

**ELECTROMAGNETIC EMISSIONS
COMPLIANCE REPORT**

Applicant: Murata Manufacturing Co., Ltd.
1-10-1, Higashikotari, Nagaokakyou-shi, Kyoto 617-8555
Japan

Manufacturer: Murata Manufacturing Co., Ltd.
1-10-1, Higashikotari, Nagaokakyou-shi, Kyoto 617-8555
Japan

Product Name: Communication Module

Brand Name: muRata

Model No.: LBEE5XV1YM

Model Difference: N/A

Report Number: TERF2402000376E2

FCC ID VPYLB1YM

IC: 772C-LB1YM

Date of EUT Received: February 20, 2024

Date of Test: February 21, 2024~February 28, 2024

Issue Date: April 1, 2024

Approved By**Jay Lin****We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT comply with FCC rule part §15.247, ISSED RSS-247.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2402000376E2	00	Original.	April 1, 2024	Susan Lin	

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.

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1 GENERAL INFORMATION

1.1 Product Description

Product Name:	Communication Module
Brand Name:	muRata
Model No.:	LBEE5XV1YM
Model Difference:	N/A
Hardware Version:	1.0
Firmware Version:	1.0
EUT Series No.:	38918
Power Supply:	3.3Vdc
Test Software (Name/Version):	DutApMimoBt / 1.0.0.172

1.2 RF Specification

Radio Technology:	BLE
Frequency Range:	2402 – 2480MHz
Channel number:	40 channels
Modulation type:	GFSK

1.3 Antenna Designation

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Port	Peak Antenna Gain (dBi)
Monopole	Devialet	LBEE5XV1YM	2402~2480	Path B	2.1

Note: Antenna information is provided by the applicant.

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1.4 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

RSS-247 issue 3 Aug. 2023

RSS-Gen, Issue 5 April 2018, Amendment 2 (February 2021), Amendment 1 (March 2019)

ANSI C63.10:2013

1.5 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designa- tion number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1	TW0027	TW3702
		SAC 2		
		SAC 3		
		Conduction 1		
		Conducted 1		
		Conducted 2		
		Conducted 3		
		Conducted 4		
		Conducted 5		
		Conducted 6		
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C	TW0028	
		SAC C		
		SAC D		
		SAC G		
		Conducted A		
		Conducted B		
		Conducted C		
		Conducted D		
		Conducted E		
		Conducted F		
		Conducted G		

Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.

1.6 Special Accessories

There are no special accessories used while test was conducted.

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1.7 Equipment Modifications

There was no modification incorporated into the EUT.

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2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 Test Procedure

2.3.1 Radiated Emissions

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

2.4 Measurement Results Explanation Example

2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

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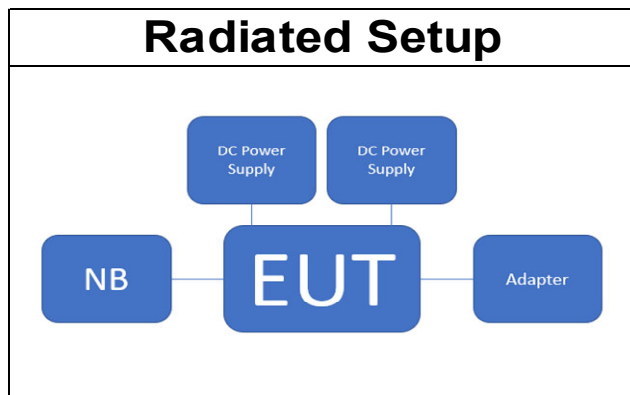
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2.5 Test Configuration



2.6 Control Unit(s)

Radiated Emission Test Site: SAC D					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L480	P0002332	N/A	N/A
Adapter	FSP GROUP INC.	FSP065-REBN2	N/A	N/A	N/A
USB cable	Qualtek	3025033	N/A	N/A	N/A
PCI cable	Samtec	HQCD	N/A	N/A	N/A
LAN cable	ELECOM	KB-FL7-03BLN	N/A	N/A	N/A

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3 SUMMARY OF TEST RESULTS

FCC Rules	ISED Rules	Description Of Test	Result
§15.247(d) §15.209	RSS-247 §5.5 RSS-Gen §8.9	Radiated Band Edge and Spurious Emission	Compliant

Note

1. This is an addendum test report reference to the test report ER/2020/C0063.

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4 DESCRIPTION OF TEST MODES

4.1 Operating Frequencies

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

4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
3. The field strength of radiation emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.
4. Investigation has been done on all the possible configurations for searching the worst case.

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TRANSMIT RADIATED EMISSION TEST (BELOW 1 GHz)				
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
Bluetooth LE	0 to 39	20	GFSK	1
Bluetooth LE	0 to 39	20	GFSK	2
TRANSMIT RADIATED EMISSION TEST (ABOVE 1 GHz)				
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
Bluetooth LE	0 to 39	0,39	GFSK	1
Bluetooth LE	0 to 39	0,39	GFSK	2

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5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 1.54 dB
Output Power measurement	+/- 0.97 dB
Emission Bandwidth	+/- 1.38 Hz
Conducted emission measurement	+/- 0.77 dB
Peak Power Density	+/- 0.61 dB
Temperature	+/- 0.6 °C
Humidity	+/- 3 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	1.89 dB	9kHz~30MHz
	+/-	4.15 dB	30MHz - 1000MHz
	+/-	3.43 dB	1GHz - 18GHz
	+/-	3.86 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	1.89 dB	9kHz~30MHz
	+/-	4.02 dB	30MHz - 1000MHz
	+/-	3.43 dB	1GHz - 18GHz
	+/-	3.86 dB	18GHz - 40GHz
Radiated Spurious Emission	+/-	2 dB	33GHz-50GHz
	+/-	1.59 dB	50GHz-60GHz
	+/-	1.7 dB	60GHz-90GHz
	+/-	1.64 dB	90GHz-140GHz
	+/-	3.83 dB	140GHz-220GHz

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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6 MEASUREMENT EQUIPMENT USED

6.1 Radiated Measurement

Radiated Emission Test Site: SAC D					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Broadband Antenna	SCHWARZBECK	VULB 9168	9168-617	12/14/2023	12/13/2024
Horn Antenna	Schwarzbeck	BBHA9120D	1341	05/26/2023	05/25/2024
Loop Antenna	ETS.LINDGREN	6502	143303	05/23/2023	05/22/2024
Horn Antenna	SCHWARZBECK	BBHA9170	185	08/21/2023	08/20/2024
3m Site NSA	SGS	966 chamber D	N/A	04/30/2023	04/29/2024
Spectrum Analyzer	KEYSIGHT	N9010A	MY57120200	03/29/2023	03/28/2024
DC Power Supply	HOLA	DP-3003	D7070035	06/12/2023	06/11/2024
DC Power Supply	Gwinstek	SPS-3610	GEW902165	01/17/2024	01/16/2025
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R
Pre-Amplifier	EMC Instruments	EMC18405SEE	980881	11/15/2023	11/14/2024
Pre-Amplifier	EMC Instruments	EMC9135	980234	11/15/2023	11/14/2024
Pre-Amplifier	EMC Instruments	EMC12630SE	980273	11/15/2023	11/14/2024
Coaxial Cable	Huber+Suhner	RG 214/U	W21.01	11/15/2023	11/14/2024
Coaxial Cable	Huber+Suhner	EMC106-SM-SM-7200	150703	11/15/2023	11/14/2024

NOTE: N.C.R refers to Not Calibrated Required.

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7 RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

Spurious Emission

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 and RSS-Gen §8.9 Table 5 and 6 limit as below.

And according to §15.33(a) (1) & RSS-Gen §6.13.2.a for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

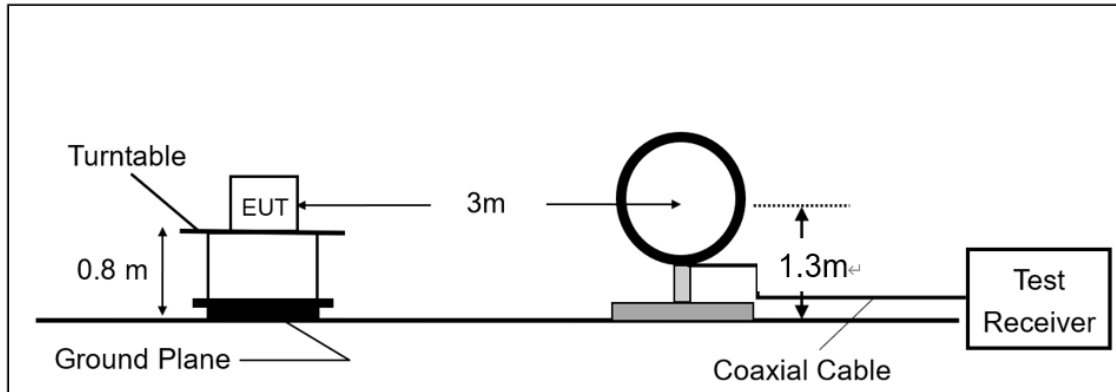
Note: The lower limit shall apply at the transition frequencies.

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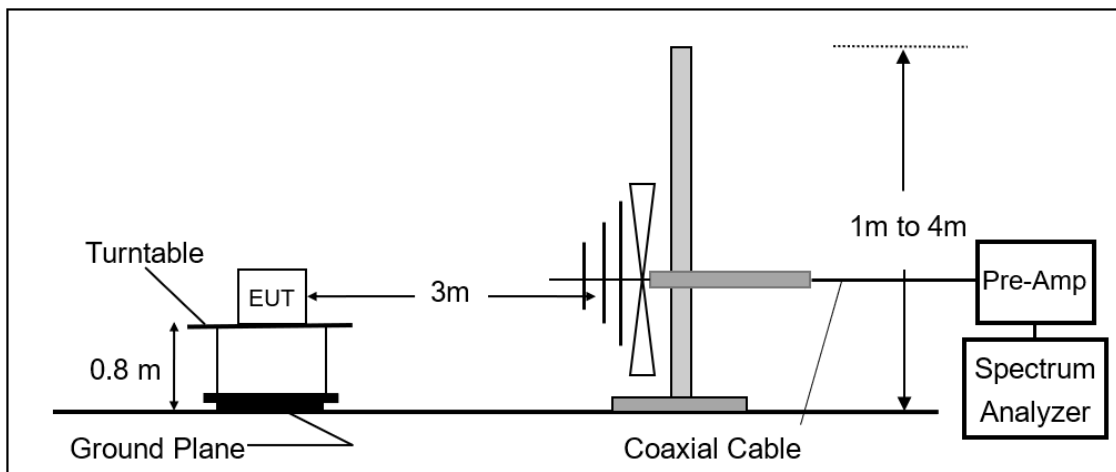
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7.1 Test Setup

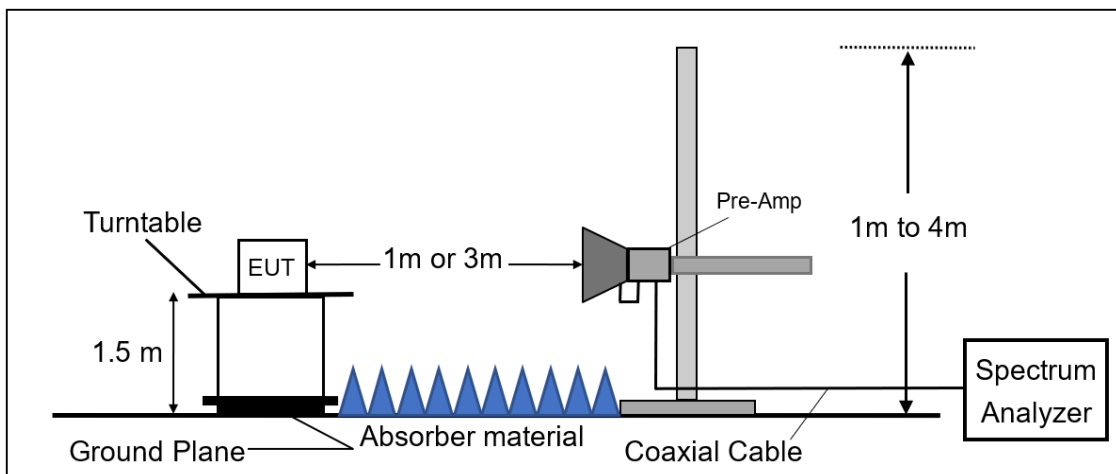
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz.



(B) Radiated Emission Test Set-Up, Frequency From 30MHz to 1000MHz.



(C) Radiated Emission Test Set-Up, Frequency Above 1GHz.



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7.2 Measurement Procedure

1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
2. The EUT was placed on a turn table with 0.8m for frequency < 1GHz and 1.5m for frequency > 1GHz above ground plane.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
5. Set the spectrum analyzer as RBW=100 kHz and VBW=300 kHz for Peak Detector (PK) at frequency between 30MHz and 1 GHz.
6. Use receiver mode as RBW=120 kHz for Quasi-peak (QP) at frequency between 30MHz and 1 GHz.
7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Maximum Emission Measurements at frequency above 1 GHz.
8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Emission Measurements at frequency above 1 GHz.
9. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.
10. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
11. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
12. Repeat above procedures until all default test channel measured were complete.

7.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where *FS* = Field Strength
RA = Reading Amplitude
AF = Antenna Factor

CL = Cable Attenuation Factor (Cable Loss)
AG = Amplifier Gain

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The limit of the emission level is expressed in dBuV/m, which converts $20 \cdot \log(uV/m)$

$$\text{Actual FS(dB}\mu\text{V/m)} = \text{SPA. Reading level(dB}\mu\text{V)} + \text{Factor(dB)}$$

$$\text{Factor(dB)} = \text{Antenna Factor(dB}\mu\text{V/m)} + \text{Cable Loss(dB)} - \text{Pre_Amplifier Gain(dB)}$$

7.4 Test Results of Radiated Spurious Emissions from 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) & RSS-GEN §6.13.2 was not reported.

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No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

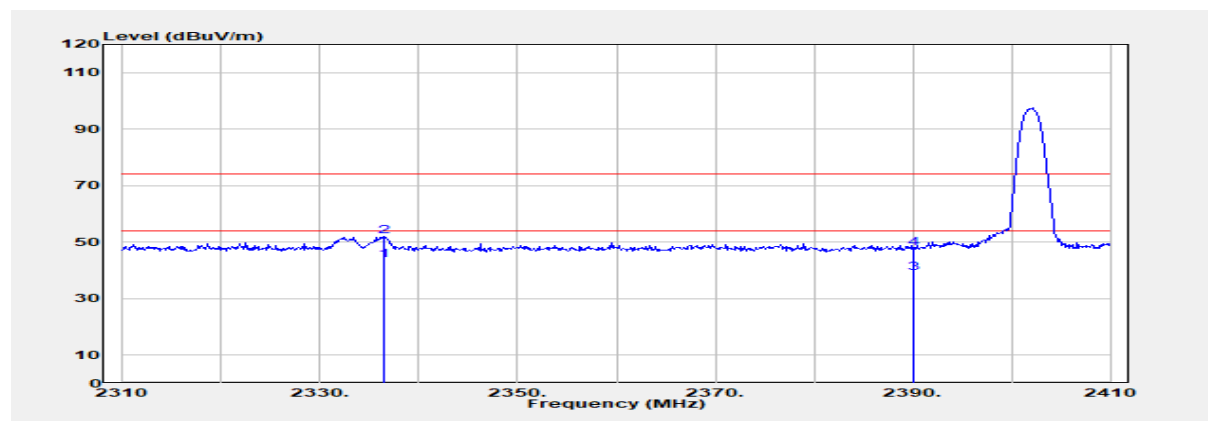
f (886-2) 2298-0488

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Member of SGS Group

7.4.1 Radiated Band Edge Measurement Result

Report Number	:TERF2402000376E2	Test Site	:SAC D
Operation Mode	:BLE 1M	Test Date	:2024-02-28
Test Frequency	:2402 MHz	Temp./Humi.	:21.4°C/50%
Test Mode	:Bandedge	Antenna Pol.	:Vertical
EUT Pol	:E2 Plane	Engineer	:Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
2336.400	Average	48.32	-4.88	43.44	54.00	-10.56
2336.400	Peak	56.92	-4.88	52.04	74.00	-21.96
2390.000	Average	43.71	-4.58	39.13	54.00	-14.87
2390.000	Peak	52.51	-4.58	47.93	74.00	-26.07

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 1M

Test Date :2024-02-28

Test Frequency :2402 MHz

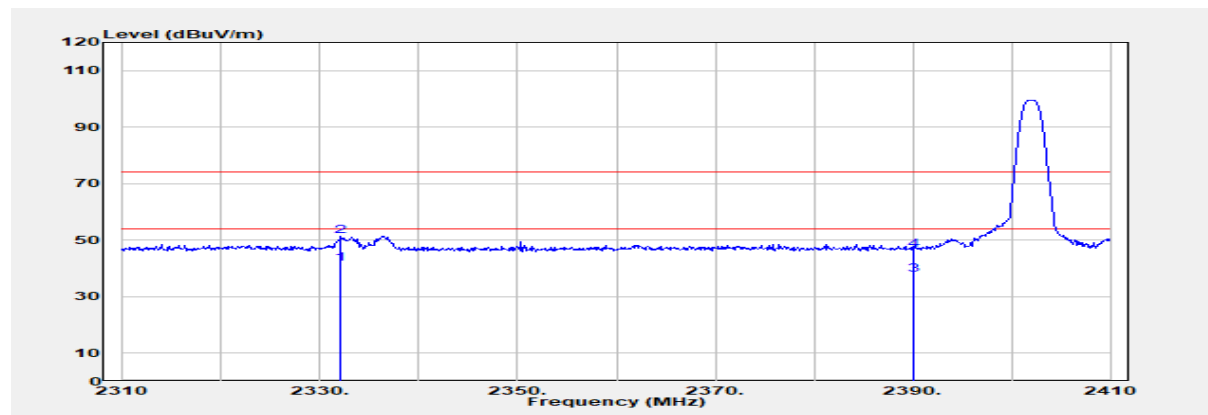
Temp./Humi. :21.4°C/50%

Test Mode :Bandedge

Antenna Pol. :Horizontal

EUT Pol :E2 Plane

Engineer :Sam Huang



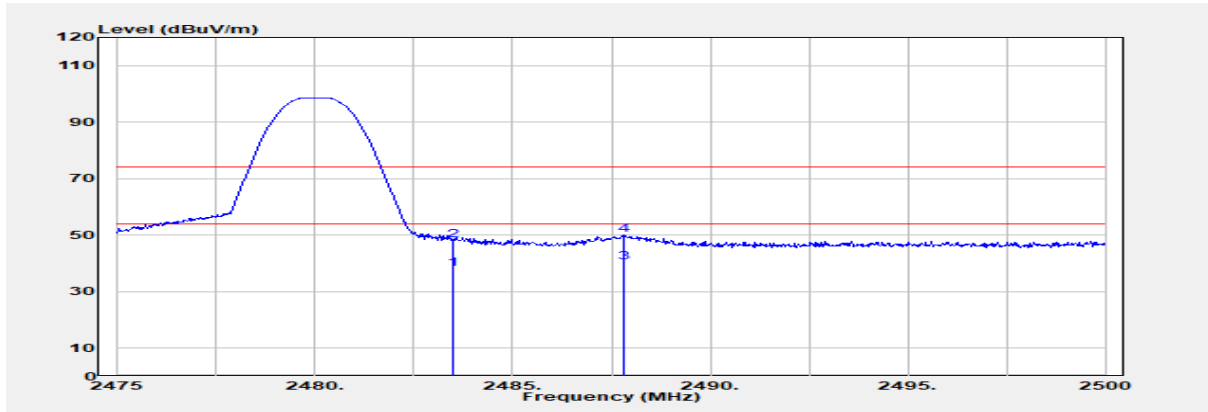
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2332.100	Average	46.53	-4.89	41.64	54.00	-12.36
2332.100	Peak	56.39	-4.89	51.50	74.00	-22.50
2390.000	Average	42.46	-4.58	37.88	54.00	-16.12
2390.000	Peak	51.20	-4.58	46.62	74.00	-27.38

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Report Number :TERF2402000376E2
Operation Mode :BLE 1M
Test Frequency :2480 MHz
Test Mode :Bandedge
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-02-28
Temp./Humi. :21.4°C/50%
Antenna Pol. :Vertical
Engineer :Sam Huang



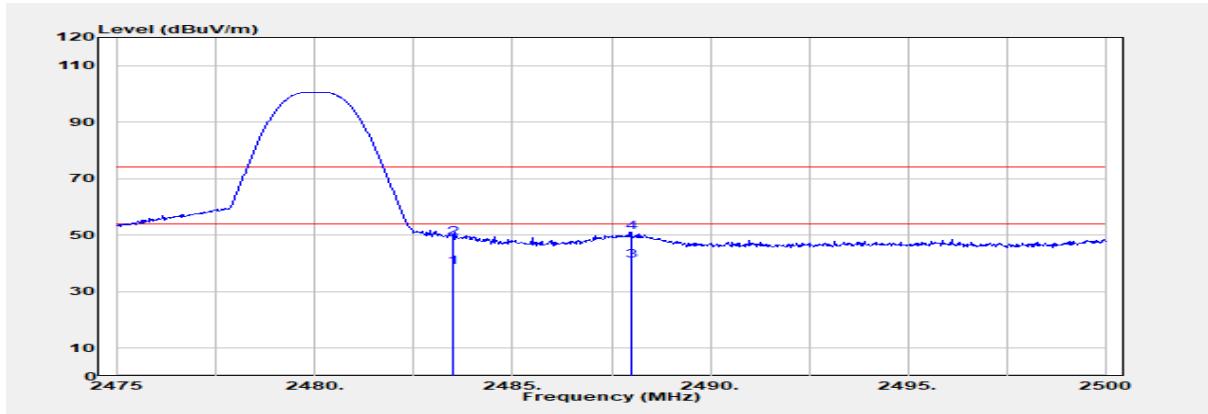
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2483.500	Average	43.45	-5.30	38.14	54.00	-15.86
2483.500	Peak	53.51	-5.30	48.20	74.00	-25.80
2487.800	Average	45.56	-5.34	40.22	54.00	-13.78
2487.800	Peak	55.56	-5.34	50.22	74.00	-23.78

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Report Number :TERF2402000376E2
Operation Mode :BLE 1M
Test Frequency :2480 MHz
Test Mode :Bandedge
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-02-28
Temp./Humi. :21.4°C/50%
Antenna Pol. :Horizontal
Engineer :Sam Huang



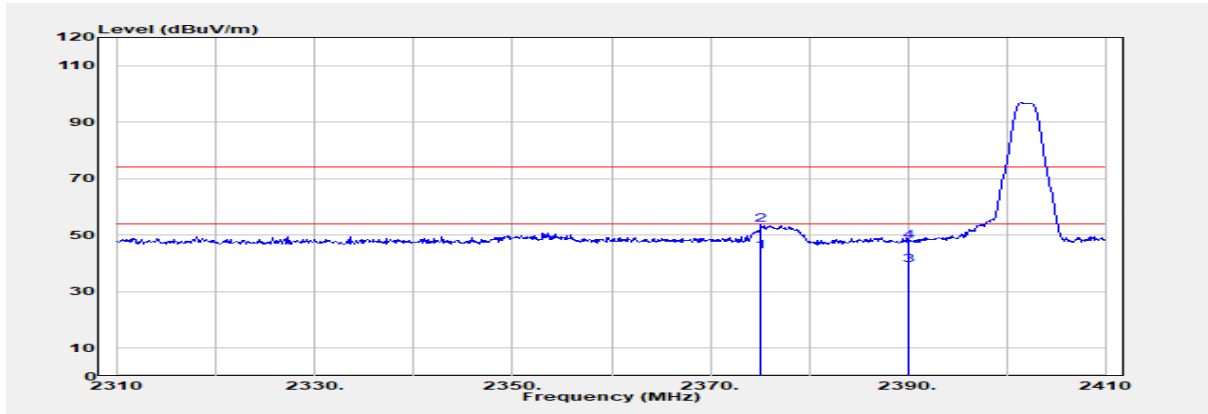
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2483.500	Average	43.93	-5.30	38.62	54.00	-15.38
2483.500	Peak	54.52	-5.30	49.22	74.00	-24.78
2488.000	Average	46.33	-5.34	40.99	54.00	-13.01
2488.000	Peak	56.42	-5.34	51.08	74.00	-22.92

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Report Number :TERF2402000376E2
Operation Mode :BLE 2M
Test Frequency :2402 MHz
Test Mode :Bandedge
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-02-28
Temp./Humi. :21.4°C/50%
Antenna Pol. :Vertical
Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2375.100	Average	48.96	-4.68	44.29	54.00	-9.71
2375.100	Peak	58.32	-4.68	53.64	74.00	-20.36
2390.000	Average	43.82	-4.58	39.24	54.00	-14.76
2390.000	Peak	52.32	-4.58	47.74	74.00	-26.26

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 2M

Test Date :2024-02-28

Test Frequency :2402 MHz

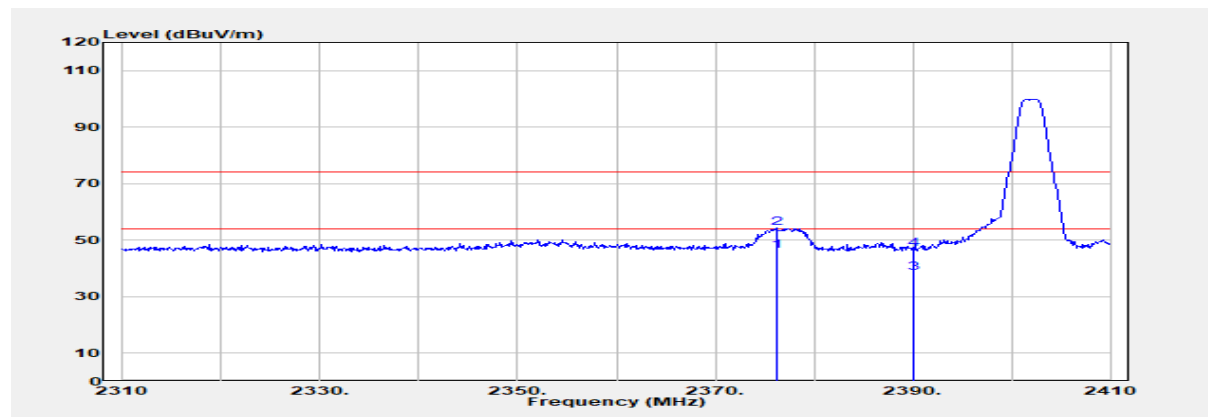
Temp./Humi. :21.4°C/50%

Test Mode :Bandedge

Antenna Pol. :Horizontal

EUT Pol :E2 Plane

Engineer :Sam Huang



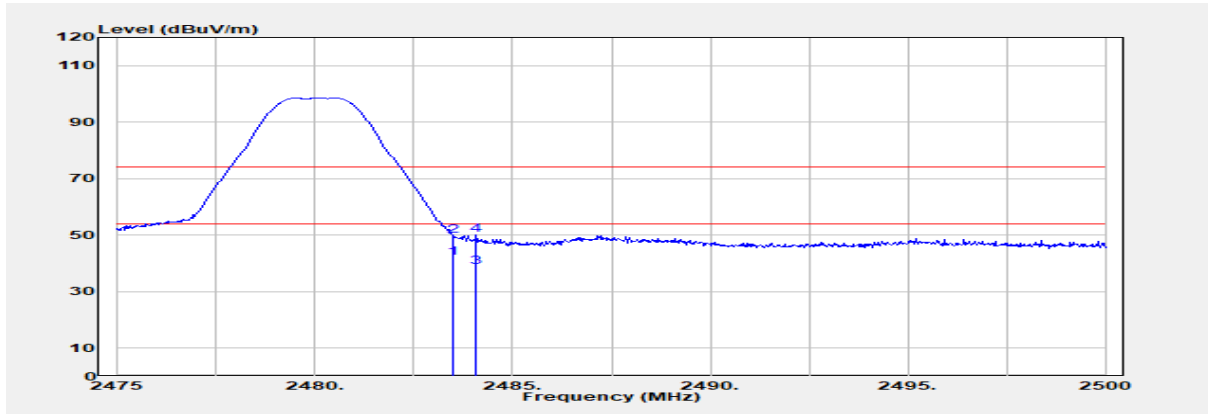
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2376.200	Average	50.73	-4.67	46.06	54.00	-7.94
2376.200	Peak	58.94	-4.67	54.27	74.00	-19.73
2390.000	Average	42.85	-4.58	38.27	54.00	-15.73
2390.000	Peak	51.31	-4.58	46.73	74.00	-27.27

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Report Number :TERF2402000376E2
Operation Mode :BLE 2M
Test Frequency :2480 MHz
Test Mode :Bandedge
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-02-28
Temp./Humi. :21.4°C/50%
Antenna Pol. :Vertical
Engineer :Sam Huang



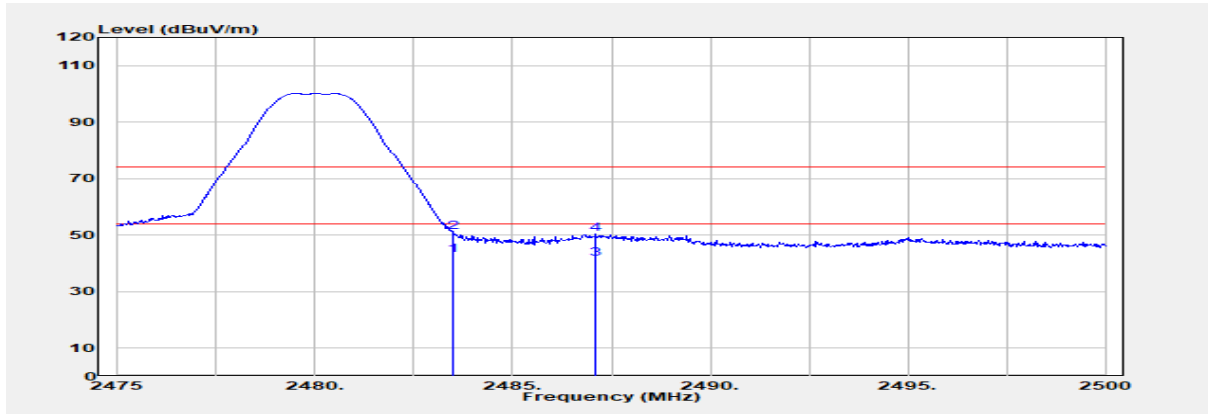
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2483.500	Average	47.18	-5.30	41.88	54.00	-12.12
2483.500	Peak	54.95	-5.30	49.65	74.00	-24.35
2484.075	Average	44.12	-5.31	38.81	54.00	-15.19
2484.075	Peak	55.40	-5.31	50.09	74.00	-23.91

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Report Number :TERF2402000376E2
Operation Mode :BLE 2M
Test Frequency :2480 MHz
Test Mode :Bandedge
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-02-28
Temp./Humi. :21.4°C/50%
Antenna Pol. :Horizontal
Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2483.500	Average	48.07	-5.30	42.77	54.00	-11.23
2483.500	Peak	56.30	-5.30	51.00	74.00	-23.00
2487.100	Average	46.85	-5.33	41.52	54.00	-12.48
2487.100	Peak	55.76	-5.33	50.43	74.00	-23.57

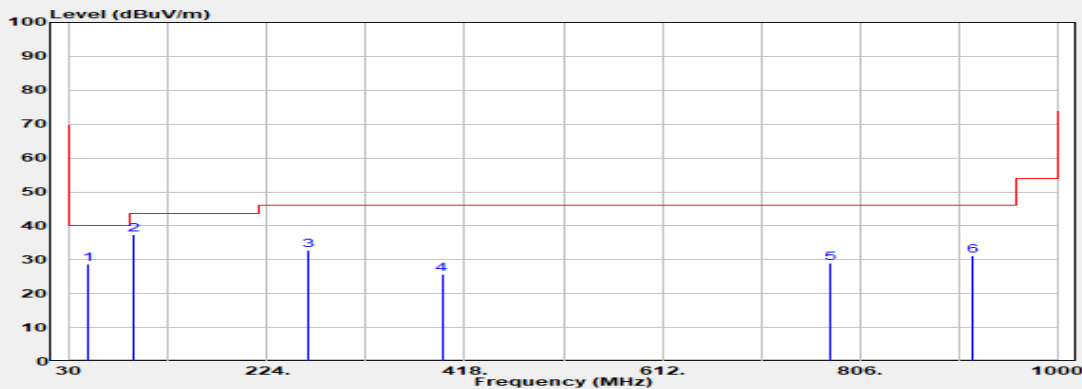
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7.4.2 Radiated Spurious Emission

Report Number :TERF2402000376E2
Operation Mode :BLE 1M
Test Frequency :2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-02-28
Temp./Humi. :21.4 °C/50%
Antenna Pol. :Vertical
Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
47.460	Peak	45.48	-16.83	28.66	40.00	-11.34
93.050	Peak	59.95	-22.61	37.34	43.50	-6.16
263.770	Peak	49.73	-16.96	32.78	46.00	-13.22
395.690	Peak	39.03	-13.39	25.64	46.00	-20.36
776.900	Peak	35.71	-6.66	29.04	46.00	-16.96
917.550	Peak	35.78	-4.53	31.25	46.00	-14.75

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 1M

Test Date :2024-02-28

Test Frequency :2442 MHz

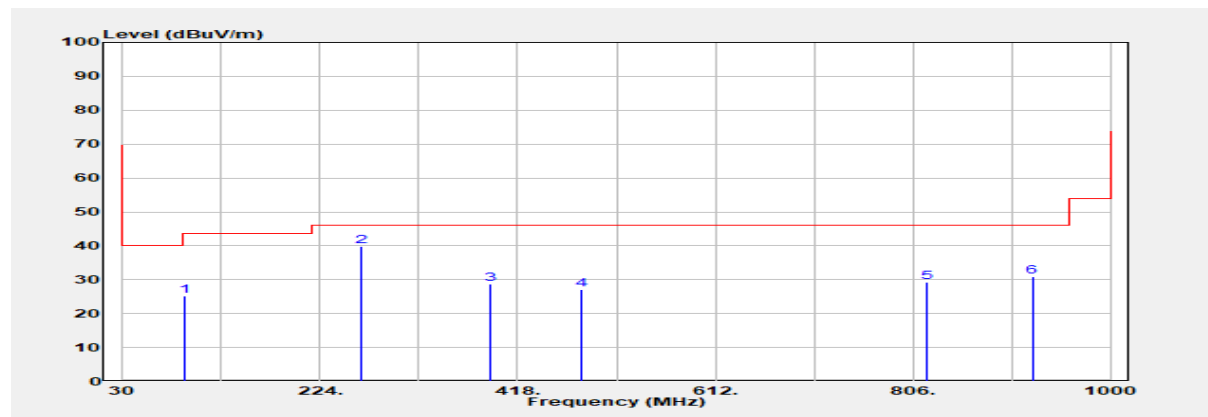
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Horizontal

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
90.140	Peak	47.90	-22.67	25.23	43.50	-18.27
263.770	Peak	56.79	-16.96	39.83	46.00	-6.17
391.810	Peak	42.12	-13.50	28.62	46.00	-17.38
480.080	Peak	38.68	-11.62	27.06	46.00	-18.94
819.580	Peak	35.18	-5.85	29.33	46.00	-16.67
923.370	Peak	35.10	-4.33	30.77	46.00	-15.23

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 2M

Test Date :2024-02-28

Test Frequency :2442 MHz

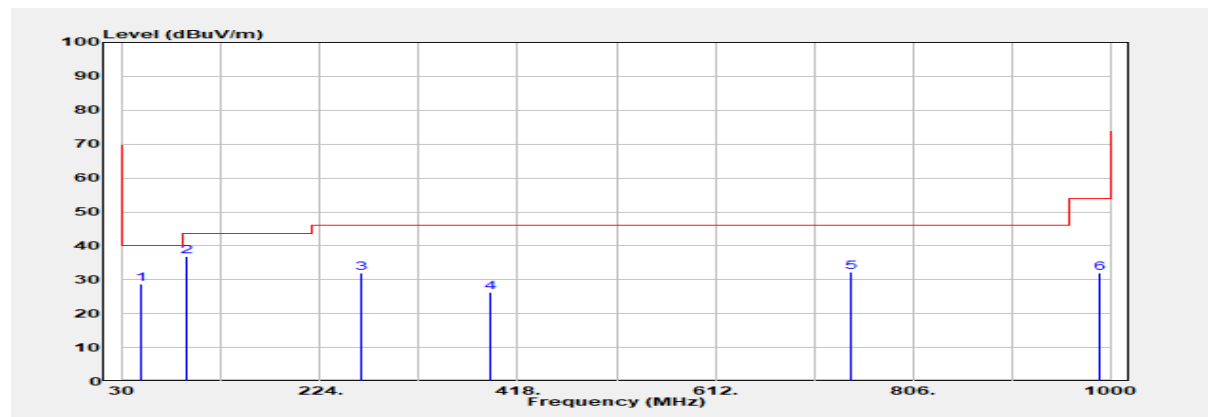
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Vertical

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
48.430	Peak	45.40	-16.78	28.62	40.00	-11.38
93.050	Peak	59.55	-22.61	36.95	43.50	-6.55
263.770	Peak	49.04	-16.96	32.08	46.00	-13.92
391.810	Peak	39.90	-13.50	26.40	46.00	-19.60
744.890	Peak	38.84	-6.58	32.26	46.00	-13.74
990.300	Peak	35.98	-4.13	31.85	54.00	-22.15

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 2M

Test Date :2024-02-28

Test Frequency :2442 MHz

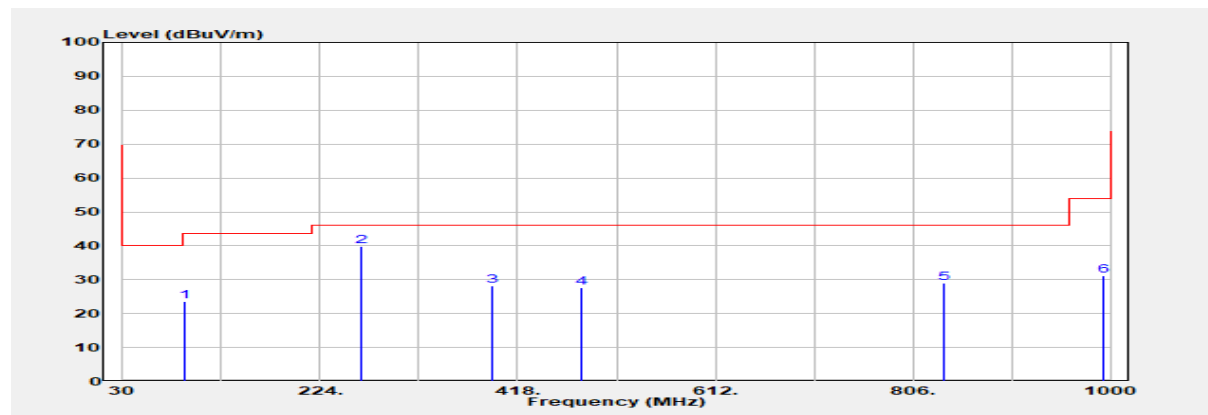
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Horizontal

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
90.140	Peak	46.15	-22.67	23.48	43.50	-20.02
263.770	Peak	56.84	-16.96	39.88	46.00	-6.12
393.750	Peak	41.53	-13.44	28.09	46.00	-17.91
480.080	Peak	39.17	-11.62	27.55	46.00	-18.45
836.070	Peak	34.78	-5.66	29.12	46.00	-16.88
993.210	Peak	35.24	-3.99	31.25	54.00	-22.75

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 1M

Test Date :2024-02-28

Test Frequency :2480 MHz

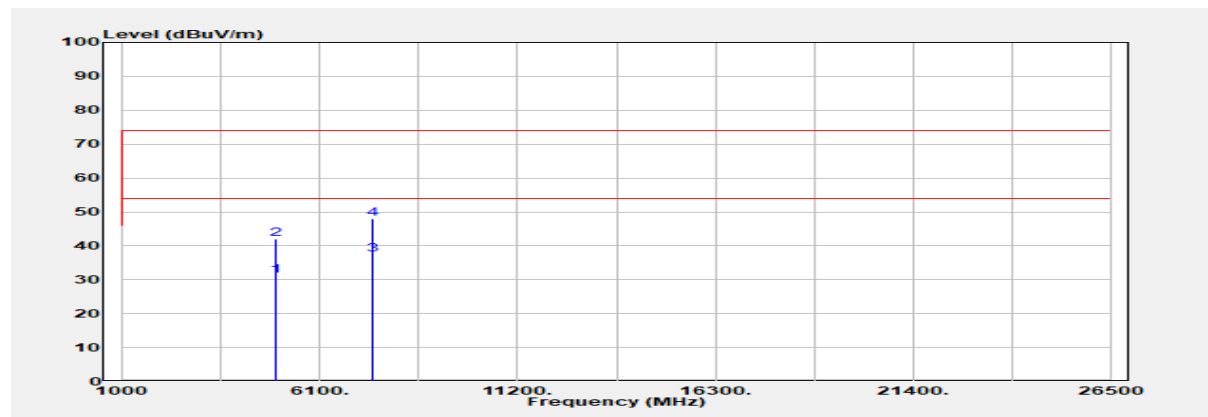
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Vertical

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
4960.000	Average	29.23	1.87	31.10	54.00	-22.90
4960.000	Peak	40.25	1.87	42.12	74.00	-31.88
7440.000	Average	27.53	9.98	37.51	54.00	-16.49
7440.000	Peak	37.95	9.98	47.93	74.00	-26.07

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台灣檢驗科技股份有限公司

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f (886-2) 2298-0488

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 1M

Test Date :2024-02-28

Test Frequency :2480 MHz

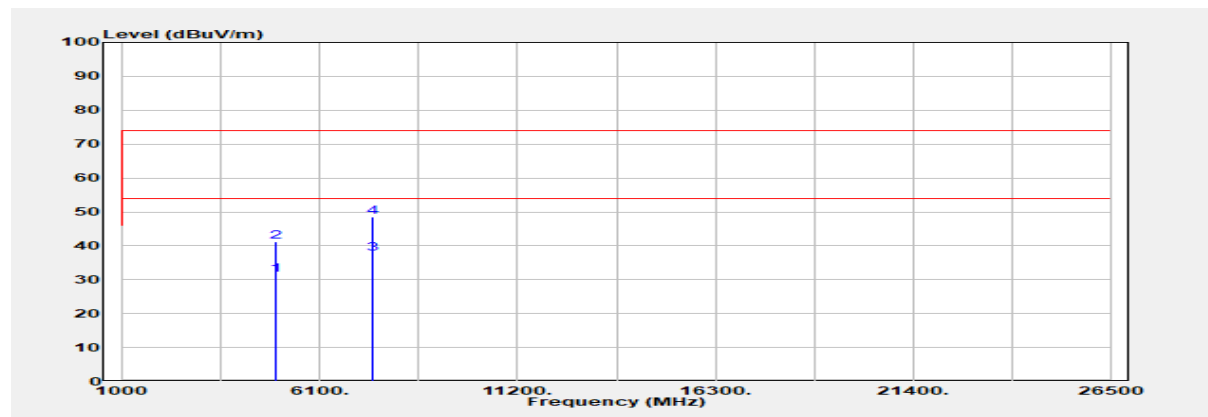
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Horizontal

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
4960.000	Average	29.49	1.87	31.35	54.00	-22.65
4960.000	Peak	39.41	1.87	41.28	74.00	-32.72
7440.000	Average	27.69	9.98	37.67	54.00	-16.33
7440.000	Peak	38.40	9.98	48.38	74.00	-25.62

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 2M

Test Date :2024-02-28

Test Frequency :2402 MHz

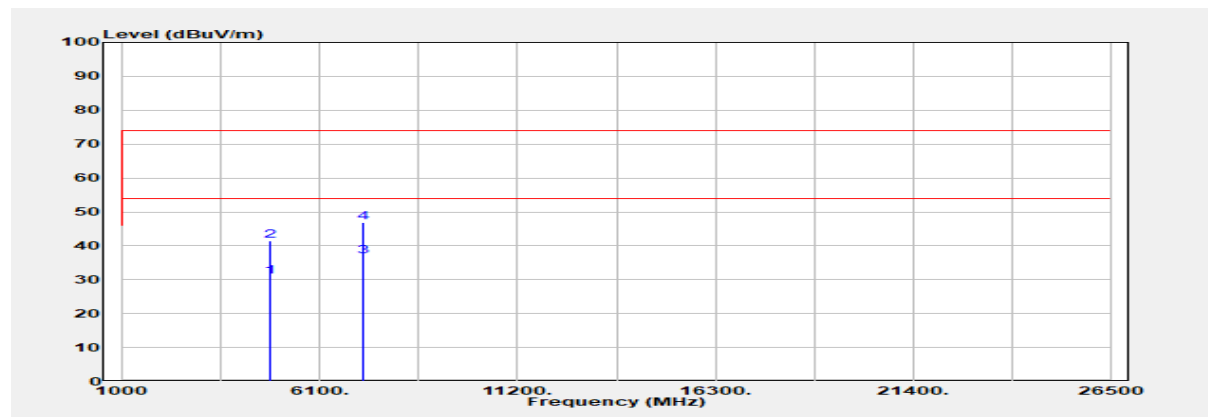
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Vertical

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
4804.000	Average	29.90	0.98	30.89	54.00	-23.11
4804.000	Peak	40.42	0.98	41.40	74.00	-32.60
7206.000	Average	28.76	8.13	36.89	54.00	-17.11
7206.000	Peak	38.71	8.13	46.83	74.00	-27.17

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Report Number :TERF2402000376E2

Test Site :SAC D

Operation Mode :BLE 2M

Test Date :2024-02-28

Test Frequency :2402 MHz

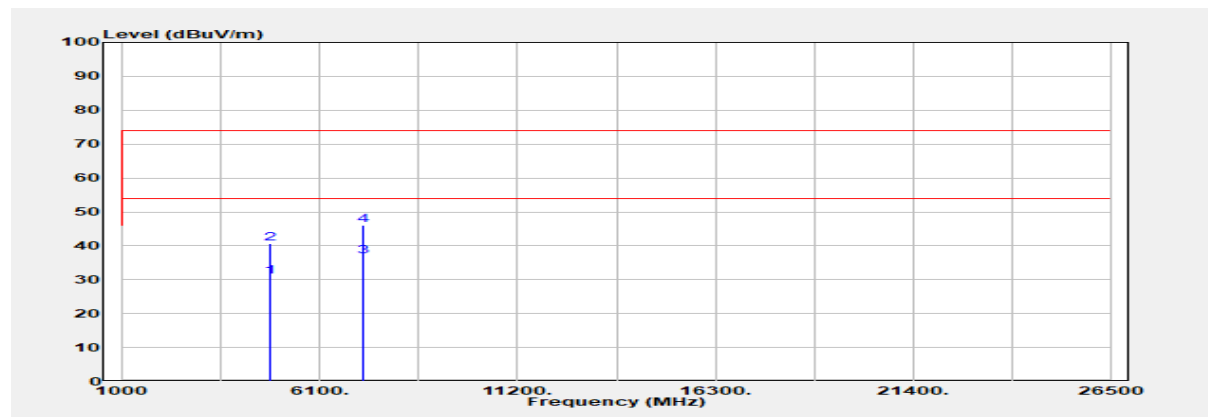
Temp./Humi. :21.4 °C/50%

Test Mode :Tx

Antenna Pol. :Horizontal

EUT Pol :E2 Plane

Engineer :Sam Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
4804.000	Average	30.02	0.98	31.00	54.00	-23.00
4804.000	Peak	39.54	0.98	40.52	74.00	-33.48
7206.000	Average	28.72	8.13	36.85	54.00	-17.15
7206.000	Peak	38.00	8.13	46.13	74.00	-27.87

~ End of Report ~

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