

# FCC Radio Test Report

## FCC ID: EROTSW80

**Report No.** : BTL-FCCP-1-2409T046  
**Equipment** : (1) 8 inch Touch Screen wall mount  
                  (2) 10.1 inch Touch Screen wall mount  
**Model Name** : (1) M202404001  
                  (2) M202404002  
**Brand Name** : CRESTRON  
**Applicant** : Crestron Electronics, Inc.  
**Address** : 15 Volvo Drive, Rockleigh, NJ 07647  
  
**Radio Function** : Bluetooth  
  
**FCC Rule Part(s)** : FCC CFR Title 47, Part 15, Subpart C (15.247)  
**Measurement** : ANSI C63.10-2013  
**Procedure(s)**  
  
**Date of Receipt** : 2024/10/1  
**Date of Test** : 2024/10/28 ~ 2024/11/6  
**Issued Date** : 2024/12/9

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

**Prepared by**

: Brett Shen  
Brett Shen, Engineer



**Approved by**

: Jerry Chuang  
Jerry Chuang, Supervisor

**BTL Inc.**

No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan

Tel: +886-2-2657-3299 Fax: +886-2-2657-3331 Web: [www.newbtl.com](http://www.newbtl.com) Service mail: [btl\\_qa@newbtl.com](mailto:btl_qa@newbtl.com)

**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.

**CONTENTS**

REVISION HISTORY	5
1 SUMMARY OF TEST RESULTS	6
1.1 TEST FACILITY	7
1.2 MEASUREMENT UNCERTAINTY	7
1.3 TEST ENVIRONMENT CONDITIONS	7
1.4 DUTY CYCLE	8
2 GENERAL INFORMATION	9
2.1 DESCRIPTION OF EUT	9
2.2 TEST MODES	11
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	12
2.4 SUPPORT UNITS	12
3 RADIATED EMISSIONS TEST	13
3.1 LIMIT	13
3.2 TEST PROCEDURE	14
3.3 DEVIATION FROM TEST STANDARD	14
3.4 TEST SETUP	14
3.5 EUT OPERATING CONDITIONS	15
3.6 TEST RESULT – 9 KHZ TO 30 MHZ	16
3.7 TEST RESULT – 30 MHZ TO 1 GHZ	16
3.8 TEST RESULT – ABOVE 1 GHZ	16
4 NUMBER OF HOPPING CHANNEL	17
4.1 APPLIED PROCEDURES	17
4.2 TEST PROCEDURE	17
4.3 DEVIATION FROM STANDARD	17
4.4 TEST SETUP	17
4.5 EUT OPERATION CONDITIONS	17
4.6 TEST RESULTS	17
5 AVERAGE TIME OF OCCUPANCY	18
5.1 APPLIED PROCEDURES / LIMIT	18
5.2 TEST PROCEDURE	18
5.3 DEVIATION FROM STANDARD	18
5.4 TEST SETUP	18
5.5 EUT OPERATION CONDITIONS	18
5.6 TEST RESULTS	18
6 HOPPING CHANNEL SEPARATION MEASUREMENT	19
6.1 APPLIED PROCEDURES / LIMIT	19
6.2 TEST PROCEDURE	19
6.3 DEVIATION FROM STANDARD	19
6.4 TEST SETUP	19
6.5 TEST RESULTS	19
7 BANDWIDTH TEST	20
7.1 APPLIED PROCEDURES	20
7.2 TEST PROCEDURE	20
7.3 DEVIATION FROM STANDARD	20
7.4 TEST SETUP	20
7.5 EUT OPERATION CONDITIONS	20
7.6 TEST RESULTS	20

8	OUTPUT POWER TEST	21
8.1	APPLIED PROCEDURES / LIMIT	21
8.2	TEST PROCEDURE	21
8.3	DEVIATION FROM STANDARD	21
8.4	TEST SETUP	21
8.5	EUT OPERATION CONDITIONS	21
8.6	TEST RESULTS	21
9	ANTENNA CONDUCTED SPURIOUS EMISSION	22
9.1	APPLIED PROCEDURES / LIMIT	22
9.2	TEST PROCEDURE	22
9.3	DEVIATION FROM STANDARD	22
9.4	TEST SETUP	22
9.5	EUT OPERATION CONDITIONS	22
9.6	TEST RESULTS	22
10	LIST OF MEASURING EQUIPMENTS	23
11	EUT TEST PHOTO	25
12	EUT PHOTOS	25
APPENDIX A	RADIATED EMISSIONS - 9 KHZ TO 30 MHZ	26
APPENDIX B	RADIATED EMISSIONS - 30 MHZ TO 1 GHZ	31
APPENDIX C	RADIATED EMISSIONS - ABOVE 1 GHZ	34
APPENDIX D	NUMBER OF HOPPING CHANNEL	53
APPENDIX E	AVERAGE TIME OF OCCUPANCY	55
APPENDIX F	HOPPING CHANNEL SEPARATION MEASUREMENT	58
APPENDIX G	BANDWIDTH	61
APPENDIX H	OUTPUT POWER	64
APPENDIX I	ANTENNA CONDUCTED SPURIOUS EMISSION	66

**REVISION HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-1-2409T046	R00	Original Report.	2024/12/9	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	-----	N/A	NOTE (3)
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX A APPENDIX B APPENDIX C	Pass	-----
15.247 (a)(1)(iii)	Number of Hopping Frequency	APPENDIX D	Pass	-----
15.247 (a)(1)(iii)	Average Time of Occupancy	APPENDIX E	Pass	-----
15.247 (a)(1)	Hopping Channel Separation	APPENDIX F	Pass	-----
15.247 (a)(1)	Bandwidth	APPENDIX G	Pass	-----
15.247 (b)(1)	Output Power	APPENDIX H	Pass	-----
15.247(d)	Antenna conducted Spurious Emission	APPENDIX I	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 is a DC input device.

## 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. 72, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan  
(FCC DN: TW0659)

C06       CB21       CB22

## 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. Radiated emissions test :

Test Site	Measurement Frequency Range	U (dB)
CB21	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

B. Conducted test :

Test Item	U (dB)
Occupied Bandwidth	0.5338
Output power	0.3659
Conducted Spurious emissions	0.5416
Conducted Band edges	0.5348
Dwell time	0.6606
Channel separation	0.6606
Channel numbers	0.6606

### 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

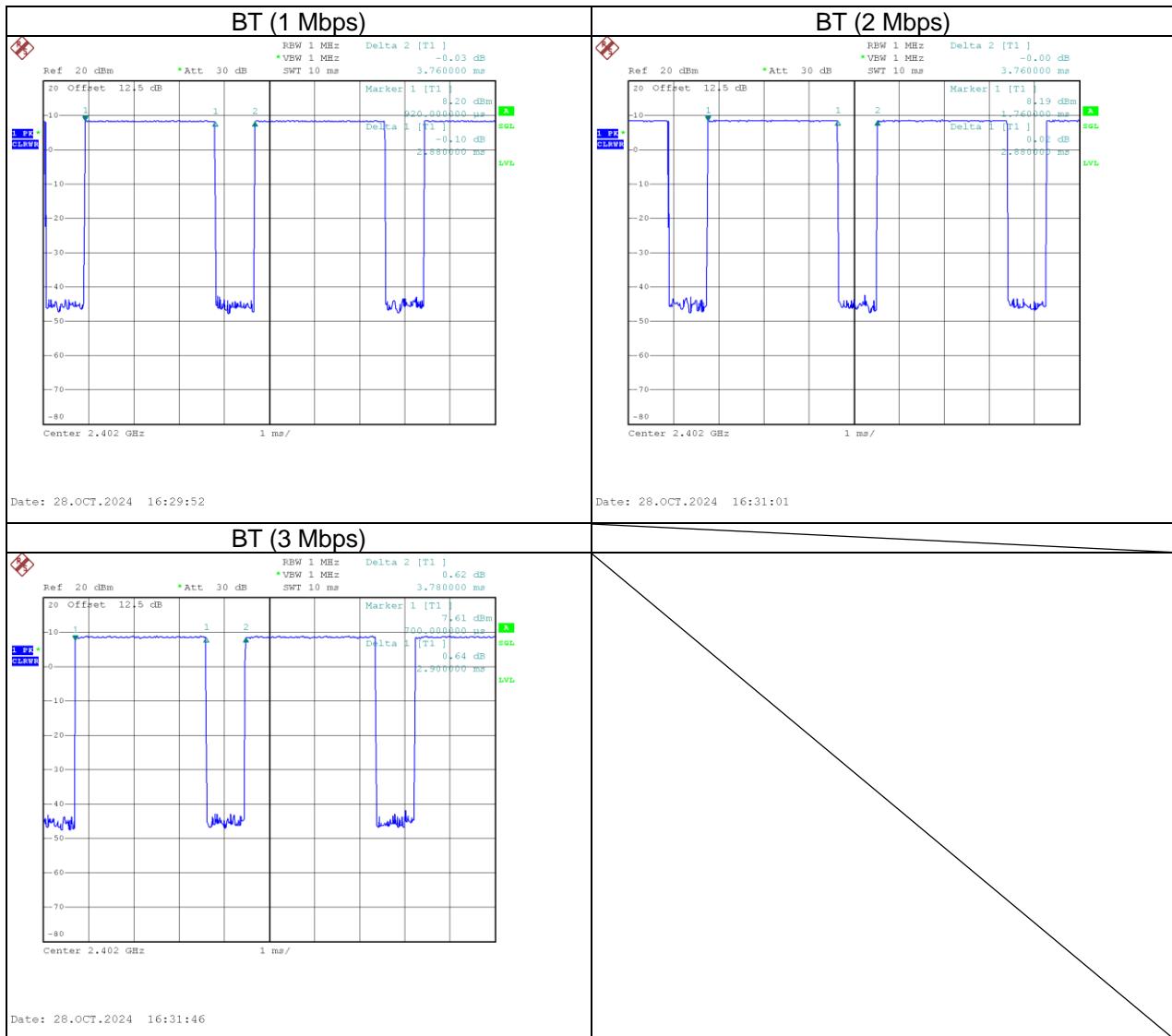
Test Item	Environment Condition	Test Voltage	Tested by
Radiated emissions below 1 GHz	Refer to data	DC 48V	Emily Chang
Radiated emissions above 1 GHz	Refer to data	DC 48V	Emily Chang
Number of Hopping Frequency	23.9 °C, 48 %	DC 48V	Ken Lan
Average Time of Occupancy	23.9 °C, 48 %	DC 48V	Ken Lan
Hopping Channel Separation	23.9 °C, 48 %	DC 48V	Ken Lan
Bandwidth	23.9 °C, 48 %	DC 48V	Ken Lan
Output Power	23.9 °C, 48 %	DC 48V	Ken Lan
Antenna conducted Spurious Emission	23.9 °C, 48 %	DC 48V	Ken Lan

## 1.4 DUTY CYCLE

If duty cycle is  $\geq 98\%$ , duty factor is not required.

If duty cycle is  $< 98\%$ , duty factor shall be considered.

Remark	Delta 2			Delta 3	On Time/Period	10 log(1/Duty Cycle)
Mode	ON (ms)	Numbers (ON)	On Time (B) (ms)	Period (ON+OFF) (ms)	Duty Cycle (%)	Duty Factor (dB)
BT (1 Mbps)	2.880	1	2.880	3.760	76.60%	1.16
BT (2 Mbps)	2.880	1	2.880	3.760	76.60%	1.16
BT (3 Mbps)	2.900	1	2.900	3.780	76.72%	1.15



## 2 GENERAL INFORMATION

### 2.1 DESCRIPTION OF EUT

Equipment	(1) 8 inch Touch Screen wall mount (2) 10.1 inch Touch Screen wall mount
Model Name	(1) M202404001 (2) M202404002
Brand Name	CRESTRON
Model Difference	M202404001: Screen size 8 Inch wall mount. M202404002: Screen size 10.1 Inch wall mount.
Power Source	DC voltage supplied from PoE.
Power Rating	Input 48 VDC 350mA (802.3at type 1) Input 48 VDC 600mA (802.3at type 2)
Products Covered	N/A
Operation Band	2400 MHz ~ 2483.5 MHz
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Type	GFSK, π/4-DQPSK, 8DPSK
Modulation Technology	FHSS
Transfer Rate	1 Mbps, 2 Mbps, 3Mbps
Output Power Max.	1 Mbps: 7.47 dBm (0.0056 W) 2 Mbps: 9.01 dBm (0.0080 W) 3 Mbps: 9.29 dBm (0.0085 W)
Test Software Version	Qualcomm Radio Control Toolkit V 4.0.00203.0
Test Model	M202404002
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)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

## (3) Table for Filed Antenna:

For Screen size 8 Inch wall mount:

Antenna	Manufacture	Part number	Type	Connector	Frequency (MHz)	Gain (dBi)
Main	JABIL	1100021776	FPC	I-PEX	2412-2480	5.80

For Screen size 10 Inch wall mount:

Antenna	Manufacture	Part number	Type	Connector	Frequency (MHz)	Gain (dBi)
Main	JABIL	1100021776	FPC	I-PEX	2412-2480	3.05

Note: Antenna gain higher is used for testing.

(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

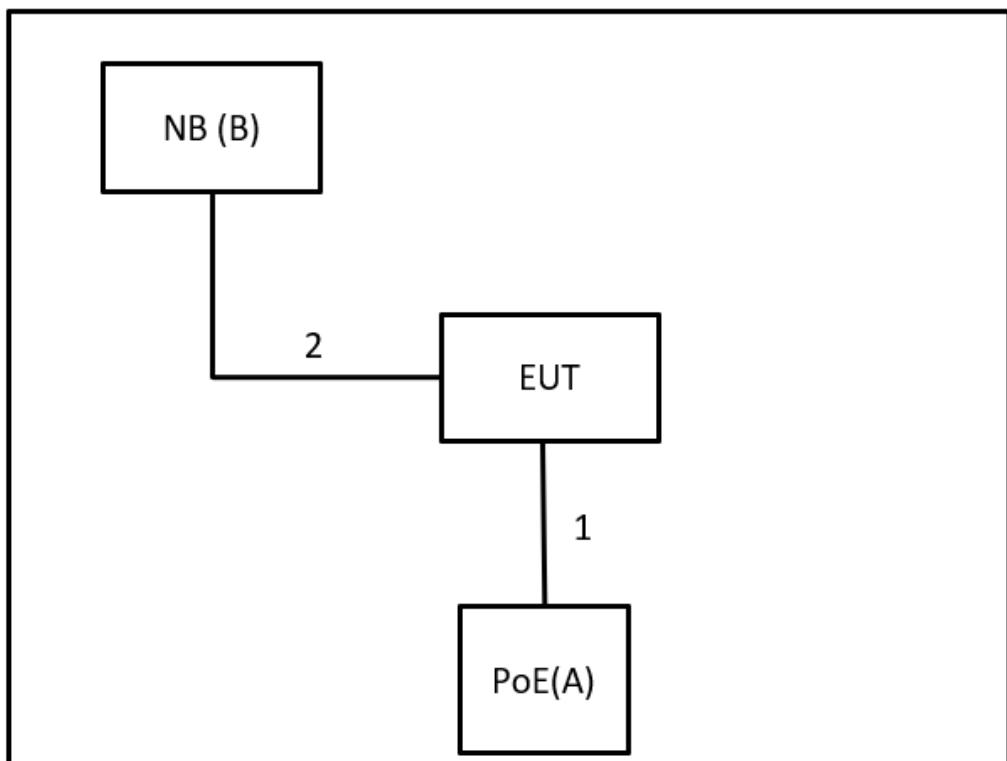
Test Items	Test mode	Channel	Note
Transmitter Radiated Emissions (below 1GHz)	3 Mbps	00	-
Transmitter Radiated Emissions (above 1GHz)	1/3 Mbps	00/78	Bandedge
	1/3 Mbps	00/39/78	Harmonic
Transmitter Radiated Emissions (above 18GHz)	3 Mbps	00	-
Number of Hopping Frequency	1/3 Mbps	00~78	-
Average Time of Occupancy	1/3 Mbps	00/39/78	-
Hopping Channel Separation	1/3 Mbps	00/39/78	-
Bandwidth	1/3 Mbps	00/39/78	-
Peak Output Power	1/2/3 Mbps	00/39/78	-
Antenna conducted Spurious Emission	1/3 Mbps	00/39/78	-

**NOTE:**

- (1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Vertical) is recorded.
- (2) 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.



## 2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	PoE	Crestron	CEN-SWPOE-16	N/A	Supplied by test requester
B	NB	dynabook	Portege-X40 G	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	3m	Lan	Supplied by test requester
2	N/A	N/A	1m	Type C TO USB 3.1	Furnished by test lab.

### 3 RADIATED EMISSIONS TEST

#### 3.1 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 (dB $\mu$ V/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 (dB $\mu$ V/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 (dB $\mu$ V)		Correct Factor (dB/m)		Measurement Value (dB $\mu$ V/m)
35.45	+	-11.37	=	24.08

Measurement Value (dB $\mu$ V/m)		Limit Value (dB $\mu$ V/m)		Margin Level (dB)
24.08	-	40	=	-15.92

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

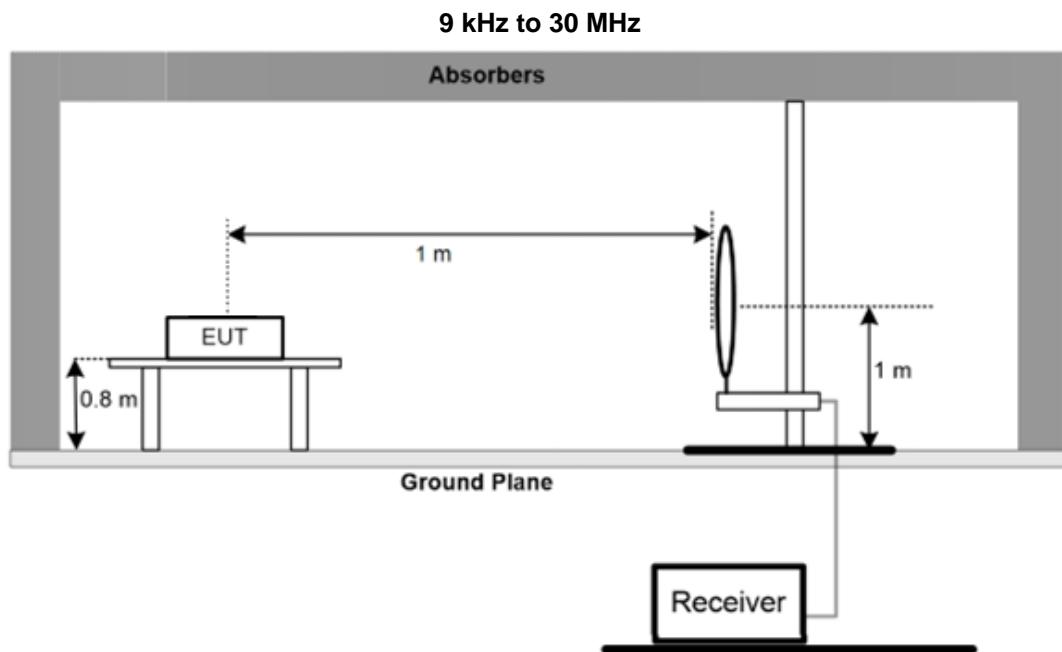
### 3.2 TEST PROCEDURE

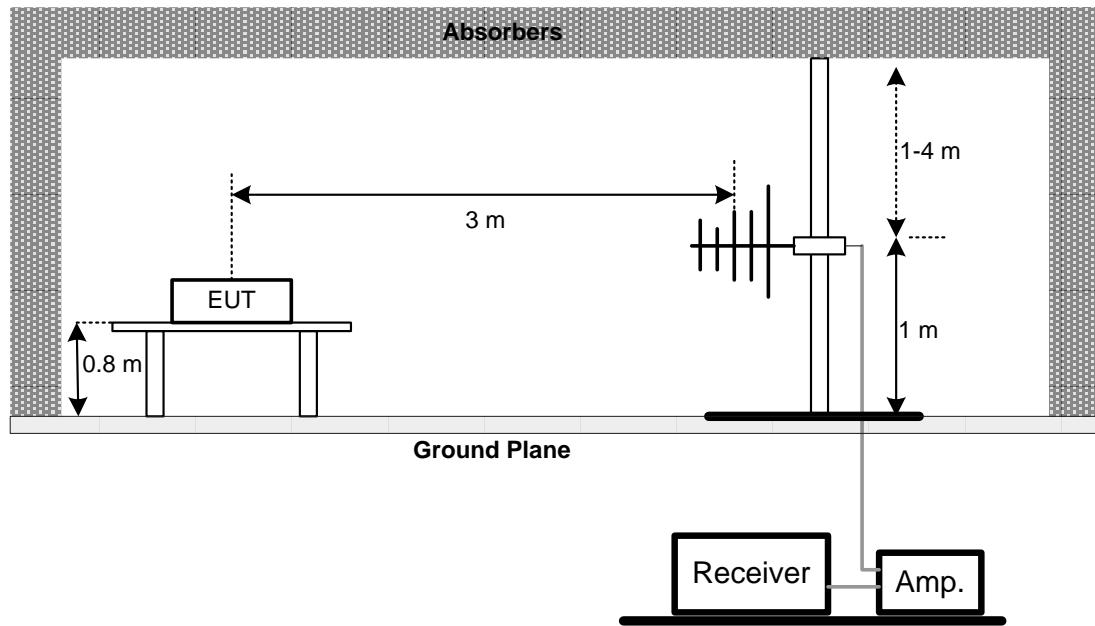
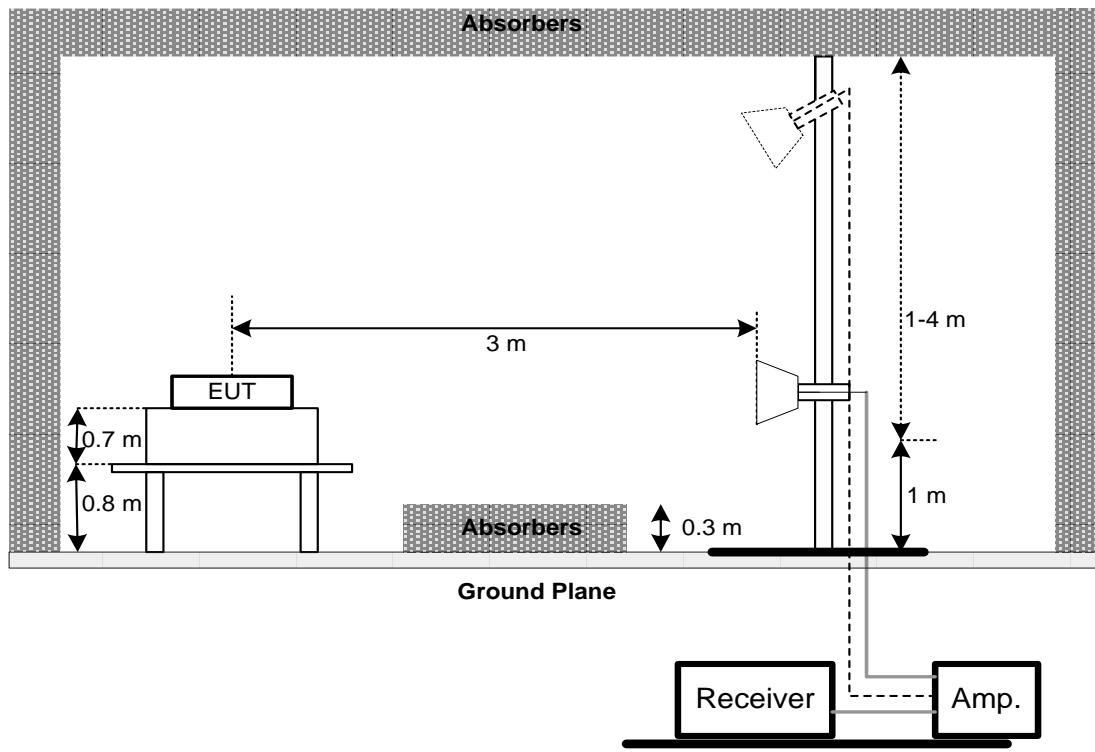
- a. The measuring distance of 1 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 30MHz)
- b. The measuring distance 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)
- c. 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)
- d. 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.
- e. 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).
- f. 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.
- g. 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.
- h. 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)
- i. 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)
- j. For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

### 3.3 DEVIATION FROM TEST STANDARD

No deviation.

### 3.4 TEST SETUP



**30 MHz to 1 GHz****Above 1 GHz****3.5 EUT OPERATING CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

**3.6 TEST RESULT – 9 KHZ TO 30 MHZ**

Please refer to the APPENDIX A.

**3.7 TEST RESULT – 30 MHZ TO 1 GHZ**

Please refer to the APPENDIX B.

**3.8 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.

## 4 NUMBER OF HOPPING CHANNEL

### 4.1 APPLIED PROCEDURES

Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(1)(iii)	Number of Hopping Channel	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RBW	100 KHz
VBW	100 KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

### 4.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW=100KHz, VBW=100KHz, Sweep time = Auto.

### 4.3 DEVIATION FROM STANDARD

No deviation.

### 4.4 TEST SETUP



### 4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

### 4.6 TEST RESULTS

Please refer to the APPENDIX D.

## 5 AVERAGE TIME OF OCCUPANCY

### 5.1 APPLIED PROCEDURES / LIMIT

Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(1)(iii)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

### 5.2 TEST PROCEDURE

- a. The transmitter output (antenna port) was connected to the spectrum analyzer
- b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
- d. Sweep Time is more than once pulse time.
- e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- f. Measure the maximum time duration of one single pulse.
- g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
- h. Measure the maximum time duration of one single pulse.
- i. Measure the maximum time duration of one single pulse.

A Period Time = (channel number) \* 0.4

For Non-AFH Mode (79 Channel):

DH1 Time Solt: Reading \* (1600/6)/79 \* (0.4 \* 79)

DH3 Time Solt: Reading \* (1600/6)/79 \* (0.4 \* 79)

DH5 Time Solt: Reading \* (1600/6)/79 \* (0.4 \* 79)

For AFH Mode (20 Channel):

DH1 Time Solt: Reading \* (800/6)/20 \* (0.4 \* 20)

DH3 Time Solt: Reading \* (800/6)/20 \* (0.4 \* 20)

DH5 Time Solt: Reading \* (800/6)/20 \* (0.4 \* 20)

### 5.3 DEVIATION FROM STANDARD

No deviation.

### 5.4 TEST SETUP



### 5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

### 5.6 TEST RESULTS

Please refer to the APPENDIX E.

## 6 Hopping Channel Separation Measurement

### 6.1 APPLIED PROCEDURES / LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 KHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	30 KHz
VBW	100 KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

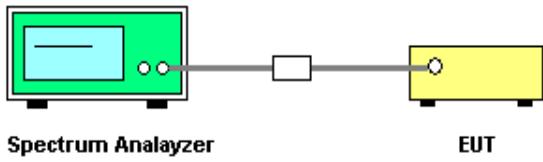
### 6.2 TEST PROCEDURE

- The EUT must have its hopping function enabled
- Span = wide enough to capture the peaks of two adjacent channels  
Resolution (or IF) Bandwidth (RBW)  $\geq$  1% of the span  
Video (or Average) Bandwidth (VBW)  $\geq$  RBW  
Sweep = Auto  
Detector function = Peak  
Trace = Max Hold

### 6.3 DEVIATION FROM STANDARD

No deviation.

### 6.4 TEST SETUP



### 6.5 TEST RESULTS

Please refer to the APPENDIX F.

## 7 BANDWIDTH TEST

### 7.1 APPLIED PROCEDURES

Section	Test Item	Frequency Range (MHz)
15.247(a)(2)	Bandwidth	2400-2483.5

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	30 KHz (20dB Bandwidth) / 30 KHz (Channel Separation)
VBW	100 KHz (20dB Bandwidth) / 100 KHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

### 7.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 30KHz, VBW=100KHz, Sweep Time = Auto.

### 7.3 DEVIATION FROM STANDARD

No deviation.

### 7.4 TEST SETUP



### 7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

### 7.6 TEST RESULTS

Please refer to the APPENDIX G.

## 8 OUTPUT POWER TEST

### 8.1 APPLIED PROCEDURES / LIMIT

Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(1)	Peak Output Power	0.125Watt or 21dBm	2400-2483.5	PASS

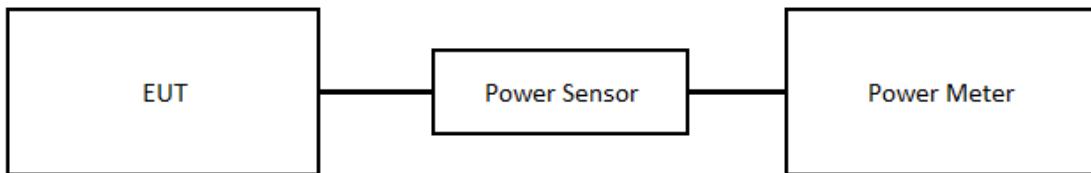
### 8.2 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 3MHz, VBW= 3MHz, Sweep time = Auto.

### 8.3 DEVIATION FROM STANDARD

No deviation.

### 8.4 TEST SETUP



### 8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

### 8.6 TEST RESULTS

Please refer to the APPENDIX H.

## 9 ANTENNA CONDUCTED SPURIOUS EMISSION

### 9.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits.

### 9.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.
- c. Offset=antenna gain+cable loss

### 9.3 DEVIATION FROM STANDARD

No deviation.

### 9.4 TEST SETUP



### 9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

### 9.6 TEST RESULTS

Please refer to the APPENDIX I.

## 10 LIST OF MEASURING EQUIPMENTS

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC330N	980850	2024/9/5	2025/9/4
2	Preamplifier	EMCI	EMC118A45SE	980819	2024/3/6	2025/3/5
3	Pre-Amplifier	EMCI	EMC184045SE	980907	2024/9/4	2025/9/3
4	Preamplifier	EMCI	EMC001340	980579	2024/9/4	2025/9/3
5	Test Cable	EMCI	EMC104-SM-1000	180809	2024/3/8	2025/3/7
6	Test Cable	EMCI	EMC104-SM-SM-3000	220322	2024/3/8	2025/3/7
7	Test Cable	EMCI	EMC104-SM-SM-7000	220324	2024/3/8	2025/3/7
8	EXA Signal Analyzer	keysight	N9020B	MY57120120	2024/2/23	2025/2/22
9	Loop Ant	Electro-Metrics	EMCI-LPA600	291	2024/9/9	2025/9/8
10	Horn Antenna	RFSPIN	DRH18-E	211202A18EN	2024/5/9	2025/5/8
11	Horn Ant	Schwarzbeck	BBHA 9170D	1136	2024/5/17	2025/5/16
12	Log-bicon Antenna	Schwarzbeck	VULB9168	1369	2024/6/14	2025/6/13
13	6dB Attenuator	EMCI	EMCI-N-6-06	AT-06001	2024/6/14	2025/6/13
14	Test Cable	EMCI	EMC101G-KM-K M-3000	220329	2024/3/13	2025/3/12
15	Test Cable	EMCI	EMC102-KM-KM-1000	220327	2024/3/13	2025/3/12
16	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Number of Hopping Frequency						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2024/3/27	2025/3/26

Average Time of Occupancy						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2024/3/27	2025/3/26

Hopping Channel Separation						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2024/3/27	2025/3/26

Bandwidth						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2024/3/27	2025/3/26

<b>Output Power</b>						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Power Meter	Anritsu	ML2495A	1128008	2024/5/11	2025/5/10
2	Power Sensor	Anritsu	MA2411B	1126001	2024/5/11	2025/5/10

<b>Antenna conducted Spurious Emission</b>						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2024/3/27	2025/3/26

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

All calibration period of equipment list is one year.

## **11 EUT TEST PHOTO**

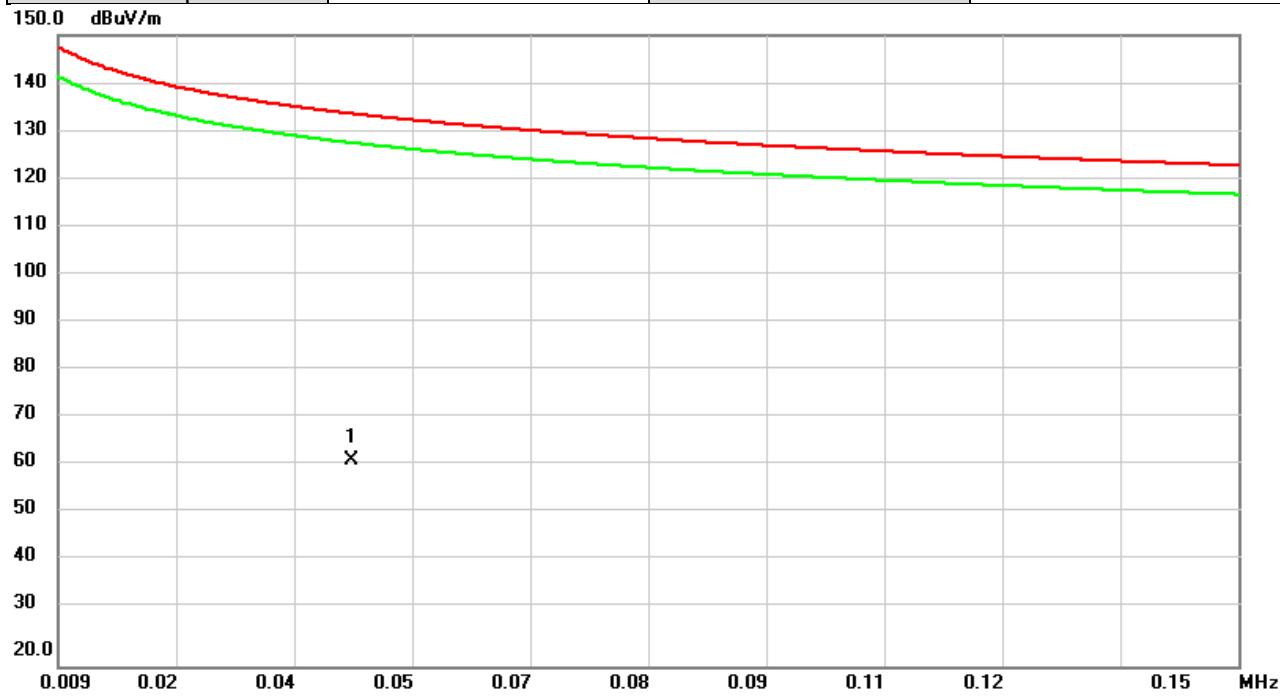
Please refer to document Appendix No.: TP-2409T046-FCCP-1 (APPENDIX-TEST PHOTOS).

## **12 EUT PHOTOS**

Please refer to document Appendix No.: EP-2409T046-1 (APPENDIX-EUT PHOTOS).

**APPENDIX A RADIATED EMISSIONS - 9 KHZ TO 30 MHZ**

Test Mode	BT (3 Mbps)	Test Date	2024/11/5
Test Frequency	2402MHz	Polarization	Vertical
Temp	21°C	Hum.	57%

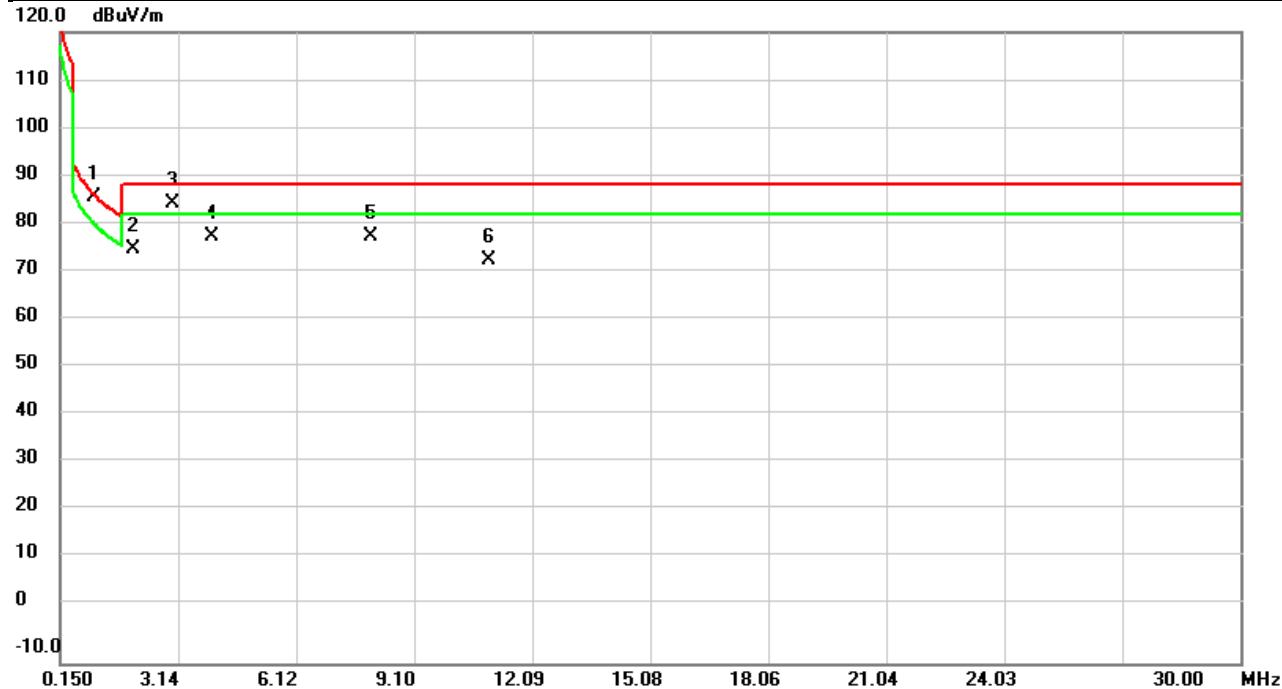


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	*	0.0441	37.70	24.77	62.47	133.80	-71.33

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/11/5
Test Frequency	2402MHz	Polarization	Vertical
Temp	21°C	Hum.	57%

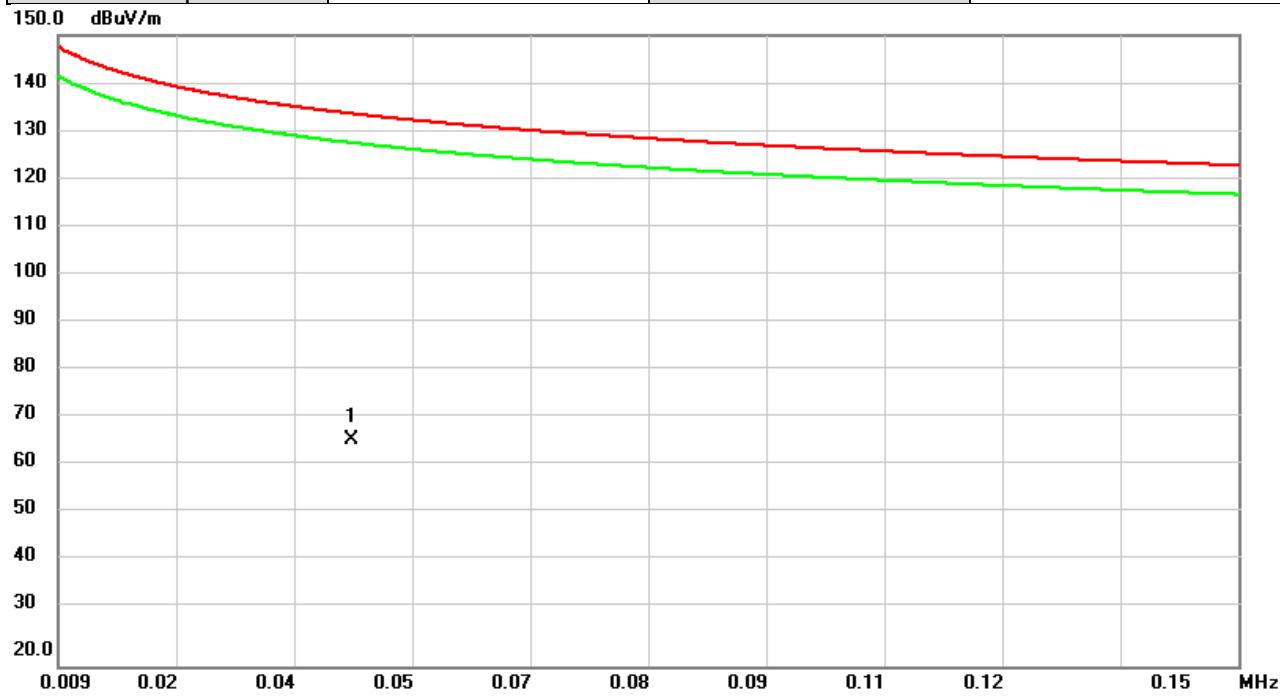


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.9997	85.72	0.22	85.94	86.68	-0.74	QP	
2		1.9997	76.98	-1.77	75.21	88.62	-13.41	QP	
3	!	2.9996	88.66	-3.77	84.89	88.62	-3.73	QP	
4		3.9996	82.08	-4.08	78.00	88.62	-10.62	QP	
5		8.0004	81.46	-3.57	77.89	88.62	-10.73	QP	
6		11.0004	76.07	-3.11	72.96	88.62	-15.66	QP	

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/11/5
Test Frequency	2402MHz	Polarization	Horizontal
Temp	21°C	Hum.	57%

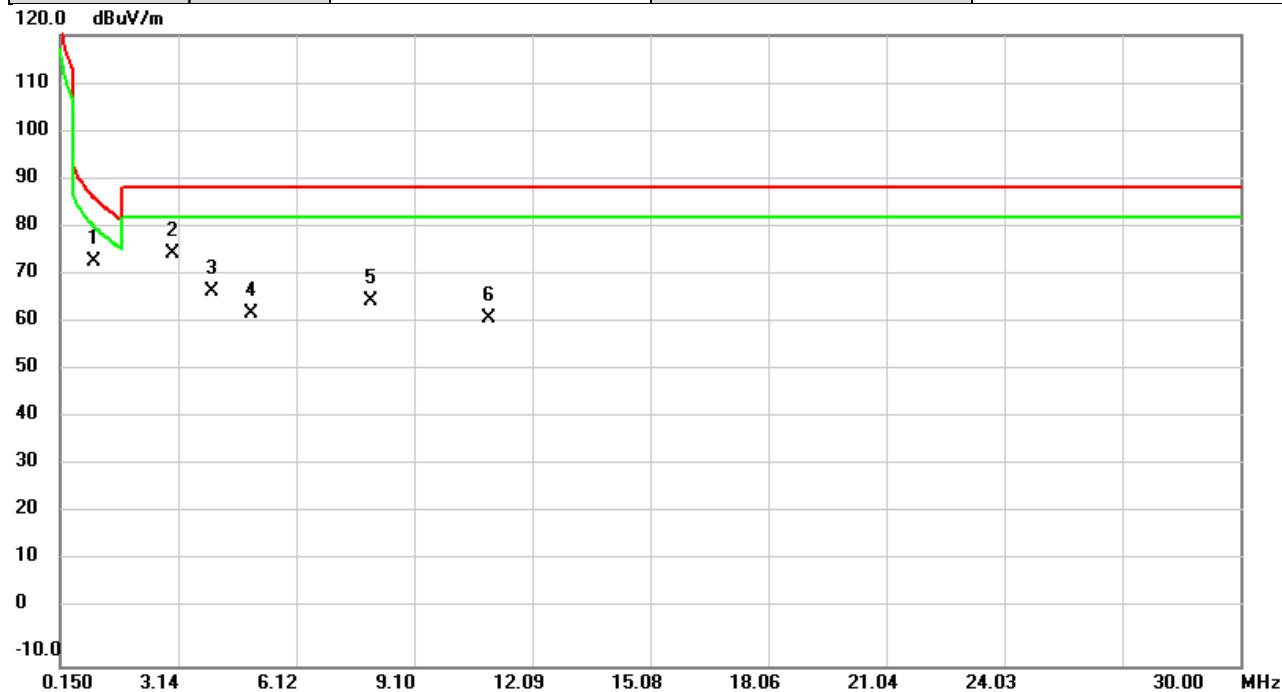


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	*	0.0441	41.88	24.77	66.65	133.80	-67.15

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/11/5
Test Frequency	2402MHz	Polarization	Horizontal
Temp	21°C	Hum.	57%



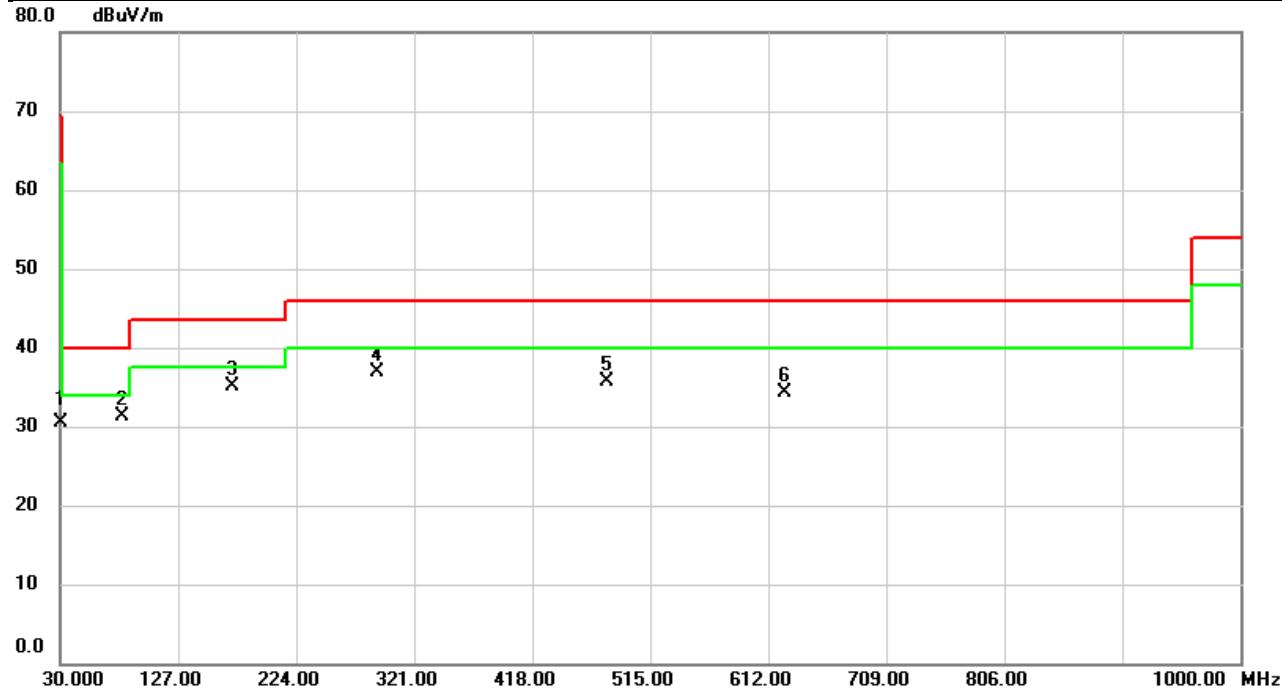
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.9997	72.99	0.22	73.21	86.68	-13.47	QP	
2		2.9996	78.71	-3.77	74.94	88.62	-13.68	QP	
3		3.9996	71.41	-4.08	67.33	88.62	-21.29	QP	
4		4.9995	66.95	-4.40	62.55	88.62	-26.07	QP	
5		8.0004	68.71	-3.57	65.14	88.62	-23.48	QP	
6		11.0004	64.76	-3.11	61.65	88.62	-26.97	QP	

## 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	BT (3 Mbps)	Test Date	2024/11/4
Test Frequency	2402MHz	Polarization	Vertical
Temp	22°C	Hum.	62%

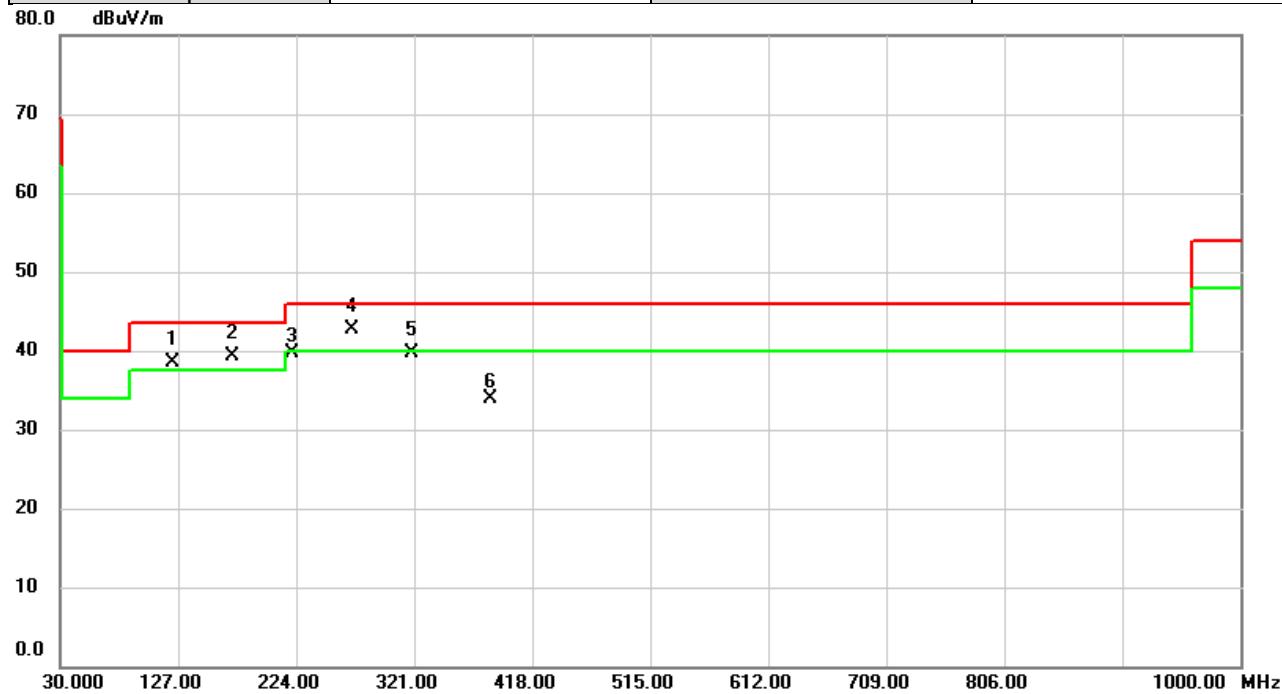


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		30.0000	44.00	-13.43	30.57	40.00	-9.43	QP	
2		81.3777	48.47	-17.10	31.37	40.00	-8.63	peak	
3	*	172.0403	47.86	-12.73	35.13	43.50	-8.37	peak	
4		290.6390	48.50	-11.65	36.85	46.00	-9.15	peak	
5		480.0477	42.58	-6.91	35.67	46.00	-10.33	peak	
6		624.9980	38.15	-3.83	34.32	46.00	-11.68	peak	

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/11/4
Test Frequency	2402MHz	Polarization	Horizontal
Temp	22°C	Hum.	62%



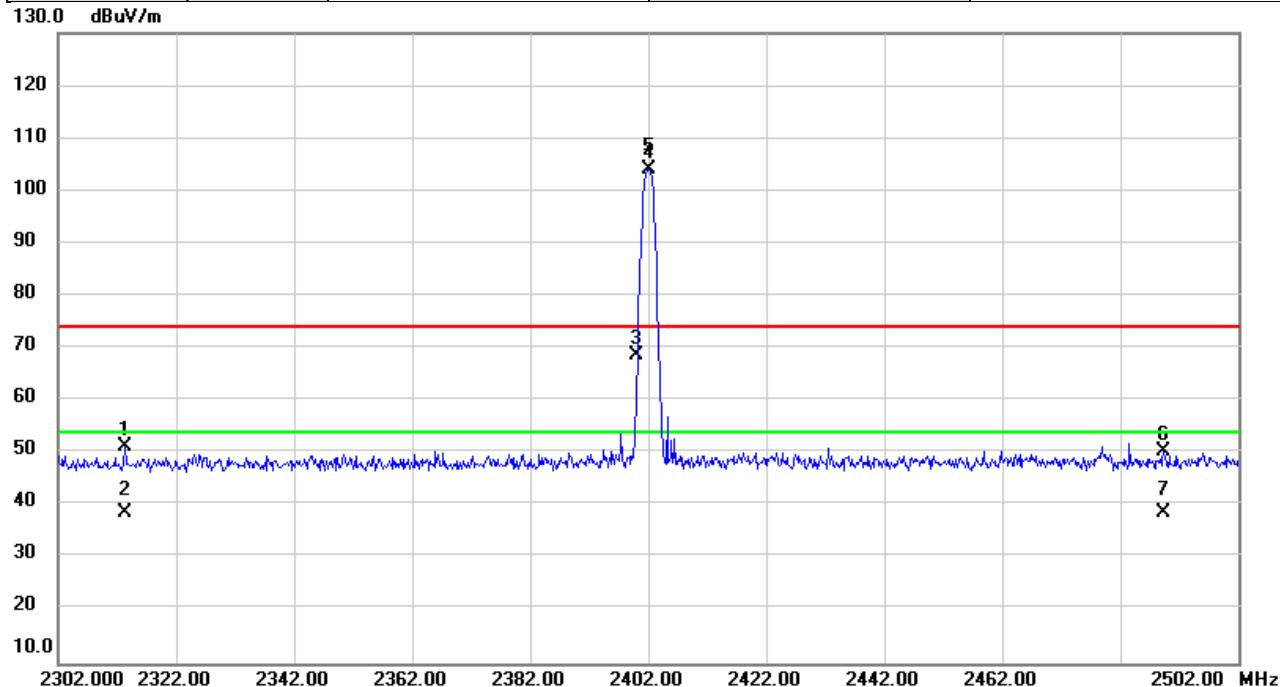
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector Comment
1	!	122.8936	52.63	-14.18	38.45	43.50	-5.05	QP
2	!	172.0403	52.13	-12.73	39.40	43.50	-4.10	QP
3		221.2193	54.96	-15.34	39.62	46.00	-6.38	peak
4	*	270.3336	55.23	-12.44	42.79	46.00	-3.21	QP
5		318.5426	50.65	-11.04	39.61	46.00	-6.39	QP
6		383.9206	43.24	-9.43	33.81	46.00	-12.19	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	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2402MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

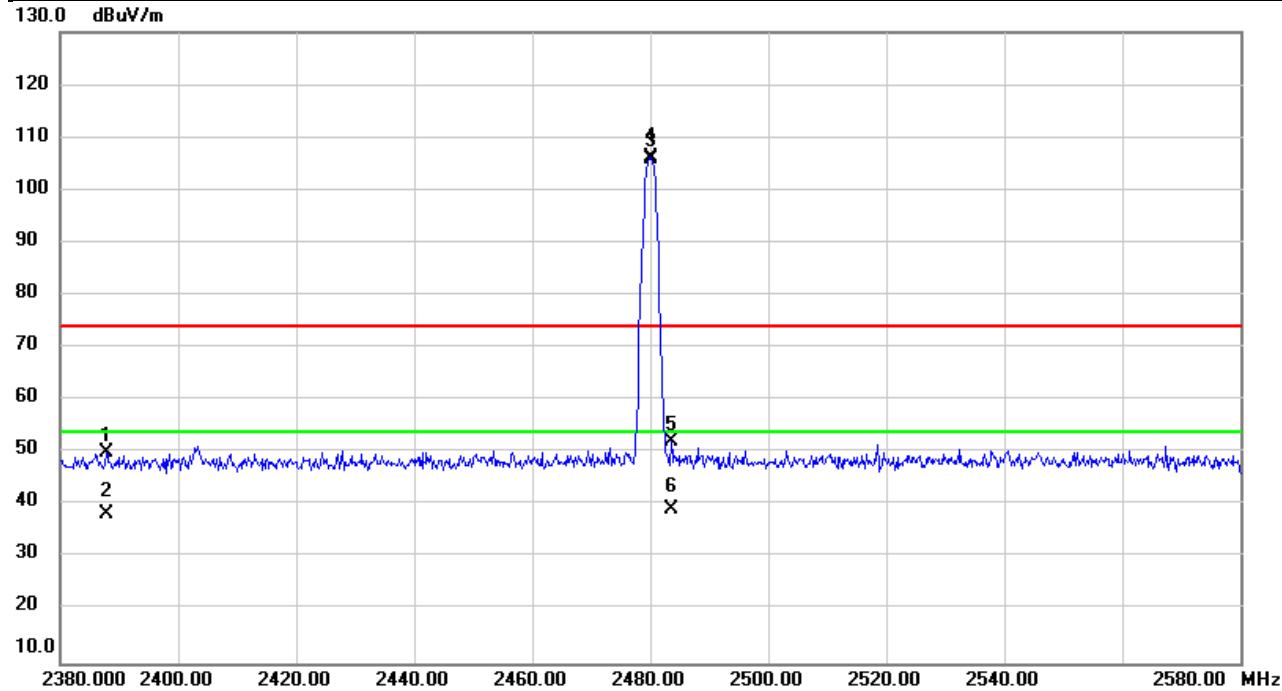


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector Comment
1		2313.340	56.45	-5.11	51.34	74.00	-22.66	peak
2		2313.340	43.69	-5.11	38.58	54.00	-15.42	AVG
3		2400.000	73.65	-4.99	68.66	74.00	-5.34	peak NoLimit
4	X	2402.000	109.19	-5.00	104.19	74.00	30.19	peak NoLimit
5	*	2402.000	108.92	-5.00	103.92	54.00	49.92	AVG NoLimit
6		2489.260	55.24	-4.88	50.36	74.00	-23.64	peak
7		2489.260	43.39	-4.88	38.51	54.00	-15.49	AVG

## REMARKS:

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2480MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

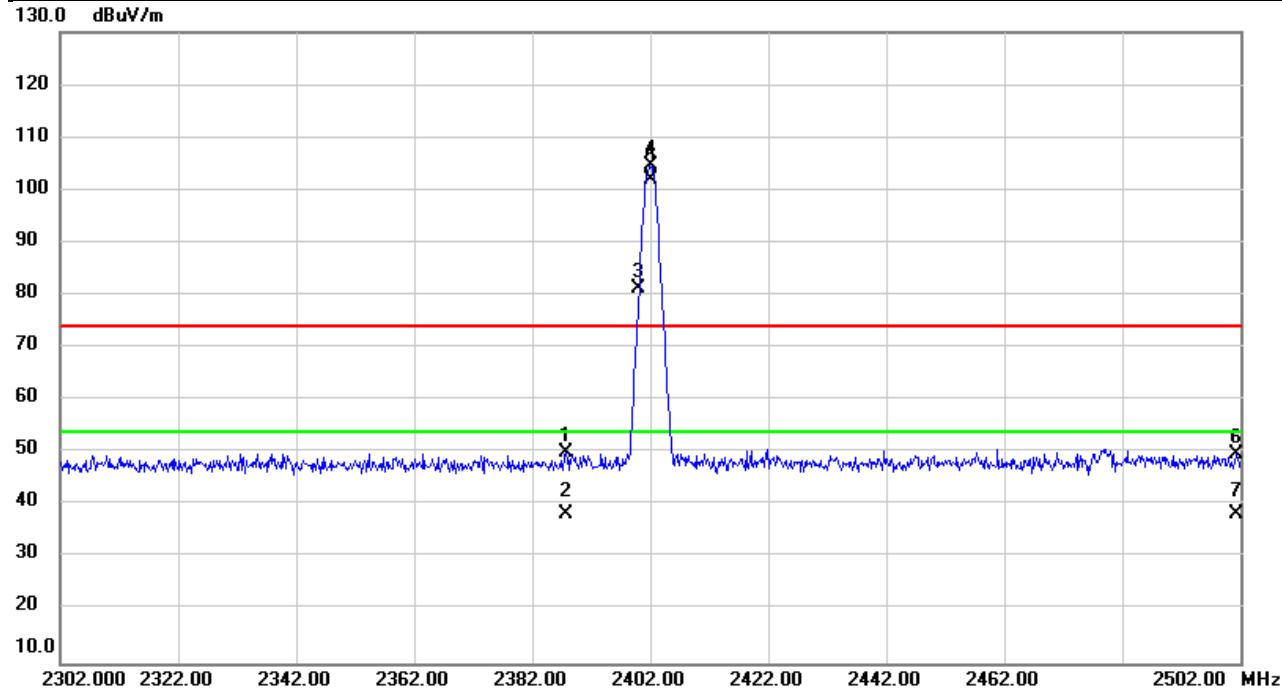


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2387.993	54.99	-5.01	49.98	74.00	-24.02	peak	
2		2387.993	43.22	-5.01	38.21	54.00	-15.79	AVG	
3	X	2480.000	111.18	-4.89	106.29	74.00	32.29	peak	NoLimit
4	*	2480.000	110.85	-4.89	105.96	54.00	51.96	AVG	NoLimit
5		2483.540	57.07	-4.87	52.20	74.00	-21.80	peak	
6		2483.540	43.99	-4.87	39.12	54.00	-14.88	AVG	

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2402MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

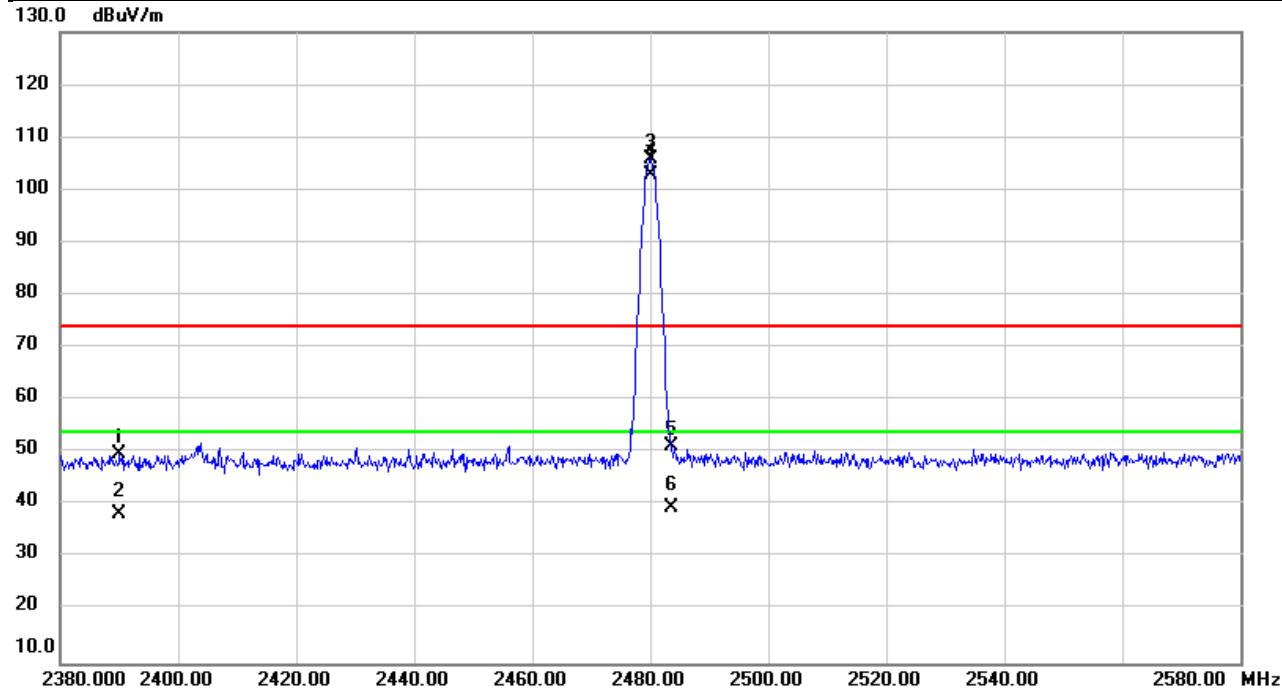


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
							Detector	Comment
1		2387.727	55.07	-5.01	50.06	74.00	-23.94	peak
2		2387.727	43.41	-5.01	38.40	54.00	-15.60	AVG
3	X	2400.000	86.13	-4.99	81.14	74.00	7.14	peak NoLimit
4	X	2402.000	109.64	-5.00	104.64	74.00	30.64	peak NoLimit
5	*	2402.000	106.97	-5.00	101.97	54.00	47.97	AVG NoLimit
6		2501.353	54.57	-4.86	49.71	74.00	-24.29	peak
7		2501.353	43.36	-4.86	38.50	54.00	-15.50	AVG

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2480MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

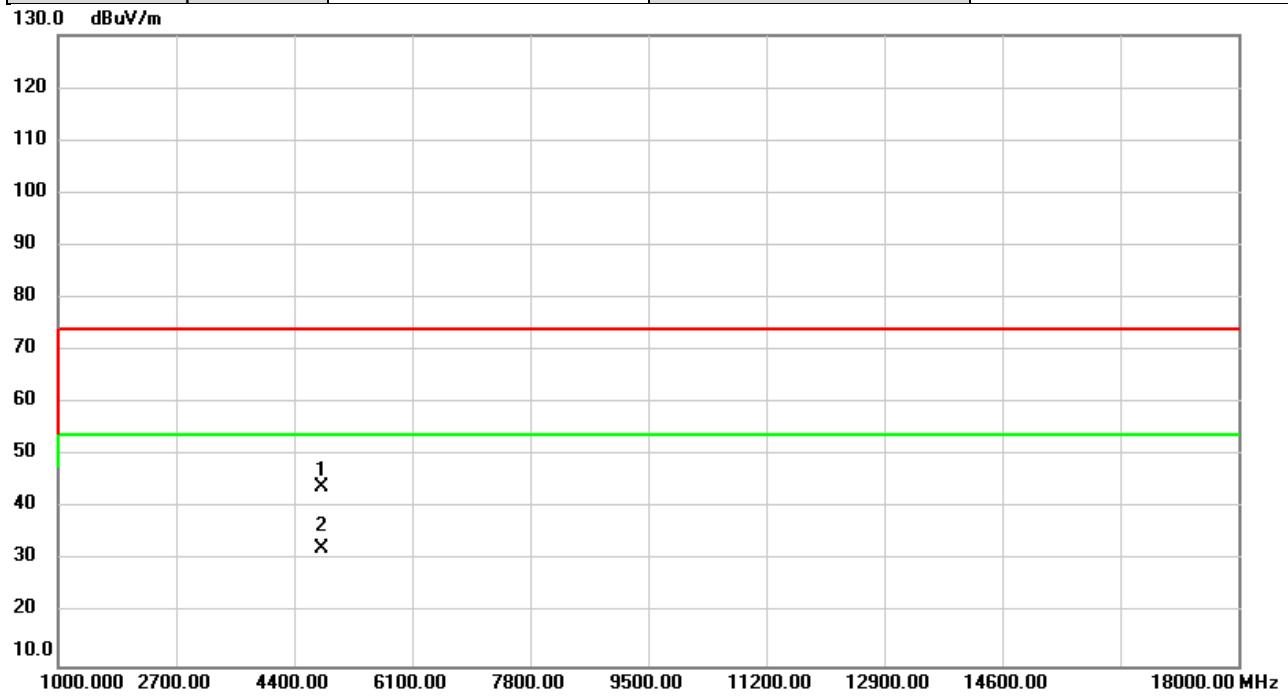


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level						
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2390.000	54.85	-5.01	49.84	74.00	-24.16	peak	
2		2390.000	43.24	-5.01	38.23	54.00	-15.77	AVG	
3	X	2480.000	110.65	-4.89	105.76	74.00	31.76	peak	NoLimit
4	*	2480.000	107.70	-4.89	102.81	54.00	48.81	AVG	NoLimit
5		2483.673	56.15	-4.87	51.28	74.00	-22.72	peak	
6		2483.673	44.50	-4.87	39.63	54.00	-14.37	AVG	

## REMARKS:

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2402MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

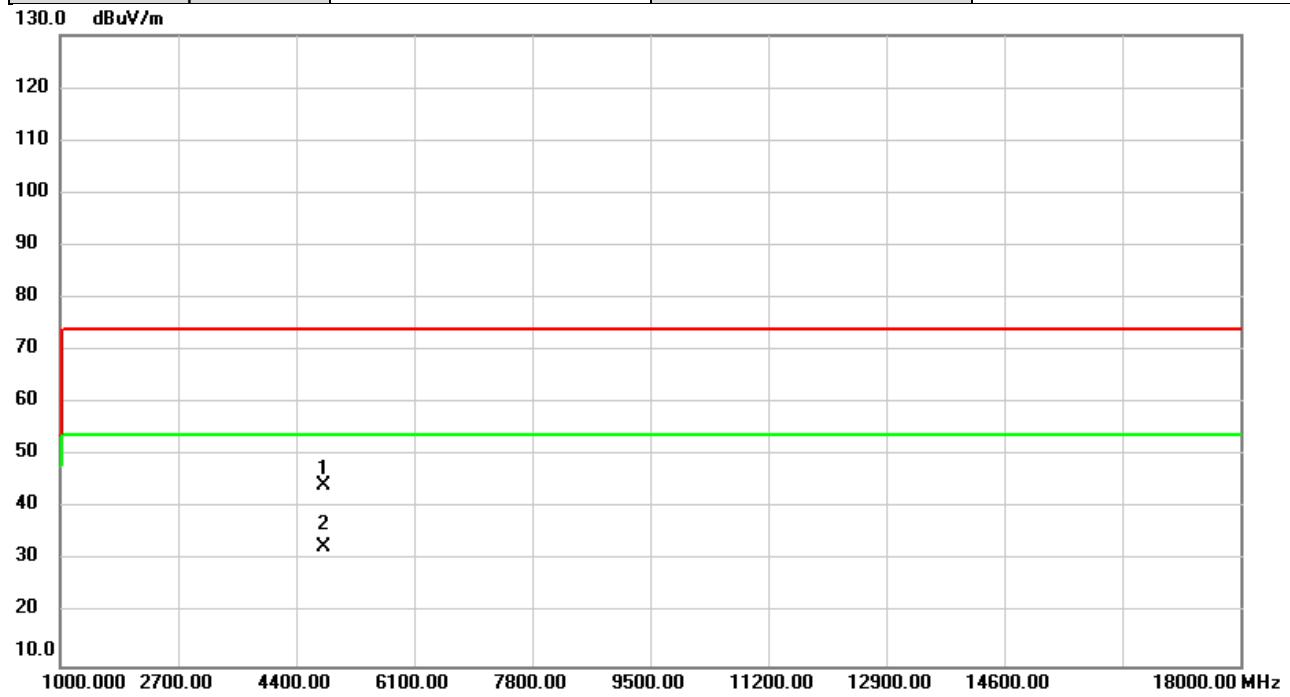


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
			Level	Factor	ment	dBuV/m	dBuV/m	dB
1		4804.000	43.18	0.88	44.06	74.00	-29.94	peak
2	*	4804.000	31.60	0.88	32.48	54.00	-21.52	AVG

**REMARKS:**

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2402MHz	Polarization	Horizontal
Temp	21°C	Hum.	51%

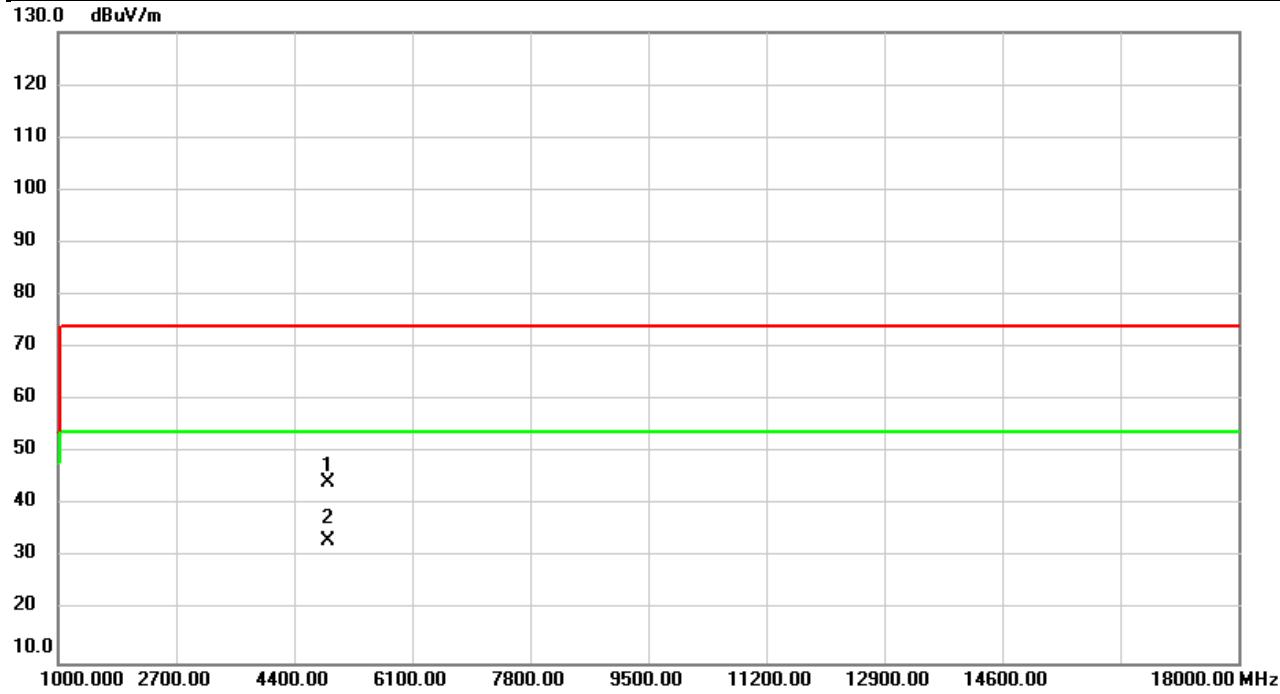


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4804.000	43.51	0.88	44.39	74.00	-29.61	peak
2	*	4804.000	31.77	0.88	32.65	54.00	-21.35	AVG

## REMARKS:

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2441MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

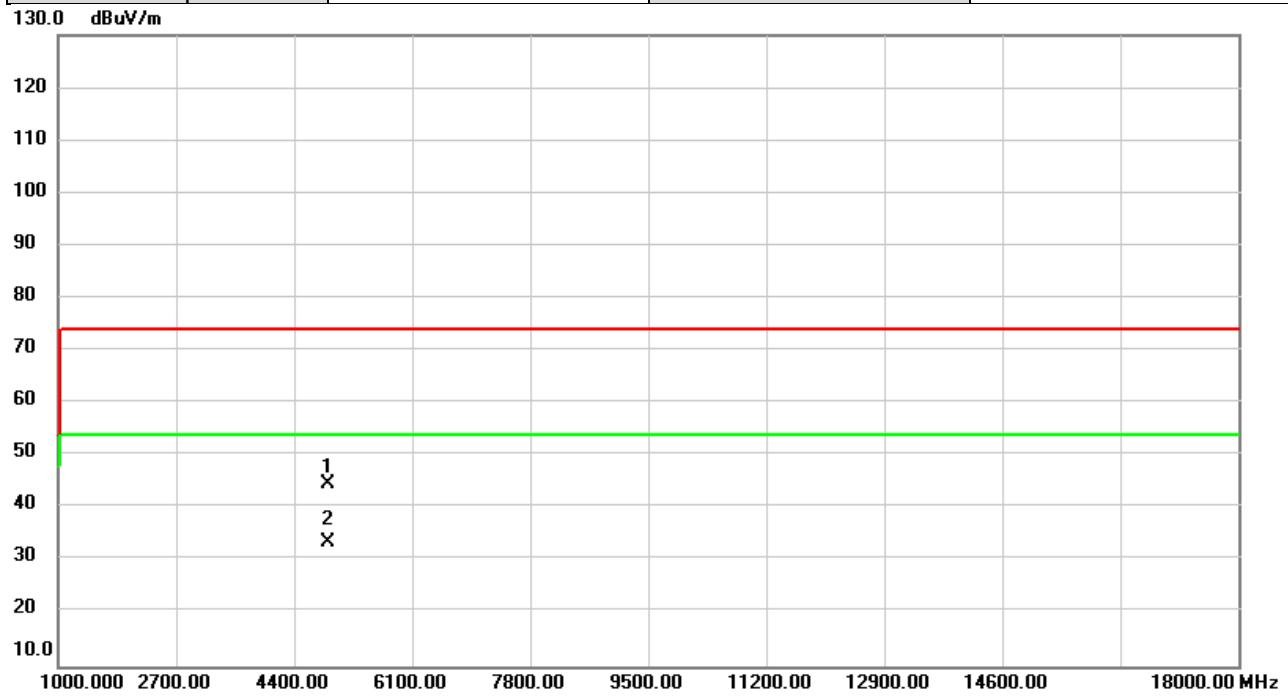


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4882.000	43.27	1.04	44.31	74.00	-29.69	peak
2	*	4882.000	32.15	1.04	33.19	54.00	-20.81	AVG

**REMARKS:**

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2441MHz	Polarization	Horizontal
Temp	21°C	Hum.	51%

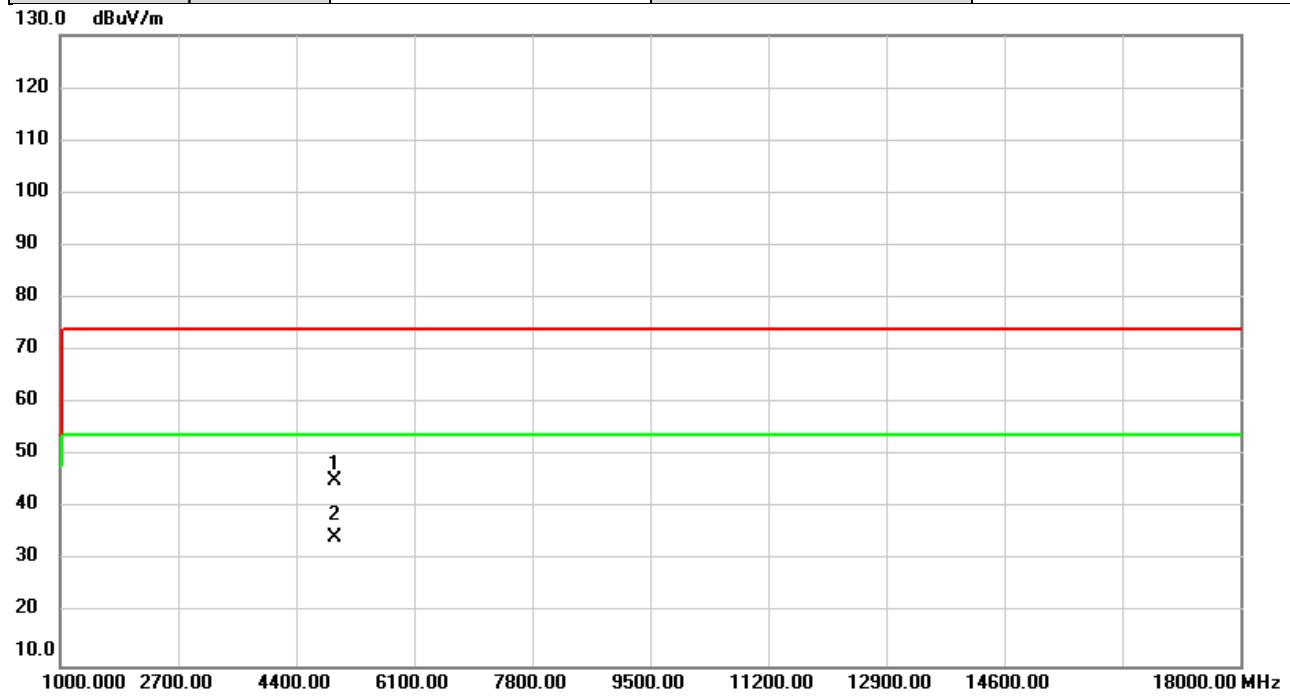


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4882.000	43.62	1.04	44.66	74.00	-29.34	peak
2	*	4882.000	32.58	1.04	33.62	54.00	-20.38	AVG

**REMARKS:**

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2480MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

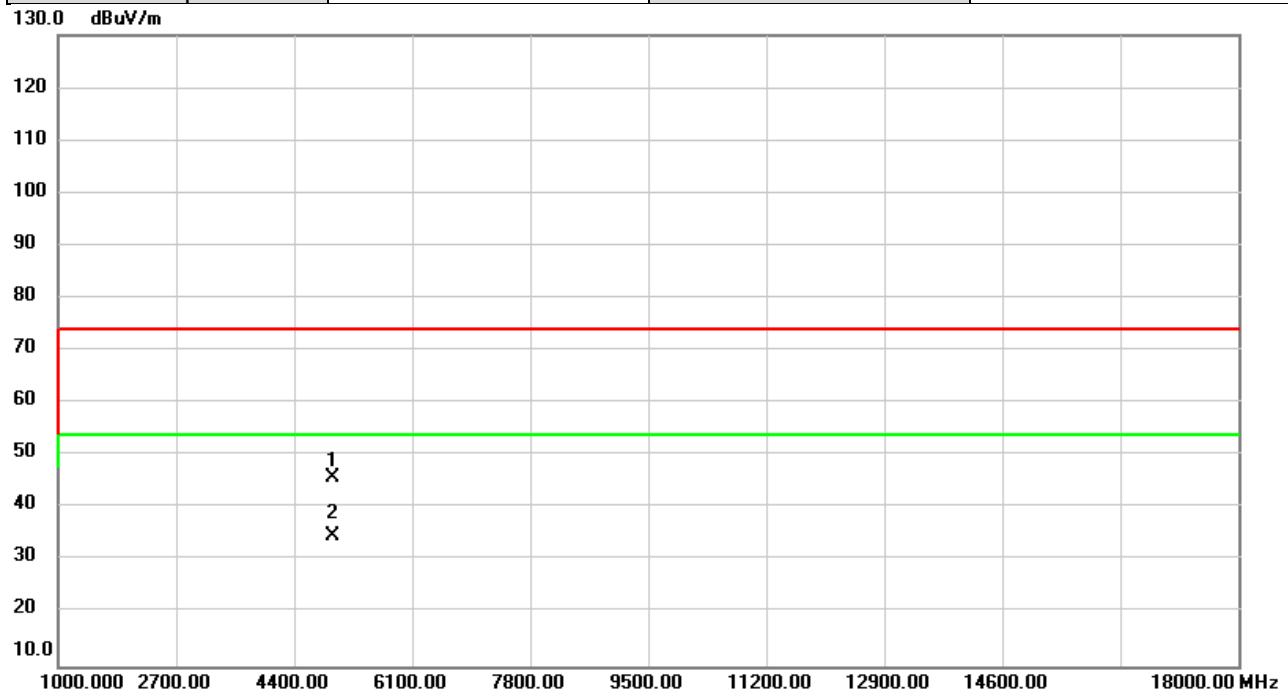


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4960.000	44.08	1.21	45.29	74.00	-28.71	peak
2	*	4960.000	33.23	1.21	34.44	54.00	-19.56	AVG

## REMARKS:

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

Test Mode	BT (1 Mbps)	Test Date	2024/10/28
Test Frequency	2480MHz	Polarization	Horizontal
Temp	21°C	Hum.	51%

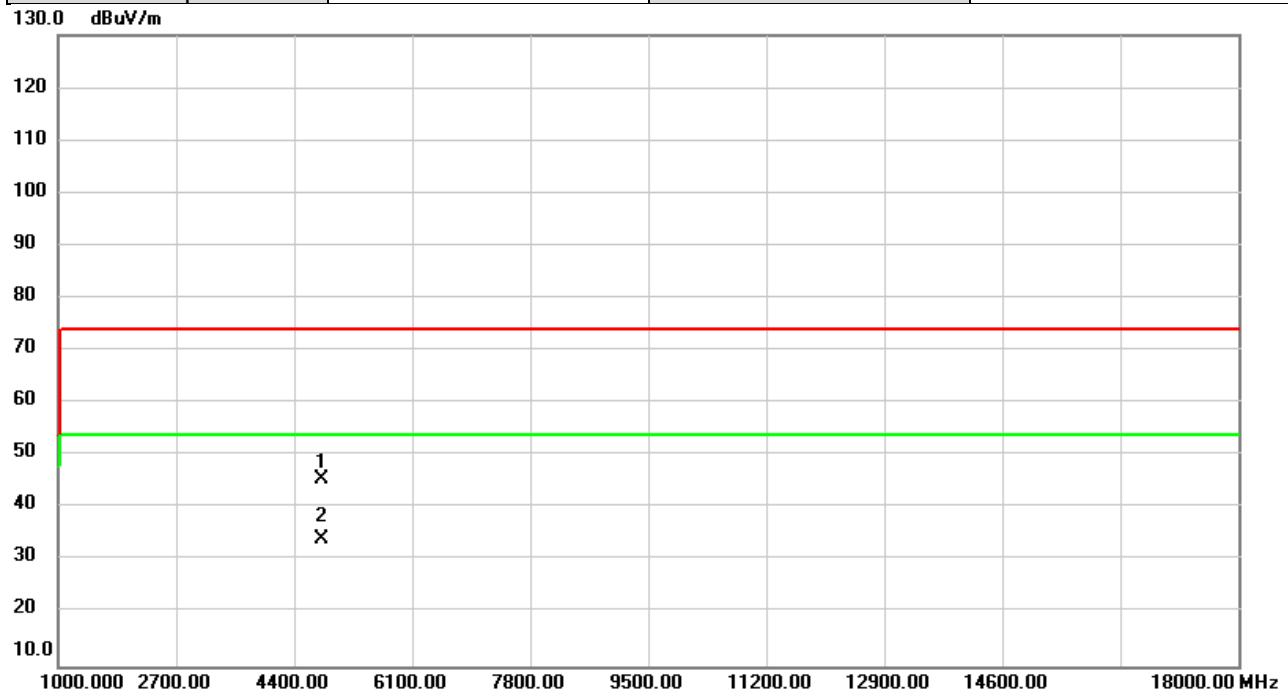


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4960.000	44.73	1.21	45.94	74.00	-28.06	peak
2	*	4960.000	33.56	1.21	34.77	54.00	-19.23	AVG

**REMARKS:**

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2402MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

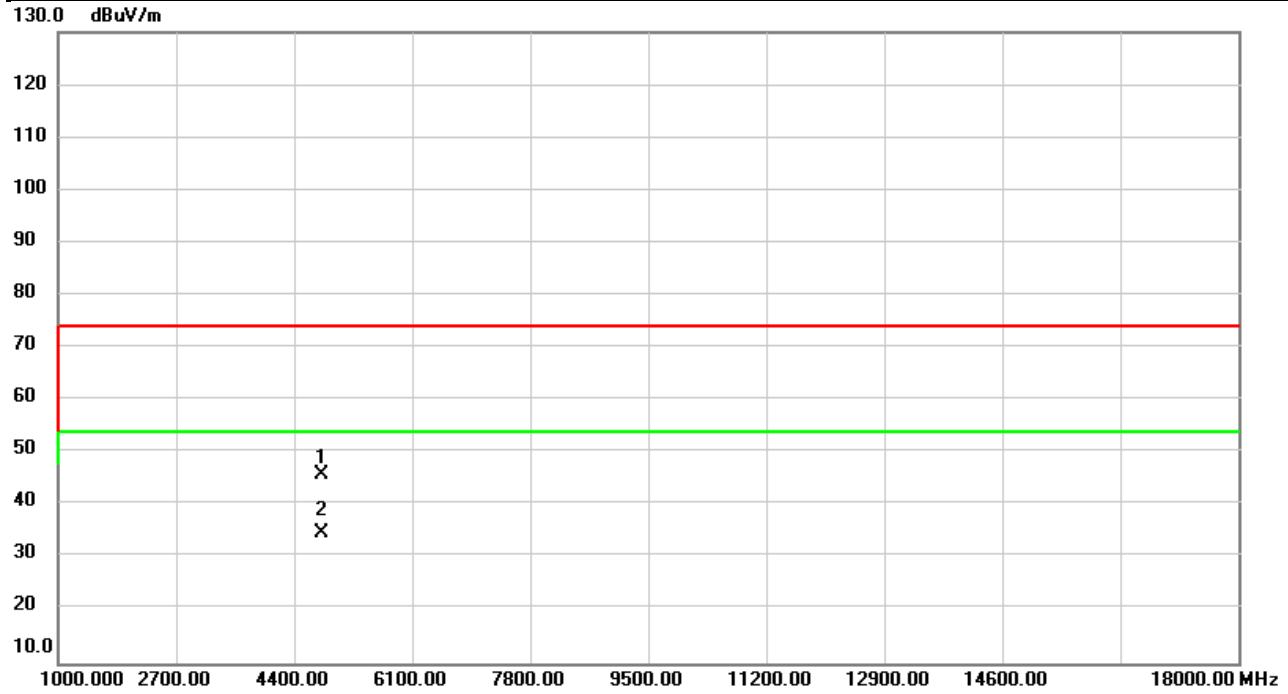


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4804.000	44.53	0.88	45.41	74.00	-28.59	peak
2	*	4804.000	33.13	0.88	34.01	54.00	-19.99	AVG

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2402MHz	Polarization	Horizontal
Temp	21°C	Hum.	51%

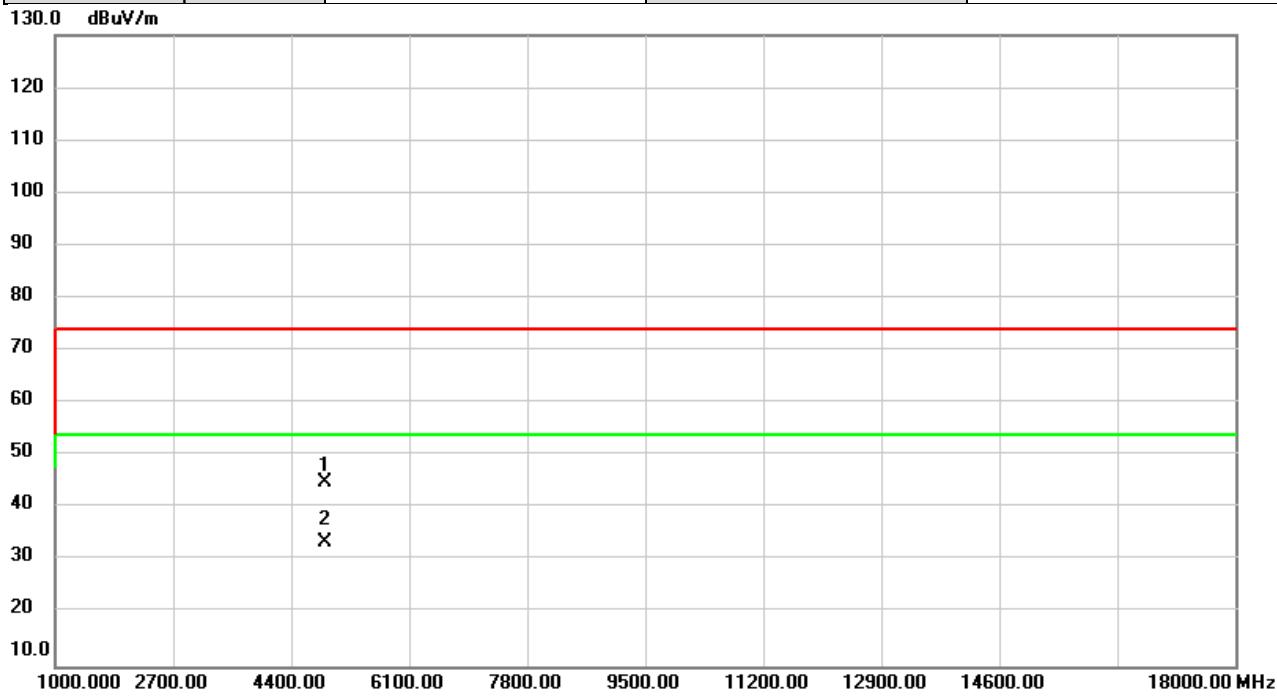


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment	dBuV/m	dBuV/m	dB	Detector
1		4804.000	45.10	0.88	45.98	74.00	-28.02	peak	
2	*	4804.000	34.02	0.88	34.90	54.00	-19.10	AVG	

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2441MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

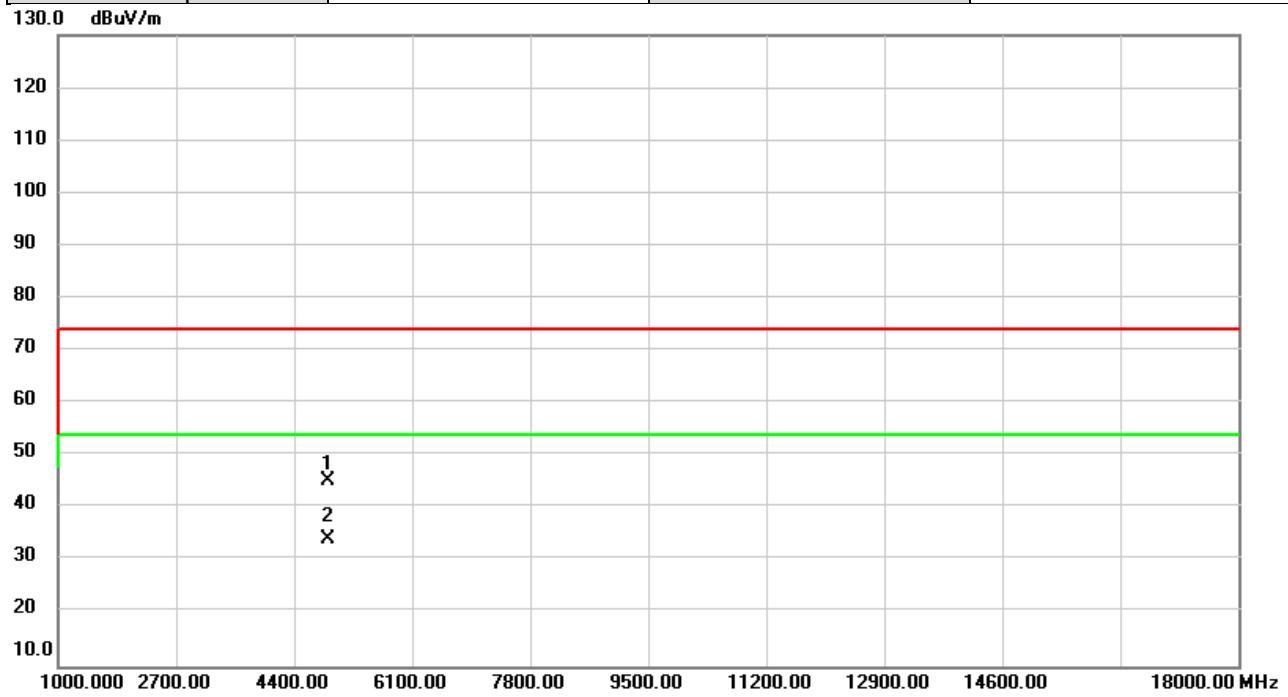


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4882.000	43.96	1.04	45.00	74.00	-29.00	peak
2	*	4882.000	32.57	1.04	33.61	54.00	-20.39	AVG

**REMARKS:**

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2441MHz	Polarization	Horizontal
Temp	21°C	Hum.	51%

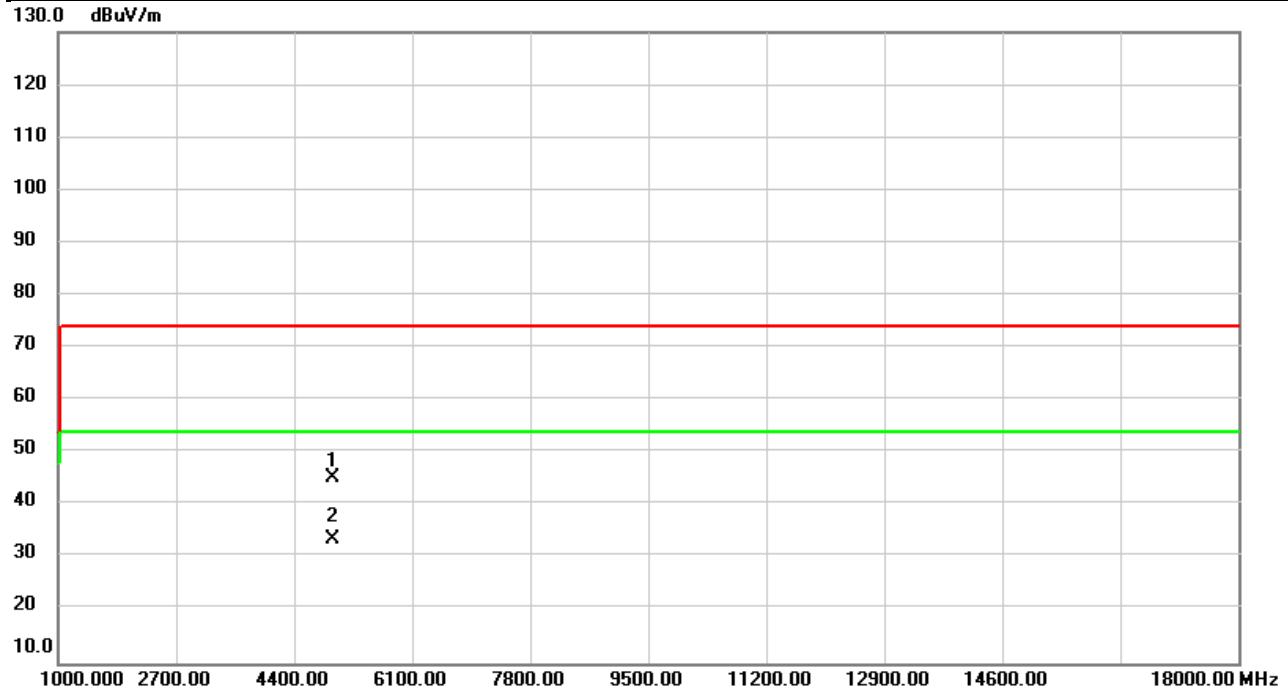


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4882.000	44.26	1.04	45.30	74.00	-28.70	peak
2	*	4882.000	33.18	1.04	34.22	54.00	-19.78	AVG

**REMARKS:**

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2480MHz	Polarization	Vertical
Temp	21°C	Hum.	51%

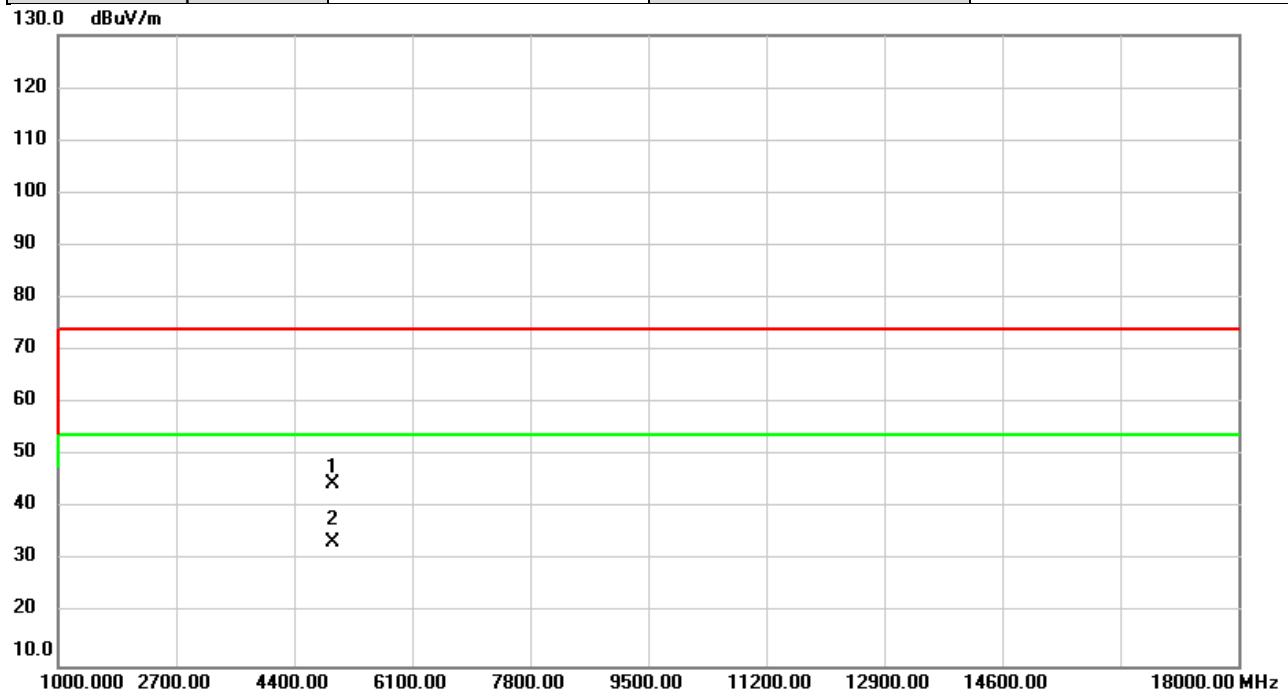


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector
1		4960.000	43.95	1.21	45.16	74.00	-28.84 peak
2	*	4960.000	32.41	1.21	33.62	54.00	-20.38 AVG

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/10/28
Test Frequency	2480MHz	Polarization	Horizontal
Temp	21°C	Hum.	51%

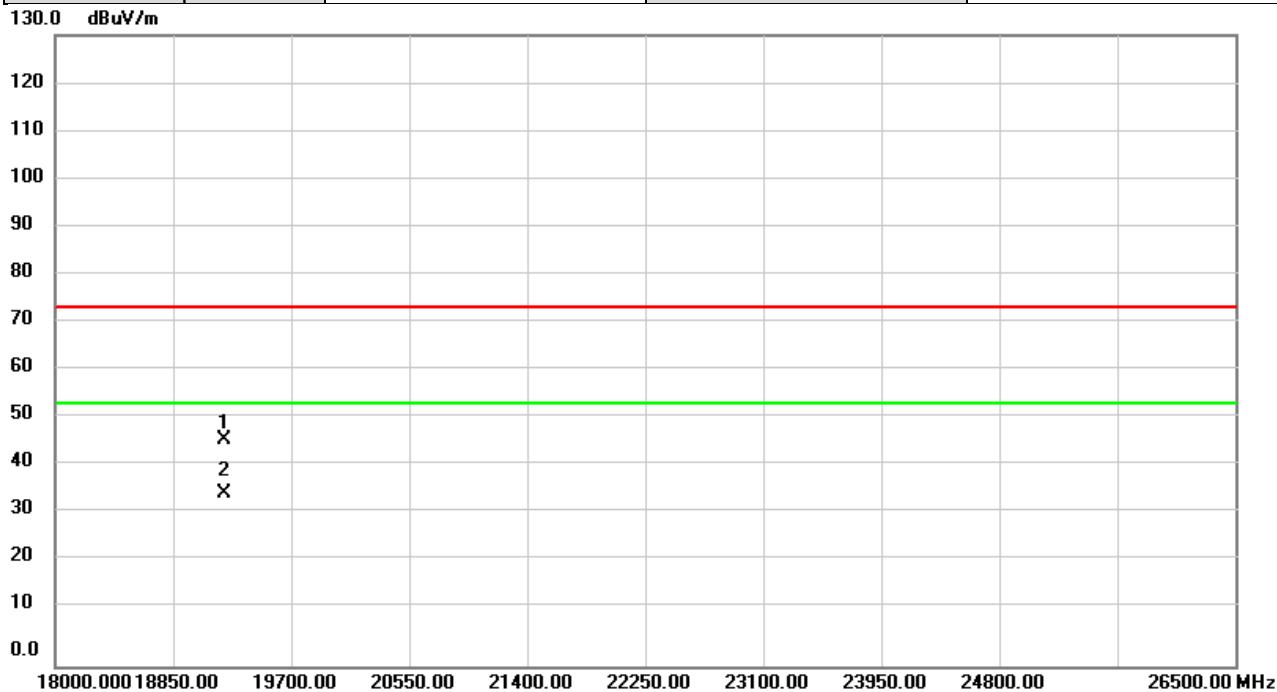


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	Detector	Comment
1		4960.000	43.58	1.21	44.79	74.00	-29.21	peak
2	*	4960.000	32.43	1.21	33.64	54.00	-20.36	AVG

**REMARKS:**

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

Test Mode	BT (3 Mbps)	Test Date	2024/11/1
Test Frequency	2402MHz	Polarization	Vertical
Temp	23°C	Hum.	66%

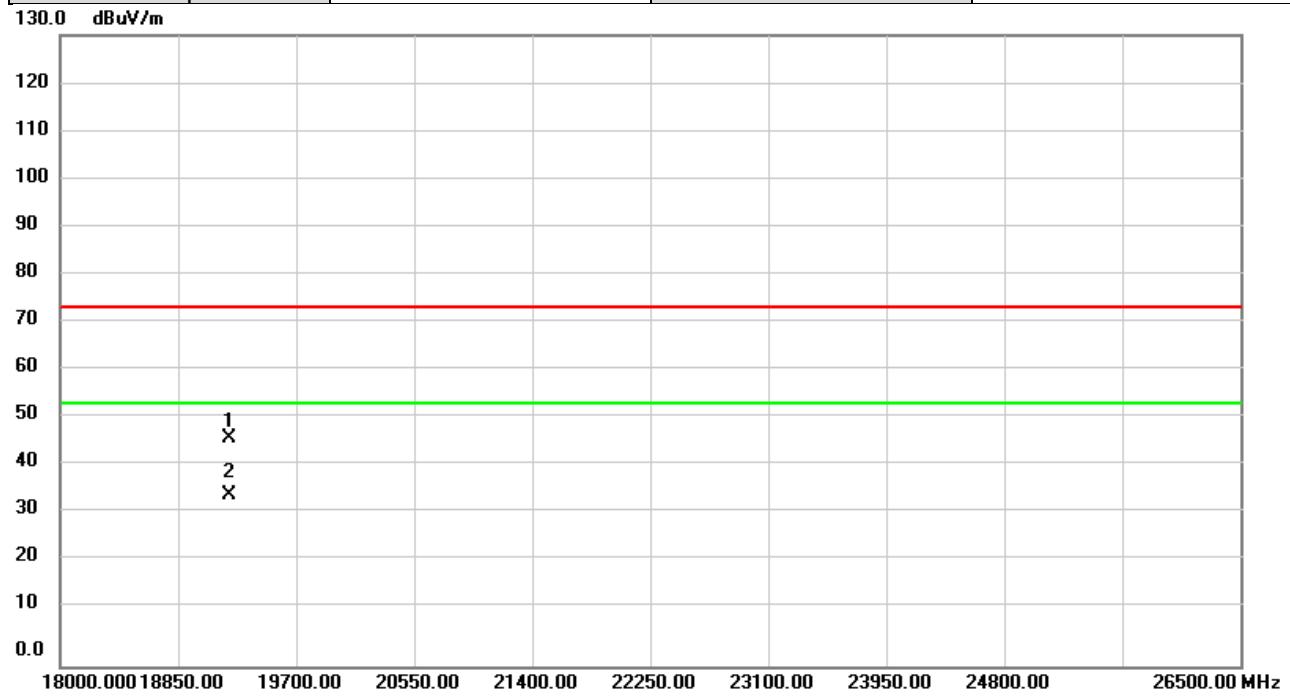


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19216.00	53.64	-6.88	46.76	74.00	-27.24	peak	
2	*	19216.00	42.32	-6.88	35.44	54.00	-18.56	AVG	

## REMARKS:

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

Test Mode	BT (3 Mbps)	Test Date	2024/11/1
Test Frequency	2402MHz	Polarization	Horizontal
Temp	23°C	Hum.	66%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19216.00	53.77	-6.88	46.89	74.00	-27.11	peak	
2	*	19216.00	42.14	-6.88	35.26	54.00	-18.74	AVG	

## REMARKS:

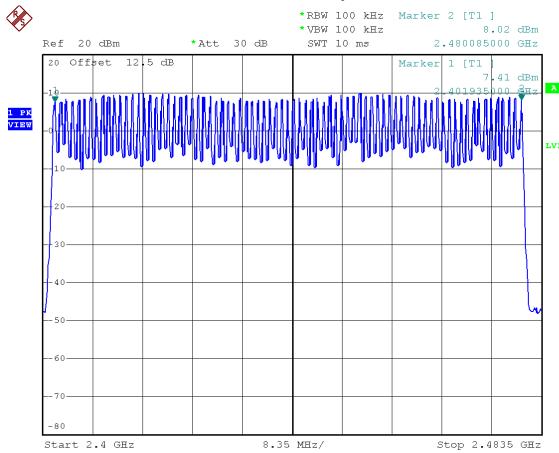
(1) Measurement Value = Reading Level + Correct Factor.  
 (2) Margin Level = Measurement Value - Limit Value.

**APPENDIX D NUMBER OF HOPPING CHANNEL**

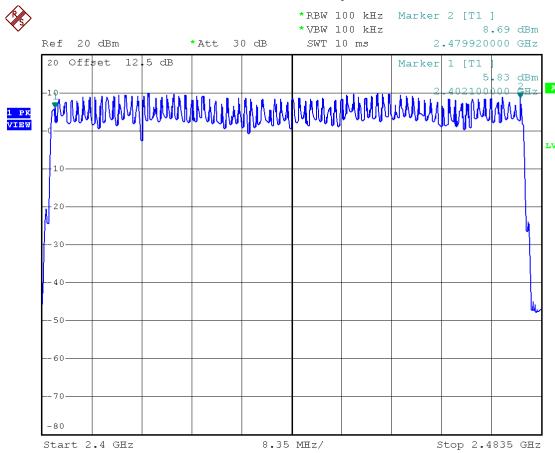
Test Mode	1/3Mbps
-----------	---------

Test Mode	Number of Hopping Channel	≥ Limit	Test Result
1 Mbps	79	15	Pass
3 Mbps	79	15	Pass

## 1 Mbps



## 3 Mbps



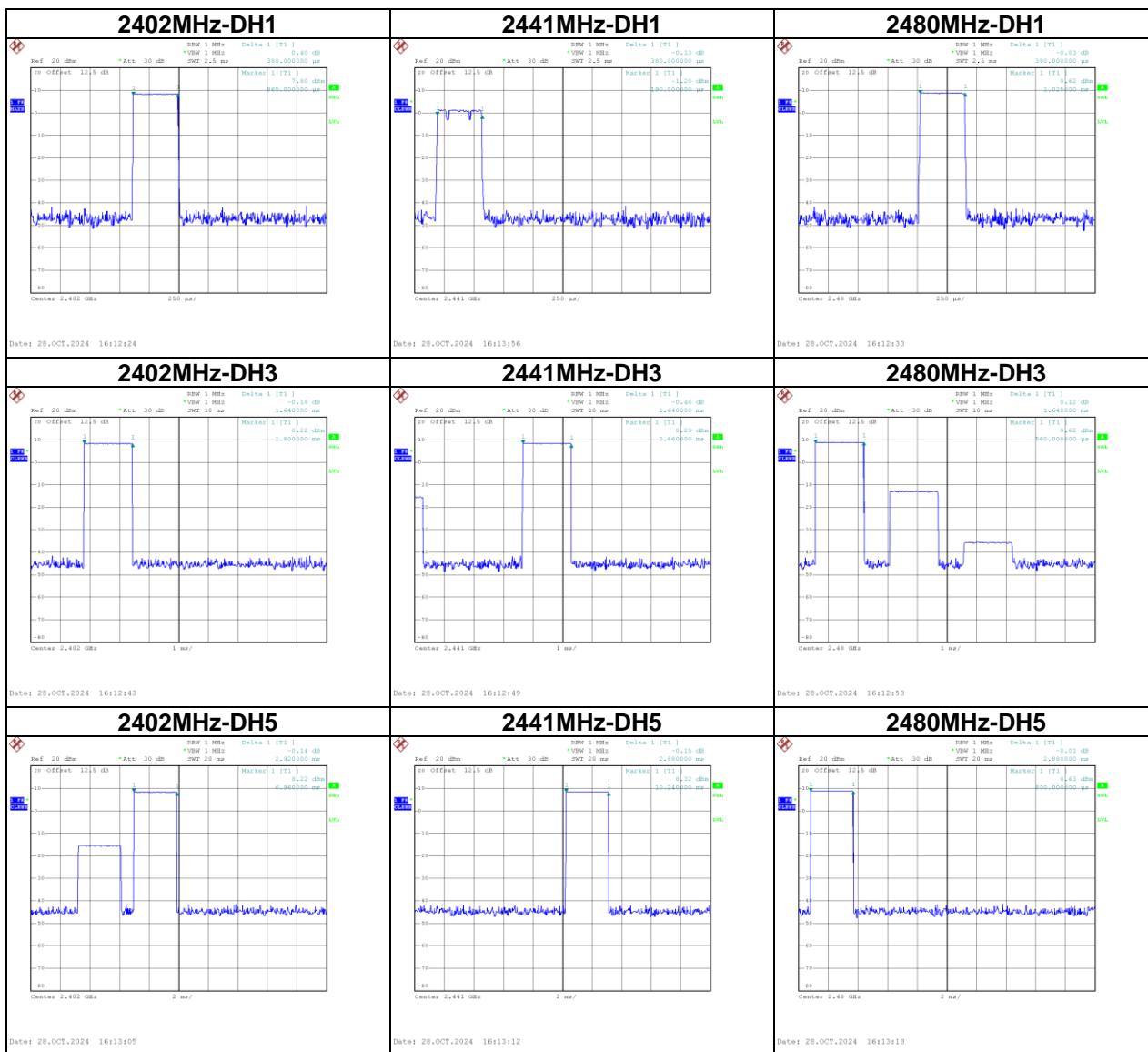
Date: 28.OCT.2024 16:08:53

Date: 28.OCT.2024 16:25:22

## APPENDIX E AVERAGE TIME OF OCCUPANCY

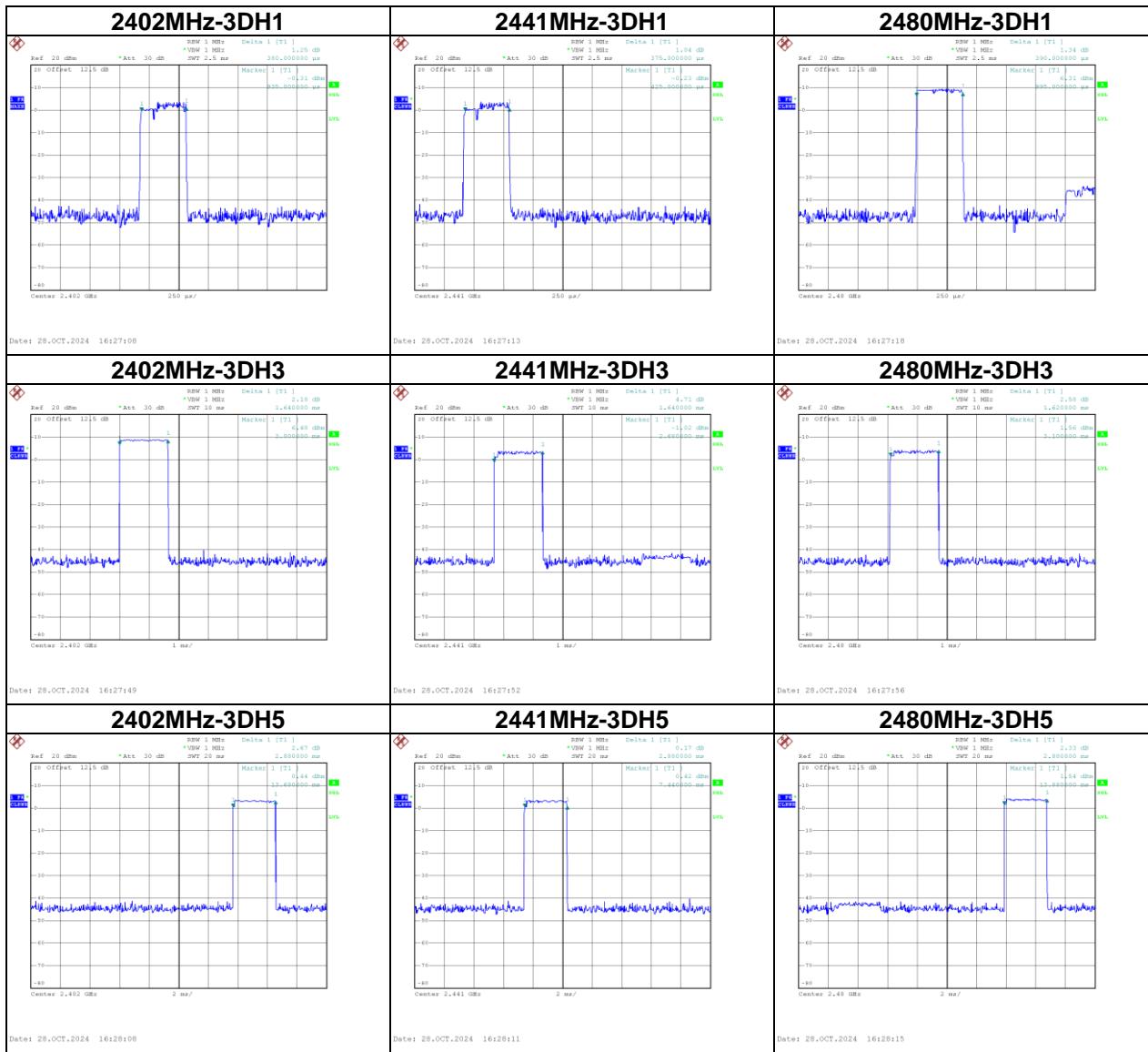
Test Mode :	1Mbps
-------------	-------

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402	2.9200	0.3115	0.4000	Pass
DH3	2402	1.6400	0.2624	0.4000	Pass
DH1	2402	0.3800	0.1216	0.4000	Pass
DH5	2441	2.8800	0.3072	0.4000	Pass
DH3	2441	1.6400	0.2624	0.4000	Pass
DH1	2441	0.3800	0.1216	0.4000	Pass
DH5	2480	2.8800	0.3072	0.4000	Pass
DH3	2480	1.6400	0.2624	0.4000	Pass
DH1	2480	0.3800	0.1216	0.4000	Pass



Test Mode :	3Mbps
-------------	-------

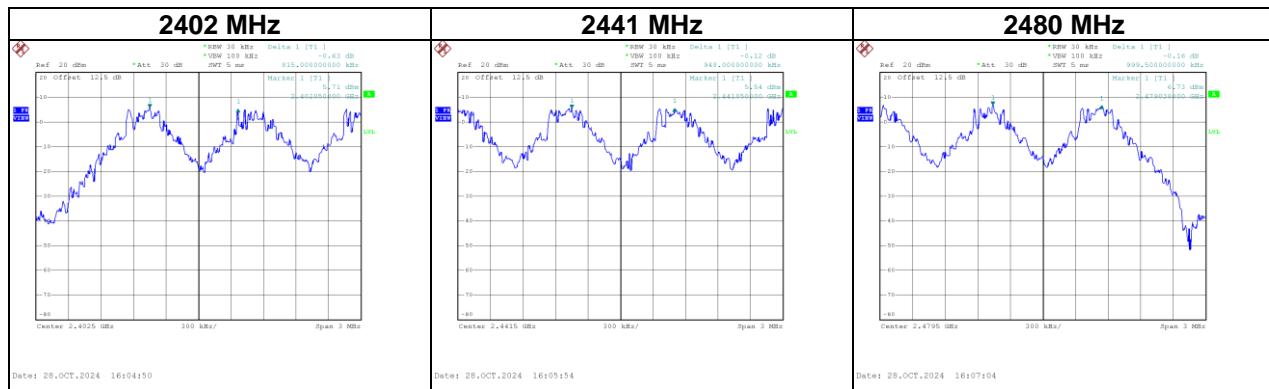
Data Packet	Frequency	Pulse Duration(ms)	Dwell Time(s)	Limits(s)	Test Result
3DH5	2402	2.8800	0.3072	0.4000	Pass
3DH3	2402	1.6400	0.2624	0.4000	Pass
3DH1	2402	0.3800	0.1216	0.4000	Pass
3DH5	2441	2.8800	0.3072	0.4000	Pass
3DH3	2441	1.6400	0.2624	0.4000	Pass
3DH1	2441	0.3750	0.1200	0.4000	Pass
3DH5	2480	2.8800	0.3072	0.4000	Pass
3DH3	2480	1.6200	0.2592	0.4000	Pass
3DH1	2480	0.3900	0.1248	0.4000	Pass



**APPENDIX F HOPPING CHANNEL SEPARATION MEASUREMENT**

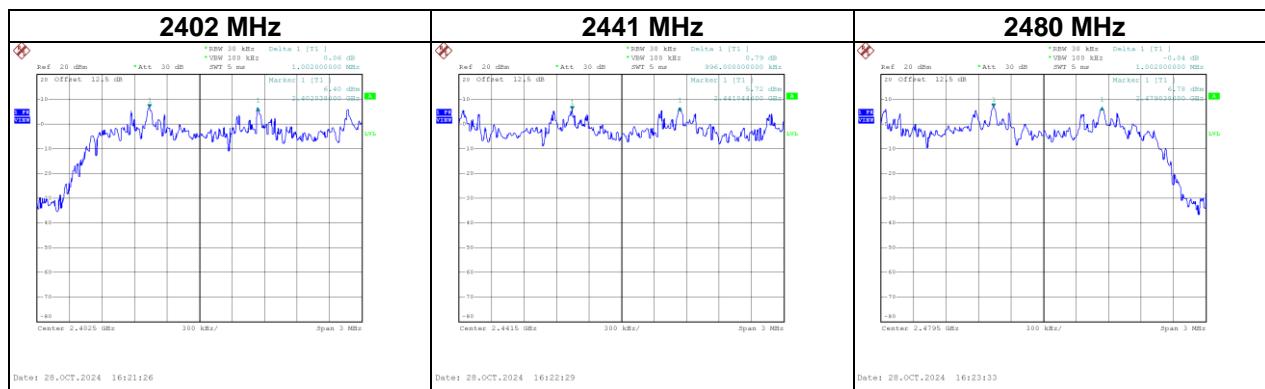
Test Mode :	Hopping on _1Mbps
-------------	-------------------

Frequency (MHz)	Channel Separation (MHz)	2/3 of 20dB Bandwidth (MHz)	Test Result
2402	0.815	0.607	Pass
2441	0.948	0.604	Pass
2480	1.000	0.629	Pass



Test Mode :	Hopping on _3Mbps
-------------	-------------------

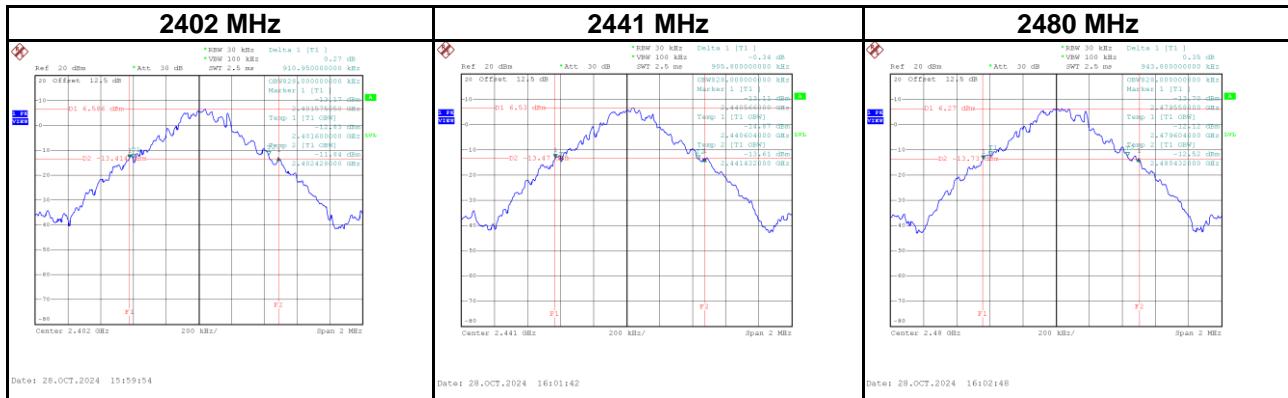
Frequency (MHz)	Channel Separation (MHz)	2/3 of 20dB Bandwidth (MHz)	Test Result
2402	1.002	0.863	Pass
2441	0.996	0.872	Pass
2480	1.002	0.880	Pass



## **APPENDIX G BANDWIDTH**

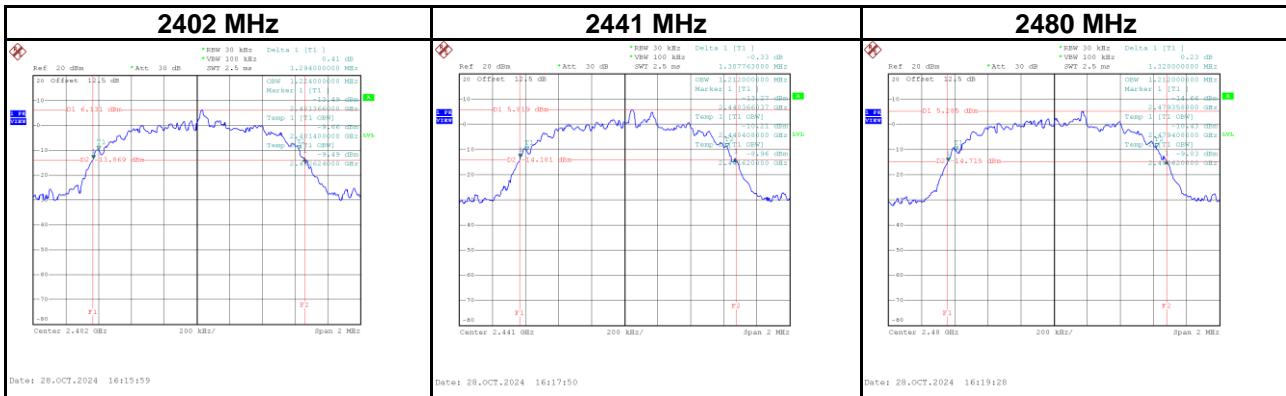
Test Mode :	1Mbps
-------------	-------

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)	Test Result
2402	0.911	0.607	Pass
2441	0.906	0.604	Pass
2480	0.944	0.629	Pass



Test Mode :	3Mbps
-------------	-------

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)	Test Result
2402	1.294	0.863	Pass
2441	1.308	0.872	Pass
2480	1.320	0.880	Pass



## APPENDIX H    OUTPUT POWER

Test Mode :	1Mbps	Tested Date	2024/10/28 ~ 11/6
-------------	-------	-------------	-------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	7.35	0.0054	20.97	0.1250	Pass
2441	7.34	0.0054	20.97	0.1250	Pass
2480	7.47	0.0056	20.97	0.1250	Pass

Test Mode :	2Mbps	Tested Date	2024/10/28 ~ 11/6
-------------	-------	-------------	-------------------

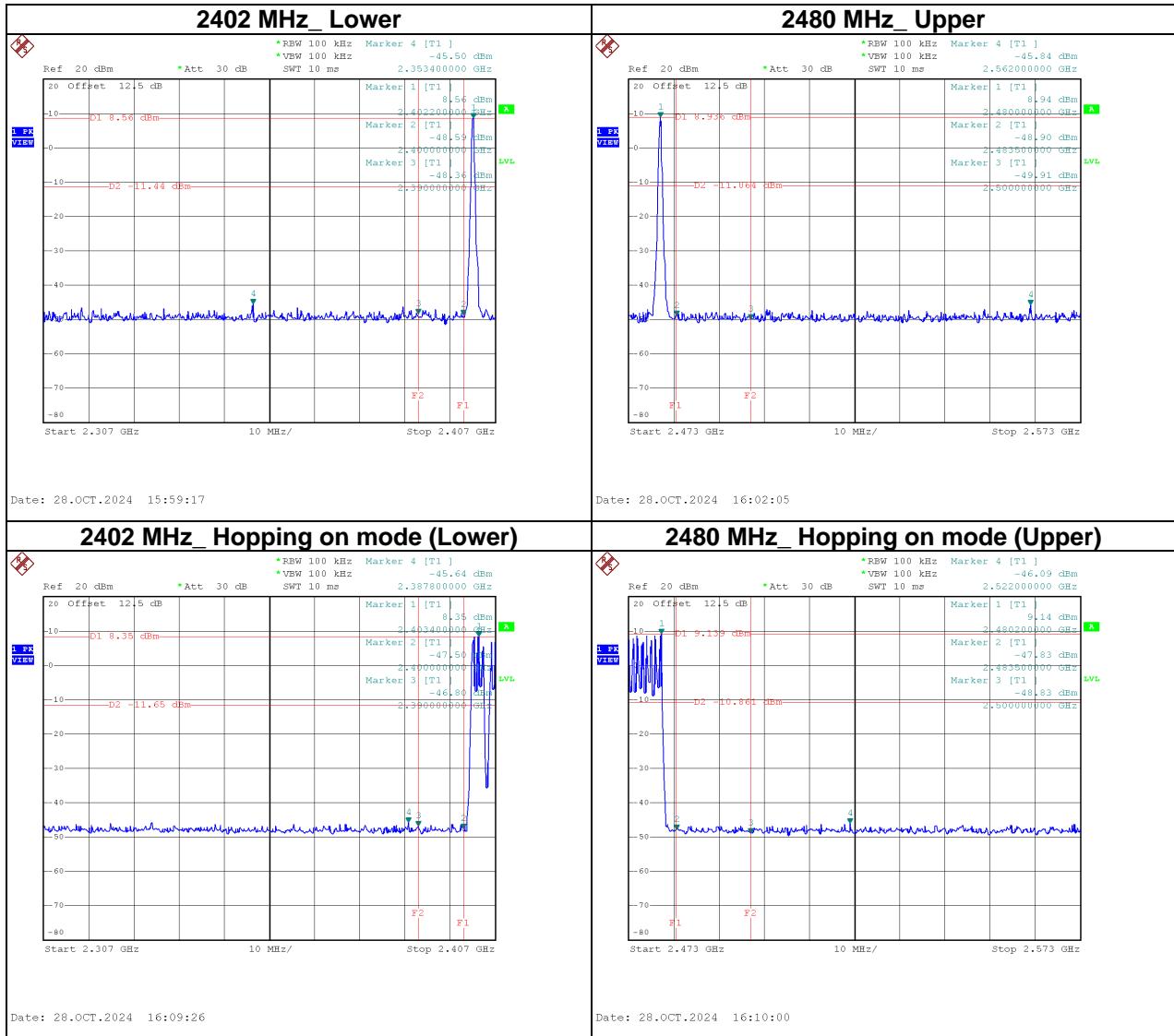
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	8.57	0.0072	20.97	0.1250	Pass
2441	8.76	0.0075	20.97	0.1250	Pass
2480	9.01	0.0080	20.97	0.1250	Pass

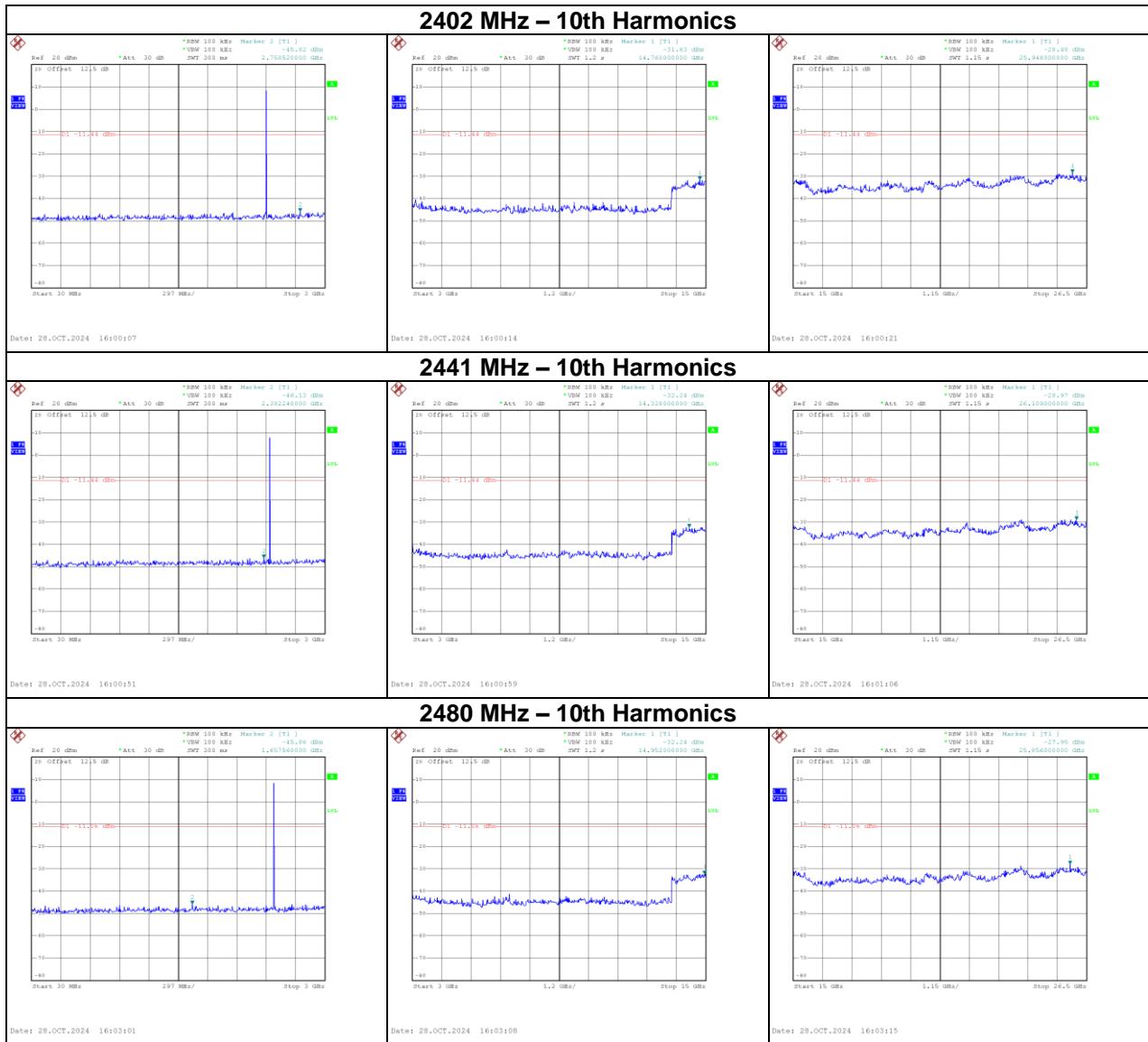
Test Mode :	3Mbps	Tested Date	2024/10/28 ~ 11/6
-------------	-------	-------------	-------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	8.75	0.0075	20.97	0.1250	Pass
2441	8.99	0.0079	20.97	0.1250	Pass
2480	9.29	0.0085	20.97	0.1250	Pass

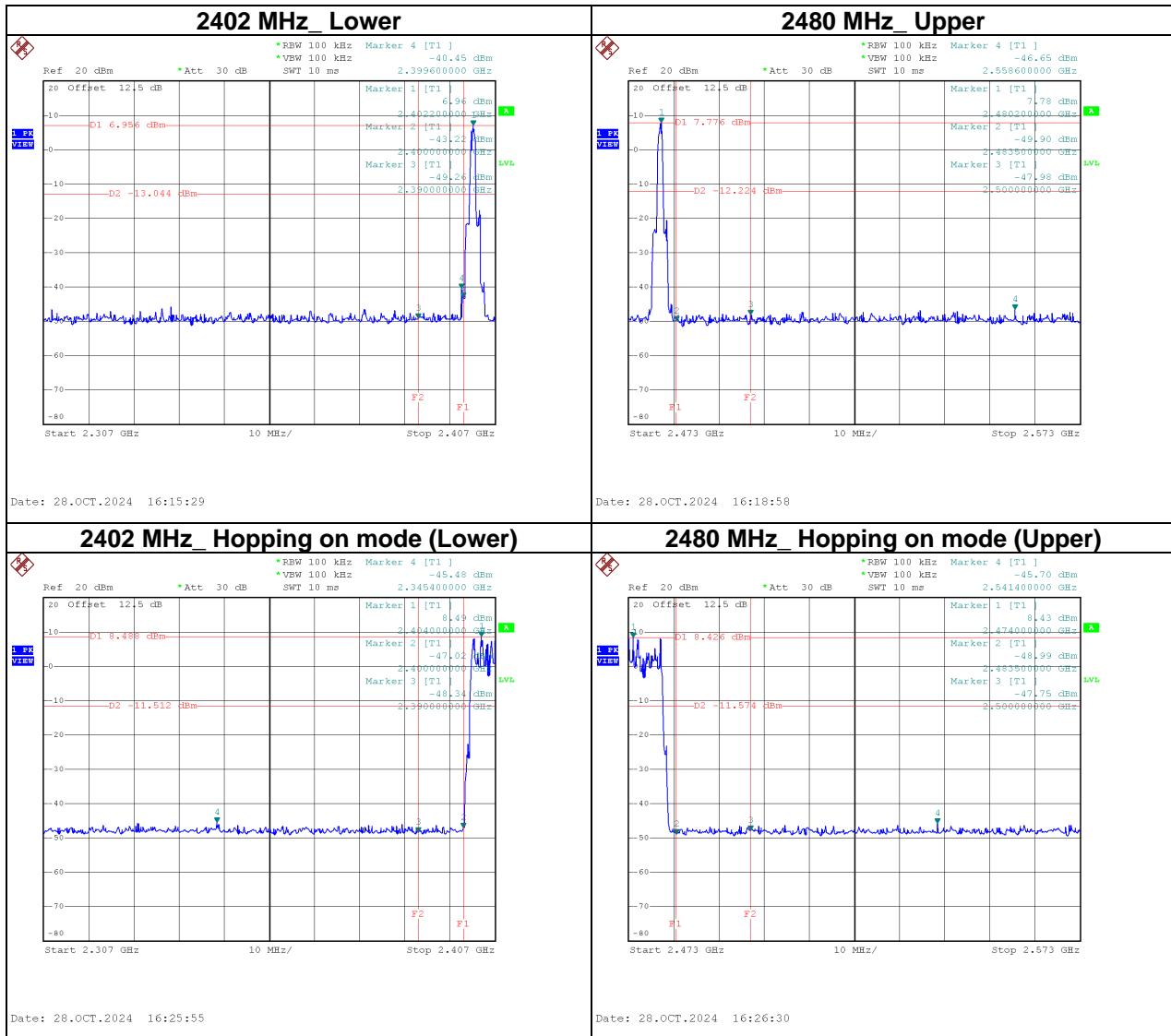
**APPENDIX I     ANTENNA CONDUCTED SPURIOUS EMISSION**

Test Mode	1Mbps
-----------	-------

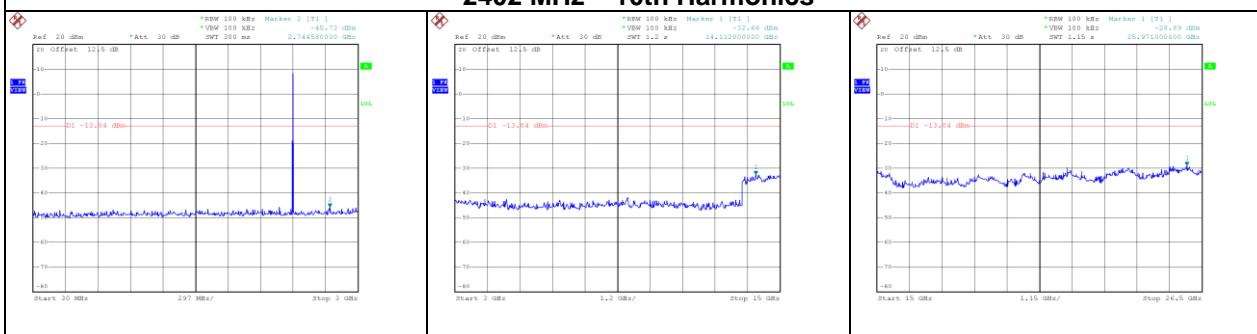




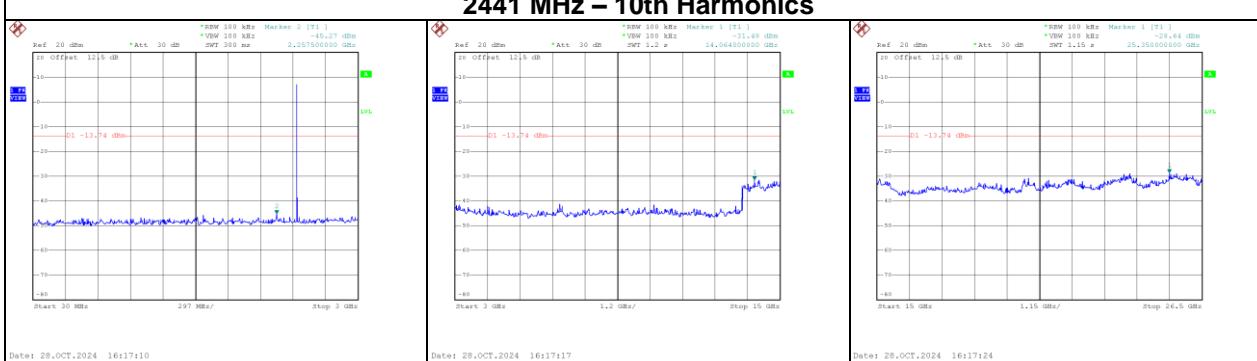
Test Mode	3Mbps
-----------	-------



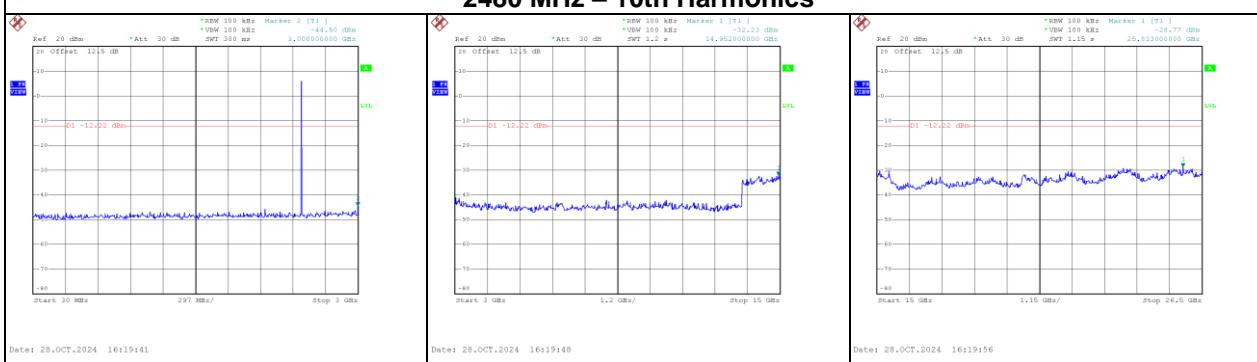
## 2402 MHz – 10th Harmonics



## 2441 MHz – 10th Harmonics



## 2480 MHz – 10th Harmonics



End of Test Report