



# **FCC** Radio Test Report

FCC ID: 2A58O-MBH001

**Report No.** : BTL-FCCP-2-2403T053 **Equipment** : Wireless on-ear speakers

Model Name : MBH001

Brand Name :

nwm

**Applicant**: NTT Sonority, Inc.

Address: 3-20-2, Nishishinjuku, Shinjuku-ku, Tokyo, Japan, 163-1432

Radio Function : Bluetooth Low Energy

FCC Rule Part(s) : FCC CFR Title 47, Part 15, Subpart C (15.247)

Measurement : ANSI C63.10-2013

Measurement Procedure(s)

**Date of Receipt** : 2024/3/21

**Date of Test** : 2024/3/28 ~ 2024/4/9

**Issued Date** : 2024/4/18

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

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Project No.: 2403T053 Page 1 of 69 Report Version: R00



### **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.

Project No.: 2403T053 Page 2 of 69 Report Version: R00





### **CONTENTS REVISION HISTORY** 5 SUMMARY OF TEST RESULTS 6 1.1 **TEST FACILITY** 7 MEASUREMENT UNCERTAINTY 1.2 7 1.3 **TEST ENVIRONMENT CONDITIONS** 8 1.4 **DUTY CYCLE** 8 2 **GENERAL INFORMATION** 9 2.1 **DESCRIPTION OF EUT** 9 **TEST MODES** 2.2 11 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 12 2.4 SUPPORT UNITS 13 3 AC POWER LINE CONDUCTED EMISSIONS TEST 14 3.1 LIMIT 14 3.2 **TEST PROCEDURE** 14 **DEVIATION FROM TEST STANDARD** 3.3 15 **TEST SETUP** 15 3.4 3.5 **TEST RESULT** 15 RADIATED EMISSIONS TEST 4 16 4.1 LIMIT 16 4.2 **TEST PROCEDURE** 17 4.3 **DEVIATION FROM TEST STANDARD** 17 4.4 **TEST SETUP** 17 4.5 **EUT OPERATING CONDITIONS** 19 TEST RESULT - 9KHZ TO 30 MHZ 4.6 19 4.7 TEST RESULT - 30 MHZ TO 1 GHZ 19 4.8 TEST RESULT - ABOVE 1 GHZ 19 5 **BANDWIDTH TEST** 20 5.1 APPLIED PROCEDURES / LIMIT 20 **TEST PROCEDURE** 5.2 20 5.3 **DEVIATION FROM STANDARD** 20 5.4 **TEST SETUP** 20 **EUT OPERATION CONDITIONS** 5.5 20 5.6 **TEST RESULTS** 20 6 **OUTPUT POWER TEST** 21 6.1 APPLIED PROCEDURES / LIMIT 21 **TEST PROCEDURE** 6.2 21 **DEVIATION FROM STANDARD** 6.3 21 6.4 **TEST SETUP** 21 6.5 **EUT OPERATION CONDITIONS** 21 **TEST RESULTS** 21 6.6 7 POWER SPECTRAL DENSITY TEST 22 7.1 APPLIED PROCEDURES / LIMIT 22 **TEST PROCEDURE** 7.2 22 7.3 **DEVIATION FROM STANDARD** 22 **TEST SETUP** 7.4 22 **EUT OPERATION CONDITIONS** 7.5 22 **TEST RESULTS** 22 7.6



8	ANTENN	IA CONDUCTED SPURIOUS EMISSION	23
8.1	APPLI	ED PROCEDURES / LIMIT	23
8.2	TEST	PROCEDURE	23
8.3	DEVIA	ATION FROM STANDARD	23
8.4	TEST	SETUP	23
8.5	EUT C	PERATION CONDITIONS	23
8.6	TEST	RESULTS	23
9	LIST OF	MEASURING EQUIPMENTS	24
10	EUT TES	ST PHOTO	26
11	EUT PHO	OTOS	26
	157.4	AS DOWED LIVE COMPLICATED ENVIOUS	
APPEND	IX A	AC POWER LINE CONDUCTED EMISSIONS	27
APPEND	IX B	RADIATED EMISSIONS - 9 KHZ TO 30 MHZ	32
APPEND	IX C	RADIATED EMISSIONS - 30 MHZ TO 1 GHZ	37
APPEND	IX D	RADIATED EMISSIONS - ABOVE 1 GHZ	40
APPEND	IX E	BANDWIDTH	59
APPEND	IX F	OUTPUT POWER	62
APPEND	IX G	POWER SPECTRAL DENSITY TEST	64
APPEND	IX H	ANTENNA CONDUCTED SPURIOUS EMISSION	67

Project No.: 2403T053 Page 4 of 69 Report Version: R00



# **REVISION HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2403T053	R00	Original Report.	2024/4/18	Valid

Project No.: 2403T053 Page 5 of 69 Report Version: R00



### **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		Pass	
15.205 15.209 15.247(d)	Radiated Emissions		Pass	
15.247(a)(2) Bandwidth		APPENDIX E	Pass	
15.247(b)(3)	047(b)(3) Output Power		Pass	
15.247(e)	Power Spectral Density	APPENDIX G	Pass	
15.247(d)	Antenna conducted Spurious Emission	APPENDIX H	Pass	
15.203	Antenna Requirement		Pass	

- (1) "N/A" denotes test is not applicable in this Test Report.(2) The report format version is TP.1.1.1.

Project No.: 2403T053 Page 6 of 69 Report Version: R00



### 1.1 TEST FACILITY

The test locations state	ed below are under the	he TAF Accreditation N	lumber 0659.		
The test location(s) use	ed to collect the test	data in this report are:			
No. 68-1, Ln. 169, Sec.	. 2, Datong Rd., Xizh	ni Dist., New Taipei City	/ 221, Taiwan		
(FCC DN: TW0659)					
□ C05	□ CB08	□ CB11	□ SR10	$\boxtimes$	SR11
No. 68-2, Ln. 169, Sec.	. 2, Datong Rd., Xizh	ni Dist., New Taipei City	/ 221, Taiwan		
(FCC DN: TW0659)	_				
⊠ SR05					
No. 72, Ln. 169, Sec. 2	2, Datong Rd., Xizhi	Dist., New Taipei City 2	221, Taiwan		
(FCC DN: TW0659)	•				
` □ C06	⊠ CB21	□ CB22			

### 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $\mathbf{y} \pm \mathbf{U}$ , where expanded uncertainty  $\mathbf{U}$  is based on a standard uncertainty multiplied by a coverage factor of  $\mathbf{k} = \mathbf{2}$ , providing a level of confidence of approximately  $\mathbf{95}$  %. 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)
SR05	CISPR	150 kHz ~ 30MHz	3.44

### B. Radiated emissions test:

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

### C. Conducted test:

Test Item	U (dB)
Occupied Bandwidth	0.5334
Output power	0.3669
Power Spectral Density	0.6591
Conducted Spurious emissions	0.5416
Conducted Band edges	0.5348

### NOTE

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

Project No.: 2403T053 Page 7 of 69 Report Version: R00



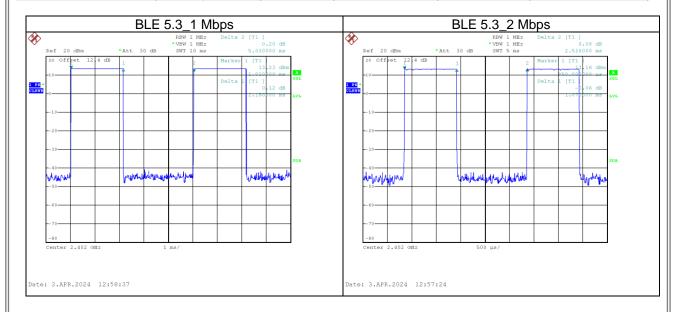
### 1.3 TEST ENVIRONMENT CONDITIONS

Test Item	<b>Environment Condition</b>	Test Voltage	Tested by
AC Power Line Conducted Emissions	22 °C, 53 %	AC 120V	Easton Tsai
Radiated emissions below 1 GHz	Refer to data	DC 5V	Mark Wang
Radiated emissions above 1 GHz	Refer to data	DC 5V	Mark Wang
Bandwidth	21 °C, 46 %	DC 5V	Ken Lan
Output Power	21 °C, 46 %	DC 5V	Ken Lan
Power Spectral Density	21 °C, 46 %	DC 5V	Ken Lan
Antenna conducted Spurious Emission	21 °C, 46 %	DC 5V	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 1			Delta 2	On Time/Period	10 log(1/Duty Cycle)
Γ	Modo	ON	Numbers	On Time (B)	Period (ON+OFF)	Duty Cycle	Duty Factor
L	Mode	(ms)	(ON)	(ms)	(ms)	(%)	(dB)
Γ	BLE (1 Mbps)	2.150	1	2.150	5.030	42.74%	3.69
Γ	BLE (2 Mbps)	1.070	1	1.070	2.510	42.63%	3.70





### **2 GENERAL INFORMATION**

### 2.1 DESCRIPTION OF EUT

Equipment	Wireless on-ear speakers	$\Box$	
Model Name	MBH001		
Brand Name	nwm NWM		
Model Difference	N/A		
Power Source	Battery supplied.     Supplied from USB port.		
Power Rating	1) 3.85V/ 300mAH/ 1.155Wh 2) 5V==0.5A		
Products Covered	1 * Battery: VDL / 402424PN4 1 * Wireless module: AIROHA / AB1585 1 * USB cable: JR Conn Electronics Co., Ltd./ JRK-560A		
Operation Band	2400 MHz ~ 2483.5 MHz		
Operation Frequency	2402 MHz ~ 2480 MHz		
Modulation Technology	GFSK		
Transfer Rate	1 Mbps, 2 Mbps		
Output Power Max.	1 Mbps: 14.59 dBm (0.0288 W) 2 Mbps: 14.56 dBm (0.0286 W)		
Test Software Version	AB1585/88 Lab Test Tool - 3.5.6		
Test Model	MBH001		
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

Project No.: 2403T053 Page 9 of 69 Report Version: R00



(3) Table for Filed Antenna:

Ant.	Brand	Model Name	Туре	Frequency Range (MHz)	Gain (dBi)
1.	PSA	RFANT3216120A1T	Chip Antenna	2400-2500	0.07

(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.

Project No.: 2403T053 Page 10 of 69 Report Version: R00



### 2.2 TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	BLE 5.3 / 1 Mbps	39	-
Transmitter Radiated Emissions	BLE 5.3 / 1, 2 Mbps	00/39	Bandedge
(above 1GHz)	BLE 5.3 / 1, 2 Mbps	00/19/39	Harmonic
Transmitter Radiated Emissions (above 18GHz)	BLE 5.3 / 1 Mbps	39	-
Bandwidth	BLE 5.3 / 1, 2 Mbps	00/19/39	-
Output Power	BLE 5.3 / 1, 2 Mbps	00/19/39	-
Power Spectral Density	BLE 5.3 / 1, 2 Mbps	00/19/39	-
Antenna conducted Spurious Emission	BLE 5.3 / 1, 2 Mbps	00/19/39	-

### 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 (X axis) is recorded.
  (3) The EUT supports both BLE 4.0 and 5.3, we will pick BLE 5.3 for testing.

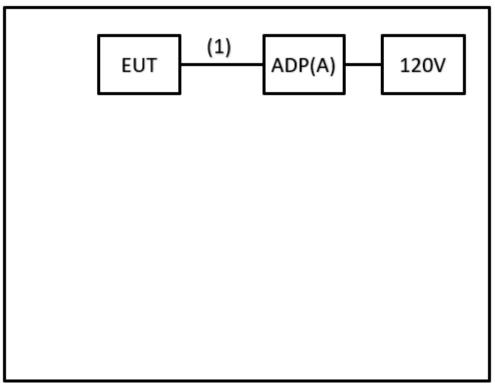
Project No.: 2403T053 Page 11 of 69 Report Version: R00



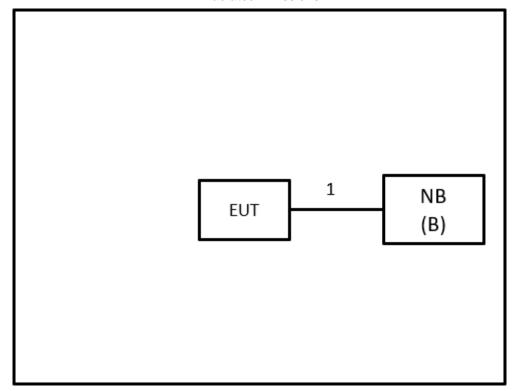
### 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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

AC power line conducted emissions



### **Radiated Emissions**



Project No.: 2403T053 Page 12 of 69 Report Version: R00



### 2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
Α	ADP	SASMSUNG	EP-TA800	N\A	Furnished by test lab.
В	NB	Dynabook	PORTEGE X30-G	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	No	No	1.5m	USB cable	Supplied by test requester.

Project No.: 2403T053 Page 13 of 69 Report Version: R00



### 3 AC POWER LINE CONDUCTED EMISSIONS TEST

### 3.1 LIMIT

Frequency	Limit (dBµV)		
(MHz)	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		Limit Value		Margin Level
(dBµV)		(dBµV)		(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.

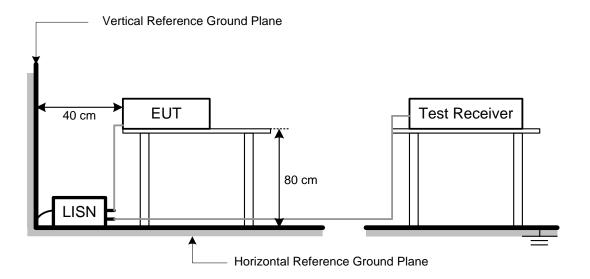
Project No.: 2403T053 Page 14 of 69 Report Version: R00



### 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	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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)

		1	
Frequency (MHz)		Emissions V/m)	Measurement Distance (meters)
(IVII IZ)	Peak	Average	(meters)
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 (dBµV)		Correct Factor (dB/m)		Measurement Value (dBµV/m)
41.91	+	-8.36	=	33.55

Measurement Value		Limit Value		Margin Level
(dBµV/m)		(dBµV/m)		(dB)
33.55	-	43.50	=	-9.95

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

Mode	VBW(Hz)
BLE (1M)	2700
BLE (2M)	2700

Project No.: 2403T053 Page 16 of 69 Report Version: R00



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

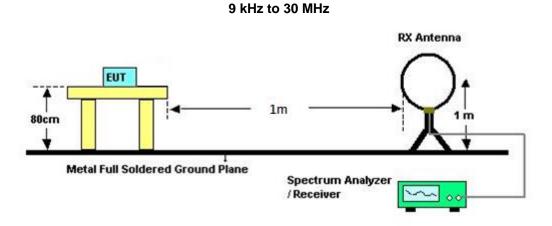
### 4.2 TEST PROCEDURE

- a. 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)
- b. 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)
- c. 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.
- d. 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).
- e. 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.
- f. 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.
- g. 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)
- h. 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)
- i. For the actual test configuration, please refer to the related Item EUT TEST PHOTO.

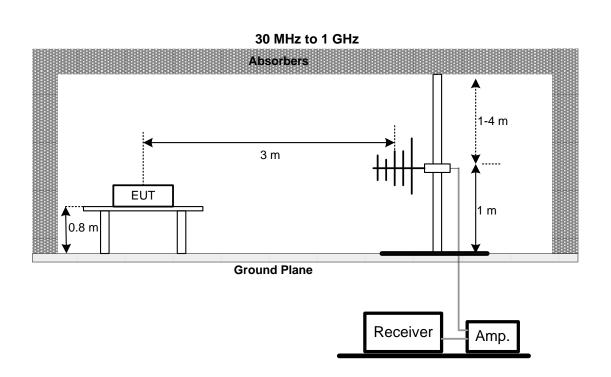
### 4.3 DEVIATION FROM TEST STANDARD

No deviation.

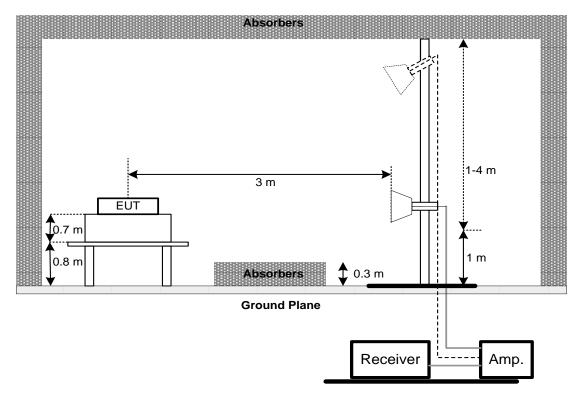
### 4.4 TEST SETUP







### 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.

Project No.: 2403T053 Page 19 of 69 Report Version: R00



### **5 BANDWIDTH TEST**

### 5.1 APPLIED PROCEDURES / LIMIT

Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(a)(2)	Bandwidth	>= 500KHz	2400-2483.5	PASS	
15.247(a)(2) Bandwidth		(6dB bandwidth)	2400 2400.0	PASS	

### 5.2 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=300KHz, Sweep time = 2.5 ms.

### 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.

Project No.: 2403T053 Page 20 of 69 Report Version: R00



### **6 OUTPUT POWER TEST**

### 6.1 APPLIED PROCEDURES / LIMIT

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

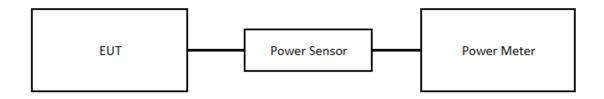
### 6.2 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. The maximum peak conducted output power was performed in accordance with FCC KDB 558074 D01 15.247 Meas Guidance.

### 6.3 DEVIATION FROM STANDARD

No deviation.

### 6.4 TEST SETUP



### 6.5 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.

### 6.6 TEST RESULTS

Please refer to the APPENDIX F.

Project No.: 2403T053 Page 21 of 69 Report Version: R00



### 7 POWER SPECTRAL DENSITY TEST

### 7.1 APPLIED PROCEDURES / LIMIT

Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

### 7.2 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=3KHz, VBW=10 KHz, 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.

Project No.: 2403T053 Page 22 of 69 Report Version: R00

### 8 ANTENNA CONDUCTED SPURIOUS EMISSION

### 8.1 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.

### 8.2 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=300KHz, Sweep time = 10 ms.

### 8.3 DEVIATION FROM STANDARD

No deviation.

### 8.4 TEST SETUP

EUT SPECTRUM ANALYZER

### 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.

Project No.: 2403T053 Page 23 of 69 Report Version: R00



# 9 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	101497	2023/5/18	2024/5/17
2	Test Cable	EMCI	EMC400-BM-BM- 5000	170501	2023/8/1	2024/7/31
3	EMI Test Receiver	R&S	ESR3	102950	2023/4/12	2024/4/11
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	Preamplifier	EMCI	EMC330N	980850	2023/9/6	2024/9/5
2	Preamplifier	EMCI	EMC118A45SE	980819	2024/3/6	2025/3/5
3	Pre-Amplifier	EMCI	EMC184045SE	980907	2023/9/21	2024/9/20
4	Preamplifier	EMCI	EMC001340	980579	2023/9/6	2024/9/5
5	Test Cable	EMCI	EMC104-SM-100 0	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	2023/9/12	2024/9/11
10	Horn Antenna	RFSPIN	DRH18-E	211202A18EN	2023/5/12	2024/5/11
11	Horn Ant	Schwarzbeck	BBHA 9170D	1136	2023/5/12	2024/5/11
12	Log-bicon Antenna	Schwarzbeck	VULB9168	1369	2023/5/9	2024/5/8
13	6dB Attenuator	EMCI	EMCI-N-6-06	AT-06001	2023/5/9	2024/5/8
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

			Bandwidth			
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	101139	2024/3/8	2025/3/7

			Output Power			
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Peak Power Analyzer	Keysight	8990B	MY51000517	2024/3/12	2025/3/11
2	Power Sensor	Keysight	N1923A	MY58310005	2024/3/12	2025/3/11

Project No.: 2403T053 Page 24 of 69 Report Version: R00



		F	ower Spectral De	nsity		
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	101139	2024/3/8	2025/3/7

	Antenna conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	101139	2024/3/8	2025/3/7

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

Project No.: 2403T053 Page 25 of 69 Report Version: R00



10 EUT TEST PHOTO
Please refer to document Appendix No.: TP-2403T053-FCCP-1 (APPENDIX-TEST PHOTOS).
11 EUT PHOTOS
Please refer to document Appendix No.: EP-2403T053-2 (APPENDIX-EUT PHOTOS).

Project No.: 2403T053 Page 26 of 69 Report Version: R00

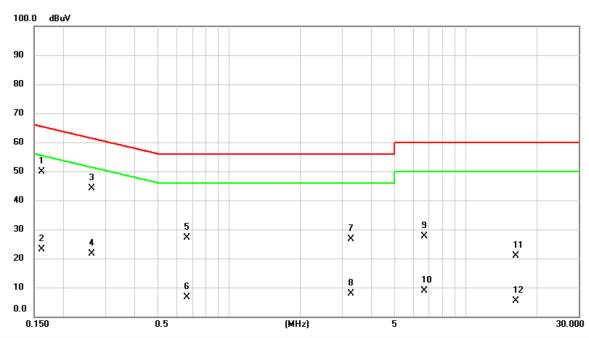


APPENDIX A	AC POWER LINE CONDUCTED EMISSIONS

Project No.: 2403T053 Page 27 of 69 Report Version: R00



Test Mode	Normal	Tested Date	2024/3/28
Test Frequency	-	Phase	Line

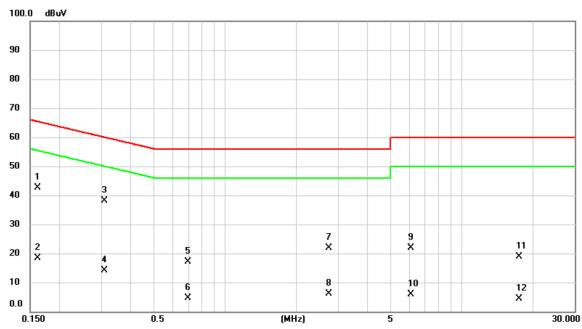


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1613	40.05	9.80	49.85	65.40	-15.55	QP	
2		0.1613	13.34	9.80	23.14	55.40	-32.26	AVG	
3		0.2625	34.43	9.78	44.21	61.35	-17.14	QP	
4		0.2630	11.77	9.78	21.55	51.34	-29.79	AVG	
5		0.6652	17.33	9.77	27.10	56.00	-28.90	QP	
6		0.6652	-3.12	9.77	6.65	46.00	-39.35	AVG	
7		3.2708	16.90	9.78	26.68	56.00	-29.32	QP	
8		3.2708	-2.00	9.78	7.78	46.00	-38.22	AVG	
9		6.6728	17.93	9.79	27.72	60.00	-32.28	QP	
10		6.6728	-0.95	9.79	8.84	50.00	-41.16	AVG	
11		16.2465	10.88	10.05	20.93	60.00	-39.07	QP	
12		16.2465	-4.55	10.05	5.50	50.00	-44.50	AVG	

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



Test Mode	Normal	Tested Date	2024/3/28
Test Frequency	-	Phase	Neutral

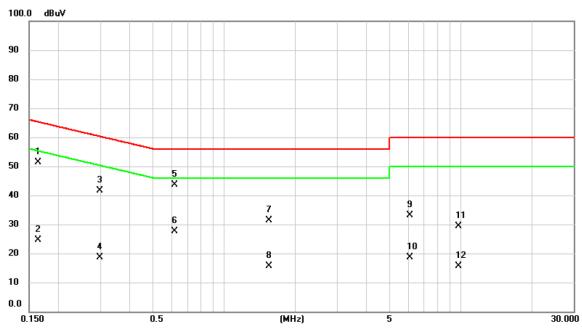


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1613	32.77	9.77	42.54	65.40	-22.86	QP	
2		0.1613	8.64	9.77	18.41	55.40	-36.99	AVG	
3	*	0.3100	28.35	9.75	38.10	59.97	-21.87	QP	
4		0.3100	4.42	9.75	14.17	49.97	-35.80	AVG	
5		0.6990	7.27	9.76	17.03	56.00	-38.97	QP	
6		0.6990	-5.06	9.76	4.70	46.00	-41.30	AVG	
7		2.7375	12.04	9.77	21.81	56.00	-34.19	QP	
8		2.7375	-3.54	9.77	6.23	46.00	-39.77	AVG	
9		6.0855	12.03	9.78	21.81	60.00	-38.19	QP	
10		6.0855	-3.87	9.78	5.91	50.00	-44.09	AVG	
11		17.5133	8.57	10.23	18.80	60.00	-41.20	QP	
12		17.5133	-5.81	10.23	4.42	50.00	-45.58	AVG	

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



I	Test Mode	Idle	Tested Date	2024/3/28	ĺ
	Test Frequency	-	Phase	Line	ĺ

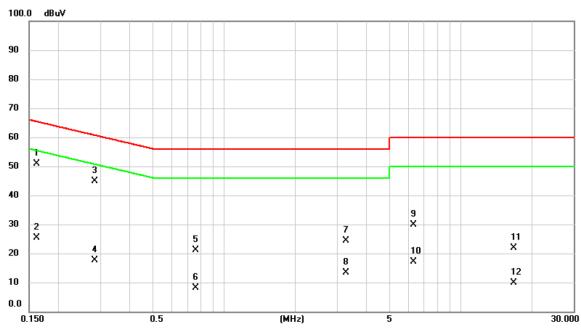


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1635	41.55	9.80	51.35	65.28	-13.93	QP	
2		0.1635	14.84	9.80	24.64	55.28	-30.64	AVG	
3		0.2985	31.78	9.77	41.55	60.28	-18.73	QP	
4		0.2985	8.81	9.77	18.58	50.28	-31.70	AVG	
5	*	0.6180	33.82	9.76	43.58	56.00	-12.42	QP	
6		0.6180	17.93	9.76	27.69	46.00	-18.31	AVG	
7		1.5540	21.63	9.77	31.40	56.00	-24.60	QP	
8		1.5540	5.81	9.77	15.58	46.00	-30.42	AVG	
9		6.0855	23.41	9.79	33.20	60.00	-26.80	QP	
10		6.0855	8.73	9.79	18.52	50.00	-31.48	AVG	
11		9.8160	19.59	9.76	29.35	60.00	-30.65	QP	
12		9.8160	5.87	9.76	15.63	50.00	-34.37	AVG	

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



Test Mode	Idle	Tested Date	2024/3/28
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1613	41.03	9.77	50.80	65.40	-14.60	QP	
2		0.1613	15.67	9.77	25.44	55.40	-29.96	AVG	
3		0.2850	35.06	9.75	44.81	60.67	-15.86	QP	
4		0.2850	7.97	9.75	17.72	50.67	-32.95	AVG	
5		0.7597	11.36	9.76	21.12	56.00	-34.88	QP	
6		0.7597	-1.64	9.76	8.12	46.00	-37.88	AVG	
7		3.2708	14.72	9.77	24.49	56.00	-31.51	QP	
8		3.2708	3.51	9.77	13.28	46.00	-32.72	AVG	
9		6.3038	20.01	9.79	29.80	60.00	-30.20	QP	
10		6.3038	7.32	9.79	17.11	50.00	-32.89	AVG	
11		16.6987	11.58	10.18	21.76	60.00	-38.24	QP	
12		16.6987	-0.27	10.18	9.91	50.00	-40.09	AVG	

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



# APPENDIX B RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

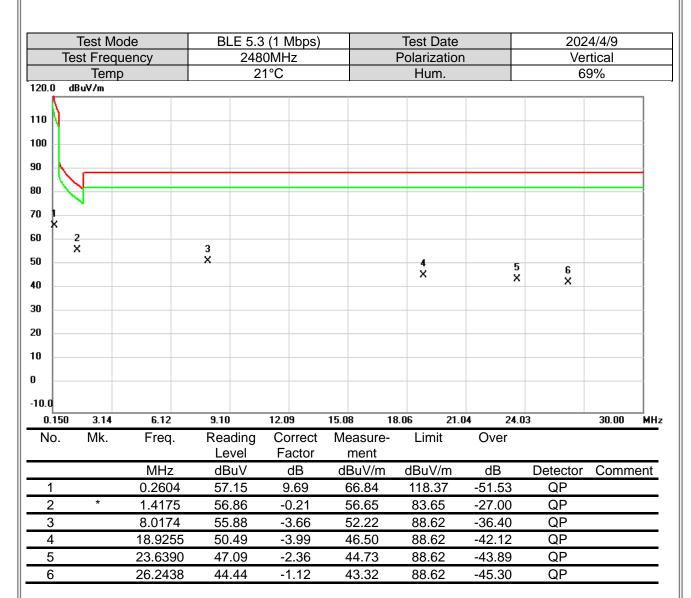
Project No.: 2403T053 Page 32 of 69 Report Version: R00



	Test Mod			3 (1 Mbps)		Test Date			4/4/9	
Te	st Frequ			0MHz		Polarization		Vertical		
	Temp		2	1°C		Hum.		6	9%	
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20.0										
0.009	0.02	0.04	0.05	0.07	0.08 0.0		0.12		0.15	MH
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comm	ent
1	*	0.1265	51.12	15.49	66.61	124.64	-58.03	AVG		

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





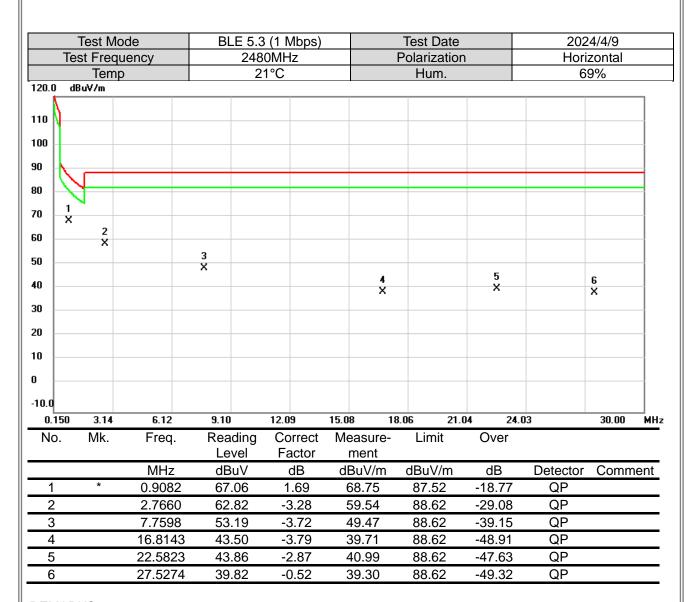
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



	Test Mod			3 (1 Mbps)		Test Date			4/4/9		
Te	st Frequ			30MHz		Polarization			Horizontal		
	Temp		2	21°C		Hum.		6	9%		
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0.009	0.02	0.04	0.05	0.07	0.08 0.0		0.12		0.15	MH	
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	·			
			Level	Factor	ment			_			
	*	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comm	ent	
1	*	0.1291	47.13	15.38	62.51	124.47	-61.96	AVG			

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





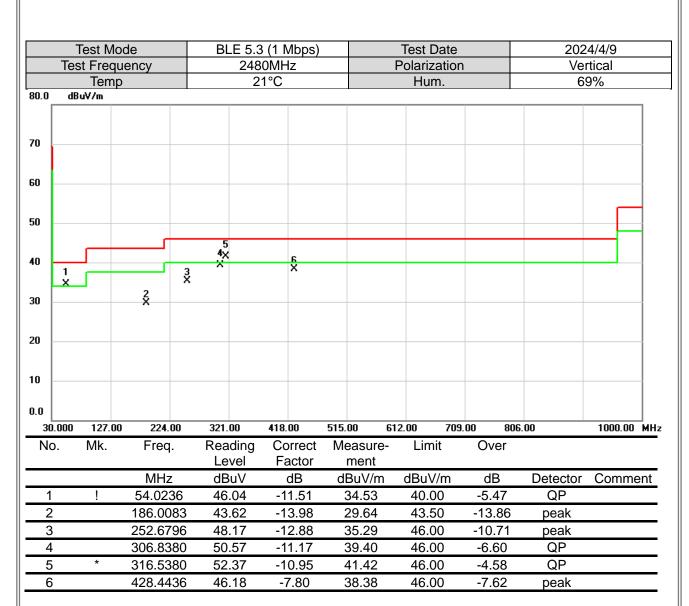
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



APPENDIX C	RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

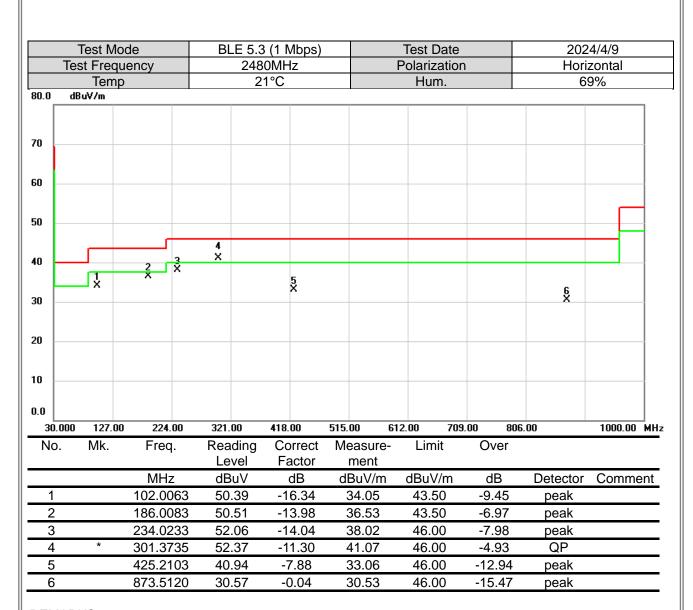
Project No.: 2403T053 Page 37 of 69 Report Version: R00





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





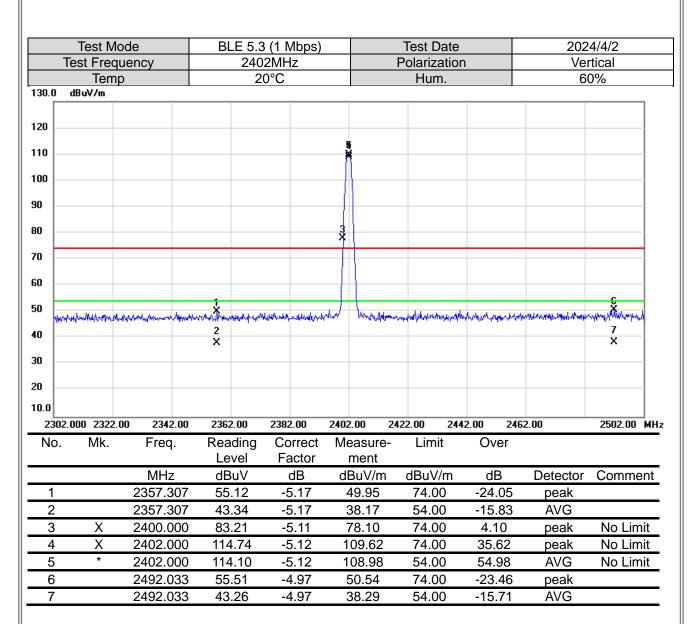
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



## APPENDIX D RADIATED EMISSIONS - ABOVE 1 GHZ

Project No.: 2403T053 Page 40 of 69 Report Version: R00





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



	est Mo			3 (1 Mbps)		Test Date			4/4/2	
Tes	t Frequ			80MHz		Polarizatio	n		rtical	
	Temp	)		20°C		Hum.		60	0%	
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0.0 2380.000							20.00 254	0.00	2580.00	
0.0	) 2400.0 Mk.	00 2420.00 Freq.	2440.00 Reading Level		2480.00 29 Measure- ment	500.00 25 Limit		0.00	2580.00	
0.0 2380.000			Reading	Correct	Measure-		20.00 254	0.00 Detector	2580.00 Commer	MI
0.0 2380.000		Freq.	Reading Level	Correct Factor	Measure- ment	Limit	20.00 254 Over			MI
0.0 2380.000 No.		Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	20.00 254 Over dB	Detector		MI
0.0 2380.000 No.		Freq. MHz 2382.313	Reading Level dBuV 54.14	Correct Factor dB -5.14	Measure- ment dBuV/m 49.00	Limit dBuV/m 74.00	20.00 254 Over dB -25.00	Detector peak		mt.
0.0 2380.000 No.	Mk.	Freq.  MHz 2382.313 2382.313	Reading Level dBuV 54.14 43.16	Correct Factor dB -5.14	Measure- ment dBuV/m 49.00 38.02	Limit  dBuV/m  74.00  54.00	20.00 254 Over dB -25.00 -15.98	Detector peak AVG	Commer	mt it
0.0 2380.000 No.	Mk.	Freq.  MHz 2382.313 2382.313 2480.000	Reading Level dBuV 54.14 43.16 112.52	Correct Factor dB -5.14 -5.14 -4.99	Measure- ment dBuV/m 49.00 38.02 107.53	Limit  dBuV/m  74.00  54.00  74.00	20.00 254 Over dB -25.00 -15.98 33.53	Detector peak AVG peak	Commer No Limi	mt it

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



	est Mod				3 (2 Mbps)			Test Da			24/4/2	
Tes	t Freque	ency			2MHz			Polarizat			rtical	
120.0 40.	Temp			2	0°C			Hum.		6	0%	
130.0 dB	uv/m											7
120												-
110						3						1
100												
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10.0	) 2322.00 Mk.	2342.00 Freq.	Re	eading Level	2382.00 Correct Factor	Mea	<b>00</b> 24 asure- nent	122.00 Limit	2442.00 Ove		2502.00	<u> </u>   МН
0.0 2302.000			Re L	eading	Correct	Me: n	asure-		Ove		2502.00 Comme	
0.0 2302.000		Freq.	Re L	eading _evel	Correct Factor	Me: n dB	asure- nent	Limit	Ove	r Detector		
0.0 2302.000 No.		Freq. MHz	Re L	eading ₋evel lBuV	Correct Factor dB	Mea n dB	asure- nent suV/m	Limit dBuV/r	Ove n dB	Detector peak		
0.0 2302.000 No.		Freq. MHz 2347.340	Re L 0 0 5	eading Level BuV 55.77	Correct Factor dB -5.19	Mea dB 50	asure- nent uV/m 0.58	Limit dBuV/n 74.00	Ove n dB -23.4	Detector 2 peak 6 AVG		ent
0.0 2302.000 No.	Mk.	Freq.  MHz 2347.340 2347.340	Re L 0 0 5 0 4	eading Level BuV 55.77	Correct Factor dB -5.19	Mea n dB 50 33	asure- nent suV/m 0.58 9.44	Limit dBuV/r 74.00 54.00	Ove n dB -23.4 -14.5	Detector peak AVG peak	Comme	ent
2302.000 No.	Mk.	Freq.  MHz 2347.340 2347.340 2400.000	Re L 0 0 5 0 4 0 9	eading Level dBuV 55.77 44.63	Correct Factor dB -5.19 -5.19	Mea n dB 50 33 9	asure- nent uV/m 0.58 9.44 1.28	Limit  dBuV/r  74.00  54.00  74.00	Ove n dB -23.4 -14.5 17.2	Detector peak AVG peak peak	Comme No Lin	ent nit
0.0 2302.000 No. 1 2 3 4	Mk.	MHz 2347.340 2347.340 2400.000 2402.000	Re L C C C C C C C C C C C C C C C C C C	eading Level BuV 55.77 14.63 96.39	Correct Factor dB -5.19 -5.19 -5.11 -5.12	Mea ndB 50 33 9 11	asure- nent 6uV/m 0.58 9.44 1.28	dBuV/r 74.00 54.00 74.00 74.00	Ove n dB -23.4 -14.5 17.2 37.7	Detector 2 peak 6 AVG 8 peak 9 peak 6 AVG	Comme No Lim	ent nit

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



	Test Mo				.3 (2 Mbps)	)		Test Date			4/4/2	
Te	est Frequ			24	80MHz			Polarization	1		rtical	
	Temp				20°C			Hum.		60	0%	
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120												ĺ
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100						$-\mathbb{N}$						
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50 40 30 20 10.0 2380.0	2 X 000 2400.0	0 2420. Freq.		2440.00 Reading Level	2460.00 J Correct Factor	2480.0 Mea	00 25 asure- ent	500.00 252 Limit	20.00 254 Over	0.00	2580.00	MH
2380.0 No.	2 X 000 2400.0	0 2420. Freq. MHz	00	2440.00 Reading Level dBuV	2460.00 Correct Factor dB	2480.0 Mea m	00 25 asure- ient uV/m	00.00 252 Limit dBuV/m	0.00 254 Over dB	0.00 Detector		MH
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 X 000 2400.0	0 2420. Freq. MHz 2387.84	00	2440.00 Reading Level dBuV 54.52	2460.00 Correct Factor dB -5.13	2480.0 Mea m dBu	00 25 asure- nent uV/m 9.39	00.00 252 Limit dBuV/m 74.00	0.00 254 Over dB -24.61	0.00  Detector peak	2580.00	MH
80 0.0 2380.0 No.	2 X 000 2400.0 Mk.	0 2420. Freq. MHz 2387.84 2387.84	00 47 47	2440.00 Reading Level dBuV 54.52 43.45	2460.00 Correct Factor dB -5.13	2480.0 Mea m dBu 49	00 25 asure- nent uV/m 0.39	dBuV/m 74.00 54.00	0.00 254 Over dB -24.61 -15.68	Detector peak AVG	2580.00 Comme	MH
300 200 2380.0 No.	2 X 000 2400.0	0 2420. Freq. MHz 2387.84 2387.84 2480.00	17 17 17	2440.00 Reading Level dBuV 54.52 43.45 113.76	2460.00 G Correct Factor dB -5.13 -5.13 -4.99	2480.0 Mea m dBu 49 38	25 asure- lent uV/m 9.39 3.32 8.77	dBuV/m 74.00 54.00 74.00	0.00 254 Over dB -24.61 -15.68 34.77	Detector peak AVG peak	2580.00  Comme	mH ent
30 20 10.0 2380.0 No.	2 X 000 2400.0 Mk.	0 2420. Freq. MHz 2387.84 2387.84	17 17 10 00	2440.00 Reading Level dBuV 54.52 43.45	2460.00 Correct Factor dB -5.13	2480.0 Mea m dBu 49 38 10	00 25 asure- nent uV/m 0.39	dBuV/m 74.00 54.00	0.00 254 Over dB -24.61 -15.68	Detector peak AVG	2580.00 Comme	ent_

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



	Test Mo			3 (1 Mbps)		Test Date			4/4/2
Te	est Frequ			)2MHz		Polarization	n		rtical
	Temp		2	20°C		Hum.		6	0%
130.0	dBuV/m								
120									
110									
100									
90									
80									
70									
60						1 ×			
50						2 X			
40									
30									
20									
10.0									
	000 2700.0			7800.00				00.00	18000.00 MHz
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12010.00	49.39	7.84	57.23	74.00	-16.77	peak	
2	*	12010.00	38.96	7.84	46.80	54.00	-7.20	AVG	

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



	Test				BL		(1 Mbps	3)			Test Da				4/4/2
	Test Fr		ency				2MHz			- 1	Polarizat				zontal
130.0	dBuV/m	mp				20	0°C				Hum.			60	0%
JU.U	ubu+/iii														
120															
10															
00															
30 <u> </u>															
BO _															
o															
io <u> </u>											1 ×				
io											2 X				
10															
30 <u> </u>															
20															
10.0															
	0.000 27				6100		7800.00		0.00			12900.00		00.00	18000.00 MH
No.	Mk		Freq.		Read Lev		Correc Factor		easure ment	<b>)</b> -	Limit	O۱	er/		
			MHz		dBı		dB	d	BuV/m	)	dBuV/n	n d	В	Detector	Comment
1			12010.0	00	51.	62	7.84		59.46		74.00	-14	.54	peak	
2	*		12010.0	00	42.	96	7.84		50.80		54.00	-3.	20	AVG	

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



	Test Mo			3 (1 Mbps)		Test Date			4/4/2
Te	est Frequ			0MHz		Polarization	1		rtical
	Temp		2	0°C		Hum.		6	0%
130.0	dBuV/m								
120									
110									
100									
90									
80									
70									
60						1 ×			
50						2 X			
40									
30									
20									
10.0									
	000 2700.0		6100.00	7800.00				00.00	18000.00 MHz
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12200.00	50.05	7.91	57.96	74.00	-16.04	peak	
2	*	12200.00	40.87	7.91	48.78	54.00	-5.22	AVG	

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



	Test M				BL			1bps)				Test Da				4/4/2
	Test Fred	_	псу				0MH	Z			F	Polariza				zontal
	Ten	ηp				2	0°C					Hum			6	0%
30.0	dBuV/m															
120																
110																
100																
90																
30																
'o																
io												1 ×				
50 -												2 X				
10 <u> </u>																
30																
20																
10.0																
	0.000 2700	).00	4400.0	)0	6100.		7800		9500			200.00	12900.		600.00	18000.00 MI
No.	Mk.		Freq.		Read			rrect ctor		easure ment	9-	Limit		Over		
			MHz		dΒι	ιV	C	dΒ	dl	3uV/n	1	dBuV/ı	m	dB	Detector	Comment
1		•	12200.0	0	53.0	06	7	.91	(	0.97		74.00	) -	13.03	peak	
2	*		12200.0	00	43.	10	7	.91	ŗ	51.01		54.00	)	-2.99	AVG	

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



	Test Mo			3 (1 Mbps)		Test Date			4/4/2
T	est Frequ			80MHz		Polarization	า		rtical
	Temp		2	0°C		Hum.		6	0%
30.0	dBuV/m								
120									
110									
100									
90 <u> </u>									
30									
70									
60						1 ×			
50						2 X			
10 <u> </u>									
30									
20 —									
10.0									
	000 2700.0		6100.00	7800.00				00.00	18000.00 MH
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12400.00	50.55	7.98	58.53	74.00	-15.47	peak	
2	*	12400.00	41.76	7.98	49.74	54.00	-4.26	AVG	<del></del>

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



	Test Mo			3 (1 Mbps)		Test Date			4/4/2
Te	est Frequ			30MHz		Polarization	า		zontal
	Temp		2	:0°C		Hum.		6	0%
130.0	dBuV/m								
120									
110									
100									
90									
80									
70									
60						1 X 2			
50						X			
40									
30									
20									
10.0									
	000 2700.0			7800.00				00.00	18000.00 MHz
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12400.00	52.71	7.98	60.69	74.00	-13.31	peak	
2	*	12400.00	43.46	7.98	51.44	54.00	-2.56	AVG	

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



-	Test Mode Test Frequency				BL		3 (2 N 2MH	(lbps)			-	Test Da Polariza					4/4/2 rtical	
		emp					0°C					Hum					0%	
130.0	dBuV/i						0 0					Hulli				0	<i>J</i> 70	
																		1
120 🗀																		-
110																		ļ
100																		
90																		
30																		
_																		
70 –																		
60 <u> </u>												1 X						
50												2 2						1
10												×						
10																		1
30																		
20																		ļ
10.0																		
1000	0.000 2	700.00	) 4400	.00	6100	.00	7800	.00	9500	0.00	11	200.00	1290	00.00	14600.00		18000.00	MH
No.	M	k.	Freq	•	Rea Le			rrect ctor		easur ment		Limit		Ove	er			
			MHz	,	dB			dB		3uV/ı		dBuV/	m	dB	Det	ector	Comme	nt
1_			12010.		47.		7	.84		55.10		74.00		-18.9		eak		
2	*		12010.	00	37.	71	7	.84	4	15.55	5	54.00	)	-8.4	5 A\	۷G		

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



	Test				BL		(2 Mbps	s)			Test Da				4/4/2
	Test Fre		ency				2MHz				Polarizat				zontal
130.0	1e dBuV/m	mp					0°C				Hum.			60	0%
	upur														
120															
10															
100															
30															
30															
'o															
50 <u> </u>											1 X				
io											2 X				
10 <u> </u>															
80															
20															
10.0															
	0.000 270				6100		7800.00		0.00			12900.00		00.00	18000.00 MH
No.	Mk	•	Freq.		Rea Le		Correct Factor		easure ment	)-	Limit	O۱	er/		
			MHz		dB		dB		BuV/m	)	dBuV/n	n d	В	Detector	Comment
1			12010.0		51.		7.84		59.80		74.00		.20	peak	
2	*		12010.0	00	43.	55	7.84		51.39		54.00	<b>-</b> 2.	61	AVG	

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



		t Mo			BL	E 5.3						Test D					24/4/2	
	Test F						OMH:	<u>Z</u>				<u>Polariz</u>		<u> </u>			rtical	
130.0	dBuV/	emp				2	0°C					Hun	n.			6	0%	
130.0	dBuv/	m																1
120 _																		
10																		
00																		
30 <u> </u>																		
BO																		
o																		
io													1					
io													1 X 2 X					1
10 <u> </u>																		
30 <u> </u>																		
20																		
10.0																		
	0.000 2				6100		7800.		9500			200.00		00.00	1460	0.00	18000.00	МН
No.	IV	lk.	Freq	•	Rea Le			rect ctor		easur ment		Lim	ΙŢ	Ove	er			
			MHz		dB	uV	C	ΙB	dE	3uV/r	n	dBuV	/m	dE	3	Detector	Comme	nt
1			12200.	00	47.	.64	7.	91	Ę	55.55		74.0	0	-18.	45	peak		
2		*	12200.	00	40.	18	7.	91		18.09		54.0	0	-5.9	91	AVG		

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



	Test Mo	de	ВІ	E 5.3	3 (2 Mbps	)		Te	est Date	Э	202	24/4/2
Т	est Frequ	iency		244	0MHz	,		Po	larizatio	on	Hori	zontal
	Temp			2	0°C				Hum.		6	0%
130.0	dBuV/m											
120												
110 -												
100 -												
90												
80												
70												
60 —									1 X 2			
50									X			
40												
30												
20												
10.0												
	000 2700.0				7800.00	9500		11200			600.00	18000.00 MH
No.	Mk.	Freq.		iding vel	Correct Factor		easure- ment	-	Limit	Over		
		MHz	dE	ωV	dB	dE	3uV/m	d	BuV/m	dB	Detector	Comment
1		12200.00	50	.93	7.91	5	8.84		74.00	-15.16	peak	
2	*	12200.00	) 43	.12	7.91	5	51.03		54.00	-2.97	AVG	

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



	Test Mo			3 (2 Mbps)		Test Date			4/4/2
Te	est Frequ			80MHz		Polarization	1		rtical
	Temp		2	20°C		Hum.		6	0%
130.0	dBuV/m								
120									
110									
100									
90									
80									
70									
60						1			
50						2 X			
40						^			
30									
20									
10.0									
	000 2700.0			7800.00				00.00	18000.00 MHz
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12400.00	47.80	7.98	55.78	74.00	-18.22	peak	
2	*	12400.00	38.48	7.98	46.46	54.00	-7.54	AVG	

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



	Test N				BL			(lbps				Test D				24/4/2
	Test Fre	_	ency				0MH	Z			F	Polariza				izontal
	Ter	np				2	0°C					Hum	۱.		6	0%
130.0	dBuV/m															
120																
110 –																
100																
90																
во																
'o																
50 <u> </u>													1 X			
50													2 X			
10 <u> </u>																
30																
20																
10.0																
	0.000 270	0.00	4400.	00	6100		7800		9500			200.00			4600.00	18000.00 MF
No.	Mk.		Freq.		Read Lev			rrect ctor		easure ment	)- 	Limit		Over		
			MHz		dBı	υV	(	dΒ	dl	3uV/m	1	dBuV/	m	dB	Detector	Comment
1			12400.0	00	52.	31	7	.98	(	60.29		74.00	)	-13.7	l peak	
2	*		12400.0	00	42.	18	7	.98	į	50.16		54.00	)	-3.84	AVG	

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



	Test Mode Test Frequency			Bl	E 5.3	3 (1 M 30MH					Test D Polariz					4/3/29 rtical		
	Ten		iCy				0°С					Hun		1			0%	
130.0	dBuV/m	ıρ					0 0					ПUП	[].			0	U%	
Г																		
120 _																		
110																		
100																		
90																		
80																		
70																		
60 <u> </u>																		
50				1														
40 <u> </u>				1 X 2														
30				×														
20																		
10.0																		
180	00.000 1885	50.00	1970	00.00	2055	50.00	2140	0.00	2225	0.00	23	00.00	239	50.00	2480	00.00	26500.00	MH:
No.	Mk.		Freq			ding vel		rrect ctor		easur ment		Lim	it	Ov	er			
			MHz	7		uV		B B		BuV/r		dBuV	/m	dE	3	Detector	Commer	nt
1		1	9840			.62		.18		15.44		74.0		-28.		peak		
2	*	1	9840	.00	44	.26	-7	.18	(	37.08	}	54.0	0	-16.	92	AVG		_

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



	Test Mo			BL		3 (1 M					Test D					1/3/29	
	Test Frequ					0MHz				F	Polariz		)			zontal	
100.0	Temp	)			2	0°C					Hun	n.			6	0%	
130.0	dBuV/m																1
120																	
110 -																	
100																	
00																	
30 <u> </u>																	
o																	
io																	
io			1 X														
10 L			2														
:0			×														
20																	
0.0																	
1800	00.000 18850	.00 1970	0.00	20550	).00	21400	.00	2225	0.00	23	100.00	239	50.00	2480	00.00	26500.00	МН
No.	Mk.	Freq		Read Lev		Cor Fac			easur ment	e-	Lim	it	Ove	er			
		MHz		dBu		d			3uV/r	n	dBuV	/m	dE	3	Detector	Comme	nt
1		19840.	.00	53.4	43	-7.	18	4	16.25		74.0	0	-27.	75	peak		
2	*	19840.	00	43.	52	-7.	18	- (	36.34		54.0	0	-17.	66	AVG		

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



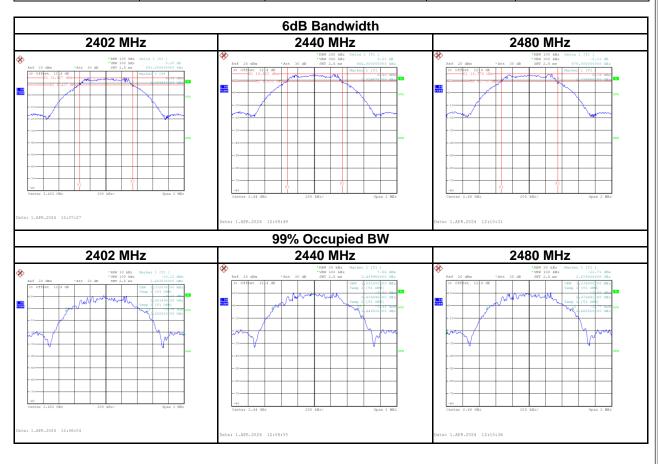
<u> </u>		Report No.: BTL-FCCP-2-2403T053
	APPENDIX E	BANDWIDTH

Project No.: 2403T053 Page 59 of 69 Report Version: R00



Test Mode: BLE 5.3\_1 Mbps

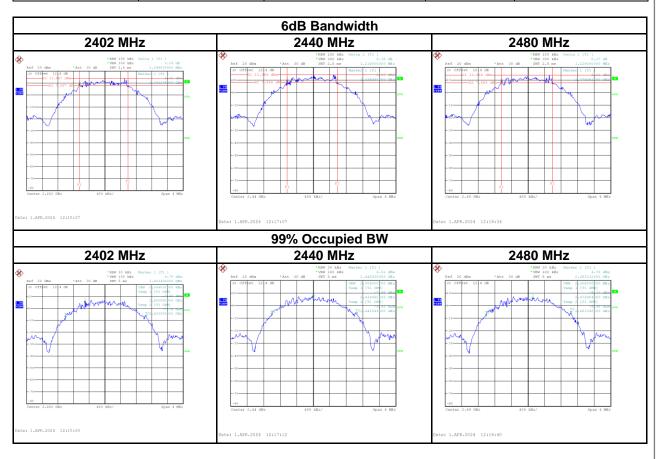
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	0.68	1.03	500	Pass
2440	0.66	1.03	500	Pass
2480	0.68	1.04	500	Pass





Test Mode: BLE 5.3\_2 Mbps

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	1.24	2.06	500	Pass
2440	1.22	2.06	500	Pass
2480	1.23	2.06	500	Pass







# APPENDIX F OUTPUT POWER

Project No.: 2403T053 Page 62 of 69 Report Version: R00



Report No.: BTL-FCCP-2-2403T053

Test Mode :	BLE 5.3_1 Mbps	Tested Date	2024/4/1
	<b>–</b> '		

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	13.65	0.0232	30.00	1.0000	Pass
2440	14.37	0.0274	30.00	1.0000	Pass
2480	14.59	0.0288	30.00	1.0000	Pass

Test Mode :	BLE 5.3_2 Mbps	Tested Date	2024/4/1
-------------	----------------	-------------	----------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	13.61	0.0230	30.00	1.0000	Pass
2440	14.36	0.0273	30.00	1.0000	Pass
2480	14.56	0.0286	30.00	1.0000	Pass

Project No.: 2403T053 Page 63 of 69 Report Version: R00



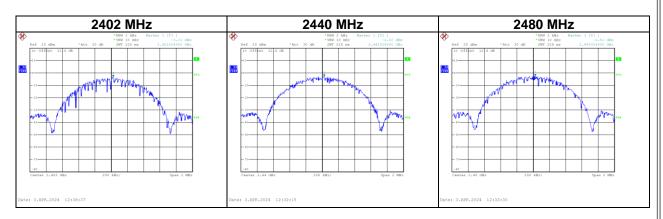
### APPENDIX G POWER SPECTRAL DENSITY TEST

Project No.: 2403T053 Page 64 of 69 Report Version: R00



Test Mode: BLE 5.3\_1 Mbps

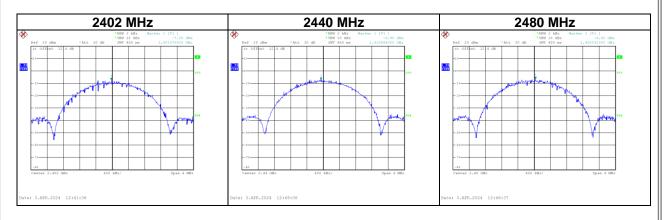
Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result
2402	-3.31	8	Pass
2440	-2.82	8	Pass
2480	-2.51	8	Pass





Test Mode : BLE 5.3\_2 Mbps

Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result
2402	-7.05	8	Pass
2440	-6.90	8	Pass
2480	-6.40	8	Pass





APPENDIX H	ANTENNA CONDUCTED SPURIOUS EMISSION

Project No.: 2403T053 Page 67 of 69 Report Version: R00





