



# CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3

#### **TEST REPORT**

For

**Adapet CGM A1** 

**MODEL NUMBER: A1** 

REPORT NUMBER: 4791514064-1.1-RF-1

ISSUE DATE: April 11, 2025

FCC ID: 2BLVKADAPETCGM IC: 33656-ADAPETCGM

Prepared for

Adapet Medical INC 1550 W 36th ave, Vancouver, V6M1J8 Canada

Prepared by

UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch

Room 101, Building 2, Zhihui City Phase I, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, China

Tel: +86 769 22038881 Fax: +86 769 33244054 Website: www.ul.com

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products.



Page 2 of 70

# **Revision History**

Rev.	Issue Date	Revisions	Revised By
V0	April 11, 2025	Initial Issue	

REPORT NO.: 4791514064-1.1-RF-1 Page 3 of 70

# **Summary of Test Results**

Test Item	Clause	Limit/Requirement	Result
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c) RSS-GEN Clause 6.8	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2	FCC Part 15.207 RSS-GEN Clause 8.8	N/A
Conducted Output Power	ANSI C63.10-2013, Clause 11.9.1.3	FCC Part 15.247 (b)(3) RSS-247 Clause 5.4 (d)	Pass
6dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013, Clause 11.8.1	FCC Part 15.247 (a)(2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
Power Spectral Density	ANSI C63.10-2013, Clause 11.10.2	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
Conducted Band edge and spurious emission	ANSI C63.10-2013, Clause 11.11	FCC Part 15.247(d) RSS-247 Clause 5.5	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013, Clause 11.12 & Clause 11.13	FCC Part 15.247 (d) FCC Part 15.205/15.209 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

#### Note:

ISED RSS-247 Issue 3> when <Simple Acceptance> decision rule is applied.

<sup>1.</sup> N/A: In this whole report not applicable.

<sup>\*</sup>This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

<sup>\*</sup>The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C



# **CONTENTS**

1. ATTI	ESTATION OF TEST RESULTS	6
2. TES	T METHODOLOGY	7
3. FAC	ILITIES AND ACCREDITATION	7
4. CAL	IBRATION AND UNCERTAINTY	8
4.1.	MEASURING INSTRUMENT CALIBRATION	8
4.2.	MEASUREMENT UNCERTAINTY	8
5. EQU	IPMENT UNDER TEST	9
5.1.	DESCRIPTION OF EUT	9
5.2.	CHANNEL LIST	9
5.3.	MAXIMUM POWER	9
<i>5.4.</i>	TEST CHANNEL CONFIGURATION	9
5.5.	THE WORSE CASE POWER SETTING PARAMETER	10
5.6.	DESCRIPTION OF AVAILABLE ANTENNAS	10
5.7.	SUPPORT UNITS FOR SYSTEM TEST	11
6. MEA	SURING EQUIPMENT AND SOFTWARE USED	12
7. ANT	ENNA PORT TEST RESULTS	15
7.1.	CONDUCTED OUTPUT POWER	15
7.2.	6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH	16
7.3.	POWER SPECTRAL DENSITY	18
7.4.	CONDUCTED BAND EDGE AND SPURIOUS EMISSION	20
7.5.	DUTY CYCLE	22
8. RAD	IATED TEST RESULTS	23
8.1.	RESTRICTED BANDEDGE	31
8.2.	SPURIOUS EMISSIONS(1 GHZ~3 GHZ)	35
8.3.	SPURIOUS EMISSIONS(3 GHZ~18 GHZ)	41
8.4.	SPURIOUS EMISSIONS(9 KHZ~30 MHZ)	47
8.5.	SPURIOUS EMISSIONS(18 GHZ~26 GHZ)	50
8.6.	SPURIOUS EMISSIONS(30 MHZ~1 GHZ)	52
9. ANT	ENNA REQUIREMENT	54
10.	TEST DATA	55
10.1.	APPENDIX A: DTS BANDWIDTH	55



10.1.1. 10.1.2.	Test Result Test Graphs	
10.2. 10.2.1. 10.2.2.	APPENDIX B: OCCUPIED CHANNEL BANDWIDTH  Test Result  Test Graphs	57
10.3. 10.3.1. 10.3.2.	APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER  Test Result  Test Graphs	59
10.4. 10.4.1. 10.4.2.	APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY  Test Result  Test Graphs	61
10.5. 10.5.1. 10.5.2.	APPENDIX E: BAND EDGE MEASUREMENTS  Test Result  Test Graphs	63
10.6. 10.6.1. 10.6.2.	APPENDIX F: CONDUCTED SPURIOUS EMISSION  Test Result  Test Graphs	65
10.7. 10.7.1. 10.7.2.	APPENDIX G: DUTY CYCLE  Test Result  Test Graphs	69



Page 6 of 70

# 1. ATTESTATION OF TEST RESULTS

**Applicant Information** 

Company Name: Adapet Medical INC

Address: 1550 W 36th ave, Vancouver, V6M1J8 Canada

**Manufacturer Information** 

Company Name: Infinovo Medical Co., Ltd

Address: 3rd Floor, 6th Building, No. 888, Zhujiang Road, Rudong, 226400

Jiangsu, P.R. China

**EUT Information** 

**Operations Manager** 

EUT Name: Adapet CGM A1

Model: A1

Sample Received Date: March 5, 2025

Sample Status: Normal Sample ID: 8201825

Date of Tested: March 27, 2025 to April 09, 2025

APPLICABLE STANDARDS				
STANDARD TEST RESULTS				
CFR 47 FCC PART 15 SUBPART C	Dees			
ISED RSS-247 Issue 3	Pass			

Prepared By:	Checked By:
Daniel Zhang	kebo. Thung
Daniel Zhang	Kebo Zhang
Project Engineer	Senior Project Engineer
Approved By:	
Stephen Emo	
Stephen Guo	

Page 7 of 70

## 2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3, KDB 558074 D01 15.247 Meas Guidance v05r02, 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, ANSI C63.10-2013 and ISED RSS-GEN Issue 5.

## 3. FACILITIES AND ACCREDITATION

	A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.
Accreditation Certificate	FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.
	ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.

#### Note 1:

All tests measurement facilities use to collect the measurement data are located at Room 101, Building 2, Zhihui City Phase I, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, China.

#### Note 2:

The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

#### Note 3:

For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

Page 8 of 70

# 4. CALIBRATION AND UNCERTAINTY

# 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

## 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty				
Conduction emission	3.62 dB				
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB				
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB				
Radiated Emission	5.78 dB (1 GHz ~ 18 GHz)				
(Included Fundamental Emission) (1 GHz to 26 GHz)	5.23 dB (18 GHz ~ 26 GHz)				
Duty Cycle	±0.028%				
DTS and 99% Occupied Bandwidth	±0.0196%				
Maximum Conducted Output Power	±0.686 dB				
Maximum Power Spectral Density Level	±0.743 dB				
Conducted Band-edge Compliance	±1.328 dB				
Conducted Unwanted Emissions In Non-restricted	±0.746 dB (9 kHz ~ 1 GHz)				
Frequency Bands	±1.328dB (1 GHz ~ 26 GHz)				
Note: This uncertainty represents an expanded uncertainty expressed at approximately the					

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

Page 9 of 70

# 5. EQUIPMENT UNDER TEST

# 5.1. DESCRIPTION OF EUT

EUT Name	Adapet CGM A1
Model	A1

Frequency Range:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK
Data Rates:	1Mbps
Normal Test Voltage:	DC 1.5V

# 5.2. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	11	2424	22	2446	33	2468
1	2404	12	2426	23	2448	34	2470
2	2406	13	2428	24	2450	35	2472
3	2408	14	2430	25	2452	36	2474
4	2410	15	2432	26	2454	37	2476
5	2412	16	2434	27	2456	38	2478
6	2414	17	2436	28	2458	39	2480
7	2416	18	2438	29	2460	/	/
8	2418	19	2440	30	2462	/	/
9	2420	20	2442	31	2464	/	/
10	2422	21	2444	32	2466	/	/

# **5.3. MAXIMUM POWER**

Test Mode	Frequency (MHz)	Channel Number	Maximum Peak Output Power (dBm)	Maximum EIRP (dBm)
LE 1M	2402 ~ 2480	0-39[40]	-1.01	3.49

# 5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency		
LE 1M	CH 0(Low Channel), CH 19(MID Channel), CH 39(High Channel)	2402 MHz, 2440 MHz, 2480 MHz		

REPORT NO.: 4791514064-1.1-RF-1 Page 10 of 70

# 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band								
Test Softwar	e Version	ncp_commander						
I Modulation	Transmit	Te	Test Software setting value					
Type	Antenna Number	CH 0	CH 19	CH 39				
GFSK(1Mbps)	1	default	default	default				

# 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)	
1	2402-2480	Monopole	4.50	

Test Mode Transmit and Receive Mode		Description	
LE 1M	⊠1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.	

REPORT NO.: 4791514064-1.1-RF-1 Page 11 of 70

## 5.7. SUPPORT UNITS FOR SYSTEM TEST

## **SUPPORT EQUIPMENT**

Item	Equipment	Brand Name	Model Name	Remark
1	PC	Lenovo	E14	/
2	AC Adaptor	Lenovo	ADLX65YCC3D	Input: AC 100-240V, 1.8A, 50-60Hz Output: DC 20V, 3.25A,65.0W Max

## **I/O CABLES**

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0	/

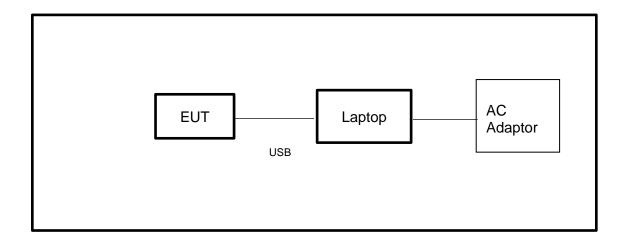
#### **ACCESSORIES**

Item	Accessory	Brand Name	Model Name	Description
/	/	/	1	/

# **TEST SETUP**

The EUT can work in engineering mode with a software through a Laptop.

## **SETUP DIAGRAM FOR TESTS**



Note: AC Adaptor only use for AC POWER LINE CONDUCTED EMISSION test



Page 12 of 70

# 6. MEASURING EQUIPMENT AND SOFTWARE USED

R&S TS 8997 Test System										
Equipment Ma		Man	ufac	turer	Model	No.	Serial No.	Last C	Cal.	Due. Date
Power sensor, Power M	leter		R&S		OSP1	20	100921	Dec.27,	2024	Dec.26,2025
Vector Signal Genera	tor		R&S		SMBV1	00A	261637	Sep.28,	2024	Sep.27, 2025
Signal Generator			R&S		SMB10	00A	178553	Sep.28,	2024	Sep.27, 2025
Signal Analyzer			R&S		FSV4	0	101118	Sep.28,	2024	Sep.27, 2025
					Softwa	re				
Description			N	/lanuf	acturer		Nam	е		Version
For R&S TS 8997 Test	Syste	em	Rol	nde &	Schwar	z	EMC	32		10.60.10
Tonsend RF Test System										
Equipment	Man	ufact	urer	Mod	del No.	S	erial No.	Last C	Cal.	Due. Date
Wireless Connectivity Tester		R&S		СМ	W270	120 <sup>-</sup>	1.0002N75- 102	Sep.13,	2024	Sep.12, 2025
PXA Signal Analyzer	Ke	eysigl	ht	N9	030A	MY	′55410512	Sep.28,	2024	Sep.27, 2025
MXG Vector Signal Generator	Ke	eysigl	ht	N5	182B	MY	′56200284	Sep.28,	2024	Sep.27, 2025
MXG Vector Signal Generator	Ke	eysigl	ht	N5	172B	MY	′56200301	Sep.28,	2024	Sep.27, 2025
DC power supply	Ke	eysigl	ht	E3642A		MY	′55159130	Sep.28,	2024	Sep.27, 2025
Temperature & Humidity Chamber	SAI	NMO	OD	SG-8	80-CC-2		2088	Sep.28,	2024	Sep.27, 2025
Attenuator	А	glien	glient 84		195B	28	14a12853	Sep.28,	2024	Sep.27, 2025
RF Control Unit	То	nscend JS0		806-2	23E	380620666	Dec.27,	2024	Dec.26,2025	
					Softwa	re				
Description Ma		Manı	ufact	urer		Name			Version	
Tonsend SRD Test Sys	tem	То	nser	nd	JS1120-3 RF Test System V3.2.22			V3.2.22		



Conducted Emissions						
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date	
EMI Test Receiver	R&S	ESR3	101961	Sep.28, 2024	Sep.27, 2025	
Two-Line V- Network	R&S	ENV216	101983	Sep.28, 2024	Sep.27, 2025	
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Sep.28, 2024	Sep.27, 2025	
Software						
Description			Manufacturer	Name	Version	
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1	

	Radiated Emissions							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date			
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Sep.28, 2024	Sep.27, 2025			
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	June 28, 2024	June.27 2027			
Preamplifier	HP	8447D	2944A09099	Sep.28, 2024	Sep.27, 2025			
EMI Measurement Receiver	R&S	ESR26	101377	Sep.28, 2024	Sep.27, 2025			
Horn Antenna	TDK	HRN-0118	130939	Apr.29, 2022	Apr.28, 2025			
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Sep.28, 2024	Sep.27, 2025			
Horn Antenna	Schwarzbeck	BBHA9170	697	Jun 30, 2024	Jun 29, 2027			
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Sep.28, 2024	Sep.27, 2025			
Preamplifier	TDK	PA-02-3	TRS-308- 00002	Sep.28, 2024	Sep.27, 2025			
Loop antenna	Schwarzbeck	1519B	80000	Dec.09, 2024	Dec.08, 2027			
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Sep.28, 2024	Sep.27, 2025			
Band Reject Filter	Wainwright	WRCJV8- 2350-2400- 2483.5- 2533.5-40SS	4	Sep.28, 2024	Sep.27, 2025			
	Software							
1	Description		Manufacturer	Name	Version			
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1			



REPORT NO.: 4791514064-1.1-RF-1 Page 14 of 70

Other Instrument							
Equipment Manufacturer		Model No. Serial No.		Last Cal.	Due Date		
Temperature humidity probe	OMEGA	ITHX-SD-5	18470007	Oct.8, 2024	Oct.7, 2025		
Barometer	Yiyi	Baro	N/A	Oct.10, 2024	Oct.9, 2025		
Attenuator	Agilent	8495B	2814a12853	Sep.28, 2024	Sep.27, 2025		

Page 15 of 70

# 7. ANTENNA PORT TEST RESULTS

# 7.1. CONDUCTED OUTPUT POWER

#### LIMITS

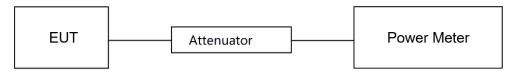
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3						
Section	Limit	Frequency Range (MHz)				
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Conduct Output Power	1 watt or 30 dBm	2400-2483.5			

#### **TEST PROCEDURE**

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

#### **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	23.2℃	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 1.5V

## **TEST DATE / ENGINEER**

Test Date	March 27, 2025	Test Bv	Bairong Liu
1 est Date	IVIAICI1 21, 2025	rest by	Dailong Liu

#### **TEST RESULTS**

Please refer to section "Test Data" - Appendix C

Page 16 of 70

## 7.2. 6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

#### **LIMITS**

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section Test Item Limit Frequency Range (MHz)			
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

#### **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

Connect the EUT to the spectrum analyzer and use the following settings:

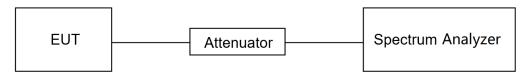
Center Frequency	The center frequency of the channel under test
Frequency Span	For 6 dB Bandwidth: Enough to capture all products of the modulation carrier emission For 99 % Occupied Bandwidth: Between 1.5 times and 5.0 times the OBW
Detector	Peak
IRRW/	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
IV/B\W	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	<b>23.2</b> ℃	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 1.5V

# **TEST DATE / ENGINEER**

Test Date	March 27, 2025	Test By	Bairong Liu

## **TEST RESULTS**

Please refer to section "Test Data" - Appendix A&B



## 7.3. POWER SPECTRAL DENSITY

## **LIMITS**

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section Test Item Limit Frequency Ran (MHz)			Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

#### **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.10.2.

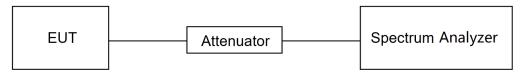
Connect the EUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	23.2℃	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 1.5V

#### **TEST DATE / ENGINEER**

Test Date	March 27, 2025	Test Bv	Bairong Liu
	, , , , , , , , , , , , , , , , , , , ,		



Page 19 of 70

# **TEST RESULTS**

Please refer to section "Test Data" - Appendix D

Page 20 of 70

## 7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

#### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3		
Section Test Item Limit		
Bandedge and bandwidth within the band that contain		at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

#### **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyzer and use the following settings for reference level measurement:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.

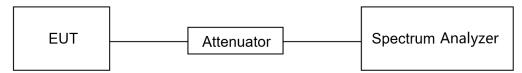
Change the settings for emission level measurement:

Shan	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.



## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	23.2℃	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 1.5V

## **TEST DATE / ENGINEER**

Test Date	March 27, 2025	Test By	Bairong Liu
	· ·		

## **TEST RESULTS**

Please refer to section "Test Data" - Appendix E&F



# 7.5. DUTY CYCLE

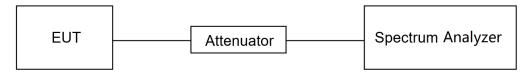
## **LIMITS**

None; for reporting purposes only.

## **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	23.2℃	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 1.5V

# **TEST DATE / ENGINEER**

Test Date Ma	arch 27, 2025	Test By	Bairong Liu
--------------	---------------	---------	-------------

## **TEST RESULTS**

Please refer to section "Test Data" - Appendix G



# 8. RADIATED TEST RESULTS

## **LIMITS**

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Streng (dBuV/m)	
,	(47/11) 41 5 111	Quasi-P	eak eak
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
Above 1000	500	74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz			
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	
0.009-0.490	2400/F(kHz)	300	
0.490-1.705	24000/F(kHz)	30	
1.705-30.0	30	30	

# ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz		
Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)
9 - 490 kHz <sup>Note 1</sup>	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

**Note 1:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.



# ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	158.52475 - 158.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	980 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1845.5 - 1848.5	Above 38.6
8.362 - 8.366	1880 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3280 - 3287	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

applications. These nequency values and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

# FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			

Note:  $^1$ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.  $^2$ Above 38.6c

Page 25 of 70

#### **TEST PROCEDURE**

Below 30 MHz

The setting of the spectrum analyzer

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
- 2. The EUT was arranged to its worst case and then 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. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80 cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
- 5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.
- 6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode remeasured. 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 and average detector and reported.
- 7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.
- 8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of  $377\Omega$ . For example, the measurement frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.



Page 26 of 70

#### Below 1 GHz and above 30 MHz

The setting of the spectrum analyzer

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.
- 2. 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80 cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. 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.



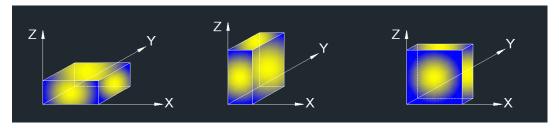
Above 1 GHz

The setting of the spectrum analyzer

RBW	1 MHz
1 / B / / /	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.
- 2. 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 1.5 m above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
- 6. 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 7.5. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.



Page 28 of 70

## For Restricted Bandedge:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. PK=Peak: Peak detector.
- 4. AV=Average: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.5.
- 6. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 7. Both horizontal and vertical have been tested, only the worst data was recorded in the report.
- 8. All modes have been tested, but only the worst data was recorded in the report.

# For Radiate Spurious emission (9 kHz ~ 30 MHz):

#### Note:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
- 3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
- 4. All modes have been tested, but only the worst data was recorded in the report.
- 5.  $dBuA/m = dBuV/m 20Log10[120\pi] = dBuV/m 51.5$

# For Radiate Spurious Emission (30 MHz ~ 1 GHz):

#### Note:

- 1. Result Level = Read Level + Correct Factor.
- 2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
- 3. All modes have been tested, but only the worst data was recorded in the report.

#### For Radiate Spurious Emission (1 GHz ~ 3 GHz):

#### Note:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.5.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. All modes have been tested, but only the worst data was recorded in the report.



For Radiate Spurious Emission (3 GHz ~ 18 GHz):

#### Note:

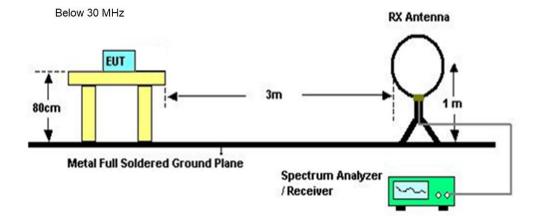
- 1. Peak Result = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.5.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. All modes have been tested, but only the worst data was recorded in the report.

# For Radiate Spurious emission (18 GHz ~ 26 GHz):

#### Note:

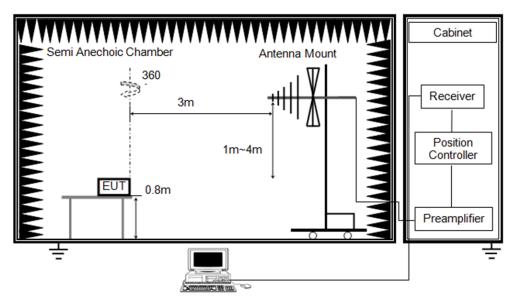
- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. Peak: Peak detector.
- 4. All modes have been tested, but only the worst data was recorded in the report.

#### **TEST SETUP**

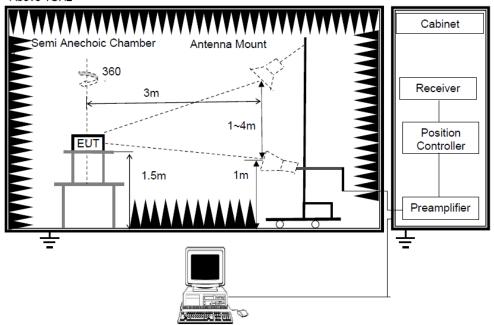




Below 1 GHz and above 30 MHz



#### Above 1GHz



#### **TEST ENVIRONMENT**

Temperature	20.3℃	Relative Humidity	58.1%
Atmosphere Pressure	101kPa	Test Voltage	

## **TEST DATE / ENGINEER**

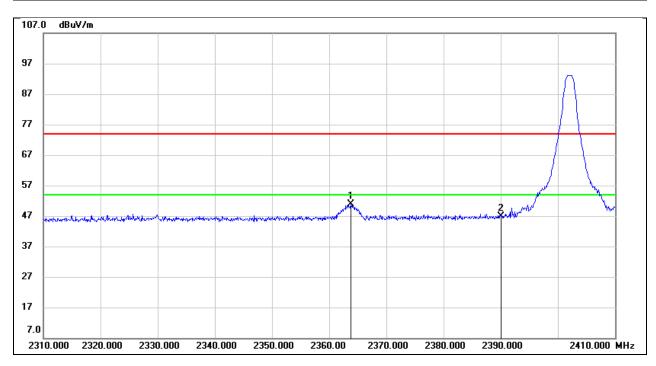
Test Date	April 9, 2025	Test By	Mason Wang
1 Oot Date	, tp::: 0, 2020	1 001 Dy	macon mang



# **TEST RESULTS**

## 8.1. RESTRICTED BANDEDGE

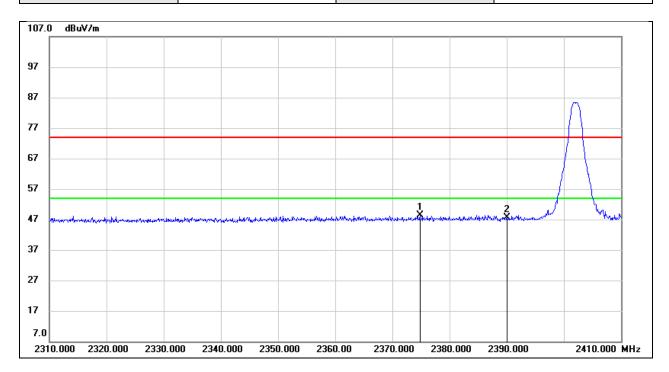
Test Mode:	BLE 1M PK	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2363.800	19.23	31.63	50.86	74.00	-23.14	peak
2	2390.000	15.11	31.73	46.84	74.00	-27.16	peak



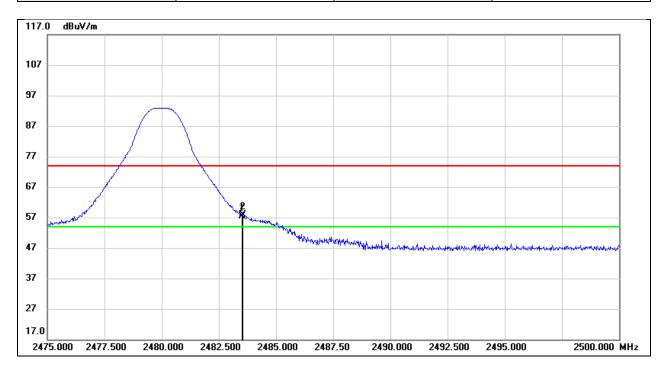
Test Mode:	BLE 1M PK	Frequency(MHz):	2402
Polarity:	Vertical	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2374.800	15.97	32.49	48.46	74.00	-25.54	peak
2	2390.000	14.97	32.55	47.52	74.00	-26.48	peak



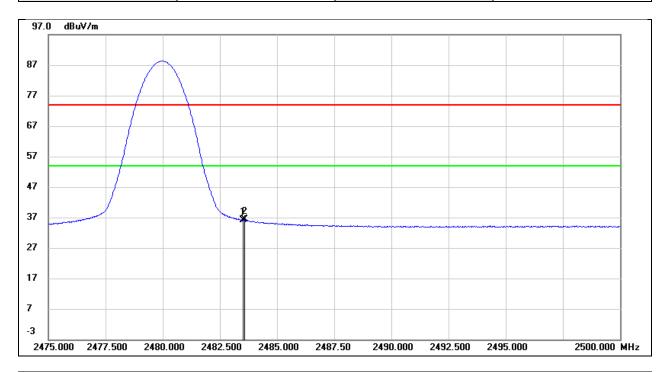
Test Mode:	BLE 1M PK	Frequency(MHz):	2480
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	25.39	32.00	57.39	74.00	-16.61	peak
2	2483.550	25.93	32.00	57.93	74.00	-16.07	peak



Test Mode:	BLE 1M AV	Frequency(MHz):	2480
Polarity:	Horizontal	Test Voltage:	DC 1.5V

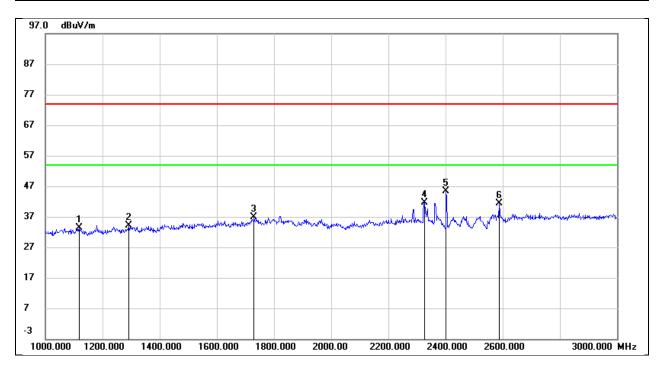


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	4.18	32.00	36.18	54.00	-17.82	AVG
2	2483.575	4.31	32.00	36.31	54.00	-17.69	AVG



8.2. SPURIOUS EMISSIONS(1 GHZ~3 GHZ)

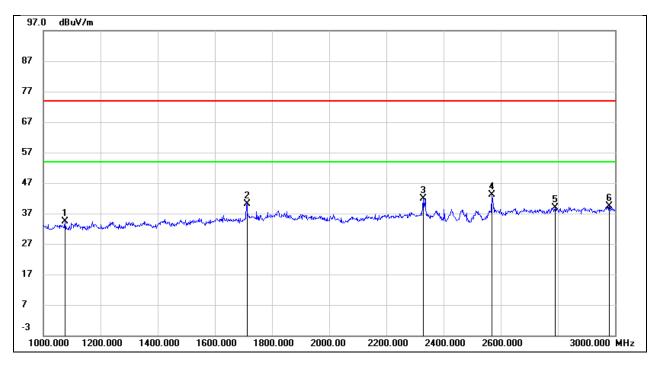
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1118.000	47.19	-13.88	33.31	74.00	-40.69	peak
2	1292.000	47.10	-13.00	34.10	74.00	-39.90	peak
3	1730.000	47.23	-10.45	36.78	74.00	-37.22	peak
4	2326.000	50.43	-8.87	41.56	74.00	-32.44	peak
5	2402.000	54.06	-8.59	45.47	74.00	-28.53	peak
6	2588.000	49.21	-7.82	41.39	74.00	-32.61	peak



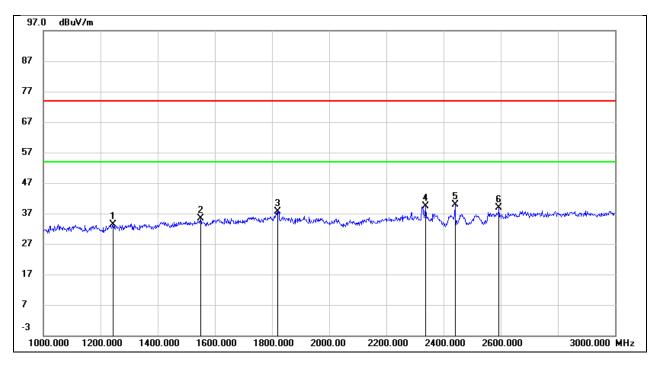
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Vertical	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1076.000	47.79	-13.45	34.34	74.00	-39.66	peak
2	1712.000	50.17	-10.14	40.03	74.00	-33.97	peak
3	2330.000	49.99	-8.02	41.97	74.00	-32.03	peak
4	2568.000	50.24	-7.04	43.20	74.00	-30.80	peak
5	2790.000	44.83	-5.88	38.95	74.00	-35.05	peak
6	2980.000	44.08	-4.82	39.26	74.00	-34.74	peak



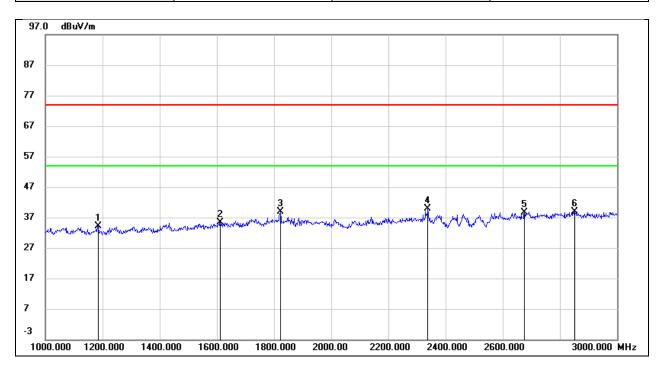
Test Mode:	BLE 1M	Frequency(MHz):	2440
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1244.000	46.67	-13.25	33.42	74.00	-40.58	peak
2	1550.000	47.06	-11.63	35.43	74.00	-38.57	peak
3	1820.000	47.68	-9.98	37.70	74.00	-36.30	peak
4	2338.000	48.14	-8.82	39.32	74.00	-34.68	peak
5	2440.000	48.28	-8.44	39.84	74.00	-34.16	peak
6	2594.000	46.61	-7.79	38.82	74.00	-35.18	peak



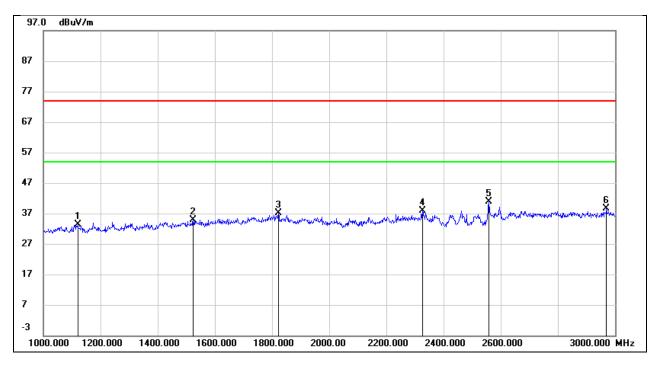
Test Mode:	BLE 1M	Frequency(MHz):	2440
Polarity:	Vertical	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1186.000	47.19	-13.06	34.13	74.00	-39.87	peak
2	1612.000	46.41	-11.01	35.40	74.00	-38.60	peak
3	1822.000	48.16	-9.37	38.79	74.00	-35.21	peak
4	2338.000	47.99	-7.99	40.00	74.00	-34.00	peak
5	2676.000	45.11	-6.46	38.65	74.00	-35.35	peak
6	2852.000	44.44	-5.53	38.91	74.00	-35.09	peak



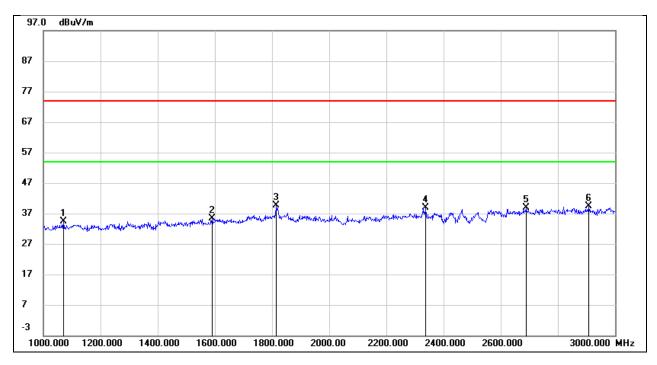
Test Mode:	BLE 1M	Frequency(MHz):	2480
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1120.000	47.29	-13.86	33.43	74.00	-40.57	peak
2	1524.000	46.70	-11.77	34.93	74.00	-39.07	peak
3	1822.000	47.21	-9.98	37.23	74.00	-36.77	peak
4	2326.000	46.68	-8.87	37.81	74.00	-36.19	peak
5	2558.000	48.71	-7.95	40.76	74.00	-33.24	peak
6	2970.000	44.81	-6.15	38.66	74.00	-35.34	peak



Test Mode:	BLE 1M	Frequency(MHz):	2480
Polarity:	Vertical	Test Voltage:	DC 1.5V

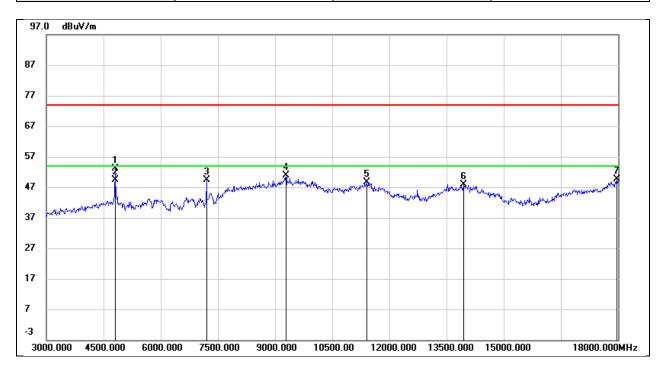


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1070.000	47.74	-13.48	34.26	74.00	-39.74	peak
2	1590.000	46.46	-11.19	35.27	74.00	-38.73	peak
3	1814.000	48.89	-9.37	39.52	74.00	-34.48	peak
4	2338.000	46.96	-7.99	38.97	74.00	-35.03	peak
5	2688.000	45.30	-6.40	38.90	74.00	-35.10	peak
6	2908.000	44.65	-5.22	39.43	74.00	-34.57	peak



### 8.3. SPURIOUS EMISSIONS(3 GHZ~18 GHZ)

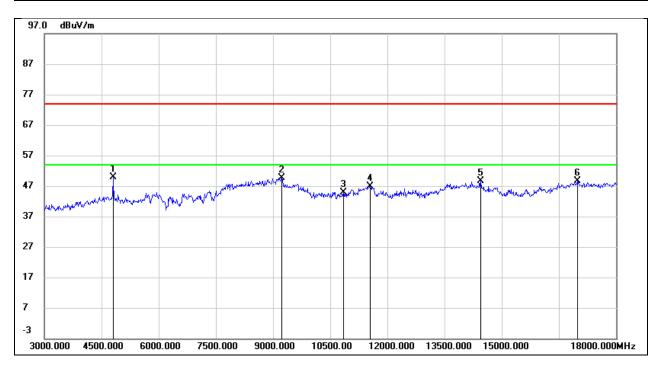
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4800.000	52.55	0.47	53.02	74.00	-20.98	peak
2	4800.000	48.87	0.47	49.34	54.00	-4.66	AVG
3	7200.000	42.38	6.89	49.27	74.00	-24.73	peak
4	9285.000	39.51	11.45	50.96	74.00	-23.04	peak
5	11400.000	30.92	17.60	48.52	74.00	-25.48	peak
6	13950.000	24.21	23.58	47.79	74.00	-26.21	peak
7	17970.000	20.18	29.33	49.51	74.00	-24.49	peak



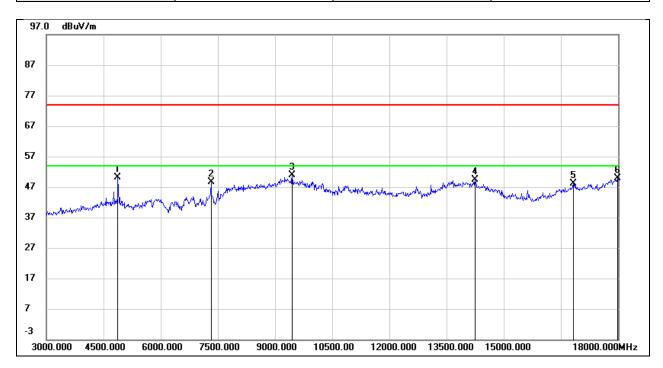
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Vertical	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4800.000	48.25	1.55	49.80	74.00	-24.20	peak
2	9225.000	38.21	11.41	49.62	74.00	-24.38	peak
3	10845.000	30.36	14.50	44.86	74.00	-29.14	peak
4	11550.000	30.36	16.61	46.97	74.00	-27.03	peak
5	14445.000	26.85	21.66	48.51	74.00	-25.49	peak
6	16980.000	23.48	25.15	48.63	74.00	-25.37	peak



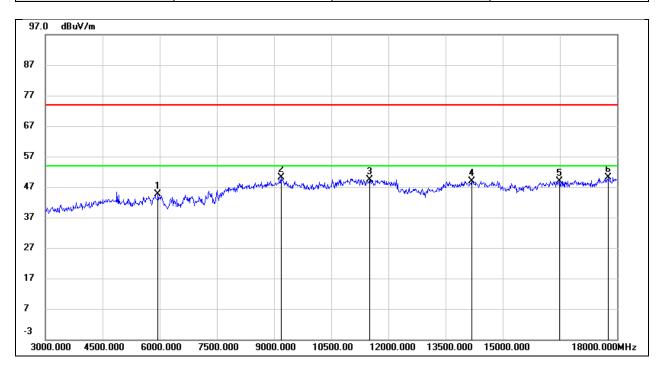
Test Mode:	BLE 1M	Frequency(MHz):	2440
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	49.51	0.65	50.16	74.00	-23.84	peak
2	7320.000	41.66	7.05	48.71	74.00	-25.29	peak
3	9450.000	38.71	12.18	50.89	74.00	-23.11	peak
4	14250.000	26.25	23.08	49.33	74.00	-24.67	peak
5	16830.000	24.81	23.27	48.08	74.00	-25.92	peak
6	17985.000	20.33	29.49	49.82	74.00	-24.18	peak



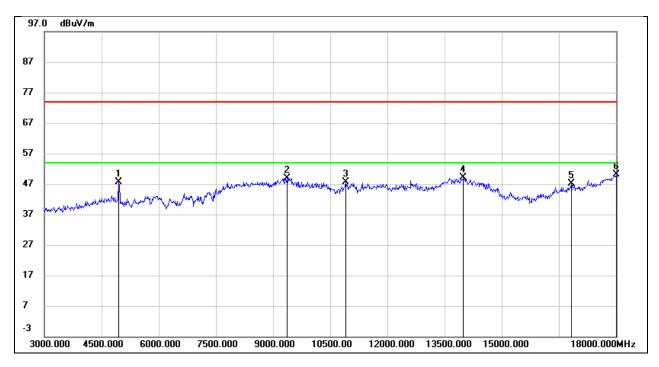
Test Mode:	BLE 1M	Frequency(MHz):	2440
Polarity:	Vertical	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5955.000	40.59	4.06	44.65	74.00	-29.35	peak
2	9180.000	39.00	11.25	50.25	74.00	-23.75	peak
3	11505.000	32.86	16.50	49.36	74.00	-24.64	peak
4	14190.000	26.64	22.27	48.91	74.00	-25.09	peak
5	16485.000	24.95	24.00	48.95	74.00	-25.05	peak
6	17775.000	23.98	26.21	50.19	74.00	-23.81	peak



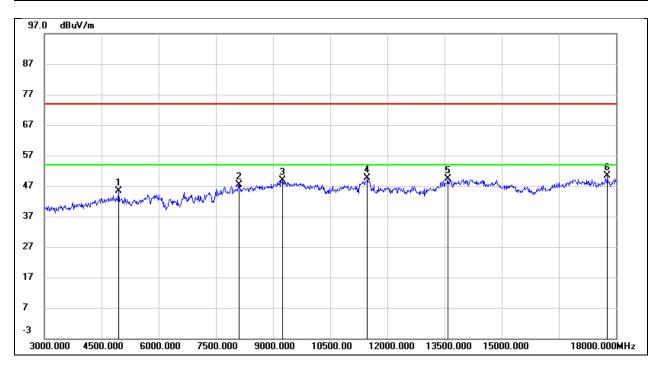
Test Mode:	BLE 1M	Frequency(MHz):	2480
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4950.000	46.77	0.83	47.60	74.00	-26.40	peak
2	9375.000	37.04	11.84	48.88	74.00	-25.12	peak
3	10905.000	32.20	15.44	47.64	74.00	-26.36	peak
4	13995.000	25.35	23.78	49.13	74.00	-24.87	peak
5	16830.000	23.81	23.27	47.08	74.00	-26.92	peak
6	18000.000	20.46	29.64	50.10	74.00	-23.90	peak



Test Mode:	BLE 1M	Frequency(MHz):	2480
Polarity:	Vertical	Test Voltage:	DC 1.5V

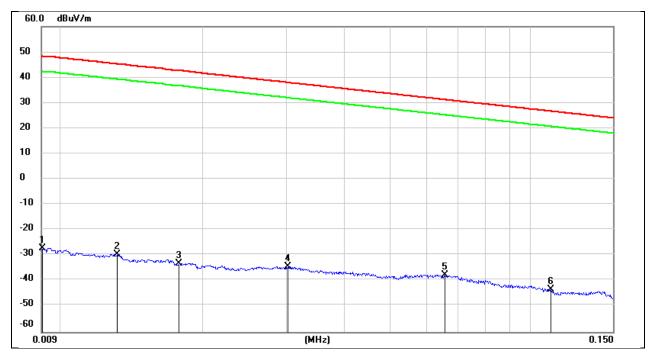


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4950.000	43.43	2.00	45.43	74.00	-28.57	peak
2	8100.000	38.52	8.81	47.33	74.00	-26.67	peak
3	9255.000	37.27	11.51	48.78	74.00	-25.22	peak
4	11475.000	33.32	16.42	49.74	74.00	-24.26	peak
5	13590.000	28.46	20.92	49.38	74.00	-24.62	peak
6	17775.000	24.06	26.21	50.27	74.00	-23.73	peak



### 8.4. SPURIOUS EMISSIONS(9 KHZ~30 MHZ)

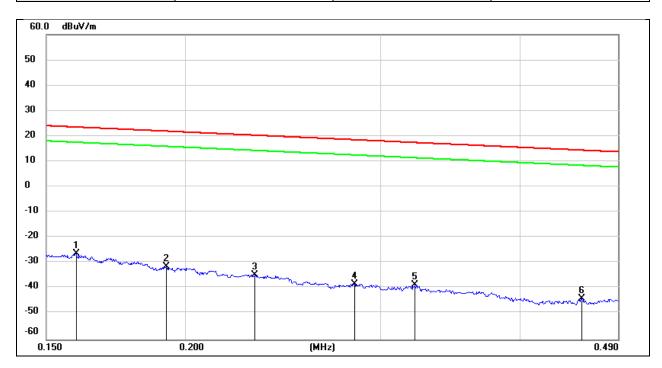
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	ISED	ISED	Margin	Remark
						Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0091	74.08	-101.33	-27.25	48.28	-78.75	-3.22	-75.53	peak
2	0.0131	71.97	-101.38	-29.41	45.25	-80.91	-6.25	-74.66	peak
3	0.0177	68.34	-101.35	-33.01	42.64	-84.51	-8.86	-75.65	peak
4	0.0303	66.95	-101.39	-34.44	37.97	-85.94	-13.53	-72.41	peak
5	0.0656	63.86	-101.55	-37.69	31.26	-89.19	-20.24	-68.95	peak
6	0.1102	58.31	-101.77	-43.46	26.76	-94.96	-24.74	-70.22	peak



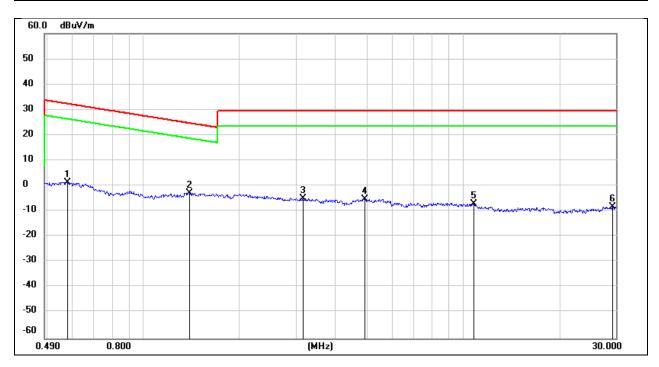
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	ISED	ISED	Margin	Remark
						Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1595	75.36	-101.65	-26.29	23.55	-77.79	-27.95	-49.84	peak
2	0.1925	70.46	-101.70	-31.24	21.92	-82.74	-29.58	-53.16	peak
3	0.2310	67.19	-101.77	-34.58	20.33	-86.08	-31.17	-54.91	peak
4	0.2837	63.72	-101.83	-38.11	18.54	-89.61	-32.96	-56.65	peak
5	0.3220	63.19	-101.88	-38.69	17.44	-90.19	-34.06	-56.13	peak
6	0.4546	58.03	-102.02	-43.99	14.45	-95.49	-37.05	-58.44	peak



Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V

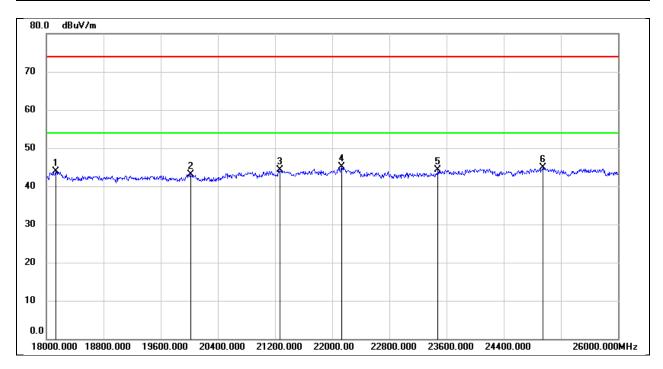


No.	Frequency	Reading	Correct	Result	Limit	ISED	ISED	Margin	Remark
						Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.5785	63.40	-62.08	1.32	32.36	-50.18	-19.14	-31.04	peak
2	1.3931	59.18	-62.09	-2.91	24.72	-54.41	-26.78	-27.63	peak
3	3.1598	56.73	-61.53	-4.80	29.54	-56.3	-21.96	-34.34	peak
4	4.9165	56.38	-61.48	-5.10	29.54	-56.6	-21.96	-34.64	peak
5	10.7888	53.65	-60.83	-7.18	29.54	-58.68	-21.96	-36.72	peak
6	29.3213	51.80	-60.02	-8.22	29.54	-59.72	-21.96	-37.76	peak



### 8.5. SPURIOUS EMISSIONS(18 GHZ~26 GHZ)

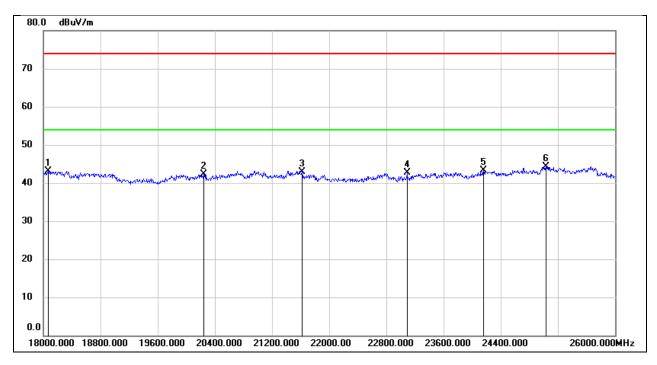
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18128.000	49.32	-5.47	43.85	74.00	-30.15	peak
2	20016.000	48.56	-5.47	43.09	74.00	-30.91	peak
3	21264.000	49.04	-4.76	44.28	74.00	-29.72	peak
4	22136.000	49.41	-4.34	45.07	74.00	-28.93	peak
5	23480.000	47.54	-3.16	44.38	74.00	-29.62	peak
6	24952.000	47.13	-2.14	44.99	74.00	-29.01	peak



Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Vertical	Test Voltage:	DC 1.5V

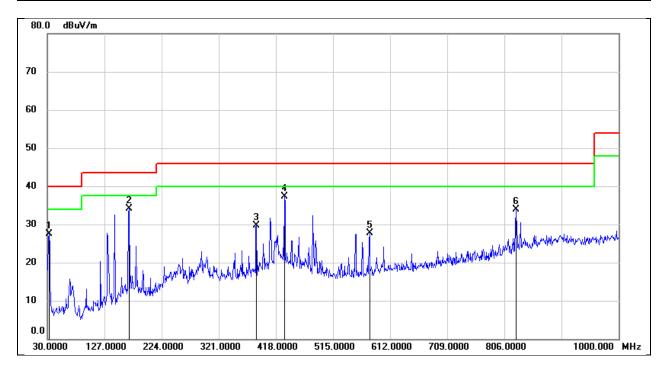


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18072.000	48.53	-5.43	43.10	74.00	-30.90	peak
2	20240.000	47.82	-5.61	42.21	74.00	-31.79	peak
3	21624.000	47.51	-4.51	43.00	74.00	-31.00	peak
4	23088.000	46.02	-3.41	42.61	74.00	-31.39	peak
5	24160.000	46.03	-2.80	43.23	74.00	-30.77	peak
6	25032.000	46.44	-2.04	44.40	74.00	-29.60	peak



8.6. SPURIOUS EMISSIONS(30 MHZ~1 GHZ)

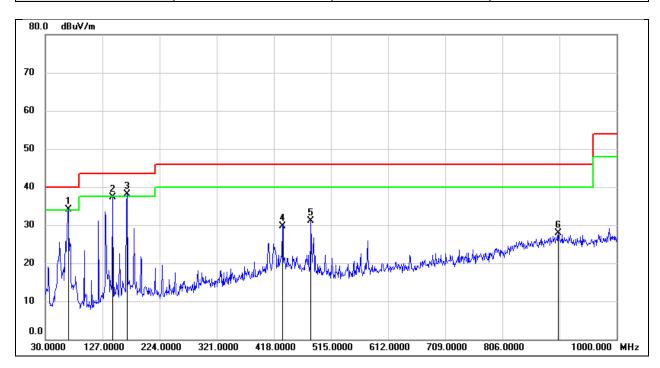
Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Horizontal	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	32.9100	41.93	-14.39	27.54	40.00	-12.46	QP
2	168.7100	46.33	-12.18	34.15	43.50	-9.35	QP
3	385.0200	39.20	-9.59	29.61	46.00	-16.39	QP
4	432.5500	45.93	-8.66	37.27	46.00	-8.73	QP
5	577.0800	34.12	-6.33	27.79	46.00	-18.21	QP
6	825.4000	35.94	-1.94	34.00	46.00	-12.00	QP



Test Mode:	BLE 1M	Frequency(MHz):	2402
Polarity:	Vertical	Test Voltage:	DC 1.5V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	68.8000	49.43	-15.27	34.16	40.00	-5.84	QP
2	144.4600	51.05	-13.76	37.29	43.50	-6.21	QP
3	168.7100	50.37	-12.18	38.19	43.50	-5.31	QP
4	432.5500	38.30	-8.66	29.64	46.00	-16.36	QP
5	481.0500	38.94	-7.85	31.09	46.00	-14.91	QP
6	901.0600	28.42	-0.45	27.97	46.00	-18.03	OP



Page 54 of 70

#### 9. ANTENNA REQUIREMENT

#### **REQUIREMENT**

Please refer to FCC part 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 an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Please refer to FCC part 15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **DESCRIPTION**

**Pass** 



Page 55 of 70

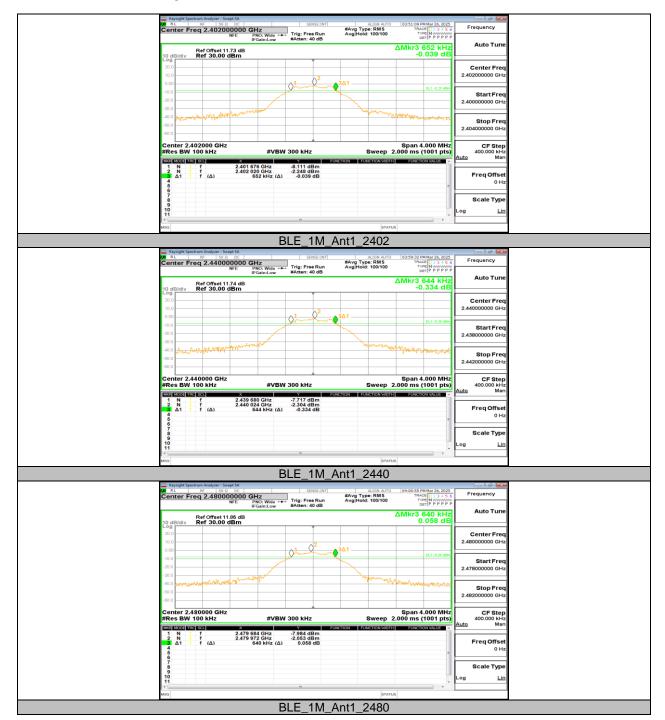
### 10. TEST DATA

## 10.1. APPENDIX A: DTS BANDWIDTH 10.1.1. Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2402	0.652	2401.676	2402.328	≥0.5	PASS
BLE_1M	Ant1	2440	0.644	2439.680	2440.324	≥0.5	PASS
		2480	0.640	2479.684	2480.324	≥0.5	PASS



### 10.1.2. Test Graphs





Page 57 of 70

### 10.2. APPENDIX B: OCCUPIED CHANNEL BANDWIDTH 10.2.1. Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
	Ant1	2402	1.0145	2401.5034	2402.5179
BLE_1M		Ant1	2440	1.0203	2439.5023
		2480	1.0130	2479.5028	2480.5158



### 10.2.2. Test Graphs





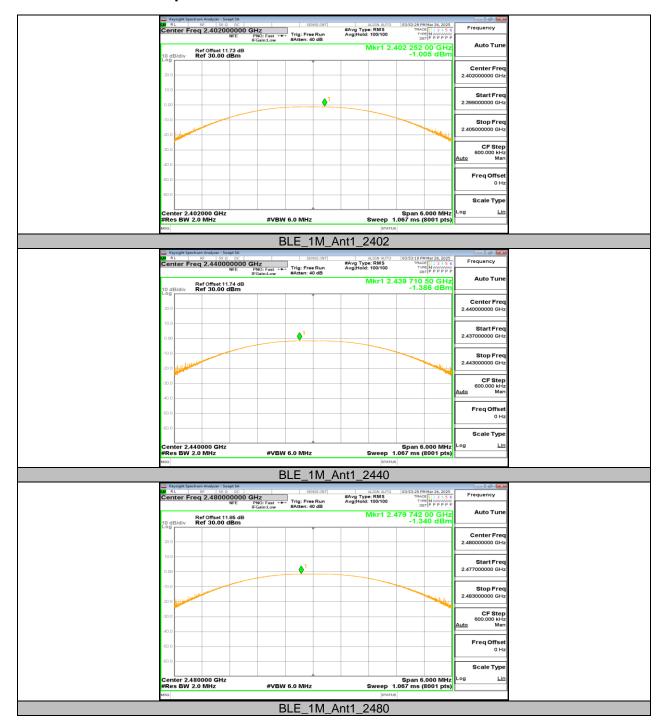
Page 59 of 70

# 10.3. APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER 10.3.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.01	≤30	PASS
		2440	-1.39	≤30	PASS
		2480	-1.34	≤30	PASS



### 10.3.2. Test Graphs





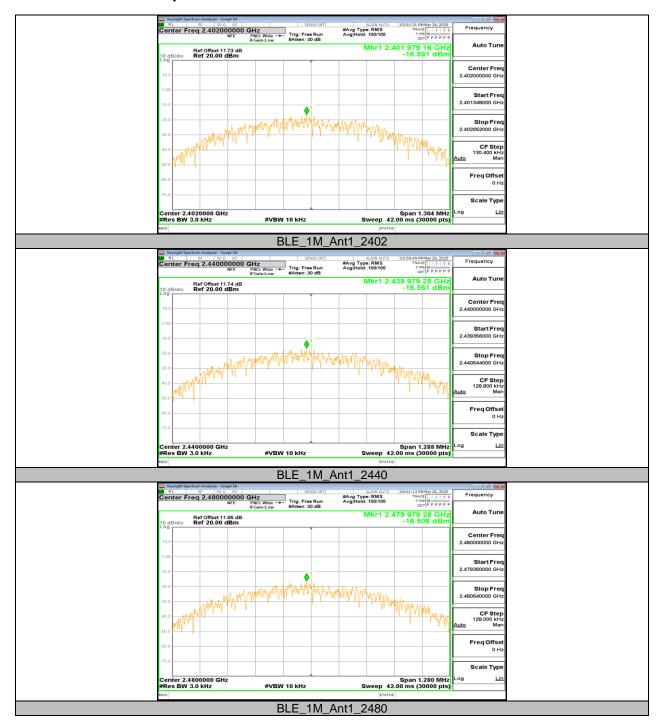
Page 61 of 70

# 10.4. APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY 10.4.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-16.59	≤8.00	PASS
		2440	-16.56	≤8.00	PASS
		2480	-16.51	≤8.00	PASS



#### 10.4.2. Test Graphs





Page 63 of 70

# 10.5. APPENDIX E: BAND EDGE MEASUREMENTS 10.5.1. Test Result

Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.21	-44.82	≤-22.21	PASS
		High	2480	-2.13	-48.06	≤-22.13	PASS



### 10.5.2. Test Graphs





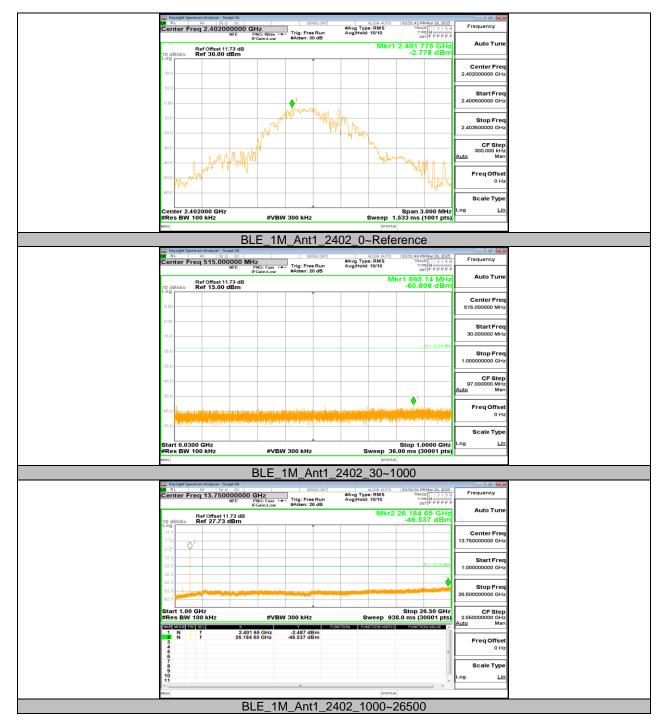
Page 65 of 70

## 10.6. APPENDIX F: CONDUCTED SPURIOUS EMISSION 10.6.1. Test Result

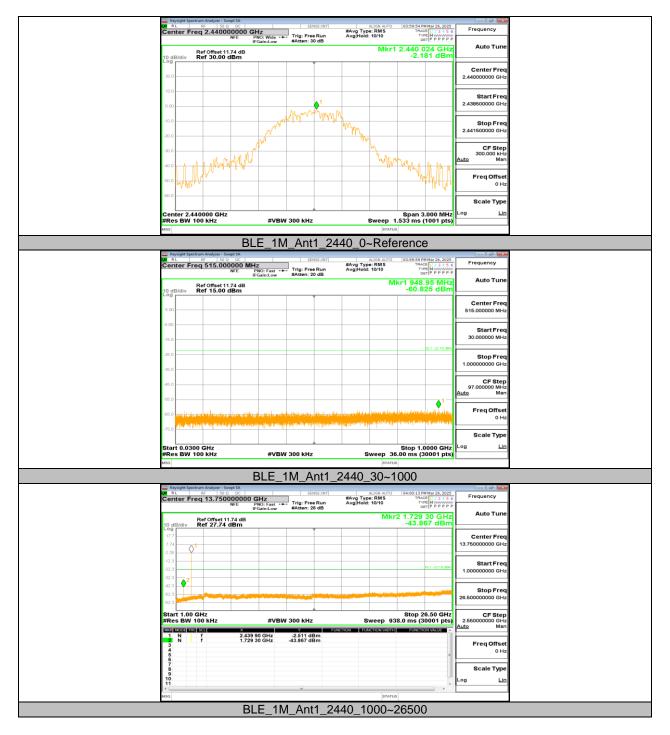
Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	Result[dBm]	Limit[dBm]	Verdict
		2402	Reference	-2.78		PASS
BLE_1M Ant1			30~1000	-60.7	≤-22.78	PASS
			1000~26500	-46.54	≤-22.78	PASS
		2440	Reference	-2.18		PASS
	Ant1		30~1000	-60.83	≤-22.18	PASS
			1000~26500	-43.87	≤-22.18	PASS
		2480	Reference	-2.42		PASS
			30~1000	-60.98	≤-22.42	PASS
			1000~26500	-46.17	≤-22.42	PASS



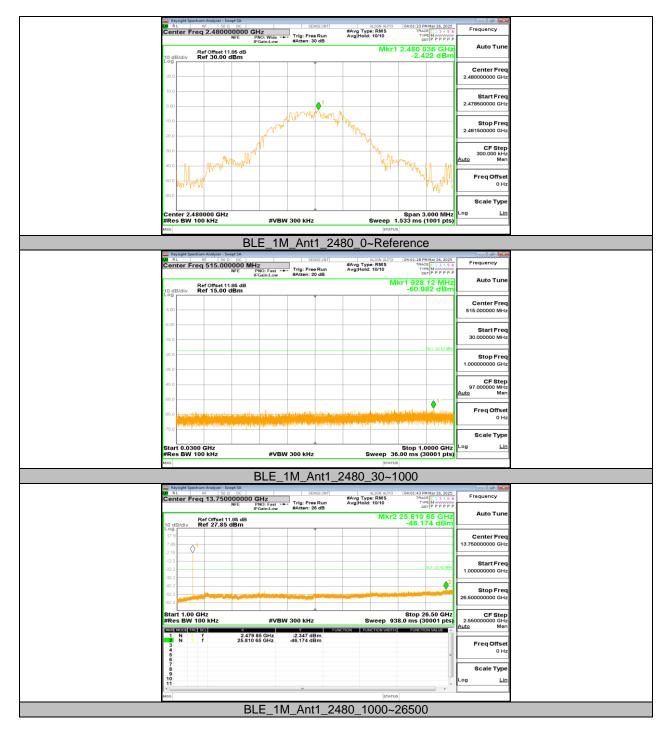
### 10.6.2. Test Graphs













Page 69 of 70

## 10.7. APPENDIX G: DUTY CYCLE 10.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
BLE_1M	0.38	0.62	0.6129	61.29	2.13	2.63	3

Note:

Duty Cycle Correction Factor=10log (1/x).

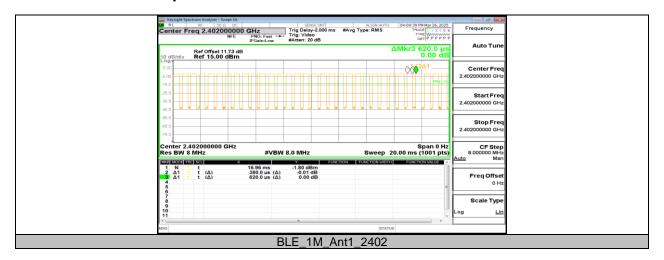
Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used.



### 10.7.2. Test Graphs



**END OF REPORT**