

FCC Radio Test Report

FCC ID: M82-PWS872FL

Report No. : BTL-FCCP-2-2302T054B
Equipment : COMPUTER
Model Name : PWS-872FL, PWS-872FLXXXXXXXXXXXXXXXXXX (where X may be any alphanumeric character , blank or "-".)
Brand Name : Advantech
Applicant : Advantech Co., Ltd.
Address : No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 11491, Taiwan.

Radio Function : Bluetooth Low Energy

FCC Rule Part(s) : FCC CFR Title 47, Part 15, Subpart C (15.247)
Measurement Procedure(s) : ANSI C63.10-2020

Date of Receipt : 2024/3/13
Date of Test : 2025/11/17 ~ 2025/12/30
Issued Date : 2026/1/8

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** assumes no responsibility for the data provided by the Customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by **BTL**.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-1-2302T054B	R00	Original Report.	2026/1/8	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

Standard(s) Section	Description	Test Result	Judgement	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass	-----
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	Pass	-----
15.247(a)(2)	Bandwidth	NOTE(3)	Pass	-----
15.247(b)(3)	Output Power	APPENDIX E	Pass	-----
15.247(e)	Power Spectral Density	NOTE(3)	Pass	-----
15.247(d)	Antenna conducted Spurious Emission	NOTE(3)	Pass	-----
15.203	Antenna Requirement	-----	Pass	-----

Statement of Conformity

The statement of conformity is based on the binary decision rule according to IEC Guide 115 and ILAC G8 "simple acceptance" principle. Without considering measurement uncertainty, its specific risk is less than 50% PFA. (PFA: Probability of False Accept)

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2) The report format version is TP.1.1.1.
- (3) This item is demonstrated to full compliance referring to the test report number 200611-03.TR04 of the integrated module (model name: AX210NGW, FCC ID: PD9AX210NG), according to KDB 996369 D02 Q1 a) 2).
- (4) The radiated emissions are tested to demonstrate full compliance of both module integrated into the host and host itself.
- (5) The output power of integrated module have been reduced, therefore, the full output power tests are performed and recorded.

1.1 TEST FACILITY

The test locations stated below are under the TAF Accreditation Number 0659.

The test location(s) used to collect the test data in this report are:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
(FCC DN: TW0659)

☐ C05 ☐ CB08 ☐ CB11 ☐ SR10 ☒ SR11

No. 64, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
(FCC DN: TW0659)

☒ C01 ☒ CB20

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k = 2$, providing a level of confidence of approximately **95 %**.

A. AC power line conducted emissions test:

Test Site	Measurement Frequency Range	U (dB)
C01	150 kHz ~ 30 MHz	3.44

B. Radiated emissions test:

Test Site	Measurement Frequency Range	U (dB)
CB20 (3m)	0.03 ~ 0.2 GHz	4.01
	0.2 ~ 1 GHz	4.64
	1 ~ 6 GHz	5.91
	6 ~ 18 GHz	6.24
	18 ~ 26 GHz	3.93
	26 ~ 40 GHz	4.06

C. Conducted test:

Test Item	U
Output power	0.4008 dB

NOTE:

Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	25 °C, 45 %	AC 120V	Benny Cao
Radiated emissions below 1 GHz	Refer to data	AC 120V	Ken Lu
Radiated emissions above 1 GHz	Refer to data	AC 120V	Ken Lu
Output Power	23.4 °C, 53 %	AC 120V	Easton Tsai

1.4 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

Test Software Version	DRTU			
Mode	2402 MHz	2440 MHz	2480 MHz	Data Rate
BLE (1 Mbps)	33	34	35	1 Mbps
BLE (2 Mbps)	33	34	35	2 Mbps

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	COMPUTER
Model Name	PWS-872FL, PWS-872FLXXXXXXXXXXXXXXXXXX (where X may be any alphanumeric character , blank or "-".)
Brand Name	Advantech
Model Difference	Different models distribute to different area.
Power Source	DC voltage supplied from AC/DC Adapter
Power Rating	EUT: 19VDC, 3.42A For Adapter: I/P: 100-240V~ 1.5A 50-60Hz O/P: 19.0V---3.42A
Products Covered	1 * CPU: Intel / i3-7100U 2.4GHz 1 * Memory: DDR4 2133MHz(4GB) 1 * Mother Board: Advantech / PWS-872 1 * 10.1" LCD Display: Jetone / J101WUXG01 1 * SSD: Advantech / SQF-SMSZ2-64GCSBE / 64GB 1 * WLAN+BT: INTEL / AX210NGW 1 * Adapter: Delta / ADP-65JH HB 1 * Desk docking station (Optional): Advantech / PWS-870 Desk Docking 1 * Vehicle docking station (Optional): Advantech / PWS-870 Vehicle Docking 1 * I/O Extension (Optional): Advantech / PWS-870-EXT100E 1 * MSR and Smart Card Reader Extension (Optional): Advantech / PWS-870-EXT300E
WIFI+BT Module	Intel® Wi-Fi 6E AX210 / AX210NGW
Operation Band	2400 MHz ~ 2483.5 MHz
Operation Frequency	2402 MHz ~ 2480 MHz
Maximum Output Power	1 Mbps: 10.32 dBm (0.0108 W) 2 Mbps: 10.26 dBm (0.0106 W)
Test Model	PWS-872FL
Sample Status	Engineering Sample
EUT Modification(s)	N/A

NOTE:

- (1) The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

(2) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

(3) Table for Filed Antenna:

Antenna	Manufacture	Part Number	Type	Connector	Frequency Range (MHz)	Gain (dBi)
Ant. A		AJDP1J-B0103	PIFA	I-PEX_IV	2402-2480	2.73
Ant. B		AJDP1J-C0058	PIFA	I-PEX_IV	2402-2480	1.75

(4) The above Antenna information are derived from the antenna data sheet provided by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.2 TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	1 Mbps	00	-
Transmitter Radiated Emissions (above 1GHz)	1/2 Mbps	00/39	Bandedge
	1/2 Mbps	00/19/39	Harmonic
Transmitter Radiated Emissions (above 18GHz)	1 Mbps	00	-
Output Power	1/2 Mbps	00/19/39	-

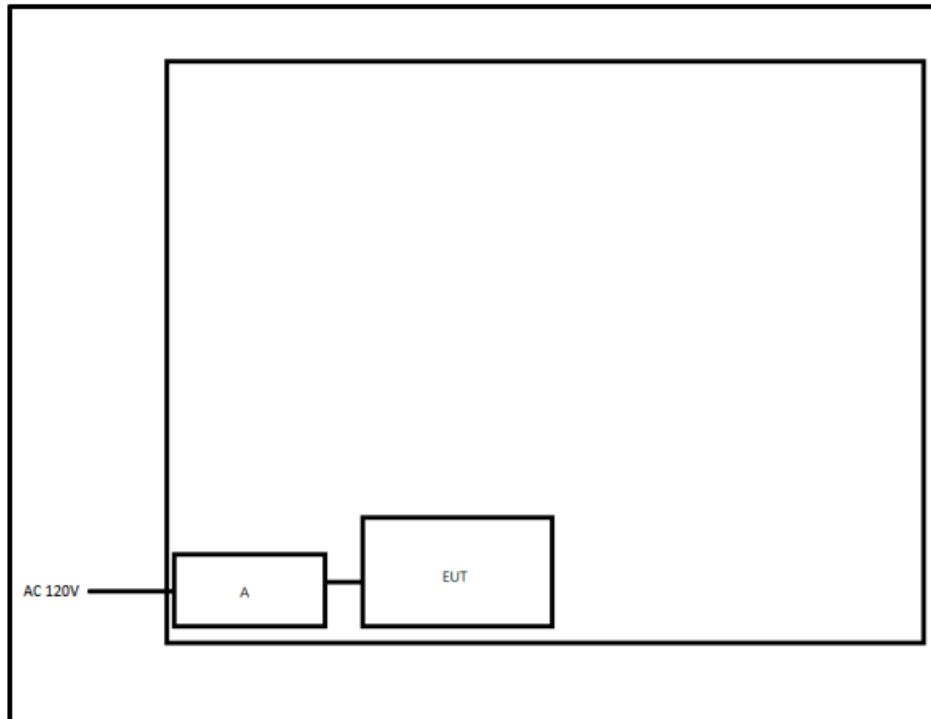
NOTE:

- (1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.
- (2) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.
- (3) All X, Y and Z axes are evaluated, but only the worst case (Y axis) is recorded.

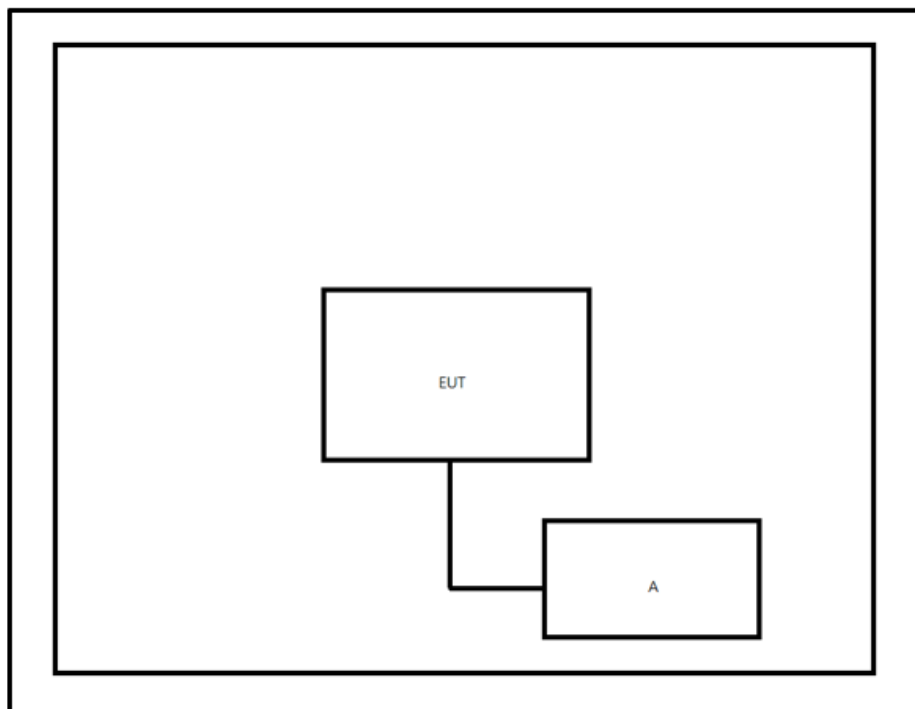
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.

AC Power Line Conducted Emissions Test



Radiated Emissions Test



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	Adapter	Delta Electronics, Inc.	ADP-65JH HB	6KWW0BL00.X	Supplied by test requester

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
-	-	-	-	-	-

3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)
 Margin Level = Measurement Value – Limit Value
 Calculation example:

Reading Level (dBμV)		Correct Factor (dB)		Measurement Value (dBμV)
38.22	+	3.45	=	41.67

Measurement Value (dBμV)		Limit Value (dBμV)		Margin Level (dB)
41.67	-	60	=	-18.33

The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
 All other support equipment were powered from an additional LISN(s).
 The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle to keep the cable above 40 cm.
- c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center.
 The end of the cable will be terminated, using the correct terminating impedance.
 The overall length shall not exceed 1 m.
- d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
- e. For the actual test configuration, please refer to the related Item - EUT TEST PHOTO.

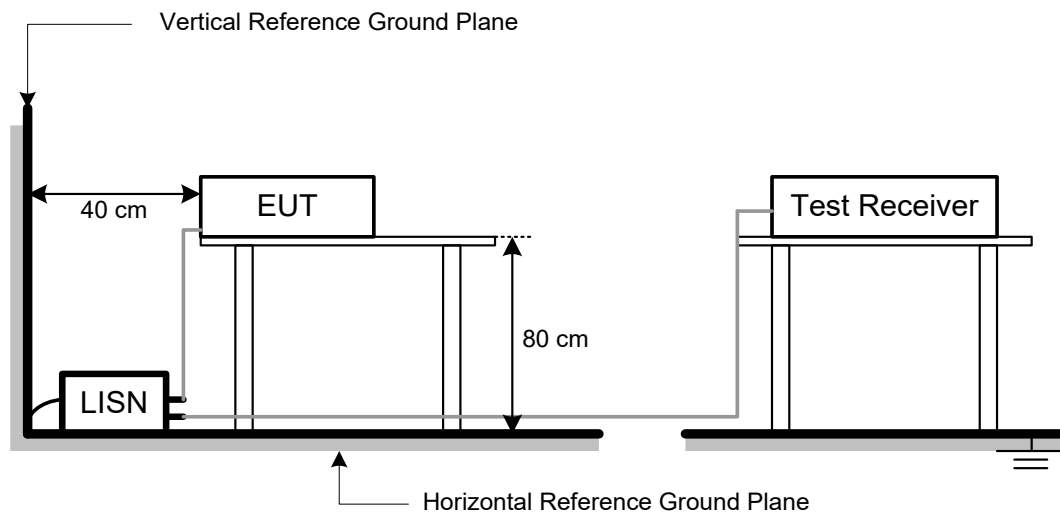
NOTE:

- (1) In the results, each reading is marked as Peak, QP or AVG per the detector used.
 BW=9 kHz (6 dB Bandwidth)
- (2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 TEST RESULT

Please refer to the APPENDIX A.

4 RADIATED EMISSIONS TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205, then the 15.209 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

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

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Radiated Emissions (dBuV/m)		Measurement Distance (meters)
	Peak	Average	
Above 1000	74	54	3

NOTE:

- (1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level (dBuV)		Correct Factor (dB/m)		Measurement Value (dBuV/m)
19.11	+	2.11	=	21.22

Measurement Value (dBuV/m)		Limit Value (dBuV/m)		Margin Level (dB)
21.22	-	54	=	-32.78

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

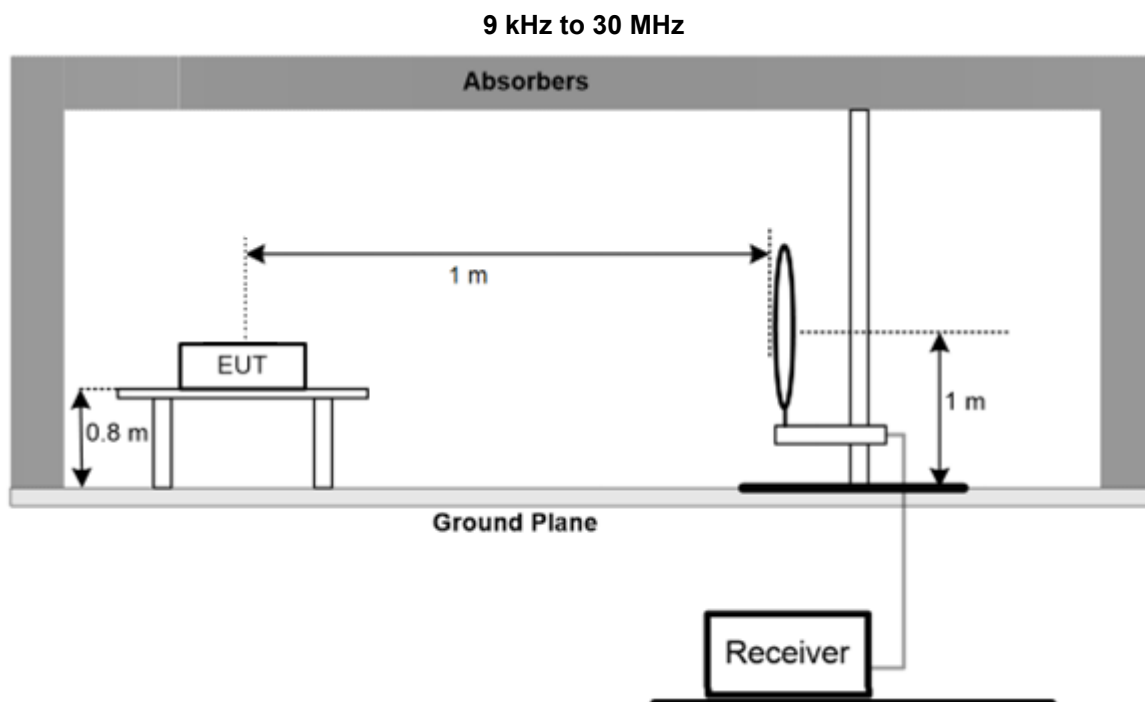
4.2 TEST PROCEDURE

- The measuring distance of 1 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 30MHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

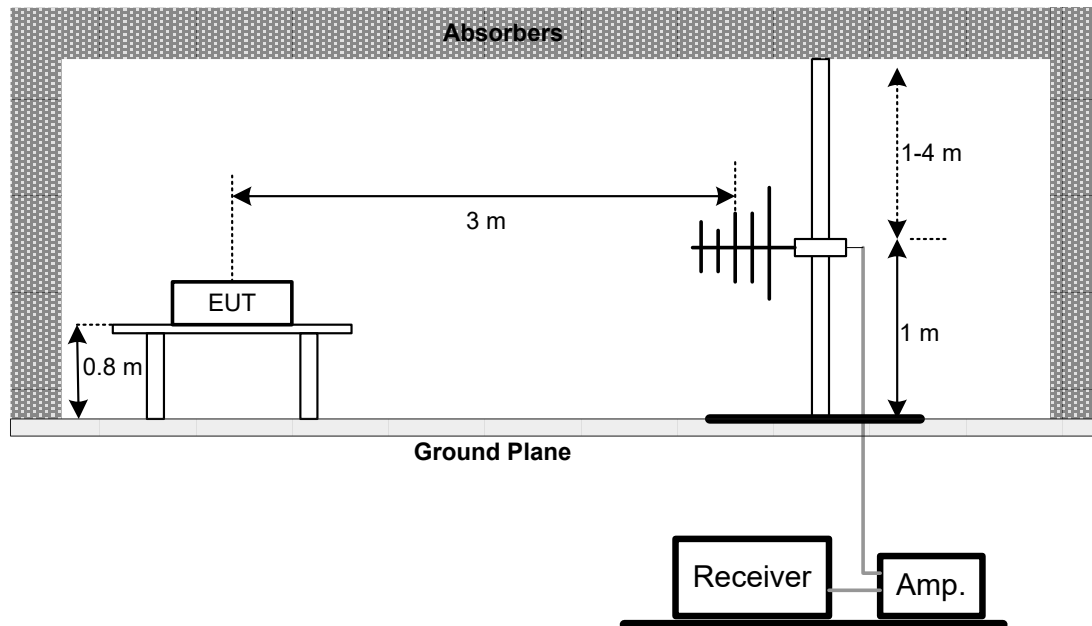
4.3 DEVIATION FROM TEST STANDARD

No deviation.

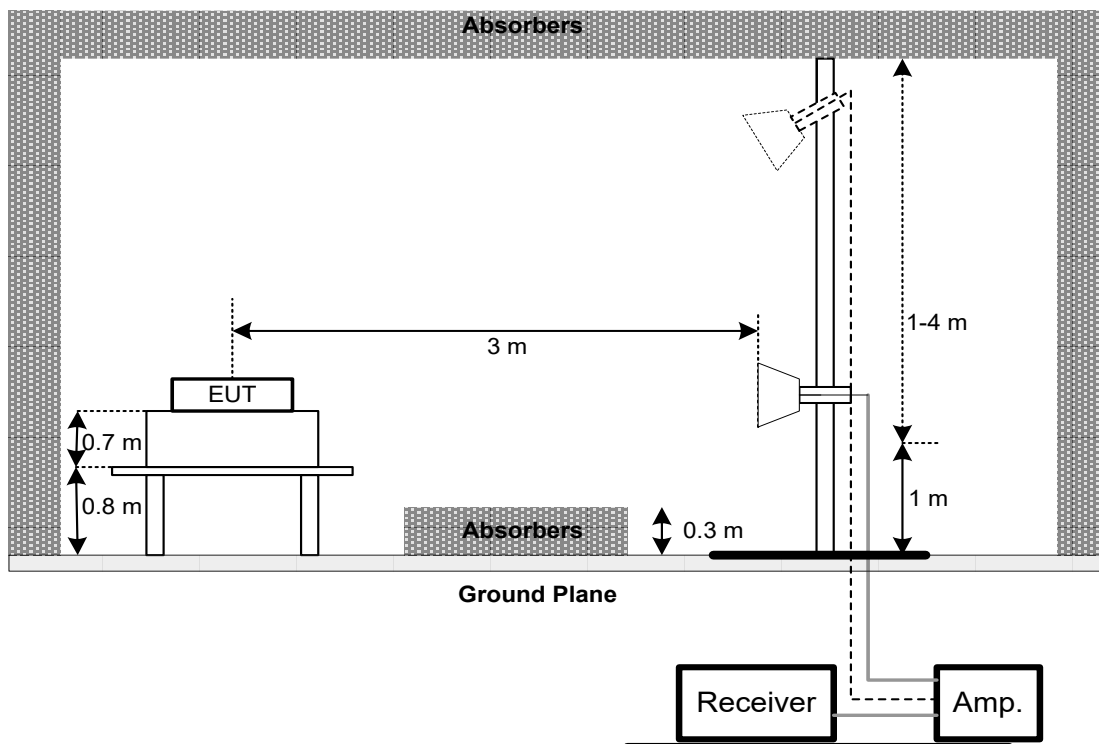
4.4 TEST SETUP



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT – 9kHz TO 30 MHz

Please refer to the APPENDIX B.

4.7 TEST RESULT – 30 MHz TO 1 GHz

Please refer to the APPENDIX C.

4.8 TEST RESULT – ABOVE 1 GHz

Please refer to the APPENDIX D.

NOTE:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5 OUTPUT POWER TEST

5.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 watt or 30 dBm	2400-2483.5	PASS

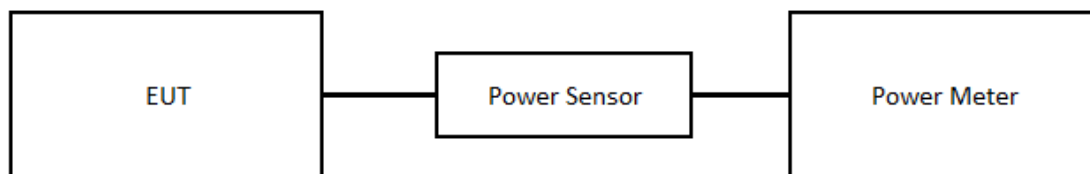
5.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- The maximum peak conducted output power was performed in accordance with method 9 b) of FCC KDB 558074 D01 DTS Meas Guidance.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX E.

6 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	EMC Receiver	keysight	N9038A	MY54130009	2025/06/25	2026/06/24
2	Test Cable	EMCI	EMCRG58-BM-B M-9000	210501	2025/12/02	2026/12/01
3	Two-Line V-Network	R&S	ENV216	101051	2025/07/02	2026/07/01
4	Measurement Software	Farad	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Pre-Amplifier	EMCI	EMC184045SE	980512	2025/12/02	2026/12/01
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	340	2025/06/25	2026/06/24
3	Test Cable	EMCI	EMC102-KM-KM- 1000	220328	2025/12/02	2026/12/01
4	Test Cable	EMCI	EMC102-KM-KM- 3000	220330	2025/12/02	2026/12/01
5	Broad-Band Horn Antenna	RFSPIN	DRH18-E	210109A18E	2025/01/14	2026/01/13
6	Pre-Amplifier	EMCI	EMC118A45SE	981030	2025/12/02	2026/12/01
7	Test Cable	EMCI	EMC102-KM-KM- 1000	210119	2025/12/02	2026/12/01
8	Test Cable	EMCI	EMC102-KM-KM- 3000	210118	2025/12/02	2026/12/01
9	Test Cable	EMCI	EMC107-SM-SM- 6000	230726	2025/12/02	2026/12/01
10	EXA Spectrum Analyzer	keysight	N9020B	MY59050137	2025/12/1	2026/11/30
11	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	364	2025/04/08	2026/04/07
12	Pre-Amplifier	EMCI	EMC001330	980807	2025/12/02	2026/12/01
13	Test Cable	EMCI	EMC-8D-NM-NM- -5000	150106	2025/12/02	2026/12/01
14	Test Cable	EMCI	EMC-CFD-400-N M-NM-3300	200348	2025/12/02	2026/12/01
15	Test Cable	EMCI	EMC-CFD-400-N M-NM-8000	200343	2025/12/02	2026/12/01
16	Loop Antenna	Electro-Metrics	EMCI-LPA600	274	2025/07/10	2026/07/09
17	Pre-Amplifier	EMCI	EMC001340	980555	2025/11/30	2026/11/29
18	Measurement Software	Farad	EZ_EMC (Ver. NB-03A1-01)	N/A	N/A	N/A

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Single Channel Pk Power Meter	Keysight	N1911A	MY63450010	2025/9/16	2026/9/15
2	Peak and Average Power Sensor	Keysight	E9327	MY63310007	2025/9/16	2026/9/15

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

7 EUT TEST PHOTO

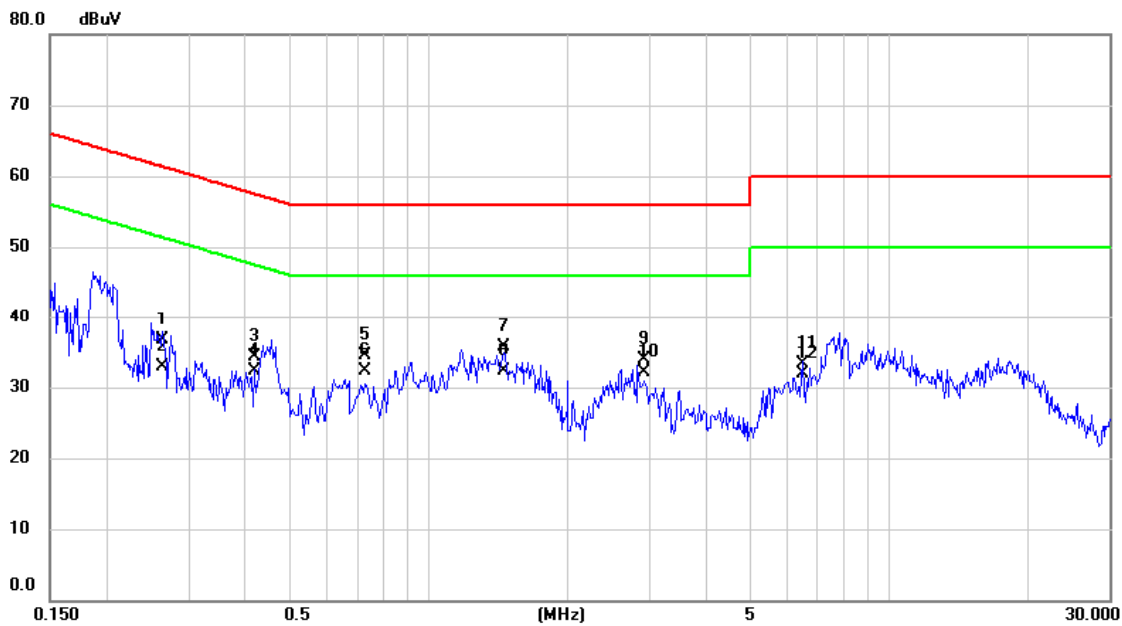
Please refer to document Appendix No.: TP-2302T054B-FCCP-1 (APPENDIX-TEST PHOTOS).

8 EUT PHOTOS

Please refer to document Appendix No.: EP-2302T054B-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

Test Mode	Normal	Tested Date	2025/12/30
Test Frequency	-	Phase	Line



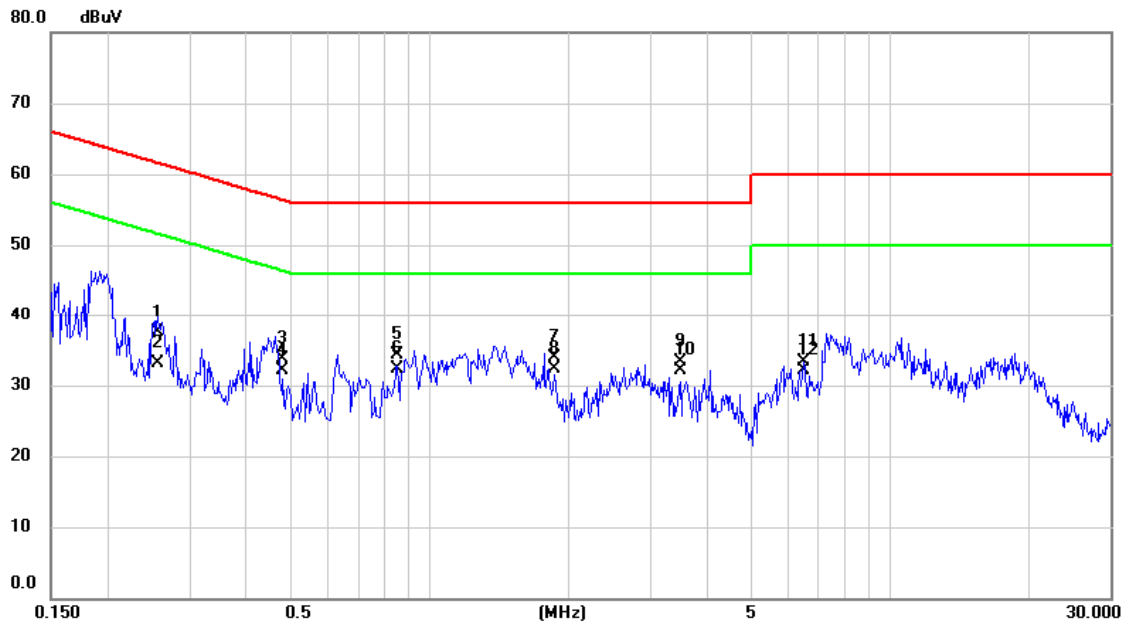
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2630	27.10	9.51	36.61	61.34	-24.73	QP	
2		0.2630	23.39	9.51	32.90	51.34	-18.44	AVG	
3		0.4185	24.75	9.52	34.27	57.48	-23.21	QP	
4		0.4185	22.79	9.52	32.31	47.48	-15.17	AVG	
5		0.7295	24.84	9.57	34.41	56.00	-21.59	QP	
6		0.7295	22.66	9.57	32.23	46.00	-13.77	AVG	
7		1.4495	26.06	9.65	35.71	56.00	-20.29	QP	
8	*	1.4495	22.70	9.65	32.35	46.00	-13.65	AVG	
9		2.9255	24.15	9.72	33.87	56.00	-22.13	QP	
10		2.9255	22.46	9.72	32.18	46.00	-13.82	AVG	
11		6.5000	23.56	9.80	33.36	60.00	-26.64	QP	
12		6.5000	22.14	9.80	31.94	50.00	-18.06	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	Normal	Tested Date	2025/12/30
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2550	27.91	9.56	37.47	61.59	-24.12	QP	
2		0.2550	23.47	9.56	33.03	51.59	-18.56	AVG	
3		0.4797	24.09	9.58	33.67	56.34	-22.67	QP	
4		0.4797	22.62	9.58	32.20	46.34	-14.14	AVG	
5		0.8510	24.77	9.62	34.39	56.00	-21.61	QP	
6	*	0.8510	22.67	9.62	32.29	46.00	-13.71	AVG	
7		1.8635	24.14	9.70	33.84	56.00	-22.16	QP	
8		1.8635	22.51	9.70	32.21	46.00	-13.79	AVG	
9		3.4790	23.52	9.75	33.27	56.00	-22.73	QP	
10		3.4790	22.27	9.75	32.02	46.00	-13.98	AVG	
11		6.5000	23.51	9.84	33.35	60.00	-26.65	QP	
12		6.5000	22.34	9.84	32.18	50.00	-17.82	AVG	

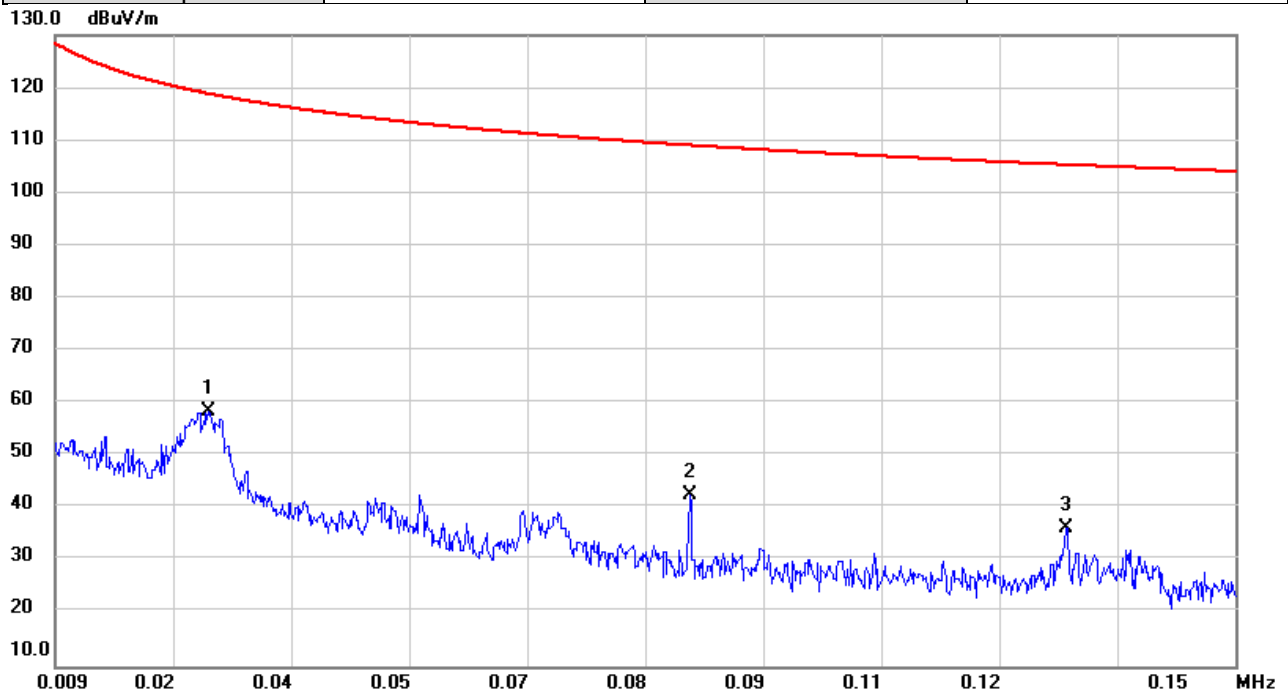
REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

APPENDIX B RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/30
Test Frequency	2402MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



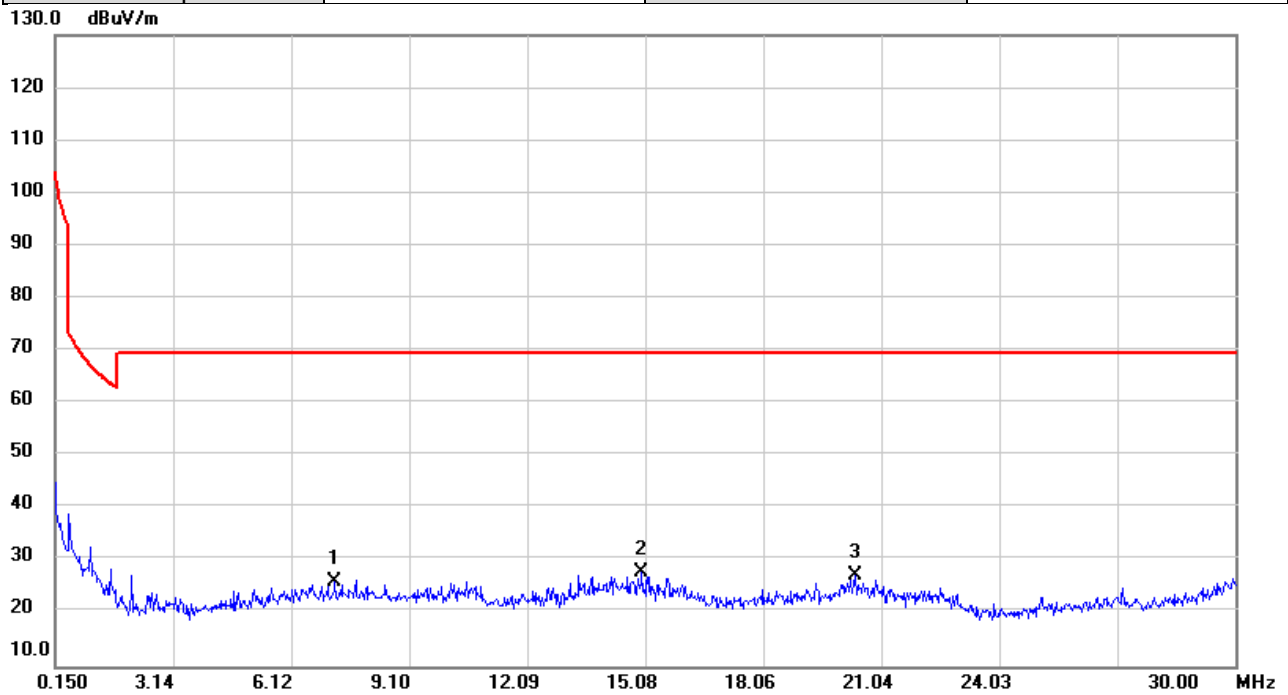
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0273	30.10	28.41	58.51	118.88	-60.37	AVG	
2		0.0848	25.30	17.36	42.66	109.04	-66.38	AVG	
3		0.1298	22.39	14.00	36.39	105.34	-68.95	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/30
Test Frequency	2402MHz	Polarization	Vertical
Temp	25°C	Hum.	65%



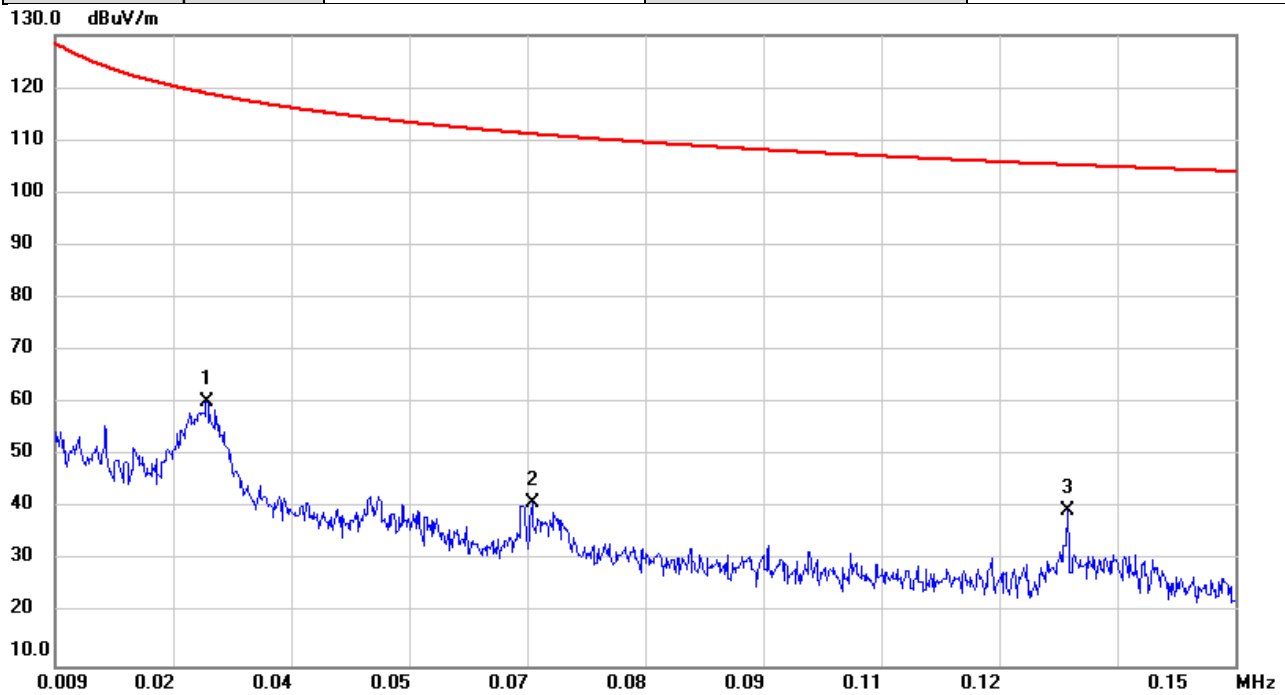
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7.2244	29.64	-3.70	25.94	69.54	-43.60	QP	
2	*	14.9854	32.68	-4.79	27.89	69.54	-41.65	QP	
3		20.3883	31.78	-4.42	27.36	69.54	-42.18	QP	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/30
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



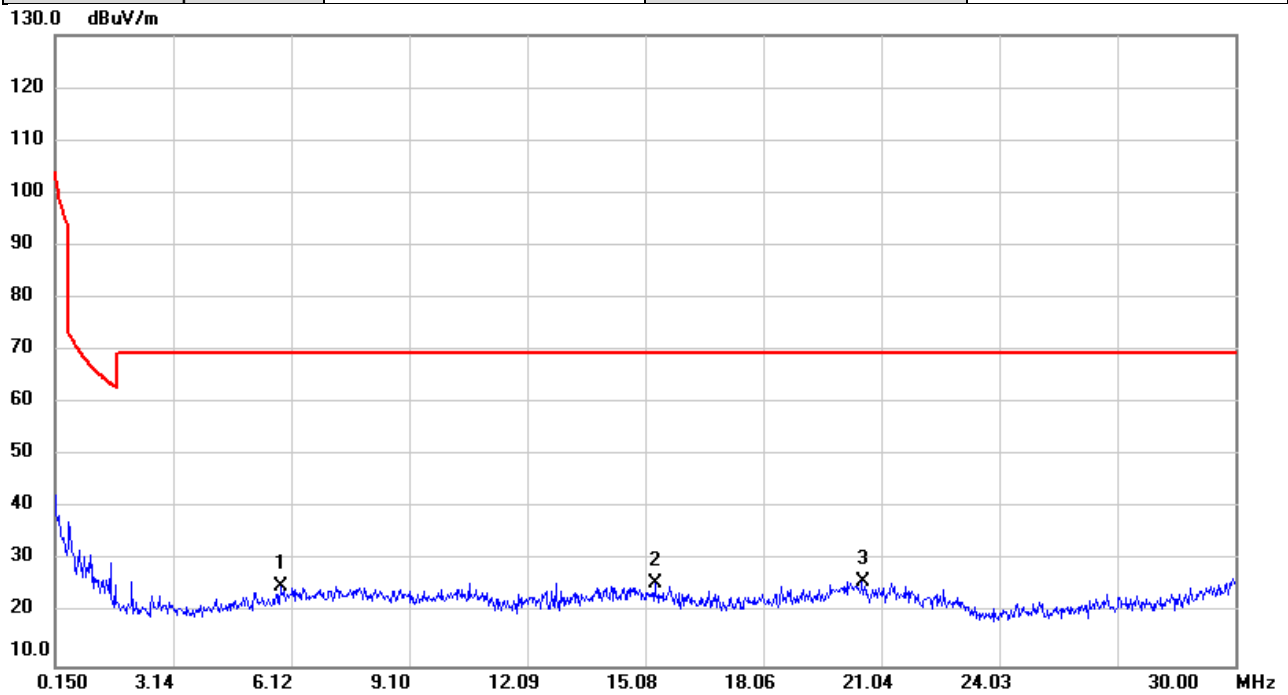
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0271	31.67	28.48	60.15	118.95	-58.80	AVG	
2		0.0661	20.97	19.98	40.95	111.20	-70.25	AVG	
3		0.1300	25.64	13.99	39.63	105.33	-65.70	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/30
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5.8514	29.16	-3.99	25.17	69.54	-44.37	QP	
2		15.3138	30.63	-4.79	25.84	69.54	-43.70	QP	
3	*	20.5674	30.47	-4.49	25.98	69.54	-43.56	QP	

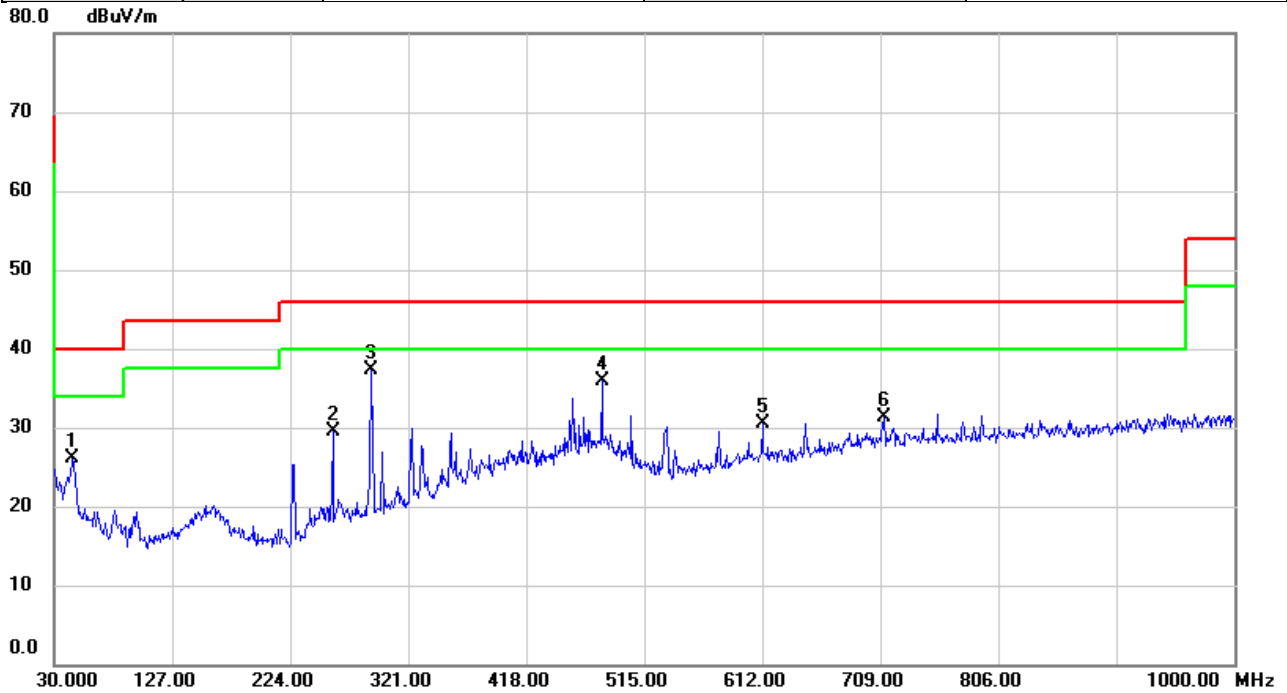
REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

APPENDIX C RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

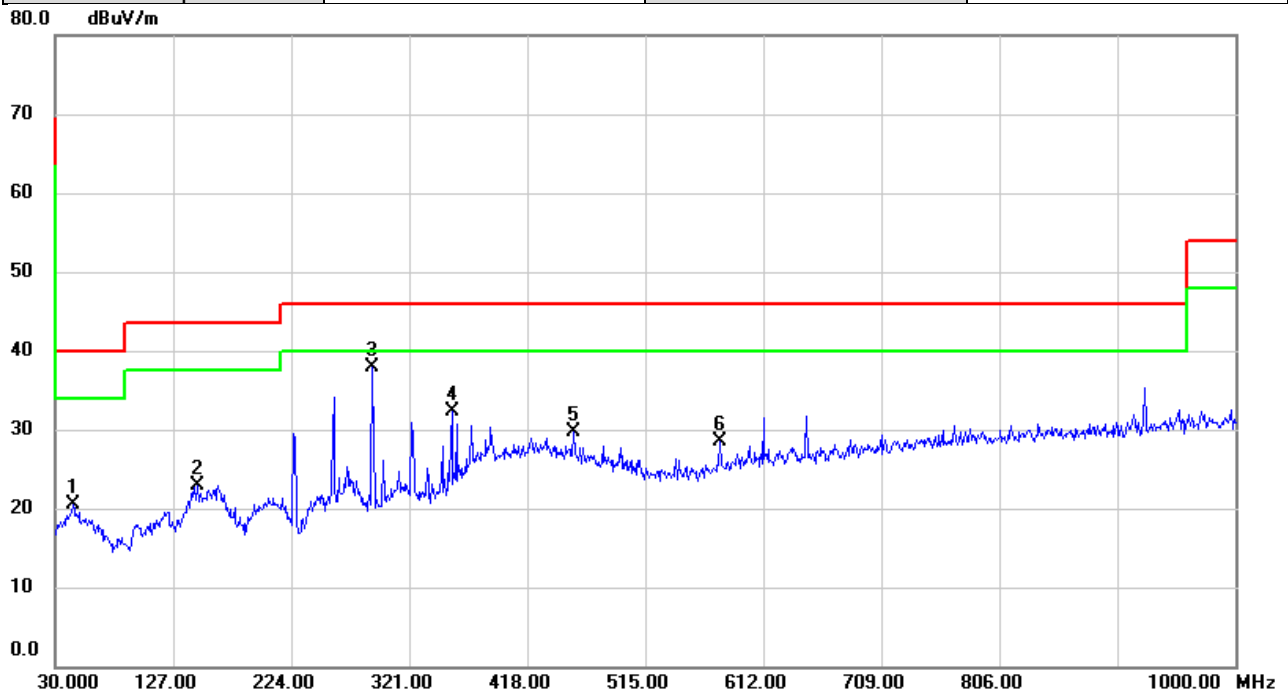


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		44.5500	37.55	-11.46	26.09	40.00	-13.91	peak	
2		258.9200	40.92	-11.51	29.41	46.00	-16.59	peak	
3	*	290.9300	47.30	-10.09	37.21	46.00	-8.79	peak	
4		480.0800	41.03	-5.13	35.90	46.00	-10.10	peak	
5		612.0000	32.30	-1.72	30.58	46.00	-15.42	peak	
6		711.9100	30.38	0.83	31.21	46.00	-14.79	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



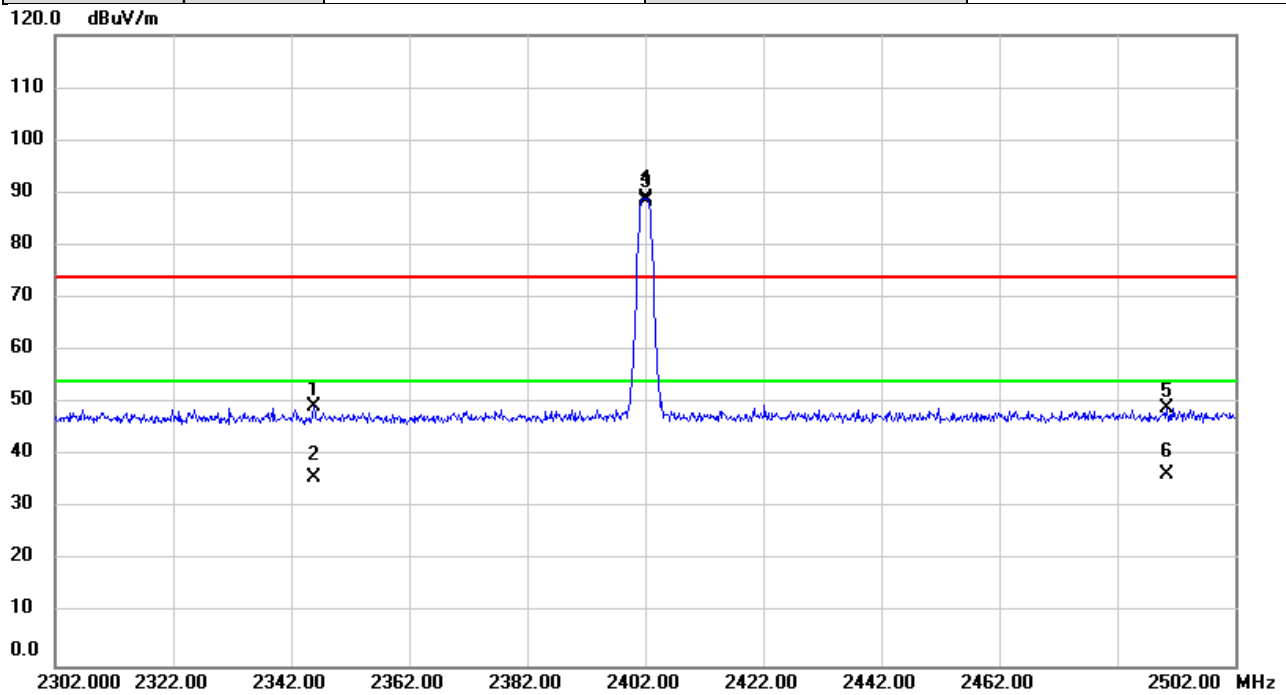
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		44.5500	31.87	-11.46	20.41	40.00	-19.59	peak	
2		147.3700	34.19	-11.20	22.99	43.50	-20.51	peak	
3	*	290.9300	48.02	-10.09	37.93	46.00	-8.07	peak	
4		355.9200	40.91	-8.53	32.38	46.00	-13.62	peak	
5		455.8300	35.23	-5.56	29.67	46.00	-16.33	peak	
6		576.1100	31.41	-2.88	28.53	46.00	-17.47	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX D RADIATED EMISSIONS - ABOVE 1 GHZ

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

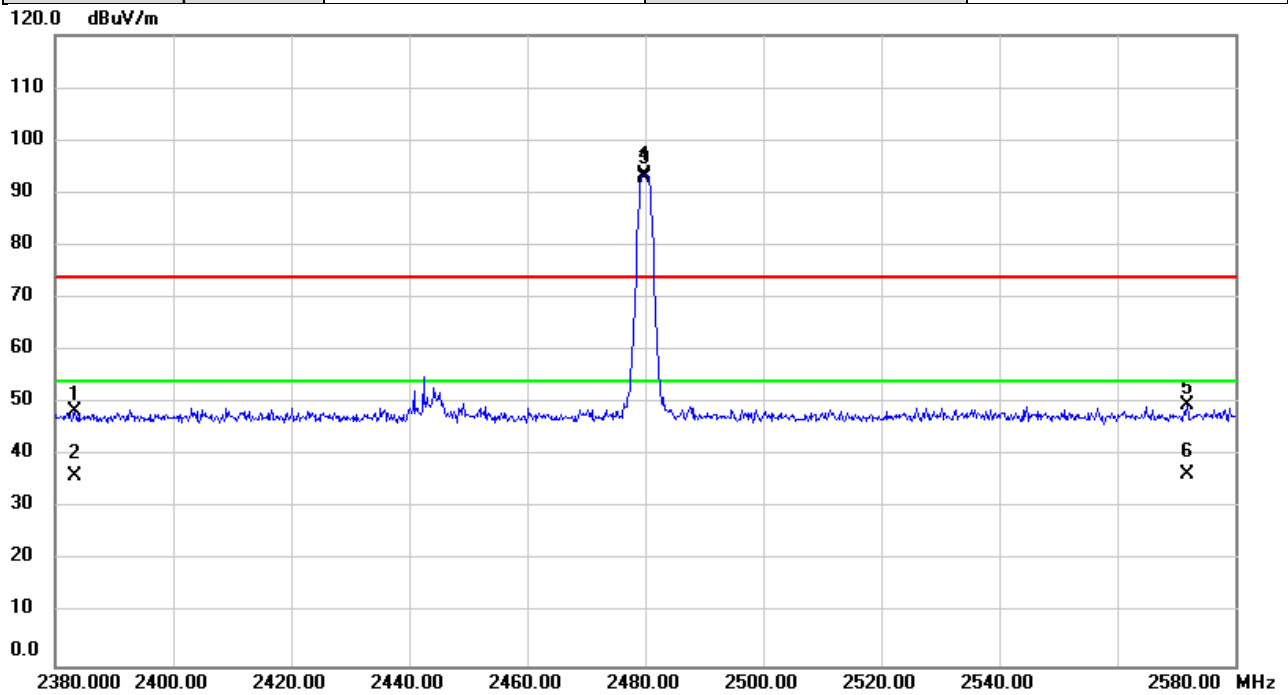


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2345.800	45.49	3.94	49.43	74.00	-24.57	peak	
2		2345.800	31.89	3.94	35.83	54.00	-18.17	AVG	
3	X	2402.000	84.93	4.03	88.96	74.00	14.96	peak	NoLimit
4	*	2402.000	84.23	4.03	88.26	54.00	34.26	AVG	NoLimit
5		2490.400	44.84	4.16	49.00	74.00	-25.00	peak	
6		2490.400	32.18	4.16	36.34	54.00	-17.66	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2480MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

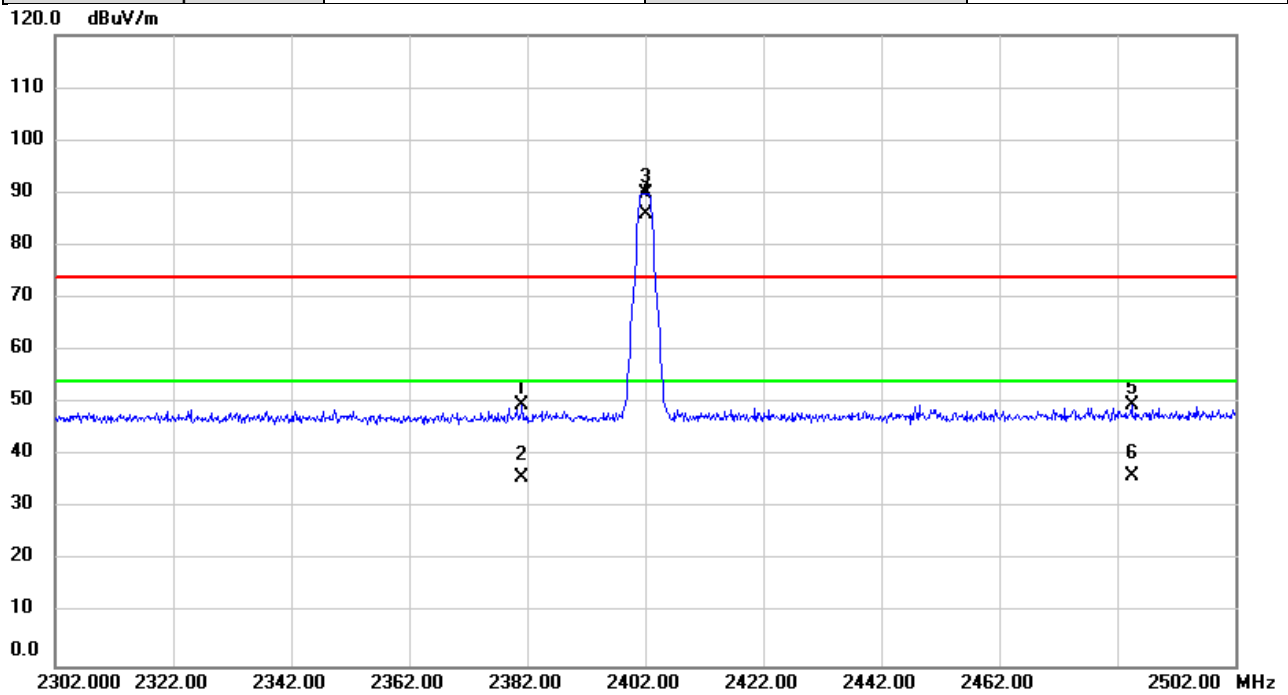


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2383.400	44.34	4.00	48.34	74.00	-25.66	peak	
2		2383.400	32.01	4.00	36.01	54.00	-17.99	AVG	
3	X	2479.800	89.30	4.15	93.45	74.00	19.45	peak	NoLimit
4	*	2479.800	88.68	4.15	92.83	54.00	38.83	AVG	NoLimit
5		2571.800	45.24	4.48	49.72	74.00	-24.28	peak	
6		2571.800	31.93	4.48	36.41	54.00	-17.59	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (3 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

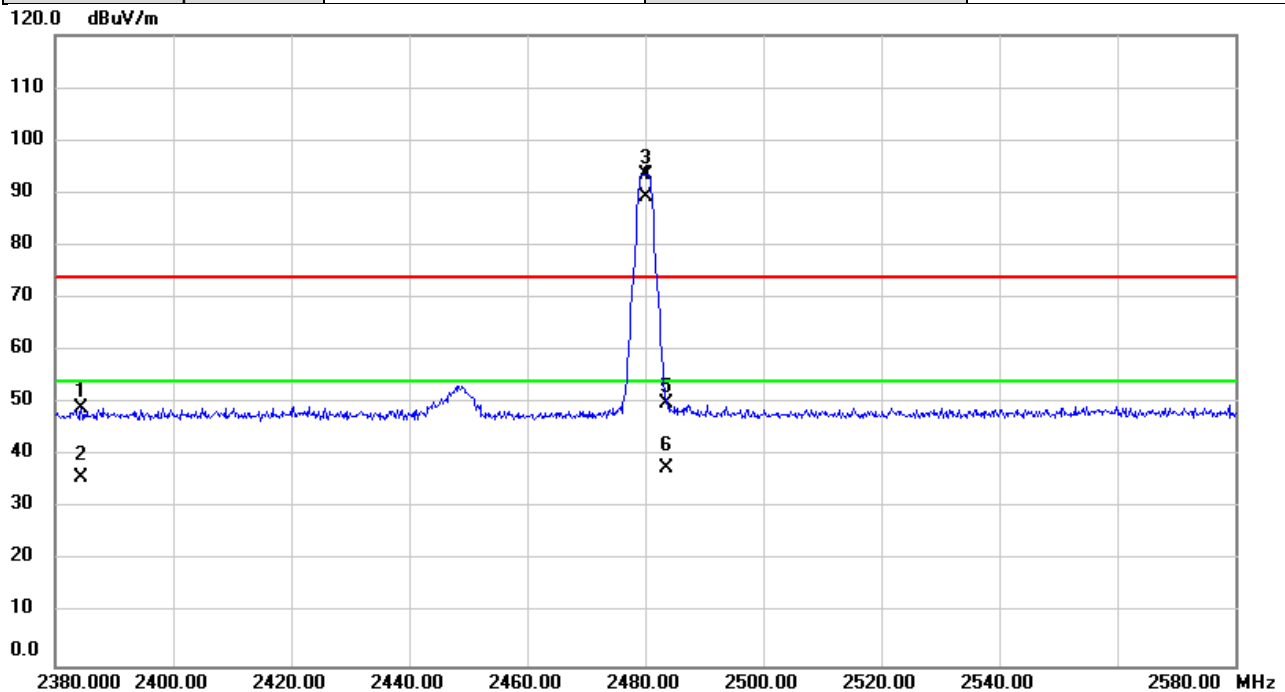


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2381.200	45.76	4.00	49.76	74.00	-24.24	peak	
2		2381.200	31.89	4.00	35.89	54.00	-18.11	AVG	
3	X	2402.000	85.96	4.03	89.99	74.00	15.99	peak	NoLimit
4	*	2402.000	81.85	4.03	85.88	54.00	31.88	AVG	NoLimit
5		2484.400	45.53	4.15	49.68	74.00	-24.32	peak	
6		2484.400	32.04	4.15	36.19	54.00	-17.81	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (3 Mbps)	Test Date	2025/12/29
Test Frequency	2480MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

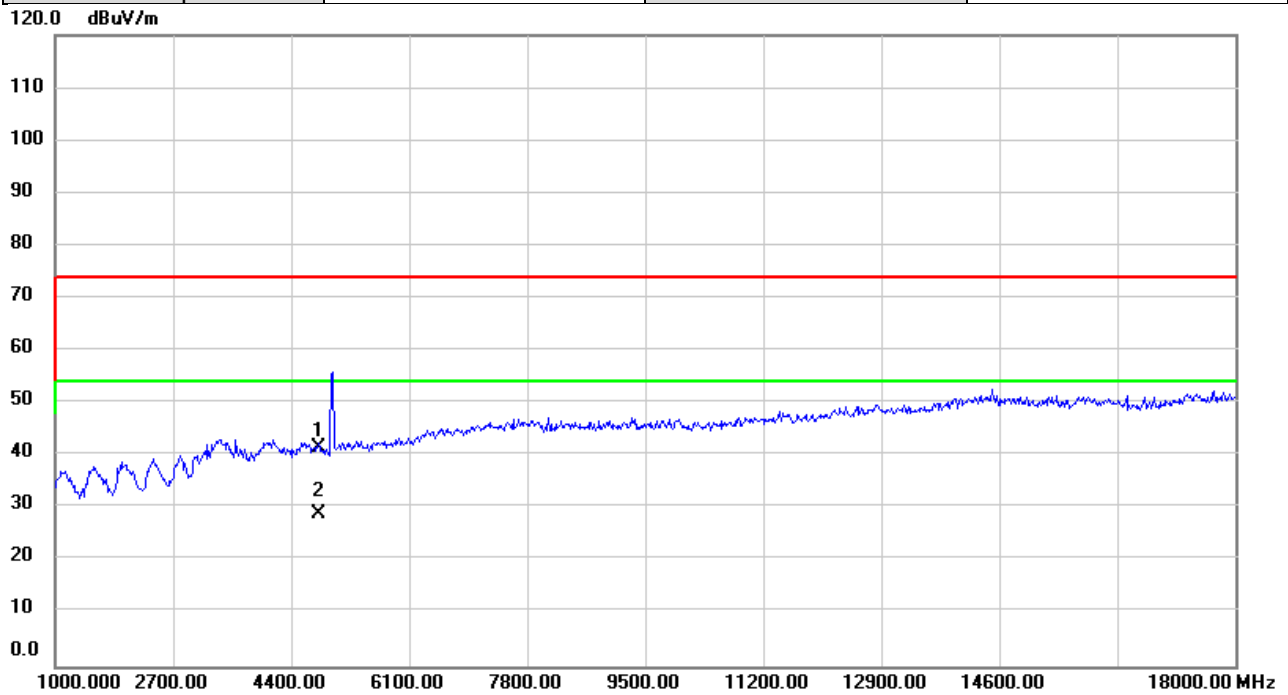


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2384.400	45.17	4.01	49.18	74.00	-24.82	peak	
2		2384.400	31.83	4.01	35.84	54.00	-18.16	AVG	
3	X	2480.000	89.39	4.15	93.54	74.00	19.54	peak	NoLimit
4	*	2480.000	85.14	4.15	89.29	54.00	35.29	AVG	NoLimit
5		2483.600	45.76	4.15	49.91	74.00	-24.09	peak	
6		2483.600	33.64	4.15	37.79	54.00	-16.21	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

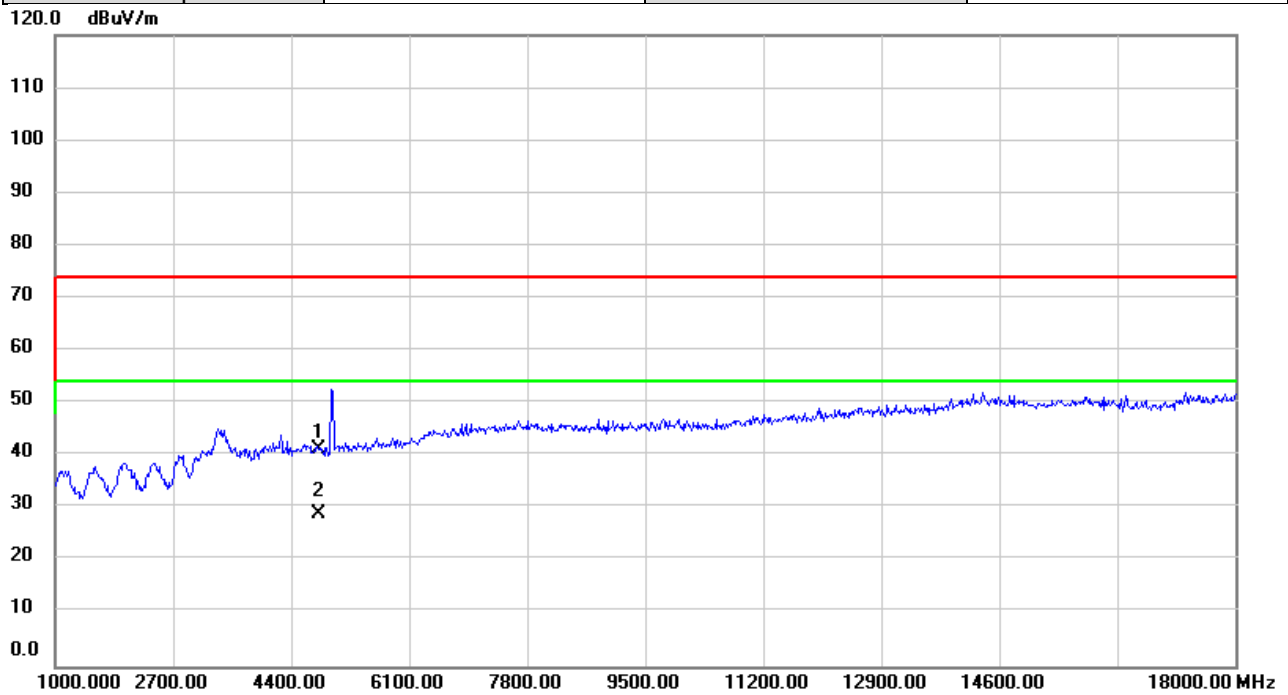


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	41.49	0.08	41.57	74.00	-32.43	peak	
2	*	4804.000	28.96	0.08	29.04	54.00	-24.96	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

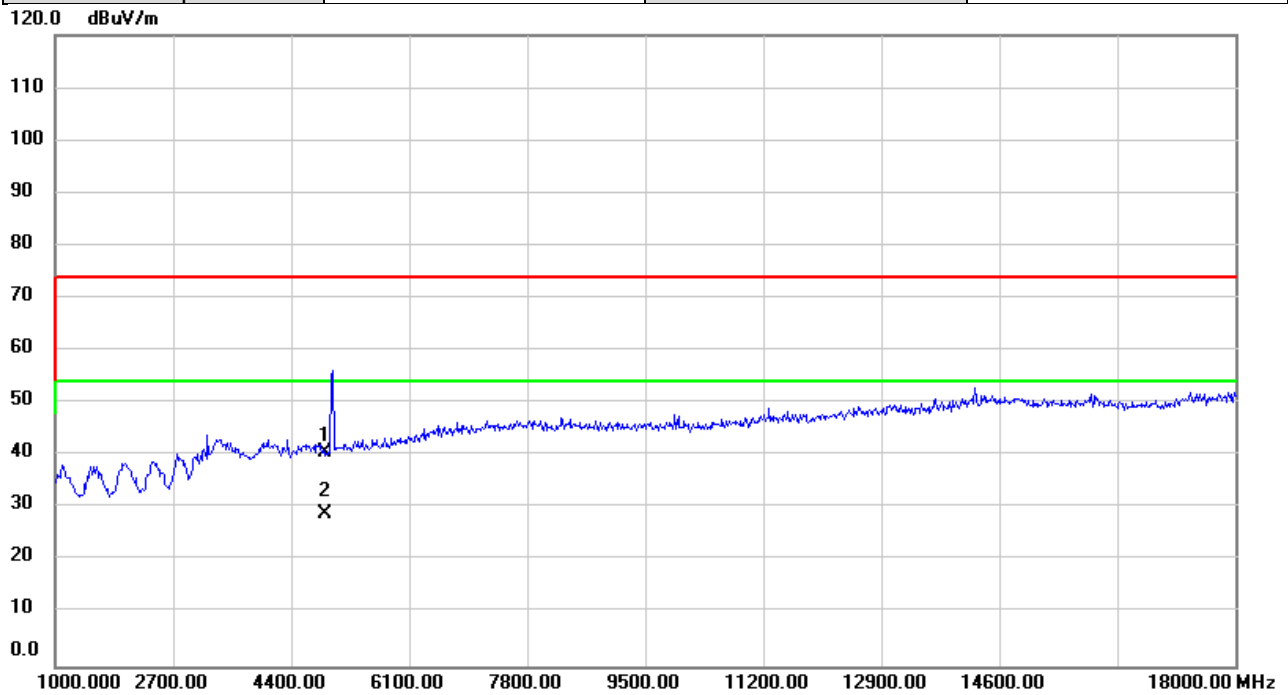


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	41.30	0.08	41.38	74.00	-32.62	peak	
2	*	4804.000	28.90	0.08	28.98	54.00	-25.02	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2440MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

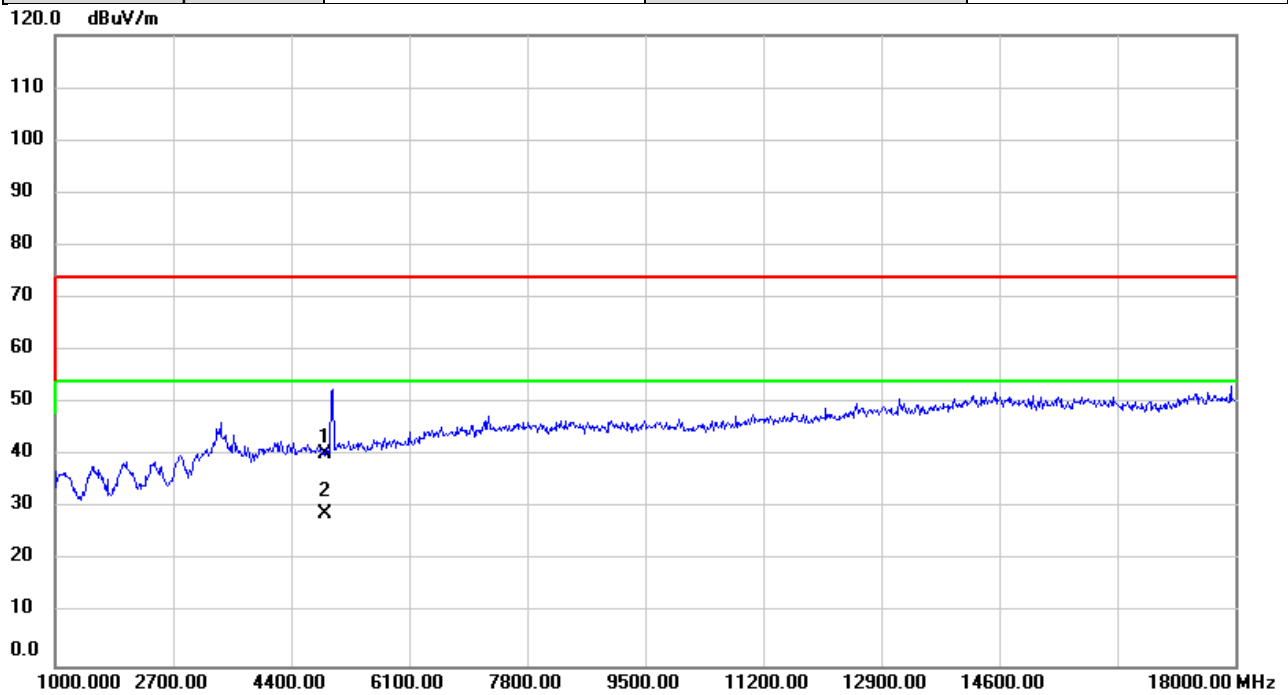


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4880.000	40.53	0.19	40.72	74.00	-33.28	peak	
2	*	4880.000	28.79	0.19	28.98	54.00	-25.02	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2440MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

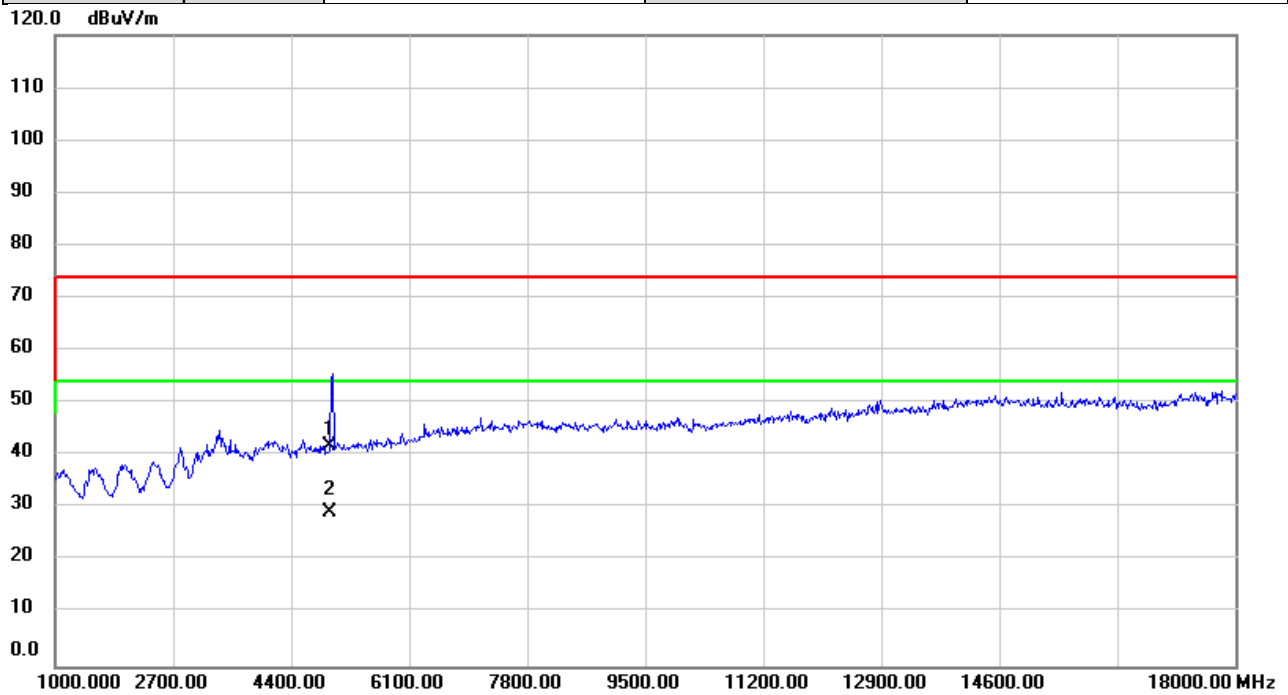


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4880.000	40.15	0.19	40.34	74.00	-33.66	peak	
2	*	4880.000	28.67	0.19	28.86	54.00	-25.14	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2480MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

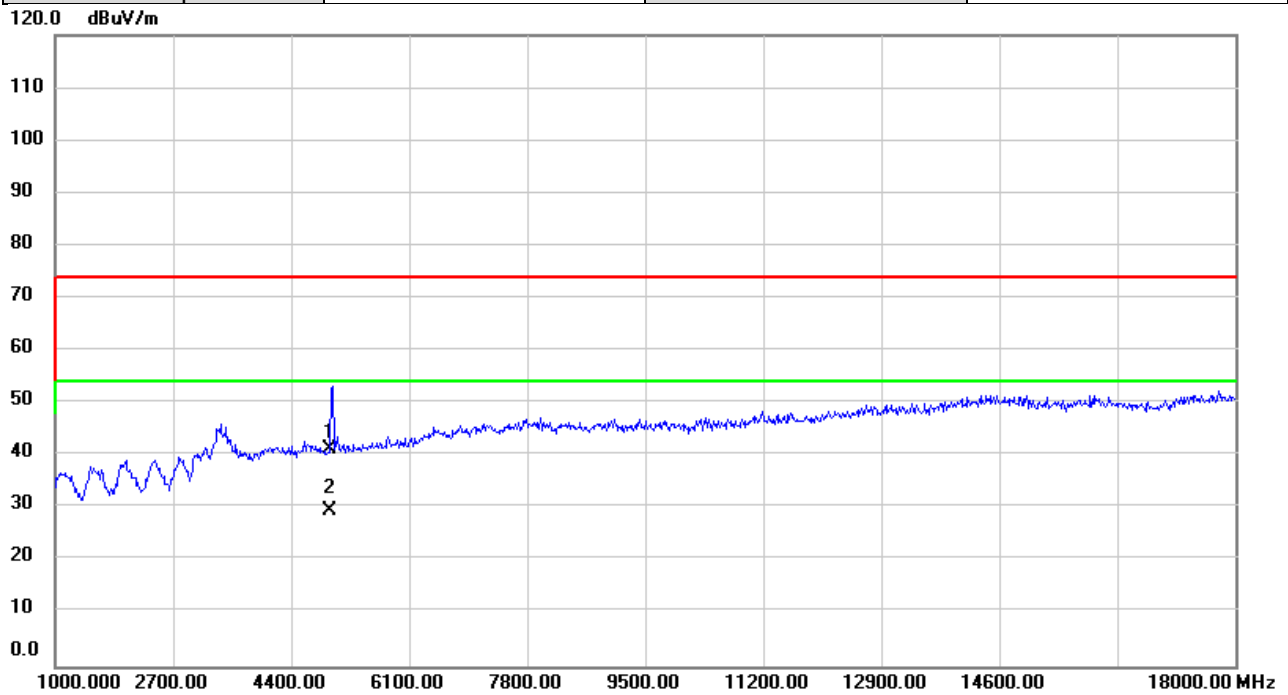


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4960.000	41.68	0.30	41.98	74.00	-32.02	peak	
2	*	4960.000	29.02	0.30	29.32	54.00	-24.68	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/29
Test Frequency	2480MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

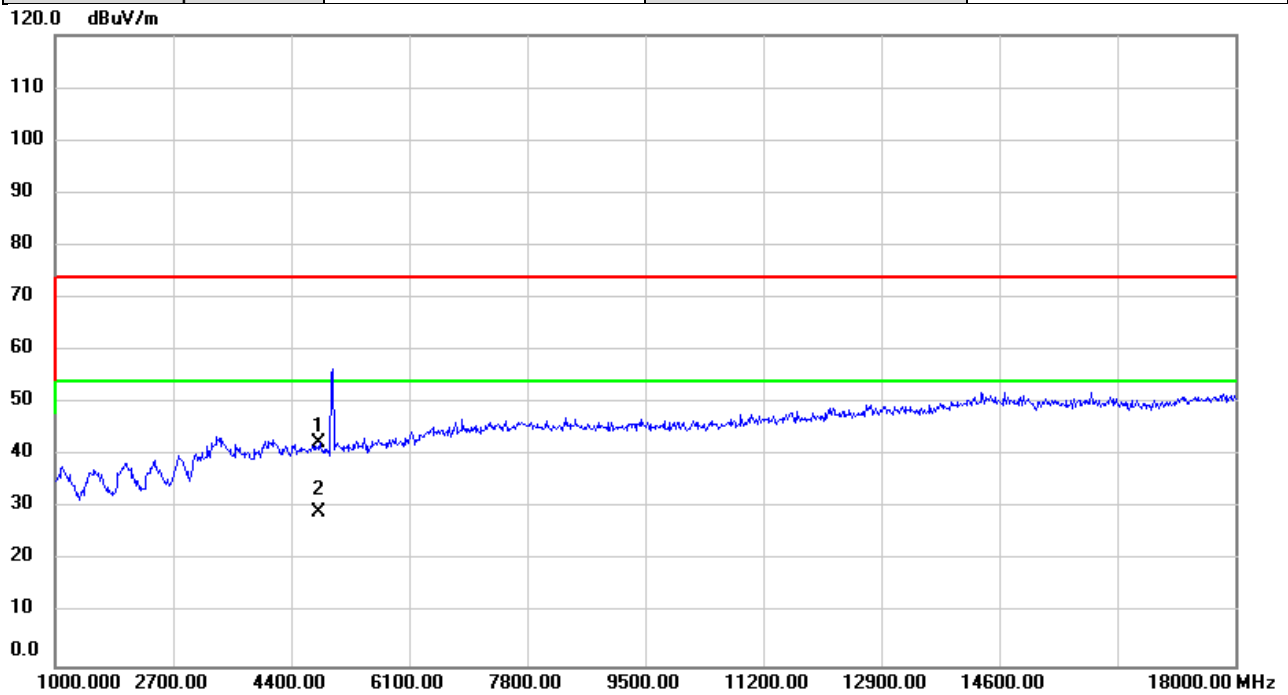


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4960.000	40.81	0.30	41.11	74.00	-32.89	peak	
2	*	4960.000	29.12	0.30	29.42	54.00	-24.58	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (2 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

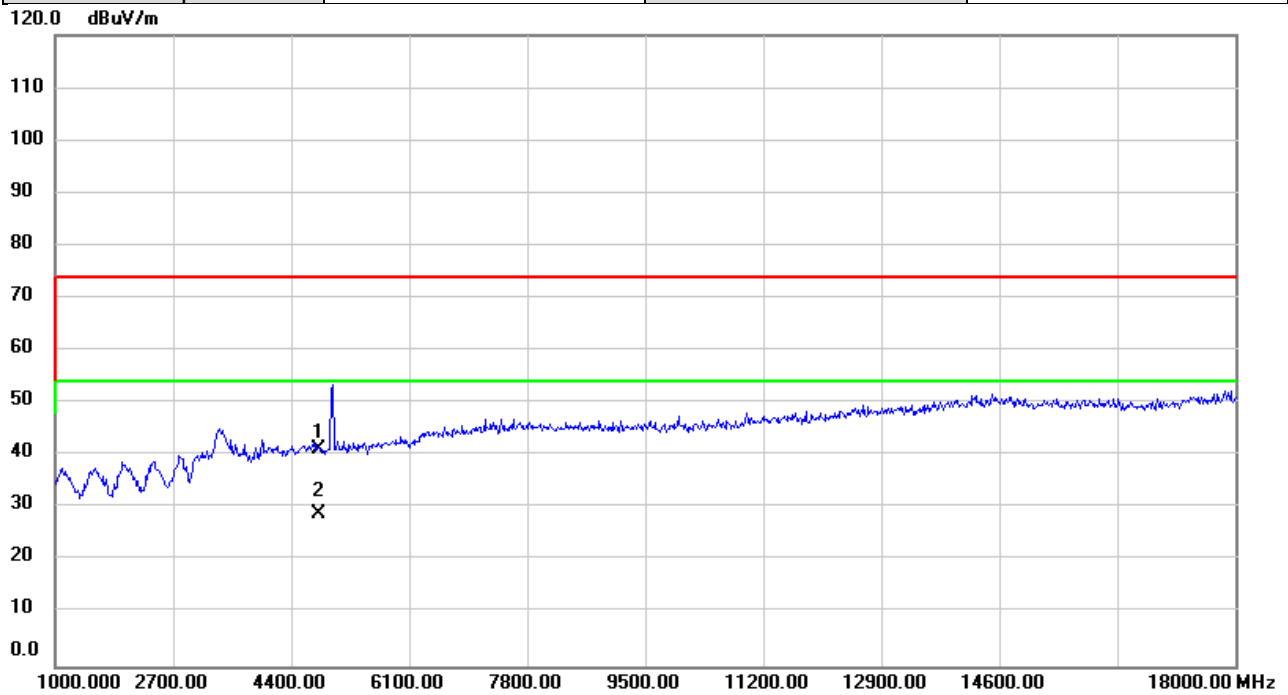


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	42.33	0.08	42.41	74.00	-31.59	peak	
2	*	4804.000	29.02	0.08	29.10	54.00	-24.90	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (2 Mbps)	Test Date	2025/12/29
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

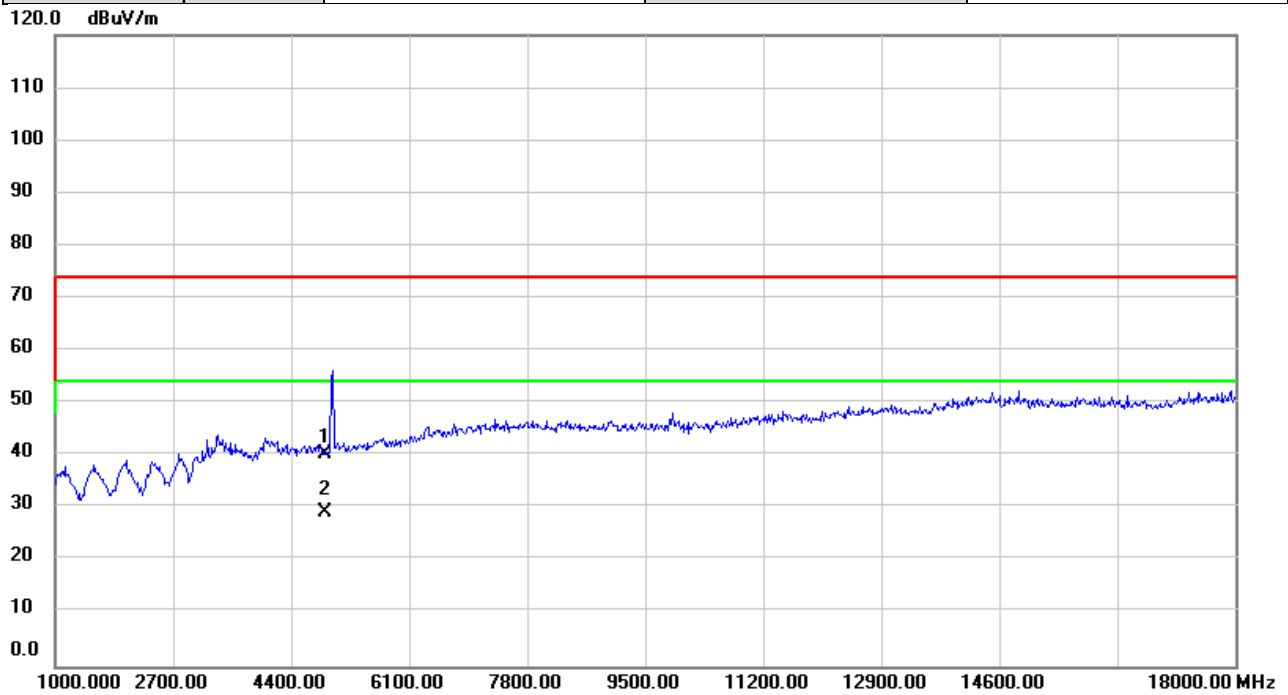


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4804.000	41.31	0.08	41.39	74.00	-32.61	peak	
2	*	4804.000	28.84	0.08	28.92	54.00	-25.08	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (2 Mbps)	Test Date	2025/12/29
Test Frequency	2440MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

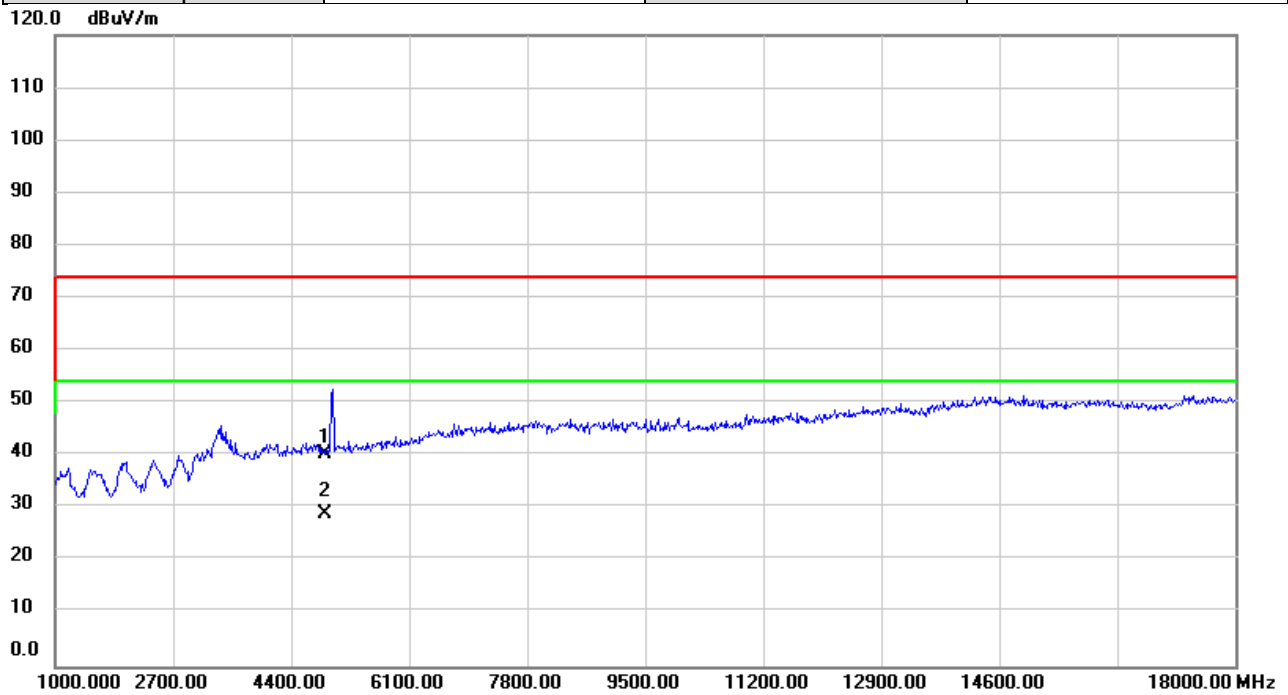


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4880.000	40.11	0.19	40.30	74.00	-33.70	peak	
2	*	4880.000	29.05	0.19	29.24	54.00	-24.76	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (2 Mbps)	Test Date	2025/12/29
Test Frequency	2440MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

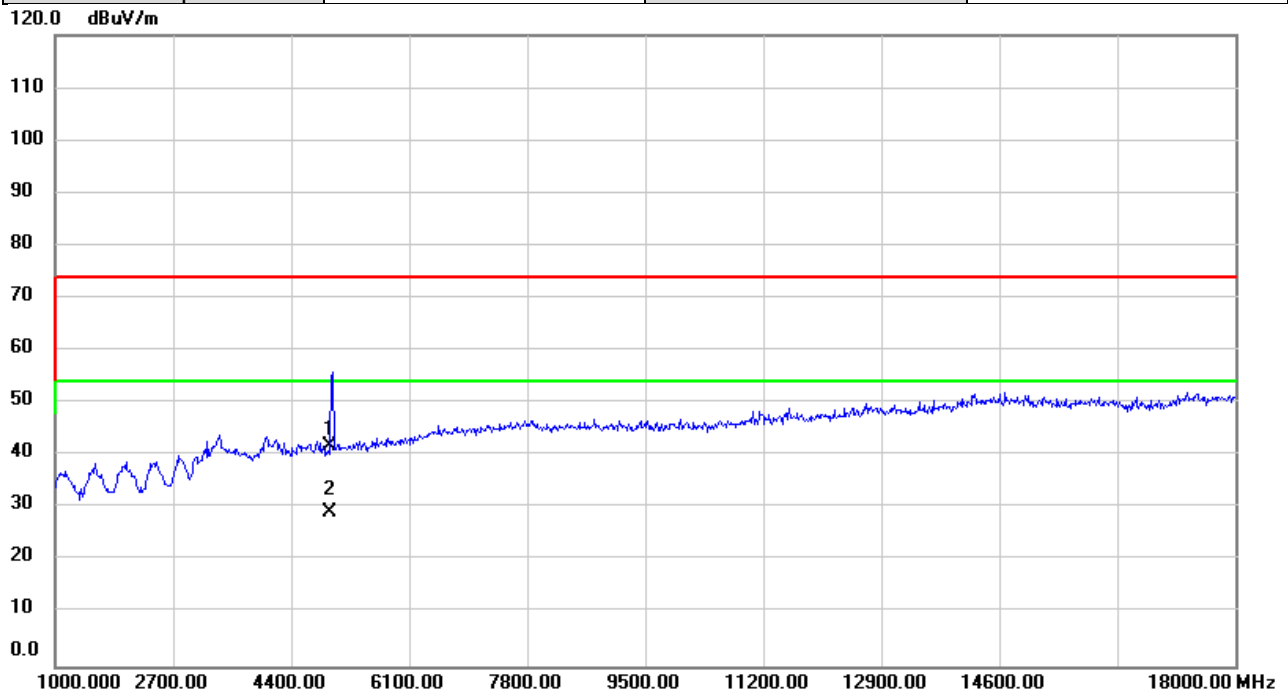


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4880.000	40.27	0.19	40.46	74.00	-33.54	peak	
2	*	4880.000	28.85	0.19	29.04	54.00	-24.96	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (2 Mbps)	Test Date	2025/12/29
Test Frequency	2480MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

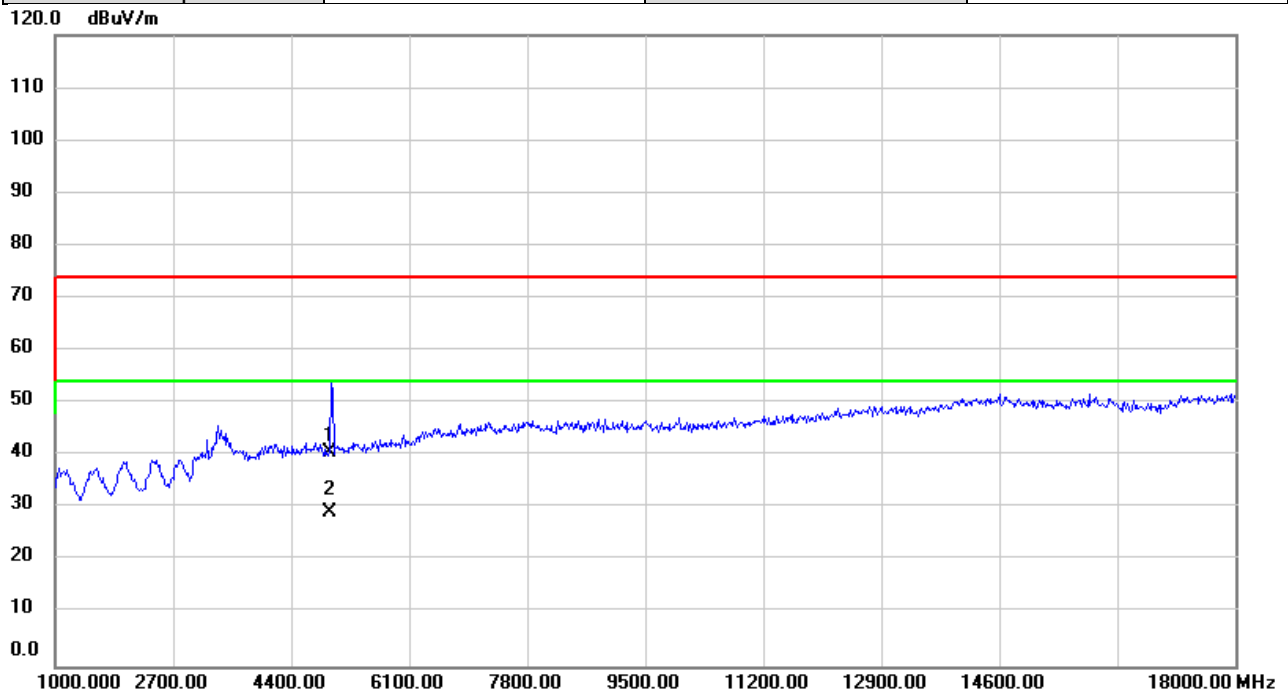


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	41.52	0.30	41.82	74.00	-32.18	peak	
2	*	4960.000	28.94	0.30	29.24	54.00	-24.76	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (2 Mbps)	Test Date	2025/12/29
Test Frequency	2480MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%

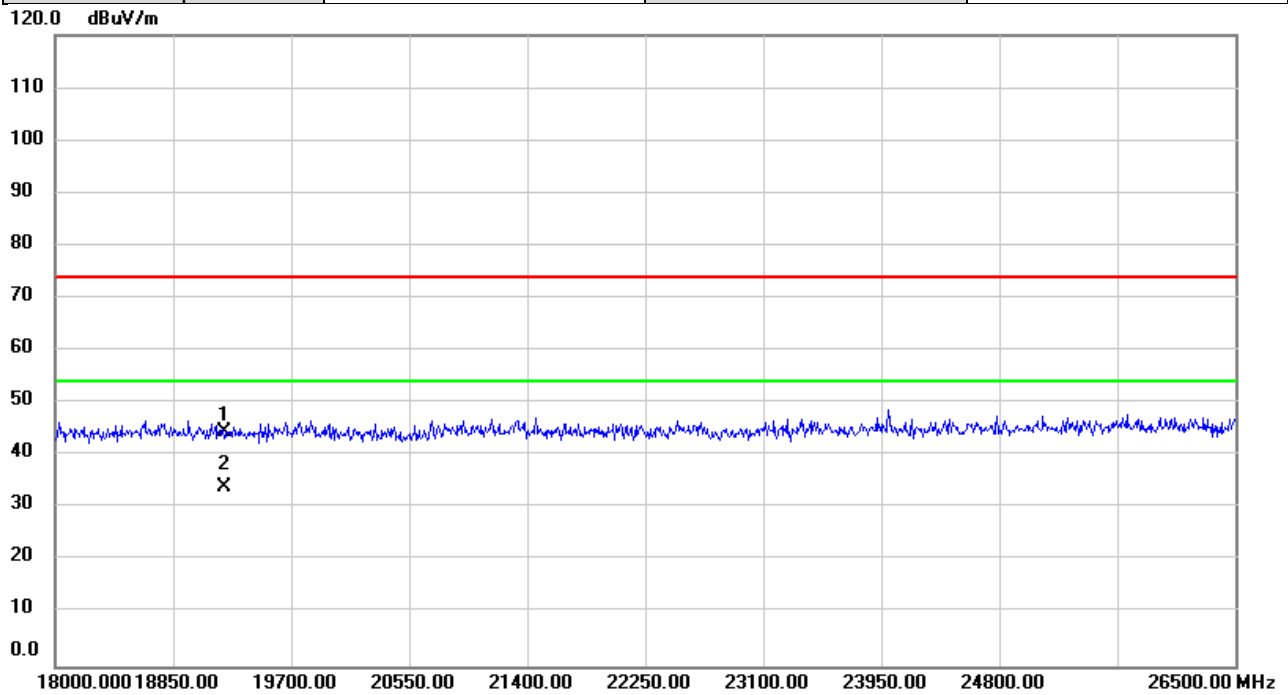


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	40.42	0.30	40.72	74.00	-33.28	peak	
2	*	4960.000	28.94	0.30	29.24	54.00	-24.76	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/30
Test Frequency	2402MHz	Polarization	Vertical
Temp	25°C	Hum.	65%

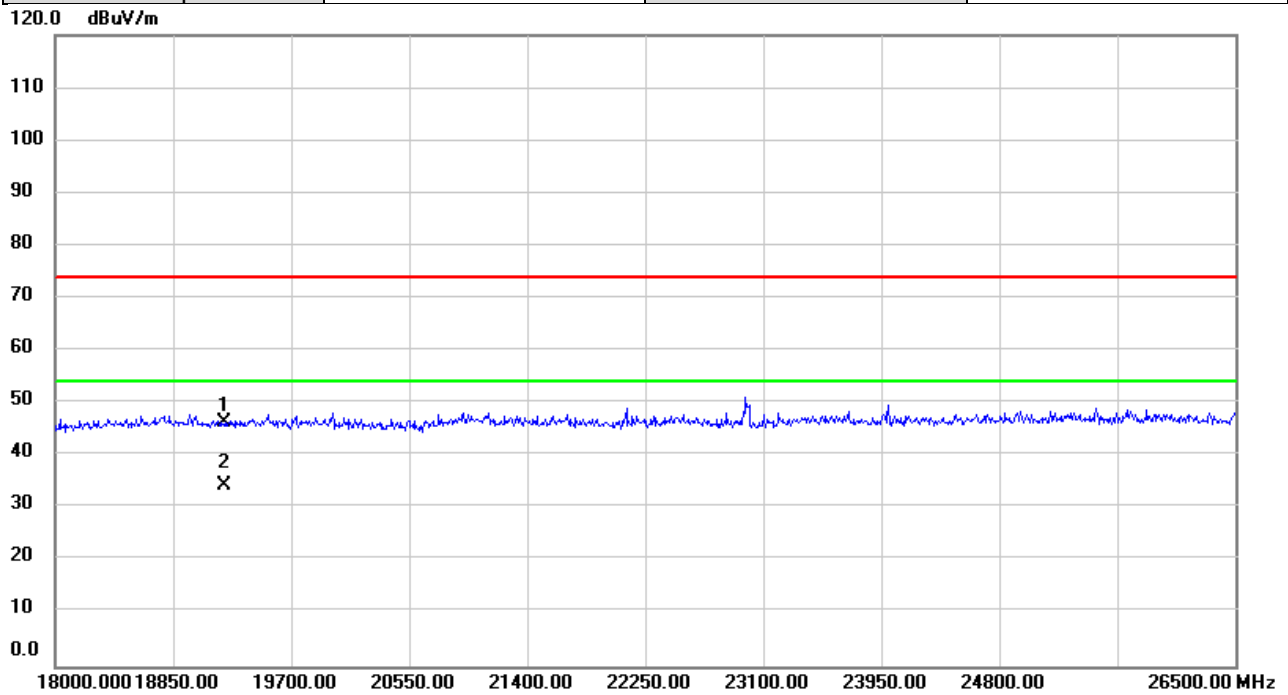


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		19216.00	54.25	-9.67	44.58	74.00	-29.42	peak	
2	*	19216.00	43.69	-9.67	34.02	54.00	-19.98	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	BLE 5.2 (1 Mbps)	Test Date	2025/12/30
Test Frequency	2402MHz	Polarization	Horizontal
Temp	25°C	Hum.	65%



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		19216.00	56.04	-9.67	46.37	74.00	-27.63	peak	
2	*	19216.00	44.12	-9.67	34.45	54.00	-19.55	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E OUTPUT POWER

Test Mode :	BLE 5.2 (1 Mbps)	Tested Date	2025/11/17
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Frequency (MHz)	Peak Power (dBm)	Peak Power (W)	Power Limit (dBm)	Power Limit (W)	Test Result
2402	9.87	0.0097	30.00	1.0000	Pass
2440	9.97	0.0099	30.00	1.0000	Pass
2480	10.32	0.0108	30.00	1.0000	Pass

Test Mode :	BLE 5.2 (2 Mbps)	Tested Date	2025/11/17
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Frequency (MHz)	Peak Power (dBm)	Peak Power (W)	Power Limit (dBm)	Power Limit (W)	Test Result
2402	9.84	0.0096	30.00	1.0000	Pass
2440	10.00	0.0100	30.00	1.0000	Pass
2480	10.26	0.0106	30.00	1.0000	Pass

End of Test Report