23.16	23.09
		3	1	23.23	23.13	23.07
		3	3	23.16	23.14	23.21
		6	0	22.49	22.42	22.42
	16QAM	1	0	22.55	22.54	22.33
		1	2	22.67	22.56	22.33
		1	5	22.52	22.60	22.38
		3	0	22.11	22.06	21.95
		3	1	22.32	22.07	22.25
		3	3	22.33	22.12	22.27
		6	0	21.43	21.39	21.34
	64QAM	1	0	21.36	21.49	21.44
		1	2	21.54	21.45	21.23
		1	5	21.48	21.44	21.36
		3	0	21.20	21.10	21.01
		3	1	21.29	21.10	21.06
		3	3	21.19	21.18	21.17
		6	0	20.46	20.20	20.43
	256QAM	1	0	18.43	18.41	18.43
		1	2	18.46	18.52	18.47
		1	5	18.62	18.51	18.43
		3	0	19.29	19.22	19.25
		3	1	19.28	19.25	19.34
		3	3	19.41	19.27	19.19
		6	0	18.56	18.42	18.45



BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		131987	132322	132657
		Frequency (MHz)		1711.50	1745	1778.50
3M	QPSK	1	0	23.32	23.00	23.30
		1	7	23.25	23.16	23.27
		1	14	23.32	23.34	23.23
		8	0	22.28	22.41	22.22
		8	3	22.50	22.38	22.22
		8	7	22.50	22.34	22.34
		15	0	22.48	22.32	22.44
		1	0	22.52	22.50	22.39
	16QAM	1	7	22.65	22.62	22.36
		1	14	22.63	22.62	22.40
		8	0	21.27	21.28	21.12
		8	3	21.53	21.26	21.35
		8	7	21.51	21.42	21.38
		15	0	21.50	21.26	21.30
		1	0	21.48	21.47	21.44
		1	7	21.46	21.38	21.25
	64QAM	1	14	21.49	21.48	21.29
		8	0	20.45	20.28	20.18
		8	3	20.56	20.26	20.28
		8	7	20.38	20.49	20.33
		15	0	20.52	20.20	20.43
		1	0	18.44	18.48	18.35
		1	7	18.41	18.60	18.36
		1	14	18.62	18.49	18.42
	256QAM	8	0	18.52	18.44	18.46
		8	3	18.55	18.46	18.52
		8	7	18.60	18.41	18.39
		15	0	18.61	18.41	18.47



BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		131997	132322	132647
		Frequency (MHz)		1712.50	1745	1777.50
5M	QPSK	1	0	23.34	22.98	23.31
		1	12	23.36	23.22	23.28
		1	24	23.45	23.39	23.20
		12	0	22.27	22.39	22.28
		12	6	22.56	22.40	22.31
		12	13	22.38	22.25	22.39
		25	0	22.52	22.31	22.49
		1	0	22.51	22.51	22.25
	16QAM	1	12	22.67	22.54	22.45
		1	24	22.53	22.56	22.31
		12	0	21.31	21.27	21.17
		12	6	21.48	21.29	21.36
		12	13	21.47	21.37	21.36
		25	0	21.49	21.31	21.28
		1	0	21.44	21.42	21.32
		1	12	21.42	21.44	21.28
	64QAM	1	24	21.48	21.39	21.29
		12	0	20.39	20.25	20.24
		12	6	20.46	20.26	20.33
		12	13	20.40	20.52	20.40
		25	0	20.42	20.22	20.39
		1	0	18.50	18.41	18.39
		1	12	18.49	18.51	18.35
		1	24	18.65	18.56	18.38
	256QAM	12	0	18.54	18.41	18.40
		12	6	18.53	18.44	18.43
		12	13	18.56	18.45	18.49
		25	0	18.63	18.46	18.39



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BW: 10M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	23.44	22.90	23.29
		1	24	23.34	23.21	23.25
		1	49	23.37	23.35	23.12
		25	0	22.31	22.32	22.19
		25	12	22.51	22.36	22.23
		25	25	22.43	22.31	22.39
		50	0	22.58	22.39	22.44
		50	0	22.58	22.39	22.44
	16QAM	1	0	22.49	22.53	22.39
		1	24	22.62	22.51	22.44
		1	49	22.66	22.51	22.32
		25	0	21.35	21.30	21.23
		25	12	21.61	21.34	21.42
		25	25	21.52	21.35	21.38
		50	0	21.45	21.40	21.42
		50	0	21.45	21.40	21.42
	64QAM	1	0	21.38	21.48	21.40
		1	24	21.45	21.42	21.23
		1	49	21.56	21.40	21.34
		25	0	20.42	20.32	20.27
		25	12	20.59	20.35	20.31
		25	25	20.45	20.48	20.31
		50	0	20.56	20.18	20.44
		50	0	20.56	20.18	20.44
	256QAM	1	0	18.50	18.39	18.41
		1	24	18.48	18.63	18.38
		1	49	18.62	18.49	18.36
		25	0	18.46	18.35	18.43
		25	12	18.51	18.40	18.48
		25	25	18.63	18.55	18.48
		50	0	18.51	18.40	18.39
		50	0	18.51	18.40	18.39



BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		132047	132322	132597
		Frequency (MHz)		1717.50	1745	1772.50
15M	QPSK	1	0	23.44	22.95	23.39
		1	37	23.36	23.29	23.29
		1	74	23.45	23.29	23.24
		36	0	22.34	22.35	22.31
		36	19	22.57	22.36	22.29
		36	39	22.48	22.28	22.38
		75	0	22.49	22.34	22.47
	16QAM	1	0	22.54	22.57	22.33
		1	37	22.72	22.60	22.34
		1	74	22.64	22.56	22.31
		36	0	21.30	21.39	21.19
		36	19	21.58	21.35	21.39
		36	39	21.51	21.33	21.40
		75	0	21.52	21.31	21.40
	64QAM	1	0	21.44	21.44	21.37
		1	37	21.42	21.51	21.34
		1	74	21.61	21.40	21.41
		36	0	20.32	20.24	20.28
		36	19	20.45	20.26	20.36
		36	39	20.43	20.51	20.33
		75	0	20.48	20.27	20.32
	256QAM	1	0	18.46	18.48	18.34
		1	37	18.53	18.58	18.42
		1	74	18.53	18.47	18.38
		36	0	18.40	18.35	18.43
		36	19	18.52	18.52	18.50
		36	39	18.60	18.44	18.45
		75	0	18.58	18.48	18.38



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BW: 20M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	23.53	23.47	23.41
		1	50	23.50	23.39	23.38
		1	99	23.51	23.45	23.34
		50	0	22.61	22.55	22.56
		50	25	22.60	22.51	22.46
		50	50	22.58	22.54	22.53
		100	0	22.64	22.52	22.52
		1	0	22.67	22.69	22.54
	16QAM	1	50	22.81	22.71	22.62
		1	99	22.73	22.73	22.55
		50	0	21.50	21.46	21.41
		50	25	21.64	21.47	21.56
		50	50	21.62	21.58	21.52
		100	0	21.61	21.45	21.49
		1	0	21.63	21.63	21.47
		1	50	21.62	21.61	21.51
	64QAM	1	99	21.71	21.66	21.54
		50	0	20.55	20.41	20.33
		50	25	20.66	20.45	20.53
		50	50	20.58	20.56	20.55
		100	0	20.59	20.43	20.52
		1	0	18.56	18.53	18.48
		1	50	18.54	18.66	18.49
		1	99	18.68	18.62	18.46
	256QAM	50	0	18.55	18.49	18.47
		50	25	18.60	18.55	18.57
		50	50	18.64	18.56	18.54
		100	0	18.66	18.53	18.53



LTE Band 4 (Ant1)

BW: 1.4M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.70	1732.50	1754.30
1.4M	QPSK	1	0	23.41	23.40	23.48
		1	2	23.38	23.33	23.32
		1	5	23.39	23.30	23.30
		3	0	23.14	23.24	23.08
		3	1	23.30	23.23	23.32
		3	3	23.36	23.23	23.34
		6	0	22.43	22.49	22.46
	16QAM	1	0	22.66	22.61	22.50
		1	2	22.45	22.54	22.71
		1	5	22.61	22.79	22.65
		3	0	22.25	22.16	22.08
		3	1	22.35	22.30	22.23
		3	3	22.43	22.28	22.15
		6	0	21.51	21.47	21.36
	64QAM	1	0	21.51	21.22	21.46
		1	2	21.43	21.50	21.34
		1	5	21.47	21.52	21.41
		3	0	21.30	21.23	21.16
		3	1	21.38	21.26	21.21
		3	3	21.25	21.42	21.25
		6	0	20.60	20.29	20.28
	256QAM	1	0	18.54	18.51	18.60
		1	2	18.60	18.59	18.68
		1	5	18.51	18.54	18.66
		3	0	19.29	19.22	19.32
		3	1	19.34	19.33	19.25
		3	3	19.46	19.51	19.27
		6	0	18.48	18.50	18.48



BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.50	1732.50	1753.50
3M	QPSK	1	0	23.33	23.38	23.46
		1	7	23.35	23.20	23.33
		1	14	23.41	23.34	23.38
		8	0	22.33	22.52	22.27
		8	3	22.51	22.36	22.42
		8	7	22.46	22.49	22.47
		15	0	22.53	22.53	22.43
		15	0	22.53	22.53	22.43
	16QAM	1	0	22.73	22.55	22.49
		1	7	22.42	22.46	22.61
		1	14	22.62	22.83	22.62
		8	0	21.37	21.36	21.29
		8	3	21.60	21.47	21.42
		8	7	21.56	21.49	21.34
		15	0	21.43	21.42	21.42
		15	0	21.43	21.42	21.42
	64QAM	1	0	21.46	21.35	21.41
		1	7	21.47	21.60	21.42
		1	14	21.45	21.48	21.48
		8	0	20.36	20.46	20.36
		8	3	20.51	20.48	20.32
		8	7	20.43	20.60	20.40
		15	0	20.68	20.41	20.34
		15	0	20.68	20.41	20.34
	256QAM	1	0	18.53	18.49	18.61
		1	7	18.51	18.57	18.72
		1	14	18.56	18.54	18.64
		8	0	18.51	18.43	18.50
		8	3	18.53	18.64	18.43
		8	7	18.66	18.59	18.43
		15	0	18.52	18.48	18.40
		15	0	18.52	18.48	18.40



BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.50	1732.50	1752.50
5M	QPSK	1	0	23.28	23.37	23.42
		1	12	23.29	23.30	23.24
		1	24	23.49	23.41	23.34
		12	0	22.33	22.52	22.29
		12	6	22.54	22.40	22.48
		12	13	22.42	22.49	22.53
		25	0	22.48	22.40	22.37
		25	0	22.48	22.40	22.37
	16QAM	1	0	22.63	22.66	22.51
		1	12	22.50	22.53	22.61
		1	24	22.69	22.85	22.63
		12	0	21.42	21.38	21.39
		12	6	21.48	21.45	21.44
		12	13	21.56	21.50	21.41
		25	0	21.42	21.45	21.31
		25	0	21.42	21.45	21.31
	64QAM	1	0	21.43	21.27	21.46
		1	12	21.36	21.62	21.38
		1	24	21.50	21.54	21.43
		12	0	20.47	20.48	20.36
		12	6	20.47	20.45	20.42
		12	13	20.52	20.50	20.43
		25	0	20.58	20.29	20.26
		25	0	20.58	20.29	20.26
	256QAM	1	0	18.59	18.52	18.62
		1	12	18.49	18.56	18.66
		1	24	18.51	18.58	18.61
		12	0	18.45	18.48	18.61
		12	6	18.63	18.59	18.48
		12	13	18.66	18.61	18.47
		25	0	18.48	18.49	18.50
		25	0	18.48	18.49	18.50



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BW: 10M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.50	1750
10M	QPSK	1	0	23.39	23.30	23.39
		1	24	23.38	23.21	23.34
		1	49	23.43	23.33	23.39
		25	0	22.44	22.49	22.32
		25	12	22.58	22.41	22.52
		25	25	22.55	22.53	22.50
		50	0	22.54	22.44	22.38
		50	0	22.54	22.44	22.38
	16QAM	1	0	22.67	22.57	22.47
		1	24	22.49	22.54	22.68
		1	49	22.66	22.85	22.68
		25	0	21.44	21.31	21.30
		25	12	21.59	21.40	21.42
		25	25	21.56	21.50	21.40
		50	0	21.39	21.47	21.42
		50	0	21.39	21.47	21.42
	64QAM	1	0	21.55	21.28	21.47
		1	24	21.46	21.61	21.43
		1	49	21.55	21.55	21.45
		25	0	20.39	20.45	20.29
		25	12	20.47	20.37	20.32
		25	25	20.50	20.52	20.52
		50	0	20.68	20.42	20.35
		50	0	20.68	20.42	20.35
	256QAM	1	0	18.61	18.42	18.65
		1	24	18.57	18.49	18.71
		1	49	18.49	18.63	18.69
		25	0	18.41	18.50	18.51
		25	12	18.63	18.62	18.47
		25	25	18.70	18.57	18.50
		50	0	18.51	18.56	18.44
		50	0	18.51	18.56	18.44



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BW: 15M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.50	1732.50	1747.50
15M	QPSK	1	0	23.31	23.42	23.49
		1	37	23.24	23.21	23.27
		1	74	23.44	23.41	23.32
		36	0	22.44	22.55	22.36
		36	19	22.62	22.36	22.38
		36	39	22.42	22.53	22.47
		75	0	22.55	22.44	22.38
		75	0	22.55	22.44	22.38
	16QAM	1	0	22.72	22.59	22.56
		1	37	22.51	22.48	22.72
		1	74	22.63	22.84	22.62
		36	0	21.43	21.43	21.30
		36	19	21.55	21.45	21.38
		36	39	21.56	21.56	21.44
		75	0	21.50	21.48	21.31
		75	0	21.50	21.48	21.31
	64QAM	1	0	21.47	21.22	21.40
		1	37	21.45	21.63	21.30
		1	74	21.51	21.56	21.39
		36	0	20.48	20.42	20.35
		36	19	20.57	20.40	20.39
		36	39	20.51	20.53	20.42
		75	0	20.57	20.30	20.38
		75	0	20.57	20.30	20.38
	256QAM	1	0	18.60	18.51	18.65
		1	37	18.57	18.55	18.78
		1	74	18.61	18.65	18.66
		36	0	18.39	18.49	18.50
		36	19	18.60	18.54	18.46
		36	39	18.60	18.65	18.47
		75	0	18.59	18.48	18.40
		75	0	18.59	18.48	18.40



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BW: 20M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.50	1745
20M	QPSK	1	0	23.57	23.53	23.59
		1	50	23.50	23.45	23.51
		1	99	23.55	23.51	23.56
		50	0	22.58	22.59	22.60
		50	25	22.55	22.56	22.58
		50	50	22.53	22.57	22.59
		100	0	22.55	22.58	22.65
		1	0	22.79	22.77	22.72
	16QAM	1	50	22.69	22.73	22.78
		1	99	22.91	22.92	22.79
		50	0	21.56	21.53	21.51
		50	25	21.67	21.58	21.56
		50	50	21.68	21.67	21.57
		100	0	21.63	21.54	21.54
		1	0	21.67	21.47	21.61
		1	50	21.58	21.66	21.58
	64QAM	1	99	21.66	21.69	21.65
		50	0	20.53	20.56	20.52
		50	25	20.65	20.64	20.55
		50	50	20.71	20.69	20.58
		100	0	20.73	20.54	20.53
		1	0	18.65	18.57	18.72
		1	50	18.64	18.64	18.79
		1	99	18.63	18.69	18.71
	256QAM	50	0	18.53	18.54	18.64
		50	25	18.67	18.66	18.58
		50	50	18.73	18.72	18.57
		100	0	18.63	18.57	18.55



LTE Band 4_Ant1							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	20050	1720	23.57	-0.8	22.77	189.23	1
	20175	1732.5	23.53	-0.8	22.73	187.50	1
	20300	1745	23.59	-0.8	22.79	190.11	1
20M-16QAM	20050	1720	22.91	-0.8	22.11	162.55	1
	20175	1732.5	22.92	-0.8	22.12	162.93	1
	20300	1745	22.79	-0.8	21.99	158.12	1
20M-64QAM	20050	1720	21.67	-0.8	20.87	122.18	1
	20175	1732.5	21.69	-0.8	20.89	122.74	1
	20300	1745	21.65	-0.8	20.85	121.62	1
20M- 256QAM	20050	1720	18.73	-0.8	17.93	62.09	1
	20175	1732.5	18.72	-0.8	17.92	61.94	1
	20300	1745	18.79	-0.8	17.99	62.95	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	20025	1717.5	23.44	-0.8	22.64	183.65	1
	20175	1732.5	23.42	-0.8	22.62	182.81	1
	20325	1747.5	23.49	-0.8	22.69	185.78	1
15M-16QAM	20025	1717.5	22.72	-0.8	21.92	155.60	1
	20175	1732.5	22.84	-0.8	22.04	159.96	1
	20325	1747.5	22.72	-0.8	21.92	155.60	1
15M-64QAM	20025	1717.5	21.51	-0.8	20.71	117.76	1
	20175	1732.5	21.63	-0.8	20.83	121.06	1
	20325	1747.5	21.40	-0.8	20.60	114.82	1
15M- 256QAM	20025	1717.5	18.61	-0.8	17.81	60.39	1
	20175	1732.5	18.65	-0.8	17.85	60.95	1
	20325	1747.5	18.78	-0.8	17.98	62.81	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	20000	1715	23.43	-0.8	22.63	183.23	1
	20175	1732.5	23.33	-0.8	22.53	179.06	1
	20350	1750	23.39	-0.8	22.59	181.55	1
10M-16QAM	20000	1715	22.67	-0.8	21.87	153.82	1
	20175	1732.5	22.85	-0.8	22.05	160.32	1
	20350	1750	22.68	-0.8	21.88	154.17	1



10M-64QAM	20000	1715	21.55	-0.8	20.75	118.85	1
	20175	1732.5	21.61	-0.8	20.81	120.50	1
	20350	1750	21.47	-0.8	20.67	116.68	1
10M-256QAM	20000	1715	18.70	-0.8	17.90	61.66	1
	20175	1732.5	18.63	-0.8	17.83	60.67	1
	20350	1750	18.71	-0.8	17.91	61.80	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	19975	1712.5	23.49	-0.8	22.69	185.78	1
	20175	1732.5	23.41	-0.8	22.61	182.39	1
	20375	1752.5	23.42	-0.8	22.62	182.81	1
5M-16QAM	19975	1712.5	22.69	-0.8	21.89	154.53	1
	20175	1732.5	22.85	-0.8	22.05	160.32	1
	20375	1752.5	22.63	-0.8	21.83	152.41	1
5M-64QAM	19975	1712.5	21.50	-0.8	20.70	117.49	1
	20175	1732.5	21.62	-0.8	20.82	120.78	1
	20375	1752.5	21.46	-0.8	20.66	116.41	1
5M-256QAM	19975	1712.5	18.66	-0.8	17.86	61.09	1
	20175	1732.5	18.61	-0.8	17.81	60.39	1
	20375	1752.5	18.66	-0.8	17.86	61.09	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
3M-QPSK	19965	1711.5	23.41	-0.8	22.61	182.39	1
	20175	1732.5	23.38	-0.8	22.58	181.13	1
	20385	1753.5	23.46	-0.8	22.66	184.50	1
3M-16QAM	19965	1711.5	22.73	-0.8	21.93	155.96	1
	20175	1732.5	22.83	-0.8	22.03	159.59	1
	20385	1753.5	22.62	-0.8	21.82	152.05	1
3M-64QAM	19965	1711.5	21.47	-0.8	20.67	116.68	1
	20175	1732.5	21.60	-0.8	20.80	120.23	1
	20385	1753.5	21.48	-0.8	20.68	116.95	1
3M-256QAM	19965	1711.5	18.66	-0.8	17.86	61.09	1
	20175	1732.5	18.64	-0.8	17.84	60.81	1
	20385	1753.5	18.72	-0.8	17.92	61.94	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1.4M-QPSK	19957	1710.7	23.41	-0.8	22.61	182.39	1
	20175	1732.5	23.40	-0.8	22.60	181.97	1



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	20393	1754.3	23.48	-0.8	22.68	185.35	1
1.4M-16QAM	19957	1710.7	22.66	-0.8	21.86	153.46	1
	20175	1732.5	22.79	-0.8	21.99	158.12	1
	20393	1754.3	22.71	-0.8	21.91	155.24	1
1.4M-64QAM	19957	1710.7	21.51	-0.8	20.71	117.76	1
	20175	1732.5	21.52	-0.8	20.72	118.03	1
	20393	1754.3	21.46	-0.8	20.66	116.41	1
1.4M-256QAM	19957	1710.7	19.46	-0.8	18.66	73.45	1
	20175	1732.5	19.51	-0.8	18.71	74.30	1
	20393	1754.3	19.32	-0.8	18.52	71.12	1



LTE Band 66_Ant1							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	132072	1720	23.53	-0.7	22.83	191.87	1
	132322	1745	23.47	-0.7	22.77	189.23	1
	132572	1770	23.41	-0.7	22.71	186.64	1
20M-16QAM	132072	1720	22.81	-0.7	22.11	162.55	1
	132322	1745	22.73	-0.7	22.03	159.59	1
	132572	1770	22.62	-0.7	21.92	155.60	1
20M-64QAM	132072	1720	21.71	-0.7	21.01	126.18	1
	132322	1745	21.66	-0.7	20.96	124.74	1
	132572	1770	21.54	-0.7	20.84	121.34	1
20M- 256QAM	132072	1720	18.68	-0.7	17.98	62.81	1
	132322	1745	18.66	-0.7	17.96	62.52	1
	132572	1770	18.57	-0.7	17.87	61.24	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	132047	1717.5	23.45	-0.7	22.75	188.36	1
	132322	1745	23.29	-0.7	22.59	181.55	1
	132597	1772.5	23.39	-0.7	22.69	185.78	1
15M-16QAM	132047	1717.5	22.72	-0.7	22.02	159.22	1
	132322	1745	22.60	-0.7	21.90	154.88	1
	132597	1772.5	22.34	-0.7	21.64	145.88	1
15M-64QAM	132047	1717.5	21.61	-0.7	20.91	123.31	1
	132322	1745	21.51	-0.7	20.81	120.50	1
	132597	1772.5	21.41	-0.7	20.71	117.76	1
15M- 256QAM	132047	1717.5	18.60	-0.7	17.90	61.66	1
	132322	1745	18.58	-0.7	17.88	61.38	1
	132597	1772.5	18.50	-0.7	17.80	60.26	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	132022	1715	23.44	-0.7	22.74	187.93	1
	132322	1745	23.35	-0.7	22.65	184.08	1
	132622	1775	23.29	-0.7	22.59	181.55	1
10M-16QAM	132022	1715	22.66	-0.7	21.96	157.04	1
	132322	1745	22.53	-0.7	21.83	152.41	1
	132622	1775	22.44	-0.7	21.74	149.28	1
10M-64QAM	132022	1715	21.56	-0.7	20.86	121.90	1



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	132322	1745	21.48	-0.7	20.78	119.67	1
	132622	1775	21.40	-0.7	20.70	117.49	1
	132022	1715	18.63	-0.7	17.93	62.09	1
10M-256QAM	132322	1745	18.63	-0.7	17.93	62.09	1
	132622	1775	18.48	-0.7	17.78	59.98	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	131997	1712.5	23.45	-0.7	22.75	188.36	1
	132322	1745	23.39	-0.7	22.69	185.78	1
	132647	1777.5	23.31	-0.7	22.61	182.39	1
5M-16QAM	131997	1712.5	22.67	-0.7	21.97	157.40	1
	132322	1745	22.56	-0.7	21.86	153.46	1
	132647	1777.5	22.45	-0.7	21.75	149.62	1
5M-64QAM	131997	1712.5	21.48	-0.7	20.78	119.67	1
	132322	1745	21.44	-0.7	20.74	118.58	1
	132647	1777.5	21.32	-0.7	20.62	115.35	1
5M-256QAM	131997	1712.5	18.65	-0.7	17.95	62.37	1
	132322	1745	18.56	-0.7	17.86	61.09	1
	132647	1777.5	18.49	-0.7	17.79	60.12	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
3M-QPSK	131987	1711.5	23.32	-0.7	22.62	182.81	1
	132322	1745	23.34	-0.7	22.64	183.65	1
	132657	1778.5	23.30	-0.7	22.60	181.97	1
3M-16QAM	131987	1711.5	22.65	-0.7	21.95	156.68	1
	132322	1745	22.62	-0.7	21.92	155.60	1
	132657	1778.5	22.40	-0.7	21.70	147.91	1
3M-64QAM	131987	1711.5	21.49	-0.7	20.79	119.95	1
	132322	1745	21.48	-0.7	20.78	119.67	1
	132657	1778.5	21.44	-0.7	20.74	118.58	1
3M-256QAM	131987	1711.5	18.62	-0.7	17.92	61.94	1
	132322	1745	18.60	-0.7	17.90	61.66	1
	132657	1778.5	18.52	-0.7	17.82	60.53	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1.4M-QPSK	131979	1710.7	23.38	-0.7	22.68	185.35	1
	132322	1745	23.37	-0.7	22.67	184.93	1
	132665	1779.3	23.27	-0.7	22.57	180.72	1



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1.4M-16QAM	131979	1710.7	22.67	-0.7	21.97	157.40	1
	132322	1745	22.60	-0.7	21.90	154.88	1
	132665	1779.3	22.38	-0.7	21.68	147.23	1
1.4M-64QAM	131979	1710.7	21.54	-0.7	20.84	121.34	1
	132322	1745	21.49	-0.7	20.79	119.95	1
	132665	1779.3	21.44	-0.7	20.74	118.58	1
1.4M-256QAM	131979	1710.7	19.41	-0.7	18.71	74.30	1
	132322	1745	19.27	-0.7	18.57	71.94	1
	132665	1779.3	19.34	-0.7	18.64	73.11	1

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



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

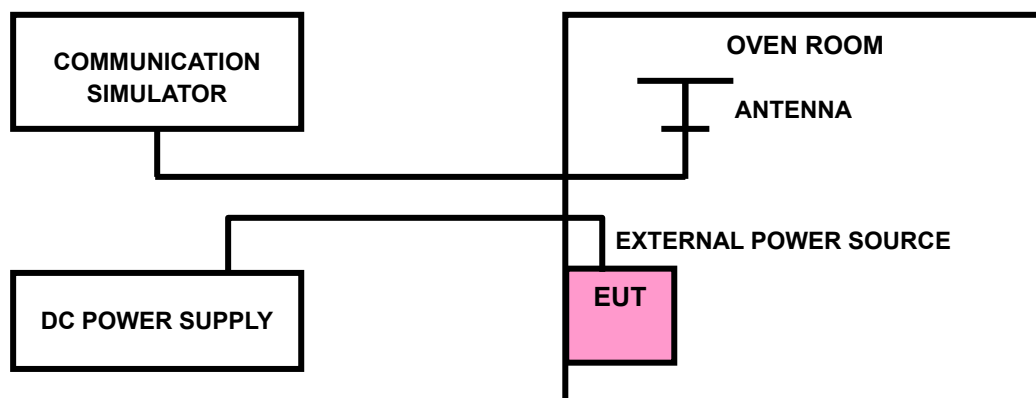
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- 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



3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

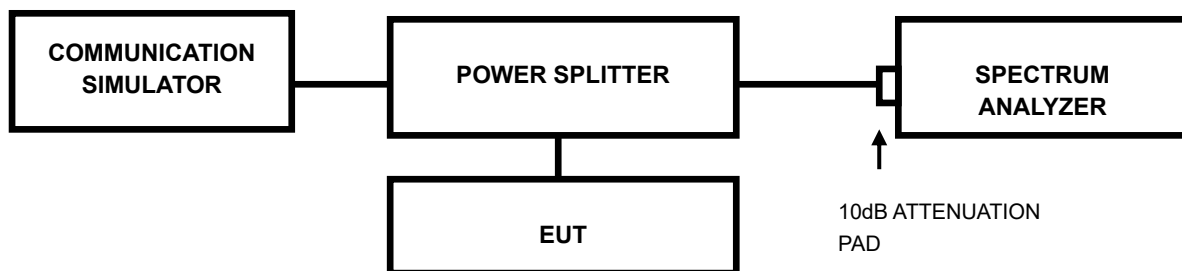


3.3 OCCUPIED BANDWIDTH MEASUREMENT

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.

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 Part 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.

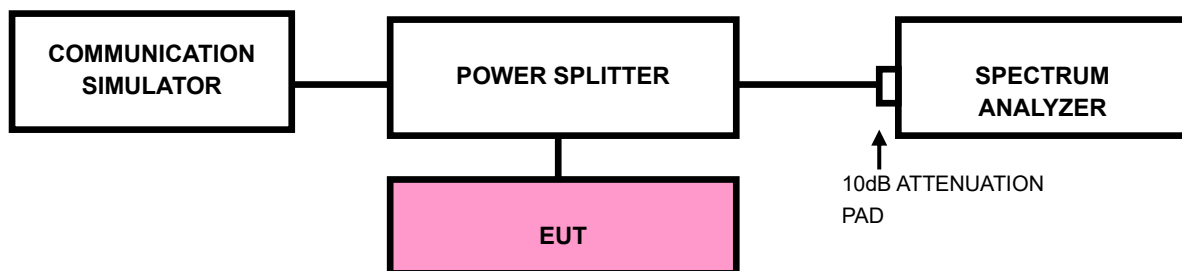
47 CFR 27.50(d)(4)

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. Fixed stations operating in the 1710–1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

47 CFR 27.50(k)(3)

3450 – 3550 MHz : Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

- a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- b) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).
- c) Set the resolution bandwidth (RBW) $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
- d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- e) Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
- f) Select the average power (RMS) display detector.
- g) Set the number of measurement points to ≥ 1001 .
- h) Use auto-coupled sweep time.
- i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- k) Record the max trace plot into the test report.

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

For LTE Band4/66

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 Band42

For mobile operations in the 3450–3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz .

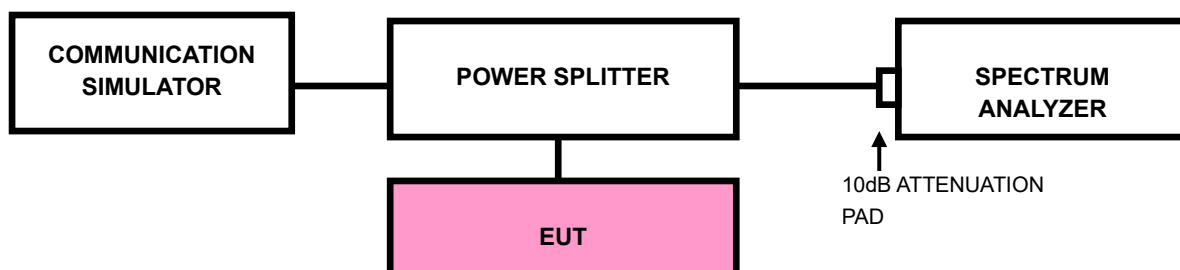
For LTE Band38/41

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 is used for conducted emission measurement.

3.5.3 TEST SETUP





3.5.4 TEST RESULTS

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

Please Refer to Appendix Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

For LTE Band4/66

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 Band42

For mobile operations in the 3450–3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz .

For LTE Band38/41

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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form 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.

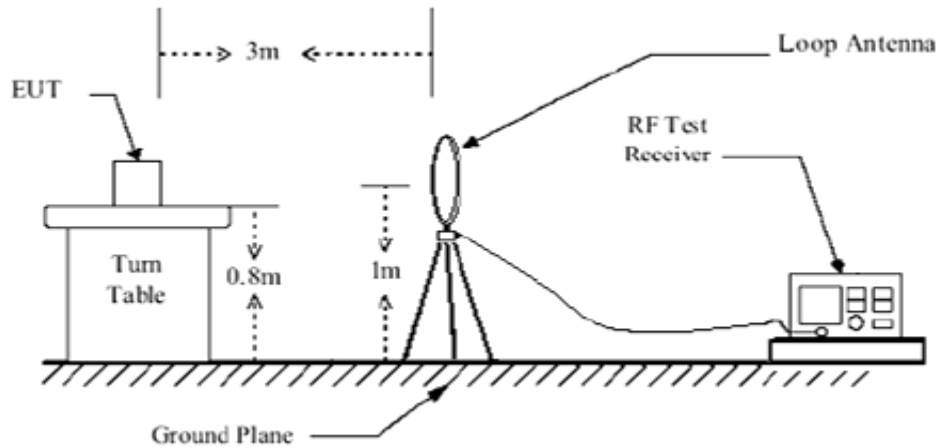
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

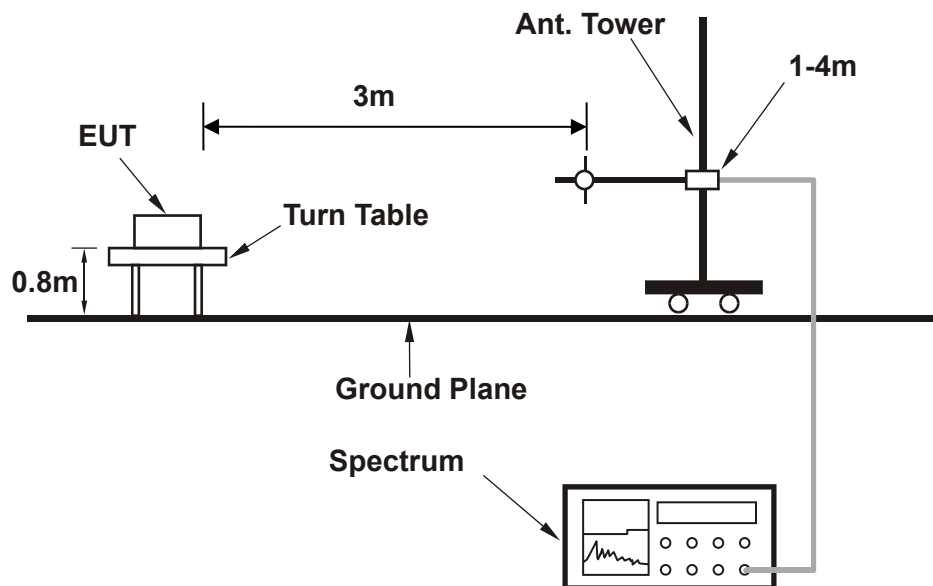


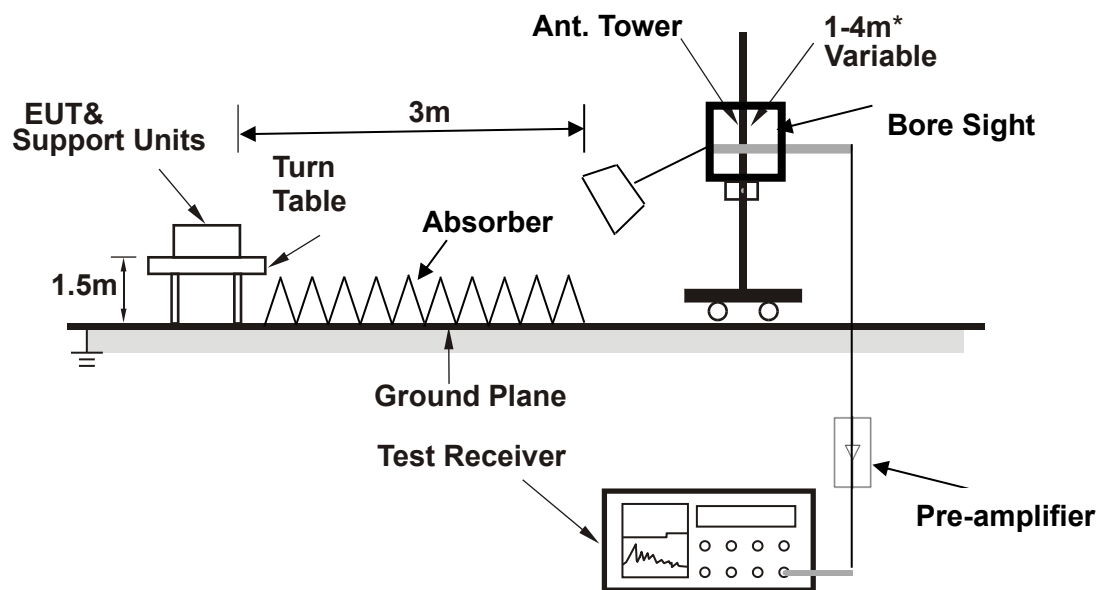
3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





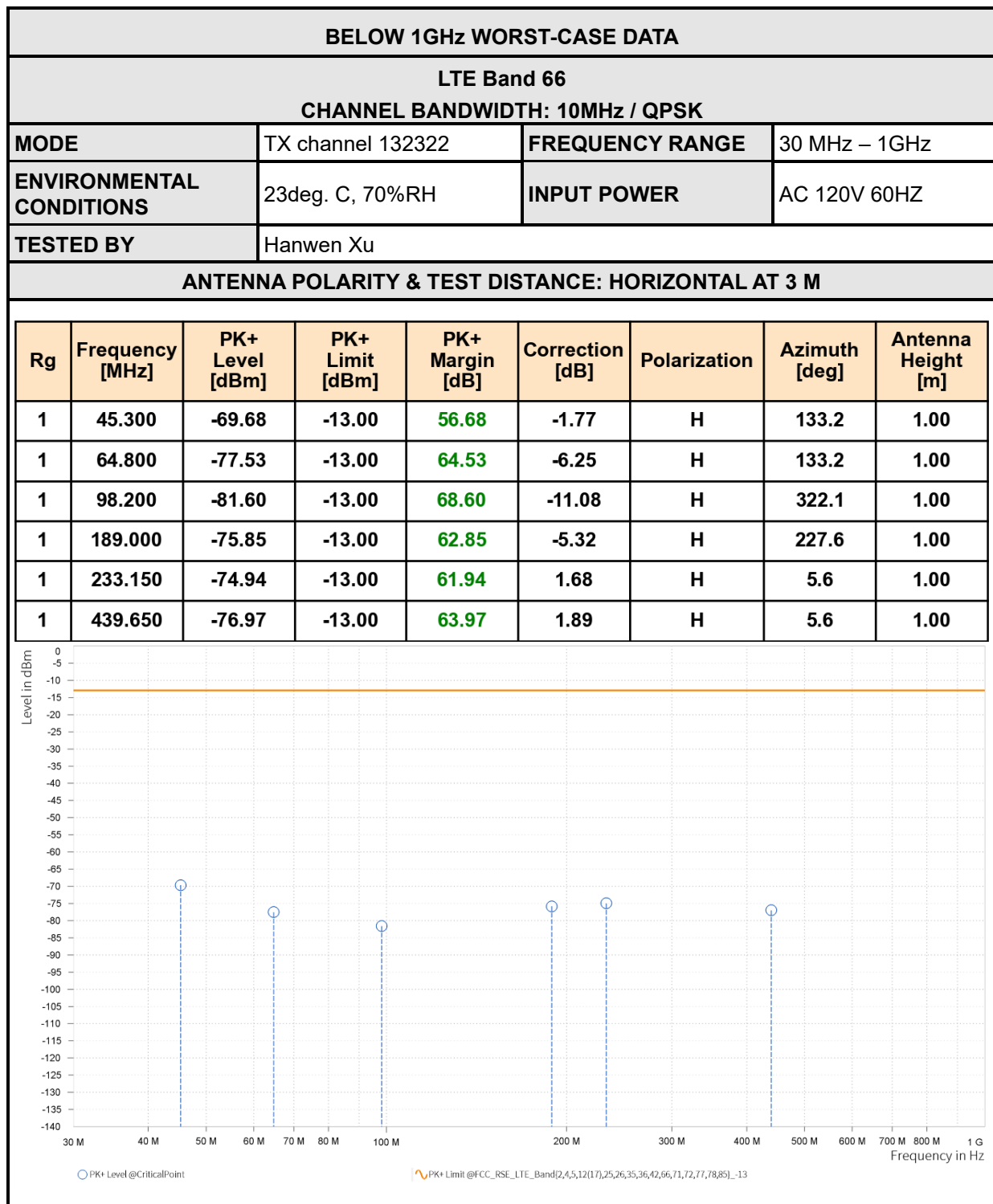
Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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.

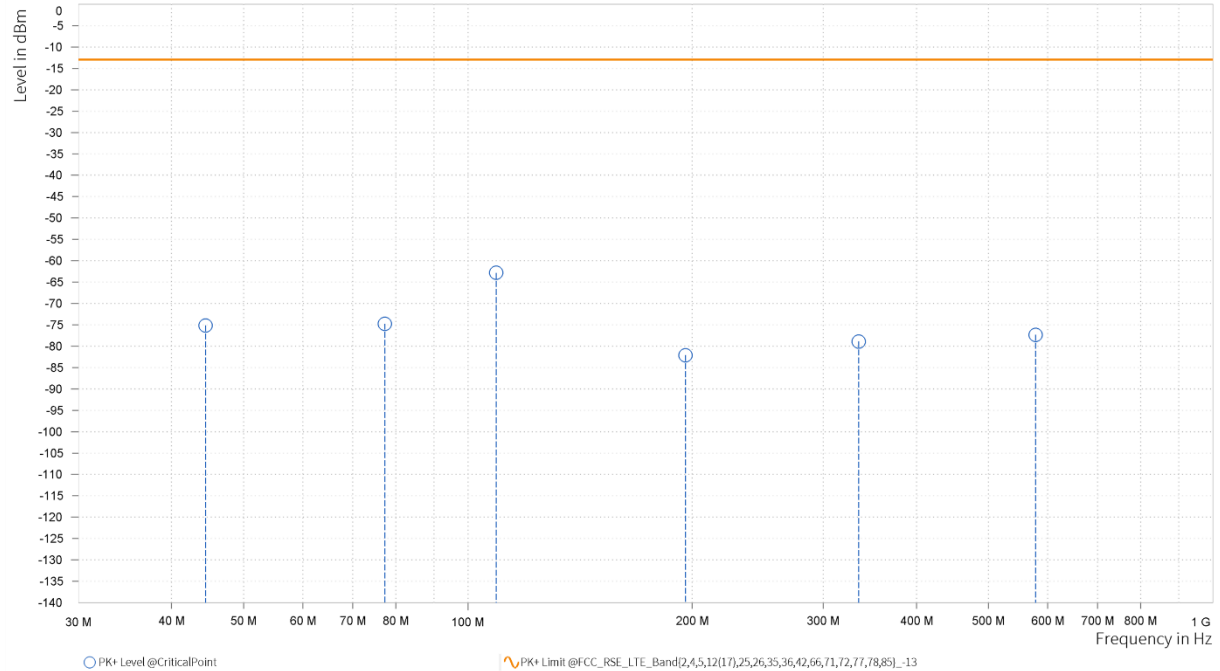




MODE	TX channel 132322	FREQUENCY RANGE	30 MHz – 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	44.450	-75.14	-13.00	62.14	-6.82	V	5.6	1.00
1	77.350	-74.74	-13.00	61.74	-10.90	V	353	1.00
1	109.100	-62.83	-13.00	49.83	1.15	V	151.1	1.00
1	195.950	-82.12	-13.00	69.12	-6.51	V	151.1	1.00
1	334.700	-78.89	-13.00	65.89	-0.44	V	359	1.00
2	578.425	-77.35	-13.00	64.35	-1.05	V	300.9	2.00





ABOVE 1GHz

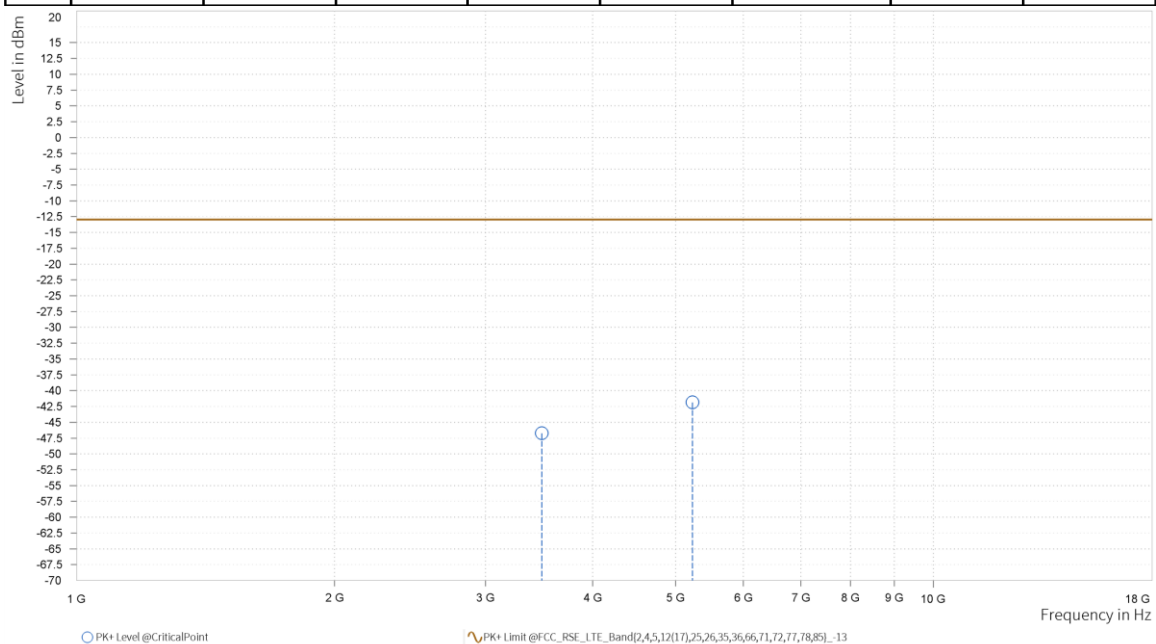
Note: For higher frequency, the emission is too low to be detected.

LTE Band66

CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,488.740	-46.74	-13.00	33.74	26.26	H	250.6	1.00
4	5,233.110	-41.86	-13.00	28.86	33.18	H	359.1	1.00

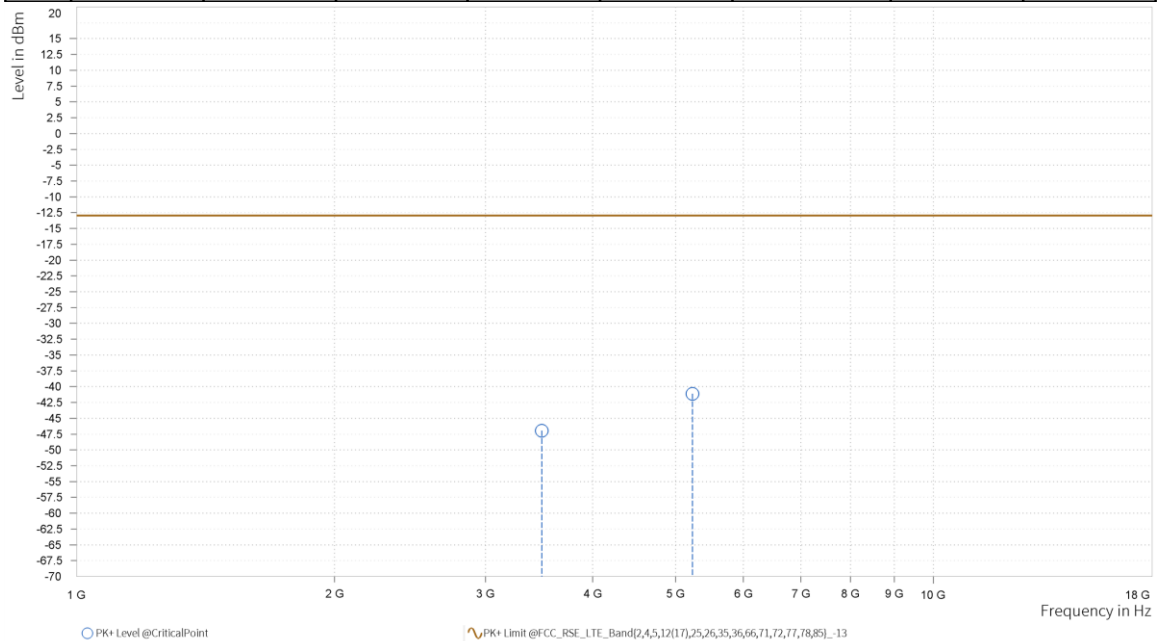




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,488.740	-46.96	-13.00	33.96	26.03	V	109.6	2.00
4	5,233.110	-41.13	-13.00	28.13	33.15	V	109.6	2.00

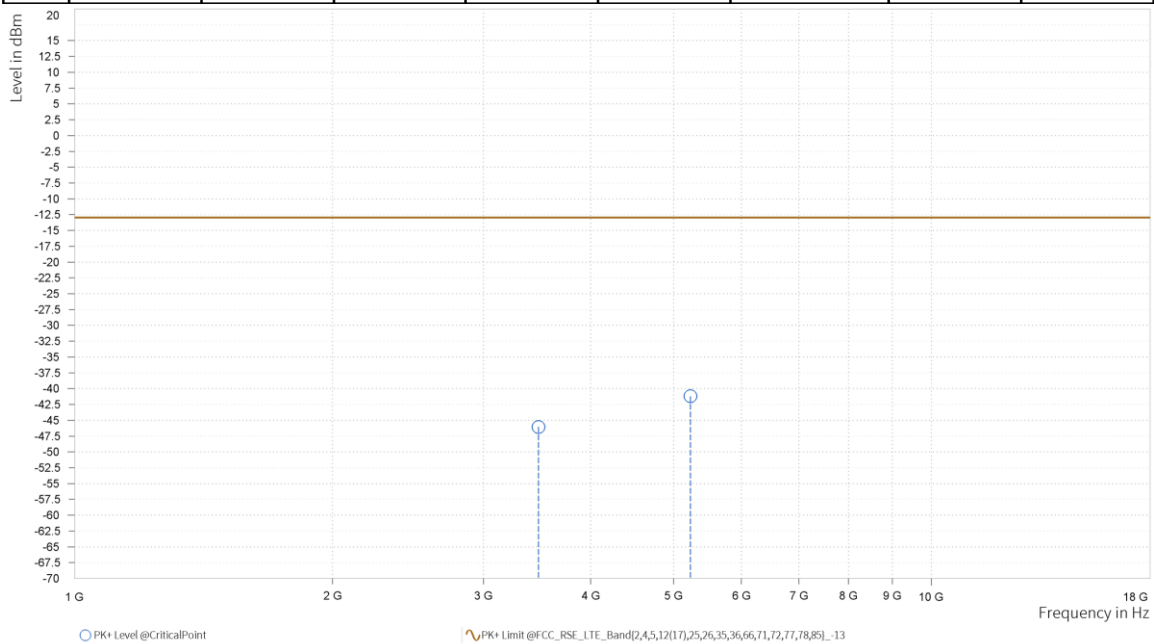




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,478.300	-46.05	-13.00	33.05	26.34	H	1	1.00
4	5,230.950	-41.20	-13.00	28.20	33.48	H	0.9	2.00

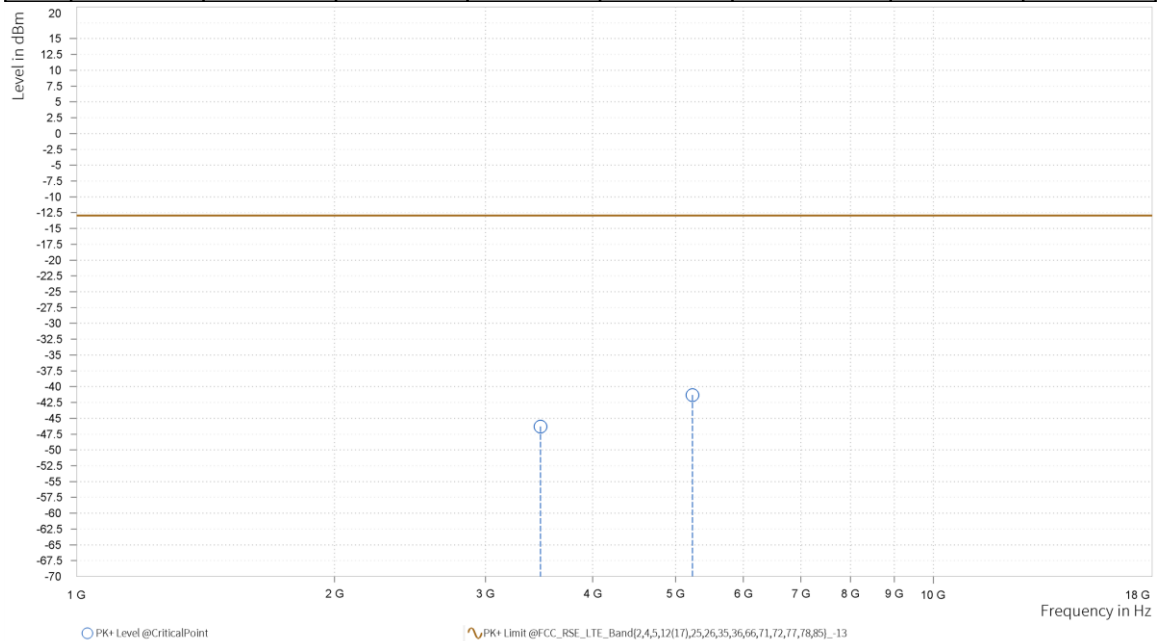




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,478.300	-46.32	-13.00	33.32	26.09	V	359	2.00
4	5,230.950	-41.32	-13.00	28.32	33.45	V	249.4	1.00

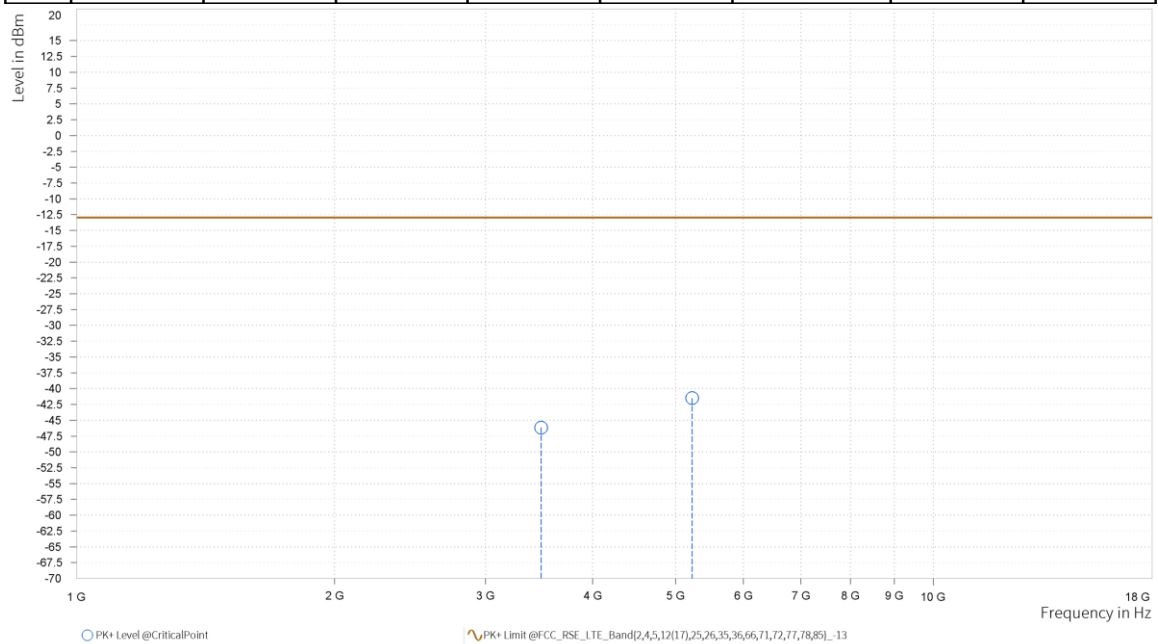




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,485.500	-46.16	-13.00	33.16	26.29	H	359	1.00
4	5,228.250	-41.49	-13.00	28.49	33.39	H	247	1.00

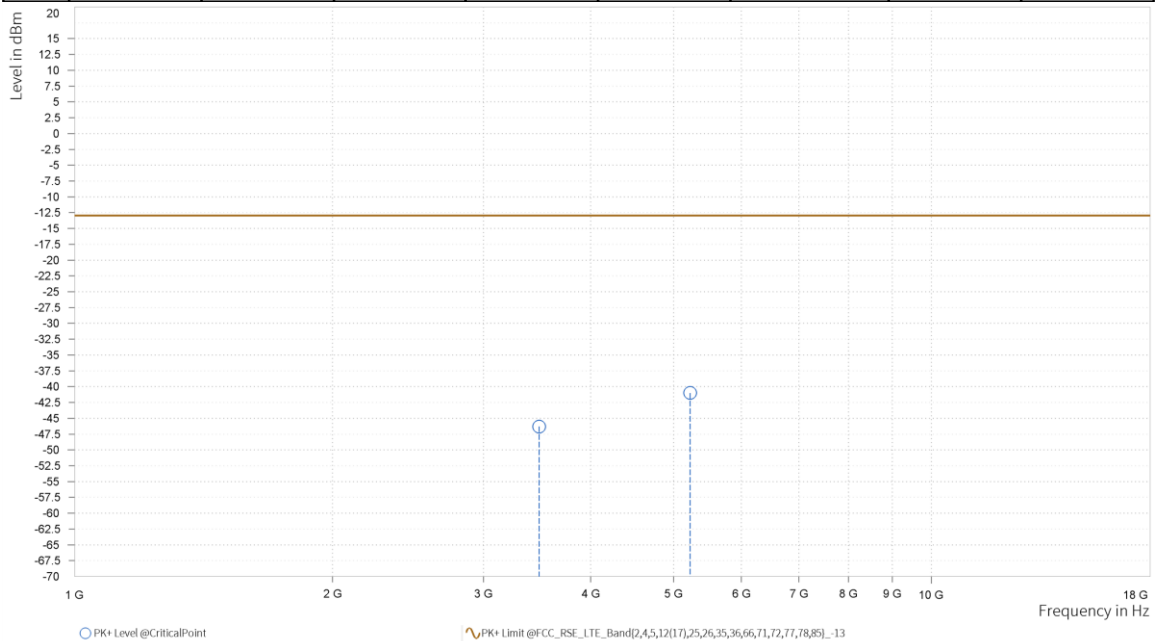




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,485.500	-46.30	-13.00	33.30	26.06	V	359.1	1.00
4	5,228.250	-41.00	-13.00	28.00	33.37	V	108.4	2.00

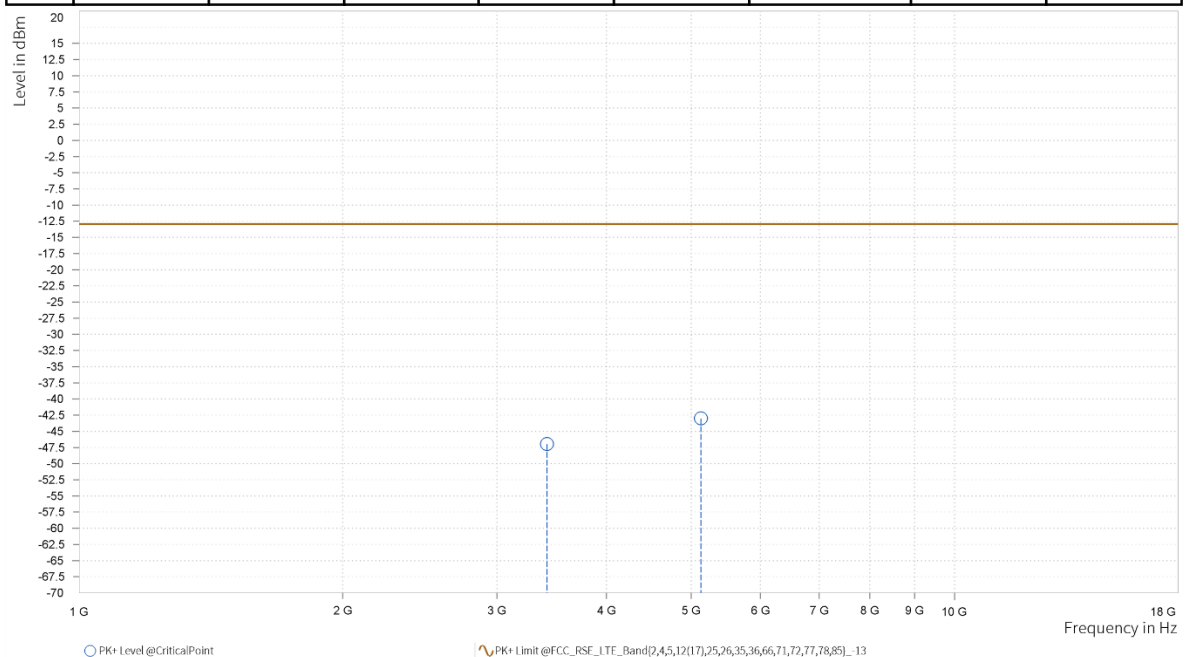




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132022
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-46.99	-13.00	33.99	26.90	H	0.9	2.00
4	5,131.500	-43.02	-13.00	30.02	31.02	H	359.1	1.00

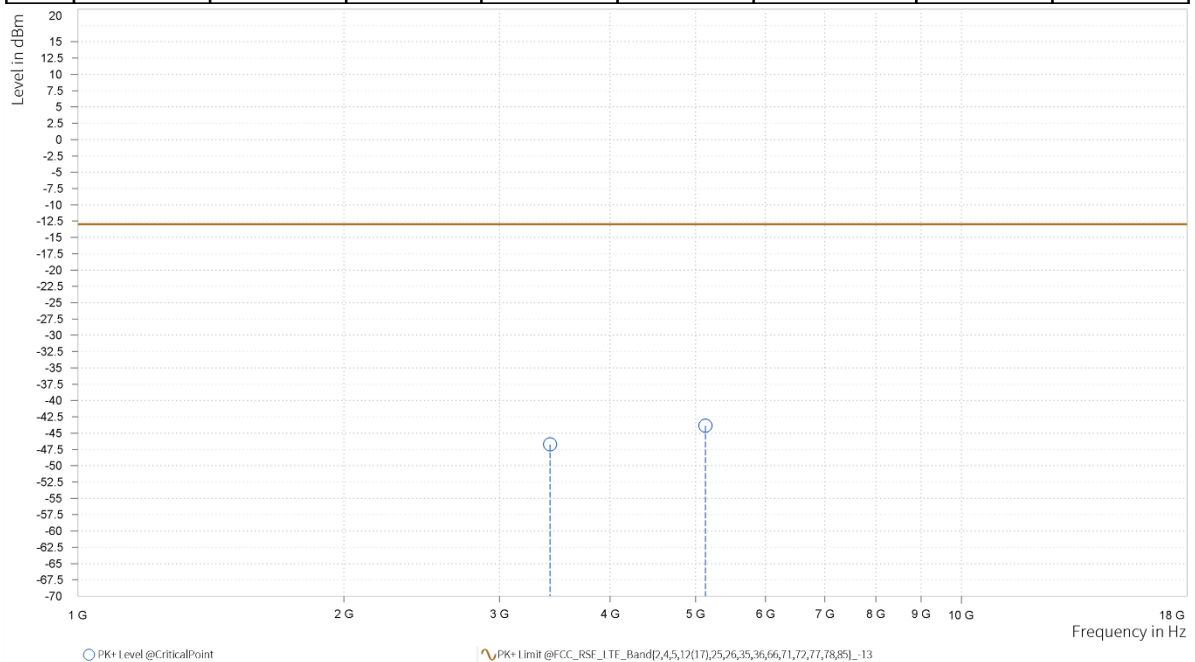




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132022
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-46.74	-13.00	33.74	26.70	V	253	1.00
4	5,131.500	-43.86	-13.00	30.86	30.89	V	359	2.00



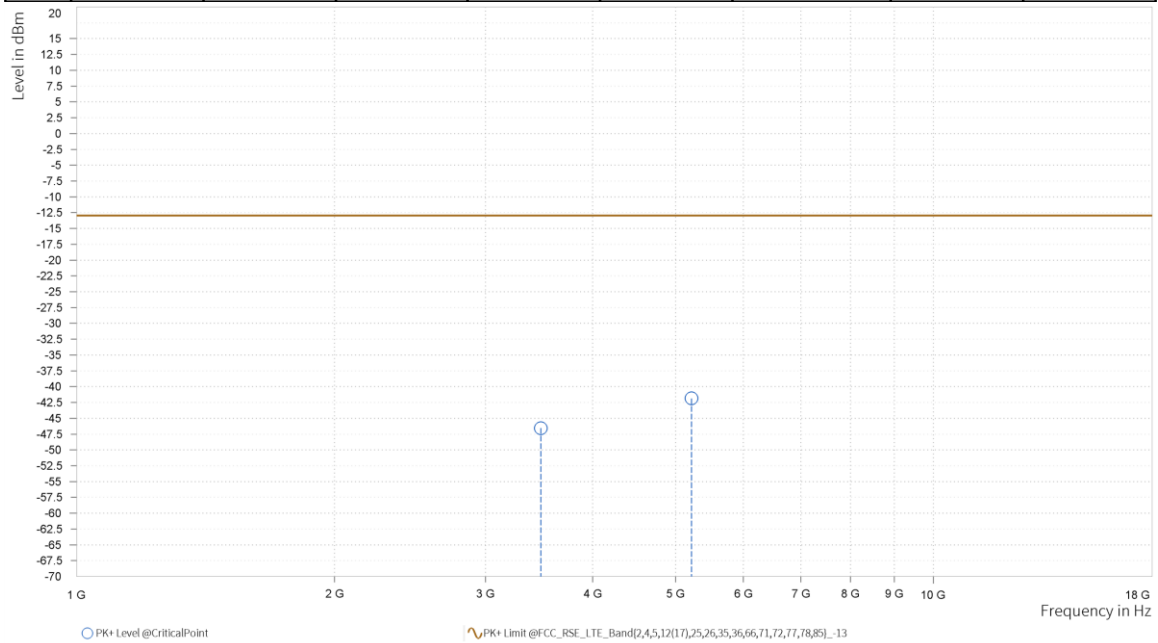


BUREAU VERITAS Test Report No.: PSU-NQN2412090210RF09

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-46.55	-13.00	33.55	26.35	H	1	1.00
4	5,221.500	-41.86	-13.00	28.86	32.64	H	248.2	1.00

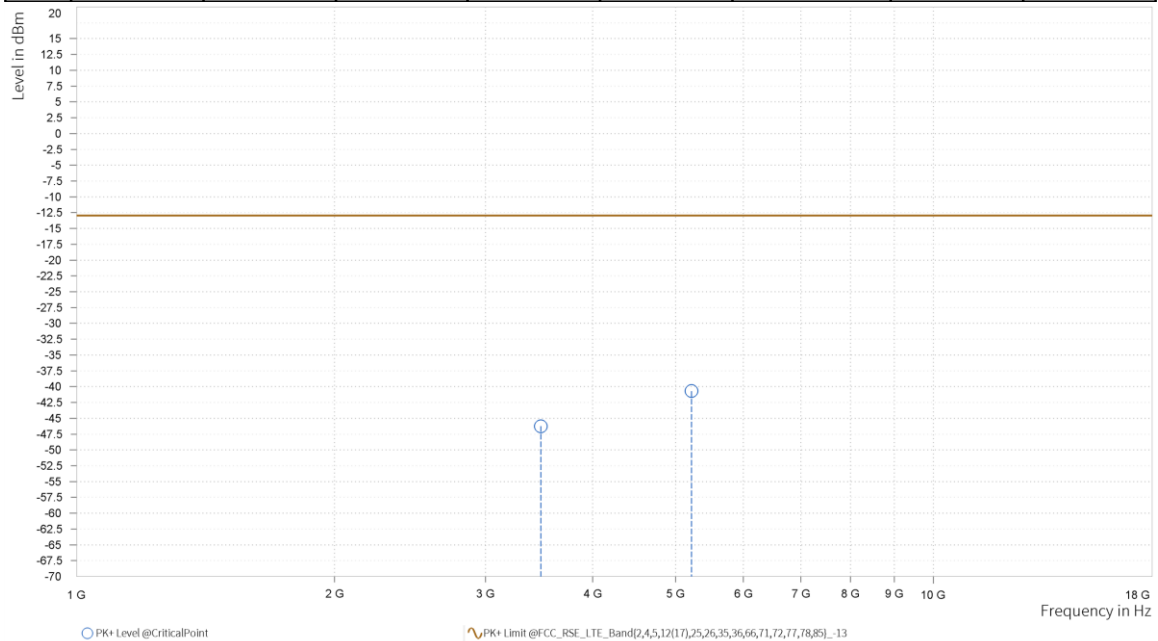




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-46.26	-13.00	33.26	26.10	V	1	2.00
4	5,221.500	-40.71	-13.00	27.71	32.62	V	1	1.00

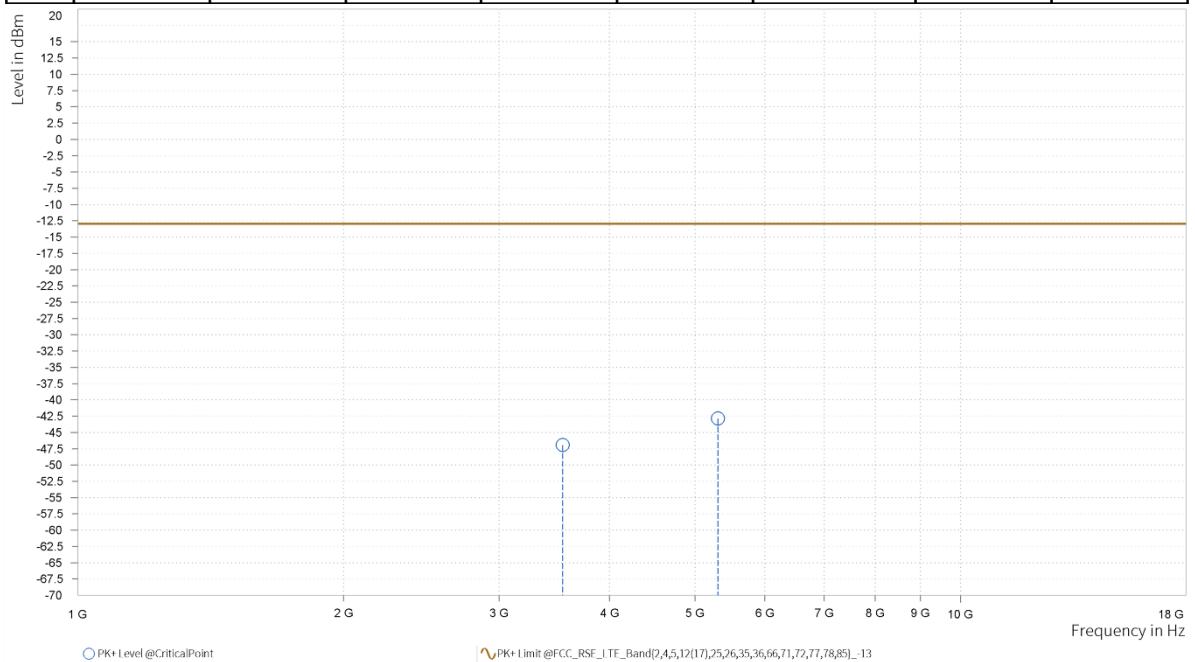




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132622
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,541.000	-46.93	-13.00	33.93	26.98	H	359	2.00
4	5,311.500	-42.86	-13.00	29.86	32.71	H	108.4	2.00

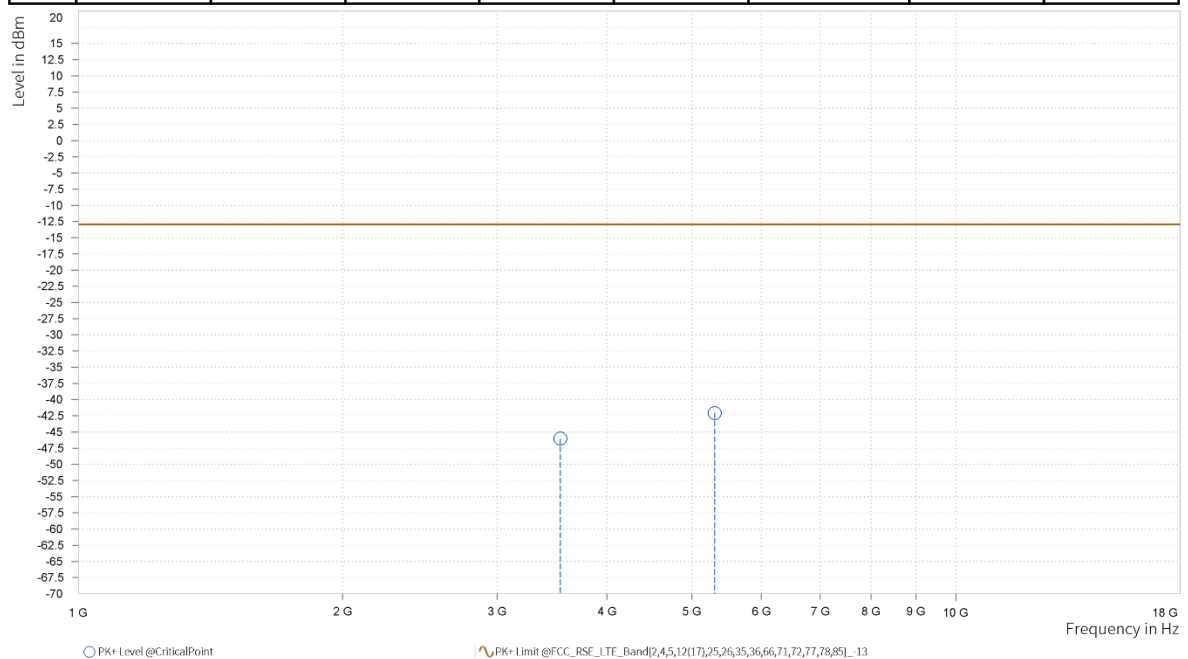




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132622
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,541.000	-46.04	-13.00	33.04	26.87	V	359.1	1.00
4	5,311.500	-42.07	-13.00	29.07	32.59	V	251.8	1.00

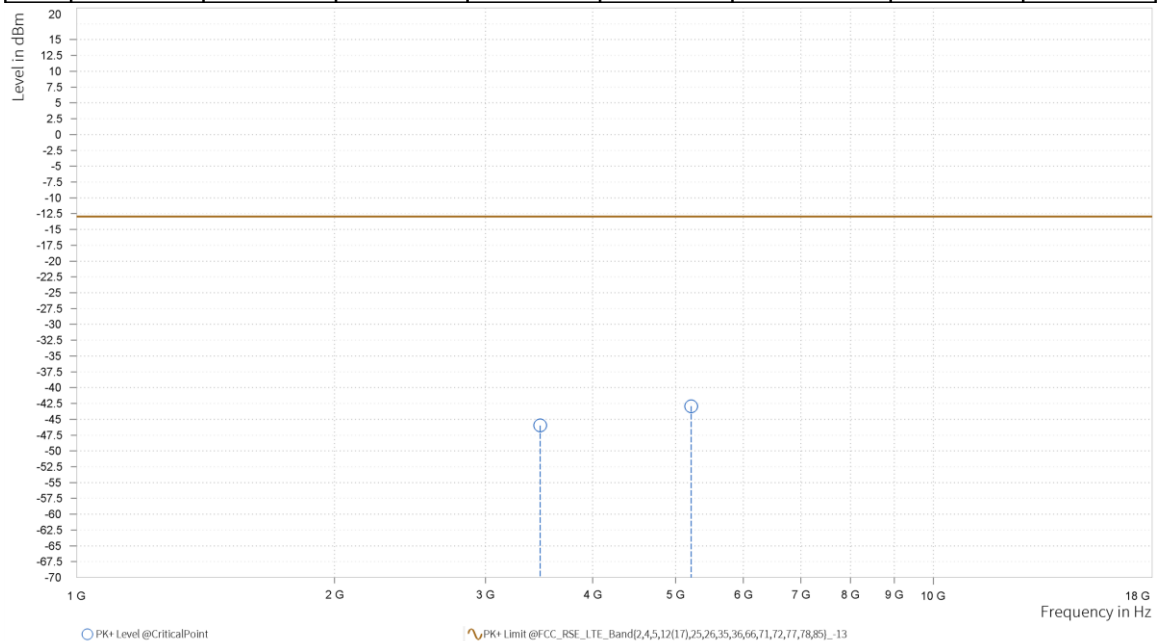




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

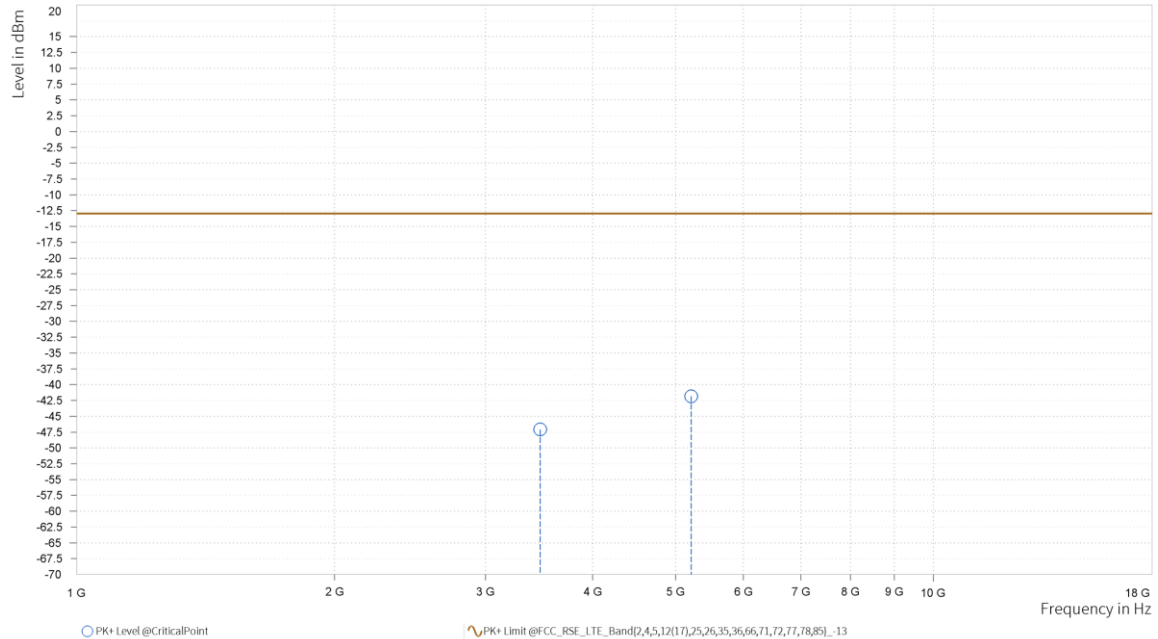
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,476.500	-45.99	-13.00	32.99	26.32	H	1	1.00
4	5,214.750	-42.93	-13.00	29.93	32.12	H	0.9	2.00





CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

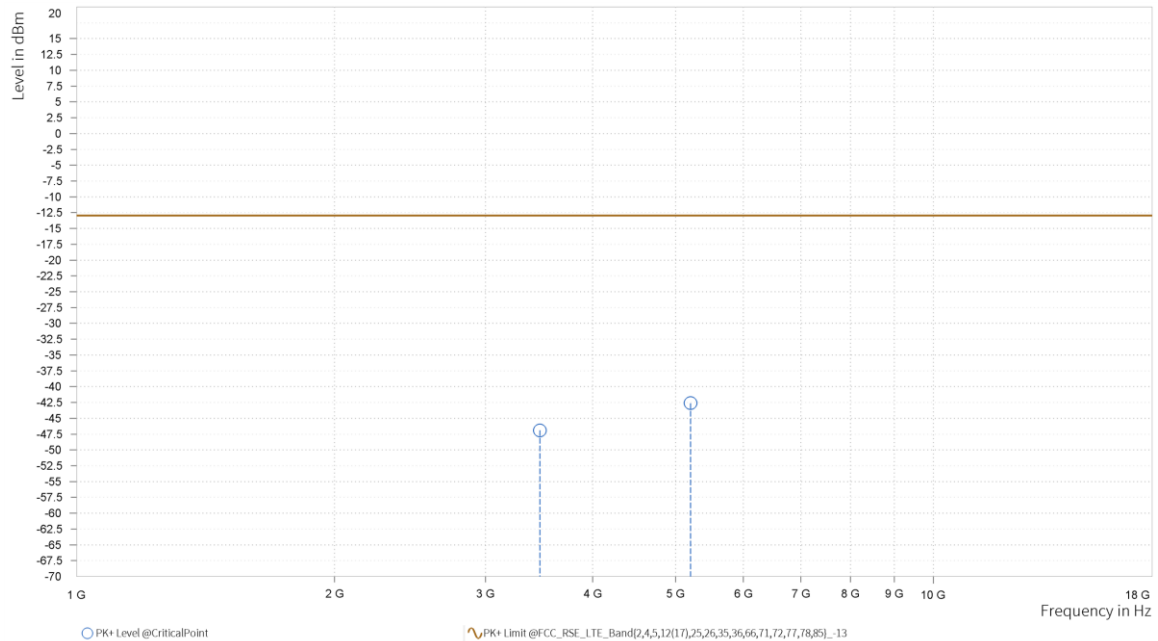
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,476.500	-47.08	-13.00	34.08	26.06	V	102.4	2.00
4	5,214.750	-41.82	-13.00	28.82	32.11	V	102.4	2.00



CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



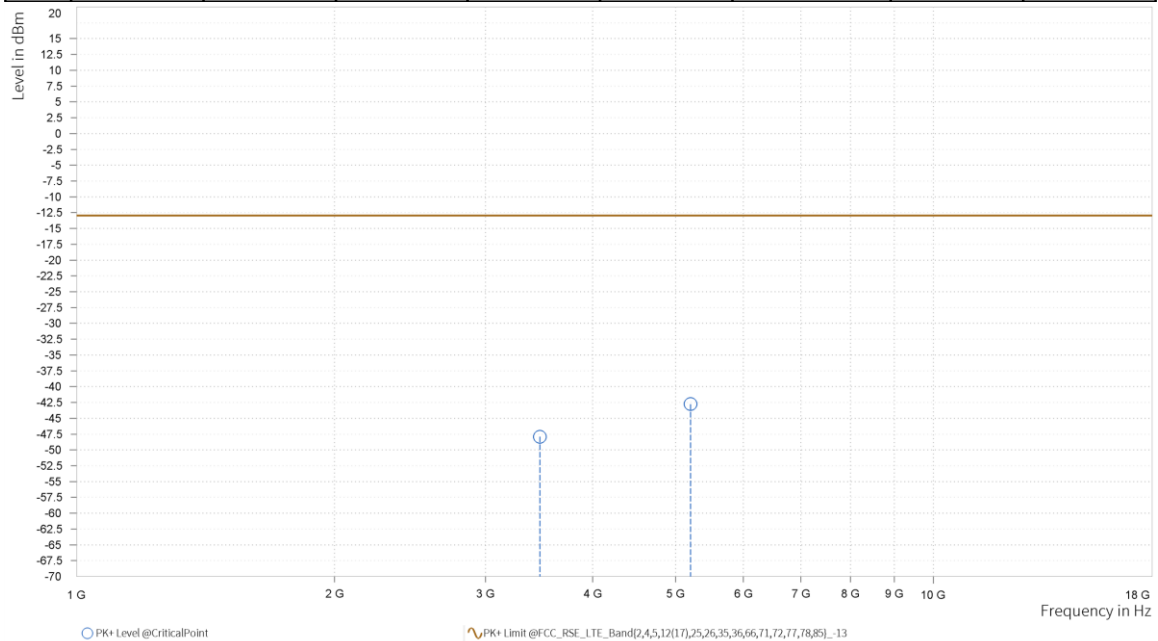
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,472.000	-46.92	-13.00	33.92	26.27	H	0.9	2.00
4	5,208.000	-42.62	-13.00	29.62	31.90	H	358.3	1.00



CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,472.000	-47.91	-13.00	34.91	26.00	V	1	2.00
4	5,208.000	-42.75	-13.00	29.75	31.87	V	247	1.00

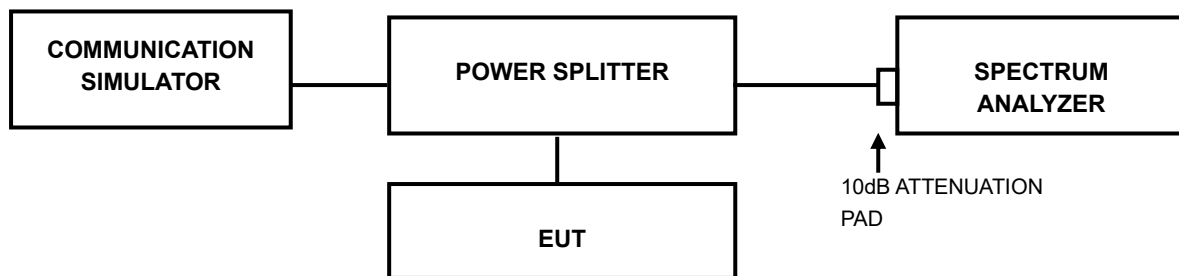


3.7 PEAK TO AVERAGE RATIO

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%.

3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

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

Suzhou EMC/RF Lab:

Tel: +86 (0557) 368 1008



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

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



6 Appendix

LTE BAND66(INCLUDING LTE B4)

PEAK-TO-AVERAGE RATIO(CCDF)

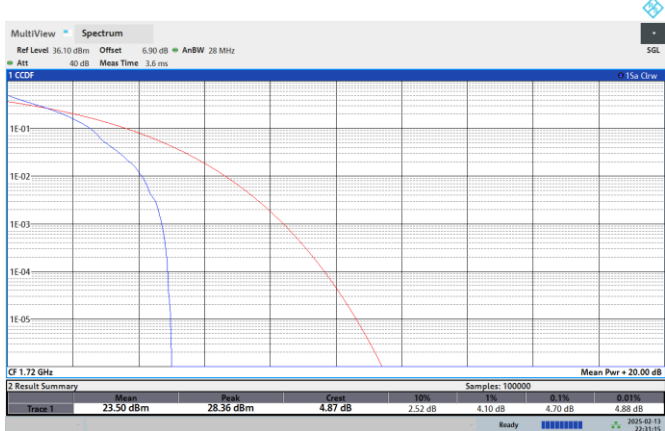
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band66	20MHz	QPSK	132072	1RB#0	4.70	13	PASS
Band66	20MHz	QPSK	132072	100RB#0	5.54	13	PASS
Band66	20MHz	QPSK	132322	1RB#0	5.48	13	PASS
Band66	20MHz	QPSK	132322	100RB#0	5.62	13	PASS
Band66	20MHz	QPSK	132572	1RB#0	5.72	13	PASS
Band66	20MHz	QPSK	132572	100RB#0	5.68	13	PASS

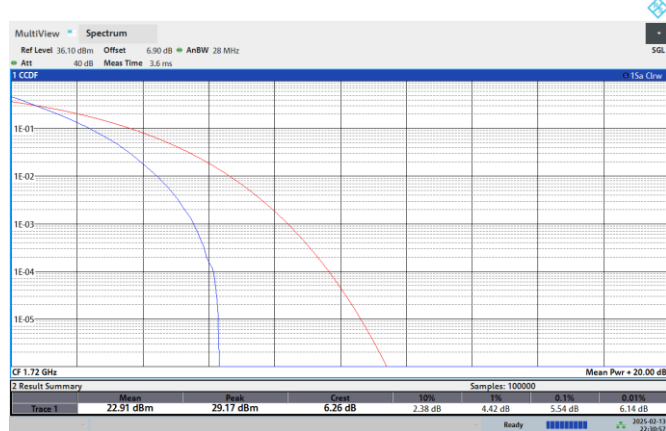


Test Graphs

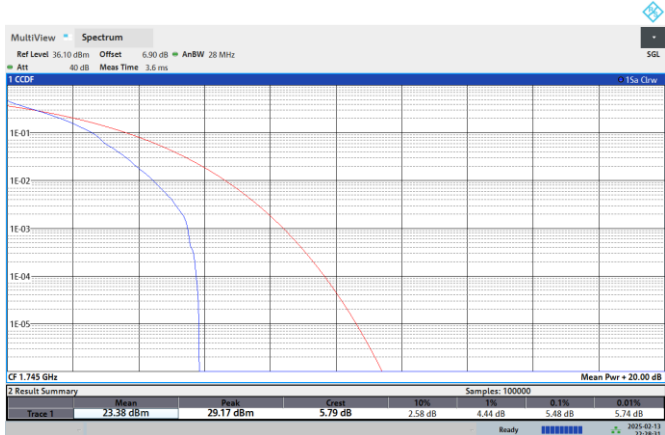
Band66-20MHz-QPSK-132072-1RB#0



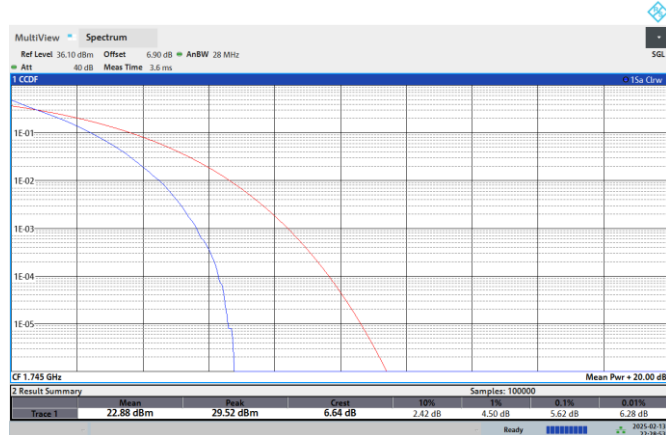
Band66-20MHz-QPSK-132072-100RB#0



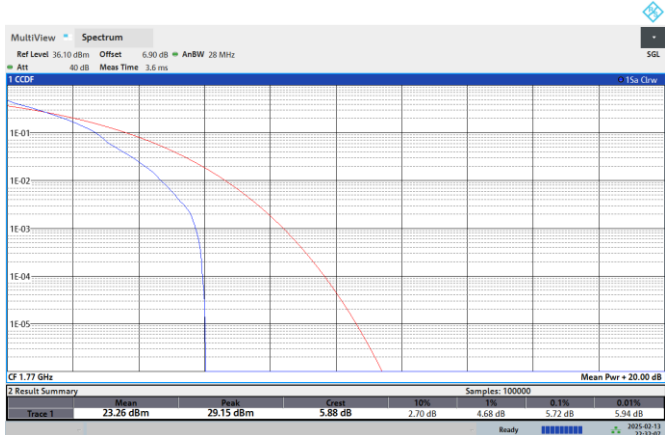
Band66-20MHz-QPSK-132322-1RB#0



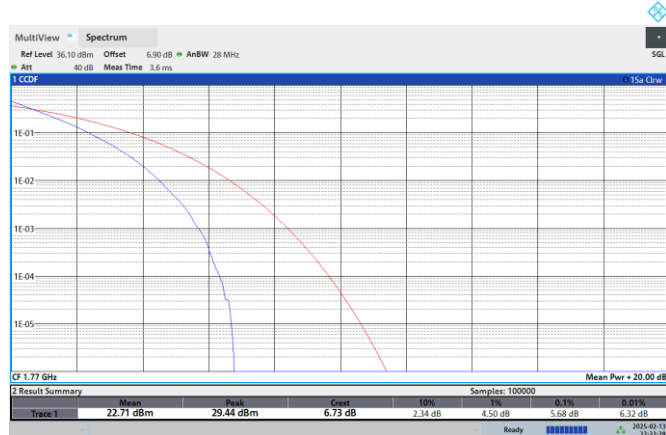
Band66-20MHz-QPSK-132322-100RB#0



Band66-20MHz-QPSK-132572-1RB#0



Band66-20MHz-QPSK-132572-100RB#0





BUREAU VERITAS Test Report No.: PSU-NQN2412090210RF09

26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band66	1.4MHz	QPSK	131979	6RB#0	1.093	1.33	PASS
Band66	1.4MHz	QPSK	132322	6RB#0	1.099	1.36	PASS
Band66	1.4MHz	QPSK	132665	6RB#0	1.098	1.33	PASS
Band66	1.4MHz	16QAM	131979	6RB#0	1.093	1.34	PASS
Band66	1.4MHz	16QAM	132322	6RB#0	1.102	1.31	PASS
Band66	1.4MHz	16QAM	132665	6RB#0	1.091	1.32	PASS
Band66	1.4MHz	64QAM	131979	6RB#0	1.089	1.33	PASS
Band66	1.4MHz	64QAM	132322	6RB#0	1.100	1.35	PASS
Band66	1.4MHz	64QAM	132665	6RB#0	1.092	1.36	PASS
Band66	1.4MHz	256QAM	131979	6RB#0	1.091	1.31	PASS
Band66	1.4MHz	256QAM	132322	6RB#0	1.095	1.33	PASS
Band66	1.4MHz	256QAM	132665	6RB#0	1.096	1.36	PASS
Band66	3MHz	QPSK	131987	15RB#0	2.700	3.02	PASS
Band66	3MHz	QPSK	132322	15RB#0	2.701	3.02	PASS
Band66	3MHz	QPSK	132657	15RB#0	2.700	3.02	PASS
Band66	3MHz	16QAM	131987	15RB#0	2.702	3.01	PASS
Band66	3MHz	16QAM	132322	15RB#0	2.699	3.00	PASS
Band66	3MHz	16QAM	132657	15RB#0	2.701	2.99	PASS
Band66	3MHz	64QAM	131987	15RB#0	2.702	3.02	PASS
Band66	3MHz	64QAM	132322	15RB#0	2.702	3.02	PASS
Band66	3MHz	64QAM	132657	15RB#0	2.699	3.02	PASS
Band66	3MHz	256QAM	131987	15RB#0	2.705	3.01	PASS
Band66	3MHz	256QAM	132322	15RB#0	2.698	3.03	PASS
Band66	3MHz	256QAM	132657	15RB#0	2.697	2.98	PASS
Band66	5MHz	QPSK	131997	25RB#0	4.493	4.96	PASS
Band66	5MHz	QPSK	132322	25RB#0	4.489	5.02	PASS
Band66	5MHz	QPSK	132647	25RB#0	4.492	4.96	PASS
Band66	5MHz	16QAM	131997	25RB#0	4.502	4.97	PASS
Band66	5MHz	16QAM	132322	25RB#0	4.484	4.97	PASS
Band66	5MHz	16QAM	132647	25RB#0	4.491	5.02	PASS
Band66	5MHz	64QAM	131997	25RB#0	4.501	5.02	PASS
Band66	5MHz	64QAM	132322	25RB#0	4.491	5.04	PASS
Band66	5MHz	64QAM	132647	25RB#0	4.489	5.04	PASS
Band66	5MHz	256QAM	131997	25RB#0	4.490	5.00	PASS
Band66	5MHz	256QAM	132322	25RB#0	4.497	5.04	PASS
Band66	5MHz	256QAM	132647	25RB#0	4.493	5.02	PASS
Band66	10MHz	QPSK	132022	50RB#0	8.978	9.83	PASS
Band66	10MHz	QPSK	132322	50RB#0	8.972	9.74	PASS
Band66	10MHz	QPSK	132622	50RB#0	8.967	9.86	PASS
Band66	10MHz	16QAM	132022	50RB#0	8.948	9.83	PASS
Band66	10MHz	16QAM	132322	50RB#0	8.967	9.89	PASS
Band66	10MHz	16QAM	132622	50RB#0	8.962	9.77	PASS
Band66	10MHz	64QAM	132022	50RB#0	8.946	9.83	PASS
Band66	10MHz	64QAM	132322	50RB#0	8.962	9.80	PASS
Band66	10MHz	64QAM	132622	50RB#0	8.952	9.77	PASS
Band66	10MHz	256QAM	132022	50RB#0	8.945	9.83	PASS

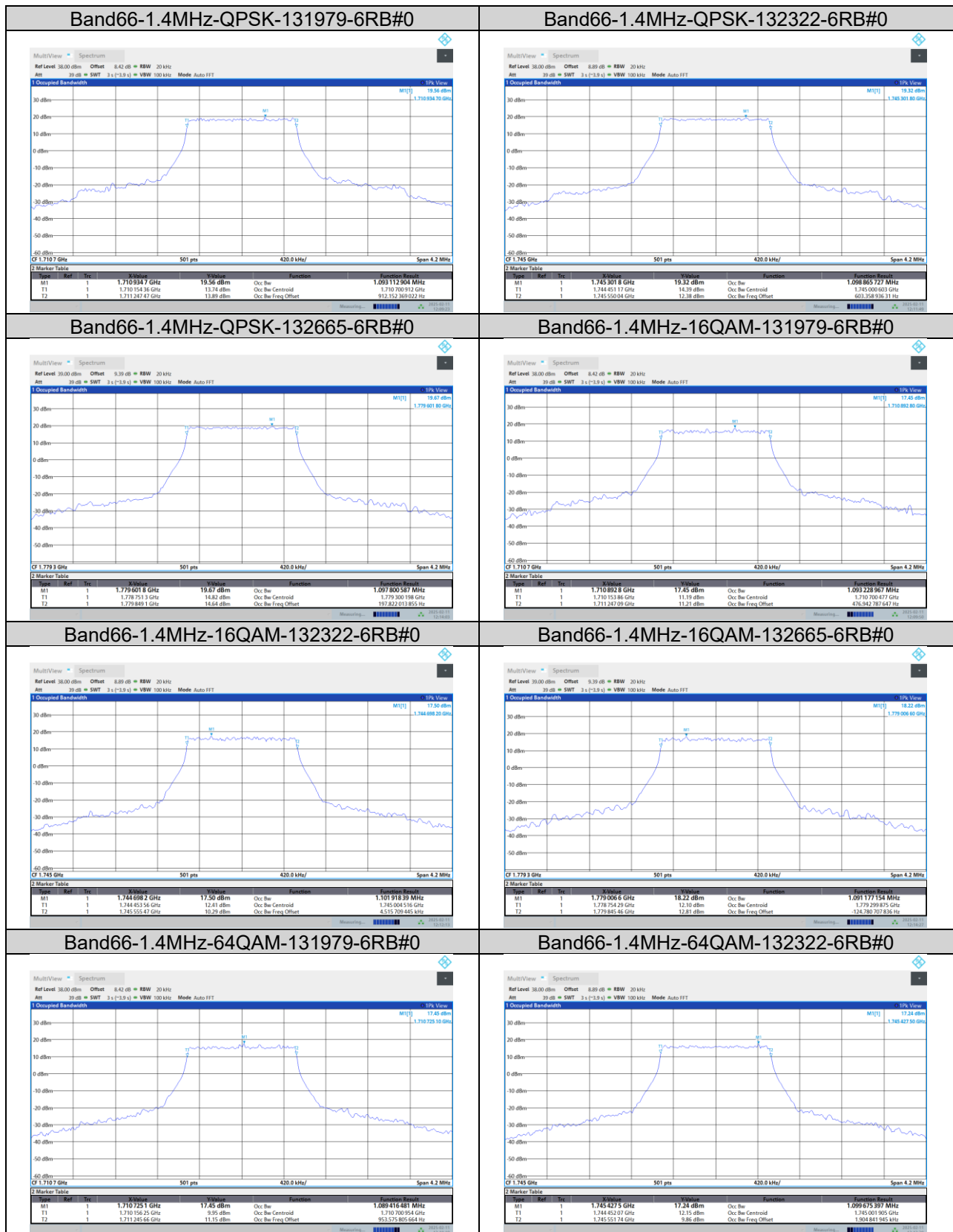


Band66	10MHz	256QAM	132322	50RB#0	8.966	9.86	PASS
Band66	10MHz	256QAM	132622	50RB#0	8.965	8.83	PASS
Band66	15MHz	QPSK	132047	75RB#0	13.470	14.74	PASS
Band66	15MHz	QPSK	132322	75RB#0	13.474	14.61	PASS
Band66	15MHz	QPSK	132597	75RB#0	13.486	14.84	PASS
Band66	15MHz	16QAM	132047	75RB#0	13.458	14.70	PASS
Band66	15MHz	16QAM	132322	75RB#0	13.494	14.79	PASS
Band66	15MHz	16QAM	132597	75RB#0	13.487	14.84	PASS
Band66	15MHz	64QAM	132047	75RB#0	13.493	14.70	PASS
Band66	15MHz	64QAM	132322	75RB#0	13.482	14.79	PASS
Band66	15MHz	64QAM	132597	75RB#0	13.507	14.74	PASS
Band66	15MHz	256QAM	132047	75RB#0	13.480	14.93	PASS
Band66	15MHz	256QAM	132322	75RB#0	13.496	14.84	PASS
Band66	15MHz	256QAM	132597	75RB#0	13.494	14.84	PASS
Band66	20MHz	QPSK	132072	100RB#0	17.935	19.42	PASS
Band66	20MHz	QPSK	132322	100RB#0	17.916	19.42	PASS
Band66	20MHz	QPSK	132572	100RB#0	17.937	19.48	PASS
Band66	20MHz	16QAM	132072	100RB#0	17.926	19.48	PASS
Band66	20MHz	16QAM	132322	100RB#0	17.899	19.36	PASS
Band66	20MHz	16QAM	132572	100RB#0	17.939	19.60	PASS
Band66	20MHz	64QAM	132072	100RB#0	17.910	19.54	PASS
Band66	20MHz	64QAM	132322	100RB#0	17.920	19.42	PASS
Band66	20MHz	64QAM	132572	100RB#0	17.956	19.48	PASS
Band66	20MHz	256QAM	132072	100RB#0	17.911	19.48	PASS
Band66	20MHz	256QAM	132322	100RB#0	17.901	19.42	PASS
Band66	20MHz	256QAM	132572	100RB#0	17.948	19.42	PASS



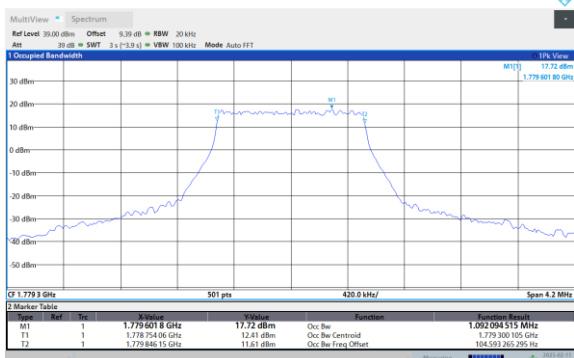
Test Graphs

Occupied Bandwidth

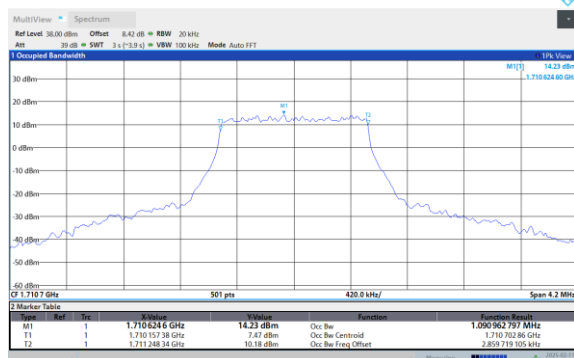




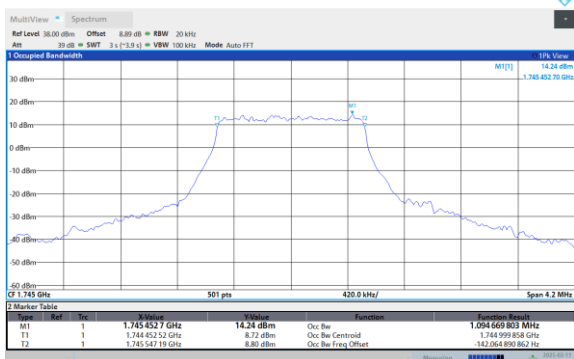
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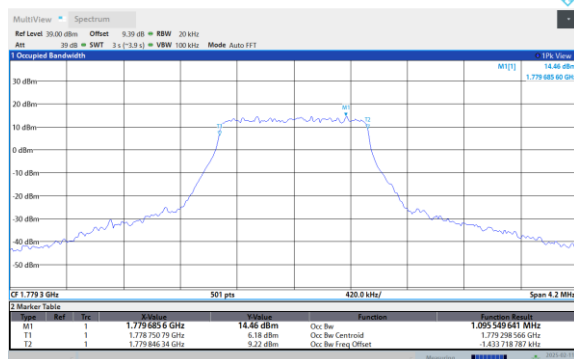
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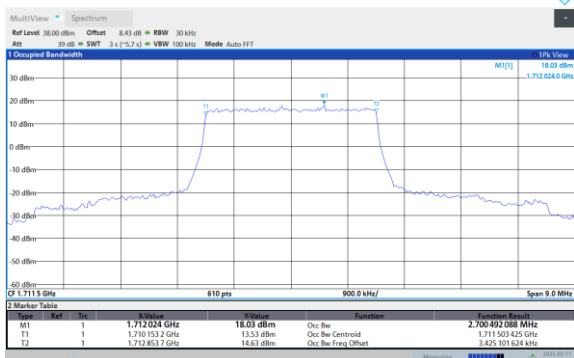
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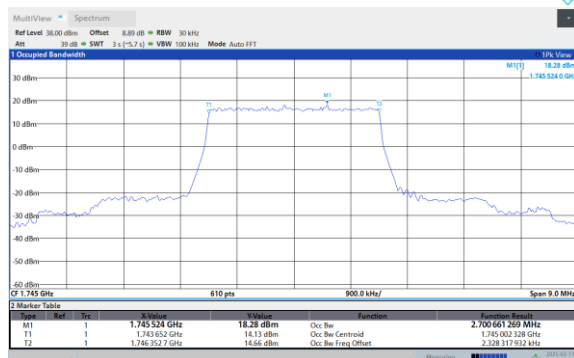
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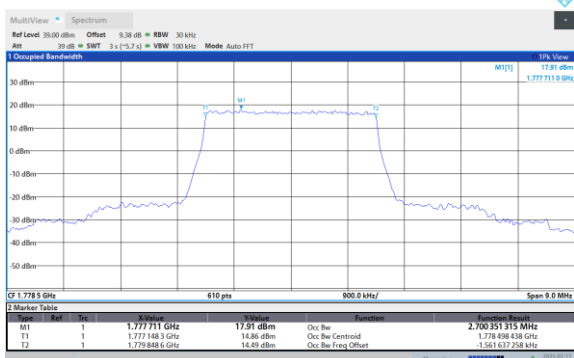
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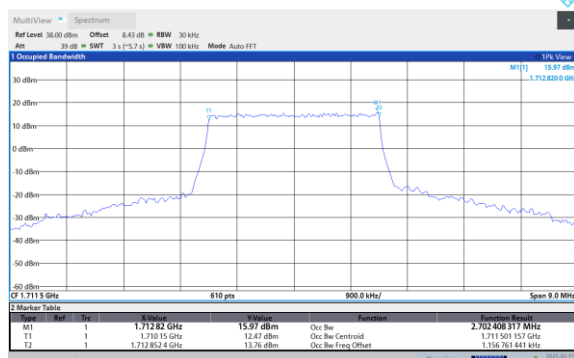
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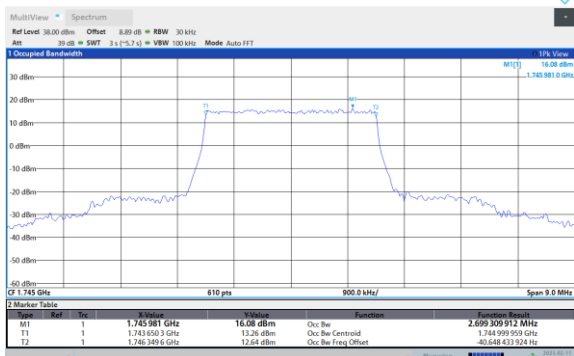


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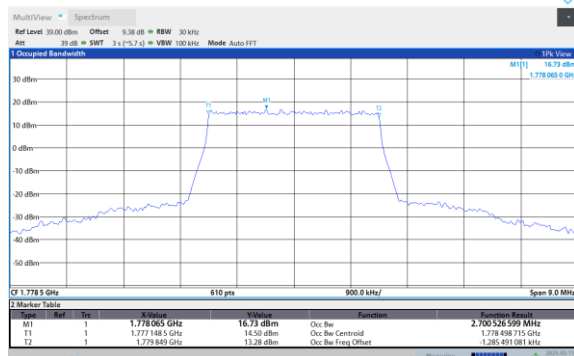


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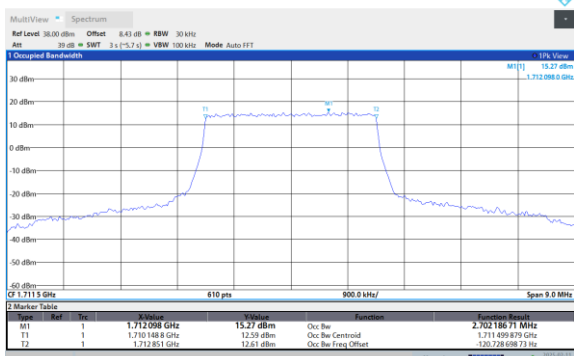
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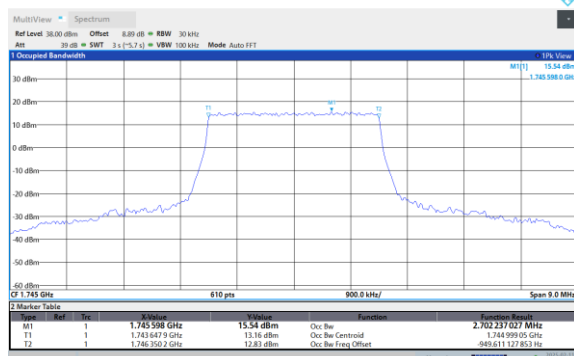
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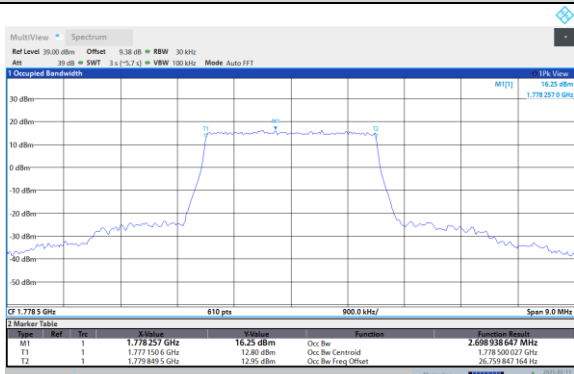
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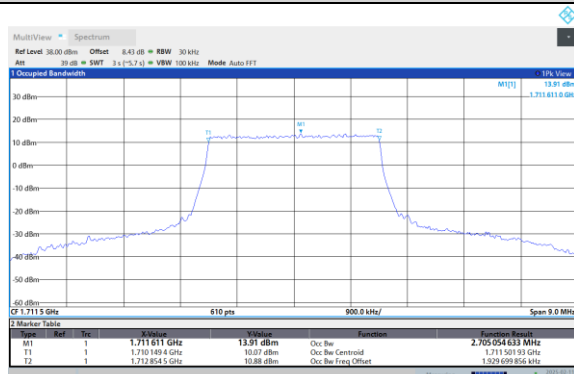
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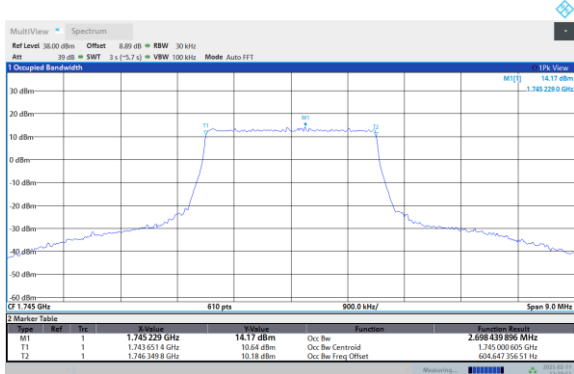
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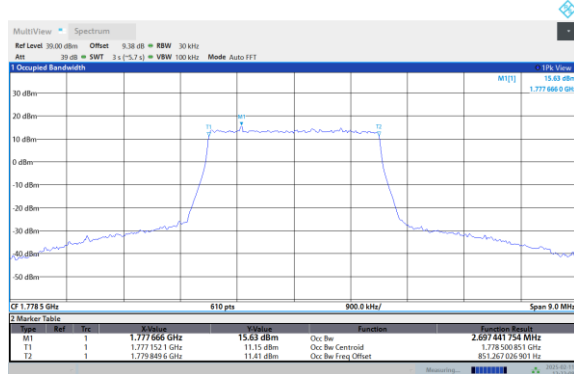
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Band66-5MHz-QPSK-131997-25RB#0

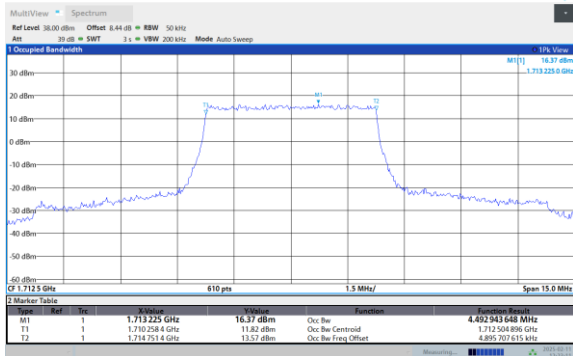


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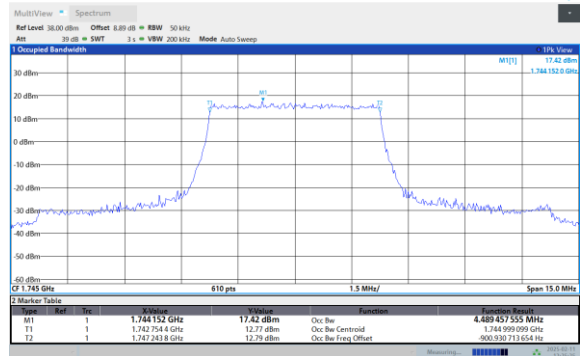


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VERITAS**

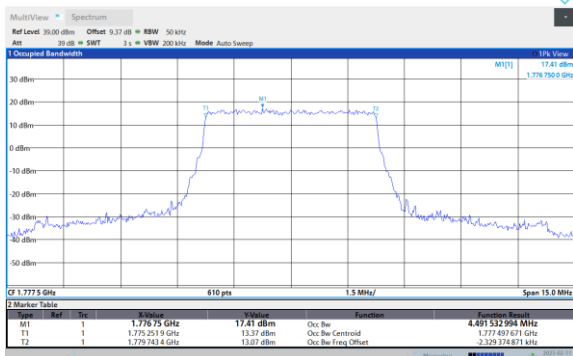
Test Report No.: PSU-NQN2412090210RF09



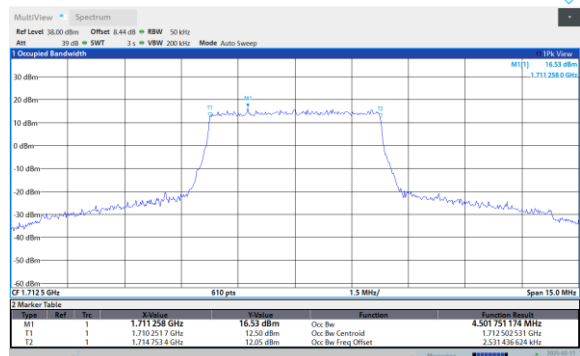
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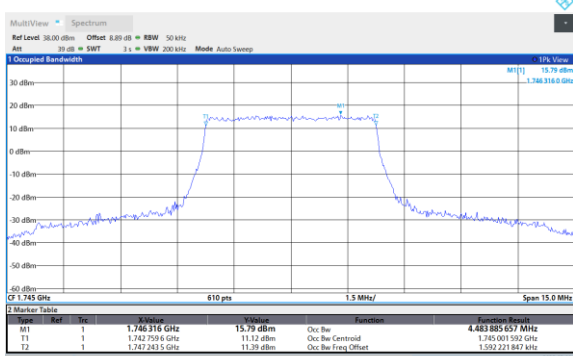
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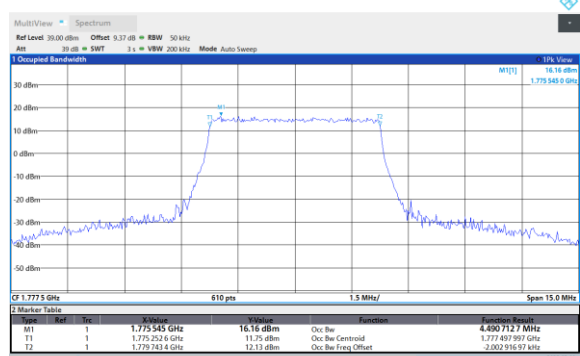
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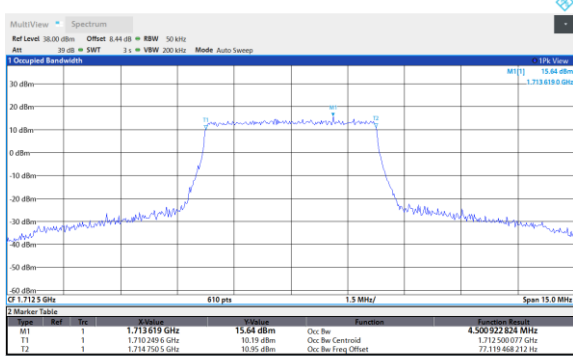
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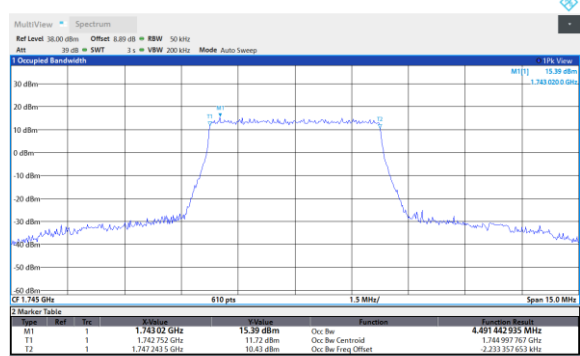
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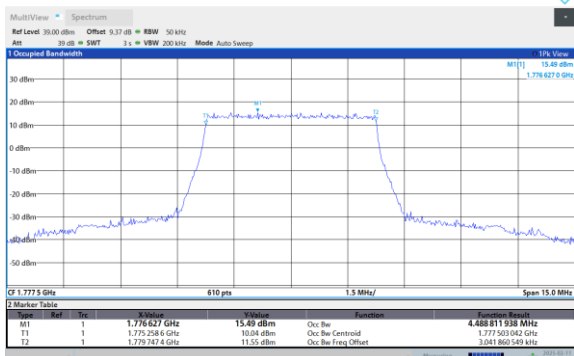
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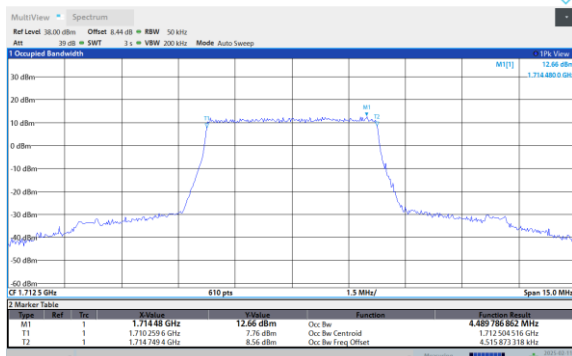
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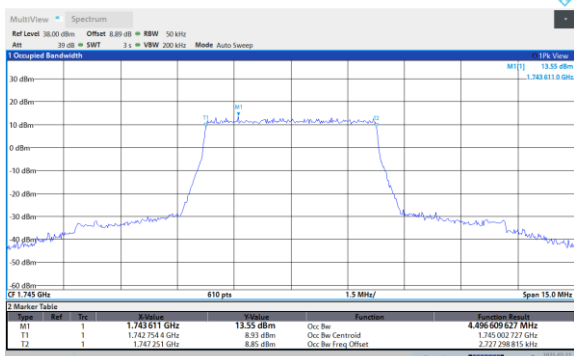
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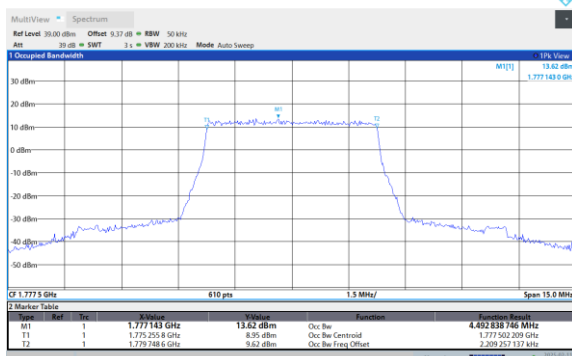
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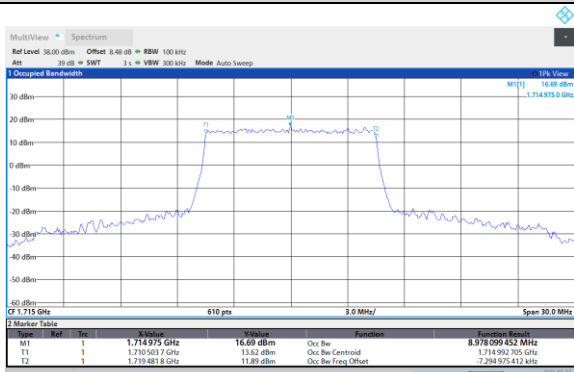
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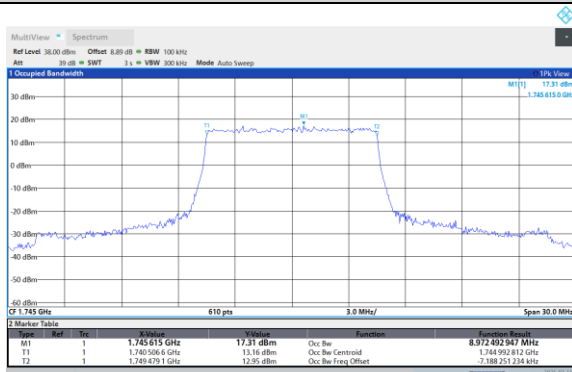
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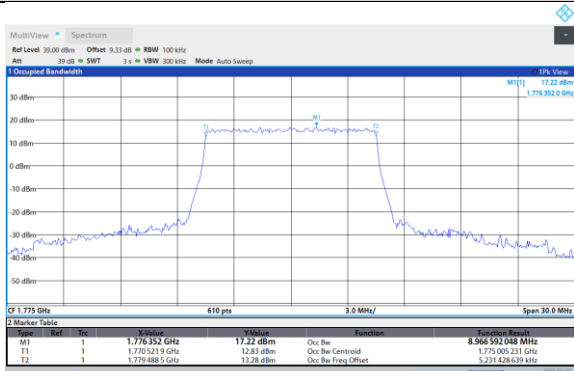
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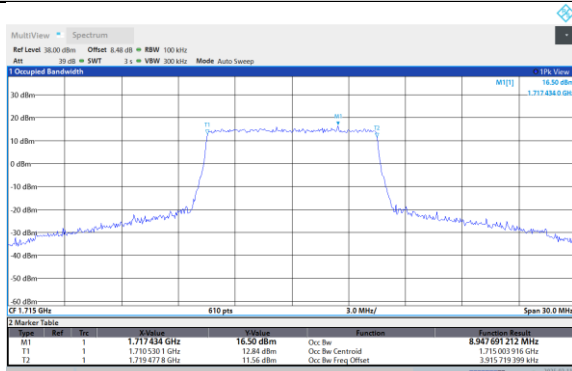
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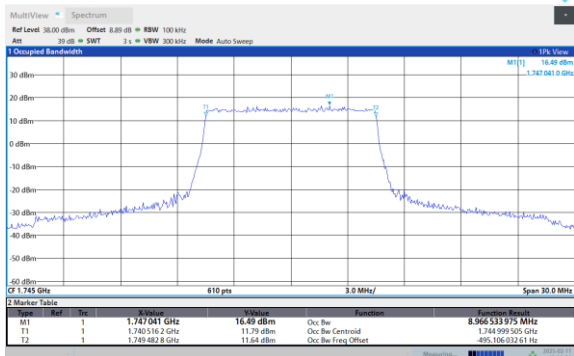
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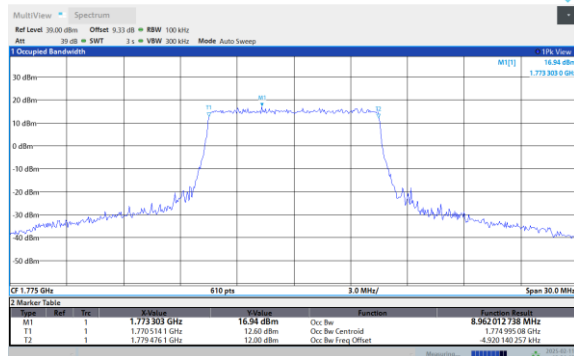
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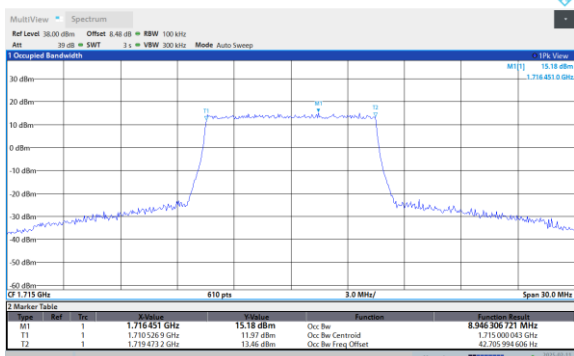
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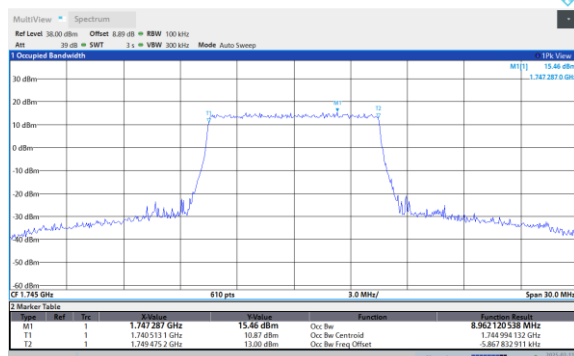
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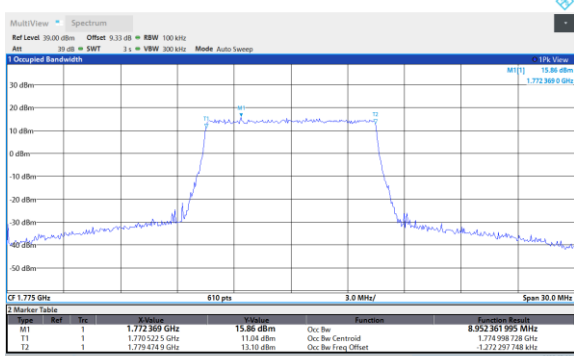
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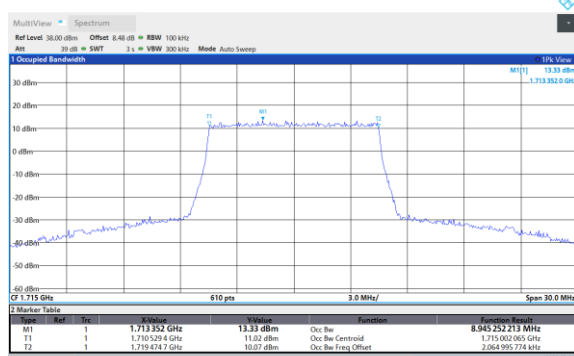
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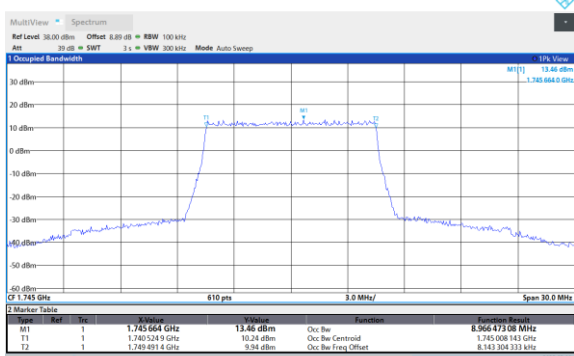
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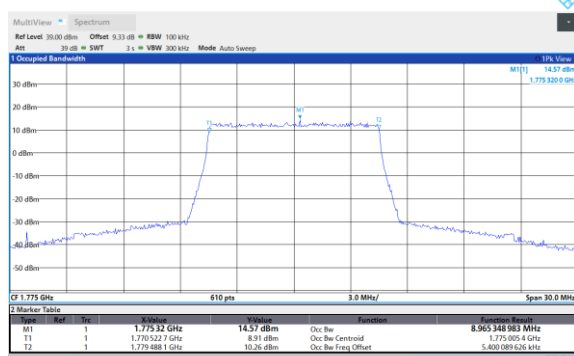
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