FCC TEST REPORT

(PART 22)

Applicant:	i.safe MOBILE GmbH
Address:	i_Park Tauberfranken 10 97922 Lauda-Koenigshofen Germany

Manufacturer or Supplier:	i.safe MOBILE GmbH
Address:	i_Park Tauberfranken 10 97922 Lauda-Koenigshofen Germany
Product:	Tablet
Brand Name:	i.safe MOBILE
Model Name	M940A01
Marketing Name:	IS940.1, IS940.M1, IS940.2, IS940.RG
FCC ID:	2AACZ-M940A01
Date of tests:	Jun. 05, 2024 ~ Jul. 17, 2024

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

☒ **FCC PART 22, Subpart H** ☒ **FCC Part 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI C63.26-2015**
☒ **ANSI/TIA/EIA-603-E**

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

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Simon Wang Date: Jul. 17, 2024	Luke Lu Date: Jul. 17, 2024

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P24050018RF04	Original release	Jul. 17, 2024

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**TEST LAB***
§2.1046	Conducted Output Power	Compliance	A
§22.913 (a)(5)	Effective Radiated Power	Compliance	A
§2.1055 §22.355	Frequency Stability	Compliance*	A
§2.1049	Occupied Bandwidth	Compliance	A
§22.913 (d)	Peak to average ratio*	Compliance	A
§22.917(a)	Band Edge Measurements	Compliance	A
§2.1051 §22.917(a)	Conducted Spurious Emissions	Compliance	A
§2.1053 §22.917(a)	Radiated Spurious Emissions	Compliance	A/B

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

NOTE:

1. The worst-case scenario for all measurements is based on an engineering evaluation made on different modulations. Then, QPSK and 16QAM were observed as the worst mode to LTE bands respectively and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, and 256QAM modulations, and tests other than output power are performed only in worse-case QPSK and 16QAM modulations.
2. For Band Edge and Emission Mask: All BW combinations were tested Combination pairs of the same BW are considered generally equivalent. The RB combinations were selected such that the signal is active closest to the band limit, as this is the worst case.
3. For Out of Band Emissions: All combinations were tested. The highest power RB combination was selected as the worst case.
4. Compliance*: The results of CA band is the same or similar to single bands (such as B5B refer to B5), so the CA mode is overwritten by the single band

5.

***Test Lab Information Reference**

Lab A:

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

Lab Address:

Room B37, Warehouse A5, No.3 Chiwan 4th Road, Zhaoshang Street, Nanshan District Shenzhen, Guangdong, People's Republic of China

Accredited Test Lab Cert 3939.01

FCC Site Registration No. : 525120; Designation No. : CN1171;

Lab B:

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
Maximum Peak Output Power	±2.06dB
Frequency Stability	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions (30MHz~1GHz)	±4.98dB
Radiated emissions (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
Band Edge Measurements	±4.70dB
Peak to average ratio	±0.76dB

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

1.2 TEST SITE AND INSTRUMENTS

Lab A:

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-LINDGREN	3143B	00161965	Feb. 18,24	Feb. 17,25
Horn Antenna	ETS-LINDGREN	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-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	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&Schwarz	CMW500	153085	May.10,24	May.09,25
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 11,23	Aug. 10,24
Power Divider	COM-MW	ZPD8-2M0-40G-1942	04223131	Oct.09.23	Oct.08.24

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.

Lab B:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Vector Signal Generator	R&S	SMBV100B	102176	Feb.16,24	Feb.15,26
Signal Generator	R&S	SMB100A	182185	Feb.16,24	Feb.15,26
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.25,24	Feb.24,26
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,24	Feb.24,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,24	Feb.27,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,24	Feb.22,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,24	Feb.22,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.26,24	Jun.25,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Oct.01,22	Sep.30,24
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
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.28,24	Apr.27,25
CABLE	R&S	W12.14	N/A	Apr.28,24	Apr.27,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.28,24	Apr.27,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.28,24	Apr.27,25
Temperature Chamber	votsch	VT4002	58566078100050	May.31,24	May.30,26

Power Divider	COM-MW	ZPD8-2M0-40G-1942	04223129	Nov.05.23	Nov.04.24

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 434559; The Designation No. is CN1325.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Tablet	
BRAND NAME	i.safe MOBILE	
MODEL NAME	M940A01	
MARKETING NAME	IS940.1, IS940.M1, IS940.2, IS940.RG	
NOMINAL VOLTAGE	5Vdc (adapter or host equipment) 3.7Vdc (Li-ion, battery)	
MODULATION TYPE	**LTE**	QPSK, 16QAM, 64QAM, 256QAM
FREQUENCY RANGE	**LTE Band 5 (Channel Bandwidth: 1.4MHz)**	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 5B Channel Bandwidth: 3MHz+5MHz	825.6MHz ~ 846.5MHz
	LTE Band 5B Channel Bandwidth: 5MHz+3MHz	826.5MHz ~ 847.4MHz
	LTE Band 5B Channel Bandwidth: 5MHz+10MHz	826.8MHz ~ 844.0MHz
	LTE Band 5B Channel Bandwidth: 10MHz+5MHz	829.0MHz ~ 846.2MHz
	LTE Band 5B Channel Bandwidth: 10MHz+10MHz	829.0MHz ~ 844.0MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 15MHz)	831.5MHz ~ 841.5MHz
MAX. ERP POWER	**LTE Band 5 (Channel Bandwidth: 1.4MHz)**	89.54mW

	LTE Band 5 (Channel Bandwidth: 3MHz)	88.51mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	87.7mW
	LTE Band 5 (Channel Bandwidth: 10MHz)	88.92mW
	LTE Band 5B Channel Bandwidth: 3MHz+5MHz	86.30mW
	LTE Band 5B Channel Bandwidth: 5MHz+3MHz	86.90mW
	LTE Band 5B Channel Bandwidth: 5MHz+10MHz	88.51mW
	LTE Band 5B Channel Bandwidth: 10MHz+5MHz	88.51mW
	LTE Band 5B Channel Bandwidth: 10MHz+10MHz	88.72mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	87.7mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	86.9mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	86.9mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	87.7mW
	LTE Band 26 (Channel Bandwidth: 15MHz)	88.92mW
EMISSION DESIGNATORGOGN	**LTE Band 5B Channel Bandwidth: 3MHz+5MHz**	QPSK: 7M50G7D
		16QAM: 7M49W7D
	LTE Band 5B Channel Bandwidth: 5MHz+3MHz	QPSK: 7M50G7D
		16QAM: 7M49W7D
	LTE Band 5B Channel Bandwidth: 5MHz+10MHz	QPSK: 13M9G7D
		16QAM: 13M9W7D
	LTE Band 5B Channel Bandwidth: 10MHz+5MHz	QPSK: 13M9G7D
		16QAM: 13M9W7D
	LTE Band 5B Channel Bandwidth: 10MHz+10MHz	QPSK: 18M8G7D
		16QAM: 18M8W7D
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M09G7D
		16QAM: 1M09W7D
	LTE Band 26	QPSK: 2M70G7D

	(Channel Bandwidth: 3MHz)	16QAM: 2M70W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M52G7D
		16QAM: 4M51W7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 9M00G7D
		16QAM: 9M00W7D
	LTE Band 26 (Channel Bandwidth: 15MHz)	QPSK: 13M5G7D
		16QAM: 13M5W7D
ANTENNA TYPE	ANT2 PIFA Antenna with -1.3dBi gain for LTE B5/ LTE CA_5B/LTE B26	
HW VERSION	V05	
SW VERSION	IS940_ROW_00.00_2_20240605	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	USB cable: With shielded cable, w/o ferrite core, 1.0 meter	
EXTREME TEMPERATURE	-10-55 ℃	
EXTREME VOLTAGE	3.6V - 4.2V	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter.

MODULATION MODE	TX FUNCTION
LTE	1TX

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

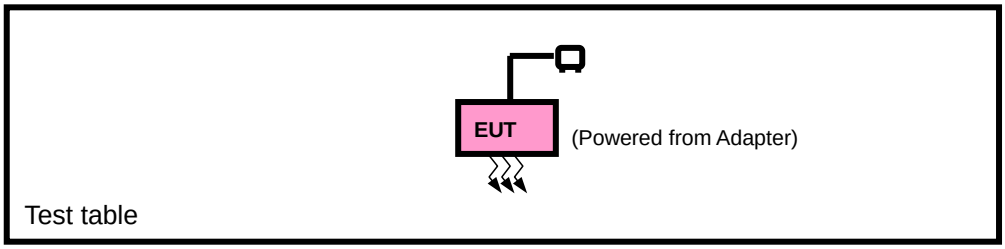
4. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

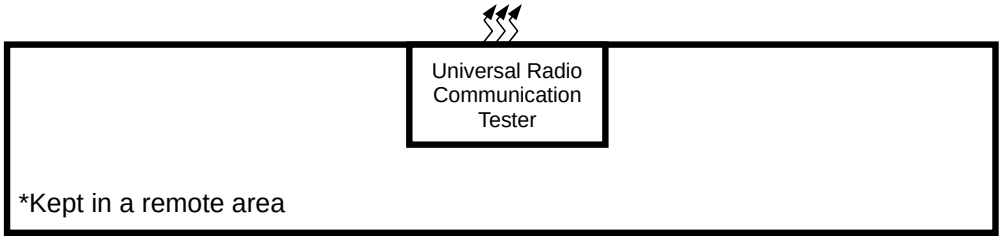
5. **List of Accessory:**

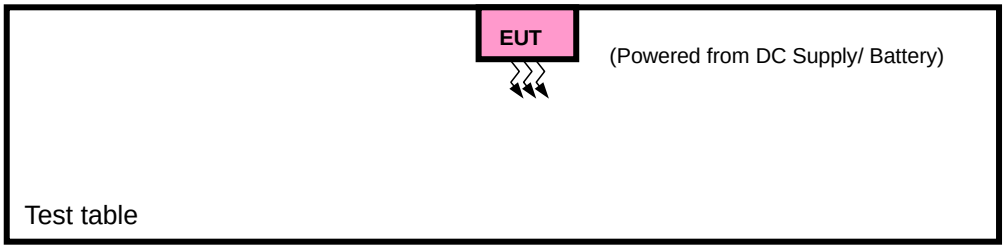
ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
AC Adapter	N/A	SHENZHEN SHI YINGYUAN POWER SUPPLY TECHNOLOGY CO., LTD.	ICP12-050-2000B	I/P: 100-240Vac, 0.5A, O/P: 5Vdc, 2A
Battery	N/A	BMZ Company Limited	MBP940AA01	Capacity: 3.7Vdc, 8160mAh
USB Cable	N/A	Winpower Technology Co., LTD	PROTECTOR 2.0	Signal Line,1.0meter

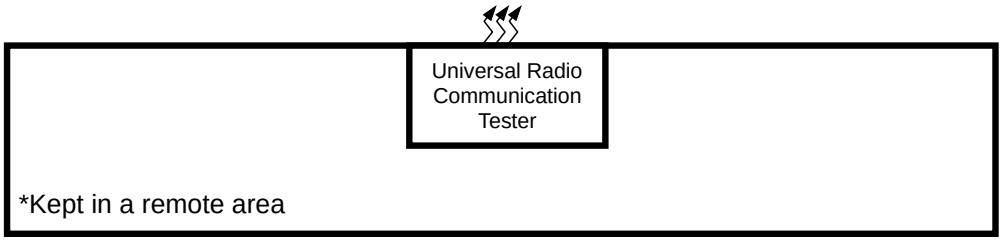
2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION









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	N/A	N/A	N/A	N/A	N/A

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

2.4 TEST ITEM AND TEST CONFIGURATION

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

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

LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	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 5 are covered by LTE Band 26, Because it is a subset of LTE Band 26 with the same output power and supported bandwidths, So the test data please refer to LTE Band 26

LTE BAND 26 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM, 256QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26865 to 26965	26865, 26915, 26965	10MHz	QPSK,16QAM	75 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset 6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM	1 RB / 0 RB Offset 15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset

		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
A	BAND EDGE	26797 to 27033	26797	1.4 MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
		26797 to 27033	27033	1.4 MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26805 to 27025	26805	3 MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
		26805 to 27025	27025	3 MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26815 to 27015	26815	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		26815 to 27015	27015	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26840 to 26990	26840	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
		26840 to 26990	26990	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		26865 to 26965	26865	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		26865 to 26965	26965	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
A	CONDUCTED EMISSION	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26797 to 27033	26915	1.4MHz	QPSK	1 RB / 0 RB Offset
		26805 to 27025	26915	3MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26915	5MHz	QPSK	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26915	15MHz	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.

LTE BAND CA_5B MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE PCC CHANNEL	AVAILABLE SCC CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(PCC)	MODE(SCC)
A	ERP	20450 to 21501	20549 to 20600	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		20450 to 20550	20522 to 20622	Low, Middle, High	10MHz+5MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		20428 to 20528	20500 to 20600	Low, Middle, High	5MHz+10MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		20425 to 20595	20464 to 20634	Low, Middle, High	5MHz+3MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		20416o 20586	20455 to 20625	Low, Middle, High	3MHz+5MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 14RB Offset	1RB/ 0RB Offset
A	OCCUPIED BANDWIDTH	20450 to 21501	20549 to 20600	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM	50RB/ 0RB Offset	50RB/ 0RB Offset
		20450 to 20550	20522 to 20622	Low, Middle, High	10MHz+5MHz	QPSK, 16QAM	25RB/ 0RB Offset	25RB/ 0RB Offset
		20428 to 20528	20500 to 20600	Low, Middle, High	5MHz+10MHz	QPSK, 16QAM	25RB/ 0RB Offset	50RB/ 0RB Offset
		20425 to 20595	20464 to 20634	Low, Middle, High	5MHz+3MHz	QPSK, 16QAM	25RB/ 0RB Offset	15RB/ 0RB Offset
		20416o 20586	20455 to 20625	Low, Middle, High	3MHz+5MHz	QPSK, 16QAM	15RB/ 0RB Offset	25RB/ 0RB Offset
A	BAND EDGE	20450 to 21501	20549 to 20600	Low	10MHz+10MHz	QPSK, 16QAM	1RB/ 0RB Offset	1RB/ 50RB Offset
							1RB/ 49RB Offset	50RB/ 0RB Offset
							50RB/ 0RB Offset	50RB/ 0RB Offset
				High	10MHz+10MHz	QPSK, 16QAM	1RB/ 0RB Offset	1RB/ 50RB Offset
							1RB/ 49RB Offset	50RB/ 0RB Offset
							50RB/ 0RB Offset	50RB/ 0RB Offset
A	CONDUCTED EMISSION	20450 to 21501	20549 to 20600	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
A	RADIATED EMISSION	20450 to 21501	20549 to 20600	Middle	10MHz+10MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB 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 CA_5B are covered by LTE Band 5, Because it is a subset of LTE Band 5 with the same output power and supported bandwidths, So the test data FREQUENCY STABILITY please refer to LTE Band 5.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/3.7V/4.2V By Battery	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	James Fu
CONDUCTED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5V By Adapter	James Fu

2.5 EUT OPERATING CONDITIONS

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

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 22

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

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

ERP or EIRP = $P_{Meas} + G_T – L_C$

Where:

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

(expressed in the same units as P_{Meas}, typically dBW or dBm);

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

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

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

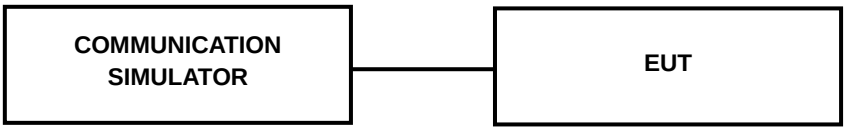
CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE Band 5 (Ant2)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	22.86	22.91	**22.94**
		1	24	22.71	22.70	22.83
		1	49	22.82	22.83	22.93
		25	0	21.84	21.85	21.95
		25	12	21.92	21.88	21.91
		25	25	21.84	21.94	21.99
		50	0	21.82	21.86	21.98
	16QAM	1	0	22.06	22.07	22.23
		1	24	21.96	22.08	22.07
		1	49	21.87	21.93	22.07
		25	0	20.87	20.92	21.00
		25	12	20.95	20.93	21.08
		25	25	20.96	20.91	21.06
		50	0	20.88	20.92	20.94
	64QAM	1	0	21.06	21.02	21.22
		1	24	21.03	21.06	21.19
		1	49	20.96	21.12	21.16
		25	0	19.86	19.91	20.05
		25	12	20.00	19.92	20.07
		25	25	19.89	19.91	20.07
		50	0	19.95	19.84	20.05
	256QAM	1	0	17.92	17.95	18.07
		1	24	17.97	17.90	18.08
		1	49	17.92	18.06	18.11
		25	0	17.93	17.94	18.05
		25	12	17.88	17.99	17.95
		25	25	17.88	17.94	18.05
		50	0	18.06	18.00	18.13

BW	Modulation	Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	22.72	22.81	22.88
		1	12	22.70	22.58	22.71
		1	24	22.79	22.76	22.84
		12	0	21.79	21.74	21.91
		12	6	21.88	21.80	21.88
		12	13	21.70	21.90	21.84
		25	0	21.68	21.78	21.97
	16QAM	1	0	21.95	21.99	22.11
		1	12	21.94	22.03	22.04
		1	24	21.82	21.91	22.01
		12	0	20.83	20.79	20.92
		12	6	20.80	20.79	21.07
		12	13	20.91	20.82	21.01
		25	0	20.83	20.79	20.90
	64QAM	1	0	21.02	20.87	21.07
		1	12	21.00	20.95	21.14
		1	24	20.94	21.10	21.10
		12	0	19.77	19.80	19.97
		12	6	19.96	19.91	20.05
		12	13	19.82	19.82	20.05
		25	0	19.90	19.79	19.91
	256QAM	1	0	17.87	17.88	17.98
		1	12	17.84	17.88	17.96
		1	24	17.85	18.03	17.96
		12	0	17.78	17.89	18.04
		12	6	17.83	17.94	17.84
		12	13	17.79	17.79	17.92
		25	0	18.04	17.91	18.09

BW	Modulation	Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	22.77	22.80	22.92
		1	7	22.58	22.68	22.77
		1	14	22.70	22.72	22.92
		8	0	21.73	21.72	21.83
		8	3	21.91	21.77	21.83
		8	7	21.83	21.81	21.86
		15	0	21.71	21.82	21.83
	16QAM	1	0	21.91	22.02	22.21
		1	7	21.83	22.07	21.99
		1	14	21.86	21.83	21.93
		8	0	20.80	20.91	20.92
		8	3	20.84	20.78	21.03
		8	7	20.92	20.81	20.94
		15	0	20.84	20.90	20.91
	64QAM	1	0	21.05	20.89	21.14
		1	7	21.02	20.99	21.13
		1	14	20.92	21.09	21.07
		8	0	19.78	19.89	19.92
		8	3	19.89	19.81	20.04
		8	7	19.80	19.83	20.03
		15	0	19.90	19.70	20.03
	256QAM	1	0	17.87	17.93	17.98
		1	7	17.91	17.88	18.00
		1	14	17.77	17.97	17.99
		8	0	17.85	17.84	18.01
		8	3	17.83	17.89	17.81
		8	7	17.79	17.87	17.97
		15	0	17.93	17.89	18.00

BW	Modulation	Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	22.74	22.88	22.87
		1	2	22.56	22.58	22.82
		1	5	22.69	22.73	22.90
		3	0	22.69	22.79	22.80
		3	1	22.87	22.84	22.85
		3	3	22.75	22.82	22.97
		6	0	21.69	21.72	21.95
	16QAM	1	0	21.96	21.97	22.09
		1	2	21.87	22.00	21.98
		1	5	21.86	21.82	21.99
		3	0	21.78	21.81	21.97
		3	1	21.80	21.88	21.94
		3	3	21.90	21.87	21.98
		6	0	20.80	20.83	20.85
	64QAM	1	0	20.99	20.95	21.09
		1	2	20.95	20.91	21.16
		1	5	20.84	21.08	21.02
		3	0	20.75	20.77	20.93
		3	1	20.97	20.81	21.02
		3	3	20.83	20.88	21.01
		6	0	19.81	19.70	20.00
	256QAM	1	0	17.81	17.92	17.94
		1	2	17.91	17.86	17.93
		1	5	17.83	17.97	18.00
		3	0	17.88	17.93	17.95
		3	1	17.87	17.95	17.93
		3	3	17.85	17.81	18.00
		6	0	17.91	17.96	18.04

LTE Band 26 (Ant2)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		26765	26865	26965
		Frequency (MHz)		821.5	831.5	841.5
15M	QPSK	1	0	22.87	**22.94**	22.87
		1	37	22.71	22.78	22.88
		1	74	22.86	22.87	22.91
		36	0	21.83	21.78	21.86
		36	19	21.85	21.96	21.90
		36	39	21.76	21.89	21.87
		75	0	21.79	21.96	21.95
	16QAM	1	0	21.94	22.05	21.98
		1	37	21.90	22.14	21.96
		1	74	21.94	22.12	21.97
		36	0	20.70	20.90	20.80
		36	19	20.83	20.98	20.95
		36	39	20.85	21.08	21.05
		75	0	20.82	20.84	20.81
	64QAM	1	0	20.85	21.00	21.10
		1	37	21.00	21.07	20.91
		1	74	20.90	20.95	20.95
		36	0	19.87	19.88	19.80
		36	19	19.78	19.87	19.89
		36	39	19.77	19.99	19.95
		75	0	19.79	19.87	19.81
	256QAM	1	0	17.66	17.92	17.99
		1	37	17.82	17.95	17.97
		1	74	17.81	17.90	17.99
		36	0	17.66	17.83	17.82
		36	19	17.80	17.88	17.91
		36	39	17.82	17.90	17.97
		75	0	17.77	17.85	17.83

BW	Modulation	Channel		26740	26865	26990
		Frequency (MHz)		819	831.5	844
10M	QPSK	1	0	22.84	22.91	22.81
		1	24	22.67	22.75	22.76
		1	49	22.81	22.82	22.88
		25	0	21.70	21.70	21.77
		25	12	21.60	21.93	21.87
		25	25	21.71	21.76	21.78
		50	0	21.66	21.76	21.84
	16QAM	1	0	21.81	21.99	21.86
		1	24	21.75	22.06	21.83
		1	49	21.79	22.01	21.82
		25	0	20.66	20.79	20.72
		25	12	20.74	20.90	20.91
		25	25	20.82	21.01	21.00
		50	0	20.67	20.72	20.78
	64QAM	1	0	20.83	20.88	20.98
		1	24	20.90	20.93	20.77
		1	49	20.79	20.85	20.83
		25	0	19.77	19.84	19.77
		25	12	19.77	19.74	19.79
		25	25	19.67	19.97	19.90
		50	0	19.66	19.76	19.68
	256QAM	1	0	17.64	17.87	17.88
		1	24	17.77	17.94	17.87
		1	49	17.75	17.86	17.90
		25	0	17.59	17.71	17.80
		25	12	17.68	17.87	17.81
		25	25	17.69	17.76	17.94
		50	0	17.71	17.83	17.68

BW	Modulation	Channel		26715	26865	27015
		Frequency (MHz)		816.5	831.5	846.5
5M	QPSK	1	0	22.73	22.87	22.84
		1	12	22.58	22.66	22.77
		1	24	22.79	22.79	22.77
		12	0	21.72	21.64	21.83
		12	6	21.63	21.93	21.87
		12	13	21.62	21.83	21.75
		25	0	21.65	21.76	21.82
	16QAM	1	0	21.89	21.99	21.84
		1	12	21.88	22.00	21.82
		1	24	21.82	21.99	21.84
		12	0	20.59	20.81	20.68
		12	6	20.69	20.89	20.92
		12	13	20.77	21.03	20.94
		25	0	20.81	20.73	20.69
	64QAM	1	0	20.77	20.85	21.07
		1	12	20.91	21.03	20.84
		1	24	20.89	20.85	20.82
		12	0	19.83	19.85	19.66
		12	6	19.68	19.81	19.87
		12	13	19.63	19.87	19.84
		25	0	19.65	19.76	19.74
	256QAM	1	0	17.64	17.90	17.86
		1	12	17.69	17.94	17.93
		1	24	17.74	17.84	17.84
		12	0	17.52	17.75	17.73
		12	6	17.70	17.78	17.90
		12	13	17.68	17.80	17.93
		25	0	17.62	17.74	17.73

BW	Modulation	Channel		26705	26865	27025
		Frequency (MHz)		815.5	831.5	847.5
3M	QPSK	1	0	22.76	22.84	22.75
		1	7	22.64	22.74	22.84
		1	14	22.72	22.73	22.81
		8	0	21.73	21.73	21.81
		8	3	21.72	21.89	21.82
		8	7	21.69	21.84	21.77
		15	0	21.68	21.78	21.90
	16QAM	1	0	21.87	21.95	21.96
		1	7	21.81	22.10	21.85
		1	14	21.86	22.03	21.84
		8	0	20.60	20.75	20.69
		8	3	20.73	20.84	20.87
		8	7	20.78	21.06	20.93
		15	0	20.79	20.79	20.74
	64QAM	1	0	20.78	20.94	20.96
		1	7	20.99	21.01	20.78
		1	14	20.89	20.85	20.92
		8	0	19.80	19.82	19.75
		8	3	19.77	19.74	19.76
		8	7	19.71	19.94	19.87
		15	0	19.70	19.77	19.69
	256QAM	1	0	17.63	17.83	17.89
		1	7	17.76	17.88	17.96
		1	14	17.77	17.77	17.92
		8	0	17.63	17.76	17.81
		8	3	17.76	17.77	17.77
		8	7	17.77	17.81	17.93
		15	0	17.64	17.80	17.76

BW	Modulation	Channel		26697	26865	27033
		Frequency (MHz)		814.7	831.5	848.3
1.4M	QPSK	1	0	22.86	22.82	22.74
		1	2	22.58	22.71	22.79
		1	5	22.71	22.78	22.88
		3	0	22.55	22.52	22.52
		3	1	22.41	22.64	22.58
		3	3	22.51	22.67	22.62
		6	0	21.72	21.82	21.87
	16QAM	1	0	21.85	21.90	21.87
		1	2	21.81	22.07	21.84
		1	5	21.92	22.08	21.96
		3	0	21.67	21.79	21.74
		3	1	21.77	21.89	21.87
		3	3	21.84	22.02	22.04
		6	0	20.67	20.77	20.76
	64QAM	1	0	20.83	20.97	20.96
		1	2	20.92	21.05	20.85
		1	5	20.88	20.88	20.82
		3	0	20.75	20.80	20.74
		3	1	20.71	20.82	20.87
		3	3	20.64	20.88	20.82
		6	0	19.70	19.76	19.74
	256QAM	1	0	17.64	17.91	17.84
		1	2	17.68	17.94	17.94
		1	5	17.73	17.82	17.88
		3	0	17.60	17.75	17.72
		3	1	17.78	17.75	17.86
		3	3	17.73	17.78	17.96
		6	0	17.73	17.77	17.69

CA_5B									
Combination 10MHz+10MHz (50RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20450	829	20549	838.9	QPSK	1	49	1	0	**22.93**
				16QAM	1	49	1	0	22.16
				64QAM	1	49	1	0	21.09
				256QAM	1	49	1	0	17.96
20476	831.6	20575	841.5	QPSK	1	49	1	0	22.86
				16QAM	1	49	1	0	22.08
				64QAM	1	49	1	0	21.05
				256QAM	1	49	1	0	17.91
20501	834.1	20600	844	QPSK	1	49	1	0	22.90
				16QAM	1	49	1	0	22.12
				64QAM	1	49	1	0	21.06
				256QAM	1	49	1	0	17.92
Combination 10MHz+5MHz (50RB+25RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20450	829	20522	836.2	QPSK	1	49	1	0	22.92
				16QAM	1	49	1	0	22.08
				64QAM	1	49	1	0	21.01
				256QAM	1	49	1	0	17.86
20500	834	20572	841.2	QPSK	1	49	1	0	22.81
				16QAM	1	49	1	0	21.97
				64QAM	1	49	1	0	20.97
				256QAM	1	49	1	0	17.90
20550	839	20622	846.2	QPSK	1	49	1	0	22.86
				16QAM	1	49	1	0	22.04
				64QAM	1	49	1	0	20.92
				256QAM	1	49	1	0	17.91

Combination 5MHz+10MHz (25RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20428	826.8	20500	834	QPSK	1	24	1	0	22.92
				16QAM	1	24	1	0	22.08
				64QAM	1	24	1	0	21.07
				256QAM	1	24	1	0	17.87
20478	831.8	20550	839	QPSK	1	24	1	0	22.80
				16QAM	1	24	1	0	22.05
				64QAM	1	24	1	0	20.92
				256QAM	1	24	1	0	17.91
20528	836.8	20600	844	QPSK	1	24	1	0	22.80
				16QAM	1	24	1	0	21.97
				64QAM	1	24	1	0	20.93
				256QAM	1	24	1	0	17.82

Combination 5MHz+3MHz (25RB+15RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20425	826.5	20464	830.4	QPSK	1	24	1	0	22.82
				16QAM	1	24	1	0	22.04
				64QAM	1	24	1	0	21.00
				256QAM	1	24	1	0	17.89
20510	835	20549	838.9	QPSK	1	24	1	0	22.80
				16QAM	1	24	1	0	22.05
				64QAM	1	24	1	0	20.91
				256QAM	1	24	1	0	17.83
20595	843.5	20634	847.4	QPSK	1	24	1	0	22.84
				16QAM	1	24	1	0	22.06
				64QAM	1	24	1	0	21.00
				256QAM	1	24	1	0	17.82

Combination 3MHz+5MHz (15RB+25RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20416	825.6	20455	829.5	QPSK	1	14	1	0	22.81
				16QAM	1	14	1	0	22.15
				64QAM	1	14	1	0	21.06
				256QAM	1	14	1	0	17.92
20501	834.1	20540	838	QPSK	1	14	1	0	22.71
				16QAM	1	14	1	0	22.06
				64QAM	1	14	1	0	21.01
				256QAM	1	14	1	0	17.91
20586	842.6	20625	846.5	QPSK	1	14	1	0	22.78
				16QAM	1	14	1	0	22.12
				64QAM	1	14	1	0	21.03
				256QAM	1	14	1	0	17.89

ERP POWER (dBm)

LTE BAND 5

LTE B5 1.4M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20407	824.7	22.87	-1.3	19.42	87.5	7
20525	836.5	22.88	-1.3	19.43	87.7	7
20643	848.3	22.97	-1.3	19.52	89.54	7

LTE B5 1.4M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20407	824.7	21.96	-1.3	18.51	70.96	7
20525	836.5	22	-1.3	18.55	71.61	7
20643	848.3	22.09	-1.3	18.64	73.11	7

LTE B5 1.4M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20407	824.7	20.99	-1.3	17.54	56.75	7
20525	836.5	21.08	-1.3	17.63	57.94	7
20643	848.3	21.16	-1.3	17.71	59.02	7

LTE B5 1.4M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20407	824.7	17.91	-1.3	14.46	27.93	7
20525	836.5	17.97	-1.3	14.52	28.31	7
20643	848.3	18.04	-1.3	14.59	28.77	7

LTE B5 3M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20415	825.5	22.77	-1.3	19.32	85.51	7
20525	836.5	22.8	-1.3	19.35	86.1	7
20635	847.5	22.92	-1.3	19.47	88.51	7

LTE B5 3M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20415	825.5	21.91	-1.3	18.46	70.15	7
20525	836.5	22.07	-1.3	18.62	72.78	7
20635	847.5	22.21	-1.3	18.76	75.16	7

LTE B5 3M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20415	825.5	21.05	-1.3	17.6	57.54	7
20525	836.5	21.09	-1.3	17.64	58.08	7
20635	847.5	21.14	-1.3	17.69	58.75	7

LTE B5 3M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20415	825.5	17.93	-1.3	14.48	28.05	7
20525	836.5	17.97	-1.3	14.52	28.31	7
20635	847.5	18.01	-1.3	14.56	28.58	7

LTE B5 5M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20425	826.5	22.79	-1.3	19.34	85.9	7
20525	836.5	22.81	-1.3	19.36	86.3	7
20625	846.5	22.88	-1.3	19.43	87.7	7

LTE B5 5M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20425	826.5	21.95	-1.3	18.5	70.79	7
20525	836.5	22.03	-1.3	18.58	72.11	7
20625	846.5	22.11	-1.3	18.66	73.45	7

LTE B5 5M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20425	826.5	21.02	-1.3	17.57	57.15	7
20525	836.5	21.1	-1.3	17.65	58.21	7
20625	846.5	21.14	-1.3	17.69	58.75	7

LTE B5 5M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20425	826.5	18.04	-1.3	14.59	28.77	7
20525	836.5	18.03	-1.3	14.58	28.71	7
20625	846.5	18.09	-1.3	14.64	29.11	7

LTE B5 10M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20450	829	22.86	-1.3	19.41	87.3	7
20525	836.5	22.91	-1.3	19.46	88.31	7
20600	844	22.94	-1.3	19.49	88.92	7

LTE B5 10M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20450	829	22.06	-1.3	18.61	72.61	7
20525	836.5	22.08	-1.3	18.63	72.95	7
20600	844	22.23	-1.3	18.78	75.51	7

LTE B5 10M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20450	829	21.06	-1.3	17.61	57.68	7
20525	836.5	21.12	-1.3	17.67	58.48	7
20600	844	21.22	-1.3	17.77	59.84	7

LTE B5 10M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20450	829	18.06	-1.3	14.61	28.91	7
20525	836.5	18.06	-1.3	14.61	28.91	7
20600	844	18.13	-1.3	14.68	29.38	7

LTE BAND 26

LTE B26 1.4M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26797	824.7	22.85	-1.3	19.4	87.1	7
26915	836.5	22.71	-1.3	19.26	84.33	7
27033	848.3	22.88	-1.3	19.43	87.7	7

LTE B26 1.4M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26797	824.7	22.09	-1.3	18.64	73.11	7
26915	836.5	21.86	-1.3	18.41	69.34	7
27033	848.3	22.04	-1.3	18.59	72.28	7

LTE B26 1.4M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26797	824.7	20.98	-1.3	17.53	56.62	7
26915	836.5	20.72	-1.3	17.27	53.33	7
27033	848.3	20.96	-1.3	17.51	56.36	7

LTE B26 1.4M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26797	824.7	17.62	-1.3	14.17	26.12	7
26915	836.5	17.7	-1.3	14.25	26.61	7
27033	848.3	17.96	-1.3	14.51	28.25	7

LTE B26 3M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26805	825.5	22.82	-1.3	19.37	86.5	7
26915	836.5	22.68	-1.3	19.23	83.75	7
27025	847.5	22.84	-1.3	19.39	86.9	7

LTE B26 3M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26805	825.5	22.06	-1.3	18.61	72.61	7
26915	836.5	21.81	-1.3	18.36	68.55	7
27025	847.5	21.96	-1.3	18.51	70.96	7

LTE B26 3M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26805	825.5	20.96	-1.3	17.51	56.36	7
26915	836.5	20.78	-1.3	17.33	54.08	7
27025	847.5	20.96	-1.3	17.51	56.36	7

LTE B26 3M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26805	825.5	17.71	-1.3	14.26	26.67	7
26915	836.5	17.71	-1.3	14.26	26.67	7
27025	847.5	17.96	-1.3	14.51	28.25	7

LTE B26 5M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26815	826.5	22.83	-1.3	19.38	86.7	7
26915	836.5	22.71	-1.3	19.26	84.33	7
27015	846.5	22.84	-1.3	19.39	86.9	7

LTE B26 5M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26815	826.5	22.09	-1.3	18.64	73.11	7
26915	836.5	21.86	-1.3	18.41	69.34	7
27015	846.5	21.84	-1.3	18.39	69.02	7

LTE B26 5M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26815	826.5	21.04	-1.3	17.59	57.41	7
26915	836.5	20.75	-1.3	17.3	53.7	7
27015	846.5	21.07	-1.3	17.62	57.81	7

LTE B26 5M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26815	826.5	17.68	-1.3	14.23	26.49	7
26915	836.5	17.69	-1.3	14.24	26.55	7
27015	846.5	17.93	-1.3	14.48	28.05	7

LTE B26 10M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26840	829	22.83	-1.3	19.38	86.7	7
26915	836.5	22.65	-1.3	19.2	83.18	7
26990	844	22.88	-1.3	19.43	87.7	7

LTE B26 10M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26840	829	22.08	-1.3	18.63	72.95	7
26915	836.5	21.81	-1.3	18.36	68.55	7
26990	844	21.86	-1.3	18.41	69.34	7

LTE B26 10M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26840	829	20.92	-1.3	17.47	55.85	7
26915	836.5	20.8	-1.3	17.35	54.33	7
26990	844	20.98	-1.3	17.53	56.62	7

LTE B26 10M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26840	829	17.69	-1.3	14.24	26.55	7
26915	836.5	17.72	-1.3	14.27	26.73	7
26990	844	17.94	-1.3	14.49	28.12	7

LTE B26 15M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26865	831.5	22.94	-1.3	19.49	88.92	7
26915	836.5	22.72	-1.3	19.27	84.53	7
26965	841.5	22.91	-1.3	19.46	88.31	7

LTE B26 15M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26865	831.5	22.14	-1.3	18.69	73.96	7
26915	836.5	21.91	-1.3	18.46	70.15	7
26965	841.5	21.98	-1.3	18.53	71.29	7

LTE B26 15M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26865	831.5	21.07	-1.3	17.62	57.81	7
26915	836.5	20.83	-1.3	17.38	54.7	7
26965	841.5	21.1	-1.3	17.65	58.21	7

LTE B26 15M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26865	831.5	17.95	-1.3	14.5	28.18	7
26915	836.5	17.73	-1.3	14.28	26.79	7
26965	841.5	17.99	-1.3	14.54	28.44	7

CA_5B									
Combination 10MHz+10MHz (50RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	Measured Power (dBm)	Gain (dBi)	ERP(dBm)	ERP(mW)	FCC Limit（W）
20450	829	20549	838.9	QPSK	**22.93**	-1.30	19.48	88.72	7
				16QAM	22.16	-1.30	18.71	74.30	7
				64QAM	21.09	-1.30	17.64	58.08	7
				256QAM	17.96	-1.30	14.51	28.25	7
20476	831.6	20575	841.5	QPSK	22.86	-1.30	19.41	87.30	7
				16QAM	22.08	-1.30	18.63	72.95	7
				64QAM	21.05	-1.30	17.60	57.54	7
				256QAM	17.91	-1.30	14.46	27.93	7
20501	834.1	20600	844	QPSK	22.90	-1.30	19.45	88.10	7
				16QAM	22.12	-1.30	18.67	73.62	7
				64QAM	21.06	-1.30	17.61	57.68	7
				256QAM	17.92	-1.30	14.47	27.99	7
Combination 10MHz+5MHz (50RB+25RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	Measured Power (dBm)	Gain (dBi)	ERP(dBm)	ERP(mW)	Limit（W）
20450	829	20522	836.2	QPSK	22.92	-1.30	19.47	88.51	7
				16QAM	22.08	-1.30	18.63	72.95	7
				64QAM	21.01	-1.30	17.56	57.02	7
				256QAM	17.86	-1.30	14.41	27.61	7
20500	834	20572	841.2	QPSK	22.81	-1.30	19.36	86.30	7
				16QAM	21.97	-1.30	18.52	71.12	7
				64QAM	20.97	-1.30	17.52	56.49	7
				256QAM	17.90	-1.30	14.45	27.86	7
20550	839	20622	846.2	QPSK	22.86	-1.30	19.41	87.30	7
				16QAM	22.04	-1.30	18.59	72.28	7
				64QAM	20.92	-1.30	17.47	55.85	7
				256QAM	17.91	-1.30	14.46	27.93	7

Combination 5MHz+10MHz (25RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	Measured Power (dBm)	Gain (dBi)	ERP(dBm)	ERP(mW)	Limit（W）
20428	826.8	20500	834	QPSK	22.92	-1.30	19.47	88.51	7
				16QAM	22.08	-1.30	18.63	72.95	7
				64QAM	21.07	-1.30	17.62	57.81	7
				256QAM	17.87	-1.30	14.42	27.67	7
20478	831.8	20550	839	QPSK	22.80	-1.30	19.35	86.10	7
				16QAM	22.05	-1.30	18.60	72.44	7
				64QAM	20.92	-1.30	17.47	55.85	7
				256QAM	17.91	-1.30	14.46	27.93	7
20528	836.8	20600	844	QPSK	22.80	-1.30	19.35	86.10	7
				16QAM	21.97	-1.30	18.52	71.12	7
				64QAM	20.93	-1.30	17.48	55.98	7
				256QAM	17.82	-1.30	14.37	27.35	7
Combination 5MHz+3MHz (25RB+15RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	Measured Power (dBm)	Gain (dBi)	ERP(dBm)	ERP(mW)	Limit（W）
20425	826.5	20464	830.4	QPSK	22.82	-1.30	19.37	86.50	7
				16QAM	22.04	-1.30	18.59	72.28	7
				64QAM	21.00	-1.30	17.55	56.89	7
				256QAM	17.89	-1.30	14.44	27.80	7
20510	835	20549	838.9	QPSK	22.80	-1.30	19.35	86.10	7
				16QAM	22.05	-1.30	18.60	72.44	7
				64QAM	20.91	-1.30	17.46	55.72	7
				256QAM	17.83	-1.30	14.38	27.42	7
20595	843.5	20634	847.4	QPSK	22.84	-1.30	19.39	86.90	7
				16QAM	22.06	-1.30	18.61	72.61	7
				64QAM	21.00	-1.30	17.55	56.89	7
				256QAM	17.82	-1.30	14.37	27.35	7

Combination 3MHz+5MHz (15RB+25RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	Measured Power (dBm)	Gain (dBi)	ERP(dBm)	ERP(mW)	Limit（W）
20416	825.6	20455	829.5	QPSK	22.81	-1.30	19.36	86.30	7
				16QAM	22.15	-1.30	18.70	74.13	7
				64QAM	21.06	-1.30	17.61	57.68	7
				256QAM	17.92	-1.30	14.47	27.99	7
20501	834.1	20540	838	QPSK	22.71	-1.30	19.26	84.33	7
				16QAM	22.06	-1.30	18.61	72.61	7
				64QAM	21.01	-1.30	17.56	57.02	7
				256QAM	17.91	-1.30	14.46	27.93	7
20586	842.6	20625	846.5	QPSK	22.78	-1.30	19.33	85.70	7
				16QAM	22.12	-1.30	18.67	73.62	7
				64QAM	21.03	-1.30	17.58	57.28	7
				256QAM	17.89	-1.30	14.44	27.80	7

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

3.2.2 TEST PROCEDURE

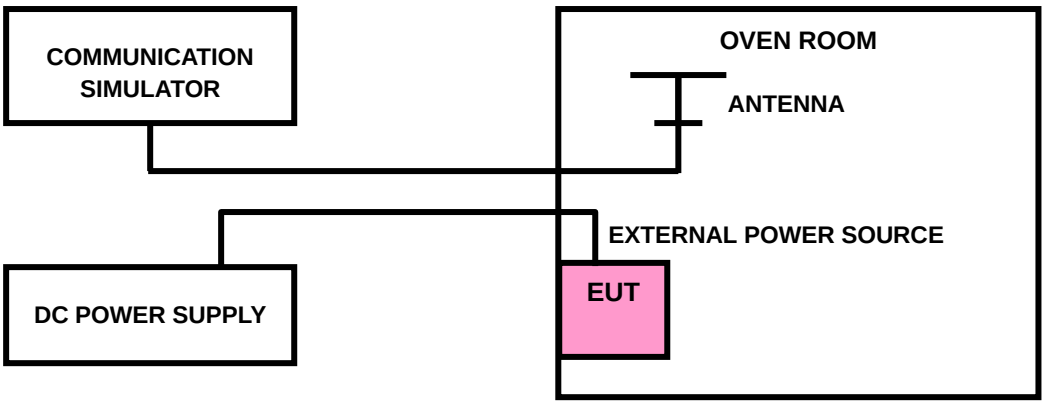
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

Please Refer to Appendix F.

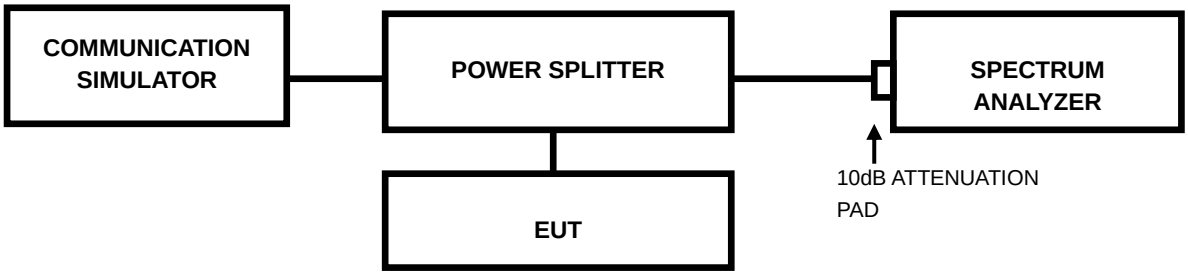
Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.7V); VH = High voltage(4.2V);
NT = Normal temperature (25℃)

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage.
0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

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

3.3.4 TEST RESULTS

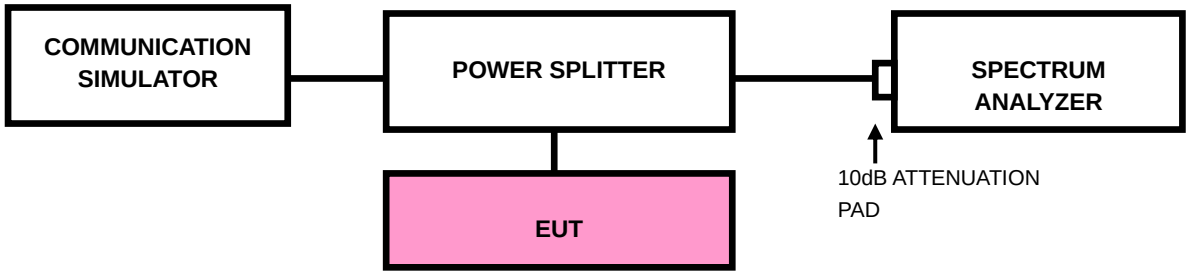
Please Refer to Appendix F.

3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

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

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

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

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

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

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

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

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

i) Use auto-coupled sweep time.

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

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

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

3.4.4 TEST RESULTS

Please Refer to Appendix F.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

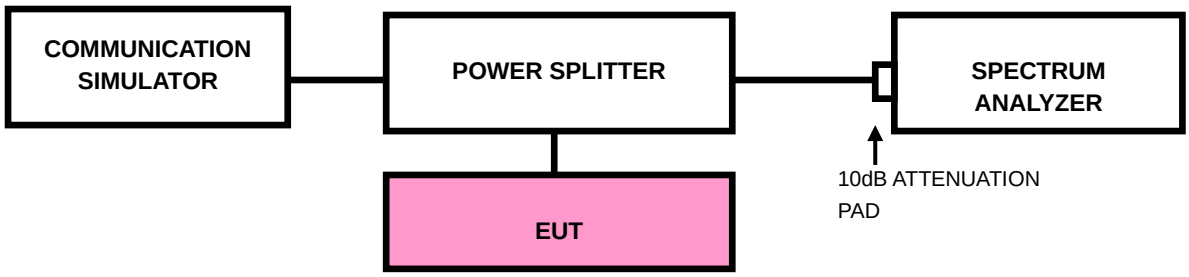
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

3.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

b. Measuring frequency range is from 9kHz up to a frequency including its 10 th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

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

Please Refer to Appendix F.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

3.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

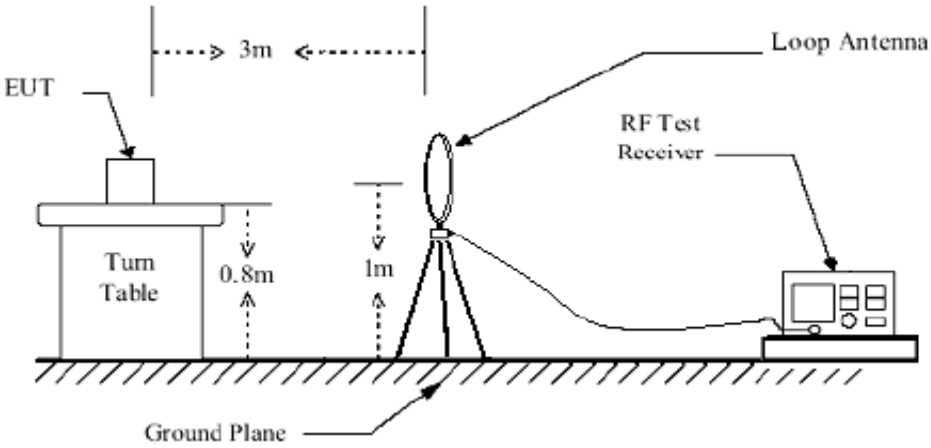
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

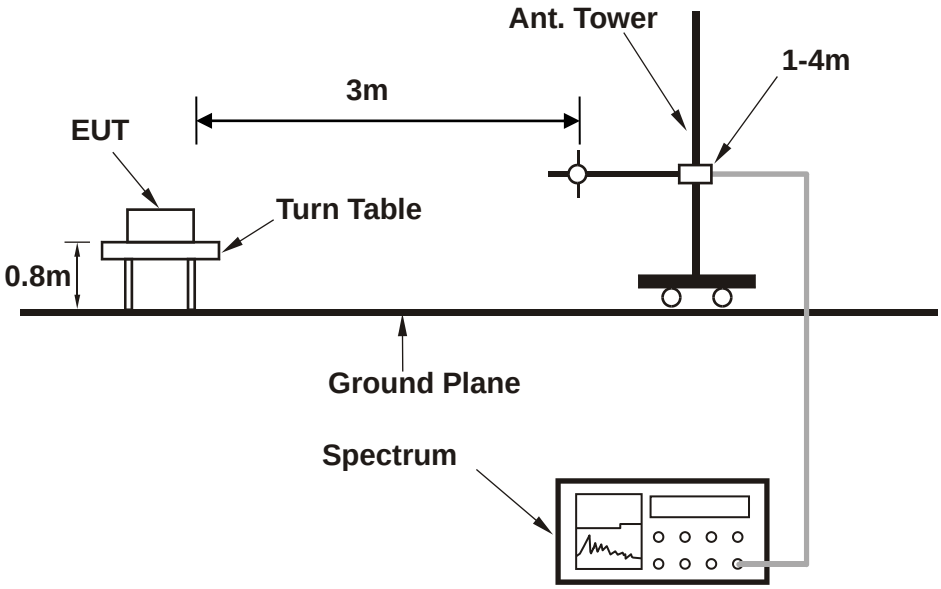
No deviation

3.6.4 TEST SETUP

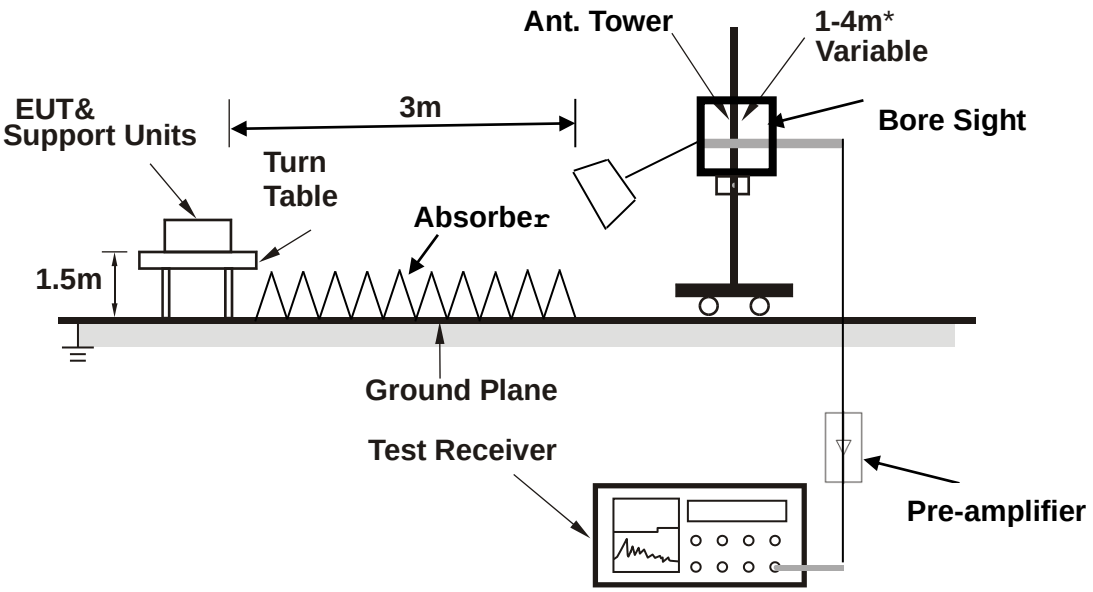
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

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

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

3.6.5 TEST RESULTS

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

BELOW 1GHz WORST-CASE DATA

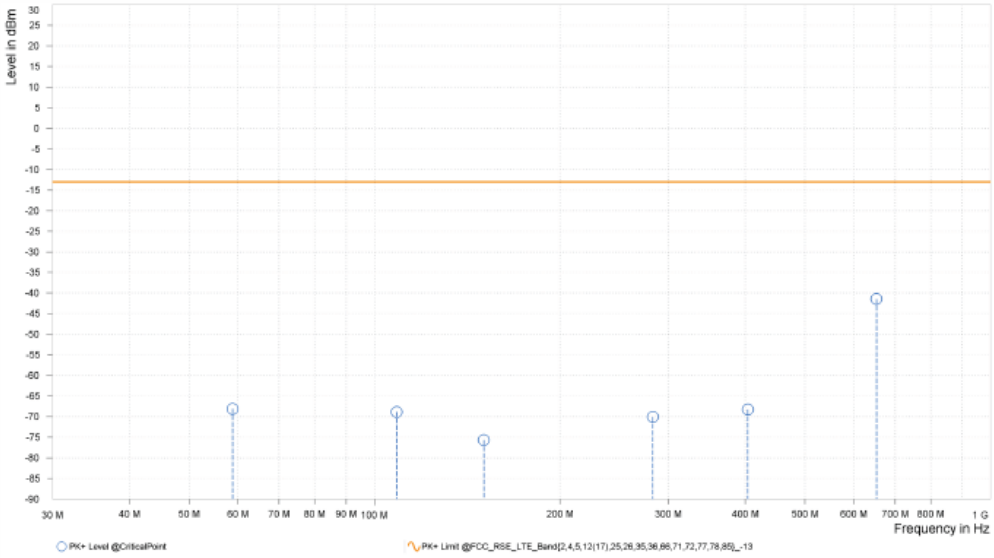
30 MHz – 1GHz data:

LTE Band 26:

CHANNEL BANDWIDTH: 10MHz / QPSK

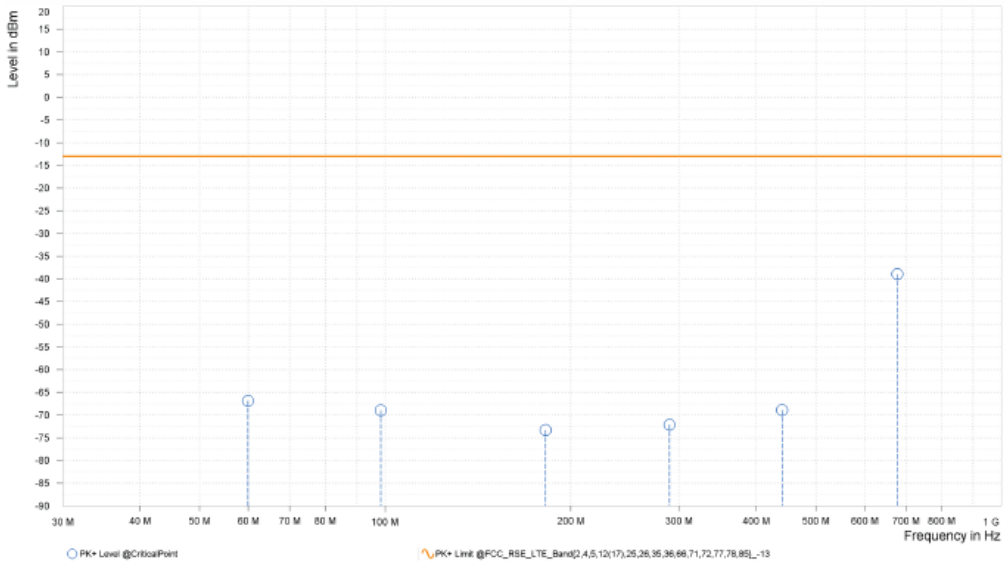
MODE	TX channel 26915	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	58.800	-68.11	-13.00	55.11	3.11	H	28.2	2.00
1	108.650	-68.84	-13.00	55.84	-0.93	H	127.4	2.00
1	150.550	-75.64	-13.00	62.64	-4.97	H	127.4	2.00
1	283.150	-70.06	-13.00	57.06	5.65	H	127.4	2.00
1	403.850	-68.26	-13.00	55.26	7.32	H	5	1.00
2	653.408	-41.44	-13.00	28.44	32.47	H	359.1	1.00



MODE	TX channel 26915	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			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	59.900	-66.91	-13.00	53.91	4.39	V	333	1.00
1	98.400	-68.97	-13.00	55.97	4.18	V	133.4	1.00
1	182.150	-73.34	-13.00	60.34	-0.12	V	233.8	1.00
1	289.500	-72.13	-13.00	59.13	4.56	V	25.8	2.00
1	440.650	-68.91	-13.00	55.91	7.00	V	359	1.00
2	678.067	-38.96	-13.00	25.96	37.31	V	2.4	2.00



ABOVE 1GHz DATA

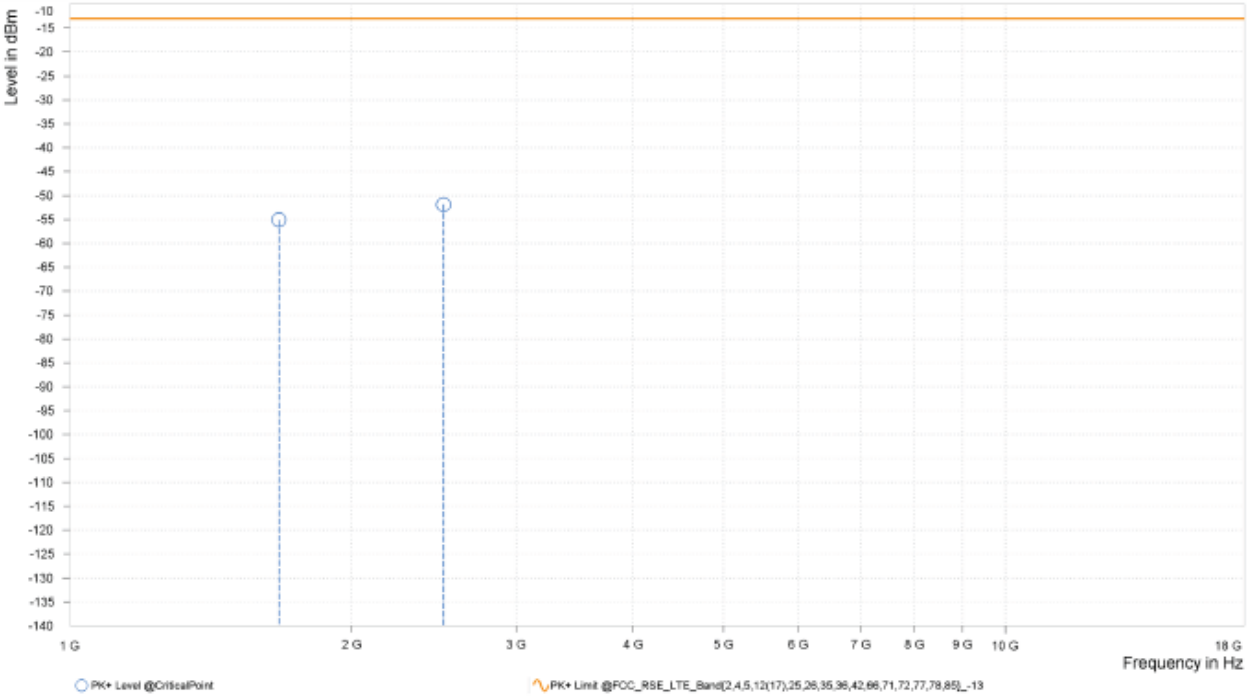
Note: For higher frequency, the emission is too low to be detected.

LTE Band 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

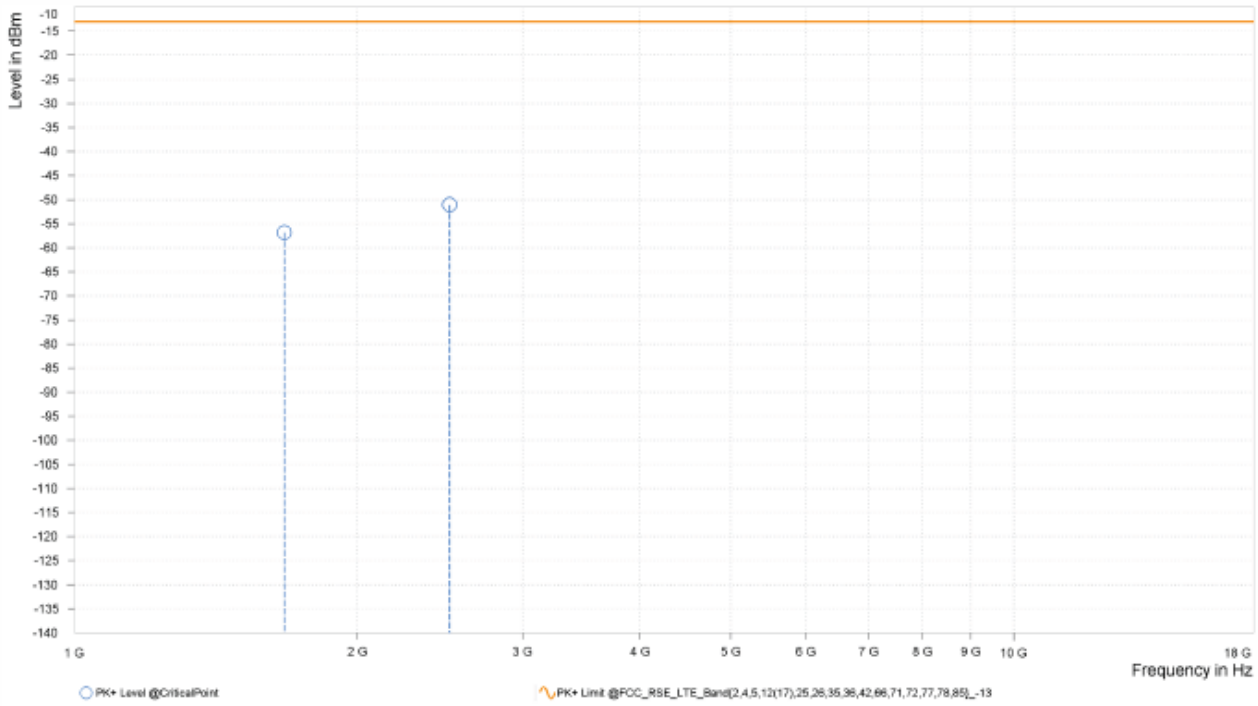
MODE	TX channel 26915	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,671.740	-55.10	-13.00	42.10	14.79	H	292.2	2.00
3	2,507.610	-51.91	-13.00	38.91	19.73	H	185.4	2.00



MODE	TX channel 26915	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			

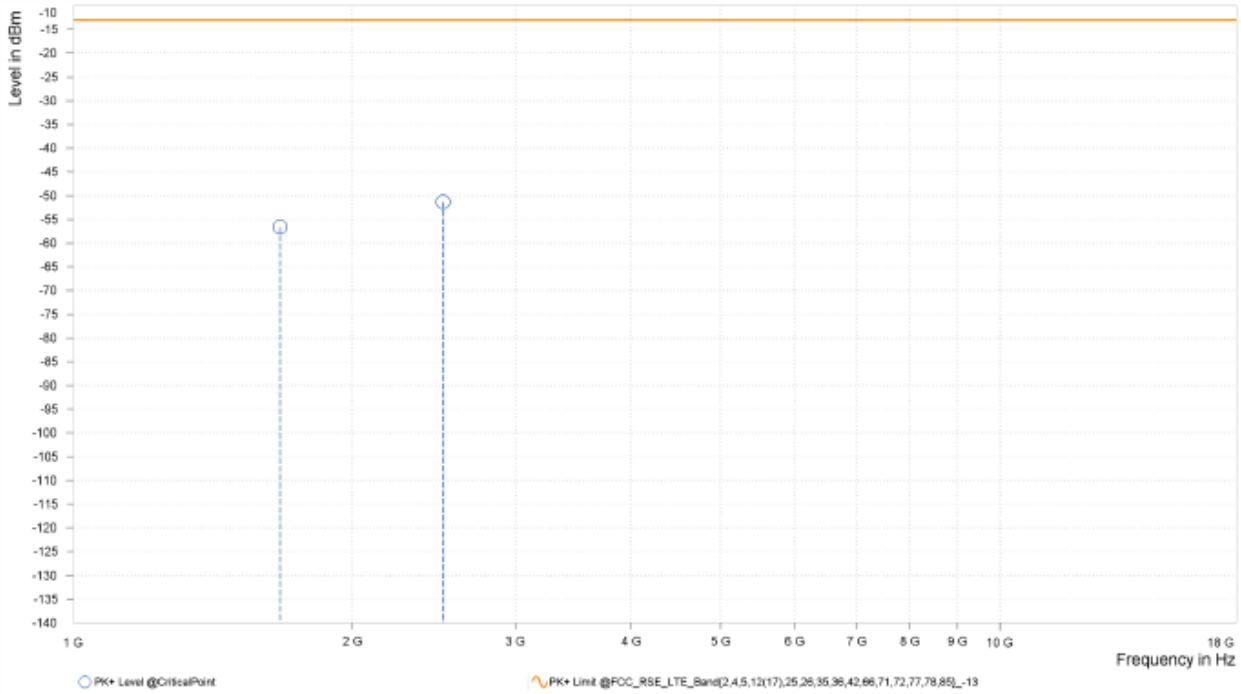
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,671.740	-56.86	-13.00	43.86	13.68	V	1	2.00
3	2,507.610	-51.08	-13.00	38.08	20.30	V	82.8	2.00



CHANNEL BANDWIDTH: 3MHz / QPSK

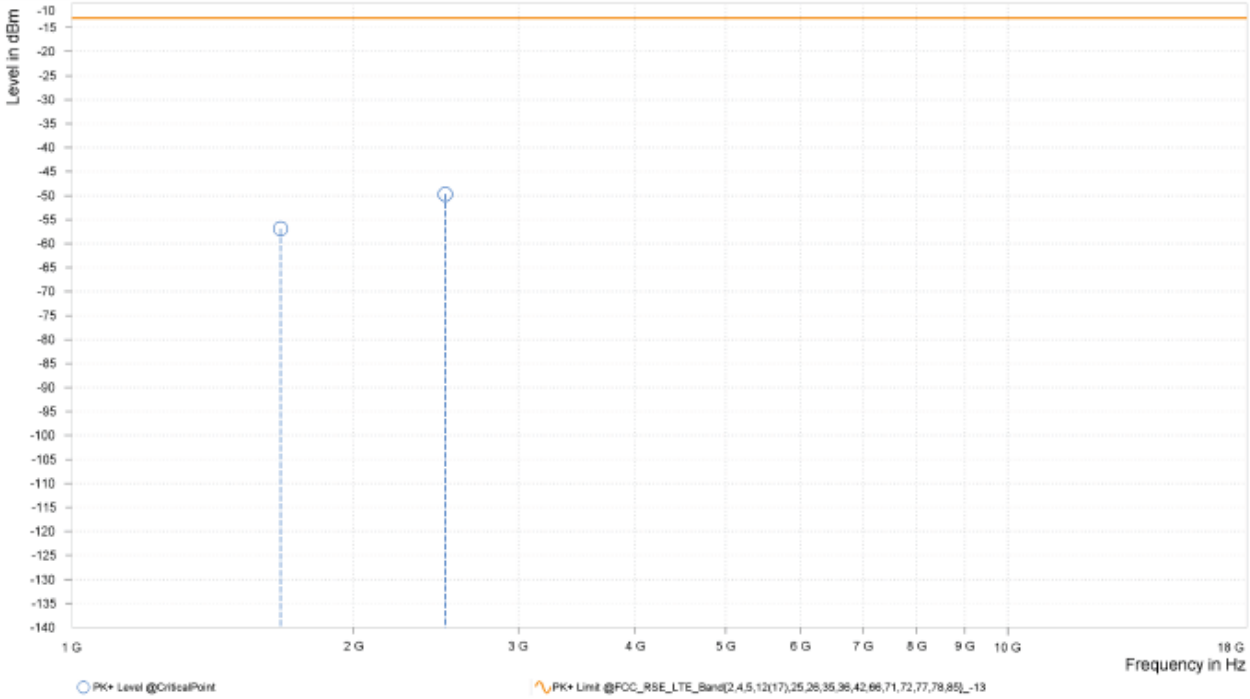
MODE	TX channel 26915	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,670.300	-56.62	-13.00	43.62	14.78	H	359.1	1.00
3	2,505.450	-51.34	-13.00	38.34	19.76	H	239.1	2.00



MODE	TX channel 26915	**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			

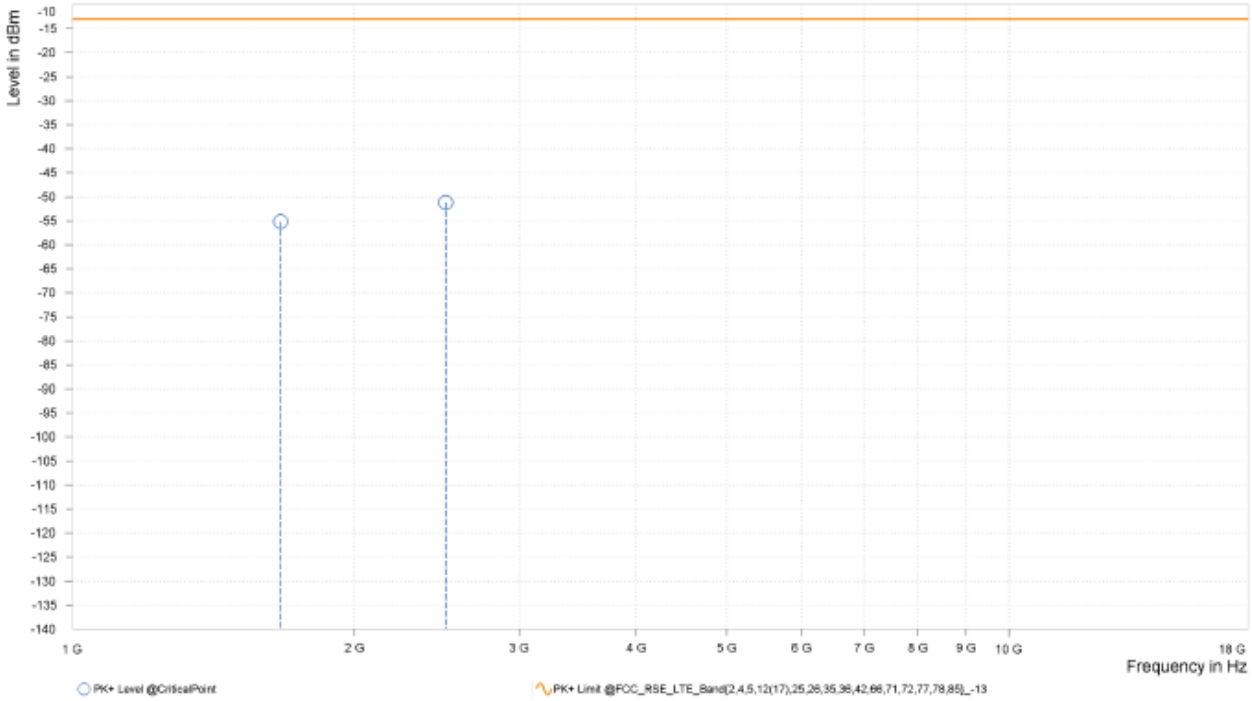
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,670.300	-56.92	-13.00	43.92	13.67	V	233.4	2.00
3	2,505.450	-49.73	-13.00	36.73	20.28	V	65	2.00



CHANNEL BANDWIDTH: 5MHz / QPSK

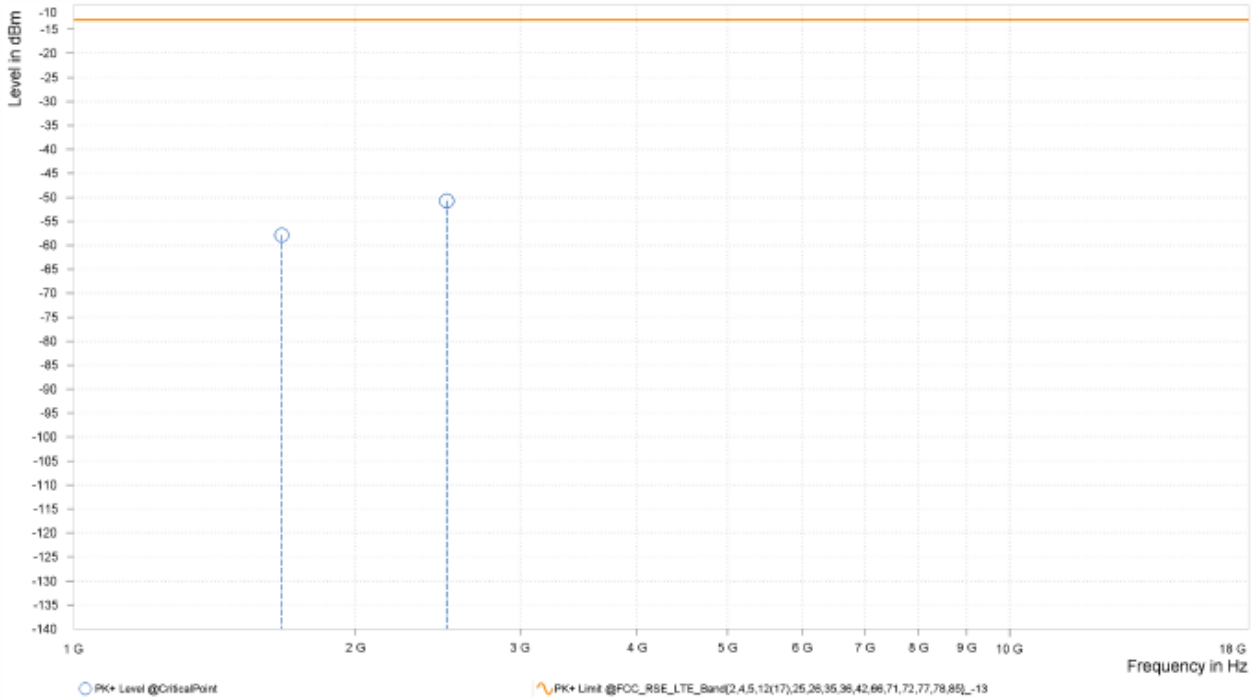
MODE	TX channel 26915	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,668.500	-55.18	-13.00	42.18	14.75	H	210.9	2.00
3	2,502.750	-51.16	-13.00	38.16	19.80	H	75	2.00



MODE	TX channel 26915	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			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,668.500	-57.91	-13.00	44.91	13.64	V	344.6	2.00
3	2,502.750	-50.73	-13.00	37.73	20.24	V	64.3	1.00

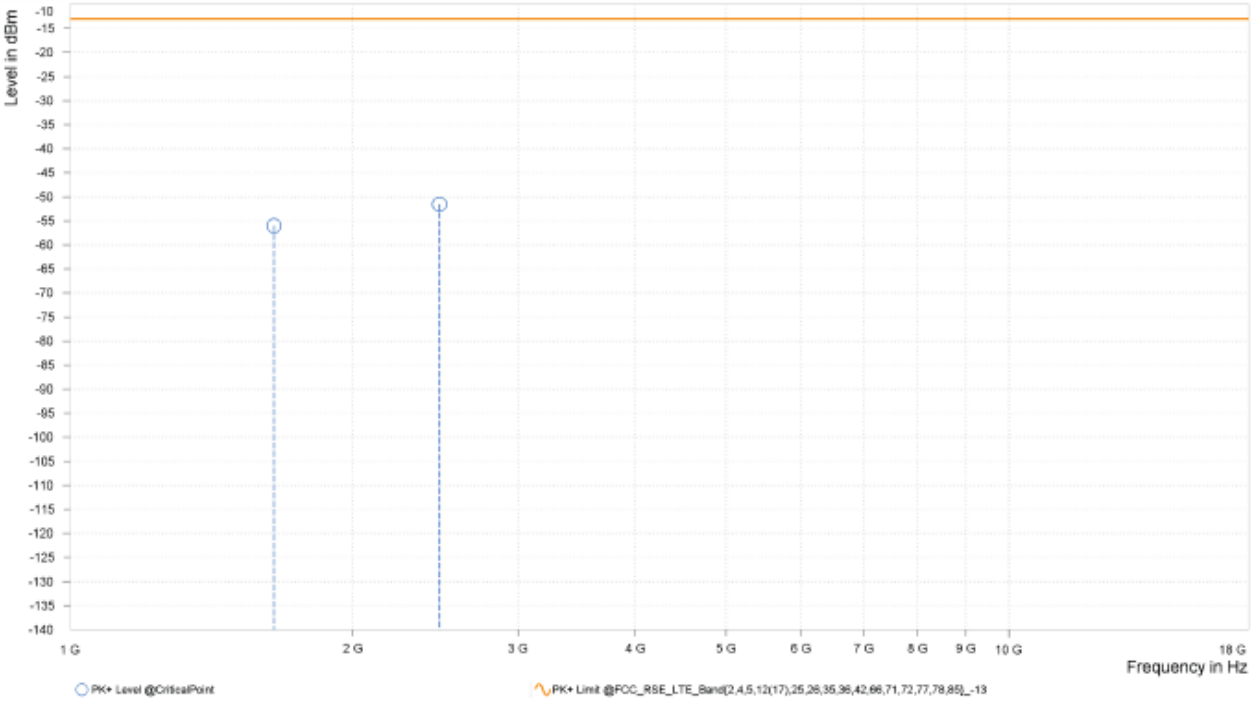


CHANNEL BANDWIDTH: 10MHz / QPSK

CH 26840

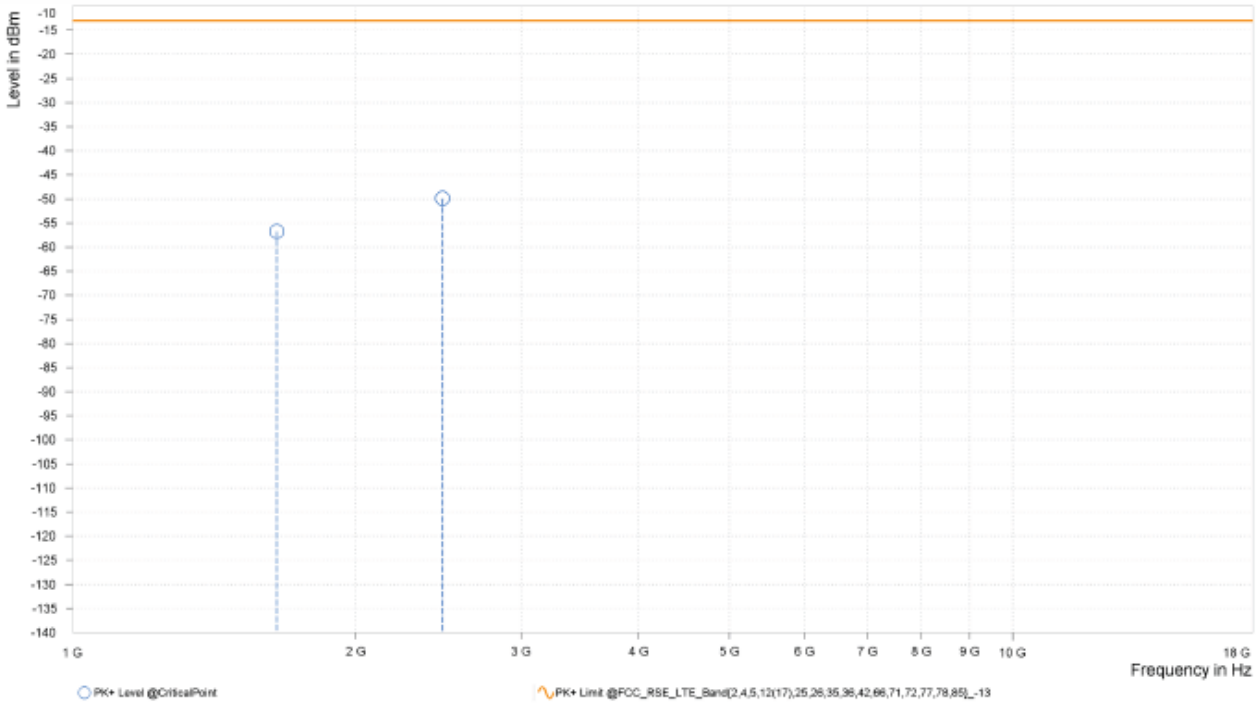
MODE	TX channel 26840	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,649.000	-56.02	-13.00	43.02	14.09	H	288	2.00
3	2,473.500	-51.55	-13.00	38.55	19.31	H	63	2.00



MODE	TX channel 26840	**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			

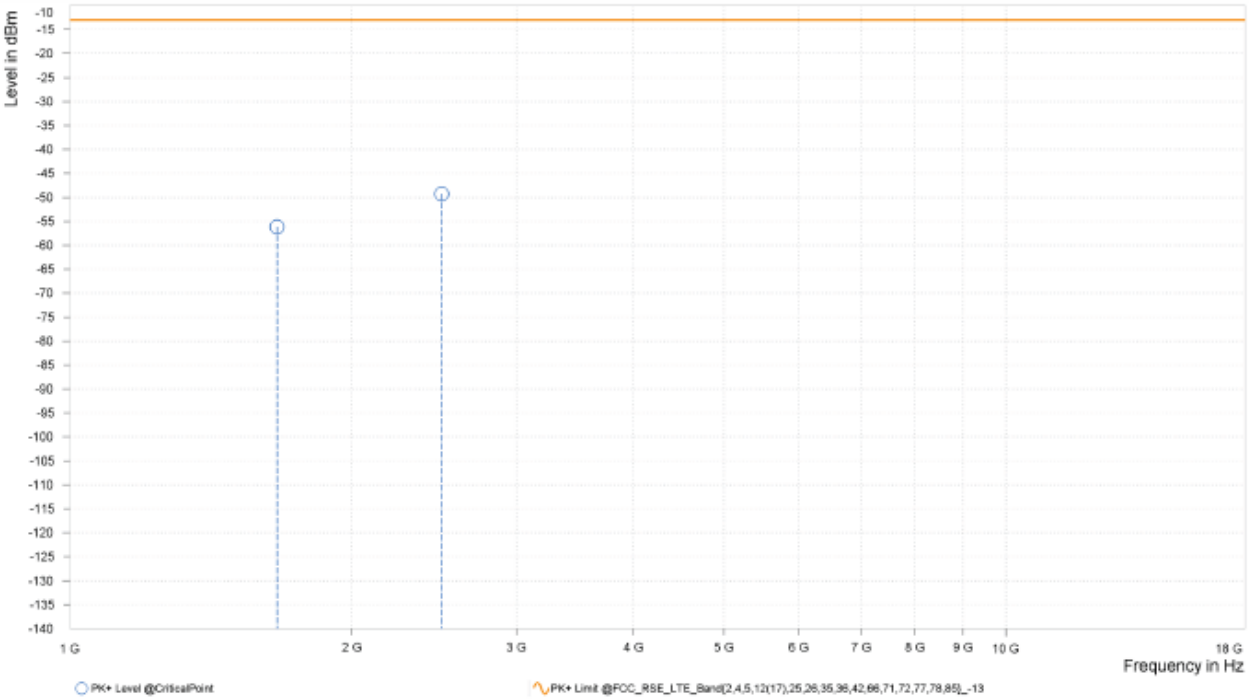
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,649.000	-56.78	-13.00	43.78	13.64	V	174.7	1.00
3	2,473.500	-49.90	-13.00	36.90	19.56	V	297.1	1.00



CH 26915

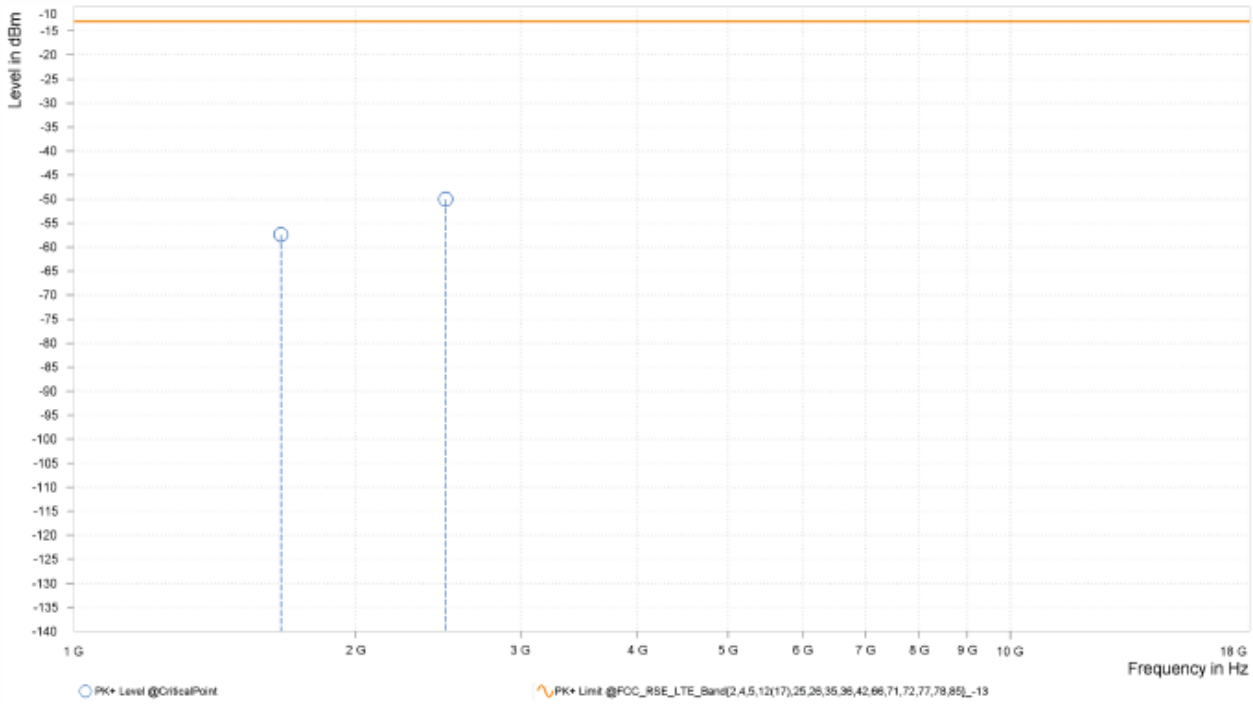
MODE	TX channel 26915	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,664.000	-56.16	-13.00	43.16	14.67	H	229.2	2.00
3	2,496.000	-49.30	-13.00	36.30	19.88	H	182.5	2.00



MODE	TX channel 26915	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			

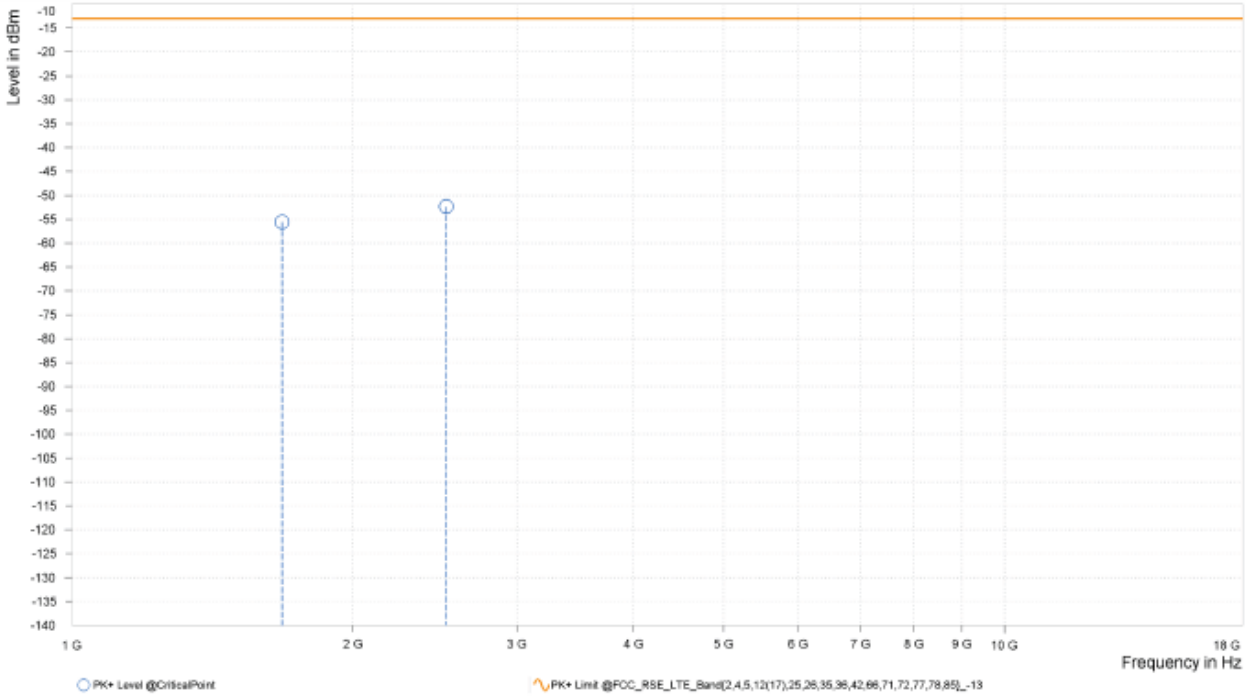
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,664.000	-57.43	-13.00	44.43	13.55	V	230.6	2.00
3	2,496.000	-50.05	-13.00	37.05	20.16	V	293.6	2.00



CH 26990

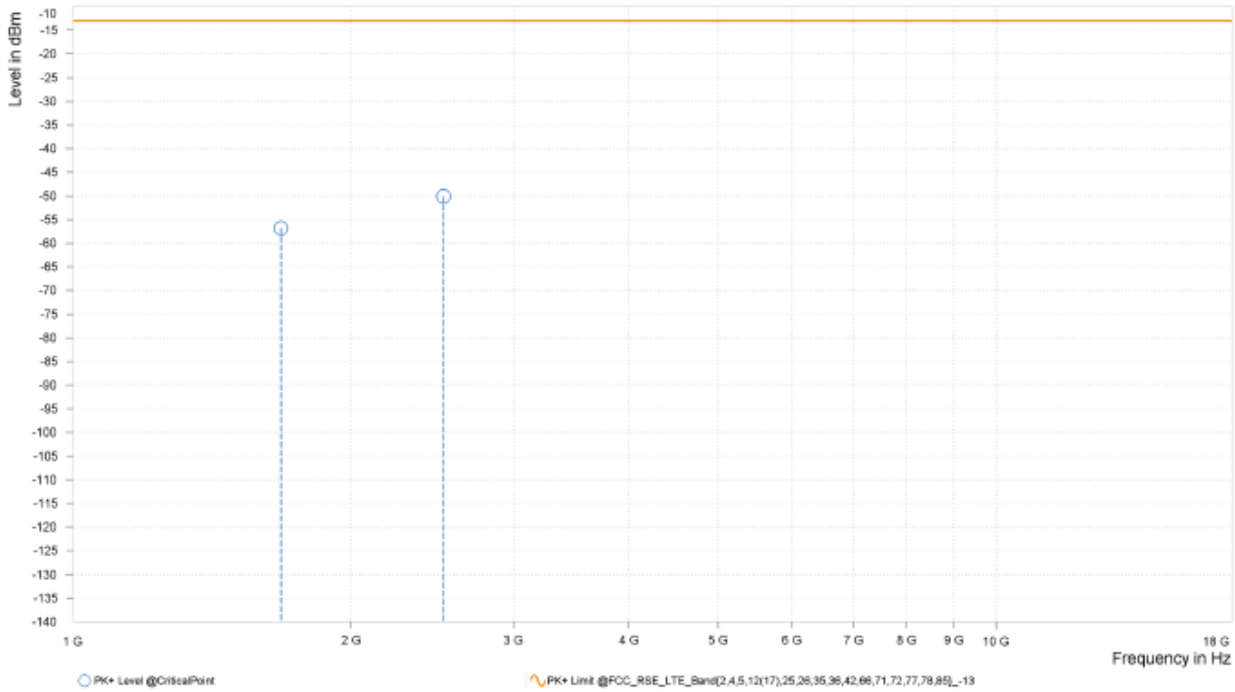
MODE	TX channel 26990	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,679.000	-55.61	-13.00	42.61	14.86	H	33.9	2.00
3	2,518.500	-52.37	-13.00	39.37	19.48	H	359.1	2.00



MODE	TX channel 26990	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			

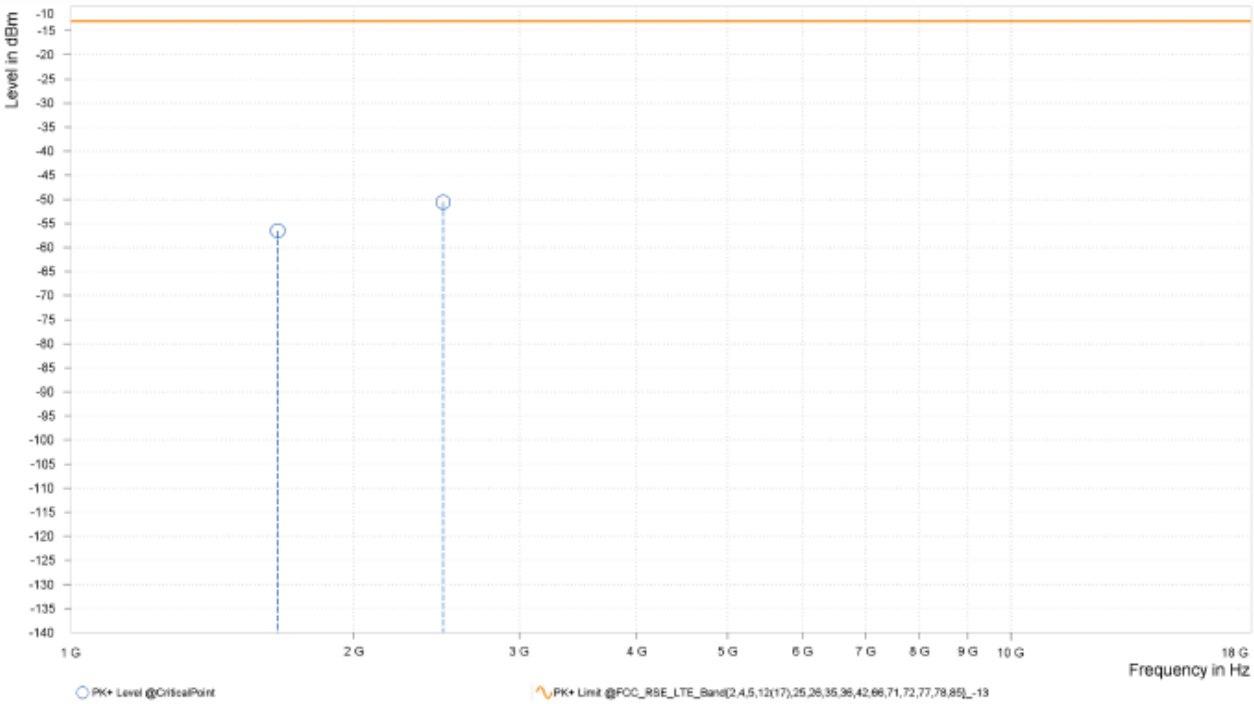
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,679.000	-56.85	-13.00	43.85	13.78	V	226.5	2.00
3	2,518.500	-50.12	-13.00	37.12	20.32	V	289.4	1.00



CHANNEL BANDWIDTH: 15MHz / QPSK

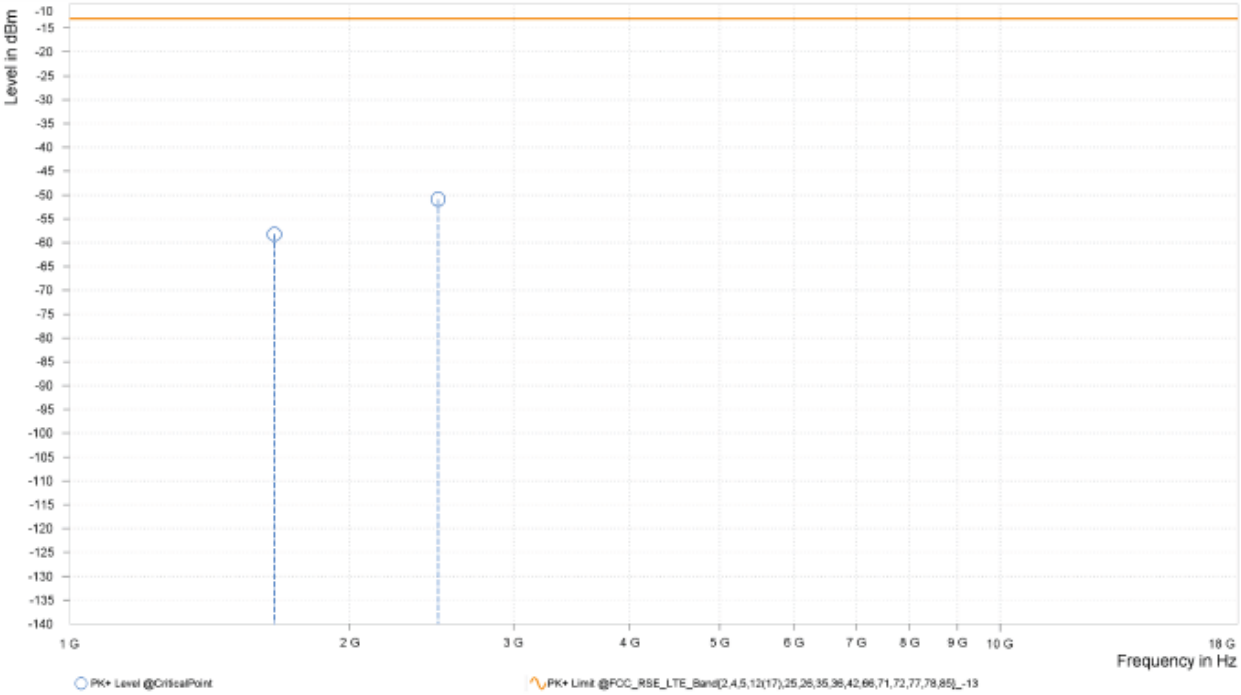
MODE	TX channel 26915	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,659.500	-56.57	-13.00	43.57	14.60	H	229.9	2.00
3	2,489.250	-50.60	-13.00	37.60	19.77	H	249.8	2.00



MODE	TX channel 26915	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			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,659.500	-58.25	-13.00	45.25	13.48	V	1	1.00
3	2,489.250	-50.91	-13.00	37.91	20.00	V	359	1.00

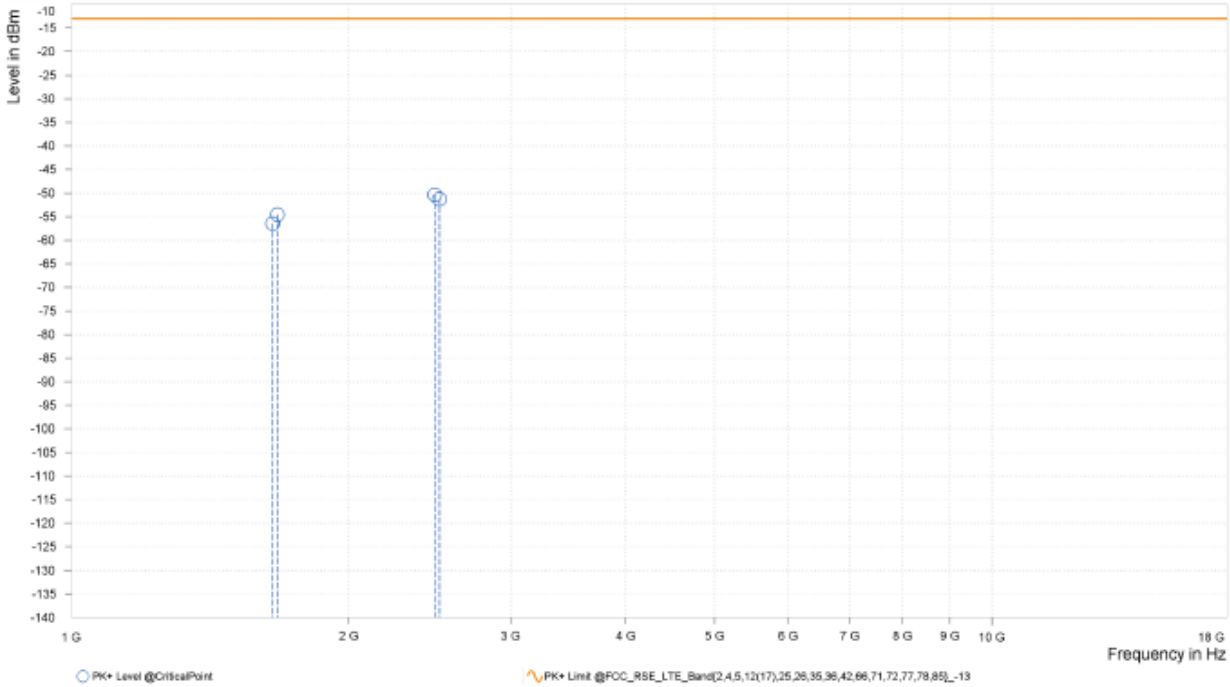


CA_5B:

CHANNEL BANDWIDTH: 10MHz+10MHz / QPSK

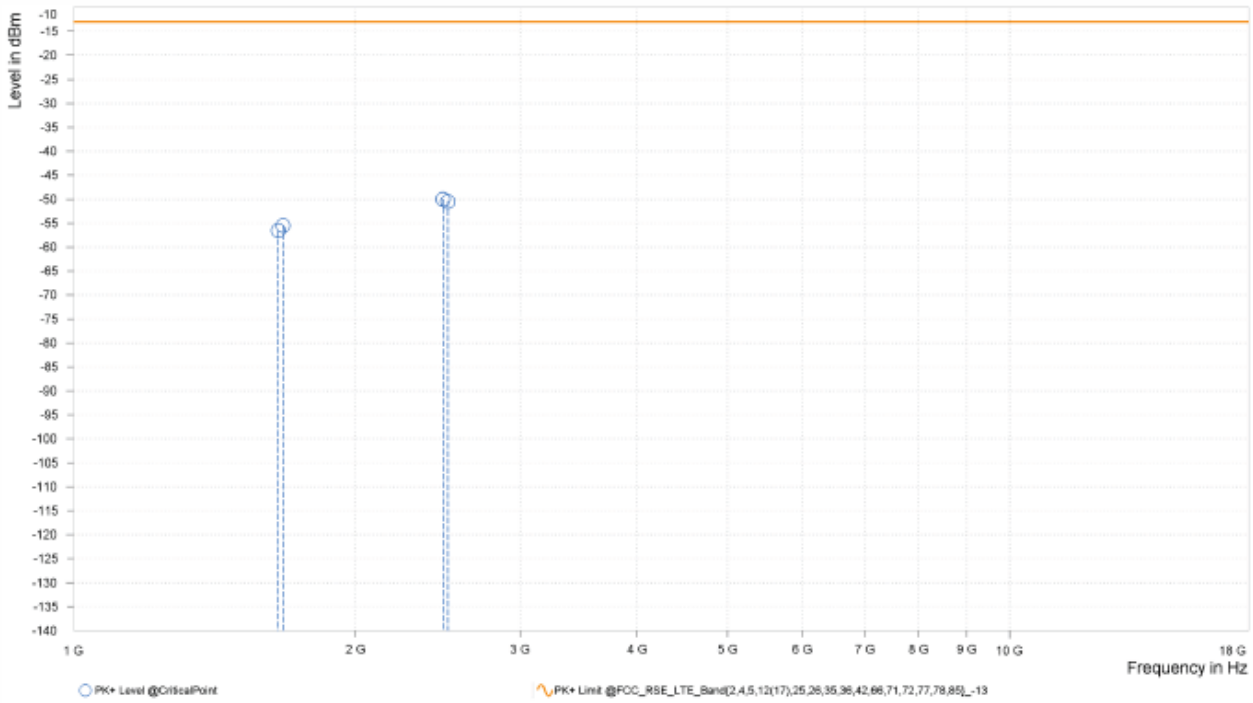
MODE	TX channel 20476/20575	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,654.200	-56.46	-13.00	43.46	14.34	H	208.6	1.00
2	1,674.000	-54.56	-13.00	41.56	14.81	H	326	2.00
3	2,481.300	-50.40	-13.00	37.40	19.55	H	48.6	2.00
3	2,511.000	-51.23	-13.00	38.23	19.69	H	309	1.00



MODE	TX channel 20476/20575	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			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,654.200	-56.55	-13.00	43.55	13.57	V	149.2	2.00
2	1,674.000	-55.51	-13.00	42.51	13.70	V	349.4	1.00
3	2,481.300	-50.01	-13.00	37.01	19.79	V	354.3	1.00
3	2,511.000	-50.51	-13.00	37.51	20.35	V	359	2.00

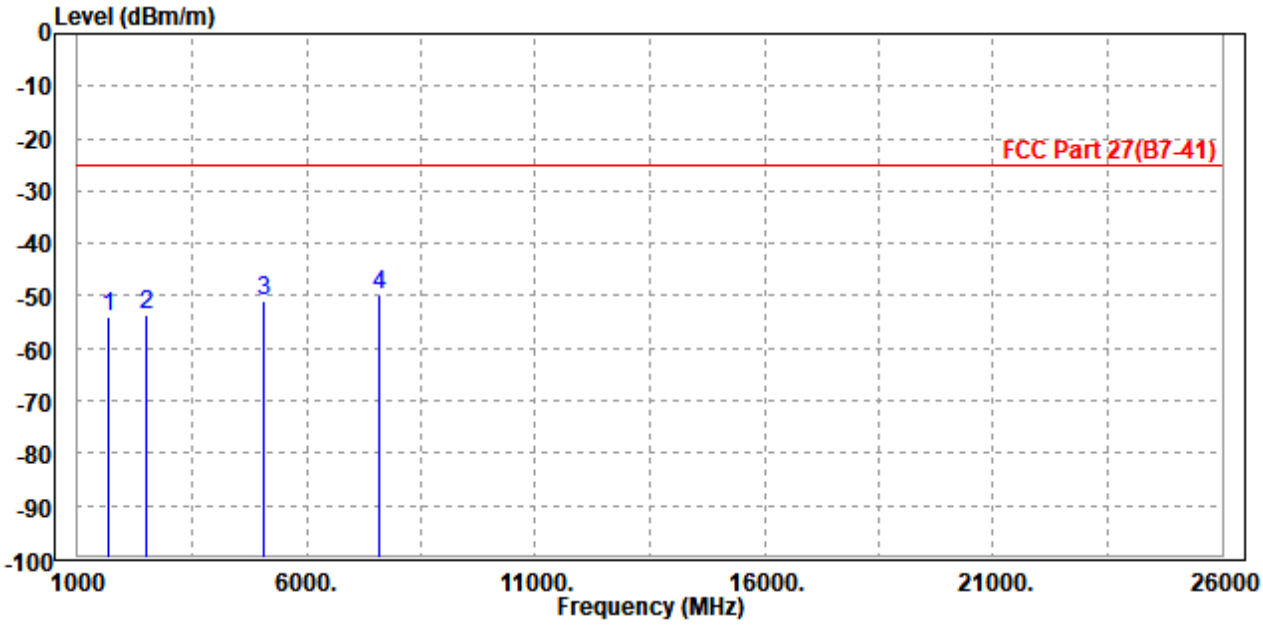


CA_5A-7A:

CHANNEL BANDWIDTH: 10MHz+20MHz / QPSK

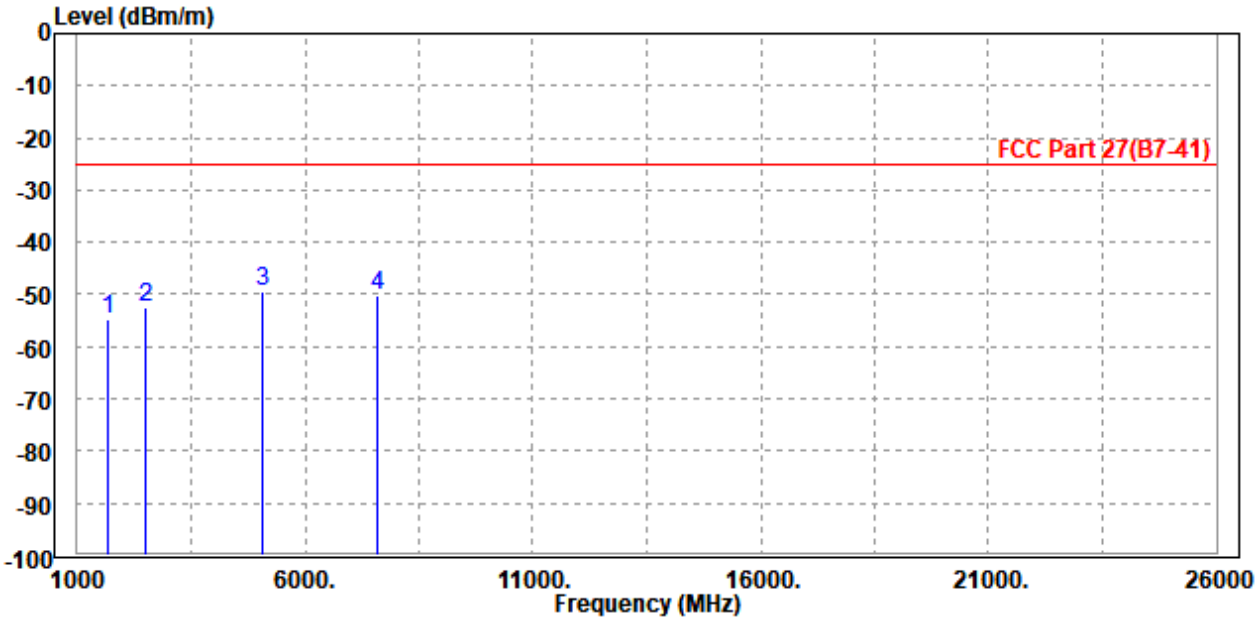
MODE	TX channel 20525/21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-54.18	-57.91	-25.00	-29.18	3.73	Peak	Horizontal
2	2508.000	-53.58	-59.71	-25.00	-28.58	6.13	Peak	Horizontal
3	5075.000	-50.94	-62.11	-25.00	-25.94	11.17	Peak	Horizontal
4 PP	7605.000	-49.88	-64.40	-25.00	-24.88	14.52	Peak	Horizontal



MODE	TX channel 20525/21100	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	1675.000	-54.67	-58.10	-25.00	-29.67	3.43	Peak	Vertical
2	2508.000	-52.49	-58.32	-25.00	-27.49	5.83	Peak	Vertical
3 PP	5070.000	-49.26	-60.77	-25.00	-24.26	11.51	Peak	Vertical
4	7605.000	-50.16	-63.64	-25.00	-25.16	13.48	Peak	Vertical

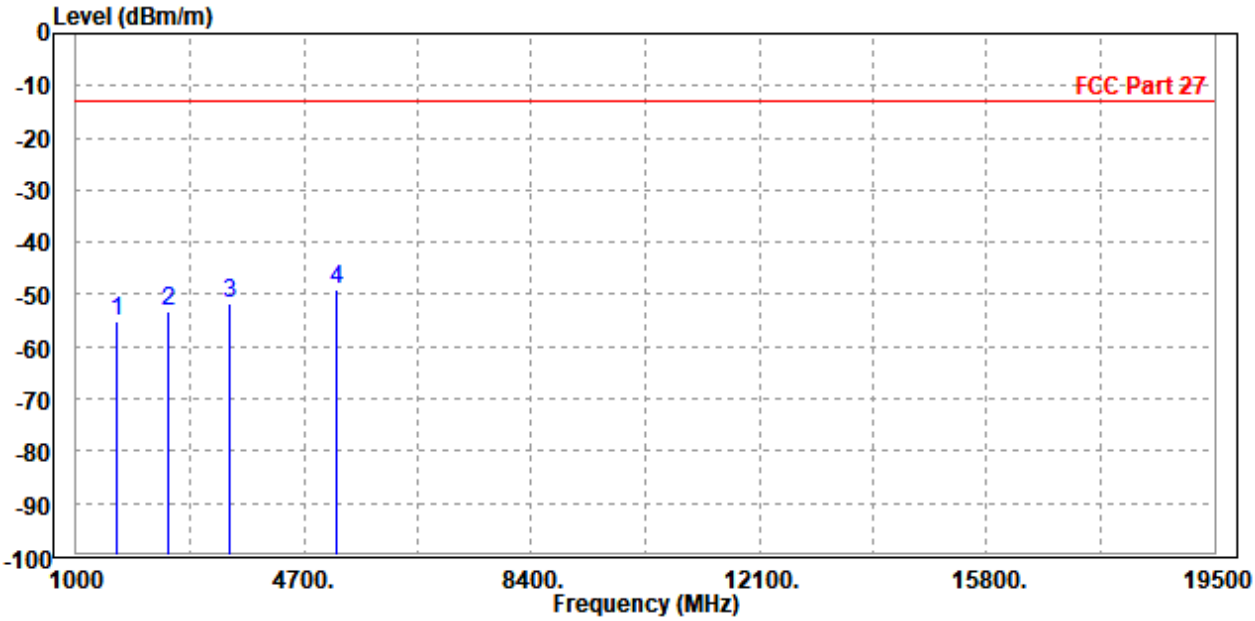


CA_5A-66A:

CHANNEL BANDWIDTH: 10MHz+20MHz / QPSK

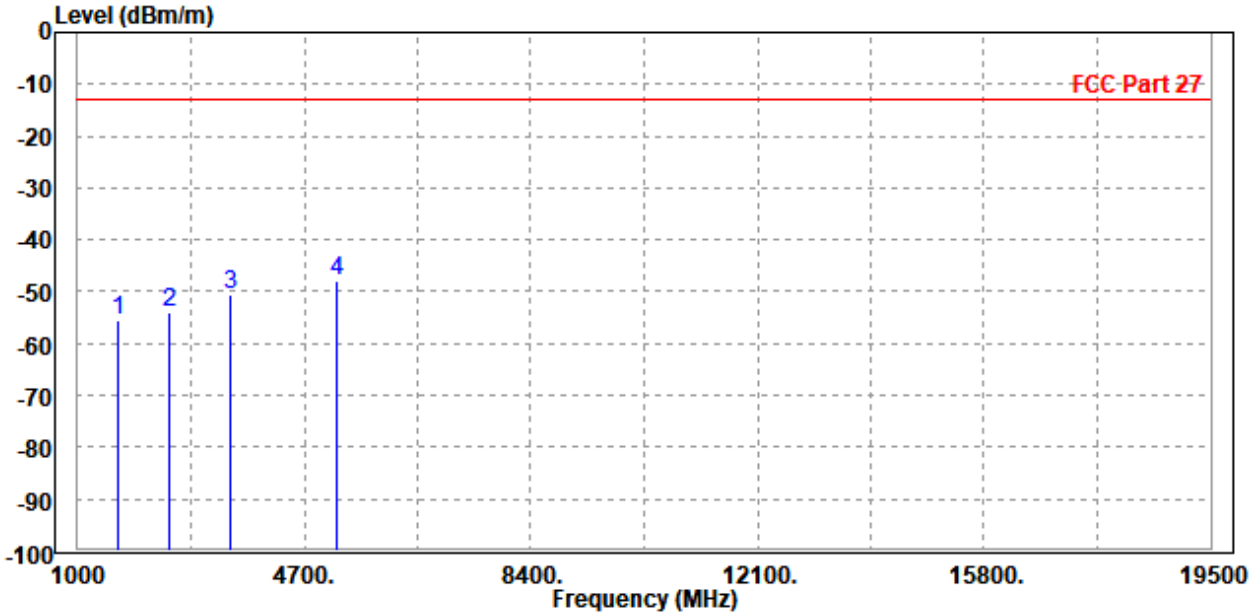
MODE	TX channel 20525/ 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-55.22	-58.95	-13.00	-42.22	3.73	Peak	Horizontal
2	2508.000	-53.29	-59.42	-13.00	-40.29	6.13	Peak	Horizontal
3	3490.000	-51.83	-60.38	-13.00	-38.83	8.55	Peak	Horizontal
4 PP	5236.500	-49.05	-60.46	-13.00	-36.05	11.41	Peak	Horizontal



MODE	TX channel 20525/ 132322	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		1666.000	-55.50	-58.92	-13.00	-42.50	3.42	Peak	Vertical
2		2508.000	-53.99	-59.82	-13.00	-40.99	5.83	Peak	Vertical
3		3490.000	-50.46	-59.10	-13.00	-37.46	8.64	Peak	Vertical
4	PP	5235.000	-48.07	-59.90	-13.00	-35.07	11.83	Peak	Vertical

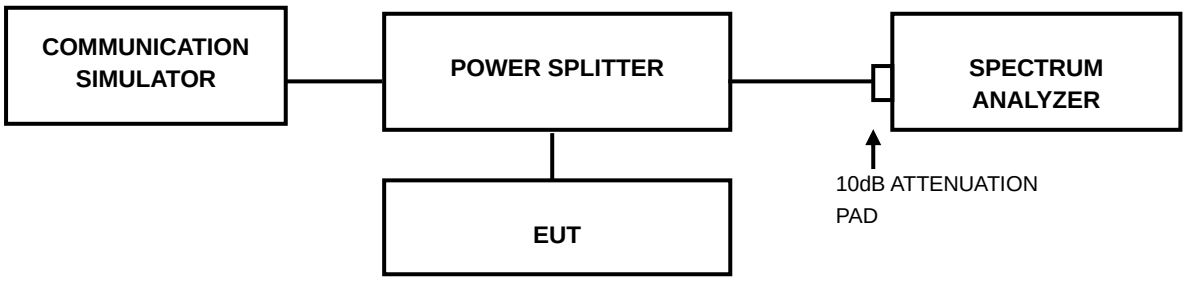


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.7.4 TEST RESULTS

Please Refer to Appendix F.

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

5 INFORMATION ON THE TESTING LABORATORIES

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

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

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Tel: +86-755-88696566
Fax: +86-755-88696577

Email: customerservice.sw@bureauveritas.com
Web Site: www.adt.com.tw

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

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.

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