



## CTC Laboratories, Inc.

Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China  
Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.org.cn

# TEST REPORT

**Report No.** .....: **CTC2024157305**  
**FCC ID**.....: **2AWAA-RS6**  
**Applicant**.....: **ZHEJIANG DALI TECHNOLOGY CO., LTD**  
**Address**.....: NO639 Binkang Road, Hangzhou, P.R.CHINA, 310053  
**Manufacturer**.....: ZHEJIANG DALI TECHNOLOGY CO., LTD  
**Address**.....: NO639 Binkang Road, Hangzhou, P.R.CHINA, 310053  
**Product Name**.....: **Thermal Imager**  
**Trade Mark**.....: /  
**Model/Type reference**.....: RS650-640  
**Listed Model(s)** .....: RS635-384, RS635-640, RS650-384  
**Standard**.....: **FCC CFR Title 47 Part 15 Subpart C Section 15.247**  
**Date of receipt of test sample**...: Jun. 27, 2024  
**Date of testing**.....: Jun. 27, 2024 ~ Jul. 22, 2024  
**Date of issue**.....: Aug. 16, 2024  
**Result**.....: **PASS**

Compiled by:

(Printed name+signature)

Jim Jiang

*Jim Jiang*

Supervised by:

(Printed name+signature)

Eric Zhang

*Eric Zhang*

Approved by:

(Printed name+signature)

Totti Zhao

*Totti Zhao*

**Testing Laboratory Name**.....: **CTC Laboratories, Inc.**

**Address**.....:

Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community,  
Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

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## 1. TEST SUMMARY

### 1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

[RSS-247 Issue 3](#): Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

[ANSI C63.10-2013](#): American National Standard for Testing Unlicensed Wireless Devices.

### 1.2. Report Version

Revised No.	Report No.	Date of issue	Description
01	CTC2024157305	Aug. 16, 2024	Original

### 1.3. Test Description

FCC Part 15 Subpart C (15.247) / RSS-247 Issue 3				
Test Item	Standard Section		Result	Test Engineer
	FCC	IC		
Antenna Requirement	15.203	/	Pass	Jim Jiang
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Jim Jiang
Radiated Band Edge and Spurious Emissions	15.205&15.209&15.247(d)	RSS-247 5.5	Pass	Jim Jiang
Conducted Band Edge and Spurious Emissions	15.247(d)	RSS-247 5.5	Pass	Jim Jiang
6dB Bandwidth	15.247(a)(2)	RSS-247 5.2 (a)	Pass	Jim Jiang
Conducted Max Output Power	15.247(b)(3)	RSS-247 5.4 (d)	Pass	Jim Jiang
Power Spectral Density	15.247(e)	RSS-247 5.2 (b)	Pass	Jim Jiang
Transmitter Radiated Spurious	15.209&15.247(d)	RSS-247 5.5&RSS-Gen 8.9	Pass	Jim Jiang

Note: The measurement uncertainty is not included in the test result.



## 1.4. Test Facility

### CTC Laboratories, Inc.

Add: Room 101 of Building B, Room 107, 108, 207, 208 of Building A, No. 7, Lanqing 1st Road, Luh Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

### Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

#### A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

#### Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

#### FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.

## 1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.



Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	$\pm 0.0196\%$	(1)
Maximum Conducted Output Power	$\pm 0.686$ dB	(1)
Maximum Power Spectral Density Level	$\pm 0.743$ dB	(1)
Band-edge Compliance	$\pm 1.328$ dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: $\pm 0.746$ dB 1GHz-26GHz: $\pm 1.328$ dB	(1)
Conducted Emissions 9kHz~30MHz	$\pm 3.08$ dB	(1)
Radiated Emissions 30~1000MHz	$\pm 4.51$ dB	(1)
Radiated Emissions 1~18GHz	$\pm 5.84$ dB	(1)
Radiated Emissions 18~40GHz	$\pm 6.12$ dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

## 1.6. Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	21°C ~ 27°C
Relative Humidity:	40% ~ 60%
Air Pressure:	101kPa



## 2. GENERAL INFORMATION

### 2.1. Client Information

Applicant:	ZHEJIANG DALI TECHNOLOGY CO., LTD
Address:	NO639 Binkang Road, Hangzhou, P.R.CHINA, 310053
Manufacturer:	ZHEJIANG DALI TECHNOLOGY CO., LTD
Address:	NO639 Binkang Road, Hangzhou, P.R.CHINA, 310053

### 2.2. General Description of EUT

Product Name:	Thermal Imager
Trade Mark:	/
Model/Type reference:	RS650-640
Listed Model(s):	RS635-384, RS635-640, RS650-384
Model Different:	The circuit design is the same, the difference is the optical lenses.
Power supply:	DC5V 2A from Type-C Port 3.6V 950mAh from Lithium battery
Hardware version:	/
Software version:	/
<b>2.4G WIFI 802.11b/ g/ n(HT20)</b>	
Modulation:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK, QPSK, 16QAM, 64QAM)
Operation frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
Channel number:	802.11b/g/n(HT20): 11channels
Channel separation:	5MHz
Antenna type:	FPC Antenna
Antenna gain:	2.26dBi



## 2.3. Accessory Equipment Information

Equipment Information			
Name	Model	S/N	Manufacturer
Travel charger	NRT-DY035	-	Times Innovation
Cable Information			
Name	Shielded Type	Ferrite Core	Length
USB Cable	Shielded	No	100cm
Test Software Information			
Name	Version	/	/
/	/	/	/



## 2.4. Operation State

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

Channel	Frequency (MHz)
01	2412
02	2417
03	2422
04	2427
05	2432
06	2437
07	2442
08	2447
09	2452
10	2457
11	2462

Note: CH 01~CH 11 for 802.11b/g/n(HT20).

### Data Rated

Preliminary tests were performed in different data rate, and found which the below bit rate is worst case mode, so only show data which it is a worst case mode.

Mode	Data rate (worst mode)
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	HT-MCS0

### Test mode

For RF test items:
The engineering test program was provided and enabled to make EUT continuous transmit.
For AC power line conducted emissions:
The EUT was set to connect with the WLAN AP under large package sizes transmission.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report.





## 2.5. Measurement Instruments List

RF Test System					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 21, 2025
2	Spectrum Analyzer	R&S	FSV40-N	101654	Aug. 07, 2024
3	Spectrum Analyzer	R&S	FSU26	100105	Dec. 12, 2024
4	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 12, 2024
5	MXA Signal Analyzer	Keysight	N9020A	MY52091402	Aug. 22, 2024
6	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 12, 2024
7	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 12, 2024
8	EXG Analog Signal Generator	Keysight	N5173B	MY59100842	Dec. 12, 2024
9	MXG Vector Signal Generator	Keysight	N5182B	MY59100212	Dec. 12, 2024
10	USB Wideband Power Sensor	Keysight	U2021XA	MY55130004	Mar. 21, 2025
11	USB Wideband Power Sensor	Keysight	U2021XA	MY55130006	Mar. 21, 2025
12	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2024
13	RF Control Unit	Tonscend	JS0806-2	/	Aug. 22, 2024
14	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 21, 2025

Radiated Emission (3m chamber 3)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 01, 2024
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2024
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 12, 2024
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 12, 2024
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
7	Test Software	FARA	EZ-EMC	FA-03A2	/



Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	LISN	R&S	ENV216	101112	Dec. 12, 2024
2	LISN	R&S	ENV216	101113	Dec. 12, 2024
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 12, 2024
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 12, 2024
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 12, 2024
6	Test Software	R&S	EMC32	6.10.10	/

Note: 1. The Cal. Interval was one year.

2. The Cal. Interval was three year of the chamber

3. The cable loss has calculated in test result which connection between each test instruments.

### 3.TEST ITEM AND RESULTS

#### 3.1. Conducted Emission

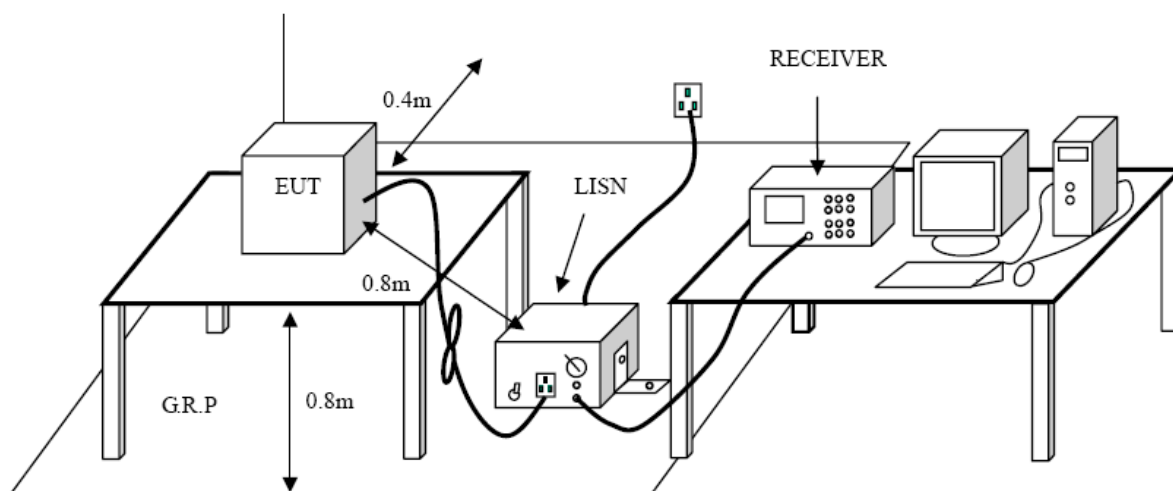
##### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.207/ RSS - Gen 8.8:

Frequency range (MHz)	Limit (dBuV)	
	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.

##### Test Configuration

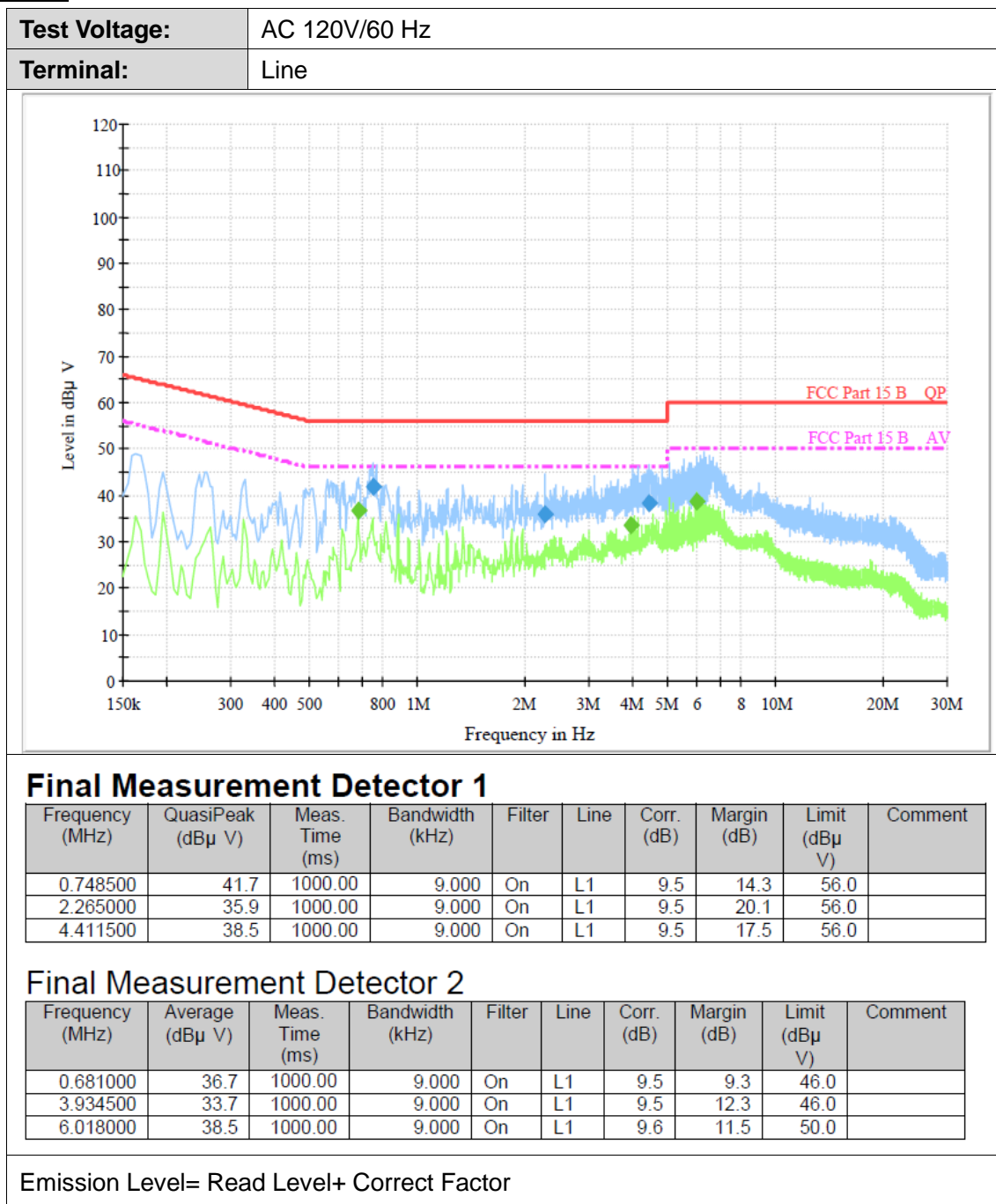


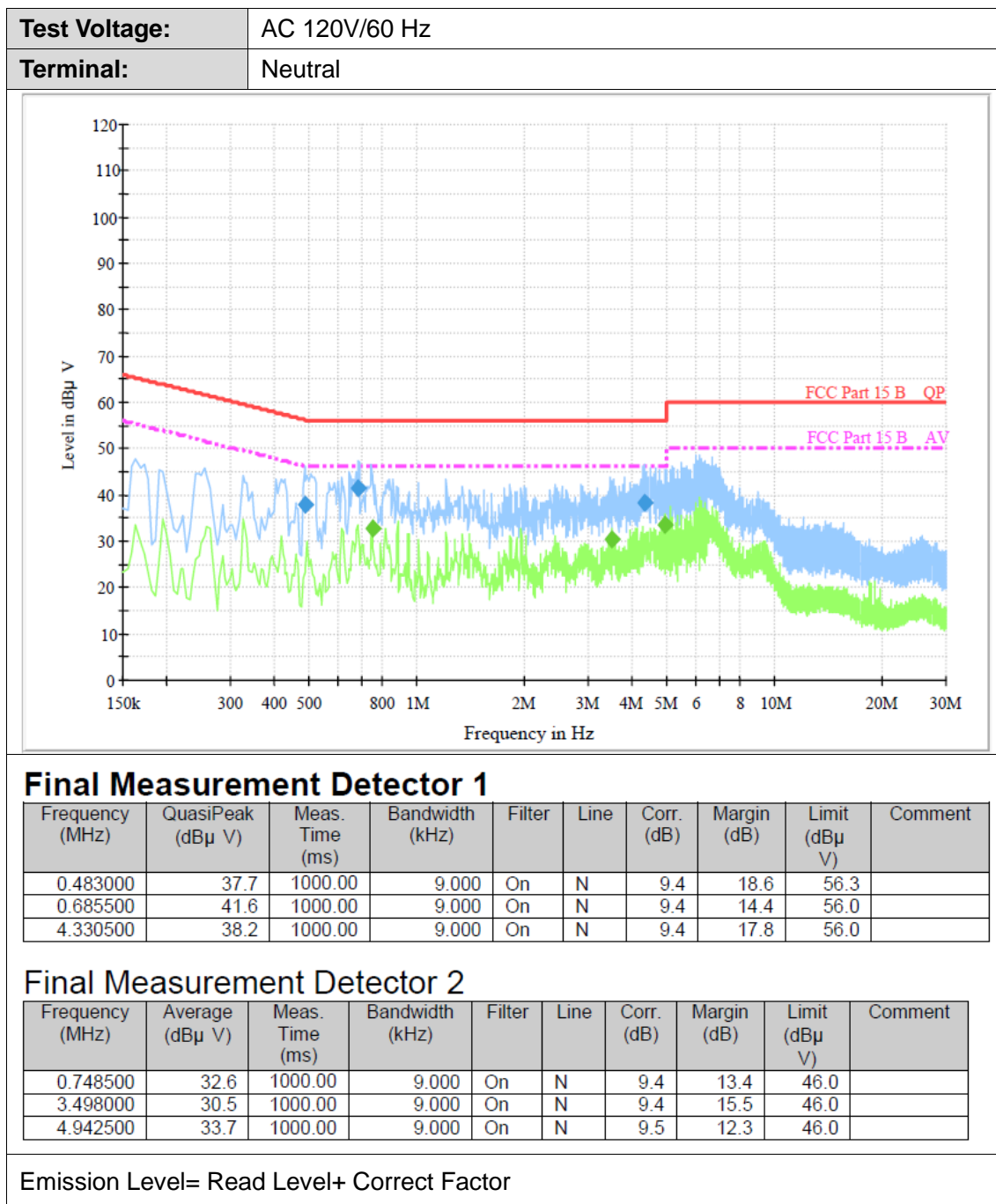
##### Test Procedure

1. The EUT was setup according to ANSI C63.10:2013 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
7. During the above scans, the emissions were maximized by cable manipulation.

**Test Mode:**

Please refer to the clause 2.4.

**Test Results**



## 3.2. Radiated Emission

### Limit

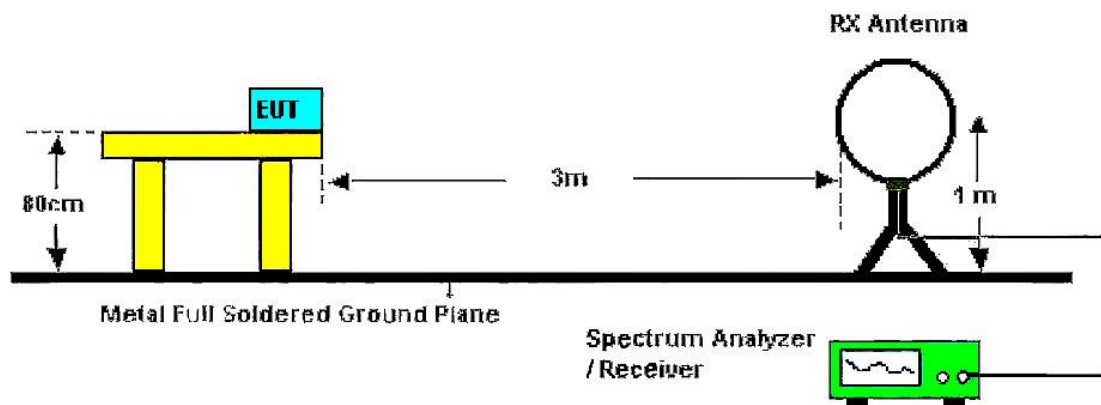
FCC CFR Title 47 Part 15 Subpart C Section 15.209/ RSS – Gen 8.9:

Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

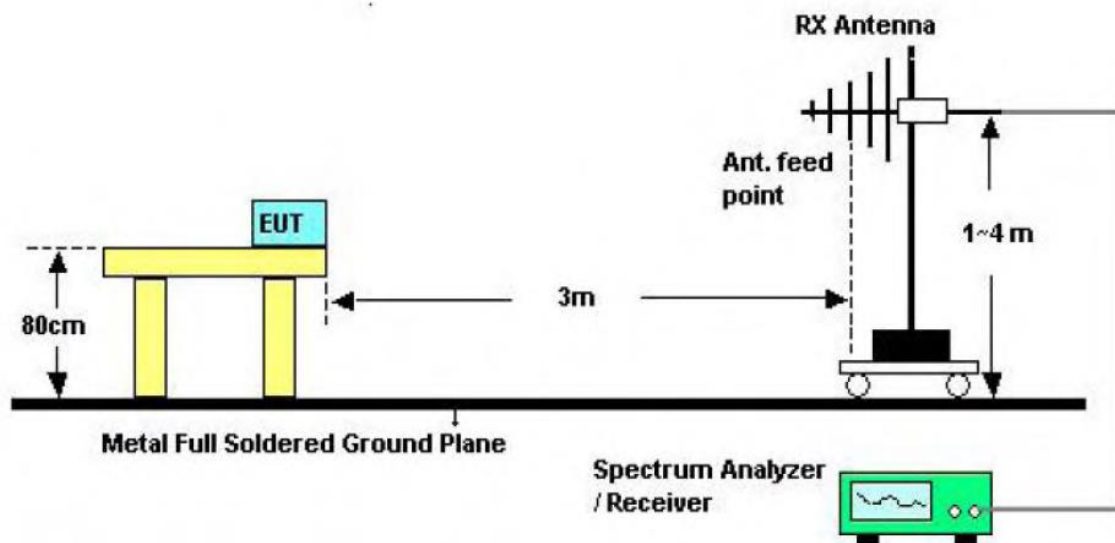
### Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

### Test Configuration

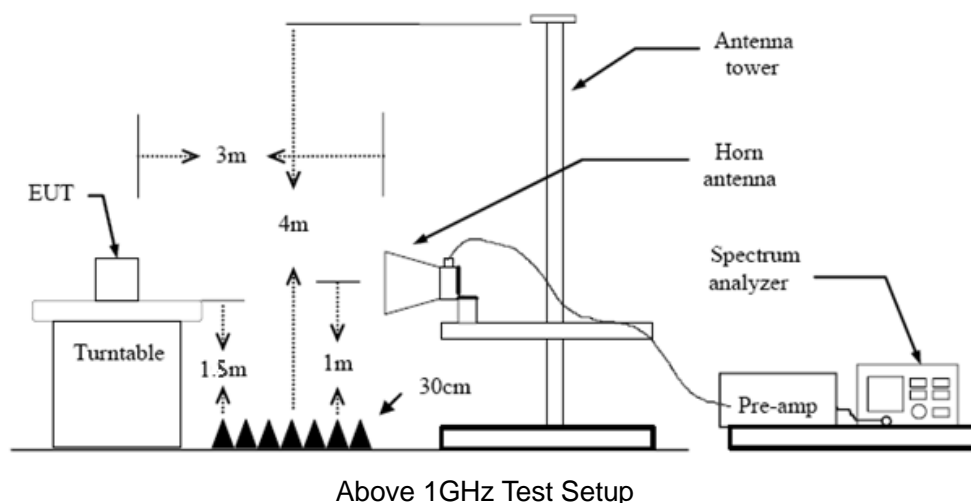


Below 30MHz Test Setup



Below 1000MHz Test Setup





### Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013
  2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
  3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
  4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
  5. Set to the maximum power setting and enable the EUT transmit continuously.
  6. Use the following spectrum analyzer settings
    - (1) Span shall wide enough to fully capture the emission being measured
    - (2) Below 30 MHz:  
 9kHz – 150kHz, RBW=200Hz, VBW $\geq$ RBW, Sweep=auto, Detector function=peak, Trace=max hold;  
 150kHz – 30MHz, RBW=9kHz, VBW $\geq$ RBW, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
    - (3) 30 MHz - 1 GHz:  
 RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;  
 If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
    - (4) From 1 GHz to 10<sup>th</sup> harmonic:  
 RBW=1MHz, VBW=3MHz Peak detector for Peak value.  
 RBW=1MHz, VBW $\geq$ 1/T Peak detector for Average value.
- Note 1: For the 1/T & Duty Cycle please refer to clause 3.8 Duty Cycle.

### Test Mode

Please refer to the clause 2.4.

### Test Result

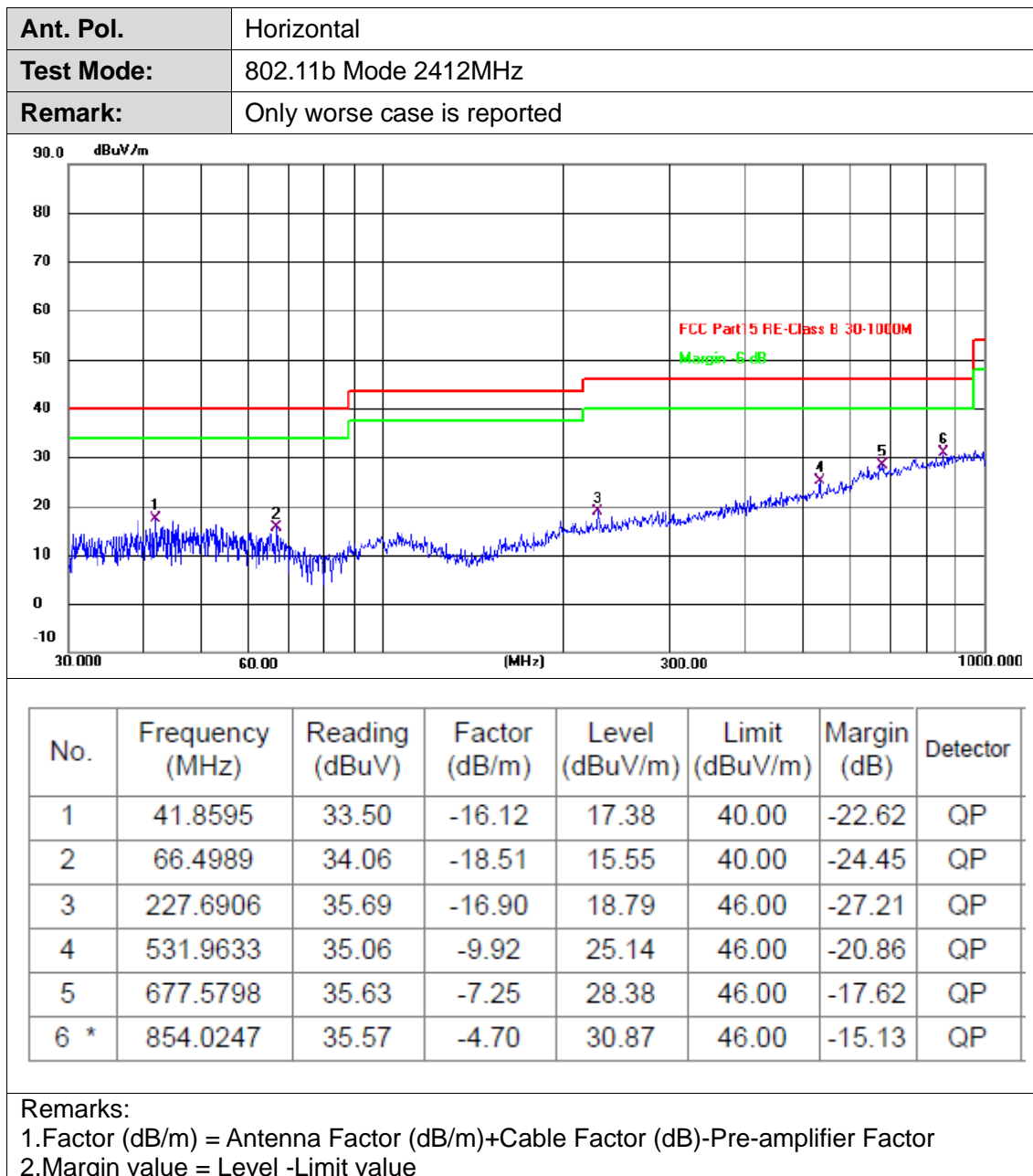
#### 9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

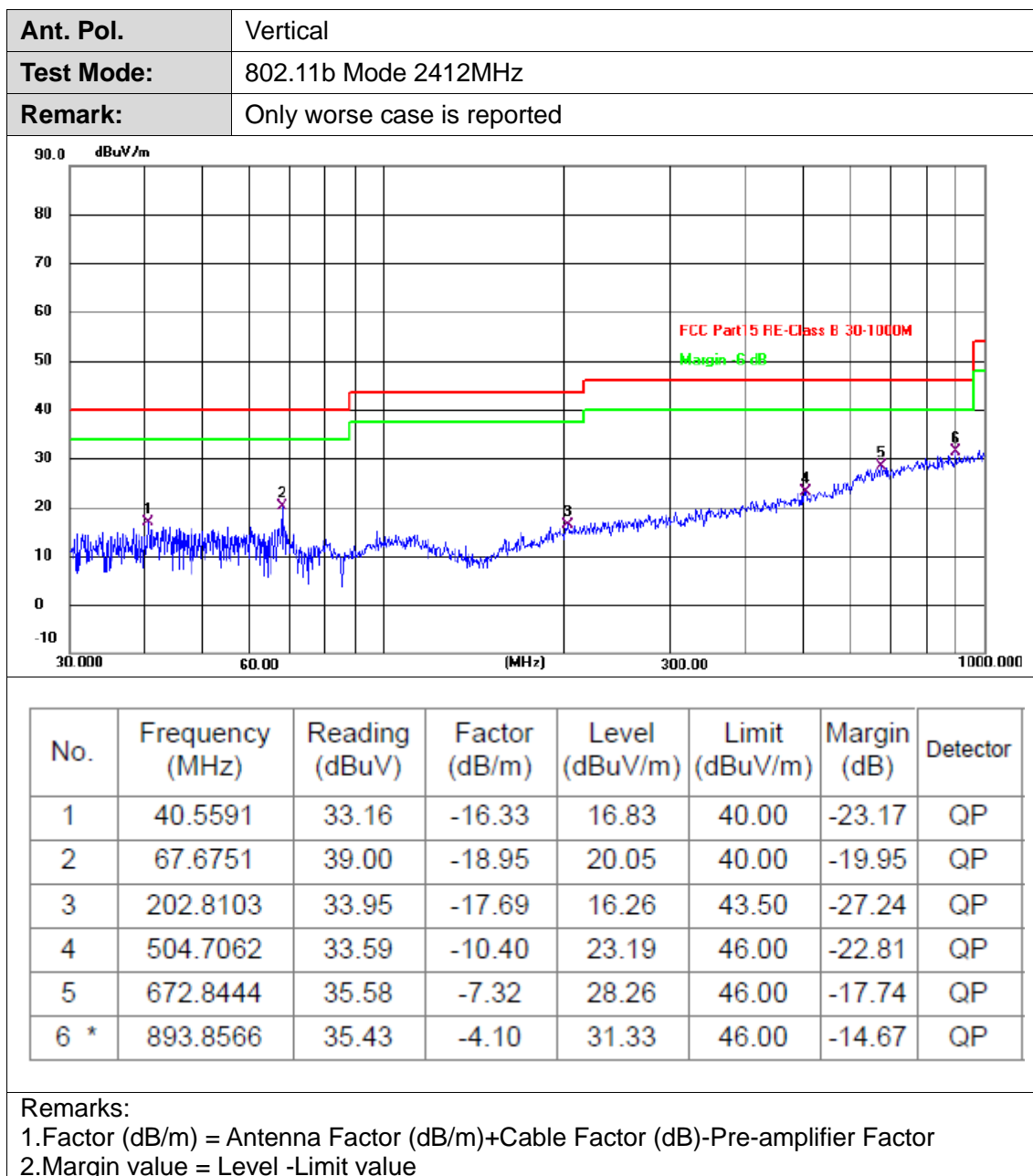
Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



## 30MHz-1GHz









## Adobe 1GHz

<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11b Mode 2412MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5128.167	40.67	2.66	43.33	74.00	-30.67	peak
2	7180.500	39.11	9.91	49.02	74.00	-24.98	peak
3	9260.250	39.23	12.42	51.65	74.00	-22.35	peak
4	10008.333	39.77	13.20	52.97	74.00	-21.03	peak
5	11273.417	38.60	14.80	53.40	74.00	-20.60	peak
6 *	12483.667	37.76	15.74	53.50	74.00	-20.50	peak

## Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11b Mode 2412MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3714.250	41.74	-0.49	41.25	74.00	-32.75	peak
2	6322.750	40.11	6.75	46.86	74.00	-27.14	peak
3	7881.583	39.35	10.60	49.95	74.00	-24.05	peak
4	9017.417	39.96	11.75	51.71	74.00	-22.29	peak
5	10024.000	39.00	13.23	52.23	74.00	-21.77	peak
6 *	11520.167	38.63	14.99	53.62	74.00	-20.38	peak

## Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value



<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11b Mode 2437MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4278.250	41.27	0.89	42.16	74.00	-31.84	peak
2	6459.833	39.38	7.22	46.60	74.00	-27.40	peak
3	7987.333	39.37	10.83	50.20	74.00	-23.80	peak
4	10024.000	38.70	13.23	51.93	74.00	-22.07	peak
5	11488.833	38.59	14.93	53.52	74.00	-20.48	peak
6 *	12354.417	37.99	15.54	53.53	74.00	-20.47	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11b Mode 2437MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4309.583	41.10	0.94	42.04	74.00	-31.96	peak
2	5797.917	41.09	4.93	46.02	74.00	-27.98	peak
3	7681.833	40.16	10.20	50.36	74.00	-23.64	peak
4	9644.083	39.10	12.67	51.77	74.00	-22.23	peak
5 *	10940.500	38.84	14.61	53.45	74.00	-20.55	peak
6	11919.667	38.03	15.31	53.34	74.00	-20.66	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value



<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11b Mode 2462MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3953.167	41.94	0.36	42.30	74.00	-31.70	peak
2	5120.333	42.76	2.63	45.39	74.00	-28.61	peak
3	7090.417	39.13	9.42	48.55	74.00	-25.45	peak
4	9620.583	38.97	12.63	51.60	74.00	-22.40	peak
5 *	10854.333	39.11	14.52	53.63	74.00	-20.37	peak
6	11974.500	38.08	15.41	53.49	74.00	-20.51	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11b Mode 2462MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4313.500	40.87	0.96	41.83	74.00	-32.17	peak
2	5766.583	40.58	4.79	45.37	74.00	-28.63	peak
3	7897.250	39.31	10.63	49.94	74.00	-24.06	peak
4	9037.000	39.84	11.81	51.65	74.00	-22.35	peak
5	10779.917	38.50	14.42	52.92	74.00	-21.08	peak
6 *	12076.333	37.97	15.55	53.52	74.00	-20.48	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11g Mode 2412MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4638.583	41.03	1.68	42.71	74.00	-31.29	peak
2	7513.417	39.52	10.09	49.61	74.00	-24.39	peak
3	9244.583	39.92	12.41	52.33	74.00	-21.67	peak
4	10529.250	39.20	13.97	53.17	74.00	-20.83	peak
5 *	11367.417	38.71	14.84	53.55	74.00	-20.45	peak
6	12491.500	37.29	15.76	53.05	74.00	-20.95	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11g Mode 2412MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4763.917	41.12	1.92	43.04	74.00	-30.96	peak
2	5974.167	40.43	5.56	45.99	74.00	-28.01	peak
3	7211.833	39.93	10.03	49.96	74.00	-24.04	peak
4	9225.000	39.32	12.39	51.71	74.00	-22.29	peak
5	10262.917	39.14	13.67	52.81	74.00	-21.19	peak
6 *	12311.333	37.91	15.59	53.50	74.00	-20.50	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11g Mode 2437MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4904.917	41.81	2.13	43.94	74.00	-30.06	peak
2	7254.917	40.13	10.04	50.17	74.00	-23.83	peak
3	7920.750	40.46	10.69	51.15	74.00	-22.85	peak
4	9542.250	38.99	12.59	51.58	74.00	-22.42	peak
5 *	11610.250	38.39	15.13	53.52	74.00	-20.48	peak
6	12483.667	37.45	15.74	53.19	74.00	-20.81	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11g Mode 2437MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4290.000	40.49	0.91	41.40	74.00	-32.60	peak
2	5782.250	41.92	4.85	46.77	74.00	-27.23	peak
3	7944.250	40.21	10.74	50.95	74.00	-23.05	peak
4	9111.417	39.61	12.07	51.68	74.00	-22.32	peak
5	10541.000	39.03	13.98	53.01	74.00	-20.99	peak
6 *	11700.333	38.41	15.11	53.52	74.00	-20.48	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value





<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11g Mode 2462MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4270.417	41.26	0.87	42.13	74.00	-31.87	peak
2	6393.250	40.61	7.04	47.65	74.00	-26.35	peak
3	7164.833	39.68	9.83	49.51	74.00	-24.49	peak
4	9260.250	39.88	12.42	52.30	74.00	-21.70	peak
5	11273.417	38.68	14.80	53.48	74.00	-20.52	peak
6 *	12021.500	38.03	15.48	53.51	74.00	-20.49	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11g Mode 2462MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4380.083	42.36	1.08	43.44	74.00	-30.56	peak
2	7235.333	39.54	10.03	49.57	74.00	-24.43	peak
3	9162.333	39.60	12.24	51.84	74.00	-22.16	peak
4	10474.417	39.15	13.92	53.07	74.00	-20.93	peak
5 *	11261.667	38.78	14.79	53.57	74.00	-20.43	peak
6	12166.417	37.60	15.68	53.28	74.00	-20.72	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11n(HT20) Mode 2412MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	6032.917	39.29	5.75	45.04	74.00	-28.96	peak
2	7235.333	39.55	10.03	49.58	74.00	-24.42	peak
3	9644.083	38.77	12.67	51.44	74.00	-22.56	peak
4 *	10541.000	39.58	13.98	53.56	74.00	-20.44	peak
5	11484.917	38.47	14.93	53.40	74.00	-20.60	peak
6	12377.917	38.02	15.52	53.54	74.00	-20.46	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11n(HT20) Mode 2412MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4446.667	41.46	1.24	42.70	74.00	-31.30	peak
2	7313.667	39.32	10.07	49.39	74.00	-24.61	peak
3	8657.083	40.96	11.13	52.09	74.00	-21.91	peak
4	9894.750	39.51	13.06	52.57	74.00	-21.43	peak
5	11128.500	38.72	14.73	53.45	74.00	-20.55	peak
6 *	12616.833	37.46	16.12	53.58	74.00	-20.42	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value





<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11n(HT20) Mode 2437MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3867.000	41.48	0.02	41.50	74.00	-32.50	peak
2	6455.917	39.62	7.21	46.83	74.00	-27.17	peak
3	7842.417	39.72	10.51	50.23	74.00	-23.77	peak
4	9178.000	39.76	12.30	52.06	74.00	-21.94	peak
5 *	11261.667	38.70	14.79	53.49	74.00	-20.51	peak
6	12706.917	37.13	16.34	53.47	74.00	-20.53	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11n(HT20) Mode 2437MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4752.167	41.44	1.89	43.33	74.00	-30.67	peak
2	6452.000	39.69	7.19	46.88	74.00	-27.12	peak
3	7309.750	39.29	10.07	49.36	74.00	-24.64	peak
4	10067.083	39.59	13.31	52.90	74.00	-21.10	peak
5	10967.917	38.78	14.63	53.41	74.00	-20.59	peak
6 *	12554.167	37.65	15.94	53.59	74.00	-20.41	peak

Remarks:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



<b>Ant. Pol.</b>	Horizontal
<b>Test Mode:</b>	TX 802.11n(HT20) Mode 2462MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5147.750	41.06	2.72	43.78	74.00	-30.22	peak
2	6784.917	39.11	7.88	46.99	74.00	-27.01	peak
3	8018.667	40.07	10.81	50.88	74.00	-23.12	peak
4	9021.333	41.61	11.76	53.37	74.00	-20.63	peak
5	10431.333	39.02	13.91	52.93	74.00	-21.07	peak
6 *	11833.500	38.25	15.15	53.40	74.00	-20.60	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

<b>Ant. Pol.</b>	Vertical
<b>Test Mode:</b>	TX 802.11n(HT20) Mode 2462MHz
<b>Remark:</b>	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4760.000	41.40	1.91	43.31	74.00	-30.69	peak
2	7149.167	39.41	9.75	49.16	74.00	-24.84	peak
3	7975.583	39.80	10.81	50.61	74.00	-23.39	peak
4	9734.167	39.33	12.82	52.15	74.00	-21.85	peak
5	11152.000	38.73	14.74	53.47	74.00	-20.53	peak
6 *	12107.667	38.00	15.60	53.60	74.00	-20.40	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

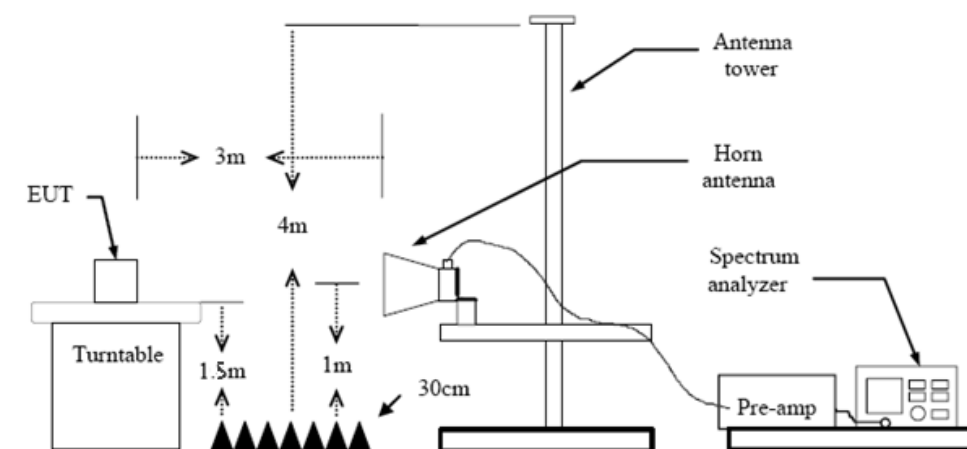
### 3.3. Band Edge Emissions (Radiated)

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d)/ RSS 247 5.5:

Restricted Frequency Band (MHz)	(dBuV/m)(at 3m)	
	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

#### Test Configuration



#### Test Procedure

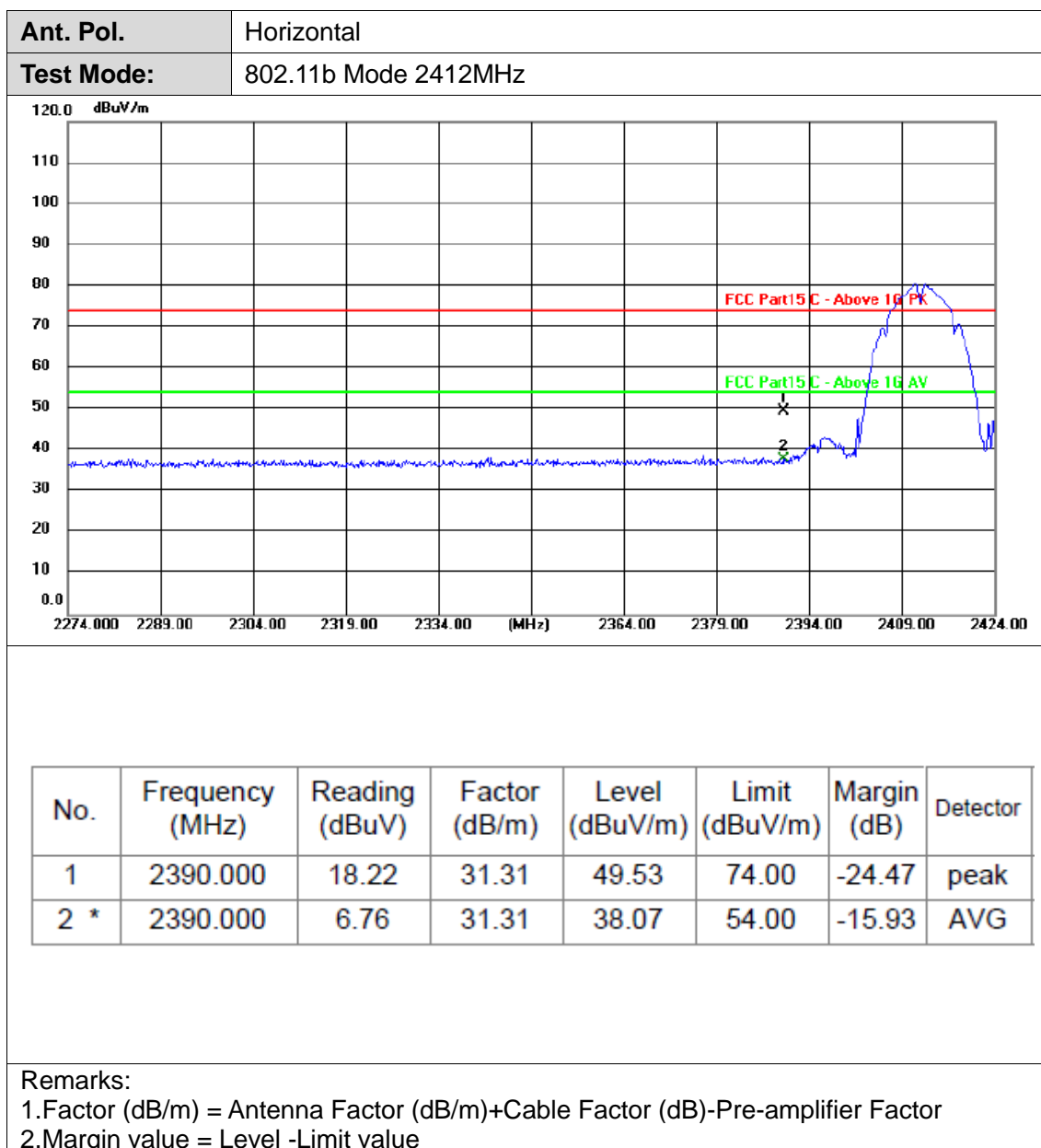
1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
5. The receiver set as follow:  
RBW=1MHz, VBW=3MHz Peak detector for Peak value.  
RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

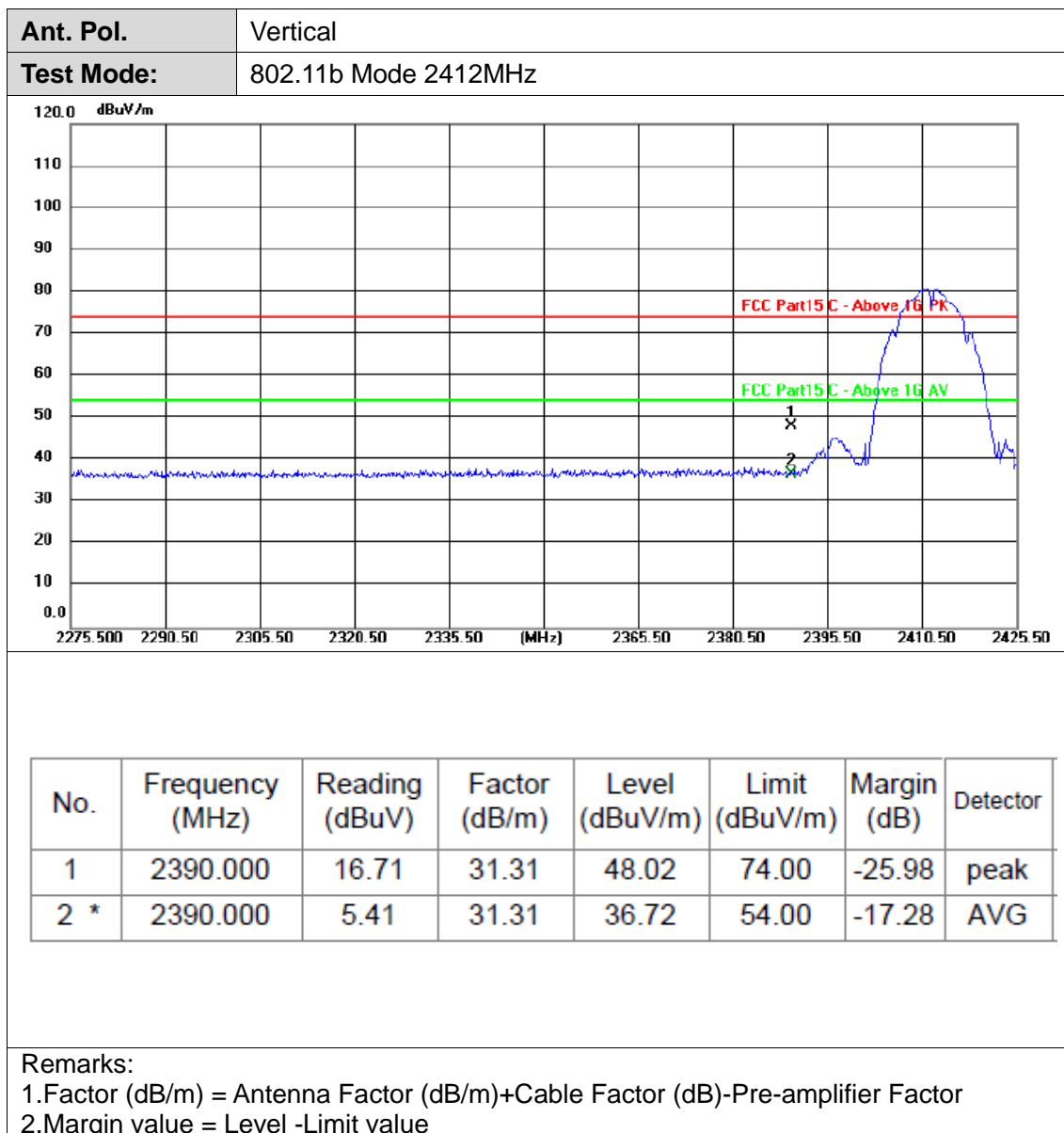
Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

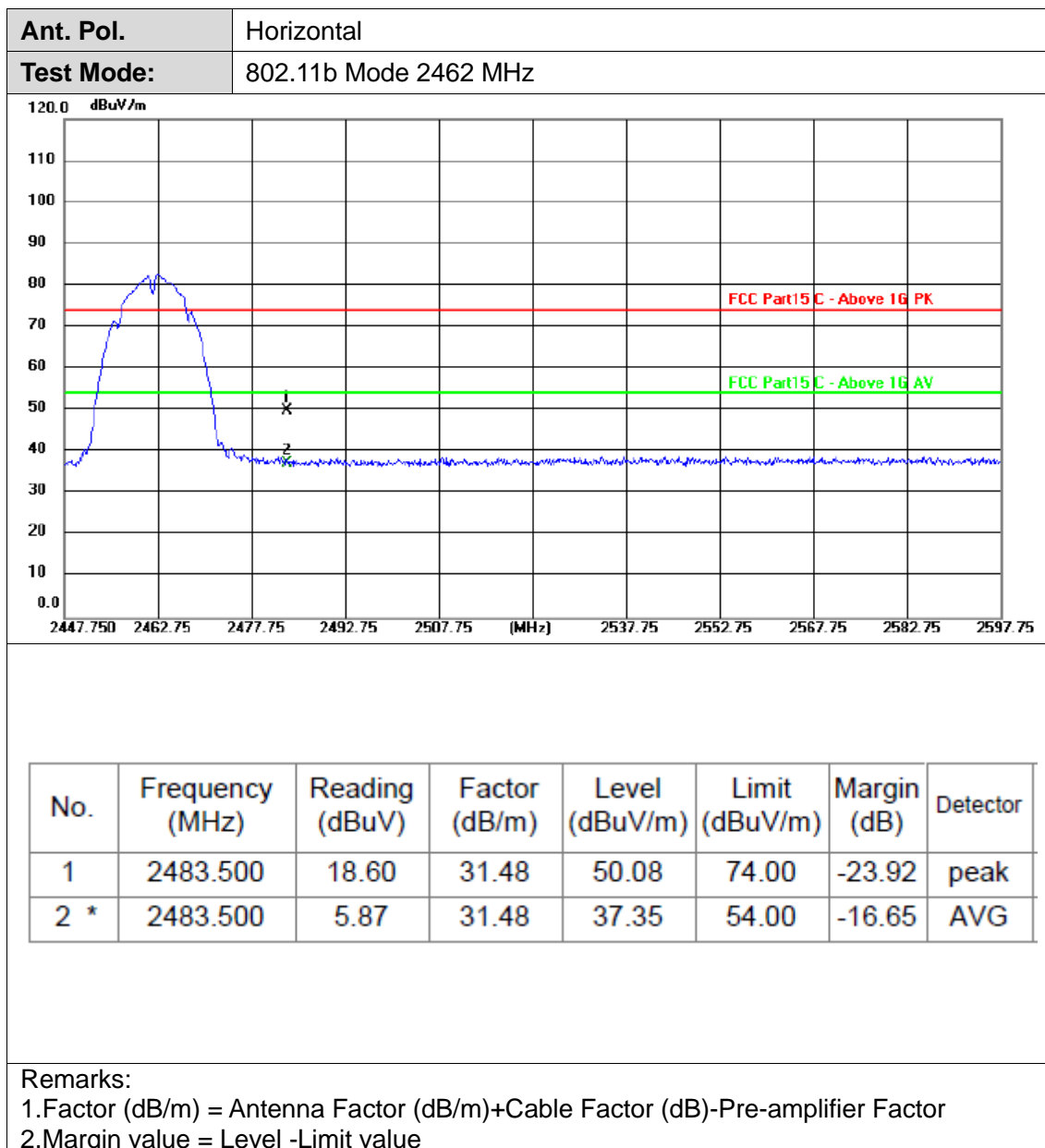
#### Test Mode

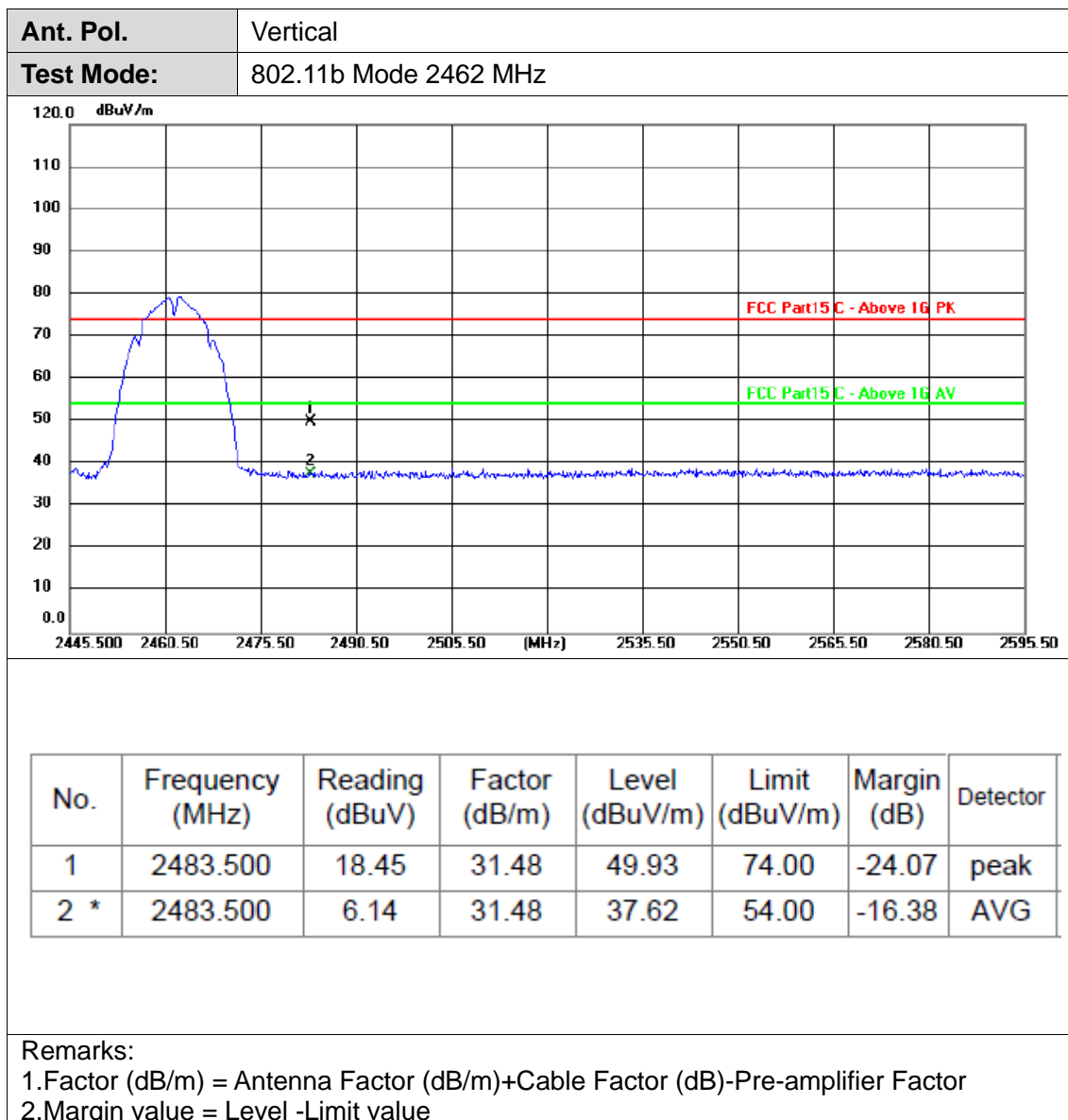
Please refer to the clause 2.4.

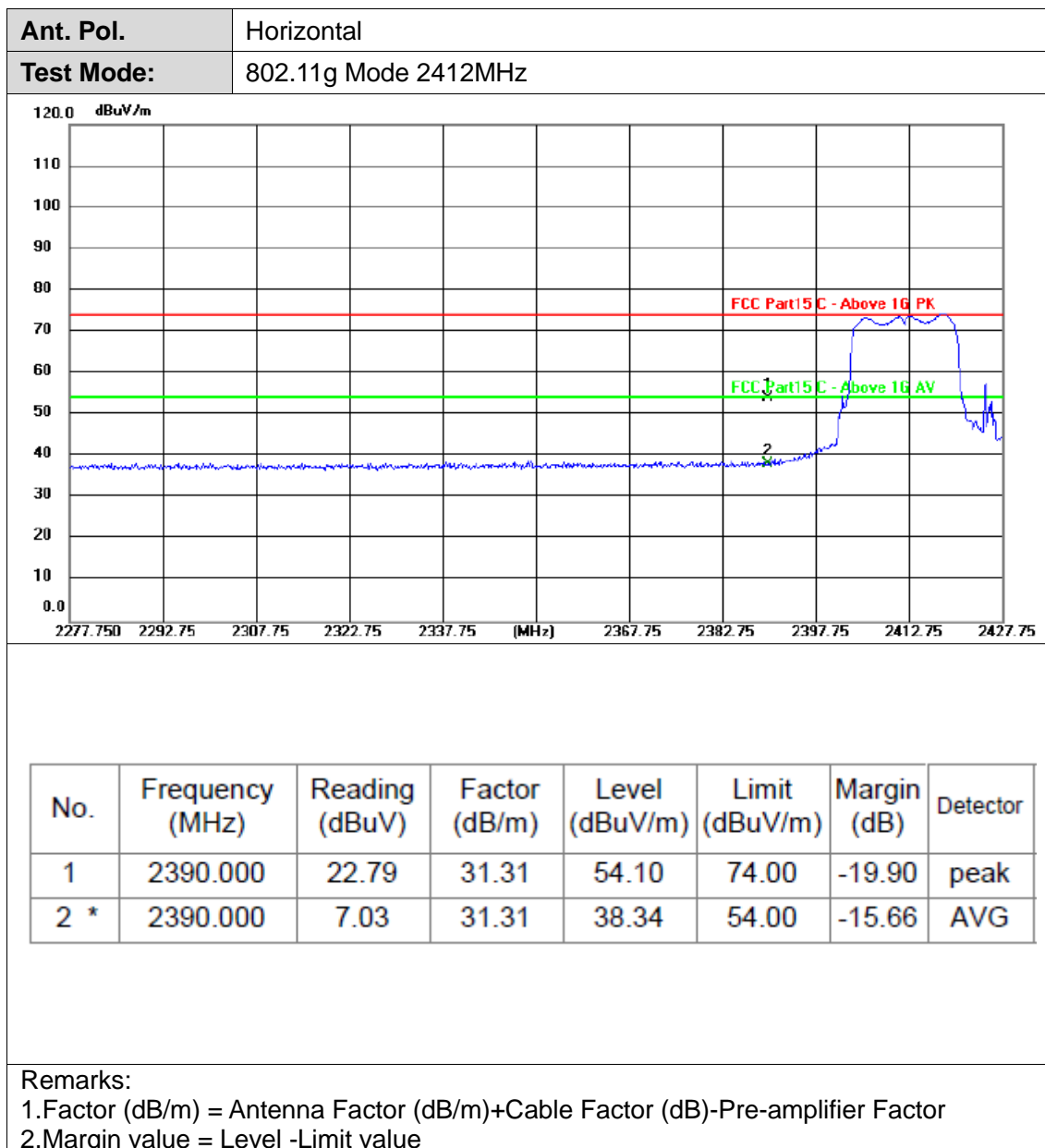
#### Test Results



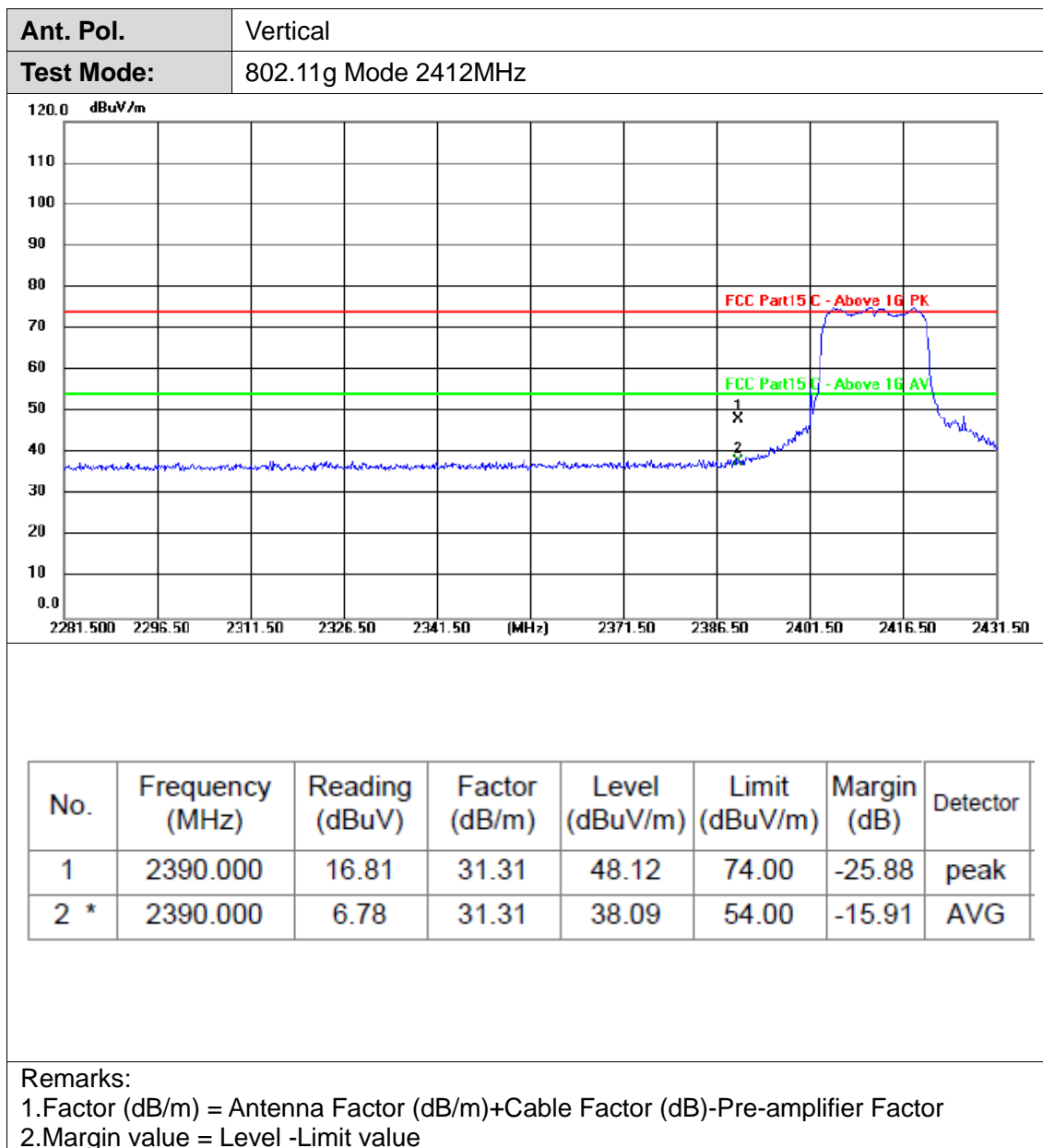


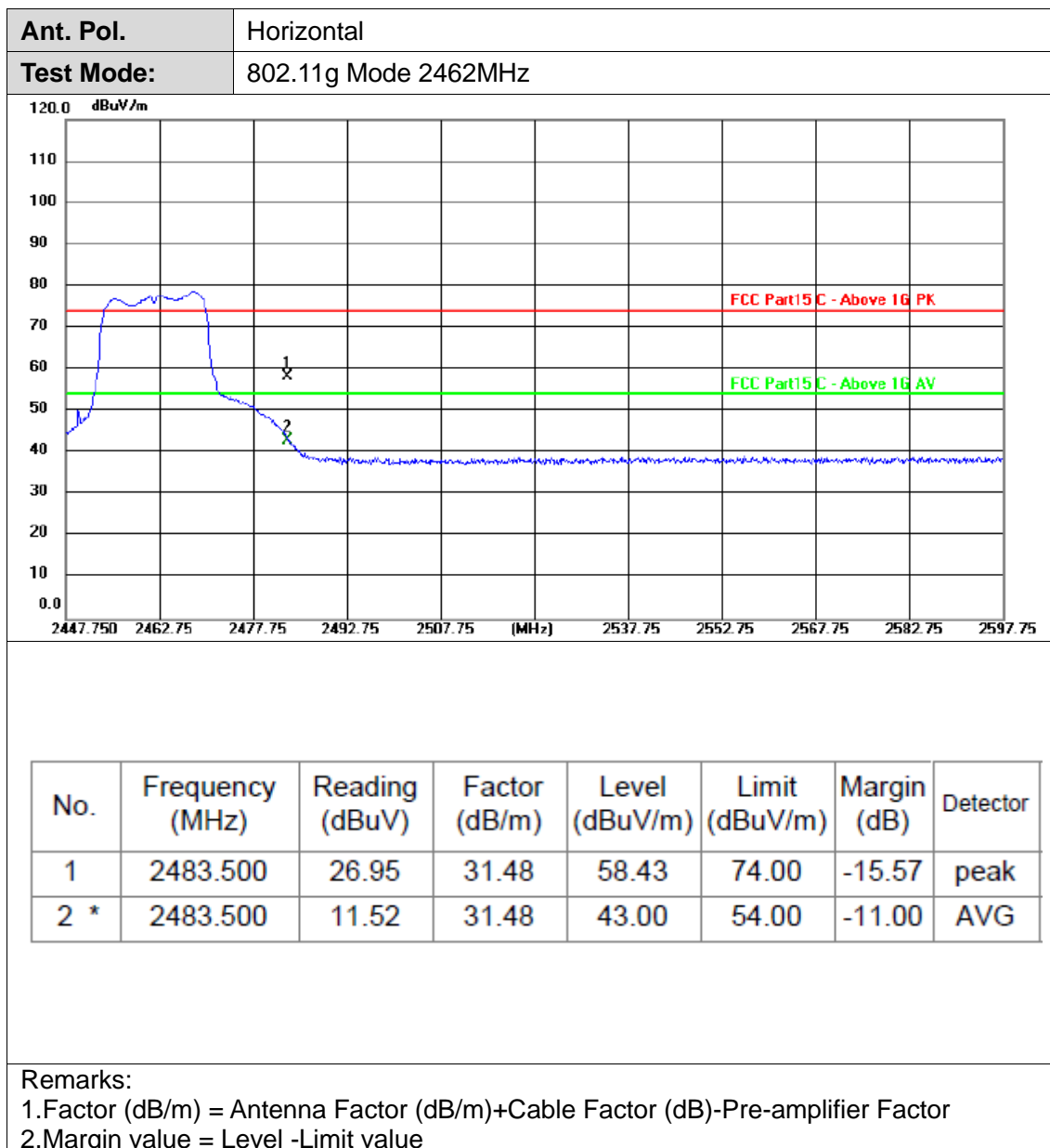


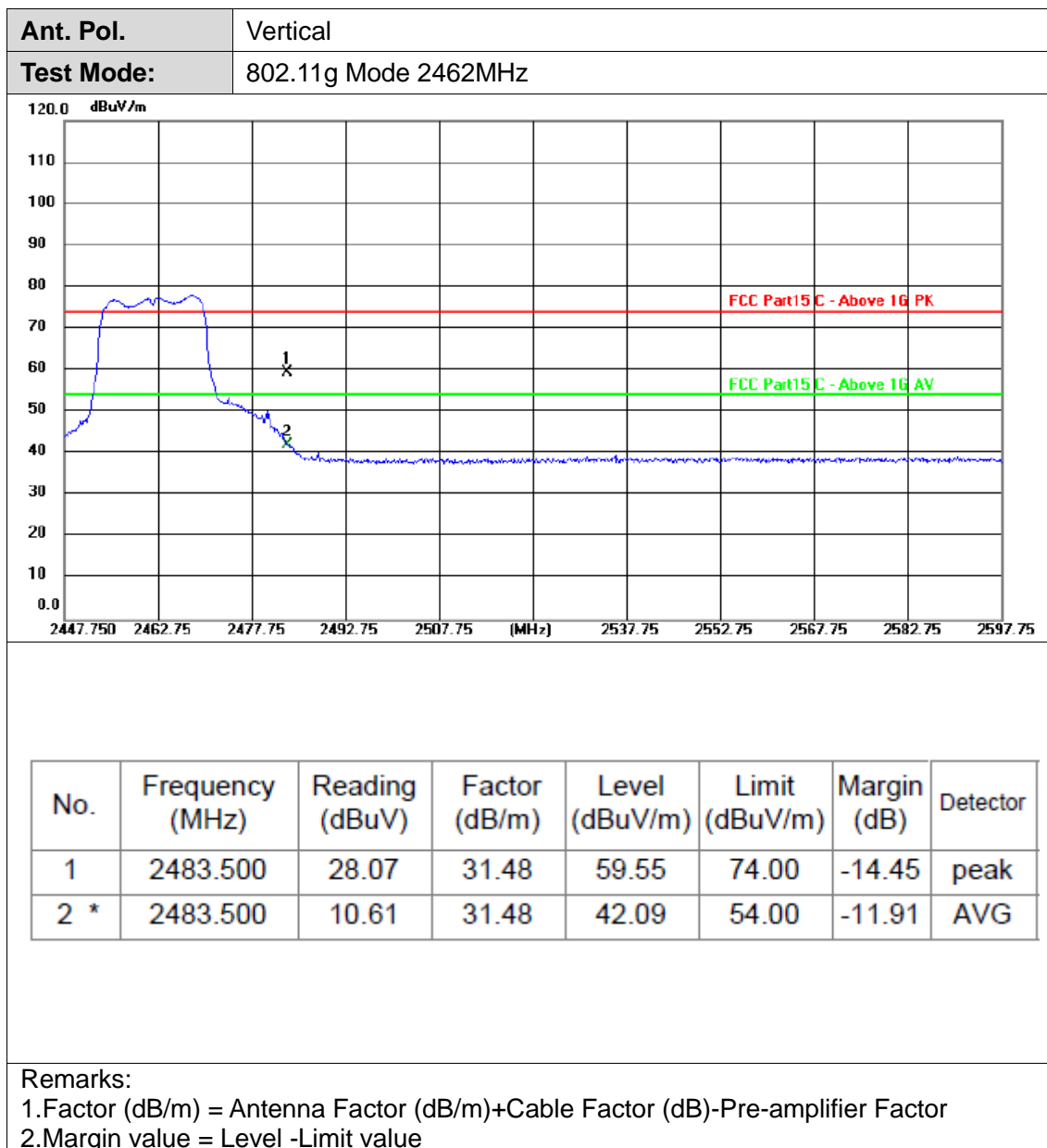


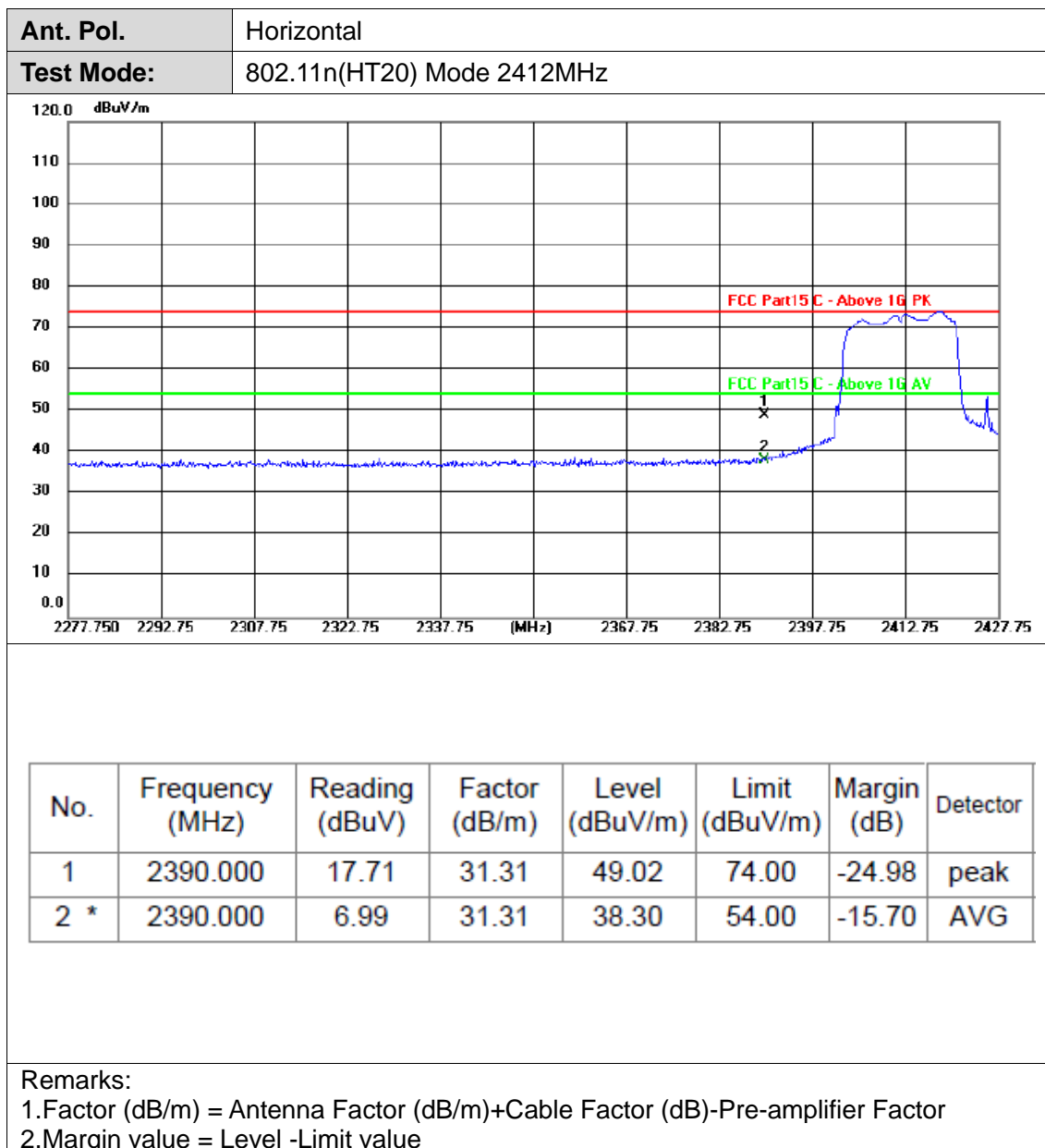


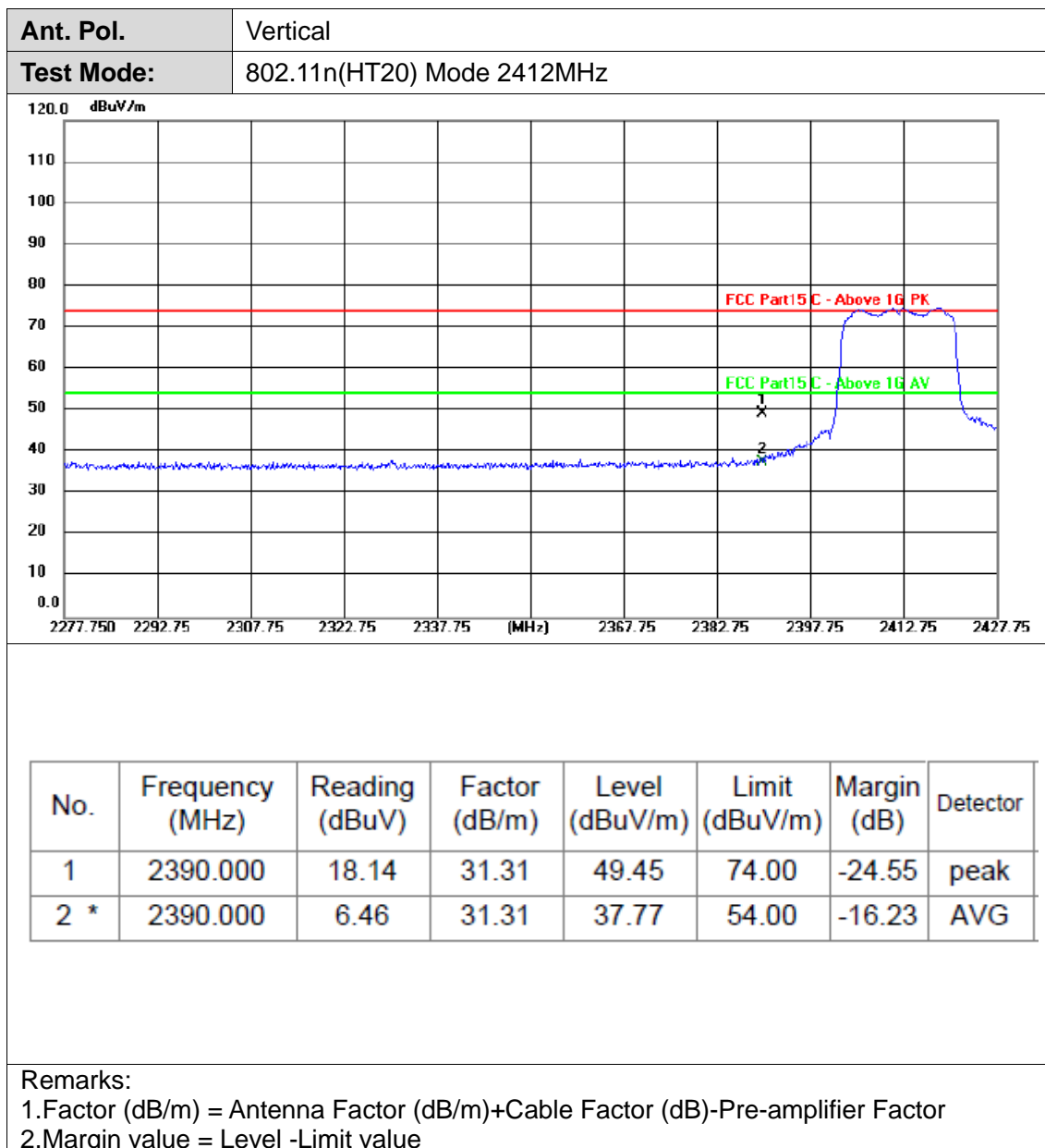


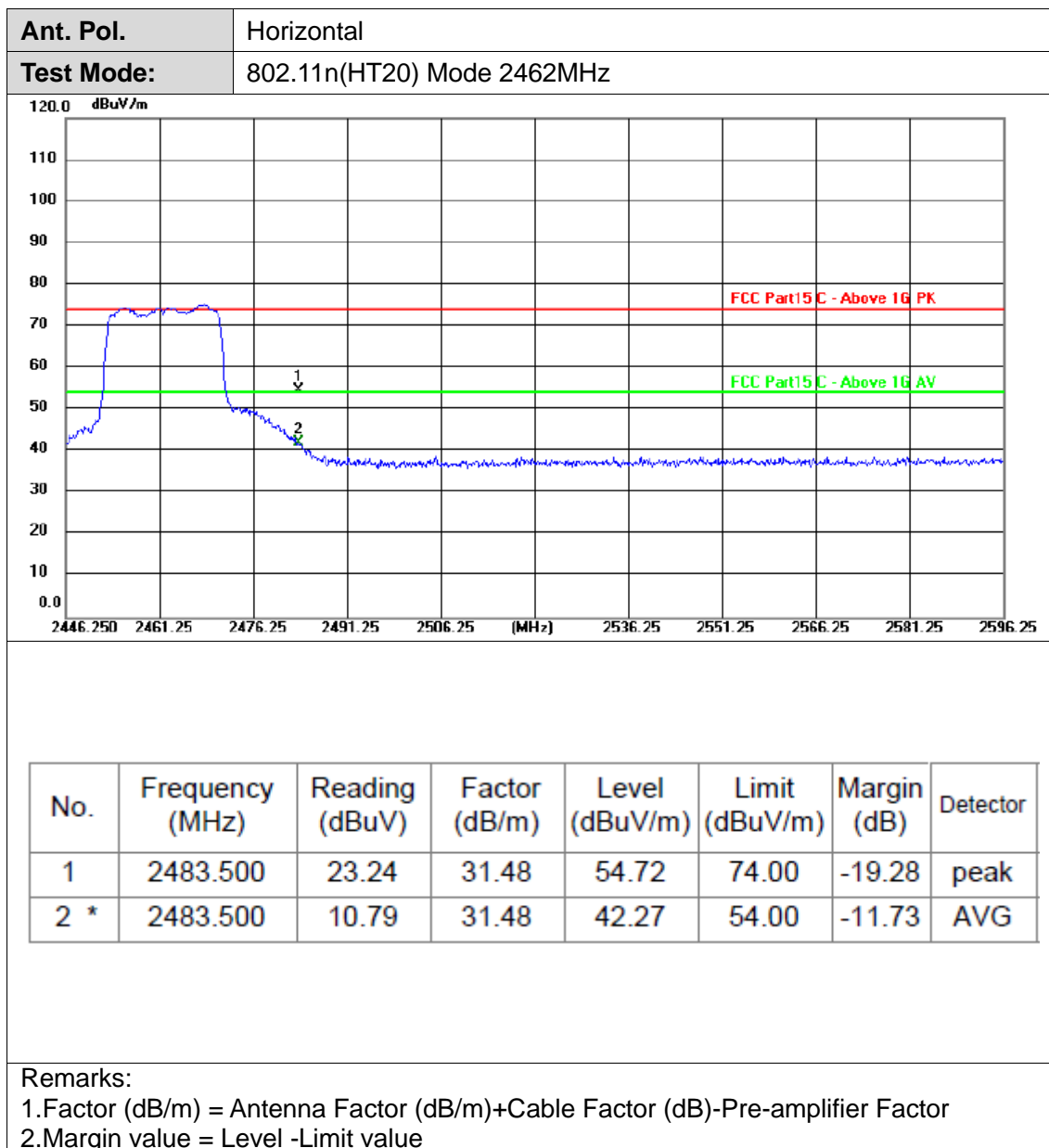


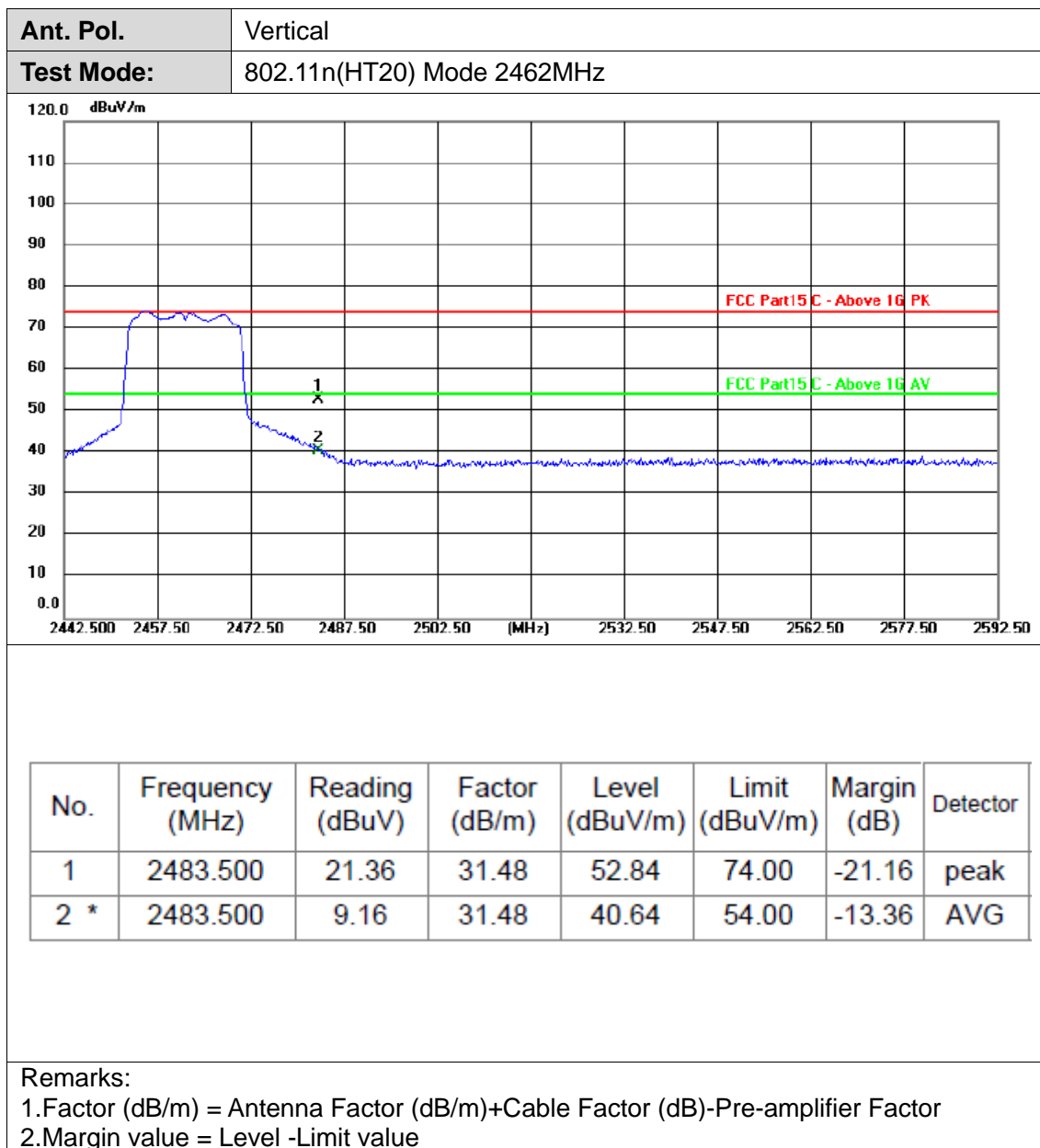












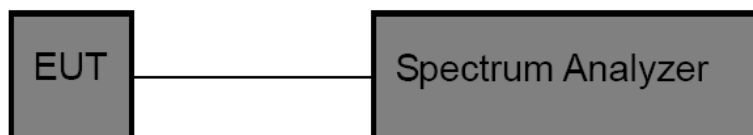


### 3.4. Band edge and Spurious Emissions (Conducted)

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 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.

#### Test Configuration



#### Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:  
RBW = 100 kHz, VBW  $\geq$  RBW, scan up through 10<sup>th</sup> harmonic.  
Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report.

#### Test Mode

Please refer to the clause 2.4.

#### Test Results



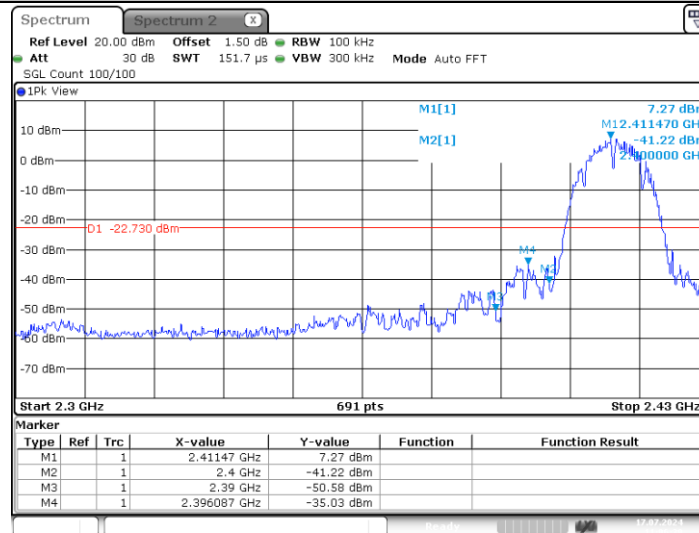
**(1) Band edge Conducted Test**

Test Mode	Test Frequency	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
802.11b	2412	7.27	-35.03	$\leq -22.73$	PASS
	2462	7.06	-47.69	$\leq -22.94$	PASS
802.11g	2412	1.26	-30.52	$\leq -28.74$	PASS
	2462	-0.23	-40.26	$\leq -30.23$	PASS
802.11n(HT20)	2412	0.35	-31.36	$\leq -29.65$	PASS
	2462	0.79	-36.96	$\leq -29.21$	PASS

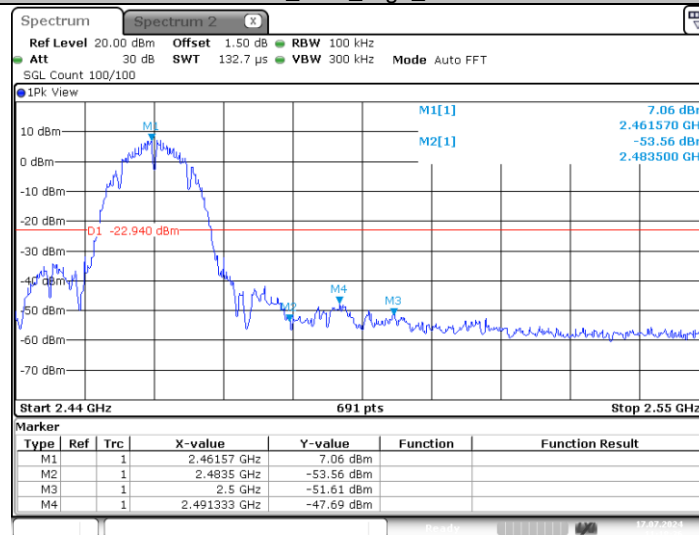


## Test Graphs

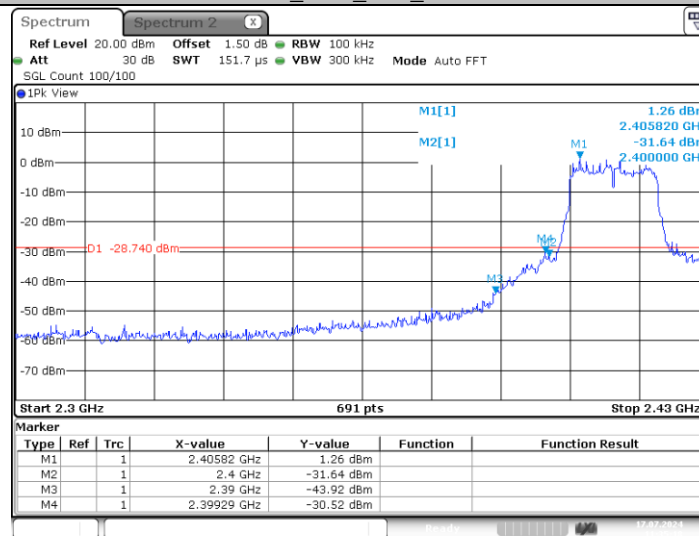
11B\_Ant1\_Low\_2412



11B\_Ant1\_High\_2462



11G\_Ant1\_Low\_2412



11G\_Ant1\_High\_2462

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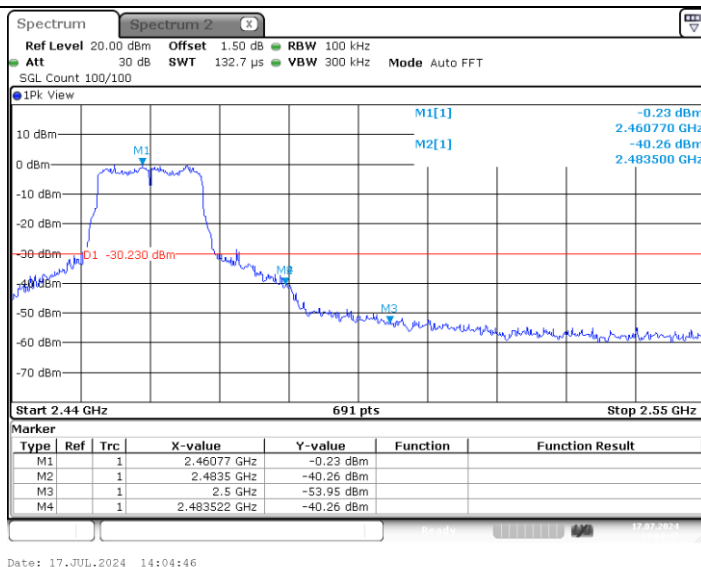
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

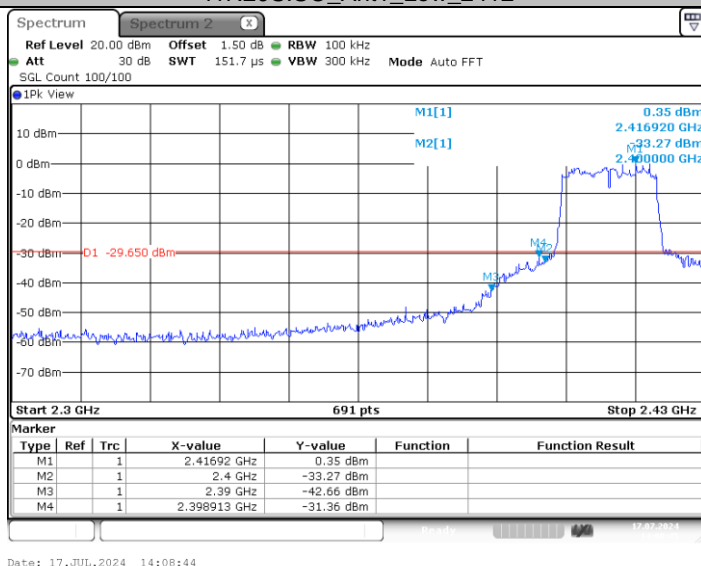
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

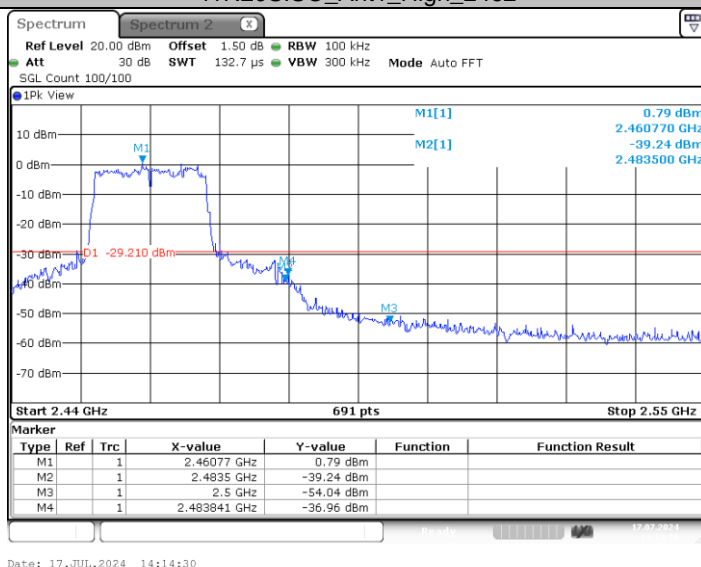
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## 11N20SISO\_Ant1\_Low\_2412



## 11N20SISO\_Ant1\_High\_2462



CTC Laboratories, Inc.

Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

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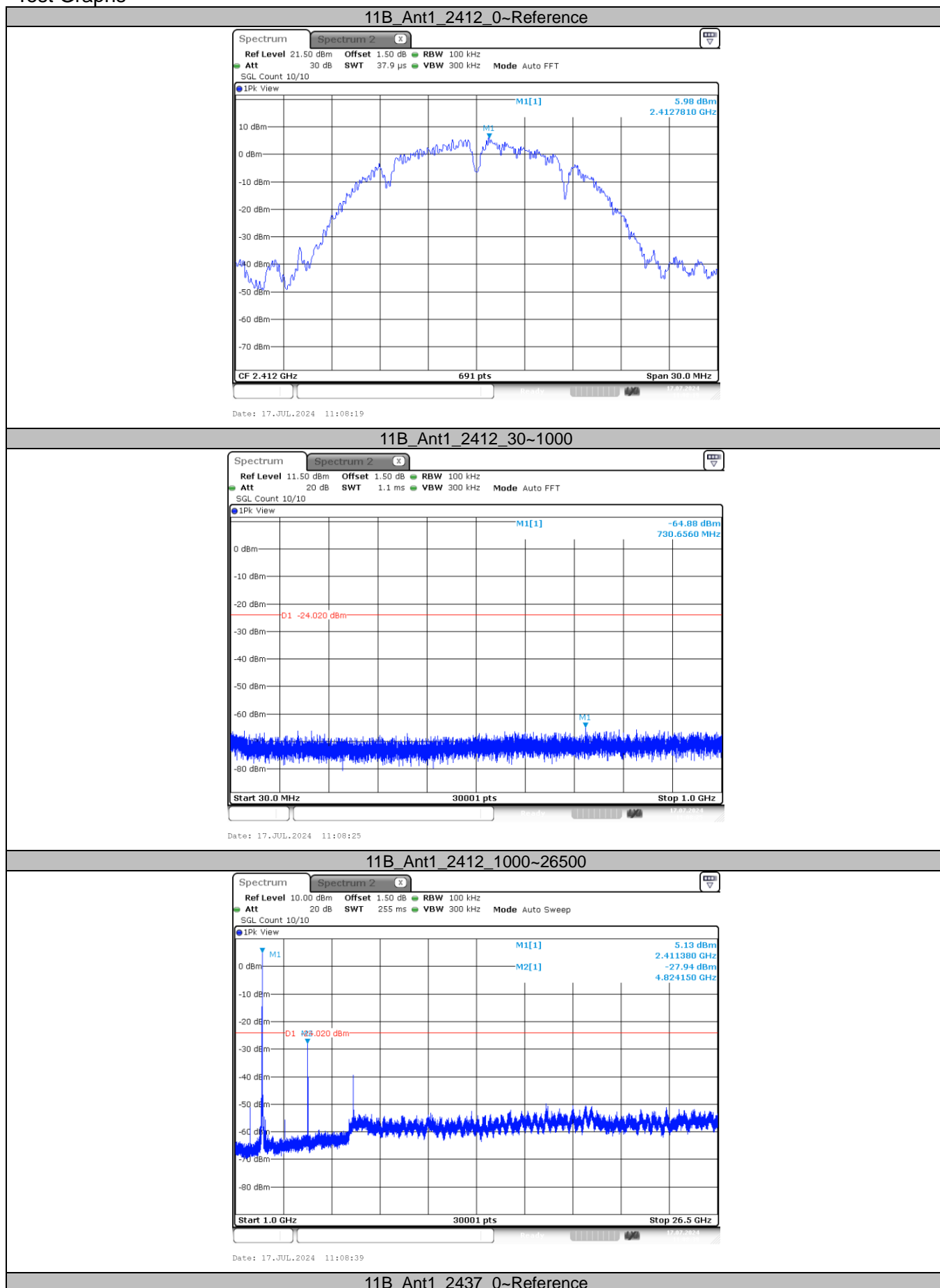


## (2) Conducted Spurious Emissions Test

Test Mode	Frequency [MHz]	Freq. Range [Mhz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
802.11b	2412	Reference	5.98	5.98	---	PASS
		30~1000	5.98	-64.88	$\leq -24.02$	PASS
		1000~26500	5.98	-27.94	$\leq -24.02$	PASS
	2437	Reference	4.91	4.91	---	PASS
		30~1000	4.91	-65.58	$\leq -25.09$	PASS
		1000~26500	4.91	-29.59	$\leq -25.09$	PASS
	2462	Reference	4.48	4.48	---	PASS
		30~1000	4.48	-61.15	$\leq -25.52$	PASS
		1000~26500	4.48	-29.88	$\leq -25.52$	PASS
802.11g	2412	Reference	0.78	0.78	---	PASS
		30~1000	0.78	-64.93	$\leq -29.22$	PASS
		1000~26500	0.78	-45.03	$\leq -29.22$	PASS
	2437	Reference	2.23	2.23	---	PASS
		30~1000	2.23	-64.13	$\leq -27.77$	PASS
		1000~26500	2.23	-45.63	$\leq -27.77$	PASS
	2462	Reference	-1.43	-1.43	---	PASS
		30~1000	-1.43	-63.77	$\leq -31.43$	PASS
		1000~26500	-1.43	-44.28	$\leq -31.43$	PASS
802.11n(HT20)	2412	Reference	-1.85	-1.85	---	PASS
		30~1000	-1.85	-65.17	$\leq -31.85$	PASS
		1000~26500	-1.85	-44.56	$\leq -31.85$	PASS
	2437	Reference	-0.88	-0.88	---	PASS
		30~1000	-0.88	-65.08	$\leq -30.88$	PASS
		1000~26500	-0.88	-45.06	$\leq -30.88$	PASS
	2462	Reference	-1.39	-1.39	---	PASS
		30~1000	-1.39	-64.90	$\leq -31.39$	PASS
		1000~26500	-1.39	-44.01	$\leq -31.39$	PASS



## Test Graphs

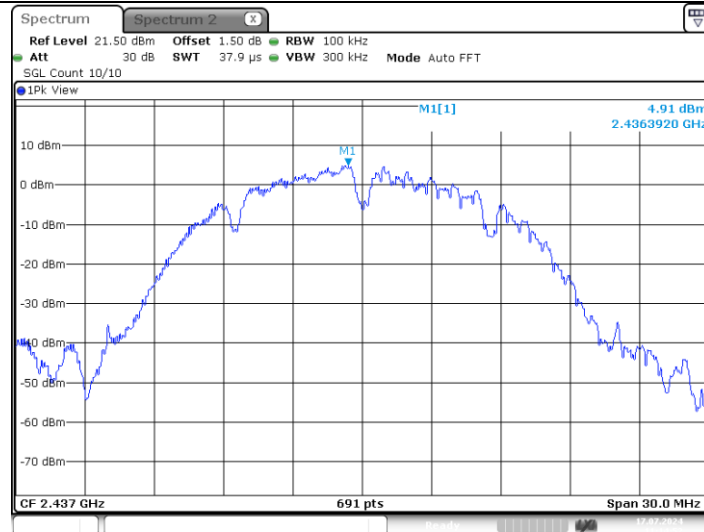


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Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

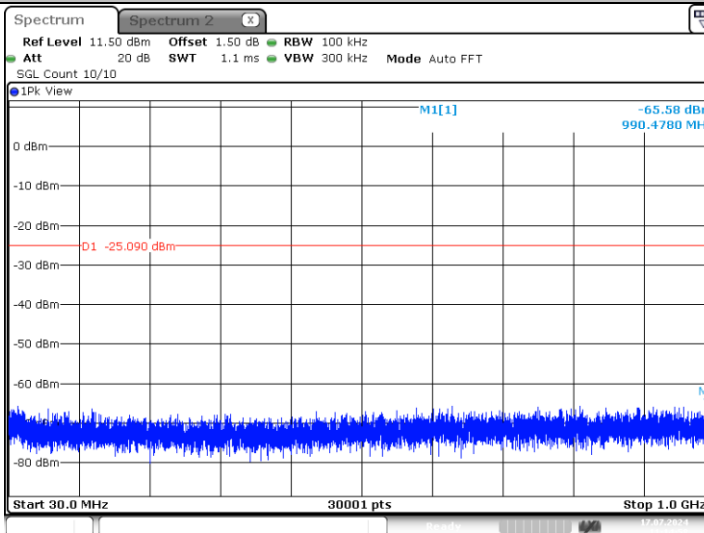


For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : [yz.cnca.cn](http://yz.cnca.cn)



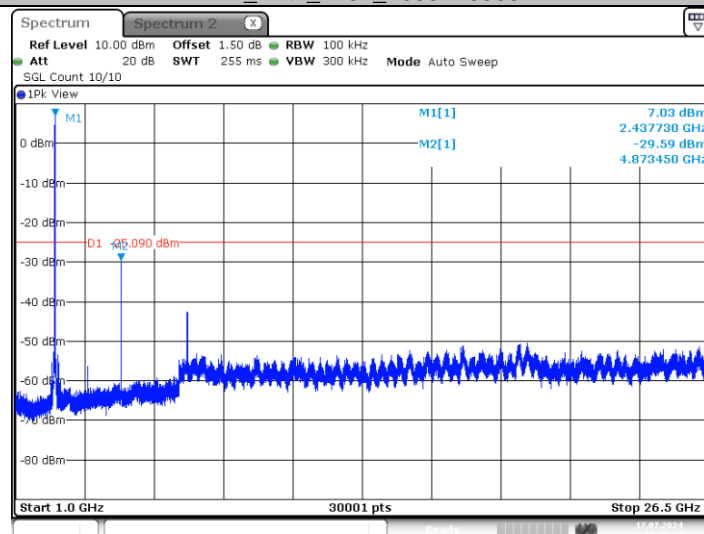
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## 11B\_Ant1\_2437\_30~1000



Date: 17.JUL.2024 11:14:58

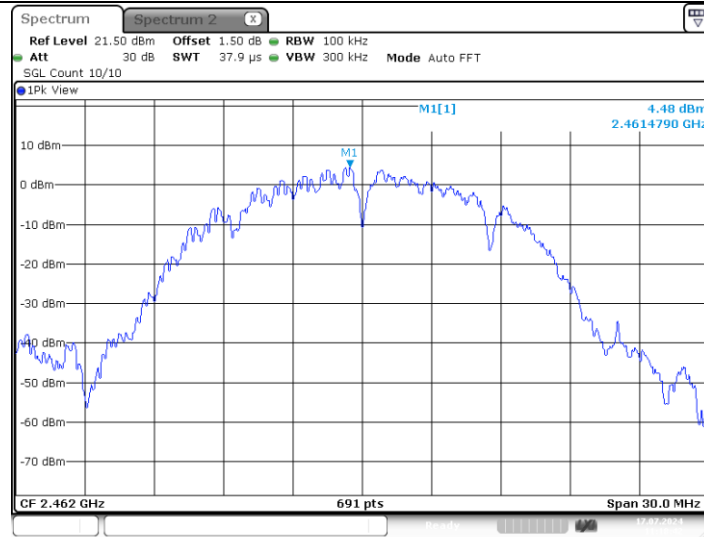
## 11B\_Ant1\_2437\_1000~26500



Date: 17.JUL.2024 11:15:11

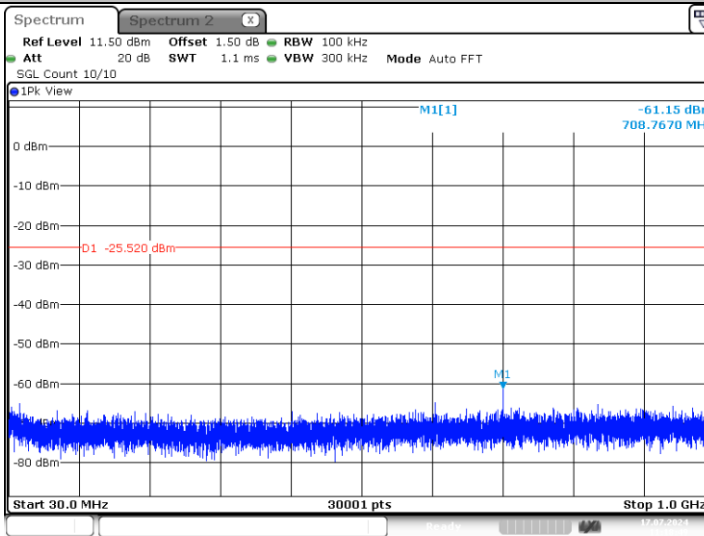
## 11B\_Ant1\_2462\_0~Reference





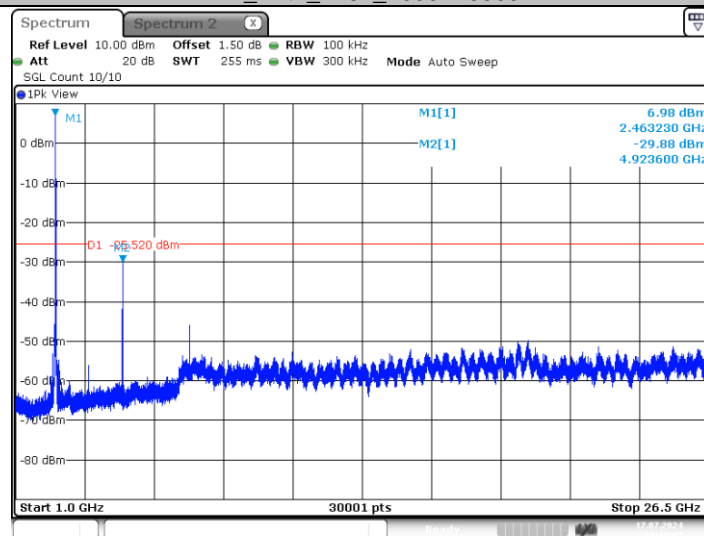
Date: 17.JUL.2024 11:18:42

## 11B\_Ant1\_2462\_30~1000



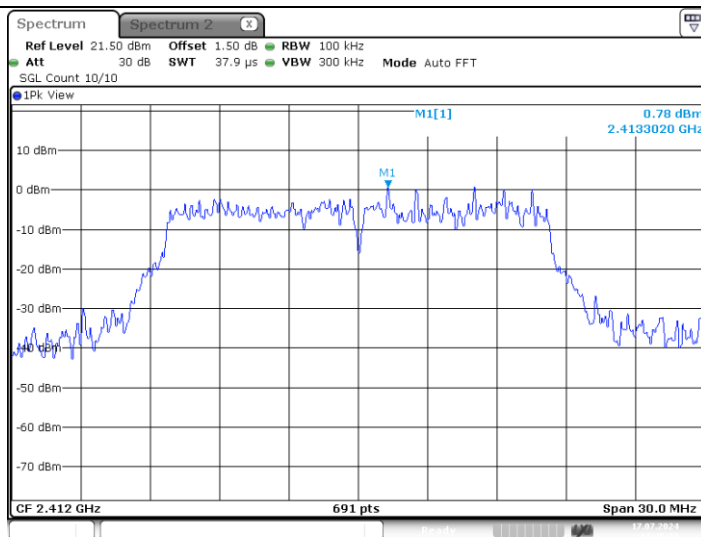
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## 11B\_Ant1\_2462\_1000~26500



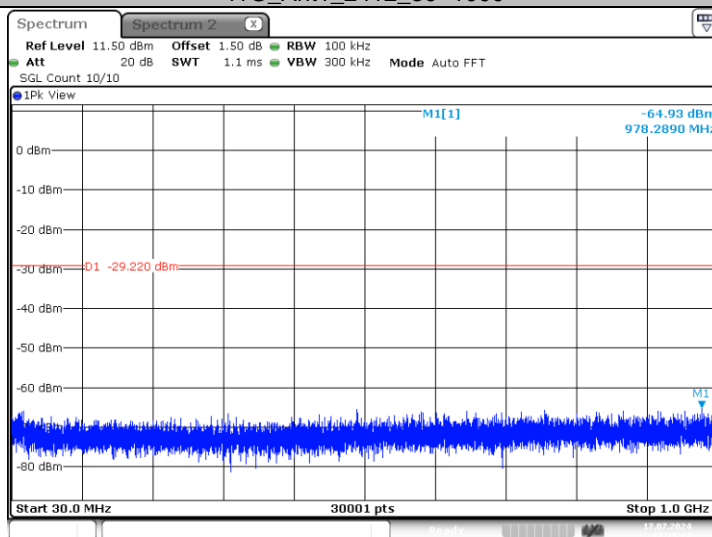
Date: 17.JUL.2024 11:19:02

## 11G\_Ant1\_2412\_0~Reference



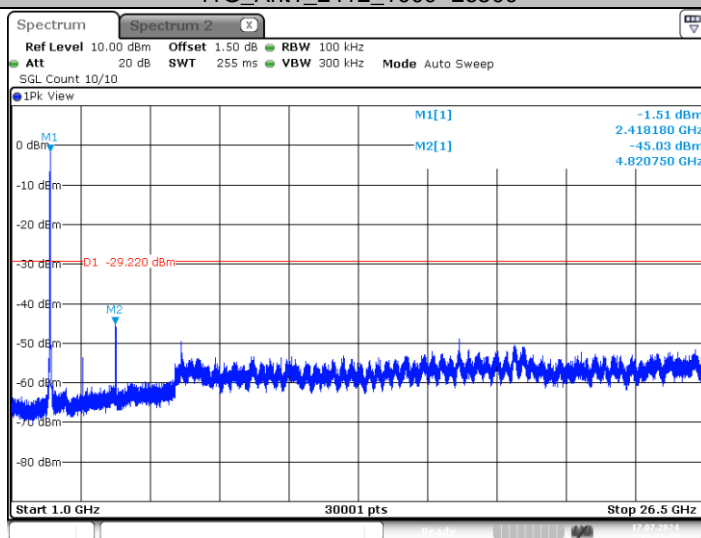
Date: 17.JUL.2024 11:35:23

## 11G\_Ant1\_2412\_30~1000



Date: 17.JUL.2024 11:35:29

## 11G\_Ant1\_2412\_1000~26500

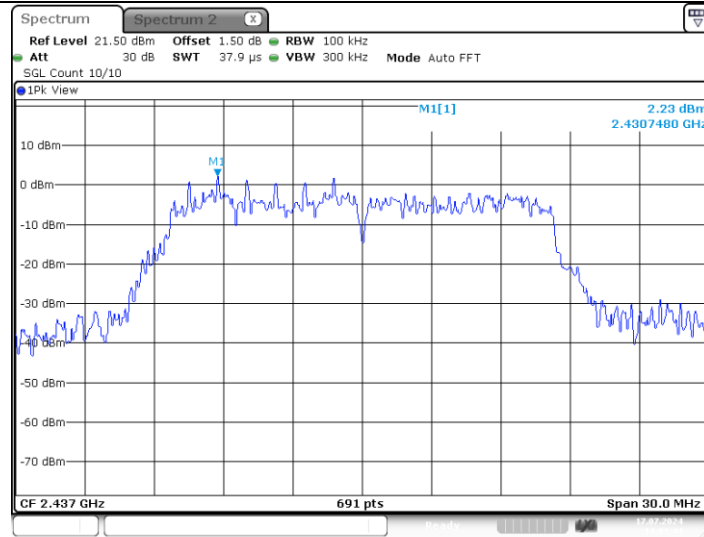


Date: 17.JUL.2024 11:35:43

## 11G\_Ant1\_2437\_0~Reference

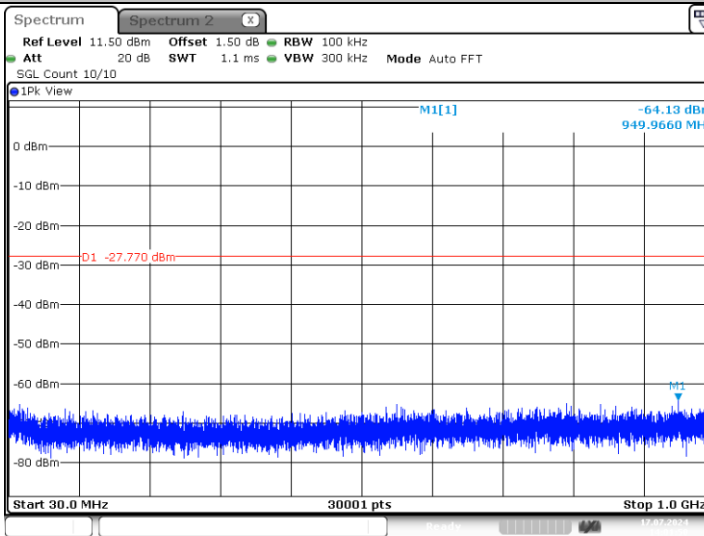






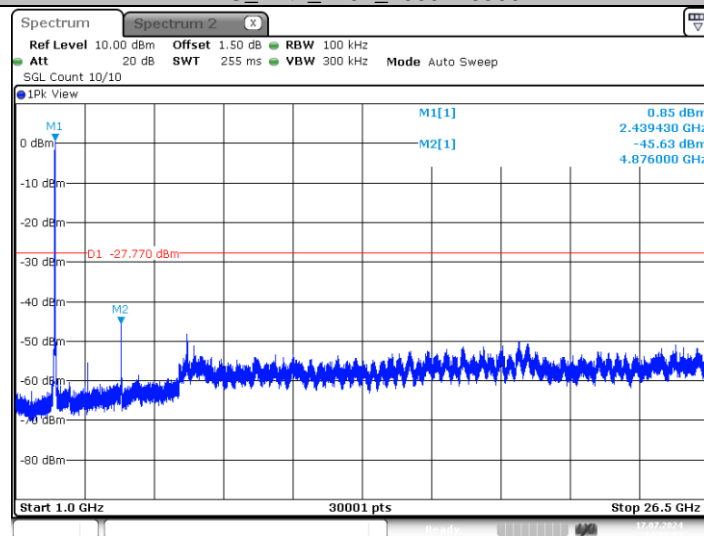
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## 11G\_Ant1\_2437\_30~1000



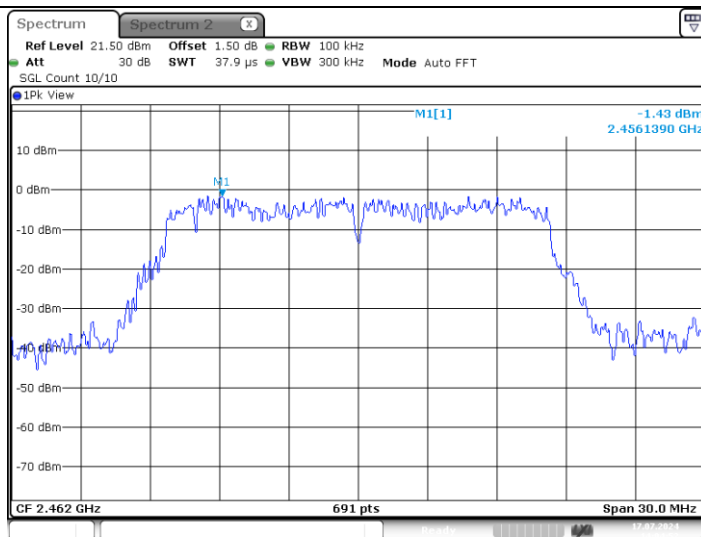
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## 11G\_Ant1\_2437\_1000~26500



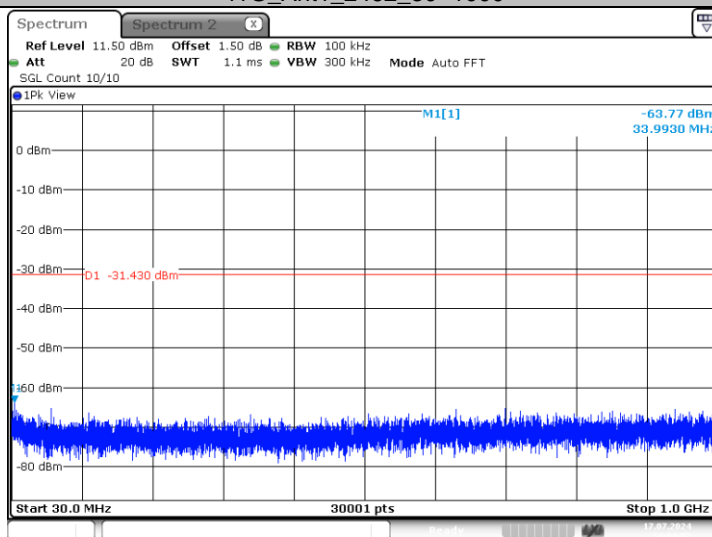
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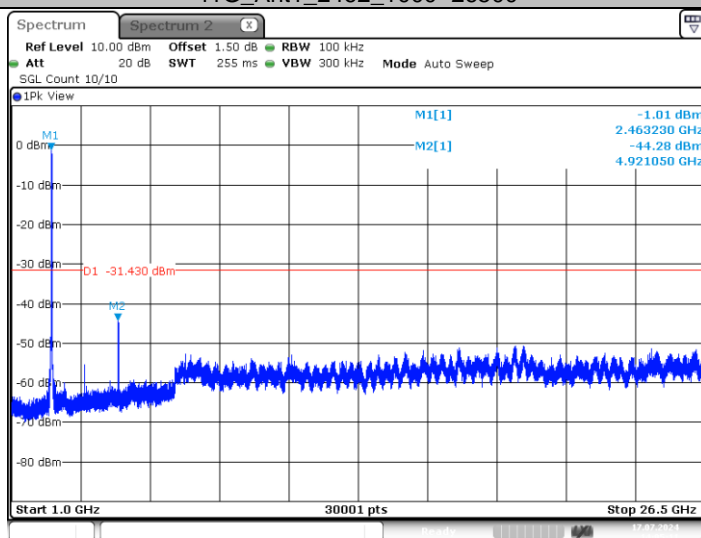
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## 11G\_Ant1\_2462\_30~1000



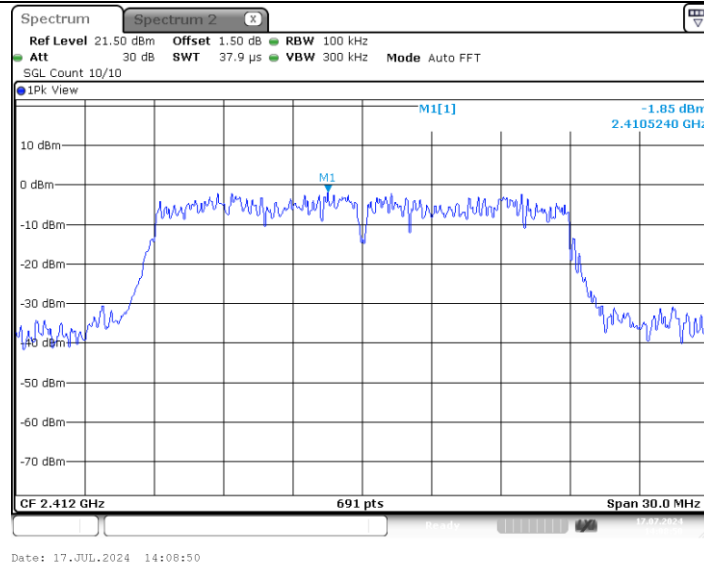
Date: 17.JUL.2024 14:04:57

## 11G\_Ant1\_2462\_1000~26500

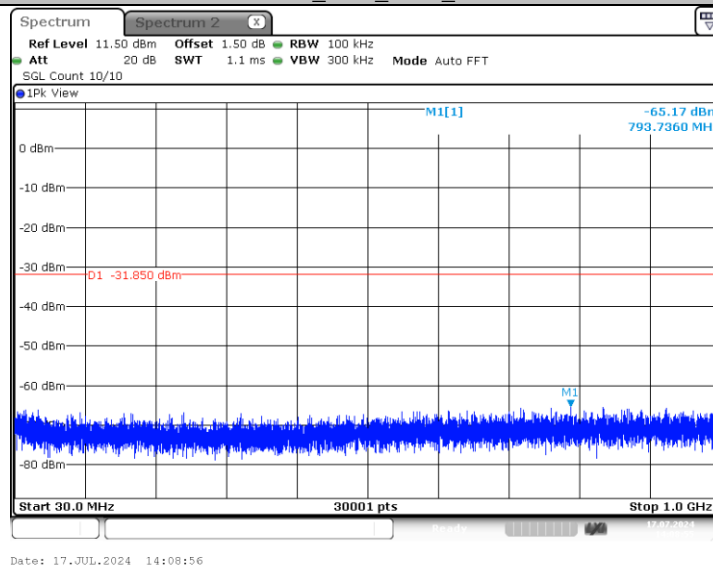


Date: 17.JUL.2024 14:05:11

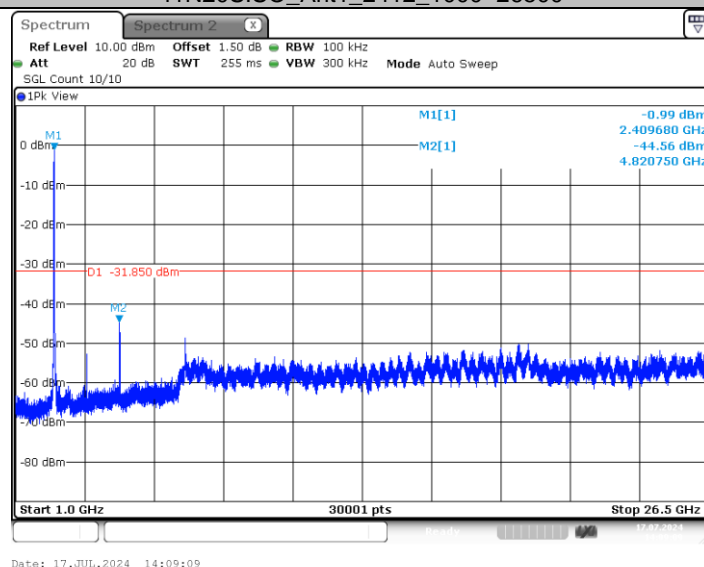
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## 11N20SISO\_Ant1\_2412\_30~1000



## 11N20SISO\_Ant1\_2412\_1000~26500



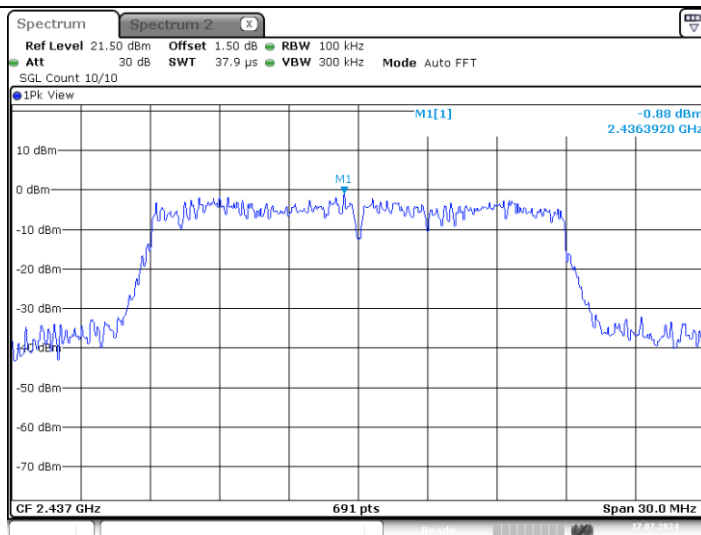
## 11N20SISO\_Ant1\_2437\_0~Reference

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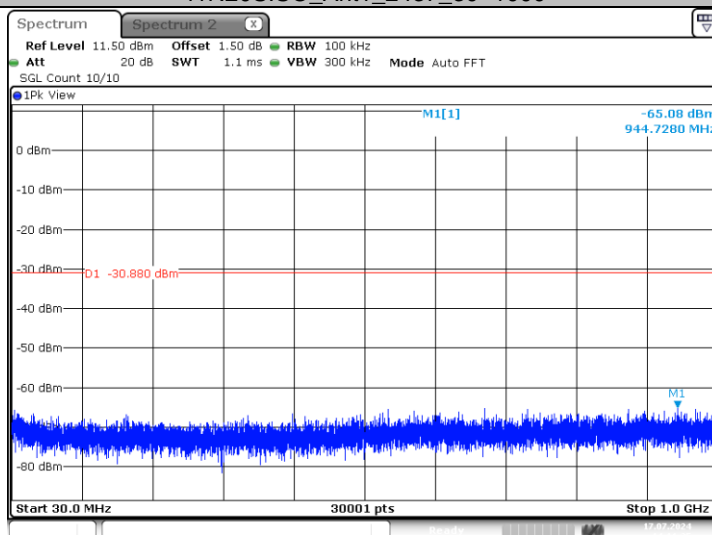


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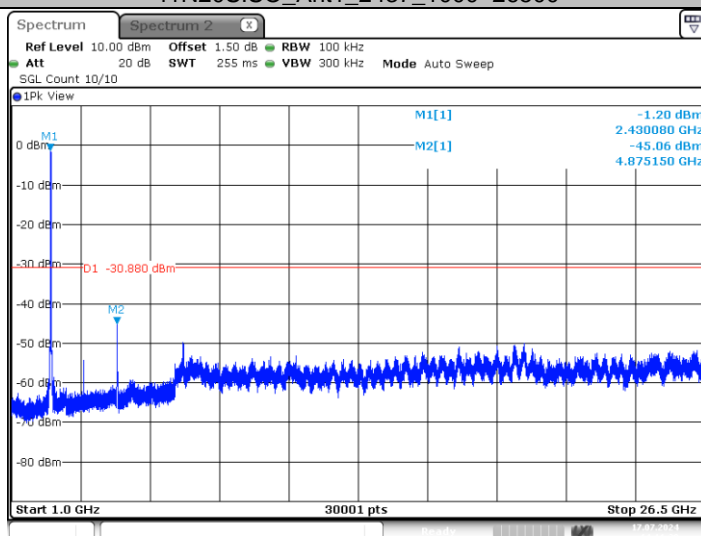
Date: 17.JUL.2024 14:11:20

## 11N20SISO\_Ant1\_2437\_30~1000



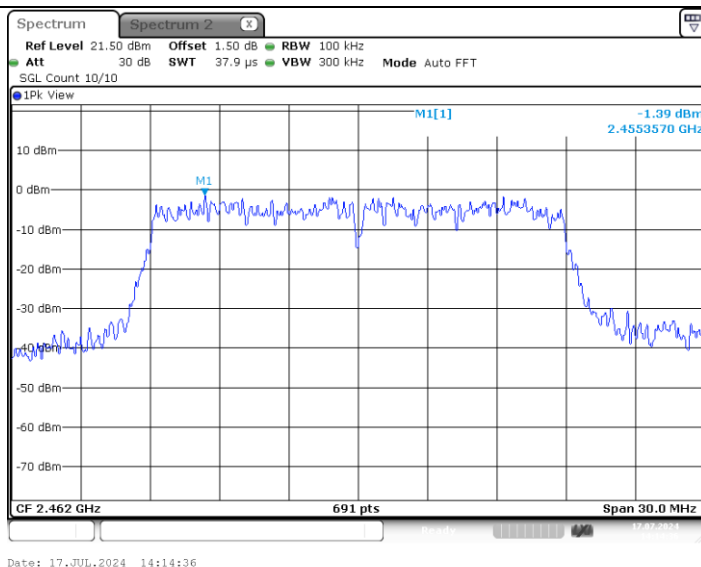
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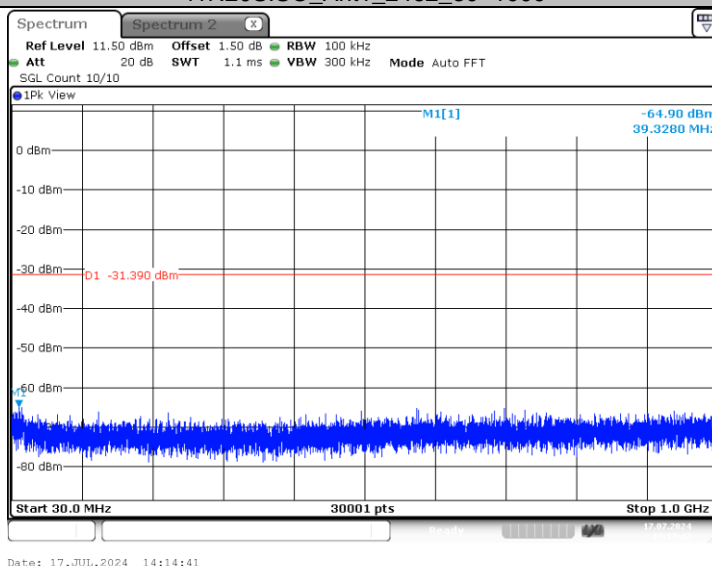


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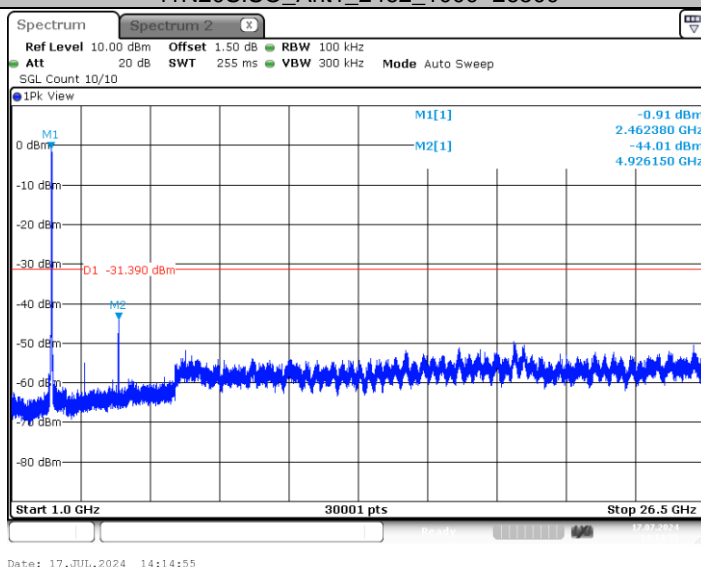
## 11N20SISO\_Ant1\_2462\_0~Reference



## 11N20SISO\_Ant1\_2462\_30~1000



## 11N20SISO\_Ant1\_2462\_1000~26500



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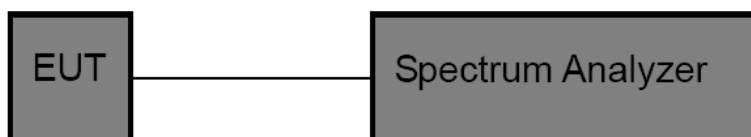
### 3.5. DTS Bandwidth

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)/ RSS-247 5.2 a:

Test Item	Limit	Frequency Range(MHz)
DTS Bandwidth	$\geq 500$ KHz (6dB bandwidth)	2400~2483.5

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

2. DTS Spectrum Setting:

- (1) Set RBW = 100 kHz.
- (2) Set the video bandwidth (VBW)  $\geq 3$  RBW.
- (3) Detector = Peak.
- (4) Trace mode = Max hold.
- (5) Sweep = Auto couple.

OCB Spectrum Setting:

- (1) Set RBW = 1% ~ 5% occupied bandwidth.
- (2) Set the video bandwidth (VBW)  $\geq 3$  RBW.
- (3) Detector = Peak.
- (4) Trace mode = Max hold.
- (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

#### Test Mode

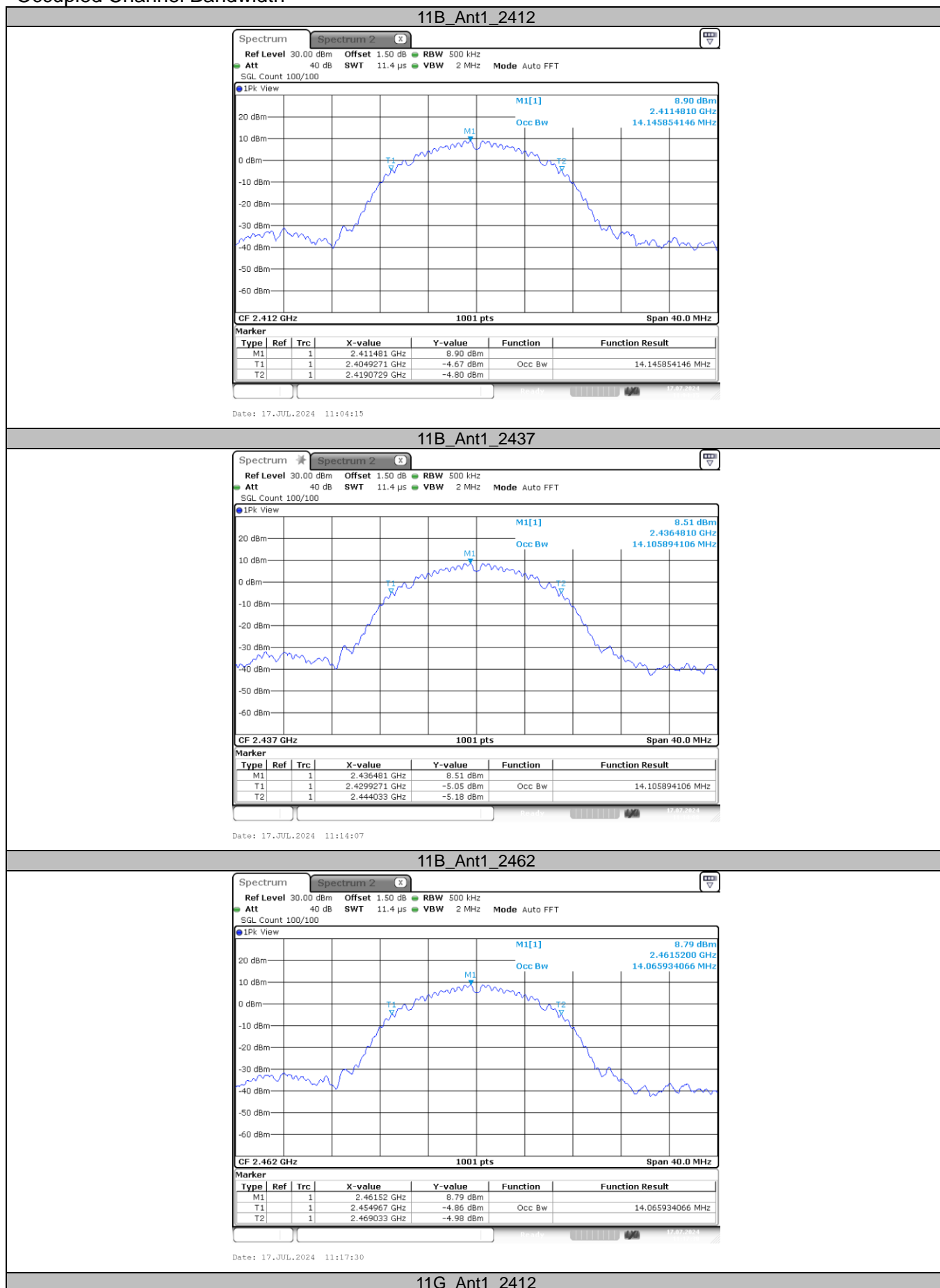
Please refer to the clause 2.4.

**Test Results**

Test Mode	Frequency [MHz]	OCB [MHz]	DTS BW [MHz]	Limit [MHz]	Verdict
802.11b	2412	14.146	9.04	$\geq 0.5$	PASS
	2437	14.106	9.08	$\geq 0.5$	PASS
	2462	14.066	9.08	$\geq 0.5$	PASS
802.11g	2412	17.223	16.44	$\geq 0.5$	PASS
	2437	16.823	16.36	$\geq 0.5$	PASS
	2462	16.983	16.32	$\geq 0.5$	PASS
802.11n(HT20)	2412	18.462	17.28	$\geq 0.5$	PASS
	2437	17.902	17.56	$\geq 0.5$	PASS
	2462	17.942	17.52	$\geq 0.5$	PASS



## Occupied Channel Bandwidth



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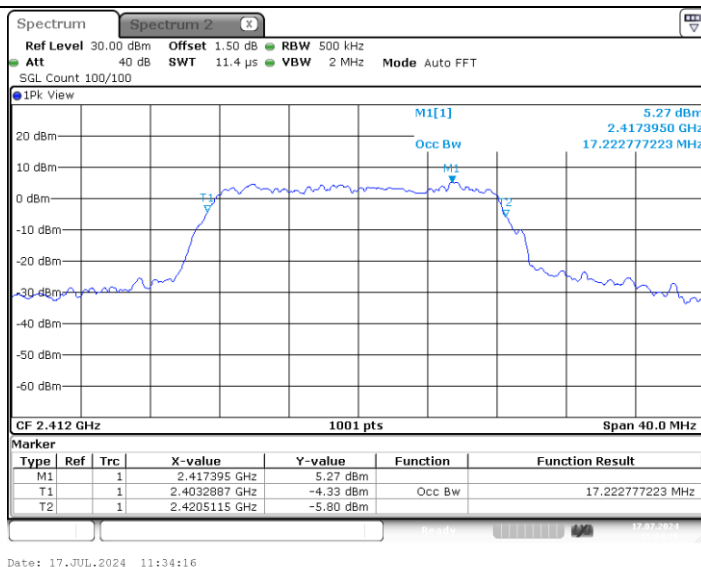
Tel.: (86)755-27521059

Fax: (86)755-27521011

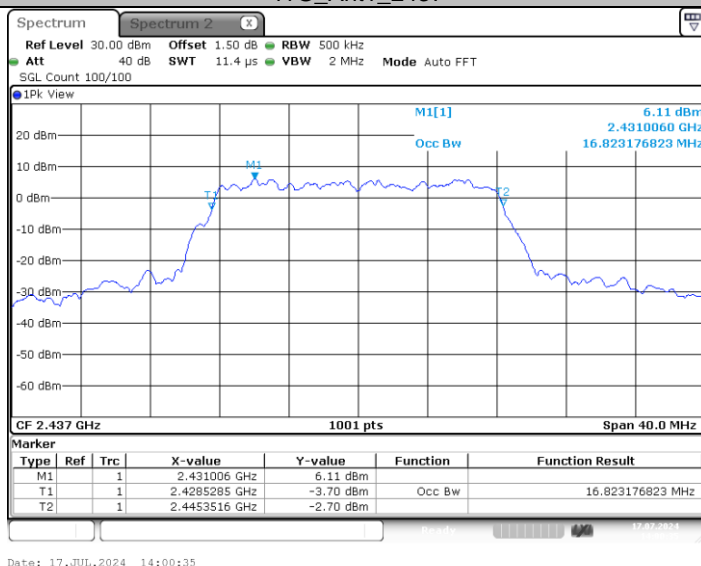
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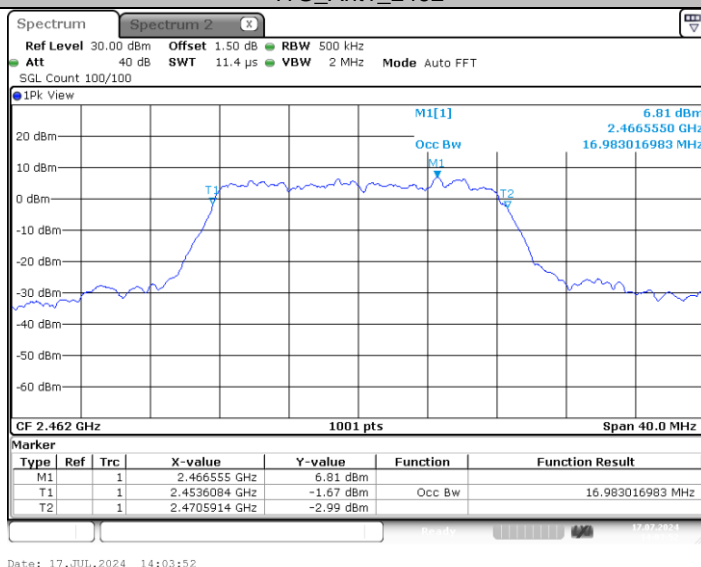




## 11G\_Ant1\_2437



## 11G\_Ant1\_2462



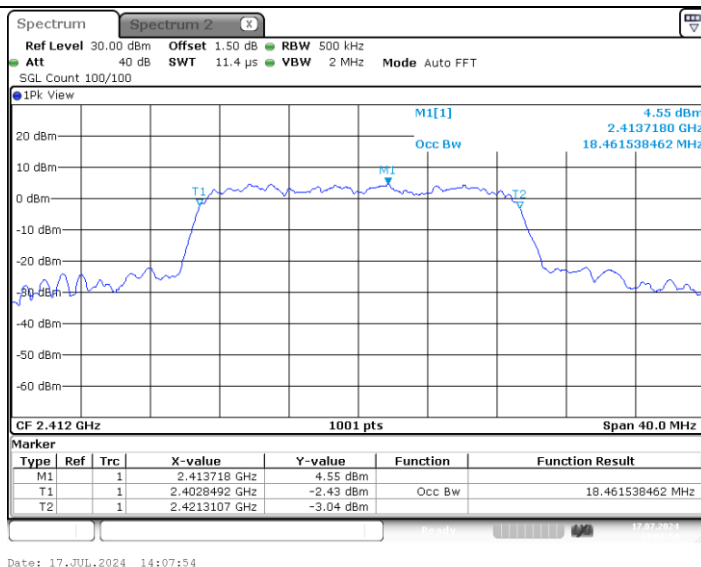
## 11N20SISO\_Ant1\_2412

CTC Laboratories, Inc.

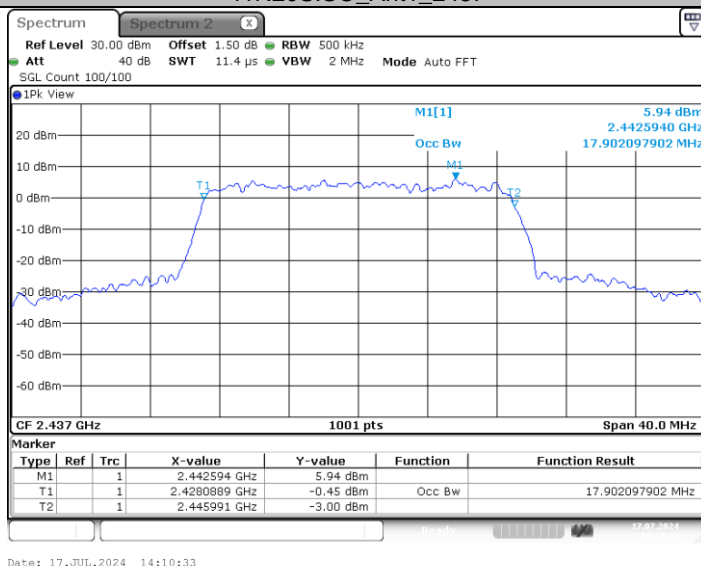
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China  
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn



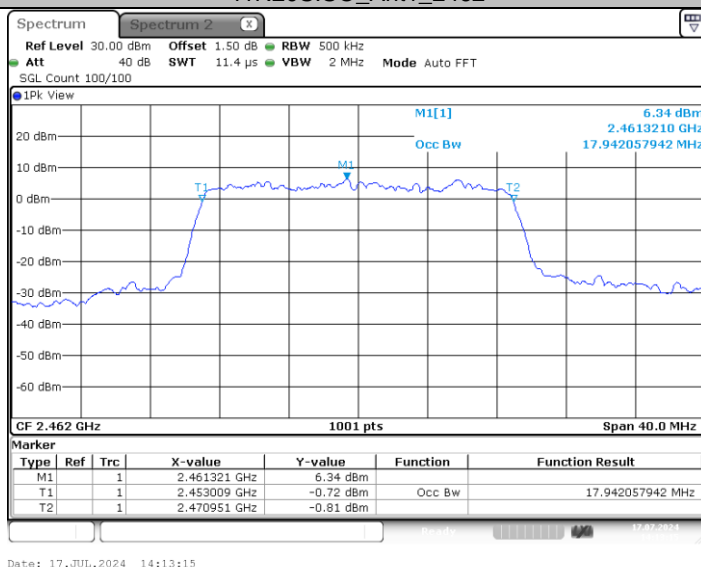
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## 11N20SISO\_Ant1\_2437



## 11N20SISO\_Ant1\_2462



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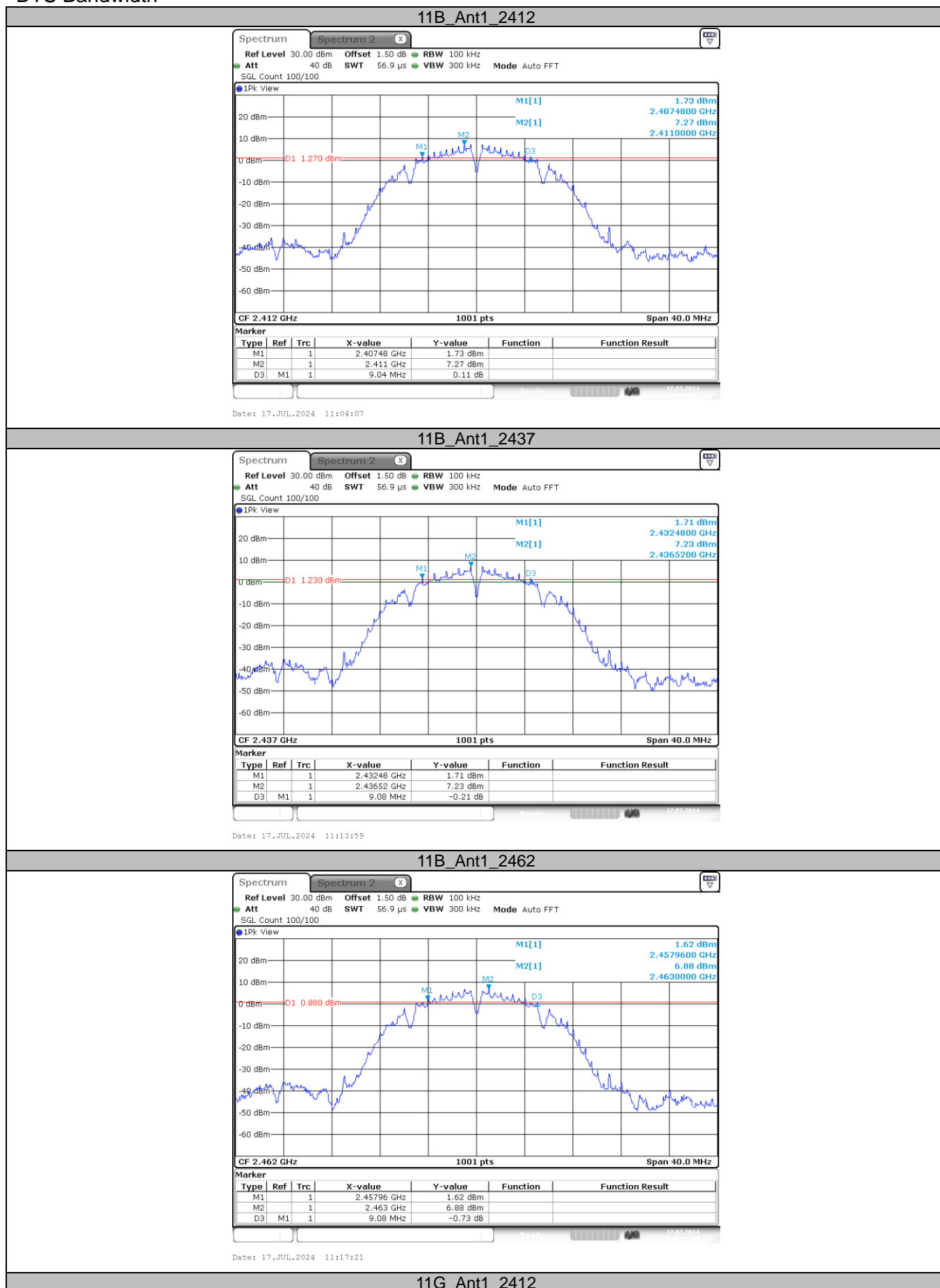
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China  
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn



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## DTS Bandwidth



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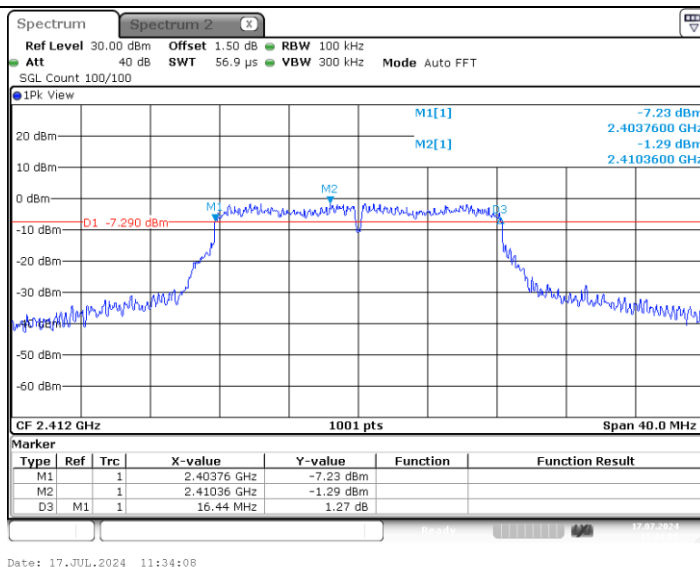
Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

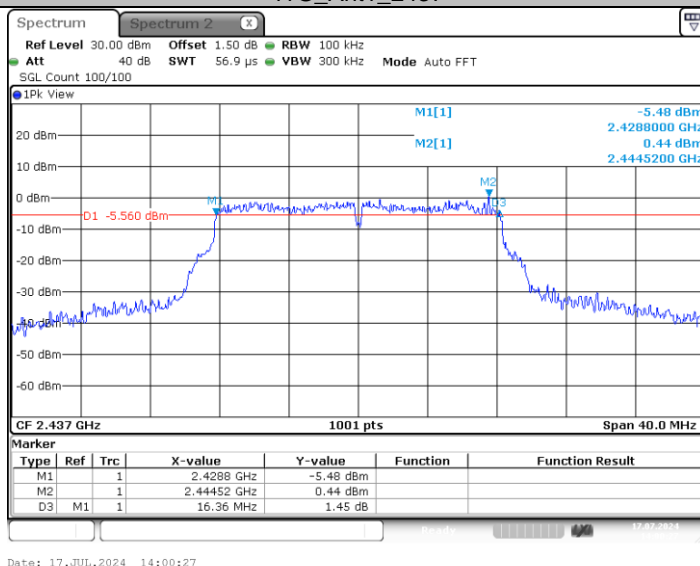
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

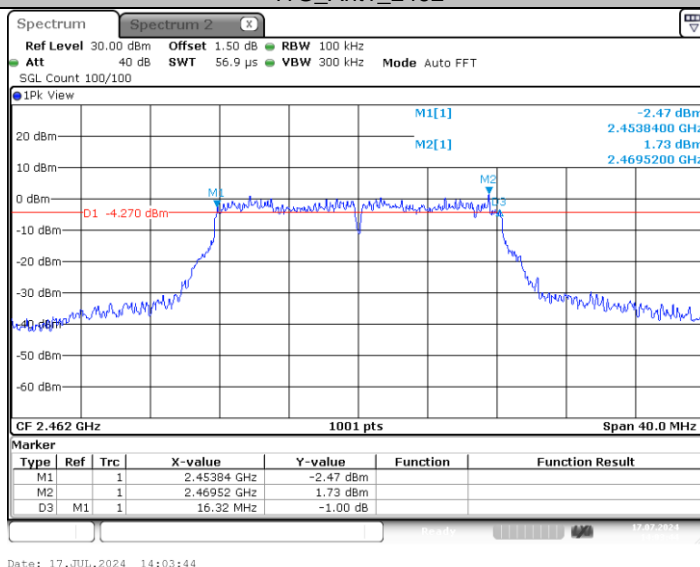
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : [yz.cnca.cn](http://yz.cnca.cn)



## 11G\_Ant1\_2437

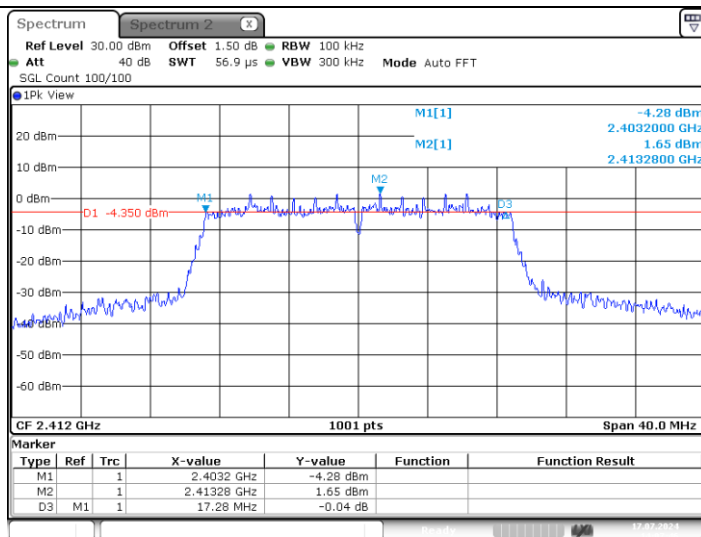


## 11G\_Ant1\_2462



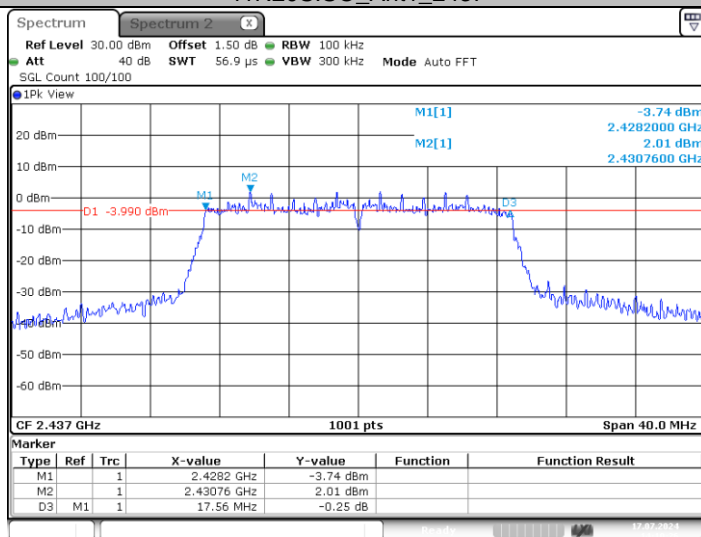
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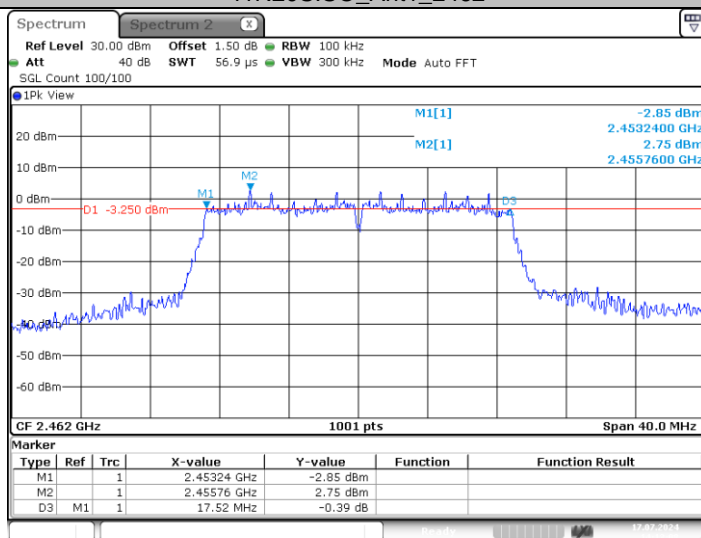
Date: 17.JUL.2024 14:07:46

## 11N20SISO\_Ant1\_2437



Date: 17.JUL.2024 14:10:25

## 11N20SISO\_Ant1\_2462



Date: 17.JUL.2024 14:13:07

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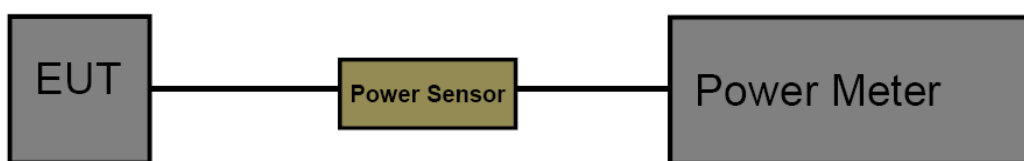
### 3.6. Maximum Conducted Output Power

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3)/ RSS-247 5.4:

Section	Test Item	Limit	Frequency Range(MHz)
CFR 47 FCC 15.247(b)(3)	Maximum conducted output power	1 Watt or 30dBm	2400~2483.5
ISED RSS-247 5.4 d	EIRP	4 Watt or 36dBm	2400~2483.5

#### Test Configuration



#### Test Procedure

1. The maximum conducted output power may be measured using a broadband RF power meter.
2. Power measurements were performed only when the EUT was transmitting at its AVG power control level using a broadband power meter with a pulse sensor.
3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
4. Record the measurement data.

#### Test Mode

Please refer to the clause 2.4.

#### Test Result



Test Mode	Frequency [MHz]	Result AVG [dBm]	Limit [dBm]	Verdict
802.11b	2412	<b>16.45</b>	≤30	PASS
	2437	16.02	≤30	PASS
	2462	16.25	≤30	PASS
802.11g	2412	12.04	≤30	PASS
	2437	12.94	≤30	PASS
	2462	13.15	≤30	PASS
802.11n(HT20)	2412	12.42	≤30	PASS
	2437	12.90	≤30	PASS
	2462	13.07	≤30	PASS

Note: Test results increased RF cable loss by 1.5dB and Duty Cycle Factor.



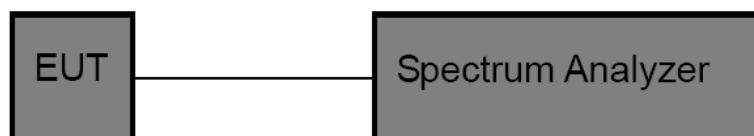
### 3.7. Power Spectral Density

#### Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e)/ RSS-247 5.2 b:

Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
3. Spectrum Setting:  
Set analyzer center frequency to DTS channel center frequency.  
Set the span to 1.5 times the DTS bandwidth.  
Set the RBW to: 3 kHz  
Set the VBW to: 10 kHz  
Detector: PK  
Sweep time: Auto  
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

#### Test Mode

Please refer to the clause 2.4.



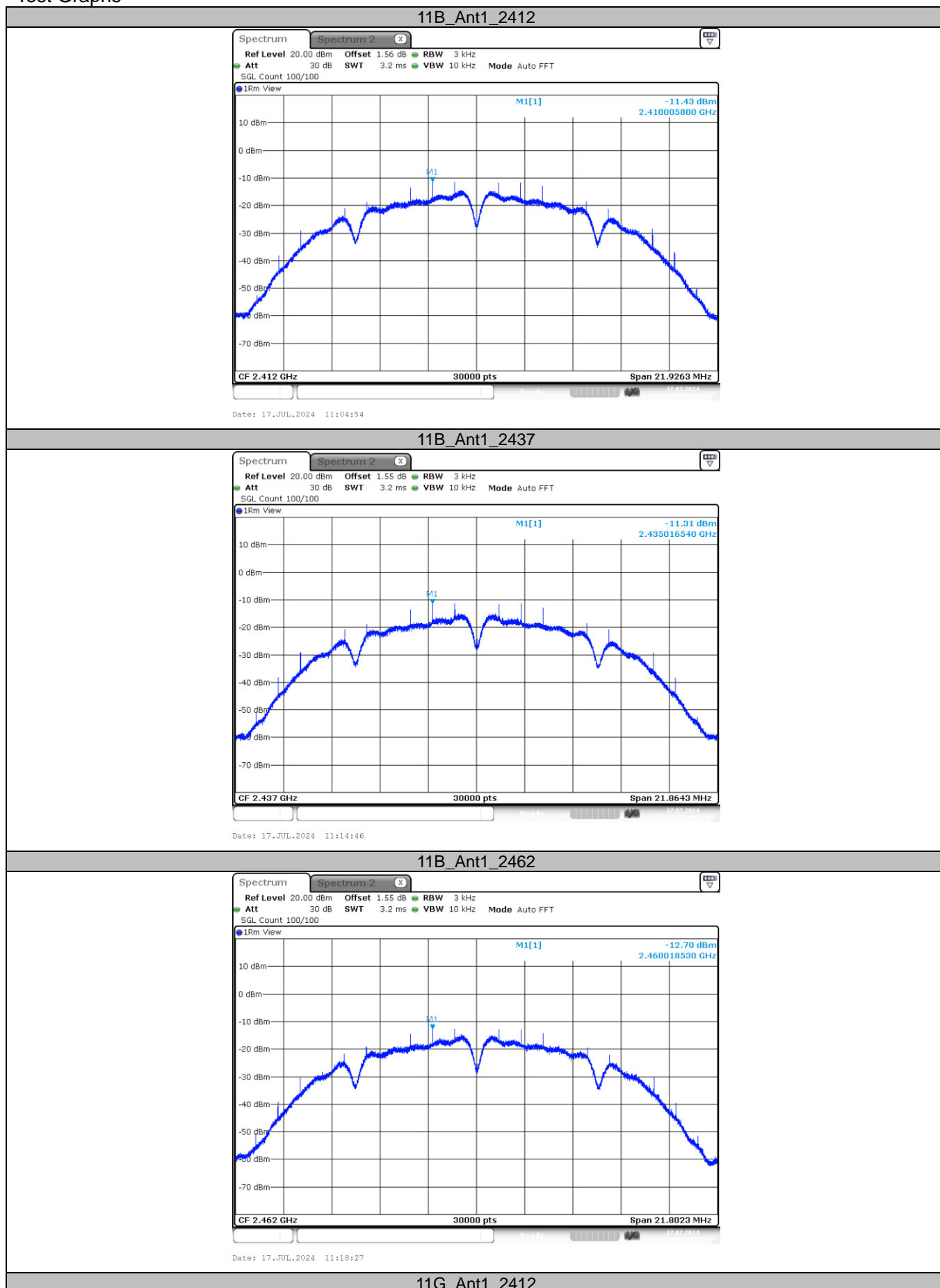
**Test Result**

Test Mode	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
802.11b	2412	-11.43	≤8	PASS
	2437	-11.31	≤8	PASS
	2462	-12.70	≤8	PASS
802.11g	2412	-20.85	≤8	PASS
	2437	-20.26	≤8	PASS
	2462	-19.94	≤8	PASS
802.11n(HT20)	2412	-20.23	≤8	PASS
	2437	-20.07	≤8	PASS
	2462	-19.88	≤8	PASS

*Note: Test results increased Duty Cycle Factor.*



## Test Graphs



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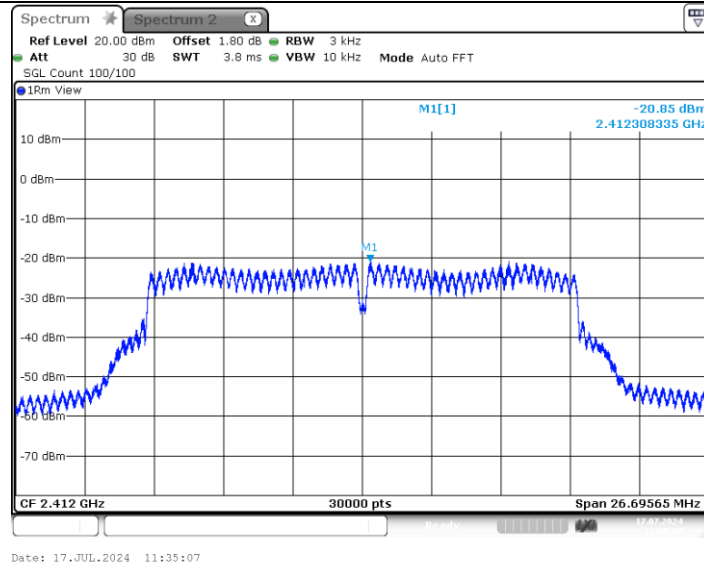
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

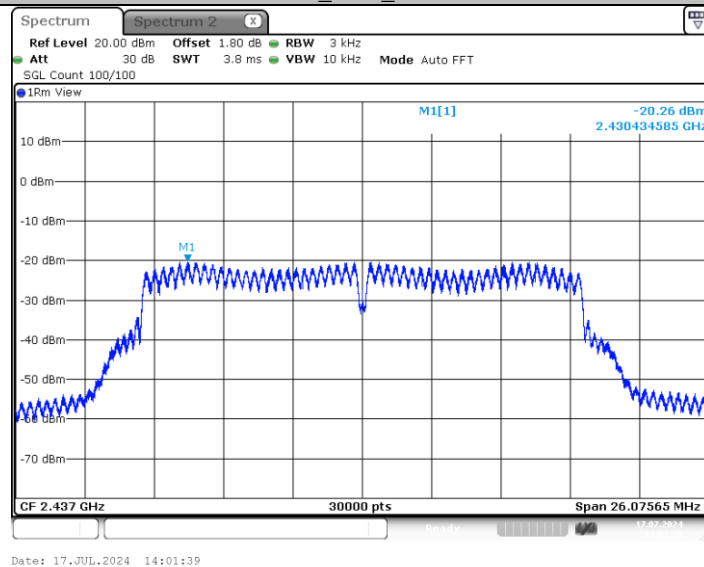
Fax: (86)755-27521011

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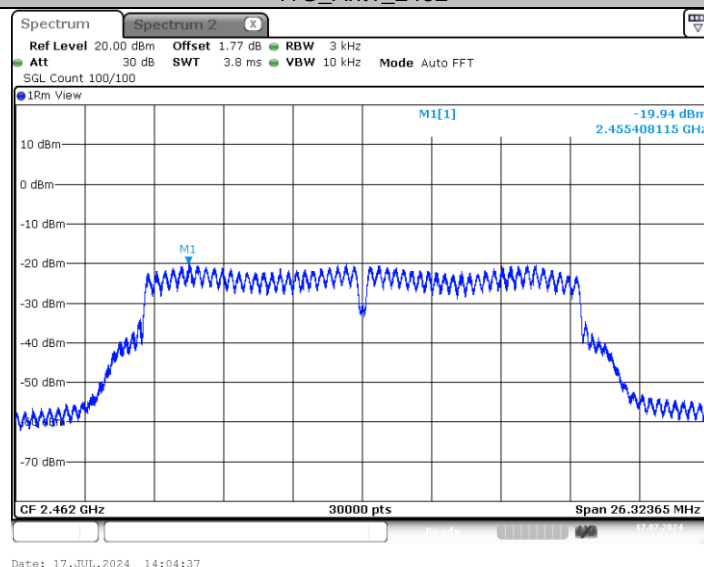
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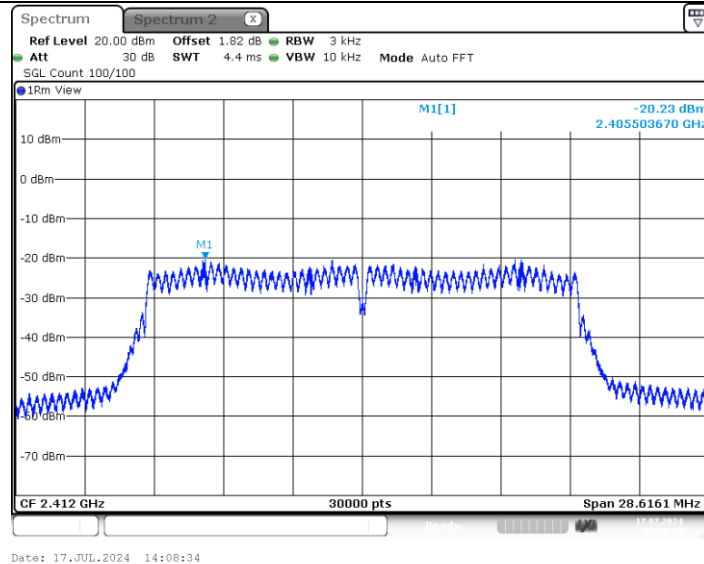
11G\_Ant1\_2437



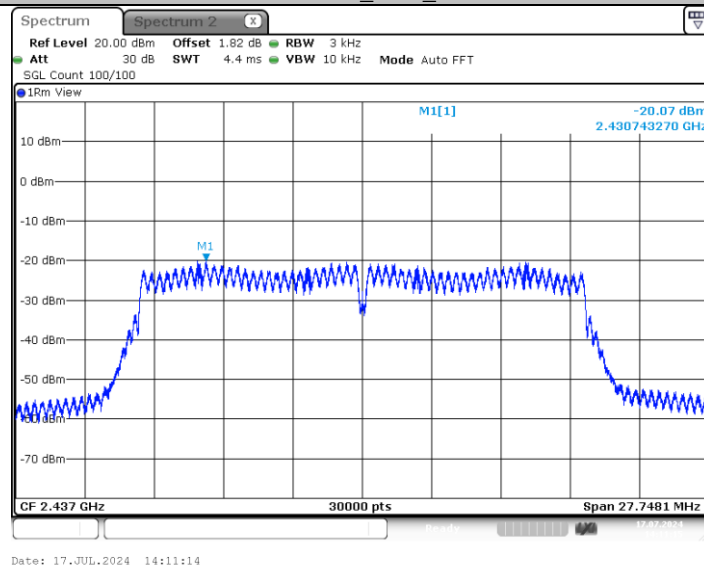
11G\_Ant1\_2462



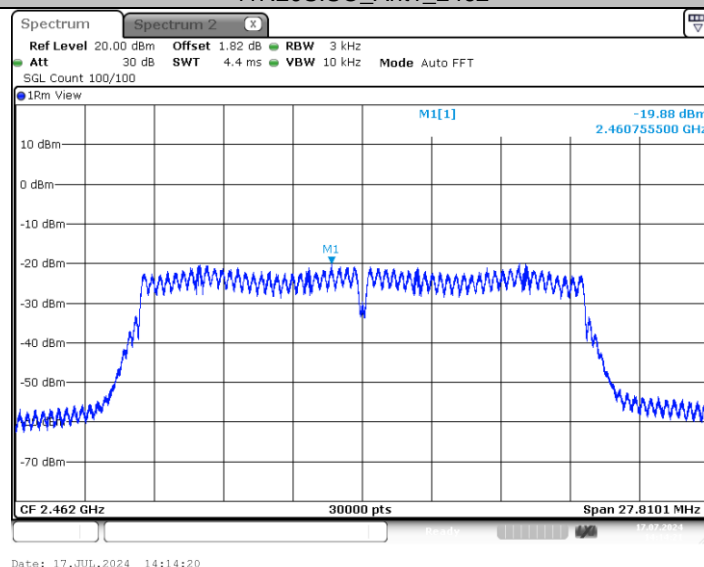
11N20SISO\_Ant1\_2412



11N20SISO\_Ant1\_2437



11N20SISO\_Ant1\_2462



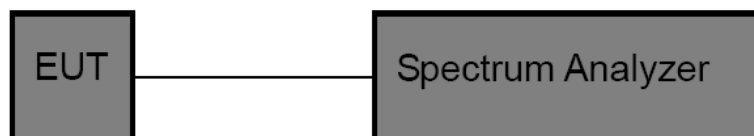


### 3.8. Duty Cycle

#### Limit

None, for report purposes only.

#### Test Configuration



#### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
3. Spectrum Setting:  
Set analyzer center frequency to DTS channel center frequency.  
Set the span to 0Hz  
Set the RBW to 8MHz  
Set the VBW to 8MHz  
Detector: peak  
Sweep time: auto  
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

#### Test Mode

Please refer to the clause 2.4.

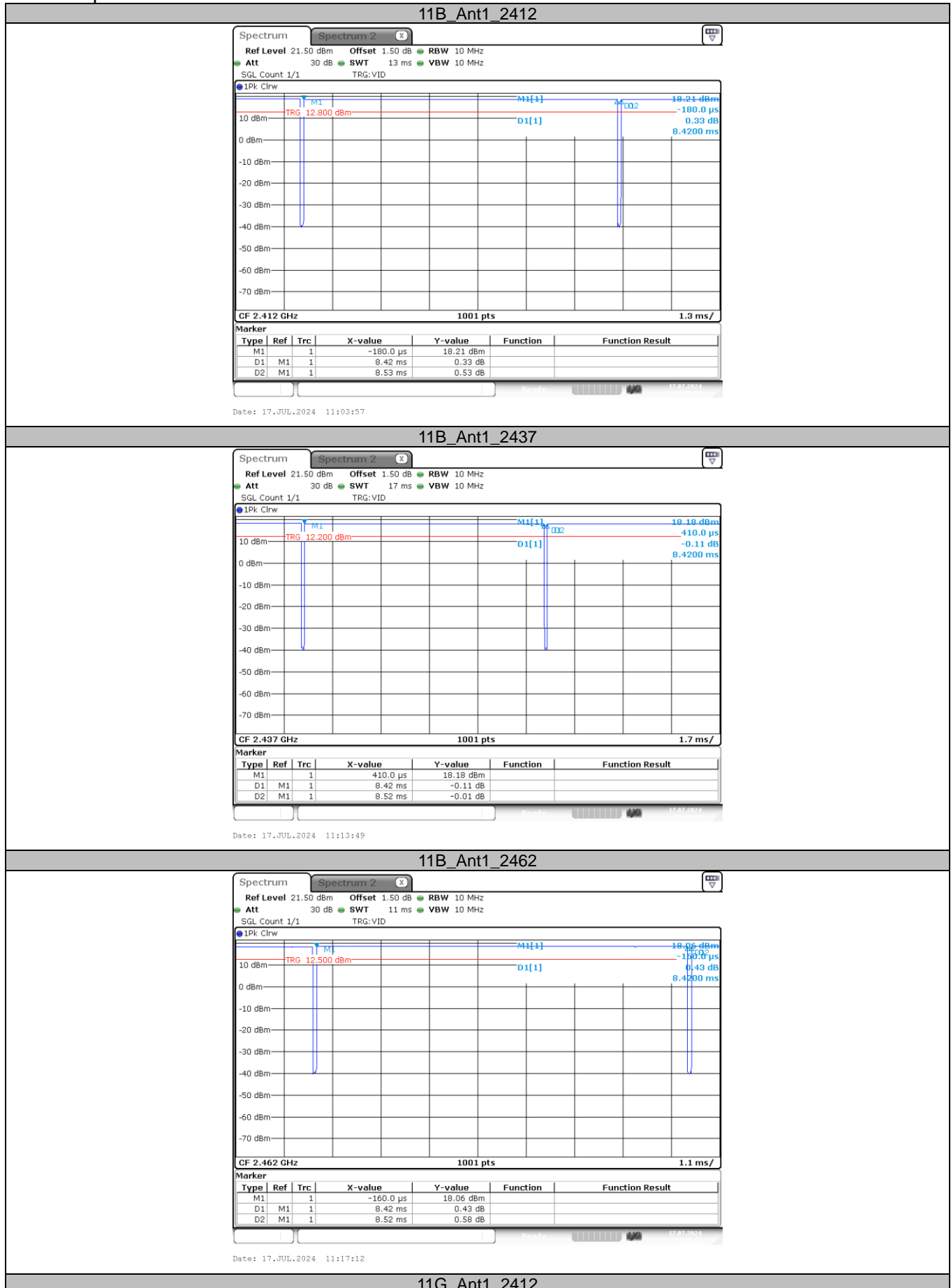
#### Test Result

Test Mode	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty Cycle Factor	1/T Minimum VBW [kHz]	Final setting For VBW [kHz]
802.11b	2412	8.42	8.53	98.71	0.06	0.12	1
	2437	8.42	8.52	98.83	0.05	0.12	1
	2462	8.42	8.52	98.83	0.06	0.12	1
802.11g	2412	1.40	1.50	93.33	0.30	0.71	1
	2437	1.40	1.50	93.33	0.30	0.71	1
	2462	1.40	1.49	93.96	0.27	0.71	1
802.11n(HT20)	2412	1.31	1.41	92.91	0.32	0.76	1
	2437	1.31	1.41	92.91	0.32	0.76	1
	2462	1.31	1.41	92.91	0.32	0.76	1

Note: Duty Cycle Factor =  $10 \cdot \log_{10}(1/\text{Duty Cycle})$



## Test Graphs



CTC Laboratories, Inc.

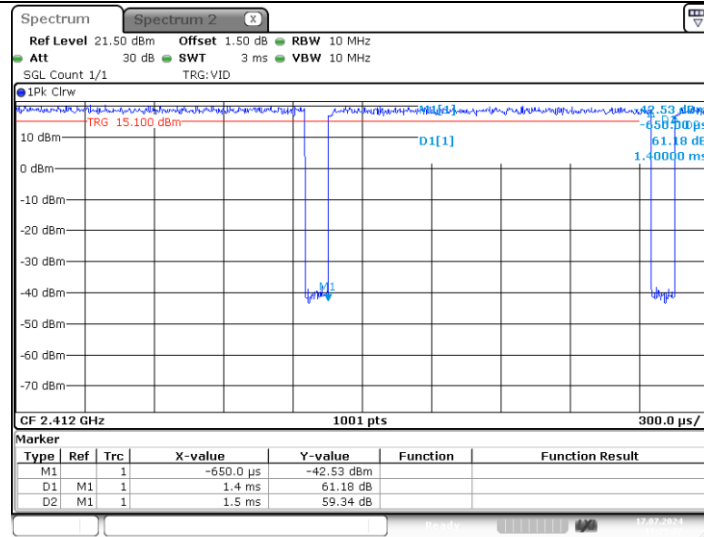
Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

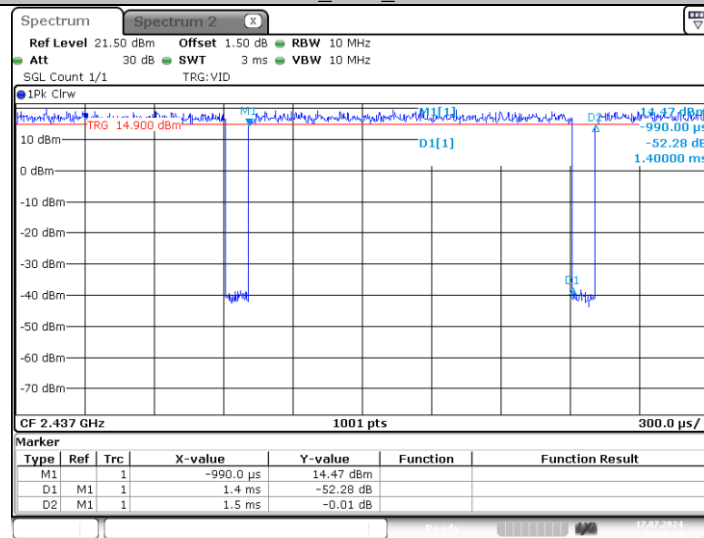
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

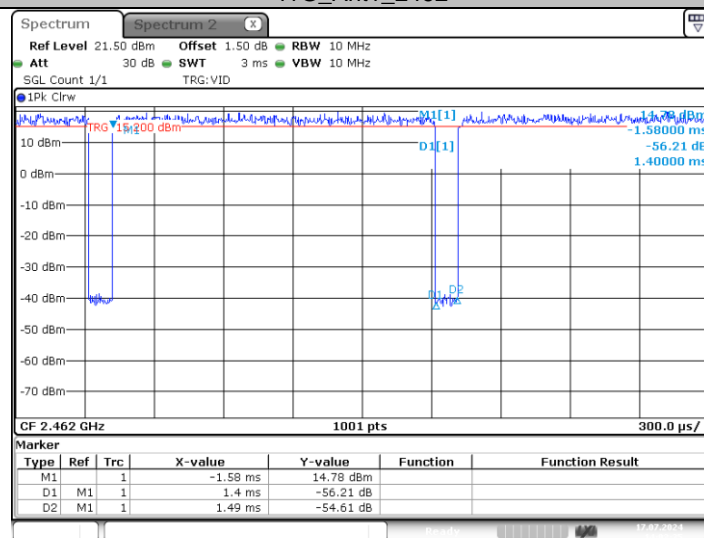
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : [yz.cnca.cn](http://yz.cnca.cn)



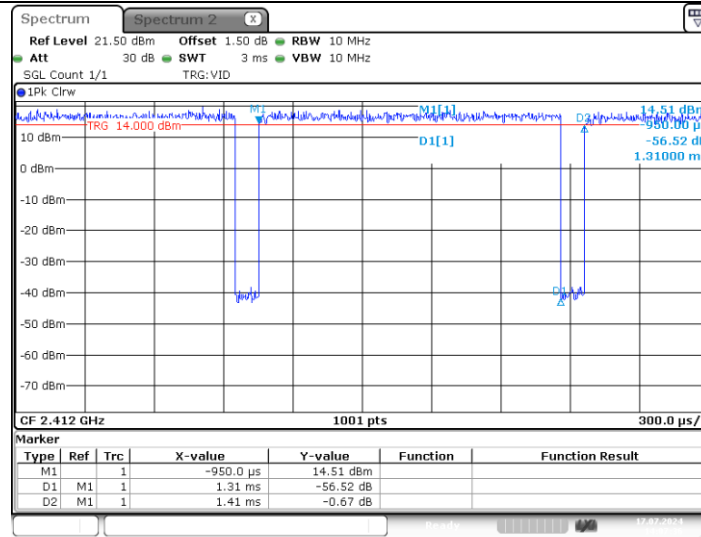
## 11G\_Ant1\_2437



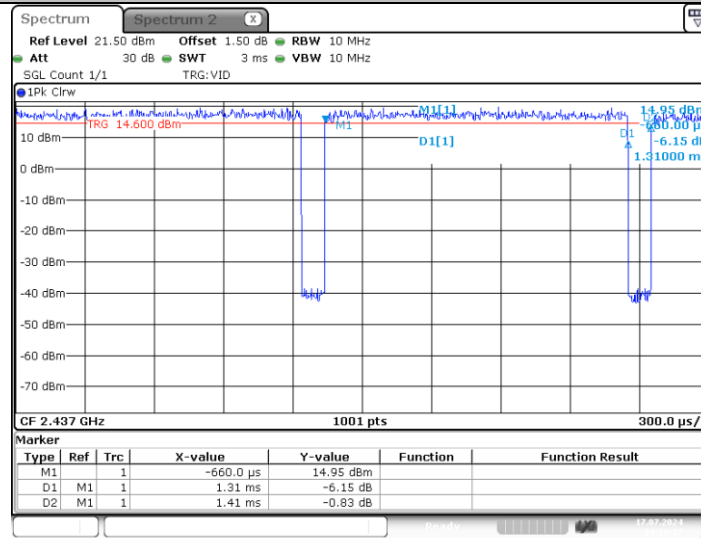
## 11G\_Ant1\_2462



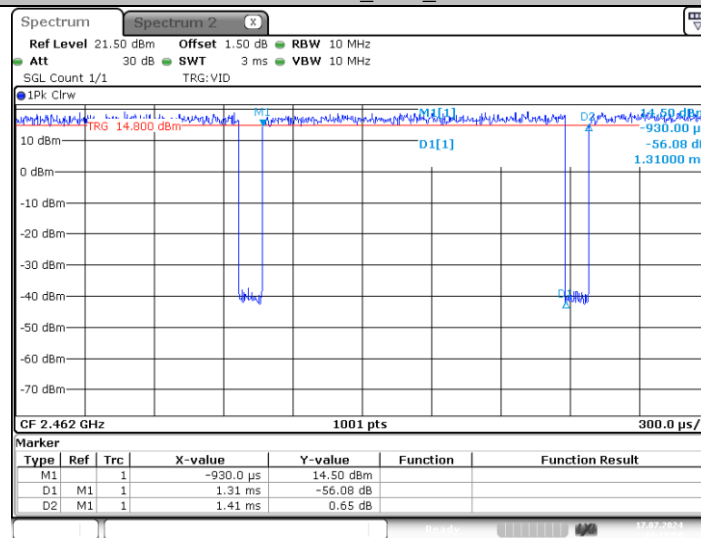
## 11N20SISO\_Ant1\_2412



## 11N20SISO\_Ant1\_2437



## 11N20SISO\_Ant1\_2462



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### 3.9. Antenna Requirement

#### Requirement

**FCC CFR Title 47 Part 15 Subpart C Section 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 antenna that uses a unique coupling to the intentional radiator, 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.

**FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):**

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### Test Result

The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.

\*\*\*\*\*THE END\*\*\*\*\*