



Test Report No.: RF260413B009



FCC TEST REPORT

(PART 90)

Applicant:	Astronomy Data Processing Corporation
Address:	2228 Cotner Ave Los Angeles, CA 90064

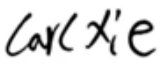
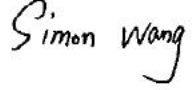
Manufacturer or Supplier	Astronomy Data Processing Corporation
Address	2228 Cotner Ave Los Angeles, CA 90064
Product	Edge Controller 01
Model Name	EC-01
FCC ID	2BM4513EA
Date of tests	Dec. 22, 2025 - Feb. 05, 2026

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 Carl Xie Engineer / Mobile Department	Approved by Simon Wang Manager / Mobile Department
	
Date: Feb. 05, 2026	Date: Feb. 05, 2026

BOOMWAVE TEST (SHENZHEN) CO., LTD. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. Without written approval of BOOMWAVE TEST (SHENZHEN) CO., LTD., the test report shall not be reproduced except in full.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF260413B009	Original release	Feb. 05, 2026



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1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Ref Std.Clause	Test Items	Result (Pass/Fail)	Remark
§2.1046	Conducted Output Power	Reporting only	-
§2.1053 §90.543(e)(3) §90.543(f) §90.691	Radiated Spurious Emissions	PASS	Under limit 21.29dB at 1584.000MHz

NOTE:

*Test Lab Information Reference

Lab A:

Boomwave Test (Shenzhen) Co., Ltd.

Lab Address:

Rm B38, Warehouse A5(Chiwan #1), #3 Chiwan 4th Rd, Chiwan Comm, Zhaoshang St, Nanshan Dist, Shenzhen, Guangdong, Shenzhen, China

Accredited Test Lab Cert 7607.01

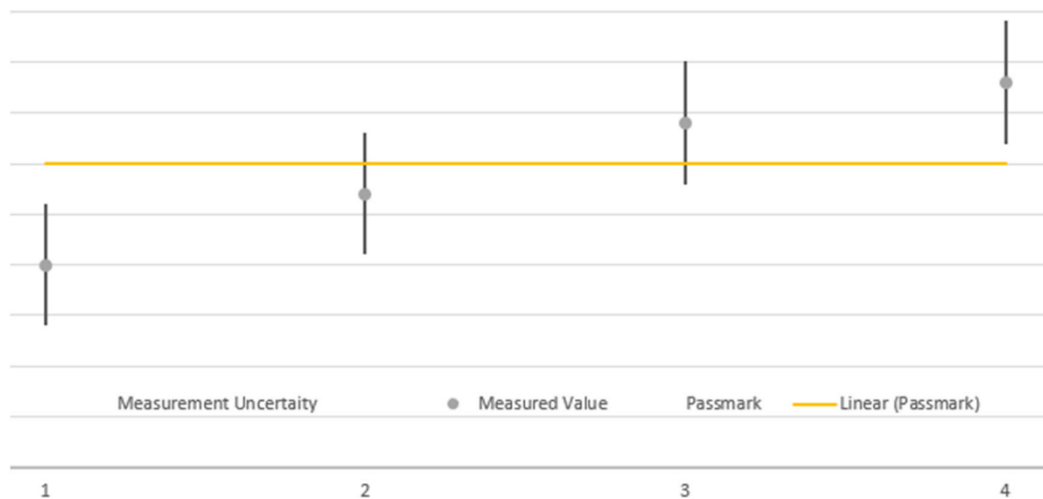
The FCC Site Registration No. is 646781; The Designation No. is CN1429.

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	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.68dB
	30MHz ~ 1GHz	3.26dB
	1GHz ~ 18GHz	4.48dB
	18GHz ~ 40GHz	4.12dB

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



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

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

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



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1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	2025/7/3	2026/7/2
BiConiLog Antenna	ETS-LINDGREN	3143B	161965	2025/7/17	2026/7/16
Horn Antenna	SCHWARZBECK	BBHA9120D	3297	2025/9/27	2026/9/26
Horn Antenna	STEATITE	QWH-SL-18-40-K-SG QMS-00361	15433	2025/7/19	2026/7/18
Preamplifier	Tonscend	TPA184045	AP24L8060388	2025/7/3	2026/7/2
MXE EMI Receiver	keysight	N9038B	MY50018017	2025/7/1	2026/6/30
MXG Vector Signal Generator	Keysight	N5183B	MY59100137	2025/6/30	2026/6/29
Preamplifier	Tonscend	TPA001330	806JSAPO40804251015	2025/6/30	2026/6/29
Preamplifier	Tonscend	TPA011845	AP24L8060392	2025/6/30	2026/6/29
Attenuator 6DB	SHX	TS2-6-6-A	230927166	2025/6/30	2026/6/29
Attenuator 6DB	SHX	TS2-6-6-A	230927165	2025/6/30	2026/6/29
Active Receive Loop Antenna	SCHWARZBECK	FMZB 1519 B	00173	2025/6/30	2026/6/29
Temp. & Humi. Recorder	Kejian	HTC-01	157246	2025/7/2	2026/7/1
HIGH pass FILTER_1-18	EWT	EWT-57-0222	EWT-57-0222	2025/6/30	2026/6/29
HIGH pass FILTER_7-18	EWT	EWT-57-0223	EWT-57-0223	2025/6/30	2026/6/29
HIGH pass FILTER_3-18	EWT	EWT-57-0221	EWT-57-0221	2025/6/30	2026/6/29
DC~1GHz Lowpass Filter	EWT	EWT-56-0649	EWT-56-0649	2025/7/3	2026/7/2
Cable 1	N/A	N/A	N/A	2025/9/28	2026/9/27
Cable 2	N/A	N/A	N/A	2025/9/28	2026/9/27
Cable 3	N/A	N/A	N/A	2025/9/28	2026/9/27
Wireless communication integrated tester	Rohde&Schwarz	CMW500	182016	2025/6/30	2026/6/29
EXA Signal Analyzer	KEYSIGHT	N9010B	MY62170156	2025/6/30	2026/6/29
RF Control Unit	Tonscend	JS0806-1	21K8060504	2025/6/16	2026/6/15
DC Power Supply	AGILENT	HMP2020	100598	2025/7/1	2026/6/30
10dB attenuator	JFW INDUSTRIES INC	50HF-010-SMA	50HF-010-SMA-1	2025/6/30	2026/6/29
10dB attenuator	JFW INDUSTRIES INC	50HF-010-SMA	50HF-010-SMA-2	2025/6/30	2026/6/29
hygrothermograph	Anymetrers	----	TH101B	2025/7/22	2026/7/21
Temperature Box	zhongkemeiqi	MA22040172	MQ-DTH50F-2	2025/7/1	2026/6/30

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power divider	WOKEN	71688	204-003180-01	2025/6/30	2026/6/29
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NOTE:

1. The calibration interval of the above test instruments is 12 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 646781; The Designation No. is CN1429.



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2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Edge Controller 01	
MODEL NAME	EC-01	
NOMINAL VOLTAGE	19Vdc	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM
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
	LTE Band 26 Channel Bandwidth: 10MHz	819MHz
EMISSION DESIGNATOR	LTE Band 14 Channel Bandwidth: 5MHz	QPSK: 4M48G7D 16QAM: 4M48W7D 64QAM: 4M48W7D
	LTE Band 14 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M94W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 1.4MHz	QPSK: 1M11G7D 16QAM: 1M11W7D 64QAM: 1M11W7D
	LTE Band 26 Channel Bandwidth: 3MHz	QPSK: 2M70G7D 16QAM: 2M71W7D 64QAM: 2M70W7D
	LTE Band 26 Channel Bandwidth: 5MHz	QPSK: 4M49G7D 16QAM: 4M48W7D 64QAM: 4M48W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
	LTE Band 26 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 8M93W7D 64QAM: 8M94W7D
MAX. ERP POWER	LTE Band 14 Channel Bandwidth: 5MHz	176.60mW

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	LTE Band 14 Channel Bandwidth: 10MHz	177.01mW
	LTE Band 26 Channel Bandwidth: 1.4MHz	149.97mW
	LTE Band 26 Channel Bandwidth: 3MHz	154.17mW
	LTE Band 26 Channel Bandwidth: 5MHz	152.76mW
	LTE Band 26 Channel Bandwidth: 10MHz	155.24mW
ANTENNA GAIN	LTE B14	0.5dBi
	LTE B26	0.1dBi
ANTENNA TYPE	PIFA Antenna	
HW VERSION	1.0	
SW VERSION	V1	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-20°C-60°C	
EXTREME VOLTAGE	15V-20V	

NOTE:

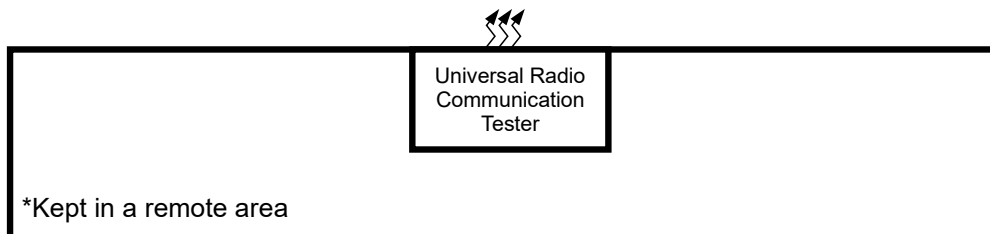
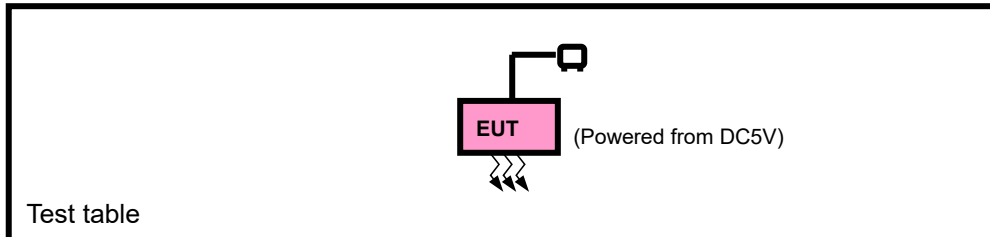
- 1 For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2 The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

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

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST





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2.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

2.4 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 + 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	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK, 16QAM, 64QAM	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	26740	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26705 to 26775	26740	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM, 64QAM	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.



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TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	24deg. C, 60%RH	19VDC	Carl Xie
RADIATED EMISSION	23deg. C, 70%RH	19VDC	Carl Xie



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2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 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.



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3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

47 CFR 90.542(a)(6)

Control stations and mobile stations transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 30 watts ERP.

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)(b)

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

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

Where:

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

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

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

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

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

CONDUCTED POWER MEASUREMENT:

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



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3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

We have verified power and ERP. The test data is better than module report, so power test data please refer to module report(No. : SEWM2304000122RG01, FCC ID: XMR2023RM520NGL)

Considering antenna gain is changed compared with module, so we update ERP.



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LTE Band14

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Gain(dBi)	Result(mW)	ERP(dBm)	ERP(mW)	Limit(W)	Verdict
Band14	5MHz	QPSK	23305	1RB#0	23.99	0.5	250.61	22.34	171.40	3	PASS
Band14	5MHz	QPSK	23305	1RB#12	23.97	0.5	249.46	22.32	170.61	3	PASS
Band14	5MHz	QPSK	23305	1RB#24	23.85	0.5	242.66	22.2	165.96	3	PASS
Band14	5MHz	QPSK	23305	25RB#0	23.02	0.5	200.45	21.37	137.09	3	PASS
Band14	5MHz	QPSK	23330	1RB#0	23.87	0.5	243.78	22.22	166.72	3	PASS
Band14	5MHz	QPSK	23330	1RB#12	24.03	0.5	252.93	22.38	172.98	3	PASS
Band14	5MHz	QPSK	23330	1RB#24	23.90	0.5	245.47	22.25	167.88	3	PASS
Band14	5MHz	QPSK	23330	25RB#0	22.90	0.5	194.98	21.25	133.35	3	PASS
Band14	5MHz	QPSK	23355	1RB#0	24.12	0.5	258.23	22.47	176.60	3	PASS
Band14	5MHz	QPSK	23355	1RB#12	24.08	0.5	255.86	22.43	174.98	3	PASS
Band14	5MHz	QPSK	23355	1RB#24	23.78	0.5	238.78	22.13	163.31	3	PASS
Band14	5MHz	QPSK	23355	25RB#0	22.96	0.5	197.70	21.31	135.21	3	PASS
Band14	5MHz	16QAM	23305	1RB#0	23.22	0.5	209.89	21.57	143.55	3	PASS
Band14	5MHz	16QAM	23305	1RB#12	23.13	0.5	205.59	21.48	140.60	3	PASS
Band14	5MHz	16QAM	23305	1RB#24	23.21	0.5	209.41	21.56	143.22	3	PASS
Band14	5MHz	16QAM	23305	25RB#0	22.03	0.5	159.59	20.38	109.14	3	PASS
Band14	5MHz	16QAM	23330	1RB#0	23.18	0.5	207.97	21.53	142.23	3	PASS
Band14	5MHz	16QAM	23330	1RB#12	23.02	0.5	200.45	21.37	137.09	3	PASS
Band14	5MHz	16QAM	23330	1RB#24	22.95	0.5	197.24	21.3	134.90	3	PASS
Band14	5MHz	16QAM	23330	25RB#0	21.91	0.5	155.24	20.26	106.17	3	PASS
Band14	5MHz	16QAM	23355	1RB#0	23.13	0.5	205.59	21.48	140.60	3	PASS
Band14	5MHz	16QAM	23355	1RB#12	23.02	0.5	200.45	21.37	137.09	3	PASS

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Band14	5MHz	16QAM	23355	1RB#24	22.93	0.5	196.34	21.28	134.28	3	PASS
Band14	5MHz	16QAM	23355	25RB#0	21.89	0.5	154.53	20.24	105.68	3	PASS
Band14	5MHz	64QAM	23305	1RB#0	22.10	0.5	162.18	20.45	110.92	3	PASS
Band14	5MHz	64QAM	23305	1RB#12	22.16	0.5	164.44	20.51	112.46	3	PASS
Band14	5MHz	64QAM	23305	1RB#24	22.04	0.5	159.96	20.39	109.40	3	PASS
Band14	5MHz	64QAM	23305	25RB#0	21.05	0.5	127.35	19.4	87.10	3	PASS
Band14	5MHz	64QAM	23330	1RB#0	22.34	0.5	171.40	20.69	117.22	3	PASS
Band14	5MHz	64QAM	23330	1RB#12	22.01	0.5	158.85	20.36	108.64	3	PASS
Band14	5MHz	64QAM	23330	1RB#24	22.03	0.5	159.59	20.38	109.14	3	PASS
Band14	5MHz	64QAM	23330	25RB#0	20.93	0.5	123.88	19.28	84.72	3	PASS
Band14	5MHz	64QAM	23355	1RB#0	22.18	0.5	165.20	20.53	112.98	3	PASS
Band14	5MHz	64QAM	23355	1RB#12	22.17	0.5	164.82	20.52	112.72	3	PASS
Band14	5MHz	64QAM	23355	1RB#24	21.99	0.5	158.12	20.34	108.14	3	PASS
Band14	5MHz	64QAM	23355	25RB#0	20.99	0.5	125.60	19.34	85.90	3	PASS
Band14	10MHz	QPSK	23330	1RB#0	24.13	0.5	258.82	22.48	177.01	3	PASS
Band14	10MHz	QPSK	23330	1RB#24	23.97	0.5	249.46	22.32	170.61	3	PASS
Band14	10MHz	QPSK	23330	1RB#49	23.77	0.5	238.23	22.12	162.93	3	PASS
Band14	10MHz	QPSK	23330	50RB#0	22.91	0.5	195.43	21.26	133.66	3	PASS
Band14	10MHz	16QAM	23330	1RB#0	23.21	0.5	209.41	21.56	143.22	3	PASS
Band14	10MHz	16QAM	23330	1RB#24	23.08	0.5	203.24	21.43	139.00	3	PASS
Band14	10MHz	16QAM	23330	1RB#49	22.94	0.5	196.79	21.29	134.59	3	PASS
Band14	10MHz	16QAM	23330	50RB#0	21.93	0.5	155.96	20.28	106.66	3	PASS
Band14	10MHz	64QAM	23330	1RB#0	22.18	0.5	165.20	20.53	112.98	3	PASS
Band14	10MHz	64QAM	23330	1RB#24	22.11	0.5	162.55	20.46	111.17	3	PASS
Band14	10MHz	64QAM	23330	1RB#49	21.99	0.5	158.12	20.34	108.14	3	PASS
Band14	10MHz	64QAM	23330	50RB#0	20.93	0.5	123.88	19.28	84.72	3	PASS

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LTE Band 26

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Result(mW)	Gain(dBi)	ERP(dBm)	ERP(mW)	Limit(W)	Verdict
Band26	1.4MHz	QPSK	26697	1RB#0	20.77	119.40	0.1	18.72	74.47	100	PASS
Band26	1.4MHz	QPSK	26697	1RB#2	20.89	122.74	0.1	18.84	76.56	100	PASS
Band26	1.4MHz	QPSK	26697	1RB#5	20.75	118.85	0.1	18.70	74.13	100	PASS
Band26	1.4MHz	QPSK	26697	6RB#0	22.84	192.31	0.1	20.79	119.95	100	PASS
Band26	1.4MHz	QPSK	26740	1RB#0	20.69	117.22	0.1	18.64	73.11	100	PASS
Band26	1.4MHz	QPSK	26740	1RB#2	20.90	123.03	0.1	18.85	76.74	100	PASS
Band26	1.4MHz	QPSK	26740	1RB#5	20.85	121.62	0.1	18.80	75.86	100	PASS
Band26	1.4MHz	QPSK	26740	6RB#0	22.88	194.09	0.1	20.83	121.06	100	PASS
Band26	1.4MHz	QPSK	26783	1RB#0	20.97	125.03	0.1	18.92	77.98	100	PASS
Band26	1.4MHz	QPSK	26783	1RB#2	23.81	240.44	0.1	21.76	149.97	100	PASS
Band26	1.4MHz	QPSK	26783	1RB#5	20.95	124.45	0.1	18.90	77.62	100	PASS
Band26	1.4MHz	QPSK	26783	6RB#0	20.92	123.59	0.1	18.87	77.09	100	PASS
Band26	1.4MHz	16QAM	26697	1RB#0	22.92	195.88	0.1	20.87	122.18	100	PASS
Band26	1.4MHz	16QAM	26697	1RB#2	22.91	195.43	0.1	20.86	121.90	100	PASS
Band26	1.4MHz	16QAM	26697	1RB#5	22.85	192.75	0.1	20.80	120.23	100	PASS
Band26	1.4MHz	16QAM	26697	6RB#0	21.77	150.31	0.1	19.72	93.76	100	PASS
Band26	1.4MHz	16QAM	26740	1RB#0	22.91	195.43	0.1	20.86	121.90	100	PASS
Band26	1.4MHz	16QAM	26740	1RB#2	22.94	196.79	0.1	20.89	122.74	100	PASS
Band26	1.4MHz	16QAM	26740	1RB#5	23.07	202.77	0.1	21.02	126.47	100	PASS
Band26	1.4MHz	16QAM	26740	6RB#0	21.95	156.68	0.1	19.90	97.72	100	PASS
Band26	1.4MHz	16QAM	26783	1RB#0	22.87	193.64	0.1	20.82	120.78	100	PASS
Band26	1.4MHz	16QAM	26783	1RB#2	23.14	206.06	0.1	21.09	128.53	100	PASS

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Band26	1.4MHz	16QAM	26783	1RB#5	23.08	203.24	0.1	21.03	126.77	100	PASS
Band26	1.4MHz	16QAM	26783	6RB#0	21.91	155.24	0.1	19.86	96.83	100	PASS
Band26	1.4MHz	64QAM	26697	1RB#0	21.97	157.40	0.1	19.92	98.17	100	PASS
Band26	1.4MHz	64QAM	26697	1RB#2	21.99	158.12	0.1	19.94	98.63	100	PASS
Band26	1.4MHz	64QAM	26697	1RB#5	21.81	151.71	0.1	19.76	94.62	100	PASS
Band26	1.4MHz	64QAM	26697	6RB#0	20.84	121.34	0.1	18.79	75.68	100	PASS
Band26	1.4MHz	64QAM	26740	1RB#0	21.96	157.04	0.1	19.91	97.95	100	PASS
Band26	1.4MHz	64QAM	26740	1RB#2	21.95	156.68	0.1	19.90	97.72	100	PASS
Band26	1.4MHz	64QAM	26740	1RB#5	22.13	163.31	0.1	20.08	101.86	100	PASS
Band26	1.4MHz	64QAM	26740	6RB#0	20.93	123.88	0.1	18.88	77.27	100	PASS
Band26	1.4MHz	64QAM	26783	1RB#0	21.92	155.60	0.1	19.87	97.05	100	PASS
Band26	1.4MHz	64QAM	26783	1RB#2	21.87	153.82	0.1	19.82	95.94	100	PASS
Band26	1.4MHz	64QAM	26783	1RB#5	22.11	162.55	0.1	20.06	101.39	100	PASS
Band26	1.4MHz	64QAM	26783	6RB#0	20.95	124.45	0.1	18.90	77.62	100	PASS
Band26	3MHz	QPSK	26705	1RB#0	20.69	117.22	0.1	18.64	73.11	100	PASS
Band26	3MHz	QPSK	26705	1RB#8	20.80	120.23	0.1	18.75	74.99	100	PASS
Band26	3MHz	QPSK	26705	1RB#14	20.75	118.85	0.1	18.70	74.13	100	PASS
Band26	3MHz	QPSK	26705	15RB#0	21.77	150.31	0.1	19.72	93.76	100	PASS
Band26	3MHz	QPSK	26740	1RB#0	20.87	122.18	0.1	18.82	76.21	100	PASS
Band26	3MHz	QPSK	26740	1RB#8	20.88	122.46	0.1	18.83	76.38	100	PASS
Band26	3MHz	QPSK	26740	1RB#14	20.95	124.45	0.1	18.90	77.62	100	PASS
Band26	3MHz	QPSK	26740	15RB#0	21.91	155.24	0.1	19.86	96.83	100	PASS
Band26	3MHz	QPSK	26775	1RB#0	22.13	163.31	0.1	20.08	101.86	100	PASS
Band26	3MHz	QPSK	26775	1RB#8	23.93	247.17	0.1	21.88	154.17	100	PASS
Band26	3MHz	QPSK	26775	1RB#14	20.92	123.59	0.1	18.87	77.09	100	PASS
Band26	3MHz	QPSK	26775	15RB#0	21.98	157.76	0.1	19.93	98.40	100	PASS

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Band26	3MHz	16QAM	26705	1RB#0	22.92	195.88	0.1	20.87	122.18	100	PASS
Band26	3MHz	16QAM	26705	1RB#8	22.90	194.98	0.1	20.85	121.62	100	PASS
Band26	3MHz	16QAM	26705	1RB#14	22.83	191.87	0.1	20.78	119.67	100	PASS
Band26	3MHz	16QAM	26705	15RB#0	21.85	153.11	0.1	19.80	95.50	100	PASS
Band26	3MHz	16QAM	26740	1RB#0	22.88	194.09	0.1	20.83	121.06	100	PASS
Band26	3MHz	16QAM	26740	1RB#8	23.00	199.53	0.1	20.95	124.45	100	PASS
Band26	3MHz	16QAM	26740	1RB#14	22.92	195.88	0.1	20.87	122.18	100	PASS
Band26	3MHz	16QAM	26740	15RB#0	21.96	157.04	0.1	19.91	97.95	100	PASS
Band26	3MHz	16QAM	26775	1RB#0	23.02	200.45	0.1	20.97	125.03	100	PASS
Band26	3MHz	16QAM	26775	1RB#8	22.97	198.15	0.1	20.92	123.59	100	PASS
Band26	3MHz	16QAM	26775	1RB#14	23.01	199.99	0.1	20.96	124.74	100	PASS
Band26	3MHz	16QAM	26775	15RB#0	22.00	158.49	0.1	19.95	98.86	100	PASS
Band26	3MHz	64QAM	26705	1RB#0	22.00	158.49	0.1	19.95	98.86	100	PASS
Band26	3MHz	64QAM	26705	1RB#8	22.05	160.32	0.1	20.00	100.00	100	PASS
Band26	3MHz	64QAM	26705	1RB#14	21.95	156.68	0.1	19.90	97.72	100	PASS
Band26	3MHz	64QAM	26705	15RB#0	20.85	121.62	0.1	18.80	75.86	100	PASS
Band26	3MHz	64QAM	26740	1RB#0	21.94	156.31	0.1	19.89	97.50	100	PASS
Band26	3MHz	64QAM	26740	1RB#8	21.92	155.60	0.1	19.87	97.05	100	PASS
Band26	3MHz	64QAM	26740	1RB#14	22.18	165.20	0.1	20.13	103.04	100	PASS
Band26	3MHz	64QAM	26740	15RB#0	20.95	124.45	0.1	18.90	77.62	100	PASS
Band26	3MHz	64QAM	26775	1RB#0	22.06	160.69	0.1	20.01	100.23	100	PASS
Band26	3MHz	64QAM	26775	1RB#8	22.12	162.93	0.1	20.07	101.62	100	PASS
Band26	3MHz	64QAM	26775	1RB#14	22.05	160.32	0.1	20.00	100.00	100	PASS
Band26	3MHz	64QAM	26775	15RB#0	21.04	127.06	0.1	18.99	79.25	100	PASS
Band26	5MHz	QPSK	26715	1RB#0	21.79	151.01	0.1	19.74	94.19	100	PASS
Band26	5MHz	QPSK	26715	1RB#12	23.75	237.14	0.1	21.70	147.91	100	PASS

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Band26	5MHz	QPSK	26715	1RB#24	20.76	119.12	0.1	18.71	74.30	100	PASS
Band26	5MHz	QPSK	26715	25RB#0	21.88	154.17	0.1	19.83	96.16	100	PASS
Band26	5MHz	QPSK	26740	1RB#0	22.12	162.93	0.1	20.07	101.62	100	PASS
Band26	5MHz	QPSK	26740	1RB#12	23.89	244.91	0.1	21.84	152.76	100	PASS
Band26	5MHz	QPSK	26740	1RB#24	20.93	123.88	0.1	18.88	77.27	100	PASS
Band26	5MHz	QPSK	26740	25RB#0	21.89	154.53	0.1	19.84	96.38	100	PASS
Band26	5MHz	QPSK	26765	1RB#0	21.93	155.96	0.1	19.88	97.27	100	PASS
Band26	5MHz	QPSK	26765	1RB#12	23.84	242.10	0.1	21.79	151.01	100	PASS
Band26	5MHz	QPSK	26765	1RB#24	20.82	120.78	0.1	18.77	75.34	100	PASS
Band26	5MHz	QPSK	26765	25RB#0	21.99	158.12	0.1	19.94	98.63	100	PASS
Band26	5MHz	16QAM	26715	1RB#0	23.00	199.53	0.1	20.95	124.45	100	PASS
Band26	5MHz	16QAM	26715	1RB#12	22.88	194.09	0.1	20.83	121.06	100	PASS
Band26	5MHz	16QAM	26715	1RB#24	22.79	190.11	0.1	20.74	118.58	100	PASS
Band26	5MHz	16QAM	26715	25RB#0	21.89	154.53	0.1	19.84	96.38	100	PASS
Band26	5MHz	16QAM	26740	1RB#0	22.90	194.98	0.1	20.85	121.62	100	PASS
Band26	5MHz	16QAM	26740	1RB#12	23.16	207.01	0.1	21.11	129.12	100	PASS
Band26	5MHz	16QAM	26740	1RB#24	23.01	199.99	0.1	20.96	124.74	100	PASS
Band26	5MHz	16QAM	26740	25RB#0	21.88	154.17	0.1	19.83	96.16	100	PASS
Band26	5MHz	16QAM	26765	1RB#0	23.11	204.64	0.1	21.06	127.64	100	PASS
Band26	5MHz	16QAM	26765	1RB#12	23.10	204.17	0.1	21.05	127.35	100	PASS
Band26	5MHz	16QAM	26765	1RB#24	22.99	199.07	0.1	20.94	124.17	100	PASS
Band26	5MHz	16QAM	26765	25RB#0	21.95	156.68	0.1	19.90	97.72	100	PASS
Band26	5MHz	64QAM	26715	1RB#0	21.92	155.60	0.1	19.87	97.05	100	PASS
Band26	5MHz	64QAM	26715	1RB#12	21.93	155.96	0.1	19.88	97.27	100	PASS
Band26	5MHz	64QAM	26715	1RB#24	21.93	155.96	0.1	19.88	97.27	100	PASS
Band26	5MHz	64QAM	26715	25RB#0	20.83	121.06	0.1	18.78	75.51	100	PASS

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Band26	5MHz	64QAM	26740	1RB#0	22.02	159.22	0.1	19.97	99.31	100	PASS
Band26	5MHz	64QAM	26740	1RB#12	22.06	160.69	0.1	20.01	100.23	100	PASS
Band26	5MHz	64QAM	26740	1RB#24	22.02	159.22	0.1	19.97	99.31	100	PASS
Band26	5MHz	64QAM	26740	25RB#0	20.94	124.17	0.1	18.89	77.45	100	PASS
Band26	5MHz	64QAM	26765	1RB#0	22.11	162.55	0.1	20.06	101.39	100	PASS
Band26	5MHz	64QAM	26765	1RB#12	22.07	161.06	0.1	20.02	100.46	100	PASS
Band26	5MHz	64QAM	26765	1RB#24	22.04	159.96	0.1	19.99	99.77	100	PASS
Band26	5MHz	64QAM	26765	25RB#0	20.98	125.31	0.1	18.93	78.16	100	PASS
Band26	10MHz	QPSK	26740	1RB#0	23.75	237.14	0.1	21.70	147.91	100	PASS
Band26	10MHz	QPSK	26740	1RB#24	23.96	248.89	0.1	21.91	155.24	100	PASS
Band26	10MHz	QPSK	26740	1RB#49	23.90	245.47	0.1	21.85	153.11	100	PASS
Band26	10MHz	QPSK	26740	50RB#0	23.00	199.53	0.1	20.95	124.45	100	PASS
Band26	10MHz	16QAM	26740	1RB#0	23.18	207.97	0.1	21.13	129.72	100	PASS
Band26	10MHz	16QAM	26740	1RB#24	23.04	201.37	0.1	20.99	125.60	100	PASS
Band26	10MHz	16QAM	26740	1RB#49	22.86	193.20	0.1	20.81	120.50	100	PASS
Band26	10MHz	16QAM	26740	50RB#0	22.02	159.22	0.1	19.97	99.31	100	PASS
Band26	10MHz	64QAM	26740	1RB#0	21.93	155.96	0.1	19.88	97.27	100	PASS
Band26	10MHz	64QAM	26740	1RB#24	22.08	161.44	0.1	20.03	100.69	100	PASS
Band26	10MHz	64QAM	26740	1RB#49	22.03	159.59	0.1	19.98	99.54	100	PASS
Band26	10MHz	64QAM	26740	50RB#0	20.91	123.31	0.1	18.86	76.91	100	PASS

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

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3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

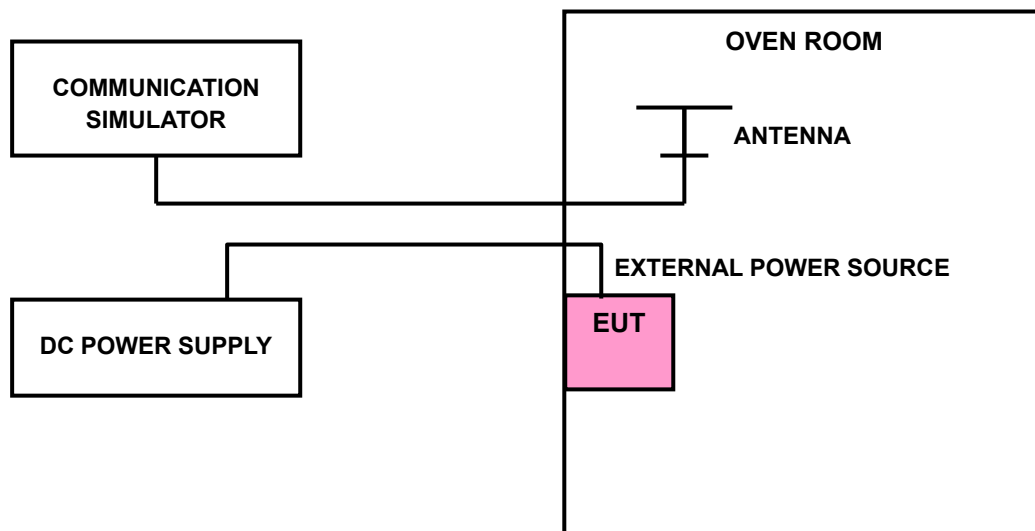
The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked

3.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

3.2.3 TEST SETUP





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3.2.4 TEST RESULTS

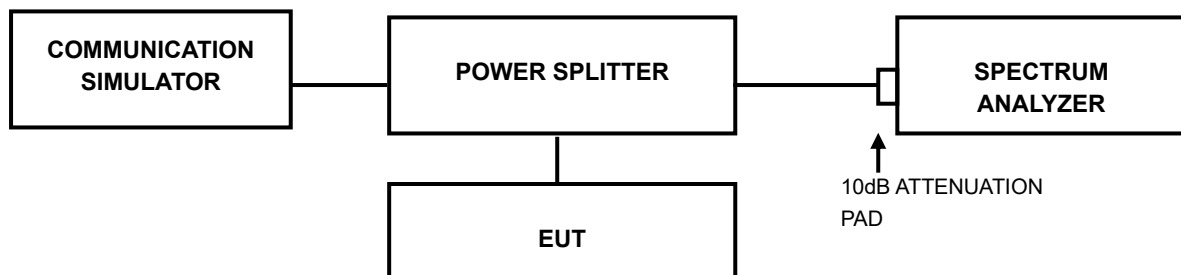
Please Refer to WWAN module(model name: RM520N-GL) test report(NO.: SEWM2304000122RG01, FCC ID: XMR2023RM520NGL).

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

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

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

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

3.3.4 TEST RESULTS

Please Refer to WWAN module(model name: RM520N-GL) test report(NO.: SEWM2304000122RG01, FCC ID: XMR2023RM520NGL).



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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.

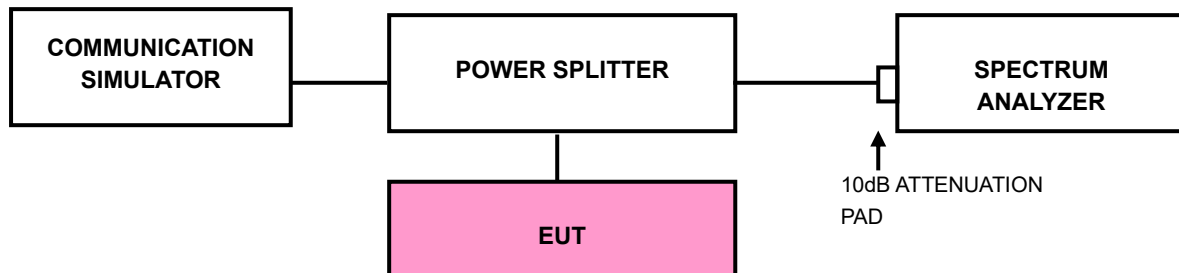
(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(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.

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 $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ 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 $43 + 10 \log_{10}(P)$ 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





Test Report No.: RF260413B009
3.4.3 TEST PROCEDURES

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

3.4.4 TEST RESULTS

Please Refer to WWAN module(model name: RM520N-GL) test report(NO.: SEWM2304000122RG01, FCC ID: XMR2023RM520NGL).

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

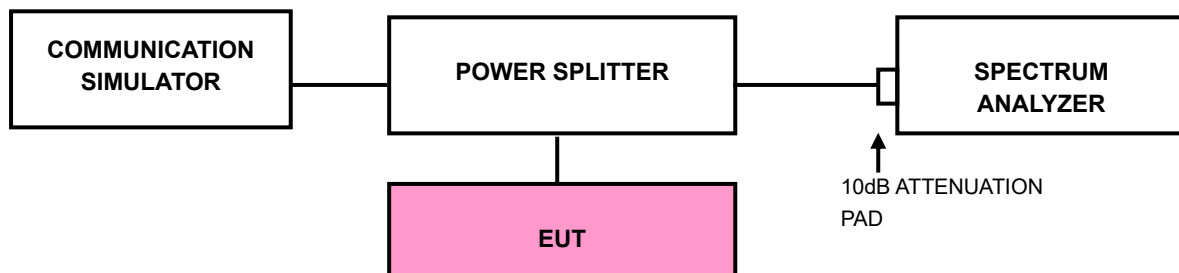
(1) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

(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





Test Report No.: RF260413B009
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 WWAN module(model name: RM520N-GL) test report(NO.: SEWM2304000122RG01, FCC ID: XMR2023RM520NGL).



3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

(1) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ 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.

3.6.2 TEST PROCEDURES

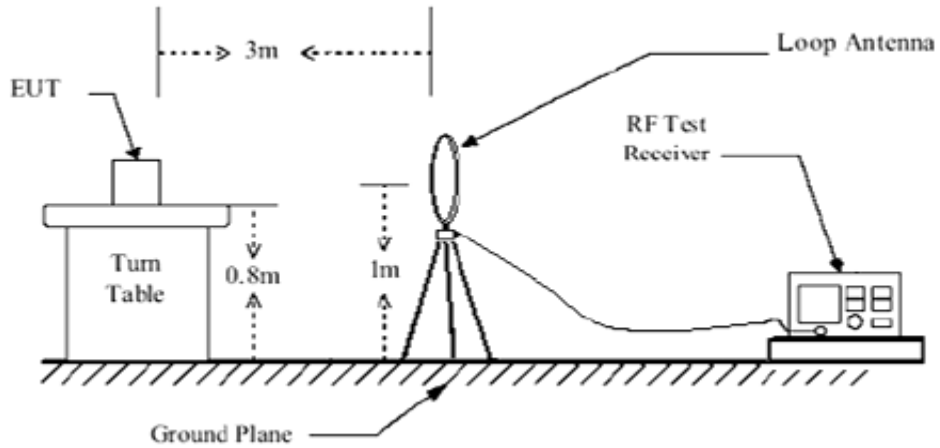
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,
 $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}.$

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

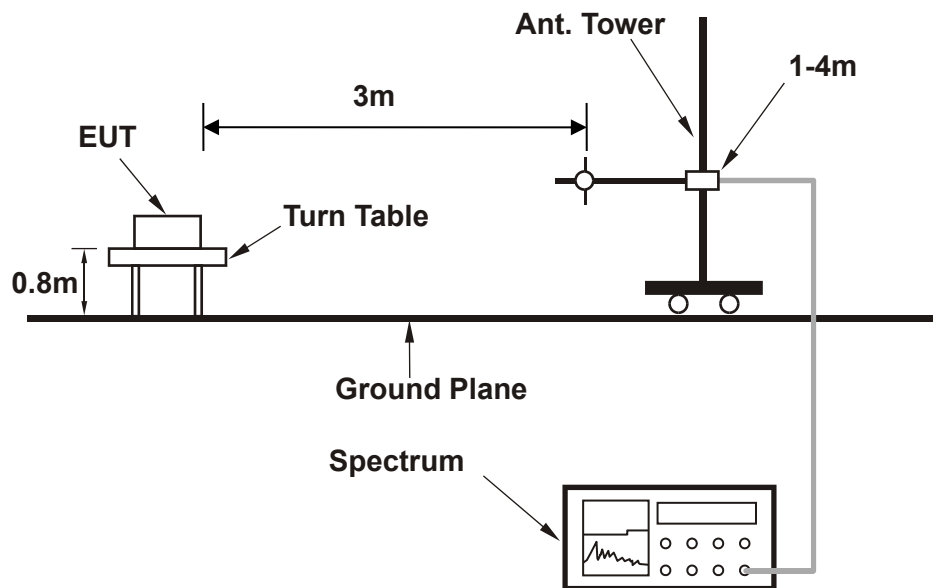
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

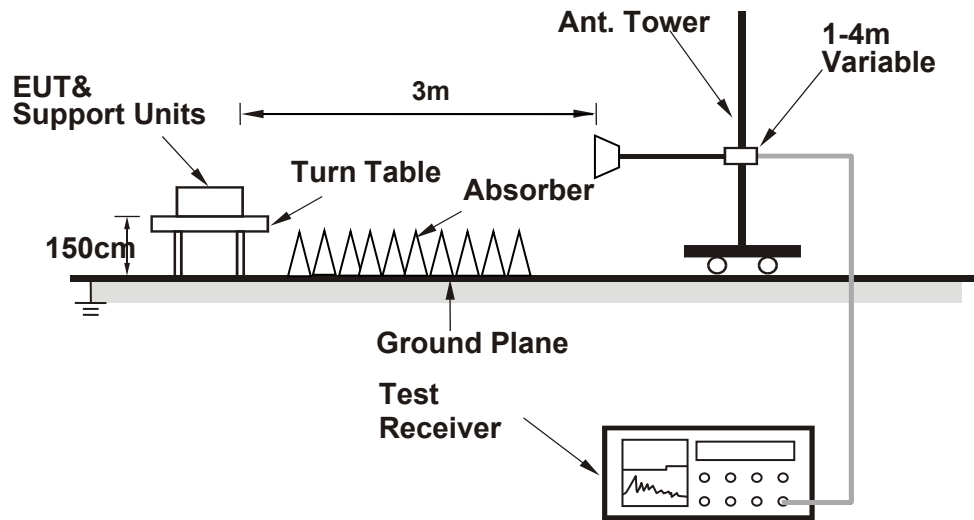
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



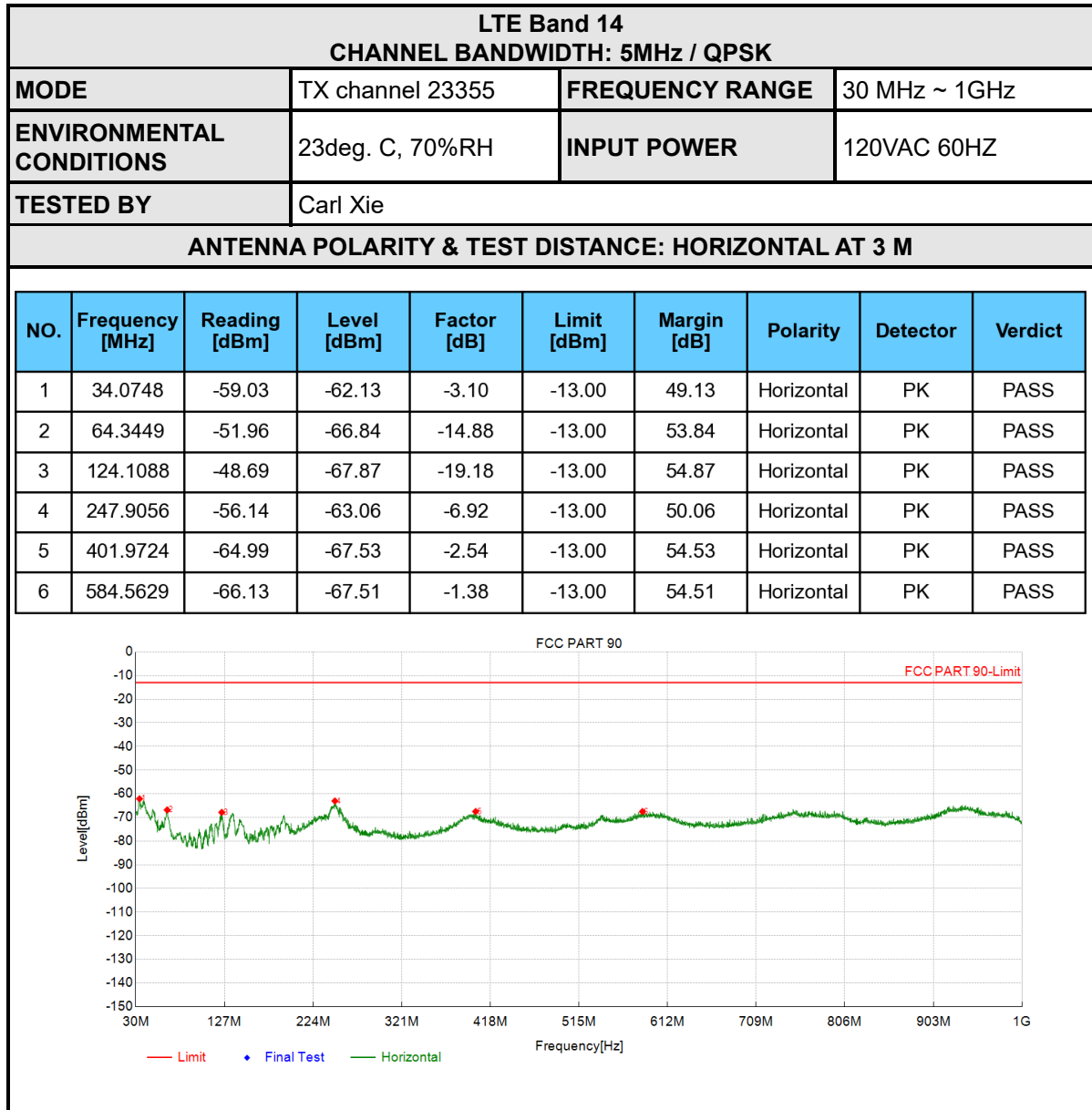
For the actual test configuration, please refer to the attached file (Test Setup Photo).



Test Report No.: RF260413B009
3.6.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

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





Test Report No.: RF260413B009

MODE		TX channel 23355		FREQUENCY RANGE		30 MHz ~ 1GHz			
ENVIRONMENTAL CONDITIONS		23deg. C, 70%RH		INPUT POWER		120VAC 60HZ			
TESTED BY		Carl Xie							
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M									

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	33.8808	-47.19	-58.71	-11.52	-13.00	45.71	Vertical	PK	PASS
2	64.927	-47.27	-66.42	-19.15	-13.00	53.42	Vertical	PK	PASS
3	136.1392	-57.34	-66.17	-8.83	-13.00	53.17	Vertical	PK	PASS
4	247.1294	-60.68	-73.08	-12.40	-13.00	60.08	Vertical	PK	PASS
5	541.2923	-66.08	-66.19	-0.11	-13.00	53.19	Vertical	PK	PASS
6	833.5147	-65.02	-64.59	0.43	-13.00	51.59	Vertical	PK	PASS

FCC PART 90

Level[dBm]

Frequency[Hz]

Limit Final Test Vertical

FCC PART 90-Limit

Boomwave Test (Shenzhen)
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Test Report No.: RF260413B009

ABOVE 1GHz

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

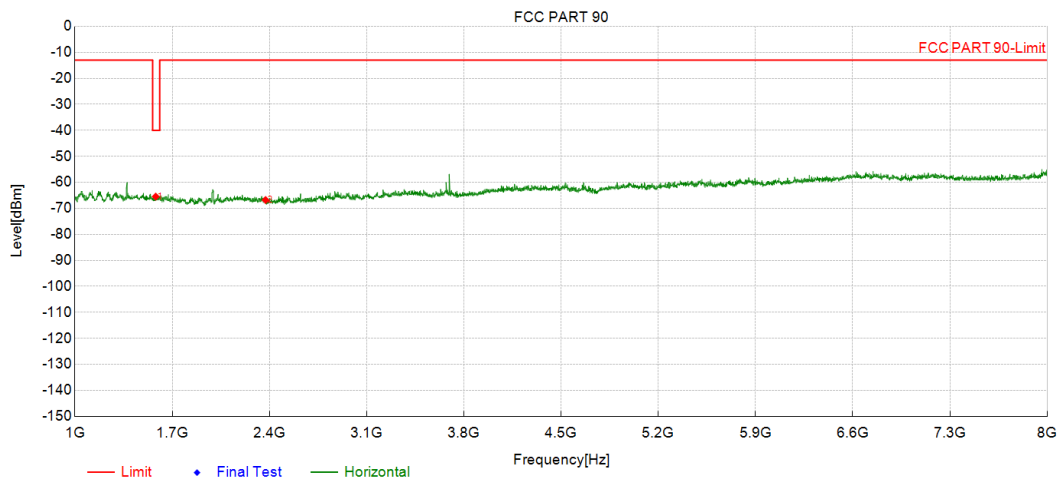
LTE BAND14

CH23305

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23305
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1581.1162	-56.10	-65.47	-9.37	-40.00	25.47	Horizontal	PK	PASS
2	2372.2745	-60.23	-66.78	-6.55	-13.00	53.78	Horizontal	PK	PASS



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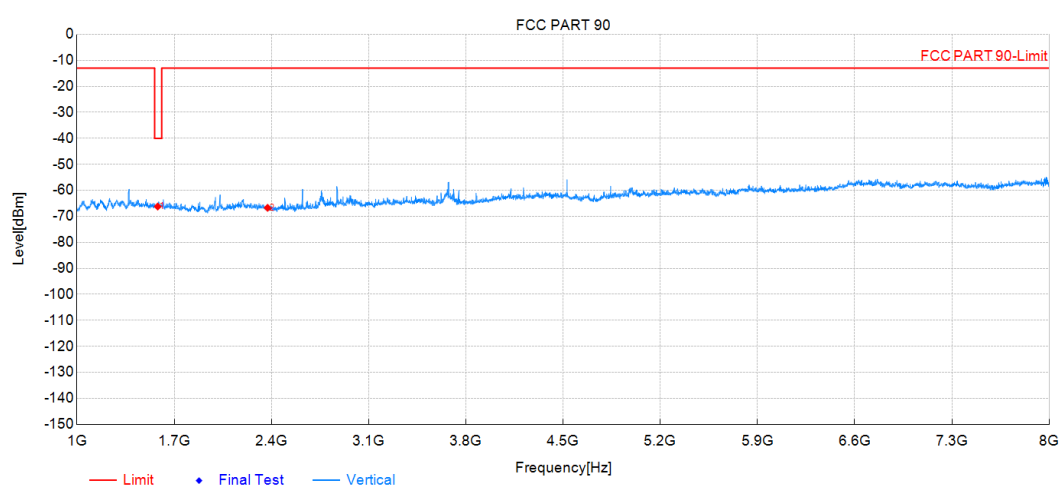


Test Report No.: RF260413B009

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23305
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1581.1162	-56.79	-66.22	-9.43	-40.00	26.22	Vertical	PK	PASS
2	2372.2745	-60.33	-66.72	-6.39	-13.00	53.72	Vertical	PK	PASS



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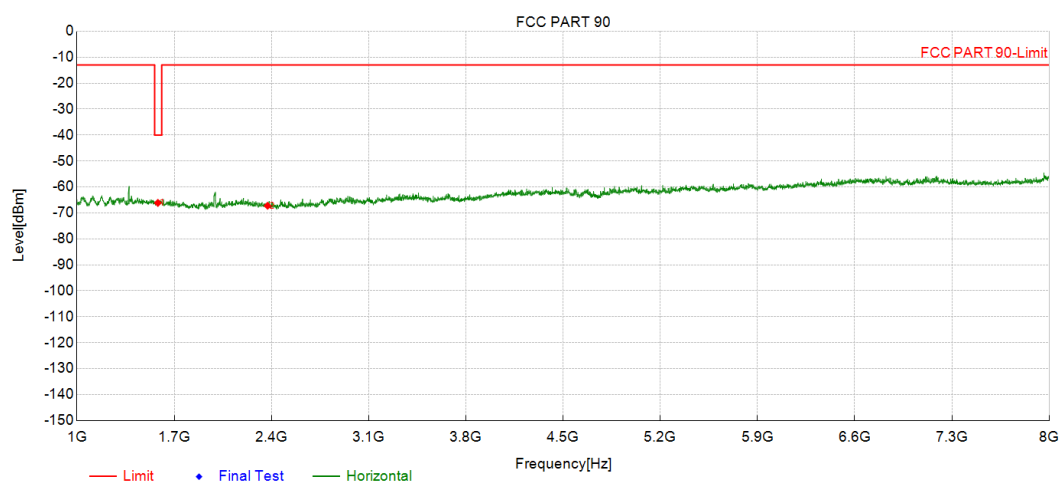
Test Report No.: RF260413B009

CH23330

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23330
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1582.5165	-56.75	-66.12	-9.37	-40.00	26.12	Horizontal	PK	PASS
2	2372.2745	-60.68	-67.23	-6.55	-13.00	54.23	Horizontal	PK	PASS



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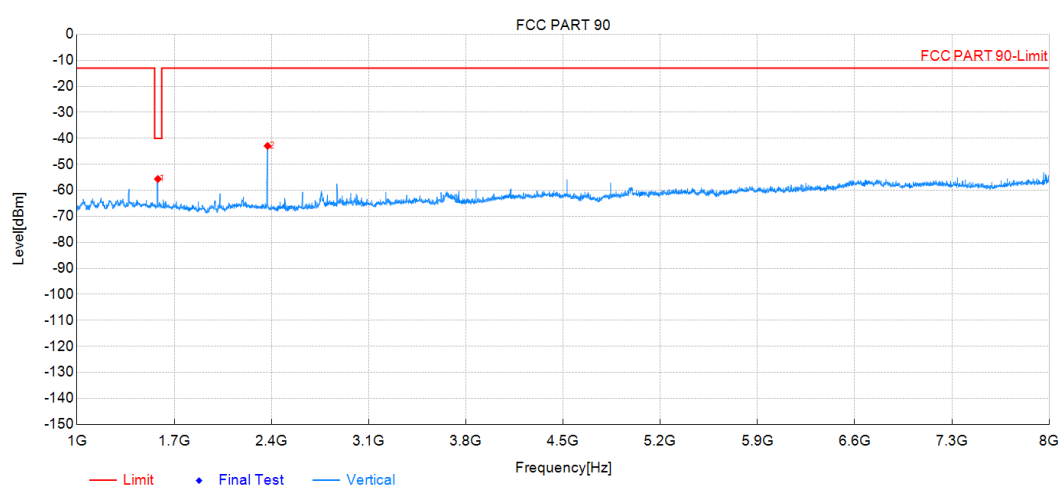


Test Report No.: RF260413B009

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23330
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1582.5165	-46.21	-55.64	-9.43	-40.00	15.64	Vertical	PK	PASS
2	2372.2745	-36.50	-42.89	-6.39	-13.00	29.89	Vertical	PK	PASS



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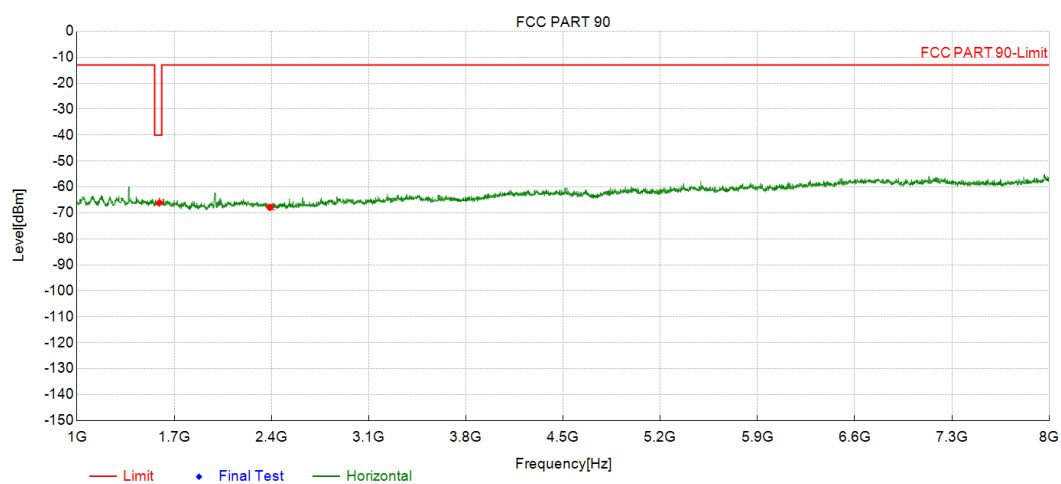
Test Report No.: RF260413B009

CH23355

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23355
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1592.3185	-56.74	-66.09	-9.35	-40.00	26.09	Horizontal	PK	PASS
2	2387.6775	-61.34	-67.87	-6.53	-13.00	54.87	Horizontal	PK	PASS



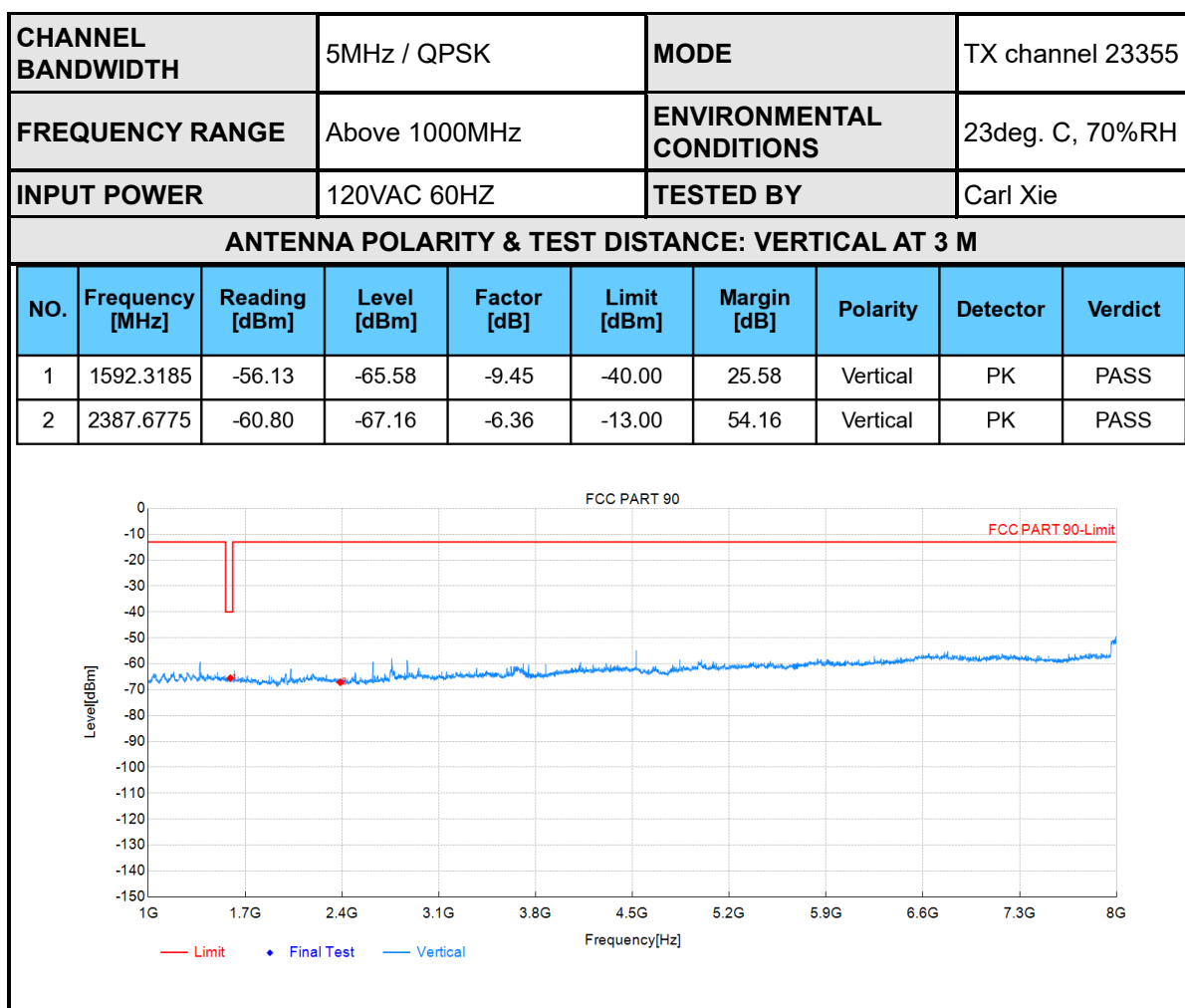
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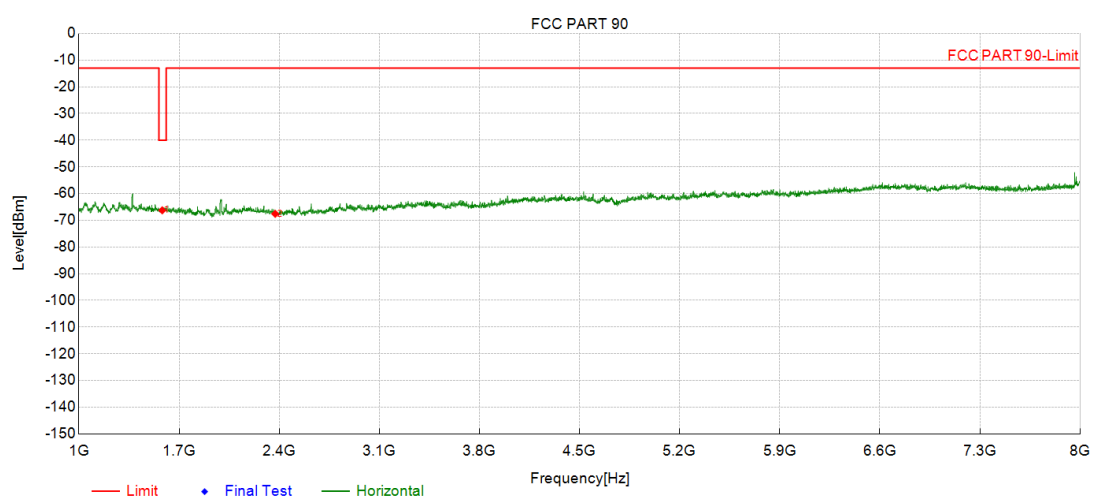


Test Report No.: RF260413B009

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23330
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1582.5165	-56.88	-66.25	-9.37	-40.00	26.25	Horizontal	PK	PASS
2	2372.2745	-61.01	-67.56	-6.55	-13.00	54.56	Horizontal	PK	PASS



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CHANNEL BANDWIDTH		10MHz / QPSK		MODE		TX channel 23330			
FREQUENCY RANGE		Above 1000MHz		ENVIRONMENTAL CONDITIONS		23deg. C, 70%RH			
INPUT POWER		120VAC 60HZ		TESTED BY		Carl Xie			
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M									
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1582.5165	-56.20	-65.63	-9.43	-40.00	25.63	Vertical	PK	PASS
2	2372.2745	-59.67	-66.06	-6.39	-13.00	53.06	Vertical	PK	PASS

FCC PART 90

Level[dBm]

Frequency[Hz]

Limit Final Test Vertical

FCC PART 90-Limit

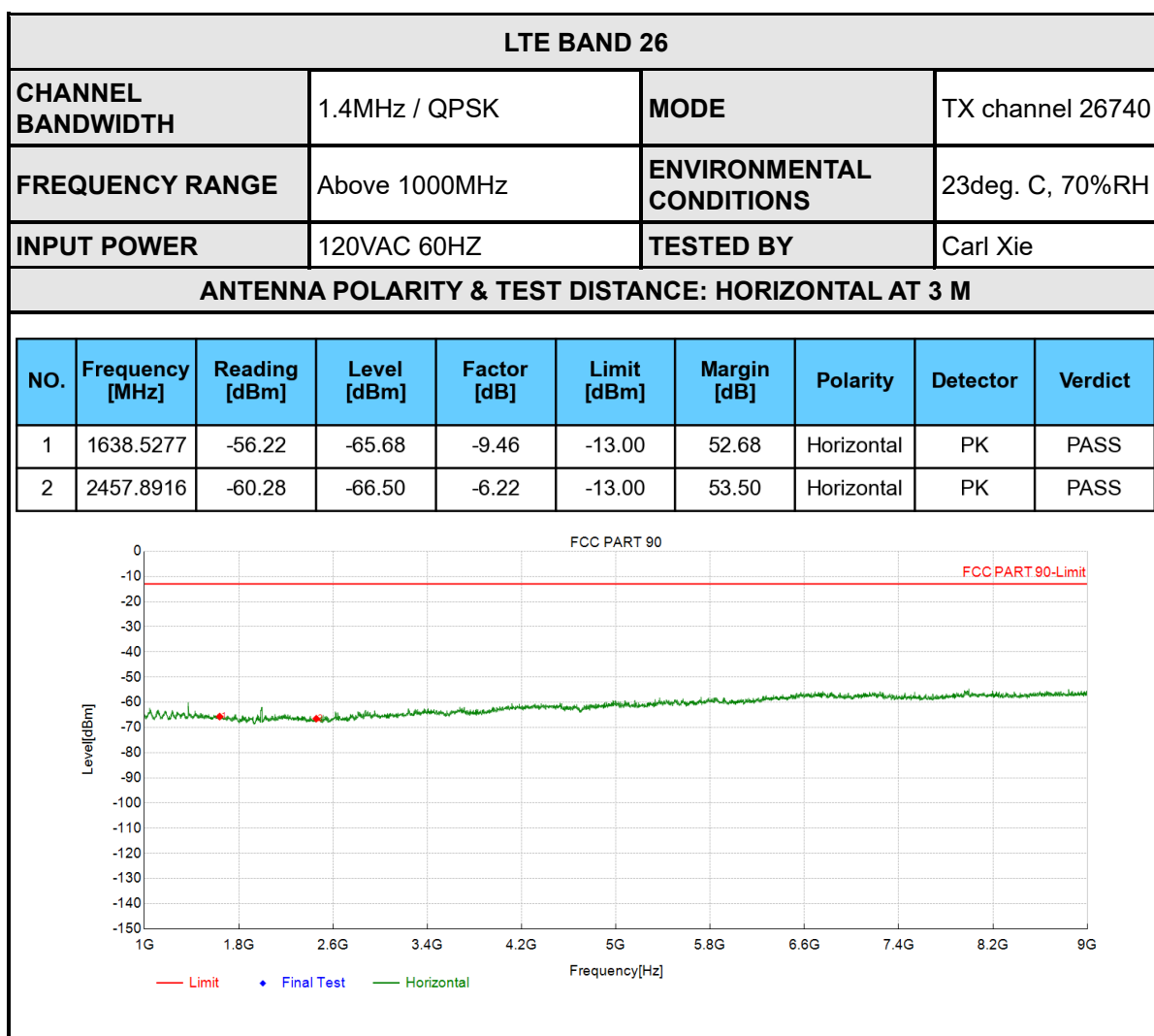
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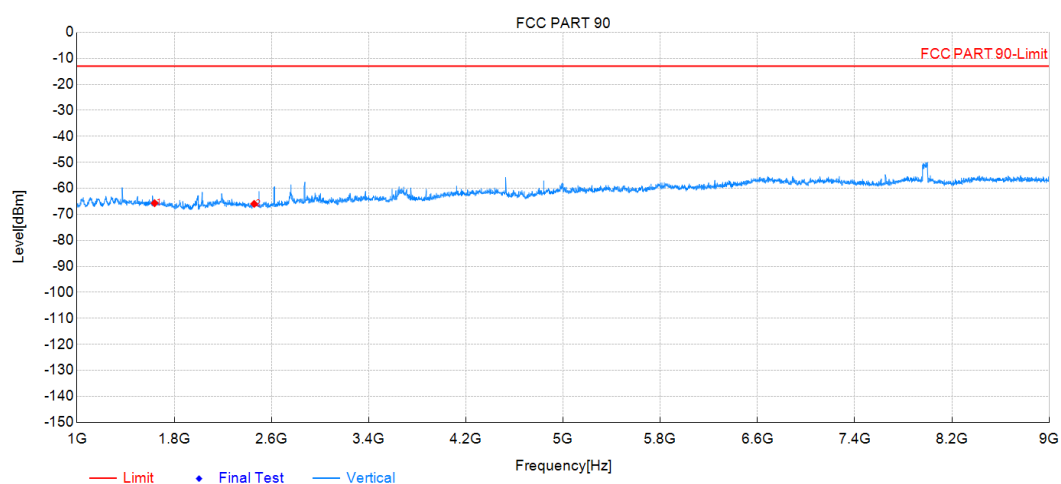
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CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

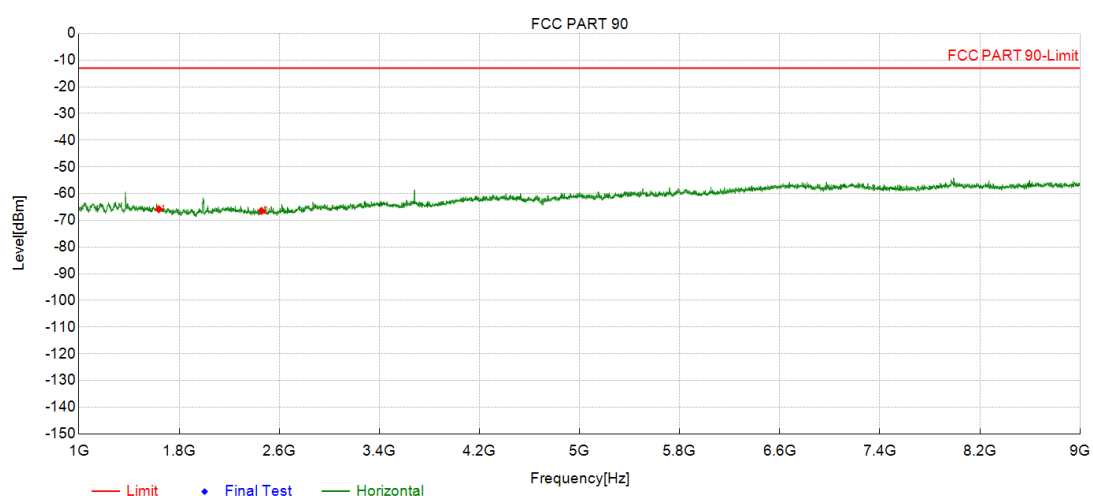
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1638.5277	-56.17	-65.70	-9.53	-13.00	52.70	Vertical	PK	PASS
2	2457.8916	-59.87	-65.97	-6.10	-13.00	52.97	Vertical	PK	PASS



CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

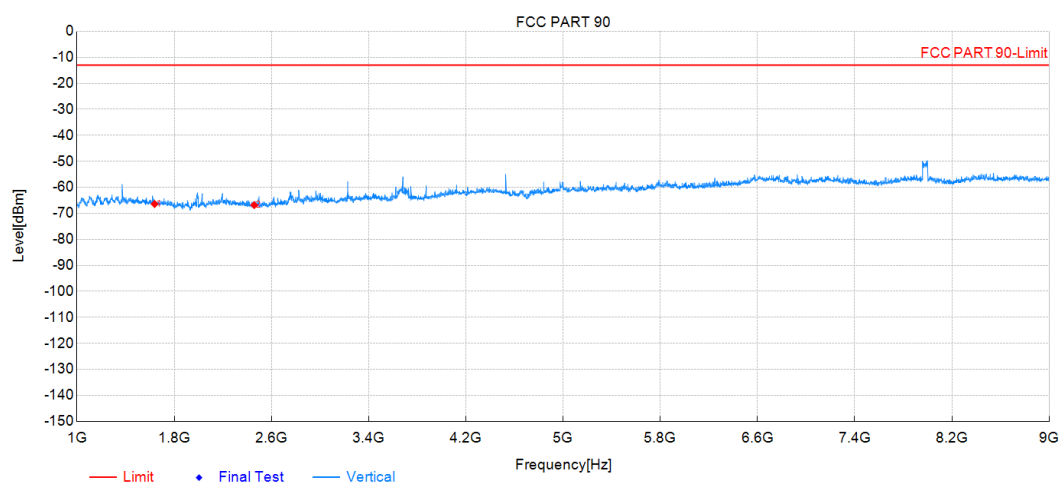
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1638.5277	-56.39	-65.86	-9.47	-13.00	52.86	Horizontal	PK	PASS
2	2457.8916	-60.24	-66.48	-6.24	-13.00	53.48	Horizontal	PK	PASS



CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1638.5277	-56.86	-66.39	-9.53	-13.00	53.39	Vertical	PK	PASS
2	2457.8916	-60.74	-66.82	-6.08	-13.00	53.82	Vertical	PK	PASS





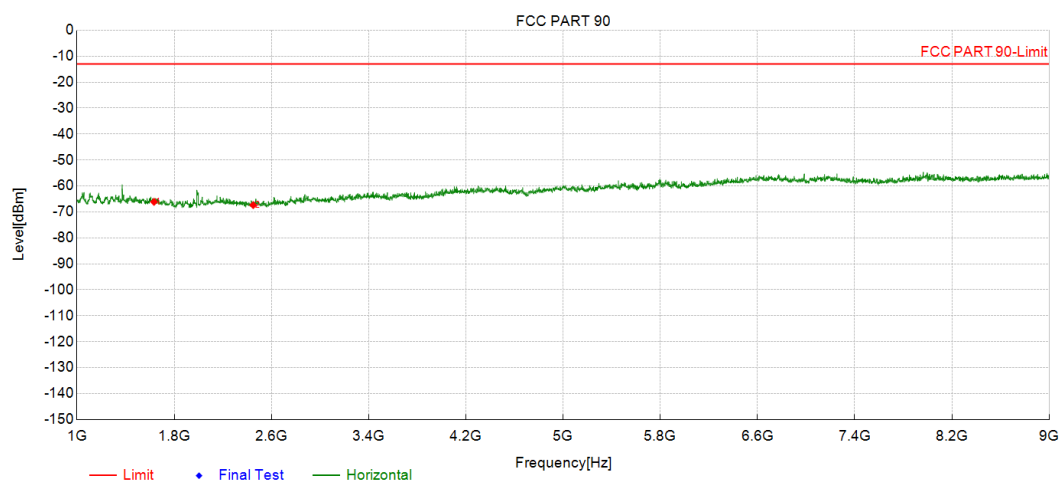
Test Report No.: RF260413B009

CH26715

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 26715
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

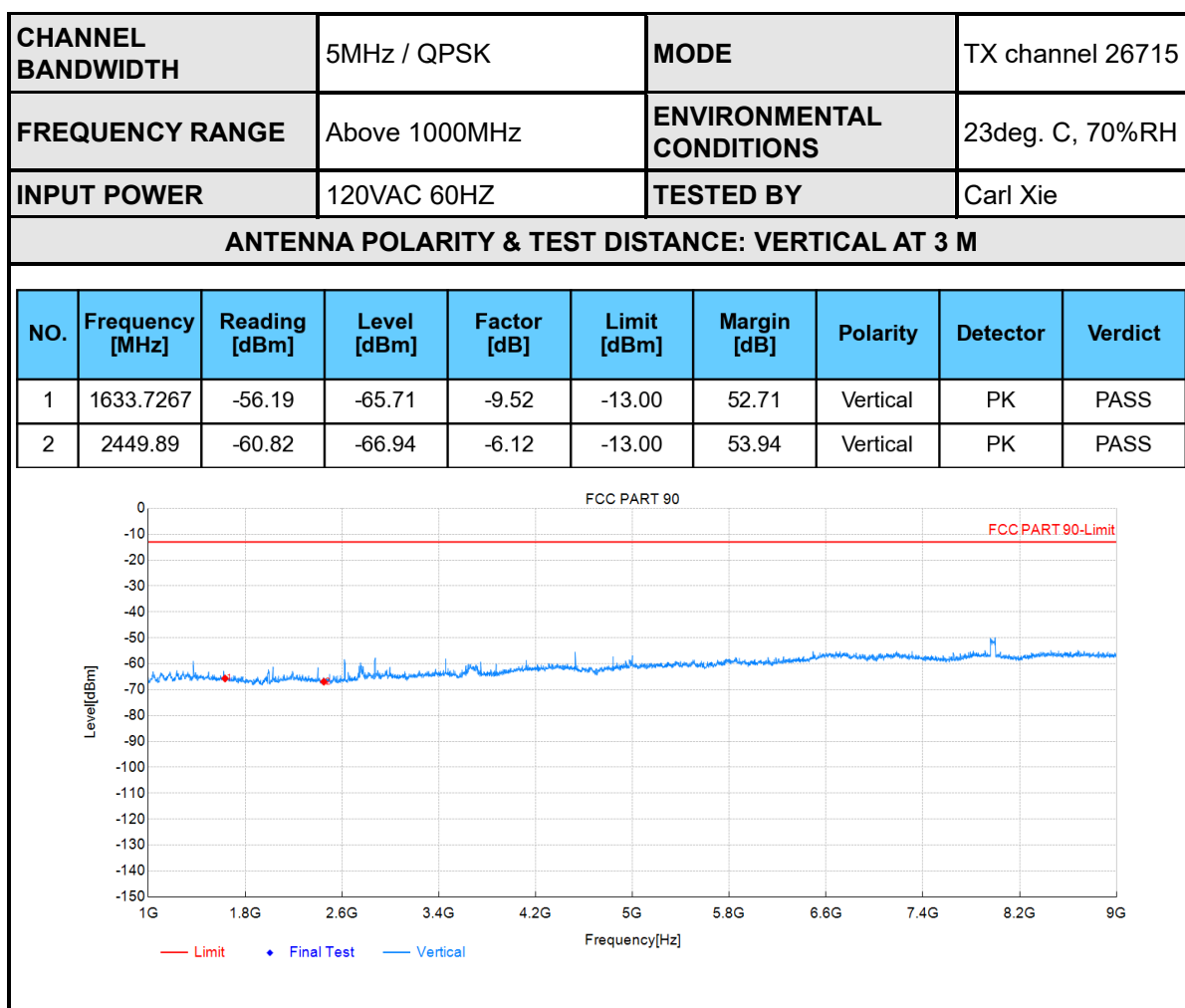
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1633.7267	-56.65	-66.10	-9.45	-13.00	53.10	Horizontal	PK	PASS
2	2449.89	-61.08	-67.35	-6.27	-13.00	54.35	Horizontal	PK	PASS



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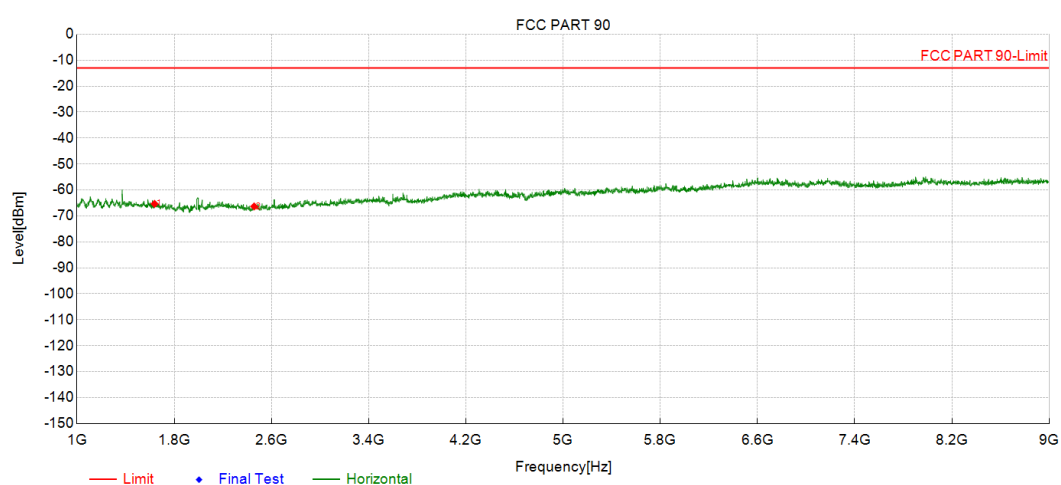


Test Report No.: RF260413B009
CH26740

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1638.5277	-55.88	-65.34	-9.46	-13.00	52.34	Horizontal	PK	PASS
2	2457.8916	-60.12	-66.34	-6.22	-13.00	53.34	Horizontal	PK	PASS



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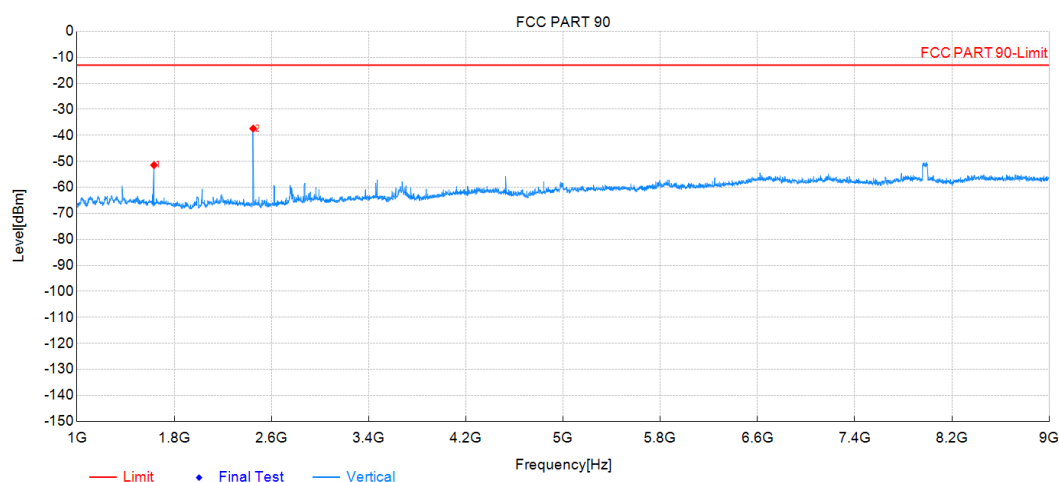


Test Report No.: RF260413B009

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1633.7267	-41.93	-51.45	-9.52	-13.00	38.45	Vertical	PK	PASS
2	2449.89	-31.25	-37.38	-6.13	-13.00	24.38	Vertical	PK	PASS



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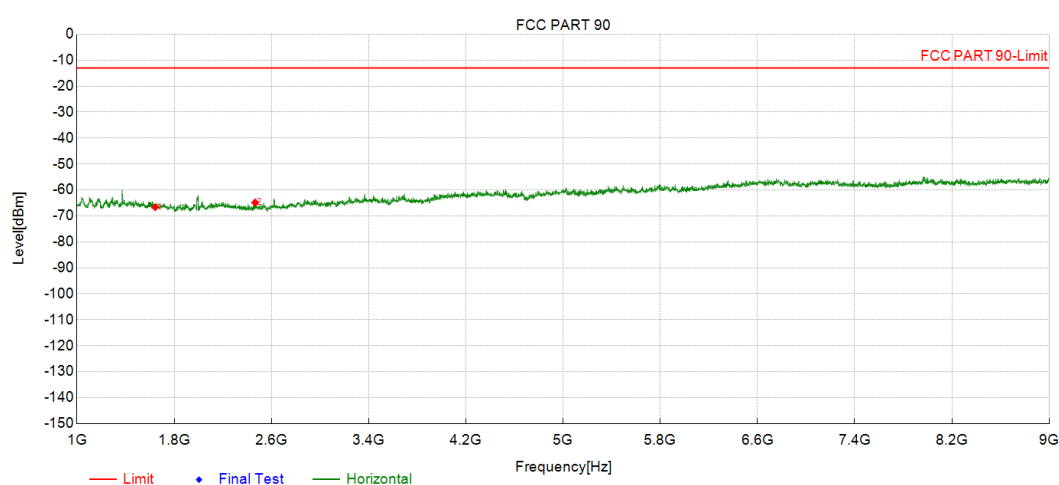


Test Report No.: RF260413B009
CH26765

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 26765
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1643.3287	-57.15	-66.63	-9.48	-13.00	53.63	Horizontal	PK	PASS
2	2465.8932	-58.61	-64.80	-6.19	-13.00	51.80	Horizontal	PK	PASS



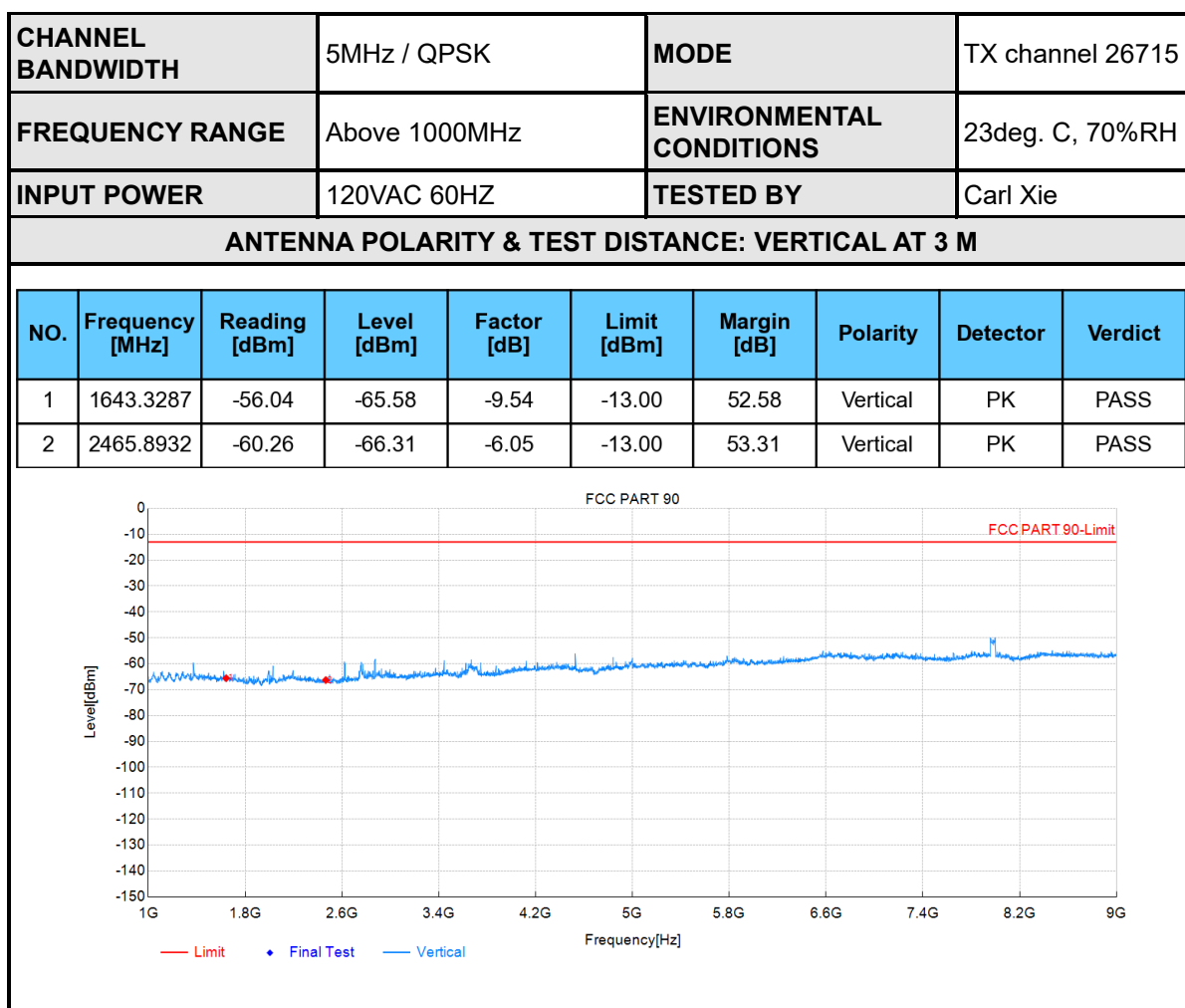
Boomwave Test (Shenzhen)
Co., Ltd.

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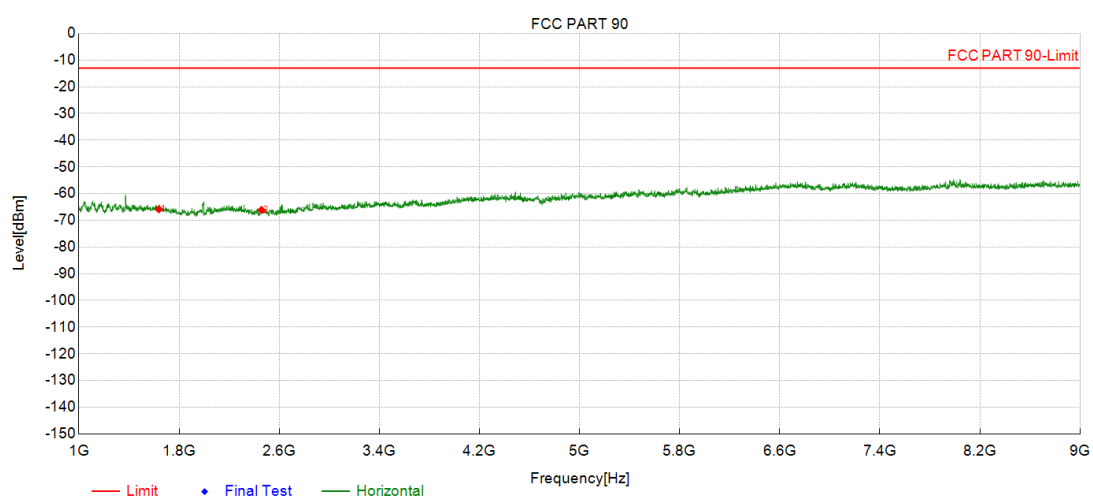


Test Report No.: RF260413B009

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

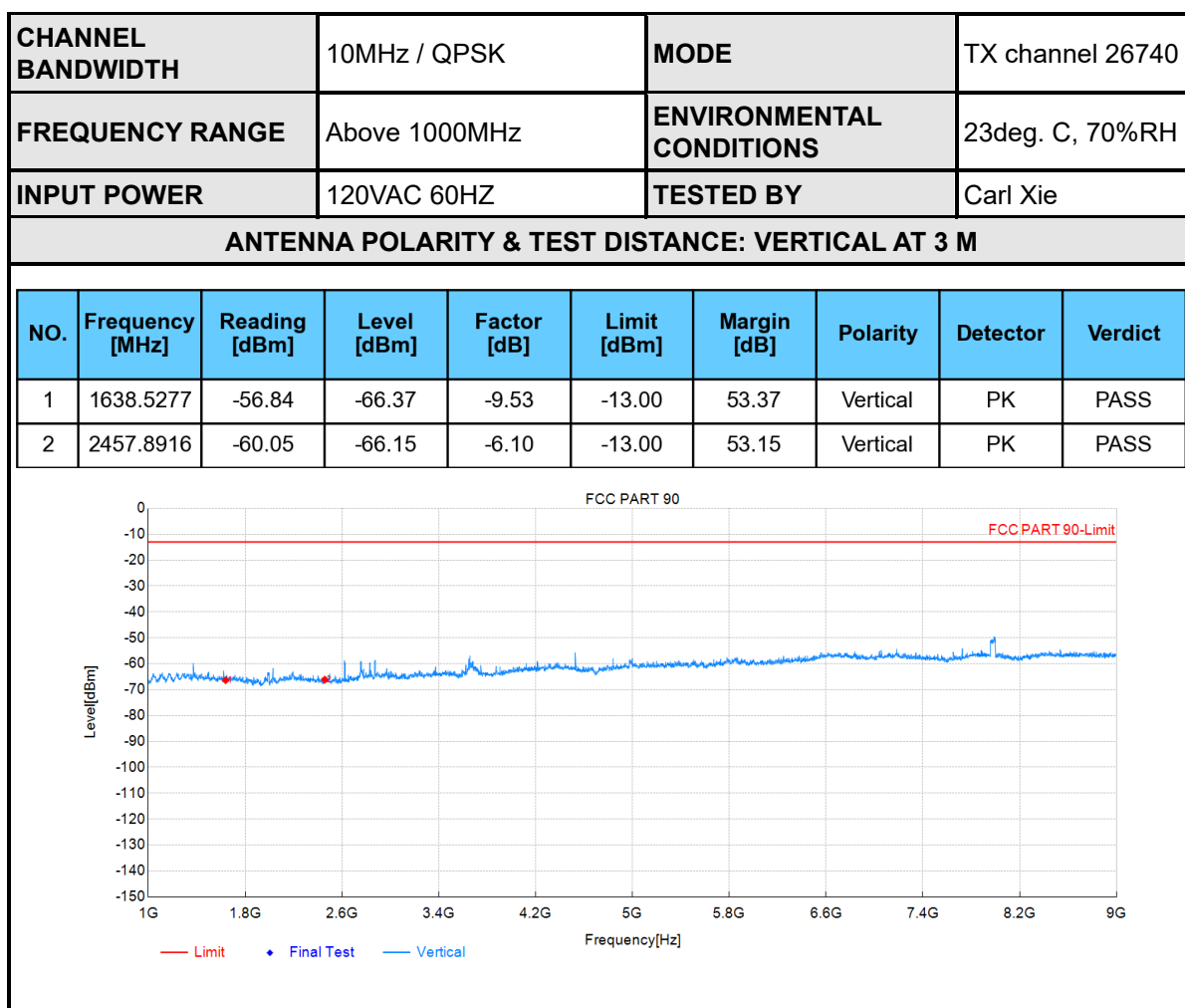
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1638.5277	-56.40	-65.87	-9.47	-13.00	52.87	Horizontal	PK	PASS
2	2457.8916	-59.86	-66.10	-6.24	-13.00	53.10	Horizontal	PK	PASS



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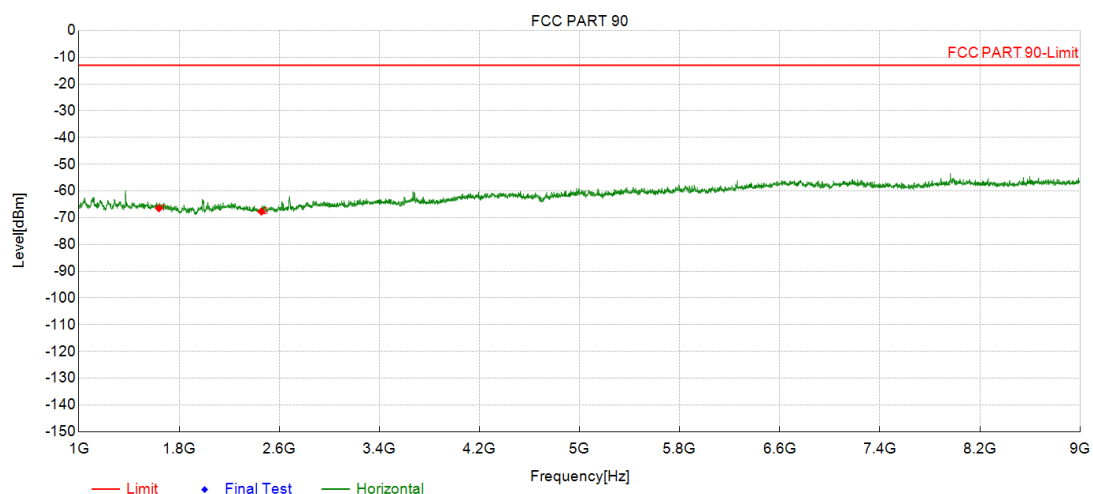


Test Report No.: RF260413B009

CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120VAC 60HZ	TESTED BY	Carl Xie

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	1638.5277	-56.96	-66.43	-9.47	-13.00	53.43	Horizontal	PK	PASS
2	2457.8916	-61.47	-67.69	-6.22	-13.00	54.69	Horizontal	PK	PASS



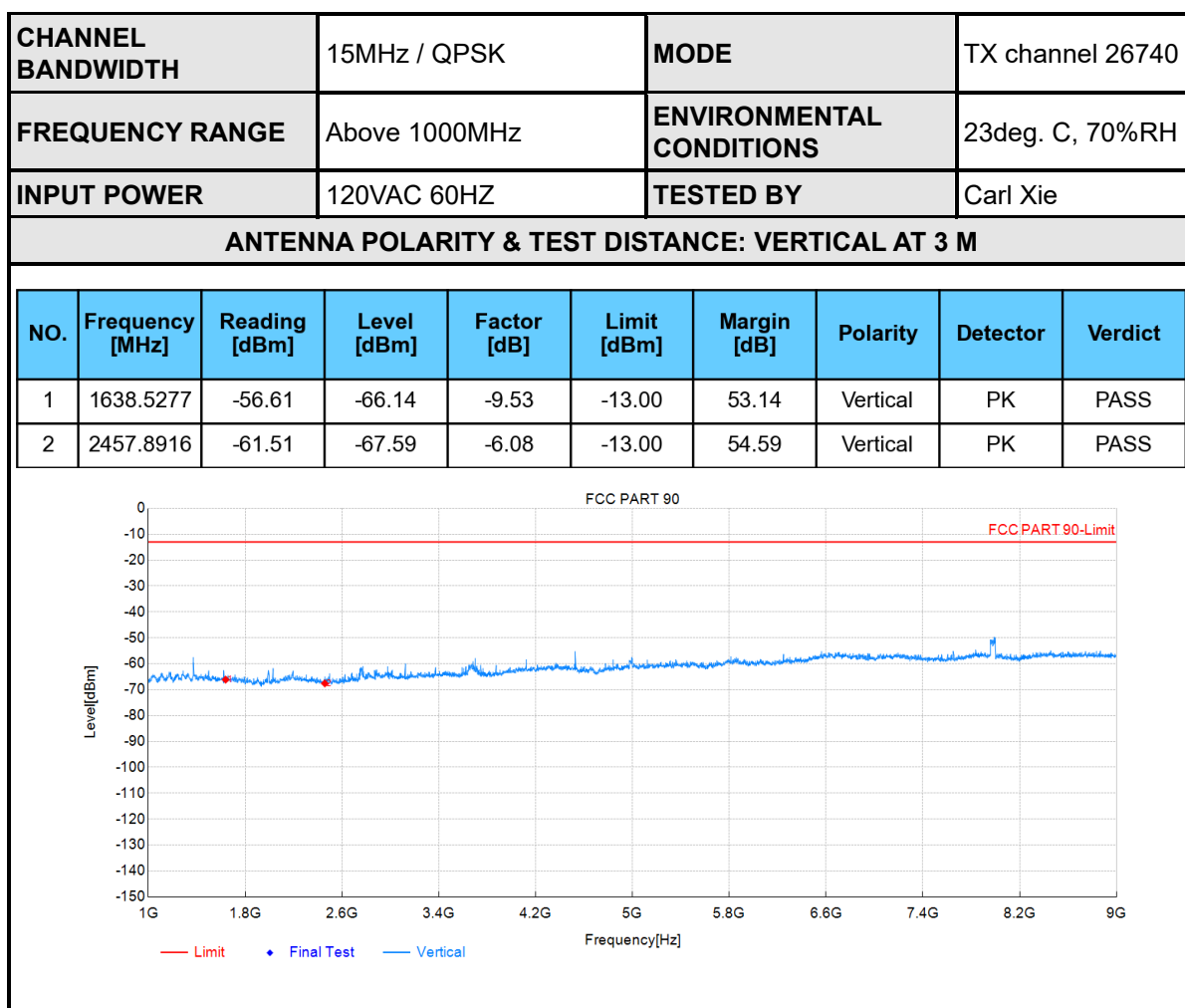
Boomwave Test (Shenzhen)
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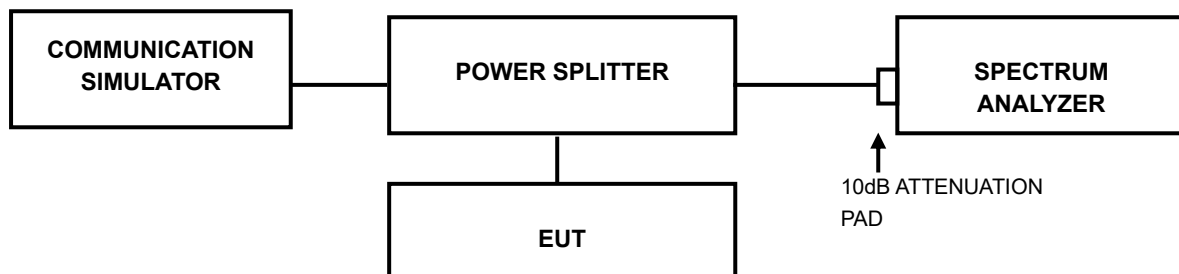
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3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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

3.7.4 TEST RESULTS

Please Refer to WWAN module(model name: RM520N-GL) test report(NO.: SEWM2304000122RG01, FCC ID: XMR2023RM520NGL).



Test Report No.: RF260413B009

4 INFORMATION ON THE TESTING LABORATORIES

We, Boomwave Test (Shenzhen) co., Ltd., were founded in 2025 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Boomwave Test (Shenzhen) Co., Ltd.

Lab Address:

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Accredited Test Lab Cert 7607.01

Shenzhen EMC/RF Lab:

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Test Report No.: RF260413B009

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.