

FCC Radio Test Report

FCC ID: 2ABVH-AX211D2W

Report No. : BTL-FCCP-4-2310G005
Equipment : Intel® Wi-Fi 6E AX211
Model Name : AX211D2W
Brand Name : AAVA
Applicant : Aava Mobile Oy
Address : Nahkatehtaankatu 2, FI-90130 Oulu, Finland
Manufacturer : Aava Mobile Oy
Address : Nahkatehtaankatu 2, FI-90130 Oulu, Finland
Factory : Ennoconn (Suzhou) Technology Co.,Ltd
Address : BUILDING 1, 299 NANSONG RD, YU SHAN TOWN KUNSHAN 215300
 JIANGSU CHINA

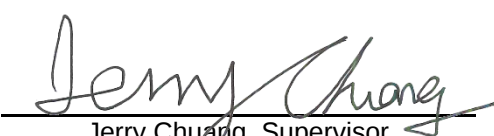
Radio Function : Bluetooth Low Energy 5.2

FCC Rule Part(s) : FCC CFR Title 47, Part 15, Subpart C (15.247)
Measurement : ANSI C63.10-2013
Procedure(s) :

Date of Receipt : 2023/11/1
Date of Test : 2023/11/16 ~ 2023/11/30
Issued Date : 2024/1/12

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

Prepared by : 
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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** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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-4-2310G005	R00	Original Report.	2024/1/12	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	Pass	-----
15.247(b)(3)	Output Power	APPENDIX D	Pass	-----

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 is to request a Class II permissive change for FCC ID: 2ABVH-AX211D2W (This FCC ID is change ID based on Intel Mobile Communications, the original application information follow as model: AX211D2W, FCC ID: PD9AX211D2, approved on 02/26/2021)
The major change filed under this application is:
Change #1: Implementation in new platform (Model number: INARI-D-10-WIG-1 Product name: Tablet)
Since the RF module has been certificated, after evaluation, above test items were criticized and reconfirmed in this report.
- (4) After spot check, this revision does not change original radio parameters.

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.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan
(FCC DN: TW0030)

☒ CB18

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 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB18 (3m)	CISPR	30 MHz ~ 200 MHz	V	3.94
		30 MHz ~ 200 MHz	H	3.74
		200 MHz ~ 1,000 MHz	V	4.10
		200 MHz ~ 1,000 MHz	H	3.98

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB18 (3m)	CISPR	1 GHz ~ 6 GHz	V	4.62
		1 GHz ~ 6 GHz	H	4.62
		6 GHz ~ 18 GHz	V	4.24
		6 GHz ~ 18 GHz	H	4.06
		18 GHz ~ 26 GHz	-	3.69
		26 GHz ~ 40 GHz	-	4.23

C. Conducted test:

Test Item	U,(dB)
Output Power	0.3669

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	20 °C, 45 %	AC 120V	Cora Lin
Radiated emissions below 1 GHz	Refer to data	AC 120V	Jerry Chuang
Radiated emissions above 1 GHz	Refer to data	AC 120V	Jerry Chuang
Output Power	21.1°C, 59 %	AC 120V	Cora Lin

1.4 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

Test Software	DRTU.03544.22.200.0			
Modulation Mode	2402 MHz	2440 MHz	2480 MHz	Data Rate
BLE5.0	12	12	12	1 Mbps
BLE5.0	12	12	12	2 Mbps

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Intel® Wi-Fi 6E AX211
Model Name	AX211ND2W
Brand Name	Intel
Model Difference	N/A
Power Supply Rating	DC 3.3V from host equipment
Platform information	
Equipment	Tablet
Model Name	INARI-D-10-WIG-1
Brand Name	AAVA
Model Difference	N/A
Power Source	1# DC voltage supplied from AC adapter. (support unit). 2# Battery supplied.
Power Rating	1# I/P: 100-240V~50/60Hz O/P:12V  2A 2# DC 7.7V/4830mAh
Products Covered	1* Battery: AMME4974
WIFI+BT Module	Intel® Wi-Fi 6E AX211 / AX211NGW
Operation Band	2400 MHz ~ 2483.5 MHz
Operation Frequency	2402 MHz ~ 2480 MHz
Maximum Output Power	1 Mbps: 7.40 dBm (0.0055 W) 2 Mbps: 5.55 dBm (0.0036 W)
Test Model	INARI-D-10-WIG-1
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:
BT&BLE:

Antenna	Brand	Part Number	Type	Connector	Frequency Range (MHz)	Gain (dBi)
2	Pulse	W3006	Chip	N/A	2400-2500	-0.6

WIFI:

Antenna	Brand	Part Number	Type	Connector	Frequency Range (MHz)	Gain (dBi)
1	Pulse	W3006	Chip	N/A	2400-2500	1.2
					5150-5850	3.0
					5925-7125	3.0
2	Pulse	W3006	Chip	N/A	2400-2500	-0.6
					5150-5850	3.0
					5925-7125	2.8

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	39	-
Transmitter Radiated Emissions (above 1GHz)	1/2 Mbps	00/39	Bandedge
	1/2 Mbps	00/19/39	Harmonic
Output Power	1/2 Mbps	00/19/39	-

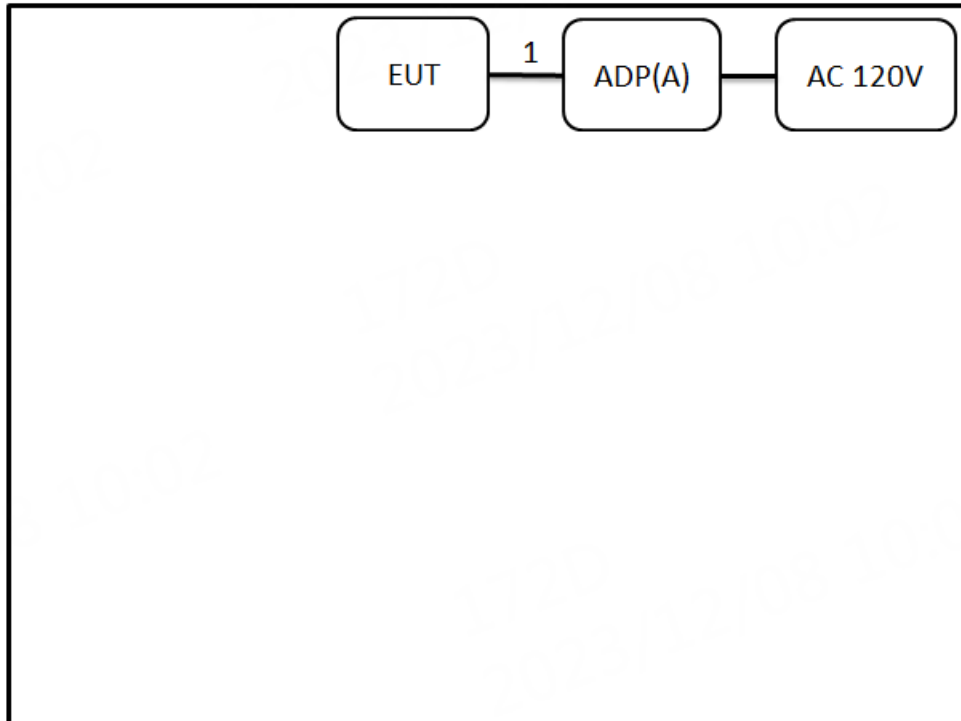
NOTE:

- (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 (Z axis) is recorded.

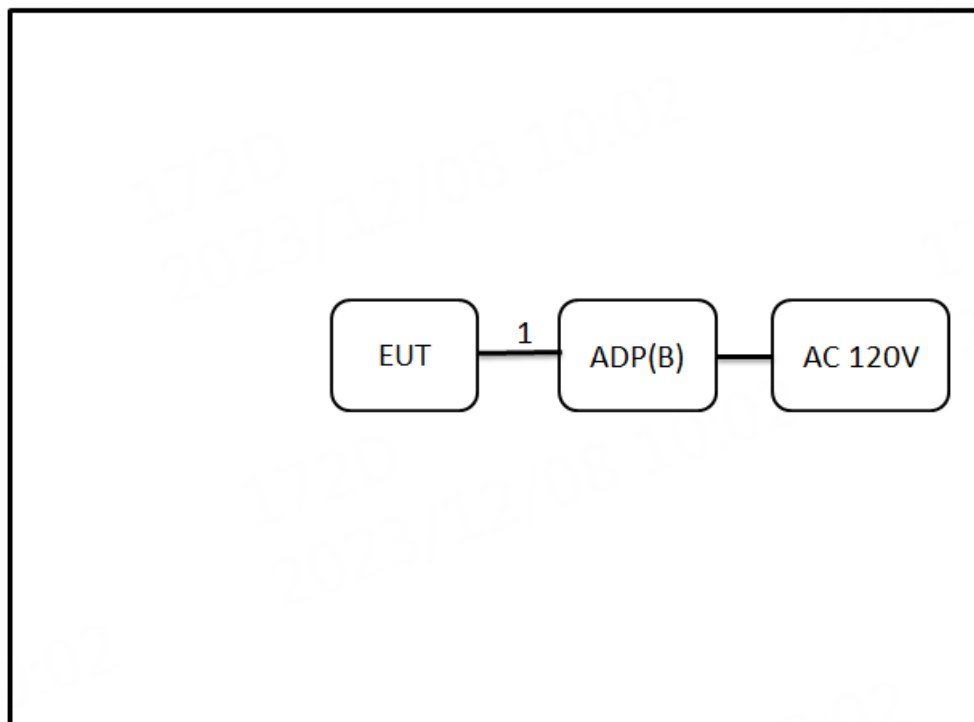
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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	ADP	SAMSUNG	EP - TA800	N/A	Furnished by test lab.
B	ADP	PHIHONG	AO18A-59CFA	N/A	Supplied by test requester.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	0.6m	USB-C to USB-C	Furnished by test lab.

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		Correct Factor		Measurement Value
38.22	+	3.45	=	41.67

Measurement Value		Limit Value		Margin Level
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.

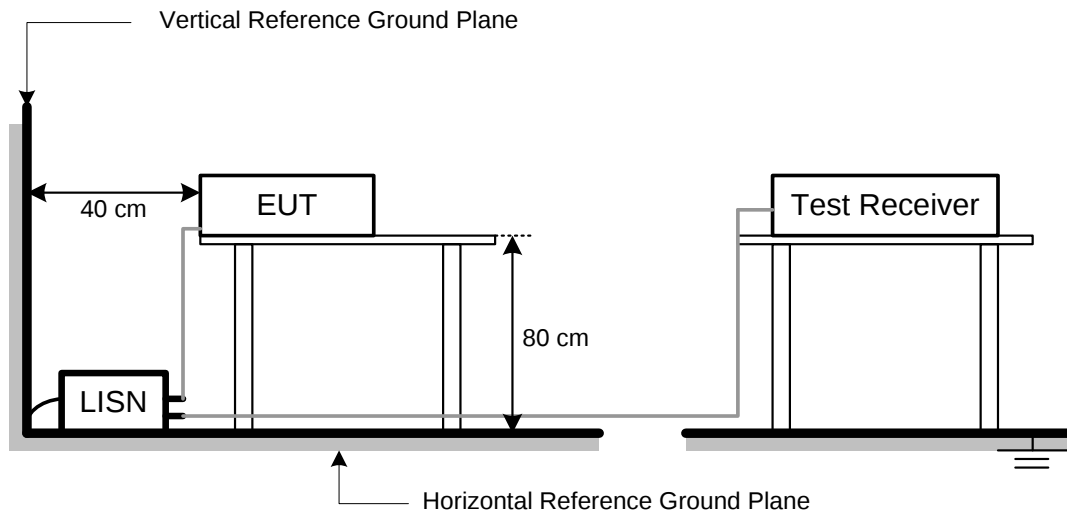
NOTE:

- (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 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		Correct Factor		Measurement Value
19.11	+	2.11	=	21.22

Measurement Value		Limit Value		Margin Level
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

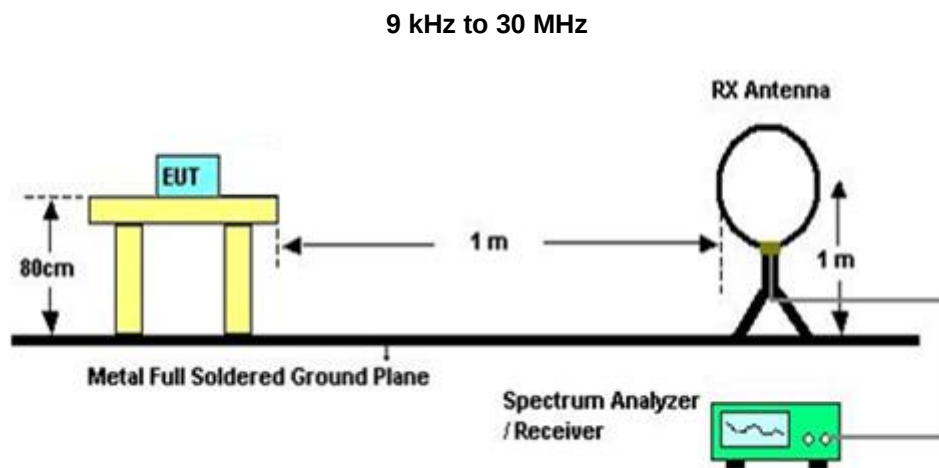
4.2 TEST PROCEDURE

- The measuring distance of 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.

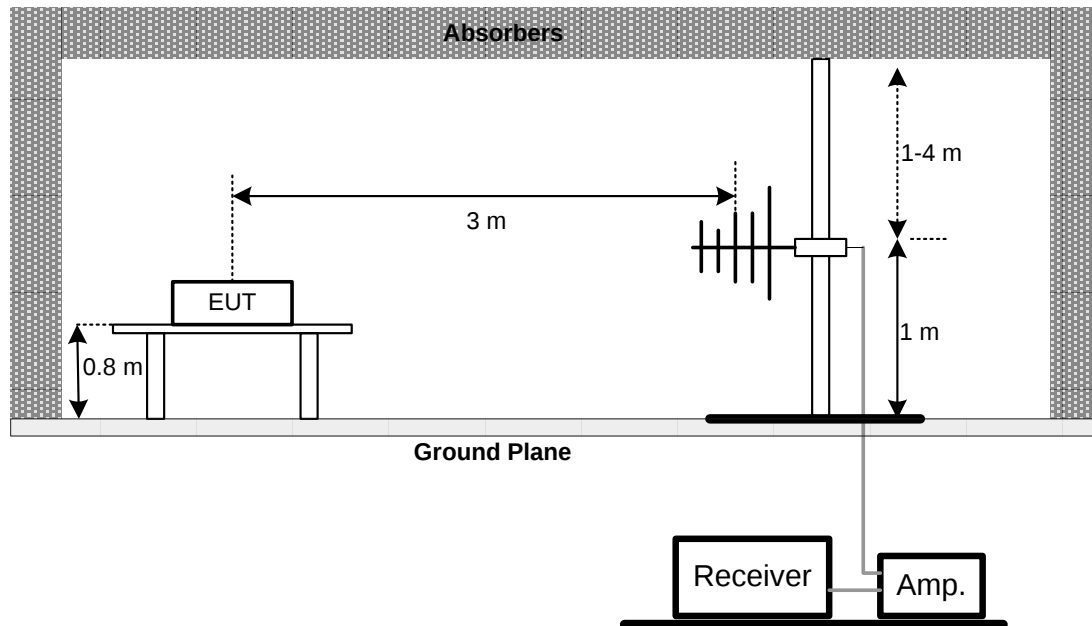
4.3 DEVIATION FROM TEST STANDARD

No deviation.

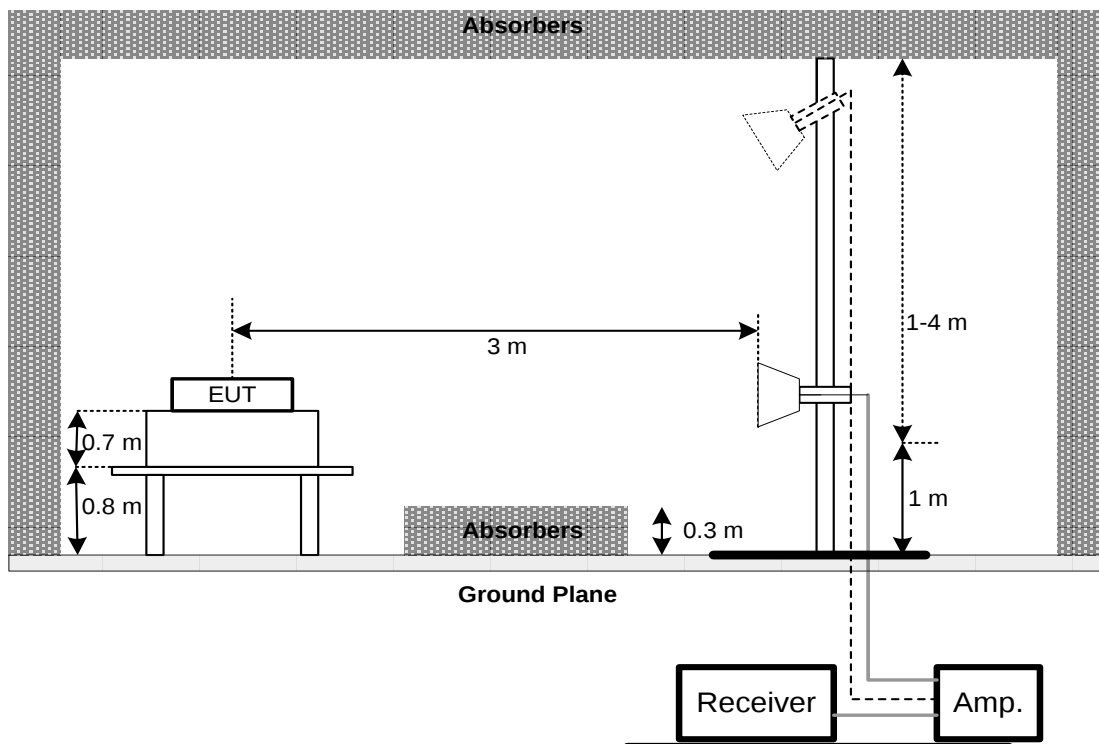
4.4 TEST SETUP



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 – BELOW 30 MHZ

There were no emissions found below 30 MHz within 20 dB of the limit.

4.7 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.8 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX C.

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 30dBm	2400-2483.5	PASS

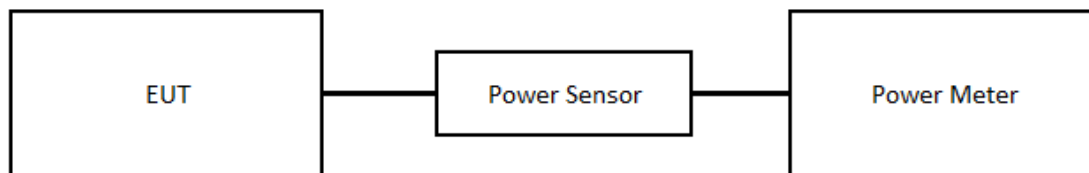
5.2 TEST PROCEDURE

- 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 D.

6 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101521	2023/9/13	2024/9/12
2	Test Cable	EMCI	EMCCFD300-BM-BMR-5000	220331	2023/3/30	2024/3/29
3	EMI Test Receiver	R&S	ESR 7	101433	2023/11/10	2024/11/9
4	Measurement Software	EZ	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	Log-Bicon Antenna	Schwarzbeck	VULB 9168	00983	2023/9/21	2024/9/20
2	Attenuator	INMET	6N-6dB	01	2023/9/21	2024/9/20
3	Pre-Amplifier	EMCI	EMC--1330	980377	2023/5/26	2024/5/25
4	Test Cable	EMCI	EMCCFD400-NM-NM-3500	170202	2023/5/26	2024/5/25
5	Test Cable	EMCI	EMC104-SM-SM-2500	170402	2023/5/26	2024/5/25
6	Test Cable	EMCI	EMCCFD400-NM-NM-8000	200344	2023/5/26	2024/5/25
7	Horn Antenna	Schwarzbeck	BBHA 9120 D	BBHA 9120 D 325	2023/6/15	2024/6/14
8	Pre-Amplifier	EMCI	EMC12630SE	980577	2023/9/20	2024/9/19
9	Test Cable	EMCI	EMC104-SM-SM-1500	210630	2023/9/20	2024/9/19
10	Test Cable	EMCI	EMC105-SM-SM-7000	210901	2023/9/20	2024/9/19
11	Test Cable	EMCI	EMC104-SM-SM-3000	170204	2023/9/20	2024/9/19
12	Spectrum Analyzer	Agilent	N9020A	MY51160196	2023/8/30	2024/8/29
13	Measurement Software	EZ	EZ_EMC (Version 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	Peak Power Analyzer	Keysight	8990B	MY51000517	2023/3/15	2024/3/14
2	Power Sensor	Keysight	N1923A	MY58310005	2023/3/15	2024/3/14
3	Spectrum Analyzer	R&S	FSP 40	101139	2023/3/9	2024/3/8

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

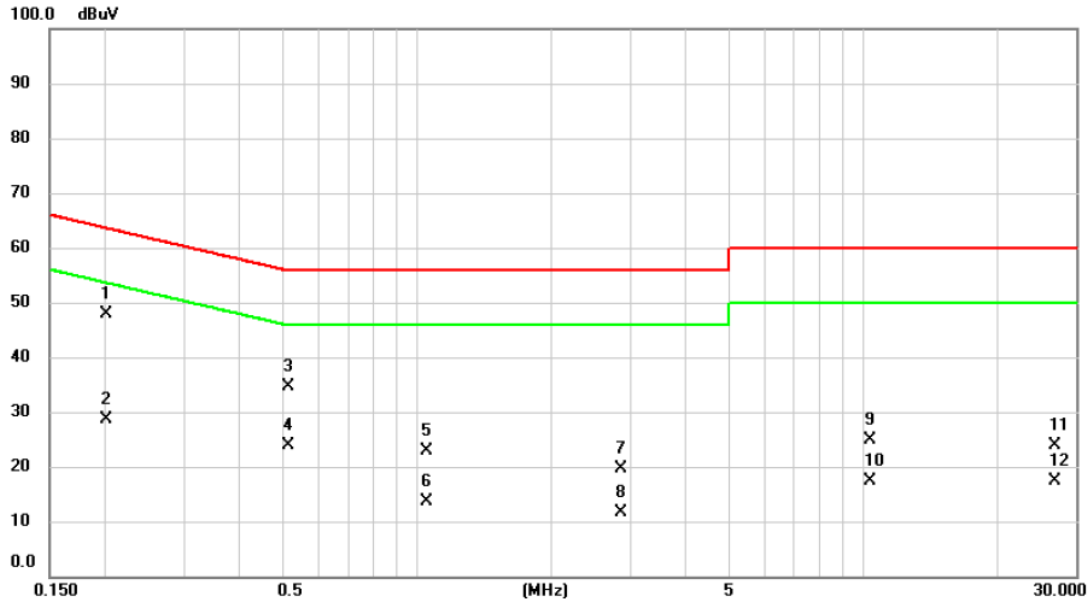
Please refer to document Appendix No.: TP-2310G005-2 (APPENDIX-TEST PHOTOS).

8 EUT PHOTOS

Please refer to document Appendix No.: EP-2310G005-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

Test Mode	Normal	Tested Date	2023/11/17
Test Frequency	-	Phase	Line

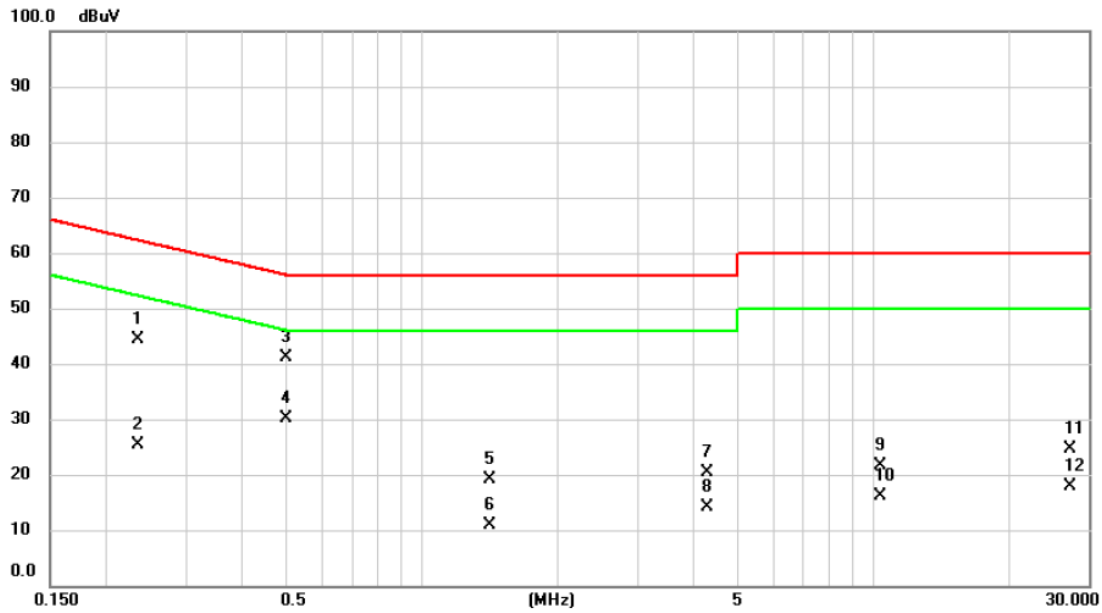


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.2004	38.40	9.60	48.00	63.59	-15.59	QP	
2		0.2004	19.15	9.60	28.75	53.59	-24.84	AVG	
3		0.5164	24.94	9.58	34.52	56.00	-21.48	QP	
4		0.5164	14.40	9.58	23.98	46.00	-22.02	AVG	
5		1.0467	13.39	9.58	22.97	56.00	-33.03	QP	
6		1.0467	4.08	9.58	13.66	46.00	-32.34	AVG	
7		2.8541	10.08	9.63	19.71	56.00	-36.29	QP	
8		2.8541	1.93	9.63	11.56	46.00	-34.44	AVG	
9		10.3240	15.15	9.73	24.88	60.00	-35.12	QP	
10		10.3240	7.61	9.73	17.34	50.00	-32.66	AVG	
11		26.7937	14.24	9.68	23.92	60.00	-36.08	QP	
12		26.7937	7.67	9.68	17.35	50.00	-32.65	AVG	

REMARKS:

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

Test Mode	Normal	Tested Date	2023/11/17
Test Frequency	-	Phase	Neutral



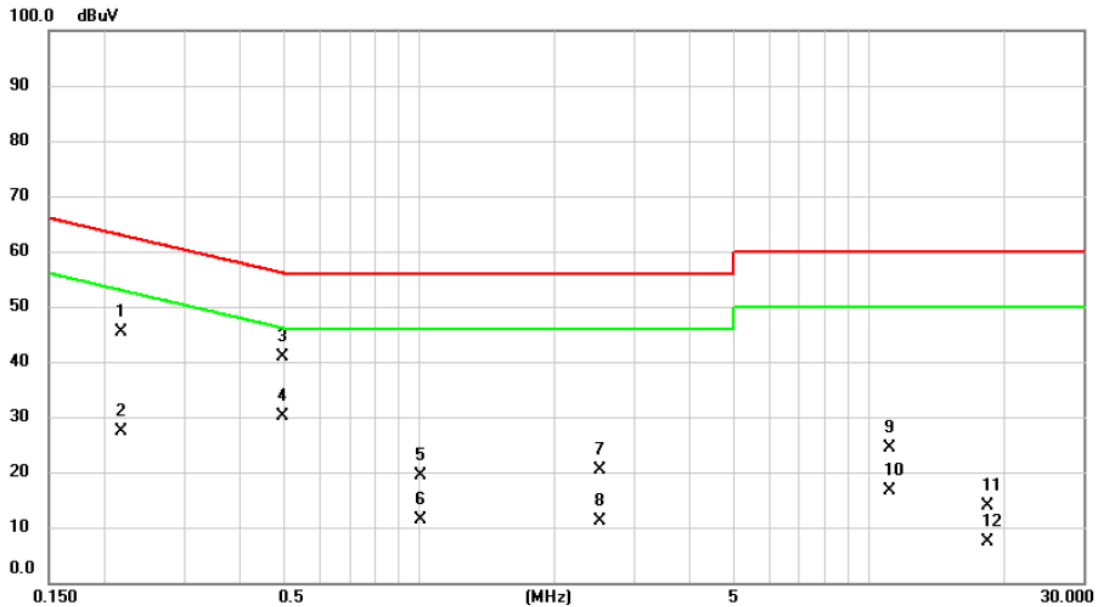
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2341	34.69	9.58	44.27	62.30	-18.03	QP	
2		0.2341	15.71	9.58	25.29	52.30	-27.01	AVG	
3	*	0.5020	31.48	9.57	41.05	56.00	-14.95	QP	
4		0.5020	20.61	9.57	30.18	46.00	-15.82	AVG	
5		1.4082	9.55	9.59	19.14	56.00	-36.86	QP	
6		1.4082	1.40	9.59	10.99	46.00	-35.01	AVG	
7		4.2692	10.76	9.63	20.39	56.00	-35.61	QP	
8		4.2692	4.48	9.63	14.11	46.00	-31.89	AVG	
9		10.3240	11.80	9.75	21.55	60.00	-38.45	QP	
10		10.3240	6.48	9.75	16.23	50.00	-33.77	AVG	
11		27.1750	14.81	9.88	24.69	60.00	-35.31	QP	
12		27.1750	7.95	9.88	17.83	50.00	-32.17	AVG	

REMARKS:

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

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

Test Mode	Idle	Tested Date	2023/11/17
Test Frequency	-	Phase	Line

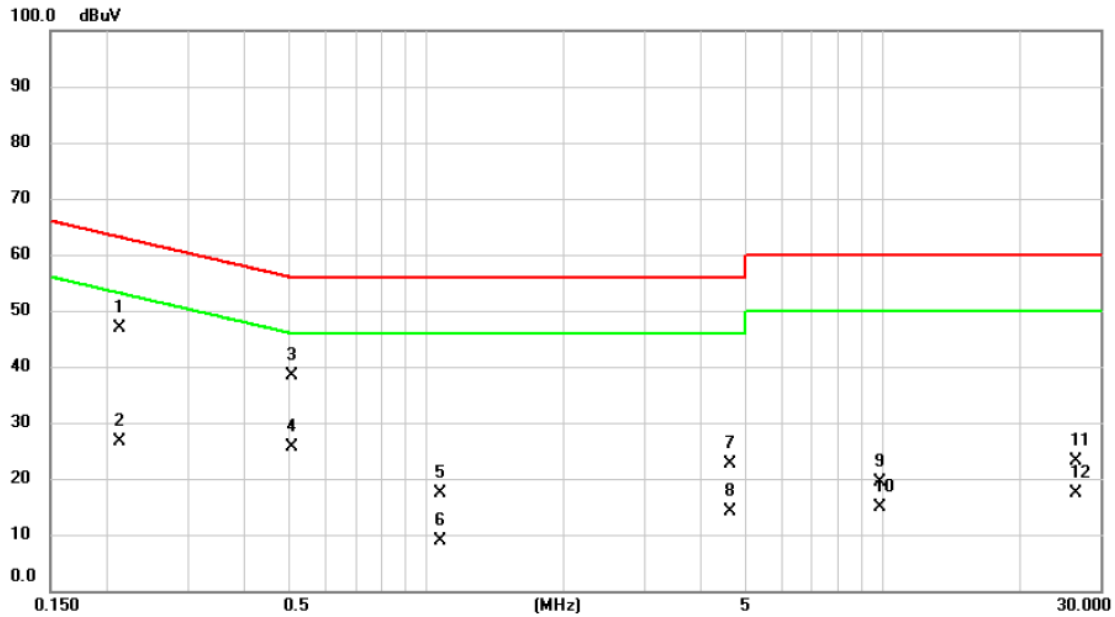


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2181	35.86	9.60	45.46	62.89	-17.43	QP	
2		0.2181	17.90	9.60	27.50	52.89	-25.39	AVG	
3	*	0.4950	31.19	9.58	40.77	56.08	-15.31	QP	
4		0.4950	20.58	9.58	30.16	46.08	-15.92	AVG	
5		1.0103	9.85	9.58	19.43	56.00	-36.57	QP	
6		1.0103	1.84	9.58	11.42	46.00	-34.58	AVG	
7		2.5133	10.67	9.64	20.31	56.00	-35.69	QP	
8		2.5133	1.52	9.64	11.16	46.00	-34.84	AVG	
9		11.1582	14.63	9.73	24.36	60.00	-35.64	QP	
10		11.1582	7.00	9.73	16.73	50.00	-33.27	AVG	
11		18.2961	4.13	9.71	13.84	60.00	-46.16	QP	
12		18.2961	-2.25	9.71	7.46	50.00	-42.54	AVG	

REMARKS:

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

Test Mode	Idle	Tested Date	2023/11/17
Test Frequency	-	Phase	Neutral



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.2135	37.23	9.59	46.82	63.07	-16.25	QP	
2	0.2135	16.94	9.59	26.53	53.07	-26.54	AVG	
3	0.5056	28.86	9.57	38.43	56.00	-17.57	QP	
4	0.5056	16.13	9.57	25.70	46.00	-20.30	AVG	
5	1.0766	7.86	9.57	17.43	56.00	-38.57	QP	
6	1.0766	-0.79	9.57	8.78	46.00	-37.22	AVG	
7	4.6468	12.96	9.64	22.60	56.00	-33.40	QP	
8	4.6468	4.37	9.64	14.01	46.00	-31.99	AVG	
9	9.8955	9.68	9.75	19.43	60.00	-40.57	QP	
10	9.8955	5.19	9.75	14.94	50.00	-35.06	AVG	
11	26.4178	13.20	9.87	23.07	60.00	-36.93	QP	
12	26.4178	7.62	9.87	17.49	50.00	-32.51	AVG	

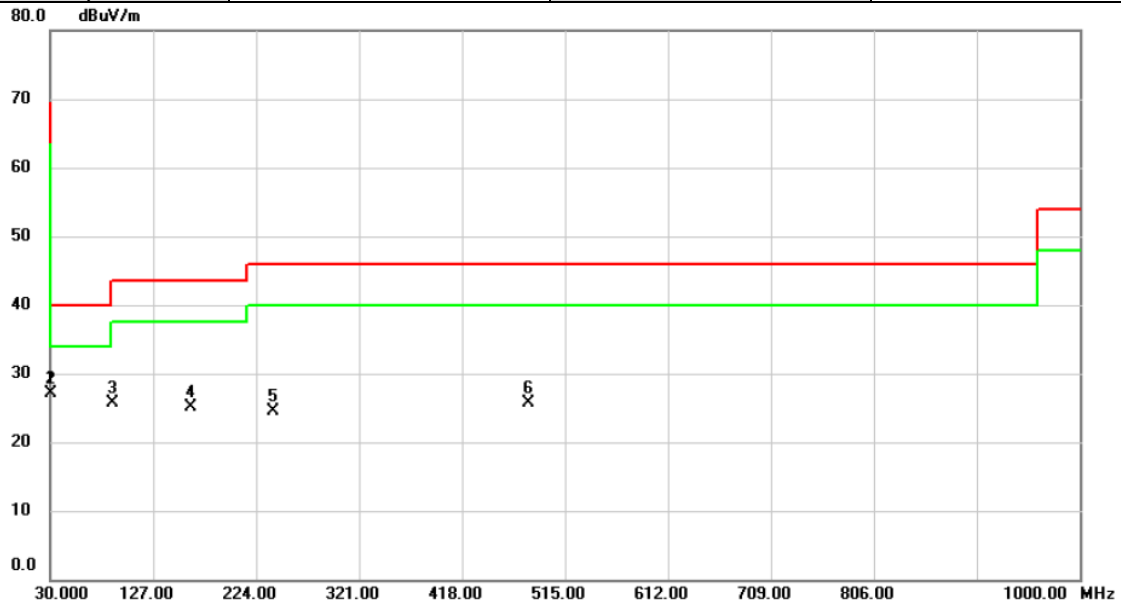
REMARKS:

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

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

APPENDIX B RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2480MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

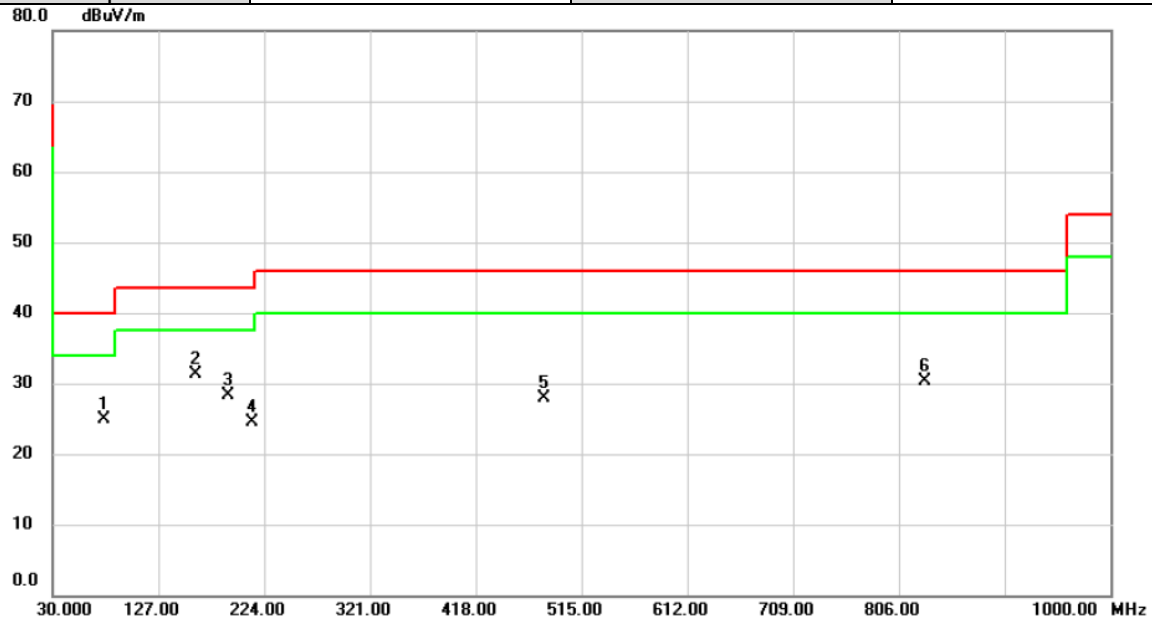


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	30.0000	40.36	-13.16	27.20	40.00	-12.80	peak	199	61
2	*	30.0000	40.36	-13.16	27.20	40.00	-12.80	peak	199	61
3		88.2000	42.39	-16.78	25.61	43.50	-17.89	peak	200	113
4		161.9200	36.10	-11.04	25.06	43.50	-18.44	peak	200	183
5		239.5200	36.99	-12.45	24.54	46.00	-21.46	peak	199	110
6		480.0800	31.24	-5.52	25.72	46.00	-20.28	peak	199	0

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2480MHz	Polarization	Vertical
Temp	23°C	Hum.	60%



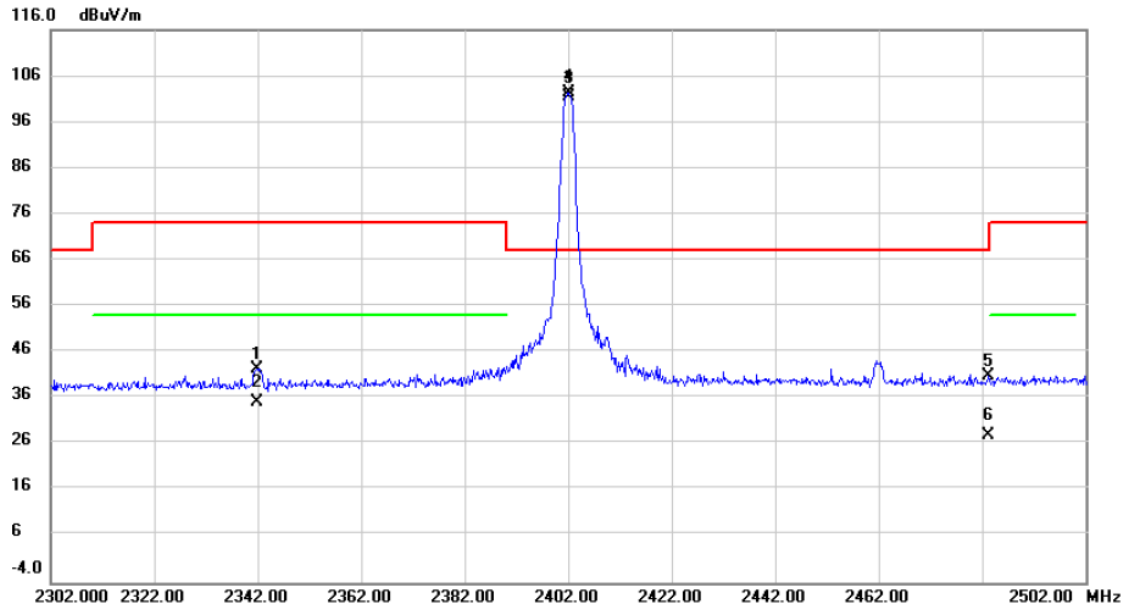
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		76.5600	40.18	-15.31	24.87	40.00	-15.13	peak		
2	*	160.9500	42.35	-11.00	31.35	43.50	-12.15	peak		
3		191.0200	41.92	-13.67	28.25	43.50	-15.25	peak		
4		213.3300	38.70	-14.13	24.57	43.50	-18.93	peak		
5		480.0800	33.52	-5.52	28.00	46.00	-18.00	peak		
6		830.2500	29.81	0.55	30.36	46.00	-15.64	peak		

REMARKS:

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

APPENDIX C RADIATED EMISSIONS - ABOVE 1 GHZ

Test Mode	BLE (1 Mbps)	Test Date	2023/11/13
Test Frequency	2402MHz	Polarization	Horizontal
Temp	24°C	Hum.	67%

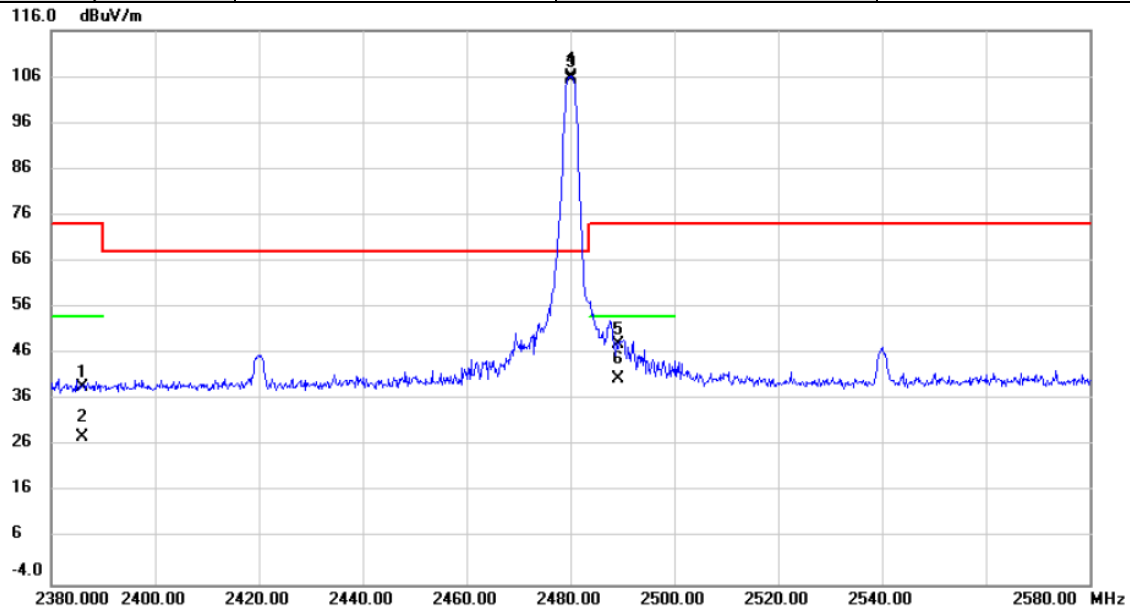


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2341.747	52.49	-10.02	42.47	74.00	-31.53	peak		
2		2341.747	45.24	-10.02	35.22	54.00	-18.78	AVG	126	212
3	*	2402.040	112.06	-9.80	102.26	68.20	34.06	peak		No Limit
4	X	2402.040	111.32	-9.80	101.52	68.20	33.32	AVG	126	212
5		2483.280	50.46	-9.50	40.96	68.20	-27.24	peak		
6		2483.280	37.37	-9.50	27.87	68.20	-40.33	AVG	126	212

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/14
Test Frequency	2480MHz	Polarization	Horizontal
Temp	24°C	Hum.	67%

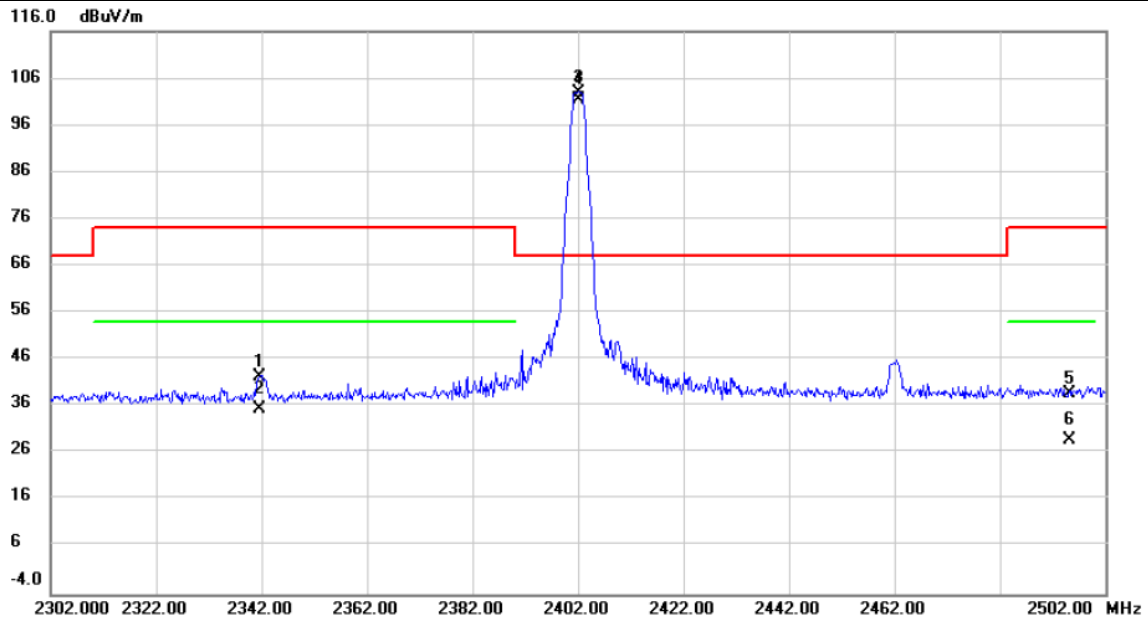


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2385.867	48.63	-9.87	38.76	74.00	-35.24	peak		
2		2385.867	37.88	-9.87	28.01	54.00	-25.99	AVG	100	127
3	*	2480.000	115.53	-9.52	106.01	68.20	37.81	peak		No Limit
4	X	2480.000	114.98	-9.52	105.46	68.20	37.26	AVG	100	127
5		2489.067	57.40	-9.48	47.92	74.00	-26.08	peak		
6		2489.067	50.11	-9.48	40.63	54.00	-13.37	AVG	100	127

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/14
Test Frequency	2402MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

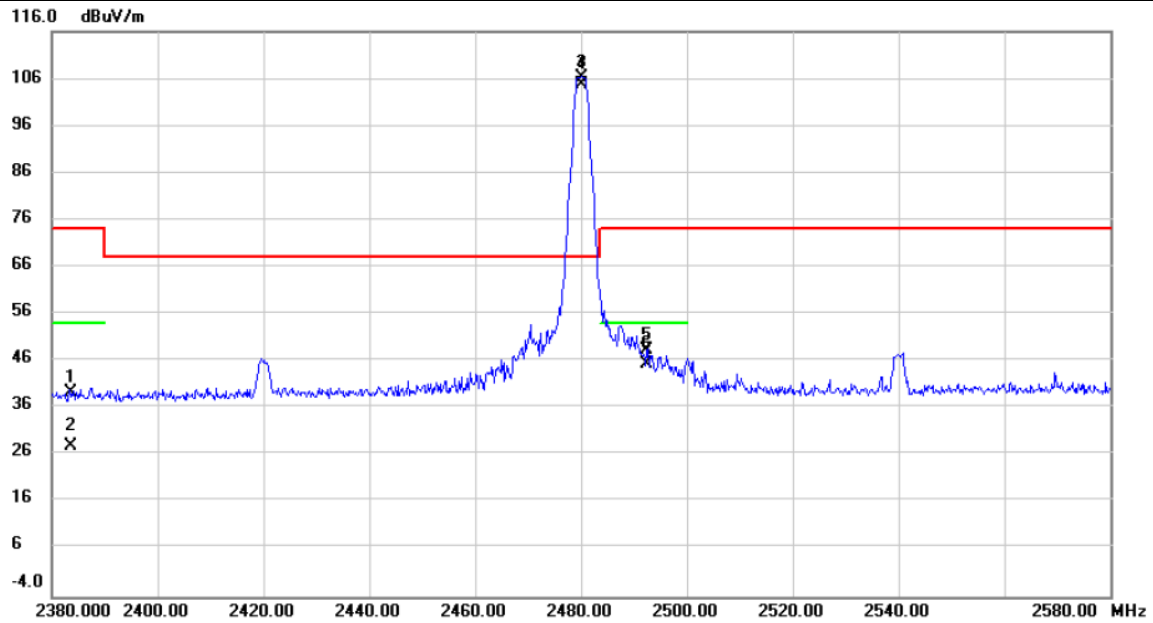


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2341.733	52.52	-10.02	42.50	74.00	-31.50	peak		
2		2341.733	45.53	-10.02	35.51	54.00	-18.49	AVG	100	54
3	*	2402.000	112.82	-9.80	103.02	68.20	34.82	peak		No Limit
4	X	2402.000	111.32	-9.80	101.52	68.20	33.32	AVG	100	54
5		2495.067	48.18	-9.46	38.72	74.00	-35.28	peak		
6		2495.067	38.26	-9.46	28.80	54.00	-25.20	AVG	100	54

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/14
Test Frequency	2480MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%



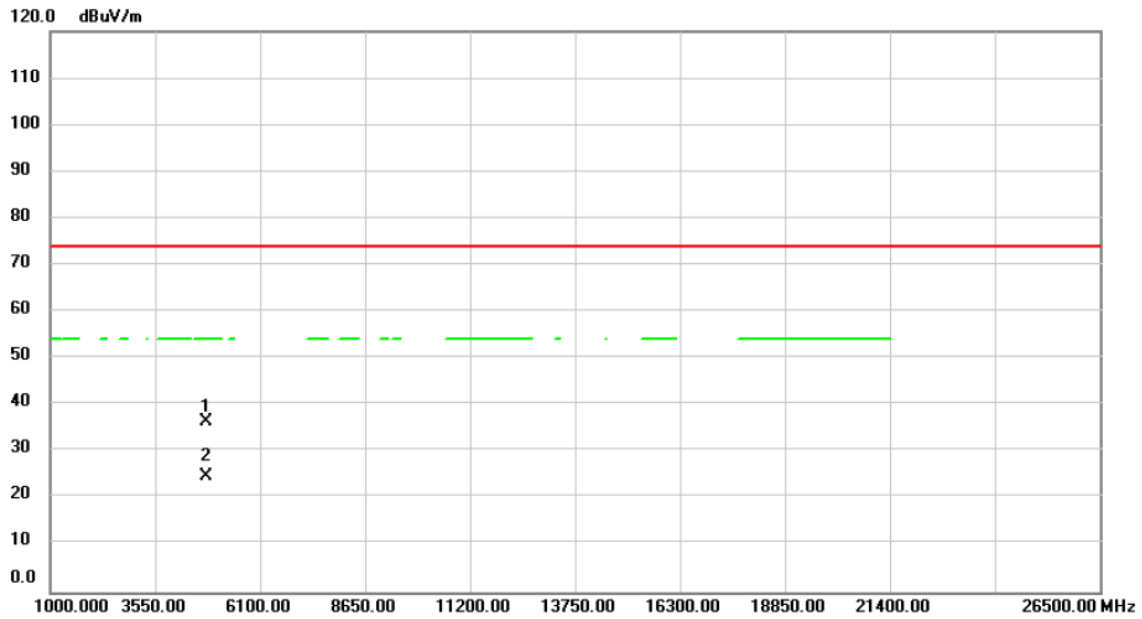
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2383.467	49.34	-9.88	39.46	74.00	-34.54	peak		
2		2383.467	37.81	-9.88	27.93	54.00	-26.07	AVG	137	47
3	*	2480.000	115.85	-9.52	106.33	68.20	38.13	peak		No Limit
4	X	2480.000	114.29	-9.52	104.77	68.20	36.57	AVG	137	47
5		2492.533	57.94	-9.48	48.46	74.00	-25.54	peak		
6		2492.533	54.69	-9.48	45.21	54.00	-8.79	AVG	137	47

REMARKS:

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

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2402MHz	Polarization	Vertical
Temp	23°C	Hum.	60%

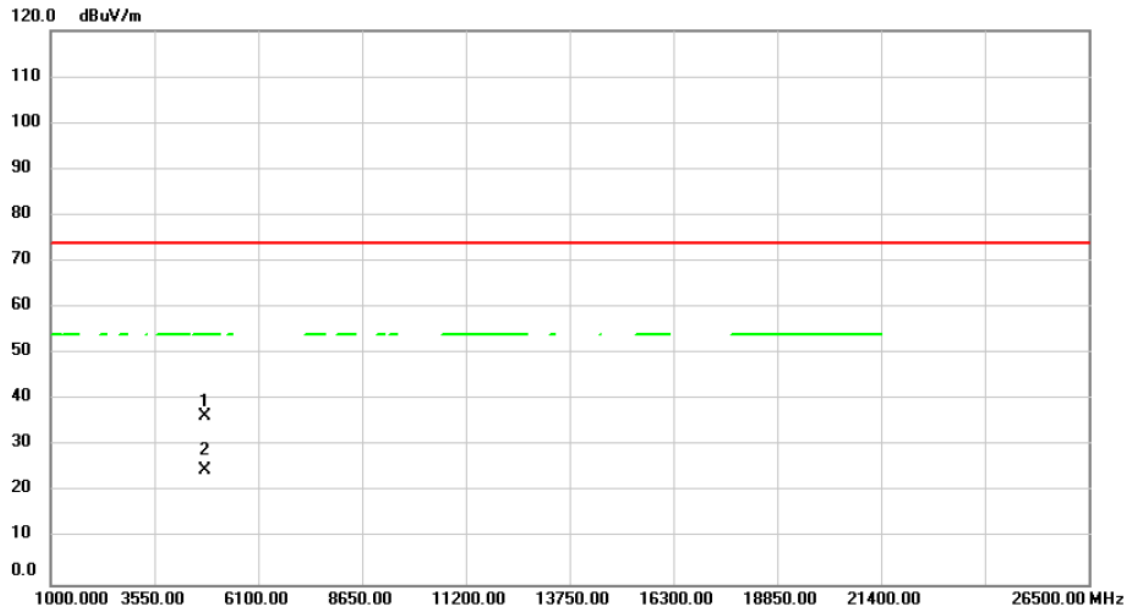


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		4804.000	40.59	-4.13	36.46	74.00	-37.54	peak		
2	*	4804.000	28.74	-4.13	24.61	54.00	-29.39	AVG		

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2402MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

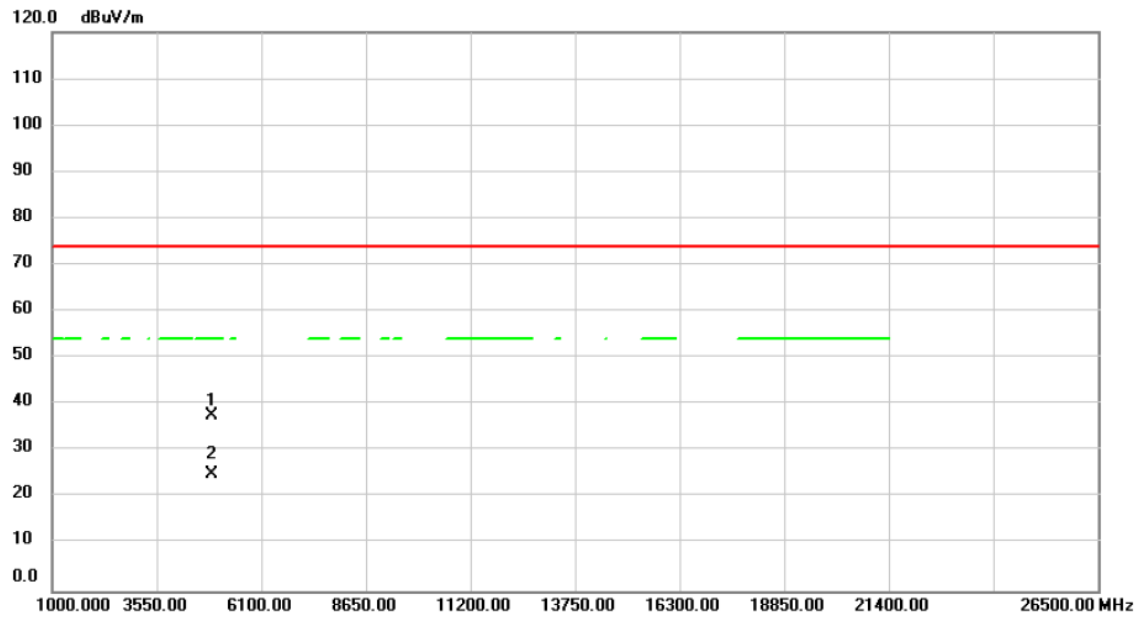


No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	4804.000	40.52	-4.13	36.39	74.00	-37.61	peak		
2 *	4804.000	28.76	-4.13	24.63	54.00	-29.37	AVG		

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2440MHz	Polarization	Vertical
Temp	23°C	Hum.	60%

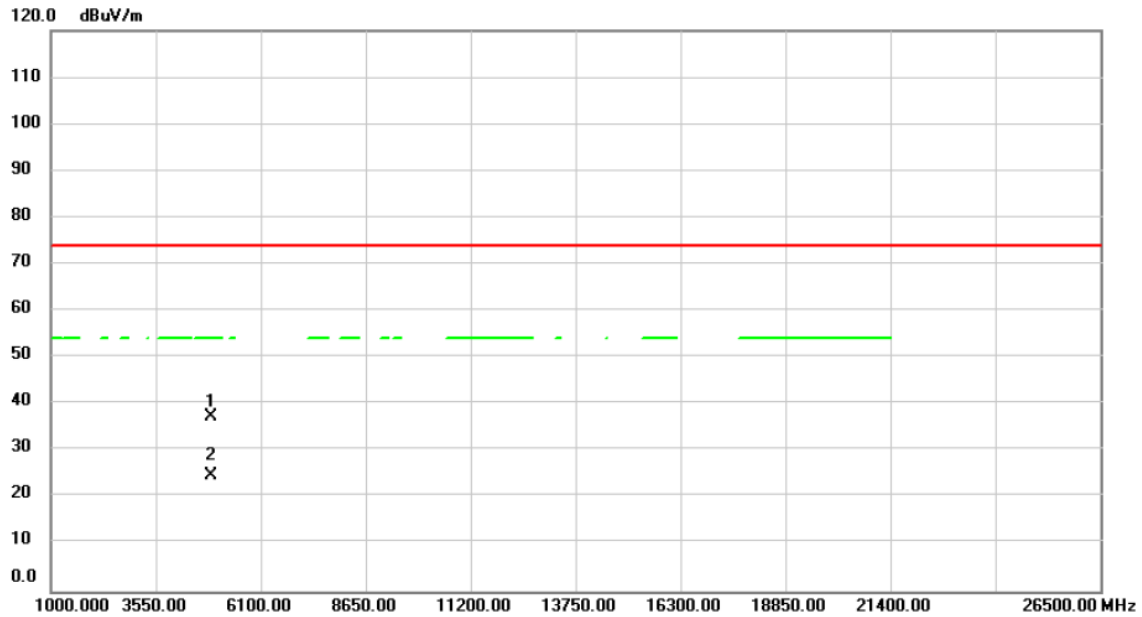


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4880.000	41.49	-3.86	37.63	74.00	-36.37	peak		
2	*	4880.000	28.89	-3.86	25.03	54.00	-28.97	AVG		

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2440MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

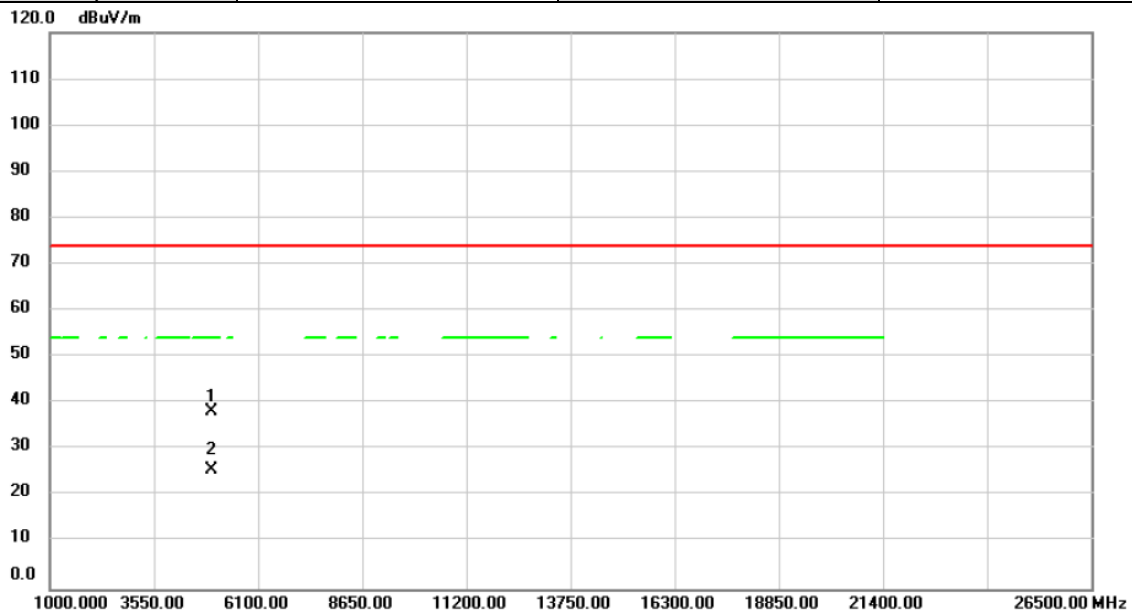


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4880.000	41.30	-3.86	37.44	74.00	-36.56	peak		
2	*	4880.000	28.75	-3.86	24.89	54.00	-29.11	AVG		

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2480MHz	Polarization	Vertical
Temp	23°C	Hum.	60%

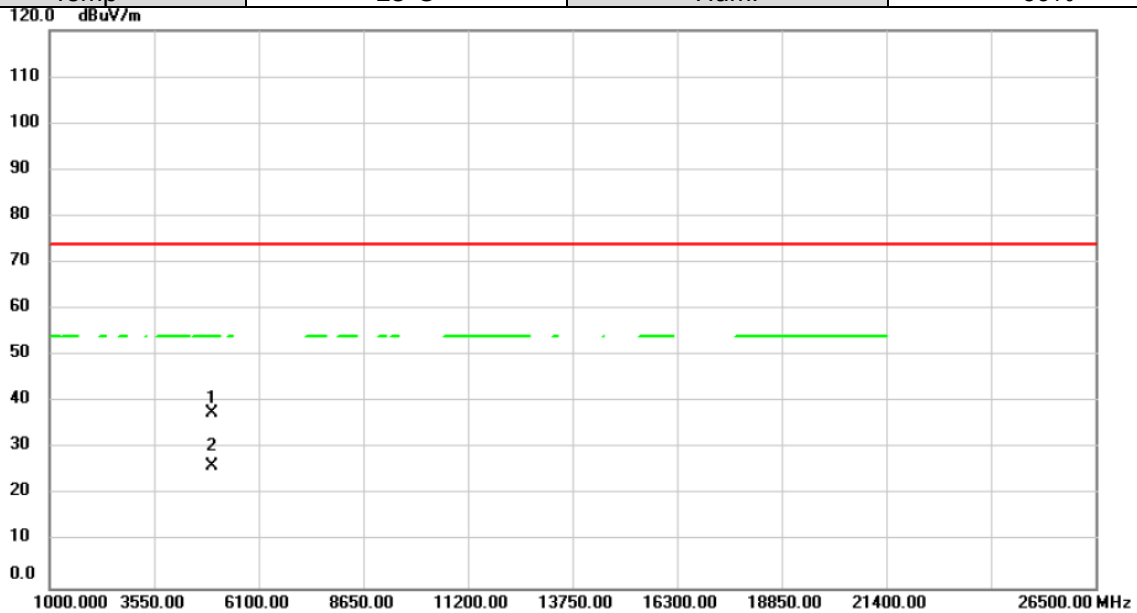


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4960.000	41.69	-3.56	38.13	74.00	-35.87	peak		
2	*	4960.000	29.25	-3.56	25.69	54.00	-28.31	AVG		

REMARKS:

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

Test Mode	BLE (1 Mbps)	Test Date	2023/11/22
Test Frequency	2480MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

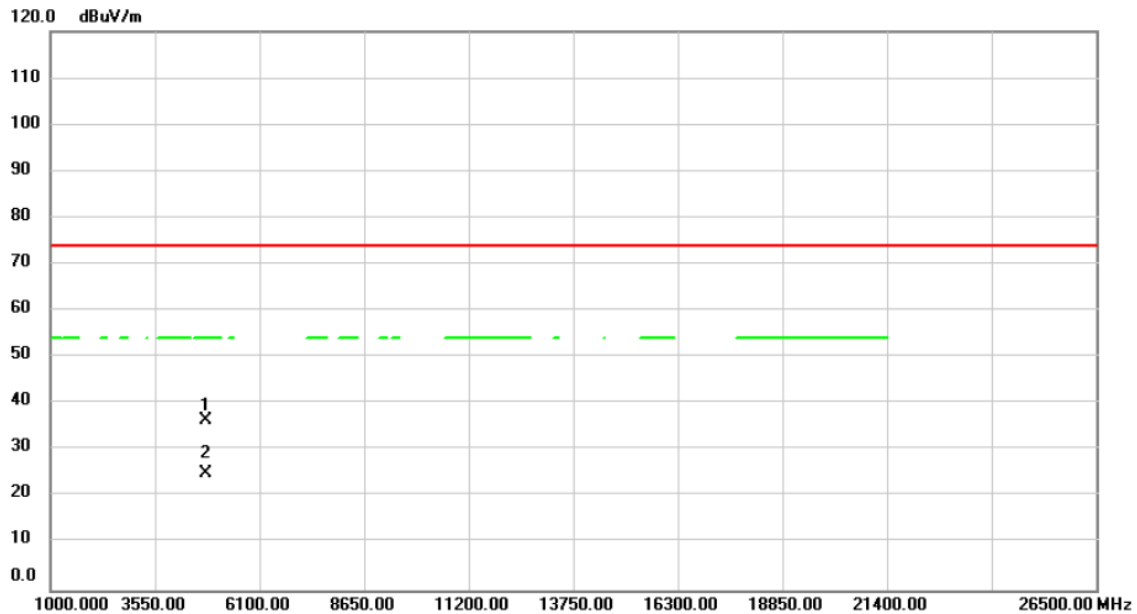


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4960.000	41.15	-3.56	37.59	74.00	-36.41	peak		
2	*	4960.000	29.93	-3.56	26.37	54.00	-27.63	AVG		

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/22
Test Frequency	2402MHz	Polarization	Vertical
Temp	23°C	Hum.	60%

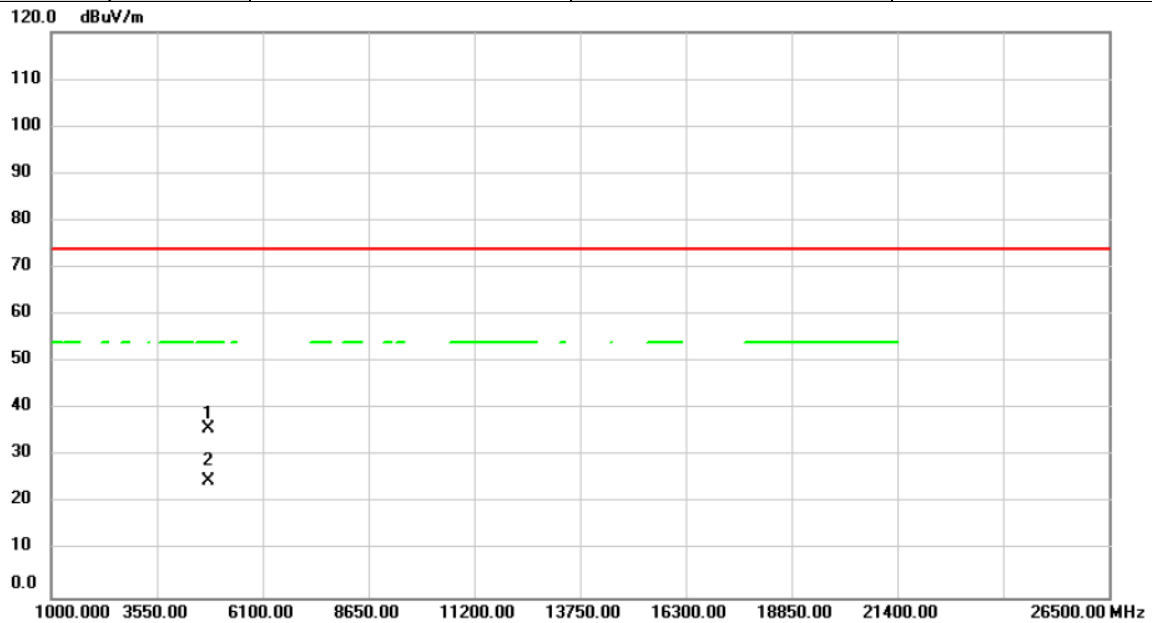


No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	4804.000	40.56	-4.13	36.43	74.00	-37.57	peak		
2 *	4804.000	29.14	-4.13	25.01	54.00	-28.99	AVG		

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/22
Test Frequency	2402MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

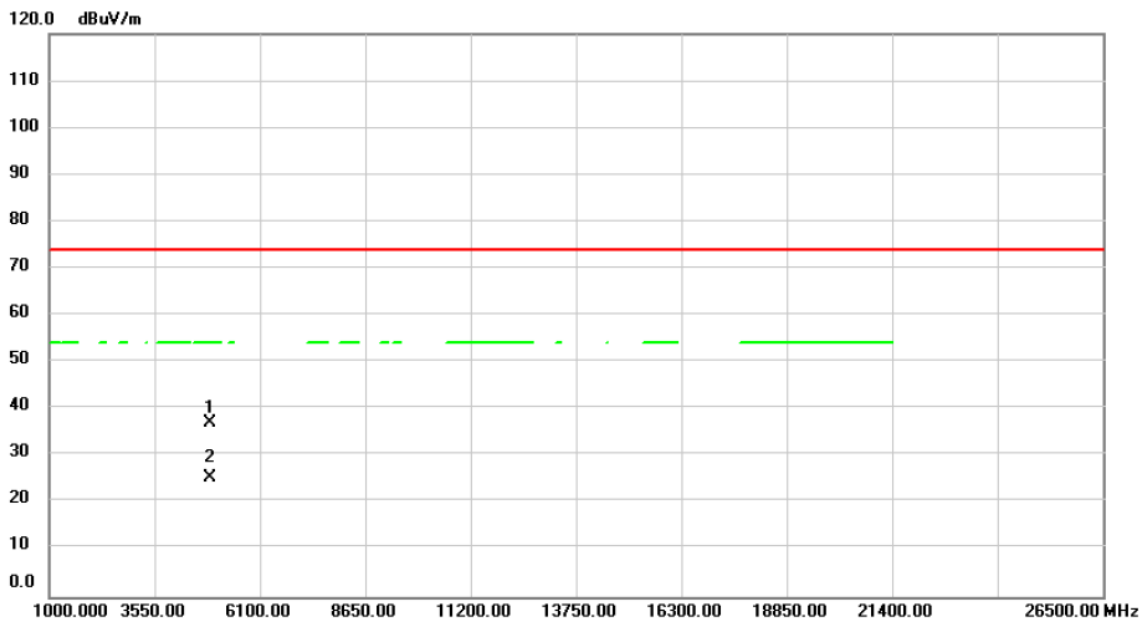


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		4804.000	40.12	-4.13	35.99	74.00	-38.01	peak		
2	*	4804.000	29.02	-4.13	24.89	54.00	-29.11	AVG		

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/22
Test Frequency	2440MHz	Polarization	Vertical
Temp	23°C	Hum.	60%

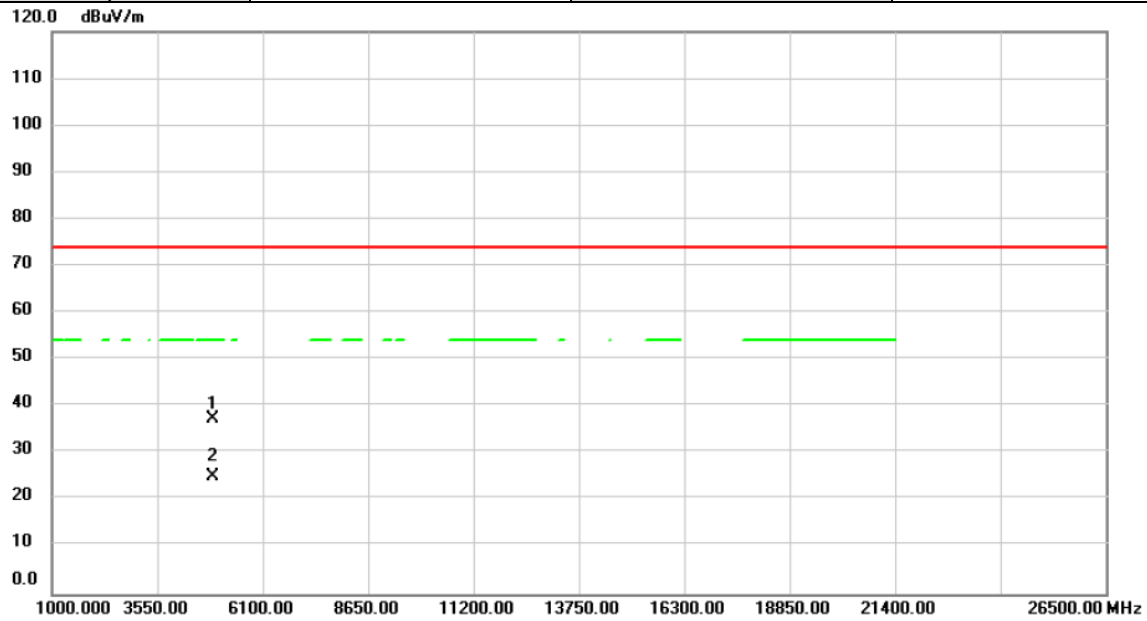


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4880.000	40.85	-3.86	36.99	74.00	-37.01	peak		
2	*	4880.000	29.10	-3.86	25.24	54.00	-28.76	AVG		

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/22
Test Frequency	2440MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%

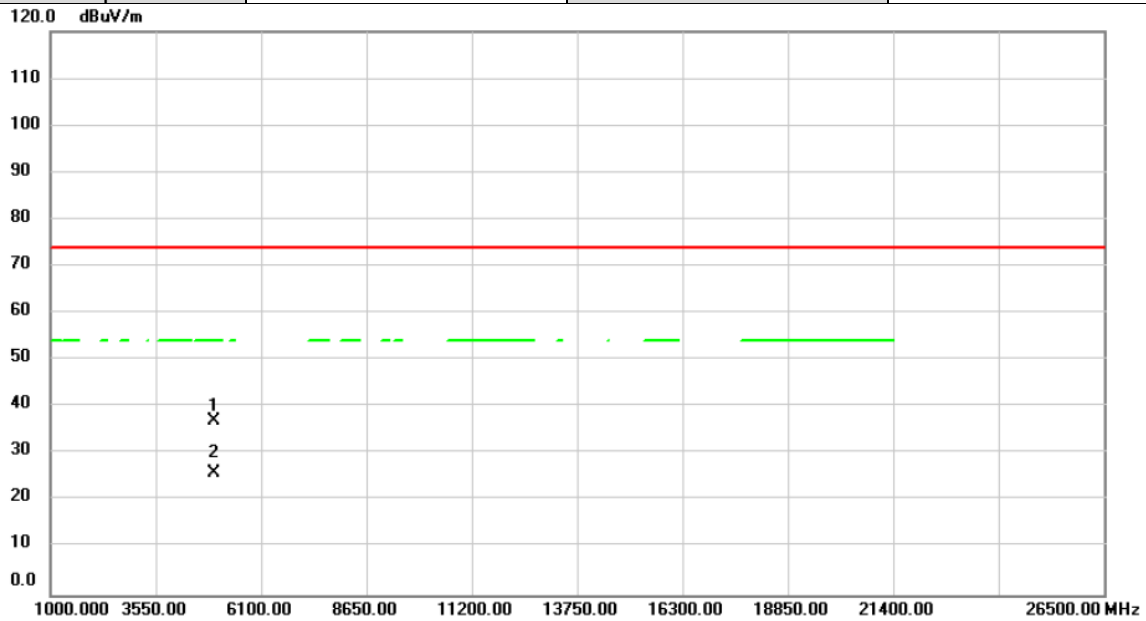


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4880.000	41.11	-3.86	37.25	74.00	-36.75	peak		
2	*	4880.000	29.03	-3.86	25.17	54.00	-28.83	AVG		

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/22
Test Frequency	2480MHz	Polarization	Vertical
Temp	23°C	Hum.	60%

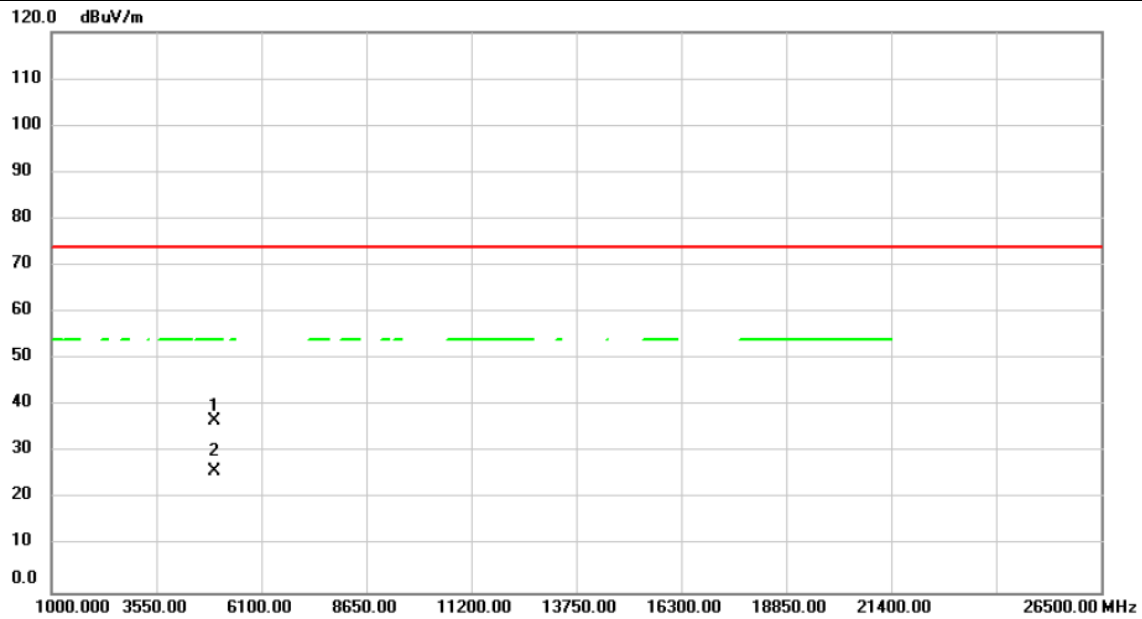


No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	4960.000	40.74	-3.56	37.18	74.00	-36.82	peak		
2 *	4960.000	29.49	-3.56	25.93	54.00	-28.07	AVG		

REMARKS:

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

Test Mode	BLE (2 Mbps)	Test Date	2023/11/22
Test Frequency	2480MHz	Polarization	Horizontal
Temp	23°C	Hum.	60%



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	4960.000	40.45	-3.56	36.89	74.00	-37.11	peak		
2 *	4960.000	29.55	-3.56	25.99	54.00	-28.01	AVG		

REMARKS:

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

APPENDIX D OUTPUT POWER

Test Mode :	BLE (1Mbps)	Tested Date	2023/11/16
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Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	7.14	0.0052	30.00	1.0000	Pass
2440	7.24	0.0053	30.00	1.0000	Pass
2480	7.40	0.0055	30.00	1.0000	Pass

Test Mode :	BLE (2Mbps)	Tested Date	2023/11/16
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Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	5.29	0.0034	30.00	1.0000	Pass
2440	5.38	0.0035	30.00	1.0000	Pass
2480	5.55	0.0036	30.00	1.0000	Pass

End of Test Report