



# FCC Radio Test Report

FCC ID: 2A2PW179641

Report No. : BTL-FCCP-1-2304G014 Equipment : Indoor Access Point

Model Name : AP-N515H : EFS

Applicant : FS.COM Inc.

Address : 380 Centerpoint Blvd, New Castle, DE 19720, United States

Manufacturer : FS.COM Inc.

Address : 380 Centerpoint Blvd, New Castle, DE 19720, United States

Radio Function : Bluetooth Low Energy

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

Measurement : ANSI C63.10-2013

Procedure(s)

**Date of Receipt** : 2023/4/21

**Date of Test** : 2023/10/27 ~ 2023/11/10

**Issued Date** : 2024/1/15

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

Prepared by

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Project No.: 2304G014 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** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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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.: 2304G014 Page 2 of 69 Report Version: R00





**CONTENTS** 1 SUMMARY OF TEST RESULTS 6 1.1 TEST FACILITY 7 1.2 MEASUREMENT UNCERTAINTY 7 **TEST ENVIRONMENT CONDITIONS** 1.3 7 1.4 **DUTY CYCLE** 8 2 **GENERAL INFORMATION** 9 2.1 **DESCRIPTION OF EUT** 9 2.2 **TEST MODES** 11 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 2.3 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 14 **TEST SETUP** 3.4 15 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 **TEST SETUP** 17 4.4 4.5 **EUT OPERATING CONDITIONS** 18 4.6 TEST RESULT - 9KHZ TO 30 MHZ 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** 20 5.2 **DEVIATION FROM STANDARD** 5.3 20 5.4 **TEST SETUP** 20 5.5 **EUT OPERATION CONDITIONS** 20 **TEST RESULTS** 5.6 20 **OUTPUT POWER TEST** 6 21 6.1 LIMIT 21 6.2 TEST PROCEDURE 21 6.3 **DEVIATION FROM STANDARD** 21 **TEST SETUP** 6.4 21 **EUT OPERATION CONDITIONS** 6.5 21 6.6 **TEST RESULTS** 21 7 POWER SPECTRAL DENSITY TEST 22 7.1 APPLIED PROCEDURES / LIMIT 22 7.2 **TEST PROCEDURE** 22 7.3 **DEVIATION FROM STANDARD** 22 7.4 **TEST SETUP** 22 7.5 **EUT OPERATION CONDITIONS** 22 7.6 TEST RESULTS 22 ANTENNA CONDUCTED SPURIOUS EMISSION 8 23



8.1	APPL	IED PROCEDURES / LIMIT	23
8.2	TEST	PROCEDURE	23
8.3	DEVIA	ATION FROM STANDARD	23
8.4	TEST	SETUP	23
8.5	EUT (	DPERATION CONDITIONS	23
8.6	TEST	RESULTS	23
9	LIST OF	MEASURING EQUIPMENTS	24
10	EUT TES	ST PHOTO	26
11	EUT PHO	OTOS	26
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.: 2304G014 Page 4 of 69 Report Version: R00



# **REVISION HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-1-2304G014	R00	Original Report.	2024/1/15	Valid

Project No.: 2304G014 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	APPENDIX A	Pass	
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	Pass	
15.247(a)(2)	Bandwidth	APPENDIX E	Pass	
15.247(b)(3)	Output Power	APPENDIX F	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	

# NOTE:

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

Project No.: 2304G014 Page 6 of 69 Report Version: R00

# 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)

□ CB08

□ CB11

⊠ SR10

No. 72, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

(FCC DN: TW0659)

□ C06

□ 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  $\mathbf{U}_{cispr}$  requirement.

A. AC power line conducted emissions test:

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

#### B. Radiated emissions test:

Test Site	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:

a tost.	
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.

### 1.3 TEST ENVIRONMENT CONDITIONS

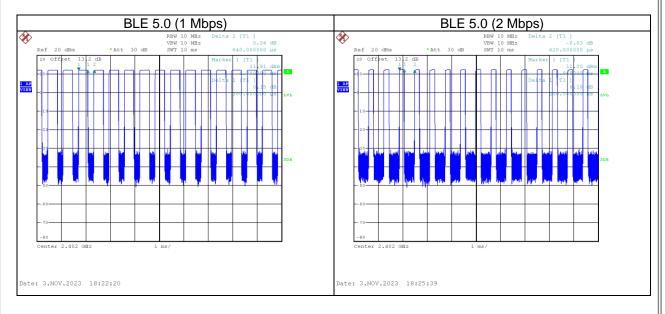
Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	20 °C, 45 %	DC 48V	Jerry Chuang
Radiated emissions below 1 GHz	Refer to data	DC 48V	Kevin Zhen
Radiated emissions above 1 GHz	Refer to data	DC 48V	Kevin Zhen
Bandwidth	25.8 °C, 54 %	DC 48V	Jerry Chuang
Output Power	25.8 °C, 54 %	DC 48V	Jerry Chuang
Power Spectral Density	25.8 °C, 54 %	DC 48V	Jerry Chuang
Antenna conducted Spurious Emission	25.8 °C, 54 %	DC 48V	Jerry Chuang



# 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)
Mode	ON	Numbers	On Time (B)	Period (ON+OFF)	Duty Cycle	Duty Factor
lviode	(ms)	(ON)	(ms)	(ms)	(%)	(dB)
BLE 5.0 (1 Mbps)	0.380	1	0.380	0.640	59.38%	2.26
BLE 5.0 (2 Mbps)	0.200	1	0.200	0.620	32.26%	4.91



# 2 GENERAL INFORMATION

# 2.1 DESCRIPTION OF EUT

Fauinment	Indeas Access Daint
Equipment	Indoor Access Point
Model Name	AP-N515H
Brand Name	<b>G</b> FS
Model Difference	N/A
Power Source	DC Voltage supplied from PoE adapter or AC adapter (Support unit).
Power Rating	PoE 48V0.6A, DC 48V0.6A
Products Covered	N/A
HW Version	V1.XX
SW Version	AP_FSOS 11.9
Operation Band	2400 MHz ~ 2483.5 MHz
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Technology	GFSK
Transfer Rate	1 Mbps, 2 Mbps
Maximum Output Power	1 Mbps: 11.34 dBm (0.0136 W)
Maximum Output Power	2 Mbps: 11.49 dBm (0.0141 W)
Test Software Version	Qualcomm RCT 4.0.00175.0
Test Model	AP-N515H
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.: 2304G014 Page 9 of 69 Report Version: R00



(3) Table for Filed Antenna:

Antenna	Manufacture	Model Name	Type	Connector	Frequency (MHz)	Gain (dBi)
					2400	2.5
1	SERCOM	AP-N515H	PIFA	N/A	2450	2.2
					2500	2.1

(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.: 2304G014 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 5.0 / 2 Mbps	19	-
Transmitter Radiated Emissions	BLE 5.0 / 1, 2 Mbps	00/39	Bandedge
(above 1GHz)	BLE 5.0 / 1, 2 Mbps	00/19/39	Harmonic
Transmitter Radiated Emissions (above 18GHz)	BLE 5.0 / 2 Mbps	19	-
Bandwidth	BLE 5.0 / 1, 2 Mbps	00/19/39	-
Output Power	BLE 5.0 / 1, 2 Mbps	00/19/39	-
Power Spectral Density	BLE 5.0 / 1, 2 Mbps	00/19/39	-
Antenna conducted Spurious Emission	BLE 5.0 / 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.

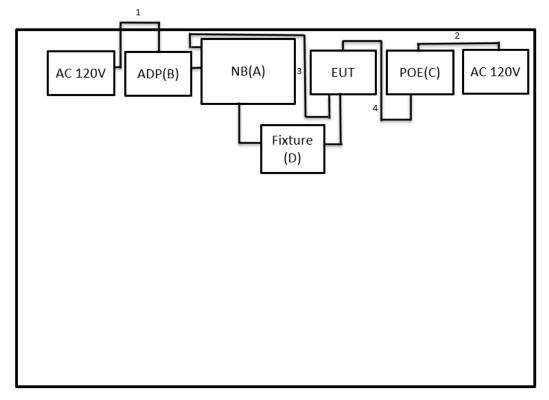
Project No.: 2304G014 Page 11 of 69 Report Version: R00



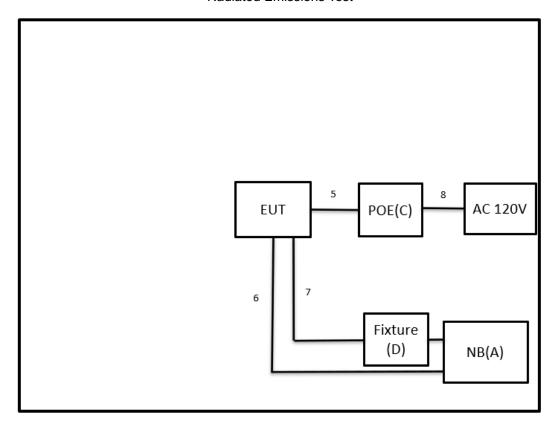
# 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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

AC Power Line Conducted Emissions Test



Radiated Emissions Test



Project No.: 2304G014 Page 12 of 69 Report Version: R00



# 2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
А	NB	ASUS	X555LN-0021B42 10	EAN0CCV31122 642B	Furnished by test lab.
В	ADP	ASUS	ADP-POYD	N/A	Furnished by test lab.
С	POE	PLANET	POE-163(V2)	N/A	Furnished by test lab.
D	Fixture	N/A	N/A	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	1m	Power Cord	Furnished by test lab.
2	N/A	N/A	1m	Power Cord	Furnished by test lab.
3	N/A	N/A	0.5m	LAN Cable	Furnished by test lab.
4	N/A	N/A	0.5m	LAN Cable	Furnished by test lab.
5	N/A	N/A	1m	LAN Cable	Furnished by test lab.
6	N/A	N/A	2m	LAN Cable	Furnished by test lab.
7	N/A	N/A	1m	Micro USB	Furnished by test lab.
8	N/A	N/A	1m	Power Cord	Furnished by test lab.



#### 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 (dBuV)		Correct Factor (dB)		Measurement Value (dBuV)
38.22	+	3.45	=	41.67

Measurement Value		Limit Value		Margin Level
(dBuV)		(dBuV)		(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:

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

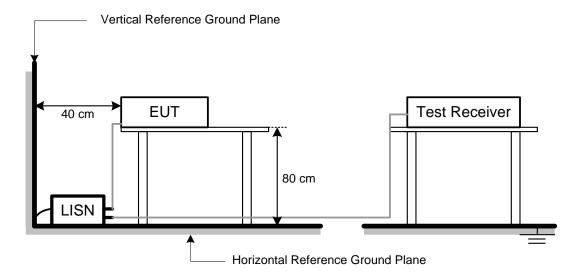
#### 3.3 DEVIATION FROM TEST STANDARD

No deviation.

Project No.: 2304G014 Page 14 of 69 Report Version: R00



# 3.4 TEST SETUP



# 3.5 TEST RESULT

Please refer to the APPENDIX A.



#### 4 RADIATED EMISSIONS TEST

#### **4.1 LIMIT**

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

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

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

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency	Radiated (dBu	Measurement Distance	
(MHz)	Peak	Average	(meters)
Above 1000	74	54	3

#### NOTE:

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

Measurement Value = Reading Level + Correct Factor

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

Margin Level = Measurement Value - Limit Value

Calculation example:

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

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

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

Project No.: 2304G014 Page 16 of 69 Report Version: R00



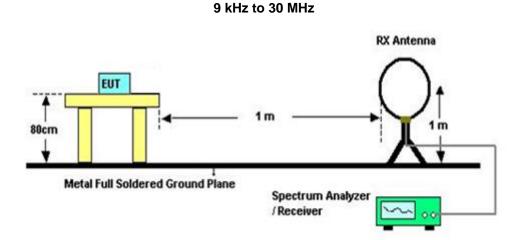
#### 4.2 TEST PROCEDURE

- 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

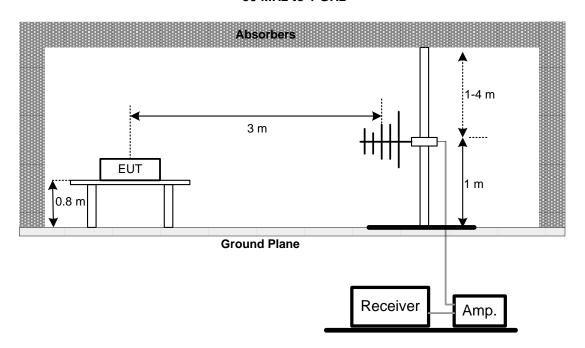
No deviation.

#### 4.4 TEST SETUP

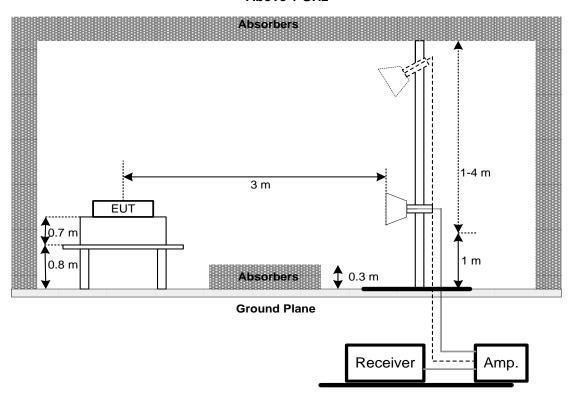




30 MHz to 1 GHz



**Above 1 GHz** 



# 4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.



# 4.6 TEST RESULT - 9kHz TO 30 MHz

Please refer to the APPENDIX B.

#### 4.7 TEST RESULT - 30 MHZ TO 1 GHZ

Please refer to the APPENDIX C.

## 4.8 TEST RESULT - ABOVE 1 GHZ

Please refer to the APPENDIX D.

## NOTE:

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

Project No.: 2304G014 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
		(6dB bandwidth)		

#### 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.: 2304G014 Page 20 of 69 Report Version: R00



#### **6 OUTPUT POWER TEST**

#### 6.1 LIMIT

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

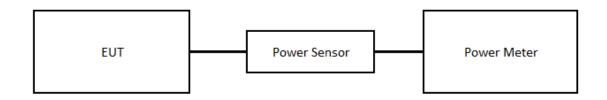
#### 6.2 TEST PROCEDURE

- 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 method 9 b) of FCC KDB 558074 D01 DTS Meas Guidance.

## 6.3 DEVIATION FROM STANDARD

No deviation.

## 6.4 TEST SETUP



## 6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 6.6 TEST RESULTS

Please refer to the APPENDIX F.



## 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.: 2304G014 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.: 2304G014 Page 23 of 69 Report Version: R00



# 9 LIST OF MEASURING EQUIPMENTS

	AC Power Line Conducted Emissions					
Item	Item Kind of Equipment Mar		Type No. Serial No.		Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	2023/5/10	2024/5/9
2	Test Cable	EMCI	EMCCFD300-BM -BMR-5000	220331	2023/3/30	2024/3/29
3	EMI Test Receiver	R&S	ESR 7	101433	2023/11/10	2024/11/9
4	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

	Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until	
1	Preamplifier	EMCI	EMC330N	980850	2023/9/6	2024/9/5	
2	Preamplifier	EMCI	EMC118A45SE	980819	2023/3/7	2024/3/6	
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	2023/7/10	2024/7/9	
6	Test Cable	EMCI	EMC104-SM-SM- 3000	220322	2023/3/14	2024/3/13	
7	Test Cable	EMCI	EMC104-SM-SM- 7000	220324	2023/3/14	2024/3/13	
8	EXA Signal Analyzer	keysight	N9020B	MY57120120	2023/2/24	2024/2/23	
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	2023/3/14	2024/3/13	
15	Test Cable	EMCI	EMC102-KM-KM- 1000	220327	2023/3/14	2024/3/13	
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	2023/3/9	2024/3/8

			Output Power			
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Power Meter	Anritsu	ML2495A	1128008	2023/5/12	2024/5/11
2	Power Sensor	Anritsu	MA2411B	1126001	2023/5/12	2024/5/11

Project No.: 2304G014 Page 24 of 69 Report Version: R00



	Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until	
1	Spectrum Analyzer	R&S	FSP 40	101139	2023/3/9	2024/3/8	

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	2023/3/9	2024/3/8	

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

Project No.: 2304G014 Page 25 of 69 Report Version: R00





10 EUT TEST PHOTO
Please refer to document Appendix No.: TP-2304G014-FCCP-1 (APPENDIX-TEST PHOTOS).
11 EUT PHOTOS
Please refer to document Appendix No.: EP-2304G014-1 (APPENDIX-EUT PHOTOS).

Project No.: 2304G014 Page 26 of 69 Report Version: R00

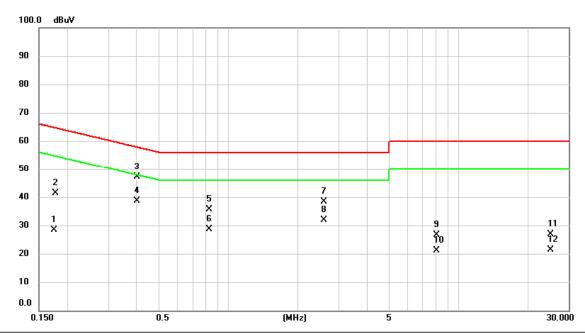


APPENDIX A	AC POWER LINE CONDUCTED EMISSIONS

Project No.: 2304G014 Page 27 of 69 Report Version: R00



Test Mode	Normal	Tested Date	2023/11/3
Test Frequency	-	Phase	Line

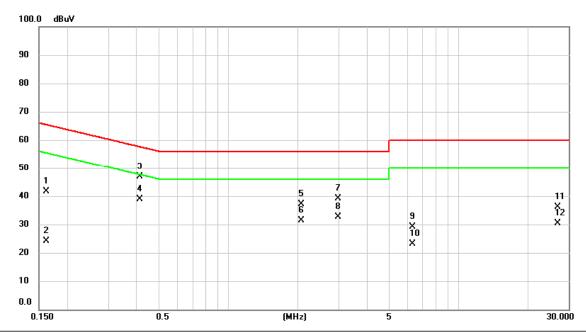


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBu∨	dB	dBu∨	dBu∨	dB	Detector	Comment
1		0.1751	18.77	9.68	28.45	54.71	-26.26	AVG	
2		0.1765	31.79	9.68	41.47	64.65	-23.18	QP	
3		0.4032	37.59	9.65	47.24	57.79	-10.55	QP	
4	*	0.4032	28.90	9.65	38.55	47.79	-9.24	AVG	
5		0.8290	26.02	9.65	35.67	56.00	-20.33	QP	
6		0.8290	19.08	9.65	28.73	46.00	-17.27	AVG	
7		2.6036	28.68	9.71	38.39	56.00	-17.61	QP	
8		2.6036	22.05	9.71	31.76	46.00	-14.24	AVG	
9		8.0624	16.91	9.78	26.69	60.00	-33.31	QP	
10		8.0624	11.25	9.78	21.03	50.00	-28.97	AVG	
11		24.9662	16.99	9.96	26.95	60.00	-33.05	QP	
12		24.9662	11.30	9.96	21.26	50.00	-28.74	AVG	

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



-	Test Mode	Normal	Tested Date	2023/11/3
	Test Frequency	-	Phase	Neutral

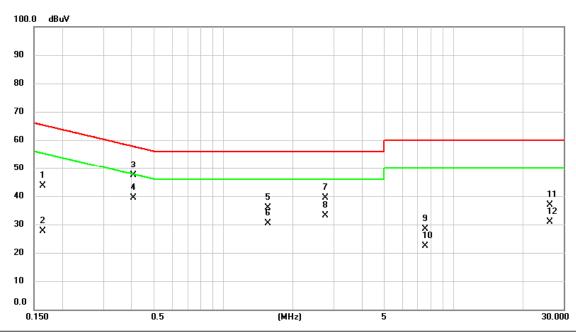


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBu∨	dB	dBu∨	dBu∨	dB	Detector	Comment
1		0.1613	31.92	9.73	41.65	65.40	-23.75	QP	
2		0.1613	14.51	9.73	24.24	55.40	-31.16	AVG	
3		0.4132	37.27	9.70	46.97	57.58	-10.61	QP	
4	*	0.4132	29.29	9.70	38.99	47.58	-8.59	AVG	
5		2.0648	27.32	9.76	37.08	56.00	-18.92	QP	
6		2.0648	21.50	9.76	31.26	46.00	-14.74	AVG	
7		2.9918	29.33	9.75	39.08	56.00	-16.92	QP	
8		2.9918	22.83	9.75	32.58	46.00	-13.42	AVG	
9		6.3060	19.44	9.80	29.24	60.00	-30.76	QP	
10		6.3060	13.42	9.80	23.22	50.00	-26.78	AVG	
11		26.8463	26.12	10.08	36.20	60.00	-23.80	QP	
12		26.8463	20.41	10.08	30.49	50.00	-19.51	AVG	

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



Test Mode	Idle	Tested Date	2023/11/3
Test Frequency	-	Phase	Line

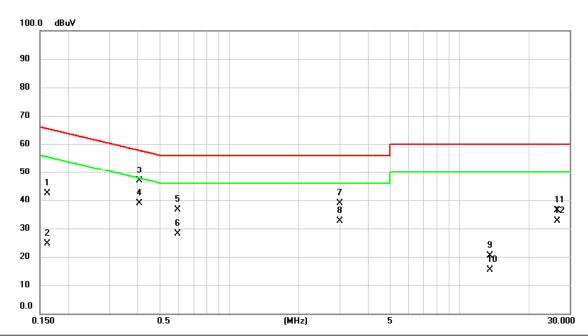


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBu∨	dB	dBu∨	dBu∨	dB	Detector	Comment
1		0.1635	34.05	9.67	43.72	65.28	-21.56	QP	
2		0.1635	17.90	9.67	27.57	55.28	-27.71	AVG	
3		0.4087	37.73	9.65	47.38	57.67	-10.29	QP	
4	*	0.4087	29.67	9.65	39.32	47.67	-8.35	AVG	
5		1.5630	26.18	9.68	35.86	56.00	-20.14	QP	
6		1.5630	20.60	9.68	30.28	46.00	-15.72	AVG	
7		2.7578	29.72	9.70	39.42	56.00	-16.58	QP	
8		2.7578	23.42	9.70	33.12	46.00	-12.88	AVG	
9		7.5593	18.53	9.78	28.31	60.00	-31.69	QP	
10		7.5593	12.59	9.78	22.37	50.00	-27.63	AVG	
11		26.1173	26.81	9.97	36.78	60.00	-23.22	QP	
12		26.1173	20.87	9.97	30.84	50.00	-19.16	AVG	

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



I	Test Mode	Idle	Tested Date	2023/11/3
	Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBu∨	dB	dBu∨	dBu∨	dB	Detector	Comment
1		0.1613	32.56	9.73	42.29	65.40	-23.11	QP	
2		0.1613	14.80	9.73	24.53	55.40	-30.87	AVG	
3		0.4087	37.18	9.70	46.88	57.67	-10.79	QP	
4	*	0.4087	29.20	9.70	38.90	47.67	-8.77	AVG	
5		0.5955	26.82	9.70	36.52	56.00	-19.48	QP	
6		0.5955	18.49	9.70	28.19	46.00	-17.81	AVG	
7		3.0008	29.22	9.75	38.97	56.00	-17.03	QP	
8		3.0008	22.90	9.75	32.65	46.00	-13.35	AVG	
9		13.5600	10.37	9.92	20.29	60.00	-39.71	QP	
10		13.5600	5.45	9.92	15.37	50.00	-34.63	AVG	
11		26.5695	26.36	10.08	36.44	60.00	-23.56	QP	
12		26.5695	22.50	10.08	32.58	50.00	-17.42	AVG	

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



APPENDIX B	RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

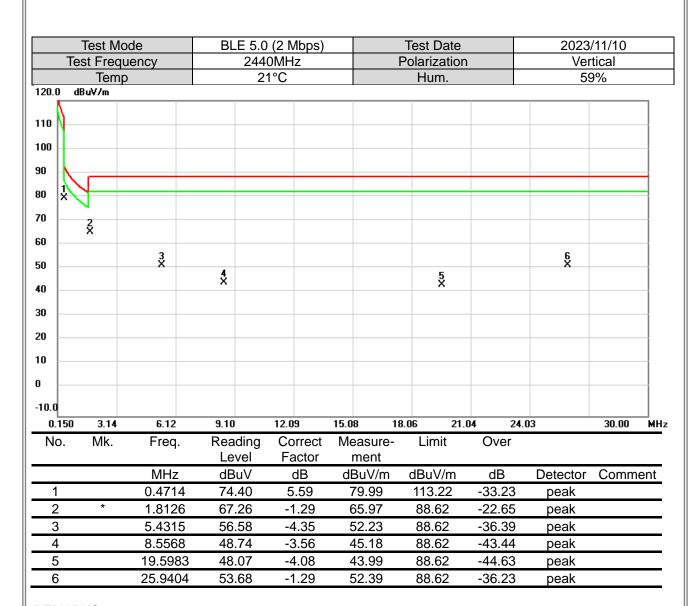
Project No.: 2304G014 Page 32 of 69 Report Version: R00



	Test Mod	de	BLE 5.0	(2 Mbps)		Test Date		2023	/11/10		
Test Frequency			244	0MHz		Polarization	Verti		tical	cal	
Temp			2	1°C		Hum.			59%		
150.0 dl	BuV/m									_	
140		_									
130											
20											
110											
100										-	
90			1 X							-	
BO										+	
70										-	
50										-	
50										-	
40										-	
30										+	
20.0											
0.009	0.02	0.04	0.05	0.07		09 0.11	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	*	0.0507	63.39	23.23	86.62	132.58	-45.96	peak			

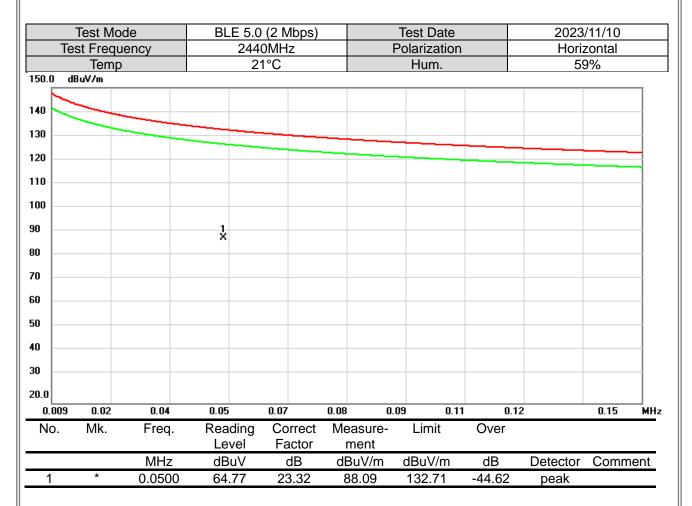
- (1) Measurement Value = Reading Level + Correct Factor.
  (2) Margin Level = Measurement Value Limit Value.





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





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



	Test Mo			0 (2 Mbps)		Test Date			/11/10		
le	st Frequ			40MHz		Polarization			Horizontal		
4000	Temp			21°C		Hum.		59	9%		
120.0 d	BuV/m									$\neg$	
110 100 90 80											
70	ž Ž									-	
60 50	×	4 *						ě			
40			5 X							-	
20											
10 0											
-10.0											
0.150	3.14	6.12	9.10	12.09		8.06 21.		03	30.00	MH	
No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comm	ent	
1		0.4585	75.71	5.77	81.48	113.46	-31.98	peak			
2	*	1.4225	71.84	-0.28	71.56	83.61	-12.05	peak			
3		2.9221	62.87	-3.64	59.23	88.62	-29.39	peak			
4		5.4295	56.07	-4.35	51.72	88.62	-36.90	peak			
5		10.2970	43.67	-3.23	40.44	88.62	-48.18	peak			
6		25.4558	51.94	-1.52	50.42	88.62	-38.20	peak			

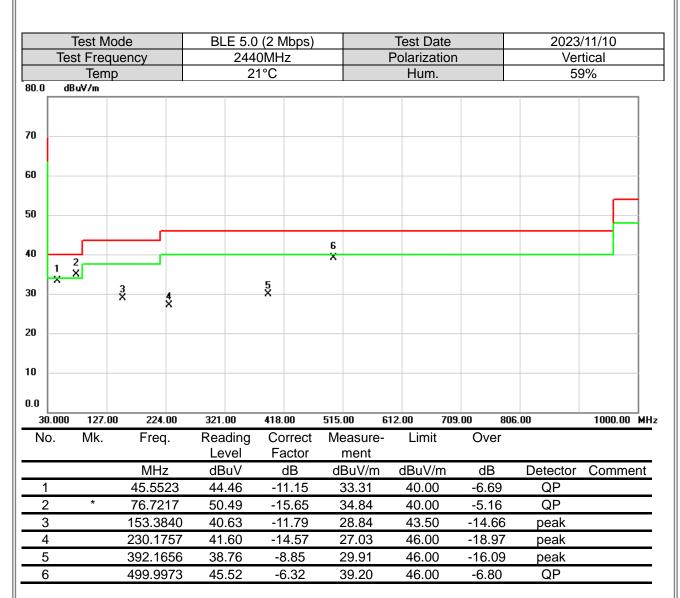
- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



APPENDIX C	RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

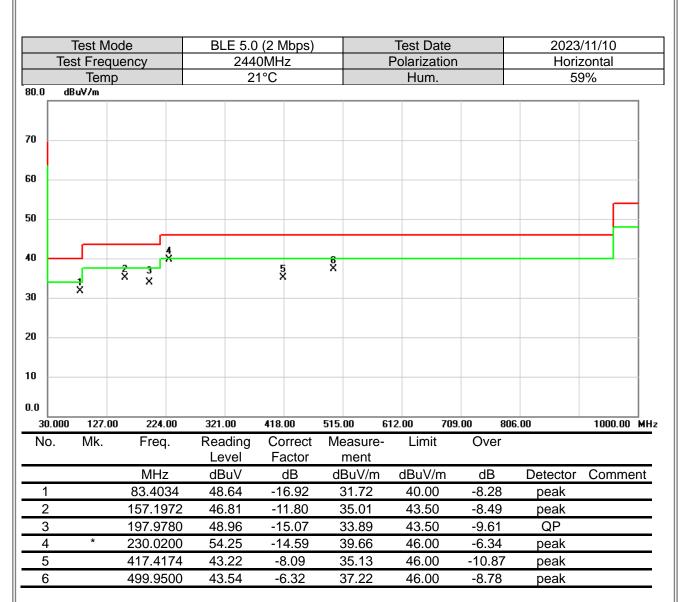
Project No.: 2304G014 Page 37 of 69 Report Version: R00





- (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.: 2304G014 Page 40 of 69 Report Version: R00



	est Mod			(1 Mbps)		Test Date			3/11/9
les	t Freque	ency		2MHz		Polarizatio	n		tical
130.0 dB	Temp uV/m		2	5°C		Hum.		56	6%
130.0 UB	uv/III								
120									
110									
100					Ä				
90					-				
80									
70					Ž.				
60									
50			*					ereprekatura produkcial	<u>5</u>
40	Marillo de porte de la constituida del constituida del constituida de la constituida	allow how property the property	manghanhan X	property and the second	may my man	han and an angle of health	ffyrigi <mark>n 1986 gifty festilgifyto yr fes</mark> yddiai	directoristical desirent de la constituit de la constitui	7
30									X
30									
20									
20 10.0									
10.0	0 2322.00	2342.00	2362.00	2382.00	2402.00 2	422.00 24	42.00 246	52.00	2502.00 M
10.0	0 2322.00 Mk.	2342.00 Freq.	2362.00 Reading Level	2382.00 Correct Factor	2402.00 2 Measure- ment	422.00 24 Limit	42.00 248 Over	52.00	2502.00 M
10.0 2302.00			Reading	Correct	Measure-			52.00 Detector	2502.00 M
0.0 2302.00		Freq.	Reading Level	Correct Factor dB -5.43	Measure- ment	Limit	Over		
0.0 2302.000 No.		Freq. MHz	Reading Level dBuV 56.51 46.21	Correct Factor dB -5.43	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
0.0 2302.000 No.	Mk.	Freq.  MHz 2360.673 2360.673 2400.000	Reading Level dBuV 56.51 46.21 75.07	Correct Factor dB -5.43 -5.43 -5.37	Measure- ment dBuV/m 51.08 40.78 69.70	Limit  dBuV/m  74.00  54.00  74.00	Over  dB -22.92 -13.22 -4.30	Detector peak AVG peak	Comment
0.0 2302.000 No. 1 2 3 4	Mk.	Freq.  MHz 2360.673 2360.673 2400.000 2402.000	Reading Level dBuV 56.51 46.21 75.07 106.77	Correct Factor dB -5.43 -5.43 -5.37 -5.36	Measure- ment dBuV/m 51.08 40.78 69.70 101.41	Limit  dBuV/m  74.00  54.00	Over  dB  -22.92  -13.22  -4.30  27.41	Detector peak AVG peak peak	Comment
0.0 2302.000 No. 1 2 3 4 5	Mk.	Freq.  MHz 2360.673 2360.673 2400.000 2402.000 2402.000	Reading Level dBuV 56.51 46.21 75.07 106.77 106.08	Correct Factor dB -5.43 -5.43 -5.37 -5.36	Measure- ment dBuV/m 51.08 40.78 69.70 101.41 100.72	Limit  dBuV/m  74.00  54.00  74.00  74.00  54.00	Over  dB -22.92 -13.22 -4.30 27.41 46.72	Detector peak AVG peak	Comment
2302.000 No.	Mk.	Freq.  MHz 2360.673 2360.673 2400.000 2402.000	Reading Level dBuV 56.51 46.21 75.07 106.77	Correct Factor dB -5.43 -5.43 -5.37 -5.36	Measure- ment dBuV/m 51.08 40.78 69.70 101.41	Limit  dBuV/m  74.00  54.00  74.00  74.00	Over  dB  -22.92  -13.22  -4.30  27.41	Detector peak AVG peak peak	Comment  NoLimit  NoLimit

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



Ta	Test Mo est Frequ			0 (1 Mbps) 80MHz		Test Date Polarization			3/11/9 rtical	
- 10	Temp			25°C		Hum.			6%	
130.0	dBuV/m		-			T IGITI.			370	
										7
120										-
10										
'''					4					
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-										
30										1
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50		Laderski, om skalen for de problege	anastropen and removals	areament that were have no	Agusta harrystagada	Marykanykanykanika 6 X	NewhouseMousepl	planesty tradentification	of expression of the delication of the second	1
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50 i i i i i i i i i i i i i i i i i i i		Laderic von sicher von der der	enegstypernach nephthe	ageniulys-partison,	paring purchase and	6	Naglipalana Manapal	of the second state of the second state of the	at vigensyntysiä titensyn	
50						6 ×				
2 X 30 20 2380.0	.000 2400.0	0 2420.00	2440.00	2460.00	2480.00 25	6 X 500.00 252	0.00 254	parametristonepitenten	ачунаралбаар. 2580.00	
50			2440.00 Reading	2460.00 Correct	2480.00 25 Measure-	6 ×				
60 2 40 2 X 80 20 0.0 2380.0	.000 2400.0	0 2420.00 Freq.	2440.00 Reading Level	2460.00 Correct Factor	2480.00 25 Measure- ment	6 X 500.00 252 Limit	0.00 254 Over	0.00	2580.00	MI
2 X 80 0.0 2380.0 No.	.000 2400.0	0 2420.00 Freq.	2440.00 Reading Level dBuV	2460.00 Correct Factor dB	2480.00 25 Measure- ment dBuV/m	6 X 500.00 252 Limit	0.00 254 Over dB	0.00 Detector		MI
2 X 80 0.0 2380.0 No.	.000 2400.0	00 2420.00 Freq. MHz 2384.160	2440.00 Reading Level dBuV 55.05	2460.00 Correct Factor dB -5.40	2480.00 25 Measure- ment dBuV/m 49.65	500.00 252 Limit dBuV/m 74.00	0.00 254 Over dB -24.35	0.00  Detector peak	2580.00	MI
0 2 X 0 0 0.0 2380.0 No.	.000 2400.0 Mk.	0 2420.00 Freq. MHz 2384.160 2384.160	2440.00 Reading Level dBuV 55.05 43.68	2460.00 Correct Factor dB -5.40	2480.00 25 Measure- ment dBuV/m 49.65 38.28	500.00 252 Limit dBuV/m 74.00 54.00	0.00 254 Over dB -24.35 -15.72	Detector peak AVG	2580.00 Comme	MI
0 2 X 0 0 0.0 0.0 0.0 No.	.000 2400.0	0 2420.00 Freq. MHz 2384.160 2384.160 2480.000	2440.00 Reading Level dBuV 55.05 43.68 105.17	2460.00 Correct Factor dB -5.40 -5.40 -5.22	2480.00 25 Measure- ment dBuV/m 49.65 38.28 99.95	6 X 500.00 252 Limit dBuV/m 74.00 54.00 74.00	0.00 254 Over dB -24.35 -15.72 25.95	Detector peak AVG peak	2580.00 Comme	MI ent
10 2 X 80 0 0.0 2380.0 No.	.000 2400.0 Mk.	0 2420.00 Freq. MHz 2384.160 2384.160	2440.00 Reading Level dBuV 55.05 43.68	2460.00 Correct Factor dB -5.40	2480.00 25 Measure- ment dBuV/m 49.65 38.28	500.00 252 Limit dBuV/m 74.00 54.00	0.00 254 Over dB -24.35 -15.72	Detector peak AVG	2580.00 Comme	MI ent

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



	Test Mo				2 Mbps)			Test Dat			3/11/9
les	st Frequ	•		2402			<u> </u>	Polarizati	ion		tical
130.0 dB	Temp			25°	C			Hum.		56	5%
130.0 UB	uv/III										
120											
10											
100						\$					
90											
BO						*					
70											
50						-					
50 40	μη <b>ιμήν</b> Λην <sup>α</sup> 2	Moderate de propriéta	dand by province	houthpublique	nggpHugpayausukandand	wang /	apple of the second	M-exact from many	Kriminianinidanpianinis	matulisianismiserial des	Maradan Arabi
10 <u> </u>											
20											
10.0											
2302.00	0 2322.0	0 2342.00	2362.0		2382.00	2402.00			2442.00 24	162.00	2502.00 MF
No.	Mk.	Freq.	Read Lev		Correct Factor	Meas me		Limit	Over		
		MHz	dBu	V	dB	dBu\	V/m	dBuV/n	n dB	Detector	Comment
1		2325.160	55.9	7	-5.50	50.	47	74.00	-23.53	peak	
2		2325.160	) 43.9	1	-5.50	38.	41	54.00	-15.59	AVG	
3	Χ	2400.000	84.2	:0	-5.37	78.	83	74.00	4.83	peak	NoLimit
4	Χ	2402.000	103.	31	-5.36	98.	45	74.00	24.45	peak	NoLimit
5	*	2402.000	102.	06	-5.36	96.	70	54.00	42.70	AVG	NoLimit
6		2501.927	7 55.2	:4	-5.18	50.	06	74.00	-23.94	peak	
7											

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



-	Test Mo	de	BLE 5.0	0 (2 Mbps)		Test Date		2023	3/11/9
Tes	st Frequ	iency		30MHz		Polarization	ı		tical
	Temp		2	25°C		Hum.		56	6%
130.0 dE	BuV/m								
120									
110									
					3				
00					<u> </u>				
30									
30					- fit				
70									
					JH				
60									_
50	Oliver de des		Marie Ma	and address or take a	and Joseph Market	da de Jakona Janasa	O. Alba A altra tata a	ballar market aller de ministre de la co	X tratage
40 X	(harindan sakalaha)	na didental han resolution	A Charles and bed to the second	Producile Committee and Committee	A.A. A disamples	Contracting the Albanders (Alban)	tolere dan Auffeldungsteit der Au	Marks - organic Marks and Marks	S X
+u _^_									^
30									
20									
10.0	0 2400 0	0 2420.00	2440.00	2460.00	2480.00 2	E00.00 2E	20.00 254	10.00	2500.00 141
No.	00 2400.0 Mk.	Freq.	Reading	Correct	Measure-	500.00 25: Limit	20.00 254 Over	0.00	2580.00 MI
INO.	IVIK.	rieq.	Level	Factor	ment	LIIIIII	Ovei		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2383.980	56.02	-5.39	50.63	74.00	-23.37	peak	Commission
2		2383.980	46.41	-5.39	41.02	54.00	-12.98	AVG	
	Χ	2480.000	107.95	-5.22	102.73	74.00	28.73	peak	NoLimit
3				0.22	102.70	,		poun	. 10 =
3	*			-5.22	101.05	54.00	47.05	AVG	NoLimit
3 4 5		2480.000 2564.153	106.27 55.91	-5.22 -4.97	101.05 50.94	54.00 74.00	47.05 -23.06	AVG peak	NoLimit

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



	Test M	BLI	E 5.0 (1					est Dat				3/11/9	
	Test Fred			2402M					<u>larizati</u>	on			tical
	Tem	ıp		25°C	;				Hum.			56	5%
130.0	dBuV/m												
120													
110													
100													
90													
80													
70													
60													
50			1										
10 <u> </u>			1 X										
30			2 X										
20													
10.0													
	0.000 2700				00.00	9500.		1120		12900.00	1460	0.00	18000.00 MH
No.	Mk.	Freq.	Read Lev		Correct Factor		asure nent	-	Limit	Ove	er		
		MHz	dBı		dB		uV/m	d	BuV/m	n dE	3	Detector	Comment
1		4804.00			0.53		4.94		74.00	-29.		peak	
2	*	4804.00			0.53		2.85		54.00	-21.		AVG	

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



	Test Mo	ode				(1 Mbps)				est Da				3/11/9
Te	st Frequ					2MHz			Po	olariza				zontal
	Temp	)			25	5°C				Hum.			56	6%
130.0 d	BuV/m													
120														
10														
00 -														
ıo														
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0														
0 -														
0			1 X											
0			2											
0			×											
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0.0														
	00 2700.0			6100.0		7800.00	9500			00.00	1290		00.00	18000.00 M
No.	Mk.	Freq.		Read Lev		Correct Factor		easure ment	-	Limit	•	Over		
		MHz		dBu	V	dB	dl	BuV/m		dBuV/ı	m	dB	Detector	Comment
1		4804.00	00	44.0	)8	0.53	4	44.61		74.00	)	-29.39	peak	
2	*	4804.00	00	32.3	35	0.53		32.88		54.00	)	-21.12	AVG	<u></u>

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



	Test Mo	ode		BLE	5.0	(1 Mbps)				est Da			2023	3/11/9
Te	st Frequ					OMHz			Po	olarizat				tical
	Temp	)			25	5°C				Hum.			56	6%
30.0 dl	BuV/m													
20														
10														
00														
o														
o														
0														
0														
0			1 X											
0			2 X											
0			×											
o														
0.0														
	00 2700.0			6100.0		7800.00	9500			00.00	1290		300.00	18000.00 M
No.	Mk.	Freq.		Read Leve		Correct Factor		easure- ment	-	Limit		Over		
		MHz		dBu	V	dB	dE	3uV/m	(	dBuV/r	m	dB	Detector	Comment
1		4880.00	00	44.0	0	0.75	4	4.75		74.00	)	-29.25	peak	
2	*	4880.00	00	33.1	2	0.75	3	33.87		54.00	)	-20.13	AVG	<del></del>

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



	Test Mo			(1 Mbps)		Test Date			3/11/9
10	est Frequ Temp			0MHz 5°C		Polarization Hum.	n		zontal 5%
130.0	dBuV/m			5 C		Hulli.		30	D 70
120									
110									
100 -									
90									
80									
70									
60									
00									
50		1 X							
40									
		2 X							
30									
20									
10.0									
1000.	000 2700.0	0 4400.00	6100.00	7800.00	9500.00	11200.00 12	900.00 146	500.00	18000.00 MHz
No.	Mk.	Freq.	Reading	Correct	Measure	- Limit	Over		
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m		dB	Detector	Comment
1		4880.000	43.91	0.75	44.66	74.00	-29.34	peak	
2	*	4880.000	33.14	0.75	33.89	54.00	-20.11	AVG	

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



		st Mo			BL	E 5.0						Test Da					3/11/9	
-		requ					<u>OMH</u>	Z			Р	olariza					tical	
		Temp				2	5°C					Hum	١.			56	6%	
130.0	dBuV.	/m																$\neg$
120																		-
10																		-
00																		4
10																		4
io																		_
o																		$\dashv$
0																		-
0				1 X														=
0																		4
:0				2 X														4
0																		
0.0																		
		2700.0			6100		7800	0.00	9500	).00	112	200.00		00.00	1460	0.00	18000.0	00 MH
No.	Ν	Λk.	Freq		Rea Le			rrect		easur ment	e-	Limit	t	Ove	r			
			MHz		dB	uV	(	dB	dl	3uV/n	n	dBuV/	m	dB		Detector	Comm	ent
1			4960.0	00	44.	95	1	.00	4	15.95		74.00	)	-28.0	)5	peak		
2		*	4960.0	00	32.	51	1	.00	3	33.51		54.00	)	-20.4	19	AVG		

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



	Test Mo	ode		BLE 5.0	0 (1 Mbps)		Test Da	ate	2023	3/11/9
Te	est Freq				30MHz		Polariza			zontal
	Tem	ρ		2	25°C		Hum.		50	6%
130.0 d	IBuV/m									
120										
110										
100										
90 —										
80										
70										
60										
50			1 X							
40			2 X							
30			^							
20										
10.0	200 0700	00 1100		2122.22	7000 00	2522.00	11000 00	10000 00 1	1000.00	10000 001111
	000 2700.			6100.00	7800.00	9500.00	11200.00		4600.00	18000.00 MHz
No.	Mk.	Freq	•	Reading Level	Correct Factor	Measure ment	e- Limit	Over		
		MHz	i i	dBuV	dB	dBuV/n	n dBuV/ı	m dB	Detector	Comment
1		4960.0	00	44.21	1.00	45.21	74.00	-28.79		
2	*	4960.0	00	32.61	1.00	33.61	54.00	-20.39	AVG	

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



	Te	st Mo	de		BL	E 5.0	(2 Mb	ps)				Test Da	ate			2023	3/11/9	
-	Test	Frequ	iency				2MHz				Р	olariza	ation				tical	
		Temp	)			2	5°C					Hum	١.			56	3%	
130.0	dBu∀	//m																_
120 _																		
110																		-
100																		-
00																		-
80																		-
o																		7
io —																		$\perp$
0				1 X														7
0				2														+
:0				×														$\parallel$
20																		-
0.0																		
		2700.0			6100		7800.0		9500			00.00		00.00	1460	0.00	18000.0	O MI
No.	1	Иk.	Freq	•	Rea Le	ding vel	Corr Fac			easure ment	∋-	Limi	t	Ove	er			
			MHz	7	dB	uV	dE			3uV/n	า	dBuV/	m'	dB		Detector	Comm	ent
1			4804.0	000	45.	.00	0.5	3		5.53		74.00	0	-28.4	17	peak		
2		*	4804.0	000	32.	.80	0.5	3	3	33.33		54.00	0	-20.6	37	AVG		

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



	Test				BL		(2 M					Test [					3/11/9	
	Test Fre		ency				2MHz	-			<u> </u>	Polariz		1			zontal	
130.0	dBuV/m	mp				2	5°C					Hur	n.			50	6%	
130.0	dBuV/m																	_
120																		-
110																		_
100																		_
90																		-
80		-																-
70																		-
60																		_
50				1 X														-
40																		4
30				2 X														
20																		
10.0																		
1000	.000 270		4400	0.00	6100	0.00	7800.	00	9500	).00	11	200.00		900.00	146	00.00	18000.0	0 MHz
No.	Mk		Freq		Rea Le			rect ctor		easui ment		Lim	iit	Ov	er			
			MHz	7	dB			В		3uV/ı		dBu∖	//m	dE	3	Detector	Commo	ent
1			4804.0	000	43.	.68	0.	53	4	14.21		74.0	00	-29.	79	peak		
2	*		4804.0	000	32.	.89	0.	53	- (	33.42	)	54.0	00	-20.	58	AVG		

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



	Test Mode			BL	E 5.0	(2 Mb)	os)				est Da				202	3/11/9	
Te	st Freq					0MHz				P	olariza					rtical	
	Temp	)			2	5°C					Hum				5	6%	
130.0 d	BuV/m												1				_
120																	
10																	4
00																	$\dashv$
o																	-
0																	-
0																	
0																	-
0			1 X														
o			2 X														-
o			×														-
o																	
0.0																	
	00 2700.			6100		7800.00		9500			00.00		00.00	14600	0.00	18000.	00 MI
No.	Mk.	Freq		Rea Le	ding vel	Corre Fact			asure nent	)-	Limit	t	Ove	r			
		MHz		dB	uV	dB		dE	3uV/m	)	dBuV/	m	dB		Detector	Comm	ent
1		4880.0		44.		0.75		4	5.12		74.00	)	-28.8		peak		
2	*	4880.0	000	33.	41	0.75	5	3	34.16		54.00	)	-19.8	34	AVG		

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



	Test Mo	de	Bl	E 5.0	(2 Mbps)			Test	Date		2023	3/11/9
Te	est Frequ				0MHz			Polari		n		zontal
	Temp			25	5°C			Ηι	ım.		50	6%
130.0	dBuV/m											
120												
110												
100												
90												
80												
70												
60												
50			1 X									
40			X 2									
30		:	×									
20												
10.0												
	000 2700.0				7800.00	9500.		11200.00			600.00	18000.00 MHz
No.	Mk.	Freq.		iding vel	Correct Factor		asure- nent	· Lir	mit	Over		
		MHz	dE	BuV	dB	dB	uV/m	dBu	V/m	dB	Detector	Comment
1		4880.000	) 43	.92	0.75	4	4.67	74	.00	-29.33	peak	
2	*	4880.000	33	.54	0.75	3	4.29	54	.00	-19.71	AVG	

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



	Test Mo			5.0 (2 Mbps	s)	Test D			3/11/9
Te	est Frequ		2	2480MHz		Polariz			rtical
	Temp			25°C		Hur	n.	50	6%
130.0	dBuV/m								
120									
110									
100									
90									
80									
70									
60									
50			1 X						
40			2 X						
30			×						
20									
10.0									
	000 2700.0				9500.00	11200.00		14600.00	18000.00 MHz
No.	Mk.	Freq.	Readii Leve				it Over	r	
		MHz	dBu∖		dBuV/		//m dB	Detector	Comment
1		4960.000	44.14	1.00	45.14	74.0	0 -28.8	6 peak	
2	*	4960.000	33.05	1.00	34.05	54.0	00 -19.9	5 AVG	

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



•	Test Mode			BL		(2 Mb	ps)				Test Da					3/11/9	
Tes	st Frequ					0MHz				Р	olariza					zontal	
	Temp	)			2	5°C					Hum	١.			56	6%	
130.0 dE	BuV/m												1				_
120																	-
10																	-
00																	-
0																	-
:o																	$\parallel$
0																	-
0																	$\parallel$
0			1 X														-
0			2 X														$\parallel$
0			X														$\parallel$
:0																	-
0.0																	
	0 2700.0			6100		7800.0		9500			00.00		00.00	1460	0.00	18000.0	O MI
No.	Mk.	Freq.		Rea Le		Corr Fact			easure ment	<del>)</del> -	Limit	t	Ove	r			
		MHz		dB	uV	dE		d	3uV/m	1	dBuV/	m	dB		Detector	Comme	ent
1		4960.0	00	44.	96	1.0	0		15.96		74.00	)	-28.0	)4	peak		
2	*	4960.0	00	32.	69	1.0	0	3	33.69		54.00	)	-20.3	31	AVG		

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



	Test Mo			BL		(2 Mbr	os)				Test Da				3/11/10
Т	est Frequ					0MHz				F	<u>Polariza</u>				rtical
30.0	Temp dBuV/m				2	1°C					Hum.			5	9%
30.0	dBuV/m														
20															
10															
00															
o															
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) <u> </u>															
)   <u> </u>															
o  =	1 X														
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	2 X														
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, L															
.0															
	0.000 20200.	00 2240	00.00	2460	0.00	26800.0	0	2900	0.00	31	200.00	3340	0.00 3	5600.00	40000.00 Mi
No.	Mk.	Freq		Rea	ding	Corre	ct	Me	asure	<b>)</b> -	Limit		Over		
				Le	vel	Facto			nent						
	<u>-</u>	MHz		dB		dB			3uV/n	า	dBuV/ı		dB	Detector	Comment
1		19520.		55.		-8.2			7.18		74.00		-26.82		
2	*	19520.	.00	42.	.88	-8.2	8	3	4.60		54.00	)	-19.40	AVG	

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



	Test Mode		BLE 5.0	) (2 Mbps)		Test Date		2023	/11/10
Т	est Freque	ency		0MHz		Polarization	n		zontal
	Temp		2	1°C		Hum.		59	9%
30.0	dBuV/m								
20									
10									
00 -									
o									
0									
0									
o  -									
0	1 X								
D  -	2								
)  -	×								
0									
0									
.0									
	0.000 20200.0			26800.00				500.00	40000.00 M
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	- Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		19520.00	54.69	-8.28	46.41	74.00	-27.59	peak	
2	*	19520.00	42.98	-8.28	34.70	54.00	-19.30	AVG	

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





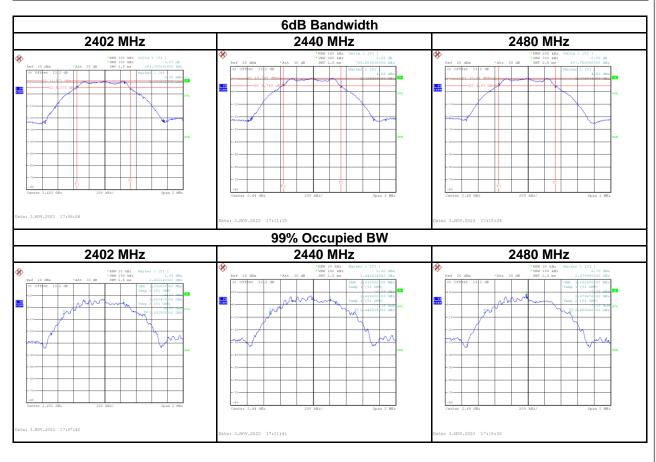
	Report No.: BTL-FCCP-1-2304G014
APPENDIX E	

Project No.: 2304G014 Page 59 of 69 Report Version: R00



Test Mode: BLE 5.0\_1 Mbps

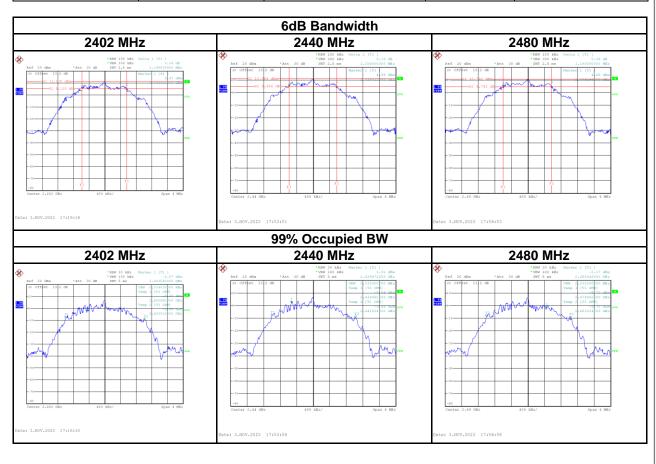
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	0.68	1.03	500	Pass
2440	0.70	1.03	500	Pass
2480	0.69	1.03	500	Pass





Test Mode: BLE 5.0\_2 Mbps

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	1.15	2.02	500	Pass
2440	1.16	2.03	500	Pass
2480	1.18	2.03	500	Pass







## APPENDIX F OUTPUT POWER

Project No.: 2304G014 Page 62 of 69 Report Version: R00



Report No.: BTL-FCCP-1-2304G014

٦	Test Mode :	BLE 5.0 1 Mbps	Tested Date	2023/11/3
		_ '		l e

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	11.34	0.0136	30.00	1.0000	Pass
2440	10.94	0.0124	30.00	1.0000	Pass
2480	10.75	0.0119	30.00	1.0000	Pass

Test Mode :	BLE 5.0_2 Mbps	Tested Date	2023/11/3
-------------	----------------	-------------	-----------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	11.49	0.0141	30.00	1.0000	Pass
2440	11.13	0.0130	30.00	1.0000	Pass
2480	10.88	0.0122	30.00	1.0000	Pass

Project No.: 2304G014 Page 63 of 69 Report Version: R00



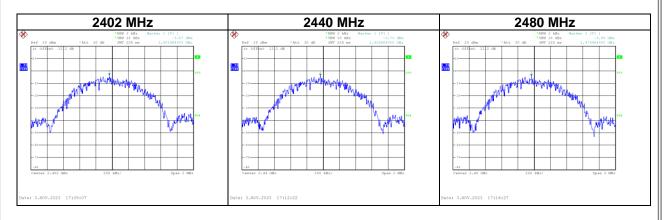
# APPENDIX G POWER SPECTRAL DENSITY TEST

Project No.: 2304G014 Page 64 of 69 Report Version: R00



Test Mode : BLE 5.0\_1 Mbps

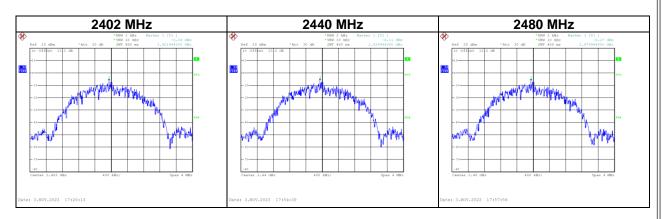
Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result
2402	-3.57	8	Pass
2440	-3.73	8	Pass
2480	-3.99	8	Pass





Test Mode : BLE 5.0\_2 Mbps

Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result
2402	-6.34	8	Pass
2440	-6.11	8	Pass
2480	-6.27	8	Pass





APPENDIX H	ANTENNA CONDUCTED SPURIOUS EMISSION

Project No.: 2304G014 Page 67 of 69 Report Version: R00





