Test Report No.: W7L-P24050018RF09

FCC TEST REPORT

(PART 90)

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 90, Subpart R, S** ☒ **ANSI/TIA/EIA-603- D**
☒ **FCC Part 2** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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

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

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

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

Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P24050018RF09	Original release	Jul. 17, 2024

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 90 & Part 2		
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**
§2.1046 §90.635(b)	Conducted Output Power (Band26)	PASS
§90.542(a)	Effective Radiated Power (Band14)	PASS
§2.1055 §90.213	Frequency Stability	PASS
§2.1049 §90.209	Occupied Bandwidth	PASS
§2.1051 §90.543(e)(f) §90.691(a)	Emission Masks	PASS
§2.1051 §90.543(e)(f) §90.691(a)	Conducted Spurious Emissions	PASS
§2.1053 §90.691(a) §90.543(e)(f)	Radiated Spurious Emissions	PASS

Note：
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.

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

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

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	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 TECHNOLOGY	**LTE**	QPSK, 16QAM, 64QAM,256QAM
FREQUENCY RANGE	**LTE Band 14 Channel Bandwidth: 5MHz**	790.5MHz ~ 795.5MHz
	LTE Band 14 Channel Bandwidth: 10MHz	793MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	814.7MHz ~ 823.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	815.5MHz ~ 822.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	816.5MHz ~ 821.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	819MHz
EMISSION DESIGNATOR	**LTE Band 14 Channel Bandwidth: 5MHz**	QPSK: 4M52G7D
		16QAM: 4M51W7D
	LTE Band 14 Channel Bandwidth: 10MHz	QPSK: 8M99G7D
		16QAM: 9M01W7D
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M10G7D
		16QAM: 1M10W7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK: 2M70G7D
		16QAM: 2M70W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M52G7D
		16QAM: 4M51W7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 9M00G7D
		16QAM: 8M97W7D
MAX. EIRP POWER	**LTE Band 14 Channel Bandwidth: 5MHz**	84.33mW
	LTE Band 14 Channel Bandwidth: 10MHz	84.72mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	87.3mW

	LTE Band 26 (Channel Bandwidth: 3MHz)	86.3mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	85.9mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	86.9mW
ANTENNA TYPE	ANT2 PIFA Antenna with -1.5dBi gain for LTE B14 PIFA Antenna with -1.3dBi gain for LTE B26	
HW Version	V05	
SW Version	IS940_ROW_00.00_2_20240605	
I/O PORTS	Refer to user's manual	
DATA CABLE	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

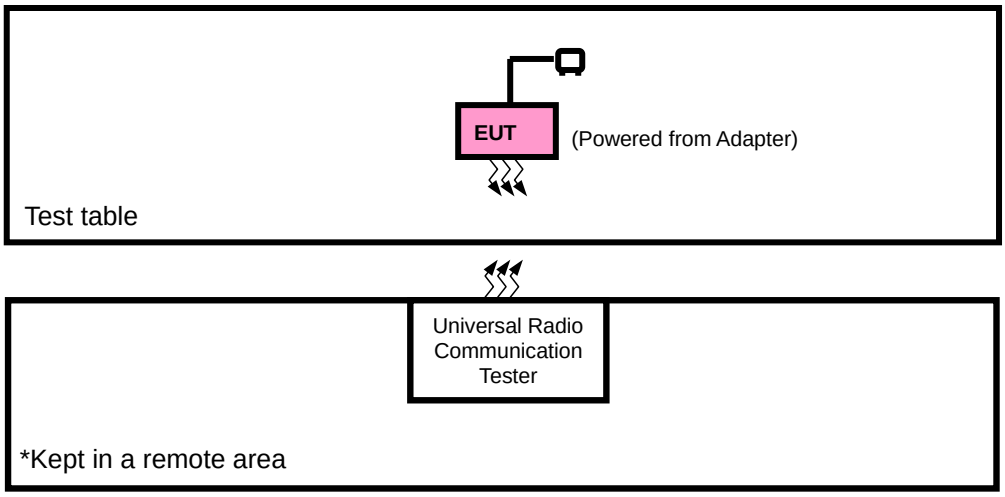
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

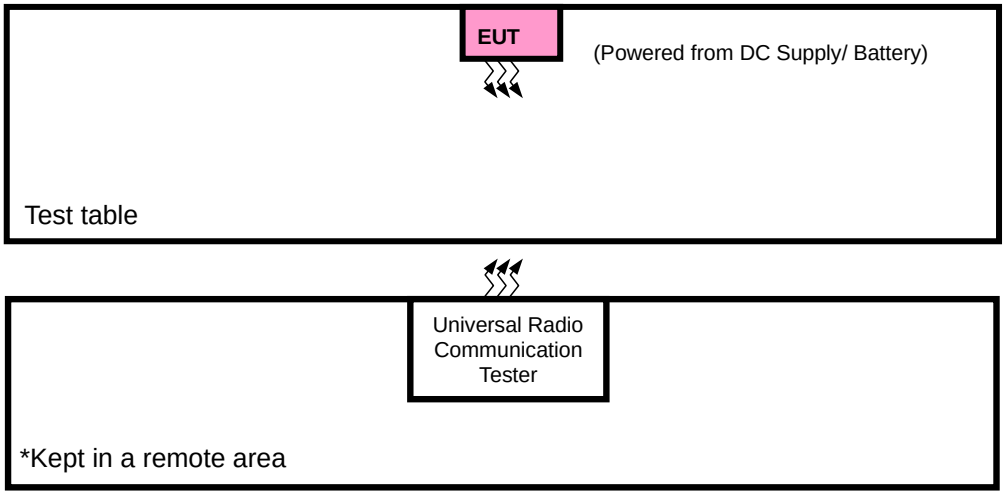
5. List of Accessory:

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 TEST





2.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	Kikusui/JP	PMX18-5A	0000001	N/A

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

2.4 DESCRIPTION OF TEST MODES

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/EIRP 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 14 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23305 to 23355	23305, 23355	5MHz	QPSK	25 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	23305 to 23355	23305	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23355	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23300	23330	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
						1 RB / 49 RB Offset
A	CONDUCTED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	10MHz	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 26 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM,	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26715 to 26765	26715, 26740, 26765	5MHz	QPSK	25 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26740	26740	10MHz	QPSK,16QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	26697 to 26783	26697	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26783	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26705 to 26775	26705	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			26775	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26715 to 26765	26715	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			26765	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			26740	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
A	CONDUCTED EMISSION	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	26697 to 26783	26740	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26740,	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHz	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
EIRP(ERP)	24deg. C, 60%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	24deg. C, 61%RH	DC 3.6V/3.7V/4.2V By DC Supply	James Fu
OCCUPIED BANDWIDTH	24deg. C, 61%RH	DC5V By Adapter	James Fu
BAND EDGE	24deg. C, 61%RH	DC 5V By Adapter	James Fu
CONDUCTED EMISSION	24deg. C, 61%RH	DC5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC5V By Adapter	Jace Hu

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 90

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

47 CFR 90.542(a)(7)
Portable stations (hand-held devices) transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 3 watts ERP.
Per FCC Part 90.635(a)
The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

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);

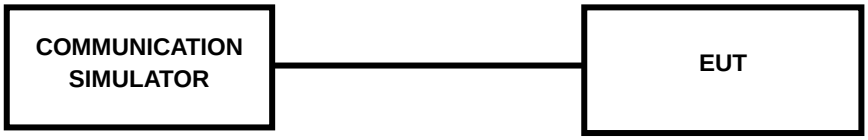
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE Band 14

LTE Band 14 (Ant2)						
BW	**Modulation**	**RB Size**	**RB Offset**	**Mid**		
		Channel		**23330**		
		Frequency (MHz)		**793**		
10M	QPSK	1	0		22.90	
		1	24		**22.93**	
		1	49		22.80	
		25	0		21.96	
		25	12		21.99	
		25	25		21.99	
		50	0		21.95	
	16QAM	1	0		22.13	
		1	24		22.12	
		1	49		22.02	
		25	0		21.00	
		25	12		21.01	
		25	25		21.06	
		50	0		20.97	
	64QAM	1	0		21.11	
		1	24		21.16	
		1	49		21.10	
		25	0		20.04	
		25	12		20.05	
		25	25		20.06	
		50	0		20.00	
	256QAM	1	0		17.92	
		1	24		17.90	
		1	49		17.91	
		25	0		17.94	
		25	12		17.92	
		25	25		17.90	
		50	0		17.92	

BW	Modulation	Channel		23305	23330	23355
		Frequency (MHz)		790.5	793	795.5
5M	QPSK	1	0	22.87	22.89	22.75
		1	12	22.78	22.89	22.91
		1	24	22.78	22.79	22.79
		12	0	21.87	21.84	21.94
		12	6	21.98	21.86	21.97
		12	13	21.86	21.84	21.97
		25	0	21.84	21.82	21.88
	16QAM	1	0	22.12	22.03	22.11
		1	12	22.06	21.98	22.03
		1	24	21.89	21.92	21.90
		12	0	20.93	20.91	20.99
		12	6	20.89	20.92	20.89
		12	13	21.03	21.04	20.97
		25	0	20.96	20.89	20.85
	64QAM	1	0	21.02	21.01	21.00
		1	12	21.01	21.01	21.02
		1	24	20.98	21.08	21.03
		12	0	19.89	19.98	20.03
		12	6	19.90	19.99	20.02
		12	13	19.93	19.91	19.99
		25	0	19.95	19.91	19.97
	256QAM	1	0	17.90	17.78	17.79
		1	12	17.87	17.81	17.84
		1	24	17.76	17.87	17.76
		12	0	17.87	17.91	17.88
		12	6	17.79	17.77	17.78
		12	13	17.87	17.86	17.80
		25	0	17.86	17.90	17.87

LTE BAND 26

LTE Band 26 for FCC Q (Ant2)						
BW	MCS Index	RB Size	RB Offset		Mid	
		Channel			26740	
		Frequence (MHz)			819	
10M	QPSK	1	0		**22.84**	
		1	24		22.67	
		1	49		22.81	
		25	0		21.70	
		25	12		21.60	
		25	25		21.71	
		50	0		21.66	
	16QAM	1	0		21.81	
		1	24		21.75	
		1	49		21.79	
		25	0		20.66	
		25	12		20.74	
		25	25		20.82	
		50	0		20.67	
	64QAM	1	0		20.83	
		1	24		20.90	
		1	49		20.79	
		25	0		19.77	
		25	12		19.77	
		25	25		19.67	
		50	0		19.66	
	256QAM	1	0		17.64	
		1	24		17.77	
		1	49		17.75	
		25	0		17.59	
		25	12		17.68	
		25	25		17.69	
		50	0		17.71	

BW	MCS Index	Channel		26715	26740	26765
		Frequence (MHz)		816.5	819	821.5
5M	QPSK	1	0	22.73	22.71	22.54
		1	12	22.58	22.53	22.41
		1	24	22.79	22.74	22.49
		12	0	21.72	21.58	21.53
		12	6	21.63	21.50	21.39
		12	13	21.62	21.63	21.49
		25	0	21.65	21.60	21.38
	16QAM	1	0	21.89	21.68	21.67
		1	12	21.88	21.62	21.47
		1	24	21.82	21.68	21.49
		12	0	20.59	20.60	20.32
		12	6	20.69	20.66	20.36
		12	13	20.77	20.79	20.55
		25	0	20.81	20.65	20.48
	64QAM	1	0	20.77	20.72	20.40
		1	12	20.91	20.77	20.61
		1	24	20.89	20.71	20.47
		12	0	19.83	19.65	19.62
		12	6	19.68	19.75	19.51
		12	13	19.63	19.61	19.39
		25	0	19.65	19.64	19.43
	256QAM	1	0	17.64	17.62	17.43
		1	12	17.69	17.65	17.44
		1	24	17.74	17.68	17.50
		12	0	17.52	17.46	17.41
		12	6	17.70	17.53	17.51
		12	13	17.68	17.61	17.47
		25	0	17.62	17.67	17.43

BW	MCS Index	Channel		26705	26740	26775
		Frequence (MHz)		815.5	819	822.5
3M	QPSK	1	0	22.76	22.81	22.59
		1	7	22.64	22.53	22.43
		1	14	22.72	22.73	22.58
		8	0	21.73	21.62	21.47
		8	3	21.72	21.57	21.40
		8	7	21.69	21.70	21.38
		15	0	21.68	21.63	21.41
	16QAM	1	0	21.87	21.79	21.62
		1	7	21.81	21.64	21.44
		1	14	21.86	21.66	21.60
		8	0	20.60	20.63	20.37
		8	3	20.73	20.60	20.48
		8	7	20.78	20.67	20.50
		15	0	20.79	20.52	20.46
	64QAM	1	0	20.78	20.80	20.44
		1	7	20.99	20.75	20.64
		1	14	20.89	20.68	20.55
		8	0	19.80	19.70	19.48
		8	3	19.77	19.62	19.49
		8	7	19.71	19.66	19.41
		15	0	19.70	19.64	19.36
	256QAM	1	0	17.63	17.58	17.41
		1	7	17.76	17.68	17.48
		1	14	17.77	17.69	17.57
		8	0	17.63	17.48	17.36
		8	3	17.76	17.54	17.42
		8	7	17.77	17.57	17.53
		15	0	17.64	17.70	17.48

BW	MCS Index	Channel		26697	26740	26783
		Frequence (MHz)		814.7	819	823.3
1.4M	QPSK	1	0	22.86	22.69	22.53
		1	2	22.58	22.60	22.41
		1	5	22.71	22.69	22.51
		3	0	22.55	22.49	22.24
		3	1	22.41	22.25	22.19
		3	3	22.51	22.37	22.27
		6	0	21.72	21.57	21.44
	16QAM	1	0	21.85	21.79	21.69
		1	2	21.81	21.63	21.47
		1	5	21.92	21.76	21.51
		3	0	21.67	21.62	21.32
		3	1	21.77	21.62	21.40
		3	3	21.84	21.78	21.53
		6	0	20.67	20.62	20.51
	64QAM	1	0	20.83	20.80	20.41
		1	2	20.92	20.85	20.55
		1	5	20.88	20.65	20.54
		3	0	20.75	20.75	20.62
		3	1	20.71	20.68	20.48
		3	3	20.64	20.63	20.33
		6	0	19.70	19.62	19.37
	256QAM	1	0	17.64	17.58	17.37
		1	2	17.68	17.74	17.42
		1	5	17.73	17.73	17.52
		3	0	17.60	17.45	17.36
		3	1	17.78	17.54	17.55
		3	3	17.73	17.57	17.50
		6	0	17.73	17.56	17.37

ERP

LTE BAND 14

LTE B14 5M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	22.87	-1.5	19.22	83.56	3
23330	793	22.89	-1.5	19.24	83.95	3
23355	795.5	22.91	-1.5	19.26	84.33	3

LTE B14 5M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	22.12	-1.5	18.47	70.31	3
23330	793	22.03	-1.5	18.38	68.87	3
23355	795.5	22.11	-1.5	18.46	70.15	3

LTE B14 5M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	21.02	-1.5	17.37	54.58	3
23330	793	21.08	-1.5	17.43	55.34	3
23355	795.5	21.03	-1.5	17.38	54.7	3

LTE B14 5M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	17.9	-1.5	14.25	26.61	3
23330	793	17.91	-1.5	14.26	26.67	3
23355	795.5	17.88	-1.5	14.23	26.49	3

LTE B14 10M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23330	793	22.93	-1.5	19.28	84.72	3

LTE B14 10M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23330	793	22.13	-1.5	18.48	70.47	3

LTE B14 10M 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23330	793	21.16	-1.5	17.51	56.36	3

LTE B14 10M 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
23330	793	17.94	-1.5	14.29	26.85	3

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

LTE BAND 26

LTE B26 1.4M QPSK Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	22.86	-1.3	19.41	87.3	100
26740	819	22.69	-1.3	19.24	83.95	100
26783	823.3	22.53	-1.3	19.08	80.91	100

LTE B26 1.4M 16QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	21.92	-1.3	18.47	70.31	100
26740	819	21.79	-1.3	18.34	68.23	100
26783	823.3	21.69	-1.3	18.24	66.68	100

LTE B26 1.4M 64QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	20.92	-1.3	17.47	55.85	100
26740	819	20.85	-1.3	17.4	54.95	100
26783	823.3	20.62	-1.3	17.17	52.12	100

LTE B26 1.4M 256QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	17.78	-1.3	14.33	27.1	100
26740	819	17.74	-1.3	14.29	26.85	100
26783	823.3	17.55	-1.3	14.1	25.7	100

LTE B26 3M QPSK Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	22.76	-1.3	19.31	85.31	100
26740	819	22.81	-1.3	19.36	86.3	100
26775	822.5	22.59	-1.3	19.14	82.04	100

LTE B26 3M 16QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	21.87	-1.3	18.42	69.5	100
26740	819	21.79	-1.3	18.34	68.23	100
26775	822.5	21.62	-1.3	18.17	65.61	100

LTE B26 3M 64QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	20.99	-1.3	17.54	56.75	100
26740	819	20.8	-1.3	17.35	54.33	100
26775	822.5	20.64	-1.3	17.19	52.36	100

LTE B26 3M 256QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	17.77	-1.3	14.32	27.04	100
26740	819	17.7	-1.3	14.25	26.61	100
26775	822.5	17.57	-1.3	14.12	25.82	100

LTE B26 5M QPSK Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	22.79	-1.3	19.34	85.9	100
26740	819	22.74	-1.3	19.29	84.92	100
26765	821.5	22.54	-1.3	19.09	81.1	100

LTE B26 5M 16QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	21.89	-1.3	18.44	69.82	100
26740	819	21.68	-1.3	18.23	66.53	100
26765	821.5	21.67	-1.3	18.22	66.37	100

LTE B26 5M 64QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	20.91	-1.3	17.46	55.72	100
26740	819	20.77	-1.3	17.32	53.95	100
26765	821.5	20.61	-1.3	17.16	52	100

LTE B26 5M 256QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	17.74	-1.3	14.29	26.85	100
26740	819	17.68	-1.3	14.23	26.49	100
26765	821.5	17.51	-1.3	14.06	25.47	100

LTE B26 10M QPSK Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26740	819	22.84	-1.3	19.39	86.9	100

LTE B26 10M 16QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26740	819	21.81	-1.3	18.36	68.55	100

LTE B26 10M 64QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26740	819	20.9	-1.3	17.45	55.59	100

LTE B26 10M 256QAM Q						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (W)
26740	819	17.77	-1.3	14.32	27.04	100

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

2.5 ppm is for mobile stations when the output power is within 2 watts or less.

3.2.2 TEST PROCEDURE

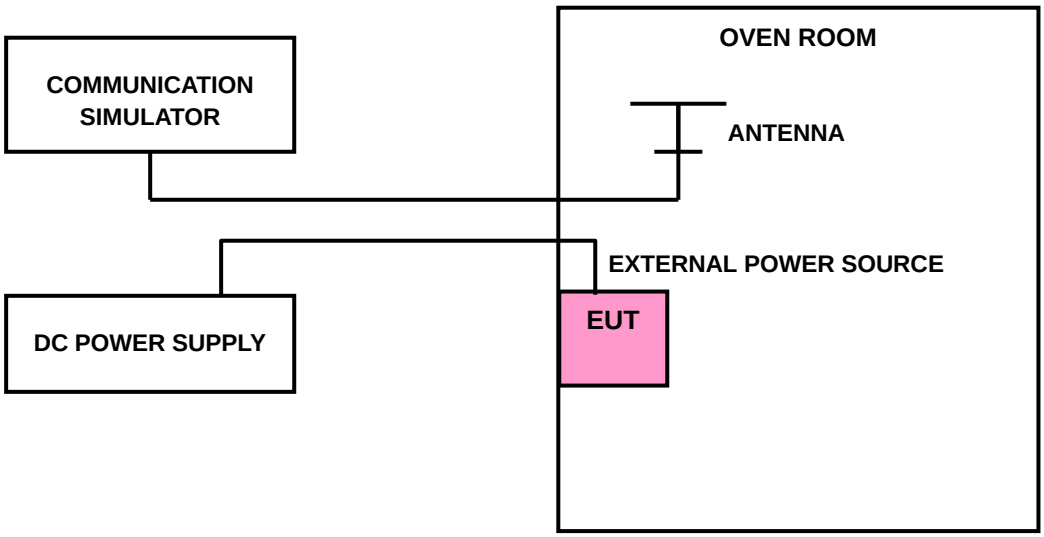
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warms up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected to 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 E.

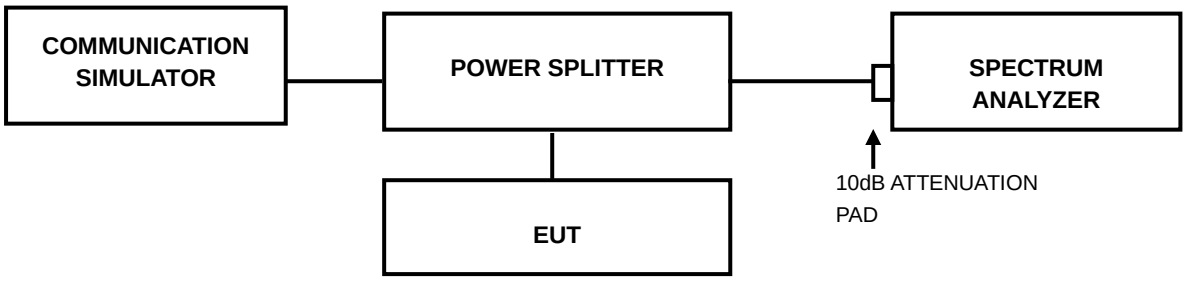
Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.7V); VH = High voltage(4.2V);
NT = Normal temperature (25℃)

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 E.

3.4 EMISSION MASK MEASUREMENT

3.4.1 LIMITS OF EMISSION MASK MEASUREMENT

LTE Band14:
According to FCC part 90.543(e) shall be tested the emission mask.
(e) For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the 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, in accordance with the following:

(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

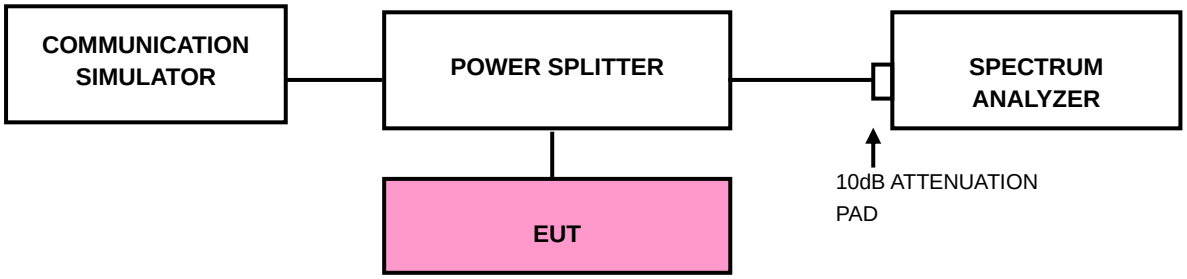
(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

LTE Band26:

According to FCC part 90.691 shall be tested the emission mask. For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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) ≧ 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 ≧3 x 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 E.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

(1)The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

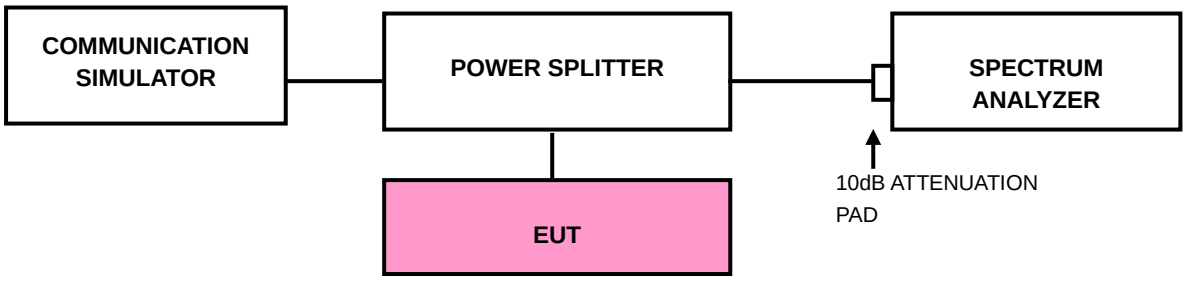
(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

3.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at middle 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 E.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

47 CFR 90.543(e)
For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the 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, in accordance with the following:
(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.
(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.
47 CFR 90.543(f)
For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.
47 CFR 90.691(a)(2)
Any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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.

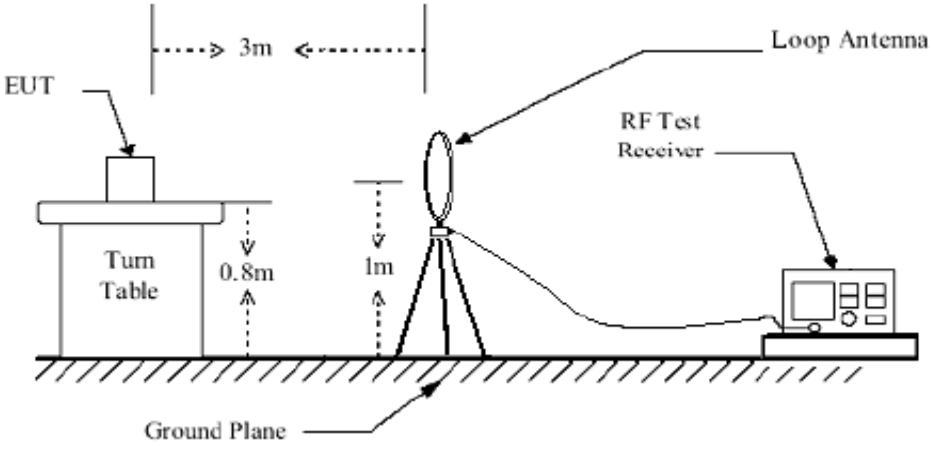
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

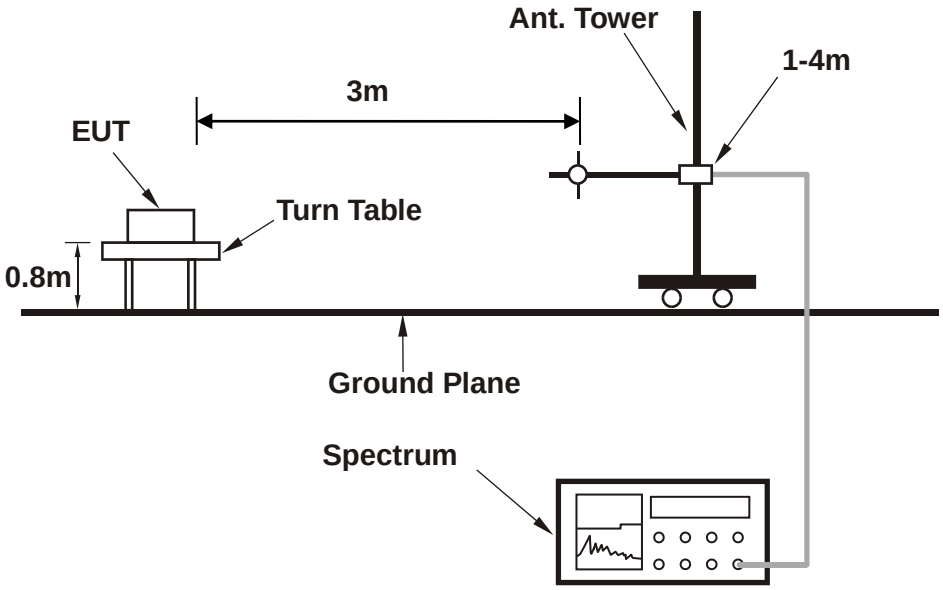
No deviation

3.6.4 TEST SETUP

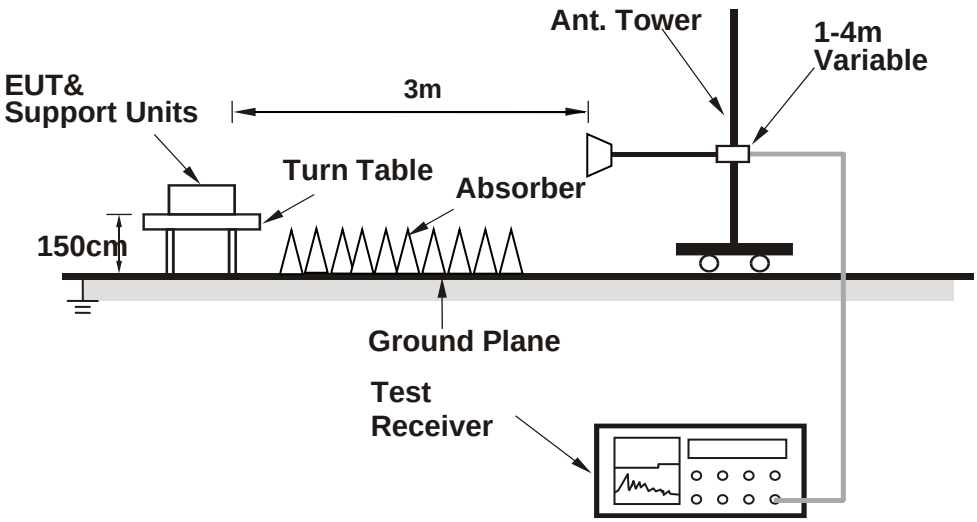
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



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:

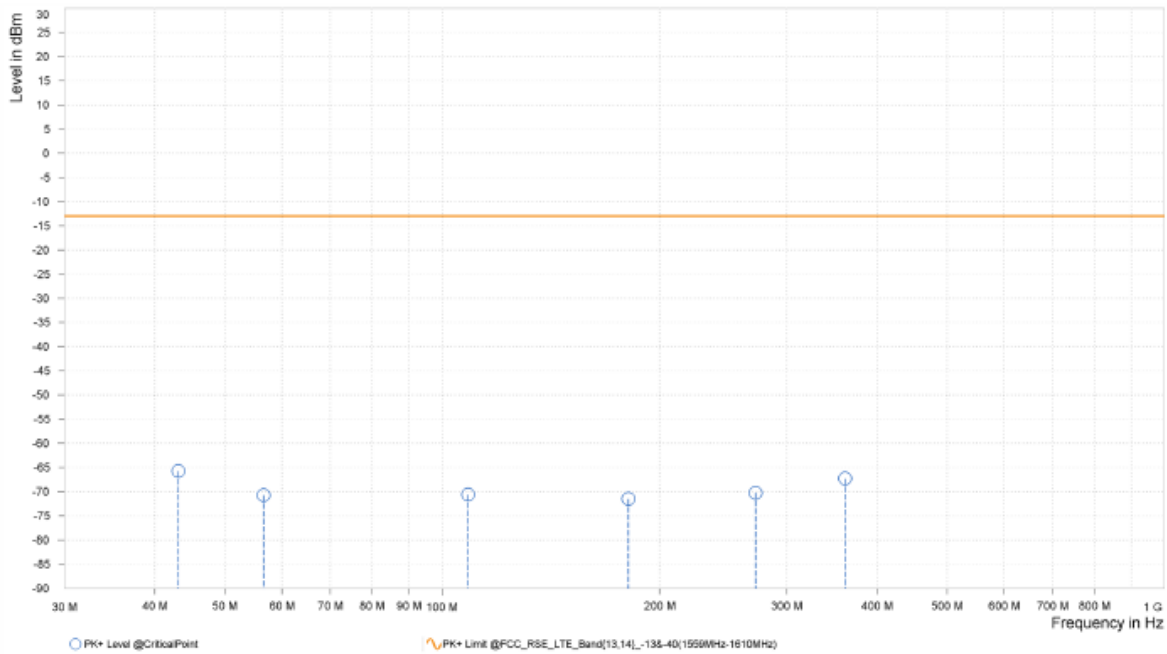
LTE Band 14:

CHANNEL BANDWIDTH: 5MHz / QPSK

CH23330

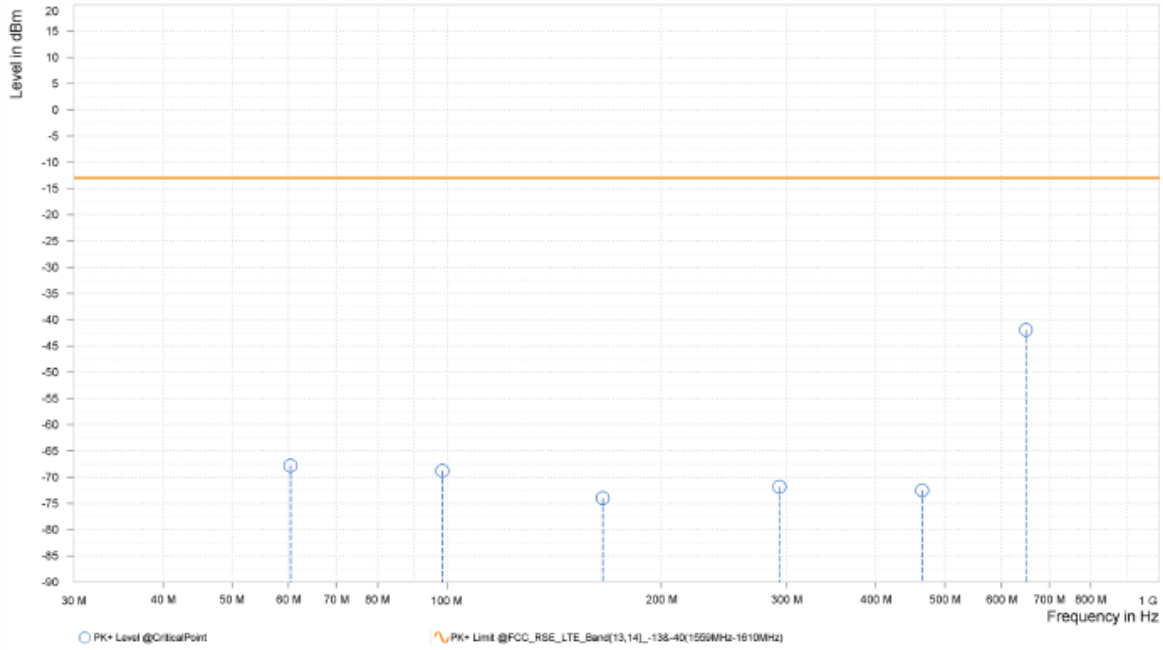
MODE	TX channel 23330	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace HU		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	43.100	-65.74	-13.00	52.74	3.34	H	0.9	2.00
1	56.600	-70.75	-13.00	57.75	3.20	H	226.6	2.00
1	108.600	-70.61	-13.00	57.61	-0.90	H	126.2	2.00
1	181.000	-71.47	-13.00	58.47	-1.41	H	126.2	2.00
1	271.550	-70.24	-13.00	57.24	3.91	H	126.2	2.00
1	361.050	-67.26	-13.00	54.26	6.35	H	6.5	1.00



MODE	TX channel 23330	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	60.350	-67.80	-13.00	54.80	4.14	V	1	1.00
1	98.600	-68.76	-13.00	55.76	5.05	V	359.1	1.00
1	165.550	-74.00	-13.00	61.00	-1.22	V	227.9	2.00
1	292.900	-71.84	-13.00	58.84	5.05	V	127.4	2.00
2	464.071	-72.50	-13.00	59.50	6.49	V	359.1	1.00
2	649.421	-41.93	-13.00	28.93	32.73	V	359	2.00



ABOVE 1GHz

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

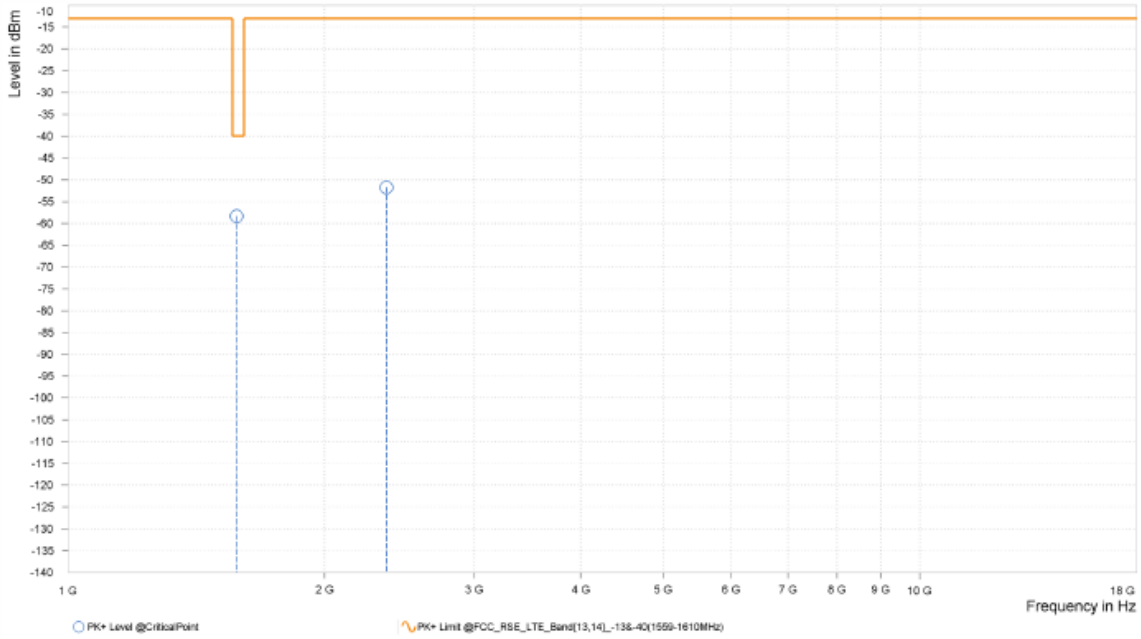
LTE B14

CHANNEL BANDWIDTH: 5MHz / QPSK

CH23305

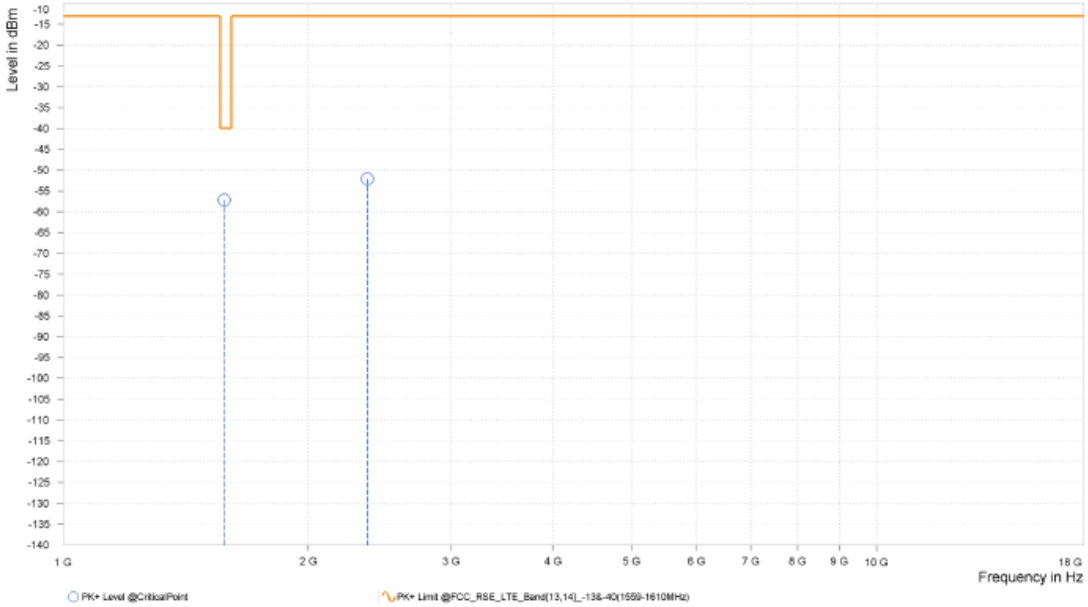
MODE	TX channel 23305	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,576.500	-58.32	-40.00	18.32	12.32	H	358.7	1.00
3	2,364.750	-51.74	-13.00	38.74	19.63	H	359.1	1.00



MODE	TX channel 23305	**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			

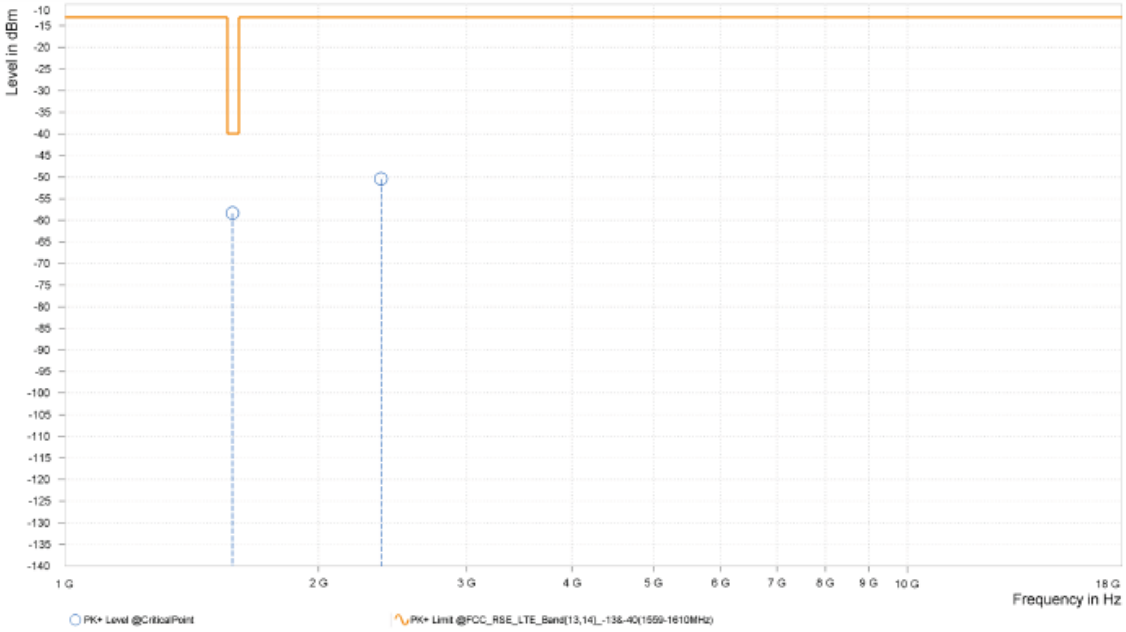
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,576.500	-57.17	-40.00	17.17	13.52	V	354.4	1.00
3	2,364.750	-52.09	-13.00	39.09	19.29	V	188.9	1.00



CH23330

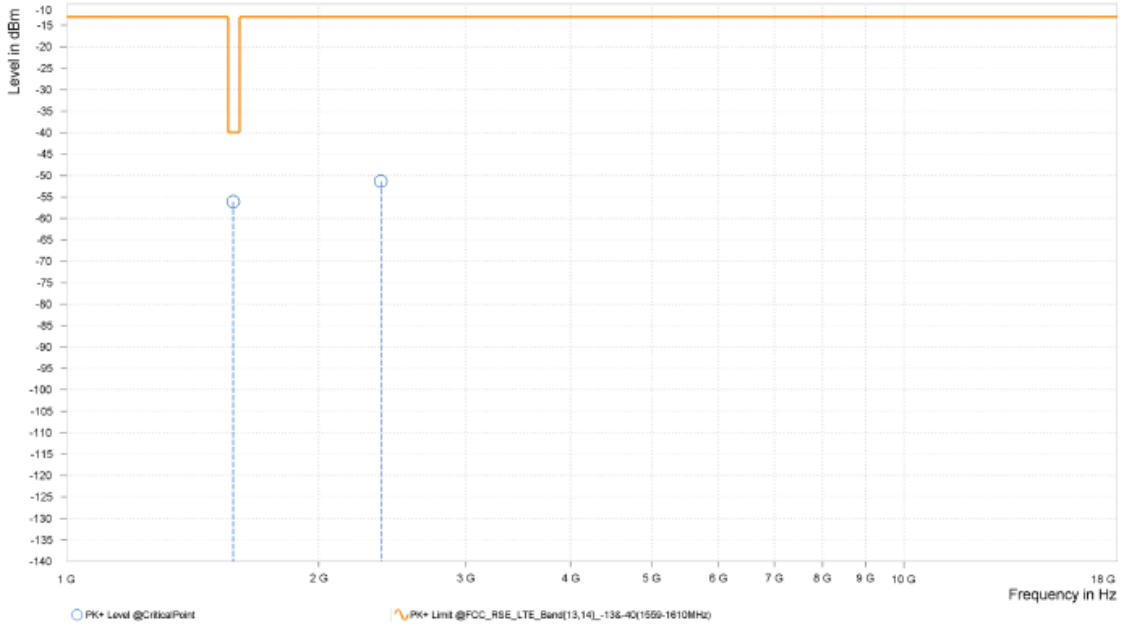
MODE	TX channel 23330	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,581.500	-58.37	-40.00	18.37	12.40	H	1	1.00
3	2,372.250	-50.42	-13.00	37.42	19.87	H	130.9	2.00



MODE	TX channel 23330	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			

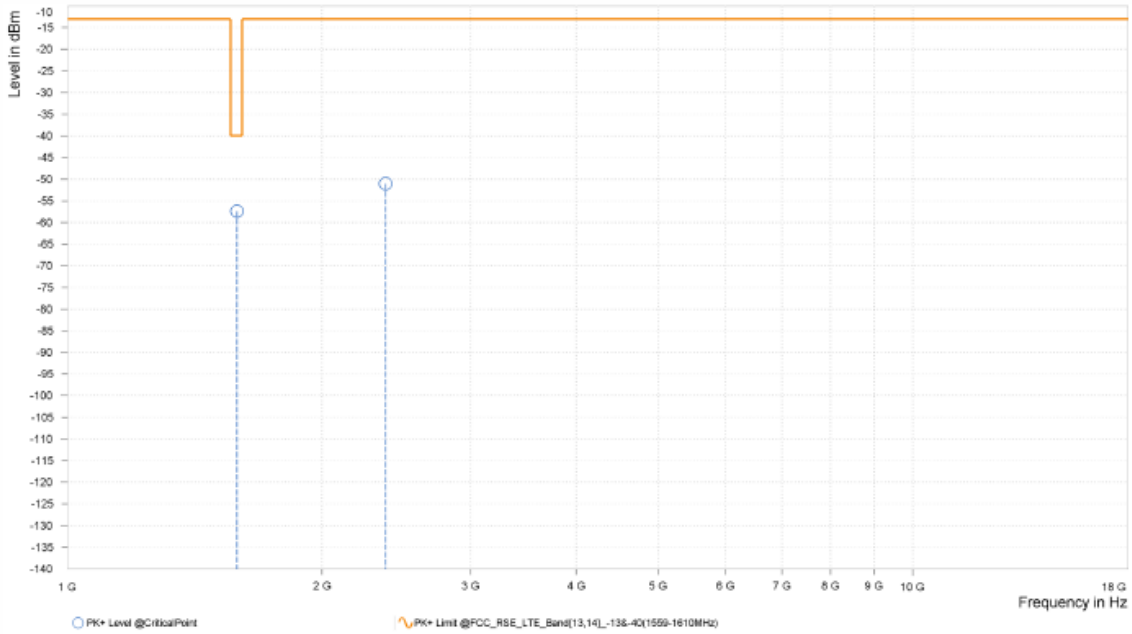
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,581.500	-56.10	-40.00	16.10	13.53	V	169.8	1.00
3	2,372.250	-51.34	-13.00	38.34	19.31	V	278.7	1.00



CH23355

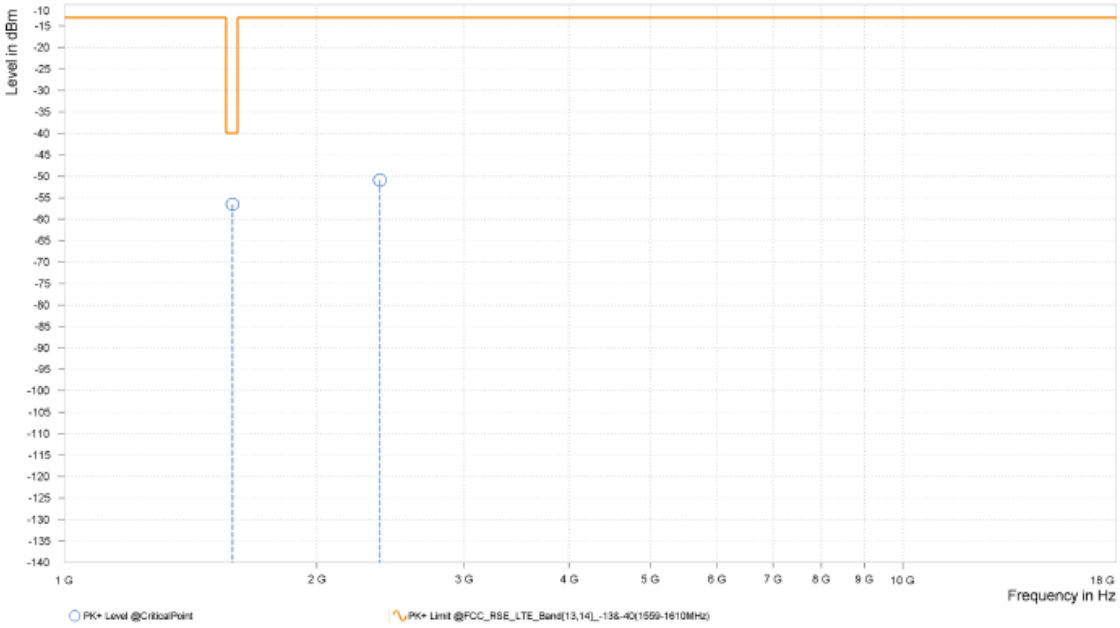
MODE	TX channel 23355	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,586.500	-57.43	-40.00	17.43	12.51	H	86.2	2.00
3	2,379.750	-51.06	-13.00	38.06	19.78	H	323.3	1.00



MODE	TX channel 23355	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	1,586.500	-56.57	-40.00	16.57	13.59	V	190.2	2.00
3	2,379.750	-50.90	-13.00	37.90	19.23	V	127.3	2.00

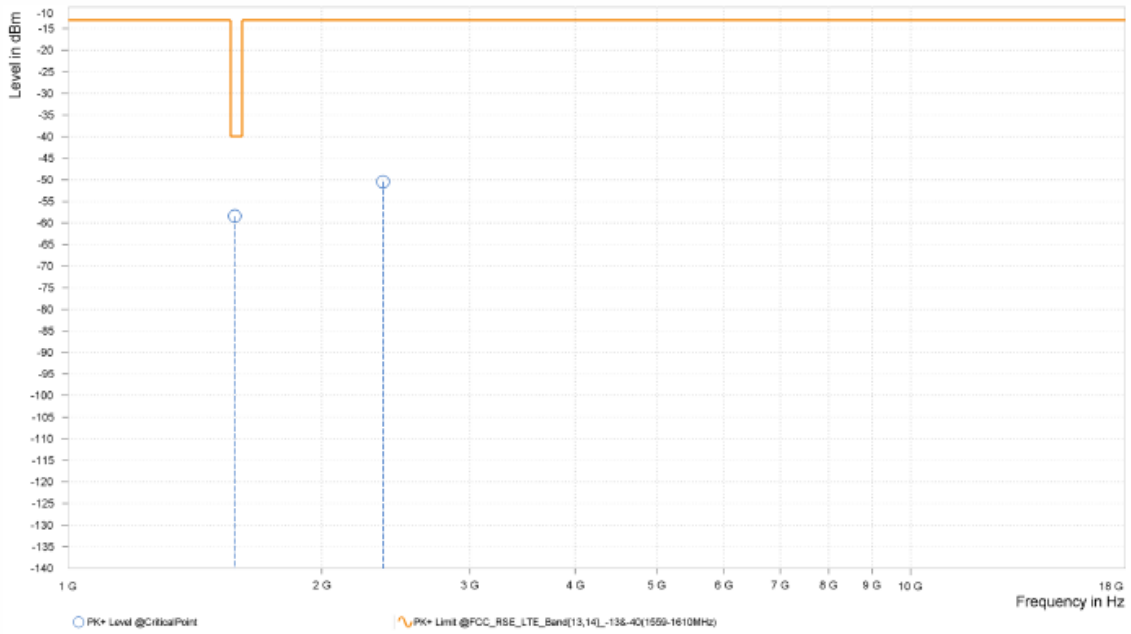


CHANNEL BANDWIDTH: 10MHz / QPSK

CH23330

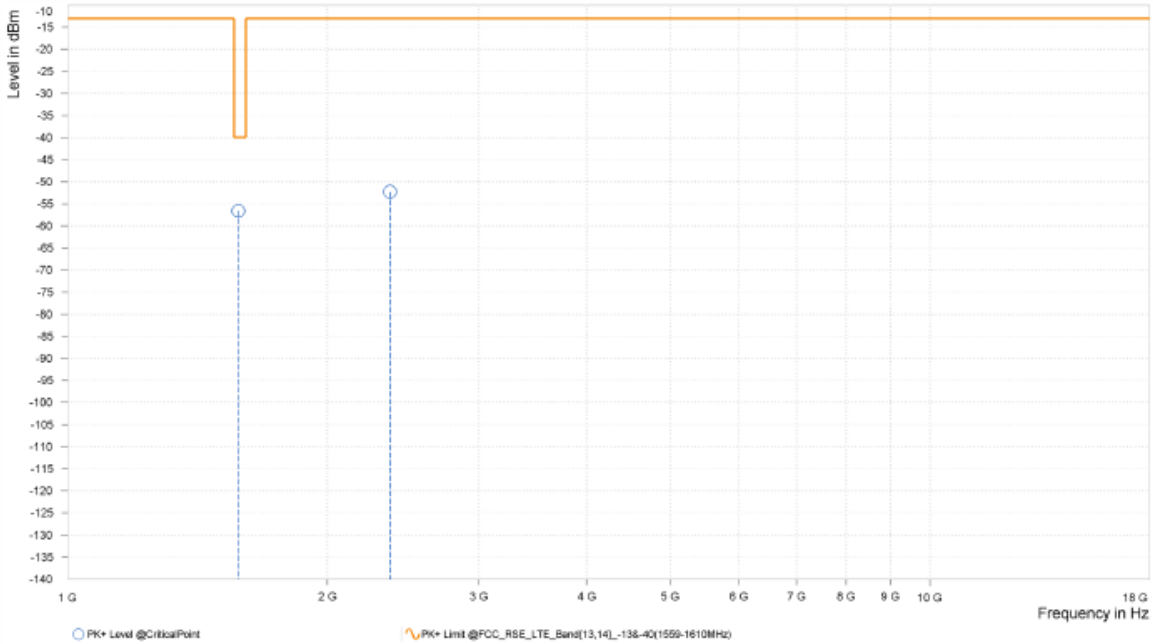
MODE	TX channel 23330	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,577.000	-58.42	-40.00	18.42	12.32	H	86.9	2.00
3	2,365.500	-50.45	-13.00	37.45	19.66	H	359	1.00



MODE	TX channel 23330	**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	1,577.000	-56.60	-40.00	16.60	13.52	V	86.2	2.00
3	2,365.500	-52.28	-13.00	39.28	19.29	V	130.9	2.00

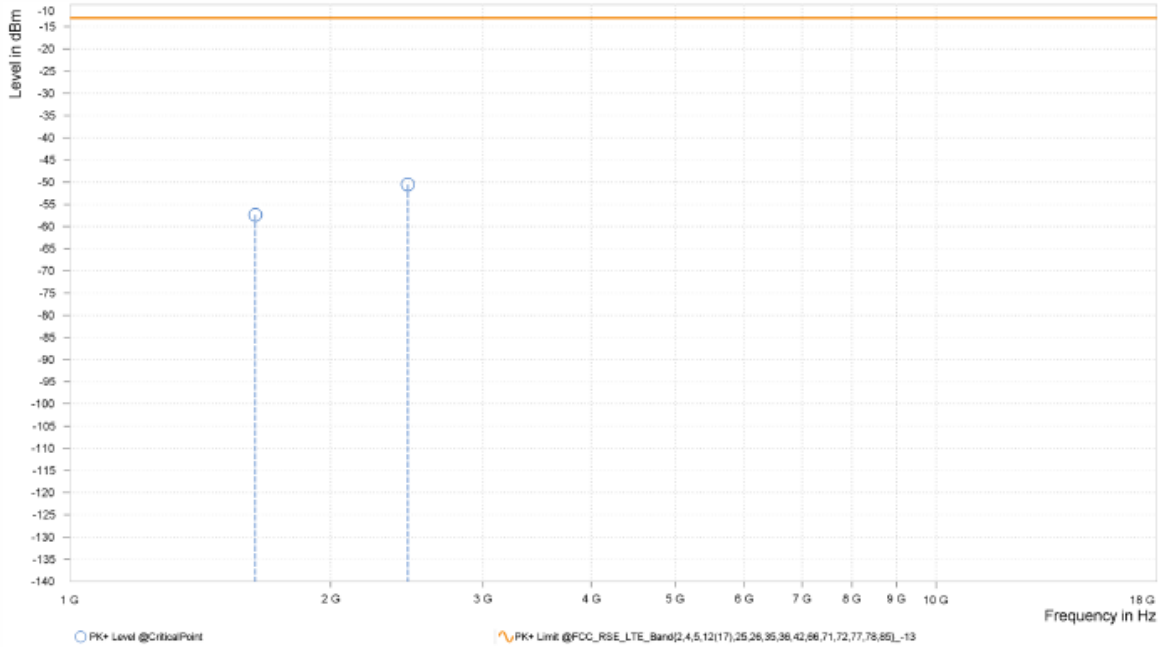


LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

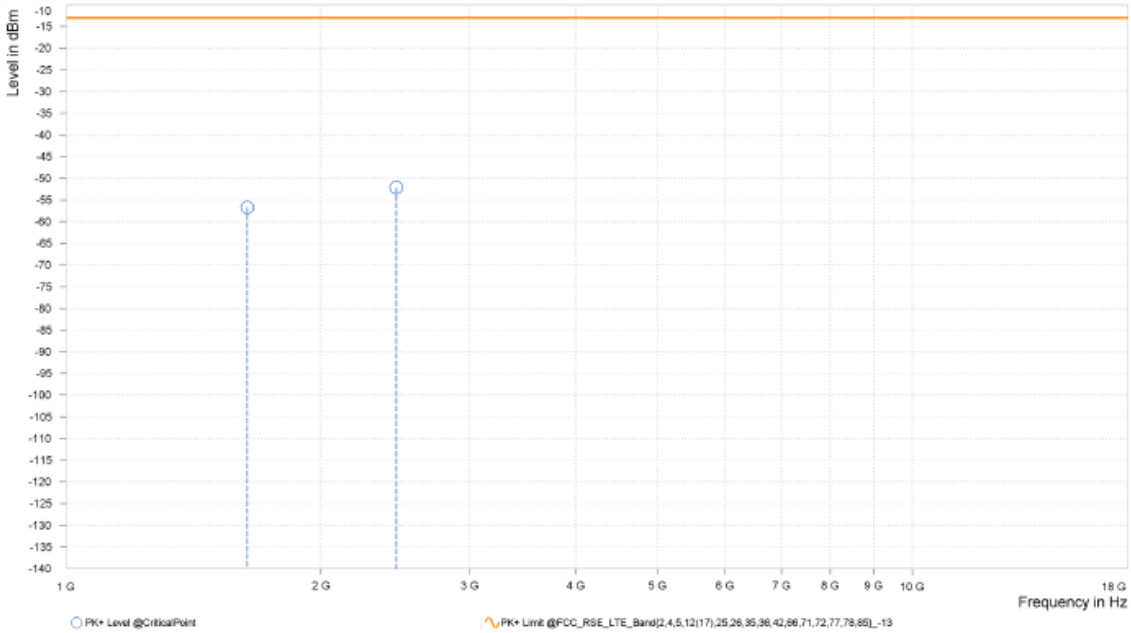
MODE	TX channel 26740	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,636.740	-57.37	-13.00	44.37	13.64	H	1	2.00
3	2,455.110	-50.55	-13.00	37.55	19.40	H	62.8	2.00



MODE	TX channel 26740	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			

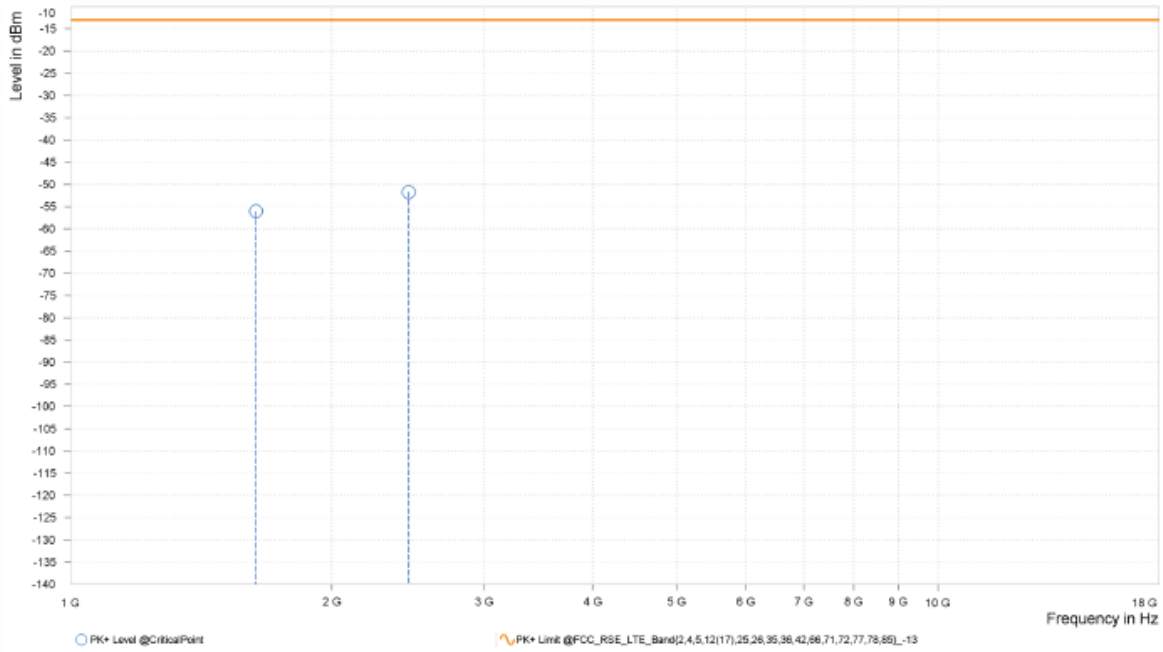
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,636.740	-56.73	-13.00	43.73	13.69	V	33.1	2.00
3	2,455.110	-52.14	-13.00	39.14	19.41	V	1	2.00



CHANNEL BANDWIDTH: 3MHz / QPSK

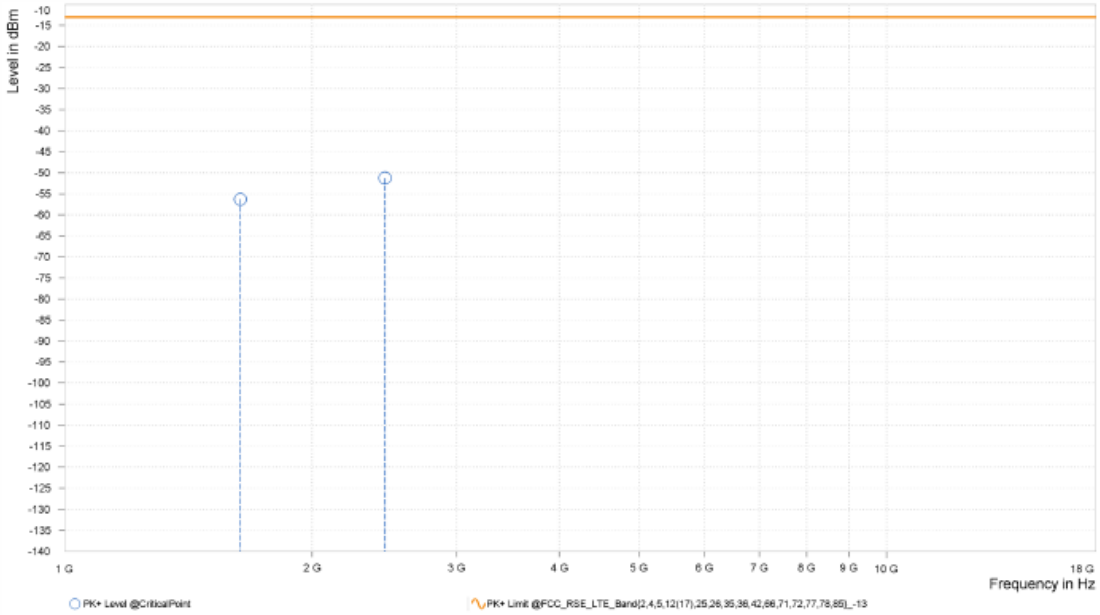
MODE	TX channel 26740	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,635.300	-56.04	-13.00	43.04	13.61	H	1	2.00
3	2,452.950	-51.75	-13.00	38.75	19.44	H	1	2.00



MODE	TX channel 26740	**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	1,635.300	-56.29	-13.00	43.29	13.68	V	359	2.00
3	2,452.950	-51.29	-13.00	38.29	19.42	V	62.2	2.00

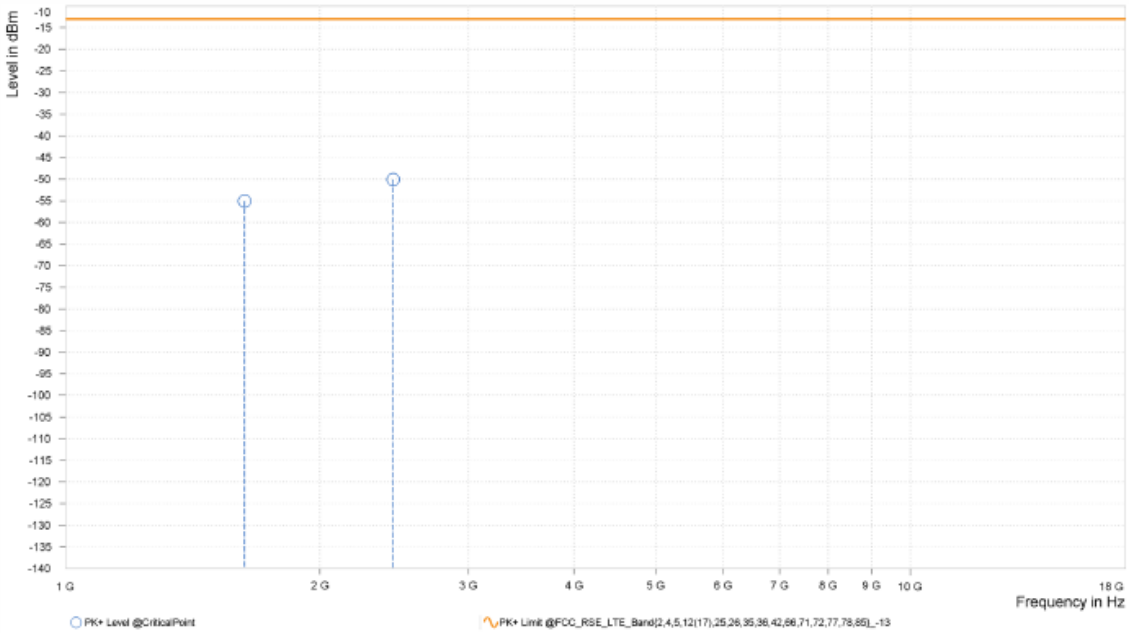


CHANNEL BANDWIDTH: 5MHz / QPSK

CH 26715

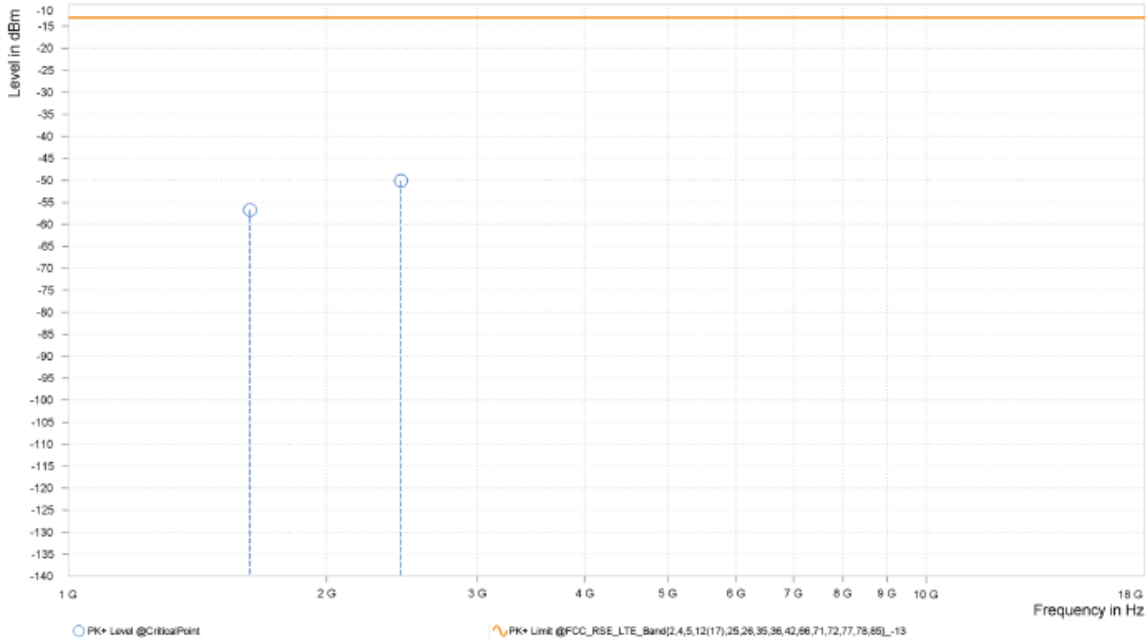
MODE	TX channel 26715	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,628.500	-55.06	-13.00	42.06	13.47	H	290.8	2.00
3	2,442.750	-50.08	-13.00	37.08	19.66	H	183.9	2.00



MODE	TX channel 26715	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			

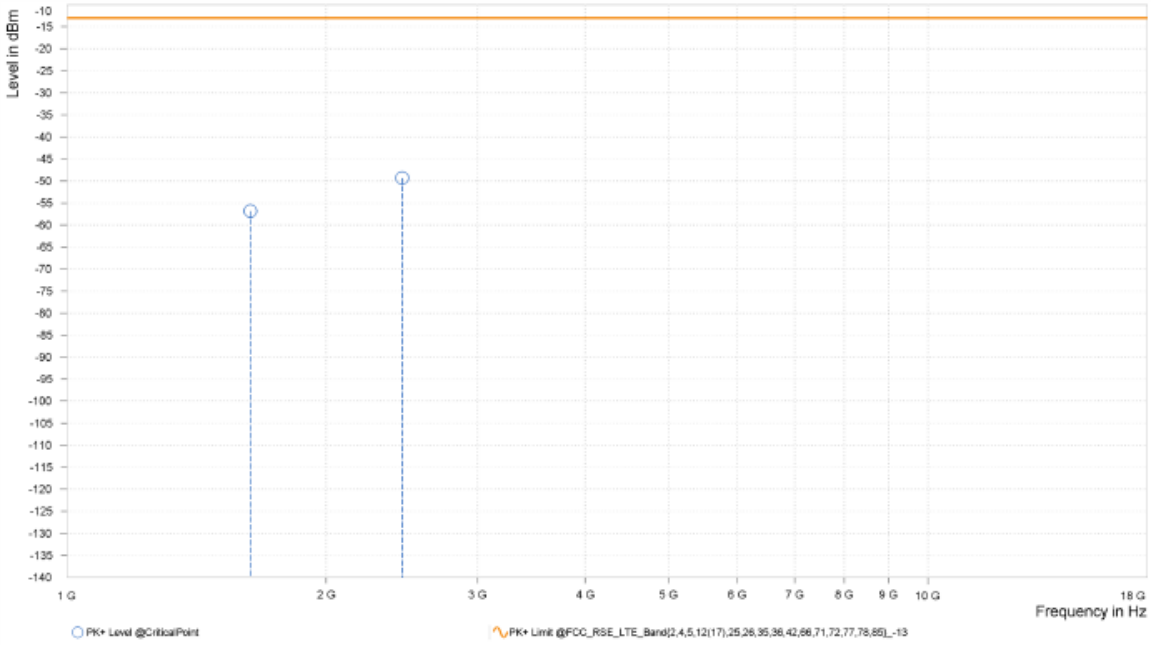
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,628.500	-56.73	-13.00	43.73	13.68	V	1	2.00
3	2,442.750	-50.09	-13.00	37.09	19.45	V	296.4	2.00



CH 26740

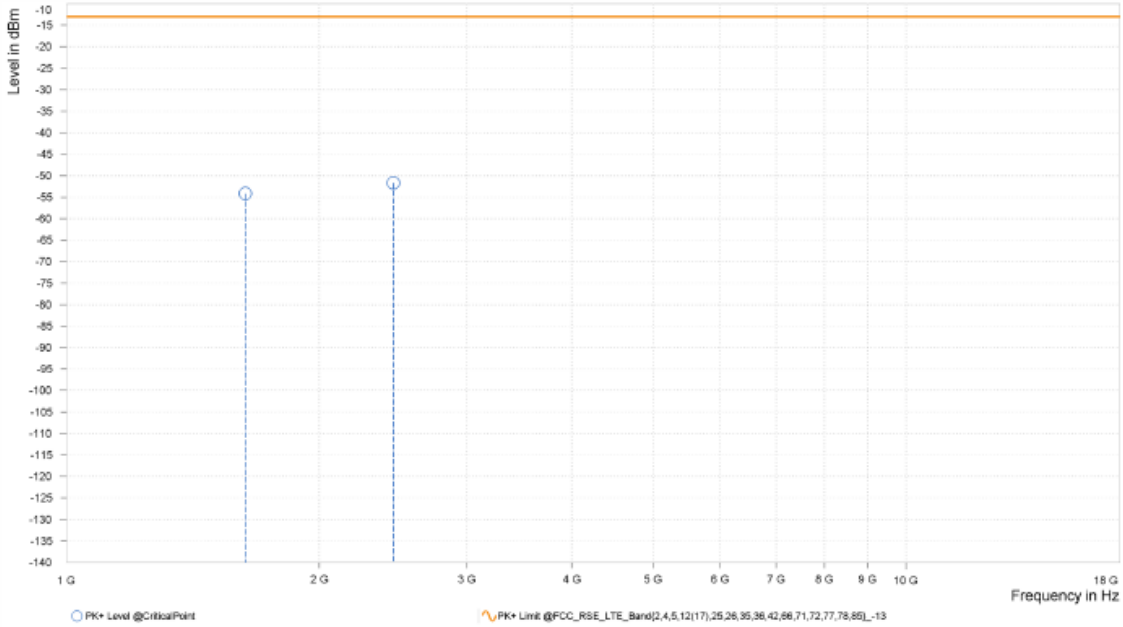
MODE	TX channel 26740	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,633.500	-56.83	-13.00	43.83	13.57	H	33.8	2.00
3	2,450.250	-49.33	-13.00	36.33	19.83	H	303.4	2.00



MODE	TX channel 26740	**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			

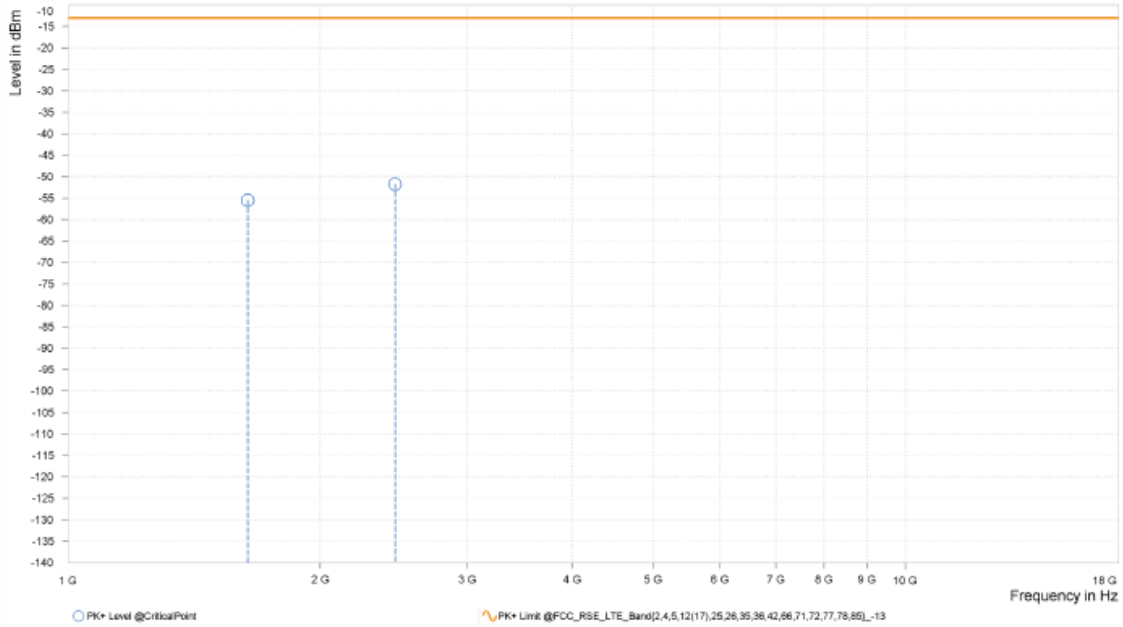
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,633.500	-54.16	-13.00	41.16	13.68	V	33.9	1.00
3	2,450.250	-51.73	-13.00	38.73	19.43	V	1	2.00



CH 26765

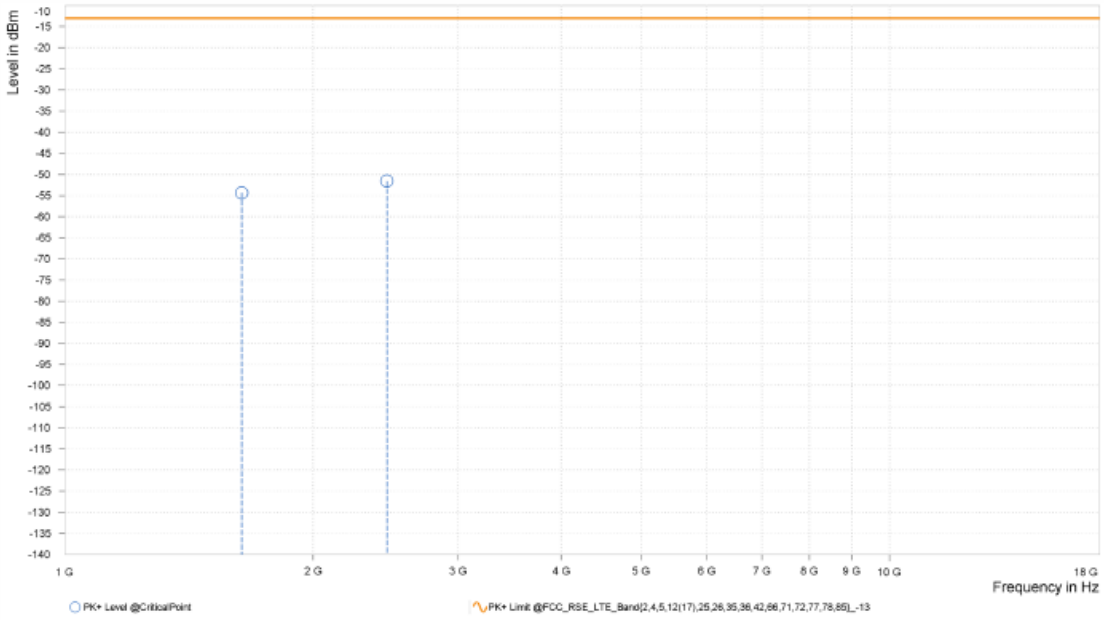
MODE	TX channel 26765	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,638.500	-55.49	-13.00	42.49	13.68	H	174.6	1.00
3	2,457.750	-51.75	-13.00	38.75	19.35	H	352.8	2.00



MODE	TX channel 26765	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			

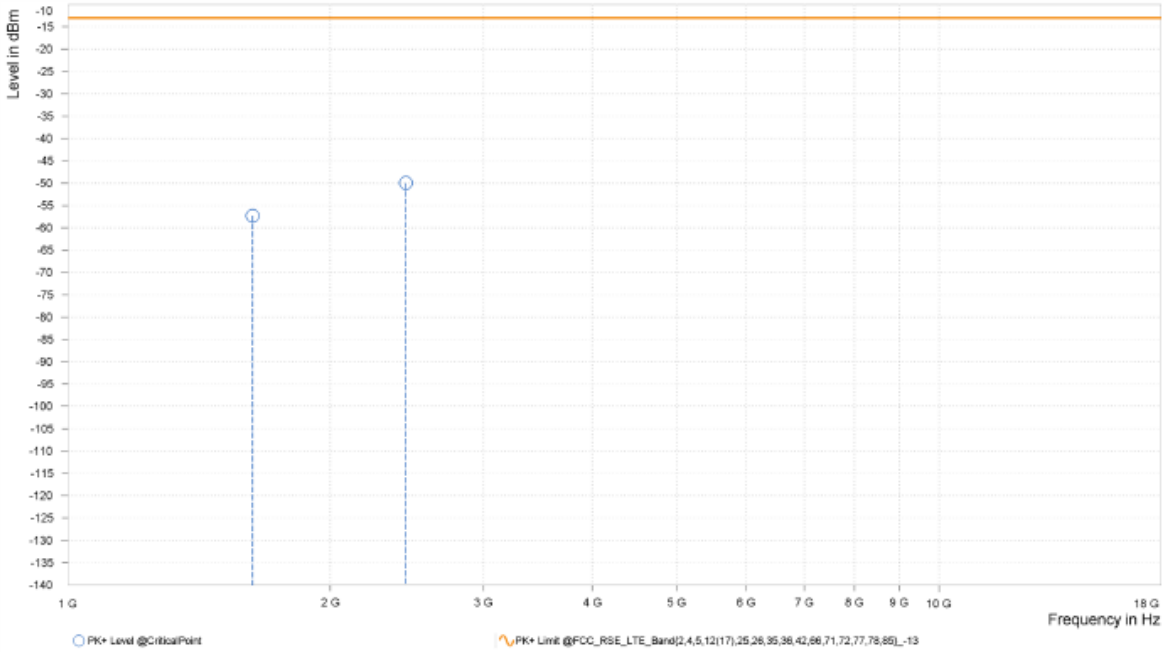
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,638.500	-54.37	-13.00	41.37	13.69	V	232.6	2.00
3	2,457.750	-51.58	-13.00	38.58	19.40	V	297	2.00



CHANNEL BANDWIDTH: 10MHz / QPSK

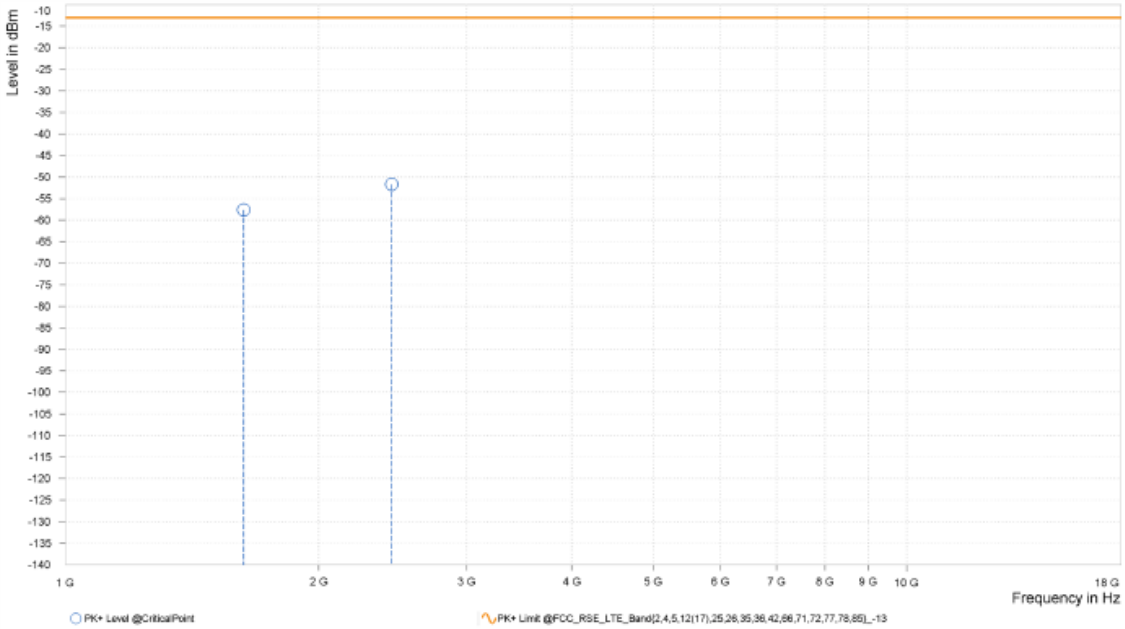
MODE	TX channel 26740	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,629.000	-57.30	-13.00	44.30	13.48	H	359.1	2.00
3	2,443.500	-49.96	-13.00	36.96	19.64	H	179.7	2.00



MODE	TX channel 26740	**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	1,629.000	-57.63	-13.00	44.63	13.68	V	33.2	2.00
3	2,443.500	-51.72	-13.00	38.72	19.45	V	235.5	2.00

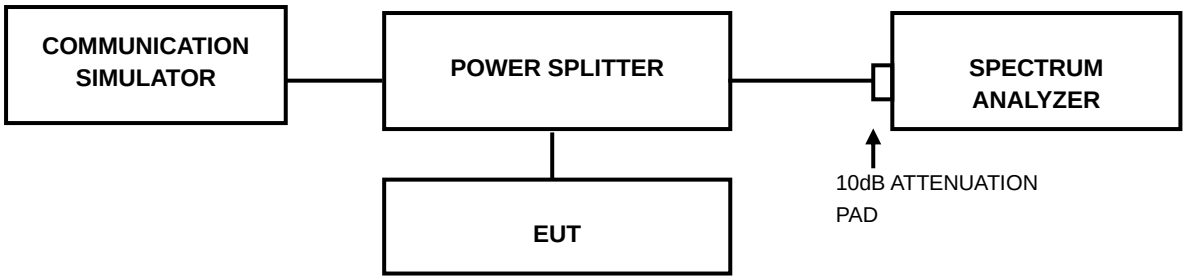


3.7 PEAK TO AVERAGE RATIO

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 ≥ 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 E.

4 INFORMATION ON THE TESTING LABORATORIES

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

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

Shenzhen EMC/RF Lab:
Tel: +86-755-88696566
Fax: +86-755-88696577

Email: customerservice.sw@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.

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

No modifications were made to the EUT by the lab during the test.

---END---