

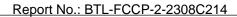
FCC Radio Test Report

FCC ID: 2ADQS-107001328

Report No.	BTL-FCCP-2-2308C214
Equipment	BT speaker
Model Name	ROCKSTER GO 2
Brand Name	Fender x Teufel
Applicant	Lautsprecher Teufel GmbH
Address	Budapester Strasse 44,10787 Berlin, Germany
Radio Function	Bluetooth Low Energy
FCC Rule Part(s) Measurement Procedure(s)	FCC CFR Title 47, Part 15, Subpart C (15.247) ANSI C63.10-2013
Date of Receipt	2023/10/16
Date of Test	2023/10/27 ~ 2023/12/13
Issued Date	2024/1/31

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

Prepared by Supervisor Jerry **ac-MRA** Testing Laborator hilula 0659 Approved by Peter Chen, Manager **BTL Inc.** No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan Tel: +886-2-2657-3299 Fax: +886-2-2657-3331 Web: www.newbtl.com Service mail: btl_qa@newbtl.com





Declaration

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

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

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

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

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

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

Limitation

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

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



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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2308C214	R00	Original Report.	2024/1/31	Invalid
BTL-FCCP-2-2308C214	R01	Revised Typo.	2024/1/31	Valid

SUMMARY OF TEST RESULTS 1

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.



1.1 TEST FACILITY

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

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

 No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

 (FCC DN: TW0659)

 ☑
 C05
 □
 CB11
 ⊠
 SR10

□ SR11

No. 72, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (FCC DN: TW0659)

□ C06 ⊠ CB21 □ CB22

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expanded uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k} = 2$, providing a level of confidence of approximately **95**%. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. AC power line conducted emissions test:

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

B. Radiated emissions test :

Test Site	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.

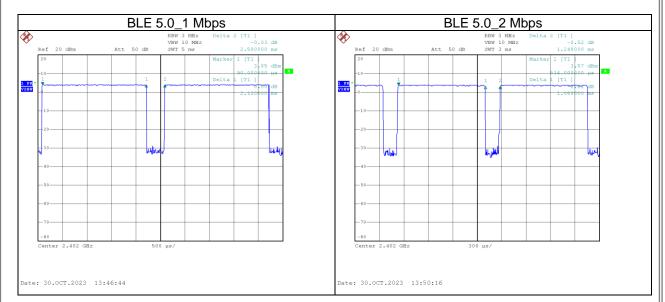
1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	20 °C, 46 %	AC 120V	Ken Lan
Radiated emissions below 1 GHz	Refer to data	DC 5V	Kevin Zhen
Radiated emissions above 1 GHz	Refer to data	DC 5V	Kevin Zhen
Bandwidth	25.6 °C, 52 %	DC 5V	Jerry Chuang
Output Power	25.6 °C, 52 %	DC 5V	Jerry Chuang
Power Spectral Density	25.6 °C, 52 %	DC 5V	Jerry Chuang
Antenna conducted Spurious Emission	25.6 °C, 52 %	DC 5V	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)
Γ	Mode	ON	Numbers	On Time (B)	Period (ON+OFF)	Duty Cycle	Duty Factor
	Mode	(ms)	(ON)	(ms)	(ms)	(%)	(dB)
	BLE (1 Mbps)	2.120	1	2.120	2.500	84.80%	0.72
Ľ	BLE (2 Mbps)	1.068	1	1.068	1.248	85.58%	0.68



2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

		_
Equipment	BT speaker	
Model Name	ROCKSTER GO 2	
Brand Name	Fender x Teufel	
Model Difference	N/A	
Power Source	Battery supplied.	
Power Rating	5V===3A	
Products Covered	1 * Type-C USB cable	
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: 3.18 dBm (0.0021 W) 2 Mbps: 3.07 dBm (0.0020 W)	
Hardware Version	MAIN PCB V4/USB PCB V4/LED PCB V4	-
Test Software Version		
Test Model	ROCKSTER GO 2	
Sample Status	Engineering Sample	
EUT Modification(s)	N/A	

NOTE:

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

(2) Channel List:

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



(3) Table for Filed Antenna:

Ant.	Brand	Model Name	Туре	Frequency Range (MHz)	Gain (dBi)
1.	Fender x Teufel	2.4G ANT	PCB Antenna	2410-2480	1.85

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



2.2 TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	BLE 5.0 / 1 Mbps	00	-
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 / 1 Mbps	00	-
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:

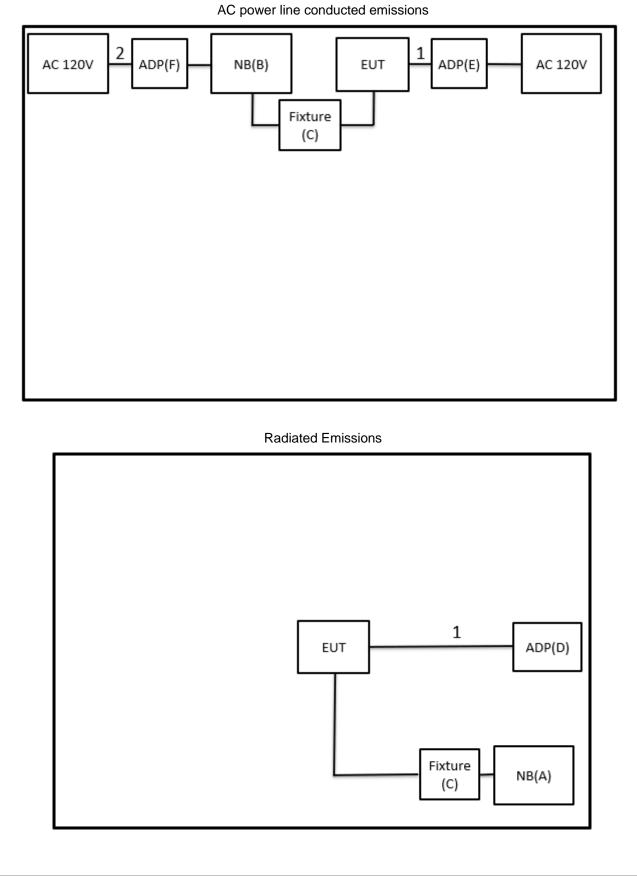
(1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.

(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 5.0, we will pick BLE 5.0 for testing.



2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
А	NB	HP	TPN-I119	N/A	Furnished by test lab.
В	Fixture	N/A	N/A	N/A	Furnished by test lab.
С	ADP	APPLE	N/A	N/A	Furnished by test lab.
D	ADP	XIAOMI	AD652G	N/A	Furnished by test lab.
Е	ADP	SAMSUNG	EP - TA800	N/A	Furnished by test lab.
F	ADP	HP	HSTNN -CA40	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	No	No	1m	Type-C to USB Cable	Supplied by test requester.
2	No	No	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:

	Correct Factor		Measurement Value
	(dB)		(dBµV)
+	3.45	Π	41.67
	+	(dB)	(dB)

Measurement Value (dBuV)		Limit Value (dBuV)		Margin Level
(ασμν)		(ασμν)		(dB)
41.67	1	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:

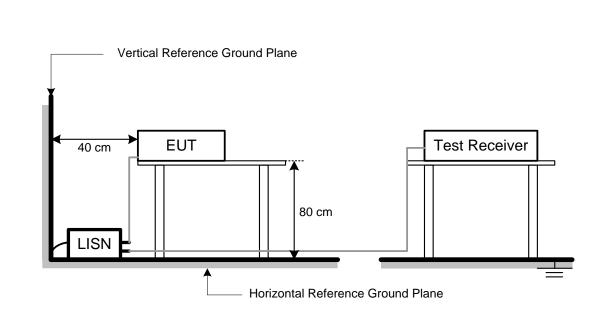
- In the results, each reading is marked as Peak, QP or AVG per the detector used. BW=9 kHz (6 dB Bandwidth)
- (2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.



3.3 DEVIATION FROM TEST STANDARD

No deviation.

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)

Frequency (MHz)	Radiated I (dBu	Measurement Distance	
	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:

Ouloulution example.				
Reading Level		Correct Factor		Measurement Value
(dBµV)		(dB/m)		(dBµV/m)
41.91	+	-8.36	Ш	33.55

Measurement Value (dBµV/m)		Limit Value (dBµV/m)		Margin Level (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



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

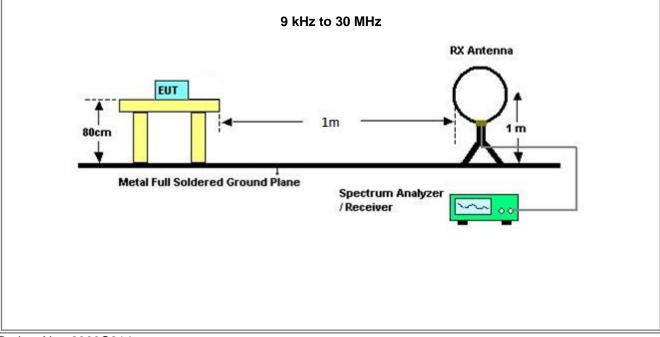
4.2 TEST PROCEDURE

- 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)
- 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.

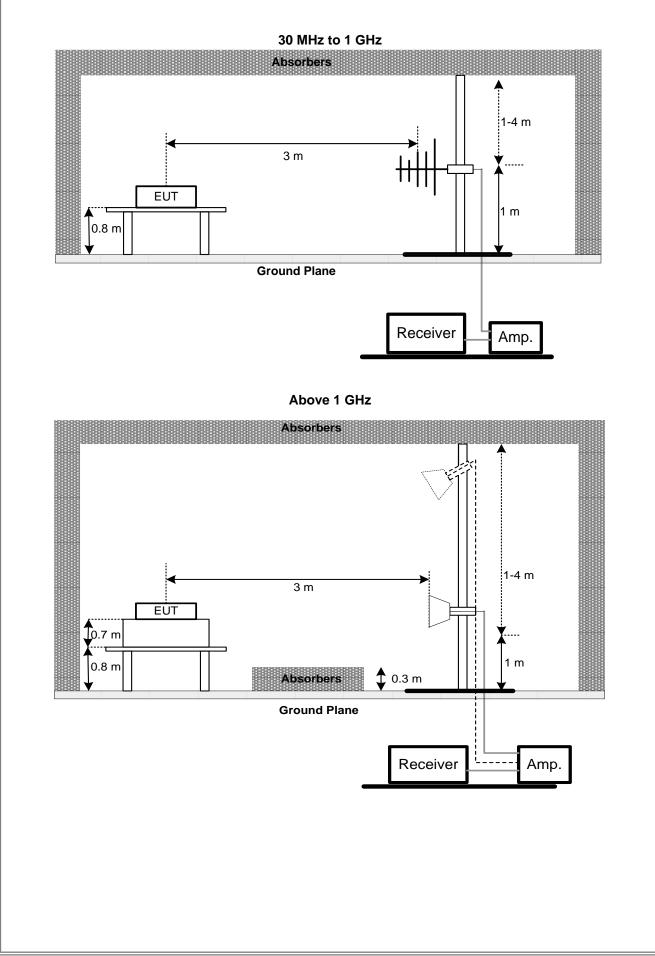
4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP









4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT – 9kHz TO 30 MHz

Please refer to the APPENDIX B.

4.7 TEST RESULT - 30 MHZ TO 1 GHZ

Please refer to the APPENDIX C.

4.8 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX D.

NOTE:

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



5 BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

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



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 2400-2		PASS

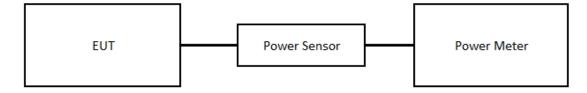
6.2 TEST PROCEDURE

- 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.



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.



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



8.5 EUT OPERATION CONDITIONS

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

8.6 TEST RESULTS

Please refer to the APPENDIX H.



9 LIST OF MEASURING EQUIPMENTS

	AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101521	2023/9/13	2024/9/12
2	Test Cable	EMCI	EMCCFD300-BM -BMR-5000	220331	2023/3/30	2024/3/29
3	EMI Test Receiver	R&S	ESR 7	101433	2023/11/10	2024/11/9
4	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

	Radiated Emissions								
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until			
1	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						
Iter	m Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until	
1	Spectrum Analyzer	R&S	FSP 40	100129	2023/3/27	2024/3/26	

	Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Peak Power Analyzer	Keysight	8990B	MY51000517	2023/3/15	2024/3/14
2	Power Sensor	Keysight	N1923A	MY58310005	2023/3/15	2024/3/14



Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2023/3/27	2024/3/26

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2023/3/27	2024/3/26

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



10 EUT TEST PHOTO

Please refer to document Appendix No.: TP-2308C214-FCCP-1 (APPENDIX-TEST PHOTOS).

11 EUT PHOTOS

Please refer to document Appendix No.: EP-2308C214-1 (APPENDIX-EUT PHOTOS).



APPENDIX A AC POWER LINE CONDUCTED EMISSIONS



st Mo	de	Normal					T	ested Date	2023/11/15		
st Fre	quency	-			Ρ	hase	Line				
100.0	0 dBu¥										
90											
80											
70											
60											
50											
50	1 X		3 X								
40				5 X		7 X					
30	2		4 ×	C				9			
20	×			6 X		8 X		× 10	11		
								×	12 X		
10											
0.0 0.	150		0.5		(MHz)		5		30.000		
		Readi	ng Corre	ct Measure	-						
lo. Ml					Limit	Margin					
1	MHz	dBu\		dBu∨ 0 42.67	dBuV	dB	Detector QP	Comment			
1 2	0.1728				64.82 54.82	-22.15 -30.63	AVG				
2 3 *	0.5020				56.00	-12.76	QP				
4	0.5020				46.00	-18.70	AVG				
5	1.0541				56.00	-18.57	QP				
6	1.0541				46.00	-23.45	AVG				
7	2.8140) 27.9	7 9.63	3 37.60	56.00	-18.40	QP				
8	2.8140) 12.2	5 9.63	3 21.88	46.00	-24.12	AVG				
9	8.1196	6 15.23	3 9.69	9 24.92	60.00	-35.08	QP				
0	8.1196	8.20	6 9.69	9 17.95	50.00	-32.05	AVG				
1	20.4854	4 8.32	2 9.7	1 18.03	60.00	-41.97	QP				
12	20.4854	1 2.69	9 9.7	1 12.40	50.00	-37.60	AVG				



est Mode Normal									ested Date	2023/11/15		
st Fre	quency	-				Ρ	hase	Neutral				
100.	D dBuV											
90												
80												
70												
60												
50	1											
40	×	3 X		5 X								
30	2 X					7 X		9 X				
		4		6		8 ×		10 X		11 X 12		
20		×		×		Ŷ				x		
10												
0.0 0.	150		0	.5		(MHz)		5		30.000		
			Reading Correct		Measure-							
No. M	k. Fre MH:		evel BuV	Factor dB	ment dBuV	Limit dBu∨	Margin dB		Comment			
1	0.166		5.66	9.59	45.25	авиv 65.12	-19.87	Detector QP	Comment			
2	0.166		3.06	9.59	32.65	55.12	-22.47	AVG				
3	0.315		9.79	9.57	39.36	59.84	-20.48	QP				
4	0.315	50	8.55	9.57	18.12	49.84	-31.72	AVG				
5 *	0.680)2 3	0.96	9.57	40.53	56.00	-15.47	QP				
6	0.680		9.79	9.57	19.36	46.00	-26.64	AVG				
7	1.894		0.83	9.63	30.46	56.00	-25.54	QP				
8	1.894		1.10	9.63	20.73	46.00	-25.27	AVG				
9 10	5.950 5.950		0.35 2.91	9.66 9.66	30.01 22.57	60.00 50.00	-29.99 -27.43	QP AVG				
10	16.11		5.33	9.80	25.13	60.00	-27.43	QP				
12	16.11		8.47	9.80	18.27	50.00	-31.73	AVG				



est Mo	de	Idle						Te	ested Date	2023/11/15		
est Fre	quency	-				Ρ	hase	Line				
100.0	0 dBu¥		1									
90												
80												
70												
60			••••									
50	1											
40	×	3 X		5								
	2 X			×								
30		4		6		7 X		9 X				
20		×		×		8 X		10 X		11 X 12		
10										×		
0.0												
0.	150		0.5			(MHz)		5		30.000		
No. Mł	k. Frec	Read ا۰ Lev		Correct Factor	Measure ment	- Limit	Margin					
	MHz			dB	dBuV	dBuV	dB	Detector	Comment			
1	0.165	5 35.	76	9.60	45.36	65.18	-19.82	QP				
2	0.165			9.60	33.03	55.18	-22.15	AVG				
3 *	0.340			9.58	43.32	59.19	-15.87	QP				
4	0.340			9.58	21.46	49.19	-27.73	AVG				
5 6	0.800			9.58 9.58	39.16 22.25	56.00 46.00	-16.84 -23.75	QP AVG				
о 7	2.106			9.58 9.65	22.25	46.00	-23.75	QP				
8	2.100			9.65	17.84	46.00	-28.16	AVG				
9	5.950			9.66	26.07	60.00	-33.93	QP				
10	5.950			9.66	18.69	50.00	-31.31	AVG				
11	18.820	5 8.	55	9.71	18.26	60.00	-41.74	QP				
12	18.820	5 2.8	89	9.71	12.60	50.00	-37.40	AVG				

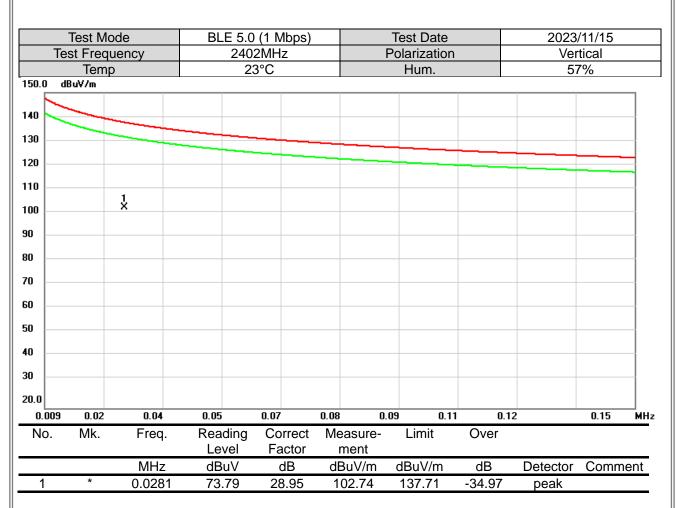


st Mo	de	Idle					Т	ested Date	2023/11/15
st Fre	quency	-					Ρ	hase	Neutral
100.0	0 dBuV								
90									
80									
70									
60									
50	1								
40	×	3 X		5 X					
	2			6		7		9	
30	×	4		×		8 ×		× 10	11 X
20		×						×	12 X
10									
0.0	150		0.5		(MHz)		5		30.000
U.	100	Reading		Measure			3		30.000
lo. Mi	k. Free		Factor	ment	Limit	Margin			
	MHz		dB	dBuV	dBuV	dB	Detector	Comment	
1	0.168		9.59	44.58	65.06	-20.48	QP		
2 3	0.168		9.59 9.57	30.66 41.98	55.06 57.90	-24.40 -15.92	AVG QP		
4	0.397		9.57	21.34	47.90	-26.56	AVG		
5 *	0.908		9.57	40.13	56.00	-15.87	QP		
6	0.908		9.57	27.83	46.00	-18.17	AVG		
7	3.041	4 20.20	9.63	29.83	56.00	-26.17	QP		
8	3.041	4 13.93	9.63	23.56	46.00	-22.44	AVG		
9	7.893		9.70	29.18	60.00	-30.82	QP		
10	7.893		9.70	21.95	50.00	-28.05	AVG		
11	17.048	2 14.43	9.80	24.23	60.00	-35.77	QP		



APPENDIX B RADIATED EMISSIONS - 9 KHZ TO 30 MHZ





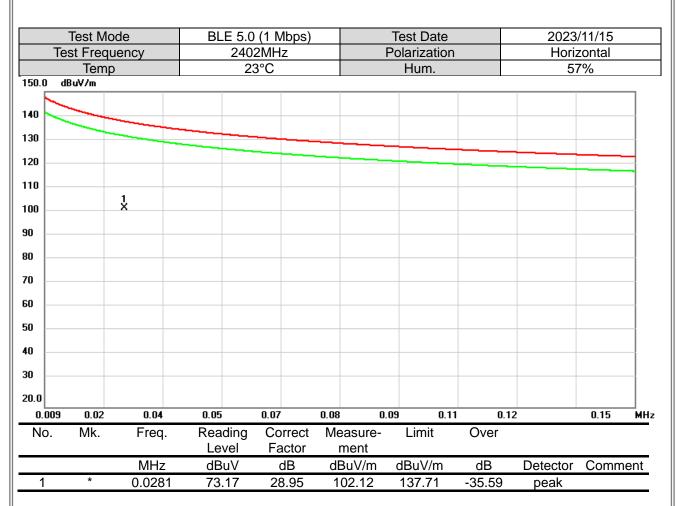
(1) Measurement Value = Reading Level + Correct Factor.

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



	Test Mo	BL	E 5.0		/				est Date			2023/11/15 Vertical				
Ie	st Frequ	2402MHz 23°C					Polarization					57%				
Temp 20.0 dBuV/m				2	30					Hum.				57	%	
10 00 0 0 1 X	3uV/m	3 X	4 *						ь»Х		6 X					
10.0																
0.150	3.14	6.12	9.10		12.0	9	15.0	8 1	8.06	5 21	.04	24.	03		30.00	 МН
No.	Mk.	Freq.	Rea Le			rrect ictor		easure- ment		Limit	0	ver				
		MHz	dB	uV	(βB	d	3uV/m	d	lBuV/m	(dΒ	Deteo	ctor	Comm	nent
1	*	0.7460	73.	64	3	.06		6.70		89.23	-1:	2.53	pea			
2		1.4982	67.			.48		67.49		83.16		5.67	pea			
3		4.0554	52			.13		8.07		88.62		0.55	pea			
4		7.8214	44			5.75		0.69		88.62		7.93	pea			
5		17.9575	45.			.94		1.78		88.62		6.84	pea			
6		21.4151	45.			.45		2.54		88.62		6.08	pea			





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

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



	Test Mo) (1 Mbps)		Test Date	2023/11/15				
Test Frequency Temp				2MHz		Polarizatior	۱	Horizontal			
			2	3°C		Hum.		57	7%		
120.0 d	Bu¥/m									_	
110											
11											
00											
10											
30											
X `	<u>_</u>										
70	2 X										
60											
50		3 X 4									
50		× 4 ×					c			1	
40						5 X	6 X			_	
30						1					
20										1	
10										_	
)											
10.0 0.150	3.14	6.12	9.10	12.09	15.08 1	8.06 21.	04 24.0		30.00		
No.	3.14 Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	13	30.00	MH	
INU.	IVIN.	TTEY.	Level	Factor	ment	Linnt	Over				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comm	ent	
1	*	0.7490	75.25	3.03	78.28	89.19	-10.91	peak	20		
2		1.4992	70.29	-0.48	69.81	83.16	-13.35	peak			
3		4.0424	55.79	-4.13	51.66	88.62	-36.96	peak			
4		5.1578	53.17	-4.42	48.75	88.62	-39.87	peak			
5		17.9565	41.62	-3.94	37.68	88.62	-50.94	peak			
<u>^</u>	6 22.2728		43.86 -3.04			40.82 88.62		peak			



APPENDIX C RADIATED EMISSIONS - 30 MHZ TO 1 GHZ



	Test I				BL			/lbps)				t Date				/11/14	
T	Test Fre		ncy				2MH	Z				rizatior	ו			zontal	
0.0	Ter	np				2	2°C				ŀ	lum.			5	5%	
BO.O	dBuV/m																
70																	
50 —																	
50 -																_	
10 —																	
80						2			4 X			5 X		6 X			
20 X		2 X				З Х			^								_
0																	_
).0																	
30.00	00 127	.00	224.	00	321.0	00	418.	00	515.	00 6	12.00	709	9.00 8	06.00		1000.	00 MH
No.	Mk.		Freq	•	Rea Lev	vel	Fa	orrect actor		easure- ment		.imit	Over				
			MHz		dB			dB		BuV/m		uV/m	dB		Detector	Comr	ment
1			38.63	30	31.	67	-1	1.86		19.81	4	0.00	-20.19		peak		
2			152.38	317	31.	05	-1	1.78		19.27	4	3.50	-24.23		peak		
3			363.97	710	32.		-6	9.75		22.67	4	6.00	-23.33		peak		
4			485.15	563	31.	47	-6	6.56	4	24.91	4	6.00	-21.09		peak		
5			666.25	553	31.	73	-3	3.01		28.72	4	6.00	-17.28		peak		
6	*		823.23	337	31.	47	-(0.50		30.97	4	6.00	-15.03		peak		



	Т	est M	ode		BL	E 5.0) (1 N	/bps)			Te	est Date	е			2023	/11/1	4	
	Tes	t Freq	uency				2MH				Pol	arizatio	on			Ve	rtical		
		Tem	р			2	2°C					Hum.				5	5%		
BO.O	dB	uV/m																	-
70 -																			
50 -																			
50 -																			
40 -																			
30]								•			5 X	1			6 X		
20	1 X		2 X			3 X			\$	4									
0																			
D.O																			
	000	127.0	0 224.	00	321.	00	418.	00	515.0	DO 6	612.0	0 7	09.00	80	6.00		100	0.00	J Mh
No	•	Mk.	Freq			ding vel		orrect actor		asure- nent	1	Limit		Over					
			MHz		dB	uV		dB	dE	3uV/m	d	BuV/m		dB	Det	tector	Con	nme	nt
1			47.330)7	30	.25	-1	1.18	1	9.07		40.00	-	20.93	р	eak			
2			162.89	00	31	.21	-1	1.94	1	9.27		43.50	-	24.23	р	eak			
3			330.76	47	31	.63	-1	0.61	2	21.02		46.00	-	24.98	р	eak			
4			520.07	63	31	.53	-5	5.95	2	25.58		46.00	-	20.42	р	eak			
5			723.00	03	31	.35	-2	2.10	2	9.25		46.00	-	16.75	р	eak			
6		*	921.39	77	31	.27	0	.85	3	32.12		46.00	-	13.88	p	eak			



APPENDIX D RADIATED EMISSIONS - ABOVE 1 GHZ



-	Test Mod	е	BL) (1 M					est Da					3/11/6	
Tes	st Freque	ncy			2MHz	Z				arizat					zontal	
	Temp			23	3°C					Hum.				5	5%	
130.0 dB	uV/m															_
120																
110																
100							×									_
90							[]									-
80							-									
70							X									
60							+									-
50	www.hundhahund	handlener	hannan	whene	menne	hillenen	www	Wanthing	www.	napara kalangan	www	mound	when when	hallownorthalle	un vit nike where	m
40		×													7 X	
30																
20																
10.0																
	0 2322.00	2342.00			2382		2402		2422.		2442		2462.00)	2502.00) MHz
No.	Mk.	Freq.	Read Lev			rrect ctor		asure∙ ∩ent	-	Limit		Over				
		MHz	dB			B		uV/m	d	BuV/r	n	dB	D	etector	Comm	ent
1		2338.107	7 56.	06	-5	.48	5	0.58		74.00)	-23.42	2	peak		
2		2338.107	7 45.	51	-5	.48	4	0.03	ł	54.00)	-13.97		AVG		
3		2400.000) 73.	67	-5	.37	6	8.30		74.00)	-5.70		peak	No Lir	nit
4	Х	2402.000) 107	.19	-5	.36	1()1.83		74.00)	27.83		peak	No Lir	nit
5	*	2402.000) 106	.34	-5	.36	1(0.98	ļ	54.00)	46.98		AVG	No Lir	nit
6		2491.107	7 55.	44	-5	.20	5	0.24		74.00)	-23.76	6	peak		
7		2491.107	7 43.	15	-5	.20	3	7.95		54.00		-16.05		AVG		

- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.

	Test Mod) (1 Mbps)		Test Date			8/11/6
	Test Freque	ency		BOMHz		Polarization	1		zontal
30.0	Temp dBuV/m		2	3°C		Hum.		55	5%
30.0									
20									
10 -									
00									
o _					5				
0									
0									
0									
	*					5 X	A . M	1	La califica
	2	altremeterson/Unders	Marylumathurum	Happerson Angella De	war halante	E Kultukarowa Matala G	m	the and the second s	utrayongthe Howards of
i0		uth and a start	Mphalumatan	dayan an a	www.lookinner	5 X 6 X	4r ^A wr ^a wraithar	Halla ya malada da	ulisiyaadha Noortooo
տե	2	uth and an and a start and a	elphylunakteurym	higenselve naveliety	une holioneter	6	an the second	Mayaya, miliyadi waka	utraying the Albert has
i0 ;	2	uth yan tan tan tan tan tan tan tan tan tan t	alphylannelalauturn	high ha	ugan bakanan	6	M. white for the second s	Hanga ya mulayini ku	uhtsyngthe Houthau
0 ; 0 ; 0 0 0.0	2		1440.00	2460.00		6 ×		Wayaya, malayhidirida. 0.00	ฟกษุณ(¹ พ/1)พารี _พ 2580.00 MH
0 ; 0 ; 0 0 0 0.0	2 × 30.000 2400.00		2440.00 Reading	2460.00 Correct	2480.00 2 Measure-	6 ×			
0	2 X 30.000 2400.00	0 2420.00	2440.00	2460.00	2480.00 2	6 X 500.00 252	20.00 254		
D 2380	2 X 30.000 2400.00	0 2420.00 Freq.	2440.00 Reading Level	2460.00 Correct Factor	2480.00 2 Measure- ment	6 X 500.00 252 Limit	20.00 254 Over	0.00	2580.00 M
0 0 0.0 2380 No.	2 X 30.000 2400.00	0 2420.00 Freq. MHz	2440.00 Reading Level dBuV	2460.00 Correct Factor dB	2480.00 2 Measure- ment dBuV/m	6 X 500.00 252 Limit dBuV/m	20.00 254 Over dB	0.00 Detector	2580.00 MI
0 2380 No.	2 X 30.000 2400.00	0 2420.00 Freq. <u>MHz</u> 2383.920	2440.00 Reading Level dBuV 55.24	2460.00 Correct Factor dB -5.39	2480.00 2 Measure- ment dBuV/m 49.85	6 X 500.00 252 Limit dBuV/m 74.00	20.00 254 Over dB -24.15	0.00 Detector peak	2580.00 M
0 2380 No.	2 X 30.000 2400.00 . Mk.	0 2420.00 Freq. MHz 2383.920 2383.920	2440.00 Reading Level dBuV 55.24 43.02	2460.00 Correct Factor dB -5.39 -5.39	2480.00 2 Measure- ment dBuV/m 49.85 37.63	6 X 500.00 252 Limit dBuV/m 74.00 54.00	20.00 254 Over dB -24.15 -16.37	0.00 Detector peak AVG	2580.00 Mi
0 0 0 2380 No.	2 X 30.000 2400.00 . Mk.	0 2420.00 Freq. MHz 2383.920 2383.920 2480.000	2440.00 Reading Level dBuV 55.24 43.02 98.33	2460.00 Correct Factor dB -5.39 -5.39 -5.22	2480.00 2 Measure- ment dBuV/m 49.85 37.63 93.11	6 X 500.00 252 Limit dBuV/m 74.00 54.00 74.00	20.00 254 Over dB -24.15 -16.37 19.11	0.00 Detector peak AVG peak	2580.00 MI Comment

	Test Mod			(2 Mbps)		Test Da			3/11/6
	est Freque	ency		2MHz		Polarizat	ion		zontal
130.0	Temp dBuV/m		2	3°C		Hum.		55	5%
130.0									
120 -									
110 -									
100 -					3				
90 -									
80 -					*				
70 🗖									
60 -									
50				north and the starting	were the second	utPlant, to a	maladishaharangen	10	s X
40	Malpar Marka Andrea	warman war	and an alter sound as a set	2 X	and a second second	an server determine	a marine a anna a a	ዋበር ለስትሳር የ ብ ድ ብ ውስጥ ትሳት	7
30									×
20									
10.0									
2302	.000 2322.00	2342.00	2362.00	2382.00	2402.00	2422.00	2442.00 246	52.00	2502.00 MH
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	- Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/n	n dB	Detector	Comment
1		2387.520	57.28	-5.39	51.89	74.00	-22.11	peak	
2		2387.520	44.63	-5.39	39.24	54.00	-14.76	AVG	
3	Х	2400.000	84.39	-5.37	79.02	74.00	5.02	peak	No Limit
4	Х	2402.000	107.24	-5.36	101.88	74.00	27.88	peak	No Limit
5	*	2402.000	105.49	-5.36	100.13	54.00	46.13	AVG	No Limit
6		2490.140	56.35	-5.21	51.14	74.00	-22.86	peak	
7		2490.140	43.51	-5.21	38.30	54.00	-15.70	AVG	

	Test Mod			0 (2 Mbps)		Test Date			3/11/6
	Test Freque			80MHz		Polarization	1		zontal
100.0	Temp			23°C		Hum.		55	5%
130.0	dBuV/m								
120 -									
10									
00 -					3				
90									
80 -									
70									
60							_		
	1	Marken Marchine M. Marken	an a	and a start and a start of the	Mar Caraban		drummenter and	www.www.	hander of the state of the stat
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		insomber from from	ma-an-ukutan	nan hail a sharan man	hand handered	-apalitetermanerada	6	and the second	wnewne Aener Maria
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50 views (1990) 10 views (1990) 30 views (1990) 20 views (1990) 10 views (1990	2 X 0.000 2400.00		2440.00	2460.00		00.00 252	6 × 20.00 254	0.00	илими 2580.00 МН
50 views (1990) 10 views (1990) 30 views (1990) 20 views (1990) 10 views (1990	2 X			2460.00			6 X		
i0 viv 0 viv 0 0 0 0 2380	2 X 0.000 2400.00	0 2420.00	2440.00 Reading	2460.00 Correct	2480.00 25 Measure-	00.00 252	6 × 20.00 254		
i0 viv 0 viv 0 0 0 0 2380	2 X 0.000 2400.00	0 2420.00 Freq.	2440.00 Reading Level	2460.00 Correct Factor	2480.00 25 Measure- ment	00.00 252 Limit	6 × 20.00 254 Over	10.00	2580.00 MH
i0 viv 0 viv 0 0 0 0 2380	2 X 0.000 2400.00	0 2420.00 Freq. MHz	2440.00 Reading Level dBuV	2460.00 Correct Factor dB	2480.00 25 Measure- ment dBuV/m	00.00 252 Limit dBuV/m	6 X 20.00 254 Over dB	0.00 Detector	2580.00 MH
i0 ////	2 X 0.000 2400.00	0 2420.00 Freq. MHz 2389.680	2440.00 Reading Level dBuV 54.17	2460.00 Correct Factor dB -5.39	2480.00 25 Measure- ment dBuV/m 48.78	00.00 252 Limit dBuV/m 74.00	6 × 20.00 254 Over dB -25.22 -15.95 20.99	0.00 Detector peak	2580.00 MH Comment No Limit
i0 / / / / / / / / / / / / / / / / / / /	2 X 0.000 2400.00 Mk.	0 2420.00 Freq. MHz 2389.680 2389.680	2440.00 Reading Level dBuV 54.17 43.44	2460.00 Correct Factor dB -5.39 -5.39	2480.00 25 Measure- ment dBuV/m 48.78 38.05	00.00 252 Limit dBuV/m 74.00 54.00	6 × 20.00 254 Over dB -25.22 -15.95	Detector peak AVG	2580.00 MH
50 10 20 10.0 2380 No. 1 2 3	2 X 0.000 2400.00 Mk.	0 2420.00 Freq. MHz 2389.680 2389.680 2480.000	2440.00 Reading Level dBuV 54.17 43.44 100.21	2460.00 Correct Factor dB -5.39 -5.39 -5.22	2480.00 25 Measure- ment dBuV/m 48.78 38.05 94.99	00.00 252 Limit dBuV/m 74.00 54.00 74.00	6 × 20.00 254 Over dB -25.22 -15.95 20.99	Detector peak AVG peak	2580.00 MH



	est Mo					Mbps)				Test Da				3/11/6
Ies		uency		2	102M				P	olarizat				tical
130.0 dB	Temp JV/m	5			23°C					Hum.			50	5%
120														
110														
100														
90														
80														
70														
0														
50		1 X												
50		×												
0														
80														
20														
10.0														
1000.000				8650.00		200.00					18850		400.00	26500.00 MH
No.	Mk.	Freq	•	Readin Level		orrect actor		easure ment	-	Limit		Over		
		MHz		dBuV		dB		3uV/m		dBuV/r	n	dB	Detector	Comment
1		4804.0		55.81		0.53		56.34		74.00		-17.66	peak	
2	*	4804.0	00	50.19		0.53	Ę	50.72		54.00		-3.28	AVG	



	Test Mo		Bl		(1 Mbps)				Date			3/11/6
les	t Frequ		-		2MHz				izatio	n		zontal
130.0 dB	Temp)		23	3°C			H	um.		5	5%
130.0 dB	uv/m											
120												
10												
00												
0												
50		1										
50		×										
10												
30												
20												
0.0												
1000.00	0 3550.0	0 6100.0	0 865	D.00	11200.00	13750).00 1	16300.0	0 18	850.00	21400.00	26500.00 M
No.	Mk.	Freq.		iding vel	Correct Factor		asure- nent	Li	mit	Ove	r	
		MHz		BuV	dB		uV/m	dBu	uV/m	dB	Detector	Comment
1		4804.00		.90	0.53		4.43	74	.00	-19.5		
2	*	4804.00	0 50	.12	0.53	5	0.65	54	.00	-3.3	5 AVG	



	Fest Mo t Freq			5.0 (1 I 2440M⊦				Test Dat olarizati			3/11/6 rtical
Tes	Tem			23°C	12		<u> </u>	Hum.			5%
130.0 dB	uV/m	9		20 0				Tium.		J	570
120											
110											
100											
90											
80											
70											
60											
60		1 <u>X</u>									
50		x									
40											
30											
20											
10.0											
1000.00	0 3550.	00 6100.0)0 8650.0	00 112	00.00	13750.00	163	300.00	18850.00	21400.00	26500.00 MH
No.	Mk.	Freq.	Read		orrect	Measure	ə-	Limit	Ov	er	
			Lev		actor	ment					
		MHz	dBu		dB	dBuV/n	า	dBuV/n			Comment
1		4880.00).75	55.26		74.00			
2	*	4880.00	0 49.3	34 ().75	50.09		54.00	-3.9	AVG	



	Test Mo st Frequ		Bl		(1 Mbps) 0MHz)		Test Polaria		<u>ו</u>		3/11/6 zontal
	Temp				3°C			Hu				5%
30.0 dE	luV/m											
20												
10												
00												
0												
0		_										
		1 2 X										
0		^										
0												
0												
:0												
0.0												
	0 3550.0			0.00	11200.00	1375		6300.00		850.00	21400.00	26500.00 MI
No.	Mk.	Freq.		ding vel	Correct Factor		asure- nent	Lir	nit	Ove	r	
		MHz		BuV	dB	dB	uV/m	dBu	V/m	dB	Detector	Comment
1		4880.00	0 56	.08	0.75	5	6.83	74.	00	-17.1	7 peak	
2	*	4880.00	0 50	.60	0.75	5	1.35	54.	00	-2.6	5 AVG	

	Test Mo st Frequ) (1 Mbps) 0MHz		Test Date Polarization	1		3/11/6 rtical
	Temp			3°C		Hum.			5%
130.0 dE	uV/m		I			-			
120									
110									
100									
90									
80									
70									
60		1							
50		1. 2 X							
40		^							
30									
20									
10.0									
	0 3550.0			11200.00	13750.00 1			100.00	26500.00 MH:
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000		1.00	53.06	74.00	-20.94	peak	
2	*	4960.000	45.70	1.00	46.70	54.00	-7.30	AVG	



	Test Mo			0 (1 Mbps)		Test Date			3/11/6
Tes	t Frequ			BOMHz		Polarization	ו		zontal
100.0 10	Temp)		23°C		Hum.		55	5%
130.0 dB	uV/m								
120									
110									
100									
90									
80									
70									
60		1 X							
50		2 X							
40									
30									
20									
10.0									
1000.00	0 3550.0	00 6100.0	0 8650.00	11200.00	13750.00 1	6300.00 18	850.00 214	00.00	26500.00 MH
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.00		1.00	58.19	74.00	-15.81	peak	
2	*	4960.00	0 47.06	1.00	48.06	54.00	-5.94	AVG	



	Test Mo) (2 Mbps)			est Dat			3/11/6
Te	st Freq				2MHz			arizati	on		tical
	Temp	2		2	3°C			Hum.		55	5%
130.0 dl	BuV/m										
120											
110											
100											
90											
80											
70											
60											
50		1 2 2 X									
40											
30											
20											
10.0											
	00 3550.0			650.00	11200.00	13750.00	16300			21400.00	26500.00 MHz
No.	Mk.	Freq.		eading Level	Correct Factor	Measure ment)-	Limit	Over		
		MHz		dBuV	dB	dBuV/m	ı d	BuV/m	n dB	Detector	Comment
1		4804.00		55.12	0.53	55.65		74.00	-18.35		
2	*	4804.00)0	48.05	0.53	48.58	;	54.00	-5.42	AVG	



	Fest Mo				(2 Mbps)		Test Date			3/11/6
Tes	st Freq				2MHz		Polarization	۱		zontal
100.0 10	Temp	0		23	3°C		Hum.		55	5%
130.0 dB	uV/m							1		
120										
110										
90										
30										
70										
50		_1								
50		1 39 X								
		^								
10										
30										
20										
10.0										
1000.00	0 3550.	00 6100.	00	8650.00	11200.00	13750.00 1	6300.00 18	850.00 214	00.00	26500.00 MH
No.	Mk.	Freq.	Ī	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz		dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.00		56.70	0.53	57.23	74.00	-16.77	peak	
2	*	4804.00)0	49.80	0.53	50.33	54.00	-3.67	AVG	



	Test Mo st Frequ			5.0 (2 2440N	Mbps)				est Da blariza				3/11/6 tical
100	Temp			23°0					Hum				5%
130.0 dB	uV/m			20 0	-					•			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
120													
110													
100													
90													
80													
70 📃													
60													
00		1 X											
50		2 X											
40		^											
30													
20													
10.0													
1000.00	0 3550.0	0 6100.0	0 8650.0	0 11	200.00	1375	i0.00	163	00.00	1885	60.00 2	21400.00	26500.00 MH
No.	Mk.	Freq.	Read		Correct		easure	-	Limit		Over		
			Leve		Factor		ment						<u> </u>
4		MHz	dBu		dB		BuV/m		dBuV/		dB	Detector	Comment
1	*	4880.00			0.75		54.41		74.00		-19.59		
2	~	4880.00	0 45.9	1	0.75	4	6.72		54.00	J	-7.28	AVG	



	Test Mo) (2 Mbps)			Test Da				3/11/6	
les	st Frequ				<u>0MHz</u> 3°C		ŀ	Polarizat				zontal	
130.0 dB	Temp)		2	30			Hum.			53	5%	
	u v / III										1		7
120													
110													
100													
90													
BO													
.													4
/0													1
50		1											
50		1 2 X											
40 		<u>^</u>											
••													1
30													
20													
10.0													
1000.00	0 3550.0	0 6100.	00 8	650.00	11200.00	13750.00	16	300.00	18850.00	214	400.00	26500.00	мн
No.	Mk.	Freq.		eading Level	Correct Factor	Measur ment	e-	Limit	0	ver			
		MHz		dBuV	dB	dBuV/r	n	dBuV/r	n o	βB	Detector	Comme	ent
1		4880.00	00 5	53.71	0.75	54.46		74.00	-19	9.54	peak		
2	*	4880.00	0 4	46.90	0.75	47.65		54.00	-6	.35	AVG		



	Fest Mo t Freq		В	LE 5.0) (2 MI 0MHz					Test D Polariza					3/11/6 tical	
163	Tem				3°C					Hum					5%	
130.0 dB	uV/m	9			00					Tiuri				0.	J //0	
120																_
10																
100																
90																
30																
70																
60																
50		1 X 2														
50		2 X														
40																
30																
20																
10.0																
1000.00	0 3550.	00 6100.0	00 86!	50.00	11200	.00	1375	50.00	16	300.00	188	50.00	2140	0.00	26500.	
No.	Mk.	Freq.		ading	Cor		Me	easur	e-	Limi	t	Ove	er			
				evel	Fac			ment								
		MHz		BuV	d			3uV/r	n	dBuV		dB		Detector	Comm	ent
1		4960.00		3.81	1.(54.81		74.0		-19.1		peak		
2	*	4960.00	0 40	6.59	1.()0	2	17.59		54.0	0	-6.4	1	AVG		



	Fest Mo				(2 Mbps)		Test Date			3/11/6
les	t Frequence				0MHz		Polarization	1		zontal
120.0	Temp uV/m)		23	3°C		Hum.		55	5%
130.0 dB	uv/m									
120										
110										
00										
90										
30										
0										
50		1 X								
50		Ž X								
30										
20										
10.0										
1000.00				8650.00	11200.00				00.00	26500.00 MH
No.	Mk.	Freq.		Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz		dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.00		55.49	1.00	56.49	74.00	-17.51	peak	
2	*	4960.00	00	48.47	1.00	49.47	54.00	-4.53	AVG	



	Test Mod	le	E	LE 5.0	(1 Mbps)			Test Da	te	202	3/11/6
Т	est Freque	ency		244	0MHz		F	Polarizat	tion	Ve	rtical
	Temp			2	3°C			Hum.		5	5%
130.0	dBuV/m										
120											
110 -											
100 -											
90 –											
BO											
70 ⊨											
50 <u> </u>											
50		1 X									
40		2									
30 -		x									
20 -											
10											
D.O											
	0.00018850.0			550.00	21400.00	22250.00			23950.00	24800.00	26500.00 MH
No.	Mk.	Freq.		ading evel	Correct Factor	Measu men		Limit	Ove	er	
		MHz	d	BuV	dB	dBuV/	m	dBuV/r	n dE	B Detector	Comment
1		19520.0	0 5	4.56	-8.28	46.28	3	74.00		72 peak	
2	*	19520.0	0 4	2.50	-8.28	34.22	2	54.00	-19.	78 AVG	



	Test Mod				(1 Mbps)			st Date			3/11/6
Т	est Freque	ency			0MHz			arizatio	n		zontal
	Temp			2	3°C		ŀ	Hum.		55	5%
130.0	dBuV/m										
120											
110 -											
100 -											
90 -											
80											
70 ⊨											
60 -											
50		1 X									
40 –		2									
30 –		×									
20											
10											
0.0											
18000	0.00018850.0	0 19700.	00 20	0550.00	21400.00	22250.00	23100	.00 23	950.00 248	300.00	26500.00 MH
No.	Mk.	Freq.		eading _evel	Correct Factor	Measure ment	9-	Limit	Over		
		MHz		dBuV	dB	dBuV/n	n dE	3uV/m	dB	Detector	Comment
1		19520.0	0 5	53.90	-8.28	45.62	7	'4.00	-28.38	peak	
2	*	19520.0	0 4	12.53	-8.28	34.25	5	54.00	-19.75	AVG	

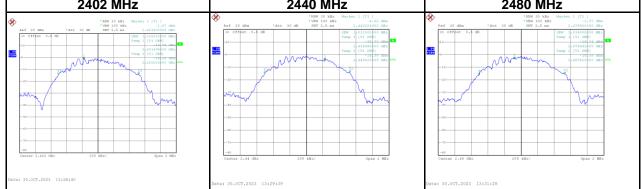


APPENDIX E BANDWIDTH



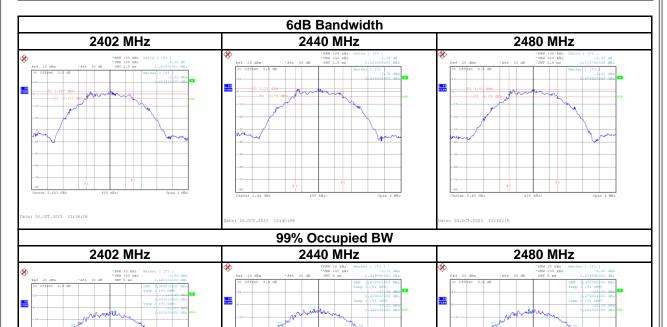
Test Mode:	BLE 5.0_1 Mbps			
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	0.70	1.03	500	Pass
2440	0.69	1.03	500	Pass
2480	0.69	1.04	500	Pass







Test Mode:	BLE 5.0_2 Mbps			
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	1.18	1.97	500	Pass
2440	1.16	1.98	500	Pass
2480	1.18	1.98	500	Pass



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e: 30.0CT.2023 13:40:12

30.0CT.2023 13:42:24



APPENDIX F OUTPUT POWER





Test Mode :	BLE 5.0_1 Mb	٢	ested Date	2023/10/27	
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	3.13	0.0021	30.00	1.0000	Pass
2440	3.18	0.0021	30.00	1.0000	Pass
2480	2.79	0.0019	30.00	1.0000	Pass

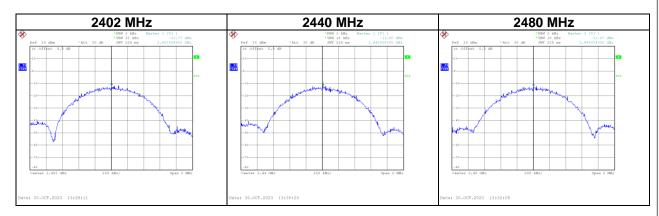
Test Mode :	BLE 5.0_2 Mb		Tested Date 2	2023/10/27	
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	3.07	0.0020	30.00	1.0000	Pass
2440	3.05	0.0020	30.00	1.0000	Pass
2480	2.69	0.0019	30.00	1.0000	Pass



APPENDIX G POWER SPECTRAL DENSITY TEST

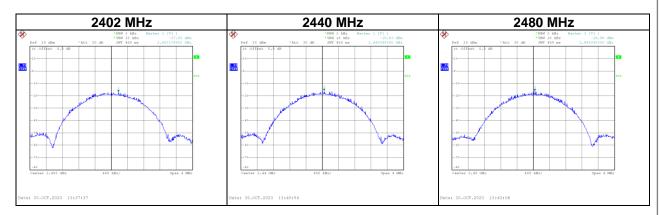


Test Mode : BLE 5.0_1 Mbps				
Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result	
2402	-11.77	8	Pass	
2440	-11.80	8	Pass	
2480	-12.47	8	Pass	





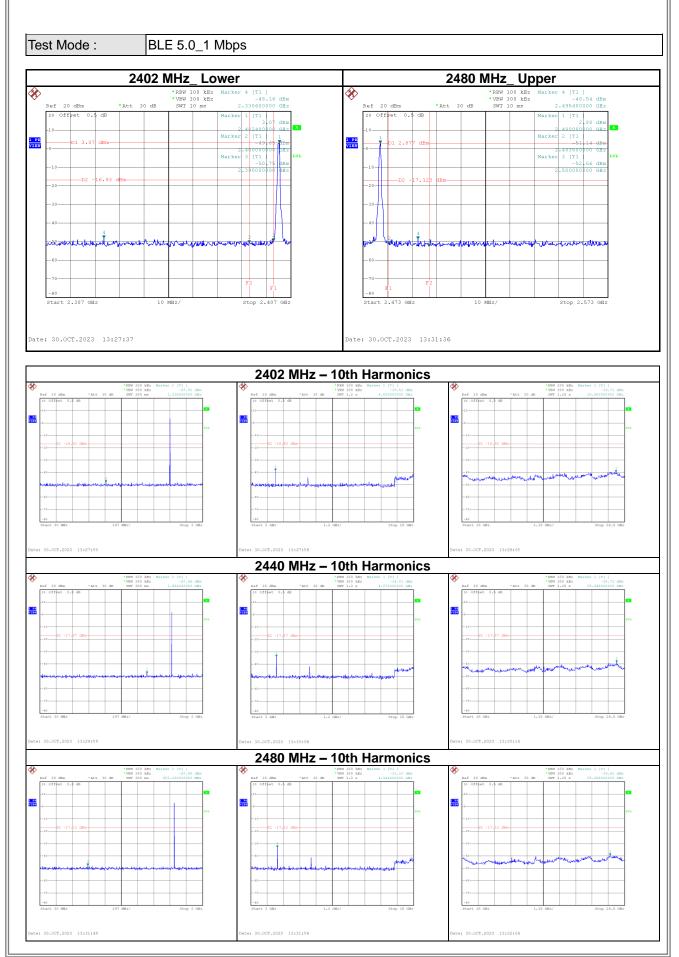
Test Mode : BLE 5.0_2 Mbps				
Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result	
2402	-17.00	8	Pass	
2440	-15.83	8	Pass	
2480	-15.96	8	Pass	



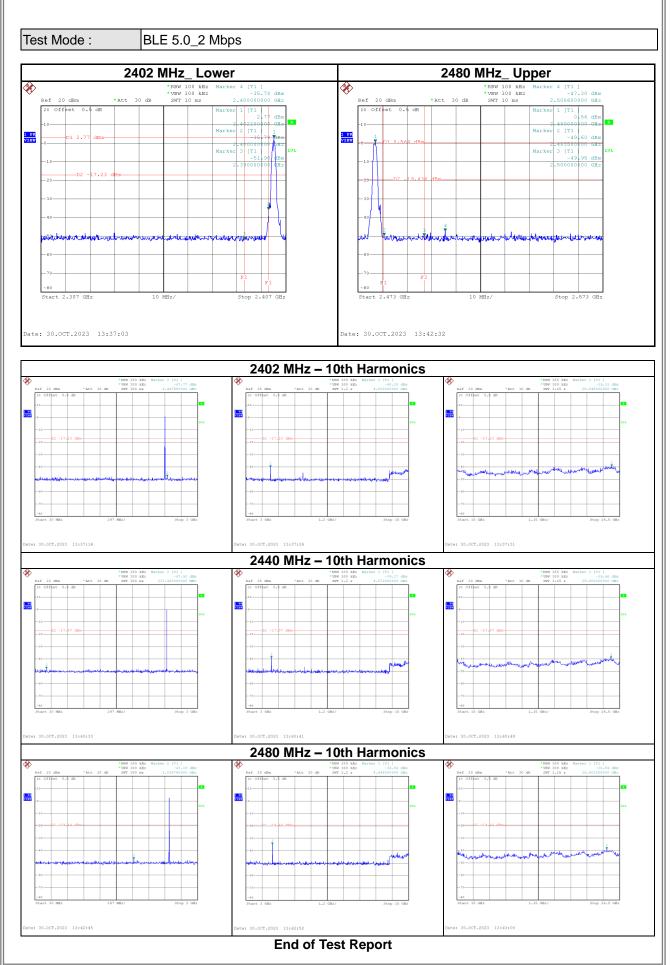


APPENDIX H ANTENNA CONDUCTED SPURIOUS EMISSION









Project No.: 2308C214