

TEST REPORT

Report No. : **CTC2026348802**

FCC ID : **2A3DY-6151GA26**

Applicant : **Blaze Entertainment Limited**

Address : 208, Spirella Building, Bridge Road, Letchworth Garden City,
Hertfordshire, SG6 4ET, UK

Manufacturer : LiteStar Electronics Technology Co.,LTD.

Address : Xingchen Science & Technology Park,Lianbi Road, Wulian
Industry Area Fenggang Town, Dongguan, China

Product Name : **Wireless Controller**

Trade Mark : EVERCADE

Model/Type reference : FG-SOLO-CTR-EFIGS

Listed Model(s) : /

Standard : **FCC CFR Title 47 Part 15 Subpart C Section 15.247**

Test Report Form No : CTC-TR-059_A5

Master TRF : Dated 2026-06-01

Date of receipt of test sample : Jul. 08, 2026

Date of testing : Jul. 09, 2026 ~ Jul. 19, 2026

Date of issue : Aug. 13, 2026

Result : **PASS**

Compiled by:

(Printed name+signature)

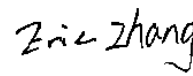
Lucy Lan



Supervised by:

(Printed name+signature)

Eric Zhang



Approved by:

(Printed name+signature)

Totti Zhao



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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 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz.

[ANSI C63.10-2020](#): American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.2. Report Version

Revised No.	Report No.	Date of issue	Description
01	CTC2026348802	Aug. 13, 2026	Original

1.3. Test Description

FCC Part 15 Subpart C (15.247)			
Test Item	Standard Section	Result	Note
Antenna Requirement	15.203	PASS	
Conducted Emission	15.207	PASS	
Restricted Bands	15.205	PASS	
Hopping Channel Separation	15.247(a)(1)	PASS	
Dwell Time	15.247(a)(iii)	PASS	
Maximum Output Power	15.247(b)(1)	PASS	
Number of Hopping Frequency	15.247(a)(iii)	PASS	
Conducted Band Edge and Spurious Emissions	15.247(d)	PASS	
Radiated Band Edge and Spurious Emissions	15.205&15.209&15.247(d)	PASS	
Radiated Spurious Emission	15.247(d) &15.209	PASS	
20dB Bandwidth	15.247(a)	PASS	
Occupied Bandwidth	/	PASS	

Note:

1. The measurement uncertainty is not included in the test result.
2. N/A: means this test item is not applicable for this device according to the technology characteristic of device.

1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: Room 107, 108, 207, 208 of Building A, Room 101 of Building B, 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
20dB Emission Bandwidth	$\pm 0.0196\%$	(1)
Carrier Frequency Separation	$\pm 1.9\%$	(1)
Number of Hopping Channel	$\pm 1.9\%$	(1)
Time of Occupancy	$\pm 0.028\%$	(1)
Max Peak Conducted Output Power	± 0.743 dB	(1)
Band-edge Spurious Emission	± 1.328 dB	(1)
Conducted RF Spurious Emission	9kHz-1GHz: ± 0.746 dB 1GHz-26GHz: ± 1.328 dB	(1)
Conducted Emissions 9kHz~30MHz	± 3.08 dB	(1)
Radiated Emissions 30~1000MHz	± 4.51 dB	(1)
Radiated Emissions 1~18GHz	± 5.84 dB	(1)
Radiated Emissions 18~40GHz	± 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:	15 °C to 35 °C
Relative Humidity:	20 % to 75 %
Air Pressure:	101 kPa

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Blaze Entertainment Limited
Address:	208, Spirella Building, Bridge Road, Letchworth Garden City, Hertfordshire, SG6 4ET, UK
Manufacturer:	LiteStar Electronics Technology Co.,LTD.
Address:	Xingchen Science & Technology Park,Lianbi Road, Wulian Industry Area Fenggang Town, Dongguan, China
Factory:	LiteStar Electronics Technology Co.,LTD.
Address:	Xingchen Science & Technology Park,Lianbi Road, Wulian Industry Area Fenggang Town, Dongguan, China

2.2. General Description of EUT

Product Name:	Wireless Controller
Trade Mark:	EVERCADE
Model/Type reference:	FG-SOLO-CTR-EFIGS
Listed Model(s):	/
Model Difference:	/
Sample ID:	CTC-GC260706-011-S002
Power Supply:	DC 5V
Hardware Version:	A2
Software Version:	V1.0
Bluetooth 5.0 / BR+EDR	
Modulation:	GFSK, $\pi/4$ -DQPSK, 8-DPSK
Operation Frequency:	2402MHz~2480MHz
Channel Number:	79
Channel Separation:	1MHz
Antenna Type:	PCB Antenna
Antenna Gain:	2.54dBi

2.3. Accessory Equipment Information

Equipment Information			
Name	Model	S/N	Manufacturer
Notebook	ThinkBook 14 G3 ACL	MP246Q6S	Lenovo
Adapter	TPA-23A050200CU01	/	SZTY
Cable Information			
Name	Shielded Type	Ferrite Core	Length
/	/	/	/
Test Software Information			
Name	Version	/	/
BT_Tool	1.1.0	/	/

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. BT EDR, 79 channels are provided to the EUT. Channels 00/39/78 were selected for testing.

Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2403
:	:
38	2440
39	2441
40	2442
:	:
77	2479
78	2480

Note: The display in grey were the channel selected for testing.

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 charges through the adapter.
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.

Power setting:

Mode	power setting
BT	+7

2.5. Measurement Instruments List

Radiated emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-759	Oct. 16, 2027
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-648	Dec. 11, 2026
3	LOOP Antenna	ETS	6507	1446	Dec. 17, 2026
4	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2026
5	Broadband Amplifier	Schwarzbeck	BBV9743B	259	Dec. 12, 2026
6	Mirowave Broadband Amplifier	Schwarzbeck	BBV9718C	111	Dec. 12, 2026
7	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
8	Test Software	FARA	EZ-EMC	FA-03A2	/

RF Test System - SRD					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
1	Spectrum Analyzer	R&S	FSV40-N	101654	Dec. 12, 2026
2	EXG Analog Signal Generator	Keysight	N5173B	MY59100842	Dec. 12, 2026
3	MXG Vector Signal Generator	Keysight	N5182B	MY59100212	Dec. 12, 2026
4	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2026
5	RF Control Unit	Tonscend	JS0806-2	/	Dec. 12, 2026
6	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 24, 2027
7	RF Cable	HUBER+SUHNER	SUCOFLEX101PE	RF-09	Apr. 15, 2027
Test Software					
Name		Manufacturer		Software Version	
JS1120-3		Tonscend		V3.6.21	

Conducted emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101112	Dec. 12, 2026
2	LISN	R&S	ENV216	101113	Dec. 12, 2026
3	EMI Test Receiver	R&S	ESCI	100524	Dec. 12, 2026
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 12, 2026
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 12, 2026
6	Test Software	R&S	EMC32	6.10.10	/

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

2. The Cal. Interval was three years of the antenna.

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

3. TEST ITEM AND RESULTS

3.1. Conducted Emission

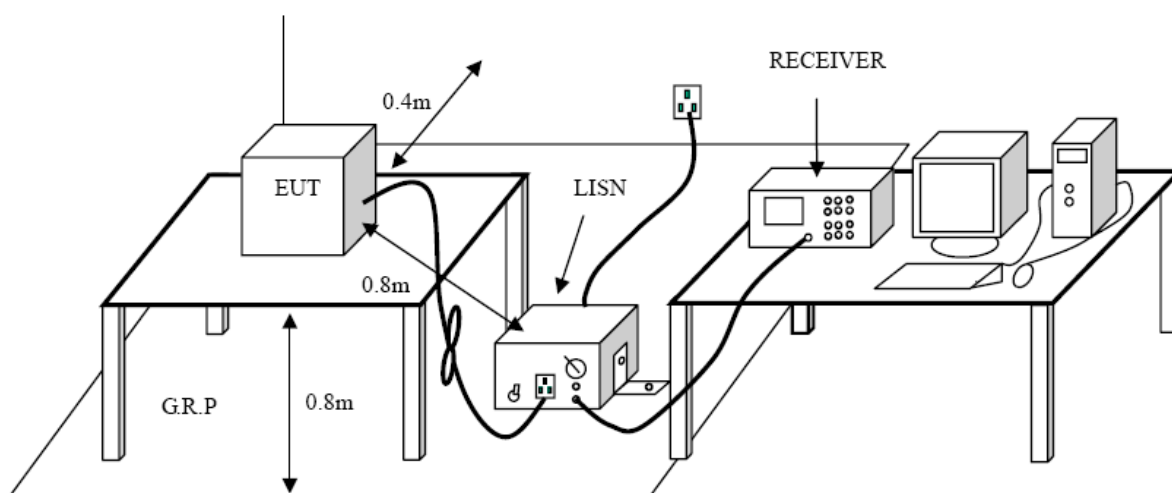
Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency (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.

Test Configuration



Test Procedure

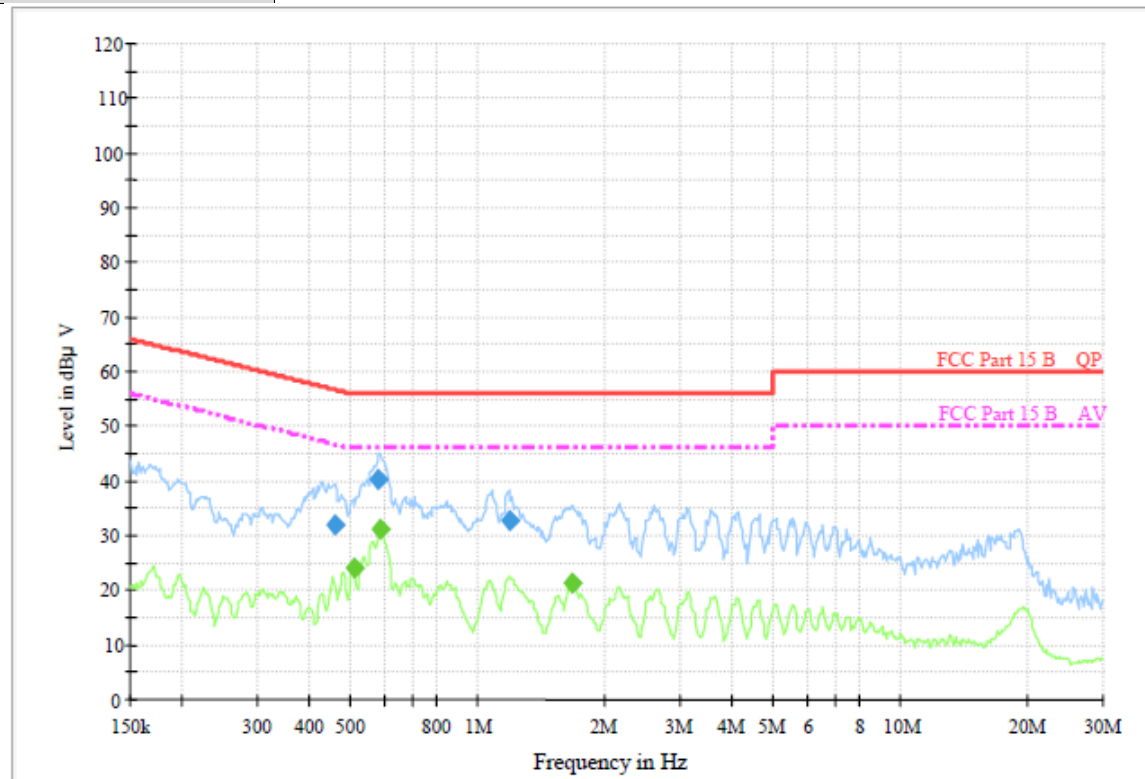
1. The EUT was setup according to ANSI C63.10 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm / 50 μ H coupling impedance for the measuring equipment.
4. 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)
5. 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.
6. 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.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

Test Mode

Please refer to the clause 2.4.

Test Result

Test Voltage:	AC 120V/60Hz
Terminal:	Line
Remark:	Only worse case is reported

**Final Measurement Detector 1**

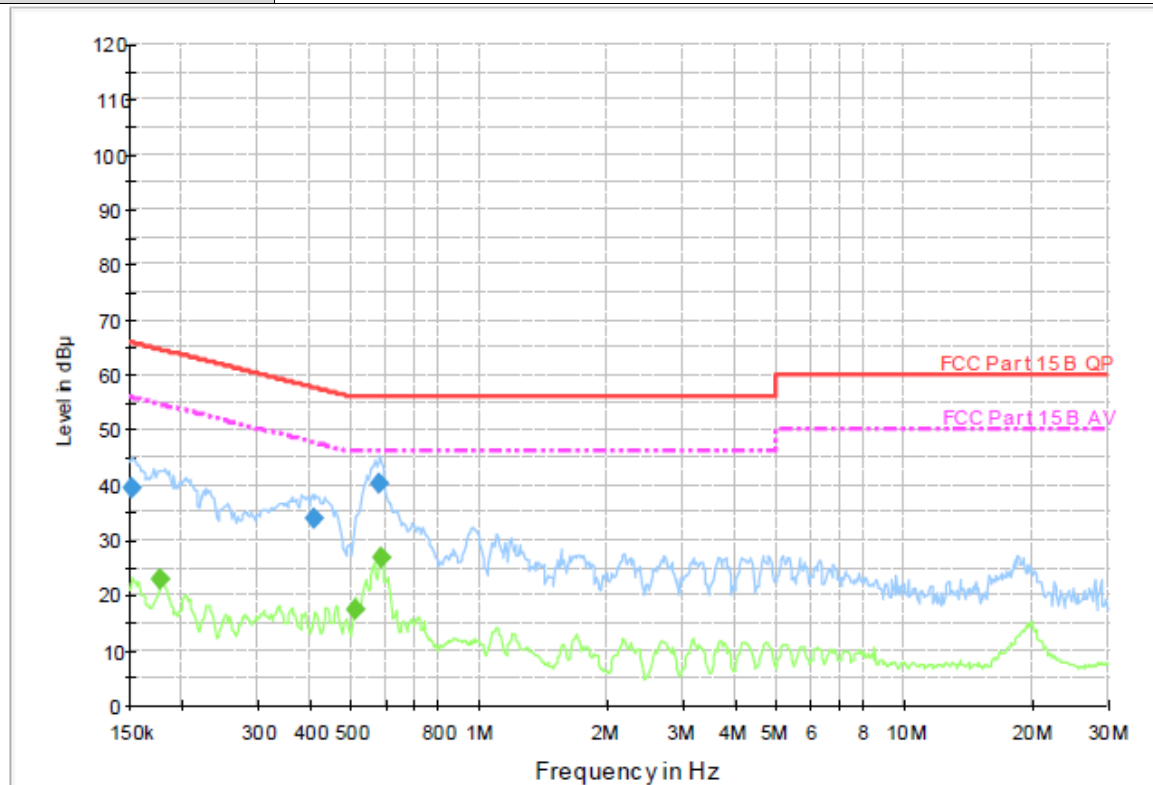
Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.457680	32.0	1000.00	9.000	On	L1	9.4	24.7	56.7	
0.581280	40.3	1000.00	9.000	On	L1	9.5	15.7	56.0	
1.181320	32.7	1000.00	9.000	On	L1	10.0	23.3	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.507640	24.2	1000.00	9.000	On	L1	9.4	21.8	46.0	
0.585930	31.2	1000.00	9.000	On	L1	9.5	14.8	46.0	
1.664070	21.4	1000.00	9.000	On	L1	9.9	24.6	46.0	

Emission Level = Read Level + Correct Factor

Test Voltage:	AC 120V/60Hz
Terminal:	Neutral
Remark:	Only worse case is reported



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.152410	39.5	1000.00	9.000	On	N	9.4	26.4	65.9	
0.409370	33.9	1000.00	9.000	On	N	9.5	23.8	57.7	
0.581280	40.5	1000.00	9.000	On	N	9.4	15.5	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.177320	22.7	1000.00	9.000	On	N	9.3	31.9	54.6	
0.511700	17.5	1000.00	9.000	On	N	9.6	28.5	46.0	
0.585930	27.0	1000.00	9.000	On	N	9.4	19.0	46.0	

Emission Level = Read Level + Correct Factor

3.2. Radiated Emission

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.209

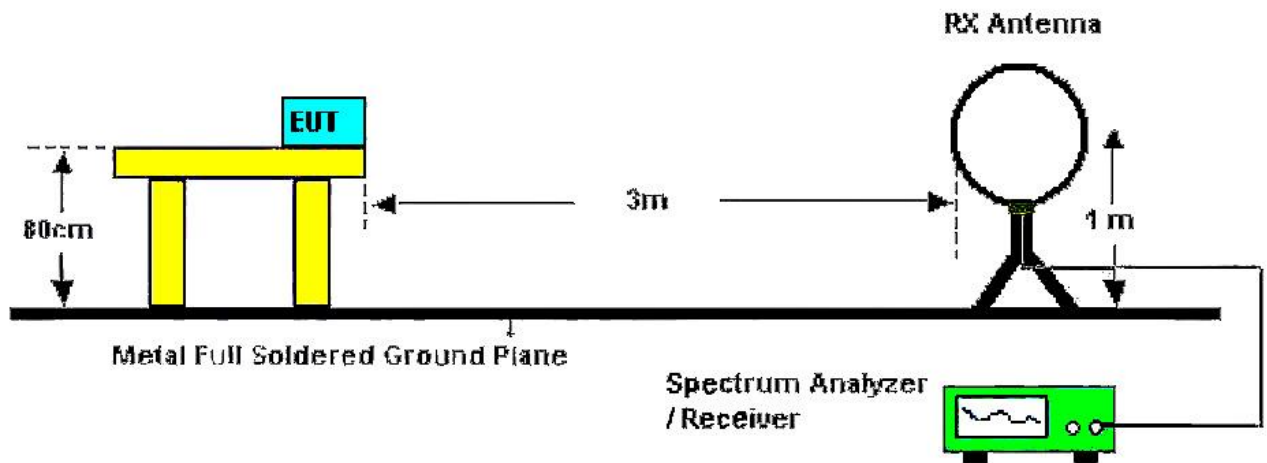
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F (kHz)	300
0.490~1.705	24000/F (kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Frequency Range (MHz)	dB μ V/m (at 3 meters)	
	Peak	Average
Above 1000	74	54

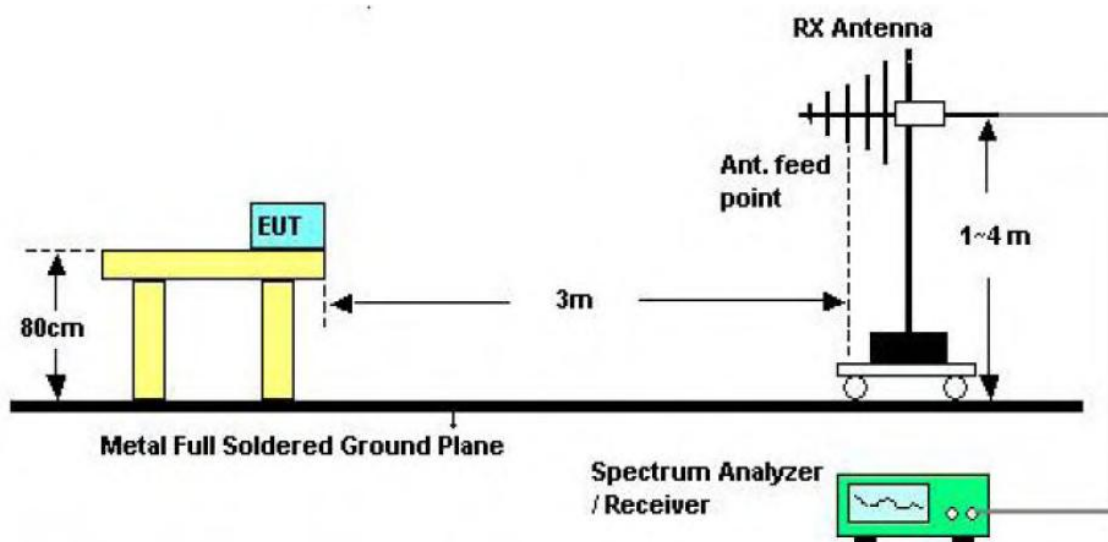
Note:

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

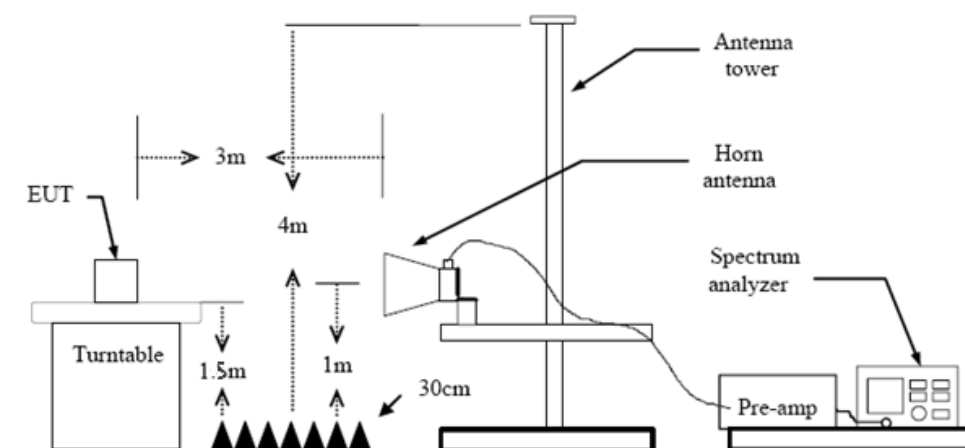
Test Configuration



Below 30MHz Test Setup



30-1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10.
 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) 9k – 150kHz:
RBW=300 Hz, VBW=1 kHz, Sweep=auto, Detector function=peak, Trace=max hold
 - (3) 0.15M – 30MHz:
RBW=10 kHz, VBW=30 kHz, Sweep=auto, Detector function=peak, Trace=max hold
 - (4) 30M - 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.

(5) From 1 GHz to 10th harmonic:

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 3.10 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Result

Test Voltage:	DC 5V
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9 kHz~30 MHz

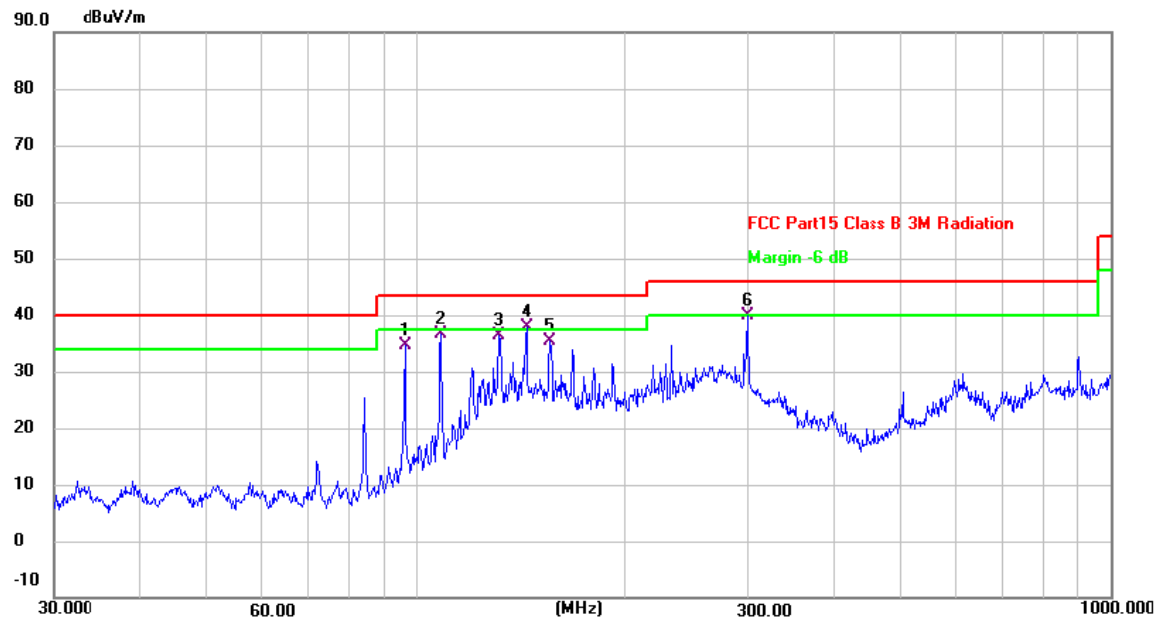
From 9 kHz to 30 MHz: The conclusion is PASS.

Note:

1. Testing is carried out with frequency rang 9kHz to the tenth harmonics.
2. All modes for required channel tested, only the worst-case reported.

30MHz-1GHz

Ant. Pol.	Horizontal
Test Mode:	TX GFSK Mode 2402MHz
Remark:	Only worse case is reported.

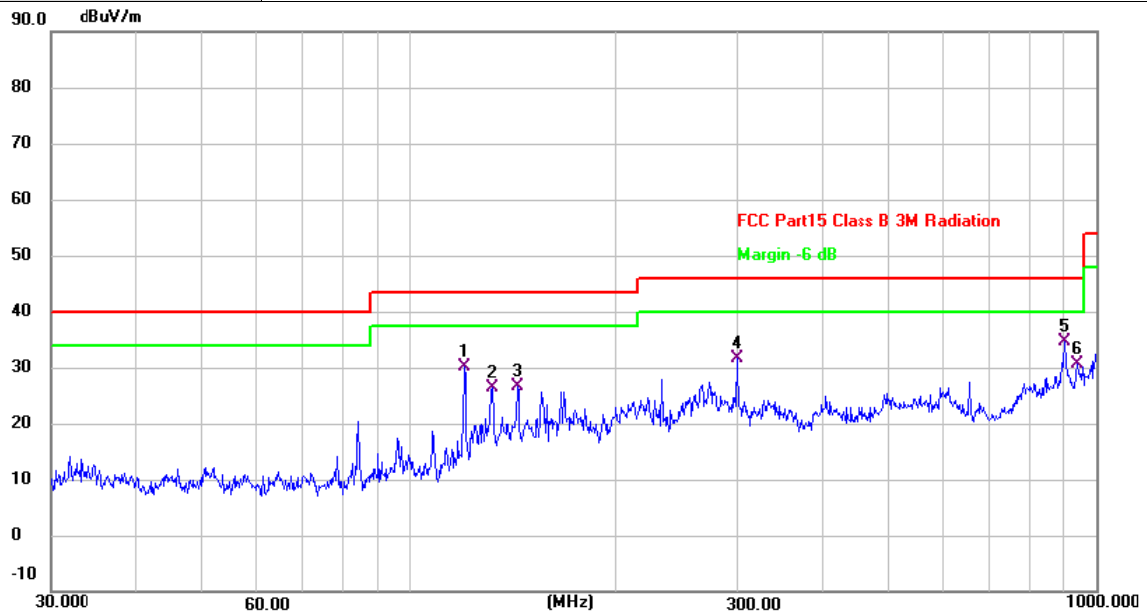


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	96.0986	56.40	-21.74	34.66	43.50	-8.84	QP
2	108.2667	57.19	-20.65	36.54	43.50	-6.96	QP
3	131.7577	55.26	-18.95	36.31	43.50	-7.19	QP
4 *	144.3348	55.71	-17.83	37.88	43.50	-5.62	QP
5	155.9101	52.73	-17.31	35.42	43.50	-8.08	QP
6	299.3158	56.60	-16.78	39.82	46.00	-6.18	QP

Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX GFSK Mode 2402MHz
Remark:	Only worse case is reported.



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	119.8556	49.94	-19.70	30.24	43.50	-13.26	QP
2	132.2206	45.40	-18.94	26.46	43.50	-17.04	QP
3	143.8295	44.36	-17.85	26.51	43.50	-16.99	QP
4	299.3158	48.38	-16.78	31.60	46.00	-14.40	QP
5 *	900.1474	39.33	-4.82	34.51	46.00	-11.49	QP
6	938.8326	34.56	-4.03	30.53	46.00	-15.47	QP

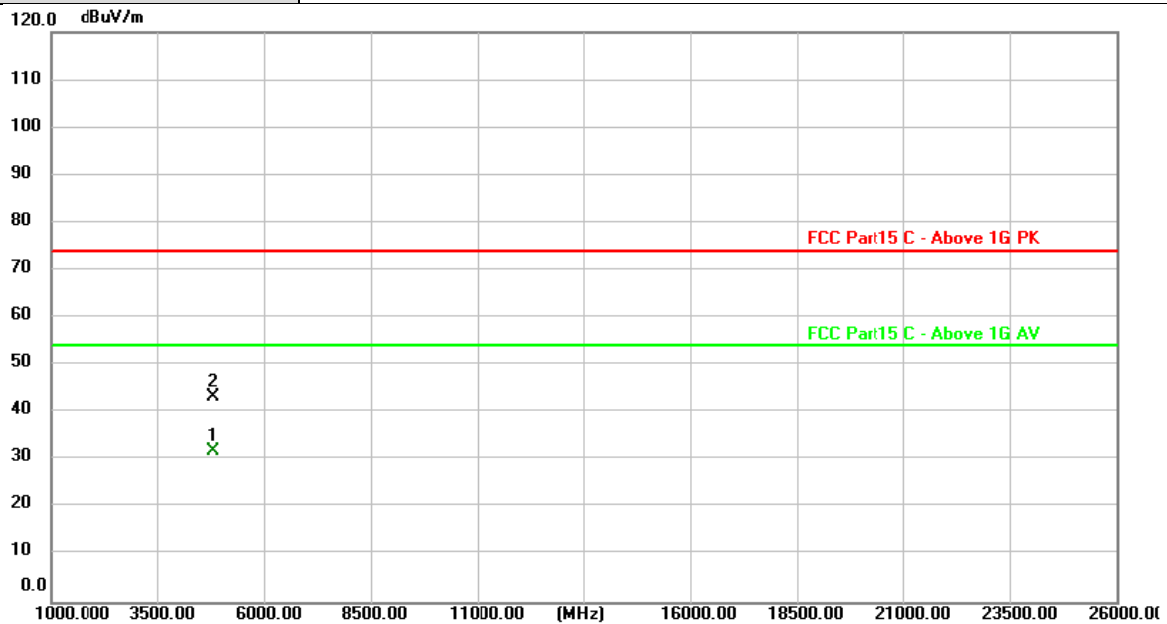
Remarks:

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

2. Margin value = Level -Limit value

Above 1GHz

Ant. Pol.	Horizontal
Test Mode:	TX GFSK Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

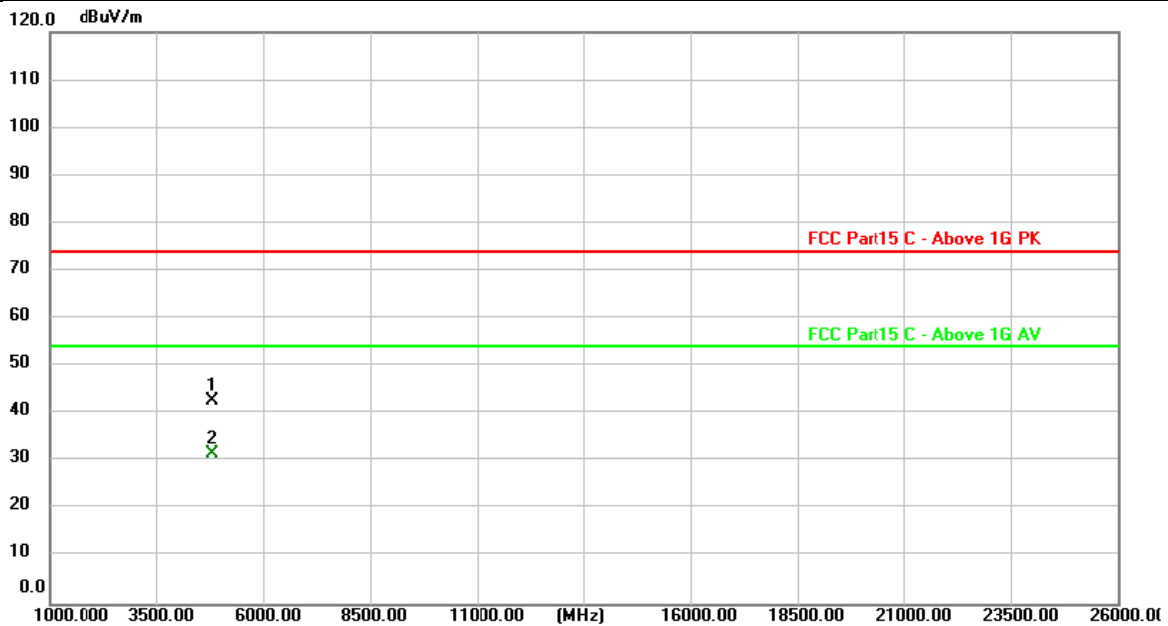


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	4804.040	30.95	0.98	31.93	54.00	-22.07	AVG
2	4804.179	42.38	0.98	43.36	74.00	-30.64	peak

Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX GFSK Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



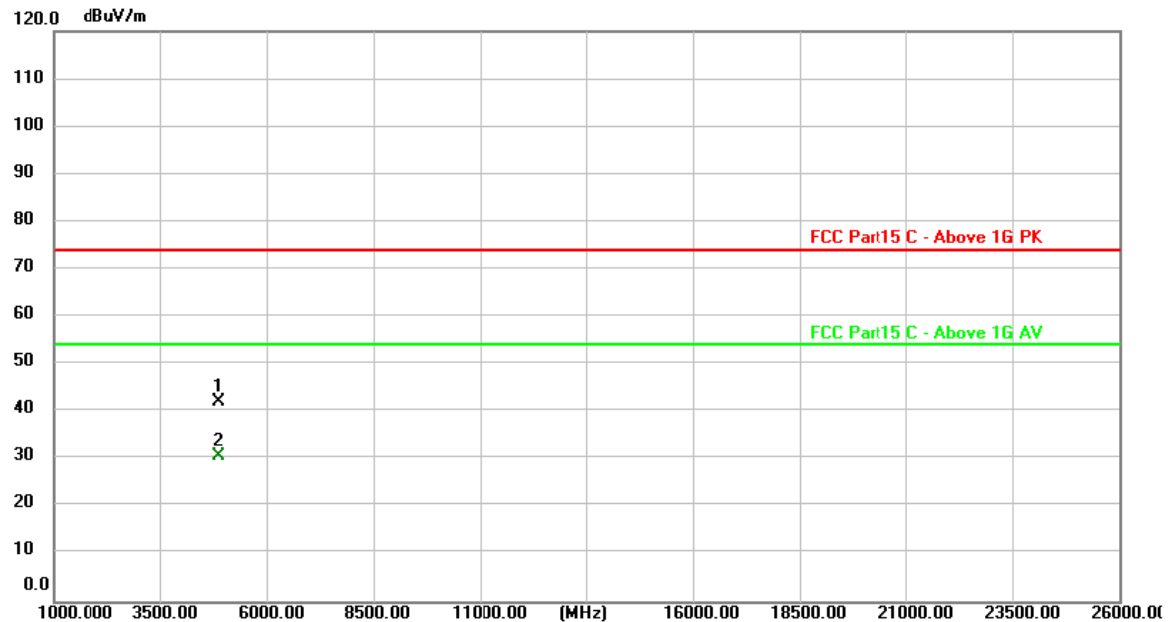
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4803.484	41.79	0.98	42.77	74.00	-31.23	peak
2 *	4804.141	30.65	0.98	31.63	54.00	-22.37	AVG

Remarks:

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

2. Margin value = Level - Limit value

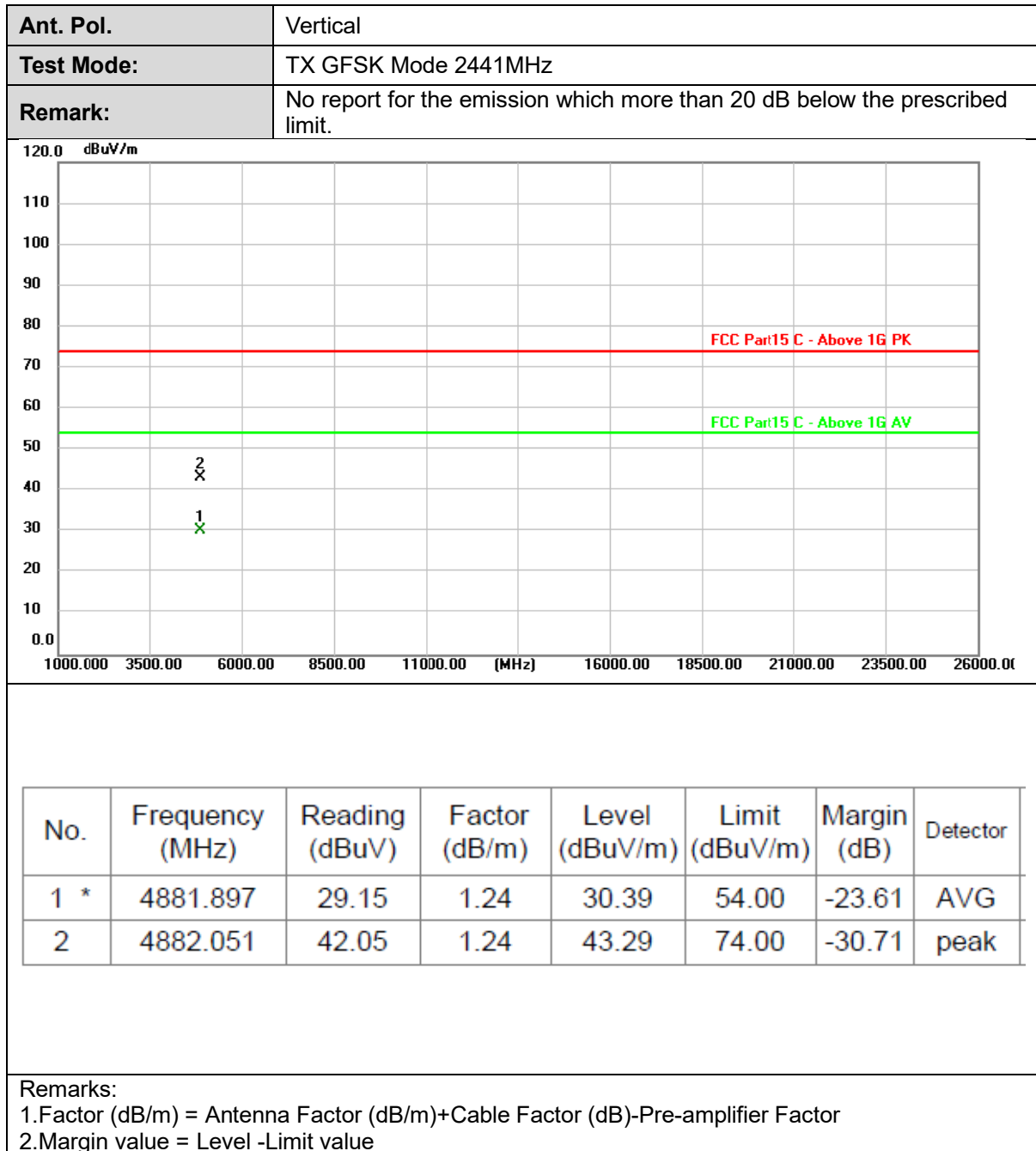
Ant. Pol.	Horizontal
Test Mode:	TX GFSK Mode 2441MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



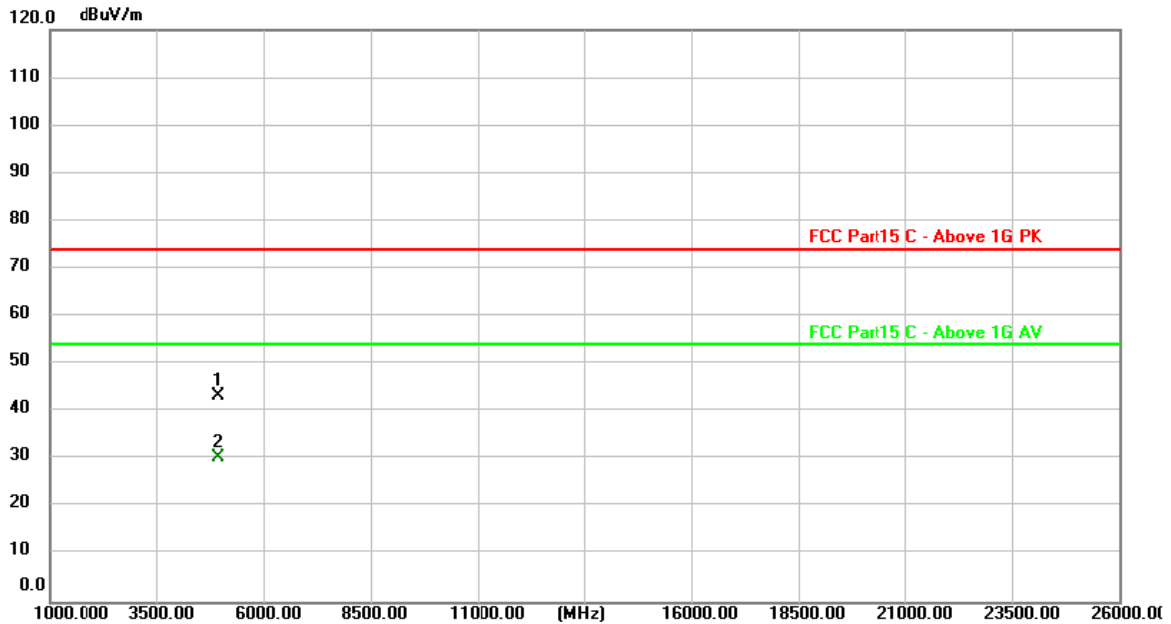
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4881.847	41.03	1.24	42.27	74.00	-31.73	peak
2 *	4882.063	29.48	1.24	30.72	54.00	-23.28	AVG

Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value



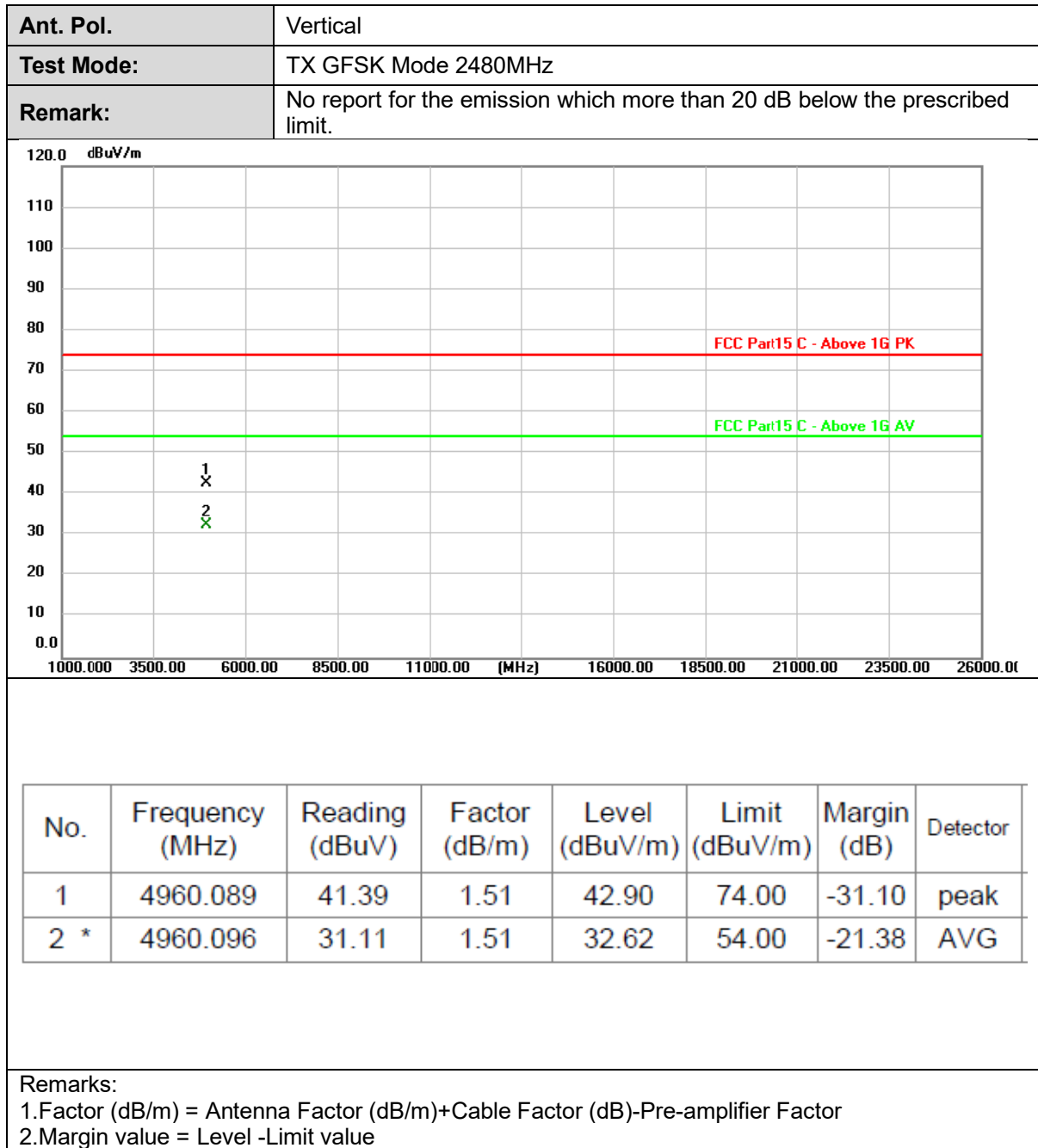
Ant. Pol.	Horizontal
Test Mode:	TX GFSK Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4959.982	41.82	1.51	43.33	74.00	-30.67	peak
2 *	4960.009	29.03	1.51	30.54	54.00	-23.46	AVG

Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value



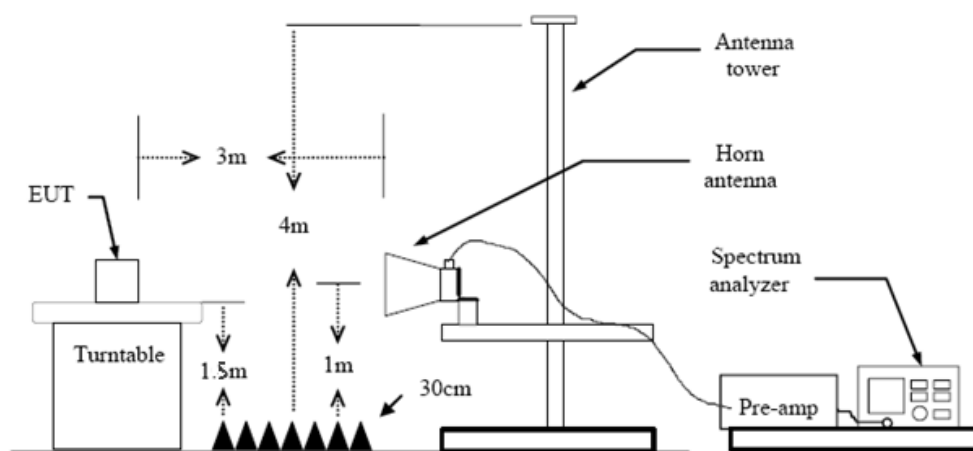
3.3. Band Edge Emissions (Radiated)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d)

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

Test Configuration



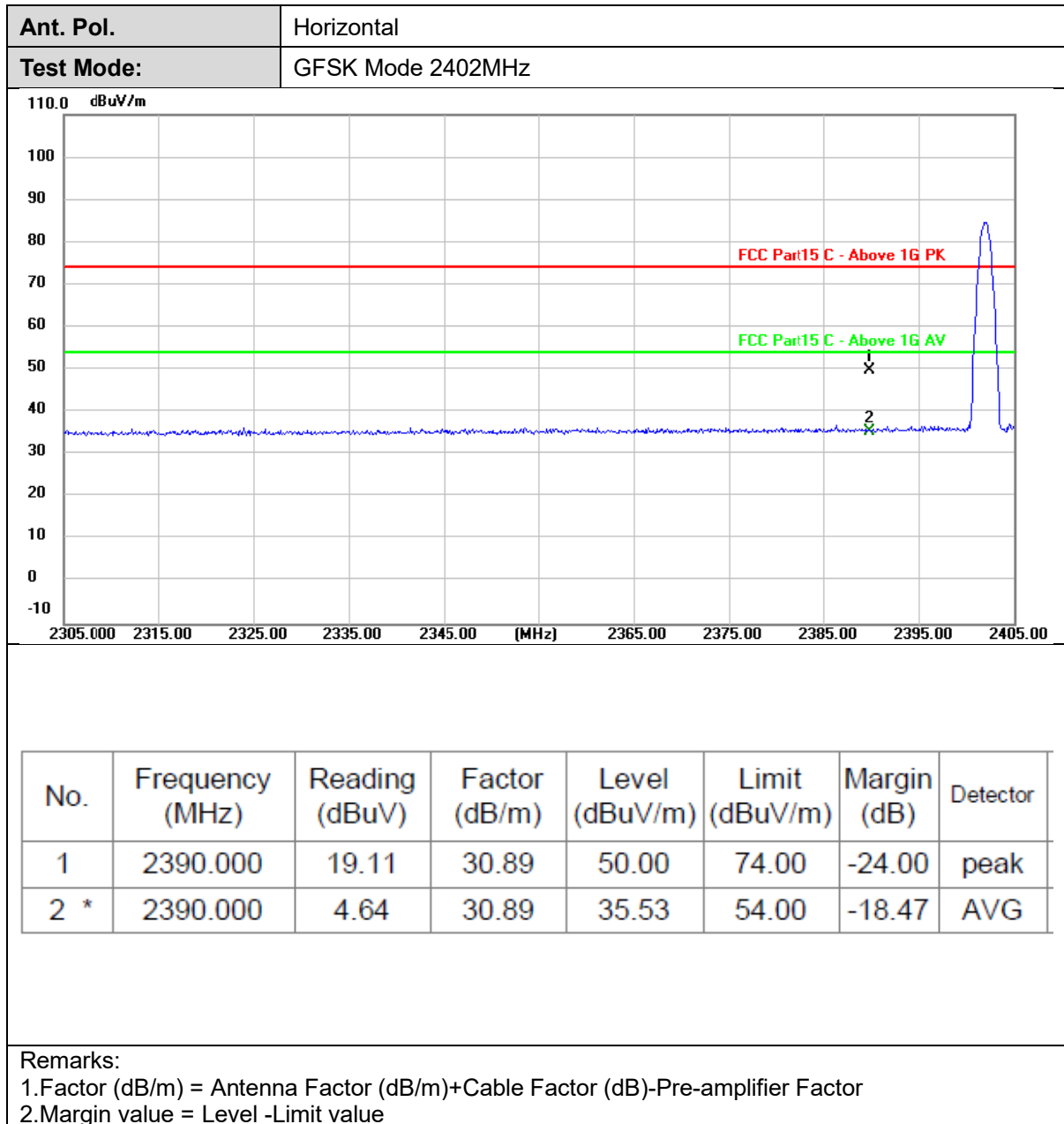
Test Procedure

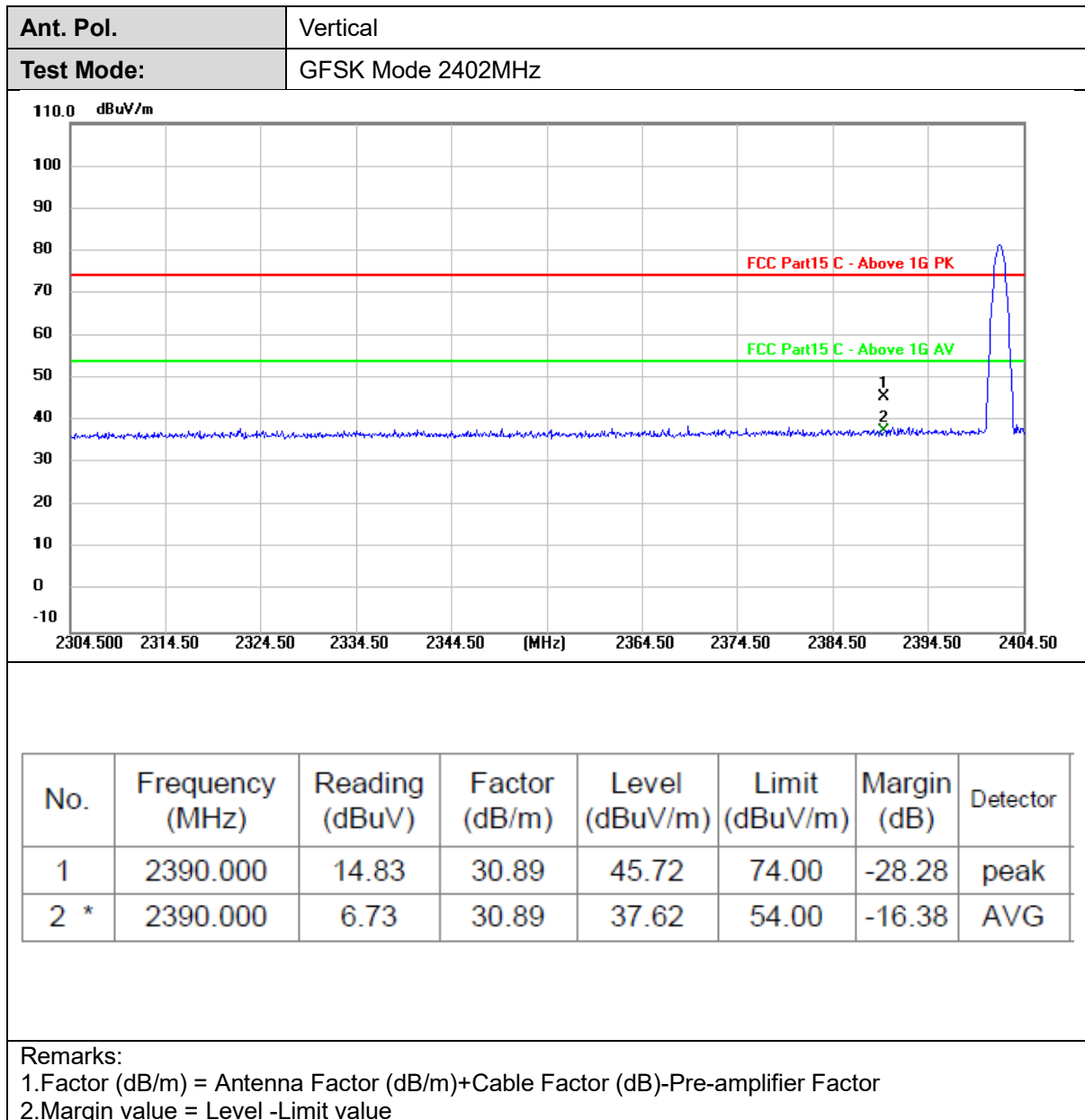
1. The EUT was setup and tested according to ANSI C63.10 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to 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 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.

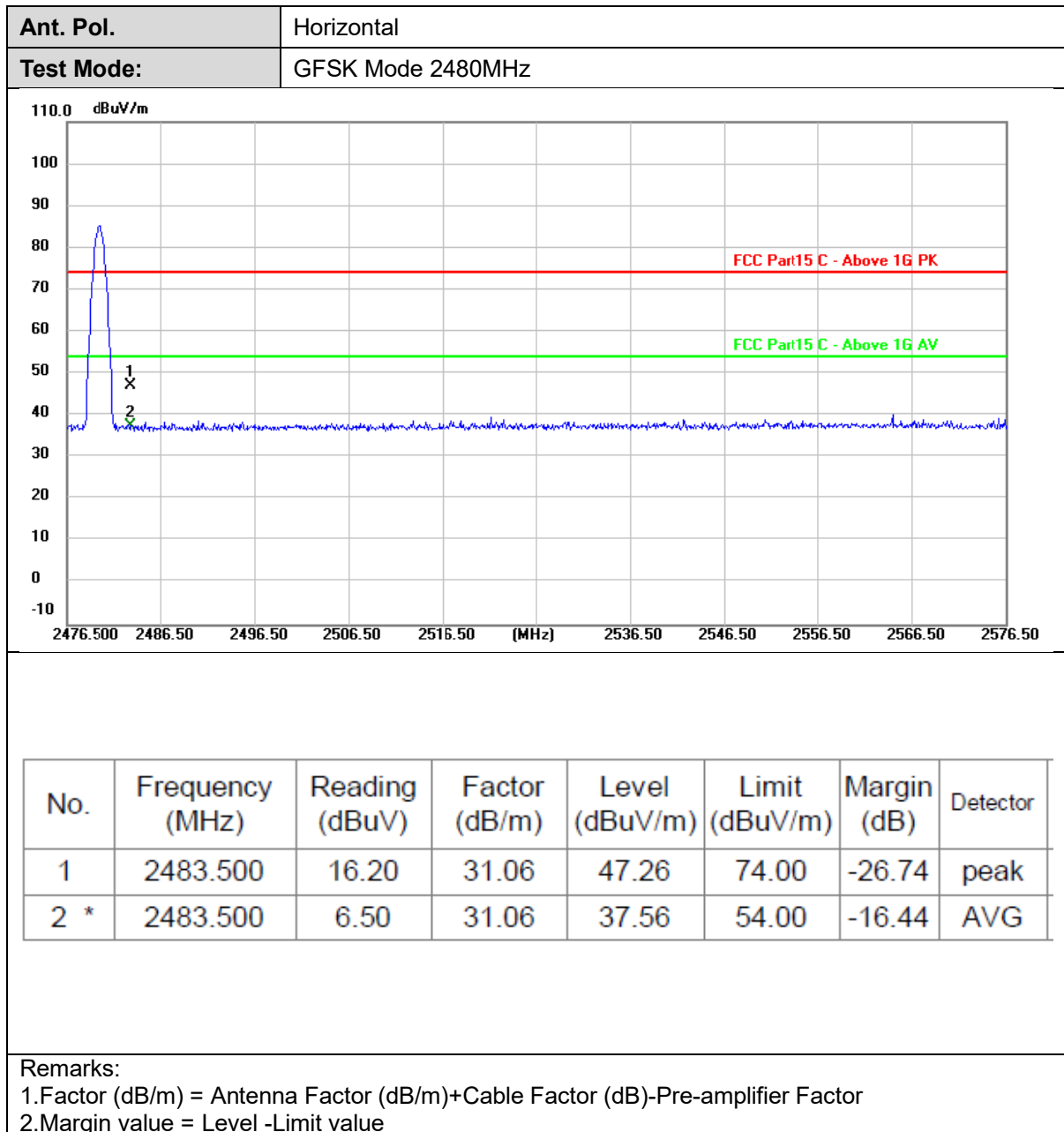
Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.10 Duty Cycle.

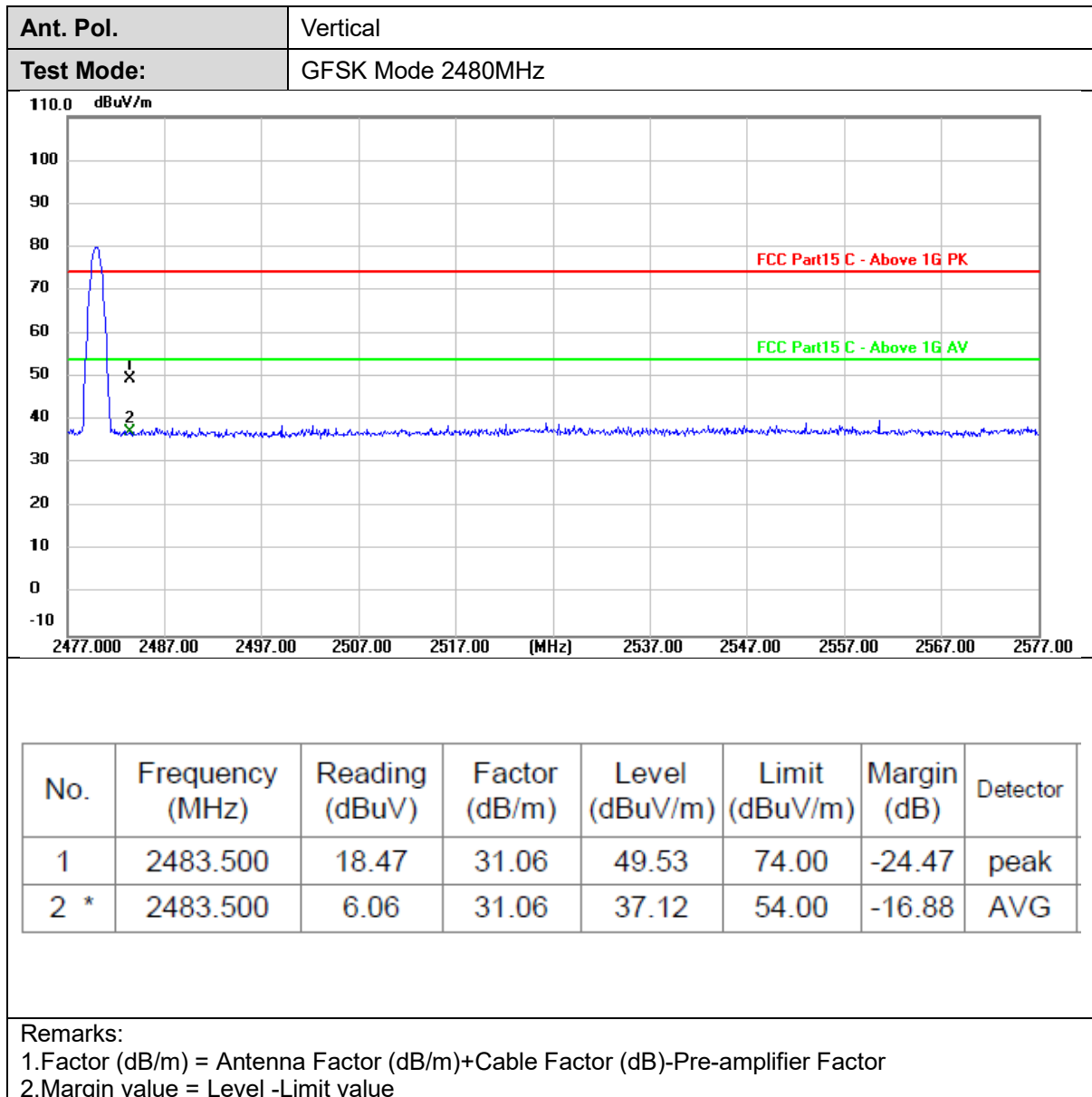
Test Mode

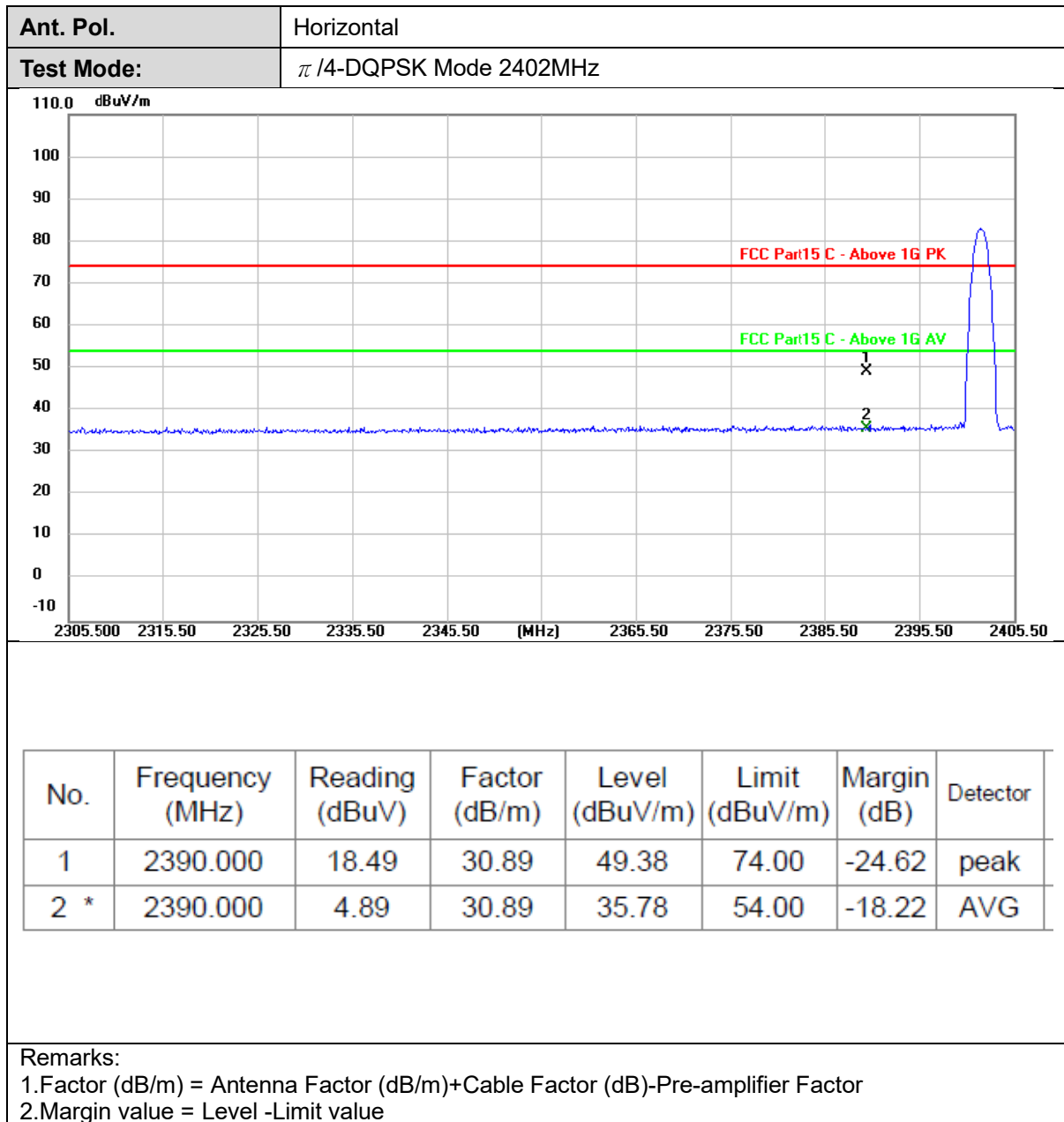
Please refer to the clause 2.4.

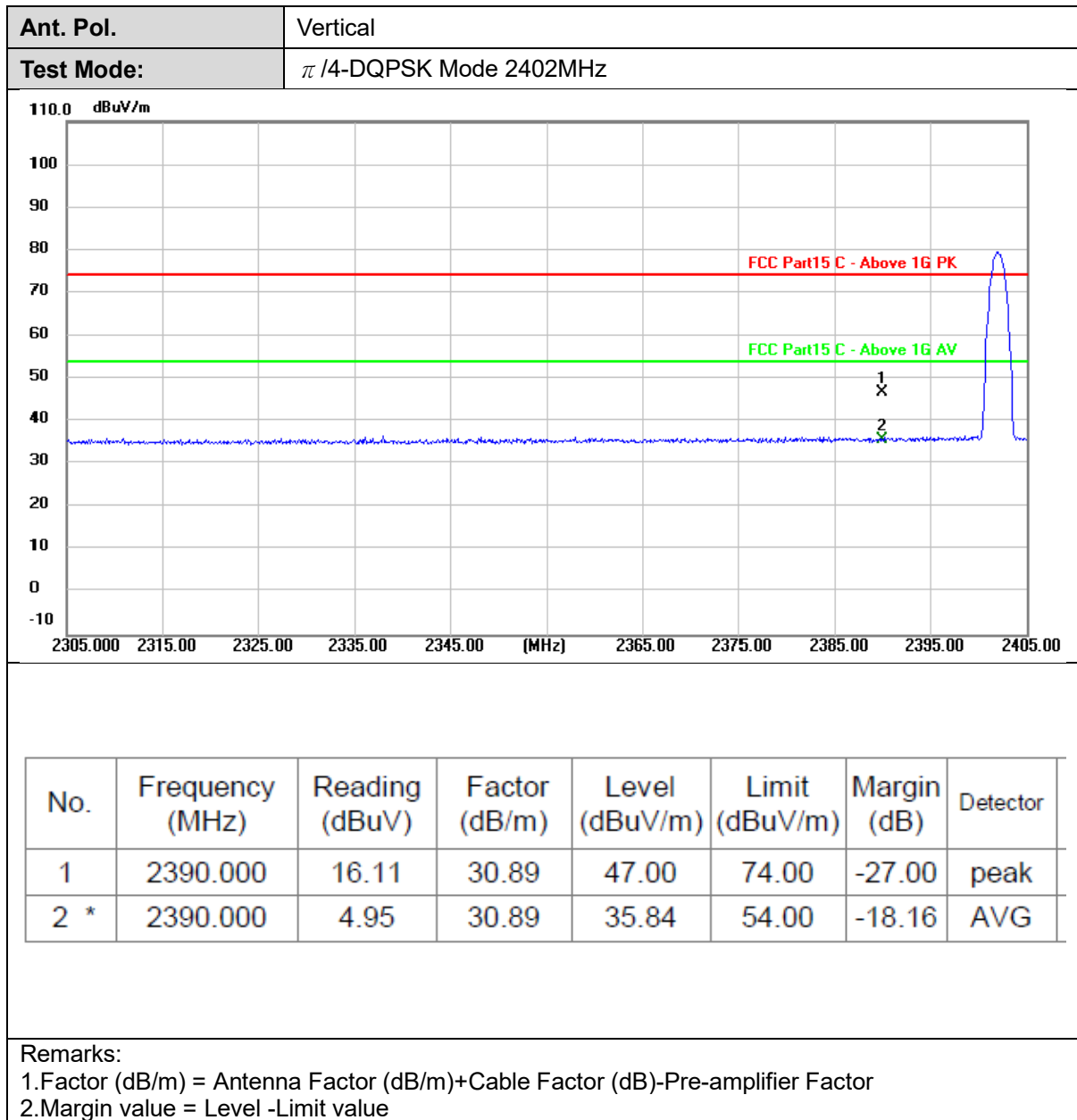
Test Result

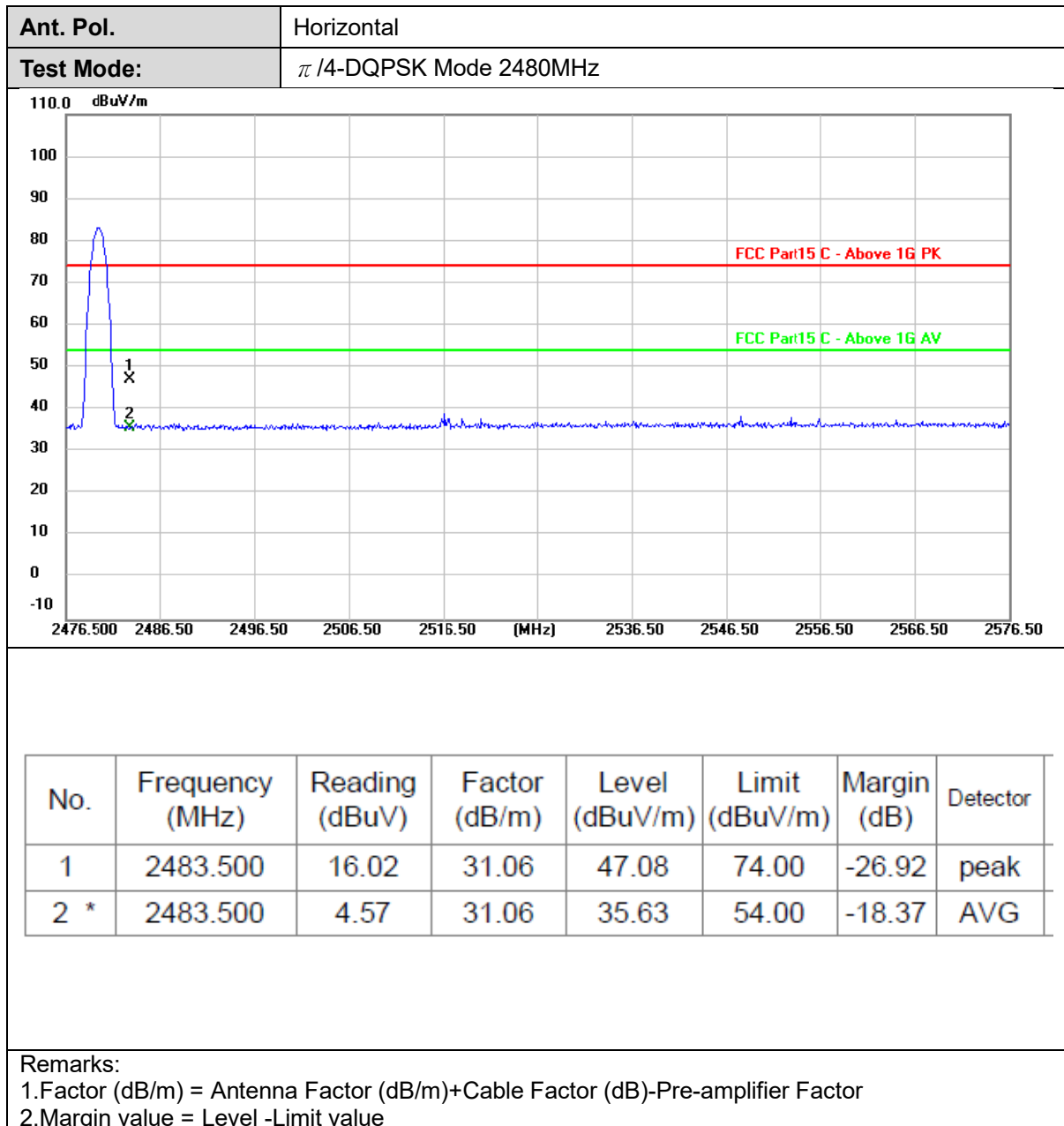


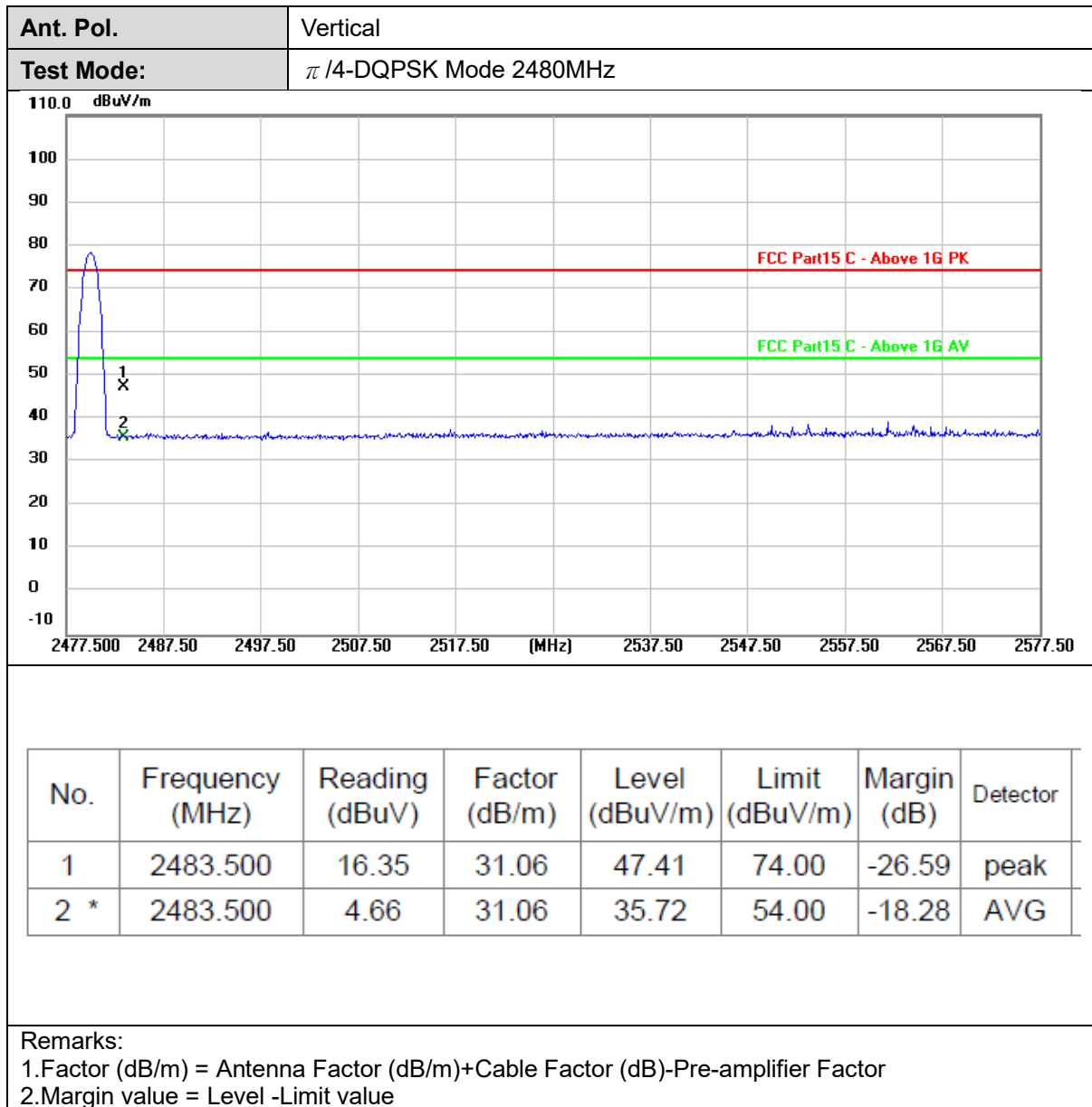


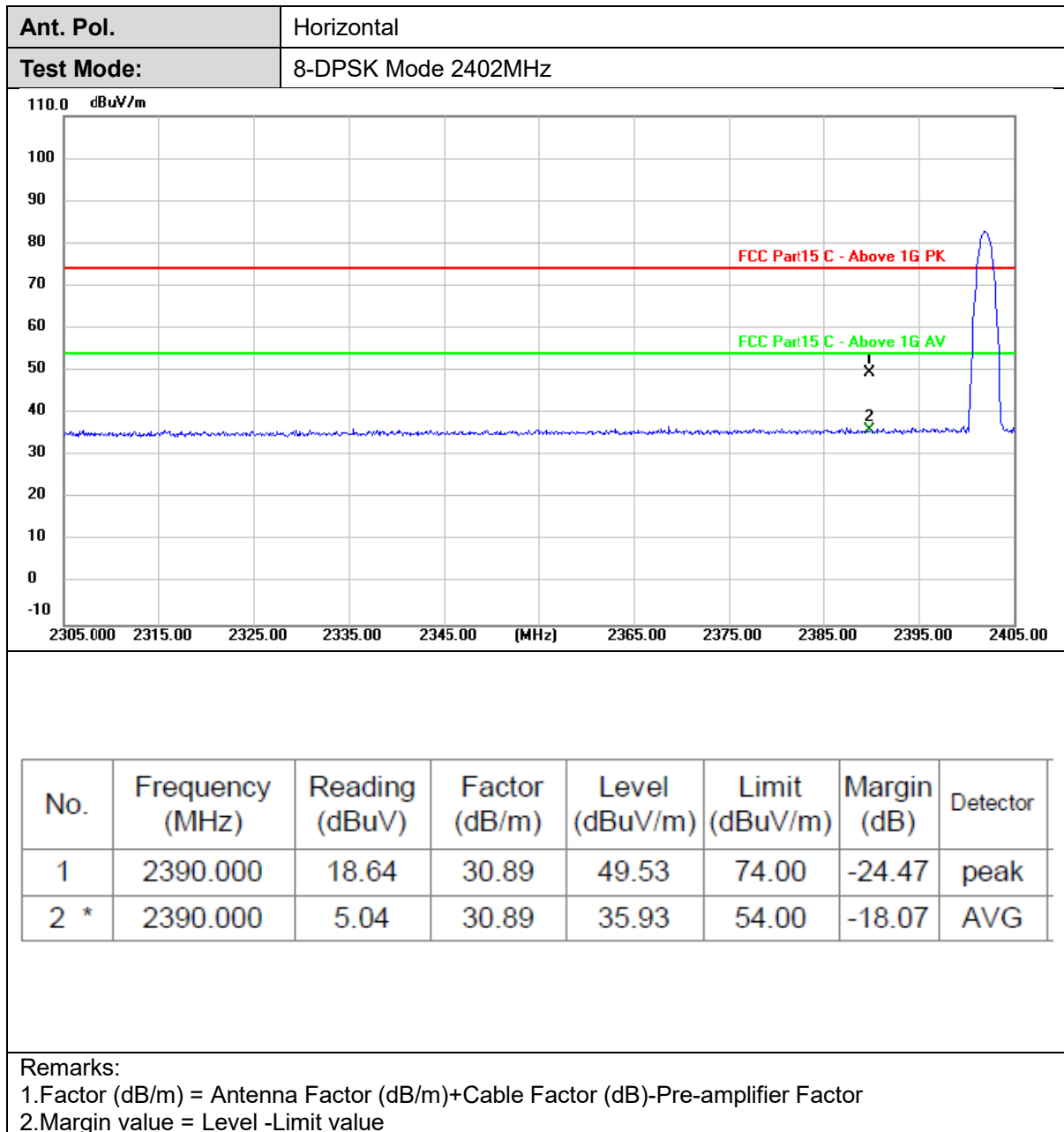


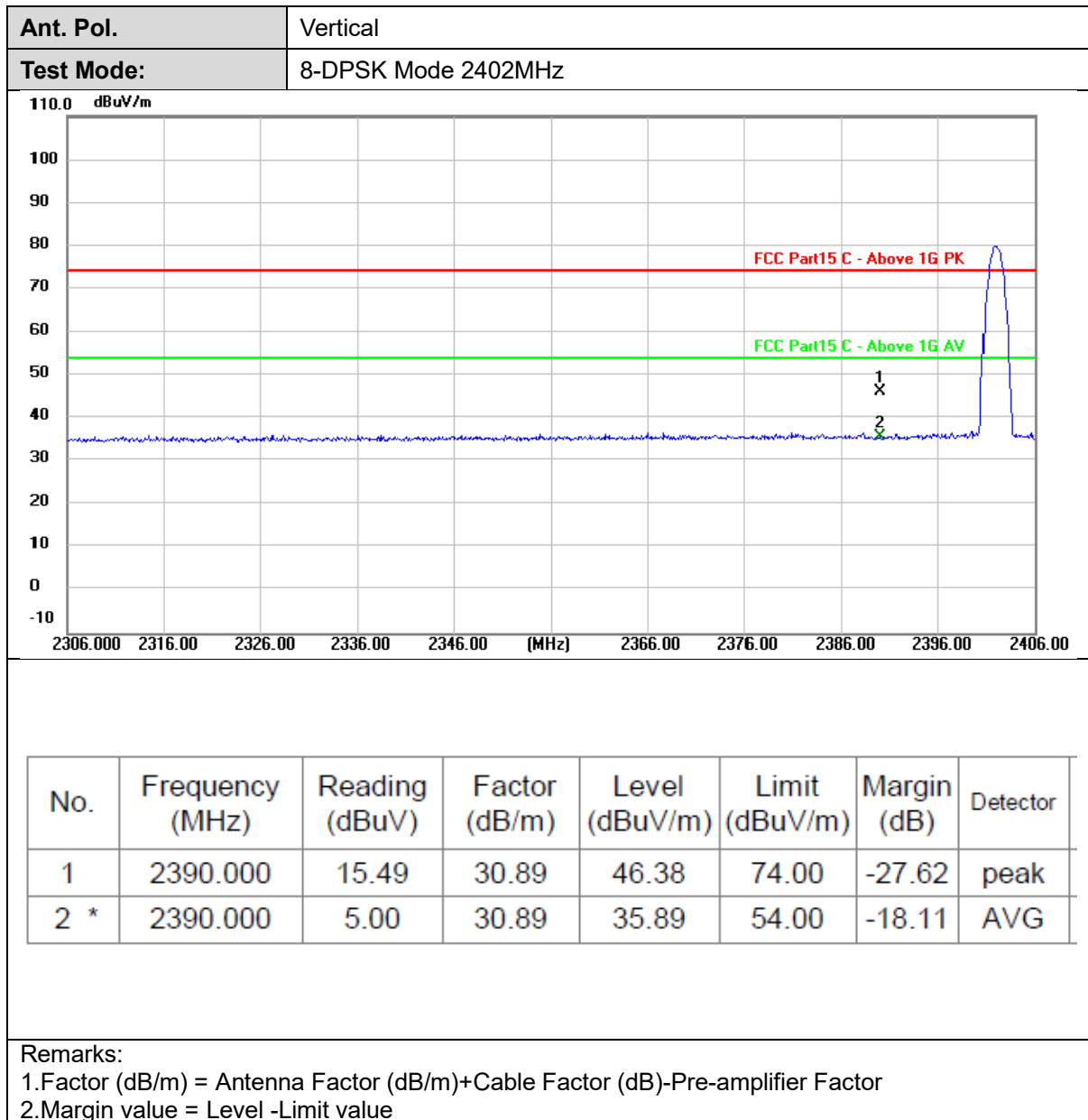


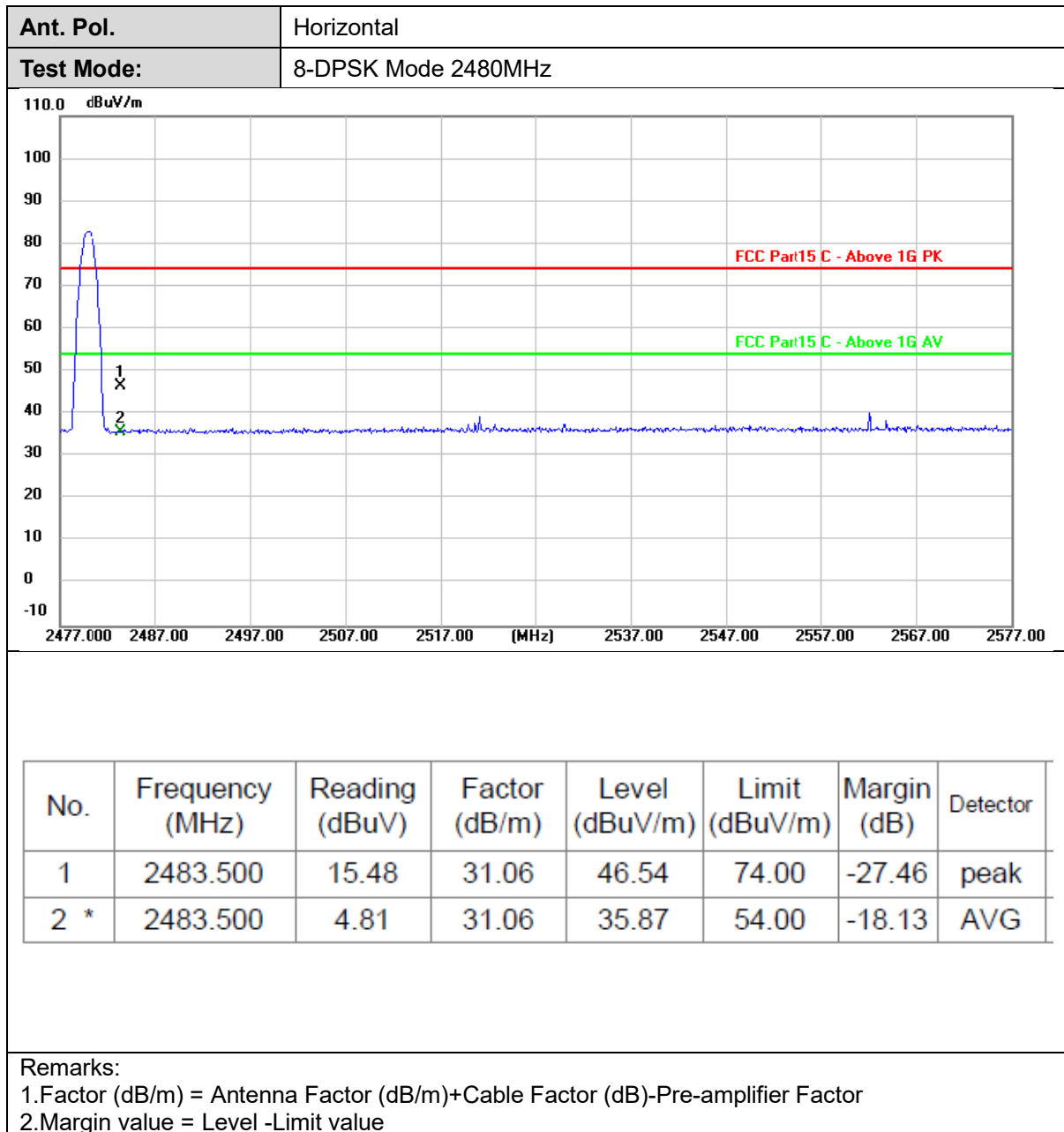


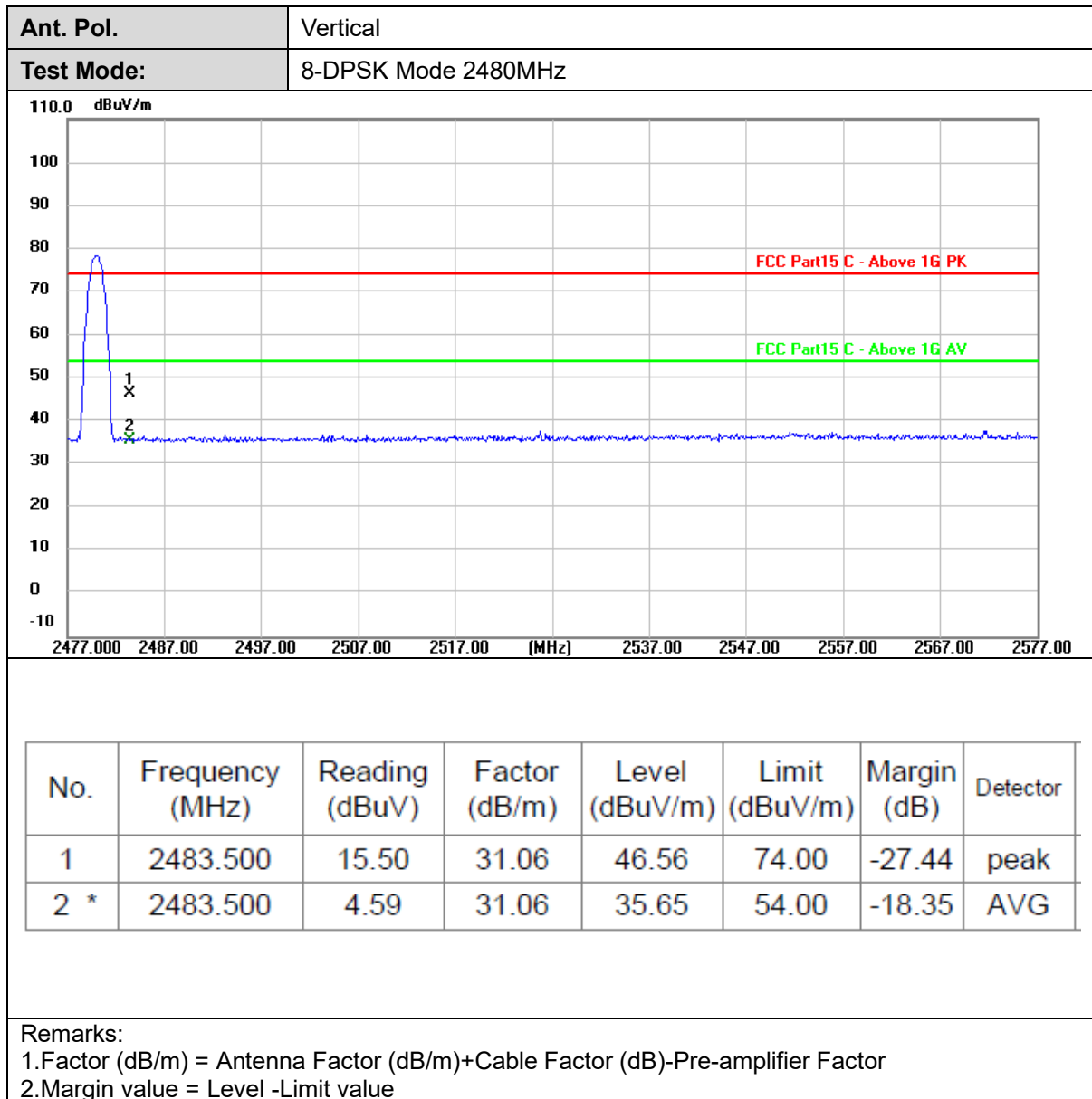












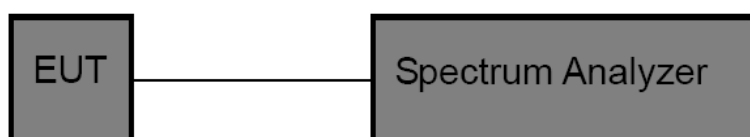
3.4. Band Edge and Spurious Emissions (Conducted)

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 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.

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 ≥ RBW, scan up through 10th 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 Result

Band Edge Conducted Test

TestMode	Antenna	ChName	Freq (MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-2.73	-57.04	≤-22.73	PASS
		High	2480	-4.65	-56.69	≤-24.65	PASS
		Low	Hop 2402	-2.52	-56.44	≤-22.52	PASS
		High	Hop 2480	-4.24	-50.02	≤-24.24	PASS
2DH5	Ant1	Low	2402	-2.59	-57.45	≤-22.59	PASS
		High	2480	-4.28	-57.14	≤-24.28	PASS
		Low	Hop 2402	-2.58	-57.09	≤-22.58	PASS
		High	Hop 2480	-4.82	-56.49	≤-24.82	PASS
3DH5	Ant1	Low	2402	-2.53	-46.49	≤-22.53	PASS
		High	2480	-5.40	-57.07	≤-25.4	PASS
		Low	Hop 2402	-4.42	-57.28	≤-24.42	PASS
		High	Hop 2480	-6.30	-55.52	≤-26.3	PASS

Band Edge Conducted Test plot as follows:

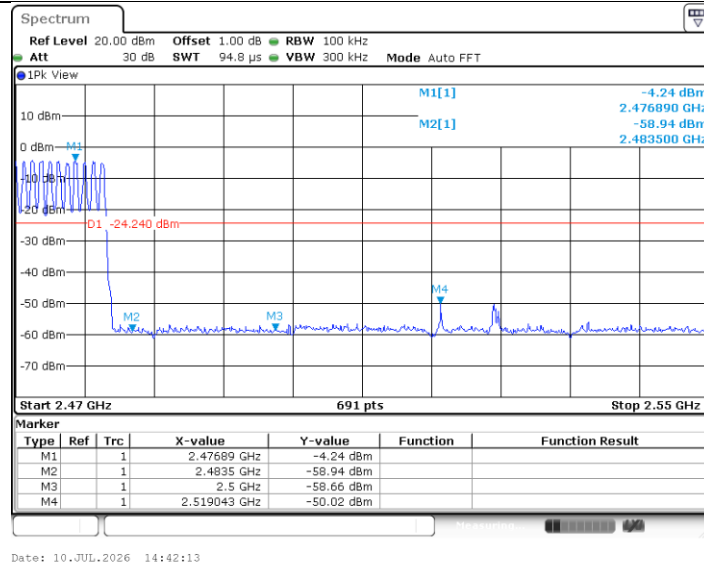


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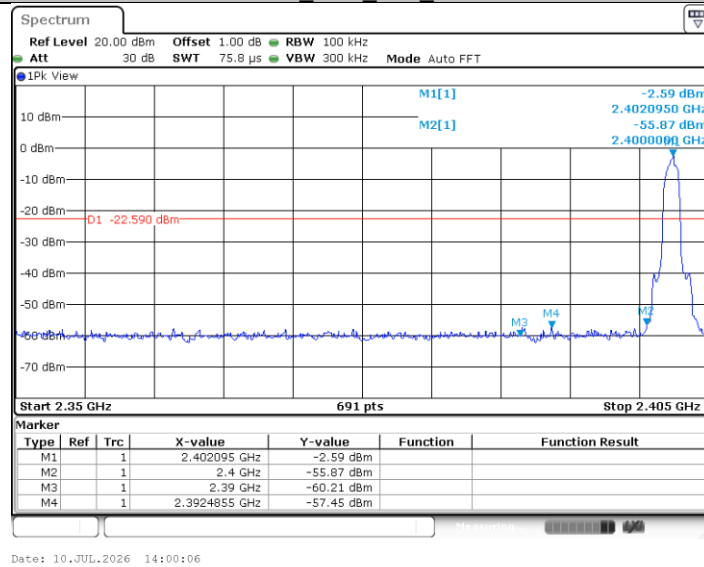
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-059_A5

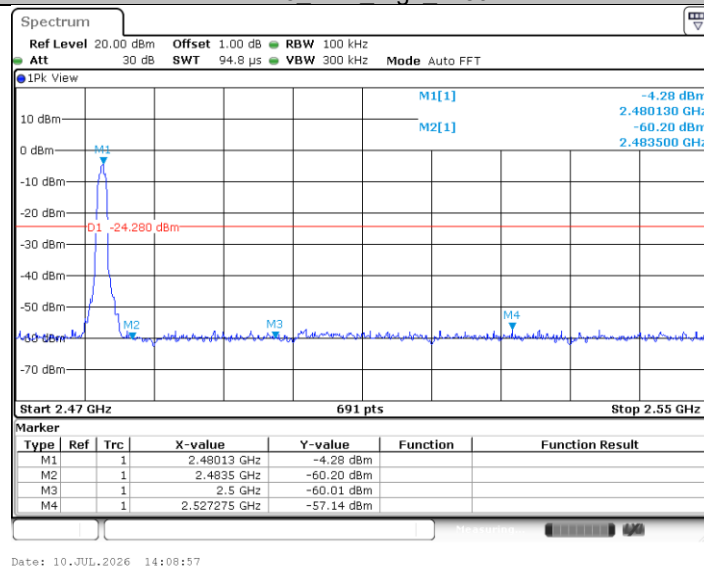
Master TRF : Dated 2026-06-01



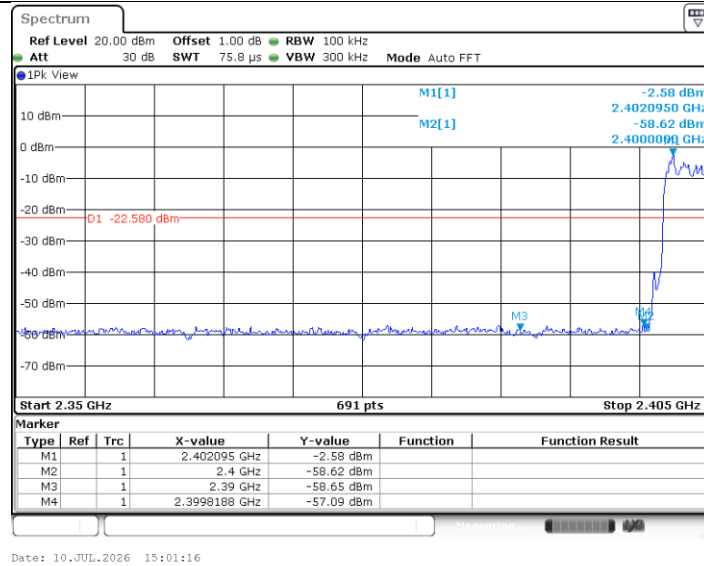
2DH5 Ant1 Low 2402



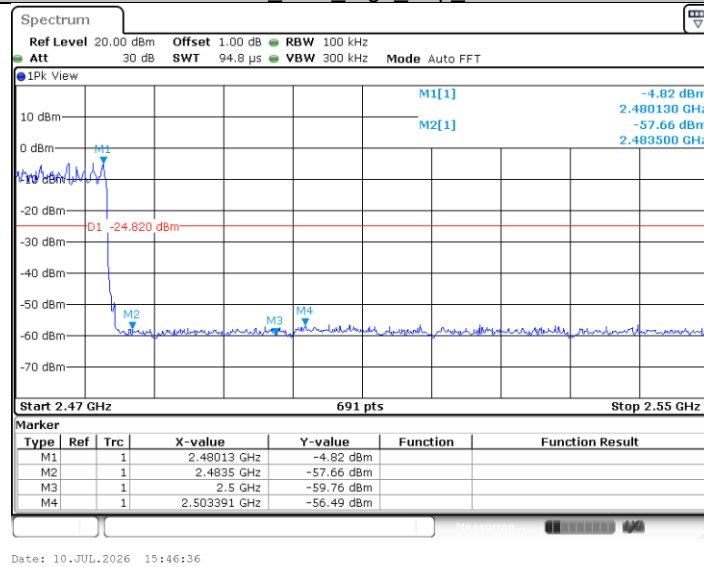
2DH5 Ant1 High 2480



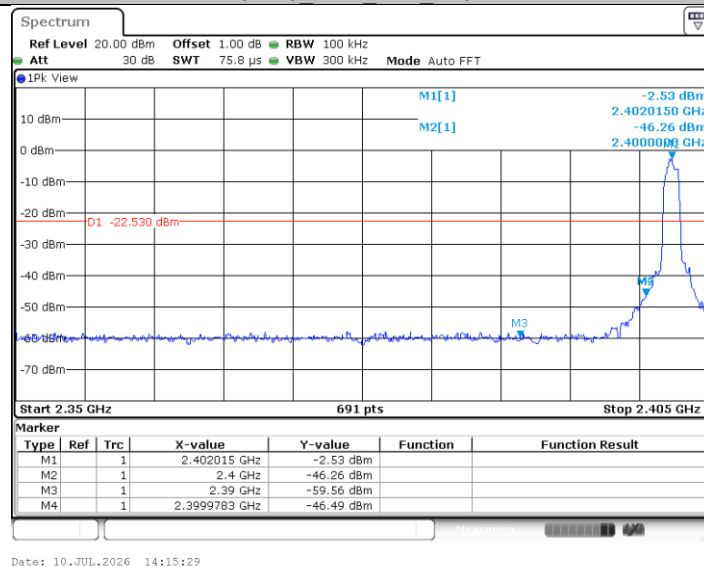
2DH5 Ant1 Low Hop 2402



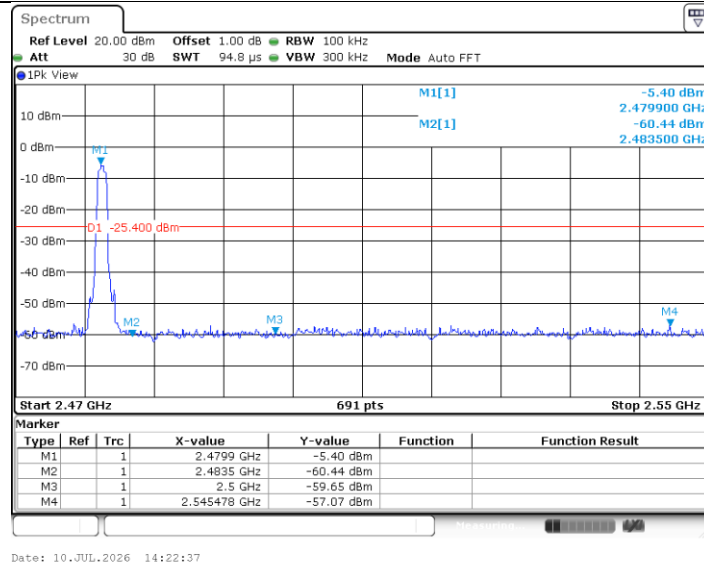
2DH5 Ant1 High Hop 2480



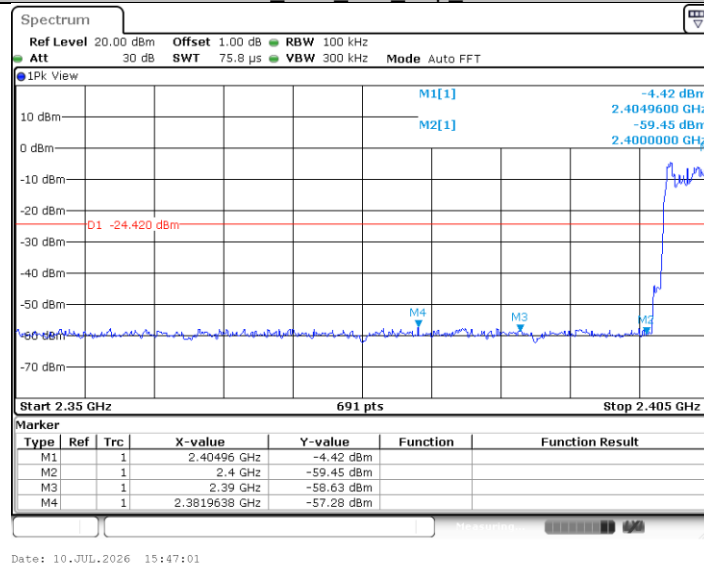
3DH5 Ant1 Low 2402



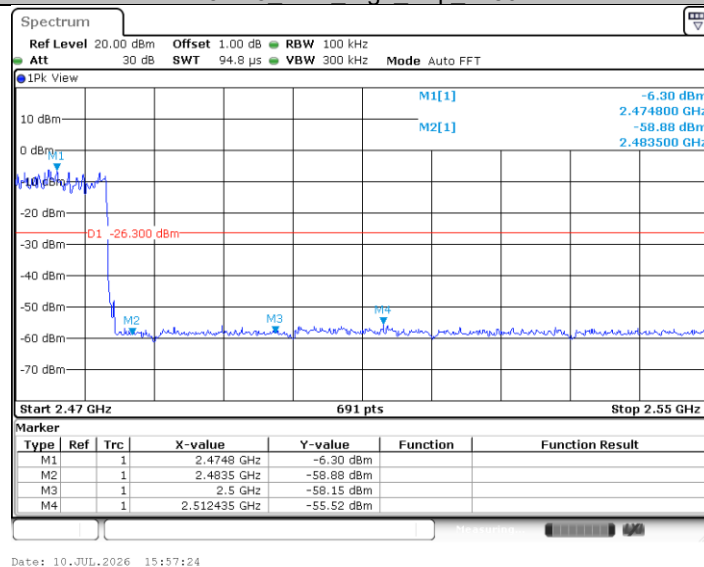
3DH5 Ant1 High 2480



3DH5 Ant1 Low Hop 2402



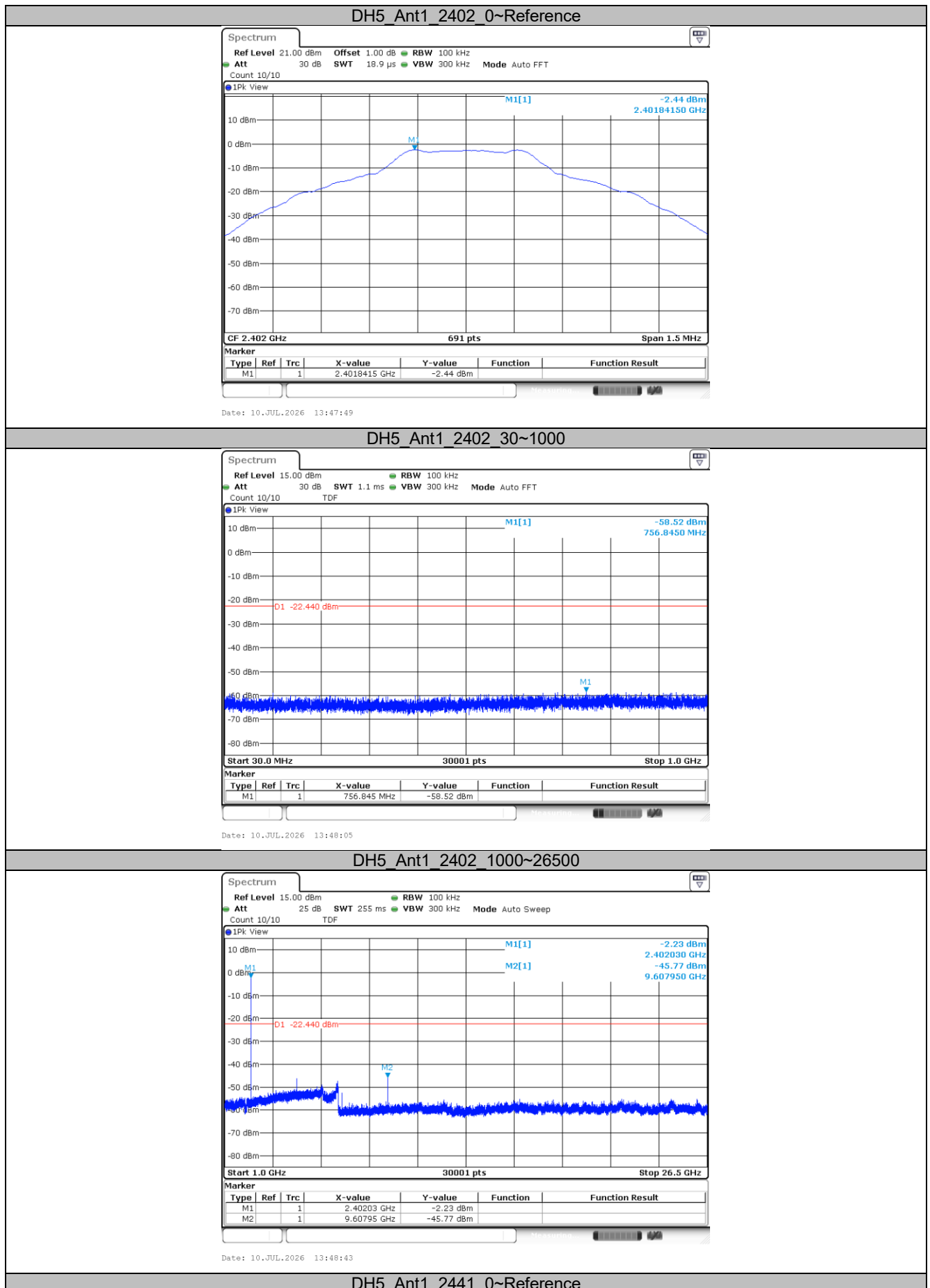
3DH5 Ant1 High Hop 2480



Conducted Spurious Emissions Test

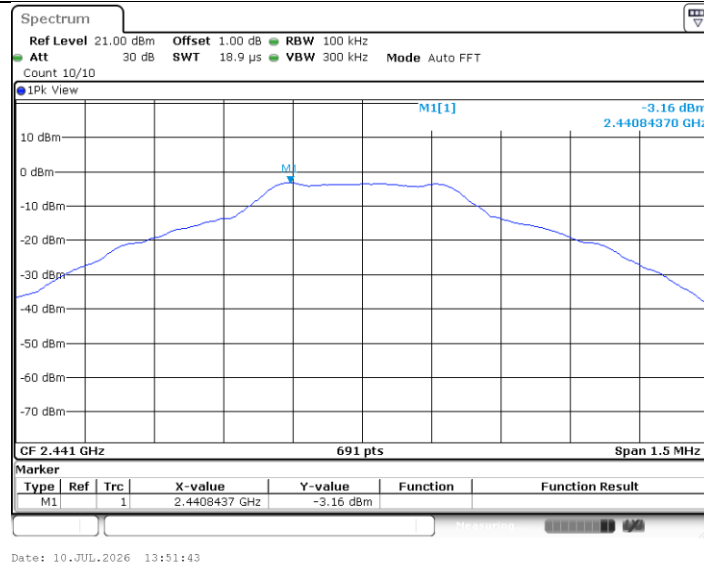
TestMode	Antenna	Freq (MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-2.44	-2.44	---	PASS
			30~1000	-2.44	-58.52	≤-22.44	PASS
			1000~26500	-2.44	-45.77	≤-22.44	PASS
		2441	Reference	-3.16	-3.16	---	PASS
			30~1000	-3.16	-51.41	≤-23.16	PASS
			1000~26500	-3.16	-48.05	≤-23.16	PASS
		2480	Reference	-4.14	-4.14	---	PASS
			30~1000	-4.14	-57.93	≤-24.14	PASS
			1000~26500	-4.14	-48.29	≤-24.14	PASS
2DH5	Ant1	2402	Reference	-2.53	-2.53	---	PASS
			30~1000	-2.53	-57.38	≤-22.53	PASS
			1000~26500	-2.53	-45.48	≤-22.53	PASS
		2441	Reference	-3.23	-3.23	---	PASS
			30~1000	-3.23	-57.77	≤-23.23	PASS
			1000~26500	-3.23	-48.49	≤-23.23	PASS
		2480	Reference	-4.19	-4.19	---	PASS
			30~1000	-4.19	-57.25	≤-24.19	PASS
			1000~26500	-4.19	-48.9	≤-24.19	PASS
3DH5	Ant1	2402	Reference	-2.72	-2.72	---	PASS
			30~1000	-2.72	-57.84	≤-22.72	PASS
			1000~26500	-2.72	-45.53	≤-22.72	PASS
		2441	Reference	-3.39	-3.39	---	PASS
			30~1000	-3.39	-58.01	≤-23.39	PASS
			1000~26500	-3.39	-47.59	≤-23.39	PASS
		2480	Reference	-4.33	-4.33	---	PASS
			30~1000	-4.33	-57.53	≤-24.33	PASS
			1000~26500	-4.33	-48.32	≤-24.33	PASS

Conducted Spurious Emissions Test plot as follows

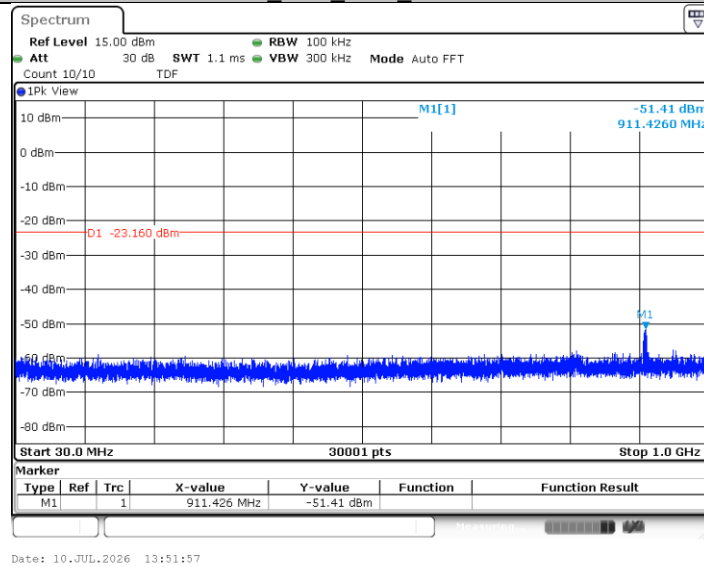


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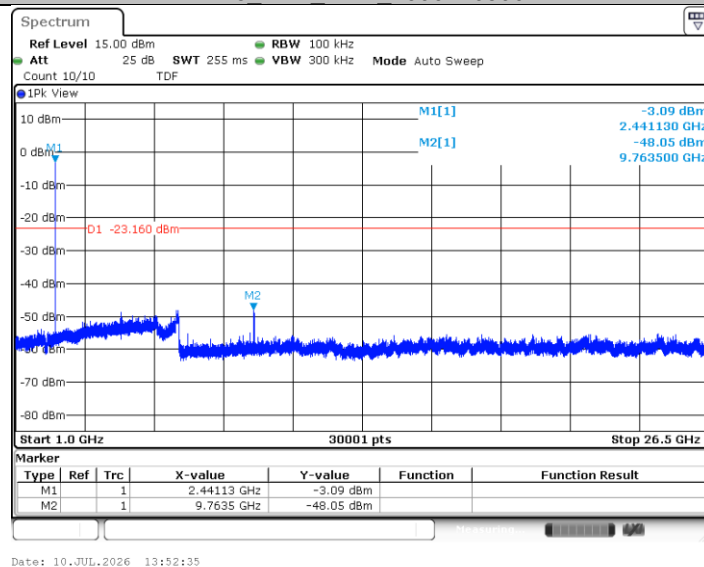
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn
TRF No: CTC-TR-059_A5 Master TRF : Dated 2026-06-01



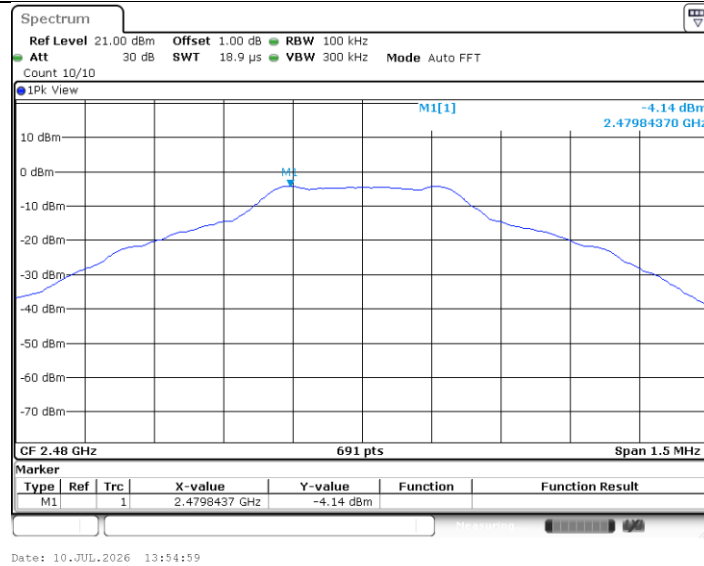
DH5 Ant1 2441 30~1000



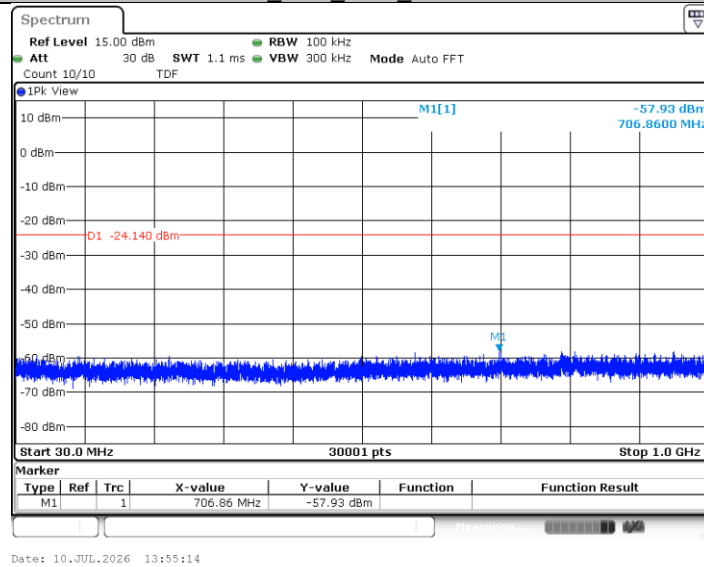
DH5 Ant1 2441 1000~26500



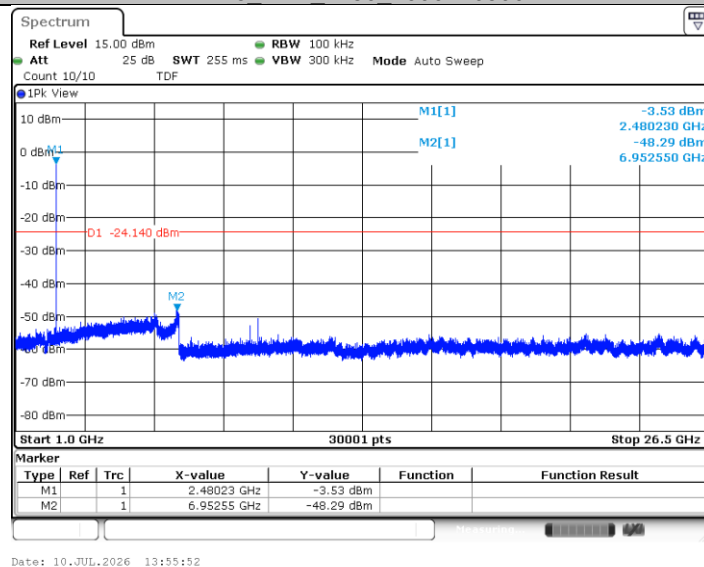
DH5 Ant1 2480 0~Reference



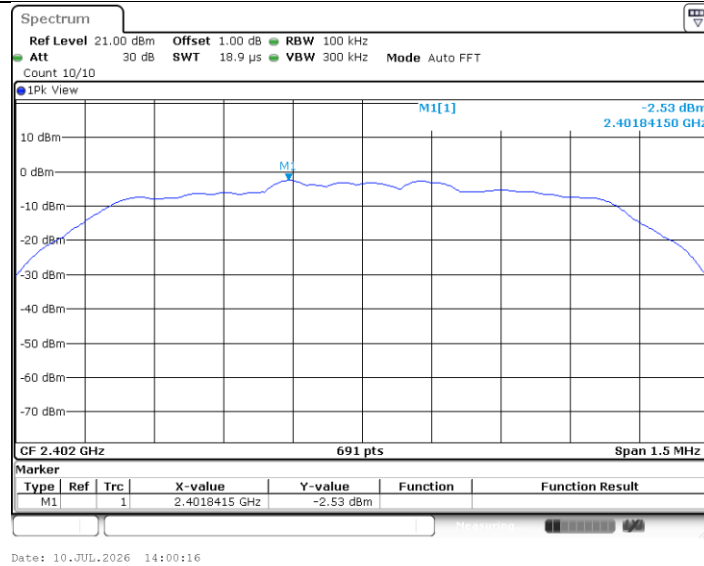
DH5 Ant1 2480 30~1000



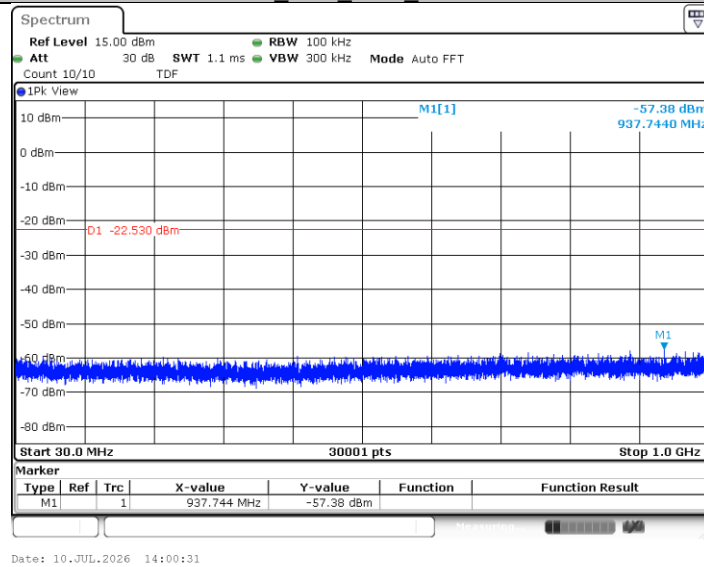
DH5 Ant1 2480 1000~26500



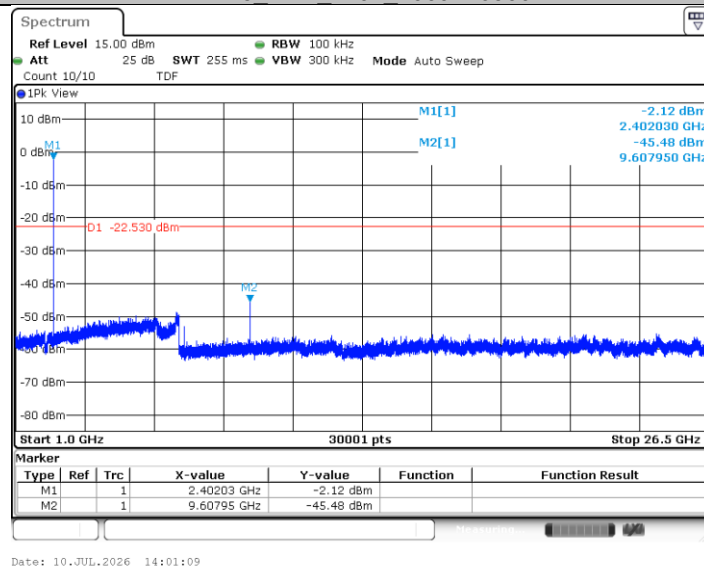
2DH5 Ant1 2402 0~Reference



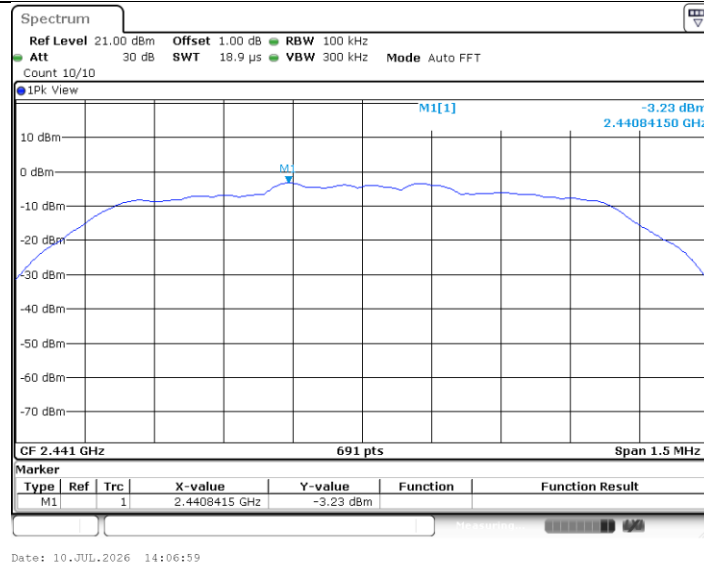
2DH5 Ant1 2402 30~1000



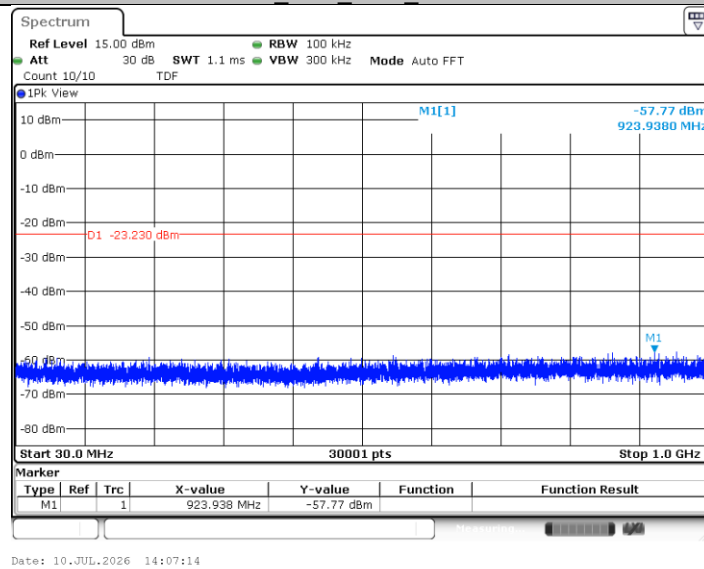
2DH5 Ant1 2402 1000~26500



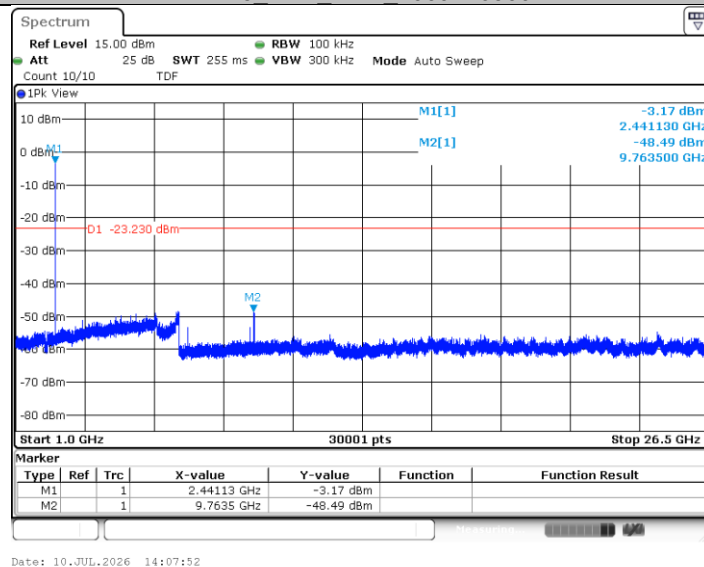
2DH5 Ant1 2441 0~Reference



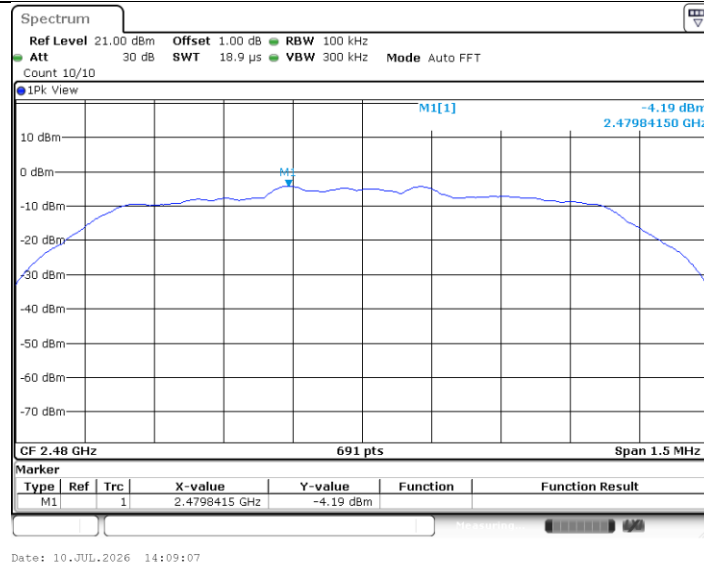
2DH5 Ant1 2441 30~1000



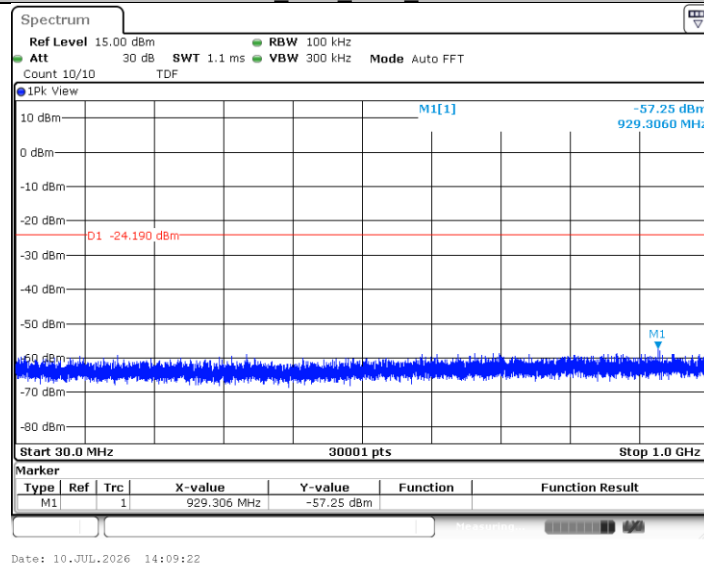
2DH5 Ant1 2441 1000~26500



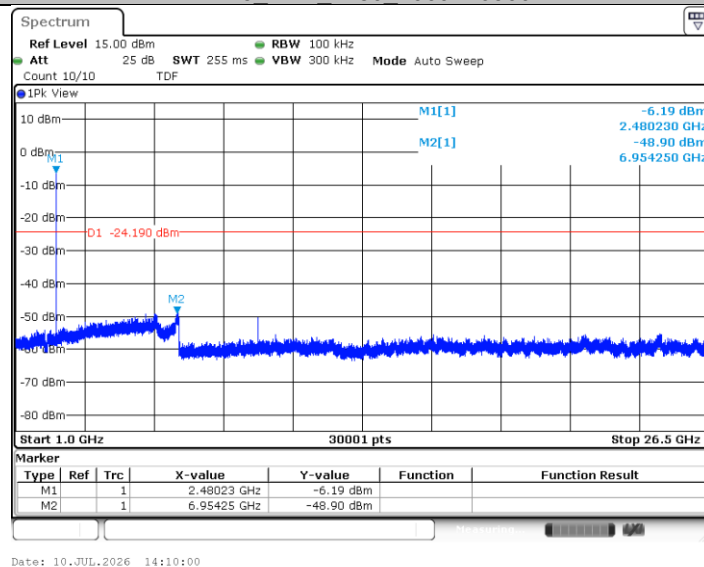
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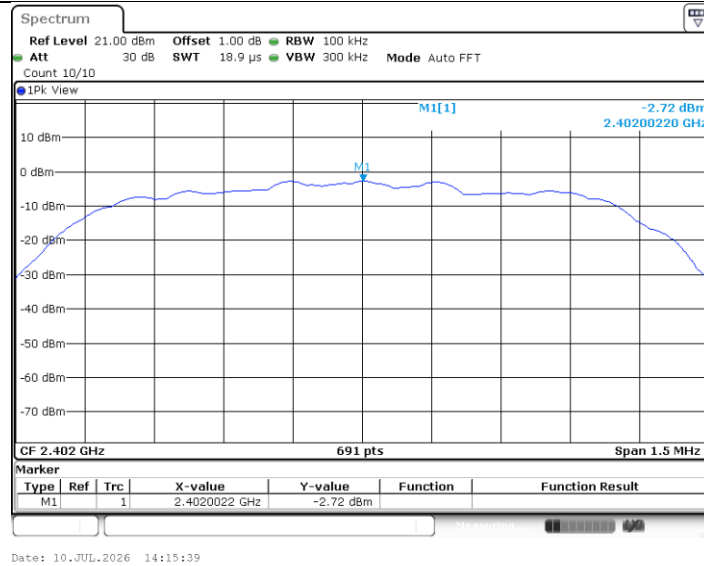
2DH5 Ant1 2480 30~1000



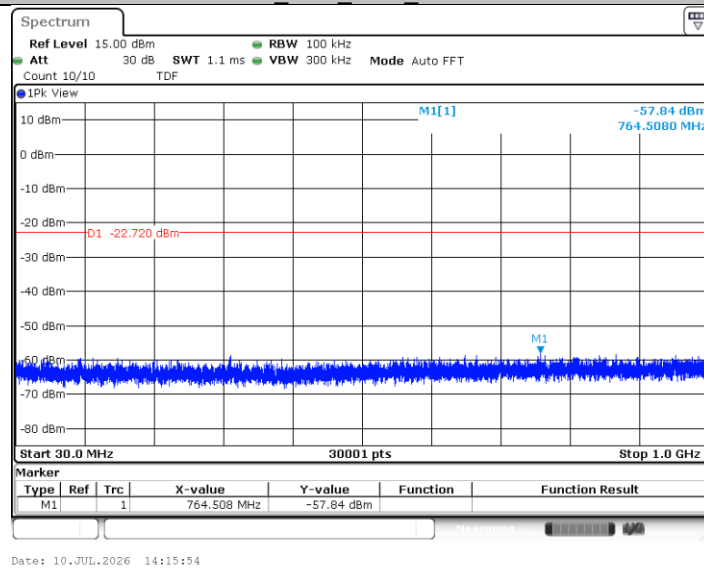
2DH5 Ant1 2480 1000~26500



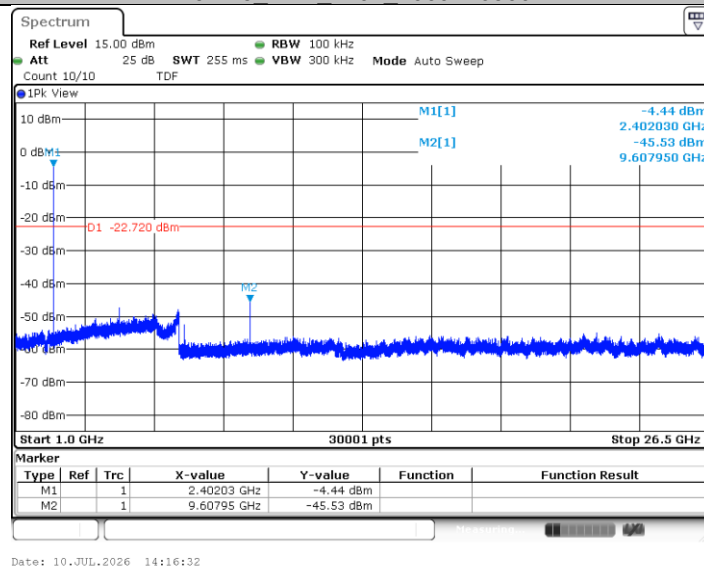
3DH5 Ant1 2402 0~Reference



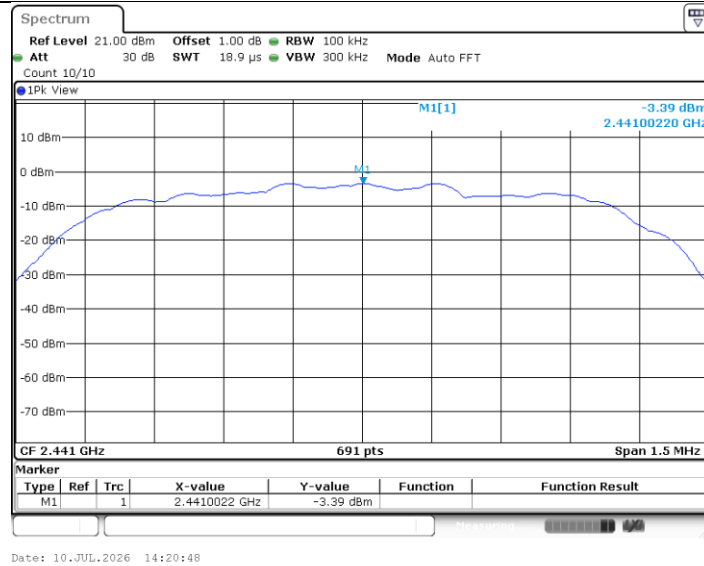
3DH5 Ant1 2402 30~1000



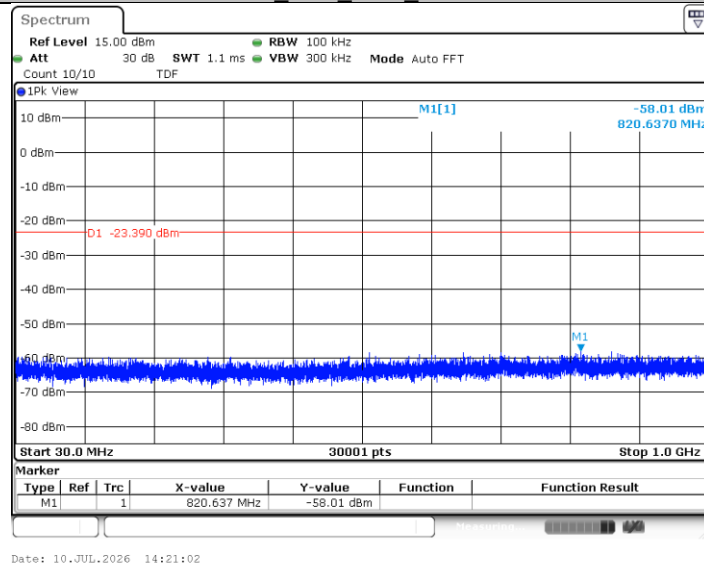
3DH5 Ant1 2402 1000~26500



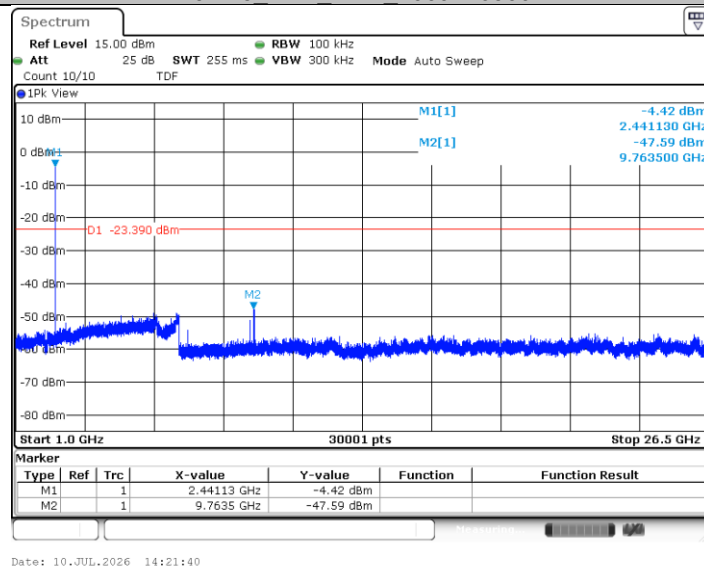
3DH5 Ant1 2441 0~Reference



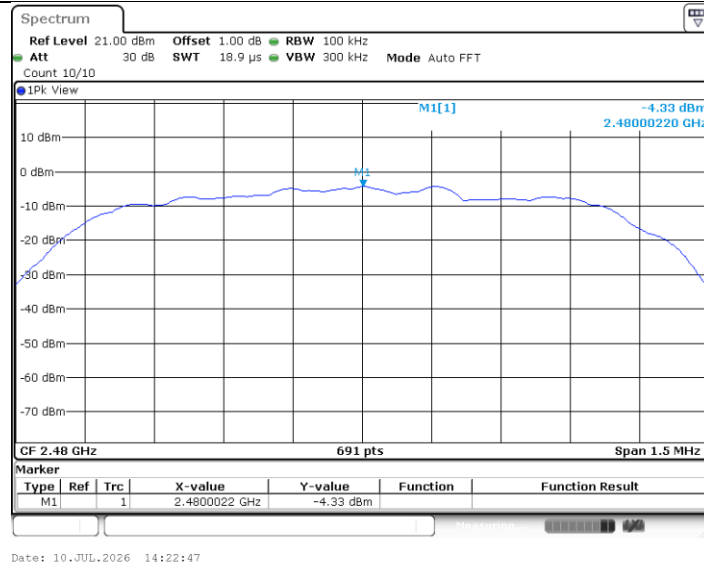
3DH5 Ant1 2441 30~1000



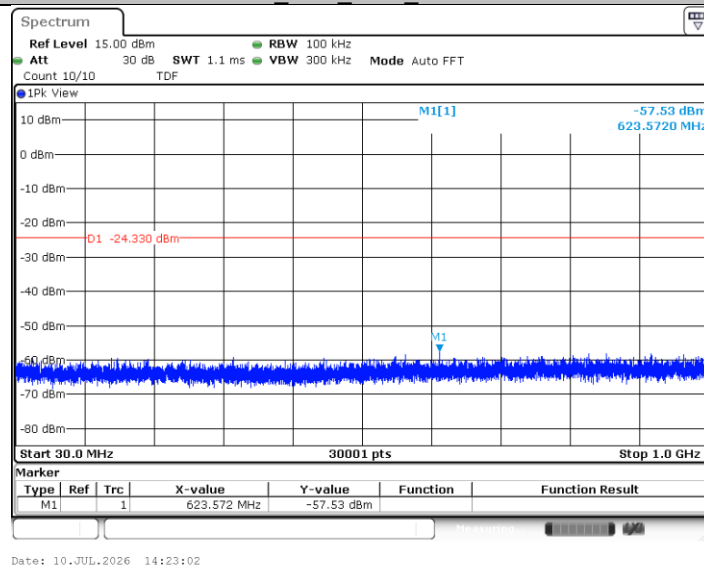
3DH5 Ant1 2441 1000~26500



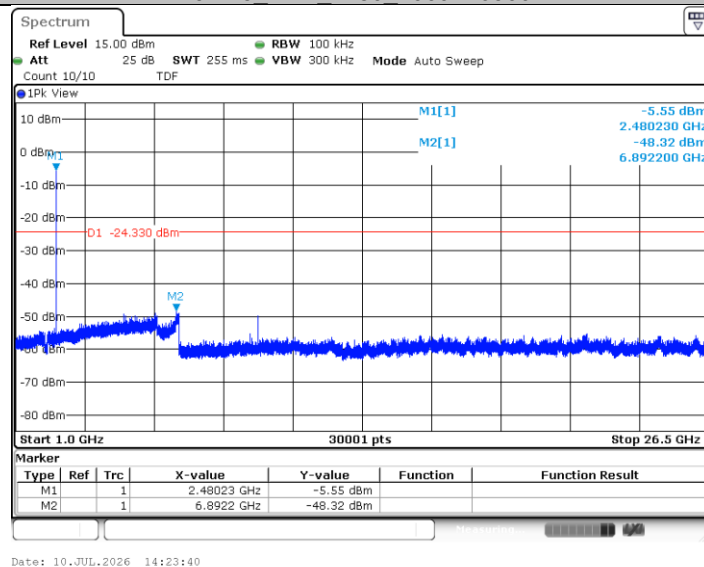
3DH5 Ant1 2480 0~Reference



3DH5 Ant1 2480 30~1000



3DH5 Ant1 2480 1000~26500

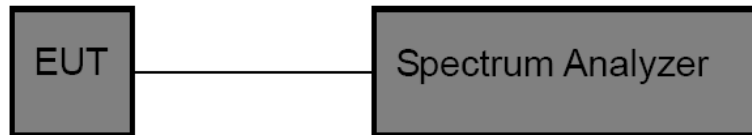


3.5. 20dB Bandwidth

Limit

N/A

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. OCB and 20dB Spectrum Setting:
 - (1) Set RBW = 1% ~ 5% occupied bandwidth.
 - (2) Set the video bandwidth (VBW) ≥ 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.

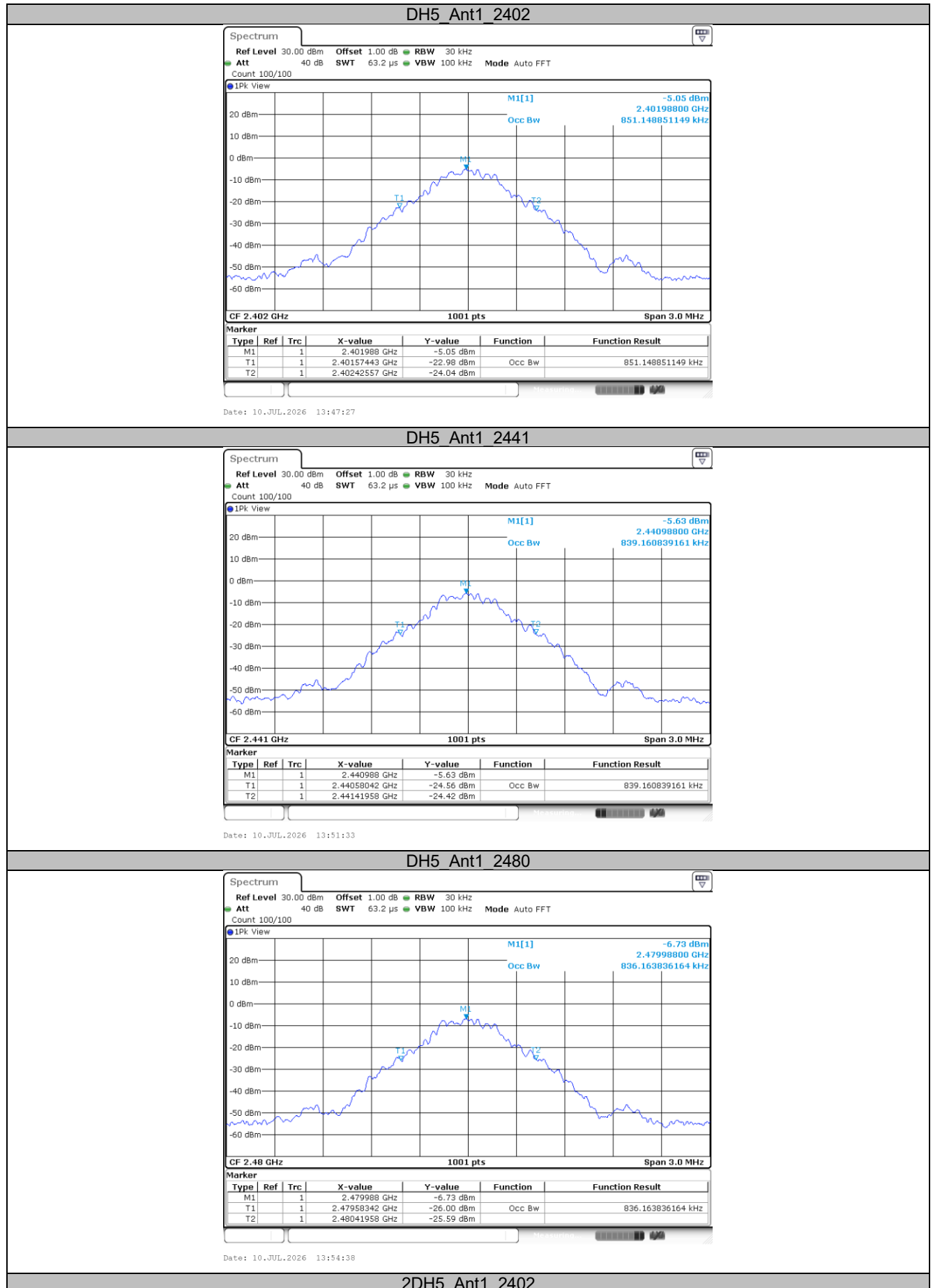
Test Mode

Please refer to the clause 2.4.

Test Result

Test Mode	Frequency (MHz)	99% Bandwidth (MHz)	20dB Bandwidth (MHz)	20dB Bandwidth *2/3 (MHz)
GFSK	2402	0.85115	0.95	0.633
	2441	0.83916	0.95	0.633
	2480	0.83616	0.95	0.633
$\pi/4$ -DQPSK	2402	1.1688	1.32	0.880
	2441	1.1658	1.32	0.880
	2480	1.1688	1.32	0.880
8-DPSK	2402	1.1718	1.30	0.867
	2441	1.1688	1.30	0.867
	2480	1.1718	1.30	0.867

99% Bandwidth:



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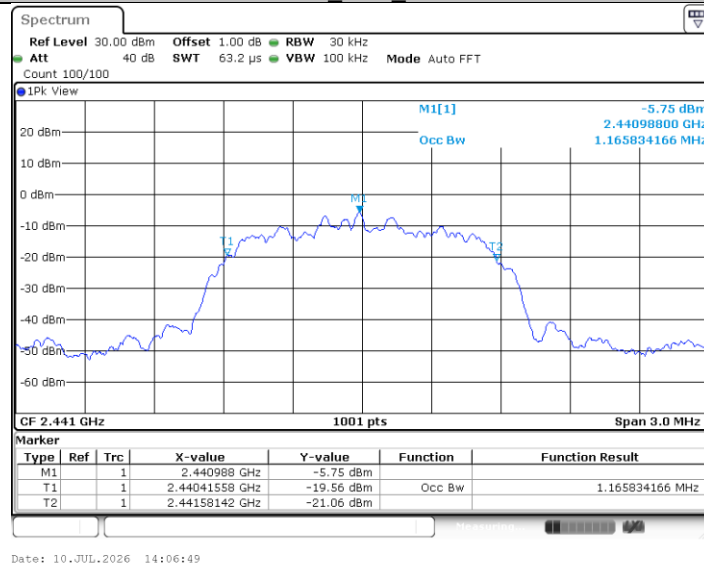
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-059_A5

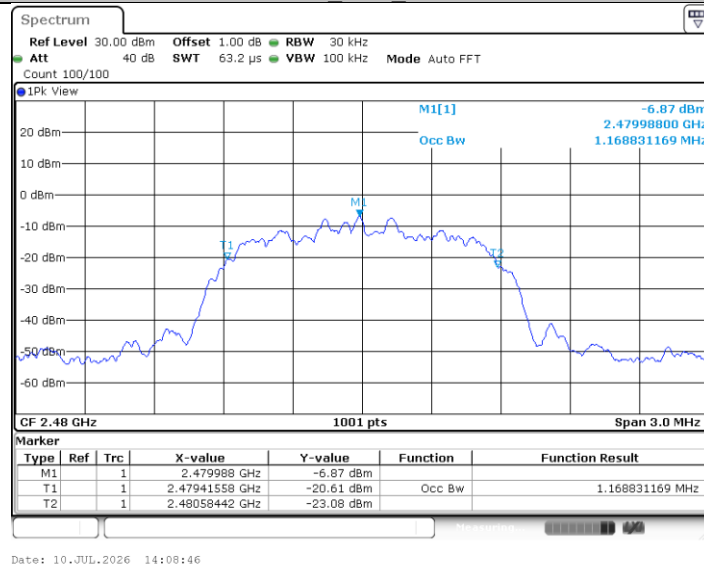
Master TRF : Dated 2026-06-01



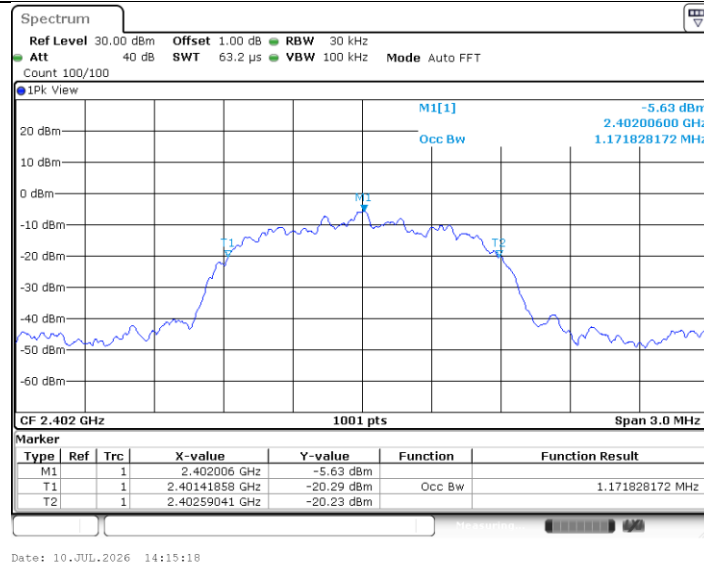
2DH5 Ant1 2441



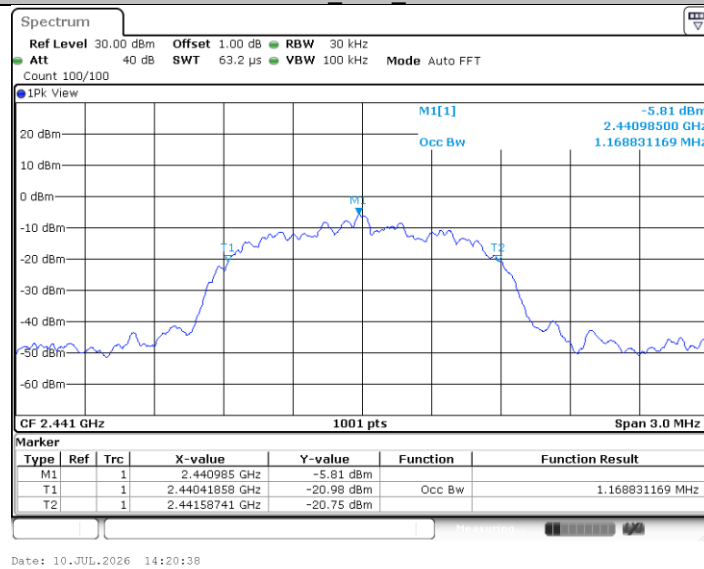
2DH5 Ant1 2480



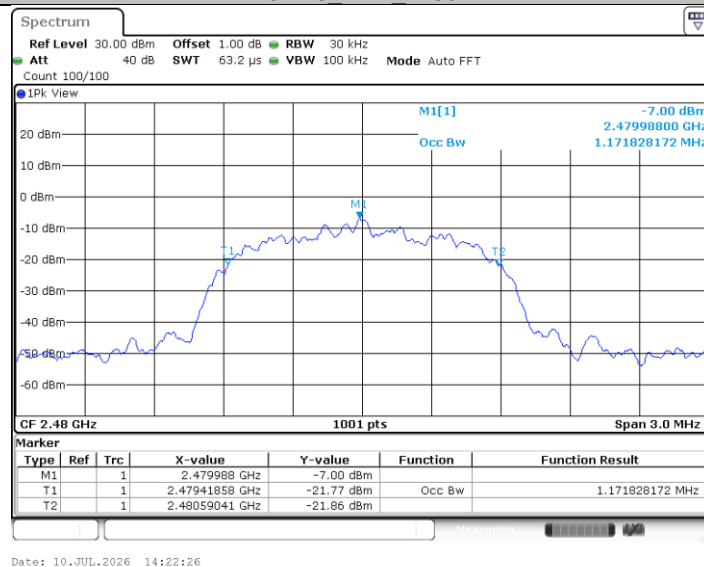
3DH5 Ant1 2402



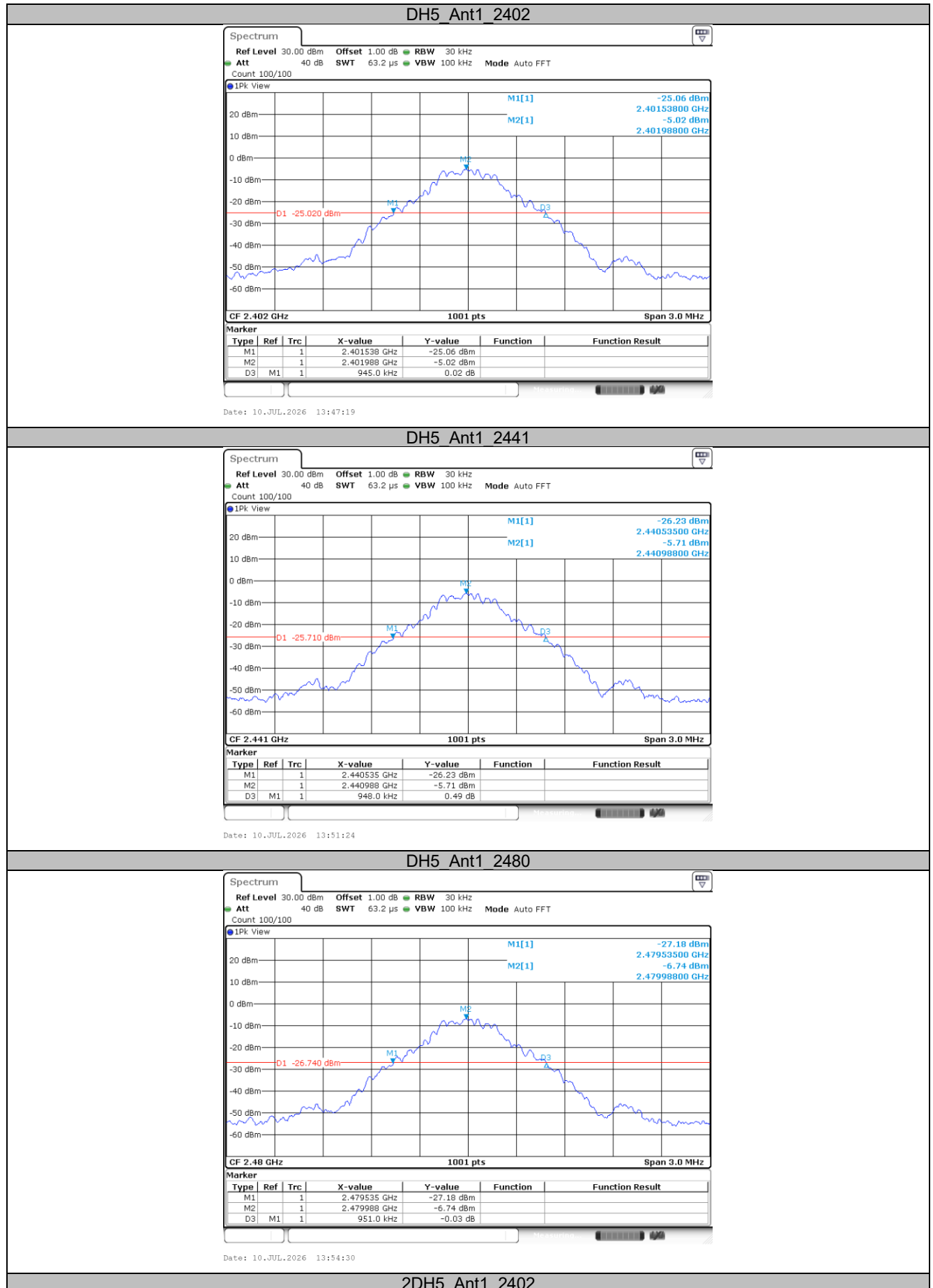
3DH5 Ant1 2441



3DH5 Ant1 2480



20dB Bandwidth:



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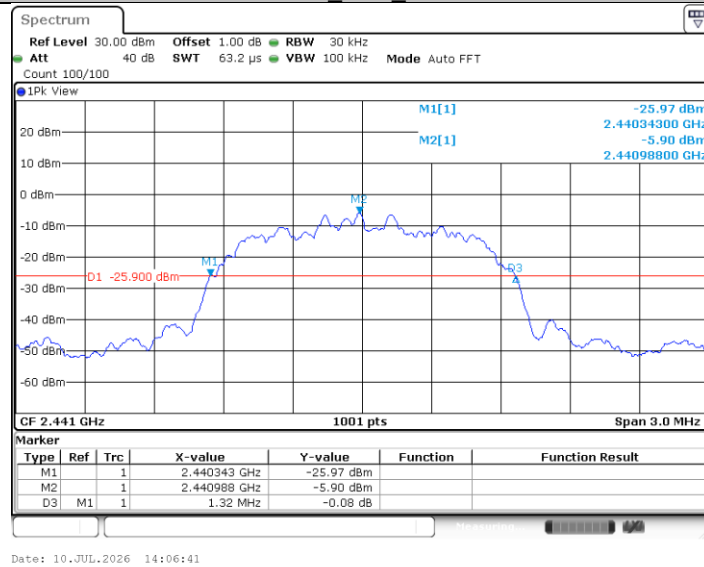
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-059_A5

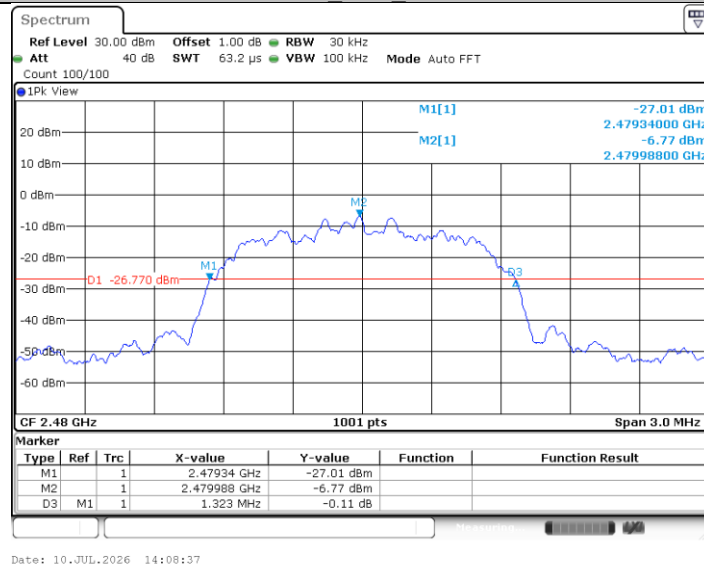
Master TRF : Dated 2026-06-01



2DH5 Ant1 2441



2DH5 Ant1 2480



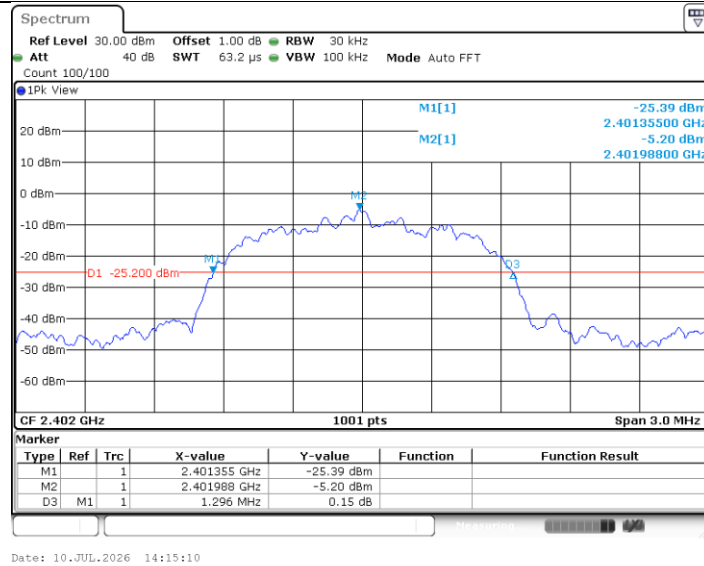
3DH5 Ant1 2402

CTC Laboratories, Inc.

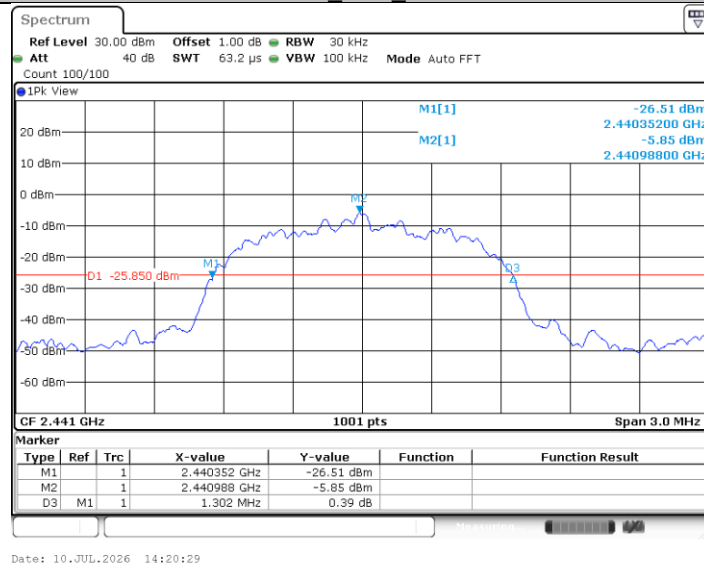
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-059_A5

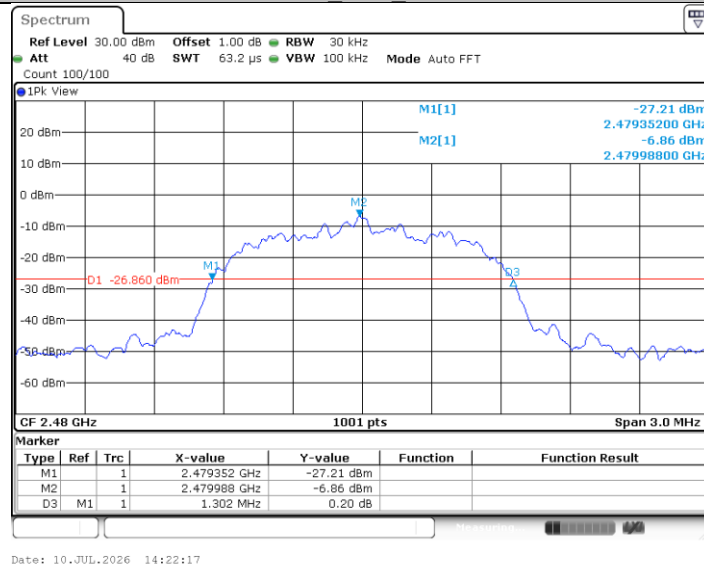
Master TRF : Dated 2026-06-01



3DH5_Ant1_2441



3DH5_Ant1_2480



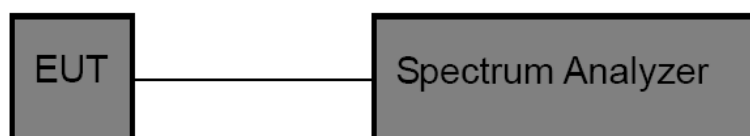
3.6. Channel Separation

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(1)

Test Item	Limit	Frequency Range (MHz)
Channel Separation	>25kHz or >two-thirds of the 20 dB bandwidth Which is greater	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. Spectrum Setting:
 - (1) Set RBW = 100 kHz.
 - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

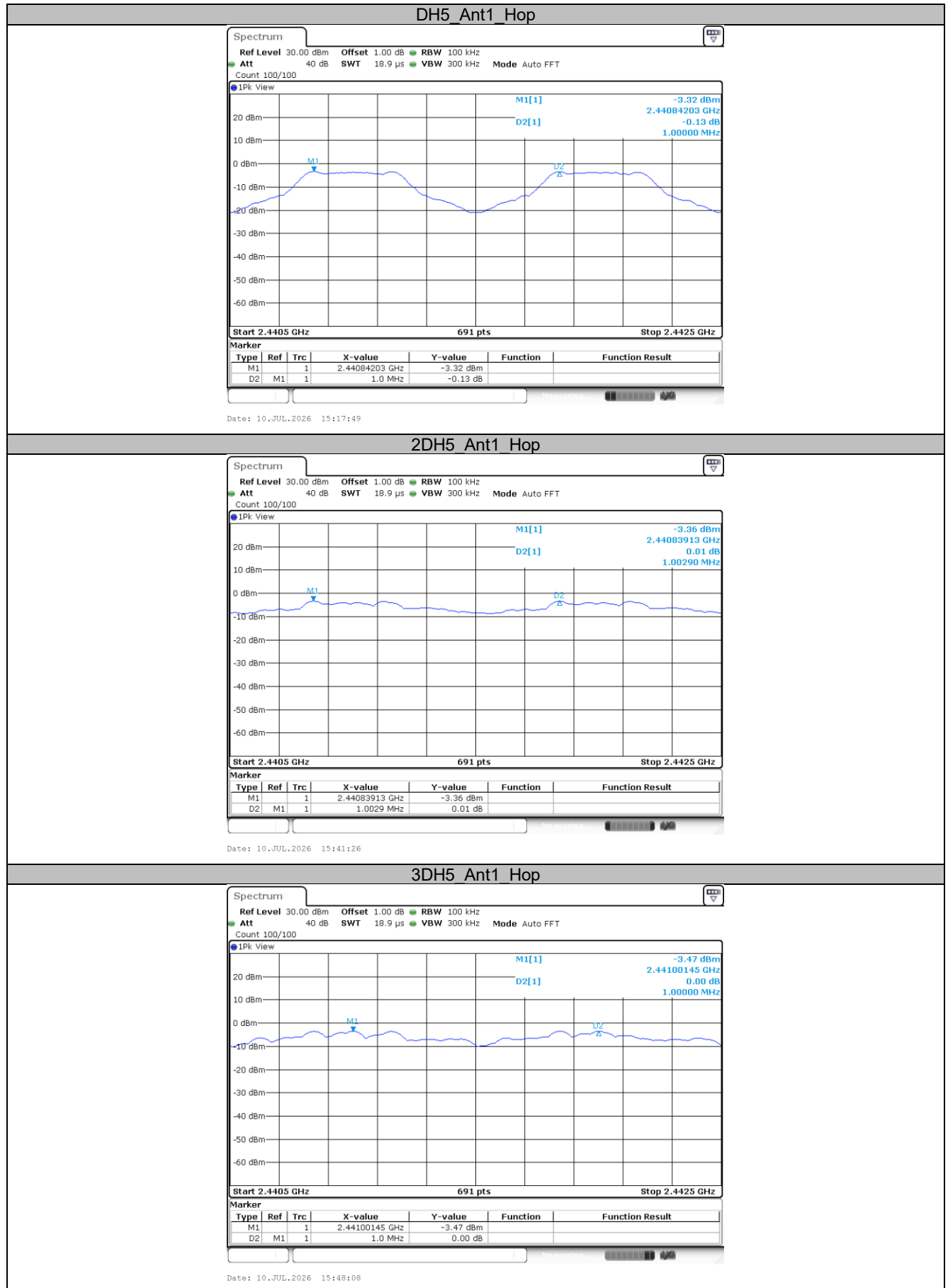
Test Mode

Please refer to the clause 2.4.

Test Result

Test Mode	Frequency (MHz)	Carrier Frequencies Separation (MHz)	Limit (MHz)	Verdict
GFSK	Hop_2441	1	>0.633	Pass
$\pi/4$ -DQPSK	Hop_2441	1.003	>0.880	Pass
8-DPSK	Hop_2441	1	>0.867	Pass

Test plot as follows:



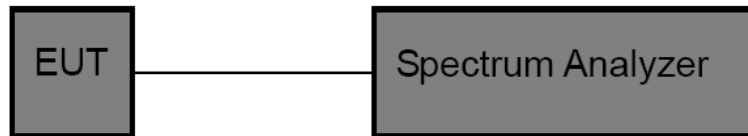
3.7. Number of Hopping Channel

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(iii)

Section	Test Item	Limit
15.247 (a)(iii)	Number of Hopping Channel	≥ 15

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. Spectrum Setting:
(1) Peak Detector: RBW=100 kHz, VBW $\geq$ RBW, Sweep time= Auto.

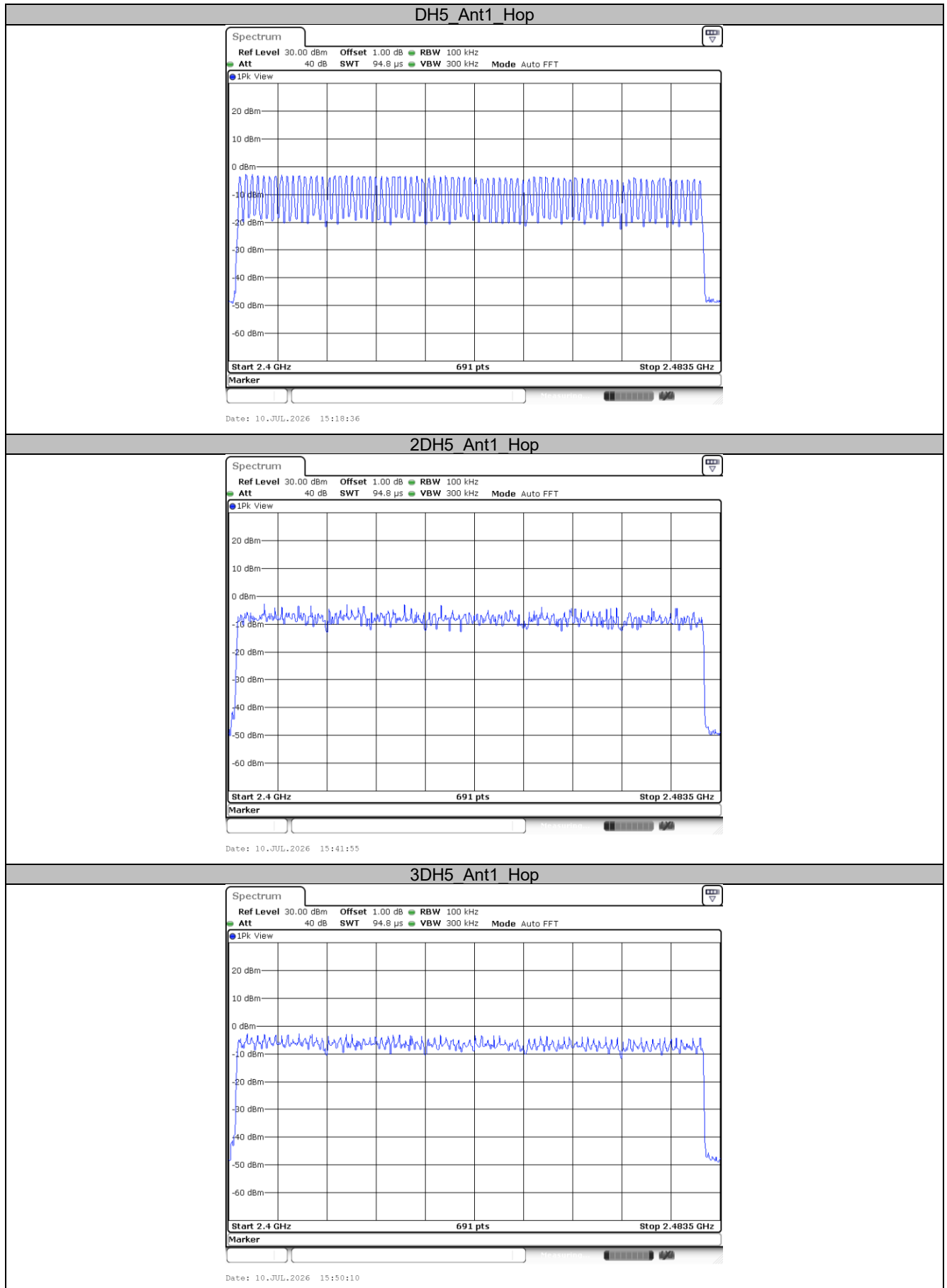
Test Mode

Please refer to the clause 2.4.

Test Result

Test Mode	Channel Number	Limit	Verdict
GFSK	79	≥ 15	Pass
$\pi/4$ -DQPSK	79	≥ 15	Pass
8-DPSK	79	≥ 15	Pass

Test plot as follows:



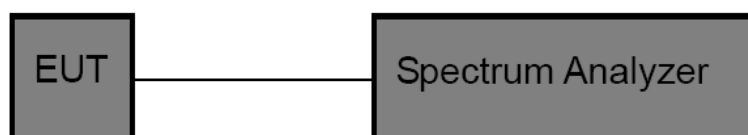
3.8. Dwell Time

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(iii)

Section	Test Item	Limit
15.247 (a)(iii)	Average Time of Occupancy	0.4 sec

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. Spectrum Setting:
 - (1) Spectrum Setting: RBW=1MHz, VBW $\geq$ RBW.
 - (2) Use video trigger with the trigger level set to enable triggering only on full pulses.
 - (3) Sweep Time is more than once pulse time.
 - (4) Set the center frequency on any frequency would be measure and set the frequency span to zero.
 - (5) Measure the maximum time duration of one single pulse.
 - (6) Set the EUT for packet transmitting.

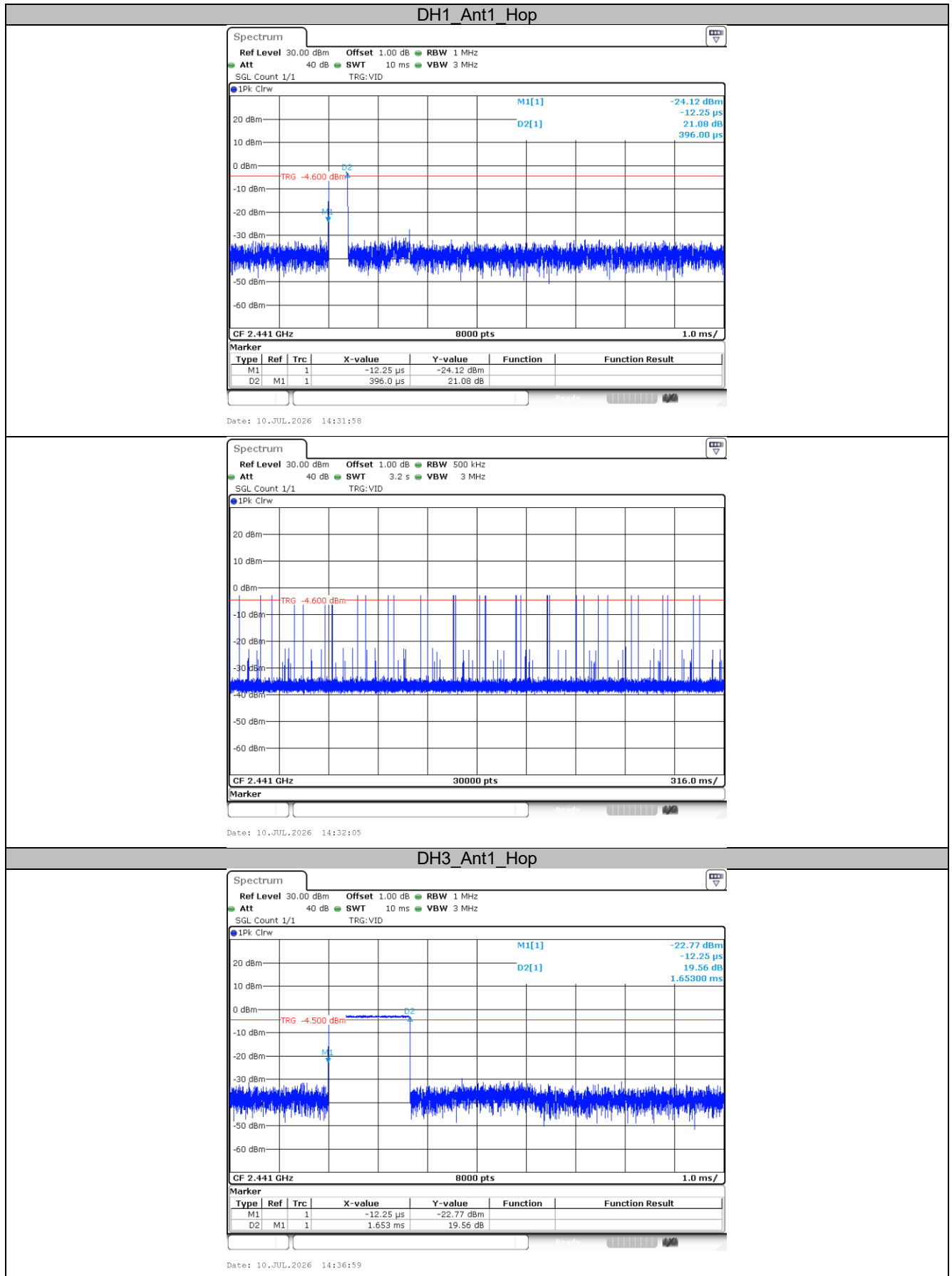
Test Mode

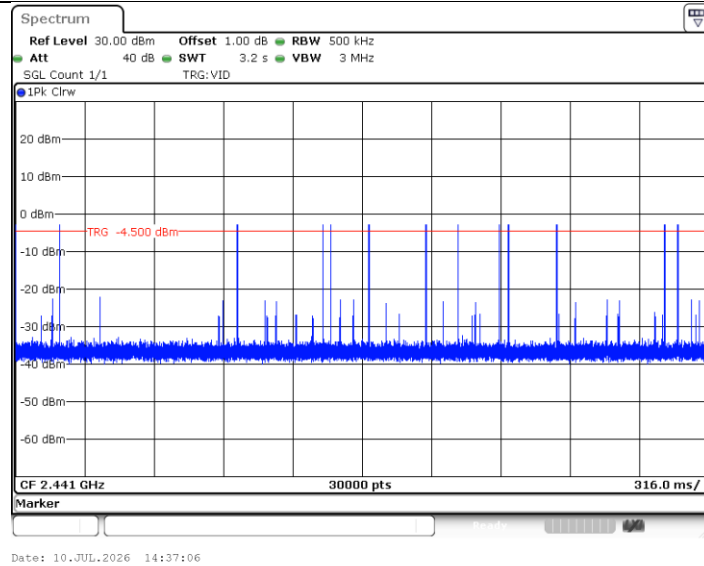
Please refer to the clause 2.4.

Test Result

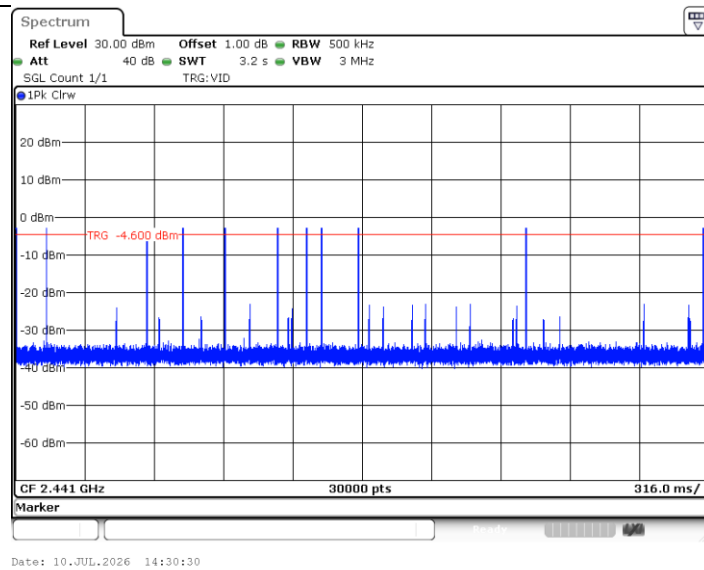
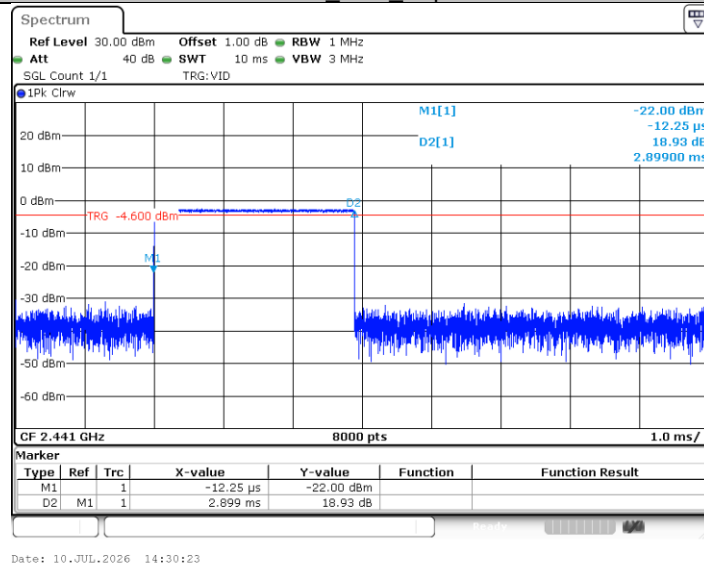
TestMode	Antenna	Freq (MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.396	320	0.127	≤0.4	PASS
DH3	Ant1	Hop	1.653	130	0.215	≤0.4	PASS
DH5	Ant1	Hop	2.899	110	0.319	≤0.4	PASS
2DH1	Ant1	Hop	0.405	320	0.13	≤0.4	PASS
2DH3	Ant1	Hop	1.658	190	0.315	≤0.4	PASS
2DH5	Ant1	Hop	2.907	90	0.262	≤0.4	PASS
3DH1	Ant1	Hop	0.406	330	0.134	≤0.4	PASS
3DH3	Ant1	Hop	1.656	190	0.315	≤0.4	PASS
3DH5	Ant1	Hop	2.908	90	0.262	≤0.4	PASS

Test plot as follows:

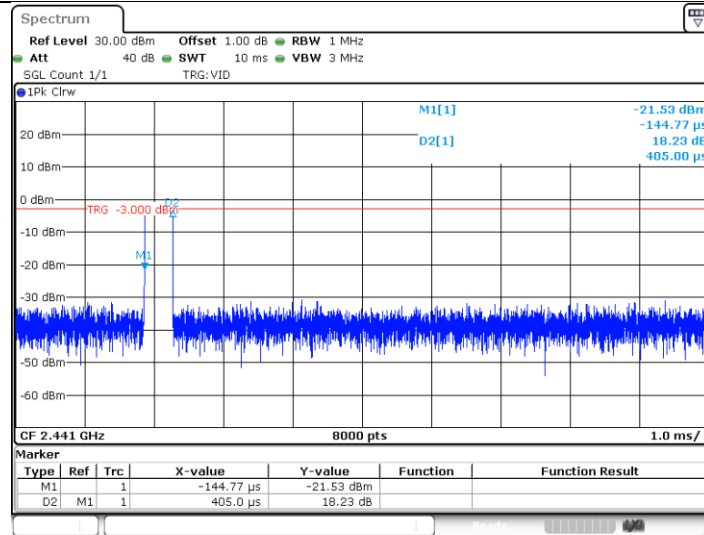




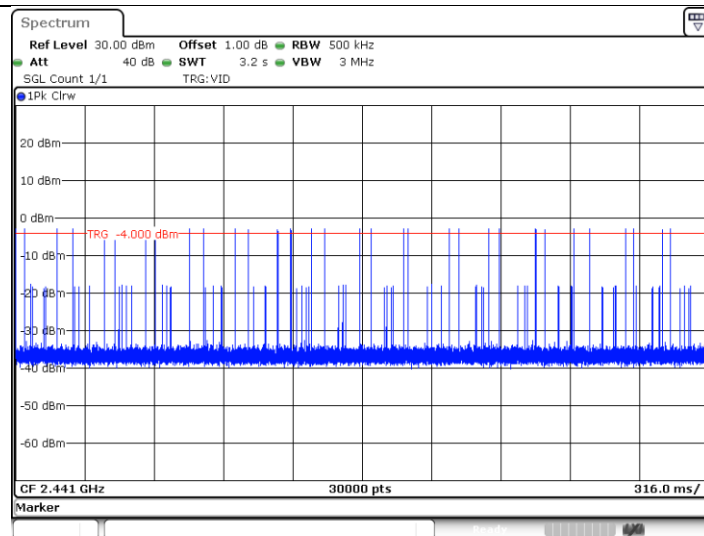
DH5_Ant1_Hop



2DH1_Ant1_Hop

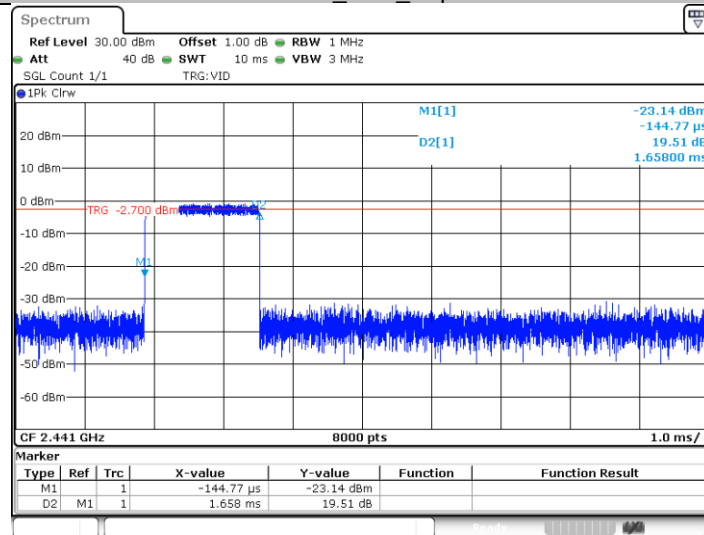


Date: 10.JUL.2026 15:43:59

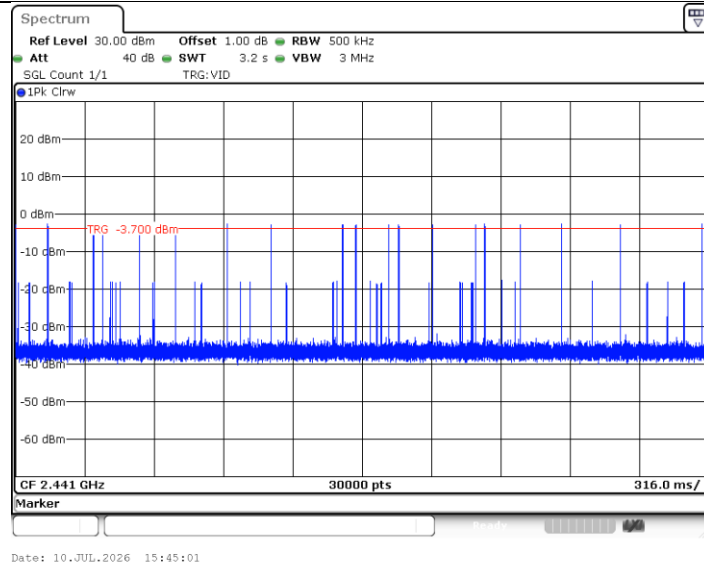


Date: 10.JUL.2026 15:44:12

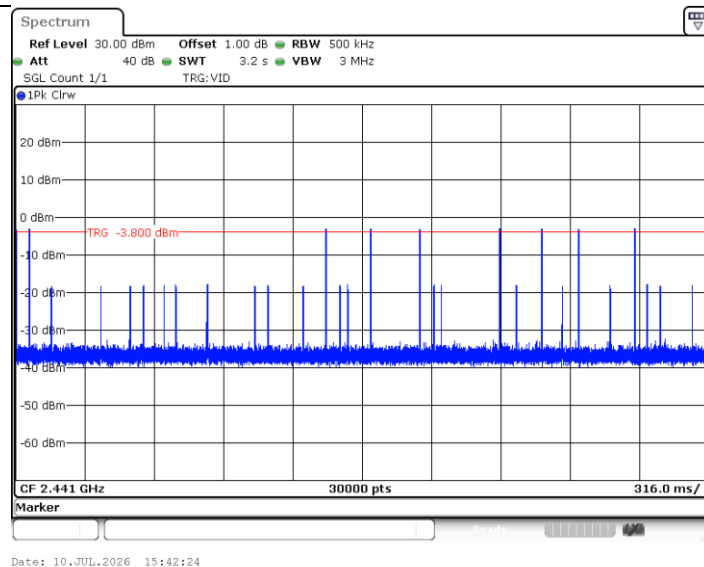
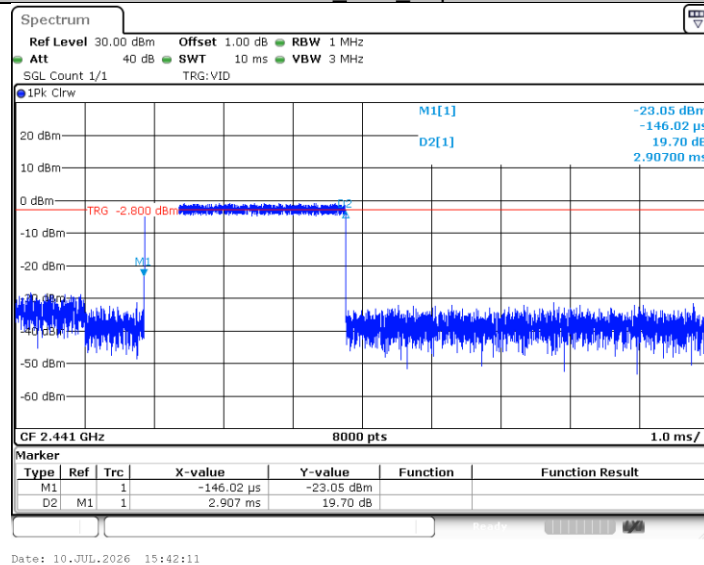
2DH3_Ant1_Hop



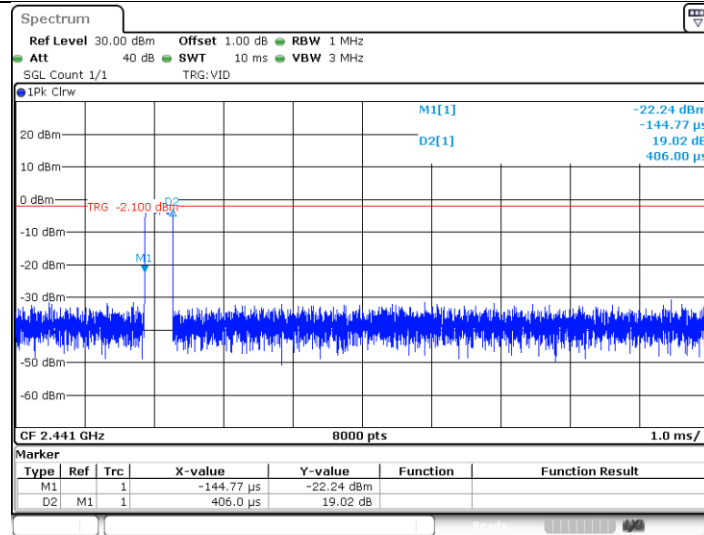
Date: 10.JUL.2026 15:44:48



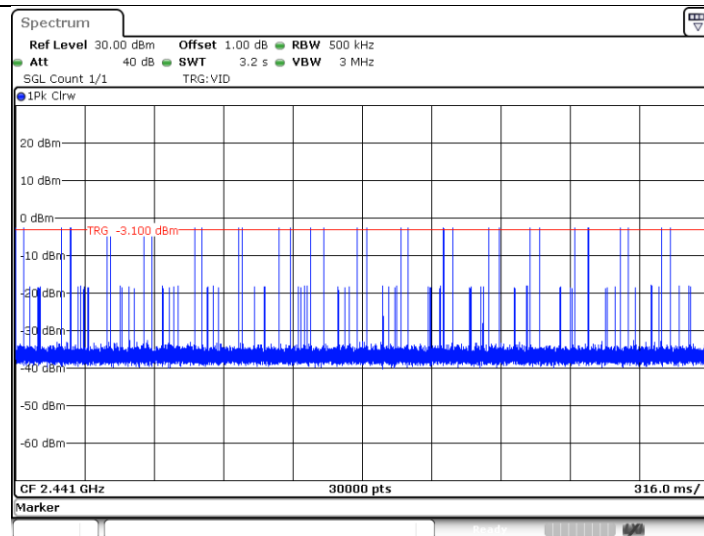
2DH5_Ant1_Hop



3DH1_Ant1_Hop

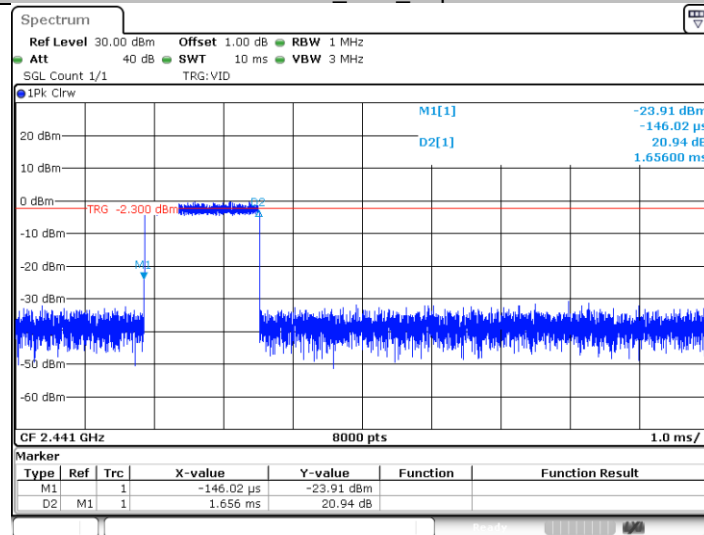


Date: 10.JUL.2026 15:51:31

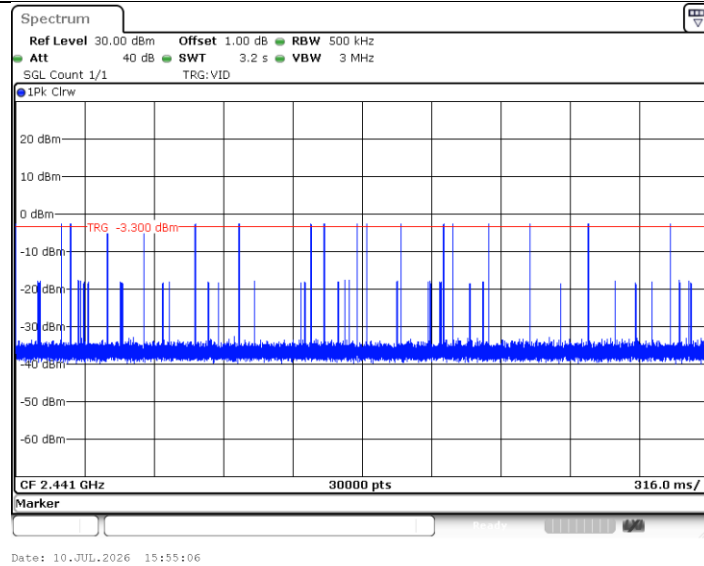


Date: 10.JUL.2026 15:51:43

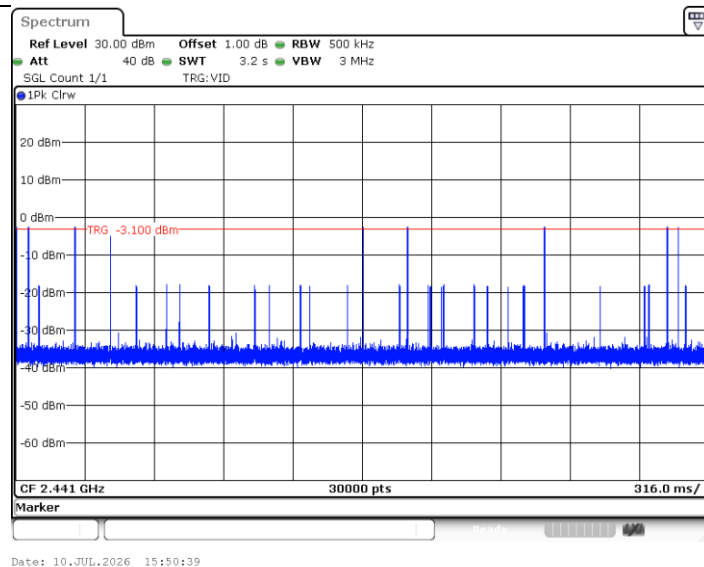
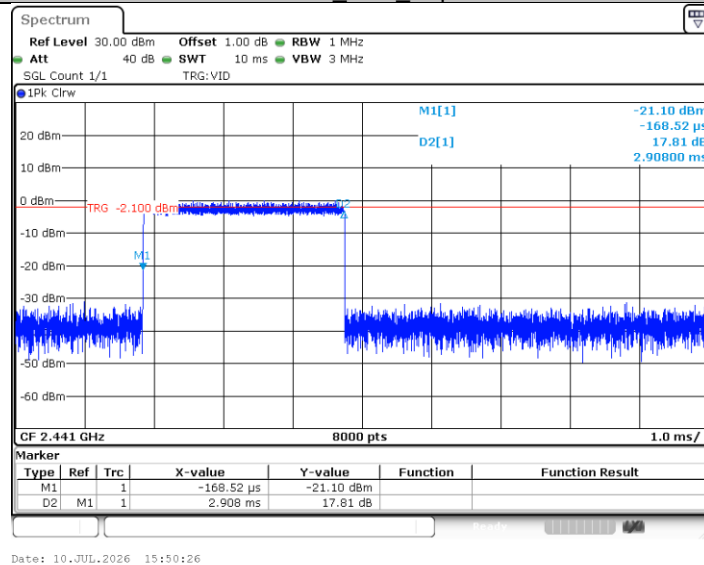
3DH3_Ant1_Hop



Date: 10.JUL.2026 15:54:53



3DH5_Ant1_Hop



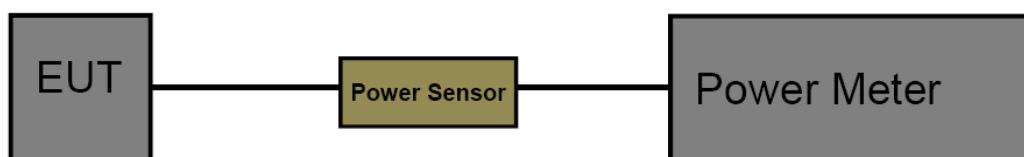
3.9. Peak Output Power

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(1)

Section	Test Item	Limit	Frequency Range (MHz)
FCC CFR 47 Part15.247 (b)(1)	Maximum Conducted Output Power	Hopping Channels ≥ 75 , Power $< 1\text{W}(30\text{dBm})$; Others $< 125\text{mW}(21\text{dBm})$	2400~2483.5

Test Configuration



Test Procedure

1. The maximum conducted output power may be measured using a broadband Peak RF power meter.
2. Peak power measurements were performed only when the EUT was transmitting at its maximum 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.
Record the measurement data.

Test Mode

Please refer to the clause 2.4.

Test Result

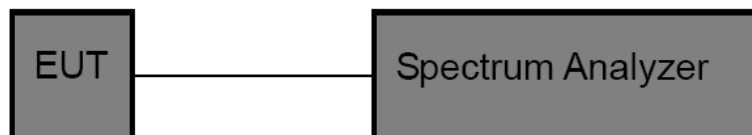
Test Mode	Frequency (MHz)	Conducted Output Power (dBm)	FCC Limit (dBm)	Verdict
GFSK	2402	-2.28	≤ 30	Pass
	2441	-2.92	≤ 30	Pass
	2480	-3.89	≤ 30	Pass
$\pi/4$ -DQPSK	2402	0.06	≤ 30	Pass
	2441	-0.81	≤ 30	Pass
	2480	-2.24	≤ 30	Pass
8-DPSK	2402	0.21	≤ 30	Pass
	2441	-0.54	≤ 30	Pass
	2480	-1.57	≤ 30	Pass

3.10. 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 test channel center frequency.
Set the span to 0Hz.
Set the RBW to 10MHz.
Set the VBW to 10MHz.
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 (%)	1/T Minimum VBW (kHz)	Final Setting for VBW (kHz)
GFSK	2402	2.90	3.75	77.33	0.34	1
	2441	2.90	3.75	77.33	0.34	1
	2480	2.90	3.75	77.33	0.34	1
$\pi/4$ -DQPSK	2402	2.92	3.76	77.66	0.34	1
	2441	2.91	3.76	77.39	0.34	1
	2480	2.91	3.76	77.39	0.34	1
8-DPSK	2402	2.91	3.76	77.39	0.34	1
	2441	2.91	3.76	77.39	0.34	1
	2480	2.91	3.76	77.39	0.34	1

3.11. 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(b) (4)

(4)The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Result

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

*****THE END OF REPORT*****