

# CTC Laboratories, Inc.

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Report No. ....: CTC20240955E01

FCC ID.....: 2BFKR-G1

IC .....: 32408-G1

Applicant .....: **Even Realities Ltd.** 

B201-1, Design Commune (SheJi Gongshe), Vanke Cloud City, Address....:

Nanshan District, Shenzhen, China

Manufacturer....: Even Realities Ltd.

B201-1, Design Commune (SheJi Gongshe), Vanke Cloud City, Address....:

Nanshan District, Shenzhen, China

Product Name .....: **Digital Glasses** 

Trade Mark .....:

Model/Type reference....:

Listed Model(s) .....:

FCC CFR Title 47 Part 15 Subpart C Section 15.247 Standard ....::

**RSS-247 Issue 3** 

Date of receipt of test sample.....: Apr. 9, 2024

Date of testing..... Apr. 9, 2024 to Apr. 29, 2024

Date of issue..... Jun. 13, 2024

**PASS** Result....:

Compiled by:

(Printed name+signature) Jim Jiang

Supervised by:

(Printed name+signature) Eric Zhang Jim Jiang Briczhang

Approved by:

(Printed name+signature) Totti Zhao

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Accreditation Administration of the People's Republic of China : http://yz.cnca.cn

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# 1. TEST SUMMARY

# 1.1. Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Operation within the bands 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz.

RSS-247 Issue 3: Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

RSS-Gen Issue 5: General Requirements for Compliance of Radio Apparatus.

<u>ANSI C63.10-2013</u>: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

# 1.2. Report Version

Revised No.	Report No.	Date of issue	Description
01	CTC20240955E01	Jun. 13, 2024	Original

# 1.3. Test Description

FCC Part 15 Subpart C (15.247) / RSS-247 Issue 3						
Toot Itom	Standard	Section	Result	Test		
Test Item	FCC	IC	Result	Engineer		
Antenna Requirement	15.203	RSS-Gen 6.8	Pass	Jim Jiang		
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Ikun Tan		
Conducted Band Edge and Spurious Emissions	15.247(d)	RSS-247 5.5	Pass	Jim Jiang		
Radiated Band Edge and Spurious Emissions	15.205&15.209& 15.247(d)	RSS-247 5.5	Pass	Jim Jiang		
6dB Bandwidth	15.247(a)(2)	RSS-247 5.2 (a)	Pass	Jim Jiang		
Conducted Max Output Power	15.247(b)(3)	RSS-247 5.4 (d)	Pass	Jim Jiang		
Power Spectral Density	15.247(e)	RSS-247 5.2 (b)	Pass	Jim Jiang		
Transmitter Radiated Spurious	15.209&15.247(d)	RSS-247 5.5& RSS-Gen 8.9	Pass	Jim Jiang		

### Note:

- 1. The measurement uncertainty is not included in the test result.
- 2. N/A: means this test item is not applicable for this device according to the technology characteristic of device.

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# 1.4. Test Facility

## Address of the report laboratory

## CTC Laboratories, Inc.

Add: Room 101 Building B, Room 107, 108, 207, 208, 303 Building A, No. 7, Langing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China (formerly 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, High-Tech Park, Guanlan Sub-District, Longhua New District, Shenzhen, Guangdong, China)

## Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

### A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

## Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

## FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.

Tel.: (86)755-27521059

CTC Laboratories, Inc.



1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.

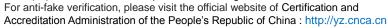
Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	±0.0196%	(1)
Maximum Conducted Output Power	±0.686 dB	(1)
Maximum Power Spectral Density Level	±0.743 dB	(1)
Band-edge Compliance	±1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

# 1.6. Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15 °C to 35 °C
Relative Humidity:	20 % to 75 %
Air Pressure:	101 kPa







2. GENERAL INFORMATION

# 2.1. Client Information

Applicant:	Even Realities Ltd.		
Address:	B201-1, Design Commune (SheJi Gongshe), Vanke Cloud City, Nanshan District, Shenzhen, China		
Manufacturer:	Even Realities Ltd.		
Address:	B201-1, Design Commune (SheJi Gongshe), Vanke Cloud City, Nanshan District, Shenzhen, China		
Factory:	Zhongshan United Optoelectronic Display Technology Co.,Ltd.		
Address:	No.11, Yingbin Avenue, Banfu, Zhongshan City, China		

# 2.2. General Description of EUT

Product Name:	Digital Glasses
Trade Mark:	/
Model/Type reference:	G1
Listed Model(s):	/
Model Difference:	/
Power Supply:	Glasses capacity: 160mAh 0.616Wh
Hardware Version:	V1.0
Software Version:	V1.0
Bluetooth 5.2 / BLE	
Modulation:	GFSK
Operation Frequency:	2402MHz~2480MHz
Channel Number:	40
Channel Separation:	2MHz
Data Rate:	1Mbps, 2Mbps
Antenna Type:	LDS Antenna
Antenna Gain:	-3.25dBi

Note: Pre-scan of the left ear and the right ear, found that the left ear data is worse, so the report only shows the left ear data.

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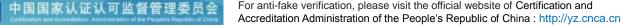
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China: http://yz.cnca.cn





2.3. Accessory Equipment Information

Equipment Information						
Name	Model	S/N	Manufacturer			
Notebook	ThinkPad T460s	/	Lenovo			
Cable Information	Cable Information					
Name	Shielded Type	Ferrite Core	Length			
USB Cable	Unshielded	NO	150cm			
Test Software Information						
Name	Version	/	1			
Direct Test Mode	v2.1.0	/	1			





# 2.4. Operation State

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing. BT BLE, 40 channels are provided to the EUT. Channels 00/19/39 were selected for testing.

Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2404
i i	÷ ·
18	2438
19	2440
20	2442
i	:
38	2478
39	2480

Note: The display in grey were the channel selected for testing.

### Test Mode:

# For RF test items:

The engineering test program was provided and enabled to make EUT continuous transmit.

# For AC power line conducted emissions:

The EUT was set to connect with the Bluetooth instrument under large package sizes transmission.

### For Radiated spurious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

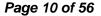




# 2.5. Measurement Instruments List

Tonscend RF Test System						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until	
1	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 21, 2025	
2	Spectrum Analyzer	R&S	FSV40-N	101654	Aug. 07, 2024	
3	Spectrum Analyzer	R&S	FSU26	100105	Dec. 12, 2024	
4	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 12, 2024	
5	MXA Signal Analyzer	Keysight	N9020A	MY52091402	Aug. 22, 2024	
6	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 12, 2024	
7	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 12, 2024	
8	EXG Analog Signal Generator	Keysight	N5173B	MY59100842	Dec. 12, 2024	
9	MXG Vector Signal Generator	Keysight	N5182B	MY59100212	Dec. 12, 2024	
10	USB Wideband Power Sensor	Keysight	U2021XA	MY55130004	Mar. 21, 2025	
11	USB Wideband Power Sensor	Keysight	U2021XA	MY55130006	Mar. 21, 2025	
12	Wideband Radio Communication Tester	R&S	CMW500	102257	May 25, 2024	
13	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2024	
14	RF Control Unit	Tonscend	JS0806-2	/	Aug. 22, 2024	
15	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 21, 2025	

Radiated Emission							
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until		
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024		
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Sep. 25, 2025		
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2024		
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 12, 2024		
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 12, 2024		
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026		
7	Test Software	FARA	EZ-EMC	FA-03A2	/		





Conduc	eted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until	
1	LISN	R&S	ENV216	101112	Dec. 12, 2024	
2	LISN	R&S	ENV216	101113	Dec. 12, 2024	
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 12, 2024	
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 12, 2024	
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 12, 2024	
6	Test Software	R&S	EMC32	6.10.10	/	

Note: 1. The Cal. Interval was one year.

- 2. The Cal. Interval was three years of the antenna.
- 3. The cable loss has been calculated in test result which connection between each test instruments.



# 3. TEST ITEM AND RESULTS

# 3.1. Conducted Emission

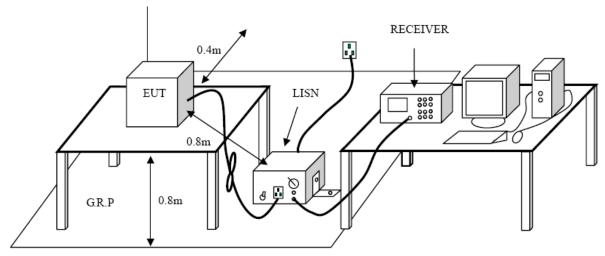
### **Limit**

# FCC CFR Title 47 Part 15 Subpart C Section 15.207 / RSS-Gen 8.8

Eraguanay (MHz)	Conducted Limit (dBµV)					
Frequency (MHz)	Quasi-peak	Average				
0.15 - 0.5	66 to 56 *	56 to 46 *				
0.5 - 5	56	46				
5 - 30	60	50				

<sup>\*</sup> Decreases with the logarithm of the frequency.

## **Test Configuration**



### **Test Procedure**

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
- 3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm / 50 µH coupling impedance for the measuring equipment.
- 4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
- 5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
- 6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
- 7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
- 8. During the above scans, the emissions were maximized by cable manipulation.

## **Test Mode**

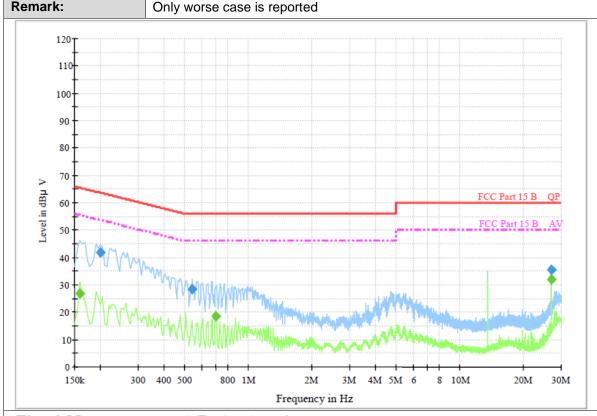
Please refer to the clause 2.4.

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# **Test Result**

Test Voltage:	AC 120V/60Hz
Terminal:	Line
Remark:	Only worse case is reported



# **Final Measurement Detector 1**

	Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
Γ	0.199500	41.9	1000.00	9.000	On	L1	9.5	21.7	63.6	
Γ	0.541500	28.4	1000.00	9.000	On	L1	9.5	27.6	56.0	
	27.118500	35.5	1000.00	9.000	On	L1	9.7	24.5	60.0	

# Final Measurement Detector 2

	Frequency	Average	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit	Comment
1	(MHz)	(dBµ V)	Time	(kHz)			(dB)	(dB)	(dBµ	
1			(ms)						V)	
	0.159000	26.7	1000.00	9.000	On	L1	9.5	28.8	55.5	
	0.699000	18.6	1000.00	9.000	On	L1	9.5	27.4	46.0	
	27.118500	32.0	1000.00	9.000	On	L1	9.7	18.0	50.0	

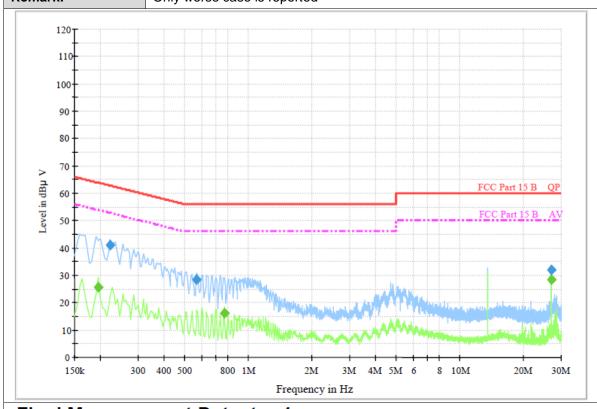
Emission Level = Read Level + Correct Factor



Test Voltage: AC 120V/60Hz

Terminal: Neutral

Remark: Only worse case is reported



# **Final Measurement Detector 1**

Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.222000	41.0	1000.00	9.000	On	N	9.4	21.7	62.7	
0.568500	28.4	1000.00	9.000	On	N	9.4	27.6	56.0	
27.118500	32.0	1000.00	9.000	On	Ν	9.5	28.0	60.0	

# Final Measurement Detector 2

	Frequency	Average	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit	Comment
- 1	(MHz)	(dBµ V)	Time	(kHz)			(dB)	(dB)	(dBµ	
- 1			(ms)						V)	
	0.195000	25.5	1000.00	9.000	On	N	9.4	28.3	53.8	
[	0.766500	16.1	1000.00	9.000	On	Z	9.4	29.9	46.0	
[	27.118500	28.6	1000.00	9.000	On	Z	9.5	21.4	50.0	

Emission Level = Read Level + Correct Factor



# 3.2. Radiated Emission

# <u>Limit</u>

# FCC CFR Title 47 Part 15 Subpart C Section 15.209 / RSS-Gen 8.9

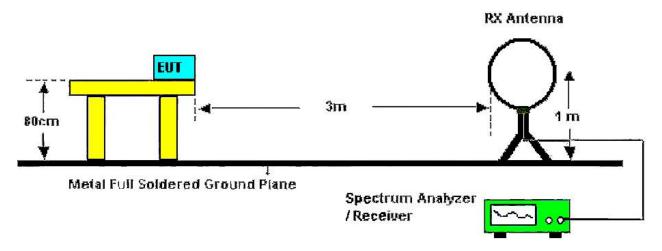
Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009~0.490	2400/F (kHz)	300
0.490~1.705	24000/F (kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Eroguanov Pango (MHz)	dBμV/m (at 3 meters)				
Frequency Range (MHz)	Peak	Average			
Above 1000	74	54			

### Note:

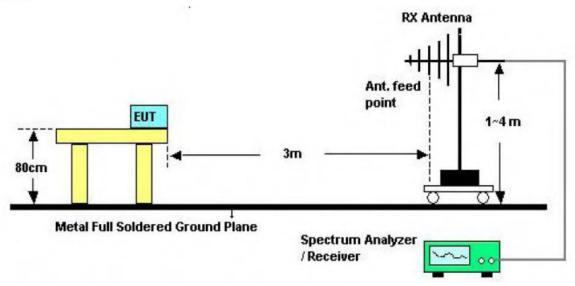
- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBμV/m)=20log Emission Level (μV/m).

# **Test Configuration**

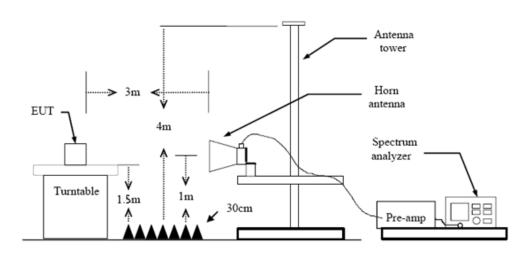


Below 30MHz Test Setup





30-1000MHz Test Setup



Above 1GHz Test Setup

### **Test Procedure**

- 1. The EUT was setup and tested according to ANSI C63.10:2013.
- 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
- 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- Use the following spectrum analyzer settings
- (1) Span shall wide enough to fully capture the emission being measured;





(2) 9k - 150kHz:

RBW=300 Hz, VBW=1 kHz, Sweep=auto, Detector function=peak, Trace=max hold (3) 0.15M - 30MHz:

RBW=10 kHz, VBW=30 kHz, Sweep=auto, Detector function=peak, Trace=max hold (4) 30M - 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(5) From 1 GHz to 10<sup>th</sup> harmonic:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

### **Test Mode**

Please refer to the clause 2.4.

### **Test Result**

## 9 kHz~30 MHz

From 9 kHz to 30 MHz: The conclusion is PASS.

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Ant	. Pol.	Hori	zontal							
Tes	t Mode:	TX	BLE 1N	M Mode 2402MHz						
Rer	mark:	Only	worse	e case is reported.						
90.0	dBuV/m									
80										
70										
60						FCC Part	15 RE-Class B	30-1000M		
50						Margin -6	dB			
40				23	<b>□</b> †	,			6 X	
30			1	Variable Andrews	maken beginstered	Northwork Marchitech	Mary have properly with wall			
20	r	.1 .	art -	, , , , , , , , , , , , , , , , , , ,			,			
10	A STATE OF THE STA	<b>HANDANA MANA</b>	1111							
0										
-10										
30	0.000	60.00		(MHz)	3	00.00			1000.	.000

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	95.7622	48.15	-18.40	29.75	43.50	-13.75	QP
2	149.4857	53.65	-21.21	32.44	43.50	-11.06	QP
3	155.9101	54.19	-20.93	33.26	43.50	-10.24	QP
4	231.7178	55.52	-16.79	38.73	46.00	-7.27	QP
5 *	298.2681	55.14	-15.12	40.02	46.00	-5.98	QP
6	801.7863	40.18	-5.37	34.81	46.00	-11.19	QP

- 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- 2.Margin value = Level -Limit value

1000.000



10

0

30.000

Ant. Pol. Vertical **Test Mode:** TX BLE 1M Mode 2402MHz Remark: Only worse case is reported. dBuV/m 90.0 80 70 60 FCC Part15 RE-Class B 30-1000M Margin -6 dB 50 40 30 20

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	38.0783	47.65	-16.96	30.69	40.00	-9.31	QP
2	95.7622	51.43	-18.40	33.03	43.50	-10.47	QP
3	103.4421	49.51	-17.65	31.86	43.50	-11.64	QP
4	233.3487	51.63	-16.72	34.91	46.00	-11.09	QP
5	299.3158	49.69	-15.08	34.61	46.00	-11.39	QP
6	935.5463	36.21	-3.72	32.49	46.00	-13.51	QP

(MHz)

300.00

### Remarks

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

60.00



Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3459.333	40.90	-1.39	39.51	74.00	-34.49	peak
2	4536.000	41.21	1.45	42.66	74.00	-31.34	peak
3	5425.667	39.93	3.48	43.41	74.00	-30.59	peak
4	7176.667	39.19	9.89	49.08	74.00	-24.92	peak
5	8610.333	39.93	11.04	50.97	74.00	-23.03	peak
6 *	10843.000	38.98	14.50	53.48	74.00	-20.52	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2586.667	38.50	-2.81	35.69	74.00	-38.31	peak
2	4094.000	41.35	0.62	41.97	74.00	-32.03	peak
3	6338.000	38.81	6.81	45.62	74.00	-28.38	peak
4	7998.333	39.78	10.87	50.65	74.00	-23.35	peak
5	9715.333	39.30	12.80	52.10	74.00	-21.90	peak
6 *	11041.333	38.54	14.69	53.23	74.00	-20.77	peak

# Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3295.000	40.59	-1.81	38.78	74.00	-35.22	peak
2	4031.667	42.23	0.57	42.80	74.00	-31.20	peak
3	5102.667	39.96	2.57	42.53	74.00	-31.47	peak
4	7233.333	39.50	10.03	49.53	74.00	-24.47	peak
5	9517.000	38.68	12.58	51.26	74.00	-22.74	peak
6 *	11171.667	38.47	14.75	53.22	74.00	-20.78	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3833.333	41.40	-0.12	41.28	74.00	-32.72	peak
2	5227.333	39.63	2.94	42.57	74.00	-31.43	peak
3	6445.667	39.43	7.18	46.61	74.00	-27.39	peak
4	8055.000	39.08	10.72	49.80	74.00	-24.20	peak
5	9211.000	39.09	12.38	51.47	74.00	-22.53	peak
6 *	11670.333	38.06	15.12	53.18	74.00	-20.82	peak

# Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant. Pol.	Horizontal
Test Mode:	TX BLE 1M Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1498.667	44.98	-6.88	38.10	74.00	-35.90	peak
2	3986.333	42.28	0.48	42.76	74.00	-31.24	peak
3	6049.000	39.62	5.80	45.42	74.00	-28.58	peak
4	7743.333	40.10	10.31	50.41	74.00	-23.59	peak
5	9188.333	38.74	12.33	51.07	74.00	-22.93	peak
6 *	11874.333	37.92	15.23	53.15	74.00	-20.85	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 1M Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4043.000	41.01	0.58	41.59	74.00	-32.41	peak
2	5896.000	39.29	5.27	44.56	74.00	-29.44	peak
3	7295.667	38.35	10.06	48.41	74.00	-25.59	peak
4	9148.667	39.87	12.19	52.06	74.00	-21.94	peak
5	10457.667	39.31	13.92	53.23	74.00	-20.77	peak
6 *	12412.667	37.83	15.53	53.36	74.00	-20.64	peak

### Remarks

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant. Pol.	Horizontal
Test Mode:	TX BLE 2M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4128.000	40.54	0.66	41.20	74.00	-32.80	peak
2	5108.333	40.63	2.59	43.22	74.00	-30.78	peak
3	7233.333	38.91	10.03	48.94	74.00	-25.06	peak
4	8412.000	40.20	10.55	50.75	74.00	-23.25	peak
5	9687.000	38.92	12.75	51.67	74.00	-22.33	peak
6 *	12418.333	37.78	15.55	53.33	74.00	-20.67	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 2M Mode 2402MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4088.333	42.08	0.63	42.71	74.00	-31.29	peak
2	5255.667	40.27	3.02	43.29	74.00	-30.71	peak
3	7171.000	39.33	9.86	49.19	74.00	-24.81	peak
4	8519.667	39.87	10.78	50.65	74.00	-23.35	peak
5	10423.667	39.37	13.89	53.26	74.00	-20.74	peak
6 *	12730.000	37.19	16.39	53.58	74.00	-20.42	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant. Pol.	Horizontal
Test Mode:	TX BLE 2M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2071.000	40.98	-4.60	36.38	74.00	-37.62	peak
2	4031.667	40.90	0.57	41.47	74.00	-32.53	peak
3	5969.667	39.49	5.53	45.02	74.00	-28.98	peak
4	9046.667	39.99	11.85	51.84	74.00	-22.16	peak
5	10667.333	39.05	14.18	53.23	74.00	-20.77	peak
6 *	12339.000	37.71	15.57	53.28	74.00	-20.72	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 2M Mode 2440MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1498.667	43.11	-6.88	36.23	74.00	-37.77	peak
2	3878.667	40.91	0.07	40.98	74.00	-33.02	peak
3	6332.333	39.10	6.79	45.89	74.00	-28.11	peak
4	7120.000	39.24	9.59	48.83	74.00	-25.17	peak
5	9245.000	39.09	12.41	51.50	74.00	-22.50	peak
6 *	11404.000	38.20	14.86	53.06	74.00	-20.94	peak

# Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



Ant. Pol.	Horizontal
Test Mode:	TX BLE 2M Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3952.333	41.27	0.36	41.63	74.00	-32.37	peak
2	5102.667	40.13	2.57	42.70	74.00	-31.30	peak
3	7488.333	39.02	10.09	49.11	74.00	-24.89	peak
4	8672.667	40.10	11.15	51.25	74.00	-22.75	peak
5 *	10440.667	39.84	13.91	53.75	74.00	-20.25	peak
6	12123.667	37.80	15.62	53.42	74.00	-20.58	peak

### Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant. Pol.	Vertical
Test Mode:	TX BLE 2M Mode 2480MHz
Remark:	No report for the emission which more than 20 dB below the prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3023.000	40.28	-2.08	38.20	74.00	-35.80	peak
2	4116.667	40.84	0.66	41.50	74.00	-32.50	peak
3	5867.667	40.12	5.17	45.29	74.00	-28.71	peak
4	7114.333	39.25	9.56	48.81	74.00	-25.19	peak
5	8060.667	40.31	10.71	51.02	74.00	-22.98	peak
6 *	11545.667	38.23	15.03	53.26	74.00	-20.74	peak

# Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



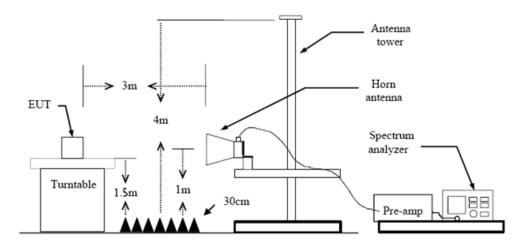
# 3.3. Band Edge Emissions (Radiated)

### **Limit**

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d) / RSS-247 5.5

Restricted Frequency Band	(dBµV/m	) (at 3m)
(MHz)	Peak	Average
2310 ~ 2390	74	54
2483.5 ~ 2500	74	54

# **Test Configuration**



# **Test Procedure**

- 1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
- 2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
- 4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
- 5. The receiver set as follow:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

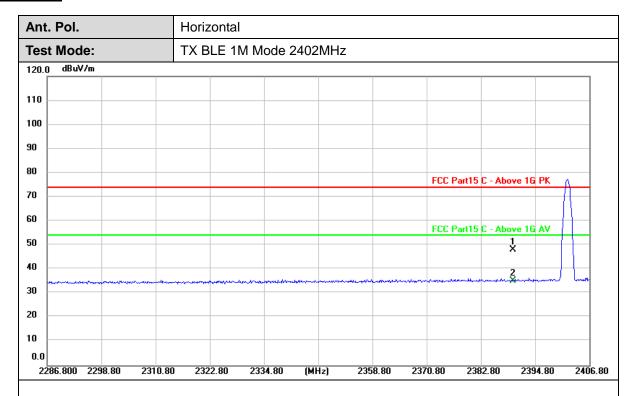
Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

# **Test Mode**

Please refer to the clause 2.4.



# **Test Result**



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	2390.000	17.19	30.84	48.03	74.00	-25.97	peak
2 *	2390.000	4.46	30.84	35.30	54.00	-18.70	AVG

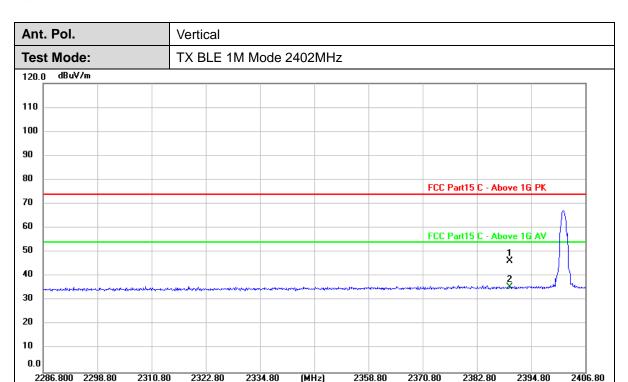
## Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	2390.000	15.63	30.84	46.47	74.00	-27.53	peak
2 *	2390.000	4.78	30.84	35.62	54.00	-18.38	AVG

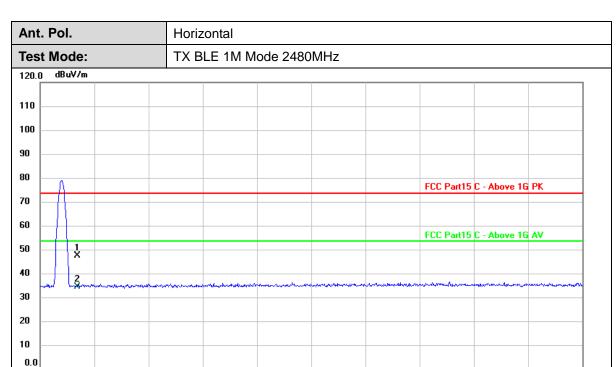
## Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2583.20

2595.20





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	16.84	31.24	48.08	74.00	-25.92	peak
2 *	2483.500	4.13	31.24	35.37	54.00	-18.63	AVG

(MHz)

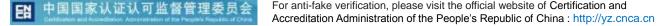
2559.20

### Remarks:

2475.200 2487.20

2499.20

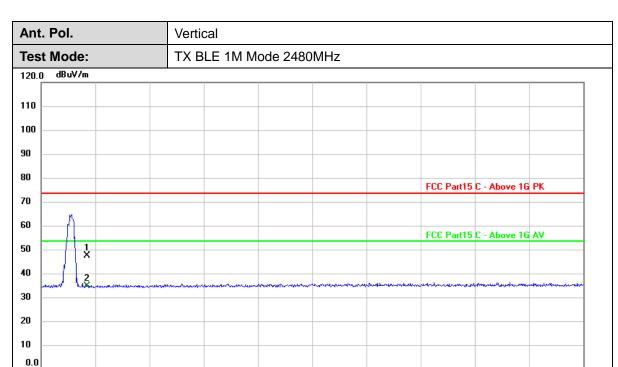
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



2581.40

2593.40





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	2483.500	16.95	31.24	48.19	74.00	-25.81	peak
2 *	2483.500	4.22	31.24	35.46	54.00	-18.54	AVG

(MHz)

2557.40

### Remarks:

2473.400 2485.40

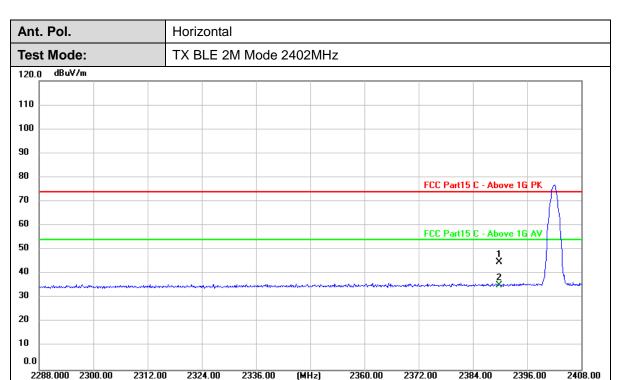
2497.40

2509.40

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





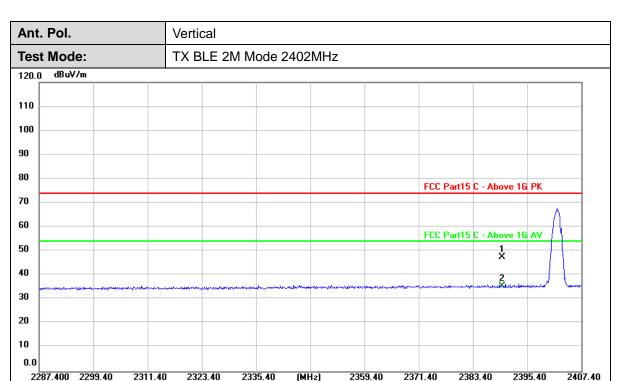


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	2390.000	14.02	30.84	44.86	74.00	-29.14	peak
2 *	2390.000	4.40	30.84	35.24	54.00	-18.76	AVG

# Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor



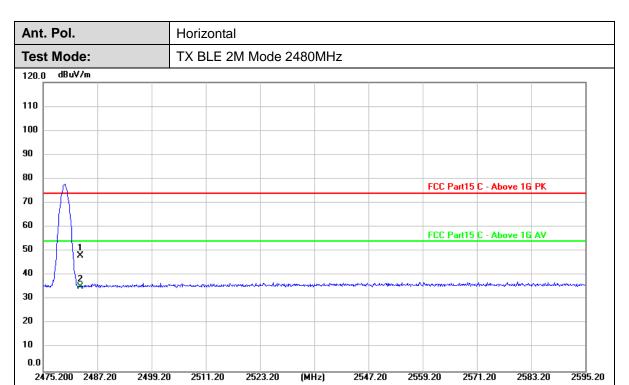


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	2390.000	16.68	30.84	47.52	74.00	-26.48	peak
2 *	2390.000	4.70	30.84	35.54	54.00	-18.46	AVG

## Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	16.86	31.24	48.10	74.00	-25.90	peak
2 *	2483.500	4.15	31.24	35.39	54.00	-18.61	AVG

### Remarks:

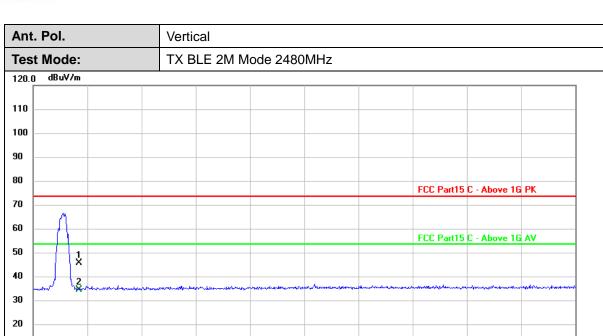
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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2581.40

2593.40



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	15.16	31.24	46.40	74.00	-27.60	peak
2 *	2483.500	4.06	31.24	35.30	54.00	-18.70	AVG

(MHz)

2557.40

# Remarks:

10 0.0

2473.400 2485.40

2497.40

2509.40

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

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Report No.: CTC20240955E01



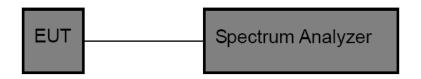
# 3.4. Band Edge and Spurious Emissions (Conducted)

## **Limit**

# FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d) / RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

# **Test Configuration**



### **Test Procedure**

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- Use the following spectrum analyzer settings:
   RBW = 100 kHz, VBW ≥ RBW, scan up through 10<sup>th</sup> harmonic.
   Sweep = auto, Detector function = peak, Trace = max hold.
- 4. Measure and record the results in the test report.

### Test Mode

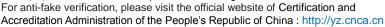
Please refer to the clause 2.4.

# **Test Result**

### **Conducted Band edge**

Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE 1M	Ant1	Low	2402	-0.01	-54.39	≤-20.01	PASS
DLE_TIVI	Anti	High	2480	0.94	-55.32	≤-19.07	PASS
BLE 2M	Ant1	Low	2402	-0.42	-31.12	≤-20.42	PASS
DLE_ZIVI	Ailti	High	2480	-0.33	-51.92	≤-20.33	PASS

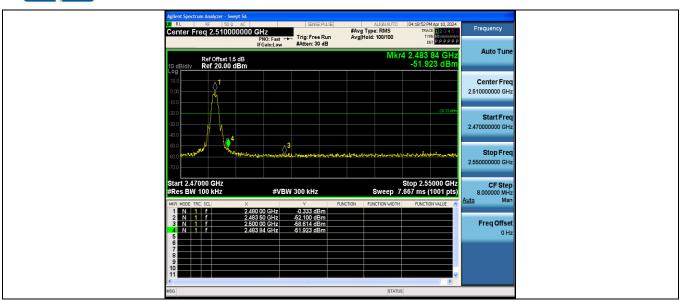
CTC Laboratories, Inc.





Test Graphs:





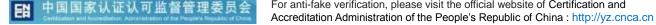


Report No.: CTC20240955E01



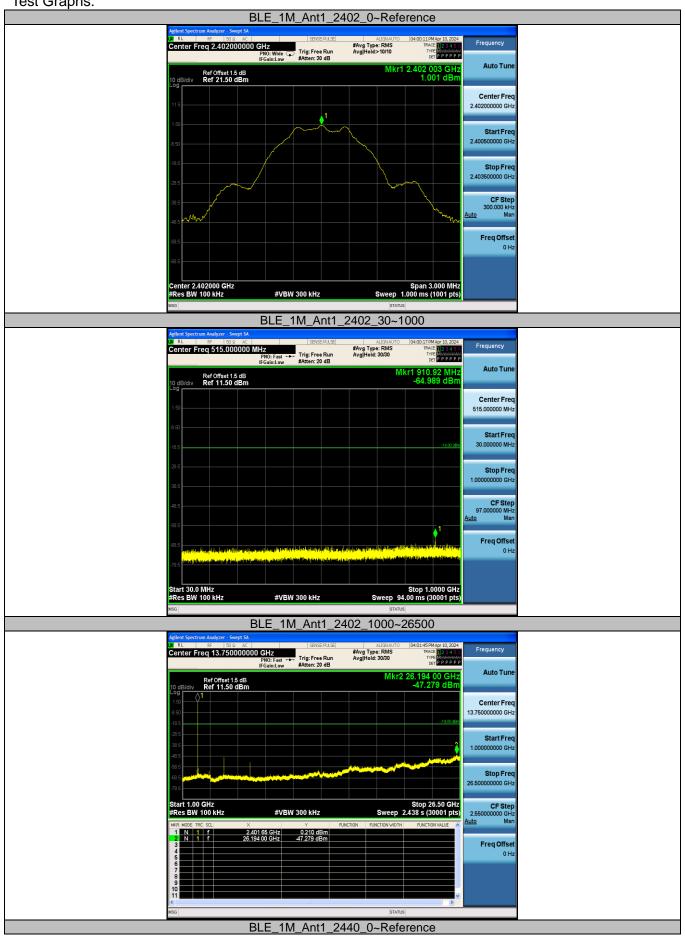
**Conducted Spurious Emission** 

Test Mode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
			Reference	1.00	1.00		PASS
		2402	30~1000	1.00	-64.99	≤-19.00	PASS
			1000~26500	1.00	-47.28	≤-19.00	PASS
			Reference	0.81	0.81		PASS
BLE_1M	Ant1	2440	30~1000	0.81	-67.76	≤-19.19	PASS
			1000~26500	0.81	-47.03	≤-19.19	PASS
		2480	Reference	0.65	0.65		PASS
			30~1000	0.65	-67.91	≤-19.35	PASS
			1000~26500	0.65	-47.21	≤-19.35	PASS
			Reference	0.97	0.97		PASS
		2402	30~1000	0.97	0.97 -66.89	≤-19.03	PASS
			1000~26500	0.97	-46.06	≤-19.03	PASS
			Reference	0.79	0.79		PASS
BLE_2M	Ant1	2440	30~1000	0.79	-67.67	≤-19.21	PASS
			1000~26500	0.79	-46.38	≤-19.21	PASS
		2480	Reference	0.91	0.91		PASS
			30~1000	0.91	-67.51	≤-19.09	PASS
			1000~26500	0.91	-46.06	≤-19.09	PASS













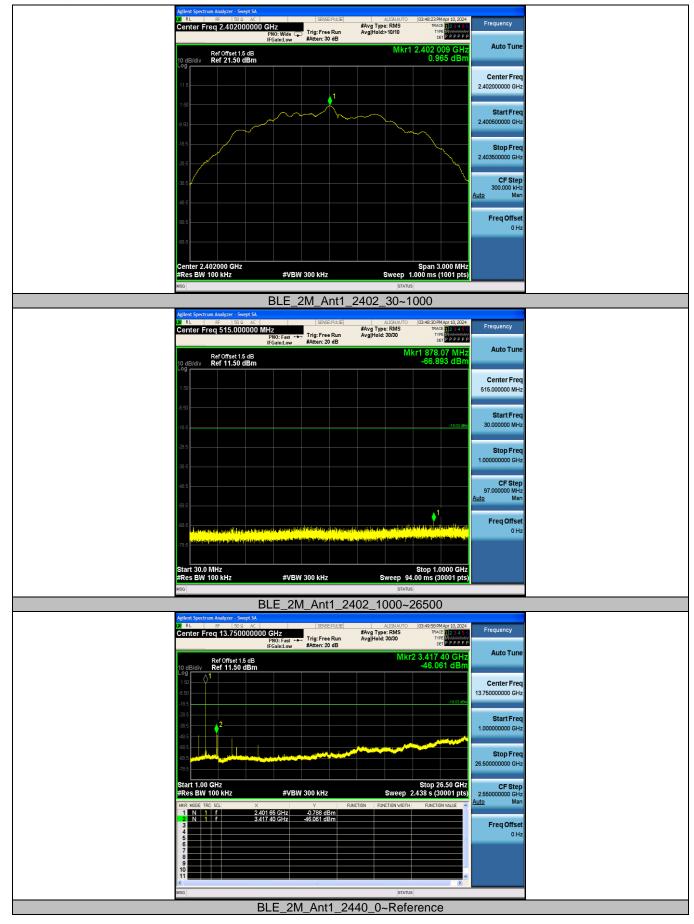




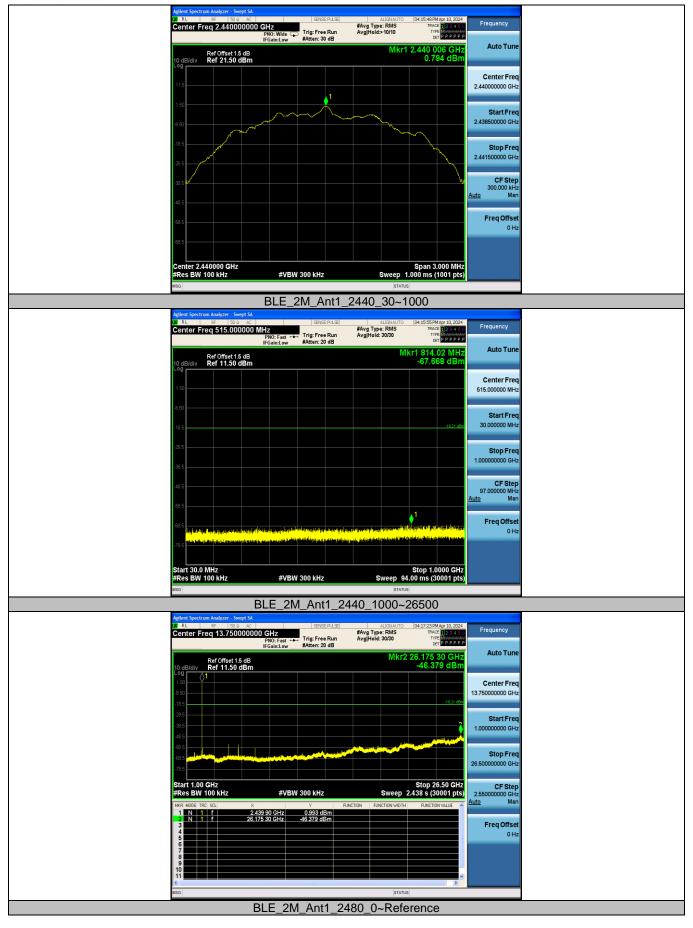






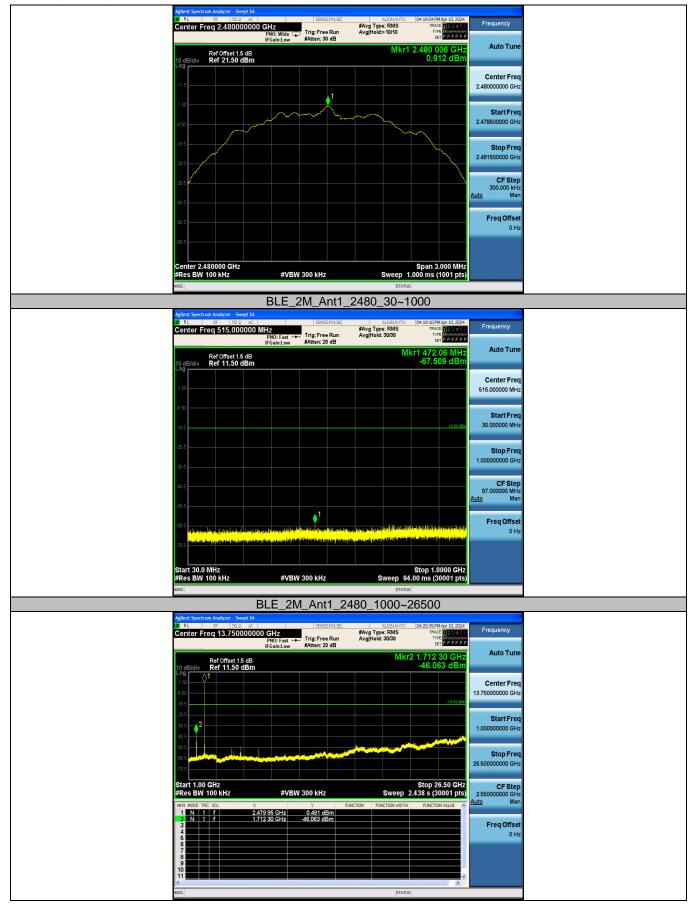












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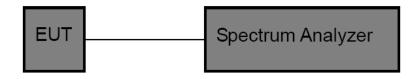
## 3.5. DTS Bandwidth

#### **Limit**

## FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2) / RSS-247 5.2 a

Test Item	Limit	Frequency Range (MHz)
DTS Bandwidth	≥500 kHz (6dB bandwidth)	2400~2483.5

## **Test Configuration**



#### **Test Procedure**

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 2. DTS Spectrum Setting:
  - (1) Set RBW = 100 kHz.
  - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
  - (3) Detector = Peak.
  - (4) Trace mode = Max hold.
  - (5) Sweep = Auto couple.
  - OCB Spectrum Setting:
  - (1) Set RBW =  $1\% \sim 5\%$  occupied bandwidth.
  - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
  - (3) Detector = Peak.
  - (4) Trace mode = Max hold.
  - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

#### **Test Mode**

Please refer to the clause 2.4.

#### **Test Result**

Test Mode	Frequency (MHz)	99% Bandwidth (MHz)	DTS Bandwidth (MHz)	Limit (MHz)	Verdict
	2402	1.0554	0.752	≥0.5	Pass
BLE_1M	2440	1.0550	0.736	≥0.5	Pass
	2480	1.0484	0.684	≥0.5	Pass
BLE_2M	2402	2.1004	1.332	≥0.5	Pass
	2440	2.0904	1.108	≥0.5	Pass
	2480	2.0805	1.116	≥0.5	Pass

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#### 99% Bandwidth:











## DTS Bandwidth:







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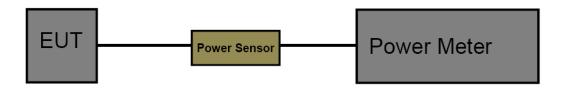
# 3.6. Peak Output Power

## **Limit**

## FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3) / RSS-247 5.4 d

Section	Test Item	Limit	Frequency Range (MHz)
FCC CFR 47 Part15.247 (b)(3)	Maximum Conducted Output Power	1 Watt or 30dBm	2400~2483.5
ISED RSS-247 5.4 d	EIRP	4 Watt or 36dBm	2400~2483.5

#### **Test Configuration**



## **Test Procedure**

- The maximum conducted output power may be measured using a broadband Peak RF power meter.
- 2. Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor.
- 3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

  Record the measurement data.

## **Test Mode**

Please refer to the clause 2.4.

#### **Test Result**

Test Mode	Frequency[MHz]	Peak Output Power[dBm]	Limit[dBm]	Verdict
	2402	1.25	≤30	PASS
BLE_1M	2440	0.94	≤30	PASS
	2480	1.09	≤30	PASS
	2402	1.19	≤30	PASS
BLE_2M	2440	0.95	≤30	PASS
	2480	1.10	≤30	PASS

	Test Mode	Frequency[MHz]	Peak Output Power[dBm]	EIRP[dBm]	Limit[dBm]	Verdict
		2402	1.25	-2.00	≤36	PASS
	BLE_1M	2440	0.94	-2.31	≤36	PASS
		2480	1.09	-2.16	≤36	PASS
Г		2402	1.19	-2.06	≤36	PASS
BLE_2M	2440	0.95	-2.30	≤36	PASS	
		2480	1.10	-2.15	≤36	PASS

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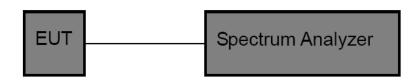
## 3.7. Power Spectral Density

#### Limit

## FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e) / RSS-247 5.2 b

Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	8 dBm (in any 3 kHz)	2400~2483.5

#### **Test Configuration**



## **Test Procedure**

- 1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
- 3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz. Set the VBW to: 10 kHz.

Detector: peak. Sweep time: auto.

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

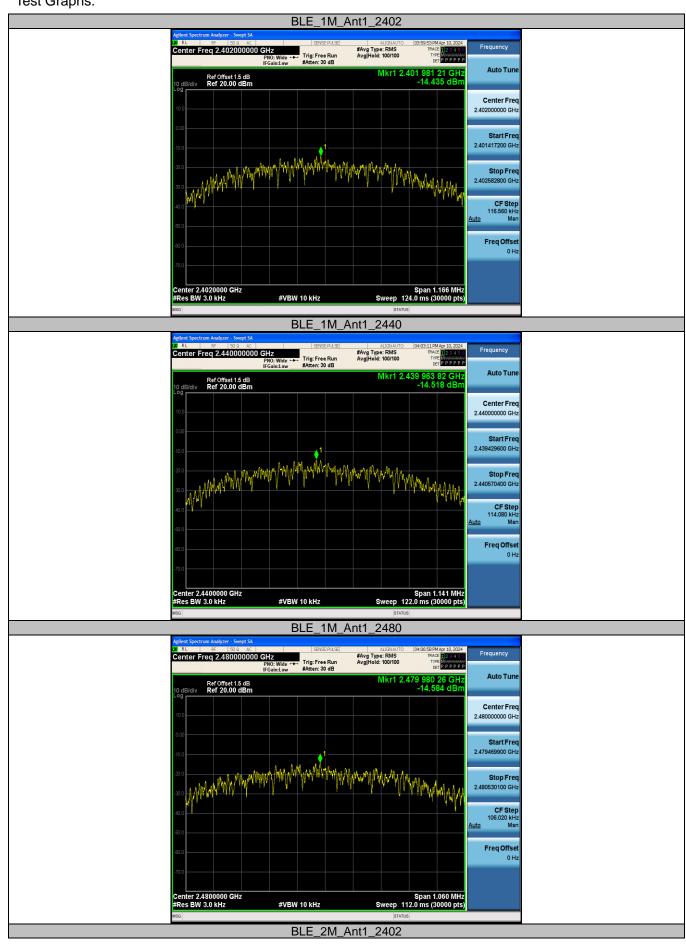
#### **Test Mode**

Please refer to the clause 2.4.

#### **Test Result**

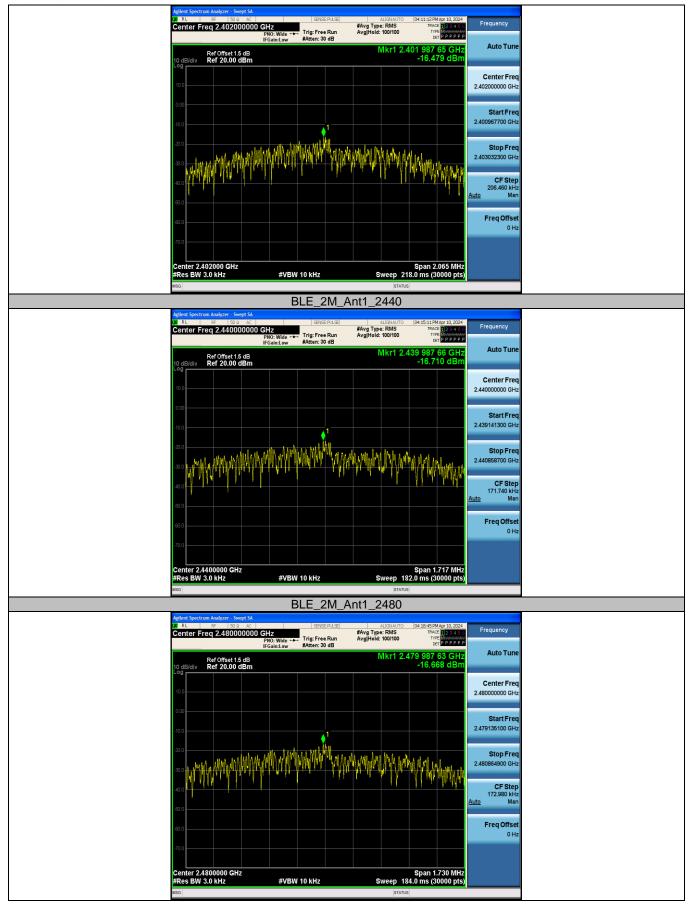
Test Mode	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
	2402	-14.44	≤8	PASS
BLE_1M	2440	-14.52	≤8	PASS
	2480	-14.58	≤8	PASS
BLE_2M	2402	-16.48	≤8	PASS
	2440	-16.71	≤8	PASS
	2480	-16.67	≤8	PASS











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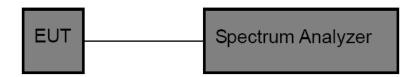


## 3.8. Duty Cycle

#### Limit

None, for report purposes only.

## **Test Configuration**



## **Test Procedure**

- 1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
- 3. Spectrum Setting:

Set analyzer center frequency to test channel center frequency.

Set the span to 0Hz. Set the RBW to 10MHz. Set the VBW to 10MHz.

Detector: Peak. Sweep time: Auto.

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

#### **Test Mode**

Please refer to the clause 2.4.

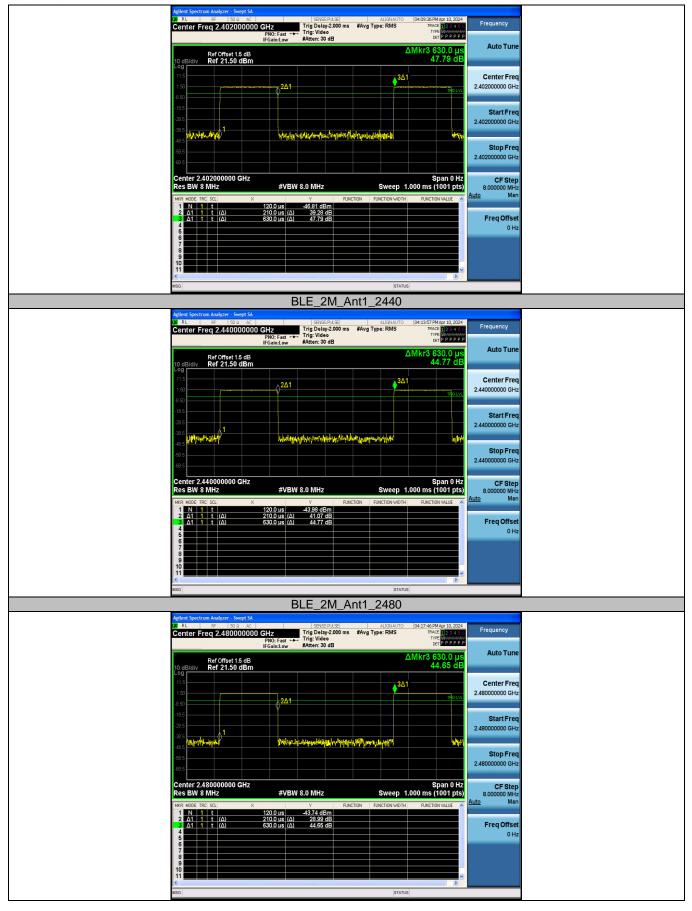
## **Test Result**

Test Mode	Frequency	Transmission	Transmission	Duty Cycle	1/T Minimum	Final Setting
	[MHz]	Duration [ms]	Period [ms]	[%]	VBW (kHz)	for VBW (kHz)
	2402	0.40	0.63	63.49	2.50	3
BLE_1M	2440	0.40	0.63	63.49	2.50	3
	2480	0.40	0.63	63.49	2.50	3
	2402	0.21	0.63	33.33	4.76	5
BLE_2M	2440	0.21	0.63	33.33	4.76	5
	2480	0.21	0.63	33.33	4.76	5









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## 3.9. Antenna Requirement

## Requirement

## FCC CFR Title 47 Part 15 Subpart C Section 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

## FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i)

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### **Test Result**

The directional gain of the antenna is less than 6dBi, please refer to the EUT internal photographs antenna





