

TEST REPORT

Report No. : **CTC2026402102**

FCC ID..... : **2APN5-MINI1GS10**

Applicant : **Shenzhen Sonoff Technologies Co.,Ltd.**

Address..... : 3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China

Manufacturer..... : Shenzhen Sonoff Technologies Co.,Ltd.

Address..... : 3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China

Product Name : **Matter Over WiFi Smart Switch**

Trade Mark : /

Model/Type reference..... : MINI-1GS10

Listed Model(s) : /

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

Test Report Form No : CTC-TR-058_A5

Master TRF..... : Dated 2026-06-01

Date of receipt of test sample..... : Aug. 5, 2026

Date of testing..... : Aug. 8, 2026 ~ Aug. 17, 2026

Date of issue..... : Sep. 9, 2026

Result..... : **PASS**

Compiled by:

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Alicia Liu

Supervised by:

(Printed name+signature) Eric Zhang

Eric Zhang

Approved by:

(Printed name+signature) Totti Zhao

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	CTC2026402102	Sep. 9, 2026	Original

1.3. Test Description

FCC Part 15 Subpart C (15.247)			
Test Item	Standard Section	Result	Note
	FCC		
Antenna Requirement	15.203	Pass	/
Conducted Emission	15.207	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	/
6dB Bandwidth	15.247(a)(2)	Pass	/
Occupied Bandwidth	/	Pass	/
Conducted Max Output Power	15.247(b)(3)	Pass	/
Power Spectral Density	15.247(e)	Pass	/
Transmitter Radiated Spurious	15.209&15.247(d)	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
DTS Bandwidth	$\pm 0.0196\%$	(1)
Maximum Conducted Output Power	± 0.686 dB	(1)
Maximum Power Spectral Density Level	± 0.743 dB	(1)
Band-edge Compliance	± 1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	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:	Shenzhen Sonoff Technologies Co.,Ltd.
Address:	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Sonoff Technologies Co.,Ltd.
Address:	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China

2.2. General Description of EUT

Product Name:	Matter Over WiFi Smart Switch
Trade Mark:	/
Model/Type reference:	MINI-1GS10
Listed Model(s):	/
Model Difference:	/
Sample ID:	CTC-GC260803-004-S008
Power Supply:	10A 100-240V ~ 50/60Hz MAX Resistive load μ
Hardware Version:	/
Software Version:	/
Bluetooth 5.3 / BLE	
Modulation:	GFSK
Operation Frequency:	2402MHz~2480MHz
Channel Number:	40
Channel Separation:	2MHz
Data Rate:	1Mbps, 2Mbps
Antenna 1 Type:	Ceramic Antenna
Antenna 1 Gain:	-1.66dBi

2.3. Accessory Equipment Information

Equipment Information			
Name	Model	S/N	Manufacturer
Notebook	ThinkPad T460s	MP246QDR	Lenovo
Serial port board	Foca v2.2	/	/
Cable Information			
Name	Shielded Type	Ferrite Core	Length
USB Cable	Unshielded	NO	100cm
Test Software Information			
Name	Version	/	/
EspRFTTestTool	3.6	/	/

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 BLE, 40 channels are provided to the EUT. Channels 00/19/39 were selected for testing.

Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2404
:	:
18	2438
19	2440
20	2442
:	:
38	2478
39	2480

Note: The display in grey was 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 engineering test program was provided and enabled to make EUT continuous transmit.
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

Radiated emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-759	Oct. 17, 2025	Oct. 16, 2027
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-648	Dec. 12, 2024	Dec. 11, 2026
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 13, 2025	Dec. 12, 2026
4	Broadband Amplifier	Schwarzbeck	BBV9743B	259	Dec. 13, 2025	Dec. 12, 2026
5	Mirowave Broadband Amplifier	Schwarzbeck	BBV9718C	111	Dec. 13, 2025	Dec. 12, 2026
6	RE33L-001	COMM	/	014 (9kHz-1GHz)	Feb. 09, 2026	Feb. 08, 2027
7	RE33L-002	COMM	/	015 (9kHz-1GHz)	Feb. 09, 2026	Feb. 08, 2027
8	RE33H-001	SUHB SUCOFLEX	/	016 (1GHz-18GHz)	Feb. 09, 2026	Feb. 08, 2027
9	RE33H-002	HUBENR	/	017 (1GHz-18GHz)	Feb. 09, 2026	Feb. 08, 2027
10	RE33H-003	HUBENR	/	018 (1GHz-18GHz)	Feb. 09, 2026	Feb. 08, 2027
11	RE33H-003	HUBENR	/	019 (18GHz-40GHz)	Feb. 09, 2026	Feb. 08, 2027
12	3m chamber 3	YIHENG	EE106	/	Aug. 29, 2023	Aug. 28, 2026
Test Software						
Name		Manufacturer		Software Version		
EZ-EMC		FARA		FA-03A2		

Radiated emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Dec. 18, 2024	Dec. 17, 2026
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Oct. 17, 2025	Oct. 16, 2027
3	Spectrum Analyzer	R&S	FSV40-N	101654	Dec. 13, 2025	Dec. 12, 2026
4	Pre-Amplifier	SONOMA	310	186194	Dec. 13, 2025	Dec. 12, 2026
5	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 13, 2025	Dec. 12, 2026
6	Test Receiver	R&S	ESCI7	100967	Dec. 13, 2025	Dec. 12, 2026
7	RE32L-001	HUBENR	/	009 (9kHz-1GHz)	Feb. 09, 2026	Feb. 08, 2027
8	RE32L-002	HUBENR	/	010 (9kHz-1GHz)	Feb. 09, 2026	Feb. 08, 2027
9	RE32L-003	HUBENR	/	011 (9kHz-1GHz)	Feb. 09, 2026	Feb. 08, 2027
10	RE32H-001	HUBENR	/	012 (1GHz-18GHz)	Feb. 09, 2026	Feb. 08, 2027
11	RE32H-002	HUBENR	/	013 (1GHz-18GHz)	Feb. 09, 2026	Feb. 08, 2027
12	3m chamber 2	Frankonia	EE025	/	Oct. 19, 2024	Oct. 18, 2027
Test Software						
Name		Manufacturer		Software Version		
EZ-EMC		FARA		FA-03A2		

Conducted emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
1	LISN	R&S	ENV216	101112	Dec. 13, 2025	Dec. 12, 2026
2	LISN	R&S	ENV216	101113	Dec. 13, 2025	Dec. 12, 2026
3	EMI Test Receiver	R&S	ESCI	100524	Dec. 13, 2025	Dec. 12, 2026
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 13, 2025	Dec. 12, 2026
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 13, 2025	Dec. 12, 2026
6	CE-001	COMM	/	001	Feb. 09, 2026	Feb. 08, 2027
Test Software						
Name		Manufacturer		Software Version		
EMC32		R&S		6.10.10		

RF Test System - SRD						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
1	Spectrum Analyzer	R&S	FSV40-N	101654	Dec. 13, 2025	Dec. 12, 2026
2	EXG Analog Signal Generator	Keysight	N5173B	MY59100842	Dec. 13, 2025	Dec. 12, 2026
3	MXG Vector Signal Generator	Keysight	N5182B	MY59100212	Dec. 13, 2025	Dec. 12, 2026
4	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 13, 2025	Dec. 12, 2026
5	RF Control Unit	Tonscend	JS0806-2	/	Dec. 13, 2025	Dec. 12, 2026
6	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 25, 2026	Mar. 24, 2027
7	RF Cable	HUBER+SUHNER	SUCOFLEX101PE	RF-09	Apr. 16, 2026	Apr. 15, 2027
Test Software						
Name		Manufacturer		Software Version		
JS1120-3		Tonscend		V3.5.39		

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

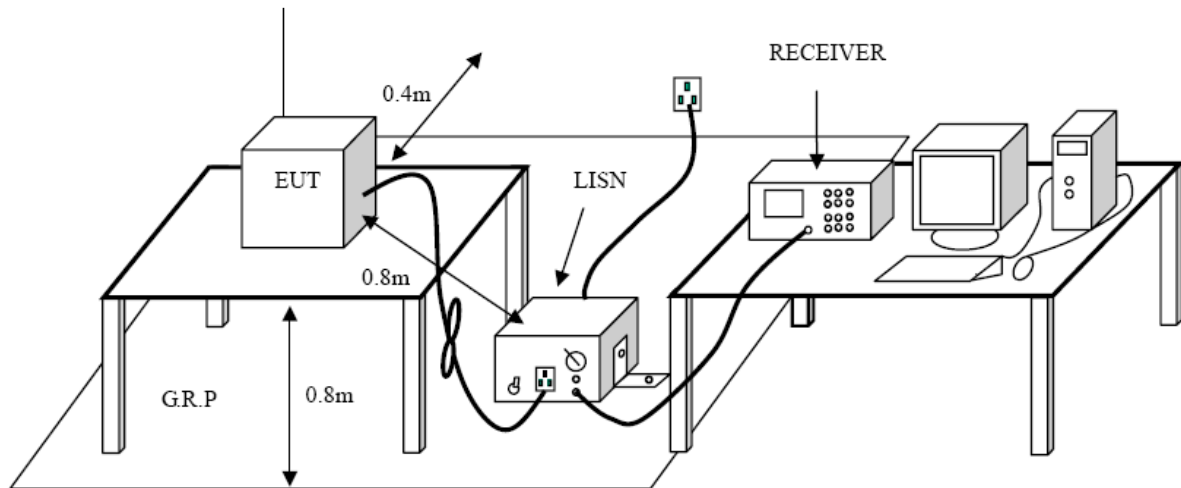
Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency (MHz)	Conducted Limit (dBμV)	
	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

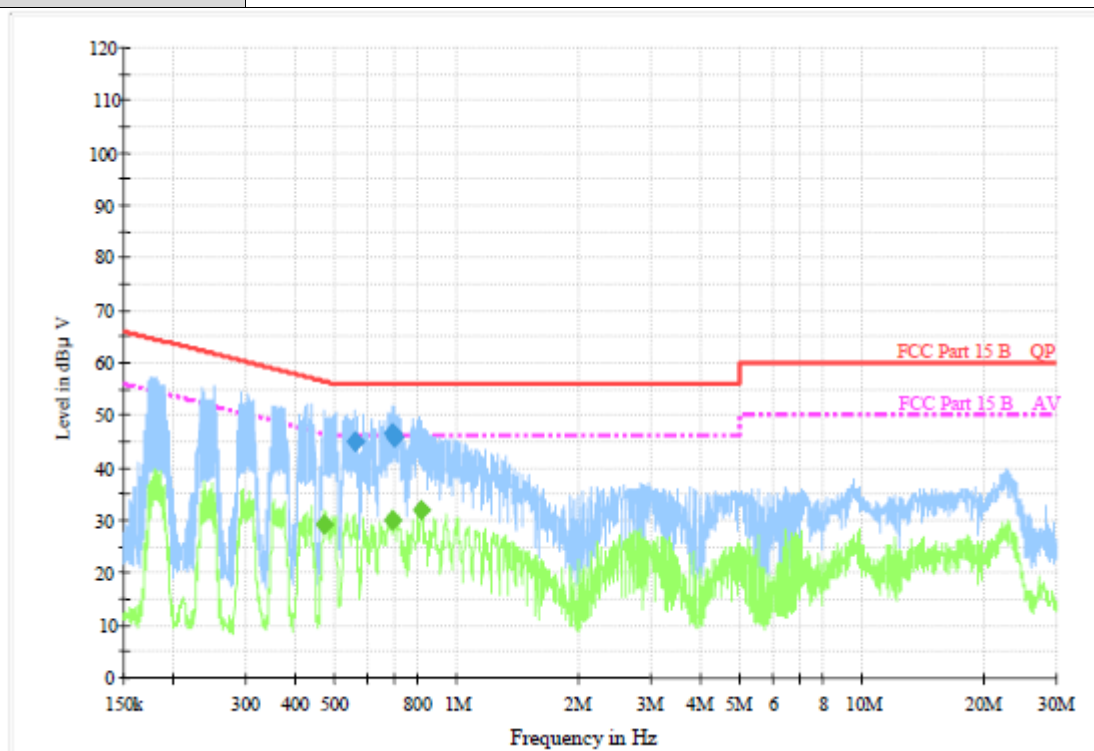
1. The EUT was setup according to ANSI C63.10:2020 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from 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 μH 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**

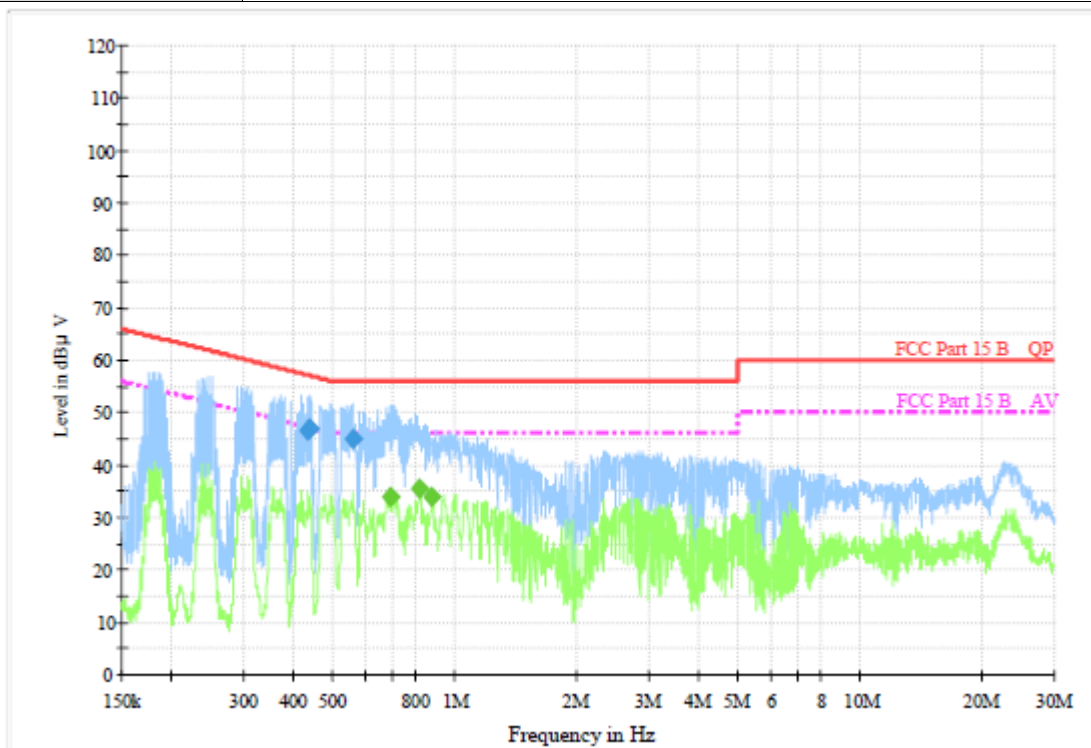
Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.556310	45.2	1000.00	9.000	On	L1	10.2	10.8	56.0	
0.690289	46.7	1000.00	9.000	On	L1	10.4	9.3	56.0	
0.698614	45.9	1000.00	9.000	On	L1	10.4	10.1	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.470358	29.4	1000.00	9.000	On	L1	10.1	17.1	46.5	
0.690289	30.0	1000.00	9.000	On	L1	10.4	16.0	46.0	
0.814801	31.8	1000.00	9.000	On	L1	10.5	14.2	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
0.430773	46.6	1000.00	9.000	On	N	10.2	10.6	57.2	
0.439466	47.1	1000.00	9.000	On	N	10.2	10.0	57.1	
0.560774	45.1	1000.00	9.000	On	N	10.1	10.9	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
0.688911	33.8	1000.00	9.000	On	N	9.8	12.2	46.0	
0.814801	35.5	1000.00	9.000	On	N	10.1	10.5	46.0	
0.875568	33.9	1000.00	9.000	On	N	10.2	12.1	46.0	

Emission Level = Read Level + Correct Factor

3.2. Radiated Emission

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.209

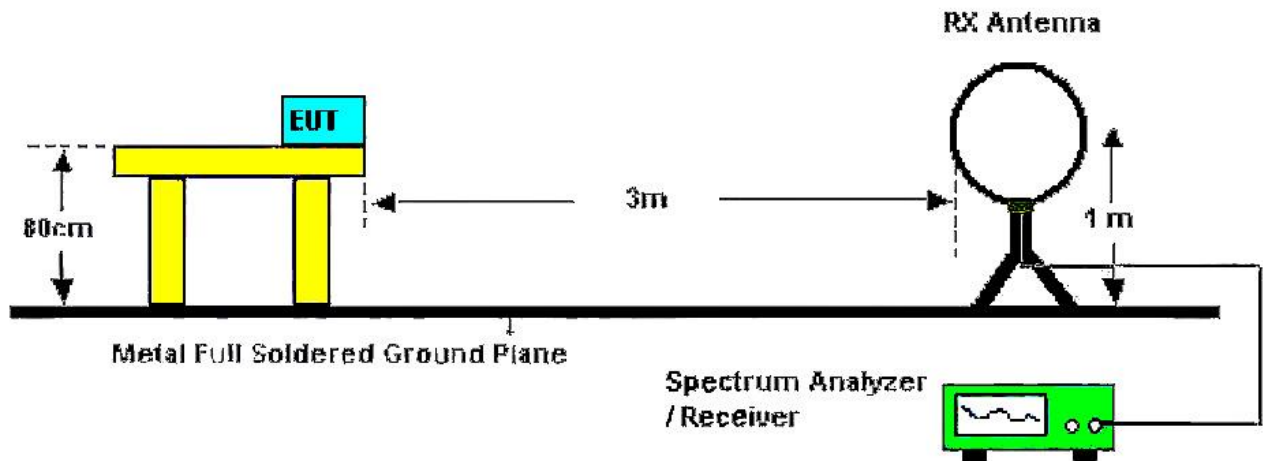
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F (kHz)	300
0.490~1.705	24000/F (kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

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

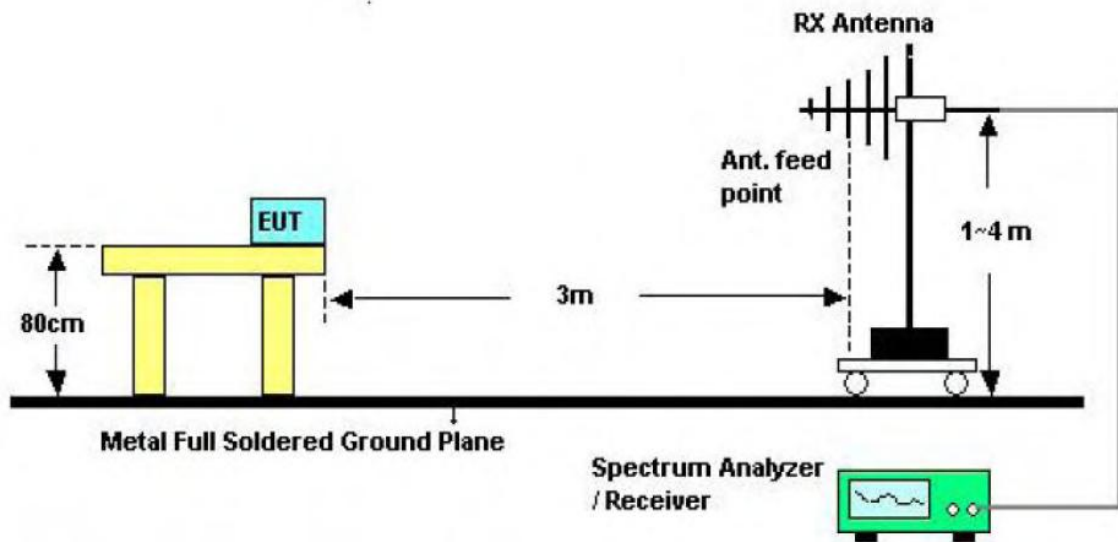
Note:

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

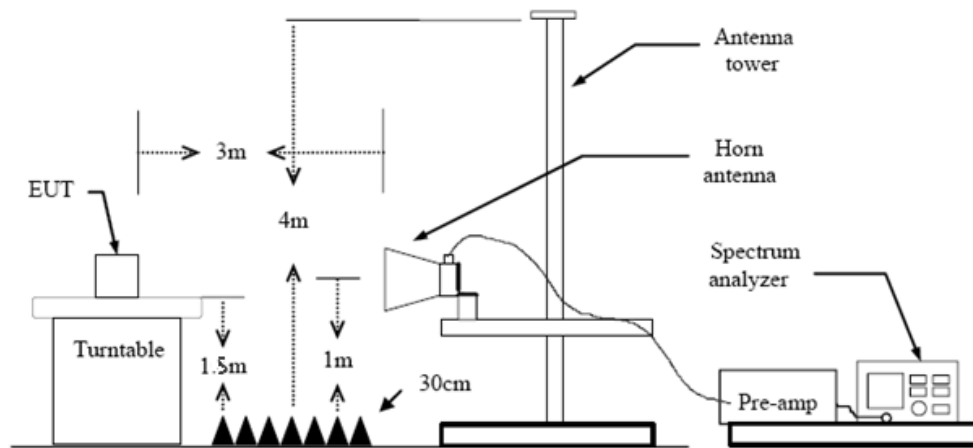
Test Configuration



Below 30MHz Test Setup



30-1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2020.
 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 3.8 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Result

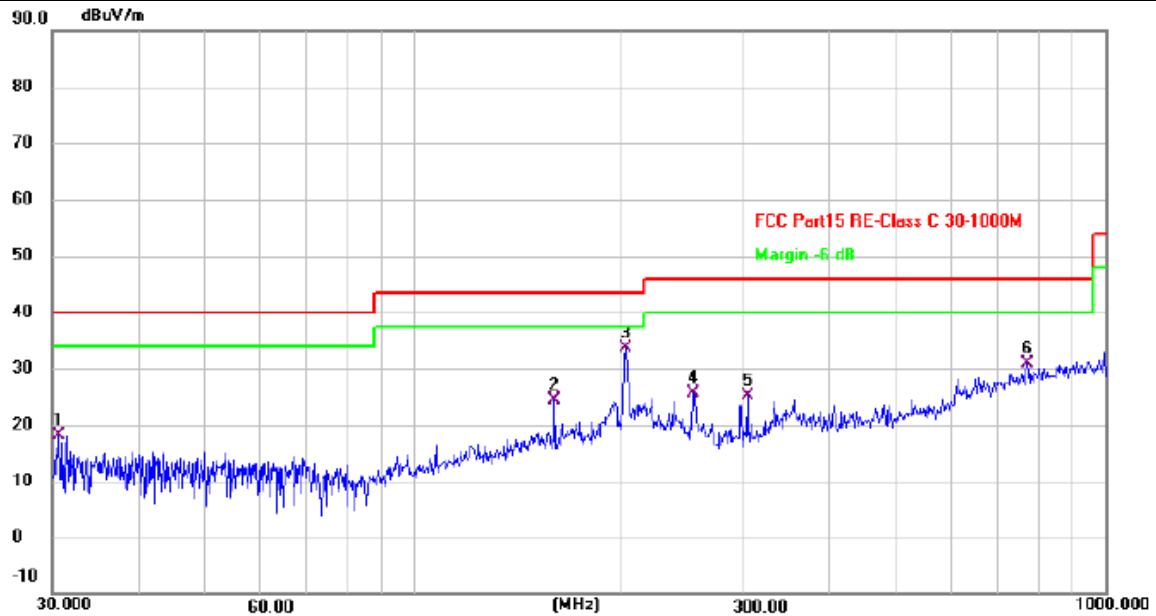
9 kHz~30 MHz

From 9 kHz to 30 MHz: The conclusion is 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

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	Only worse case is reported.

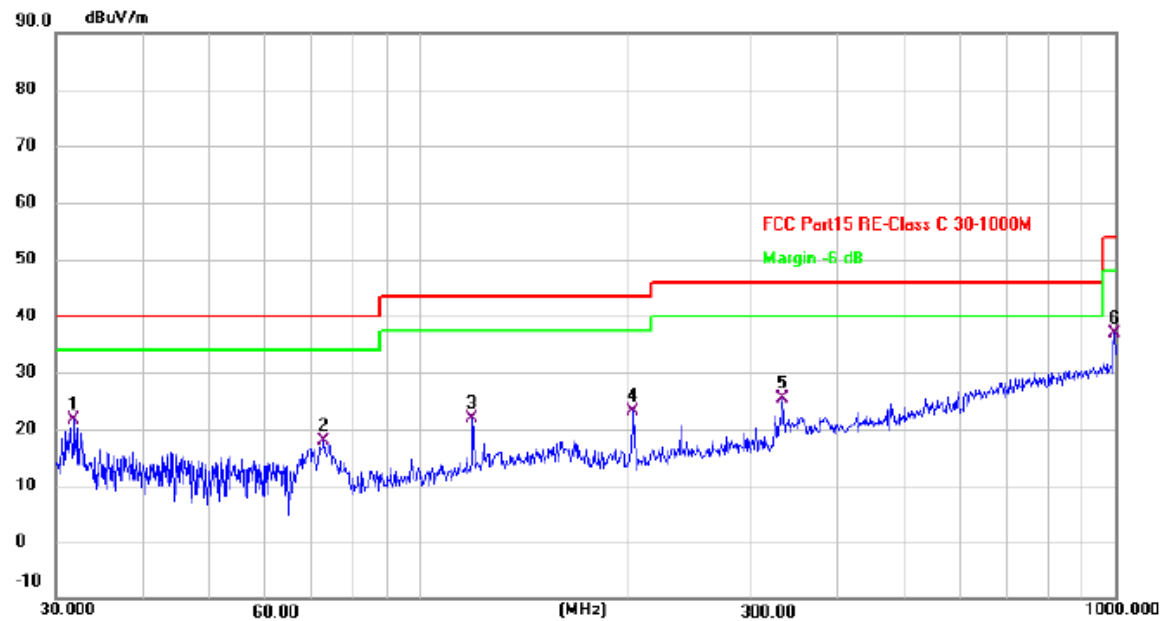


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.6378	33.87	-15.64	18.23	40.00	-21.77	QP
2	159.7844	39.49	-15.17	24.32	43.50	-19.18	QP
3 *	202.1004	52.60	-18.92	33.68	43.50	-9.82	QP
4	253.8366	42.29	-16.65	25.64	46.00	-20.36	QP
5	303.5437	40.26	-15.06	25.20	46.00	-20.80	QP
6	771.4485	35.64	-4.80	30.84	46.00	-15.16	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 BLE 1M 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	31.8427	37.23	-15.66	21.57	40.00	-18.43	QP
2	72.8466	37.50	-19.62	17.88	40.00	-22.12	QP
3	119.0180	39.30	-17.51	21.79	43.50	-21.71	QP
4	202.8104	41.98	-18.90	23.08	43.50	-20.42	QP
5	332.5187	39.60	-14.22	25.38	46.00	-20.62	QP
6 *	996.4996	38.78	-1.96	36.82	54.00	-17.18	QP

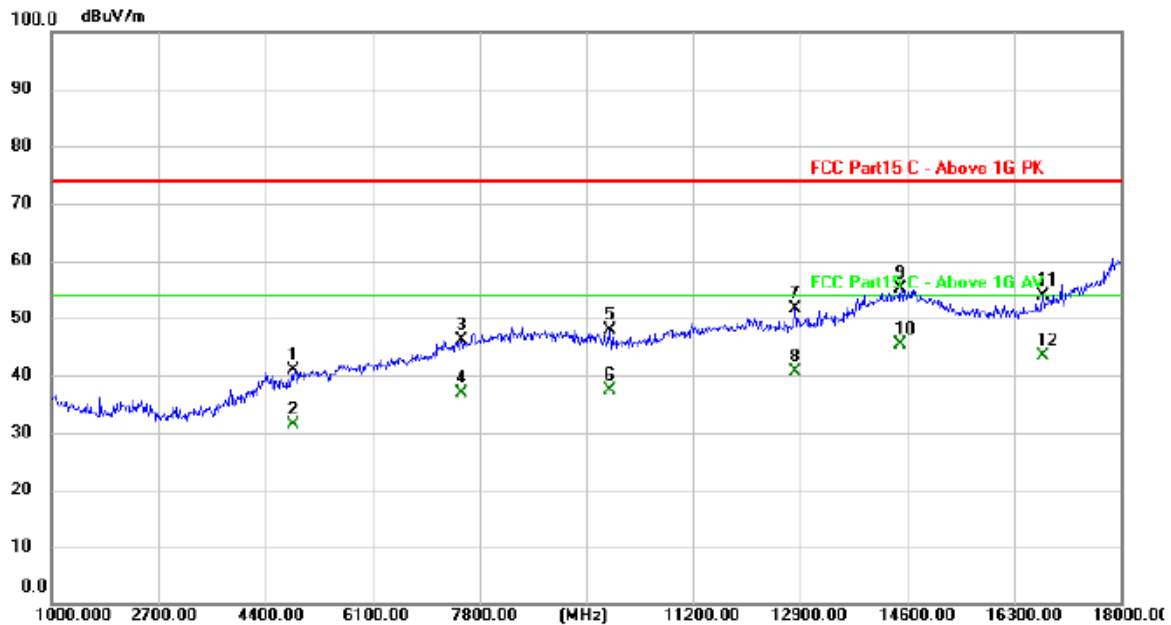
Remarks:

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

2. Margin value = Level - Limit value

1-18GHz

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



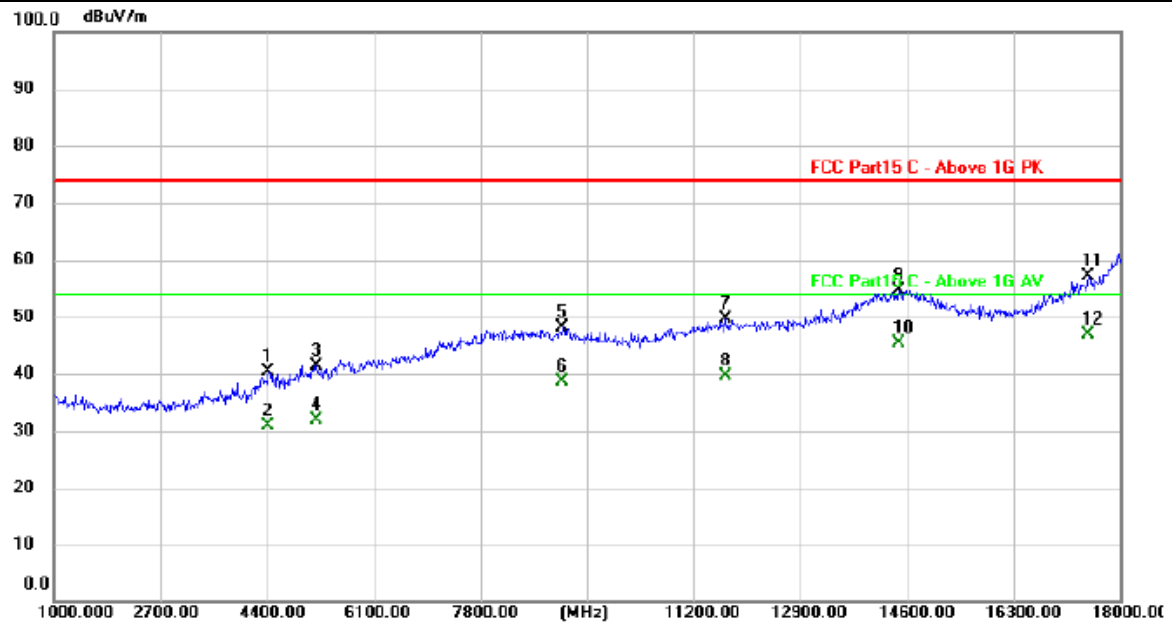
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4870.333	39.75	1.21	40.96	74.00	-33.04	peak
2	4870.333	30.11	1.21	31.32	54.00	-22.68	AVG
3	7511.000	36.83	9.30	46.13	74.00	-27.87	peak
4	7511.000	27.58	9.30	36.88	54.00	-17.12	AVG
5	9879.667	35.90	11.89	47.79	74.00	-26.21	peak
6	9879.667	25.40	11.89	37.29	54.00	-16.71	AVG
7	12820.667	36.43	15.15	51.58	74.00	-22.42	peak
8	12820.667	25.37	15.15	40.52	54.00	-13.48	AVG
9	14503.667	37.31	17.83	55.14	74.00	-18.86	peak
10 *	14503.667	27.56	17.83	45.39	54.00	-8.61	AVG
11	16759.000	36.67	17.25	53.92	74.00	-20.08	peak
12	16759.000	26.08	17.25	43.33	54.00	-10.67	AVG

Remarks:

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

2. Margin value = Level - Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



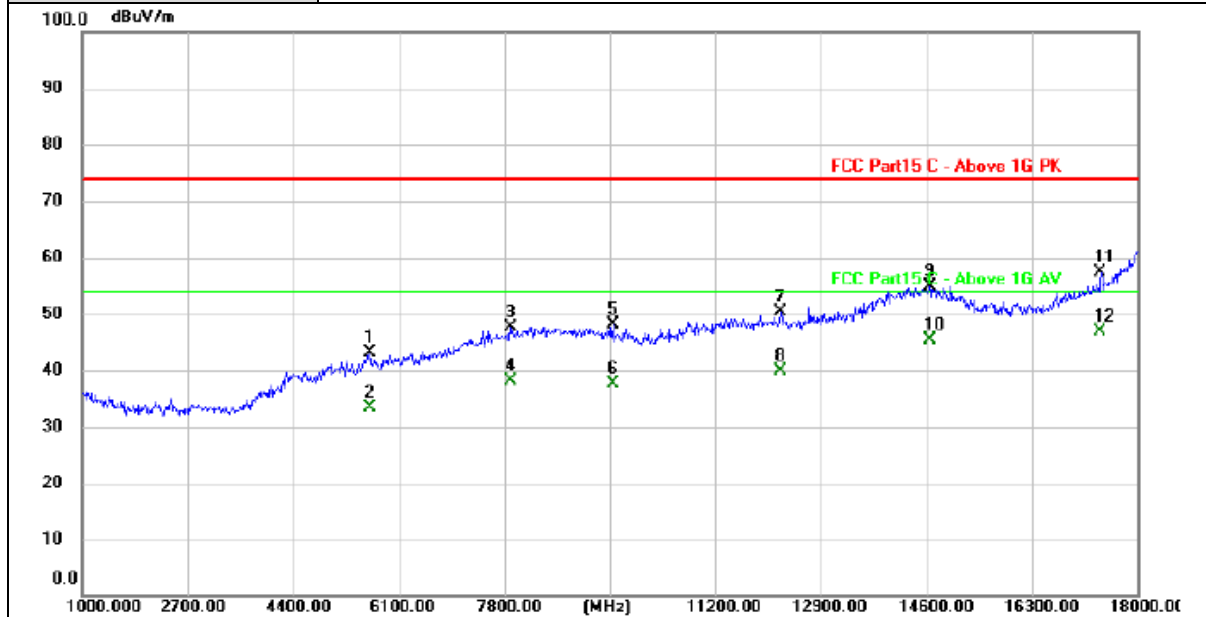
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4445.333	39.61	0.89	40.50	74.00	-33.50	peak
2	4445.333	29.87	0.89	30.76	54.00	-23.24	AVG
3	5182.000	39.50	1.97	41.47	74.00	-32.53	peak
4	5182.000	30.00	1.97	31.97	54.00	-22.03	AVG
5	9137.333	36.69	11.51	48.20	74.00	-25.80	peak
6	9137.333	27.05	11.51	38.56	54.00	-15.44	AVG
7	11715.667	35.71	13.96	49.67	74.00	-24.33	peak
8	11715.667	25.77	13.96	39.73	54.00	-14.27	AVG
9	14464.000	36.83	17.88	54.71	74.00	-19.29	peak
10	14464.000	27.39	17.88	45.27	54.00	-8.73	AVG
11	17518.333	35.84	21.32	57.16	74.00	-16.84	peak
12 *	17518.333	25.65	21.32	46.97	54.00	-7.03	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 BLE 1M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



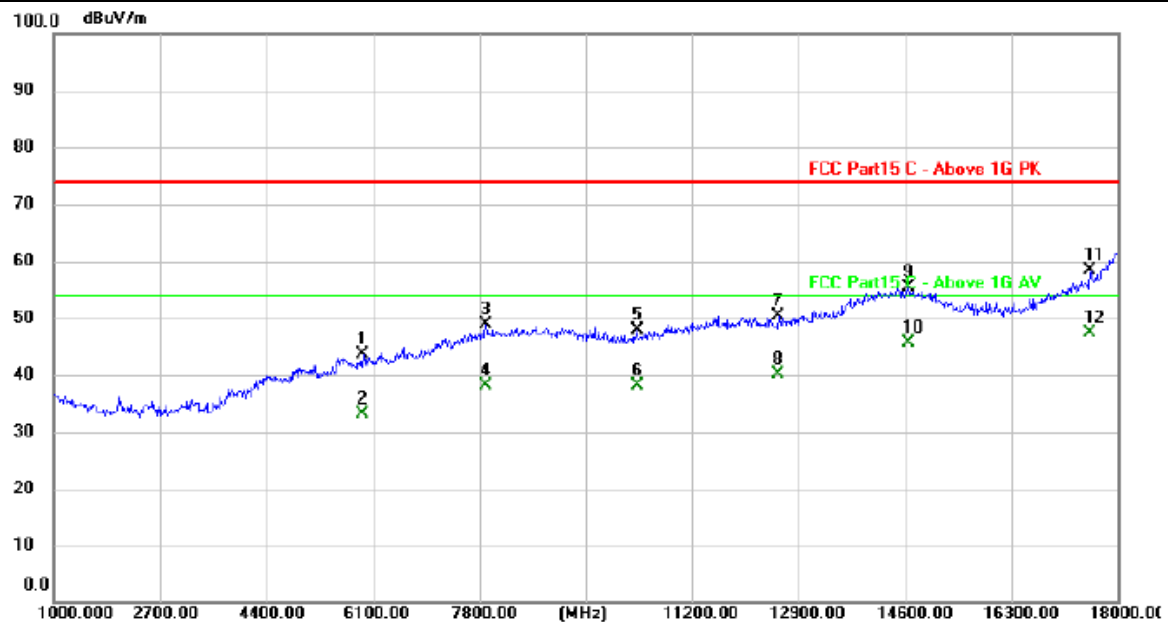
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5646.667	38.85	4.17	43.02	74.00	-30.98	peak
2	5646.667	29.33	4.17	33.50	54.00	-20.50	AVG
3	7907.667	37.64	10.11	47.75	74.00	-26.25	peak
4	7907.667	27.98	10.11	38.09	54.00	-15.91	AVG
5	9551.000	36.43	11.64	48.07	74.00	-25.93	peak
6	9551.000	25.91	11.64	37.55	54.00	-16.45	AVG
7	12254.000	35.99	14.28	50.27	74.00	-23.73	peak
8	12254.000	25.60	14.28	39.88	54.00	-14.12	AVG
9	14656.667	37.20	17.57	54.77	74.00	-19.23	peak
10	14656.667	27.88	17.57	45.45	54.00	-8.55	AVG
11	17433.333	36.55	20.81	57.36	74.00	-16.64	peak
12 *	17433.333	25.98	20.81	46.79	54.00	-7.21	AVG

Remarks:

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

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

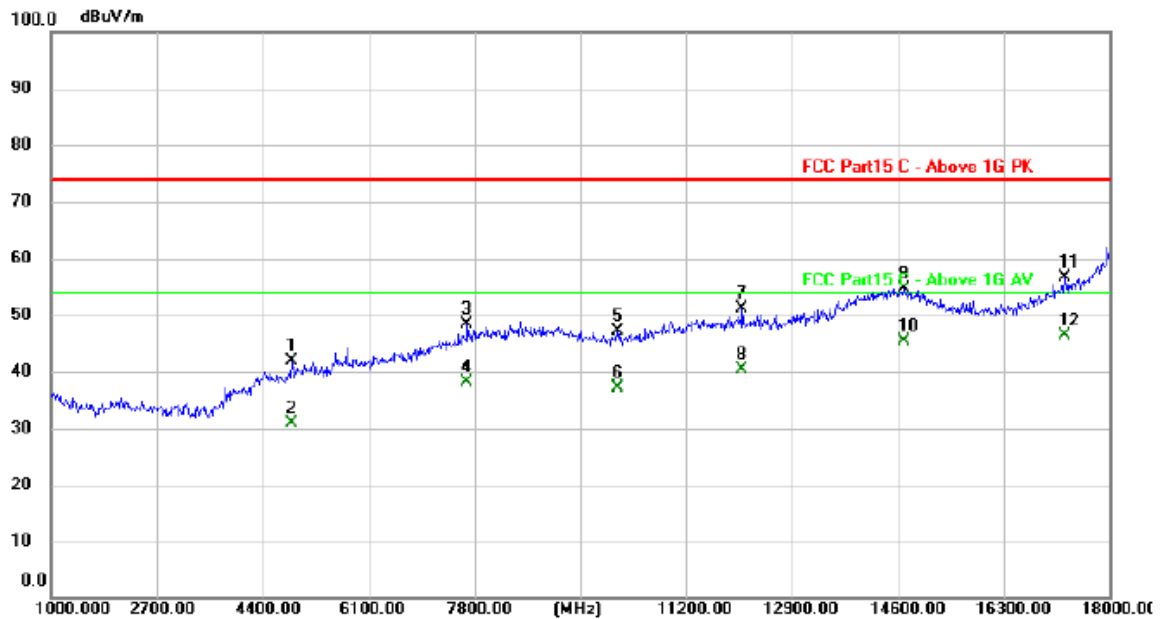


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	5958.333	38.19	5.32	43.51	74.00	-30.49	peak
2	5958.333	27.80	5.32	33.12	54.00	-20.88	AVG
3	7907.667	38.70	10.11	48.81	74.00	-25.19	peak
4	7907.667	28.13	10.11	38.24	54.00	-15.76	AVG
5	10321.667	35.33	12.58	47.91	74.00	-26.09	peak
6	10321.667	25.43	12.58	38.01	54.00	-15.99	AVG
7	12605.333	35.89	14.55	50.44	74.00	-23.56	peak
8	12605.333	25.52	14.55	40.07	54.00	-13.93	AVG
9	14656.667	37.89	17.57	55.46	74.00	-18.54	peak
10	14656.667	27.96	17.57	45.53	54.00	-8.47	AVG
11	17586.333	36.70	21.76	58.46	74.00	-15.54	peak
12 *	17586.333	25.59	21.76	47.35	54.00	-6.65	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 BLE 1M Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

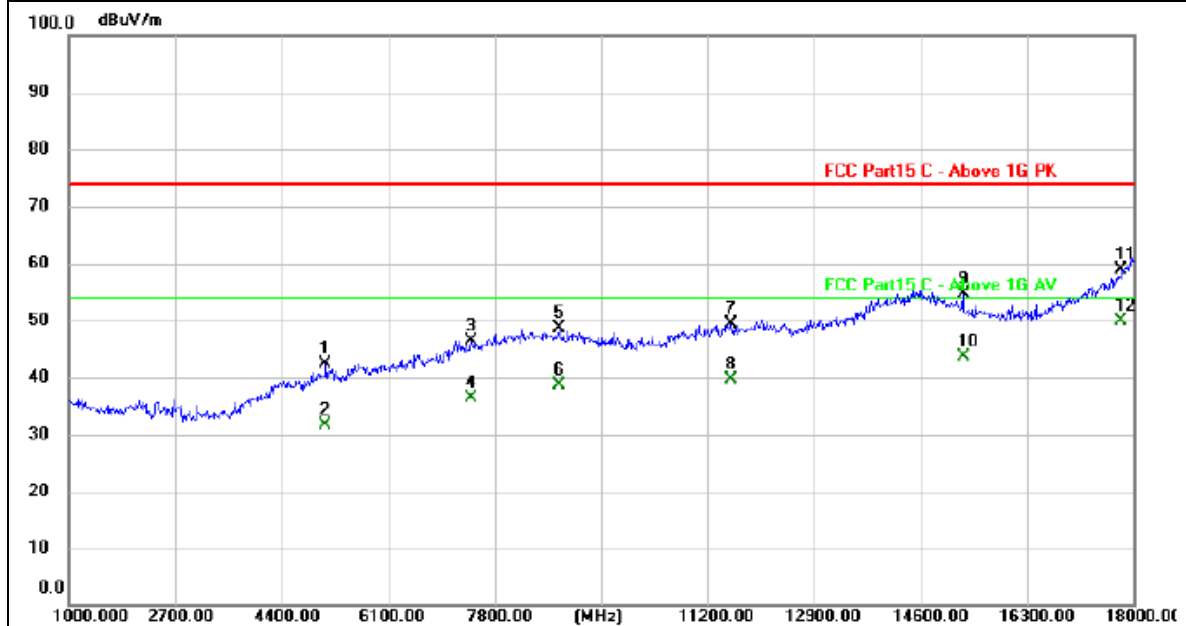


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4859.000	40.80	1.17	41.97	74.00	-32.03	peak
2	4859.000	29.69	1.17	30.86	54.00	-23.14	AVG
3	7681.000	38.65	9.67	48.32	74.00	-25.68	peak
4	7681.000	28.43	9.67	38.10	54.00	-15.90	AVG
5	10095.000	34.98	12.19	47.17	74.00	-26.83	peak
6	10095.000	24.86	12.19	37.05	54.00	-16.95	AVG
7	12101.000	36.82	14.36	51.18	74.00	-22.82	peak
8	12101.000	26.01	14.36	40.37	54.00	-13.63	AVG
9	14707.667	37.24	17.42	54.66	74.00	-19.34	peak
10	14707.667	28.03	17.42	45.45	54.00	-8.55	AVG
11	17291.667	36.68	19.97	56.65	74.00	-17.35	peak
12 *	17291.667	26.34	19.97	46.31	54.00	-7.69	AVG

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 BLE 1M 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	5097.000	40.52	1.86	42.38	74.00	-31.62	peak
2	5097.000	29.81	1.86	31.67	54.00	-22.33	AVG
3	7426.000	37.49	8.95	46.44	74.00	-27.56	peak
4	7426.000	27.39	8.95	36.34	54.00	-17.66	AVG
5	8820.000	37.48	11.19	48.67	74.00	-25.33	peak
6	8820.000	27.44	11.19	38.63	54.00	-15.37	AVG
7	11574.000	35.39	14.01	49.40	74.00	-24.60	peak
8	11574.000	25.67	14.01	39.68	54.00	-14.32	AVG
9	15280.000	39.77	14.84	54.61	74.00	-19.39	peak
10	15280.000	28.75	14.84	43.59	54.00	-10.41	AVG
11	17813.000	34.83	24.01	58.84	74.00	-15.16	peak
12 *	17813.000	25.77	24.01	49.78	54.00	-4.22	AVG

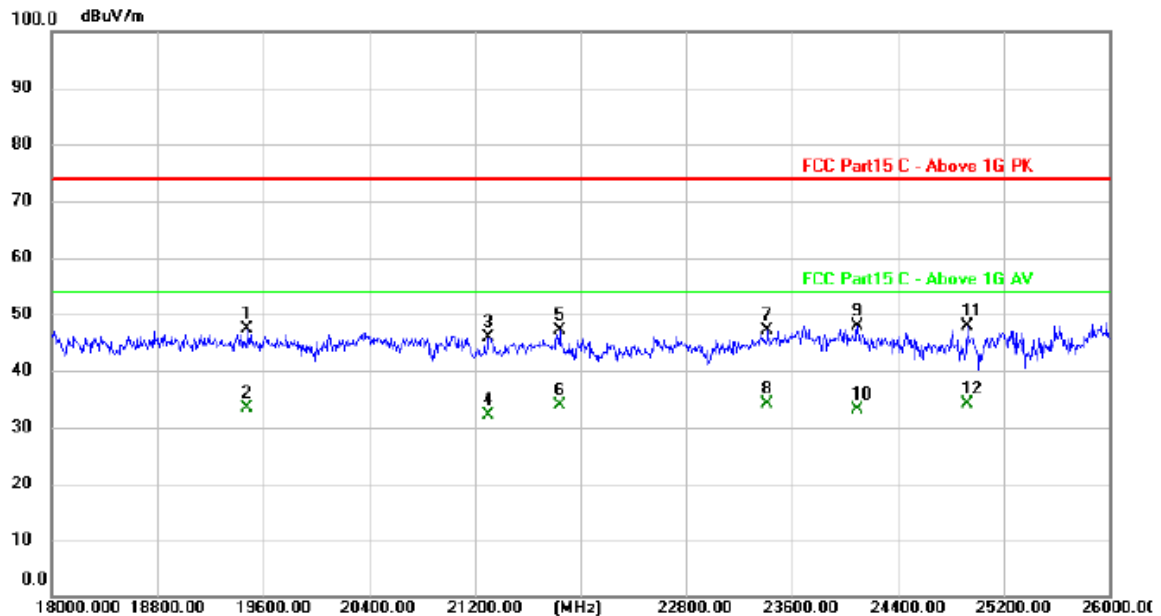
Remarks:

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

2. Margin value = Level - Limit value

18-26GHz

Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



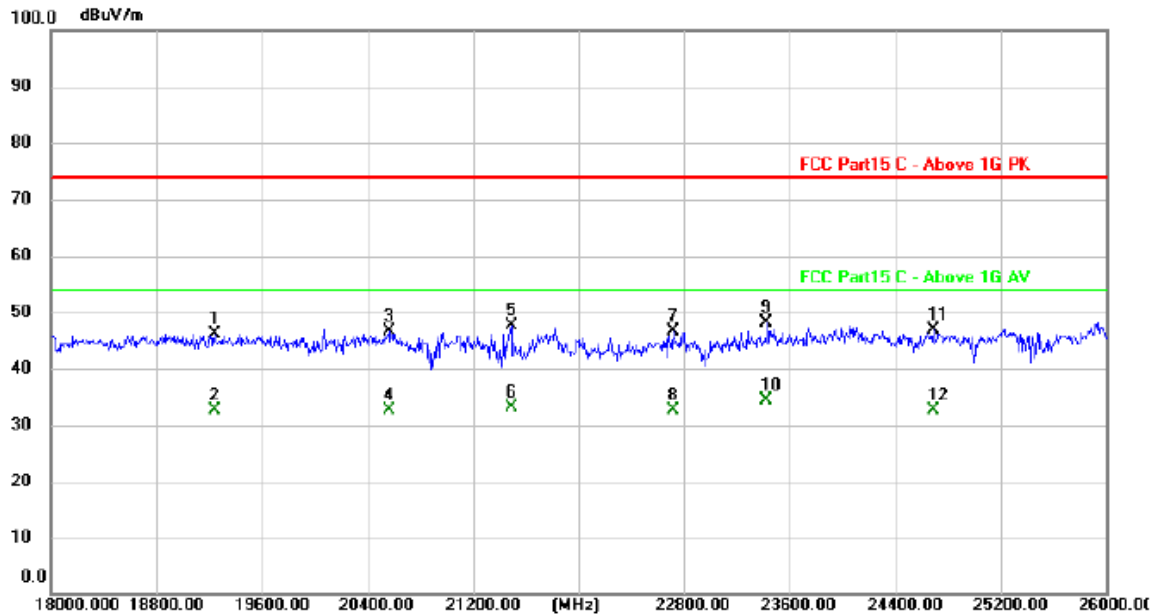
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	19485.333	36.69	10.61	47.30	74.00	-26.70	peak
2	19485.333	22.67	10.61	33.28	54.00	-20.72	AVG
3	21306.667	35.13	10.86	45.99	74.00	-28.01	peak
4	21306.667	21.22	10.86	32.08	54.00	-21.92	AVG
5	21842.667	36.08	10.96	47.04	74.00	-26.96	peak
6	21842.667	23.02	10.96	33.98	54.00	-20.02	AVG
7	23421.333	36.16	11.04	47.20	74.00	-26.80	peak
8 *	23421.333	23.07	11.04	34.11	54.00	-19.89	AVG
9	24098.667	36.96	10.96	47.92	74.00	-26.08	peak
10	24098.667	22.26	10.96	33.22	54.00	-20.78	AVG
11	24928.000	36.84	11.03	47.87	74.00	-26.13	peak
12	24928.000	23.06	11.03	34.09	54.00	-19.91	AVG

Remarks:

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

2. Margin value = Level - Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

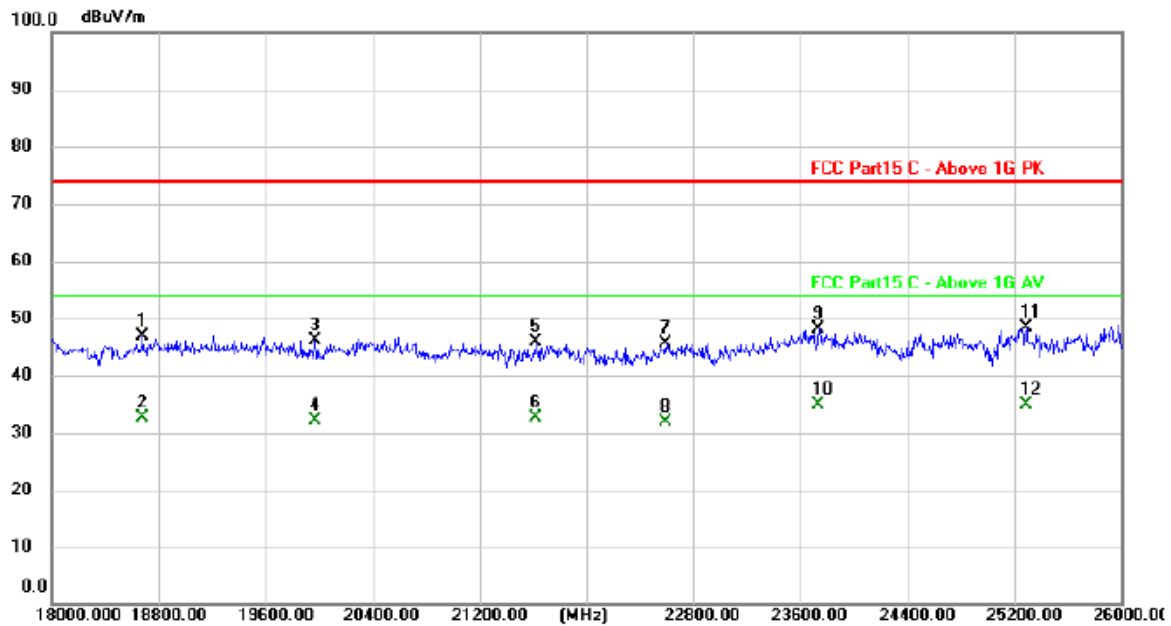


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	19242.667	35.71	10.52	46.23	74.00	-27.77	peak
2	19242.667	22.06	10.52	32.58	54.00	-21.42	AVG
3	20562.667	35.63	10.92	46.55	74.00	-27.45	peak
4	20562.667	21.77	10.92	32.69	54.00	-21.31	AVG
5	21488.000	36.70	10.82	47.52	74.00	-26.48	peak
6	21488.000	22.23	10.82	33.05	54.00	-20.95	AVG
7	22722.667	35.55	11.01	46.56	74.00	-27.44	peak
8	22722.667	21.67	11.01	32.68	54.00	-21.32	AVG
9	23437.333	37.12	11.03	48.15	74.00	-25.85	peak
10 *	23437.333	23.24	11.03	34.27	54.00	-19.73	AVG
11	24690.667	35.88	11.08	46.96	74.00	-27.04	peak
12	24690.667	21.66	11.08	32.74	54.00	-21.26	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 BLE 1M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



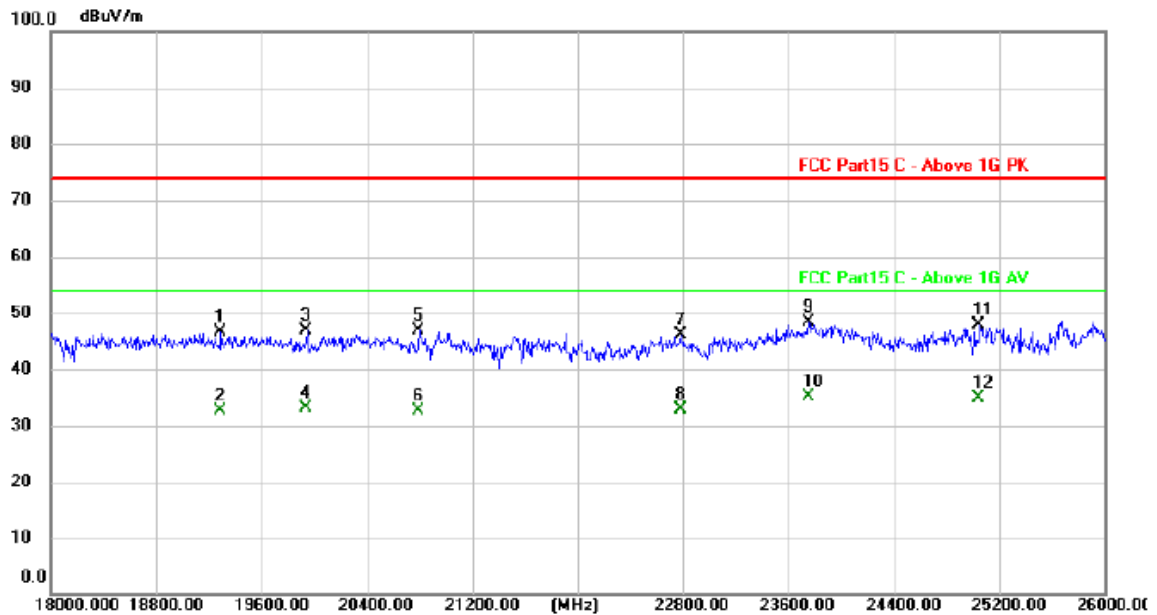
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	18685.333	36.40	10.36	46.76	74.00	-27.24	peak
2	18685.333	22.22	10.36	32.58	54.00	-21.42	AVG
3	19970.667	35.39	10.81	46.20	74.00	-27.80	peak
4	19970.667	21.33	10.81	32.14	54.00	-21.86	AVG
5	21626.667	35.02	10.87	45.89	74.00	-28.11	peak
6	21626.667	21.71	10.87	32.58	54.00	-21.42	AVG
7	22605.333	34.56	10.96	45.52	74.00	-28.48	peak
8	22605.333	21.00	10.96	31.96	54.00	-22.04	AVG
9	23749.333	37.14	10.97	48.11	74.00	-25.89	peak
10 *	23749.333	23.99	10.97	34.96	54.00	-19.04	AVG
11	25301.333	37.11	11.20	48.31	74.00	-25.69	peak
12	25301.333	23.68	11.20	34.88	54.00	-19.12	AVG

Remarks:

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

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



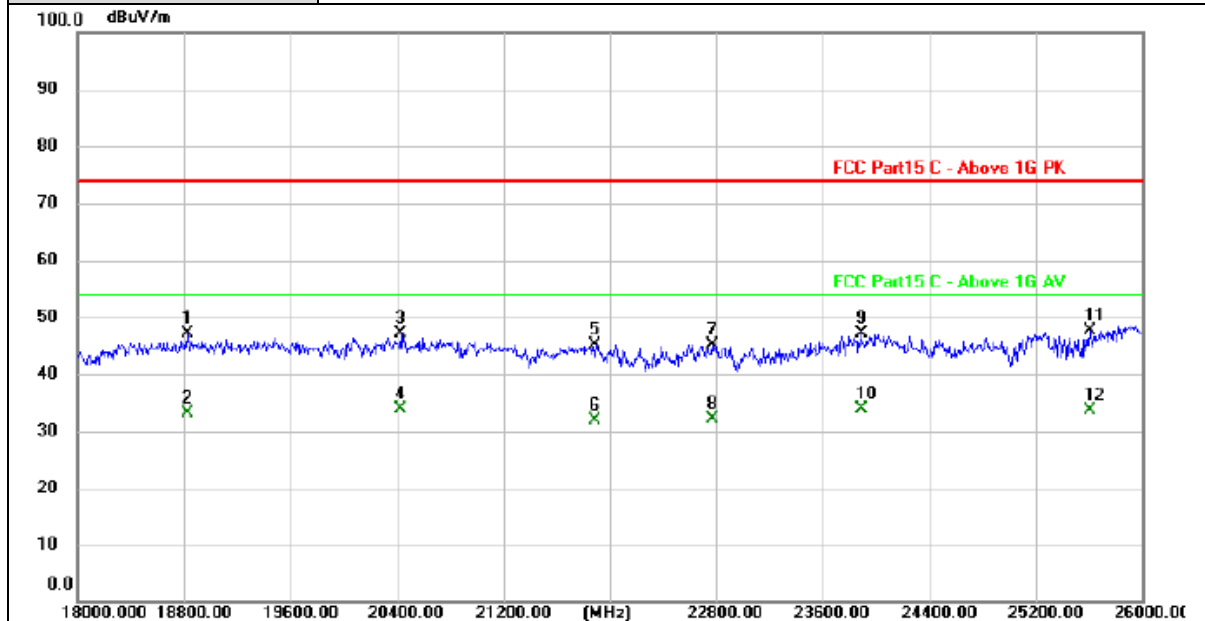
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	19293.333	36.06	10.54	46.60	74.00	-27.40	peak
2	19293.333	22.04	10.54	32.58	54.00	-21.42	AVG
3	19949.333	36.03	10.80	46.83	74.00	-27.17	peak
4	19949.333	22.28	10.80	33.08	54.00	-20.92	AVG
5	20805.333	36.05	10.92	46.97	74.00	-27.03	peak
6	20805.333	21.66	10.92	32.58	54.00	-21.42	AVG
7	22784.000	35.10	11.03	46.13	74.00	-27.87	peak
8	22784.000	21.96	11.03	32.99	54.00	-21.01	AVG
9	23752.000	37.30	10.97	48.27	74.00	-25.73	peak
10 *	23752.000	24.21	10.97	35.18	54.00	-18.82	AVG
11	25061.333	36.89	11.06	47.95	74.00	-26.05	peak
12	25061.333	23.82	11.06	34.88	54.00	-19.12	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 BLE 1M Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.



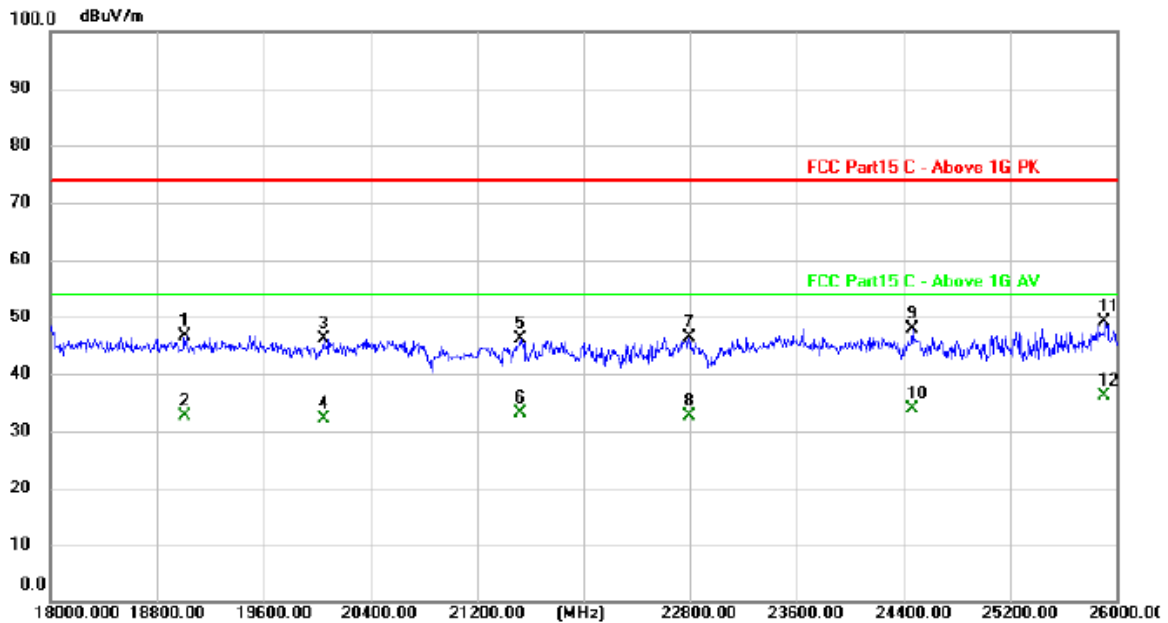
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	18824.000	36.73	10.38	47.11	74.00	-26.89	peak
2	18824.000	22.69	10.38	33.07	54.00	-20.93	AVG
3	20437.333	36.31	10.91	47.22	74.00	-26.78	peak
4	20437.333	22.91	10.91	33.82	54.00	-20.18	AVG
5	21901.333	34.17	10.98	45.15	74.00	-28.85	peak
6	21901.333	20.98	10.98	31.96	54.00	-22.04	AVG
7	22768.000	34.22	11.03	45.25	74.00	-28.75	peak
8	22768.000	21.03	11.03	32.06	54.00	-21.94	AVG
9	23890.667	36.13	10.94	47.07	74.00	-26.93	peak
10 *	23890.667	22.90	10.94	33.84	54.00	-20.16	AVG
11	25608.000	36.31	11.26	47.57	74.00	-26.43	peak
12	25608.000	22.46	11.26	33.72	54.00	-20.28	AVG

Remarks:

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

2. Margin value = Level - Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M 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	19021.333	36.08	10.43	46.51	74.00	-27.49	peak
2	19021.333	22.15	10.43	32.58	54.00	-21.42	AVG
3	20048.000	35.38	10.83	46.21	74.00	-27.79	peak
4	20048.000	21.31	10.83	32.14	54.00	-21.86	AVG
5	21541.333	35.33	10.84	46.17	74.00	-27.83	peak
6	21541.333	22.24	10.84	33.08	54.00	-20.92	AVG
7	22794.667	35.37	11.04	46.41	74.00	-27.59	peak
8	22794.667	21.64	11.04	32.68	54.00	-21.32	AVG
9	24464.000	36.88	11.11	47.99	74.00	-26.01	peak
10	24464.000	22.74	11.11	33.85	54.00	-20.15	AVG
11	25925.333	38.17	11.06	49.23	74.00	-24.77	peak
12 *	25925.333	25.02	11.06	36.08	54.00	-17.92	AVG

Remarks:

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

2. Margin value = Level - Limit value

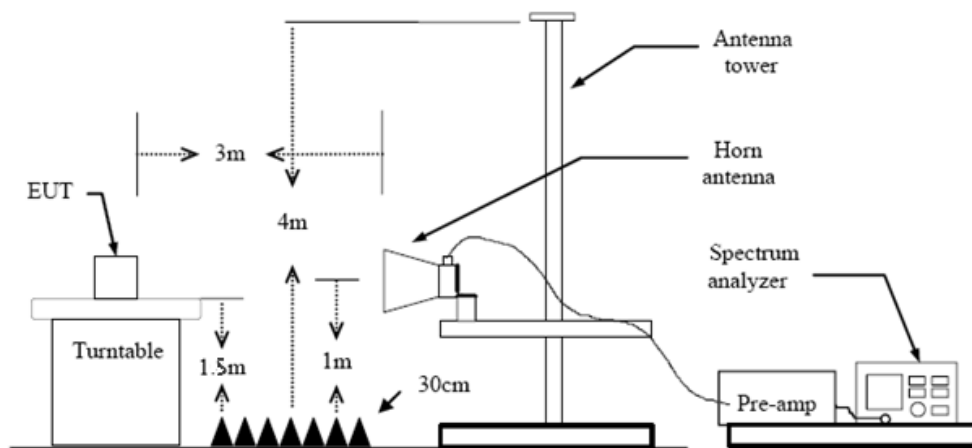
3.3. Band Edge Emissions (Radiated)

Limit

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

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 C63.10:2020 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 C63.10:2020 on radiated measurement.
5. The receiver set as follow:

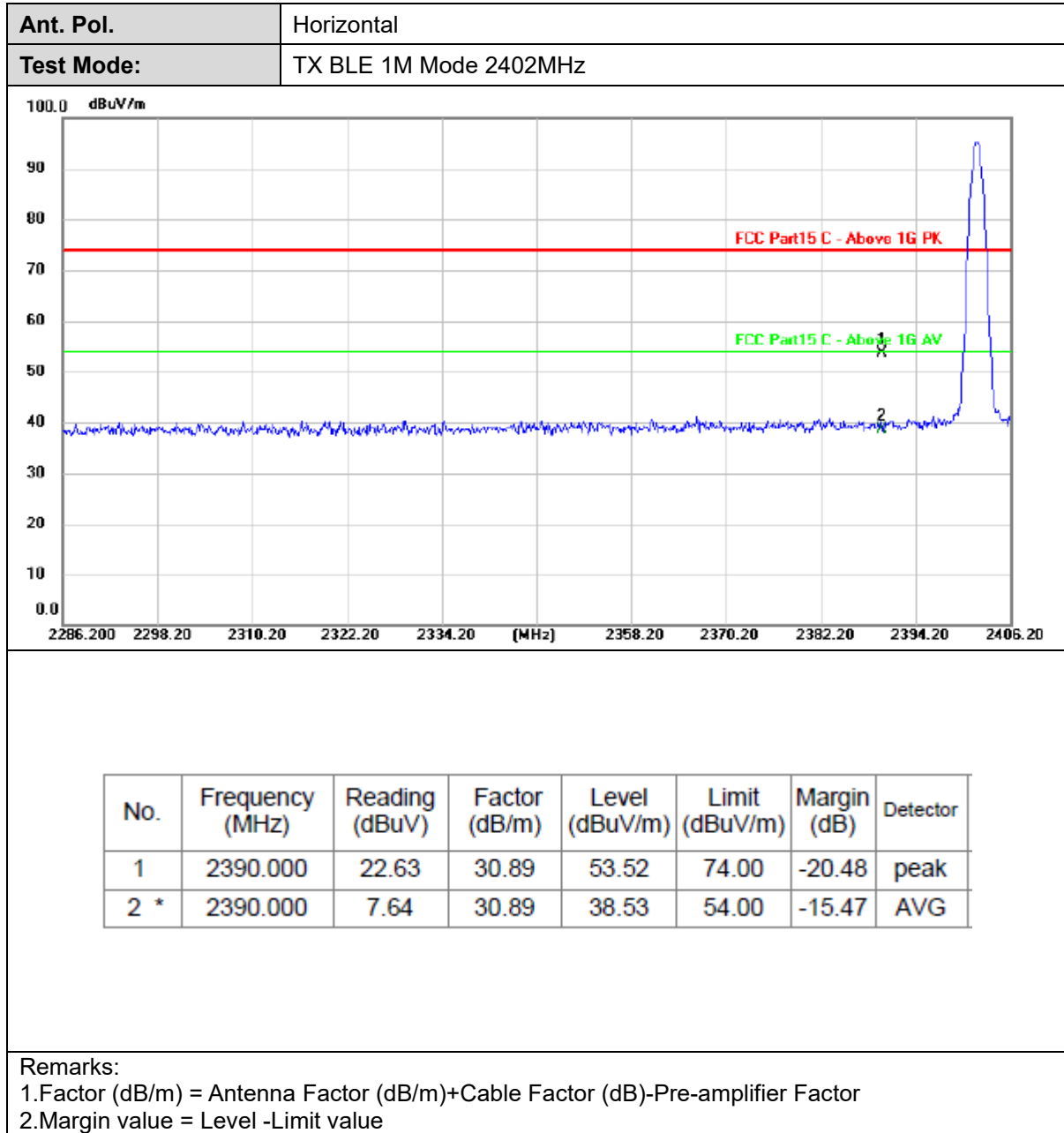
RBW=1MHz, VBW=3MHz Peak detector for Peak value.

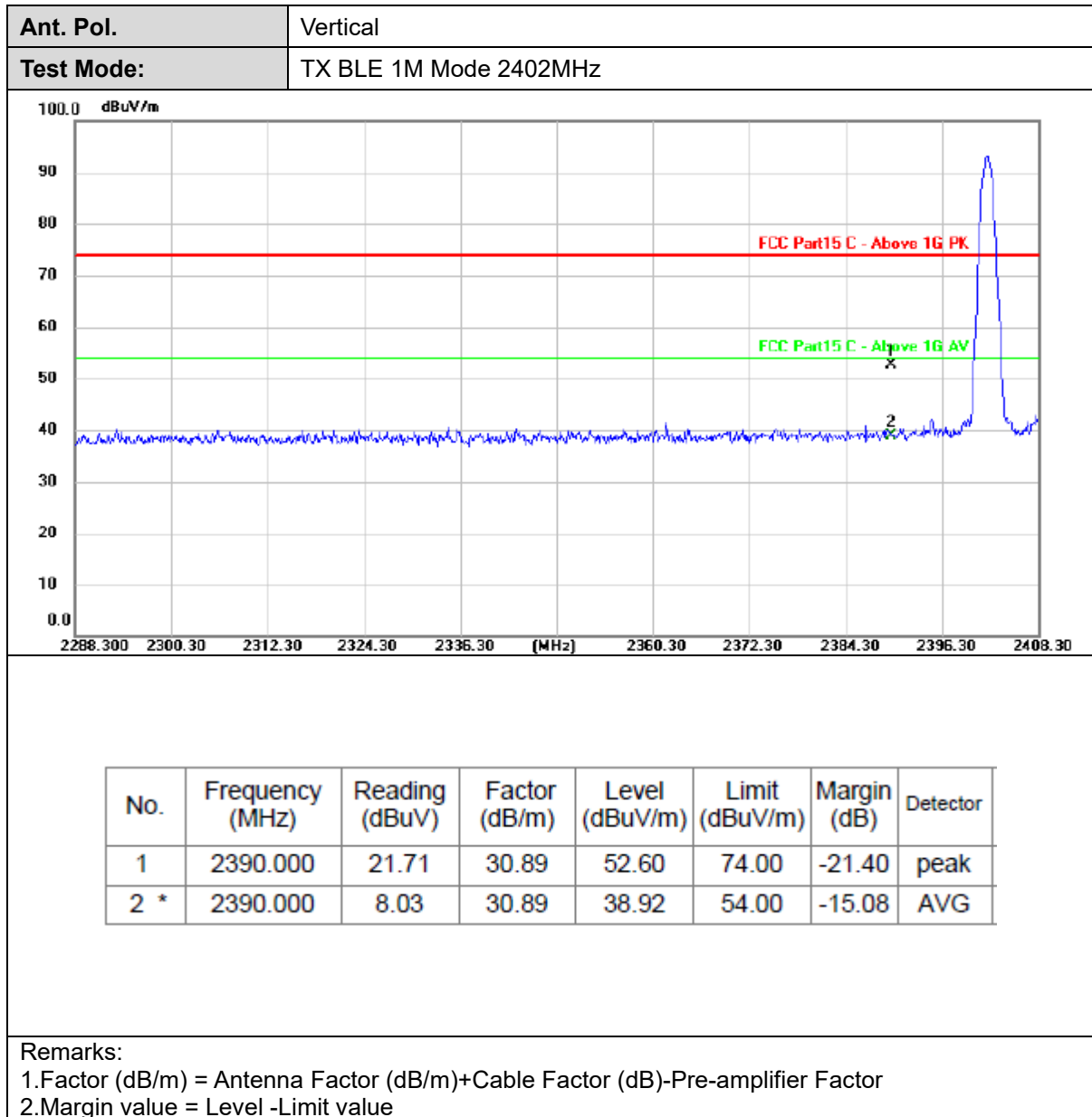
RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

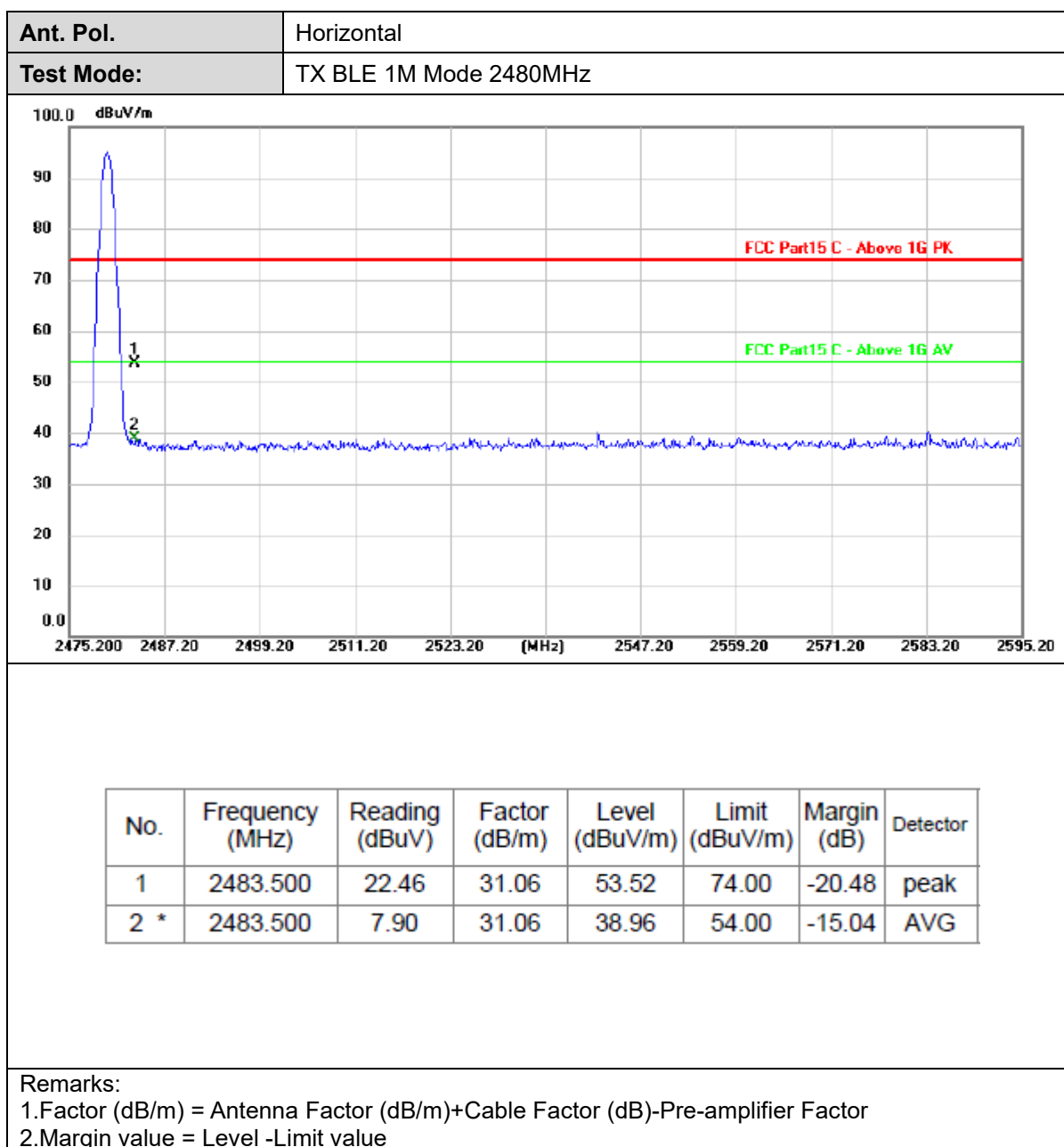
Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

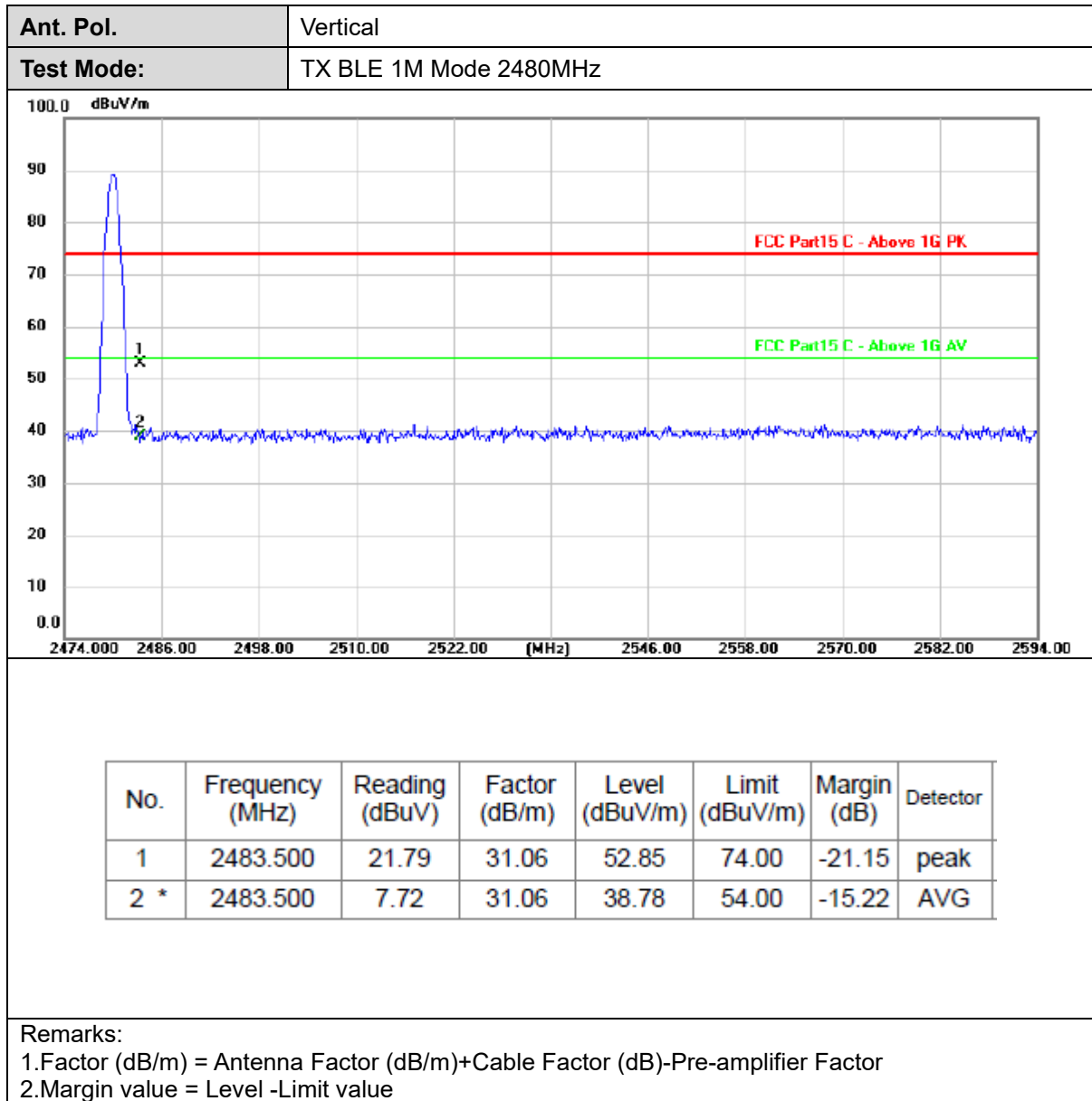
Test Mode

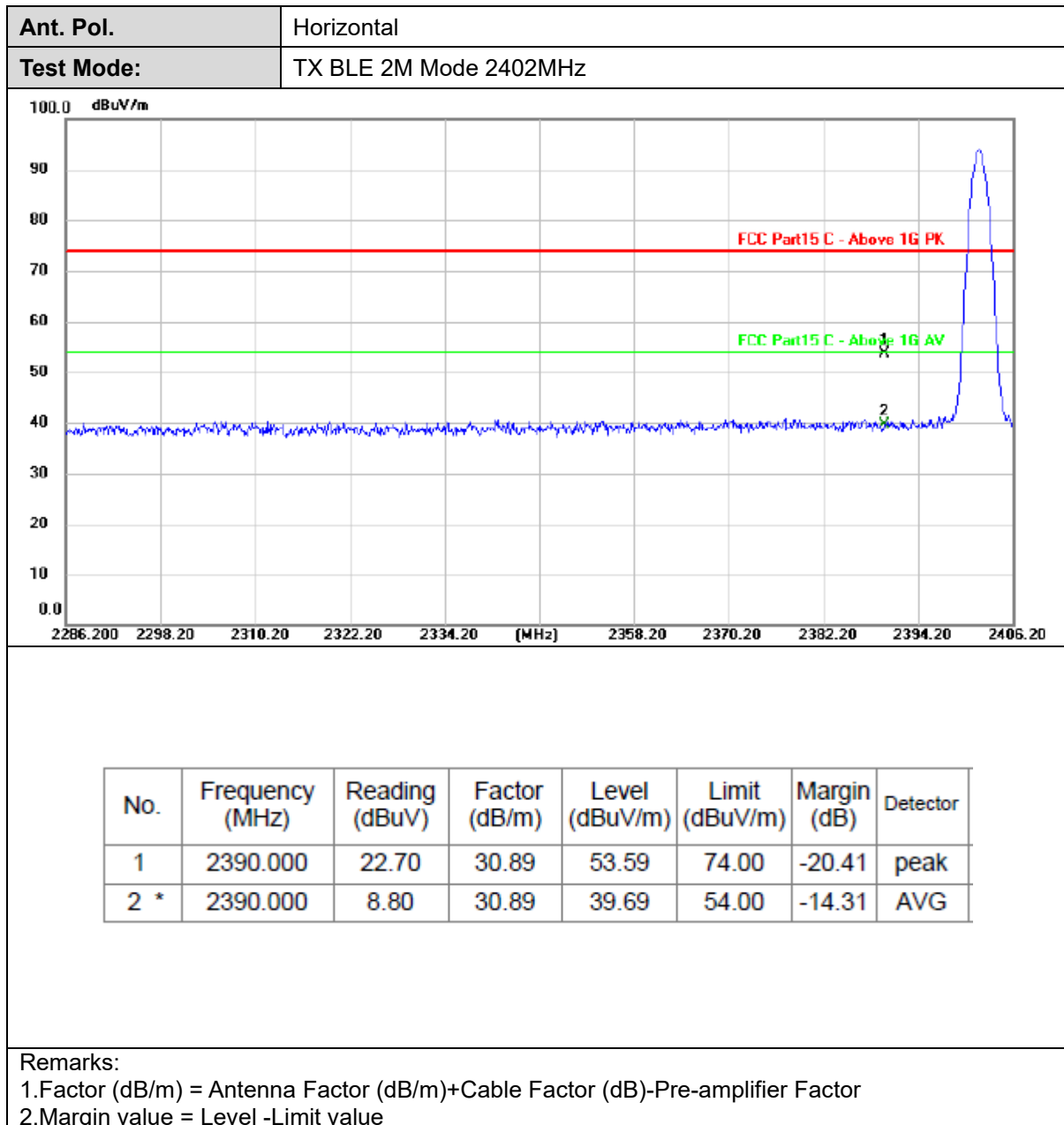
Please refer to the clause 2.4.

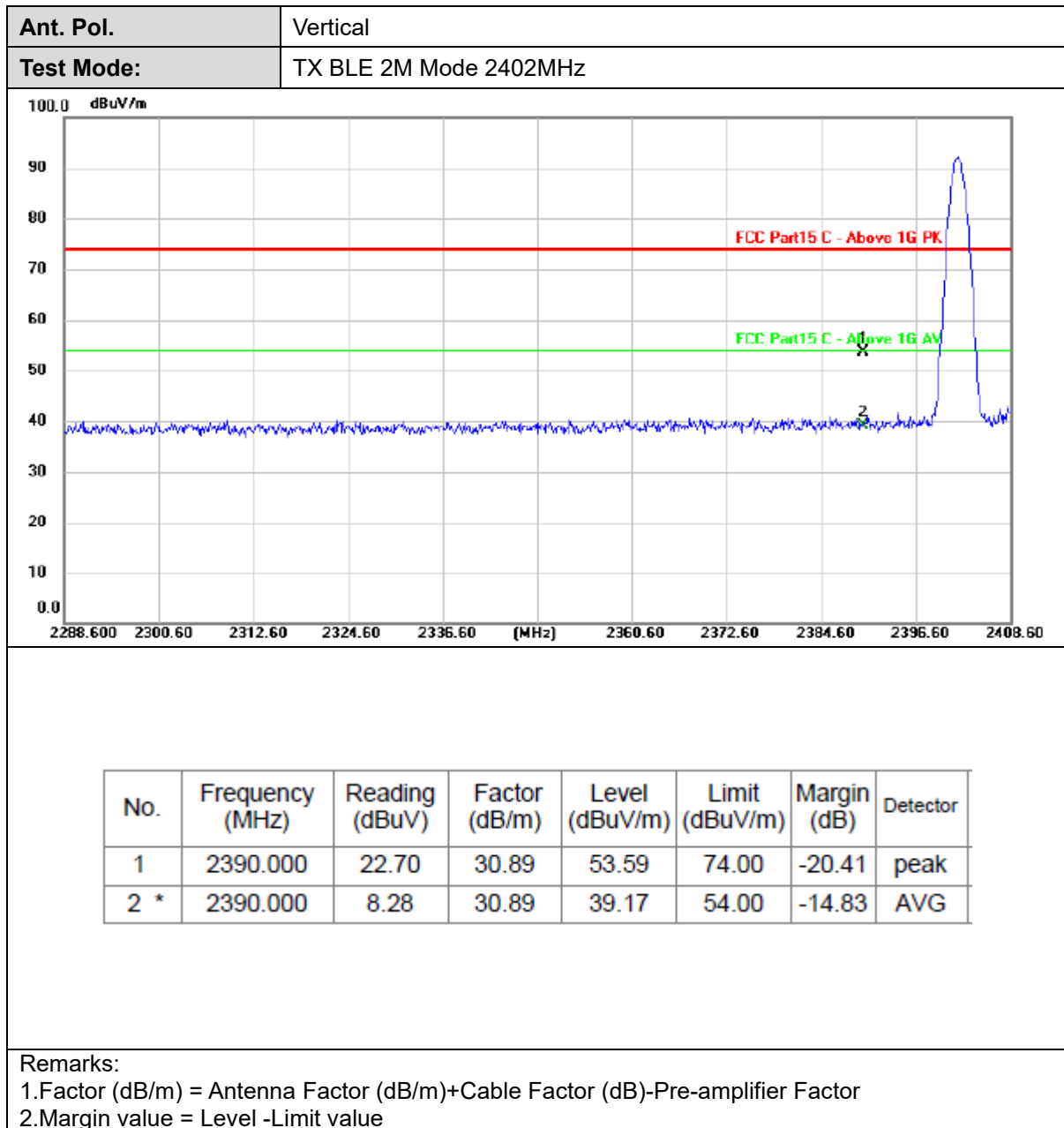
Test Result

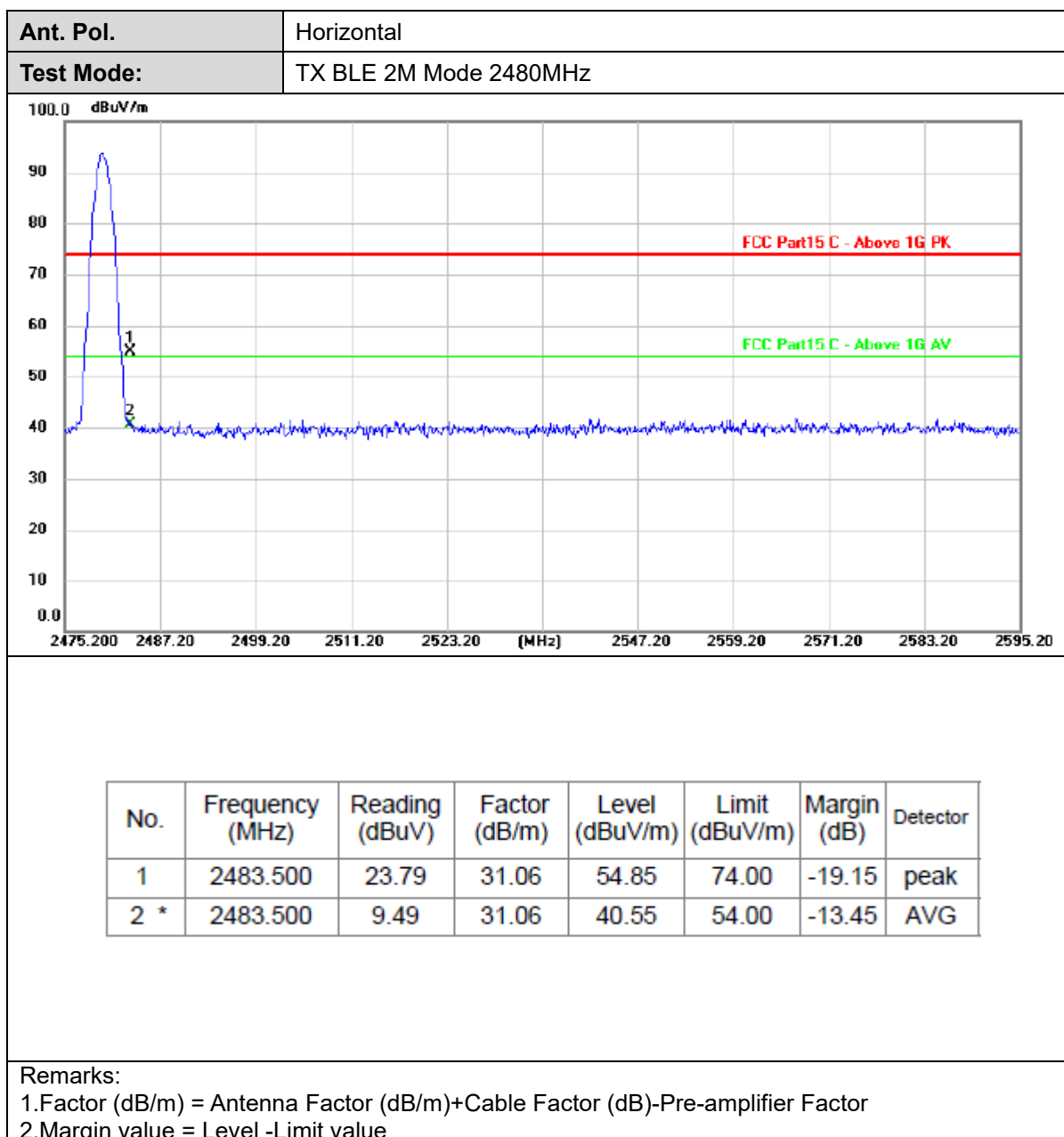


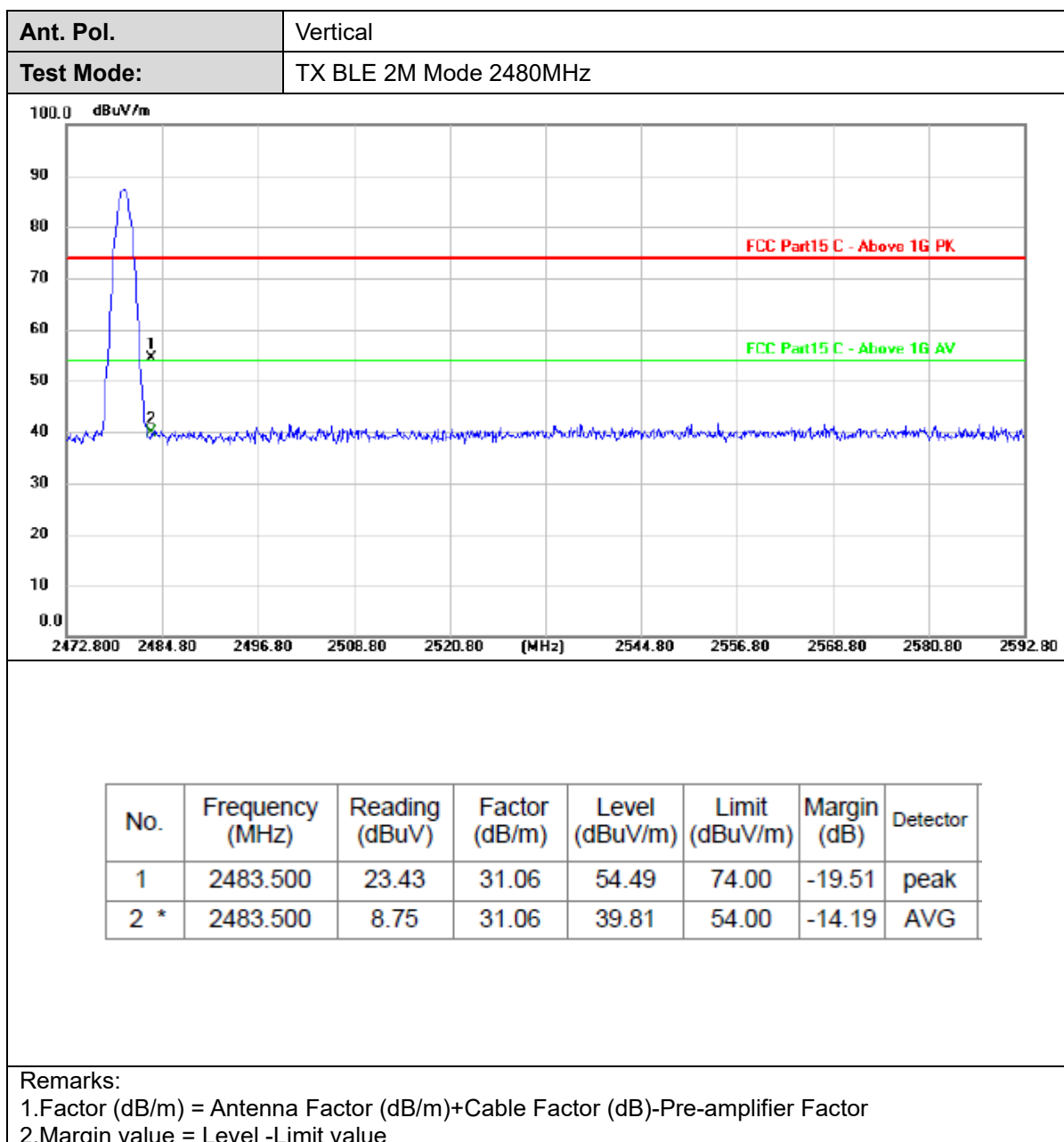












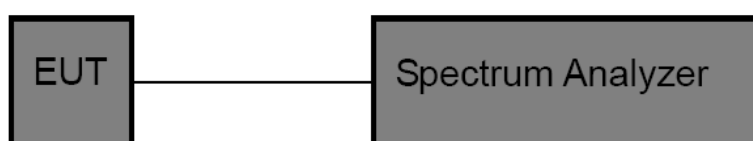
3.4. Band Edge and Spurious Emissions (Conducted)

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.

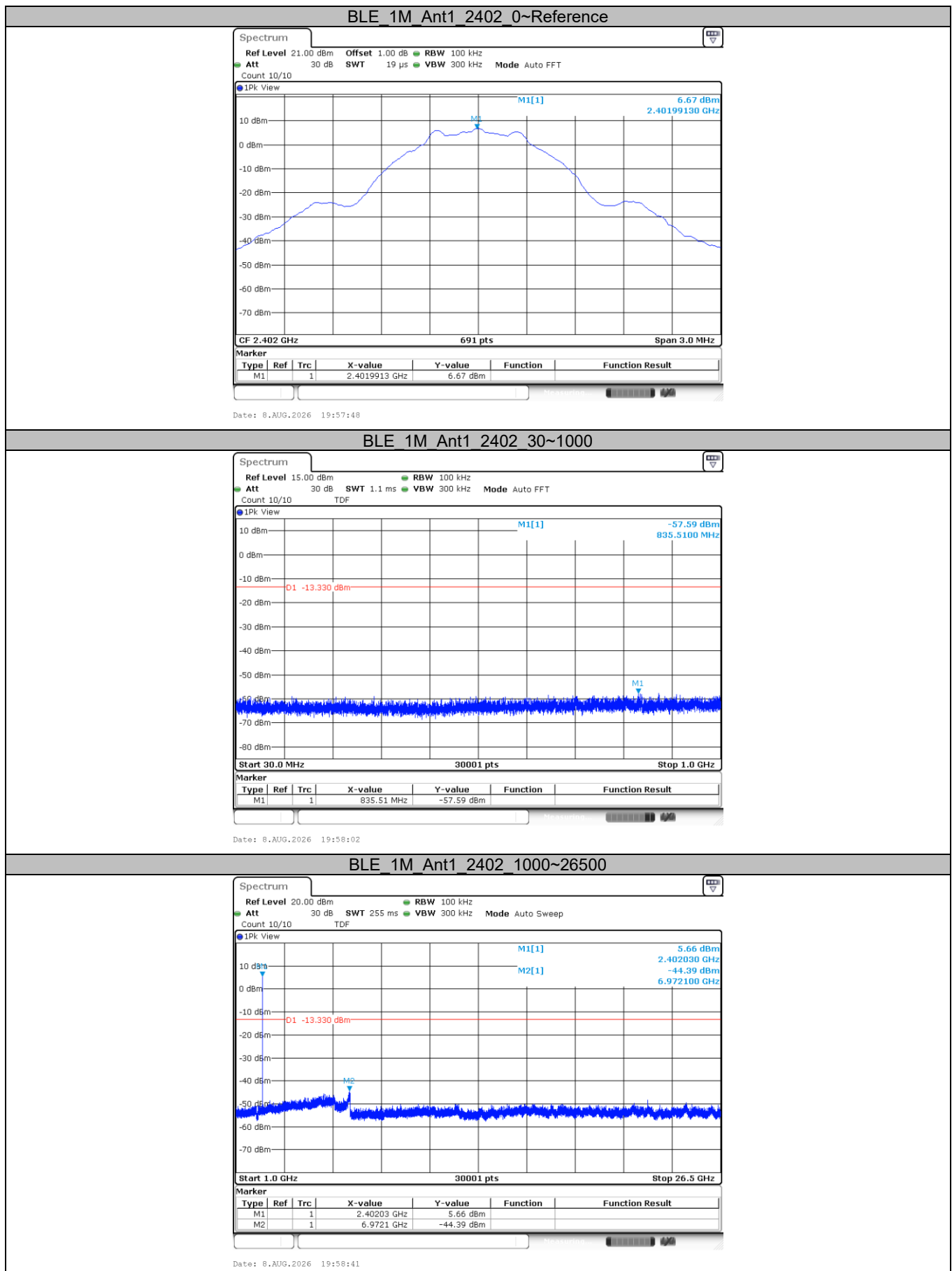
Test Mode

Please refer to the clause 2.4.

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	6.67	6.67	---	PASS
			30~1000	6.67	-57.59	≤-13.33	PASS
			1000~26500	6.67	-44.39	≤-13.33	PASS
		2440	Reference	8.02	8.02	---	PASS
			30~1000	8.02	-57.83	≤-11.98	PASS
			1000~26500	8.02	-45.57	≤-11.98	PASS
		2480	Reference	8.27	8.27	---	PASS
			30~1000	8.27	-57.3	≤-11.73	PASS
			1000~26500	8.27	-44.79	≤-11.73	PASS
BLE_2M	Ant1	2402	Reference	6.62	6.62	---	PASS
			30~1000	6.62	-57.3	≤-13.38	PASS
			1000~26500	6.62	-44.95	≤-13.38	PASS
		2440	Reference	7.96	7.96	---	PASS
			30~1000	7.96	-58.3	≤-12.04	PASS
			1000~26500	7.96	-45.58	≤-12.04	PASS
		2480	Reference	8.28	8.28	---	PASS
			30~1000	8.28	-57.82	≤-11.72	PASS
			1000~26500	8.28	-45.31	≤-11.72	PASS

Test Graphs



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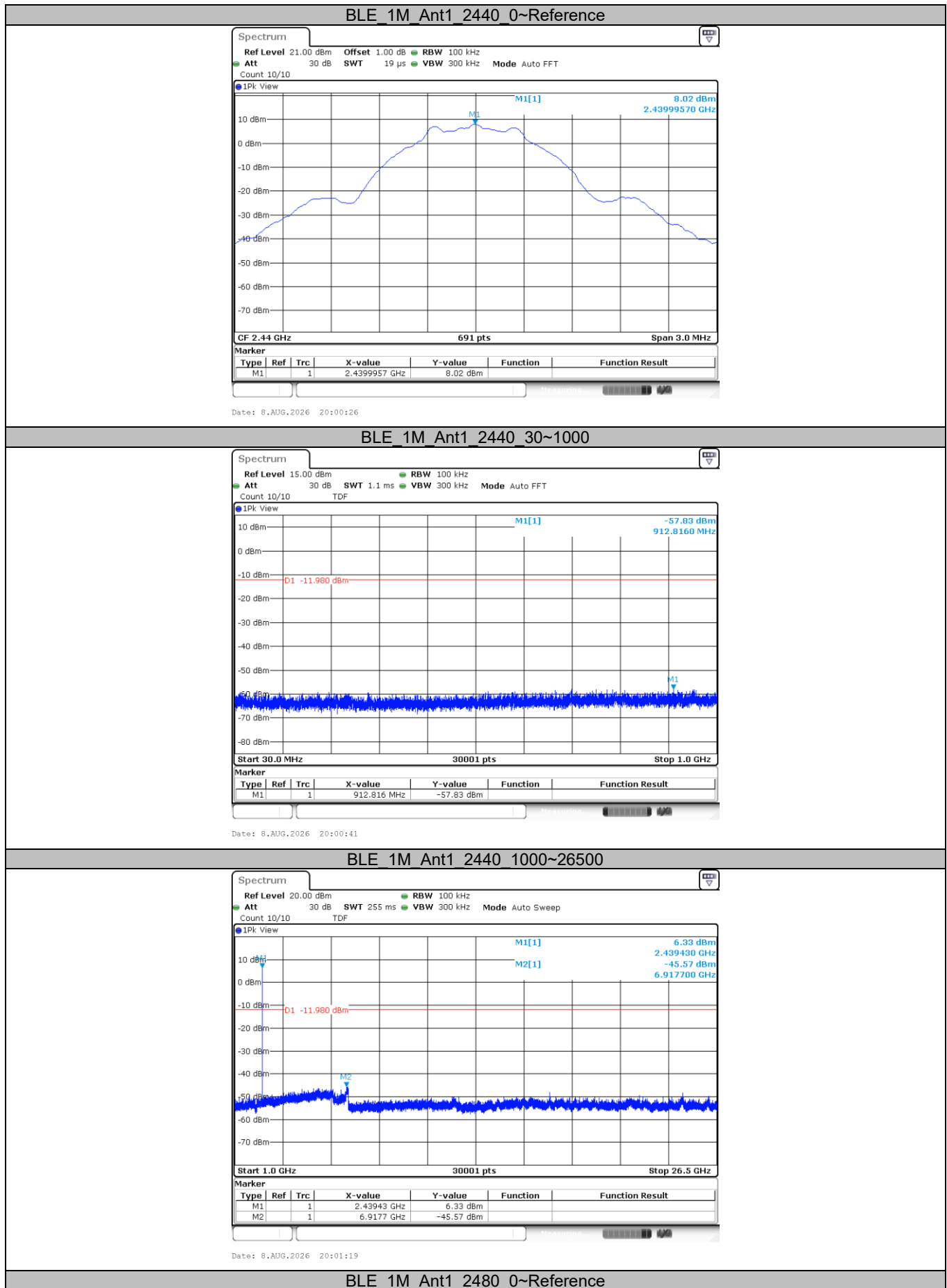
Tel.: (86)755-27521059

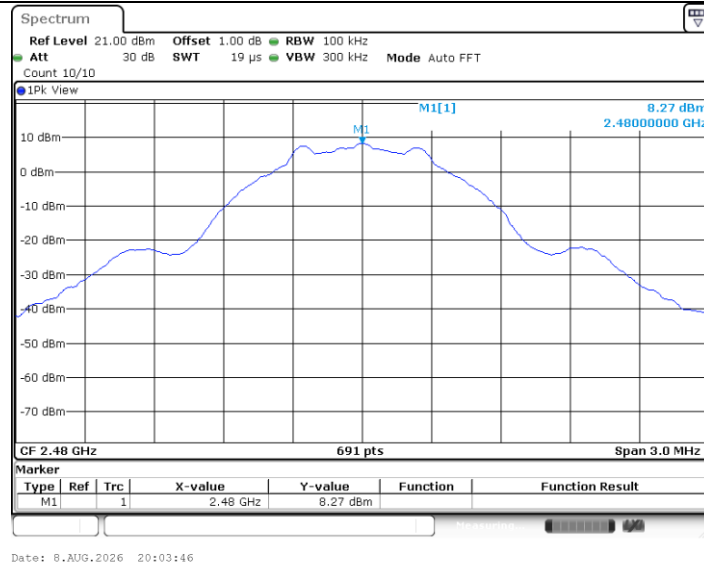
Fax: (86)755-27521011

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

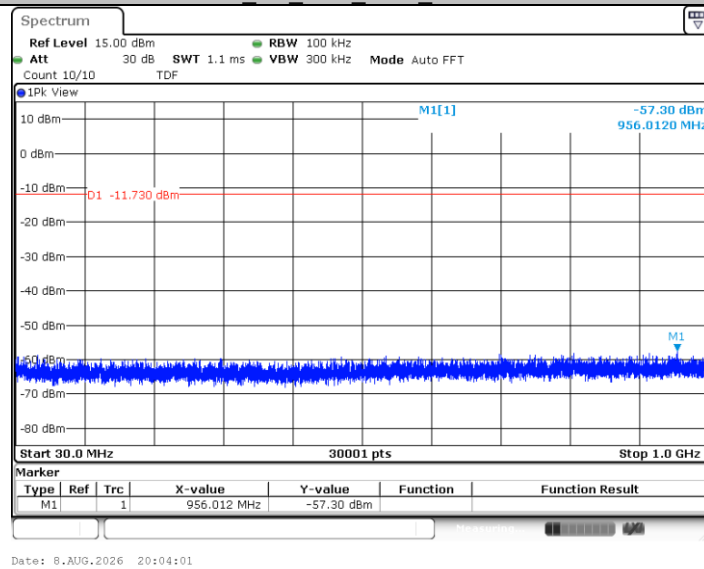
TRF No:CTC-TR-058_A5

Master TRF:Dated 2026-06-01

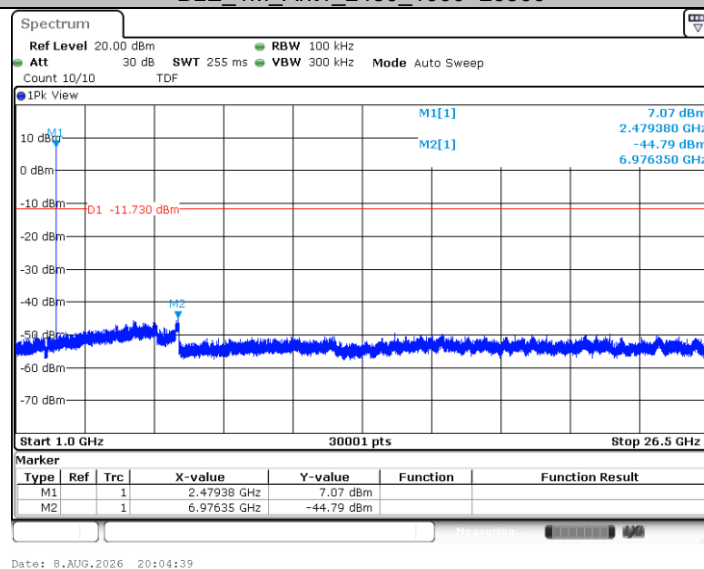




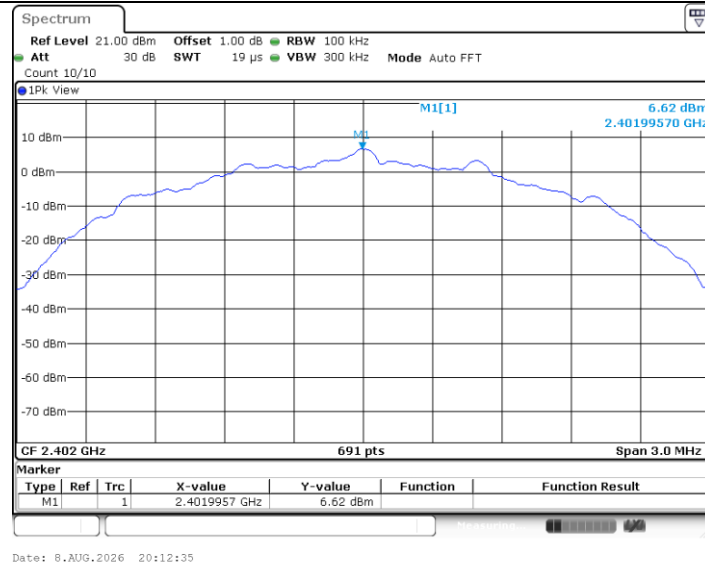
BLE_1M_Ant1_2480_30~1000



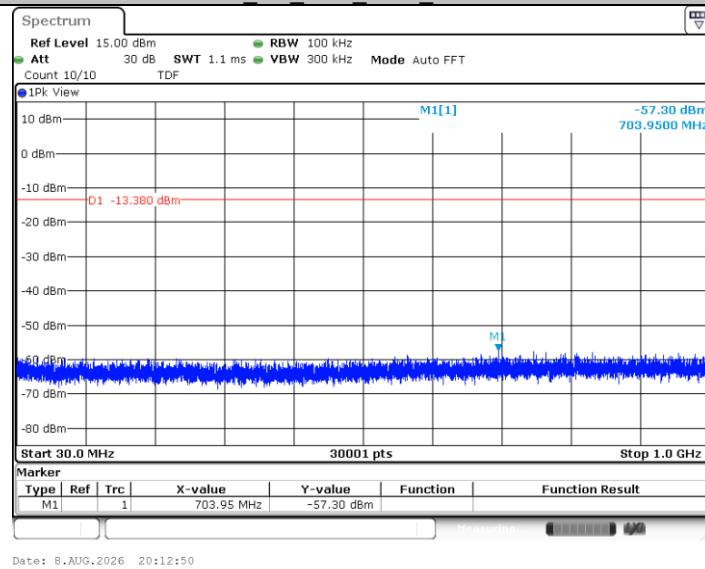
BLE_1M_Ant1_2480_1000~26500



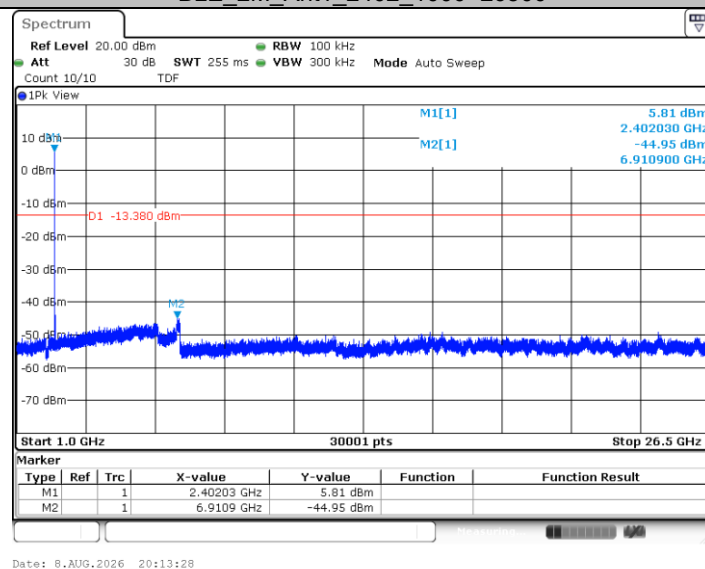
BLE_2M_Ant1_2402_0~Reference



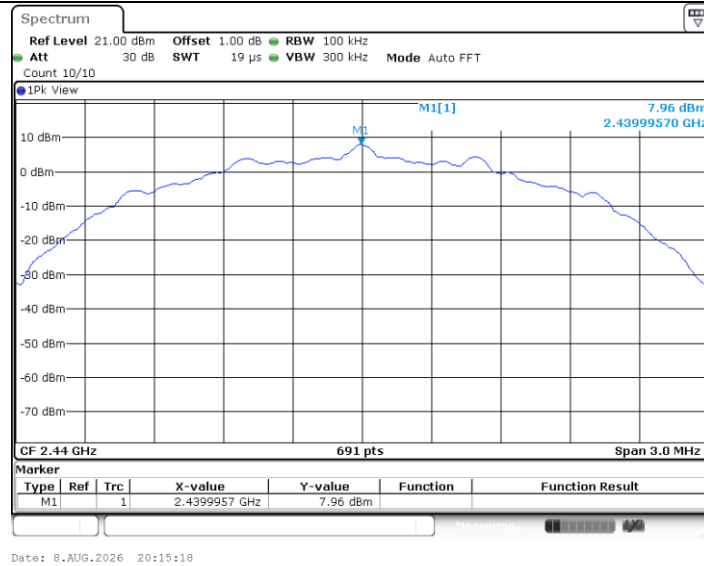
BLE_2M_Ant1_2402_30~1000



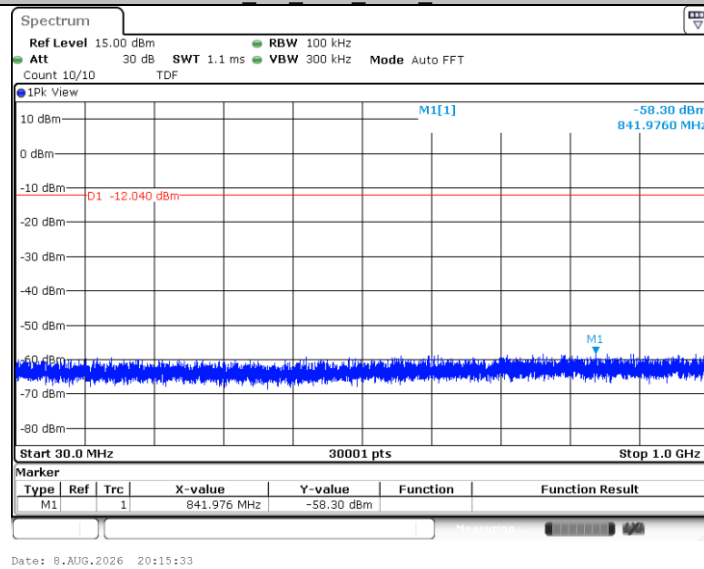
BLE_2M_Ant1_2402_1000~26500



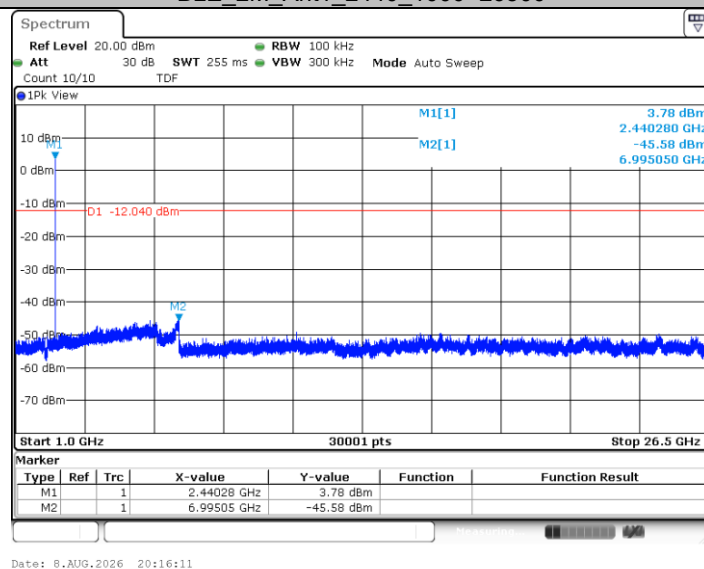
BLE_2M_Ant1_2440_0~Reference



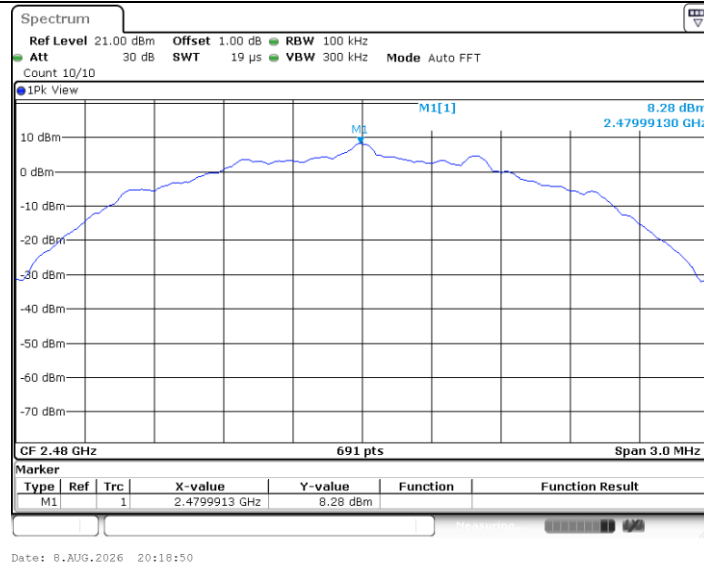
BLE_2M_Ant1_2440_30~1000



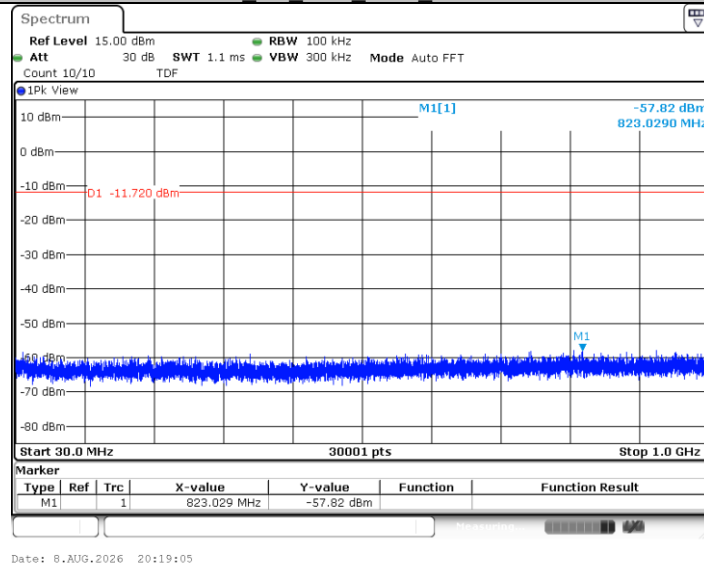
BLE_2M_Ant1_2440_1000~26500



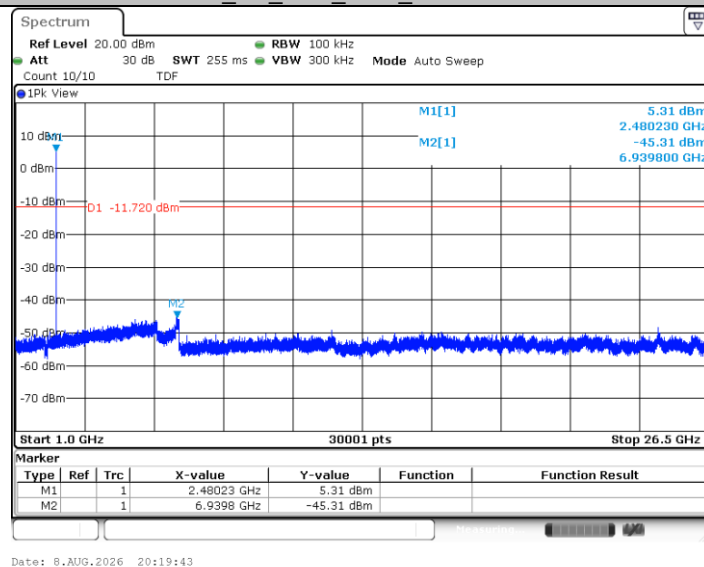
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000

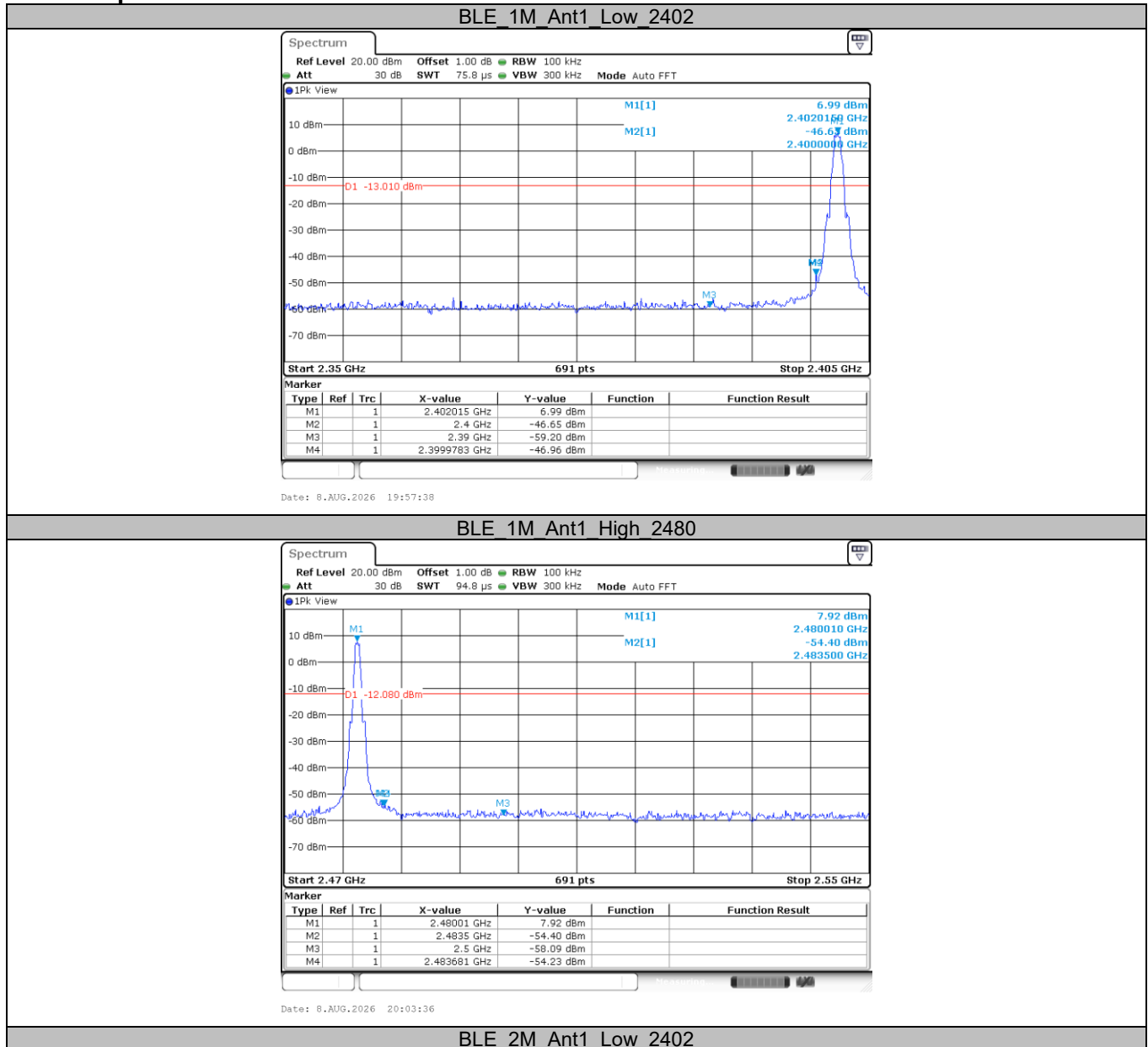


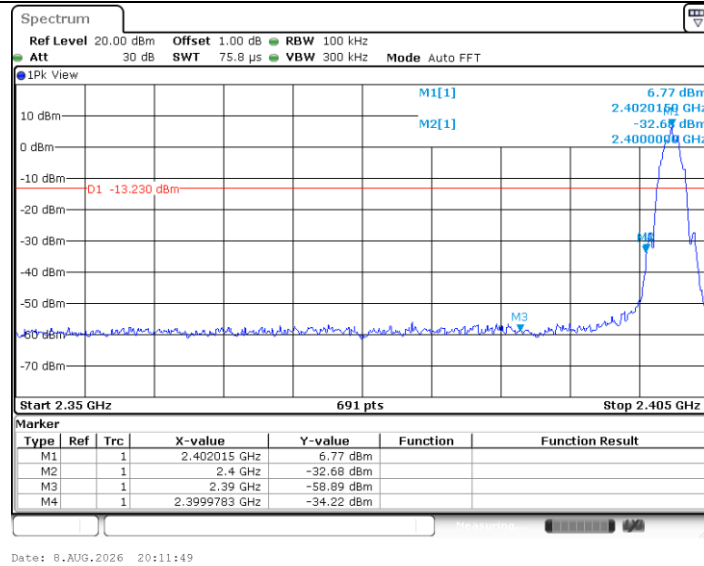
BLE_2M_Ant1_2480_1000~26500



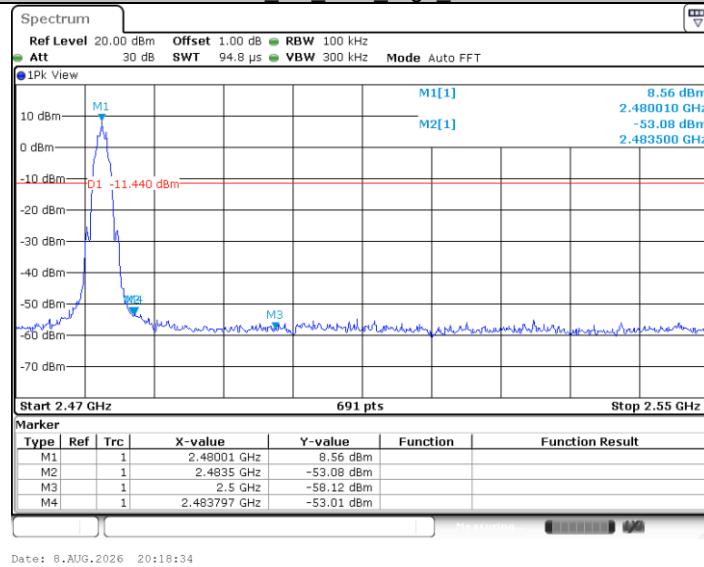
Conducted Band Edge

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.99	-46.96	≤-13.01	PASS
		High	2480	7.92	-54.23	≤-12.08	PASS
BLE_2M	Ant1	Low	2402	6.77	-34.22	≤-13.23	PASS
		High	2480	8.56	-53.01	≤-11.44	PASS

Test Graphs:



BLE 2M Ant1_High_2480



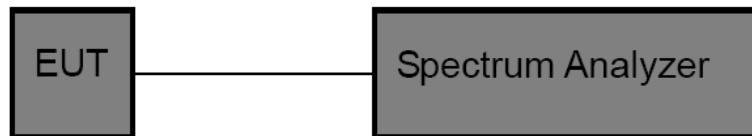
3.5. DTS Bandwidth

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)

Test Item	Limit	Frequency Range (MHz)
DTS Bandwidth	≥ 500 kHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- DTS Spectrum Setting:
 - Set RBW = 100 kHz.
 - Set the video bandwidth (VBW) ≥ 3 RBW.
 - Detector = Peak.
 - Trace mode = Max hold.
 - Sweep = Auto couple.
- OCB Spectrum Setting:
 - Set RBW = 1% ~ 5% occupied bandwidth.
 - Set the video bandwidth (VBW) ≥ 3 RBW.
 - Detector = Peak.
 - Trace mode = Max hold.
 - Sweep = Auto couple.

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

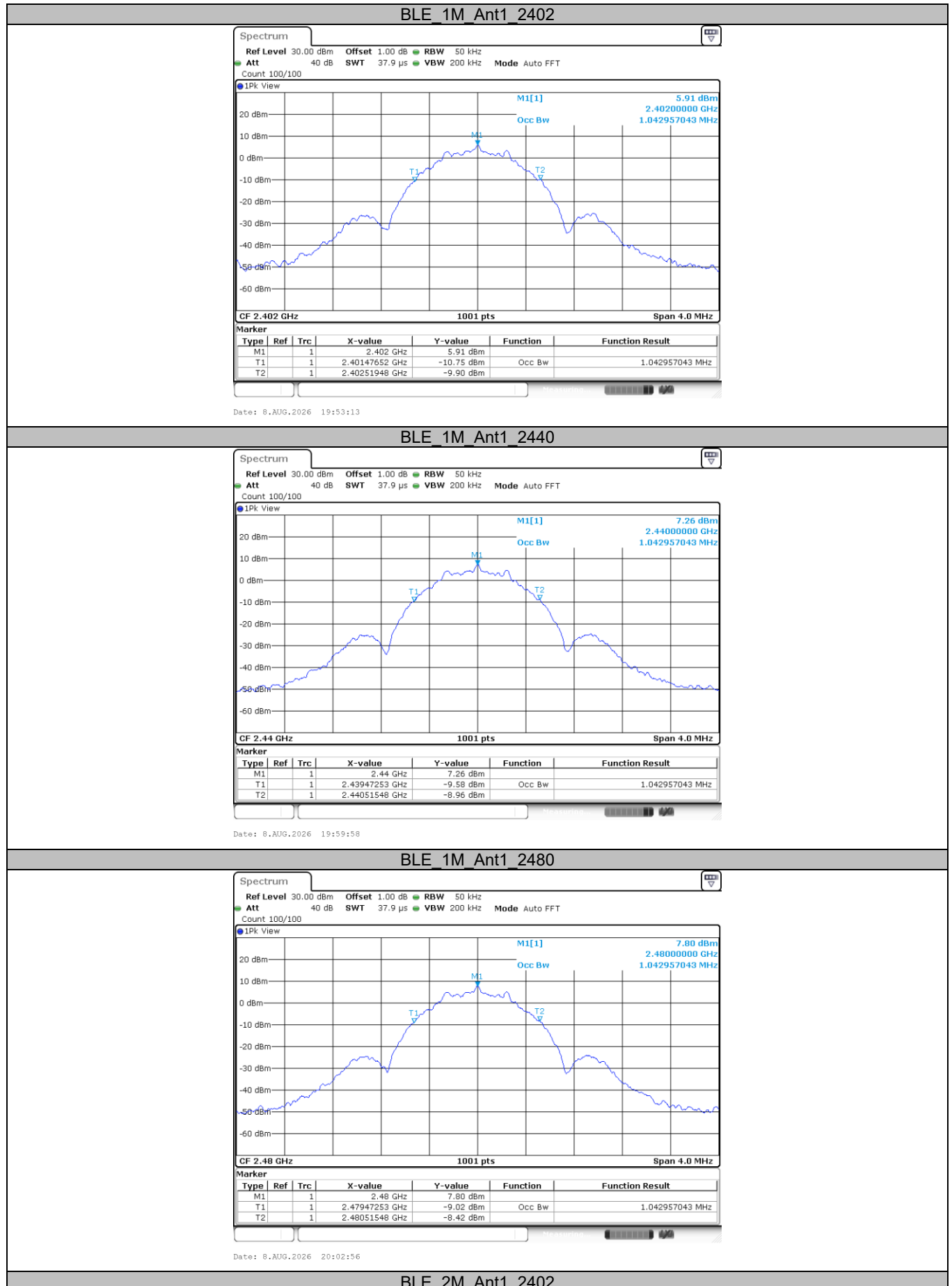
Test Mode

Please refer to the clause 2.4.

Test Result

Mode	Channel	99% Bandwidth (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
BLE 1M	0	1.043	0.64	≥ 0.5	PASS
	19	1.043	0.64		PASS
	39	1.043	0.64		PASS
BLE 2M	0	2.050	1.11		PASS
	19	2.046	1.10		PASS
	39	2.050	1.10		PASS

99% Bandwidth:



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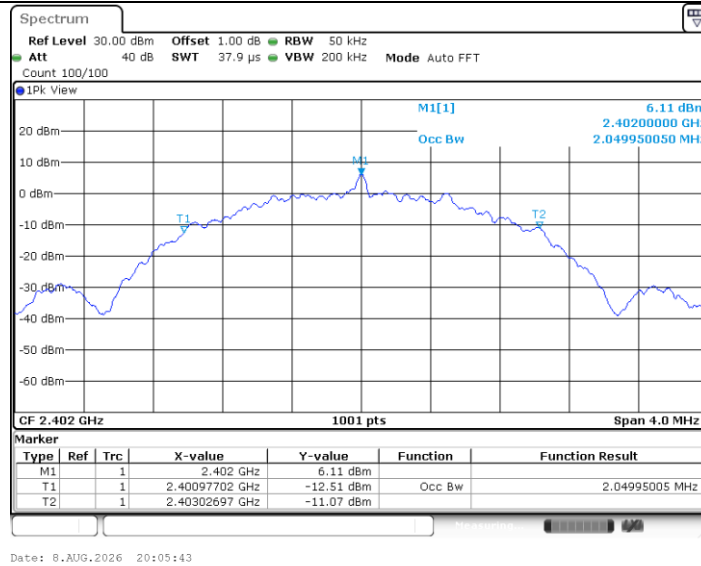
Tel.: (86)755-27521059

Fax: (86)755-27521011

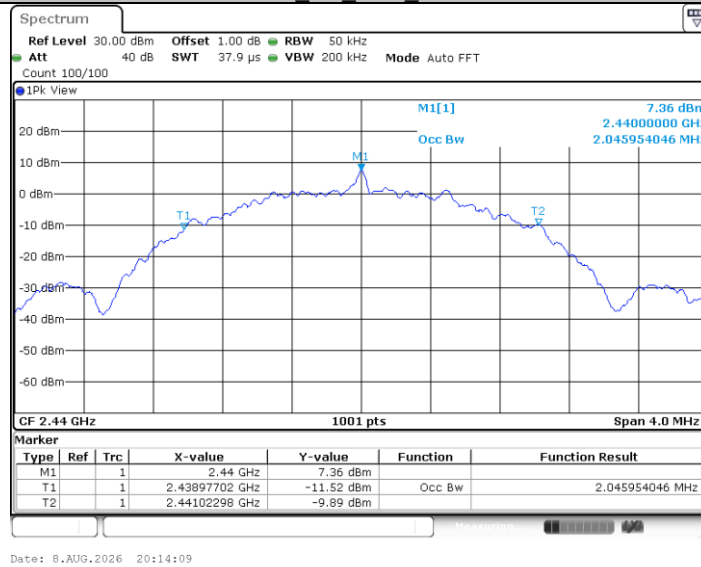
Http://www.sz-ctc.org.cn

TRF No:CTC-TR-058_A5

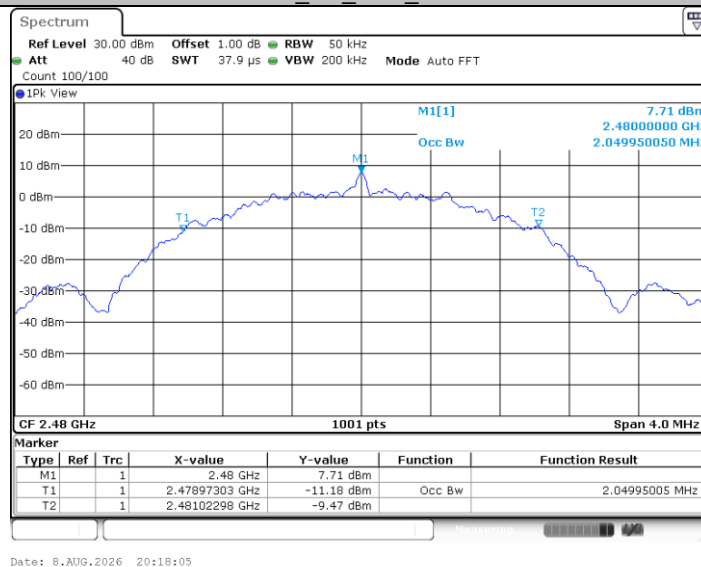
Master TRF:Dated 2026-06-01



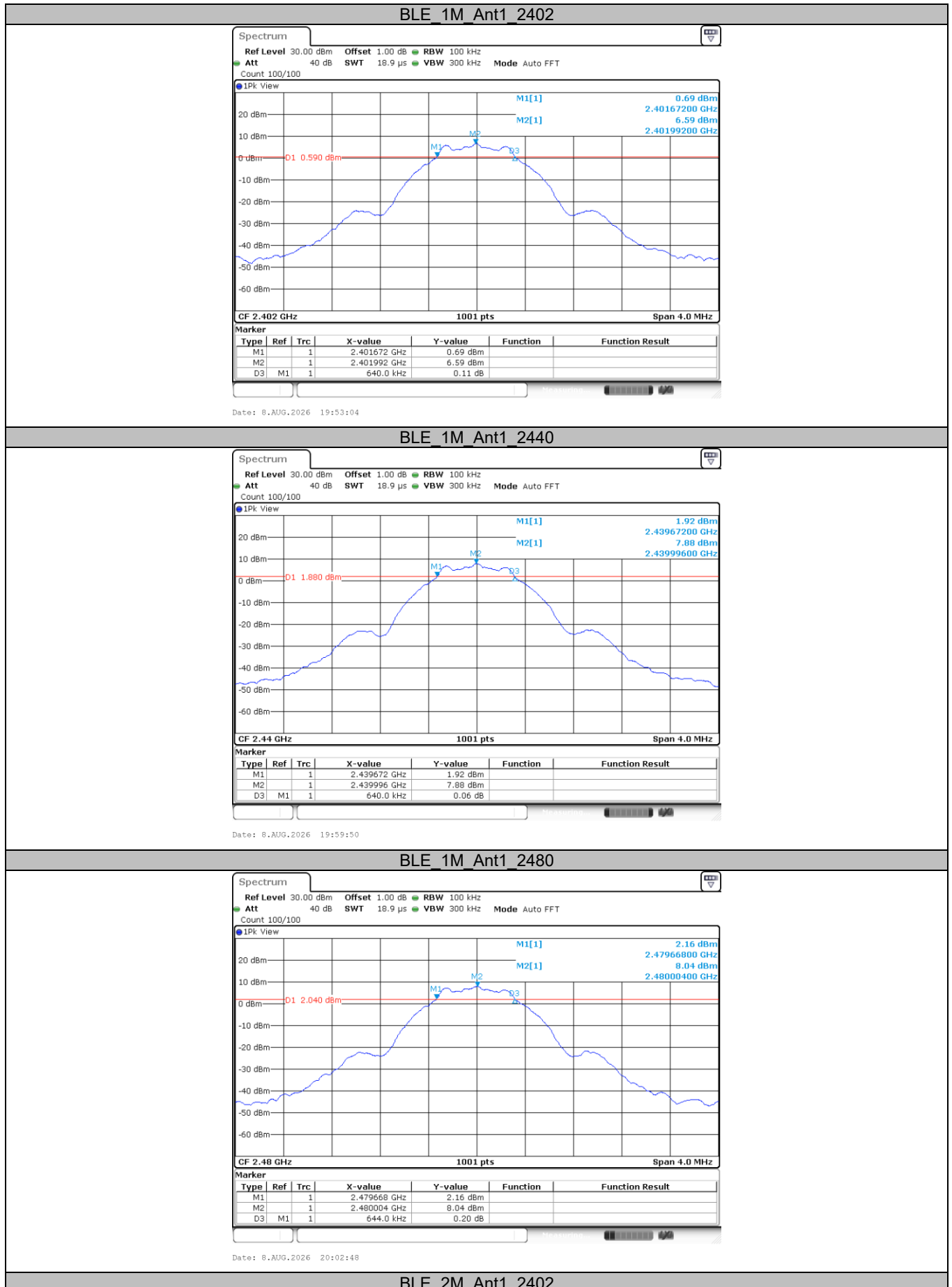
BLE 2M_Ant1_2440



BLE 2M_Ant1_2480



DTS Bandwidth:

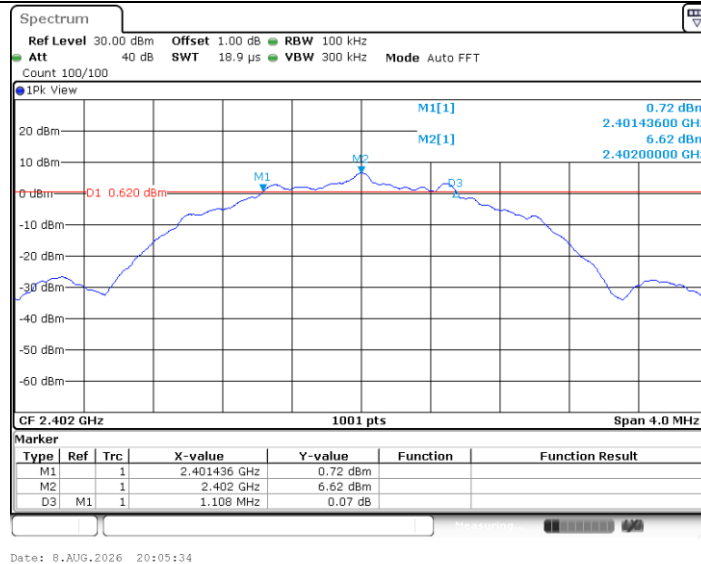


CTC Laboratories, Inc.

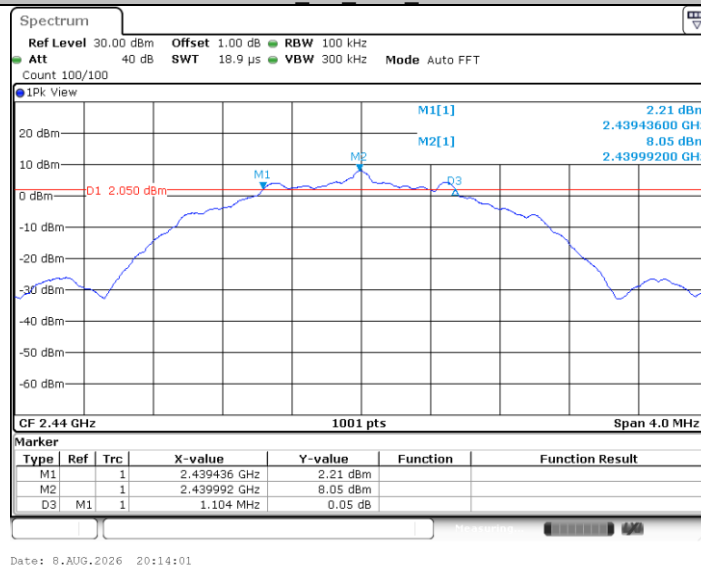
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No:CTC-TR-058_A5

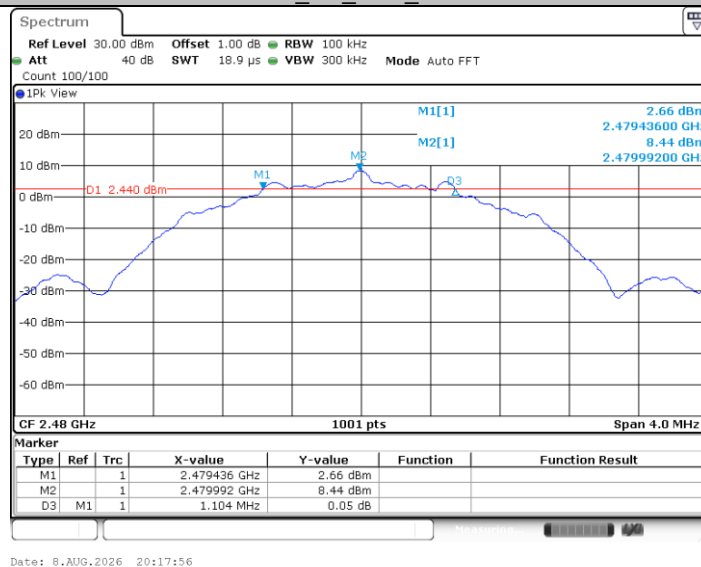
Master TRF:Dated 2026-06-01



BLE 2M_Ant1_2440



BLE 2M_Ant1_2480



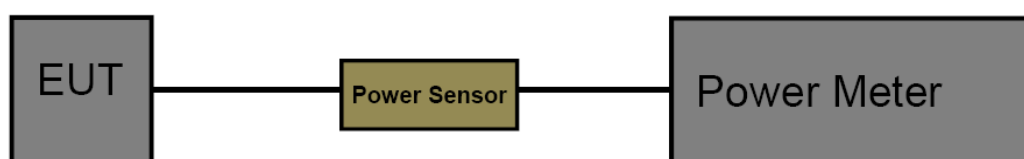
3.6. Peak Output Power

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3)

Section	Test Item	Limit	Frequency Range (MHz)
FCC CFR 47 Part15.247 (b)(3)	Maximum Conducted Output Power	1 Watt or 30dBm	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

Mode	Channel	Peak Output Power (dBm)	Limit (dBm)	Result
BLE 1M	0	6.81	≤30	PASS
	19	8.15		PASS
	39	8.58		PASS
BLE 2M	0	6.82		PASS
	19	8.07		PASS
	39	8.52		PASS

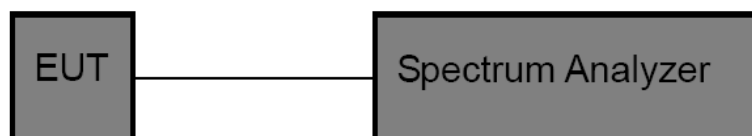
3.7. Power Spectral Density

Limit

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

Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	8 dBm (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: peak.
 Sweep time: auto.
 Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

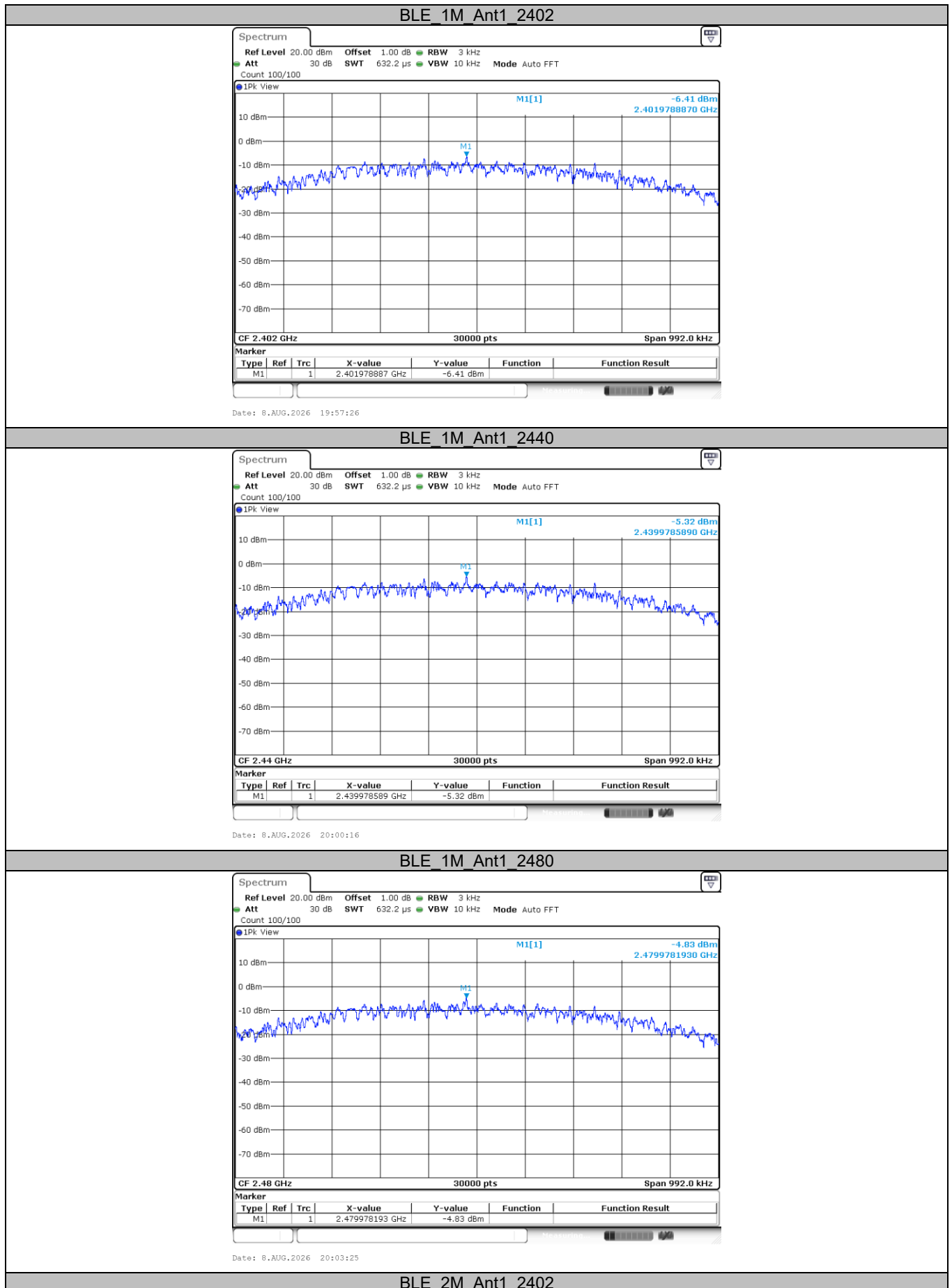
Test Mode

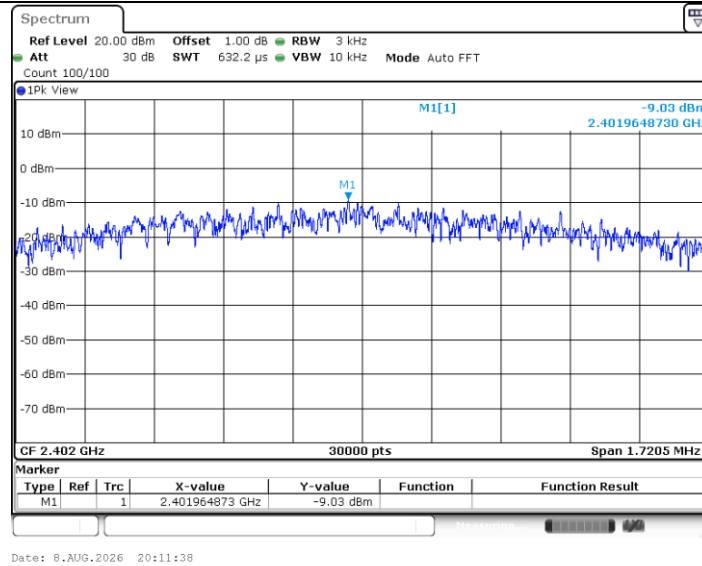
Please refer to the clause 2.4.

Test Result

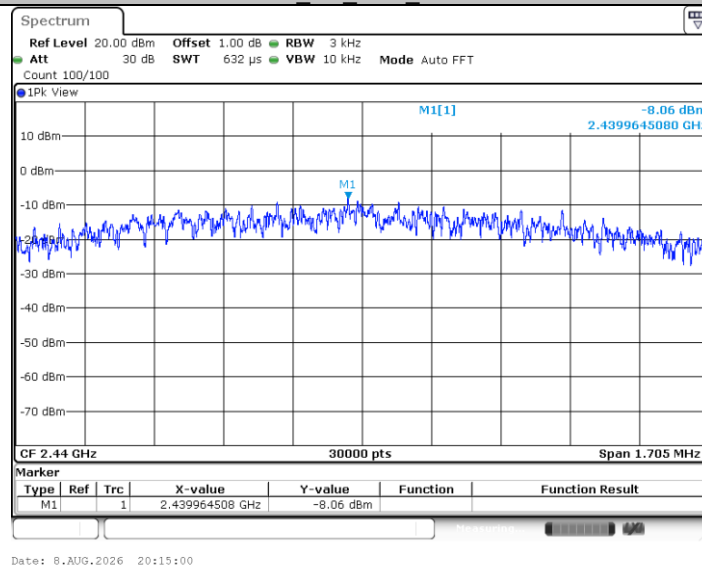
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-6.41	≤8	PASS
	19	-5.32	≤8	PASS
	39	-4.83	≤8	PASS
BLE 2M	0	-9.03	≤8	PASS
	19	-8.06	≤8	PASS
	39	-7.57	≤8	PASS

Test Graphs

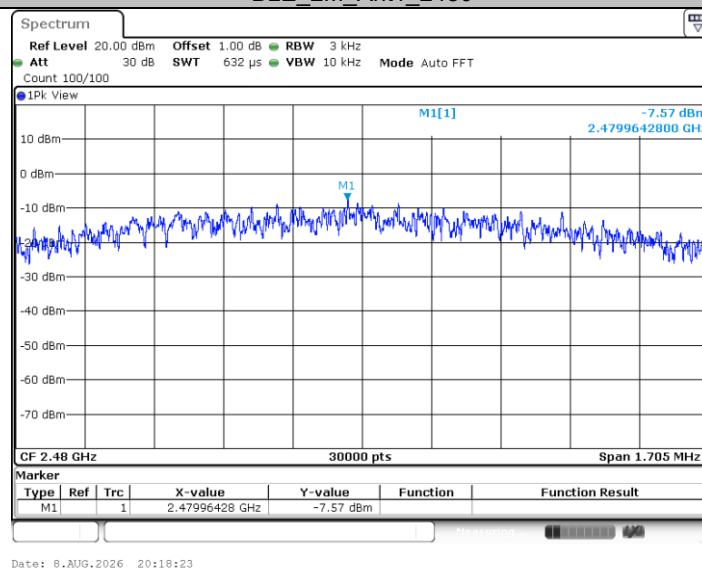




BLE 2M_Ant1_2440



BLE 2M_Ant1_2480

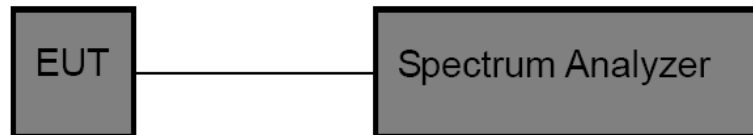


3.8. Duty Cycle

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 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

Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	1/T Minimum VBW (kHz)	Final Setting for VB (kHz)
BLE 1M	0	2.10	2.15	97.67	0.48	1
	19	2.10	2.15	97.67	0.48	1
	39	2.10	2.15	97.67	0.48	1
BLE 2M	0	1.06	1.11	95.50	0.94	1
	19	1.06	1.11	95.50	0.94	1
	39	1.06	1.11	95.50	0.94	1

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

Pass.

The transmitter employs a Ceramic Antenna installed inside the host device. The antenna is permanently attached and cannot be readily replaced by the end user. No standard antenna connector is provided.

Therefore, the antenna configuration complies with the requirements of FCC §15.203.

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

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