

# RADIO TEST REPORT

## FCC 47 CFR PART 15 SUBPART C

<b>Test Standard</b>	<b>FCC Part 15.247</b>
<b>Product name</b>	<b>Ridge X-ray Flat Panel Detector</b>
<b>Brand Name</b>	<b>INCX</b>
<b>Model No.</b>	<b>Ridge F17C, Ridge V14C, Ridge V17C, Ridge F14C, Ridge F14G, Ridge F17G</b>
<b>Test Result</b>	<b>Pass</b>
<b>Statements of Conformity</b>	<b>Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.</b>

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:



Shawn Wu  
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.  
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

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### **Revision History**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	November 30, 2022	Initial Issue	ALL	Doris Chu

## Table of contents

<b>1.</b>	<b>GENERAL INFORMATION .....</b>	<b>4</b>
<b>1.1</b>	<b>EUT INFORMATION .....</b>	<b>4</b>
<b>1.2</b>	<b>EUT CHANNEL INFORMATION .....</b>	<b>5</b>
<b>1.3</b>	<b>ANTENNA INFORMATION .....</b>	<b>5</b>
<b>1.4</b>	<b>MEASUREMENT UNCERTAINTY.....</b>	<b>6</b>
<b>1.5</b>	<b>FACILITIES AND TEST LOCATION .....</b>	<b>7</b>
<b>1.6</b>	<b>INSTRUMENT CALIBRATION .....</b>	<b>8</b>
<b>1.7</b>	<b>SUPPORT AND EUT ACCESSORIES EQUIPMENT .....</b>	<b>9</b>
<b>1.8</b>	<b>TEST METHODOLOGY AND APPLIED STANDARDS .....</b>	<b>9</b>
<b>2.</b>	<b>TEST SUMMARY .....</b>	<b>10</b>
<b>3.</b>	<b>DESCRIPTION OF TEST MODES.....</b>	<b>11</b>
<b>3.1</b>	<b>THE WORST MODE OF OPERATING CONDITION .....</b>	<b>11</b>
<b>3.2</b>	<b>THE WORST MODE OF MEASUREMENT .....</b>	<b>12</b>
<b>3.3</b>	<b>EUT DUTY CYCLE.....</b>	<b>13</b>
<b>4.</b>	<b>TEST RESULT .....</b>	<b>14</b>
<b>4.1</b>	<b>AC POWER LINE CONDUCTED EMISSION .....</b>	<b>14</b>
<b>4.2</b>	<b>6DB BANDWIDTH AND OCCUPIED BANDWIDTH (99%) .....</b>	<b>19</b>
<b>4.3</b>	<b>OUTPUT POWER MEASUREMENT .....</b>	<b>25</b>
<b>4.4</b>	<b>POWER SPECTRAL DENSITY.....</b>	<b>27</b>
<b>4.5</b>	<b>CONDUCTED BAND EDGE AND SPURIOUS EMISSION .....</b>	<b>31</b>
<b>4.6</b>	<b>RADIATION BANDEDGE AND SPURIOUS EMISSION .....</b>	<b>38</b>
<b>APPENDIX 1 - PHOTOGRAPHS OF EUT</b>		

Report No.: TMWK2209003821KR

## 1. GENERAL INFORMATION

### 1.1 EUT INFORMATION

<b>Applicant</b>	InnoCare Optoelectronics Corp Rm. B, No. 2, Sec. 2, Huanxi Rd., Southern Taiwan Science Park, Xinshi Dist., Tainan, 741 Taiwan					
<b>Manufacturer</b>	InnoCare Optoelectronics Corp Rm. B, No. 2, Sec. 2, Huanxi Rd., Southern Taiwan Science Park, Xinshi Dist., Tainan City 741, Taiwan, R.O.C.					
<b>Equipment</b>	Ridge X-ray Flat Panel Detector					
<b>Model Name</b>	Ridge F17C, Ridge V14C, Ridge V17C, Ridge F14C, Ridge F14G, Ridge F17G					
<b>Model Discrepancy</b>		<b>Model</b>	<b>PCBA X-Board</b>	<b>ROIC</b>	<b>Scintillator</b>	<b>Other</b>
	Main	Ridge F17C	different size	17	Csl	Marketing Differences
	Series	Ridge V14C		14	Csl	
		Ridge V17C		17	Csl	
		Ridge F14C		14	Csl	
		Ridge F14G		14	GOS	
		Ridge F17G		17	GOS	
<b>Brand Name</b>	INCX					
<b>Received Date</b>	September 23, 2022					
<b>Date of Test</b>	October 6 ~ 17, 2022					
<b>Power Supply</b>	1. Power from Power Adapter. Mean well / GSM60A24-P1L I/P: 100-240VAC, 1.4-0.7A, 50-60Hz O/P: 24VDC, 2.5A, 60W MAX. 2. Power from Battery. 11.4VDC, 4231mAh or 4129mAh/48Wh					
<b>HW Version</b>	V06					
<b>SW Version</b>	V81.36					

**Remark:**

- For more details, please refer to the User's manual of the EUT.
- Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
- Disclaimer: The variant trademarks are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

Report No.: TMWK2209003821KR

## 1.2 EUT CHANNEL INFORMATION

Frequency Range	2402MHz-2480MHz
Modulation Type	GFSK for BLE 1 Mbps GFSK for BLE 2 Mbps
Number of channels	40 Channels

**Remark:**

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
<input type="checkbox"/> 1 MHz or less	1	Middle
<input type="checkbox"/> 1 MHz to 10 MHz	2	1 near top and 1 near bottom
<input checked="" type="checkbox"/> More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

## 1.3 ANTENNA INFORMATION

Antenna Specification	<input type="checkbox"/> PIFA <input checked="" type="checkbox"/> PCB <input type="checkbox"/> Dipole <input type="checkbox"/> Coils
Antenna Gain	Gain: -11.01 dBi
Antenna connector	I-PEX

**Notes:**

1.The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

Report No.: TMWK2209003821KR

## 1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	$\pm 2.1183$
Channel Bandwidth	$\pm 2.1863$
RF output power (Power Meter + Power sensor)	$\pm 1.2688$
Power Spectral density	$\pm 2.1855$
Conducted Bandedge	$\pm 2.1866$
Conducted Spurious Emission	$\pm 2.1859$
Radiated Emission_9kHz-30MHz	$\pm 3.814$
Radiated Emission_30MHz-200MHz	$\pm 4.272$
Radiated Emission_200MHz-1GHz	$\pm 4.619$
Radiated Emission_1GHz-6GHz	$\pm 5.522$
Radiated Emission_6GHz-18GHz	$\pm 5.228$
Radiated Emission_18GHz-26GHz	$\pm 4.089$
Radiated Emission_26GHz-40GHz	$\pm 4.019$

**Remark:**

- 1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

## 1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

No. 12, Ln. 116, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan 24803

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Jack Chen	-
Radiation	Ray Li, Tony Chao	-
RF Conducted	David Li	-

**Remark:** The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC public Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309

## 1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2496A	2136002	2021-12-06	2022-12-05
EXA Signal Analyzer	Keysight	N9010B	MY60242460	2022-01-30	2023-01-29
Power Sensor	Anritsu	MA2411B	1911386	2022-08-08	2023-08-07
Power Sensor	Anritsu	MA2411B	1911387	2022-08-08	2023-08-07
<b>Software</b>	Radio Test Software Ver. 21				

3M 966 Chamber Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
K-Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	2021-12-05	2022-12-04
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2022-08-03	2023-08-02
Spectrum Analyzer	Agilent	E4446A	MY46180323	2021-12-06	2022-12-05
Thermo-Hygro Meter	WISEWIND	1206	D07	2021-12-28	2022-12-27
Loop Antenna	COM-POWER	AL-130	121051	2022-04-13	2023-04-12
Horn Antenna	SCHWARZBEC K	BBHA9170	1047	2022-01-11	2023-01-10
Coaxial Cable	EMCI	EMC101G- KM-KM-500	211041	2021-12-23	2022-12-22
Coaxial Cable	EMC	EMC101G-KM-KM-900 0	211042	2021-12-23	2022-12-22
Pre-Amplifier	EMCI	EMC184045SE	980860	2021-12-28	2022-12-27
Horn Antenna	ETS LINDGREN	3116	00026370	2021-11-30	2022-11-29
Cable	Woken	J-1099	201709090004	2021-12-23	2022-12-22
Preamplifier	EMEC	EM330	060609	2022-02-23	2023-02-22
Preamplifier	HP	8449B	3008A00965	2021-12-24	2022-12-23
Band Reject Filter	MICRO TRONICS	BRM 50702	112	2021-11-23	2022-11-22
Cable	Huber+Suhner	104PEA	20995+11112+18233 0	2022-02-23	2023-02-22
Coaxial Cable	EMCI	EMC105	190914+33953	2022-06-15	2023-06-14
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2022-01-25	2023-01-24
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
<b>Software</b>	e3 6.11-20180419c				

**Remark:**

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



Report No.: TMWK2209003821KR

AC Conducted Emissions Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
CABLE	EMCI	CFD300-NL	CERF	2022-06-27	2023-06-26
EMI Test Receiver	R&S	ESCI	100064	2022-06-17	2023-06-16
LISN	SCHAFFNER	NNB 41	03/10013	2022-02-15	2023-02-14
Software	EZ-EMC(CCS-3A1-CE-WUGU)				

**Remark:**

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.

## 1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

Support Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
1	NB(C)	Lenovo	T470	N/A	N/A	N/A

## 1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247.

## 2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Spurious Emission	Pass
15.247(d)	4.6	Radiation Band Edge	Pass
15.247(d)	4.6	Radiation Spurious Emission	Pass

Report No.: TMWK2209003821KR

### 3. DESCRIPTION OF TEST MODES

#### 3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	BLE Mode (1Mbps) BLE Mode (2Mbps)
Test Channel Frequencies	1.Lowest Channel : 2402MHz 2.Middle Channel : 2442MHz 3.Highest Channel : 2480MHz

**Remark:**

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

### 3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by Adapter (14 inch) Mode 2: EUT power by Adapter (17 inch)
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Adapter (14 inch) Mode 2: EUT power by Adapter (17 inch)
Worst Mode	<input type="checkbox"/> Mode 1 <input checked="" type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Worst Position	<input type="checkbox"/> Placed in fixed position. <input checked="" type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Adapter (14 inch) Mode 2: EUT power by Adapter (17 inch)
Worst Mode	<input type="checkbox"/> Mode 1 <input checked="" type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

*Remark:*

- 1. The worst mode was record in this test report.*
- 2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report*
- 3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.*

Report No.: TMWK2209003821KR

### 3.3 EUT DUTY CYCLE

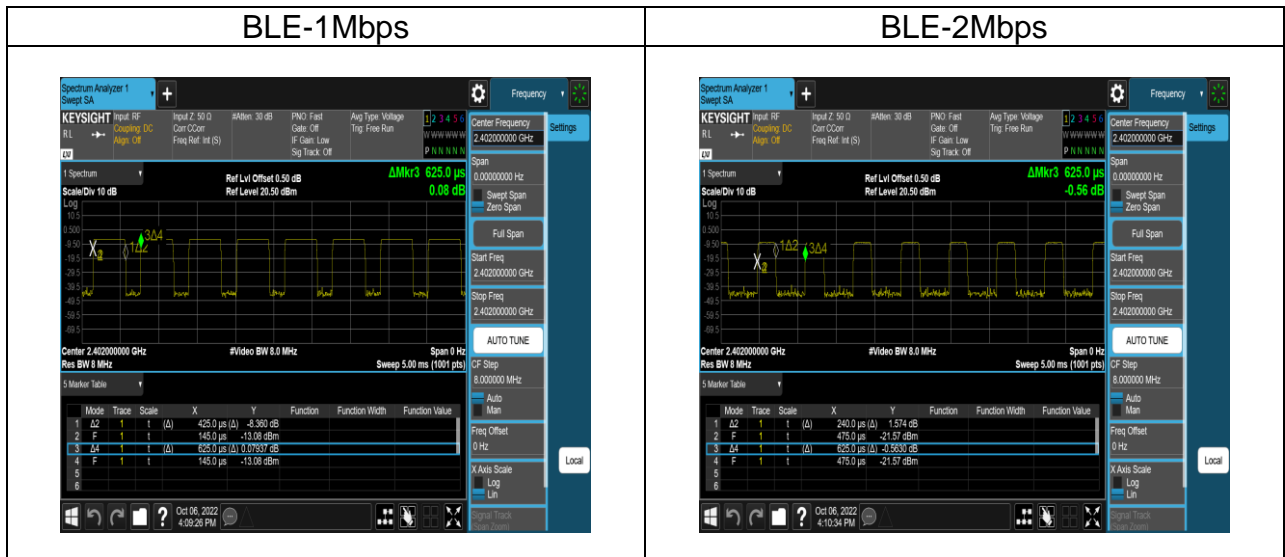
Temperature: 25.2°C

Test date: October 6, 2022

Humidity: 51% RH

Tested by: David Li

Duty Cycle				
Configuration	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
BLE 1M	68.00	1.67	2.35	3.00
BLE 2M	38.40	4.16	4.17	5.00



Report No.: TMWK2209003821KR

## 4. TEST RESULT

### 4.1 AC POWER LINE CONDUCTED EMISSION

#### 4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

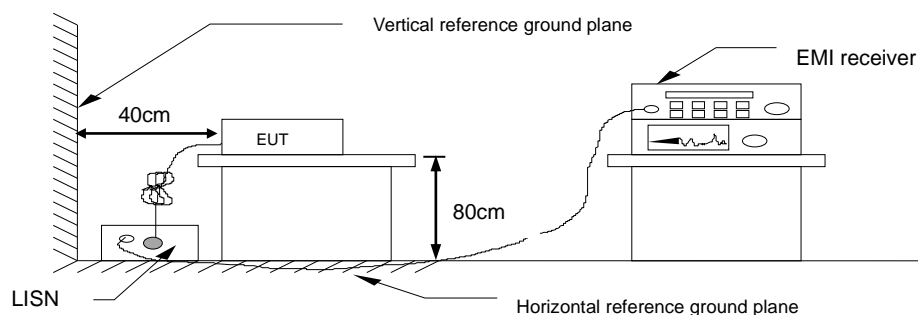
\* Decreases with the logarithm of the frequency.

#### 4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed above horizontal ground plane and 0.4m above vertical ground plane
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

#### 4.1.3 Test Setup

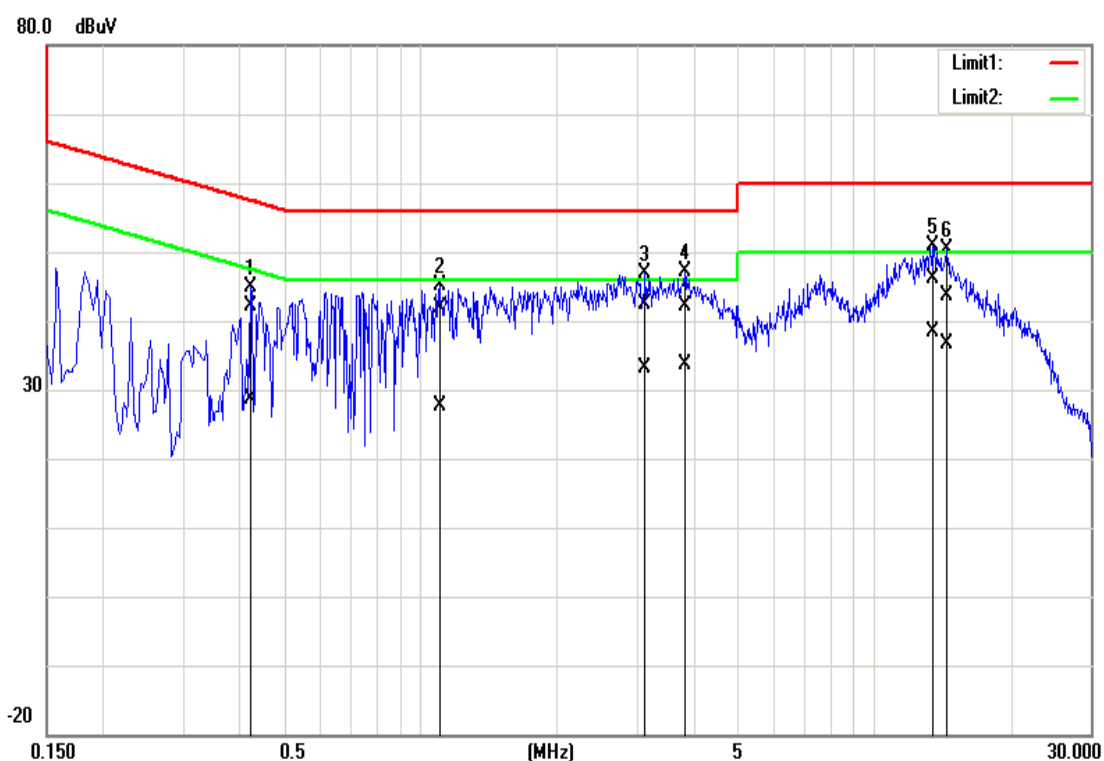


#### 4.1.4 Test Result

Pass.

### Test Data

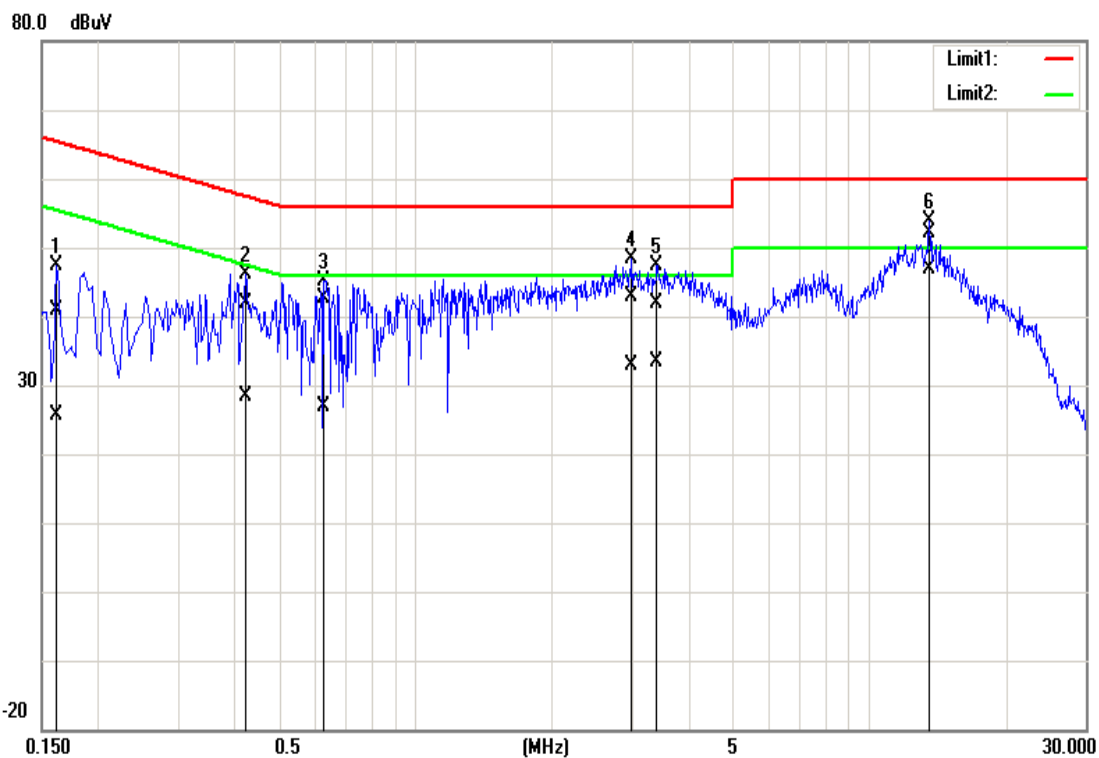
Test Mode:	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase:	Line	Test Date	October 17, 2022
Configuration	BLE-1Mbps	Test Engineer	Jack Chen



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.4220	31.97	18.37	10.19	42.16	28.56	57.41	47.41	-15.25	-18.85	Pass
1.1020	31.76	17.51	10.21	41.97	27.72	56.00	46.00	-14.03	-18.28	Pass
3.1340	32.18	22.85	10.28	42.46	33.13	56.00	46.00	-13.54	-12.87	Pass
3.8340	31.73	23.43	10.30	42.03	33.73	56.00	46.00	-13.97	-12.27	Pass
13.5060	35.75	28.11	10.36	46.11	38.47	60.00	50.00	-13.89	-11.53	Pass
14.4660	33.15	26.39	10.36	43.51	36.75	60.00	50.00	-16.49	-13.25	Pass

Note: Correction factor = LISN loss + Cable loss.

Test Mode:	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase:	Neutral	Test Date	October 17, 2022
Configuration	BLE-1Mbps	Test Engineer	Jack Chen

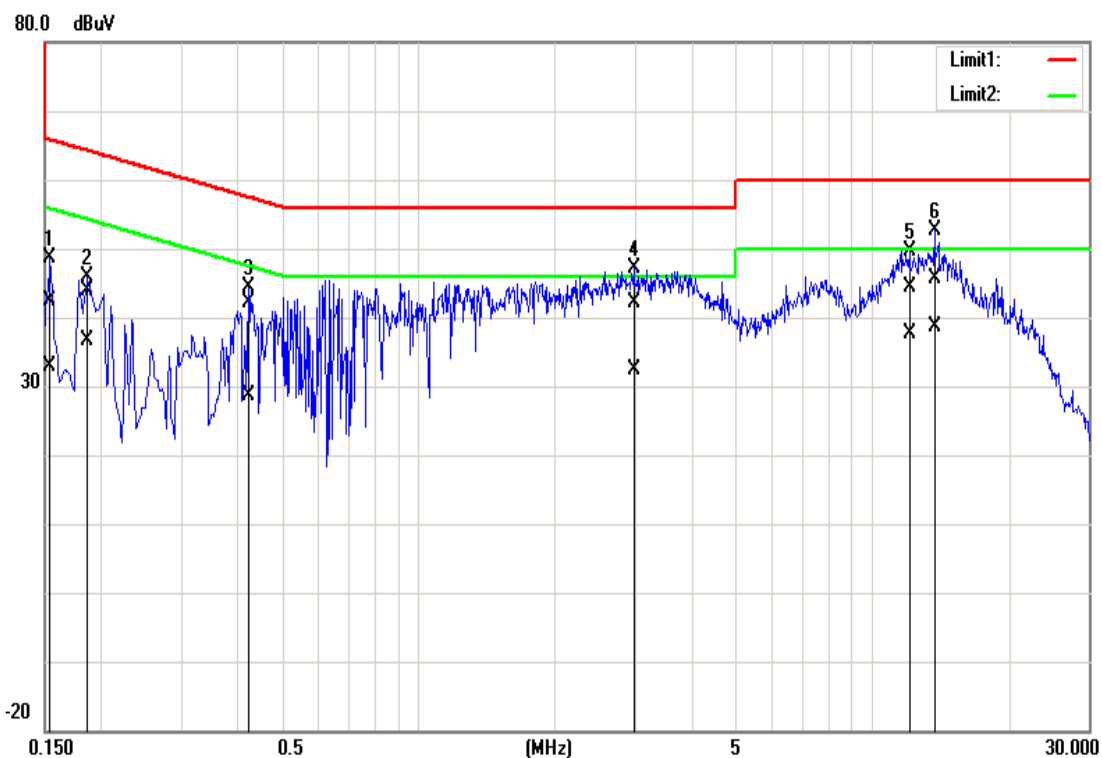


Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1620	30.65	15.36	10.17	40.82	25.53	65.36	55.36	-24.54	-29.83	Pass
0.4220	31.76	18.12	10.18	41.94	28.30	57.41	47.41	-15.47	-19.11	Pass
0.6300	32.56	16.74	10.18	42.74	26.92	56.00	46.00	-13.26	-19.08	Pass
3.0060	32.74	22.67	10.26	43.00	32.93	56.00	46.00	-13.00	-13.07	Pass
3.4140	31.74	23.15	10.26	42.00	33.41	56.00	46.00	-14.00	-12.59	Pass
13.5580	41.77	36.47	10.37	52.14	46.84	60.00	50.00	-7.86	-3.16	Pass

Note: Correction factor = LISN loss + Cable loss.



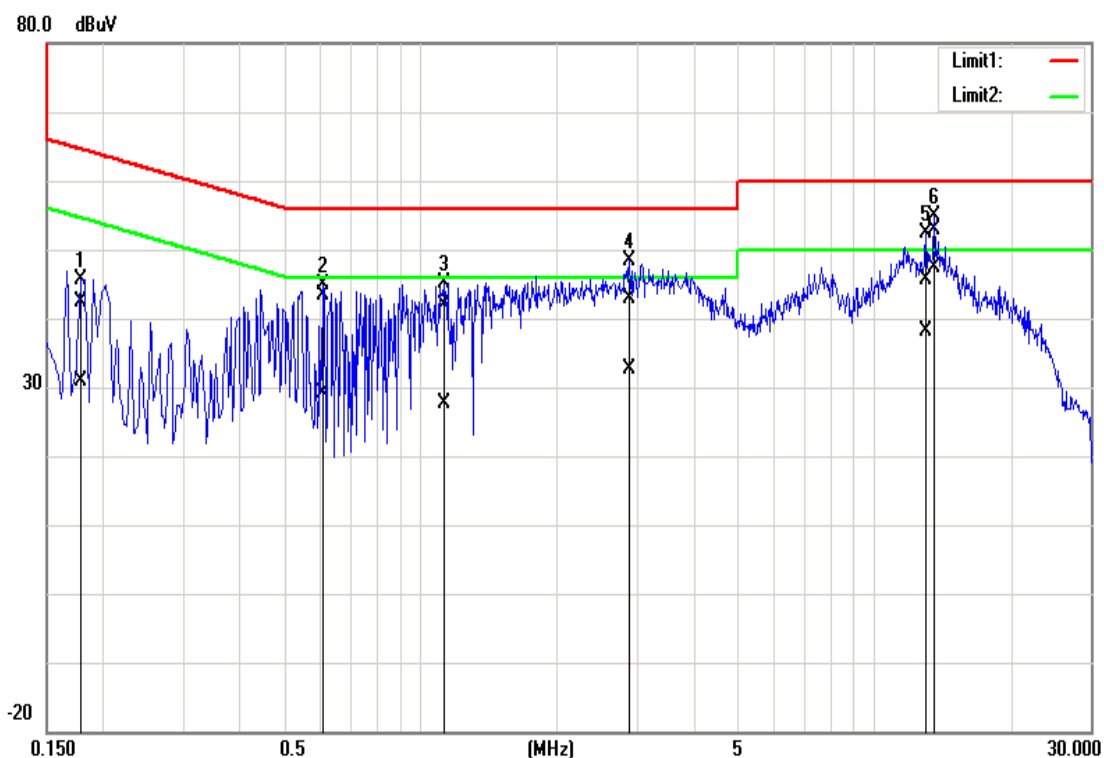
Test Mode:	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase:	Line	Test Date	October 17, 2022
Configuration	BLE-2Mbps	Test Engineer	Jack Chen



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1540	32.27	22.75	10.17	42.44	32.92	65.78	55.78	-23.34	-22.86	Pass
0.1860	33.79	26.33	10.18	43.97	36.51	64.21	54.21	-20.24	-17.70	Pass
0.4220	31.98	18.46	10.19	42.17	28.65	57.41	47.41	-15.24	-18.76	Pass
2.9780	31.79	22.19	10.28	42.07	32.47	56.00	46.00	-13.93	-13.53	Pass
12.0740	33.98	27.31	10.36	44.34	37.67	60.00	50.00	-15.66	-12.33	Pass
13.7460	35.34	28.21	10.37	45.71	38.58	60.00	50.00	-14.29	-11.42	Pass

Note: Correction factor = LISN loss + Cable loss.

Test Mode:	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase:	Neutral	Test Date	October 17, 2022
Configuration	BLE-2Mbps	Test Engineer	Jack Chen



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1780	32.12	20.82	10.17	42.29	30.99	64.58	54.58	-22.29	-23.59	Pass
0.6100	33.10	18.88	10.18	43.28	29.06	56.00	46.00	-12.72	-16.94	Pass
1.1260	31.80	17.42	10.20	42.00	27.62	56.00	46.00	-14.00	-18.38	Pass
2.8860	32.51	22.29	10.26	42.77	32.55	56.00	46.00	-13.23	-13.45	Pass
13.0300	35.16	27.66	10.37	45.53	38.03	60.00	50.00	-14.47	-11.97	Pass
13.5620	42.49	37.10	10.37	52.86	47.47	60.00	50.00	-7.14	-2.53	Pass

Note: Correction factor = LISN loss + Cable loss.

Report No.: TMWK2209003821KR

## 4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

### 4.2.1 Test Limit

According to §15.247(a)(2)

#### 6 dB Bandwidth :

Limit	Shall be at least 500kHz
-------	--------------------------

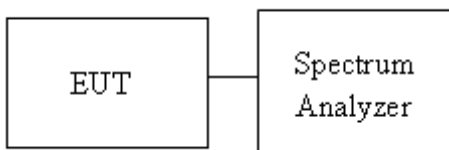
Occupied Bandwidth(99%) : For reporting purposes only.

### 4.2.2 Test Procedure

Test method Refer as ANSI C63.10: 2013,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT.
3. SA set RBW =100KHz, VBW = 300KHz and Detector = Peak, to measurement 6dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth.
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

### 4.2.3 Test Setup



Report No.: TMWK2209003821KR

#### 4.2.4 Test Result

Temperature: 25.2°C

Test date: October 6, 2022

Humidity: 51% RH

Tested by: David Li

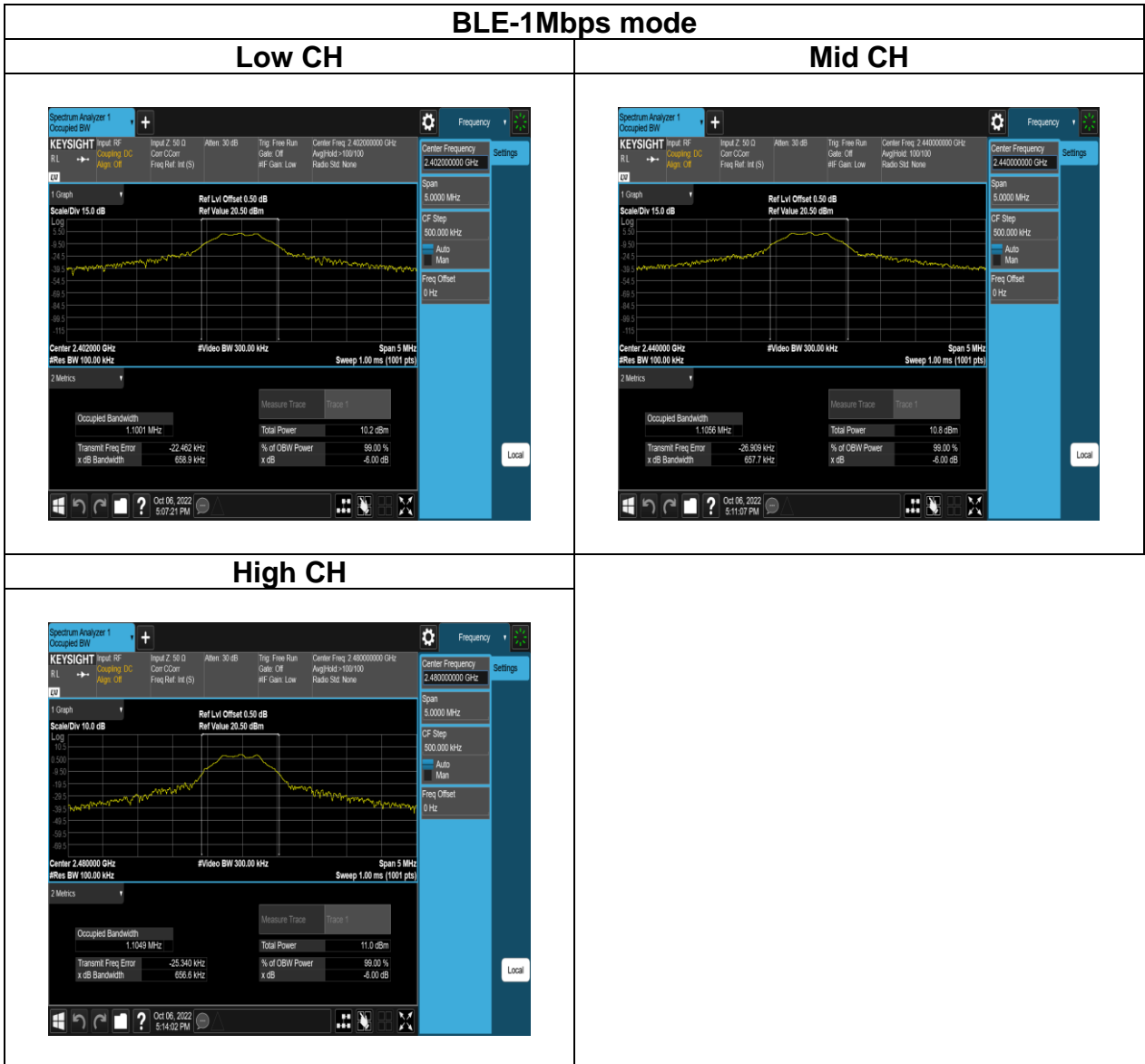
Test mode: BLE-1Mbps mode / 2402-2480 MHz				
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2402	1.0334	0.6589	≥500
Mid	2442	1.0326	0.6577	
High	2480	1.0319	0.6566	

Test mode: BLE-2Mbps mode / 2402-2480 MHz				
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2402	2.0410	1.103	≥500
Mid	2442	2.0504	1.102	
High	2480	2.0522	1.102	

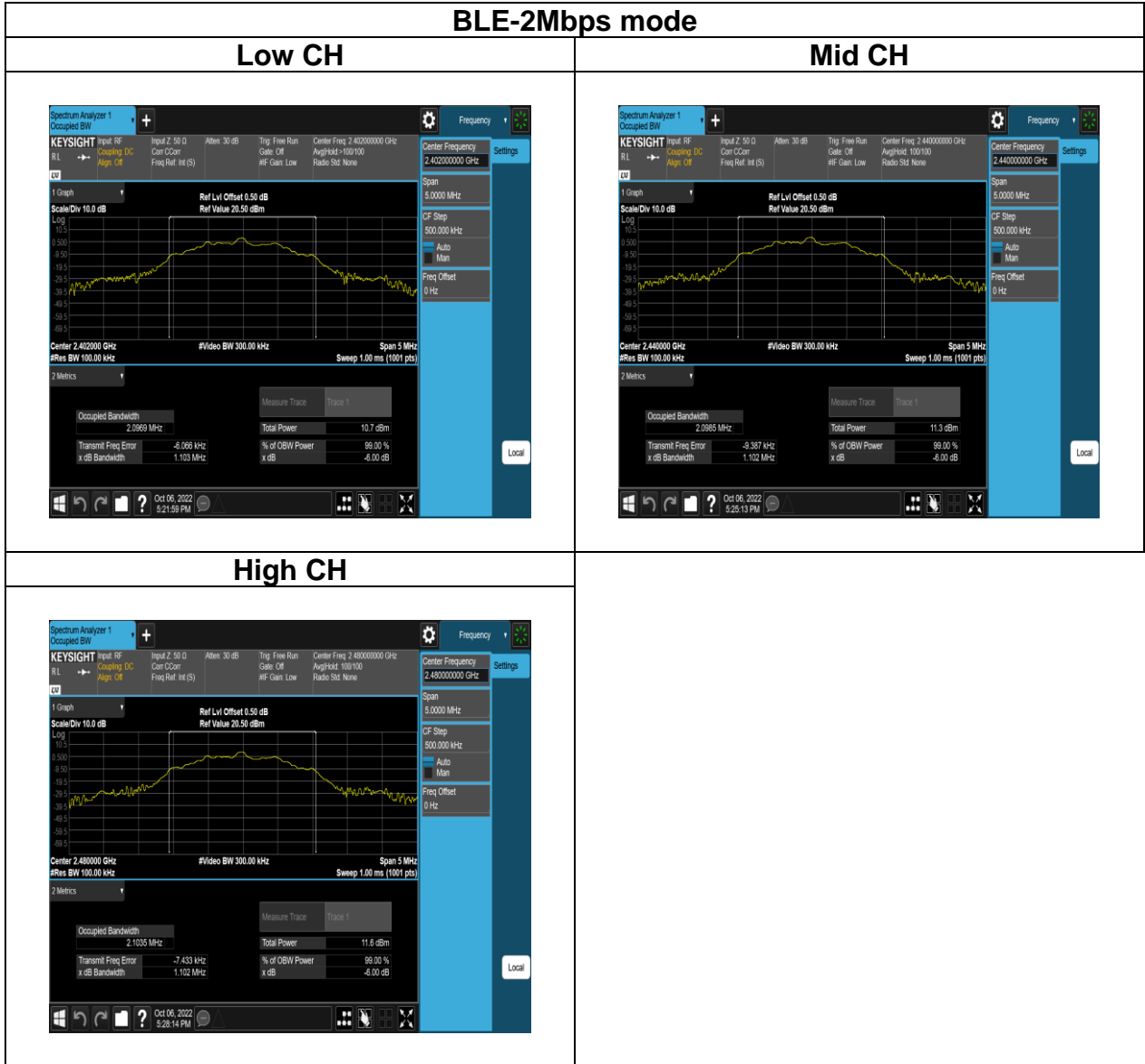
Report No.: TMWK2209003821KR

## Test Data

### 6dB BANDWIDTH



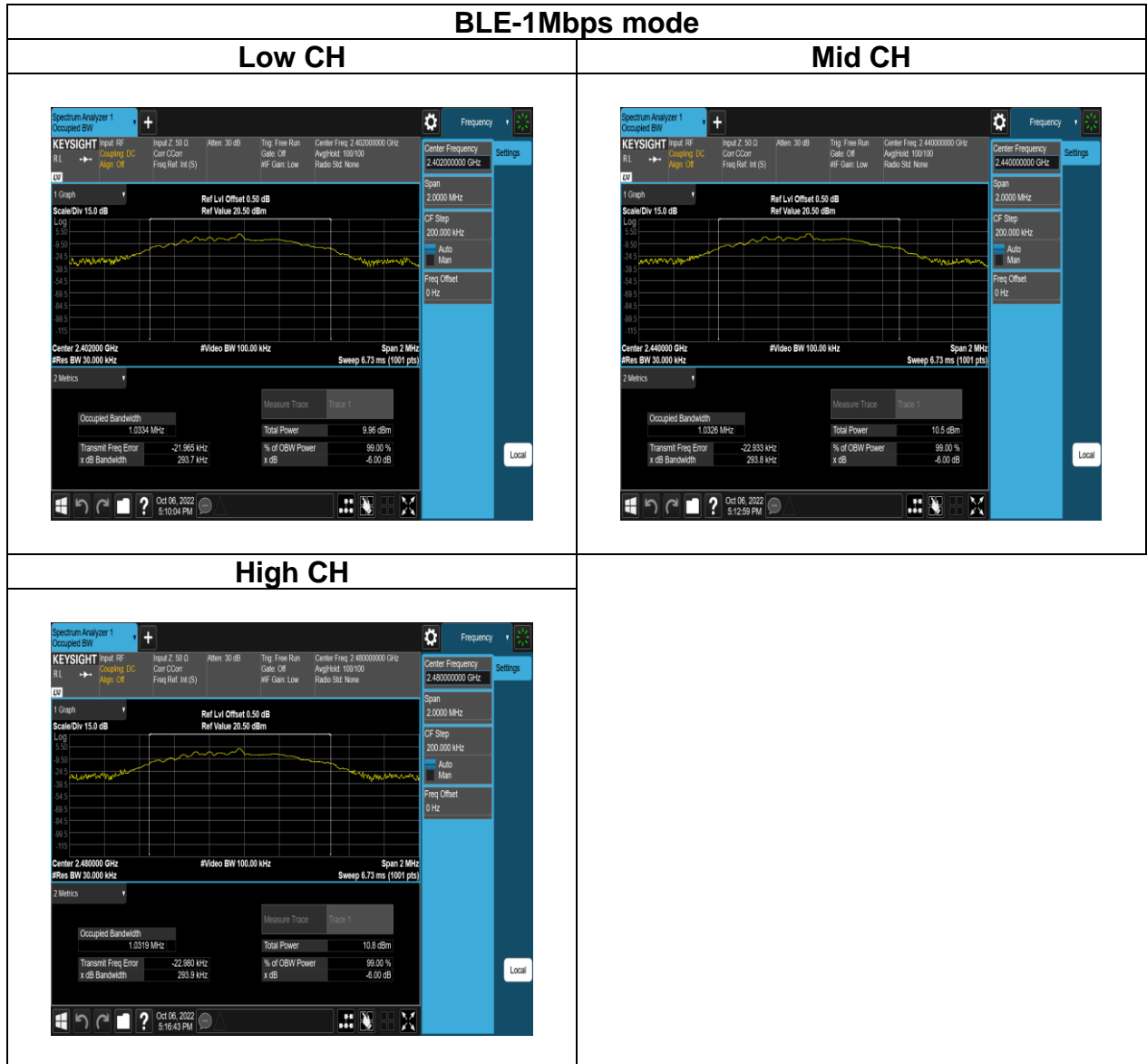
Report No.: TMWK2209003821KR



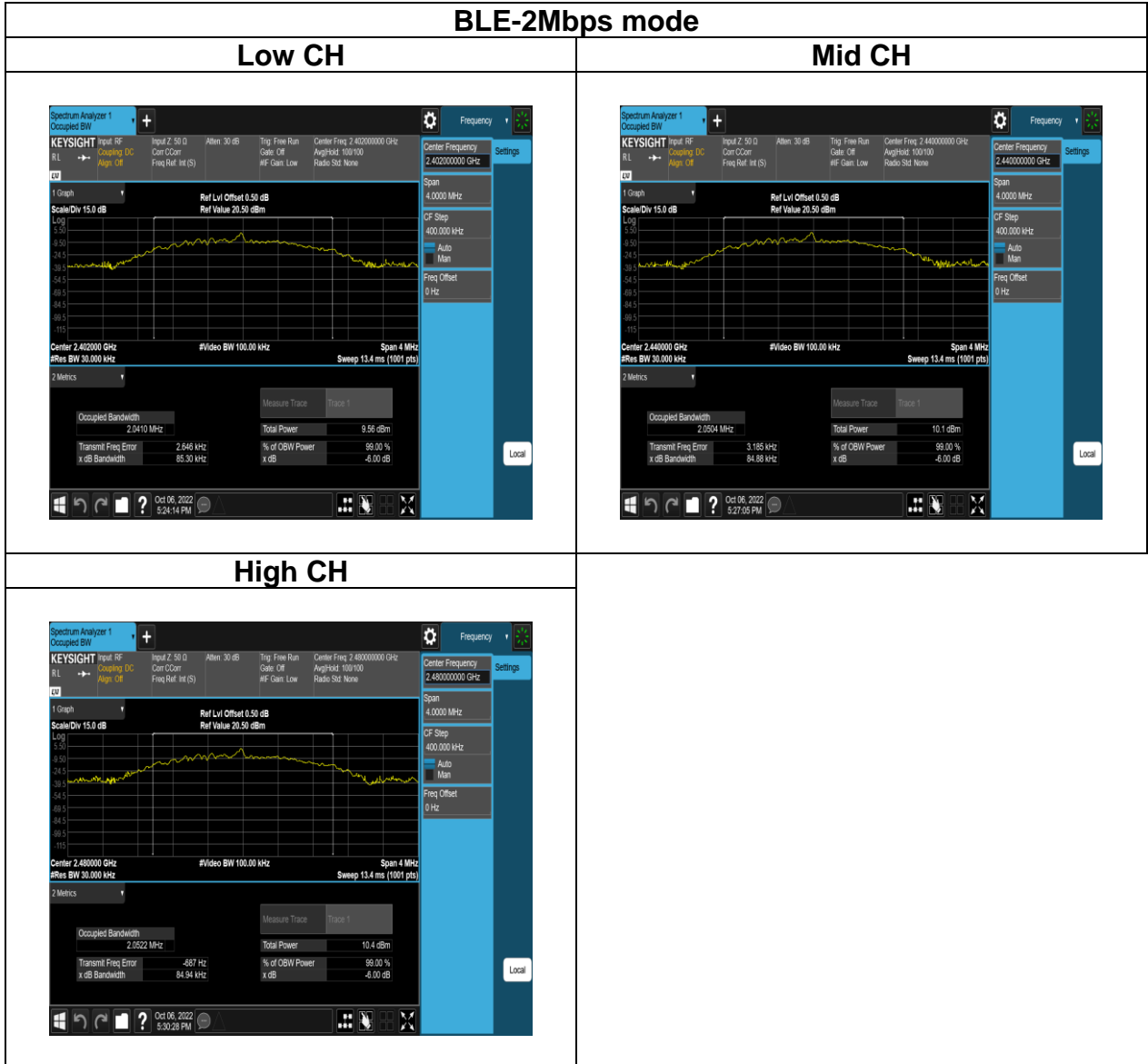
Report No.: TMWK2209003821KR

## Test Data

### BANDWIDTH (99%)



Report No.: TMWK2209003821KR





Report No.: TMWK2209003821KR

## 4.3 OUTPUT POWER MEASUREMENT

### 4.3.1 Test Limit

According to §15.247(b)(3)

**Peak output power** :

#### FCC

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement,

Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 30dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi [ Limit = 30 – (DG – 6) ] <input type="checkbox"/> Point-to-point operation
-------	---

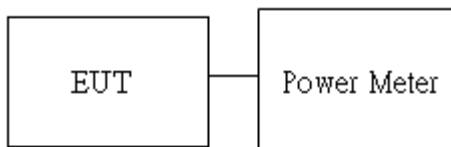
**Average output power** : For reporting purposes only.

### 4.3.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

### 4.3.3 Test Setup



Report No.: TMWK2209003821KR

### 4.3.4 Test Result

Temperature: 25.2°C

Test date: October 6, 2022

Humidity: 51% RH

Tested by: David Li

#### Peak output power :

##### BLE 1M mode:

CH	Frequency (MHz)	Power set	Peak Power Output (dBm)	Required Limit (dBm)
Low	2402	200	3.47	30
Mid	2440	200	3.65	30
High	2480	200	<b>4.13</b>	30

##### BLE 2M mode:

CH	Frequency (MHz)	Power set	Peak Power Output (dBm)	Required Limit (dBm)
Low	2402	200	3.48	30
Mid	2440	200	3.67	30
High	2480	200	<b>4.17</b>	30

#### Average output power :

##### BLE 1M mode:

CH	Frequency (MHz)	Power set	Average Power Output (dBm)	Required Limit (dBm)
Low	2402	200	3.29	30
Mid	2440	200	3.54	30
High	2480	200	4.02	30

##### BLE 2M mode:

CH	Frequency (MHz)	Power set	Average Power Output (dBm)	Required Limit (dBm)
Low	2402	200	2.96	30
Mid	2440	200	3.13	30
High	2480	200	3.78	30

Report No.: TMWK2209003821KR

## 4.4 POWER SPECTRAL DENSITY

### 4.4.1 Test Limit

According to §15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

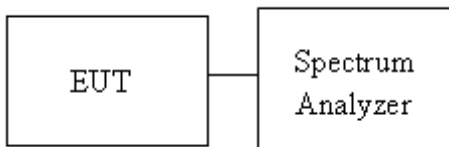
Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 8dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi [ Limit = 8 – (DG – 6) ] <input type="checkbox"/> Point-to-point operation :
-------	---

### 4.4.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

### 4.4.3 Test Setup



Report No.: TMWK2209003821KR

#### 4.4.4 Test Result

Temperature: 25.2°C

Test date: October 6, 2022

Humidity: 51% RH

Tested by: David Li

##### BLE 1M mode

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	-11.020	8	PASS
2440	-10.470	8	PASS
2480	-10.270	8	PASS

##### BLE 2M mode

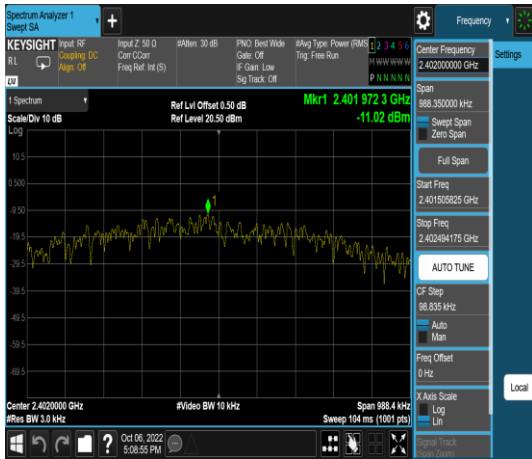
Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	-11.430	8	PASS
2440	-10.870	8	PASS
2480	-10.730	8	PASS

Report No.: TMWK2209003821KR

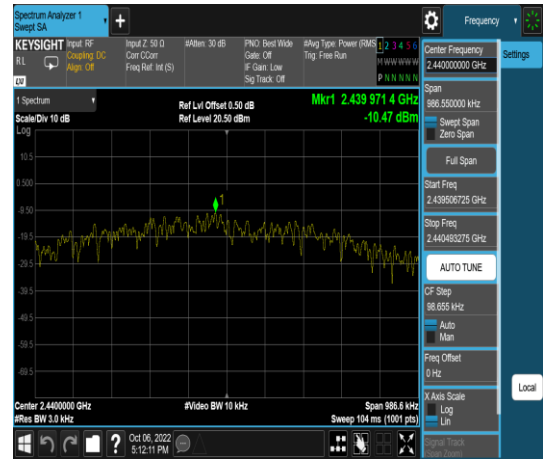
## Test Data

### BLE-1Mbps mode

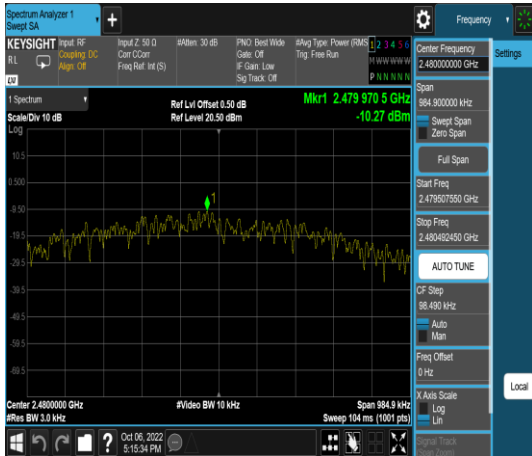
#### Low CH



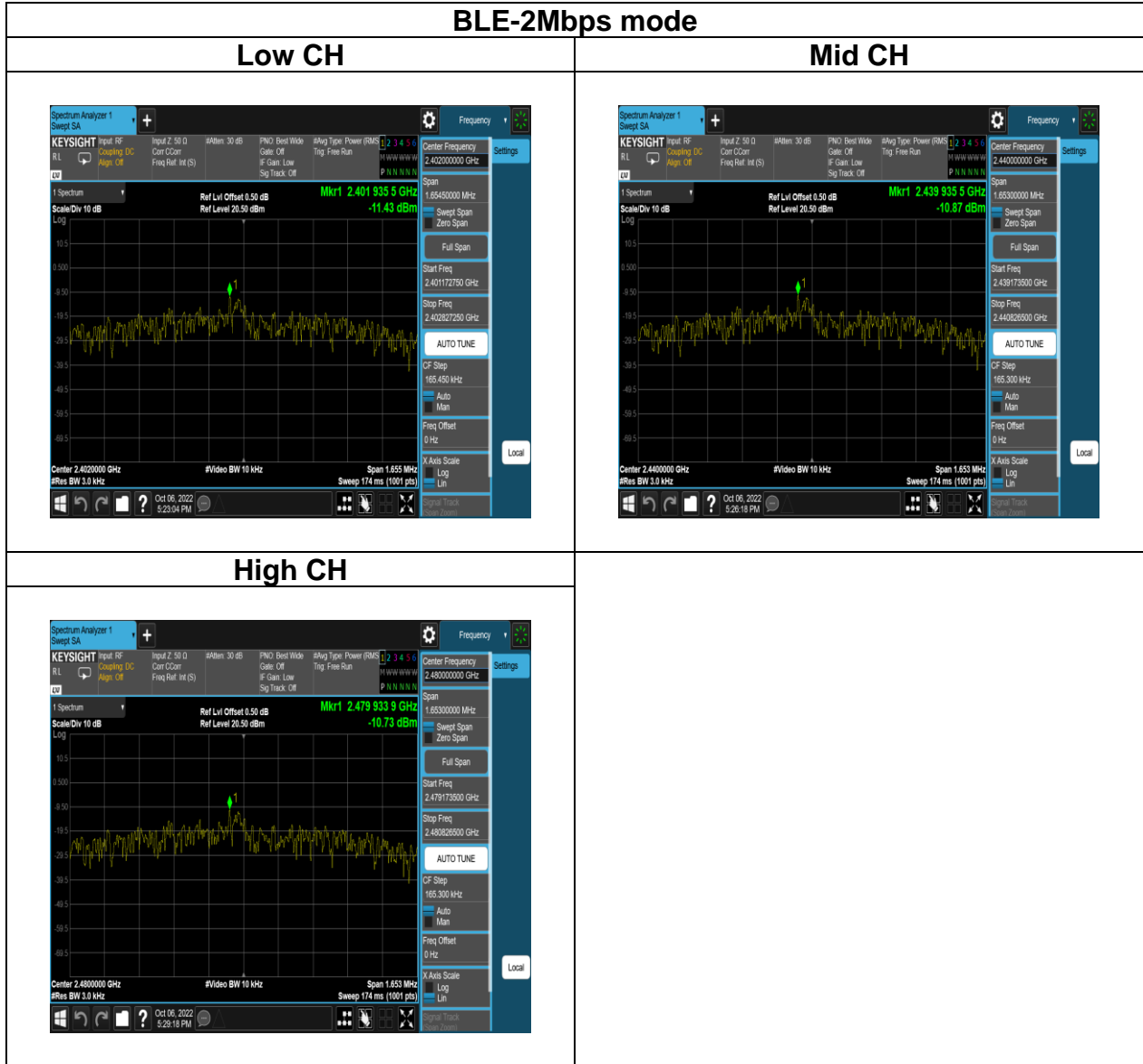
#### Mid CH



#### High CH



Report No.: TMWK2209003821KR



## 4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

### 4.5.1 Test Limit

According to §15.247(d)

**FCC:** In any 100 kHz bandwidth outside the authorized frequency band,

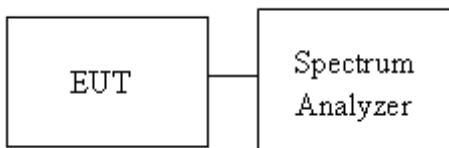
Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

### 4.5.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

### 4.5.3 Test Setup



Report No.: TMWK2209003821KR

## 4.5.4 Test Result

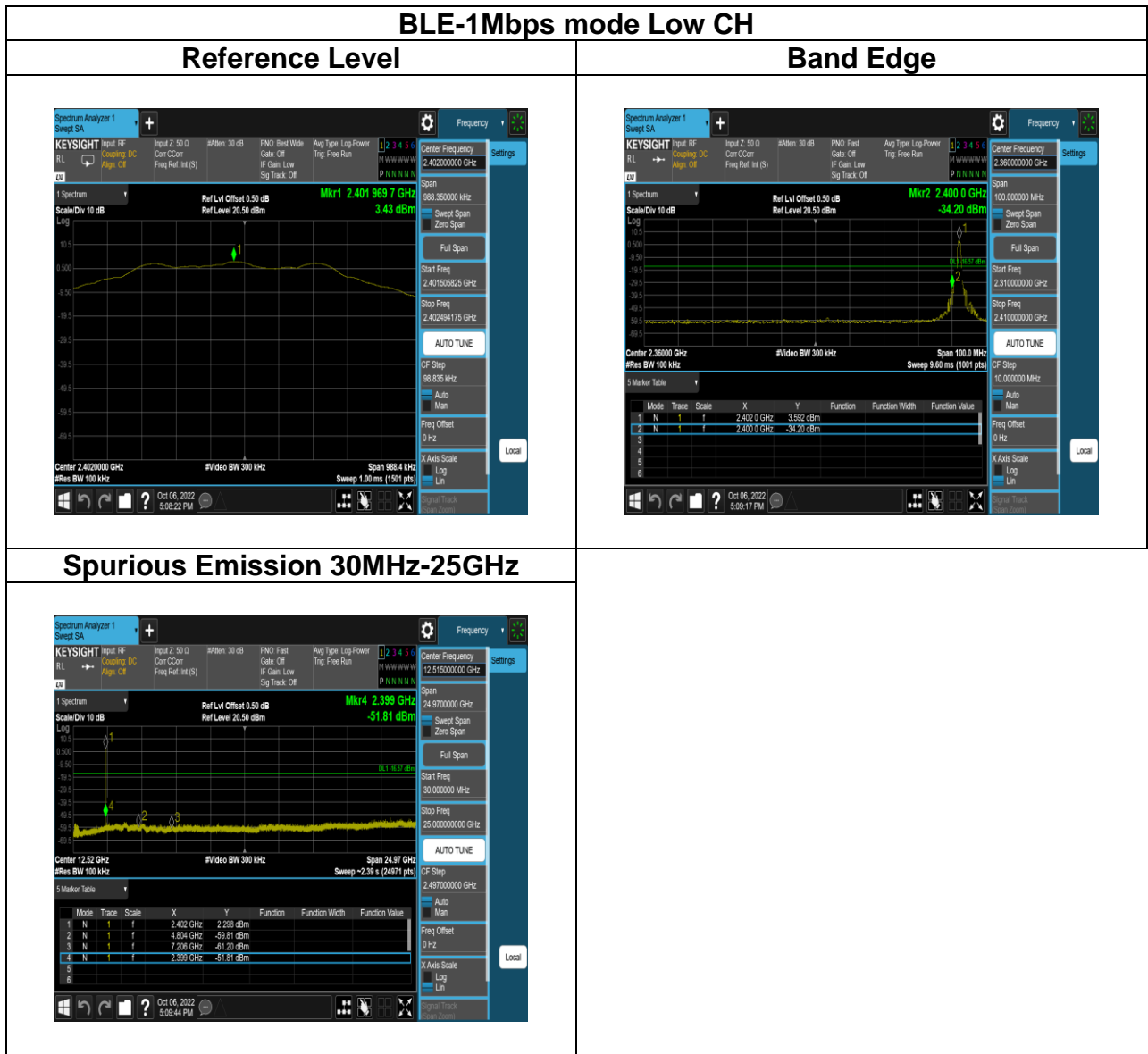
### Test Data

Temperature: 25.2°C

Test date: October 6, 2022

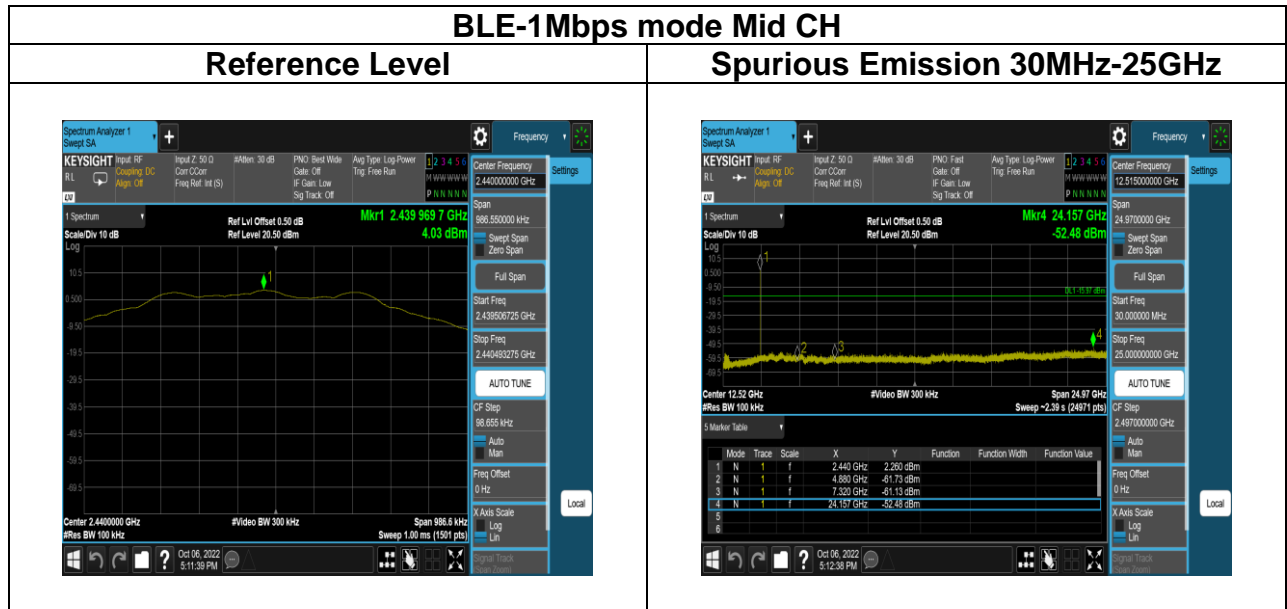
Humidity: 51% RH

Tested by: David Li





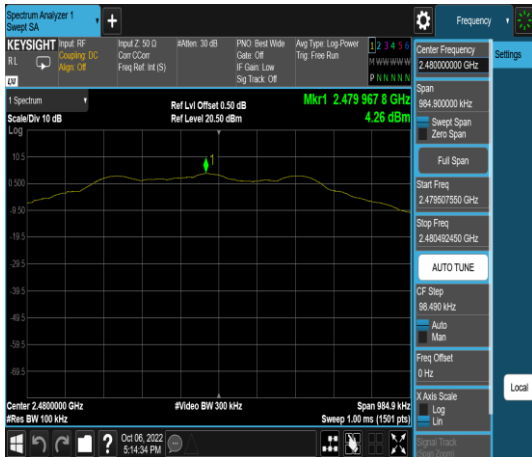
Report No.: TMWK2209003821KR



Report No.: TMWK2209003821KR

## BLE-1Mbps mode High CH

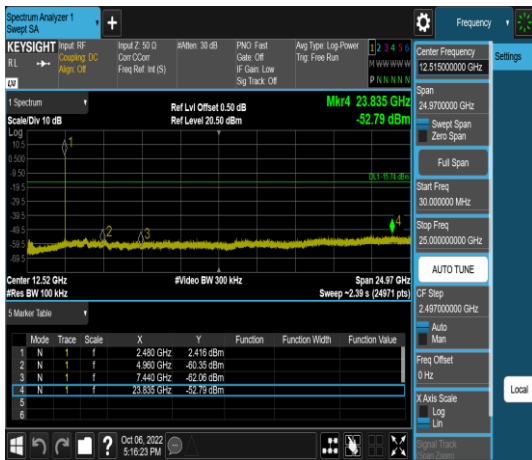
### Reference Level



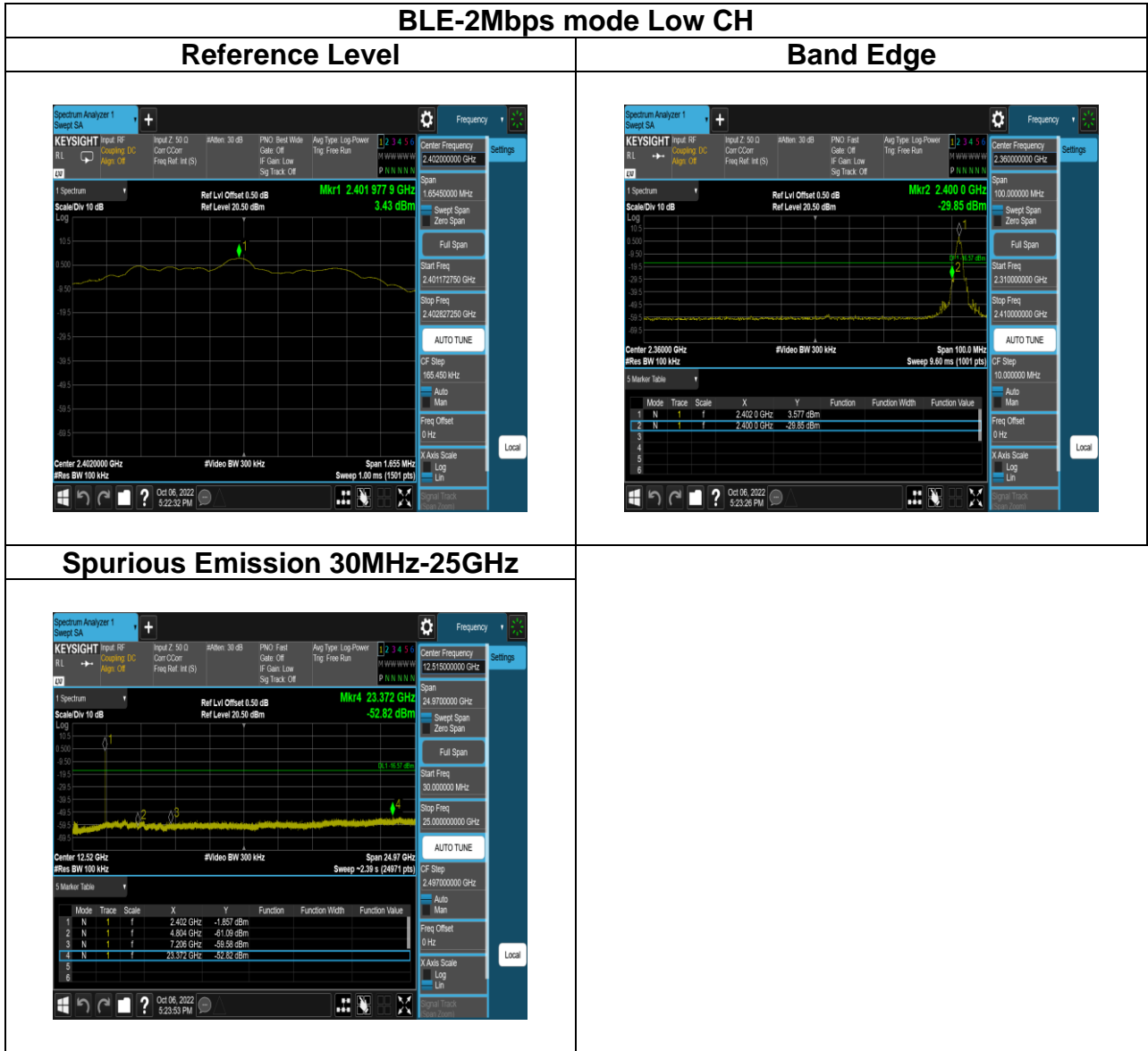
### Band Edge



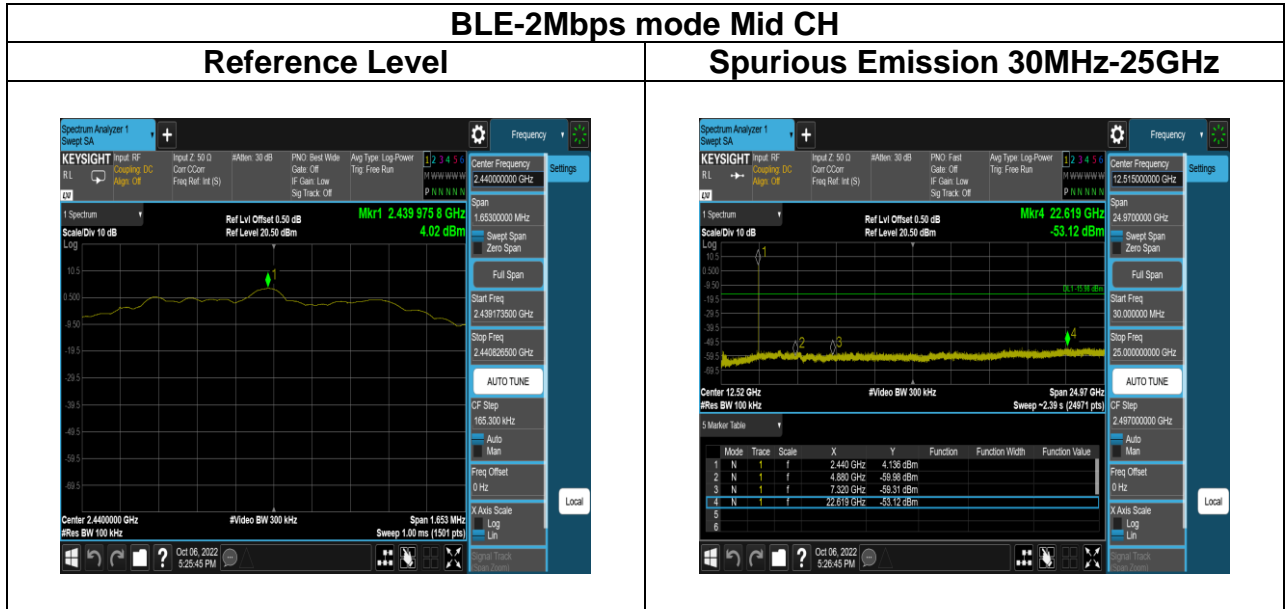
## Spurious Emission 30MHz-25GHz



Report No.: TMWK2209003821KR



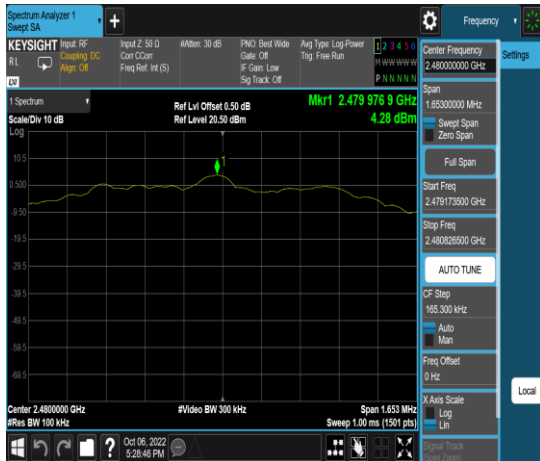
Report No.: TMWK2209003821KR



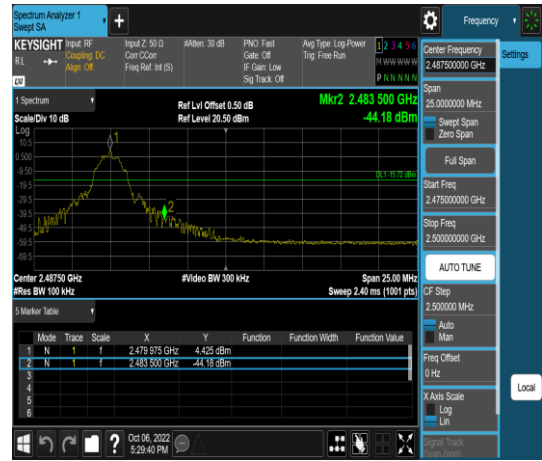
Report No.: TMWK2209003821KR

## BLE-2Mbps mode High CH

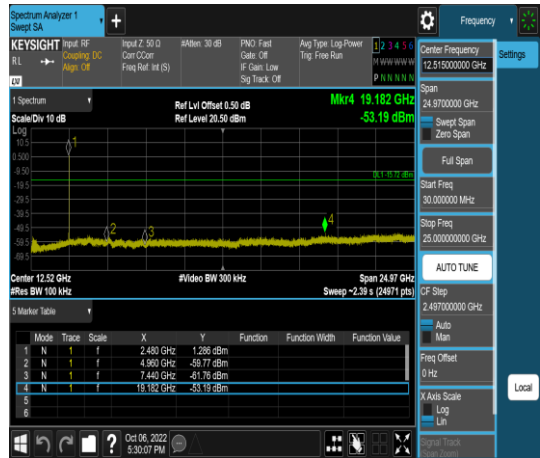
### Reference Level



### Band Edge



## Spurious Emission 30MHz-25GHz



Report No.: TMWK2209003821KR

## 4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

### 4.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

#### Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

#### Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

**Remark:**

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area test 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 based on KDB 414788.

Report No.: TMWK2209003821KR

## 4.6.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.
3. Span shall wide enough to full capture the emission measured. The SA from 9KHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:

1. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test 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 based on KDB 414788.
2. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).
3. The SA setting following :
  - (1) Below 1G : RBW = 100kHz, VBW  $\geq$  3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
  - (2) Above 1G :
    - (2.1) For Peak measurement : RBW = 1MHz, VBW  $\geq$  3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
    - (2.2) For Average measurement : RBW = 1MHz, VBW
      - If Duty Cycle  $\geq$  98%, VBW=10Hz.
      - If Duty Cycle < 98%, VBW=1/T.

### 4. Data result

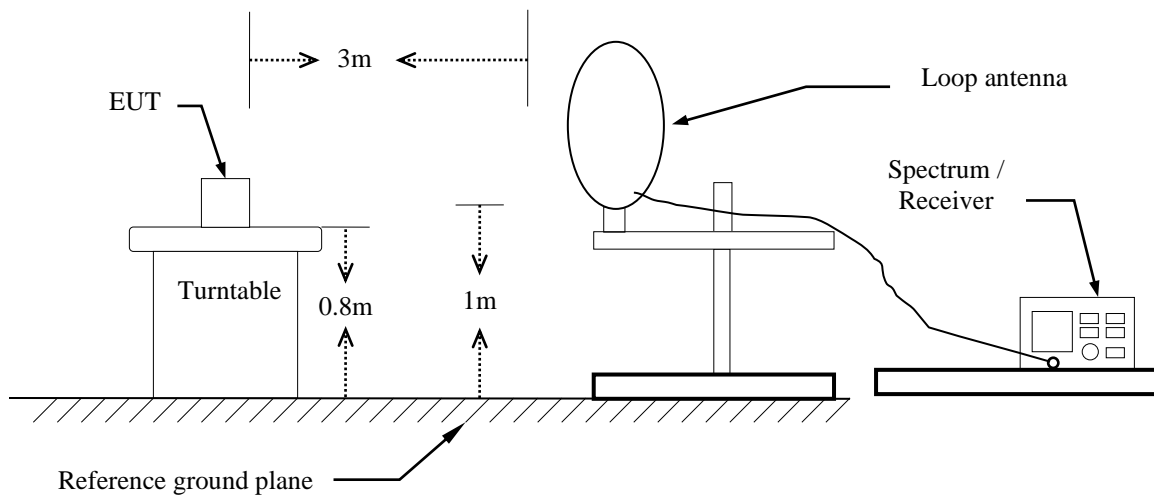
Actual FS=Spectrum Reading Level+Factor

Margin=Actual FS- Limit

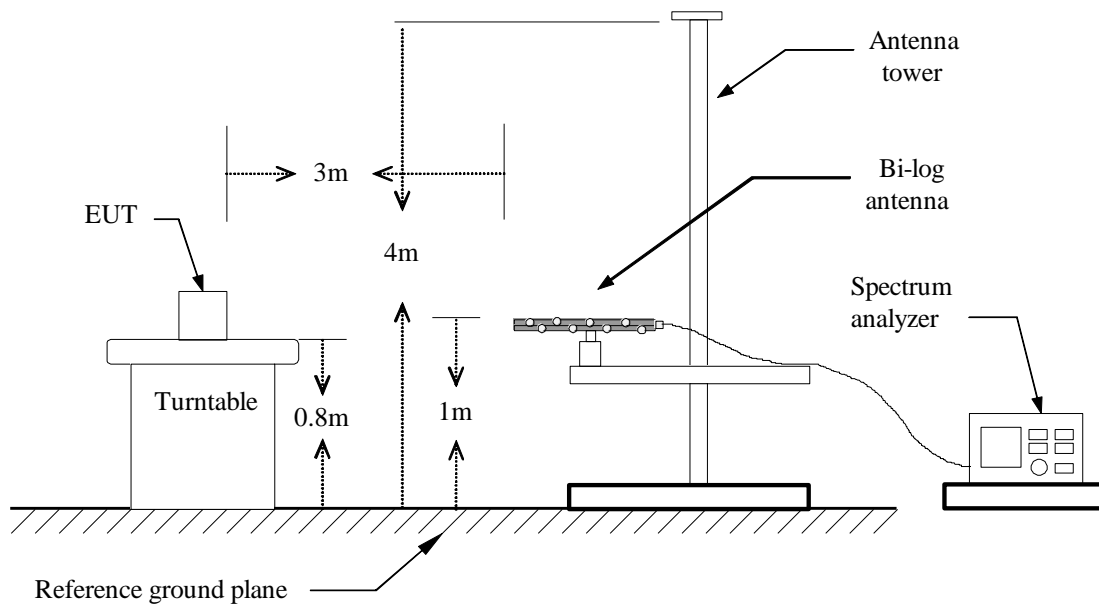
Report No.: TMWK2209003821KR

## 4.6.3 Test Setup

### 9kHz ~ 30MHz

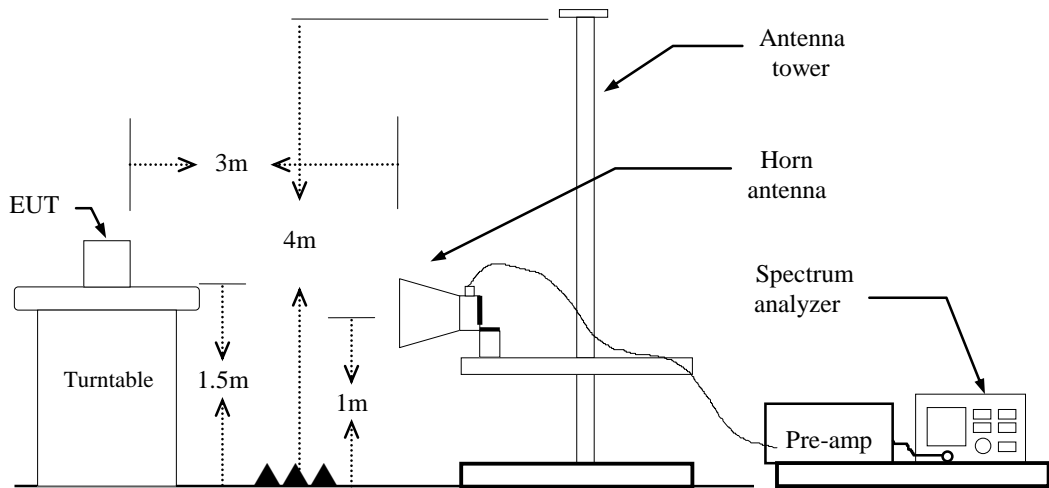


### 30MHz ~ 1GHz





## Above 1 GHz

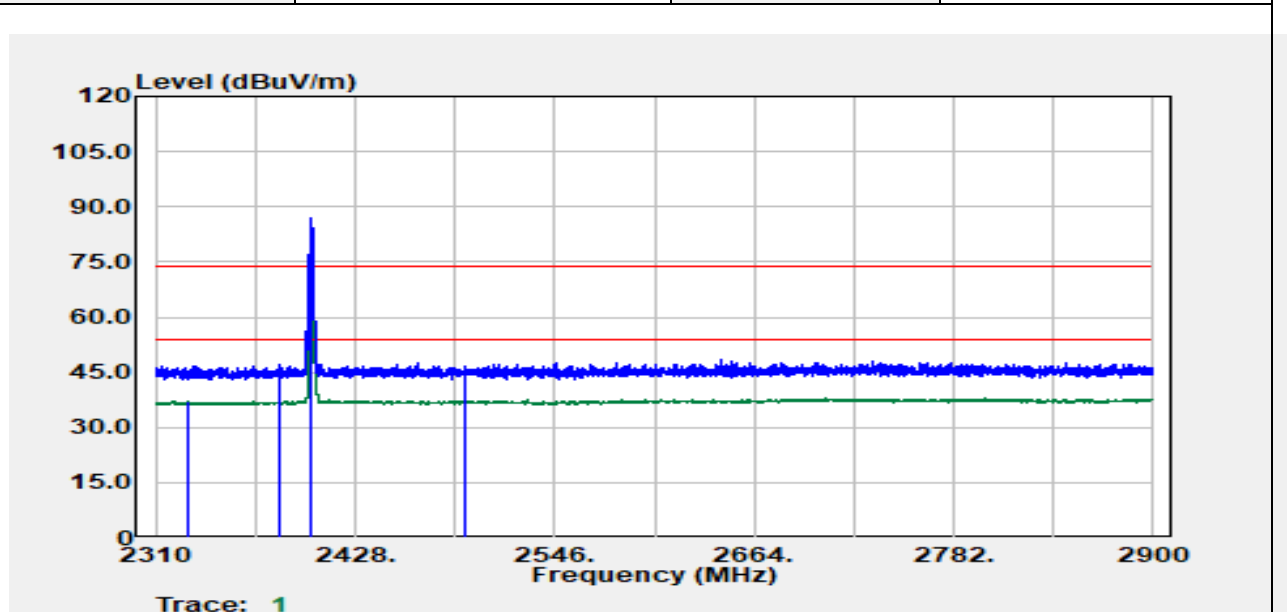


Report No.: TMWK2209003821KR

### 4.6.4 Test Result

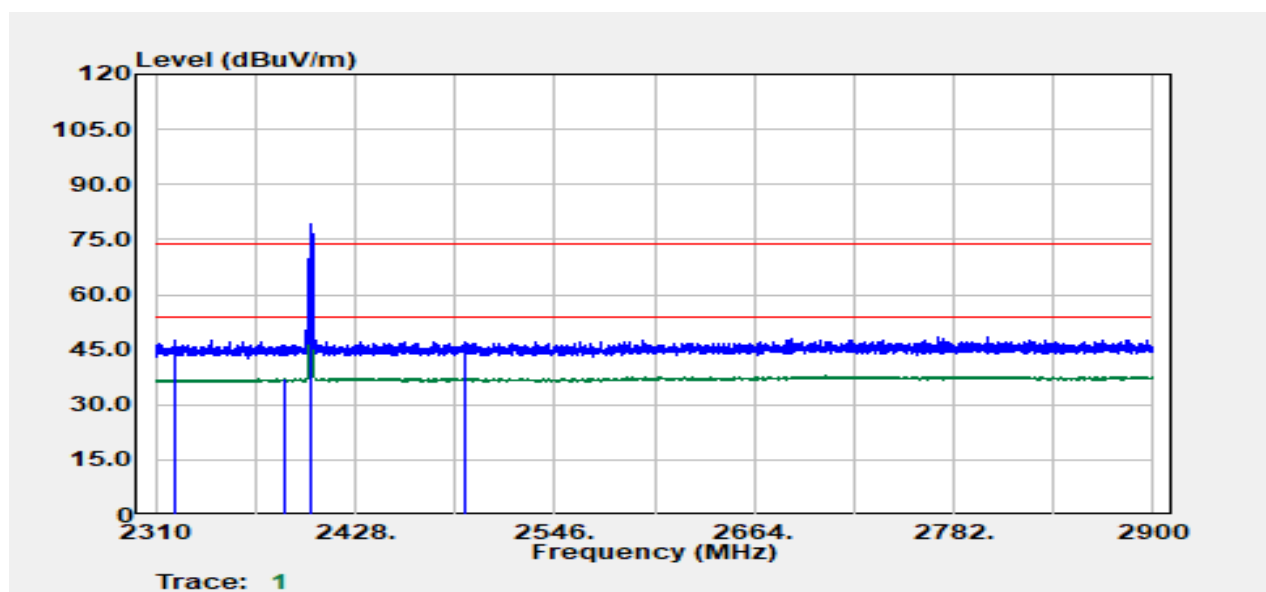
#### Band Edge Test Data

Test Mode:	Mode 2 BLE-1Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
2329.23	Average	29.58	7.61	37.18	54.00	-16.82
2383.04	Peak	39.16	7.73	46.89	74.00	-27.11
2402.00	Peak	79.28	7.79	87.07	--	--
2402.00	Average	78.45	7.79	86.24	--	--
2492.31	Peak	38.17	8.30	46.48	74.00	-27.52
2492.90	Average	28.96	8.31	37.26	54.00	-16.74

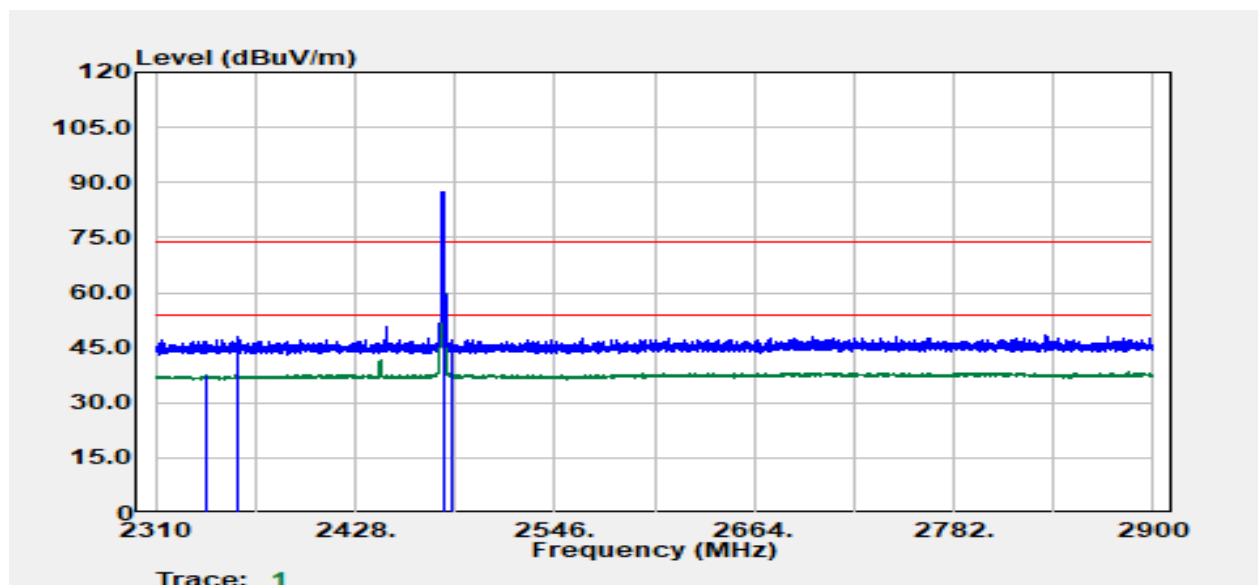
Test Mode:	Mode 2 BLE-1Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
2321.21	Peak	40.02	7.59	47.61	74.00	-26.39
2387.05	Average	29.23	7.74	36.97	54.00	-17.03
2402.00	Peak	71.58	7.79	79.37	--	--
2402.00	Average	70.66	7.79	78.46	--	--
2493.14	Peak	38.63	8.31	46.94	74.00	-27.06
2493.49	Average	28.87	8.31	37.18	54.00	-16.82

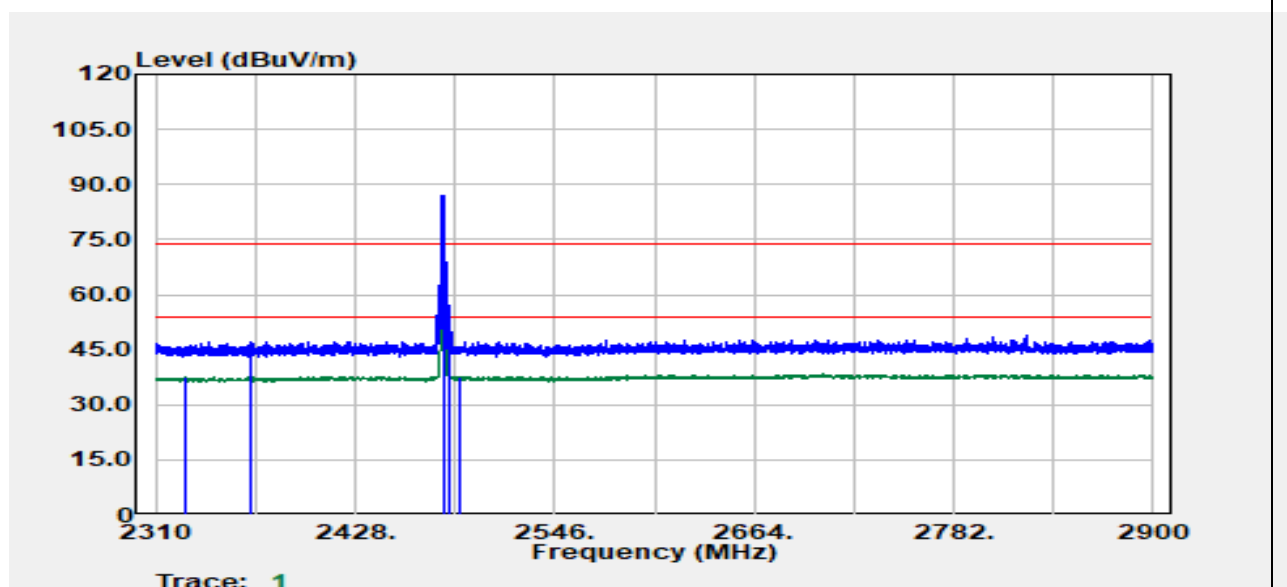
Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-1Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



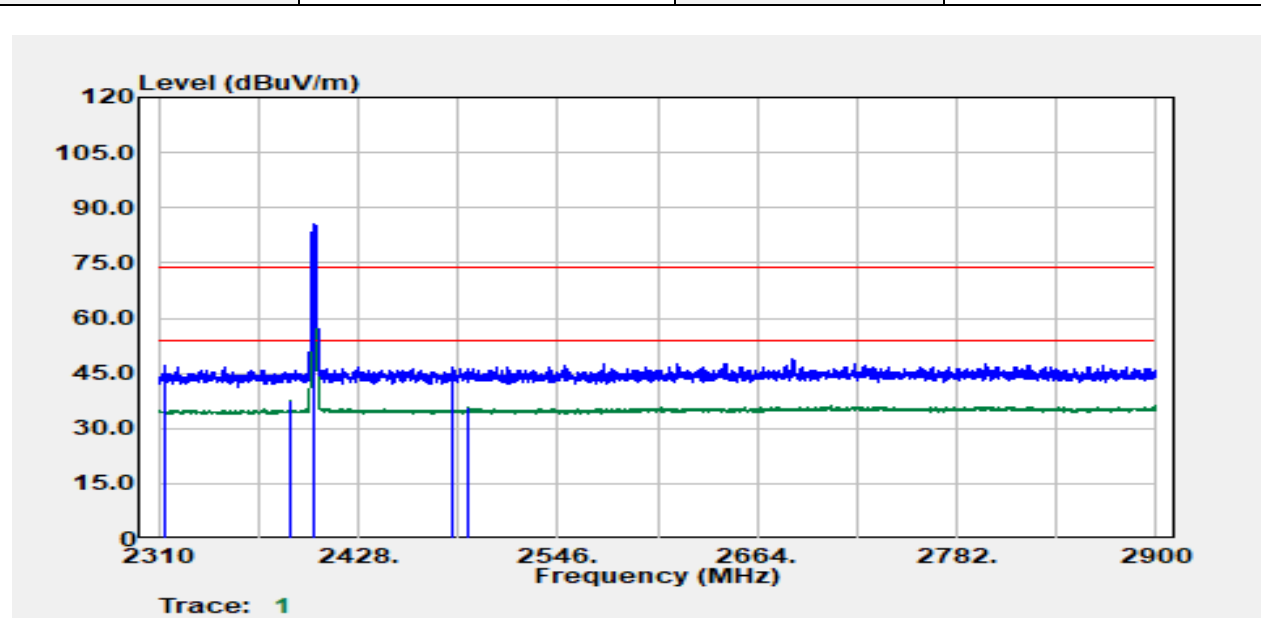
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
2340.68	Average	29.81	7.63	37.43	54.00	-16.57
2358.38	Peak	40.14	7.66	47.81	74.00	-26.19
2480.00	Peak	79.15	8.24	87.40	--	--
2480.00	Average	78.58	8.24	86.82	--	--
2484.76	Average	34.32	8.27	42.59	54.00	-11.41
2485.47	Peak	39.04	8.27	47.31	74.00	-26.69

Test Mode:	Mode 2 BLE-1Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



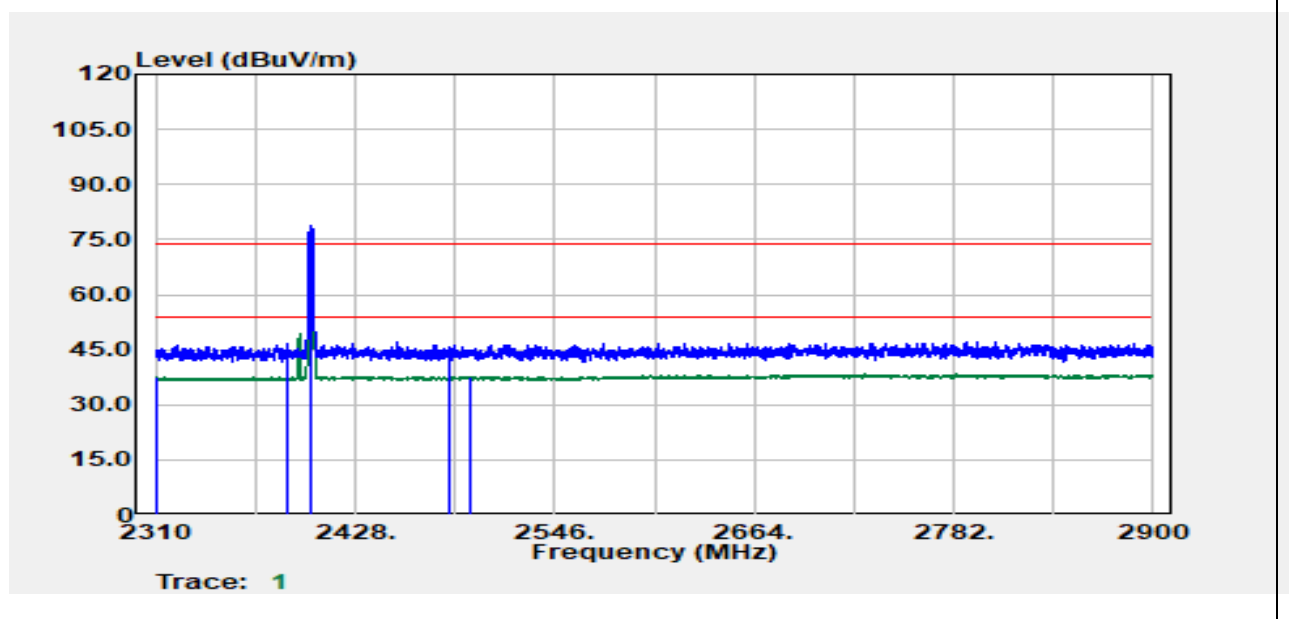
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
2327.70	Average	29.96	7.60	37.56	54.00	-16.44
2366.17	Peak	39.44	7.69	47.13	74.00	-26.87
2480.00	Peak	78.73	8.24	86.97	--	--
2480.00	Average	78.16	8.24	86.40	--	--
2483.58	Peak	44.99	8.26	53.26	74.00	-20.74
2489.24	Average	29.49	8.29	37.78	54.00	-16.22

Test Mode:	Mode 2 BLE-2Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
2313.66	Peak	39.34	7.58	46.92	74.00	-27.08
2388.47	Average	29.66	7.75	37.41	54.00	-16.59
2402.00	Peak	77.88	7.79	85.67	--	--
2402.00	Average	72.90	7.79	80.70	--	--
2483.50	Peak	38.31	8.26	46.57	74.00	-27.43
2492.66	Average	27.38	8.30	35.68	54.00	-18.32

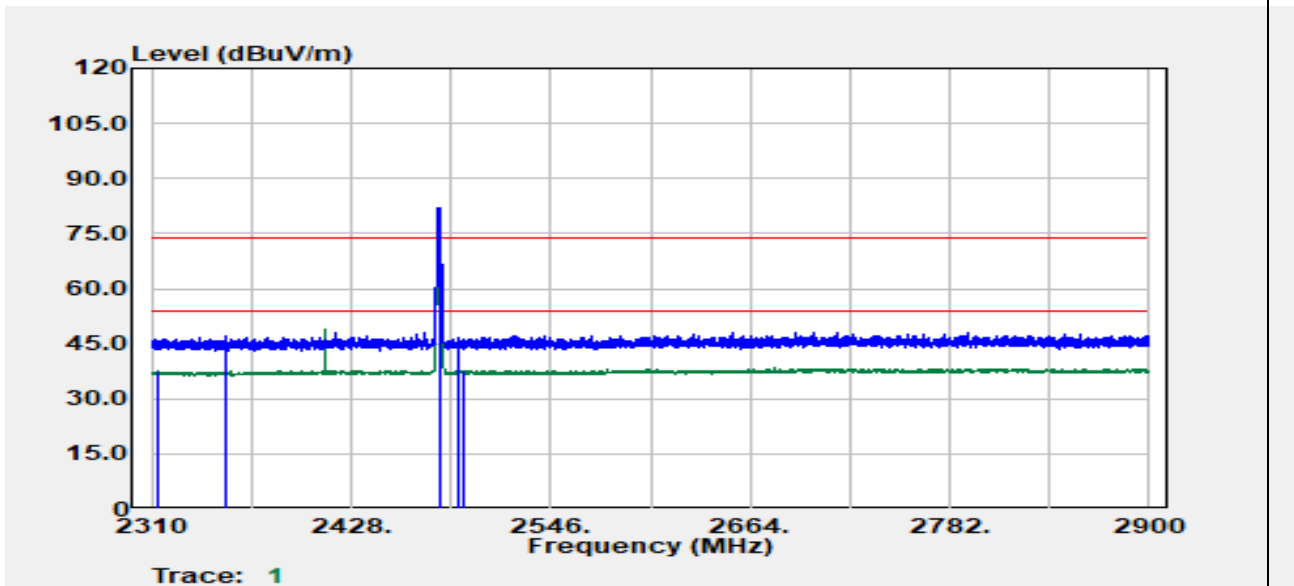
Test Mode:	Mode 2 BLE-2Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
2311.18	Average	30.04	7.58	37.62	54.00	-16.38
2387.64	Peak	38.77	7.75	46.51	74.00	-27.49
2402.00	Peak	71.21	7.79	79.00	--	--
2402.00	Average	69.40	7.79	77.19	--	--
2483.50	Peak	38.05	8.26	46.31	74.00	-27.69
2496.68	Average	29.36	8.32	37.68	54.00	-16.32

Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-2Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		

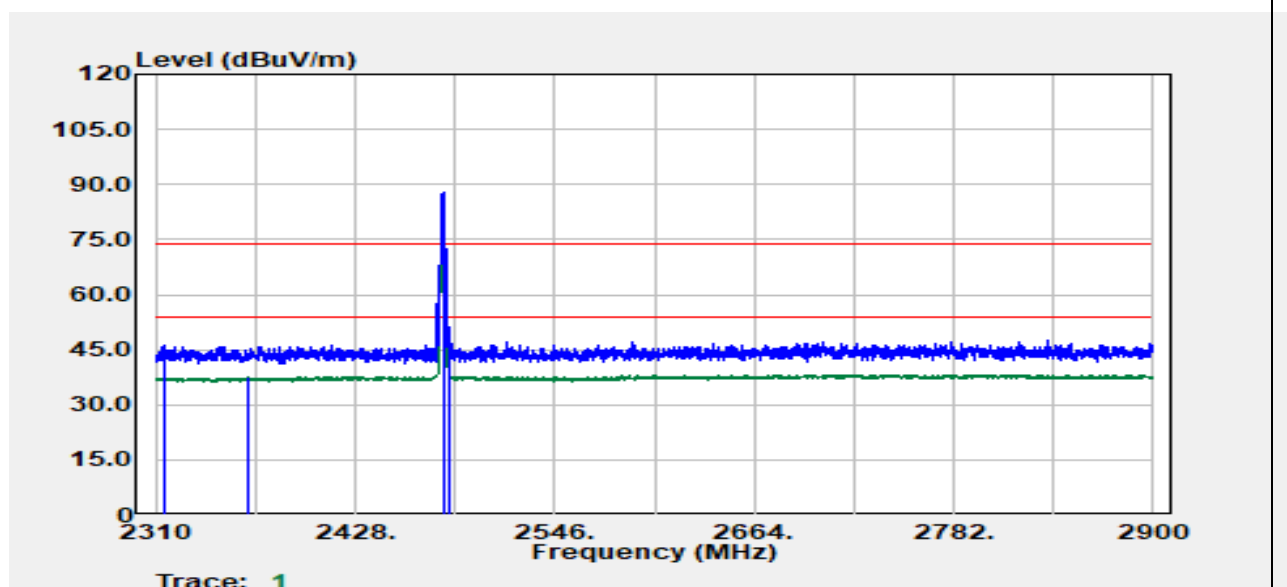


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
2313.66	Average	29.93	7.58	37.52	54.00	-16.48
2353.90	Peak	39.36	7.65	47.01	74.00	-26.99
2480.00	Peak	73.83	8.24	82.08	--	--
2480.00	Average	71.74	8.24	79.98	--	--
2491.25	Peak	38.30	8.30	46.60	74.00	-27.40
2493.96	Average	29.20	8.31	37.52	54.00	-16.48



Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-2Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Band Edge	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		

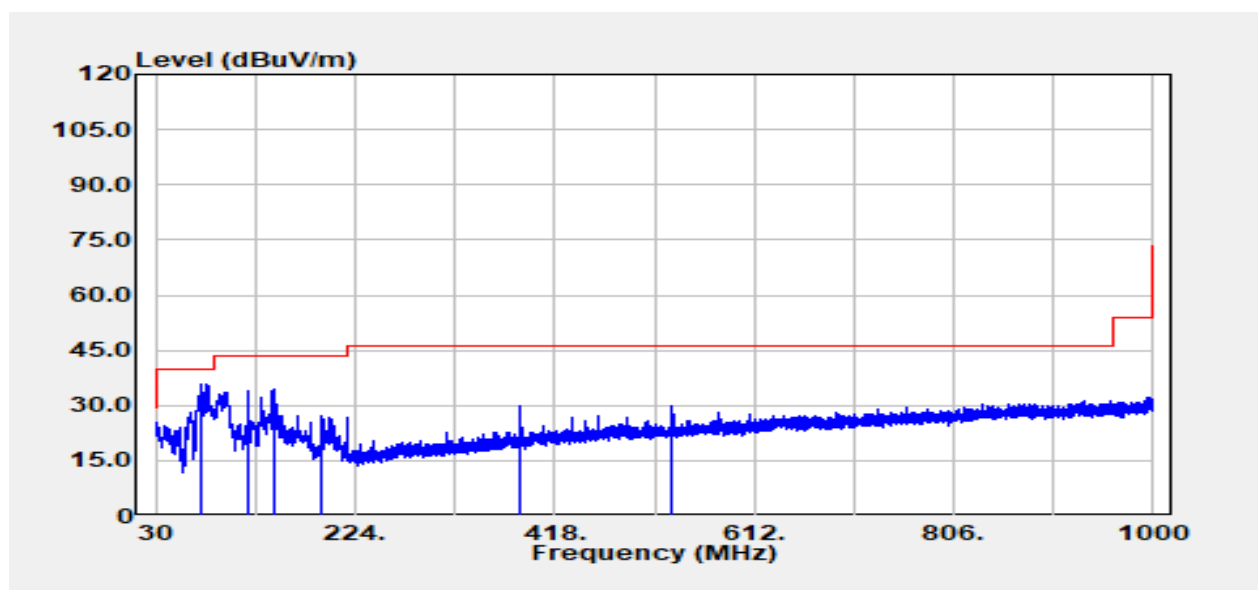


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBUV/m)	Limit @3m (dBUV/m)	Margin (dB)
2314.60	Peak	38.47	7.58	46.05	74.00	-27.95
2365.11	Average	29.71	7.68	37.39	54.00	-16.61
2480.00	Peak	79.41	8.24	87.65	--	--
2480.00	Average	77.20	8.24	85.45	--	--
2483.50	Peak	43.06	8.26	51.32	74.00	-22.68
2483.50	Average	30.01	8.26	38.27	54.00	-15.73

Report No.: TMWK2209003821KR

**Below 1G Test Data**

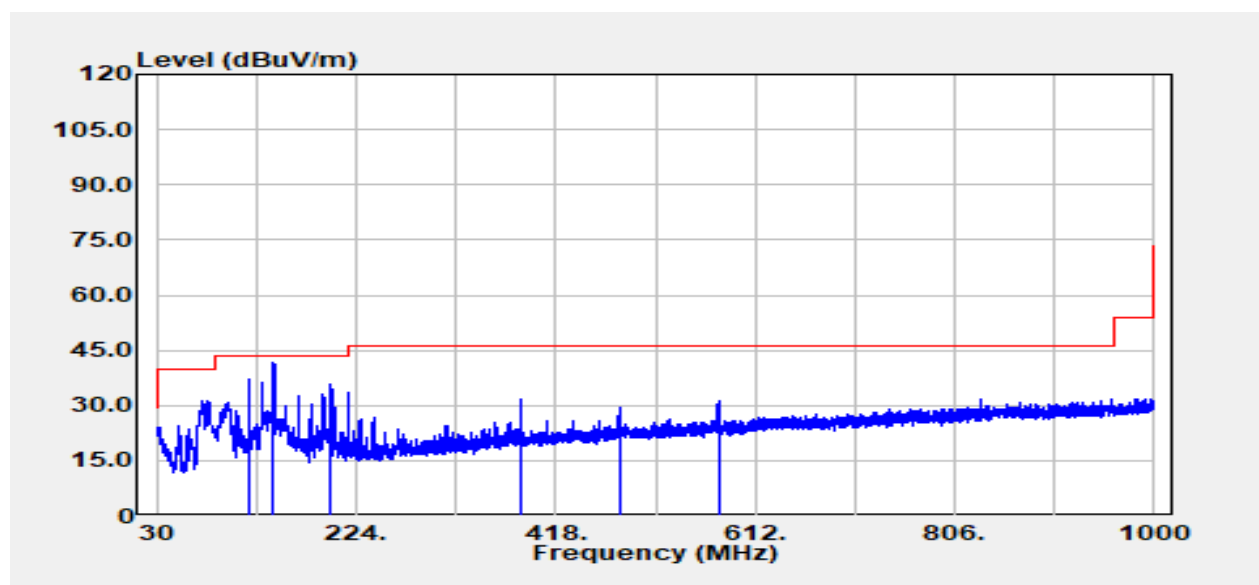
Test Mode:	Mode 2 BLE-1Mbps Mode	Temp/Hum	23.4(°C) / 63%RH
Test Item	30MHz-1GHz	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
73.29	Peak	51.64	-15.73	35.91	40.00	-4.09
120.45	Peak	43.23	-9.41	33.82	43.50	-9.68
144.34	Peak	44.97	-10.40	34.57	43.50	-8.93
191.75	Peak	38.69	-11.30	27.39	43.50	-16.11
385.26	Peak	36.57	-6.62	29.96	46.00	-16.04
532.70	Peak	33.25	-3.33	29.92	46.00	-16.08

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

Test Mode:	Mode 2 BLE-1Mbps Mode	Temp/Hum	23.4(°C) / 63%RH
Test Item	30MHz-1GHz	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak		



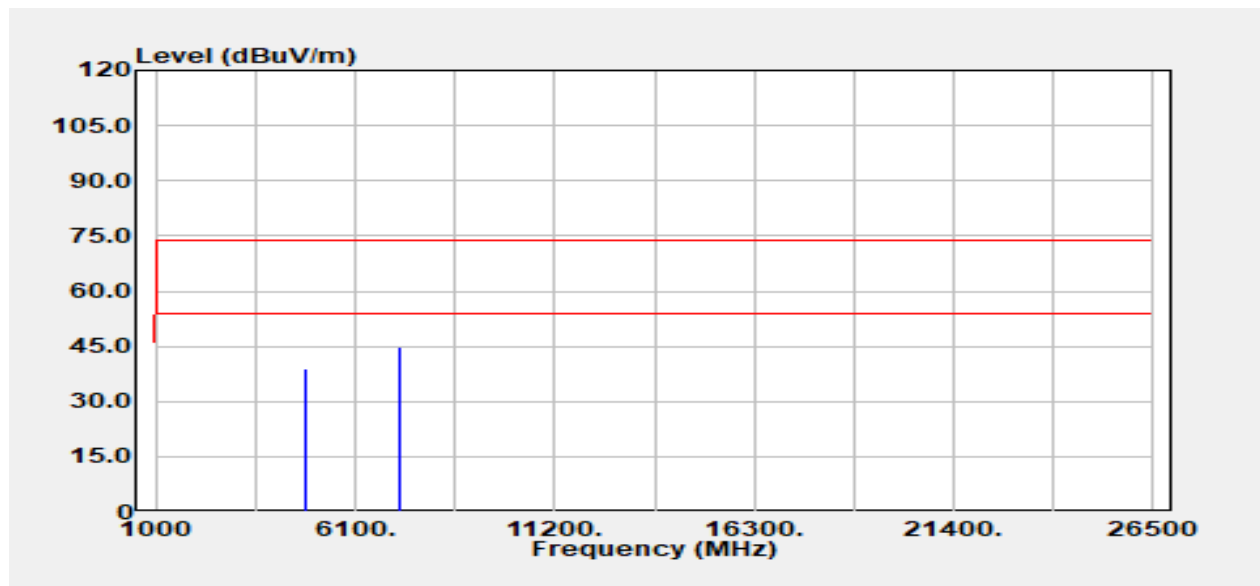
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
120.33	Peak	46.43	-9.38	37.04	43.50	-6.46
143.73	Peak	51.90	-10.38	41.52	43.50	-1.98
199.87	Peak	45.60	-9.90	35.70	43.50	-7.80
385.14	Peak	38.48	-6.62	31.86	46.00	-14.14
481.54	Peak	33.35	-3.82	29.53	46.00	-16.47
577.81	Peak	33.66	-2.45	31.22	46.00	-14.78

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

Report No.: TMWK2209003821KR

**Above 1G Test Data**

Test Mode:	Mode 2 BLE-1Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		

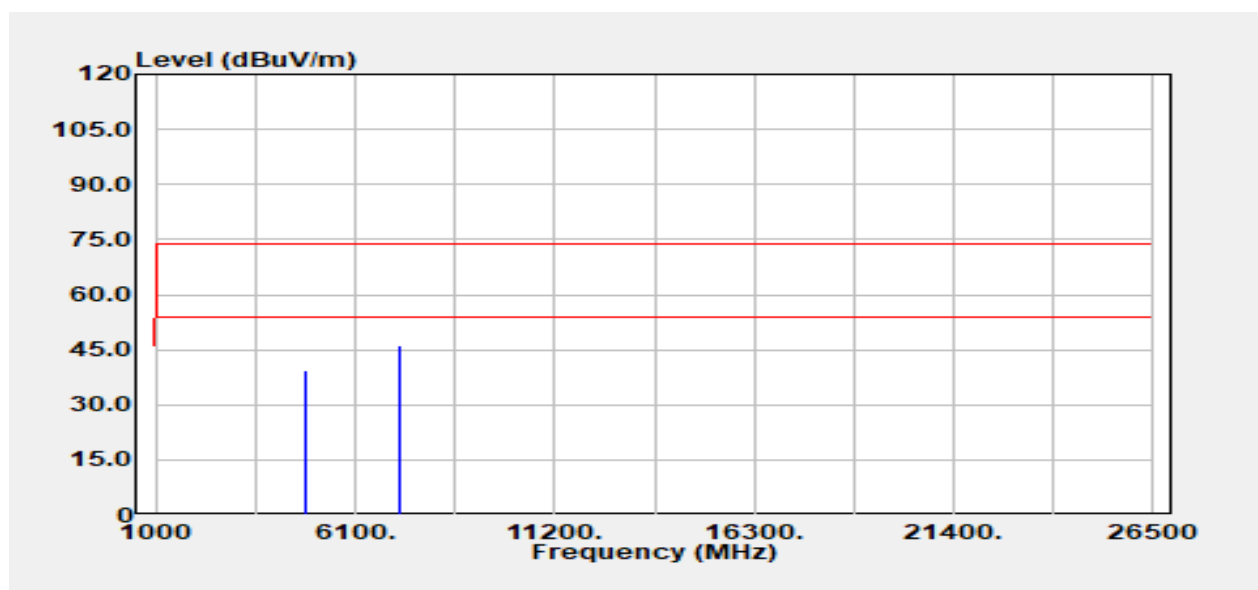


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4804.00	Peak	33.02	5.87	38.89	74.00	-35.11
4804.00	Average	25.58	5.87	31.45	54.00	-22.55
7206.00	Peak	31.56	13.25	44.81	74.00	-29.19
7206.00	Average	23.52	13.25	36.77	54.00	-17.23
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode:	Mode 2 BLE-1Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		

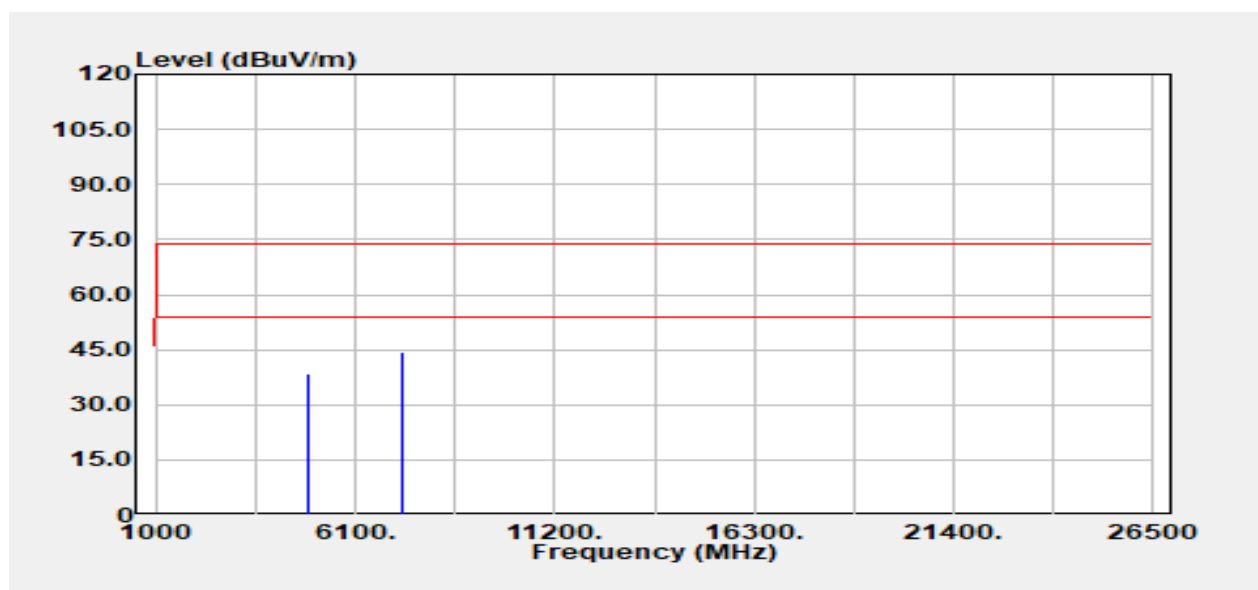


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4804.00	Peak	33.51	5.87	39.37	74.00	-34.63
4804.00	Average	24.32	5.87	30.18	54.00	-23.82
7206.00	Peak	33.15	13.25	46.40	74.00	-27.60
7206.00	Average	23.43	13.25	36.68	54.00	-17.32
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode:	Mode 2 BLE-1Mbps Mid CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		



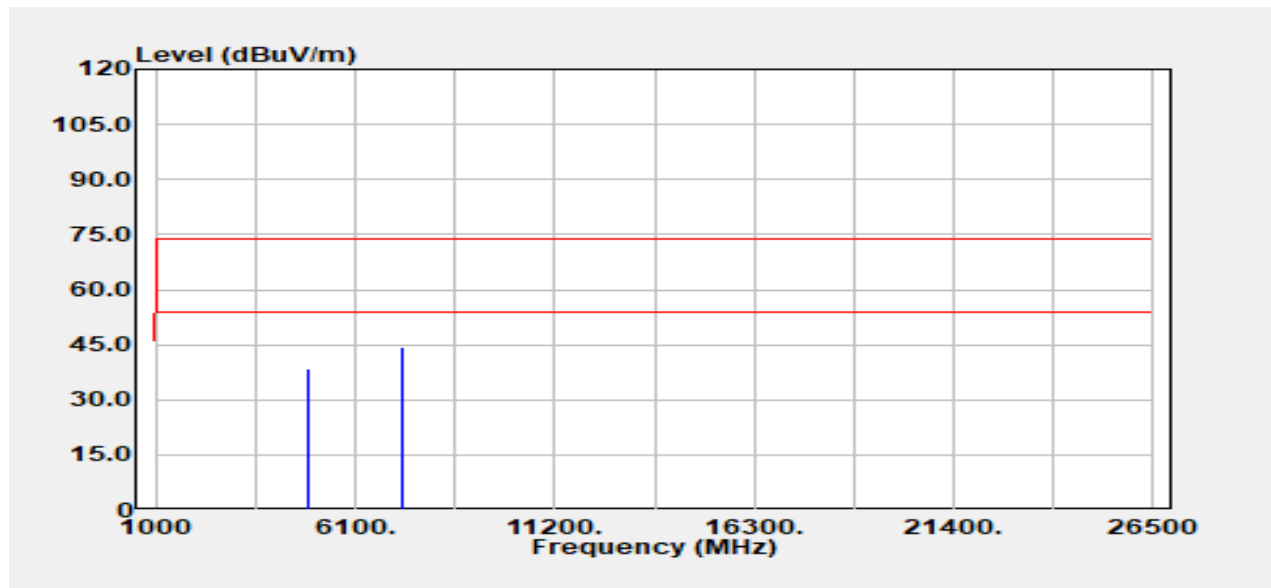
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4884.00	Peak	32.17	6.15	38.32	74.00	-35.68
4884.00	Average	25.60	6.15	31.75	54.00	-22.25
7326.00	Peak	30.94	13.36	44.30	74.00	-29.70
7326.00	Average	23.38	13.36	36.74	54.00	-17.26
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-1Mbps Mid CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		



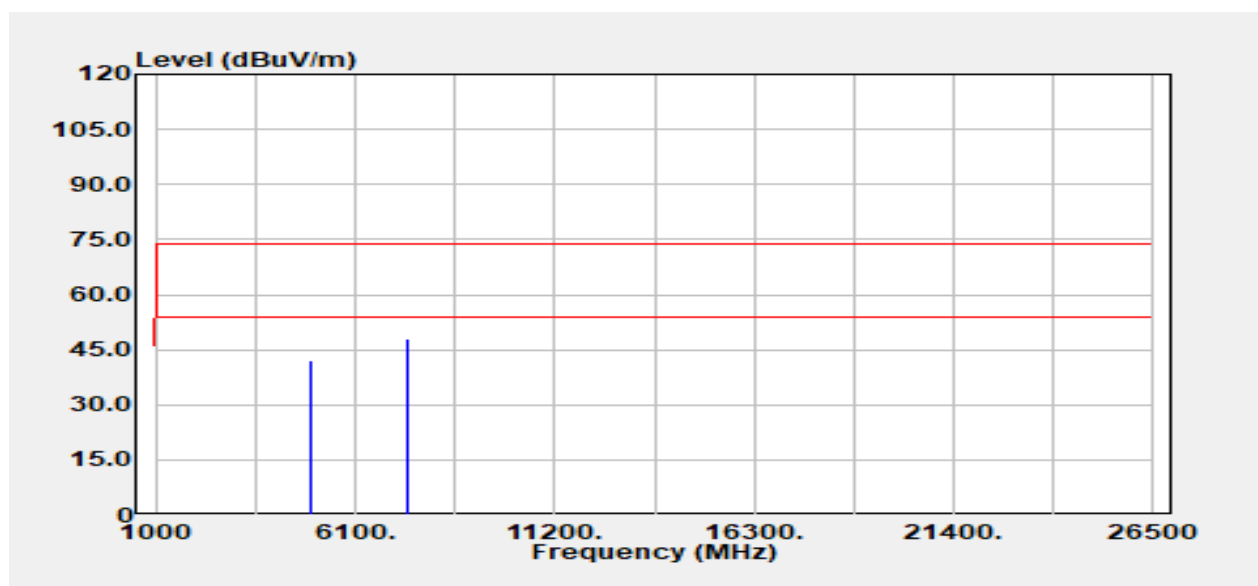
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4884.00	Peak	32.39	6.15	38.54	74.00	-35.46
4884.00	Average	24.12	6.15	30.28	54.00	-23.72
7326.00	Peak	31.01	13.36	44.37	74.00	-29.63
7326.00	Average	23.12	13.36	36.48	54.00	-17.52
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-1Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		



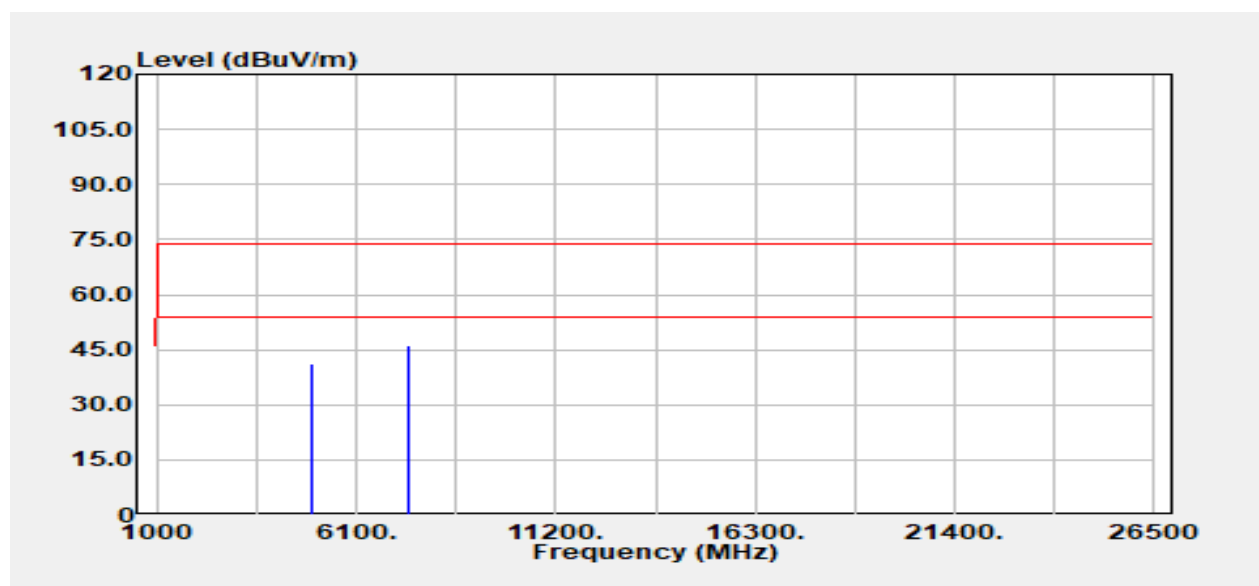
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4960.00	Peak	35.32	6.91	42.23	74.00	-31.77
4960.00	Average	30.01	6.91	36.92	54.00	-17.08
7440.00	Peak	34.97	13.22	48.19	74.00	-25.81
7440.00	Average	25.86	13.22	39.08	54.00	-14.92
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.



Test Mode:	Mode 2 BLE-1Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		



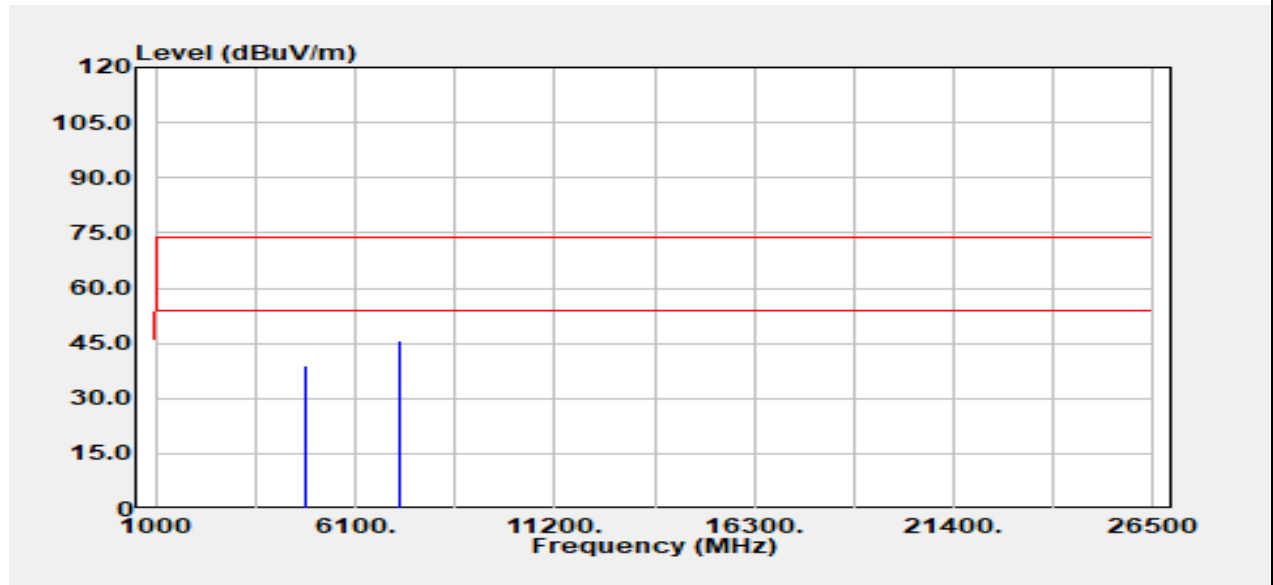
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4960.00	Peak	34.44	6.91	41.36	74.00	-32.64
4960.00	Average	24.06	6.91	30.98	54.00	-23.02
7440.00	Peak	33.18	13.22	46.40	74.00	-27.60
7440.00	Average	24.41	13.22	37.63	54.00	-16.37
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-2Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		



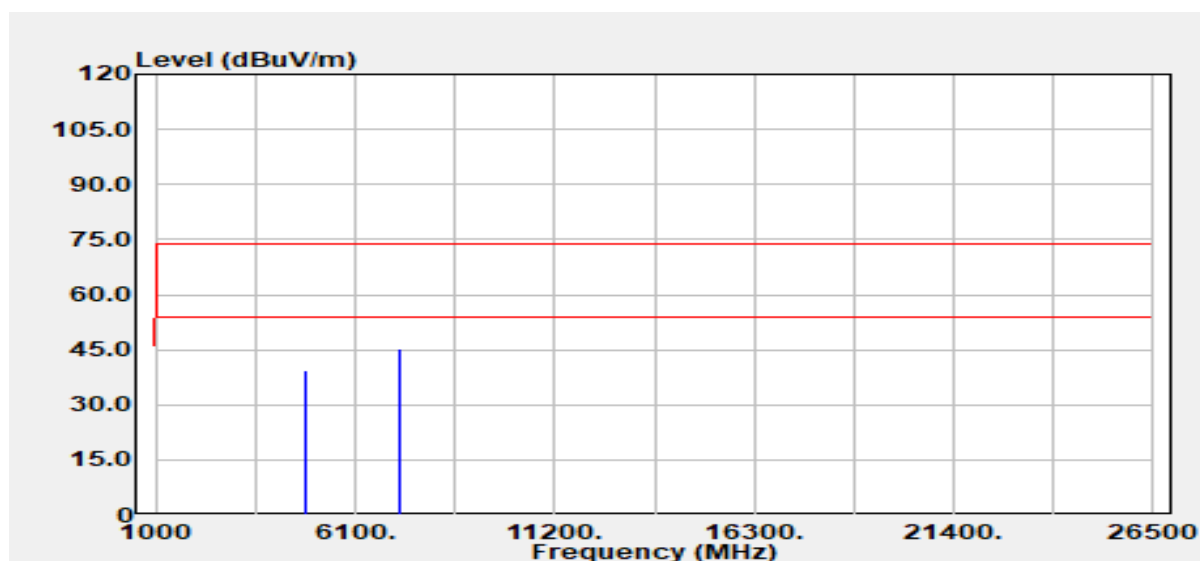
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
4804.00	Peak	32.92	5.87	38.79	74.00	-35.21
4804.00	Average	25.75	5.87	31.62	54.00	-22.38
7206.00	Peak	32.45	13.25	45.70	74.00	-28.30
7206.00	Average	24.56	13.25	37.81	54.00	-16.19
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-2Mbps Low CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		

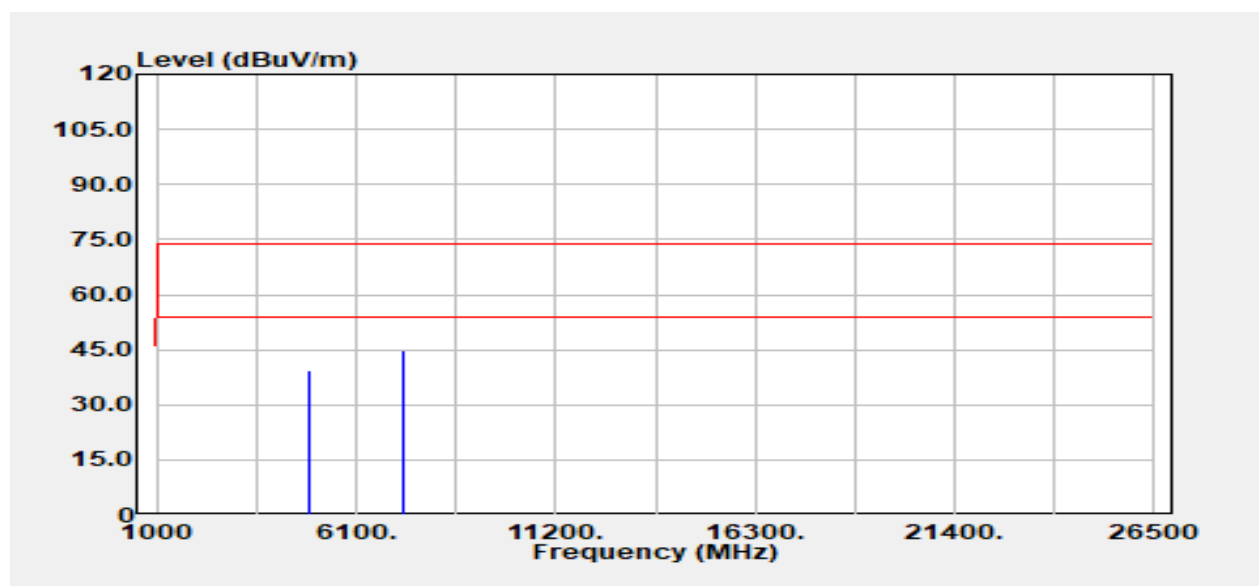


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
4804.00	Peak	33.64	5.87	39.51	74.00	-34.49
4804.00	Average	24.34	5.87	30.21	54.00	-23.79
7206.00	Peak	32.08	13.25	45.34	74.00	-28.66
7206.00	Average	23.32	13.25	36.57	54.00	-17.43
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode:	Mode 2 BLE-2Mbps Mid CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		



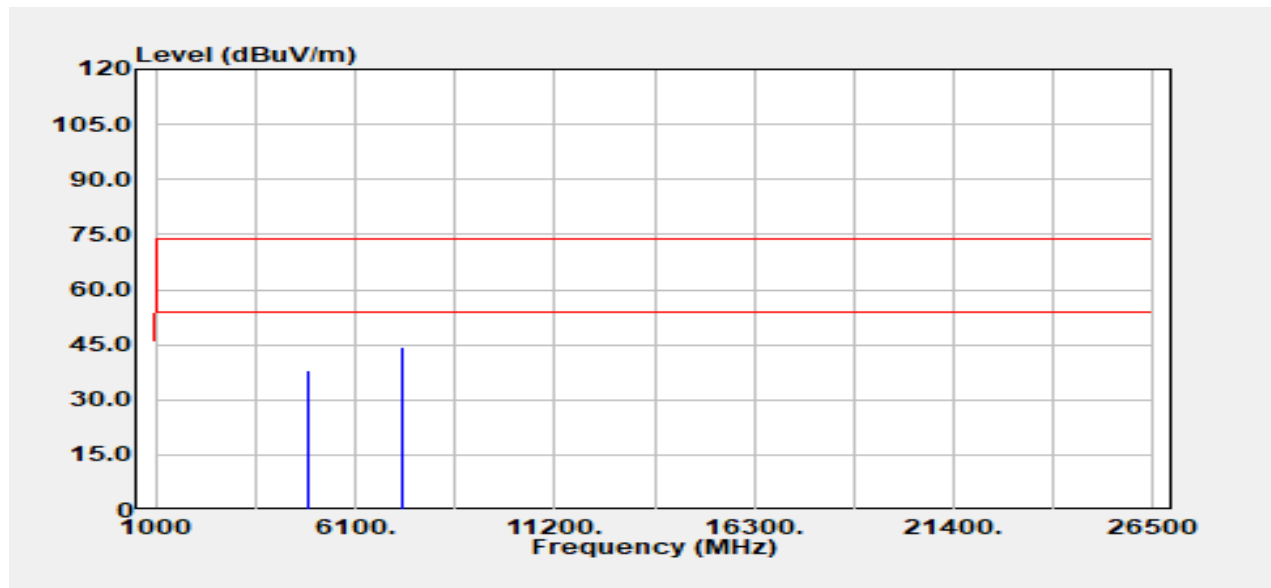
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
4884.00	Peak	33.12	6.15	39.28	74.00	-34.72
4884.00	Average	24.27	6.15	30.42	54.00	-23.58
7326.00	Peak	31.56	13.36	44.92	74.00	-29.08
7326.00	Average	23.36	13.36	36.72	54.00	-17.28
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2209003821KR

Test Mode:	Mode 2 BLE-2Mbps Mid CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		

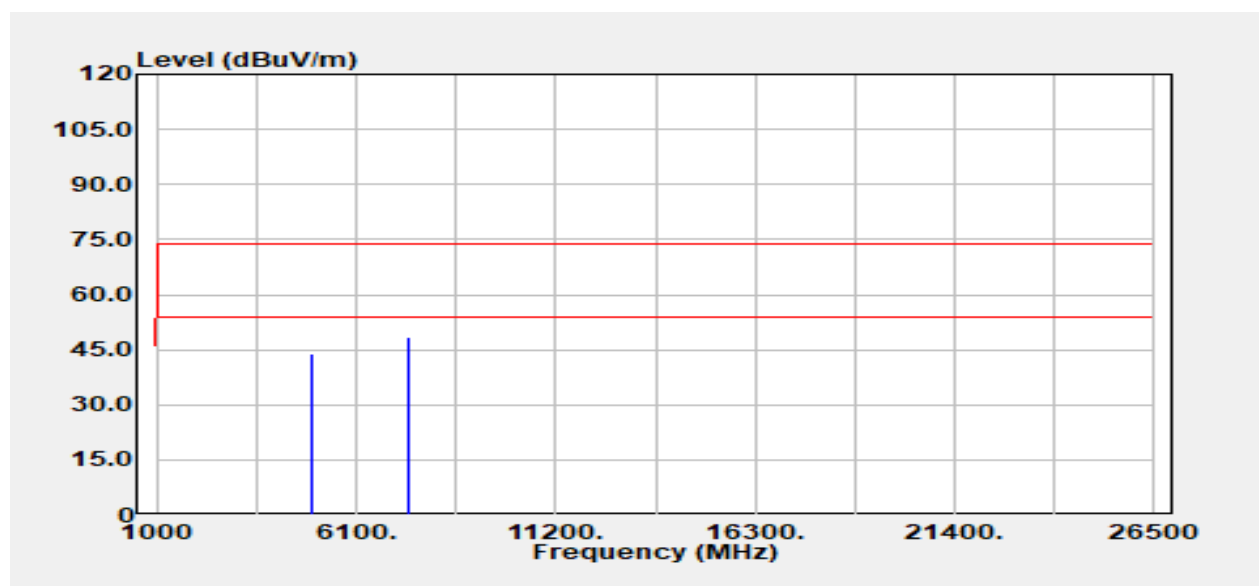


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
4884.00	Peak	32.00	6.15	38.15	74.00	-35.85
4884.00	Average	24.26	6.15	30.41	54.00	-23.59
7326.00	Peak	30.99	13.36	44.35	74.00	-29.65
7326.00	Average	23.00	13.36	36.36	54.00	-17.64
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode:	Mode 2 BLE-2Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Vertical	Test Engineer	Ray Li
Detector	Peak / Average		

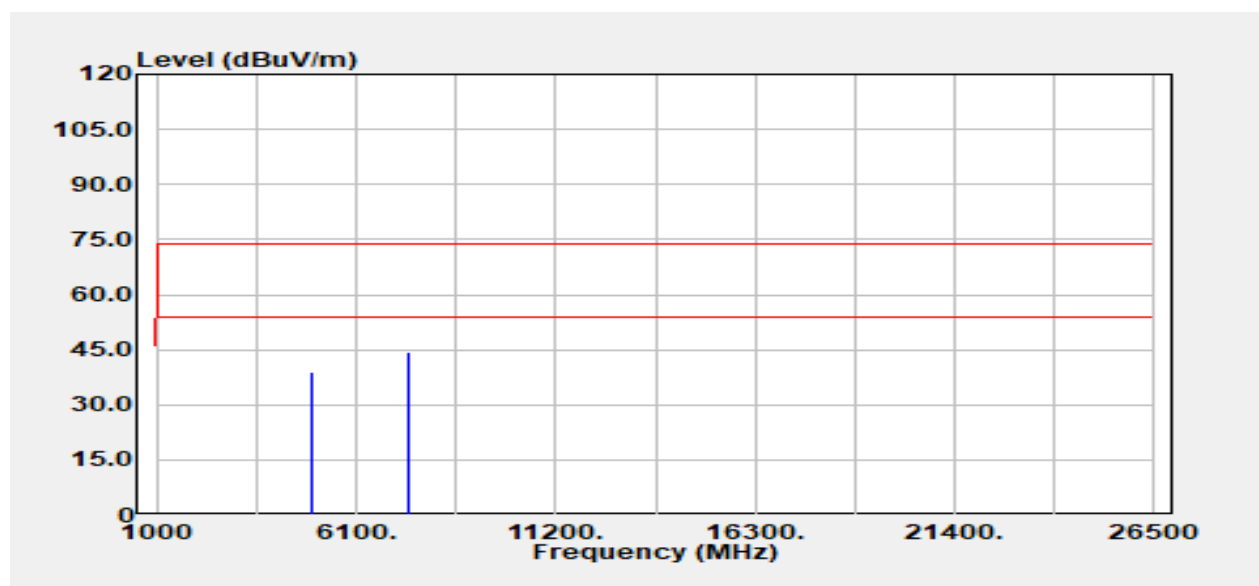


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
4960.00	Peak	36.94	6.91	43.85	74.00	-30.15
4960.00	Average	26.30	6.91	33.22	54.00	-20.78
7440.00	Peak	35.15	13.22	48.37	74.00	-25.63
7440.00	Average	25.67	13.22	38.89	54.00	-15.11
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode:	Mode 2 BLE-2Mbps High CH	Temp/Hum	23.4(°C) / 63%RH
Test Item	Harmonic	Test Date	October 11, 2022
Polarize	Horizontal	Test Engineer	Ray Li
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
4960.00	Peak	31.98	6.91	38.89	74.00	-35.11
4960.00	Average	26.50	6.91	33.41	54.00	-20.59
7440.00	Peak	31.38	13.22	44.60	74.00	-29.40
7440.00	Average	24.06	13.22	37.28	54.00	-16.72
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

**--End of Test Report--**