



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

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FCC ID: 2AGNTMDM240958A

Product Name: Autel Titan

Standard(s): 47 CFR Part 15, Subpart C(15.247)

ANSI C63.10-2013

KDB 558074 D01 15.247 Meas Guidance v05r02

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230636129-00A	Original Report	2023/8/16

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Autel Titan
EUT Model:	MDM
Operation Frequency:	SRD 1.4MHz: 904-926 MHz, 2403.5-2475.5 MHz SRD 10MHz: 909-921 MHz, 2407.5-2471.5 MHz SRD 20MHz: 914-916 MHz, 2412.5-2462.5 MHz
Maximum Average Output Power (Conducted):	SRD-900MHz: 27.43dBm SRD-2.4GHz: 25.21dBm
Modulation Type:	QPSK ,16QAM
Rated Input Voltage:	DC 47.4V from battery
Serial Number:	278G-3 (For RF Conducted) 278G-19 (For RF Radiated)
EUT Received Date:	2023/6/26
EUT Received Status:	Good

Operation Frequency Detail:

For SRD-900MHz band 1.4MHz Bandwidth Mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	904	13	916
2	905	14	917
3	906	15	918
...	...	...	...
...	...	22	925
11	914	23	926
12	915	/	/
Per section 15.31(m), the below frequencies were performed the test as below:			
Test Channel		Frequency (MHz)	
Lowest		904	
Middle		916	
Highest		926	

For SRD-900MHz band 10MHz Bandwidth Mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	909	8	916
2	910	9	917
3	911	10	918
4	912	11	919
5	913	12	920
6	914	13	921
7	915	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	909
Middle	915
Highest	921

For SRD-900MHz band 20MHz Bandwidth Mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	914	3	916
2	915	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	914
Highest	916

For SRD-2.4GHz band 1.4MHz Bandwidth Mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403.5	38	2440.5
2	2404.5	39	2441.5
3	2405.5	40	2442.5
...	...	...	...
...	...	72	2474.5
36	2438.5	73	2475.5
37	2439.5	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	2403.5
Middle	2439.5
Highest	2475.5

Additional channel was tested per the difference power level setting for output power test and radiation emission test.

For SRD-2.4GHz band 10MHz Bandwidth Mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2407.5	34	2440.5
2	2408.5	35	2441.5
3	2409.5	36	2442.5
...	...	...	...
...	...	64	2470.5
32	2438.5	65	2471.5
33	2439.5	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	2407.5
Middle	2439.5
Highest	2471.5

Additional channel was tested per the difference power level setting for output power test and radiation band edge emission test.

For SRD-2.4GHz band 20MHz Bandwidth Mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412.5	27	2438.5
2	2413.5	28	2439.5
3	2414.5	29	2440.5
...	...	...	...
...	...	50	2461.5
25	2436.5	51	2462.5
26	2437.5	/	/

Per section 15.31(m), the below frequencies were performed the test as below:

Test Channel	Frequency (MHz)
Lowest	2412.5
Middle	2437.5
Highest	2462.5

Additional channel was tested per the difference power level setting for output power test and radiation band edge emission test.

Antenna Information Detail▲:

Antenna Chain	Manufacturer	Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
0 (Tx&Rx)	Shen Zhen IOE Communication Technology Co., Ltd	External	50	902-928 MHz	1.27dBi
				2400-2483.5 MHz	1.52 dBi
				5150-5250 MHz	1.28 dBi
				5725-5850 MHz	0.52dBi
1 (Tx&Rx)		External	50	902-928 MHz	1.27dBi
				2400-2483.5 MHz	1.52 dBi
				5150-5250 MHz	1.28 dBi
				5725-5850 MHz	0.52dBi
2 (Rx Only)		FPC	50	902-928 MHz	1.54 dBi
				2400-2483.5 MHz	1.54 dBi
				5150-5250 MHz	0.9 dBi
				5725-5850 MHz	1.08 dBi
3 (Rx Only)		FPC	50	902-928 MHz	1.22 dBi
				2400-2483.5 MHz	2.13 dBi
				5150-5250 MHz	0.32dBi
				5725-5850 MHz	1.9 dBi

The Method of §15.203 Compliance:

- ☒ Antenna was permanently attached to the unit.
☐ Antenna use a unique type of connector to attach to the EUT.
☐ Unit was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Accessory Information:

Accessory Description	Manufacturer	Model
Adapter	Shenzhen Gold Power Technology Co.,Ltd	DF15_CHARGER

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Engineering Mode, which was provided by the manufacturer. The device only supports MIMO mode 2Tx4Rx.		
Equipment Modifications:	No		
EUT Exercise Software:	RRTL6.0.0_VCOM		
The software was provided by manufacturer. The maximum power was configured as below, that was provided by the manufacturer ▲ :			
Test Modes	Test Frequency	Power Level Setting	
		Chain 0	Chain 1
16QAM 1.4M	2403.5	60	60
	2439.5	60	60
	2475.5	60	60
16QAM 10M	2407.5	70	70
	2408.5	67	67
	2409.5	64	64
	2410.5	61	61
	2411.5	60	60
	2439.5	60	60
	2462.5	60	60
	2468.5	68	68
	2469.5	72	72
	2470.5	76	76
16QAM 20M	2471.5	82	82
	2412.5	90	90
	2413.5	88	88
	2414.5	86	86
	2415.5	82	82
	2418.5	70	70
	2437.5	70	70
	2450.5	70	70
	2459.5	76	76
	2460.5	79	79
	2461.5	82	82
	2462.5	85	85

Test Modes	Test Frequency	Power Level Setting	
		Chain 0	Chain 1
QPSK 1.4M	2403.5	60	60
	2439.5	60	60
	2475.5	60	60
QPSK 10M	2407.5	76	76
	2408.5	74	74
	2409.5	72	72
	2410.5	71	71
	2411.5	65	65
	2439.5	65	65
	2462.5	65	65
	2468.5	78	78
	2469.5	82	82
	2470.5	86	86
QPSK 20M	2471.5	90	90
	2412.5	90	90
	2413.5	89	89
	2414.5	88	88
	2415.5	87	87
	2418.5	65	65
	2437.5	65	65
	2450.5	65	65
	2459.5	78	78
	2460.5	79	79
	2461.5	80	80
	2462.5	81	81

Test Modes	Test Channels	Test Frequency	Power Level Setting	
			Chain 0	Chain 1
QPSK 1.4M	Lowest	904	73	73
	Middle	916	73	73
	Highest	926	73	73
QPSK 10M	Lowest	909	73	73
	Middle	915	73	73
	Highest	921	73	73
QPSK 20M	Lowest	914	70	70
	Middle	915	70	70
	Highest	916	70	70
16QAM 1.4M	Lowest	904	73	73
	Middle	916	73	73
	Highest	926	73	73
16QAM 10M	Lowest	909	73	73
	Middle	915	73	73
	Highest	921	73	73
16QAM 20M	Lowest	914	70	70
	Middle	915	70	70
	Highest	916	70	70

1.2.2 Support Equipment List and Details

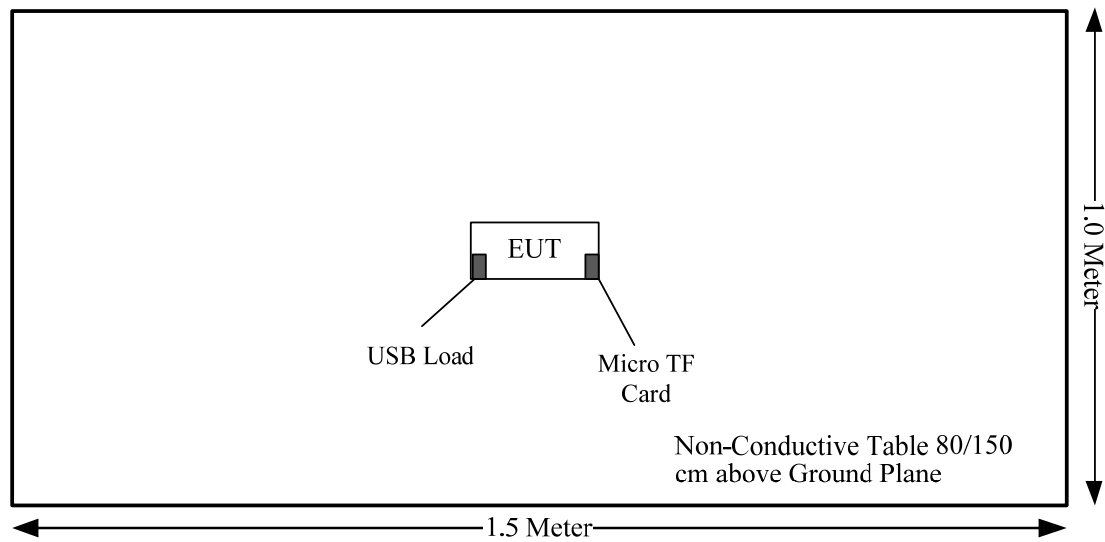
Manufacturer	Description	Model	Serial Number
Unknown	USB Load	Unknown	Unknown
SanDisk	Micro TF Card	UHS-I-16G	9292DVDSV0XZ

1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
/	/	/	/	/	/

1.2.4 Block Diagram of Test Setup

Spurious Emissions:



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	$\pm 5\%$
RF output power, conducted	$\pm 0.61\text{dB}$
Power Spectral Density, conducted	$\pm 0.61\text{ dB}$
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB, 200M~1GHz: 5.61 dB, 1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB
Unwanted Emissions, conducted	$\pm 1.26\text{ dB}$
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 0.4\%$
Duty Cycle	1%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

2. SUMMARY OF TEST RESULTS

Standard(s) Section	Test Items	Result
§15.207(a)	AC line conducted emissions	Not Applicable
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant
§15.203	Antenna Requirement	Compliant

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 Applicable Standard

FCC§15.207(a).

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

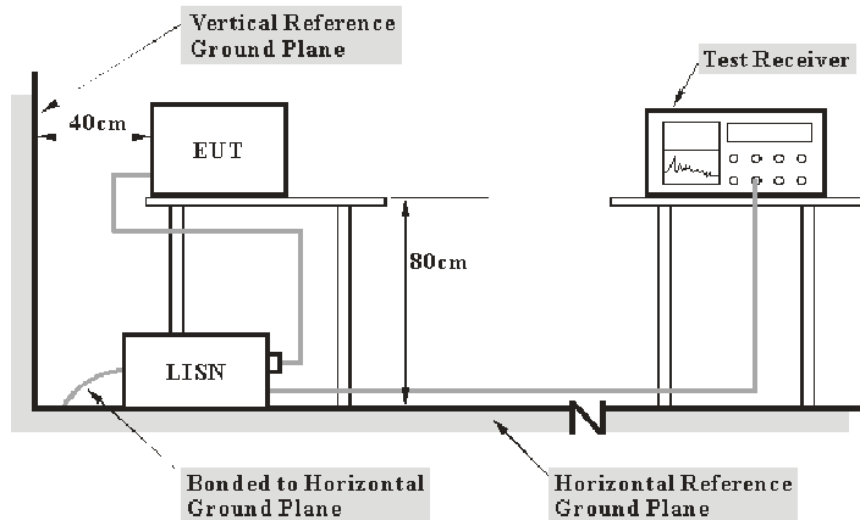
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

3.1.2 EUT Setup



Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

3.1.4 Test Procedure

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase (“hot”) line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

3.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

3.2 Radiation Spurious Emissions

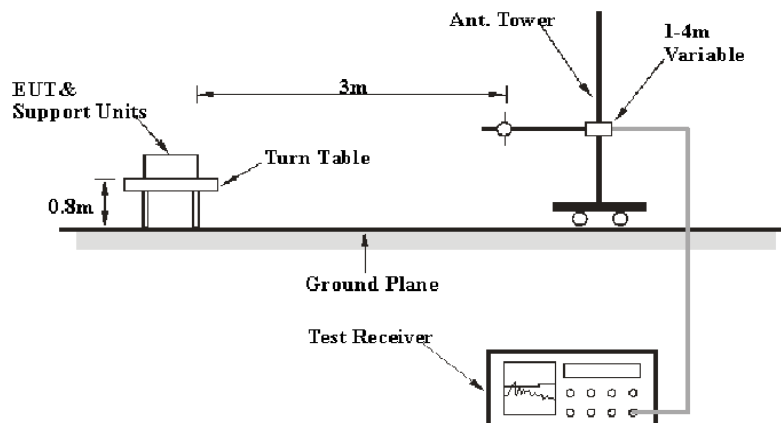
3.2.1 Applicable Standard

FCC §15.247 (d);

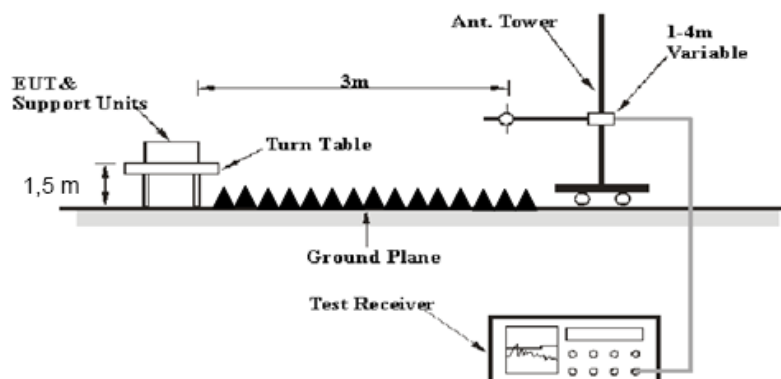
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

3.2.2 EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30-1000MHz:

Detector	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 25GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	$\geq 1/T$

Note: T is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss- Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

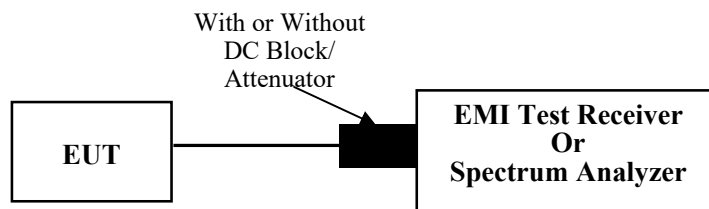
3.3 6 dB Emission Bandwidth:

3.3.1 Applicable Standard

FCC §15.247 (a)(2)

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

3.3.2 EUT Setup



3.3.3 Test Procedure

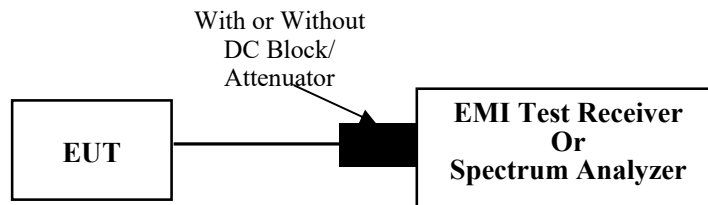
According to ANSI C63.10-2013 Section 11.8

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.4 99% Occupied Bandwidth:

3.4.1 Applicable Standard

3.4.2 EUT Setup



3.4.3 Test Procedure

According to ANSI C63.10-2013 Section 6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW}/\text{RBW})]$ below the reference level. Specific guidance is given in 4.1.5.2.
- Step a) through step c) might require iteration to adjust within the specified range.
- Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

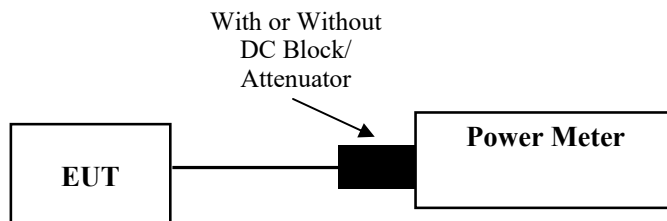
3.5 Maximum conducted output power:

3.5.1 Applicable Standard

FCC §15.247 (b)(3)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

3.5.2 EUT Setup



3.5.3 Test Procedure

According to ANSI C63.10-2013 Section 11.9.2.3.2

Method AVGPM-G is a measurement using a gated RF average power meter.

Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

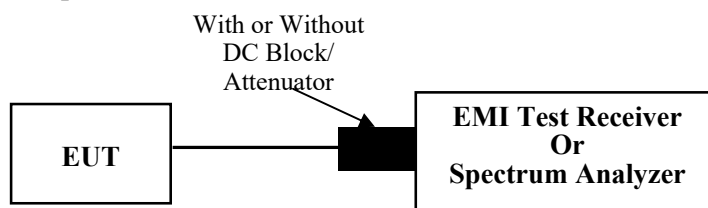
3.6 Maximum power spectral density:

3.6.1 Applicable Standard

FCC §15.247 (e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

3.6.2 EUT Setup



3.6.3 Test Procedure

Duty cycle $\geq 98\%$

According to ANSI C63.10-2013 Section 11.10.3

Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

According to ANSI C63.10-2013 Section 11.10.5

Duty cycle $< 98\%$, duty cycle variations exceed $\pm 2\%$

According to ANSI C63.10-2013 Section 11.10.7

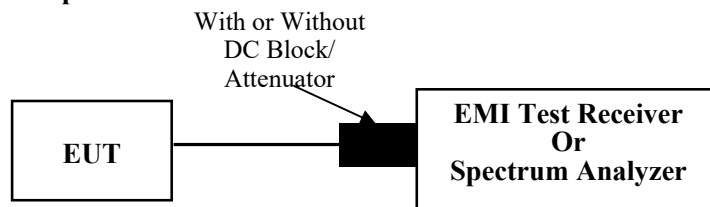
3.7 100 kHz Bandwidth of Frequency Band Edge:

3.7.1 Applicable Standard

FCC §15.247 (d);

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

3.7.2 EUT Setup



3.7.3 Test Procedure

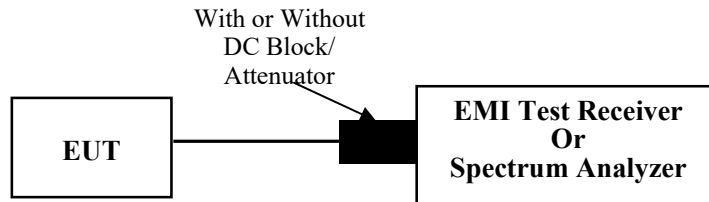
According to ANSI C63.10-2013 Section 11.11

- Set the center frequency and span to encompass frequency range to be measured.
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

3.8 Duty Cycle:

3.8.1 EUT Setup



3.8.2 Test Procedure

According to ANSI C63.10-2013 Section 11.6

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

- 1) Set the center frequency of the instrument to the center frequency of the transmission.
- 2) Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
- 3) Set $VBW \geq RBW$. Set detector = peak or average.
- 4) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu s$.)

3.9 Antenna Requirement

3.9.1 Applicable Standard

FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

3.9.2 Judgment

Compliant. Please refer to the Antenna Information detail in Section 1.

4. Test DATA AND RESULTS

4.1 AC Line Conducted Emissions

Not Applicable, the device was powered by battery when operating.

4.2 Radiation Spurious Emissions

Serial Number:	278G-19	Test Date:	Below 1G: 2023/7/24-2023/7/27 Above 1G: 2023/6/29-2023/7/7
Test Site:	966-1,966-2	Test Mode:	Transmitting
Tester:	Tao Zhu, Carl Xue	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5~27.3	Relative Humidity: (%)	58~60	ATM Pressure: (kPa)	99.3~100.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 1G					
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Audix	Test Software	E3	201021 (V9)	N/A	N/A
Above 1G					
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
R&S	Spectrum Analyzer	FSV40	101591	2023/03/31	2024/03/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2022/08/07	2023/08/06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2022/08/07	2023/08/06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/09	2023/11/08
Audix	Test Software	E3	201021 (V9)	N/A	N/A
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/02/05	2024/02/04
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2022/09/16	2023/09/15
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2022/08/07	2023/08/06
E-Microwave	Band Rejection Filter	2400-2483.5MHz	OE01902424	2022/08/07	2023/08/06
Mini Circuits	High Pass Filter	VHF-6010+	31119	2022/08/07	2023/08/06

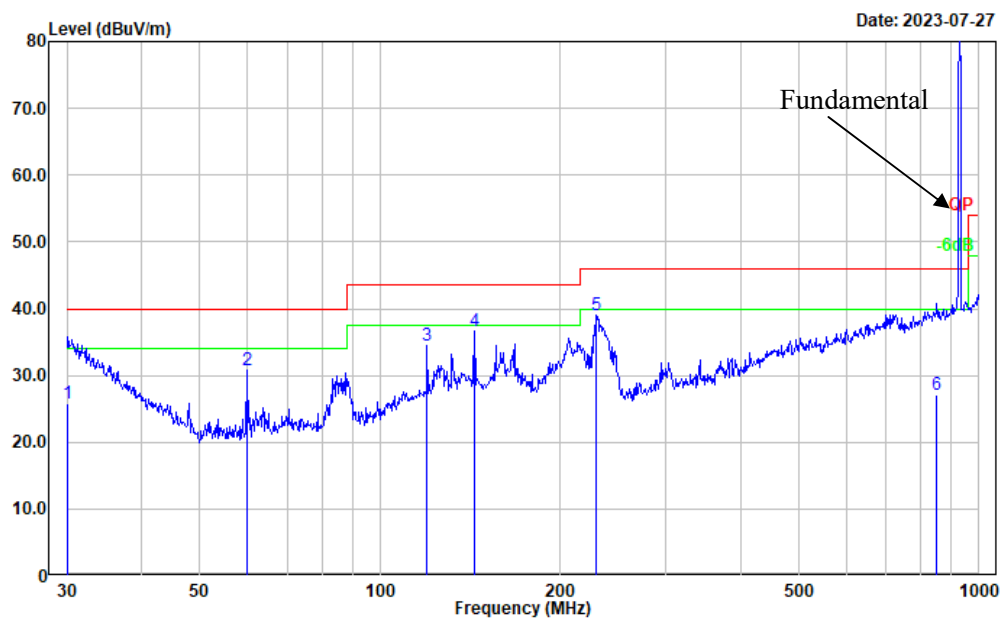
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Please refer to the below table and plots.

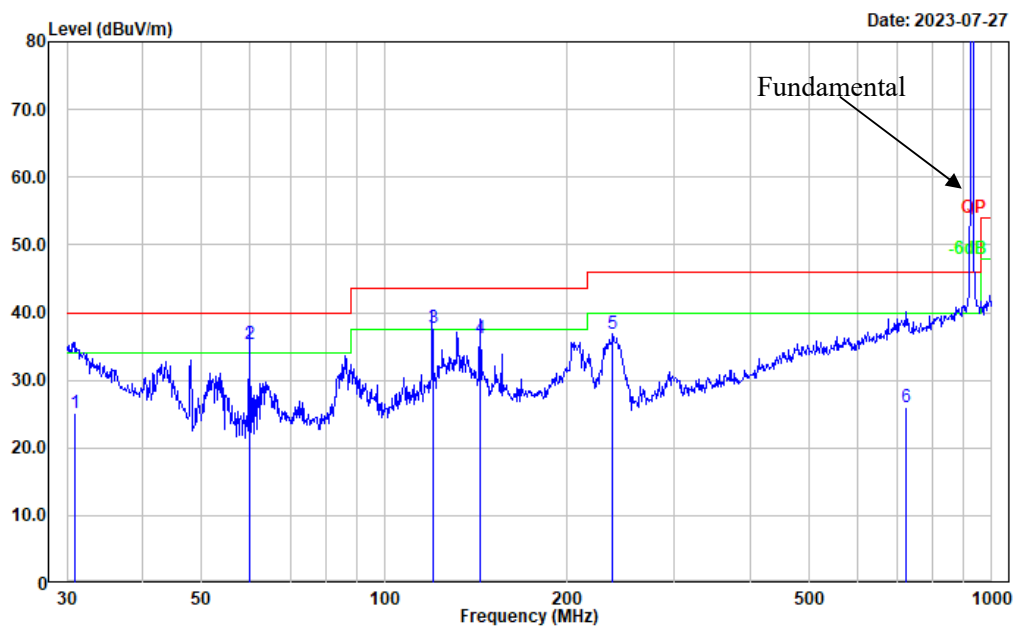
SRD 900MHz Band:**30MHz-1GHz**(1.4MHz Mode, 16QAM, High channel was tested):

Test Mode: Transmitting
Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.000	-2.18	27.88	25.70	40.00	14.30	QP
2	59.859	16.71	14.07	30.78	40.00	9.22	Peak
3	119.856	14.45	19.98	34.43	43.50	9.07	Peak
4	143.830	17.13	19.53	36.66	43.50	6.84	Peak
5	229.293	20.53	18.51	39.04	46.00	6.96	Peak
6	851.035	-2.30	29.47	27.17	46.00	18.83	QP

Test Mode: Transmitting
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.962	-1.96	27.13	25.17	40.00	14.83	QP
2	60.014	21.36	14.07	35.43	40.00	4.57	QP
3	120.004	17.73	19.99	37.72	43.50	5.78	QP
4	143.990	16.66	19.52	36.18	43.50	7.32	QP
5	237.476	18.54	18.38	36.92	46.00	9.08	Peak
6	724.261	-2.03	28.10	26.07	46.00	19.93	QP

Band edge and 1GHz-10GHz:**1.4MHz, QPSK:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 904MHz							
904.00	83.80	QP	H	29.47	113.27	N/A	N/A
904.00	91.96	QP	V	29.47	121.43	N/A	N/A
902.00	32.54	QP	V	29.46	62.00	101.43	39.43
1808.000	58.36	PK	H	1.33	59.69	74.00	14.31
1808.000	48.28	AV	H	1.33	49.61	54.00	4.39
1808.000	60.33	PK	V	1.33	61.66	74.00	12.34
1808.000	50.08	AV	V	1.33	51.41	54.00	2.59
2712.000	46.39	PK	H	4.77	51.16	74.00	22.84
2712.000	36.89	AV	H	4.77	41.66	54.00	12.34
2712.000	49.20	PK	V	4.77	53.97	74.00	20.03
2712.000	38.36	AV	V	4.77	43.13	54.00	10.87
3616.000	35.14	PK	H	8.01	43.15	74.00	30.85
3616.000	22.36	AV	H	8.01	30.37	54.00	23.63
3616.000	40.97	PK	V	8.01	48.98	74.00	25.02
3616.000	31.21	AV	V	8.01	39.22	54.00	14.78
Middle Channel: 916MHz							
916.00	83.22	QP	H	29.61	112.83	N/A	N/A
916.00	92.97	QP	V	29.61	122.58	N/A	N/A
1832.000	55.36	PK	H	1.44	56.80	74.00	17.20
1832.000	45.37	AV	H	1.44	46.81	54.00	7.19
1832.000	60.42	PK	V	1.44	61.86	74.00	12.14
1832.000	50.88	AV	V	1.44	52.32	54.00	1.68
2748.000	42.52	PK	H	4.92	47.44	74.00	26.56
2748.000	32.85	AV	H	4.92	37.77	54.00	16.23
2748.000	45.33	PK	V	4.92	50.25	74.00	23.75
2748.000	34.67	AV	V	4.92	39.59	54.00	14.41
3664.000	34.51	PK	H	8.14	42.65	74.00	31.35
3664.000	21.37	AV	H	8.14	29.51	54.00	24.49
3664.000	37.58	PK	V	8.14	45.72	74.00	28.28
3664.000	27.15	AV	V	8.14	35.29	54.00	18.71
High Channel: 926MHz							
926.00	81.44	QP	H	29.67	111.11	N/A	N/A
926.00	93.22	QP	V	29.67	122.89	N/A	N/A
928.00	34.02	QP	V	29.70	63.72	102.89	39.17
1852.000	55.47	PK	H	1.54	57.01	74.00	16.99
1852.000	45.69	AV	H	1.54	47.23	54.00	6.77
1852.000	58.64	PK	V	1.54	60.18	74.00	13.82
1852.000	48.82	AV	V	1.54	50.36	54.00	3.64
2778.000	42.30	PK	H	5.03	47.33	74.00	26.67
2778.000	31.88	AV	H	5.03	36.91	54.00	17.09
2778.000	47.58	PK	V	5.03	52.61	74.00	21.39
2778.000	37.53	AV	V	5.03	42.56	54.00	11.44
3704.000	35.36	PK	H	8.37	43.73	74.00	30.27
3704.000	22.47	AV	H	8.37	30.84	54.00	23.16
3704.000	34.28	PK	V	8.37	42.65	74.00	31.35
3704.000	21.55	AV	V	8.37	29.92	54.00	24.08

16QAM:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 904MHz							
904.00	84.39	QP	H	29.47	113.86	N/A	N/A
904.00	92.61	QP	V	29.47	122.08	N/A	N/A
902.00	34.13	QP	V	29.46	63.59	102.08	38.49
1808.000	60.34	PK	H	1.33	61.67	74.00	12.33
1808.000	50.76	AV	H	1.33	52.09	54.00	1.91
1808.000	61.32	PK	V	1.33	62.65	74.00	11.35
1808.000	51.63	AV	V	1.33	52.96	54.00	1.04
2712.000	45.64	PK	H	4.77	50.41	74.00	23.59
2712.000	35.78	AV	H	4.77	40.55	54.00	13.45
2712.000	47.68	PK	V	4.77	52.45	74.00	21.55
2712.000	37.91	AV	V	4.77	42.68	54.00	11.32
3616.000	39.47	PK	H	8.01	47.48	74.00	26.52
3616.000	29.63	AV	H	8.01	37.64	54.00	16.36
3616.000	38.42	PK	V	8.01	46.43	74.00	27.57
3616.000	28.64	AV	V	8.01	36.65	54.00	17.35
Middle Channel: 916MHz							
916.00	84.05	QP	H	29.61	113.66	N/A	N/A
916.00	93.76	QP	V	29.61	123.37	N/A	N/A
1832.000	51.64	PK	H	1.44	53.08	74.00	20.92
1832.000	41.85	AV	H	1.44	43.29	54.00	10.71
1832.000	60.12	PK	V	1.44	61.56	74.00	12.44
1832.000	50.36	AV	V	1.44	51.80	54.00	2.20
2748.000	40.03	PK	H	4.92	44.95	74.00	29.05
2748.000	30.15	AV	H	4.92	35.07	54.00	18.93
2748.000	48.64	PK	V	4.92	53.56	74.00	20.44
2748.000	38.79	AV	V	4.92	43.71	54.00	10.29
3664.000	34.64	PK	H	8.14	42.78	74.00	31.22
3664.000	22.35	AV	H	8.14	30.49	54.00	23.51
3664.000	37.13	PK	V	8.14	45.27	74.00	28.73
3664.000	27.45	AV	V	8.14	35.59	54.00	18.41
High Channel: 926MHz							
926.00	82.18	QP	H	29.67	111.85	N/A	N/A
926.00	94.31	QP	V	29.67	123.98	N/A	N/A
928.00	36.30	QP	V	29.70	66.00	103.98	37.98
1852.000	52.34	PK	H	1.54	53.88	74.00	20.12
1852.000	42.67	AV	H	1.54	44.21	54.00	9.79
1852.000	58.64	PK	V	1.54	60.18	74.00	13.82
1852.000	48.64	AV	V	1.54	50.18	54.00	3.82
2778.000	42.13	PK	H	5.03	47.16	74.00	26.84
2778.000	32.36	AV	H	5.03	37.39	54.00	16.61
2778.000	46.91	PK	V	5.03	51.94	74.00	22.06
2778.000	37.02	AV	V	5.03	42.05	54.00	11.95
3704.000	34.97	PK	H	8.37	43.34	74.00	30.66
3704.000	25.18	AV	H	8.37	33.55	54.00	20.45
3704.000	36.49	PK	V	8.37	44.86	74.00	29.14
3704.000	26.88	AV	V	8.37	35.25	54.00	18.75

10MHz, QPSK:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 909MHz							
909.00	81.43	QP	H	29.61	111.04	N/A	N/A
909.00	92.03	QP	V	29.61	121.64	N/A	N/A
902.00	51.54	QP	V	29.46	81.00	101.64	20.64
1818.000	57.31	PK	H	1.38	58.69	74.00	15.31
1818.000	46.78	AV	H	1.38	48.16	54.00	5.84
1818.000	60.63	PK	V	1.38	62.01	74.00	11.99
1818.000	50.14	AV	V	1.38	51.52	54.00	2.48
2727.000	45.25	PK	H	4.83	50.08	74.00	23.92
2727.000	36.10	AV	H	4.83	40.93	54.00	13.07
2727.000	50.27	PK	V	4.83	55.10	74.00	18.90
2727.000	39.87	AV	V	4.83	44.70	54.00	9.30
3636.000	35.21	PK	H	8.04	43.25	74.00	30.75
3636.000	22.44	AV	H	8.04	30.48	54.00	23.52
3636.000	41.19	PK	V	8.04	49.23	74.00	24.77
3636.000	30.27	AV	V	8.04	38.31	54.00	15.69
Middle Channel: 915MHz							
915.00	81.10	QP	H	29.62	110.72	N/A	N/A
915.00	91.10	QP	V	29.62	120.72	N/A	N/A
1830.000	57.36	PK	H	1.43	58.79	74.00	15.21
1830.000	47.61	AV	H	1.43	49.04	54.00	4.96
1830.000	61.15	PK	V	1.43	62.58	74.00	11.42
1830.000	51.44	AV	V	1.43	52.87	54.00	1.13
2745.000	44.34	PK	H	4.91	49.25	74.00	24.75
2745.000	34.50	AV	H	4.91	39.41	54.00	14.59
2745.000	47.87	PK	V	4.91	52.78	74.00	21.22
2745.000	36.82	AV	V	4.91	41.73	54.00	12.27
3660.000	35.86	PK	H	8.12	43.98	74.00	30.02
3660.000	22.30	AV	H	8.12	30.42	54.00	23.58
3660.000	40.21	PK	V	8.12	48.33	74.00	25.67
3660.000	30.57	AV	V	8.12	38.69	54.00	15.31
High Channel: 921MHz							
921.00	80.68	QP	H	29.58	110.26	N/A	N/A
921.00	92.83	QP	V	29.58	122.41	N/A	N/A
928.00	58.83	QP	V	29.70	88.53	102.41	13.88
1842.000	58.78	PK	H	1.49	60.27	74.00	13.73
1842.000	48.64	AV	H	1.49	50.13	54.00	3.87
1842.000	60.25	PK	V	1.49	61.74	74.00	12.26
1842.000	50.38	AV	V	1.49	51.87	54.00	2.13
2763.000	45.82	PK	H	4.97	50.79	74.00	23.21
2763.000	34.25	AV	H	4.97	39.22	54.00	14.78
2763.000	48.21	PK	V	4.97	53.18	74.00	20.82
2763.000	37.44	AV	V	4.97	42.41	54.00	11.59
3684.000	34.71	PK	H	8.26	42.97	74.00	31.03
3684.000	21.56	AV	H	8.26	29.82	54.00	24.18
3684.000	42.01	PK	V	8.26	50.27	74.00	23.73
3684.000	32.17	AV	V	8.26	40.43	54.00	13.57

16QAM:

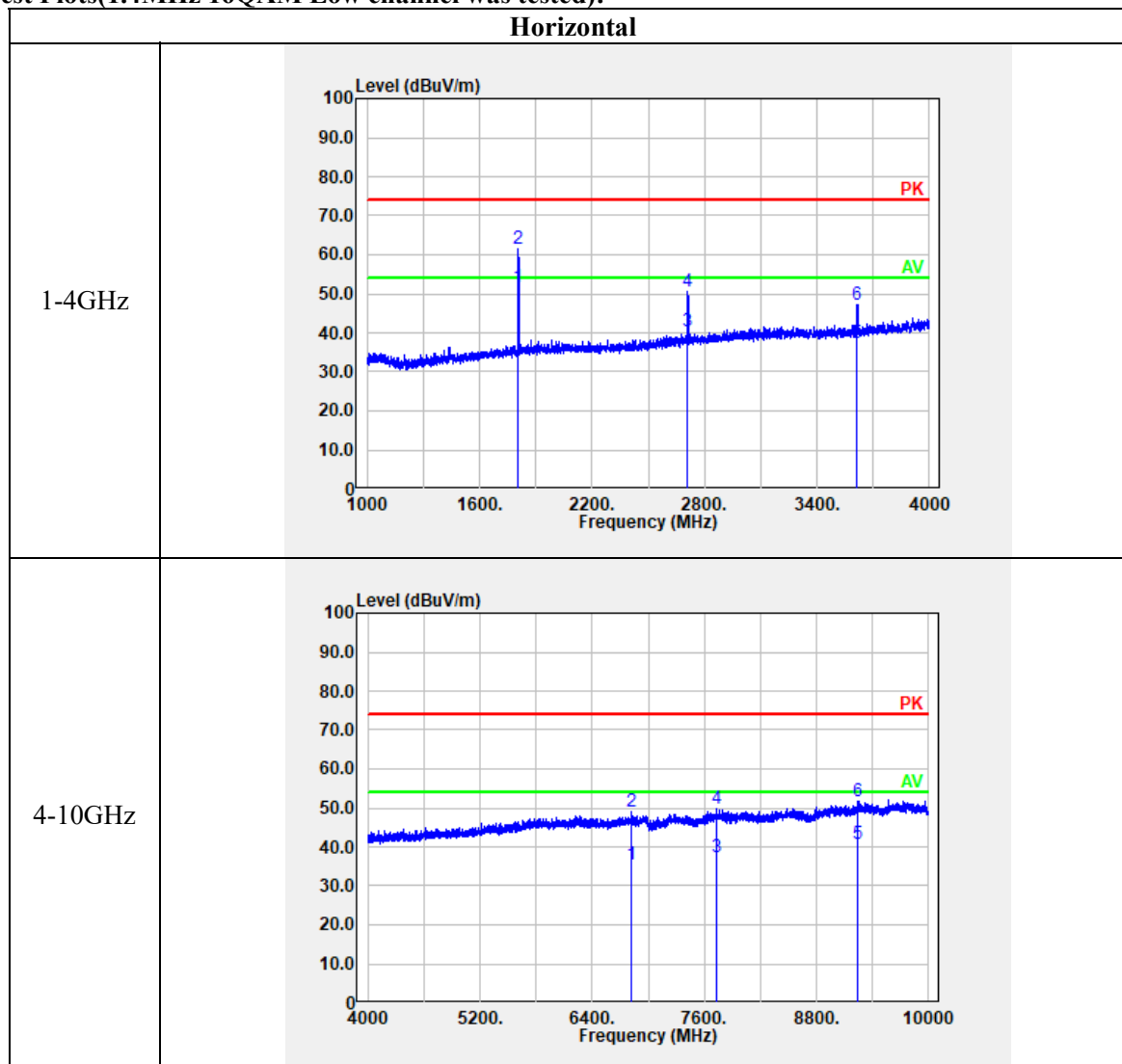
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 909MHz							
909.00	75.72	QP	H	29.61	105.33	N/A	N/A
909.00	86.80	QP	V	29.61	116.41	N/A	N/A
902.00	39.89	QP	V	29.46	69.35	96.41	27.06
1818.000	57.62	PK	H	1.38	59.00	74.00	15.00
1818.000	48.21	AV	H	1.38	49.59	54.00	4.41
1818.000	60.29	PK	V	1.38	61.67	74.00	12.33
1818.000	50.30	AV	V	1.38	51.68	54.00	2.32
2727.000	44.32	PK	H	4.83	49.15	74.00	24.85
2727.000	34.56	AV	H	4.83	39.39	54.00	14.61
2727.000	49.38	PK	V	4.83	54.21	74.00	19.79
2727.000	40.08	AV	V	4.83	44.91	54.00	9.09
3636.000	36.55	PK	H	8.04	44.59	74.00	29.41
3636.000	23.69	AV	H	8.04	31.73	54.00	22.27
3636.000	40.67	PK	V	8.04	48.71	74.00	25.29
3636.000	30.34	AV	V	8.04	38.38	54.00	15.62
Middle Channel: 915MHz							
915.00	76.11	QP	H	29.62	105.73	N/A	N/A
915.00	87.17	QP	V	29.62	116.79	N/A	N/A
1830.000	58.69	PK	H	1.43	60.12	74.00	13.88
1830.000	48.33	AV	H	1.43	49.76	54.00	4.24
1830.000	60.22	PK	V	1.43	61.65	74.00	12.35
1830.000	50.56	AV	V	1.43	51.99	54.00	2.01
2745.000	43.20	PK	H	4.91	48.11	74.00	25.89
2745.000	33.52	AV	H	4.91	38.43	54.00	15.57
2745.000	46.58	PK	V	4.91	51.49	74.00	22.51
2745.000	36.36	AV	V	4.91	41.27	54.00	12.73
3660.000	34.57	PK	H	8.12	42.69	74.00	31.31
3660.000	21.74	AV	H	8.12	29.86	54.00	24.14
3660.000	39.10	PK	V	8.12	47.22	74.00	26.78
3660.000	28.66	AV	V	8.12	36.78	54.00	17.22
High Channel: 921MHz							
921.00	75.22	QP	H	29.58	104.80	N/A	N/A
921.00	86.91	QP	V	29.58	116.49	N/A	N/A
928.00	36.93	QP	V	29.70	66.63	96.49	29.86
1842.000	56.30	PK	H	1.49	57.79	74.00	16.21
1842.000	47.25	AV	H	1.49	48.74	54.00	5.26
1842.000	59.85	PK	V	1.49	61.34	74.00	12.66
1842.000	49.77	AV	V	1.49	51.26	54.00	2.74
2763.000	42.52	PK	H	4.97	47.49	74.00	26.51
2763.000	32.52	AV	H	4.97	37.49	54.00	16.51
2763.000	47.20	PK	V	4.97	52.17	74.00	21.83
2763.000	38.27	AV	V	4.97	43.24	54.00	10.76
3684.000	34.66	PK	H	8.26	42.92	74.00	31.08
3684.000	21.56	AV	H	8.26	29.82	54.00	24.18
3684.000	40.31	PK	V	8.26	48.57	74.00	25.43
3684.000	30.28	AV	V	8.26	38.54	54.00	15.46

20MHz, QPSK:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 914MHz							
914.00	78.07	QP	H	29.62	107.69	N/A	N/A
914.00	88.74	QP	V	29.62	118.36	N/A	N/A
902.00	53.80	QP	V	29.46	83.26	98.36	15.10
1828.000	56.68	PK	H	1.42	58.10	74.00	15.90
1828.000	46.71	AV	H	1.42	48.13	54.00	5.87
1828.000	58.35	PK	V	1.42	59.77	74.00	14.23
1828.000	47.66	AV	V	1.42	49.08	54.00	4.92
2742.000	45.36	PK	H	4.90	50.26	74.00	23.74
2742.000	35.71	AV	H	4.90	40.61	54.00	13.39
2742.000	48.30	PK	V	4.90	53.20	74.00	20.80
2742.000	38.66	AV	V	4.90	43.56	54.00	10.44
3656.000	40.23	PK	H	8.10	48.33	74.00	25.67
3656.000	30.49	AV	H	8.10	38.59	54.00	15.41
3656.000	40.21	PK	V	8.10	48.31	74.00	25.69
3656.000	30.36	AV	V	8.10	38.46	54.00	15.54
Low Channel: 915MHz							
915.00	77.97	QP	H	29.62	107.59	N/A	N/A
915.00	88.43	QP	V	29.62	118.05	N/A	N/A
1830.000	57.62	PK	H	1.43	59.05	74.00	14.95
1830.000	47.33	AV	H	1.43	48.76	54.00	5.24
1830.000	60.21	PK	V	1.43	61.64	74.00	12.36
1830.000	50.14	AV	V	1.43	51.57	54.00	2.43
2745.000	44.36	PK	H	4.91	49.27	74.00	24.73
2745.000	34.25	AV	H	4.91	39.16	54.00	14.84
2745.000	48.21	PK	V	4.91	53.12	74.00	20.88
2745.000	37.69	AV	V	4.91	42.60	54.00	11.40
3660.000	40.12	PK	H	8.12	48.24	74.00	25.76
3660.000	30.41	AV	H	8.12	38.53	54.00	15.47
3660.000	40.68	PK	V	8.12	48.80	74.00	25.20
3660.000	30.45	AV	V	8.12	38.57	54.00	15.43
High Channel: 916MHz							
916.00	78.39	QP	H	29.61	108.00	N/A	N/A
916.00	89.02	QP	V	29.61	118.63	N/A	N/A
928.00	60.54	QP	V	29.70	90.24	98.63	8.39
1832.000	57.44	PK	H	1.44	58.88	74.00	15.12
1832.000	47.36	AV	H	1.44	48.80	54.00	5.20
1832.000	60.45	PK	V	1.44	61.89	74.00	12.11
1832.000	50.66	AV	V	1.44	52.10	54.00	1.90
2748.000	42.33	PK	H	4.92	47.25	74.00	26.75
2748.000	32.28	AV	H	4.92	37.20	54.00	16.80
2748.000	49.36	PK	V	4.92	54.28	74.00	19.72
2748.000	39.41	AV	V	4.92	44.33	54.00	9.67
3664.000	40.25	PK	H	8.14	48.39	74.00	25.61
3664.000	30.33	AV	H	8.14	38.47	54.00	15.53
3664.000	42.68	PK	V	8.14	50.82	74.00	23.18
3664.000	32.57	AV	V	8.14	40.71	54.00	13.29

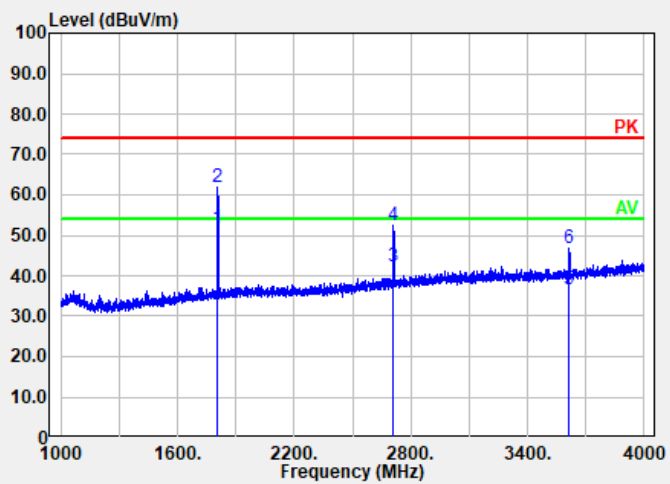
16QAM:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 914MHz							
914.00	79.69	QP	H	29.62	109.31	N/A	N/A
914.00	89.55	QP	V	29.62	119.17	N/A	N/A
902.00	57.43	QP	V	29.46	86.89	99.17	12.28
1828.000	58.61	PK	H	1.42	60.03	74.00	13.97
1828.000	48.31	AV	H	1.42	49.73	54.00	4.27
1828.000	59.37	PK	V	1.42	60.79	74.00	13.21
1828.000	48.44	AV	V	1.42	49.86	54.00	4.14
2742.000	47.32	PK	H	4.90	52.22	74.00	21.78
2742.000	36.39	AV	H	4.90	41.29	54.00	12.71
2742.000	50.06	PK	V	4.90	54.96	74.00	19.04
2742.000	39.88	AV	V	4.90	44.78	54.00	9.22
3656.000	41.25	PK	H	8.10	49.35	74.00	24.65
3656.000	31.14	AV	H	8.10	39.24	54.00	14.76
3656.000	41.56	PK	V	8.10	49.66	74.00	24.34
3656.000	30.88	AV	V	8.10	38.98	54.00	15.02
Low Channel: 915MHz							
915.00	79.82	QP	H	29.62	109.44	N/A	N/A
915.00	89.47	QP	V	29.62	119.09	N/A	N/A
1830.000	59.30	PK	H	1.43	60.73	74.00	13.27
1830.000	49.68	AV	H	1.43	51.11	54.00	2.89
1830.000	60.33	PK	V	1.43	61.76	74.00	12.24
1830.000	50.46	AV	V	1.43	51.89	54.00	2.11
2745.000	46.76	PK	H	4.91	51.67	74.00	22.33
2745.000	36.70	AV	H	4.91	41.61	54.00	12.39
2745.000	48.96	PK	V	4.91	53.87	74.00	20.13
2745.000	39.66	AV	V	4.91	44.57	54.00	9.43
3660.000	40.21	PK	H	8.12	48.33	74.00	25.67
3660.000	30.58	AV	H	8.12	38.70	54.00	15.30
3660.000	43.74	PK	V	8.12	51.86	74.00	22.14
3660.000	33.20	AV	V	8.12	41.32	54.00	12.68
High Channel: 916MHz							
916.00	81.20	QP	H	29.61	110.81	N/A	N/A
916.00	90.32	QP	V	29.61	119.93	N/A	N/A
928.00	64.46	QP	V	29.70	94.16	99.93	5.77
1832.000	57.66	PK	H	1.44	59.10	74.00	14.90
1832.000	47.28	AV	H	1.44	48.72	54.00	5.28
1832.000	62.13	PK	V	1.44	63.57	74.00	10.43
1832.000	51.39	AV	V	1.44	52.83	54.00	1.17
2748.000	43.55	PK	H	4.92	48.47	74.00	25.53
2748.000	33.57	AV	H	4.92	38.49	54.00	15.51
2748.000	49.63	PK	V	4.92	54.55	74.00	19.45
2748.000	39.32	AV	V	4.92	44.24	54.00	9.76
3664.000	41.59	PK	H	8.14	49.73	74.00	24.27
3664.000	31.48	AV	H	8.14	39.62	54.00	14.38
3664.000	41.78	PK	V	8.14	49.92	74.00	24.08
3664.000	30.58	AV	V	8.14	38.72	54.00	15.28

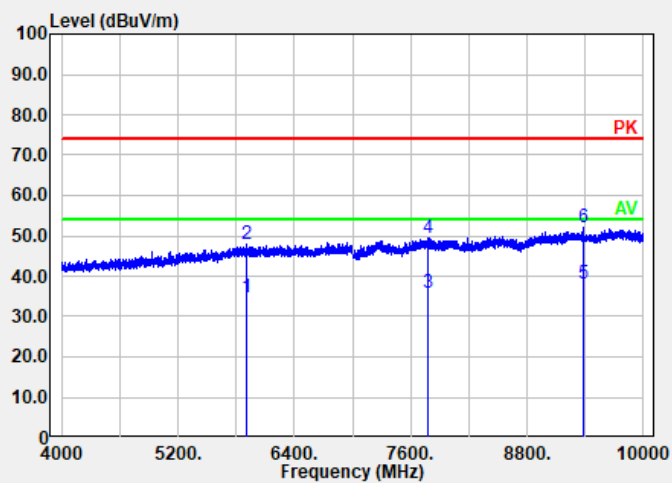
Test Plots(1.4MHz 16QAM Low channel was tested):

Vertical

1-4GHz

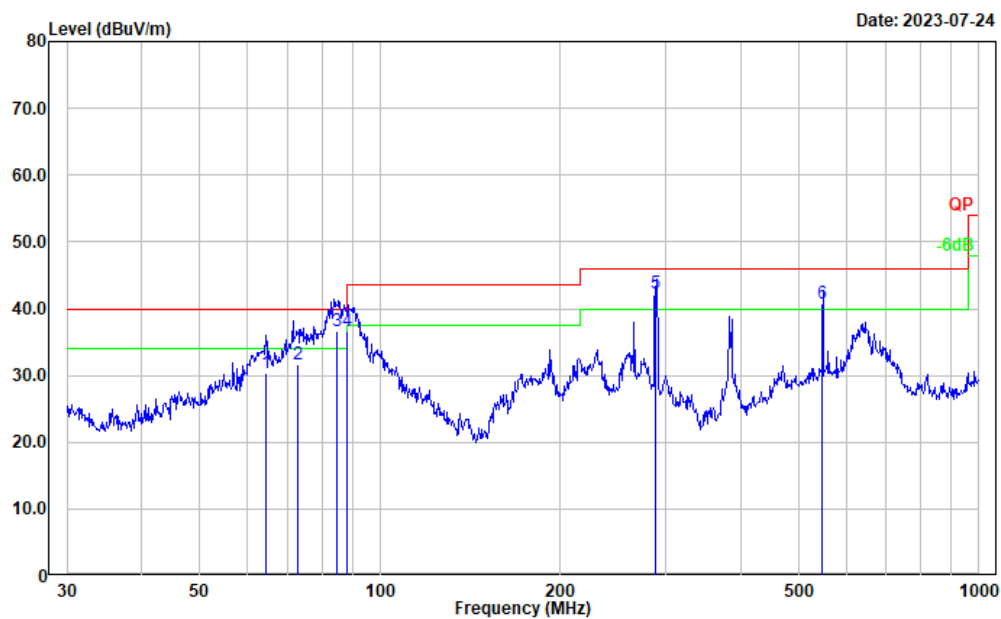


4-10GHz



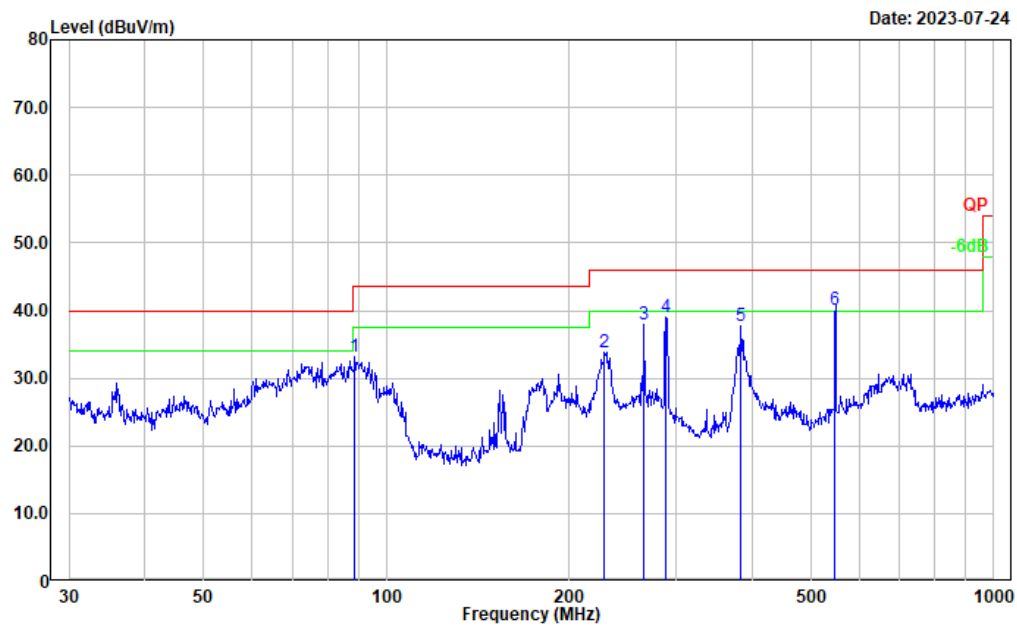
2.4GHz Band:**1) 30MHz-1GHz(1.4MHz QPSK, Low channel was tested)**

Test Mode: Transmitting
Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	64.433	47.38	-17.00	30.38	40.00	9.62	QP
2	72.865	48.39	-16.73	31.66	40.00	8.34	QP
3	84.599	53.83	-17.21	36.62	40.00	3.38	QP
4	88.099	53.58	-17.03	36.55	43.50	6.95	QP
5	287.642	53.49	-11.19	42.30	46.00	3.70	QP
6	547.988	46.51	-5.80	40.71	46.00	5.29	QP

Test Mode: Transmitting
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	88.652	50.18	-17.01	33.17	43.50	10.33	Peak
2	228.490	46.87	-12.95	33.92	46.00	12.08	Peak
3	265.676	50.13	-12.26	37.87	46.00	8.13	Peak
4	289.002	50.20	-11.10	39.10	46.00	6.90	Peak
5	383.932	46.84	-9.03	37.81	46.00	8.19	Peak
6	548.032	45.99	-5.80	40.19	46.00	5.81	QP

2) 1-25GHz:**QPSK 1.4M Mode:**

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 2403.5 MHz							
2403.500	76.20	PK	H	31.51	107.71	N/A	N/A
2403.500	70.34	AV	H	31.51	101.85	N/A	N/A
2403.500	88.92	PK	V	31.51	120.43	N/A	N/A
2403.500	82.85	AV	V	31.51	114.36	N/A	N/A
2390.000	27.69	PK	V	31.46	59.15	74.00	14.85
2390.000	14.23	AV	V	31.46	45.69	54.00	8.31
4807.000	51.66	PK	V	10.92	62.58	74.00	11.42
4807.000	41.57	AV	V	10.92	52.49	54.00	1.51
7210.500	42.98	PK	V	14.25	57.23	74.00	16.77
7210.500	30.00	AV	V	14.25	44.25	54.00	9.75
Middle Channel: 2439.5 MHz							
2439.500	76.74	PK	H	31.60	108.34	N/A	N/A
2439.500	70.33	AV	H	31.60	101.93	N/A	N/A
2439.500	88.62	PK	V	31.60	120.22	N/A	N/A
2439.500	79.26	AV	V	31.60	110.86	N/A	N/A
4879.000	49.17	PK	V	11.06	60.23	74.00	13.77
4879.000	40.57	AV	V	11.06	51.63	54.00	2.37
7318.500	44.32	PK	V	14.80	59.12	74.00	14.88
7318.500	31.25	AV	V	14.80	46.05	54.00	7.95
High Channel: 2475.5MHz							
2475.500	76.69	PK	H	31.64	108.33	N/A	N/A
2475.500	70.39	AV	H	31.64	102.03	N/A	N/A
2475.500	89.04	PK	V	31.64	120.68	N/A	N/A
2475.500	83.94	AV	V	31.64	115.58	N/A	N/A
2483.500	28.55	PK	V	31.64	60.19	74.00	13.81
2483.500	15.56	AV	V	31.64	47.20	54.00	6.80
4951.000	50.19	PK	V	11.24	61.43	74.00	12.57
4951.000	41.28	AV	V	11.24	52.52	54.00	1.48
7426.500	44.36	PK	V	15.15	59.51	74.00	14.49
7426.500	31.57	AV	V	15.15	46.72	54.00	7.28

16QAM:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 2403.5 MHz							
2403.500	76.59	PK	H	31.51	108.10	N/A	N/A
2403.500	70.89	AV	H	31.51	102.40	N/A	N/A
2403.500	88.27	PK	V	31.51	119.78	N/A	N/A
2403.500	82.35	AV	V	31.51	113.86	N/A	N/A
2390.000	28.73	PK	V	31.46	60.19	74.00	13.81
2390.000	15.02	AV	V	31.46	46.48	54.00	7.52
4807.000	50.61	PK	V	10.92	61.53	74.00	12.47
4807.000	41.48	AV	V	10.92	52.40	54.00	1.60
7210.500	43.12	PK	V	14.25	57.37	74.00	16.63
7210.500	21.37	AV	V	14.25	35.62	54.00	18.38
Middle Channel: 2439.5 MHz							
2439.500	76.68	PK	H	31.60	108.28	N/A	N/A
2439.500	70.52	AV	H	31.60	102.12	N/A	N/A
2439.500	88.85	PK	V	31.60	120.45	N/A	N/A
2439.500	82.76	AV	V	31.60	114.36	N/A	N/A
4879.000	49.40	PK	V	11.06	60.46	74.00	13.54
4879.000	40.25	AV	V	11.06	51.31	54.00	2.69
7318.500	46.54	PK	V	14.80	61.34	74.00	12.66
7318.500	34.05	AV	V	14.80	48.85	54.00	5.15
High Channel: 2475.5MHz							
2475.500	76.52	PK	H	31.64	108.16	N/A	N/A
2475.500	70.17	AV	H	31.64	101.81	N/A	N/A
2475.500	89.17	PK	V	31.64	120.81	N/A	N/A
2475.500	83.11	AV	V	31.64	114.75	N/A	N/A
2483.500	28.19	PK	V	31.64	59.83	74.00	14.17
2483.500	15.07	AV	V	31.64	46.71	54.00	7.29
4951.000	50.25	PK	V	11.24	61.49	74.00	12.51
4951.000	41.24	AV	V	11.24	52.48	54.00	1.52
7426.500	44.33	PK	V	15.15	59.48	74.00	14.52
7426.500	34.42	AV	V	15.15	49.57	54.00	4.43

10MHz QPSK:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 2407.5 MHz							
2407.500	71.26	PK	H	31.52	102.78	N/A	N/A
2407.500	62.38	AV	H	31.52	93.90	N/A	N/A
2407.500	84.92	PK	V	31.52	116.44	N/A	N/A
2407.500	75.10	AV	V	31.52	106.62	N/A	N/A
2390.000	33.68	PK	V	31.46	65.14	74.00	8.86
2390.000	20.77	AV	V	31.46	52.23	54.00	1.77
4815.000	42.36	PK	V	10.93	53.29	74.00	20.71
4815.000	29.88	AV	V	10.93	40.81	54.00	13.19
7222.500	34.86	PK	V	14.34	49.20	74.00	24.80
7222.500	21.47	AV	V	14.34	35.81	54.00	18.19
2408.5 MHz							
2408.500	85.35	PK	V	31.52	116.87	N/A	N/A
2408.500	75.28	AV	V	31.52	106.80	N/A	N/A
2390.000	35.18	PK	V	31.46	66.64	74.00	7.36
2390.000	21.59	AV	V	31.46	53.05	54.00	0.95
2409.5 MHz							
2409.500	85.48	PK	V	31.52	117.00	N/A	N/A
2409.500	75.21	AV	V	31.52	106.73	N/A	N/A
2390.000	34.09	PK	V	31.46	65.55	74.00	8.45
2390.000	21.56	AV	V	31.46	53.02	54.00	0.98
2410.5 MHz							
2410.500	85.86	PK	V	31.53	117.39	N/A	N/A
2410.500	75.47	AV	V	31.53	107.00	N/A	N/A
2390.000	34.57	PK	V	31.46	66.03	74.00	7.97
2390.000	22.05	AV	V	31.46	53.51	54.00	0.49
2411.5 MHz							
2411.500	87.17	PK	V	31.53	118.70	N/A	N/A
2411.500	77.74	AV	V	31.53	109.27	N/A	N/A
2390.000	34.80	PK	V	31.46	66.26	74.00	7.74
2390.000	20.43	AV	V	31.46	51.89	54.00	2.11
Middle Channel: 2439.5 MHz							
2439.500	73.38	PK	H	31.60	104.98	N/A	N/A
2439.500	63.83	AV	H	31.60	95.43	N/A	N/A
2439.500	86.89	PK	V	31.60	118.49	N/A	N/A
2439.500	77.54	AV	V	31.60	109.14	N/A	N/A
4879.000	35.62	PK	V	11.06	46.68	74.00	27.32
4879.000	22.41	AV	V	11.06	33.47	54.00	20.53
7318.500	34.71	PK	V	14.80	49.51	74.00	24.49
7318.500	21.73	AV	V	14.80	36.53	54.00	17.47
Middle Channel: 2464.5 MHz							
2464.500	87.06	PK	V	31.64	118.70	N/A	N/A
2464.500	77.76	AV	V	31.64	109.40	N/A	N/A
2483.500	34.06	PK	V	31.64	65.70	74.00	8.30
2483.500	20.13	AV	V	31.64	51.77	54.00	2.23
High Channel: 2465.5MHz							
2465.500	83.84	PK	V	31.64	115.48	N/A	N/A
2465.500	74.91	AV	V	31.64	106.55	N/A	N/A
2483.500	35.22	PK	V	31.64	66.86	74.00	7.14
2483.500	21.37	AV	V	31.64	53.01	54.00	0.99

High Channel: 2469.5MHz							
2469.500	82.67	PK	V	31.64	114.31	N/A	N/A
2469.500	72.49	AV	V	31.64	104.13	N/A	N/A
2483.500	34.96	PK	V	31.64	66.60	74.00	7.40
2483.500	20.84	AV	V	31.64	52.48	54.00	1.52
High Channel: 2470.5MHz							
2470.500	82.08	PK	V	31.64	113.72	N/A	N/A
2470.500	71.97	AV	V	31.64	103.61	N/A	N/A
2483.500	35.19	PK	V	31.64	66.83	74.00	7.17
2483.500	20.55	AV	V	31.64	52.19	54.00	1.81
High Channel: 2471.5MHz							
2471.500	67.68	PK	H	31.64	99.32	N/A	N/A
2471.500	56.21	AV	H	31.64	87.85	N/A	N/A
2471.500	80.84	PK	V	31.64	112.48	N/A	N/A
2471.500	70.71	AV	V	31.64	102.35	N/A	N/A
2483.500	34.50	PK	V	31.64	66.14	74.00	7.86
2483.500	20.12	AV	V	31.64	51.76	54.00	2.24
4943.000	35.66	PK	V	11.22	46.88	74.00	27.12
4943.000	22.49	AV	V	11.22	33.71	54.00	20.29
7414.500	35.47	PK	V	15.05	50.52	74.00	23.48
7414.500	21.68	AV	V	15.05	36.73	54.00	17.27

16QAM:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 2407.5 MHz							
2407.500	73.14	PK	H	31.52	104.66	N/A	N/A
2407.500	63.36	AV	H	31.52	94.88	N/A	N/A
2407.500	86.64	PK	V	31.52	118.16	N/A	N/A
2407.500	76.75	AV	V	31.52	108.27	N/A	N/A
2390.000	34.90	PK	V	31.46	66.36	74.00	7.64
2390.000	20.93	AV	V	31.46	52.39	54.00	1.61
4815.000	43.36	PK	V	10.93	54.29	74.00	19.71
4815.000	29.83	AV	V	10.93	40.76	54.00	13.24
7222.500	35.77	PK	V	14.34	50.11	74.00	23.89
7222.500	22.41	AV	V	14.34	36.75	54.00	17.25
Low Channel: 2408.5 MHz							
2408.500	86.88	PK	V	31.52	118.40	N/A	N/A
2408.500	76.34	AV	V	31.52	107.86	N/A	N/A
2390.000	35.08	PK	V	31.46	66.54	74.00	7.46
2390.000	21.82	AV	V	31.46	53.28	54.00	0.72
Low Channel: 2409.5 MHz							
2409.500	87.85	PK	V	31.52	119.37	N/A	N/A
2409.500	77.76	AV	V	31.52	109.28	N/A	N/A
2390.000	35.27	PK	V	31.46	66.73	74.00	7.27
2390.000	21.78	AV	V	31.46	53.24	54.00	0.76
Low Channel: 2410.5 MHz							
2410.500	87.67	PK	V	31.53	119.20	N/A	N/A
2410.500	77.14	AV	V	31.53	108.67	N/A	N/A
2390.000	35.33	PK	V	31.46	66.79	74.00	7.21
2390.000	21.47	AV	V	31.46	52.93	54.00	1.07
Middle Channel: 2420.5 MHz							
2420.500	87.95	PK	V	31.55	119.50	N/A	N/A
2420.500	77.67	AV	V	31.55	109.22	N/A	N/A
2390.000	33.45	PK	V	31.46	64.91	74.00	9.09
2390.000	18.67	AV	V	31.46	50.13	54.00	3.87
Middle Channel: 2439.5 MHz							
2439.500	76.20	PK	H	31.60	107.80	N/A	N/A
2439.500	66.41	AV	H	31.60	98.01	N/A	N/A
2439.500	87.52	PK	V	31.60	119.12	N/A	N/A
2439.500	77.32	AV	V	31.60	108.92	N/A	N/A
4879.000	40.32	PK	V	11.06	51.38	74.00	22.62
4879.000	27.55	AV	V	11.06	38.61	54.00	15.39
7318.500	36.57	PK	V	14.80	51.37	74.00	22.63
7318.500	23.41	AV	V	14.80	38.21	54.00	15.79
Middle Channel: 2460.5 MHz							
2460.500	88.26	PK	V	31.63	119.89	N/A	N/A
2460.500	78.18	AV	V	31.63	109.81	N/A	N/A
2483.500	34.78	PK	V	31.64	66.42	74.00	7.58
2483.500	20.43	AV	V	31.64	52.07	54.00	1.93
High Channel: 2461.5MHz							
2461.500	86.11	PK	V	31.63	117.74	N/A	N/A
2461.500	75.61	AV	V	31.63	107.24	N/A	N/A
2483.500	31.25	PK	V	31.64	62.89	74.00	11.11
2483.500	18.36	AV	V	31.64	50.00	54.00	4.00

High Channel: 2469.5MHz							
2469.500	85.30	PK	V	31.64	116.94	N/A	N/A
2469.500	74.77	AV	V	31.64	106.41	N/A	N/A
2483.500	32.61	PK	V	31.64	64.25	74.00	9.75
2483.500	18.48	AV	V	31.64	50.12	54.00	3.88
High Channel: 2470.5MHz							
2470.500	84.27	PK	V	31.64	115.91	N/A	N/A
2470.500	74.34	AV	V	31.64	105.98	N/A	N/A
2483.500	35.52	PK	V	31.64	67.16	74.00	6.84
2483.500	21.71	AV	V	31.64	53.35	54.00	0.65
High Channel: 2471.5MHz							
2471.500	76.59	PK	H	31.64	108.23	N/A	N/A
2471.500	65.39	AV	H	31.64	97.03	N/A	N/A
2471.500	82.99	PK	V	31.64	114.63	N/A	N/A
2471.500	73.20	AV	V	31.64	104.84	N/A	N/A
2483.500	31.71	PK	V	31.64	63.35	74.00	10.65
2483.500	18.16	AV	V	31.64	49.80	54.00	4.20
4943.000	35.62	PK	V	11.22	46.84	74.00	27.16
4943.000	22.47	AV	V	11.22	33.69	54.00	20.31
7414.500	35.49	PK	V	15.05	50.54	74.00	23.46
7414.500	22.30	AV	V	15.05	37.35	54.00	16.65

20MHz QPSK:

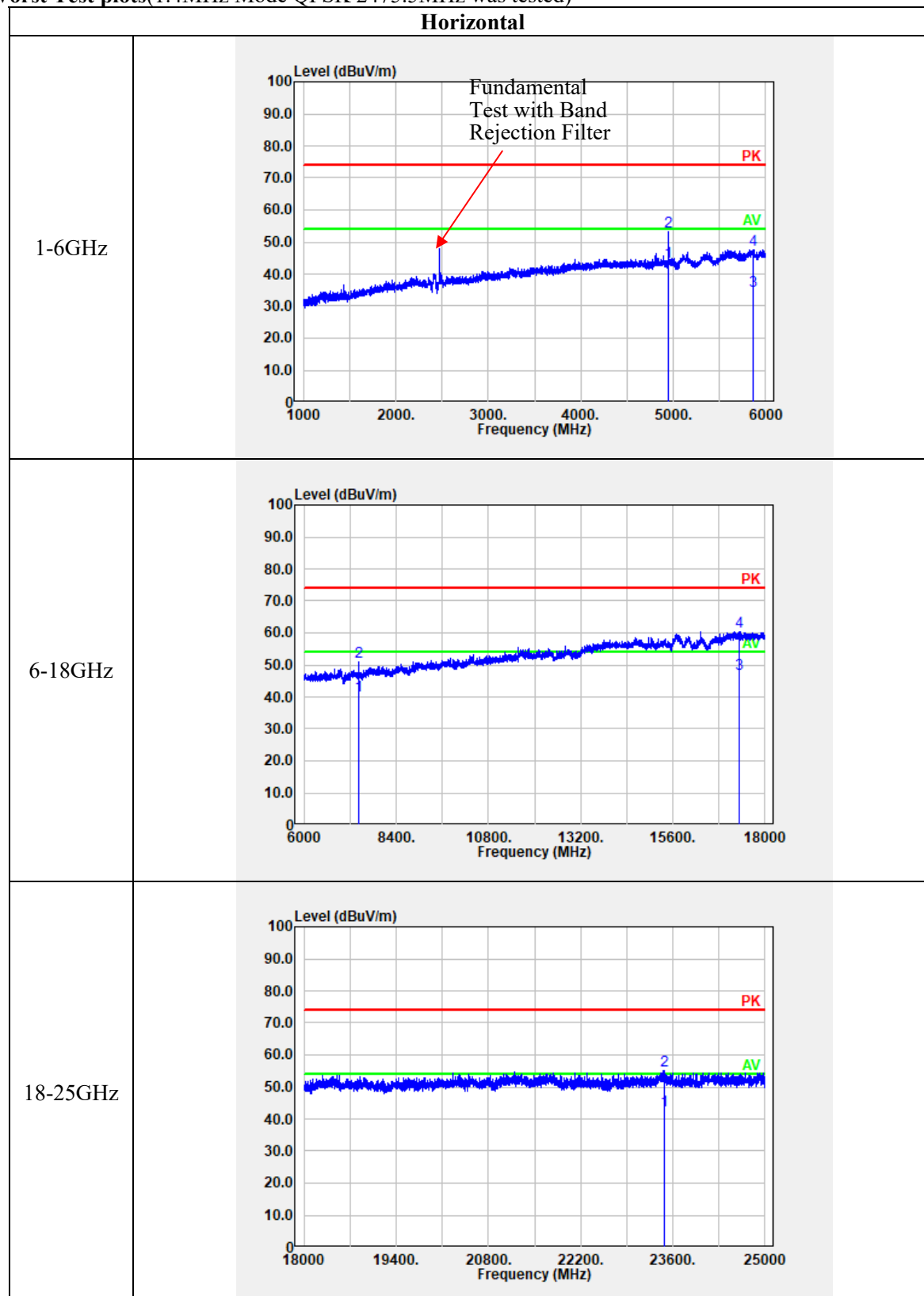
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 2412.5 MHz							
2412.500	71.95	PK	H	31.53	103.48	N/A	N/A
2412.500	59.78	AV	H	31.53	91.31	N/A	N/A
2412.500	82.16	PK	V	31.53	113.69	N/A	N/A
2412.500	70.58	AV	V	31.53	102.11	N/A	N/A
2390.000	32.89	PK	V	31.46	64.35	74.00	9.65
2390.000	21.05	AV	V	31.46	52.51	54.00	1.49
4825.000	35.42	PK	V	10.94	46.36	74.00	27.64
4825.000	22.68	AV	V	10.94	33.62	54.00	20.38
7237.500	34.75	PK	V	14.46	49.21	74.00	24.79
7237.500	21.62	AV	V	14.46	36.08	54.00	17.92
Low Channel: 2413.5 MHz							
2413.500	82.36	PK	V	31.54	113.90	N/A	N/A
2413.500	70.97	AV	V	31.54	102.51	N/A	N/A
2390.000	34.79	PK	V	31.46	66.25	74.00	7.75
2390.000	21.63	AV	V	31.46	53.09	54.00	0.91
Low Channel: 2414.5 MHz							
2414.500	82.75	PK	V	31.54	114.29	N/A	N/A
2414.500	71.43	AV	V	31.54	102.97	N/A	N/A
2390.000	34.84	PK	V	31.46	66.30	74.00	7.70
2390.000	21.59	AV	V	31.46	53.05	54.00	0.95
Low Channel: 2415.5 MHz							
2415.500	82.85	PK	V	31.54	114.39	N/A	N/A
2415.500	71.56	AV	V	31.54	103.10	N/A	N/A
2390.000	36.15	PK	V	31.46	67.61	74.00	6.39
2390.000	21.98	AV	V	31.46	53.44	54.00	0.56
Middle Channel: 2416.5 MHz							
2416.500	87.99	PK	V	31.54	119.53	N/A	N/A
2416.500	76.35	AV	V	31.54	107.89	N/A	N/A
2390.000	35.21	PK	V	31.46	66.67	74.00	7.33
2390.000	20.16	AV	V	31.46	51.62	54.00	2.38
Middle Channel: 2437.5 MHz							
2437.500	76.68	PK	H	31.60	108.28	N/A	N/A
2437.500	65.88	AV	H	31.60	97.48	N/A	N/A
2437.500	87.58	PK	V	31.60	119.18	N/A	N/A
2437.500	76.92	AV	V	31.60	108.52	N/A	N/A
4875.000	35.69	PK	V	11.05	46.74	74.00	27.26
4875.000	22.75	AV	V	11.05	33.80	54.00	20.20
7312.500	34.72	PK	V	14.80	49.52	74.00	24.48
7312.500	21.45	AV	V	14.80	36.25	54.00	17.75
Middle Channel: 2452.5 MHz							
2452.500	87.43	PK	V	31.63	119.06	N/A	N/A
2452.500	77.06	AV	V	31.63	108.69	N/A	N/A
2483.500	33.97	PK	V	31.64	65.61	74.00	8.39
2483.500	20.15	AV	V	31.64	51.79	54.00	2.21
High Channel: 2459.5MHz							
2459.500	84.83	PK	V	31.63	116.46	N/A	N/A
2459.500	73.48	AV	V	31.63	105.11	N/A	N/A
2483.500	34.03	PK	V	31.64	65.67	74.00	8.33
2483.500	21.80	AV	V	31.64	53.44	54.00	0.56

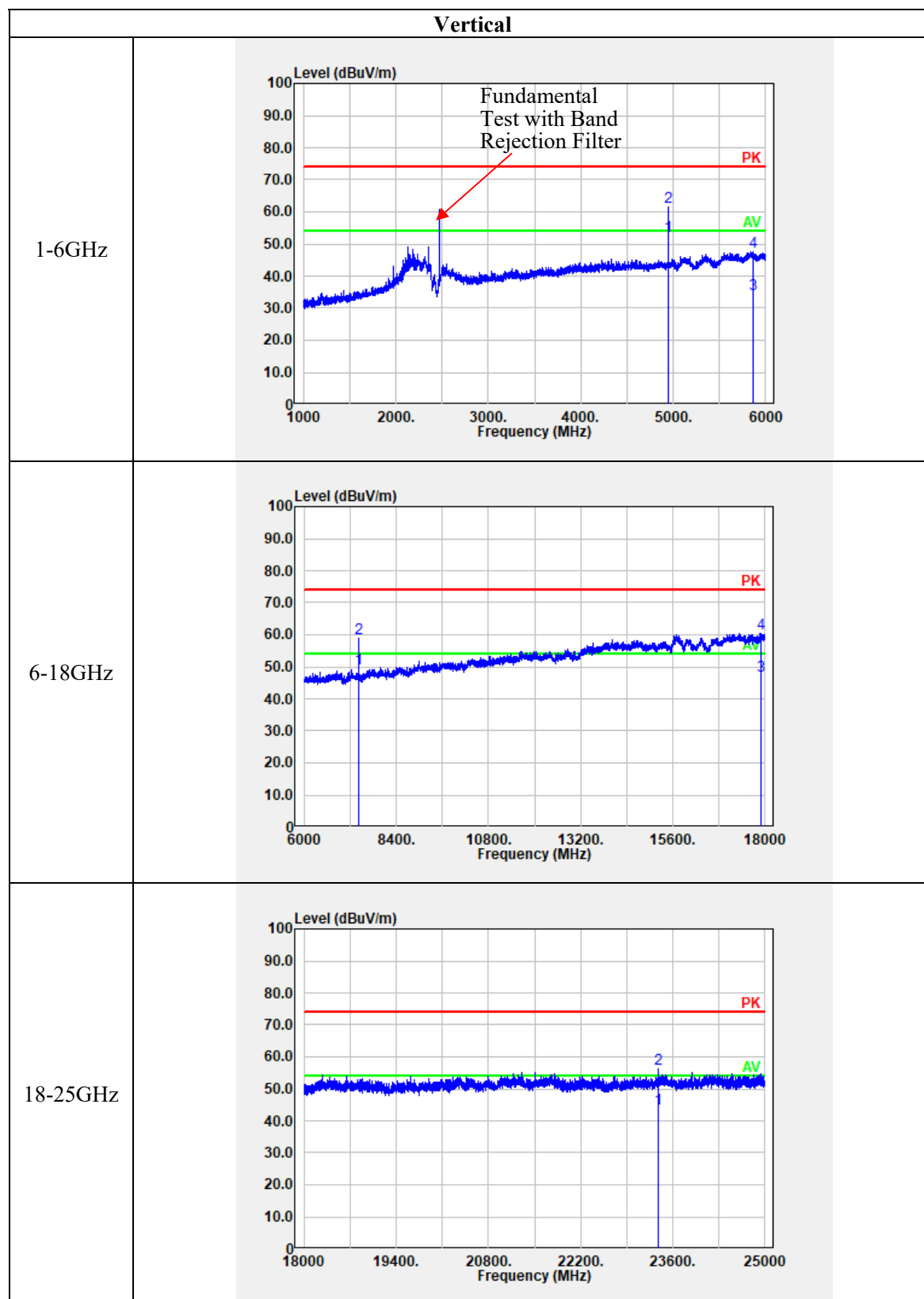
High Channel: 2460.5MHz							
2460.500	84.76	PK	V	31.63	116.39	N/A	N/A
2460.500	73.19	AV	V	31.63	104.82	N/A	N/A
2483.500	34.56	PK	V	31.64	66.20	74.00	7.80
2483.500	21.37	AV	V	31.64	53.01	54.00	0.99
High Channel: 2461.5MHz							
2461.500	84.74	PK	V	31.63	116.37	N/A	N/A
2461.500	73.09	AV	V	31.63	104.72	N/A	N/A
2483.500	34.67	PK	V	31.64	66.31	74.00	7.69
2483.500	21.46	AV	V	31.64	53.10	54.00	0.90
High Channel: 2462.5MHz							
2462.500	75.13	PK	H	31.64	106.77	N/A	N/A
2462.500	63.79	AV	H	31.64	95.43	N/A	N/A
2462.500	84.38	PK	V	31.64	116.02	N/A	N/A
2462.500	73.11	AV	V	31.64	104.75	N/A	N/A
2483.500	33.10	PK	V	31.64	64.74	74.00	9.26
2483.500	19.66	AV	V	31.64	51.30	54.00	2.70
4925.000	35.36	PK	V	11.19	46.55	74.00	27.45
4925.000	22.68	AV	V	11.19	33.87	54.00	20.13
7387.500	34.25	PK	V	14.89	49.14	74.00	24.86
7387.500	21.47	AV	V	14.89	36.36	54.00	17.64

16QAM:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector					
Low Channel: 2412.5 MHz							
2412.500	73.74	PK	H	31.53	105.27	N/A	N/A
2412.500	62.84	AV	H	31.53	94.37	N/A	N/A
2412.500	82.21	PK	V	31.53	113.74	N/A	N/A
2412.500	71.37	AV	V	31.53	102.90	N/A	N/A
2390.000	33.64	PK	V	31.46	65.10	74.00	8.90
2390.000	21.32	AV	V	31.46	52.78	54.00	1.22
4825.000	35.27	PK	V	10.94	46.21	74.00	27.79
4825.000	22.14	AV	V	10.94	33.08	54.00	20.92
7237.500	35.36	PK	V	14.46	49.82	74.00	24.18
7237.500	21.50	AV	V	14.46	35.96	54.00	18.04
Low Channel: 2413.5 MHz							
2413.500	82.65	PK	V	31.54	114.19	N/A	N/A
2413.500	72.75	AV	V	31.54	104.29	N/A	N/A
2390.000	35.77	PK	V	31.46	67.23	74.00	6.77
2390.000	21.45	AV	V	31.46	52.91	54.00	1.09
Low Channel: 2414.5 MHz							
2414.500	83.15	PK	V	31.54	114.69	N/A	N/A
2414.500	72.93	AV	V	31.54	104.47	N/A	N/A
2390.000	35.86	PK	V	31.46	67.32	74.00	6.68
2390.000	21.47	AV	V	31.46	52.93	54.00	1.07
Low Channel: 2415.5 MHz							
2415.500	83.83	PK	V	31.54	115.37	N/A	N/A
2415.500	73.52	AV	V	31.54	105.06	N/A	N/A
2390.000	35.60	PK	V	31.46	67.06	74.00	6.94
2390.000	22.06	AV	V	31.46	53.52	54.00	0.48
Middle Channel: 2416.5 MHz							
2416.500	86.76	PK	V	31.54	118.30	N/A	N/A
2416.500	76.10	AV	V	31.54	107.64	N/A	N/A
2390.000	33.73	PK	V	31.46	65.19	74.00	8.81
2390.000	20.32	AV	V	31.46	51.78	54.00	2.22
Middle Channel: 2437.5 MHz							
2437.500	75.35	PK	H	31.60	106.95	N/A	N/A
2437.500	65.12	AV	H	31.60	96.72	N/A	N/A
2437.500	86.98	PK	V	31.60	118.58	N/A	N/A
2437.500	76.22	AV	V	31.60	107.82	N/A	N/A
4875.000	35.20	PK	V	11.05	46.25	74.00	27.75
4875.000	22.11	AV	V	11.05	33.16	54.00	20.84
7312.500	34.15	PK	V	14.80	48.95	74.00	25.05
7312.500	21.69	AV	V	14.80	36.49	54.00	17.51
Middle Channel: 2456.5 MHz							
2456.500	86.81	PK	V	31.63	118.44	N/A	N/A
2456.500	76.68	AV	V	31.63	108.31	N/A	N/A
2483.500	31.47	PK	V	31.64	63.11	74.00	10.89
2483.500	19.89	AV	V	31.64	51.53	54.00	2.47
High Channel: 2459.5MHz							
2459.500	85.35	PK	V	31.63	116.98	N/A	N/A
2459.500	75.29	AV	V	31.63	106.92	N/A	N/A
2483.500	33.98	PK	V	31.64	65.62	74.00	8.38
2483.500	21.46	AV	V	31.64	53.10	54.00	0.90

High Channel: 2460.5MHz							
2460.500	84.46	PK	V	31.63	116.09	N/A	N/A
2460.500	74.23	AV	V	31.63	105.86	N/A	N/A
2483.500	33.25	PK	V	31.64	64.89	74.00	9.11
2483.500	20.26	AV	V	31.64	51.90	54.00	2.10
High Channel: 2461.5MHz							
2461.500	83.64	PK	V	31.63	115.27	N/A	N/A
2461.500	73.48	AV	V	31.63	105.11	N/A	N/A
2483.500	34.25	PK	V	31.64	65.89	74.00	8.11
2483.500	21.22	AV	V	31.64	52.86	54.00	1.14
High Channel: 2462.5MHz							
2462.500	73.66	PK	H	31.64	105.30	N/A	N/A
2462.500	63.88	AV	H	31.64	95.52	N/A	N/A
2462.500	82.96	PK	V	31.64	114.60	N/A	N/A
2462.500	72.68	AV	V	31.64	104.32	N/A	N/A
2483.500	36.21	PK	V	31.64	67.85	74.00	6.15
2483.500	20.71	AV	V	31.64	52.35	54.00	1.65
4925.000	35.20	PK	V	11.19	46.39	74.00	27.61
4925.000	21.88	AV	V	11.19	33.07	54.00	20.93
7387.500	34.89	PK	V	14.89	49.78	74.00	24.22
7387.500	21.97	AV	V	14.89	36.86	54.00	17.14

Worst Test plots(1.4MHz Mode QPSK 2475.5MHz was tested)



4.3 6 dB Emission Bandwidth:

Serial Number:	278G-3	Test Date:	2023/8/11~2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2~26.7	Relative Humidity: (%)	56~62	ATM Pressure: (kPa)	99.7~99.9
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Test Equipment List and Details:

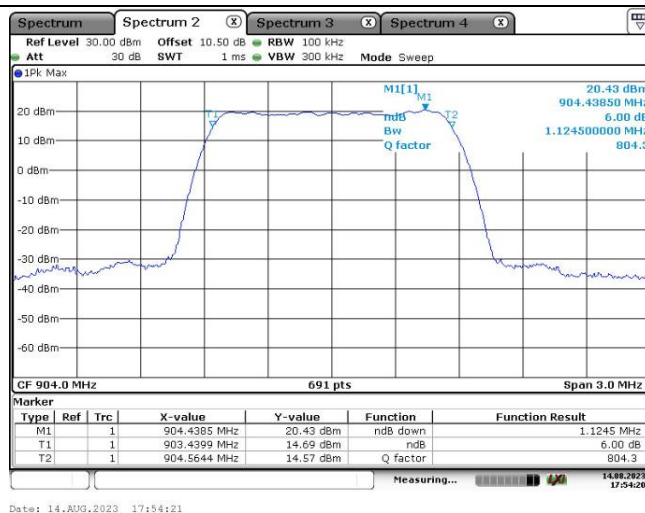
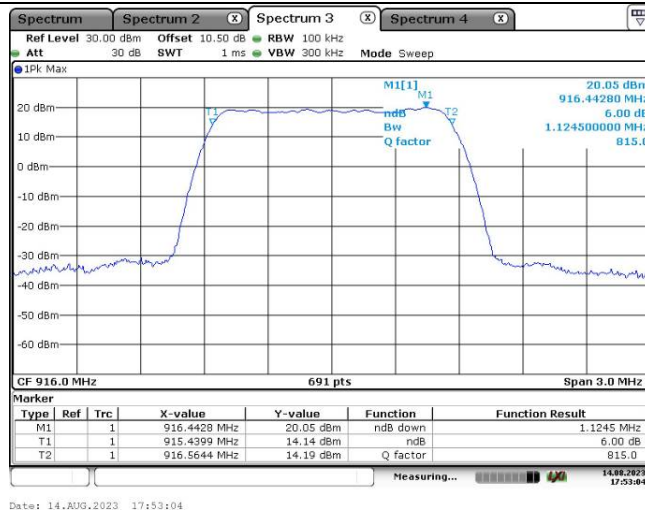
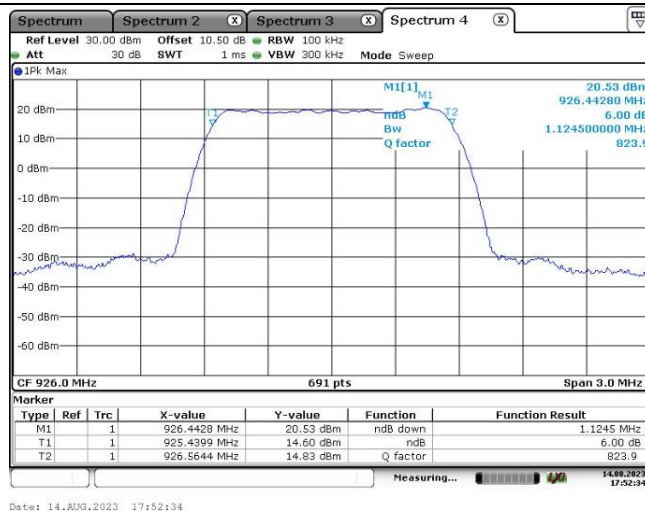
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

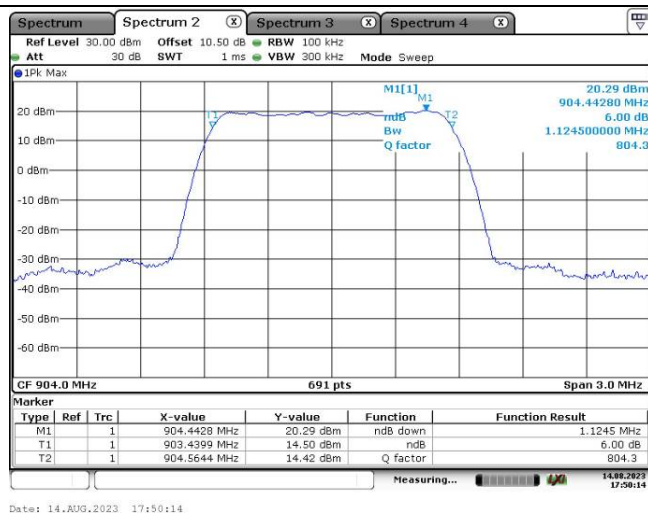
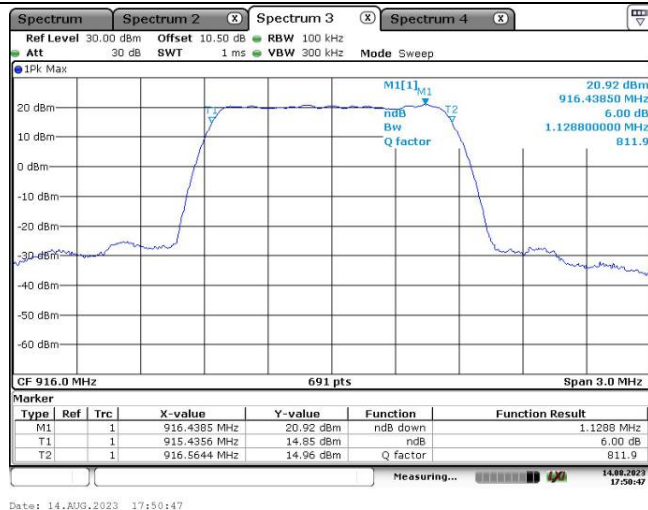
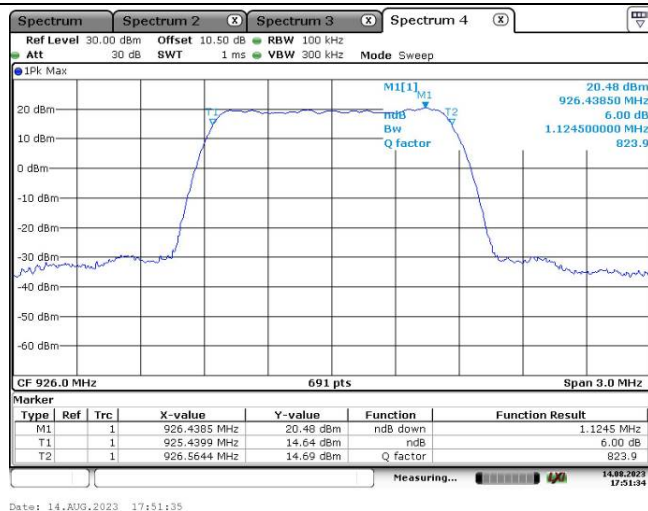
Test Data:

Test only was performed at chain 0, please refer to the following table and plots:

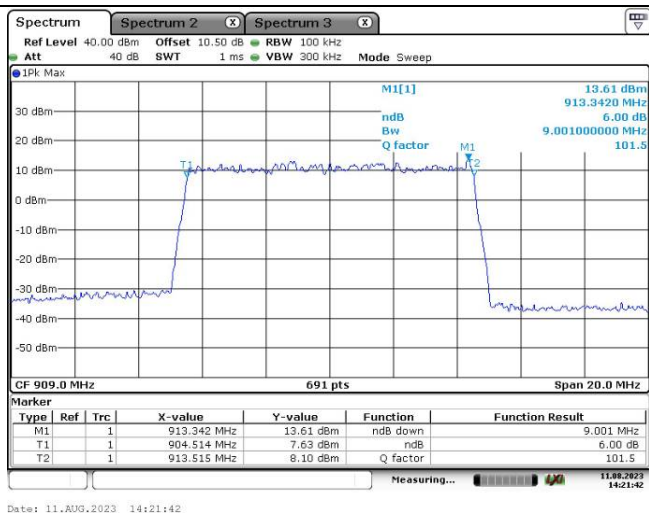
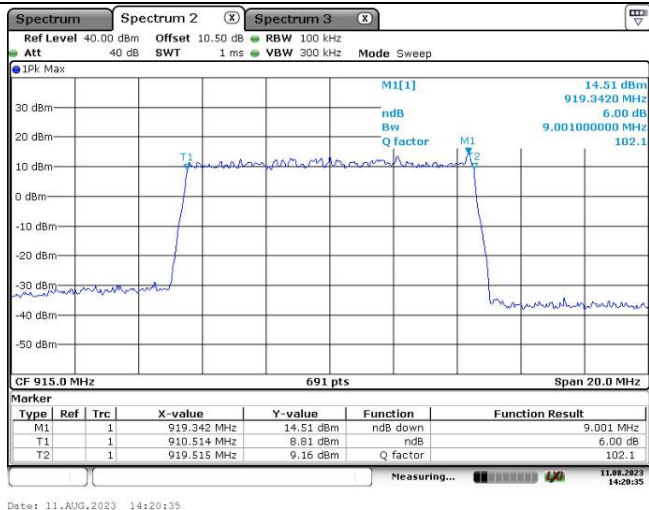
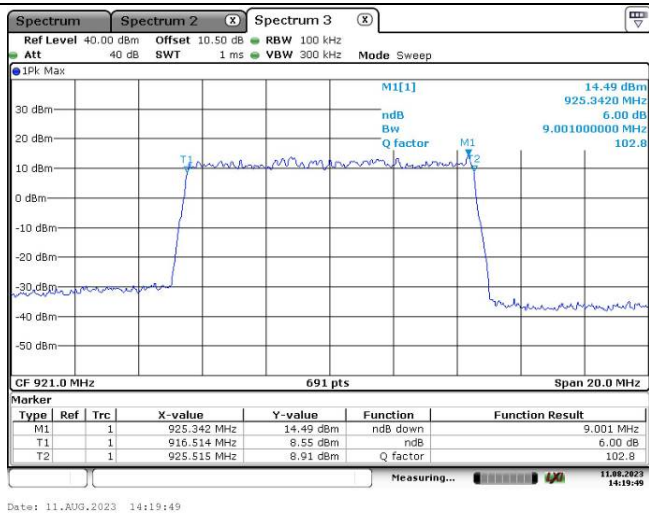
Operation Bands	Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
900MHz	1.4M QPSK	904	1.125	≥ 0.5
		916	1.125	≥ 0.5
		926	1.125	≥ 0.5
	1.4M 16QAM	904	1.125	≥ 0.5
		916	1.129	≥ 0.5
		926	1.125	≥ 0.5
	10M QPSK	909	9.001	≥ 0.5
		915	9.001	≥ 0.5
		921	9.001	≥ 0.5
	10M 16QAM	909	9.001	≥ 0.5
		915	9.001	≥ 0.5
		921	9.001	≥ 0.5
	20M QPSK	914	18.061	≥ 0.5
		915	18.061	≥ 0.5
		916	18.061	≥ 0.5
	20M 16QAM	914	18.061	≥ 0.5
		915	18.061	≥ 0.5
		916	18.061	≥ 0.5
2.4GHz	1.4M QPSK	2403.5	1.125	≥ 0.5
		2439.5	1.125	≥ 0.5
		2475.5	1.125	≥ 0.5
	1.4M 16QAM	2403.5	1.133	≥ 0.5
		2439.5	1.129	≥ 0.5
		2475.5	1.129	≥ 0.5
	10M QPSK	2407.5	9.001	≥ 0.5
		2439.5	9.001	≥ 0.5
		2471.5	9.001	≥ 0.5
	10M 16QAM	2407.5	9.001	≥ 0.5
		2439.5	9.001	≥ 0.5
		2471.5	9.001	≥ 0.5
	20M QPSK	2412.5	18.061	≥ 0.5
		2437.5	18.061	≥ 0.5
		2462.5	18.061	≥ 0.5
	20M 16QAM	2412.5	18.061	≥ 0.5
		2437.5	18.061	≥ 0.5
		2462.5	18.061	≥ 0.5

900MHz Band:**6dB Emission Bandwidth**1.4MHz,QPSK
Lowest Channel1.4MHz,QPSK
Middle Channel1.4MHz,QPSK
Highest Channel

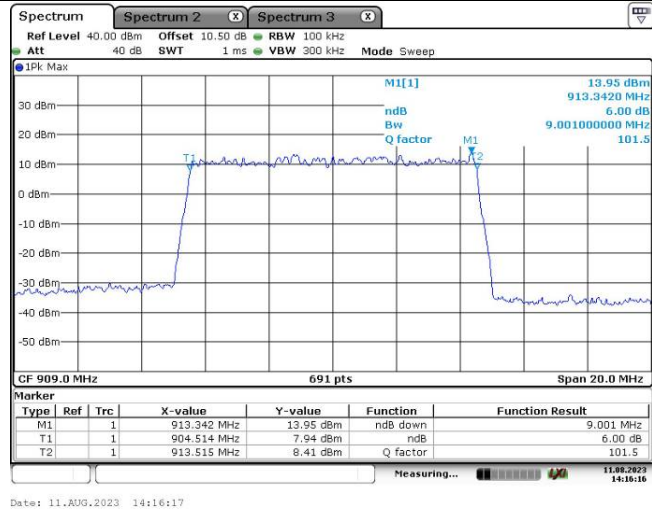
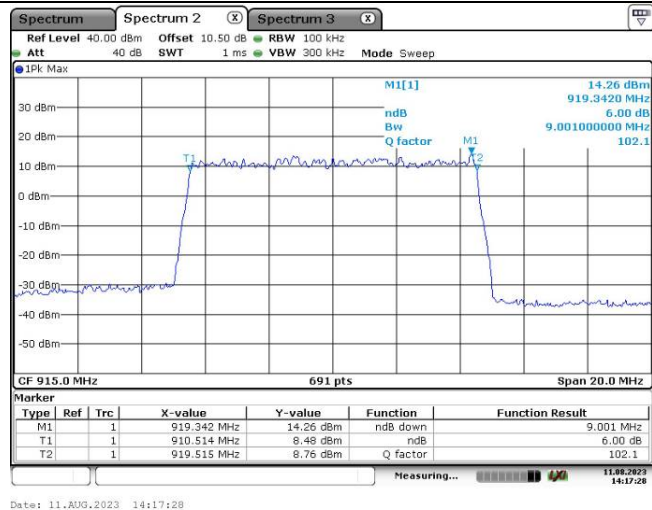
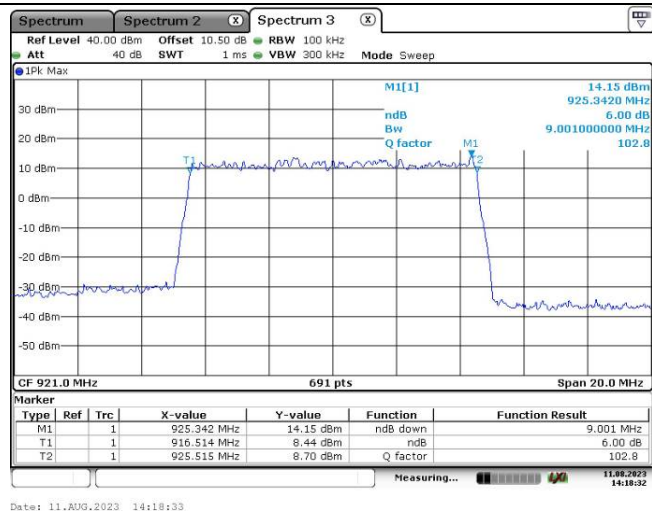
6dB Emission Bandwidth

1.4MHz, 16QAM
Lowest Channel1.4MHz, 16QAM
Middle Channel1.4MHz, 16QAM
Highest Channel

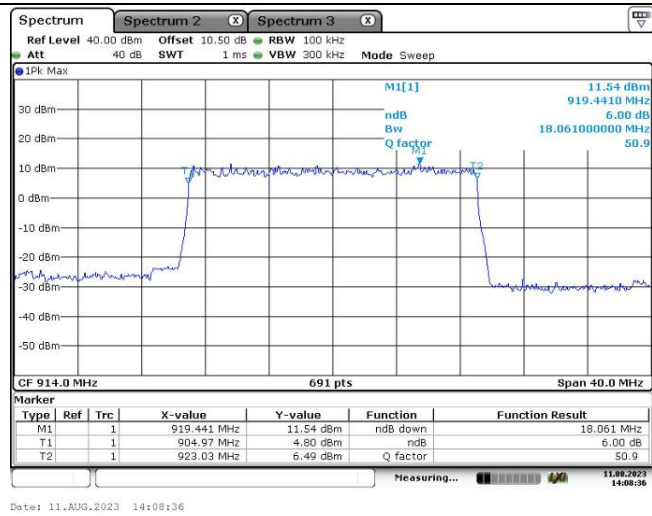
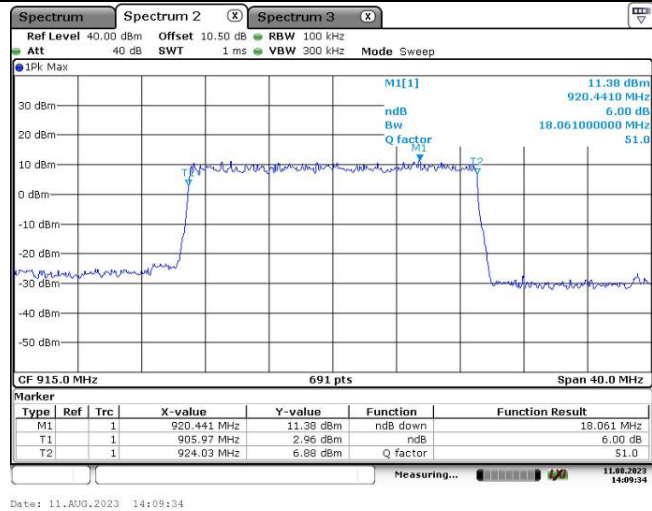
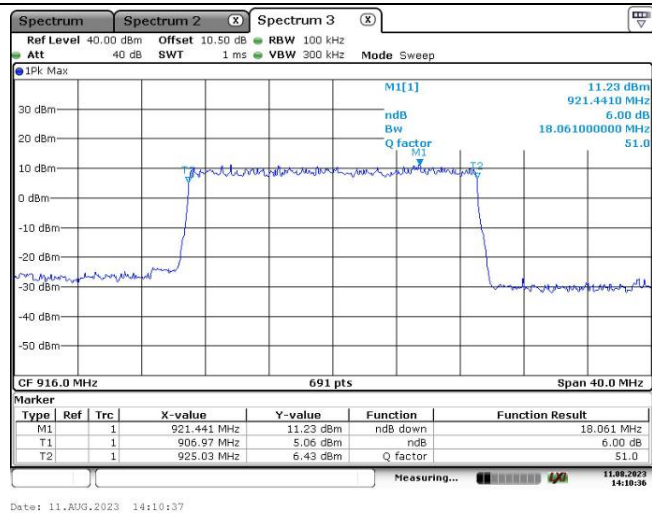
6dB Emission Bandwidth

10MHz,QPSK
Lowest Channel10MHz,QPSK
Middle Channel10MHz,QPSK
Highest Channel

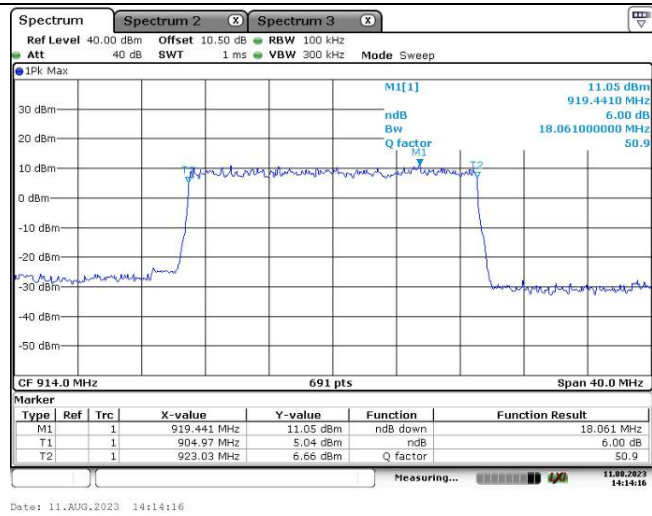
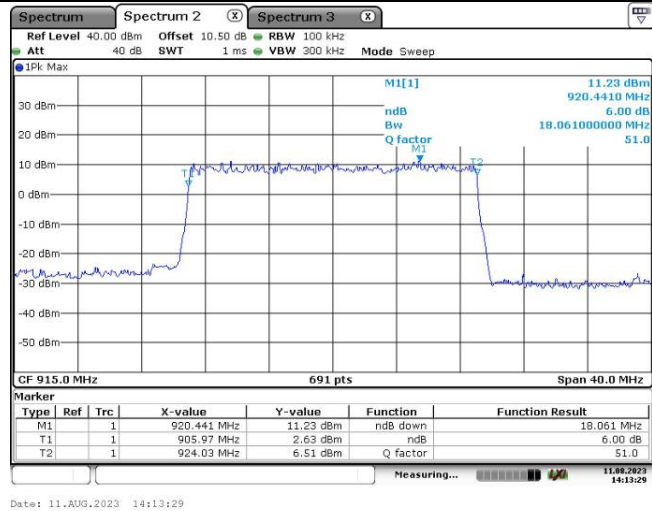
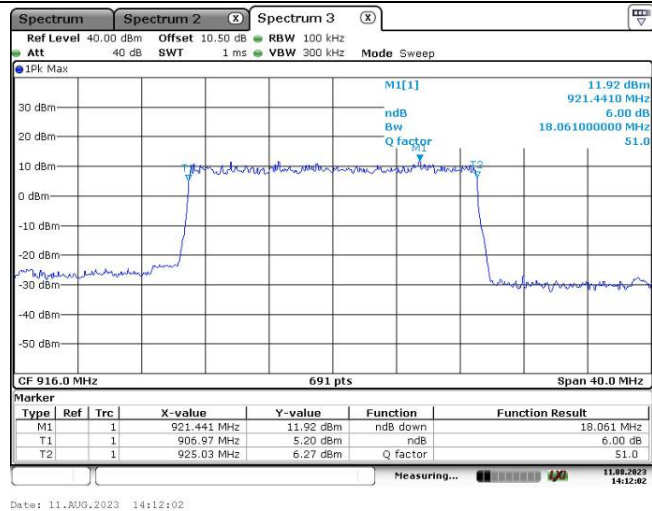
6dB Emission Bandwidth

10MHz, 16QAM
Lowest Channel10MHz, 16QAM
Middle Channel10MHz, 16QAM
Highest Channel

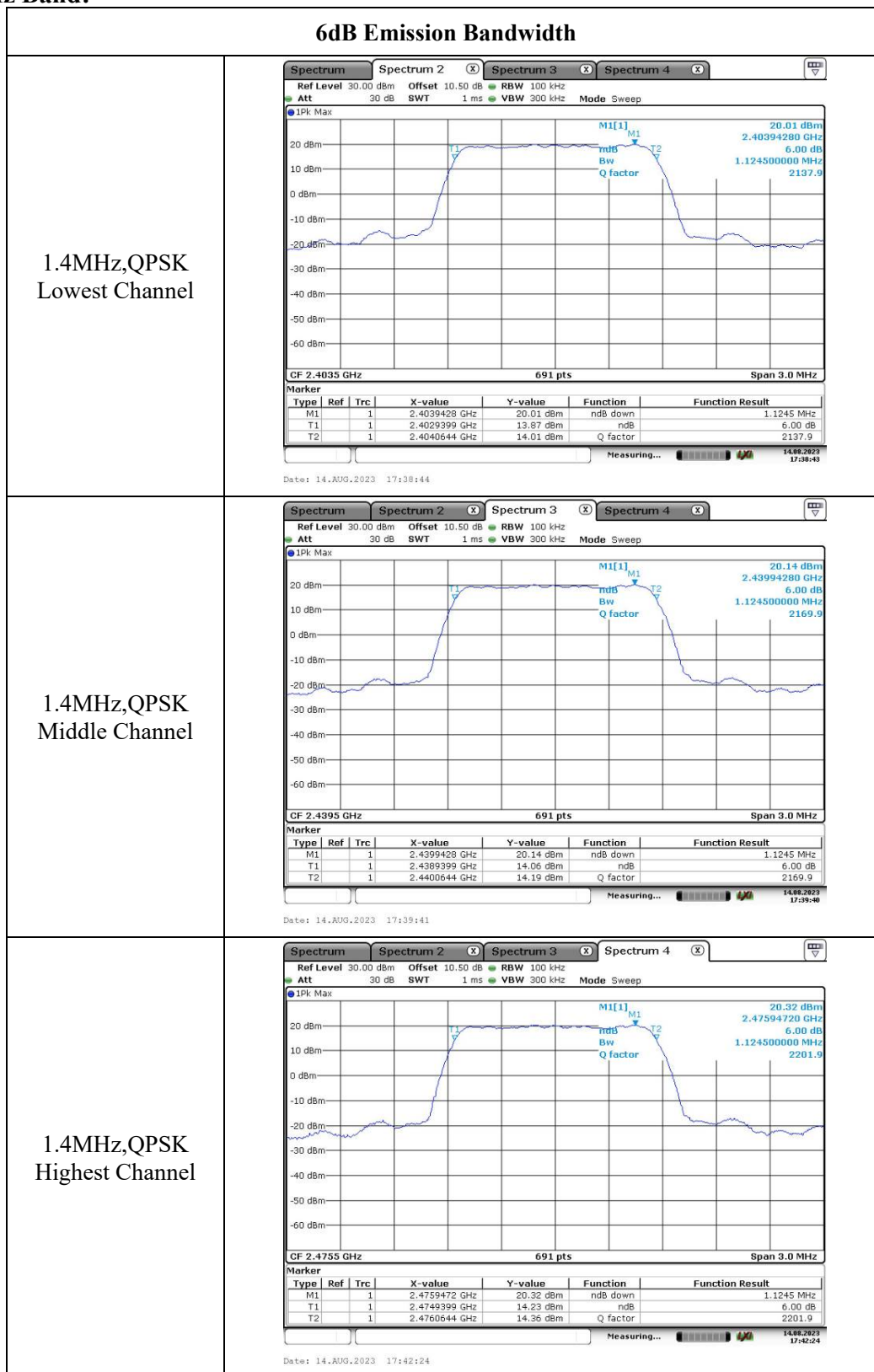
6dB Emission Bandwidth

20MHz,QPSK
Lowest Channel20MHz,QPSK
Middle Channel20MHz,QPSK
Highest Channel

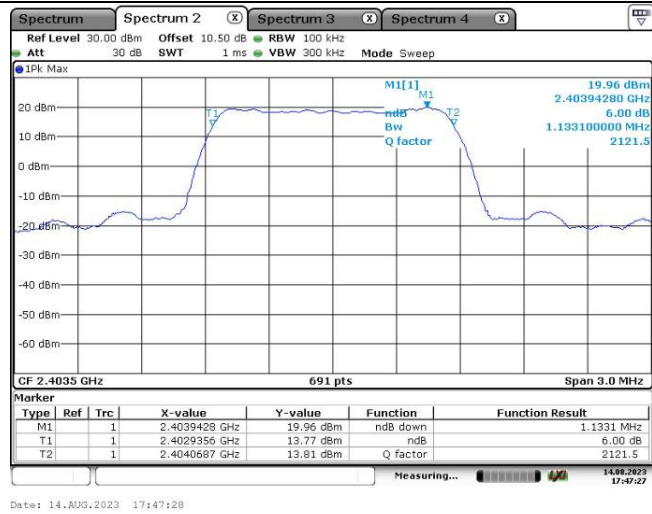
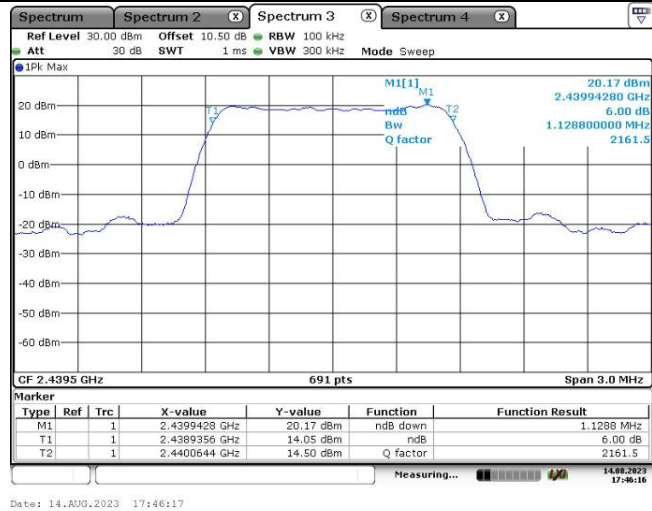
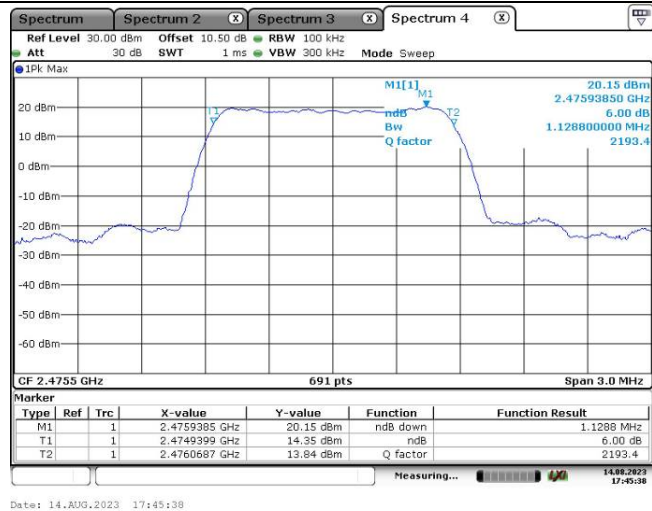
6dB Emission Bandwidth

20MHz, 16QAM
Lowest Channel20MHz, 16QAM
Middle Channel20MHz, 16QAM
Highest Channel

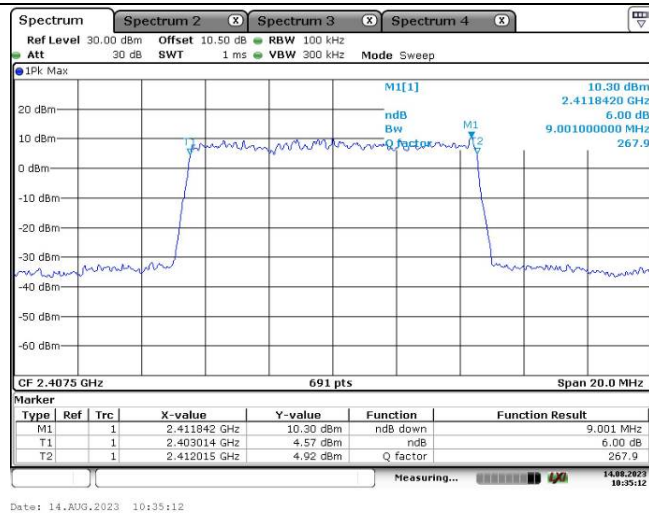
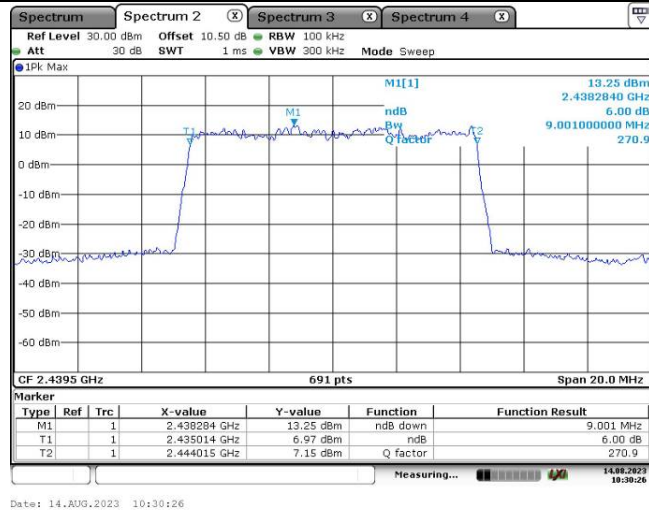
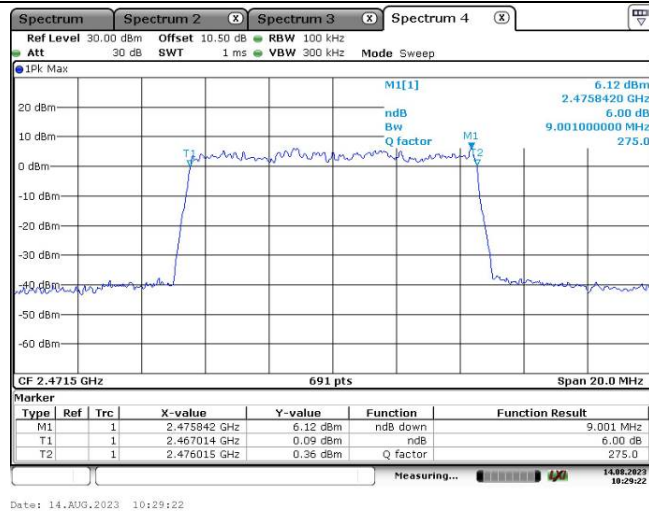
2.4GHz Band:



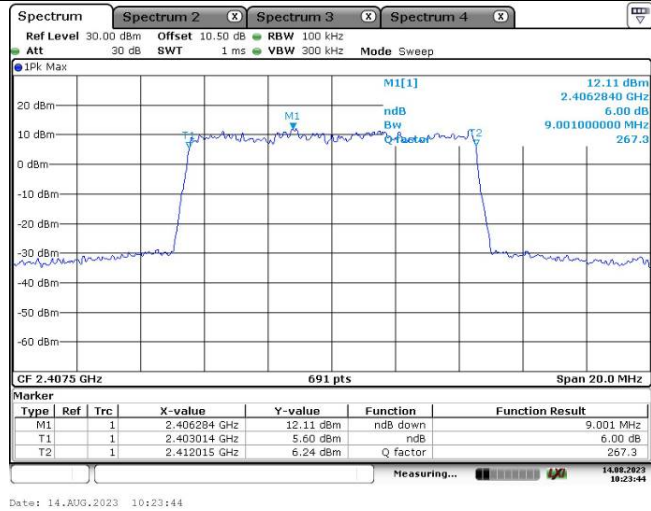
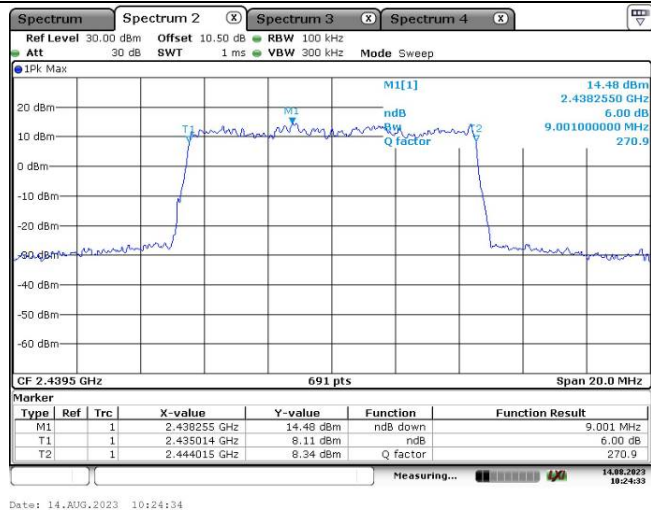
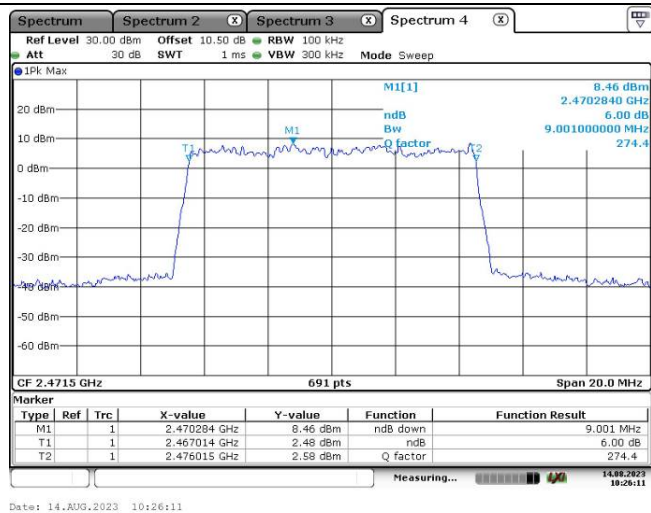
6dB Emission Bandwidth

1.4MHz, 16QAM
Lowest Channel1.4MHz, 16QAM
Middle Channel1.4MHz, 16QAM
Highest Channel

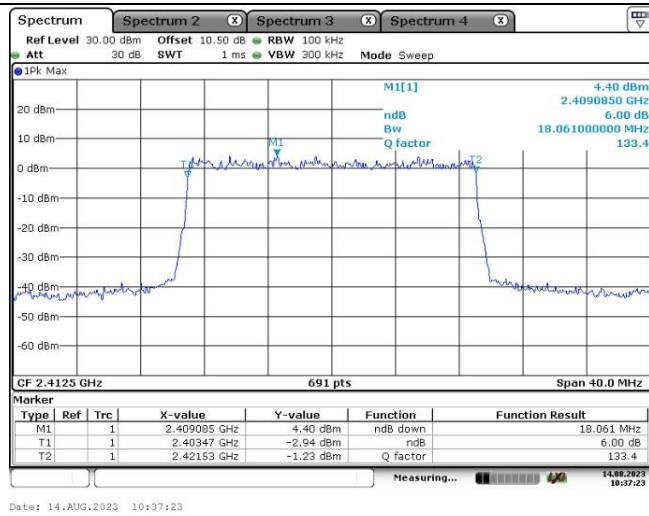
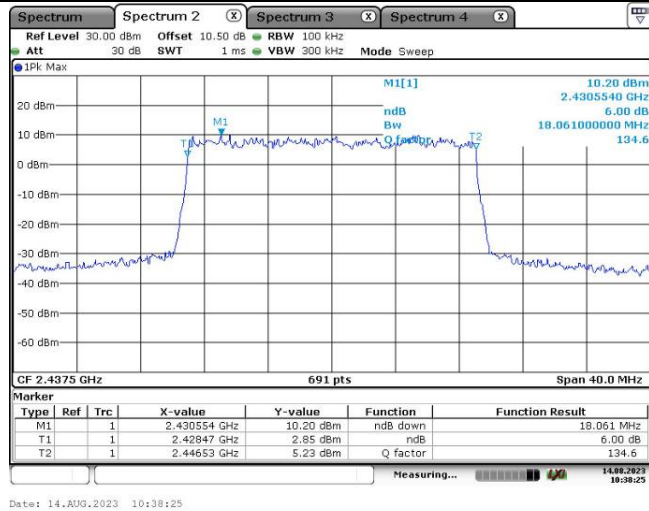
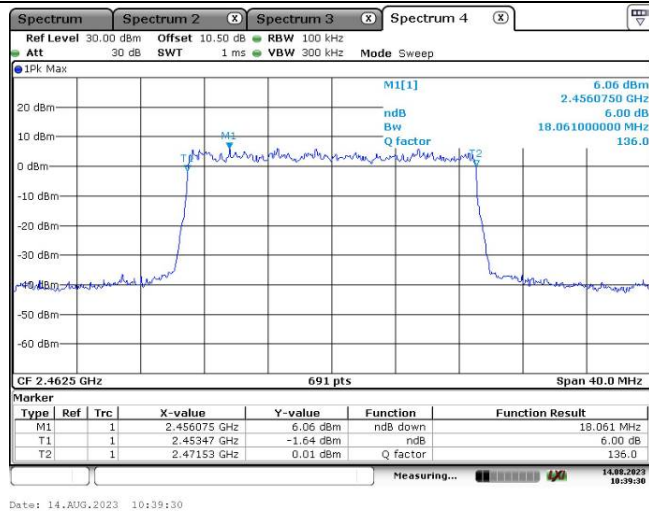
6dB Emission Bandwidth

10MHz,QPSK
Lowest Channel10MHz,QPSK
Middle Channel10MHz,QPSK
Highest Channel

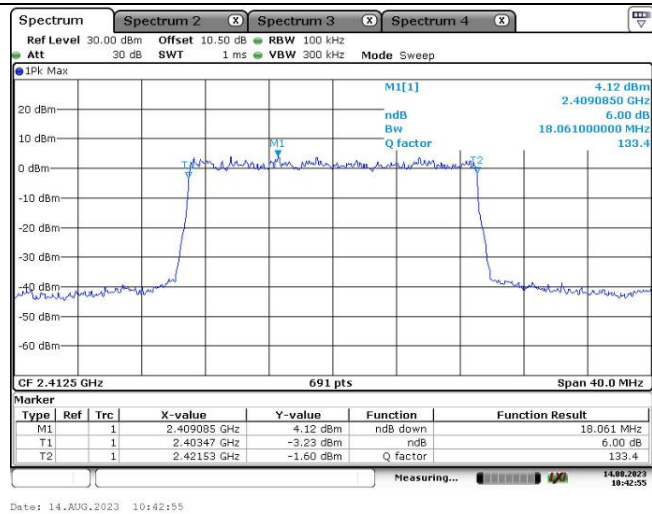
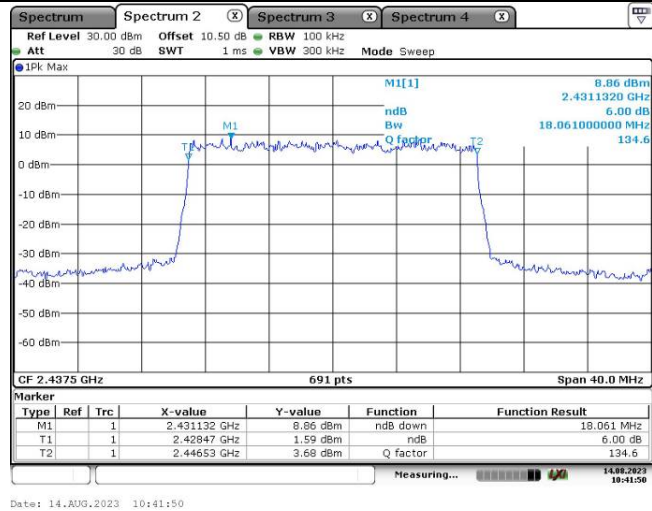
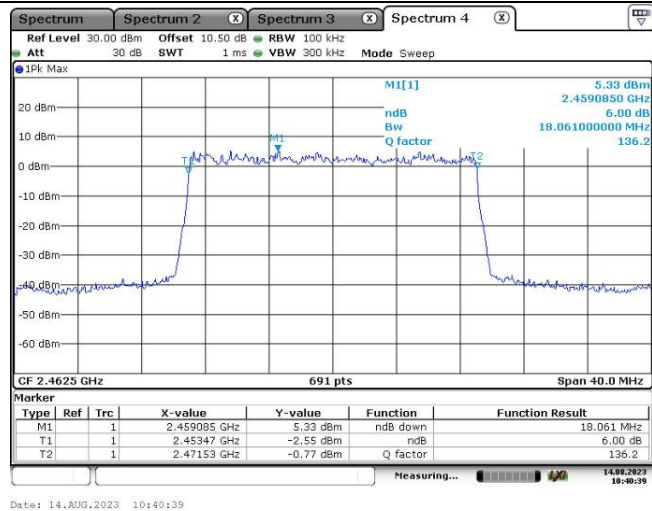
6dB Emission Bandwidth

10MHz, 16QAM
Lowest Channel10MHz, 16QAM
Middle Channel10MHz, 16QAM
Highest Channel

6dB Emission Bandwidth

20MHz,QPSK
Lowest Channel20MHz, QPSK
Middle Channel20MHz,QPSK
Highest Channel

6dB Emission Bandwidth

20MHz, 16QAM
Lowest Channel20MHz, 16QAM
Middle Channel20MHz, 16QAM
Highest Channel

4.4 99% Occupied Bandwidth:

Serial Number:	278G-3	Test Date:	2023/8/11~2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2~26.7	Relative Humidity: (%)	56~62	ATM Pressure: (kPa)	99.7~99.9
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Test Equipment List and Details:

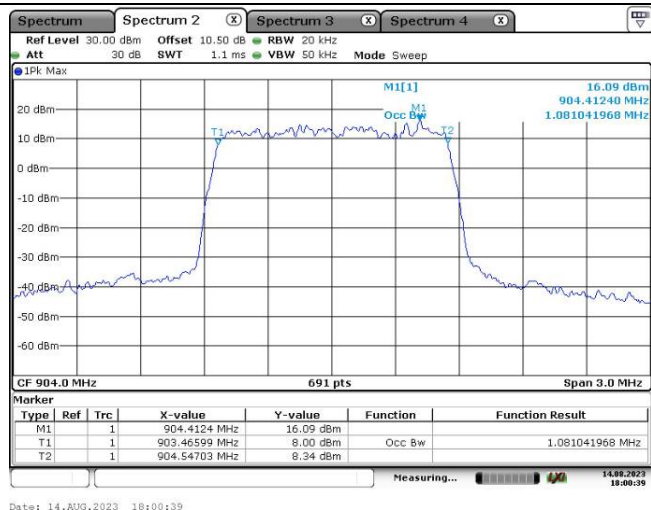
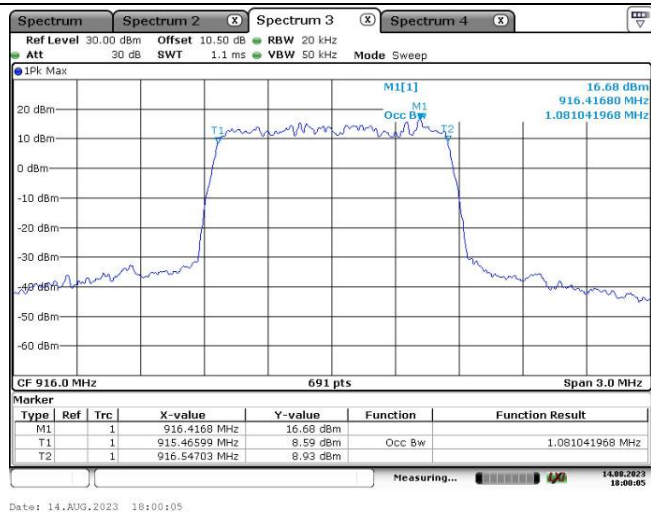
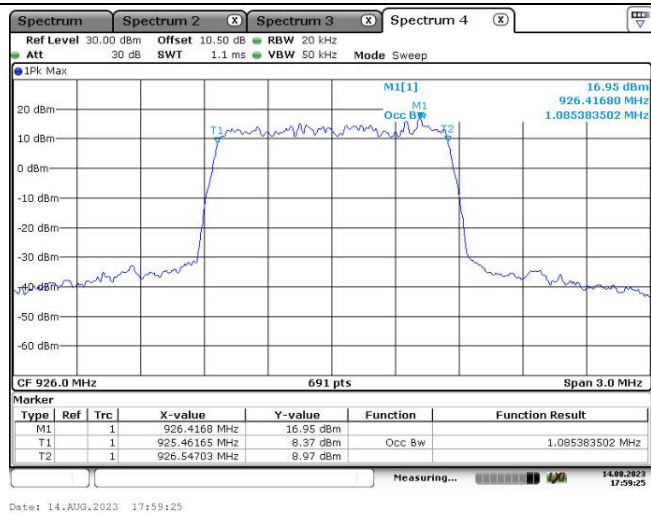
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/03/31	2024/03/30
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

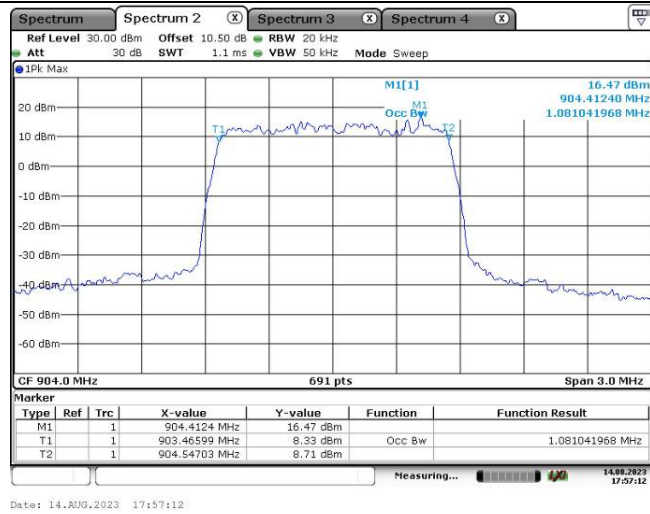
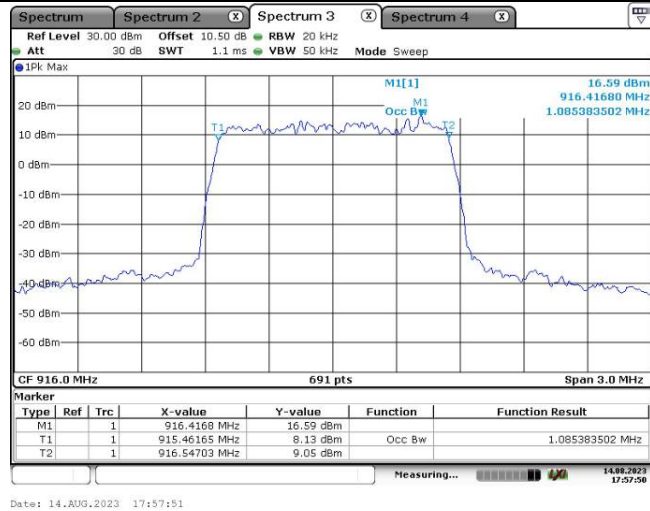
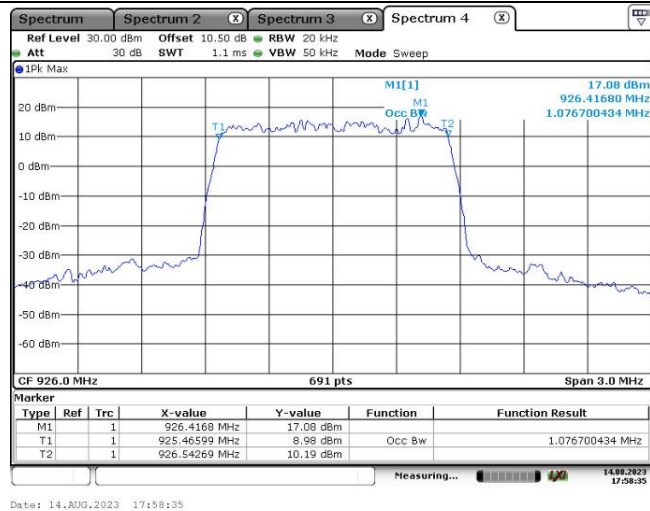
Test Data:

Test only was performed at chain 0, please refer to the following table and plots:

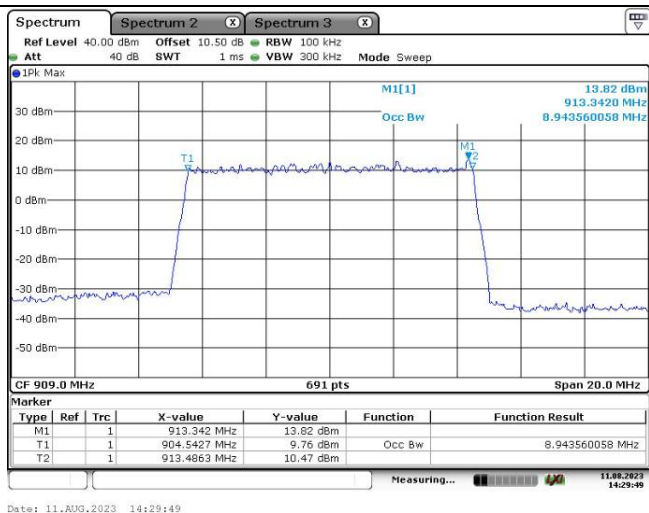
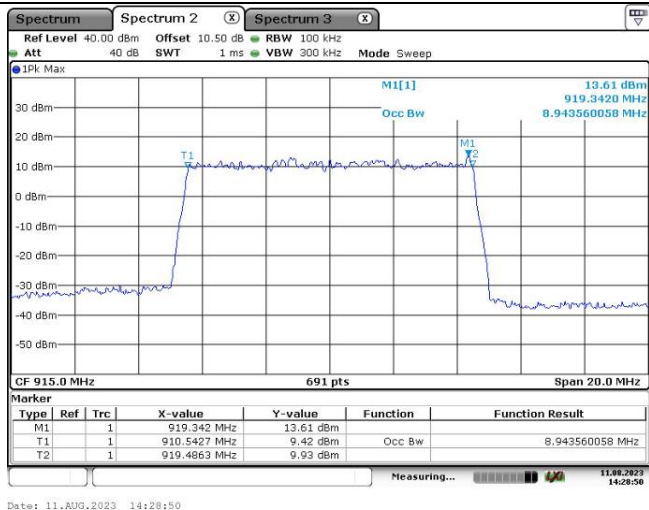
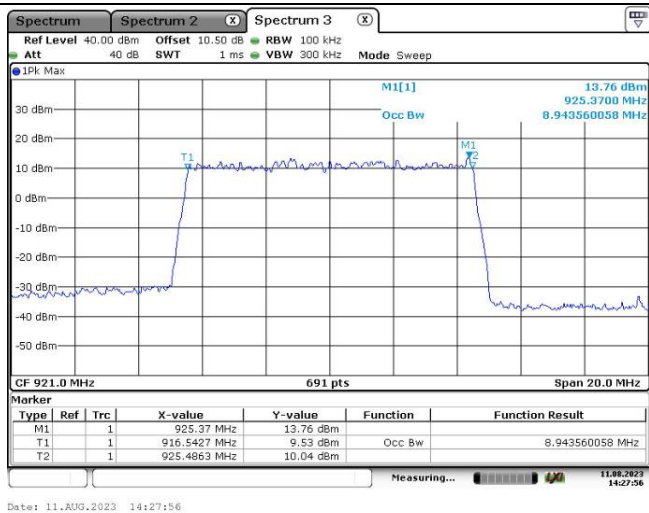
Operation Bands	Test Modes	Test Frequency (MHz)	99% Occupied Bandwidth (MHz)
900MHz	1.4M QPSK	904	1.081
		916	1.081
		926	1.085
	1.4M 16QAM	904	1.081
		916	1.085
		926	1.077
	10M QPSK	909	8.944
		915	8.944
		921	8.944
	10M 16QAM	909	8.944
		915	8.944
		921	8.944
	20M QPSK	914	17.945
		915	17.945
		916	17.945
	20M 16QAM	914	17.945
		915	17.945
		916	17.945
2.4GHz	1.4M QPSK	2403.5	1.085
		2439.5	1.081
		2475.5	1.085
	1.4M 16QAM	2403.5	1.081
		2439.5	1.081
		2475.5	1.081
	10M QPSK	2407.5	8.944
		2439.5	8.944
		2471.5	8.944
	10M 16QAM	2407.5	8.944
		2439.5	8.944
		2471.5	8.944
	20M QPSK	2412.5	17.945
		2437.5	17.945
		2462.5	17.945
	20M 16QAM	2412.5	17.945
		2437.5	17.945
		2462.5	17.945

900MHz Band:**99% Occupied Bandwidth**1.4MHz,QPSK
Lowest Channel1.4MHz,QPSK
Middle Channel1.4MHz,QPSK
Highest Channel

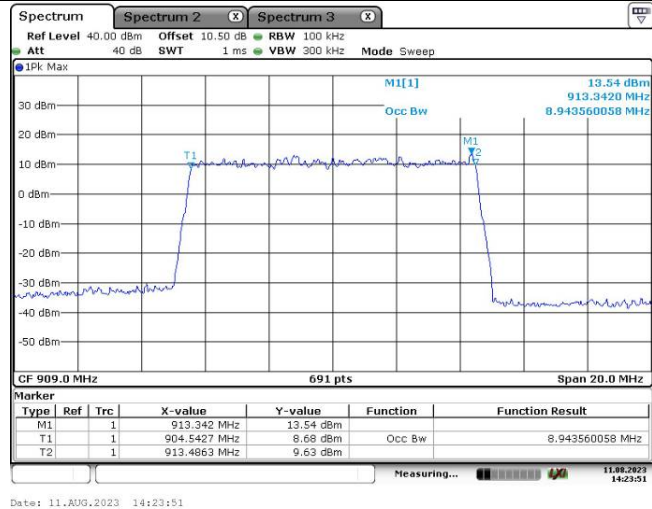
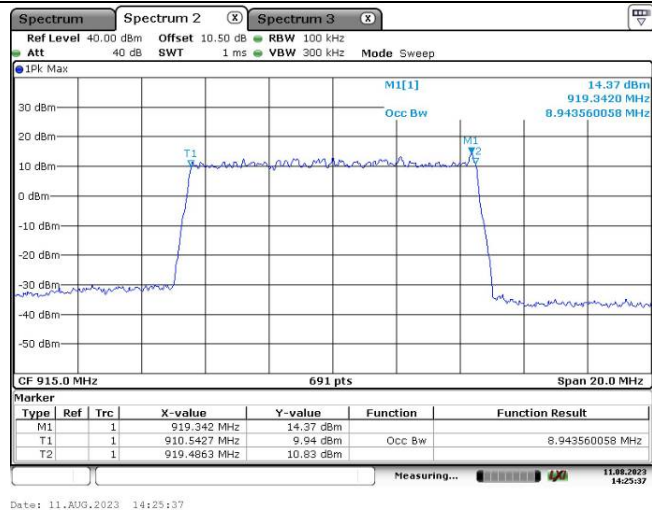
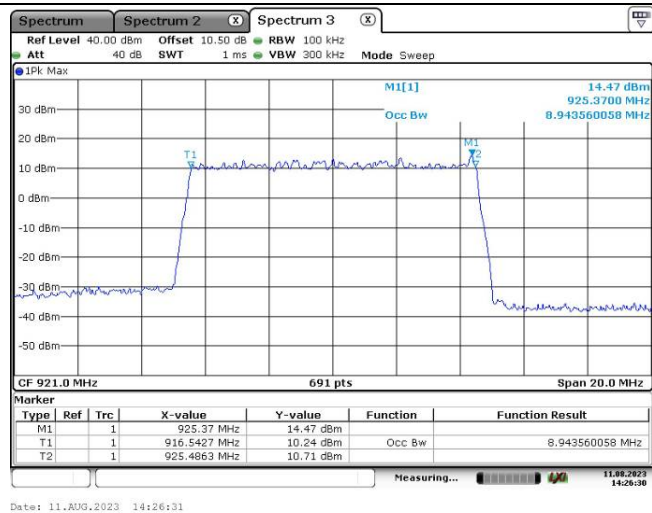
99% Occupied Bandwidth

1.4MHz, 16QAM
Lowest Channel1.4MHz, 16QAM
Middle Channel1.4MHz, 16QAM
Highest Channel

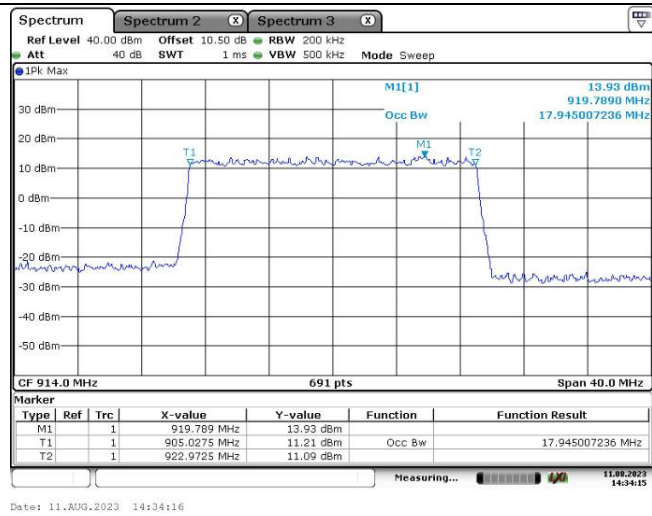
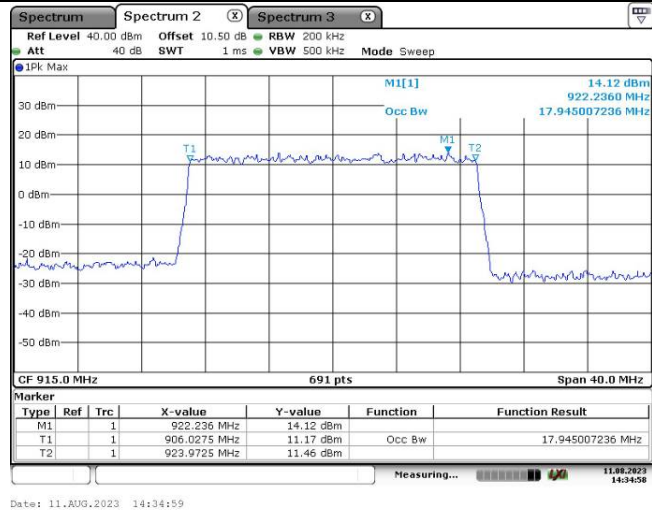
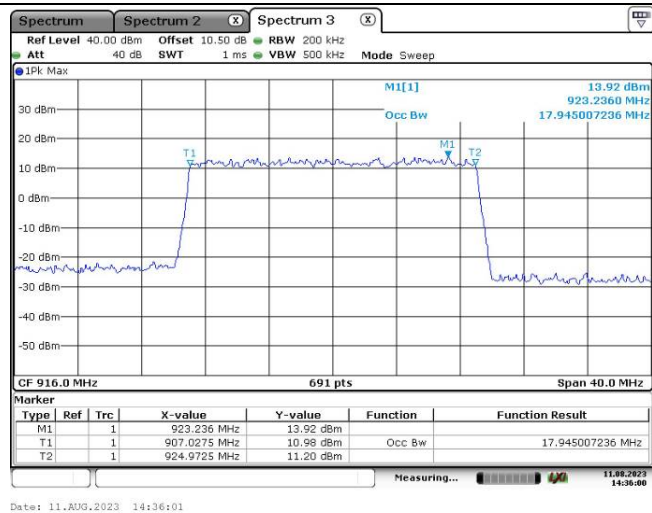
99% Occupied Bandwidth

10MHz,QPSK
Lowest Channel10MHz,QPSK
Middle Channel10MHz,QPSK
Highest Channel

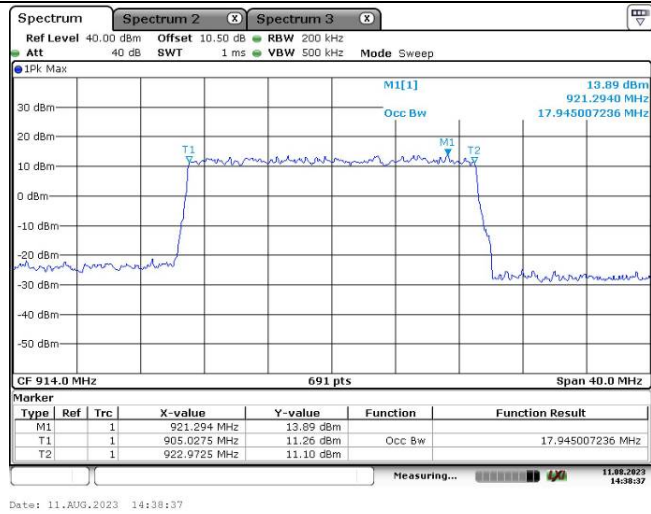
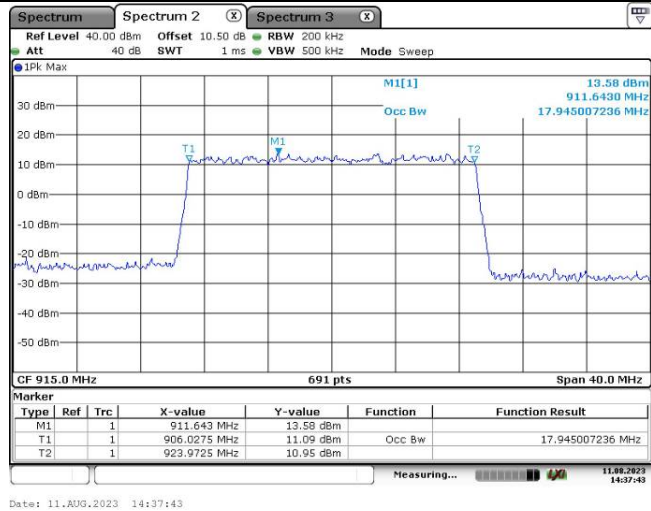
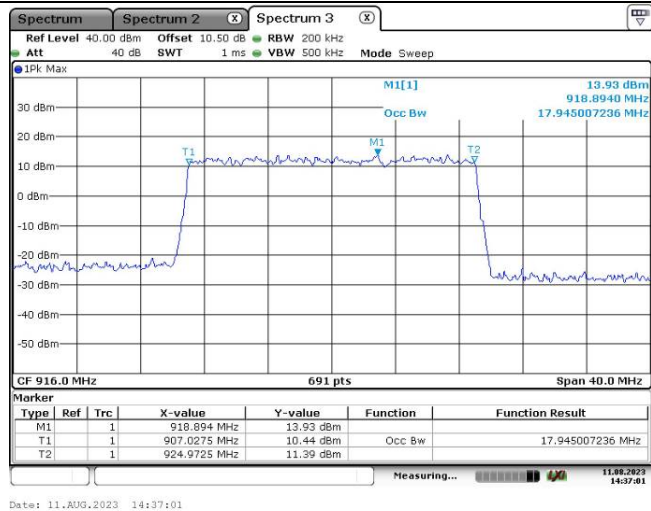
99% Occupied Bandwidth

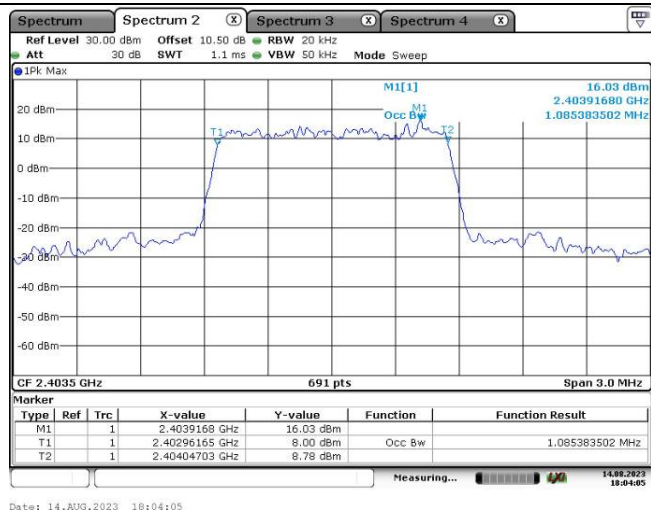
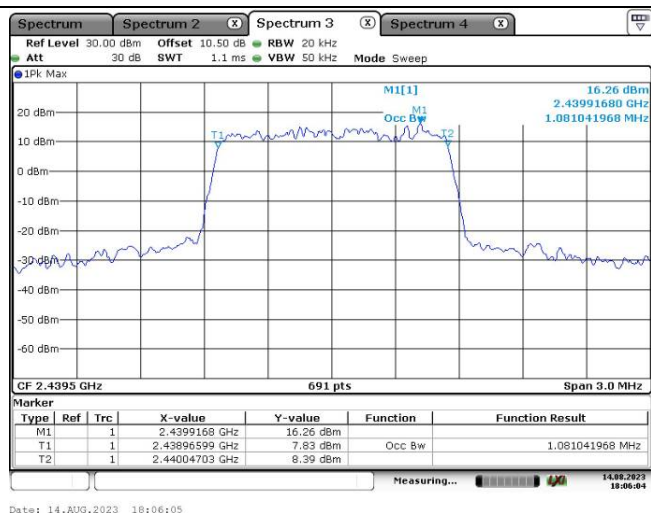
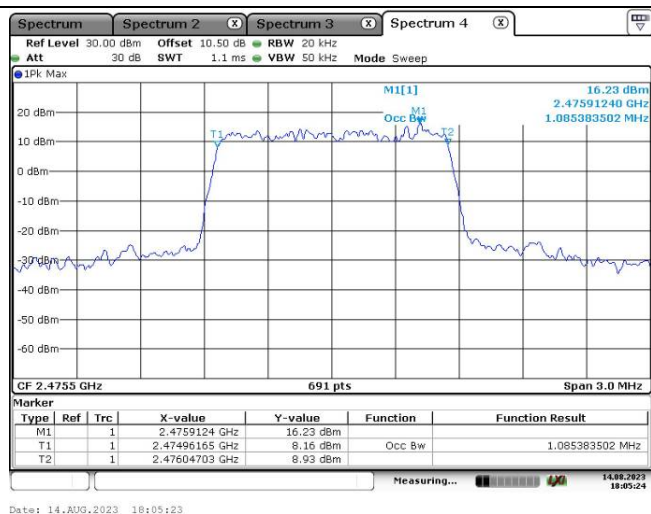
10MHz, 16QAM
Lowest Channel10MHz, 16QAM
Middle Channel10MHz, 16QAM
Highest Channel

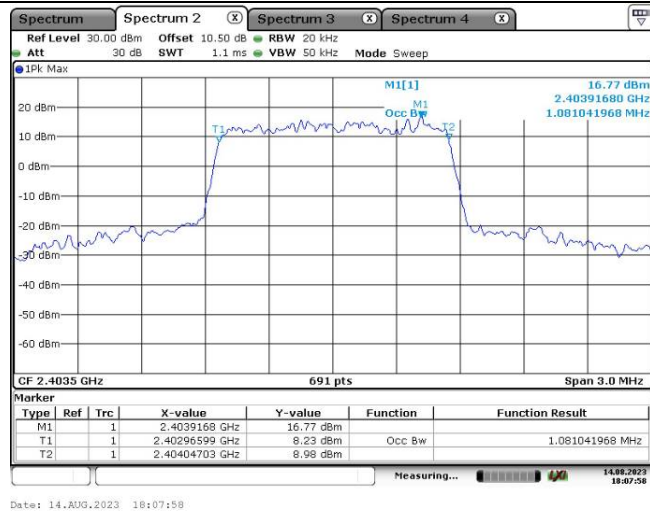
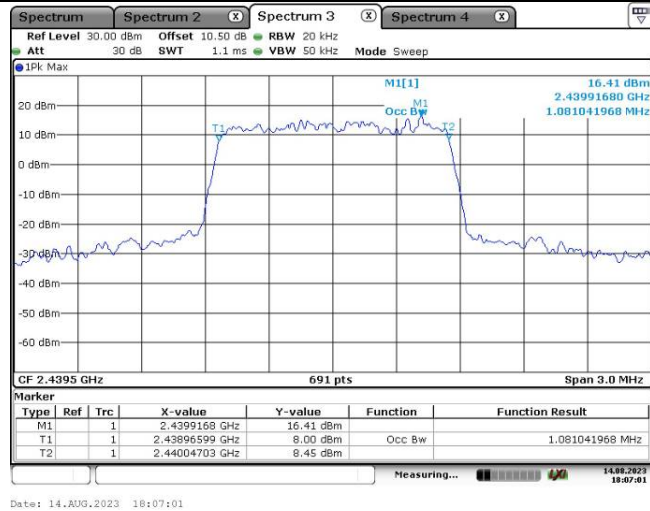
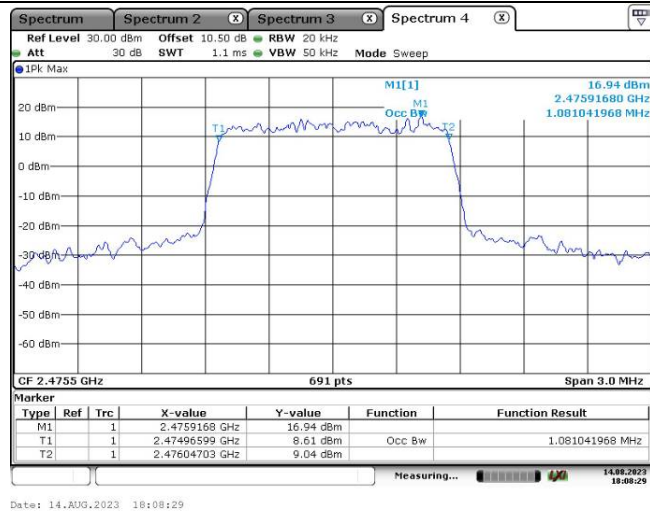
99% Occupied Bandwidth

20MHz,QPSK
Lowest Channel20MHz,QPSK
Middle Channel20MHz,QPSK
Highest Channel

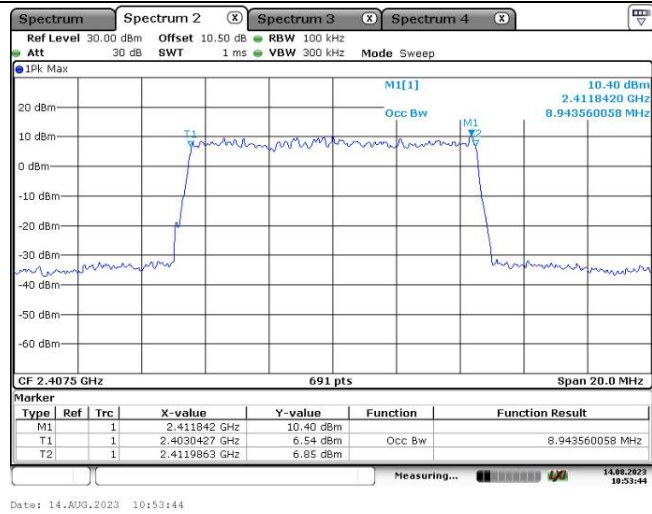
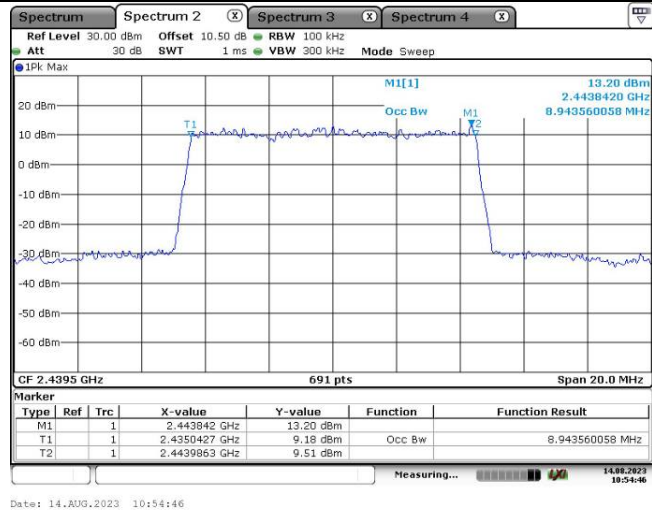
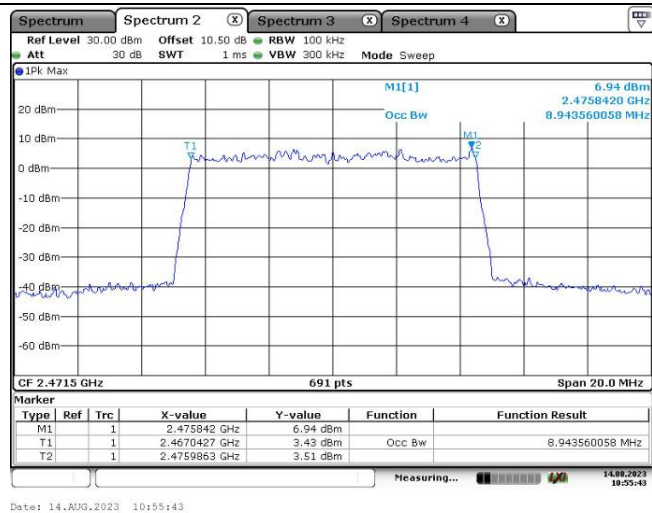
99% Occupied Bandwidth

20MHz, 16QAM
Lowest Channel20MHz, 16QAM
Middle Channel20MHz, 16QAM
Highest Channel

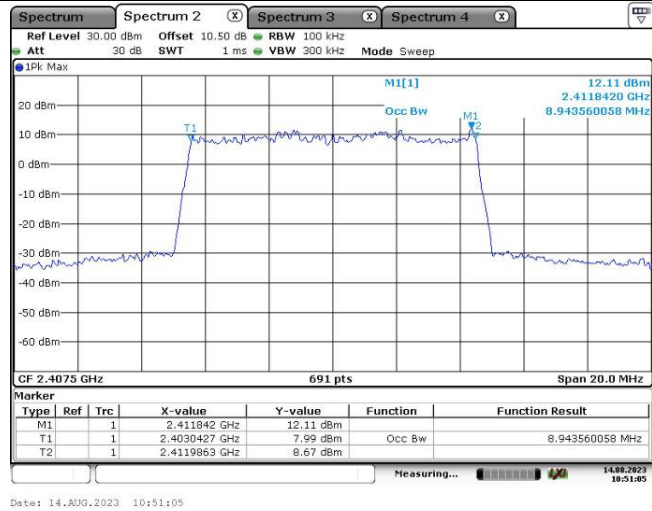
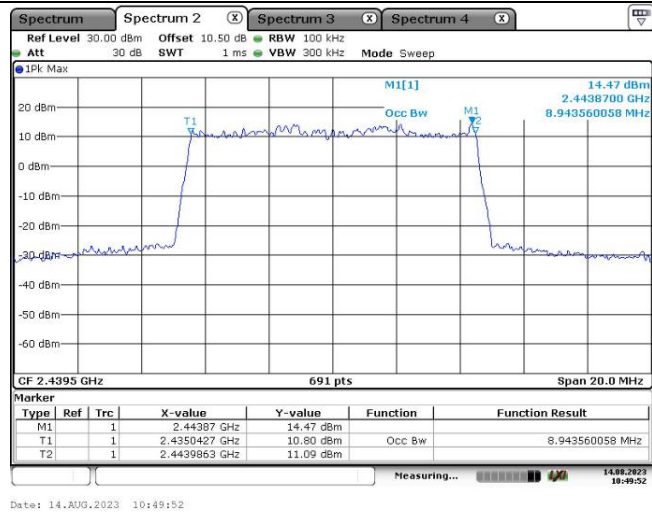
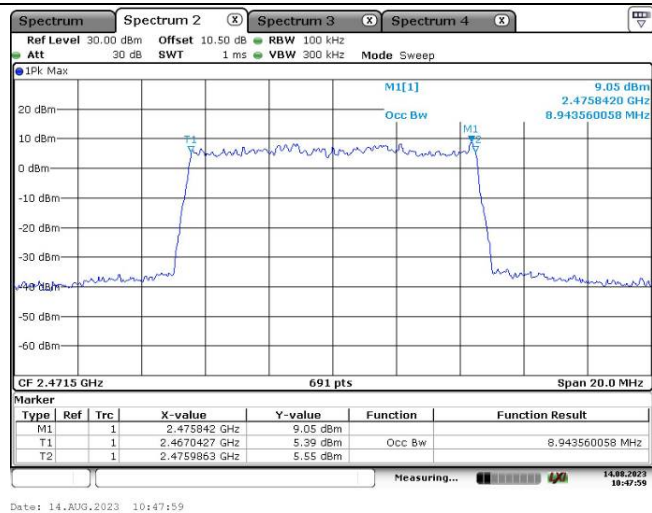
2.4GHz Band:**99% Occupied Bandwidth**1.4MHz,QPSK
Lowest Channel1.4MHz,QPSK
Middle Channel1.4MHz,QPSK
Highest Channel

99% Occupied Bandwidth1.4MHz, 16QAM
Lowest Channel1.4MHz, 16QAM
Middle Channel1.4MHz, 16QAM
Highest Channel

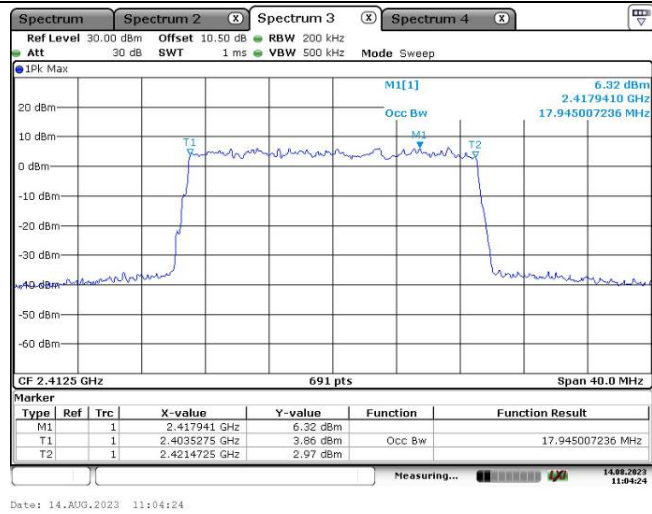
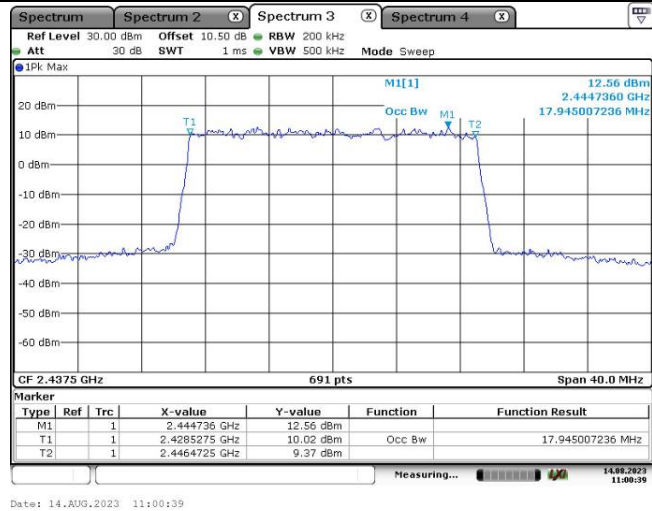
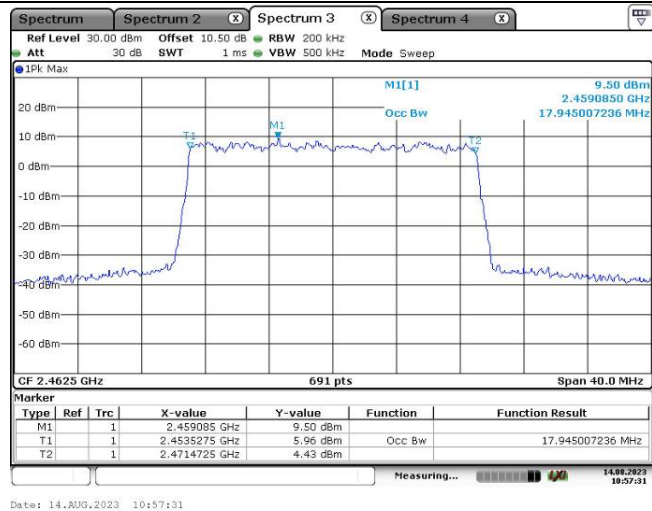
99% Occupied Bandwidth

10MHz,QPSK
Lowest Channel10MHz,QPSK
Middle Channel10MHz,QPSK
Highest Channel

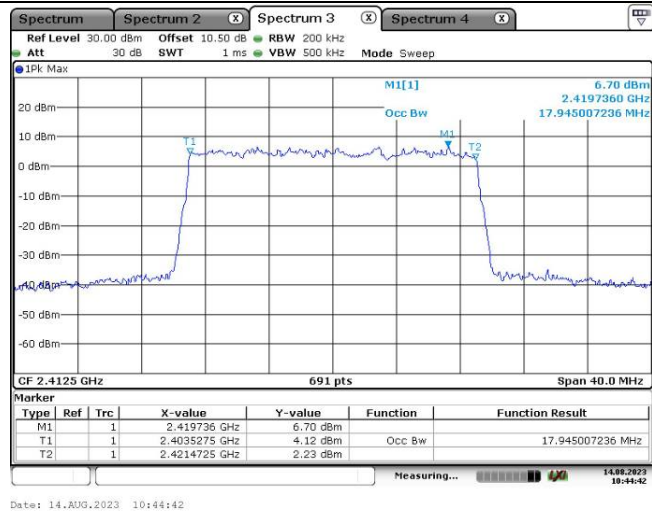
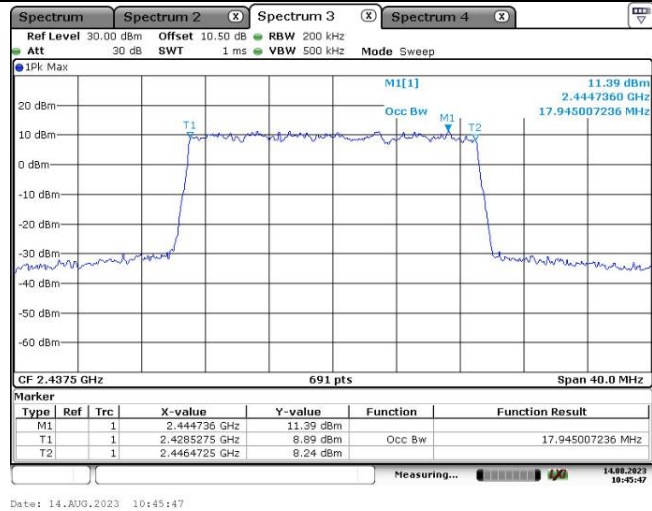
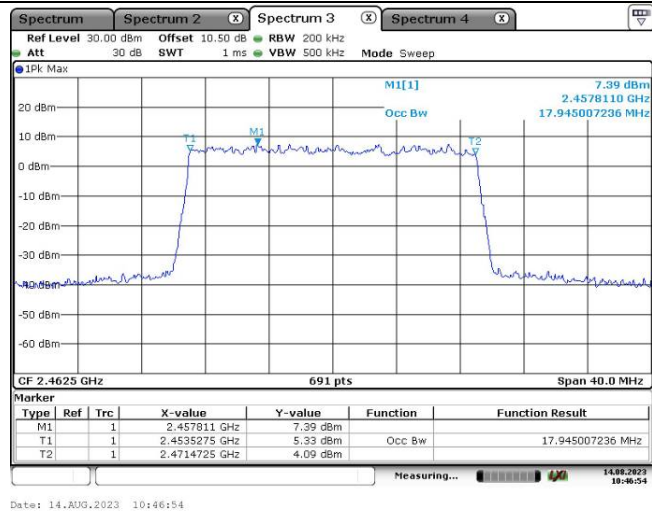
99% Occupied Bandwidth

10MHz, 16QAM
Lowest Channel10MHz, 16QAM
Middle Channel10MHz, 16QAM
Highest Channel

99% Occupied Bandwidth

20MHz,QPSK
Lowest Channel20MHz,QPSK
Middle Channel20MHz,QPSK
Highest Channel

99% Occupied Bandwidth

20MHz, 16QAM
Lowest Channel20MHz, 16QAM
Middle Channel20MHz, 16QAM
Highest Channel

4.5 Maximum conducted output power:

Serial Number:	278G-3	Test Date:	2023/8/11~2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~26.7	Relative Humidity: (%)	46~62	ATM Pressure: (kPa)	99.7~99.9
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
Agilent	USB Wideband Power Sensor	U2021XA	MY54080015	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:**900MHz Band:**

Modulation	Test Modes	Test Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			Limit (dBm)
			Chain 0	Chain 1	Total	
QPSK	1.4M	904	22.82	24.23	26.59	≤30
		916	22.97	24.44	26.78	≤30
		926	22.81	24.34	26.65	≤30
	10M	909	23.01	24.41	26.78	≤30
		915	23.08	24.52	26.87	≤30
		921	23.03	24.41	26.78	≤30
	20M	914	23.69	25.05	27.43	≤30
		915	23.46	24.84	27.21	≤30
		916	23.24	24.57	26.97	≤30
16-QAM	1.4M	904	23.48	24.93	27.28	≤30
		916	23.12	24.64	26.96	≤30
		926	23.05	24.52	26.86	≤30
	10M	909	22.49	23.97	26.30	≤30
		915	22.54	24.02	26.35	≤30
		921	22.77	24.23	26.57	≤30
	20M	914	23.51	25.08	27.38	≤30
		915	23.46	24.92	27.26	≤30
		916	23.23	24.68	27.03	≤30

2.4GHz band:

Modulation	Test Modes	Test Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			Limit (dBm)
			Chain 0	Chain 1	Total	
QPSK	1.4M	2403.5	22.12	22.14	25.14	≤30
		2439.5	22.38	22.01	25.21	≤30
		2475.5	22.29	22.11	25.21	≤30
	10M	2407.5	18.81	17.91	21.39	≤30
		2408.5	19.35	18.41	21.92	≤30
		2409.5	19.73	18.88	22.34	≤30
		2410.5	20.03	19.17	22.63	≤30
		2411.5	21.41	20.52	24.00	≤30
		2439.5	21.37	20.21	23.84	≤30
		2464.5	21.45	19.77	23.70	≤30
		2468.5	17.95	16.58	20.33	≤30
		2469.5	17.03	15.57	19.37	≤30
		2470.5	16.17	14.65	18.49	≤30
		2471.5	15.22	13.66	17.52	≤30
	20M	2412.5	15.63	14.69	18.20	≤30
		2413.5	15.76	14.99	18.40	≤30
		2414.5	16.03	15.23	18.66	≤30
		2415.5	16.29	15.51	18.93	≤30
		2418.5	21.62	20.62	24.16	≤30
		2437.5	21.59	20.53	24.10	≤30
		2450.5	21.56	20.31	23.99	≤30
		2459.5	18.31	16.88	20.66	≤30
		2460.5	18.01	16.69	20.41	≤30
		2461.5	17.72	16.35	20.10	≤30
		2462.5	17.57	16.18	19.94	≤30

Modulation	Test Modes	Test Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			Limit (dBm)
			Chain 0	Chain 1	Total	
16-QAM	1.4M	2403.5	22.02	22.34	25.19	≤30
		2439.5	22.12	22.11	25.13	≤30
		2475.5	22.05	22.01	25.04	≤30
	10M	2407.5	20.09	19.51	22.82	≤30
		2408.5	20.82	20.01	23.44	≤30
		2409.5	21.56	20.62	24.13	≤30
		2410.5	22.34	21.11	24.78	≤30
		2420.5	22.41	21.75	25.10	≤30
		2439.5	22.44	21.37	24.95	≤30
		2460.5	22.68	21.01	24.94	≤30
		2468.5	20.77	19.05	23.00	≤30
		2469.5	19.66	17.98	21.91	≤30
		2470.5	18.53	17.05	20.86	≤30
		2471.5	17.23	15.61	19.51	≤30
	20M	2412.5	15.49	14.88	18.21	≤30
		2413.5	16.01	15.24	18.65	≤30
		2414.5	16.50	15.63	19.10	≤30
		2415.5	17.23	16.66	19.96	≤30
		2418.5	20.42	19.33	22.92	≤30
		2437.5	20.47	19.23	22.90	≤30
		2456.5	20.44	18.96	22.77	≤30
		2459.5	18.82	17.62	21.27	≤30
		2460.5	18.11	16.72	20.48	≤30
		2461.5	17.35	15.87	19.68	≤30
		2462.5	16.62	15.28	19.01	≤30

4.6 Maximum power spectral density:

Serial Number:	278G-3	Test Date:	2023/8/11~2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~26.7	Relative Humidity: (%)	46~62	ATM Pressure: (kPa)	99.7~99.9
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/03/31	2024/03/30
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

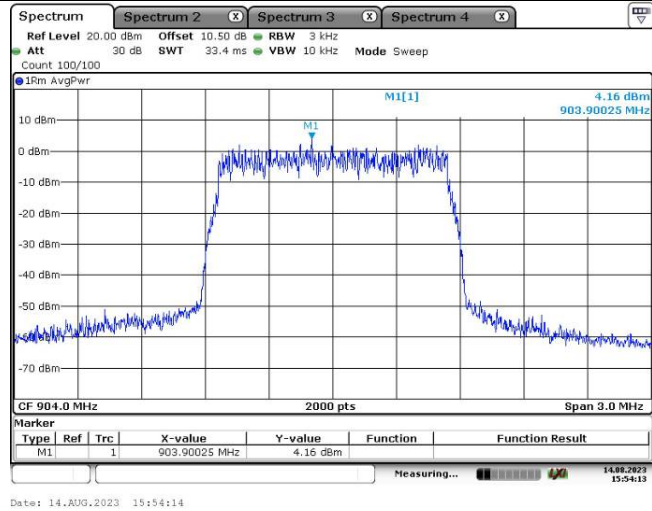
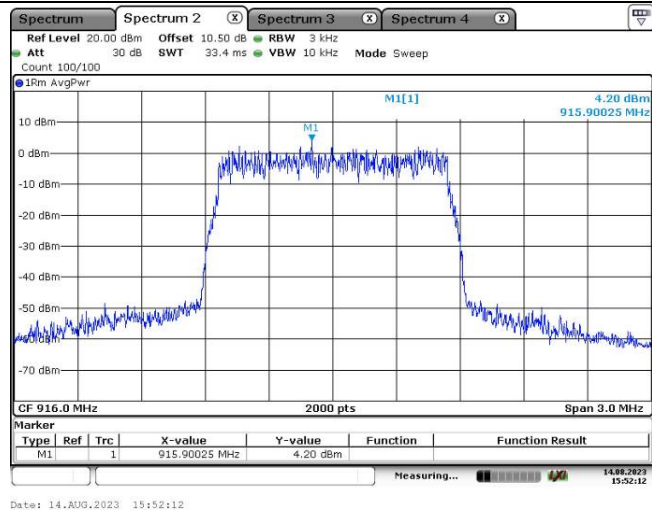
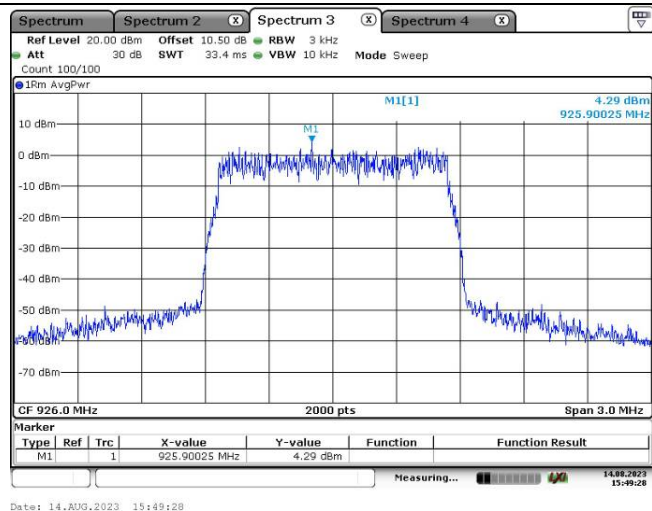
Test Data:

900MHz Band:

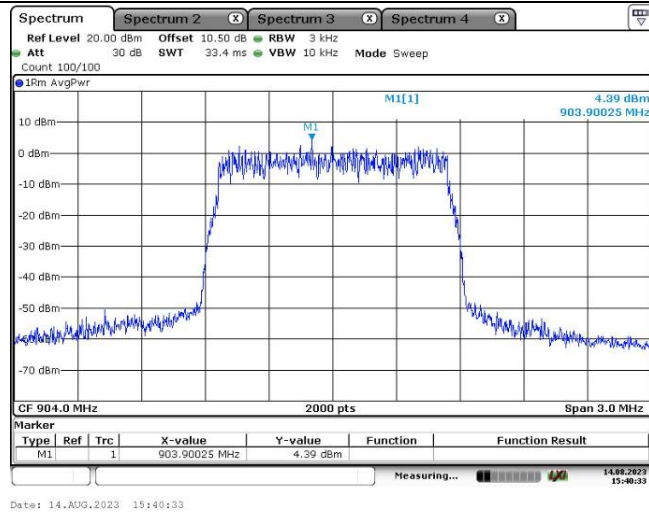
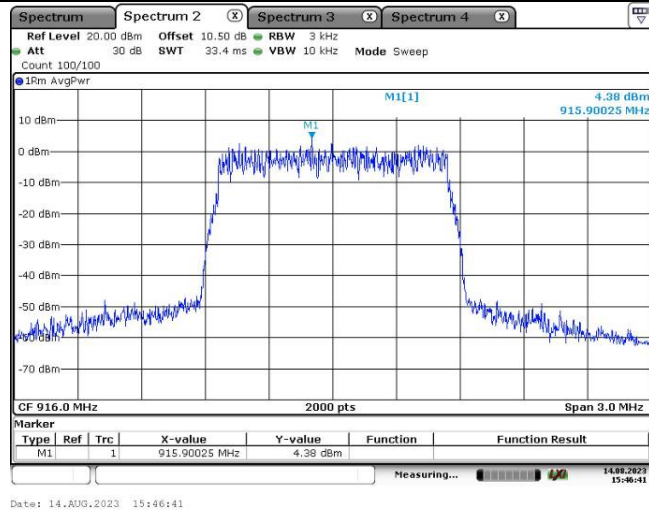
Modulation	Test Modes	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)
			Chain 0	Chain 1	Total	
QPSK	1.4M	904	4.16	5.52	7.90	≤8.00
		916	4.20	5.48	7.90	≤8.00
		926	4.29	5.48	7.94	≤8.00
	10M	909	-6.03	-4.77	-2.34	≤8.00
		915	-6.25	-4.96	-2.55	≤8.00
		921	-5.93	-4.83	-2.33	≤8.00
	20M	914	-7.97	-6.76	-4.31	≤8.00
		915	-8.14	-6.70	-4.35	≤8.00
		916	-8.26	-6.94	-4.54	≤8.00
16-QAM	1.4M	904	4.39	5.47	7.97	≤8.00
		916	4.38	5.48	7.98	≤8.00
		926	4.46	5.38	7.95	≤8.00
	10M	909	-6.00	-4.75	-2.32	≤8.00
		915	-6.12	-4.68	-2.33	≤8.00
		921	-6.05	-4.53	-2.21	≤8.00
	20M	914	-7.88	-6.75	-4.27	≤8.00
		915	-7.64	-6.73	-4.15	≤8.00
		916	-7.66	-6.53	-4.05	≤8.00

2.4GHz band:

Modulation	Test Modes	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)
			Chain 0	Chain 1	Total	
QPSK	1.4M	2403.5	4.81	4.57	7.70	≤8.00
		2439.5	4.77	4.48	7.64	≤8.00
		2475.5	4.85	4.55	7.71	≤8.00
	10M	2407.5	-11.18	-12.92	-8.95	≤8.00
		2439.5	-7.31	-9.28	-5.17	≤8.00
		2471.5	-13.98	-15.20	-11.54	≤8.00
	20M	2412.5	-16.52	-17.26	-13.86	≤8.00
		2437.5	-10.78	-12.13	-8.39	≤8.00
		2462.5	-15.12	-16.37	-12.69	≤8.00
16-QAM	1.4M	2403.5	4.83	4.51	7.68	≤8.00
		2439.5	4.87	4.59	7.74	≤8.00
		2475.5	4.81	4.41	7.62	≤8.00
	10M	2407.5	-8.77	-9.58	-6.15	≤8.00
		2439.5	-6.76	-7.75	-4.22	≤8.00
		2471.5	-12.12	-13.53	-9.76	≤8.00
	20M	2412.5	-15.41	-16.57	-12.94	≤8.00
		2437.5	-11.30	-12.17	-8.70	≤8.00
		2462.5	-14.96	-16.17	-12.51	≤8.00

**900MHz Band:
Chain 0:****Power Spectral Density**1.4MHz,QPSK
Lowest Channel1.4MHz,QPSK
Middle Channel1.4MHz,QPSK
Highest Channel

Power Spectral Density

1.4MHz, 16QAM
Lowest Channel1.4MHz, 16QAM
Middle Channel1.4MHz, 16QAM
Highest Channel