

**ELECTROMAGNETIC EMISSIONS
COMPLIANCE TEST REPORT**

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

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

Product Name: Communication Module

Brand Name: Murata Manufacturing Co., Ltd.

Model No.: LBES0ZZ2LL

/ISED HVIN:

Family Model No.: LBEE0ZZ2KL

/ Family ISED HVIN:

Model Difference: Different functions: LBES0ZZ2LL includes IEEE802.15.4. functionality.

ISED PMN: LBES0ZZ2LL, LBEE0ZZ2KL

Report Number: TERF2410002921E2

FCC ID VPLYLBES0ZZ2LL

IC: 772C-LBES0ZZ2LL

Date of EUT Received: September 24, 2024

Date of Test: October 4, 2024 ~ November 14, 2024

Issue Date: December 18, 2024

Approved By**Aken Huang****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 and §15.407, ISED RSS-247.

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

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f (886-2) 2298-0488

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2410002921E2	00	Original	Dec. 6, 2024	Candice Li	
TERF2410002921E2	01	Modify FVIN of section 1.1	Dec. 18, 2024	Candice Li	*

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.
- 2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.
Only the main model LBES0ZZ2LL has IEEE802.15.4. functionality and has been independently tested for this feature. The variants are assessed as electrically identical in RF characteristics, therefore, no further assessment required for the variant(s).

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Contents

1	GENERAL INFORMATION	4
2	SYSTEM TEST CONFIGURATION	6
3	SUMMARY OF TEST RESULT	8
4	DESCRIPTION OF TEST MODES	9
5	MEASUREMENT UNCERTAINTY	10
6	UNDESIRABLE RADIATED EMISSION MEASUREMENT	11

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1 GENERAL INFORMATION

1.1 Product Description

Product Name:	Communication Module
Brand Name:	Murata Manufacturing Co., Ltd.
Model No.: /ISED HVIN:	LBES0ZZ2LL
Family Model No.: / Family ISED HVIN:	LBEE0ZZ2KL
Model Difference:	Different functions: LBES0ZZ2LL includes IEEE802.15.4. functionality.
Hardware Version:	1.0
Firmware Version:	1.1.1.1
EUT Series No.:	2LL #116 / 2LL #106
Power Supply:	3.3 Vdc, 1.8 Vdc
Test Software (Name/Version)	DUT Labtool Version 2.0.0.17

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1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.247

FCC Part 15, Subpart E §15.407

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

RSS-247 issue 3 Aug. 2023

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

ANSI C63.10:2013

1.3 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation 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.				

1.4 Special Accessories

There are no special accessories used while test was conducted.

1.5 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

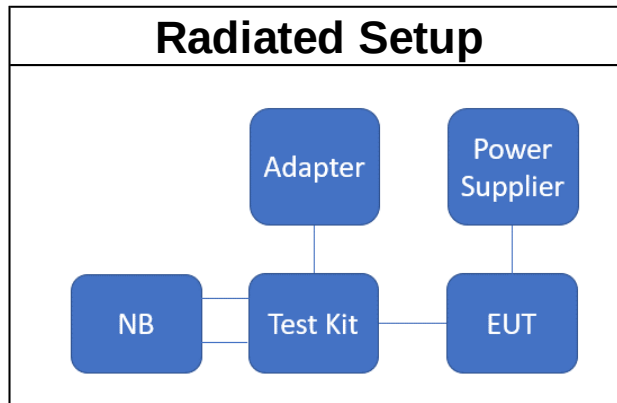
Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

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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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	T470	P0001293	N/A	N/A
LAN Cable	BUFFALO	BSLS6NU30BL	N/A	N/A	N/A
USB cable	ZHUANG SHAN CHUAN	2725	N/A	N/A	N/A
USB cable	ANKER	A8852011	N/A	N/A	N/A
Adapter	ANKER	A2664	N/A	N/A	N/A

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3 SUMMARY OF TEST RESULT

FCC Rules	ISED Rules	Description Of Test	Result
§15.205 §15.209 §15.247(d) §15.407(b)	RSS-247 §6.2.1~4 (2)	Undesirable Radiated Emissions	Compliant

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4 DESCRIPTION OF TEST MODES

4.1 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 mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case. The given UE is pre-scanned among below modes.

Test mode

Final test modes are considering the modulation and worse data rate as below table.

External Antenna

Transmitter Unwanted Emissions Outside the 5 GHz RLAN Bands

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
WLAN 5G				
802.11a	100 to 144	144	OFDM	6
BLE				
BLE(125kbps)	0 to 39	20	GFSK	0.125

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
WLAN 5G				
802.11a	100 to 144	144	OFDM	6
BLE				
IEEE 802.15.4.	11 to 26	18	GFSK	1

Internal Antenna

Transmitter Unwanted Emissions Outside the 5 GHz RLAN Bands

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
WLAN 5G				
802.11a	100 to 144	144	OFDM	6
BLE				
BLE(125kbps)	0 to 39	20	GFSK	0.125

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
WLAN 5G				
802.11a	100 to 144	144	OFDM	6
BLE				
IEEE 802.15.4.	11 to 26	18	GFSK	1

Note:

The field strength of radiated 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.

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5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
Conducted emission measurement	+/- 0.77 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 UNDESIRABLE RADIATED EMISSION MEASUREMENT

6.1 Standard Applicable

$EIRP = (E \cdot d)^2 / 30$, where E is the field strength in V/m, d is the measurement distance (3m), $EIRP$ is the equivalent isotropically radiated power in Watts.

6.1.1 5150~5850 MHz

Applicable to	Operation Freq. (MHz)	EIRP		Field Strength @ 3m (dBμV/m)
		Freq. (MHz)	Limits (dBm/MHz)	
15.407(b)(1) RSS-247 §6.2.1.2	5150~5250	$f \leq 5150$ $f \geq 5350$	PK: -27	PK: 68.2
15.407(b)(2) RSS-247 §6.2.2.2	5250~5350			
15.407(b)(3) RSS-247 §6.2.3.2	5475~5725	$f \leq 5470$ $f \geq 5725$		
15.407(b)(4)(i) RSS-247 §6.2.4.2	5725~5850	at 75 MHz or more above or below the band edge	PK:-27	PK: 68.2
		increasing linearly from 75~25MHz above or below the band edge	PK:-27~10	PK: 68.2~105.2
		increasing linearly from 25~5MHz above or below the band edge	PK:10~15.6	PK: 105.2~110.8
		increasing linearly from 5~0 MHz above or below the band edge	PK: 15.6~27	PK:110.8~122.2

6.1.2 Spurious Emission

Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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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6.2 Measurement Equipment Used:

6.2.1 Radiated Measurement

Radiated Emission Test Site: SAC D					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
3m Site NSA	SGS	966 chamber D	N/A	04/30/2024	04/29/2025
Active Loop Antenna	COM-POWER	AL-130R	10160105	12/04/2023	12/03/2024
Band Rejection Filter	Micro Tronics	BRM50701-01	RF201	11/14/2024	11/13/2025
Broadband Antenna	SCHWARZBECK	VULB 9168	9168-617	12/14/2023	12/13/2024
Coaxial Cable	Huber+Suhner	EMC106-SM-SM-7200	150703	11/15/2023	11/14/2024
Coaxial Cable	Huber+Suhner	RG 214/U	W21.01	11/15/2023	11/14/2024
DC Power Supply	Gwinstek	SPS-3610	GEV856769	08/14/2024	08/13/2025
Notch Filter	Woken	EWI-14-0251	RF181	11/14/2024	11/13/2025
Horn Antenna	Schwarzbeck	BBHA9120D	1341	05/30/2024	05/29/2025
Horn Antenna	Schwarzbeck	BBHA9170	184	12/28/2023	12/27/2024
Lowpass Filter	Woken	EWI-56-0019	RF173	11/15/2023	11/14/2024
Pre-Amplifier	EMC Instruments	EMC12630SE	980273	11/15/2023	11/14/2024
Pre-Amplifier	EMC Instruments	EMC18405SEE	980881	11/15/2023	11/14/2024
Spectrum Analyzer	KEYSIGHT	N9010A	MYS7120200	04/03/2024	04/02/2025
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R
Pre-Amplifier	EMC Instruments	EMC9135	980234	11/15/2023	11/14/2024

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

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SGS Taiwan Ltd.

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

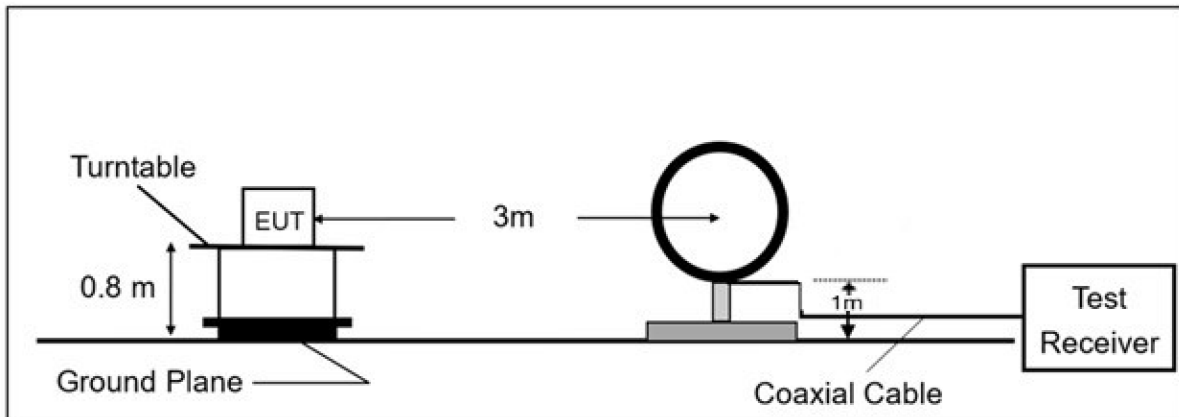
f (886-2) 2298-0488

www.sgs.com.tw

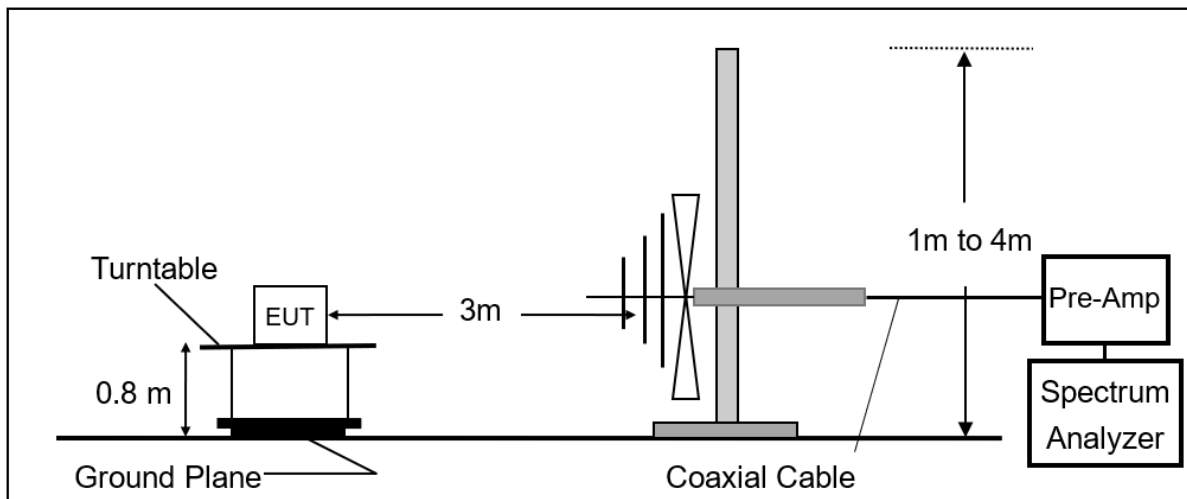
Member of SGS Group

6.3 Test Setup

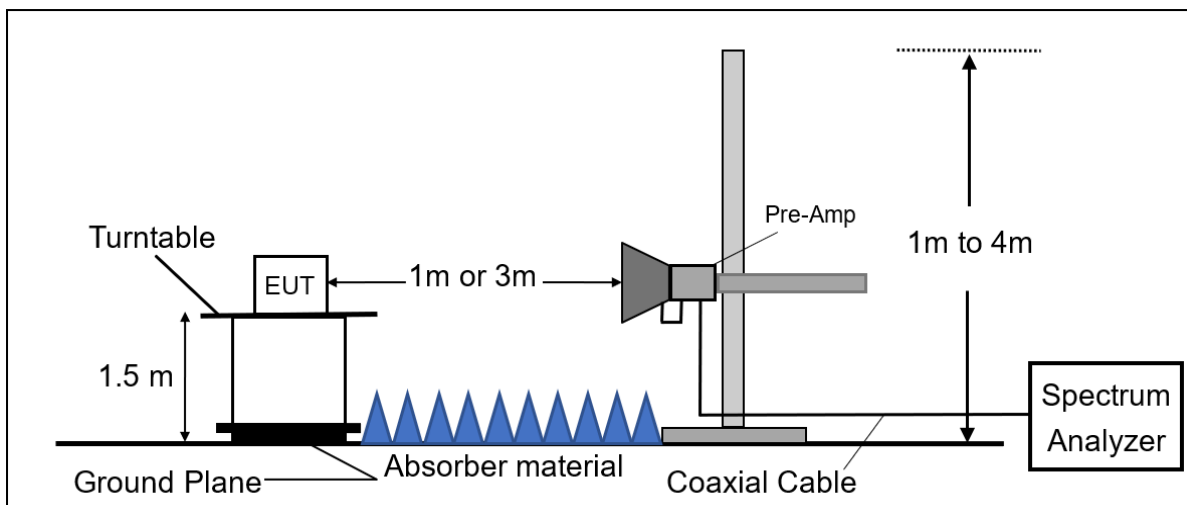
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz.



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



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



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6.4 Measurement Procedure

1. The testing follows FCC KDB 789033 D02.
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 $\geq 1/T$ (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 frequency measured were complete.

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6.5 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

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

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

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

6.6 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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6.7 Radiated Spurious Emission Measurement Result

6.7.1 Spurious Emission

External Antenna

Report Number :TERF2410002921E2

Test Site :SAC D

Operation Mode :802.11a+BLE 125k

Test Date :2024-11-14

Test Frequency :5720 MHz+2442 MHz

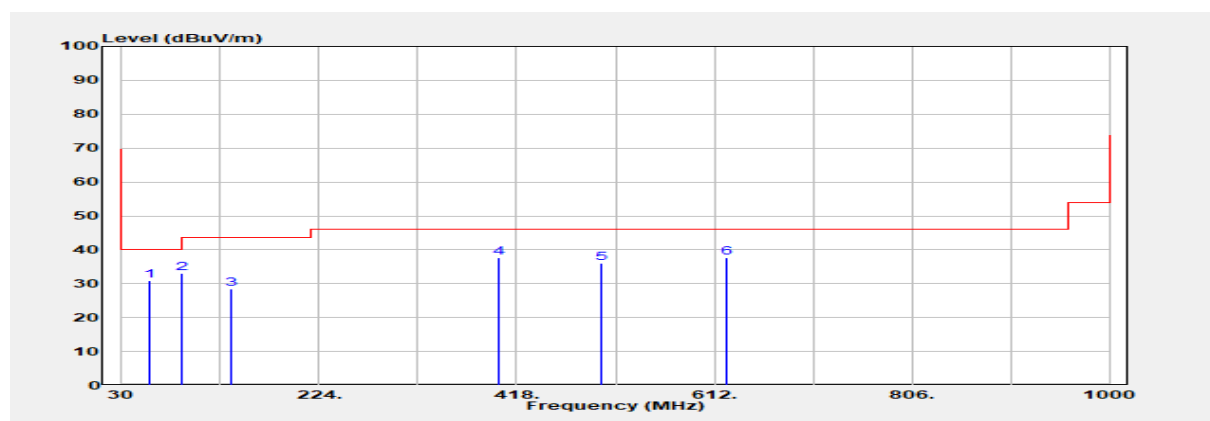
Temp./Humi. :22.3 °C/61%

Test Mode :Tx

Antenna Pol. :Vertical

EUT Pol :E2 Plane

Engineer :Pony Chen



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
58.130	Peak	47.99	-17.00	30.99	40.00	-9.01
89.170	Peak	55.79	-22.76	33.04	43.50	-10.46
137.670	Peak	45.49	-17.14	28.36	43.50	-15.14
399.570	Peak	51.03	-13.35	37.68	46.00	-8.32
500.450	Peak	47.19	-11.28	35.91	46.00	-10.09
624.610	Peak	45.84	-8.21	37.63	46.00	-8.37

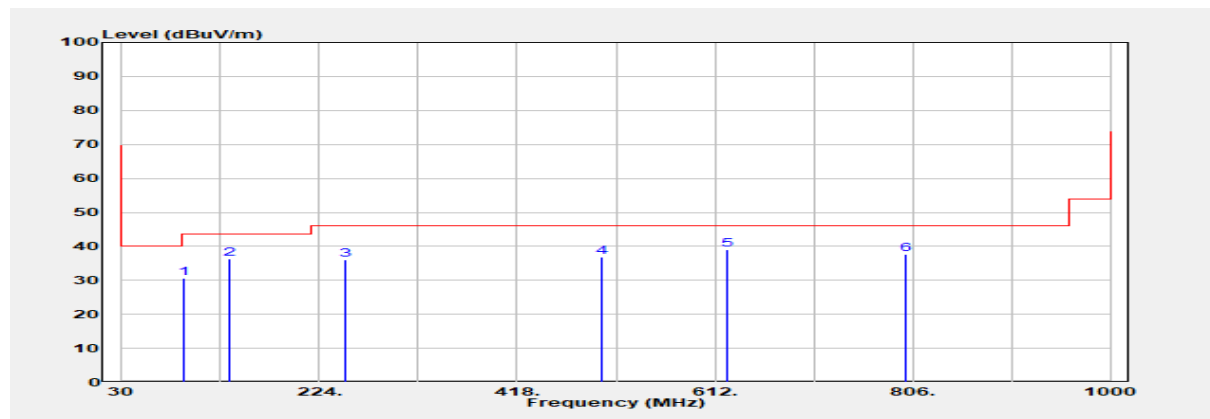
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Report Number :TERF2410002921E2
 Operation Mode :802.11a+BLE 125k
 Test Frequency :5720 MHz+2442 MHz
 Test Mode :Tx
 EUT Pol :E2 Plane

Test Site :SAC D
 Test Date :2024-11-14
 Temp./Humi. :22.3 °C/61%
 Antenna Pol. :Horizontal
 Engineer :Pony Chen



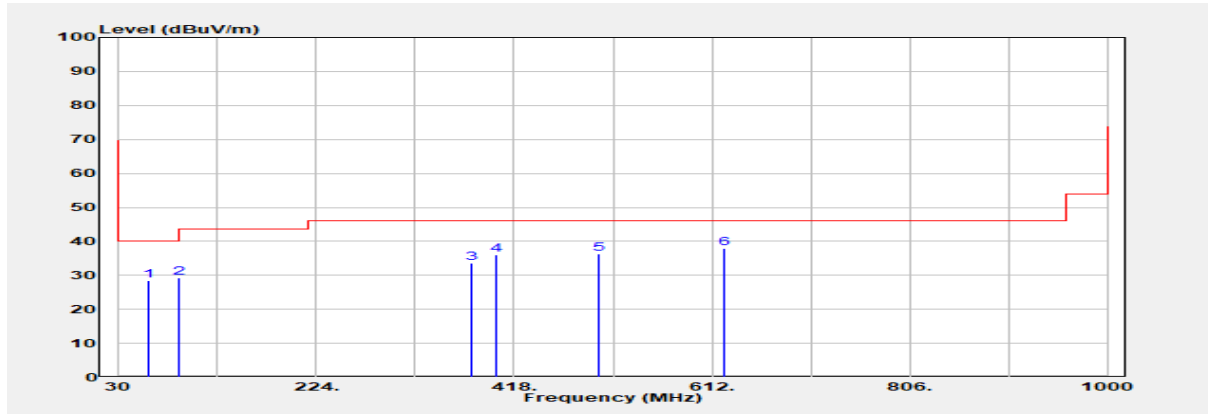
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
90.140	Peak	53.41	-22.67	30.74	43.50	-12.76
134.760	Peak	53.49	-17.19	36.30	43.50	-7.20
250.190	Peak	53.36	-17.21	36.15	46.00	-9.85
500.450	Peak	48.24	-11.28	36.96	46.00	-9.04
624.610	Peak	47.13	-8.21	38.93	46.00	-7.07
800.180	Peak	43.97	-6.28	37.69	46.00	-8.31

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



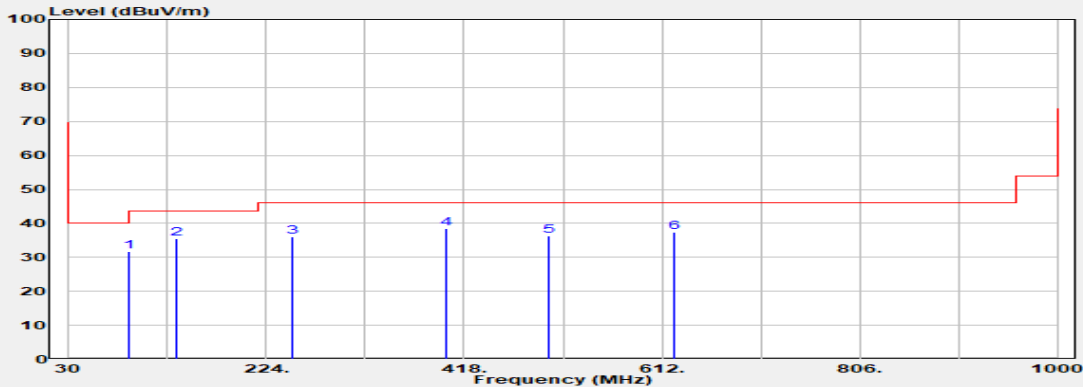
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
59.100	Peak	45.30	-16.96	28.35	40.00	-11.65
89.170	Peak	52.11	-22.76	29.35	43.50	-14.15
375.320	Peak	47.26	-13.63	33.63	46.00	-12.37
399.570	Peak	49.47	-13.35	36.12	46.00	-9.88
500.450	Peak	47.51	-11.28	36.23	46.00	-9.77
624.610	Peak	46.19	-8.21	37.99	46.00	-8.01

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4.
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Horizontal
Engineer :Pony Chen



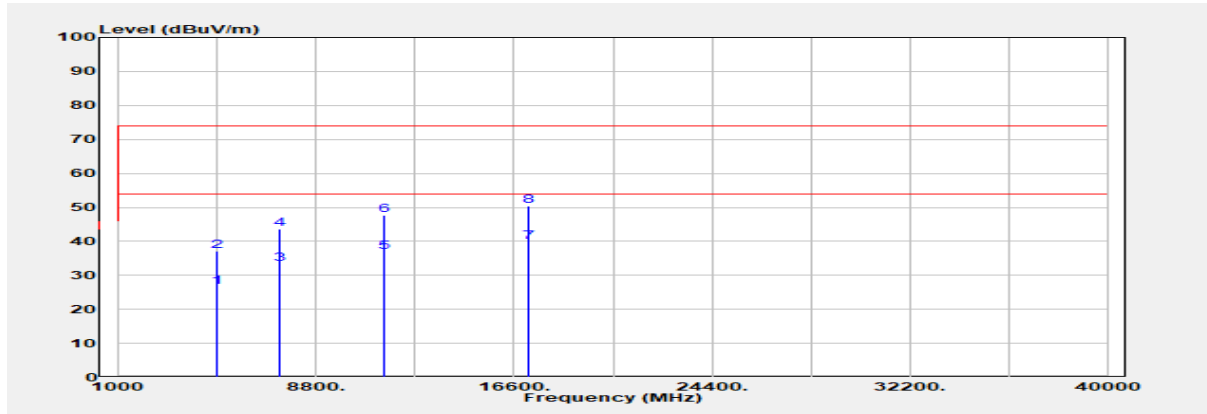
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
89.170	Peak	54.39	-22.76	31.63	43.50	-11.87
135.730	Peak	52.50	-17.10	35.40	43.50	-8.10
250.190	Peak	53.25	-17.21	36.04	46.00	-9.96
400.540	Peak	51.80	-13.33	38.47	46.00	-7.53
500.450	Peak	47.60	-11.28	36.32	46.00	-9.68
624.610	Peak	45.69	-8.21	37.48	46.00	-8.52

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Report Number :TERF2410002921E2
Operation Mode :802.11a+BLE 125k
Test Frequency :5720 MHz+2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



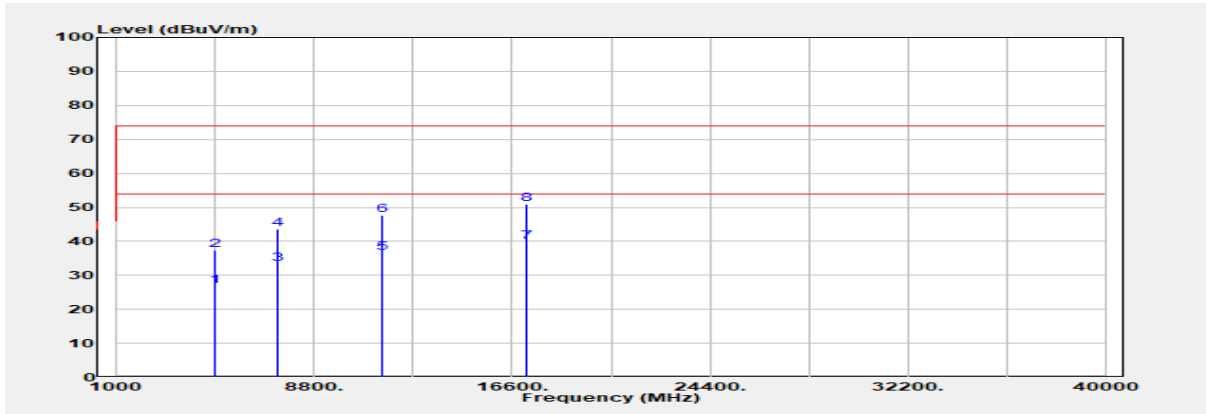
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
4884.000	Average	25.69	0.97	26.65	54.00	-27.35
4884.000	Peak	36.14	0.97	37.11	74.00	-36.89
7326.000	Average	24.60	8.72	33.33	54.00	-20.67
7326.000	Peak	34.79	8.72	43.51	74.00	-30.49
11440.000	Average	22.33	14.50	36.83	54.00	-17.17
11440.000	Peak	33.08	14.50	47.58	74.00	-26.42
17160.000	Average	21.21	18.68	39.89	54.00	-14.11
17160.000	Peak	31.78	18.68	50.45	74.00	-23.55

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Report Number :TERF2410002921E2
Operation Mode :802.11a+BLE 125k
Test Frequency :5720 MHz+2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Horizontal
Engineer :Pony Chen



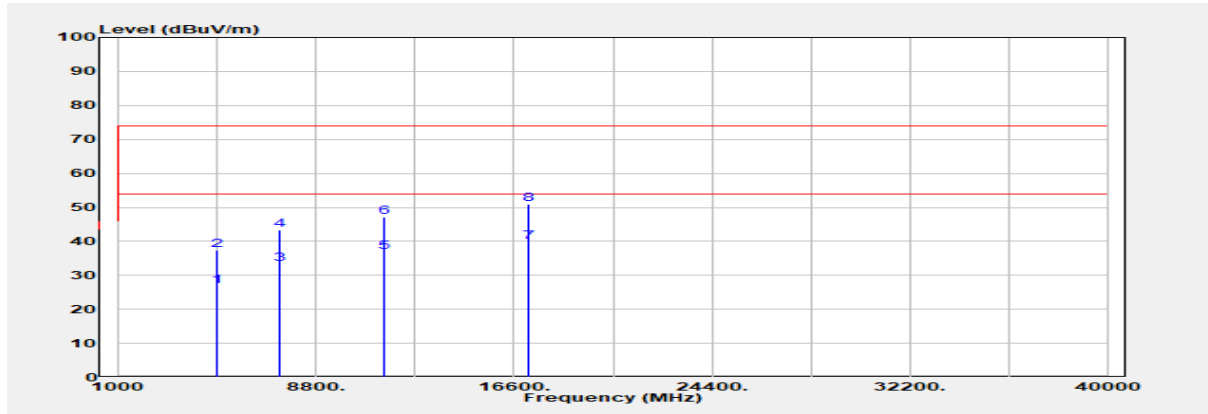
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
4884.000	Average	25.86	0.97	26.83	54.00	-27.17
4884.000	Peak	36.36	0.97	37.33	74.00	-36.67
7326.000	Average	24.48	8.72	33.20	54.00	-20.80
7326.000	Peak	34.95	8.72	43.67	74.00	-30.33
11440.000	Average	22.12	14.50	36.63	54.00	-17.37
11440.000	Peak	33.12	14.50	47.62	74.00	-26.38
17160.000	Average	21.29	18.68	39.97	54.00	-14.03
17160.000	Peak	32.26	18.68	50.93	74.00	-23.07

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4.
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



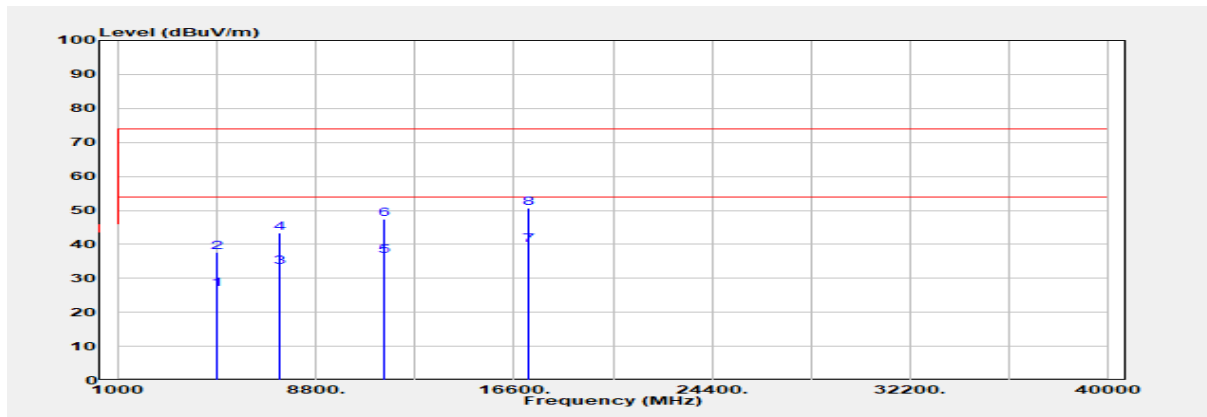
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
4880.000	Average	25.94	1.00	26.94	54.00	-27.06
4880.000	Peak	36.47	1.00	37.48	74.00	-36.52
7320.000	Average	24.61	8.76	33.37	54.00	-20.63
7320.000	Peak	34.73	8.76	43.49	74.00	-30.51
11440.000	Average	22.25	14.50	36.76	54.00	-17.24
11440.000	Peak	32.63	14.50	47.14	74.00	-26.86
17160.000	Average	21.26	18.68	39.93	54.00	-14.07
17160.000	Peak	32.17	18.68	50.85	74.00	-23.15

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Report Number :TERF2410002921E2
 Operation Mode :802.11a+IEEE 802.15.4.
 Test Frequency :5720 MHz+2440 MHz
 Test Mode :Tx
 EUT Pol :E2 Plane

Test Site :SAC D
 Test Date :2024-11-14
 Temp./Humi. :22.3 °C/61%
 Antenna Pol. :Horizontal
 Engineer :Pony Chen



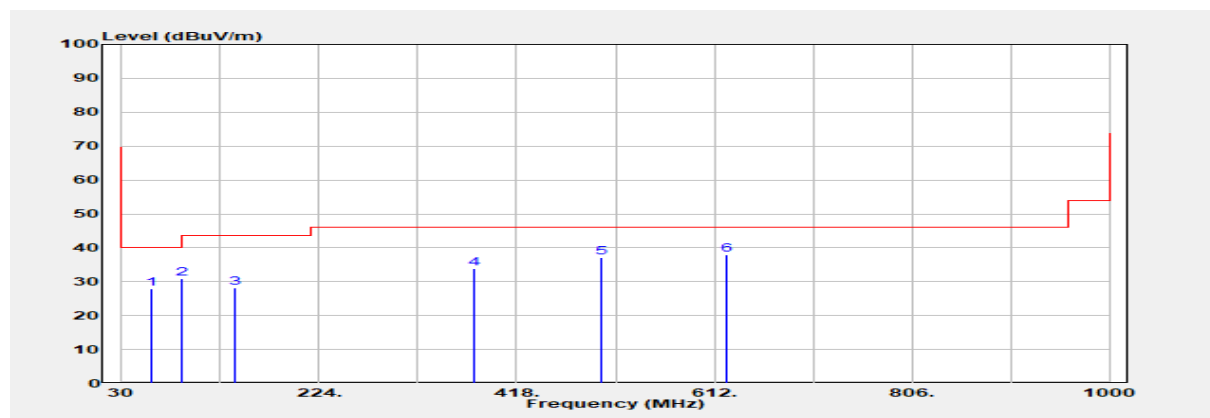
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
4880.000	Average	25.94	1.00	26.94	54.00	-27.06
4880.000	Peak	36.76	1.00	37.76	74.00	-36.24
7320.000	Average	24.49	8.76	33.25	54.00	-20.75
7320.000	Peak	34.60	8.76	43.36	74.00	-30.64
11440.000	Average	22.19	14.50	36.69	54.00	-17.31
11440.000	Peak	32.80	14.50	47.31	74.00	-26.69
17160.000	Average	21.27	18.68	39.94	54.00	-14.06
17160.000	Peak	32.05	18.68	50.72	74.00	-23.28

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Report Number :TERF2410002921E2
Operation Mode :802.11a+BLE 125k
Test Frequency :5720 MHz+2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



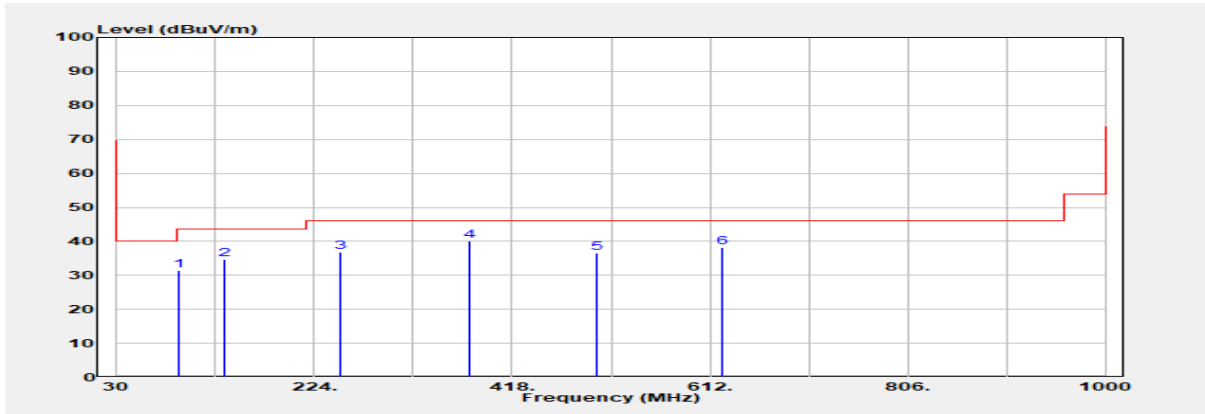
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
59.100	Peak	44.95	-16.96	27.99	40.00	-12.01
89.170	Peak	53.59	-22.76	30.83	43.50	-12.67
140.580	Peak	45.00	-16.91	28.10	43.50	-15.40
375.320	Peak	47.41	-13.63	33.78	46.00	-12.22
500.450	Peak	48.29	-11.28	37.01	46.00	-8.99
624.610	Peak	46.08	-8.21	37.88	46.00	-8.12

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Report Number :TERF2410002921E2
Operation Mode :802.11a+BLE 125k
Test Frequency :5720 MHz+2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Horizontal
Engineer :Pony Chen



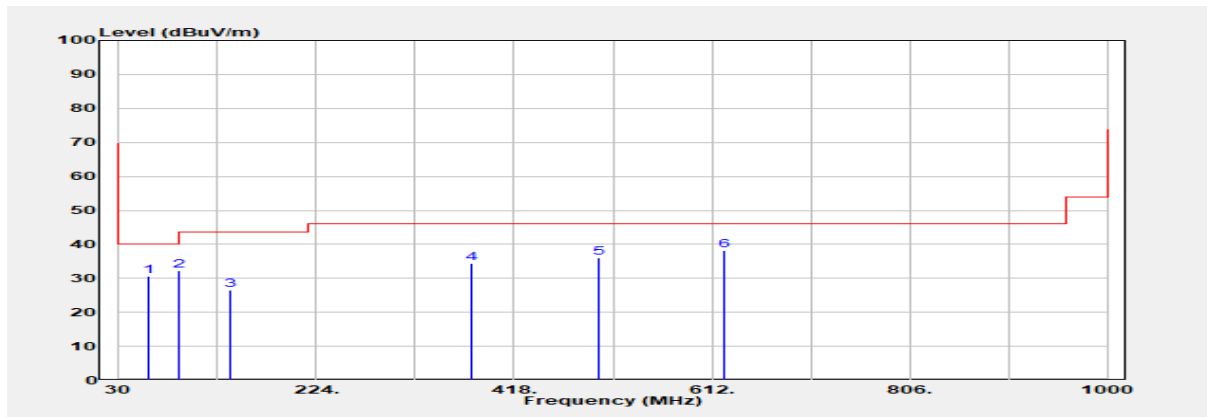
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
90.140	Peak	54.15	-22.67	31.48	43.50	-12.02
135.730	Peak	51.86	-17.10	34.75	43.50	-8.75
250.190	Peak	54.02	-17.21	36.81	46.00	-9.19
375.320	Peak	53.86	-13.63	40.23	46.00	-5.77
500.450	Peak	47.84	-11.28	36.56	46.00	-9.44
624.610	Peak	46.53	-8.21	38.32	46.00	-7.68

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4.
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



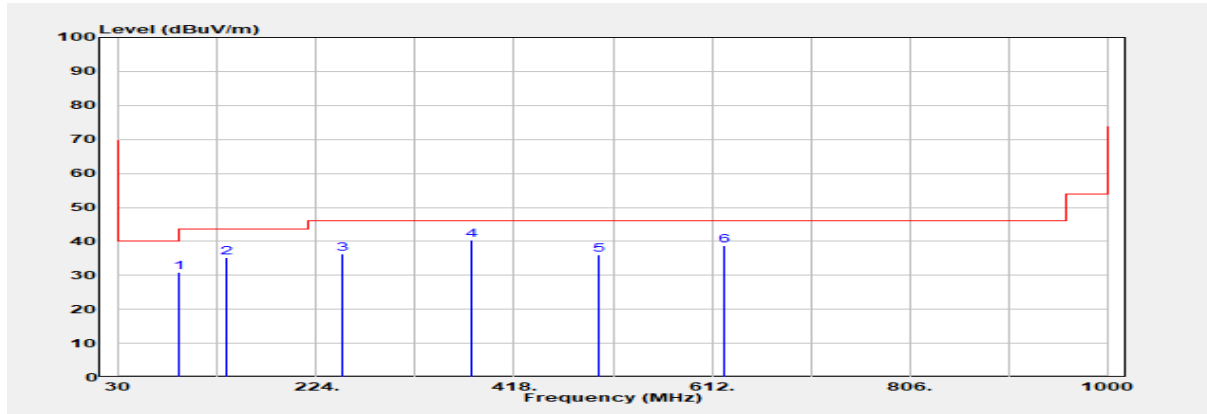
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
59.100	Peak	47.50	-16.96	30.54	40.00	-9.46
89.170	Peak	54.97	-22.76	32.22	43.50	-11.28
139.610	Peak	43.60	-16.93	26.67	43.50	-16.83
375.320	Peak	48.01	-13.63	34.38	46.00	-11.62
500.450	Peak	47.30	-11.28	36.02	46.00	-9.98
624.610	Peak	46.51	-8.21	38.31	46.00	-7.69

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4.
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Horizontal
Engineer :Pony Chen



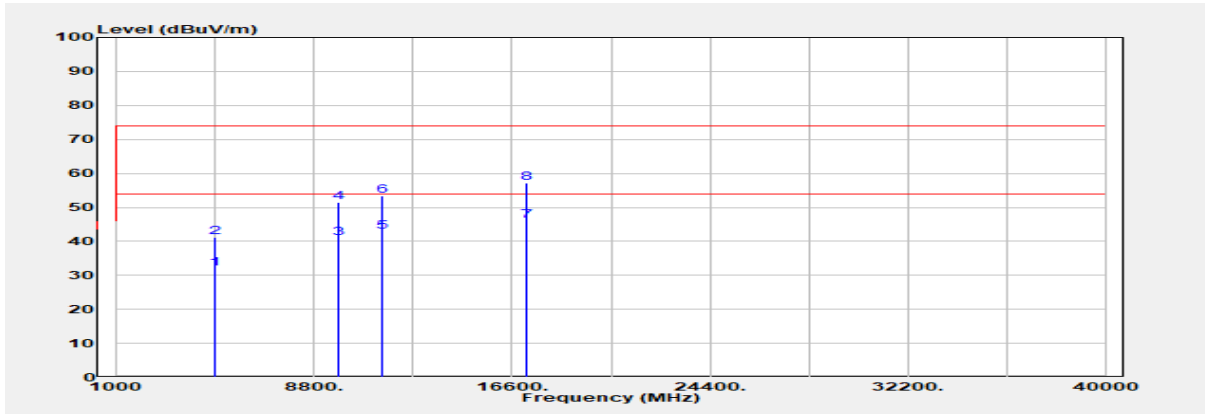
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
88.200	Peak	53.61	-22.72	30.89	43.50	-12.61
134.760	Peak	52.45	-17.19	35.27	43.50	-8.23
250.190	Peak	53.59	-17.21	36.37	46.00	-9.63
375.320	Peak	53.95	-13.63	40.32	46.00	-5.68
500.450	Peak	47.45	-11.28	36.17	46.00	-9.83
624.610	Peak	46.92	-8.21	38.71	46.00	-7.29

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Report Number :TERF2410002921E2
Operation Mode :802.11a+BLE 125k
Test Frequency :5720 MHz+2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



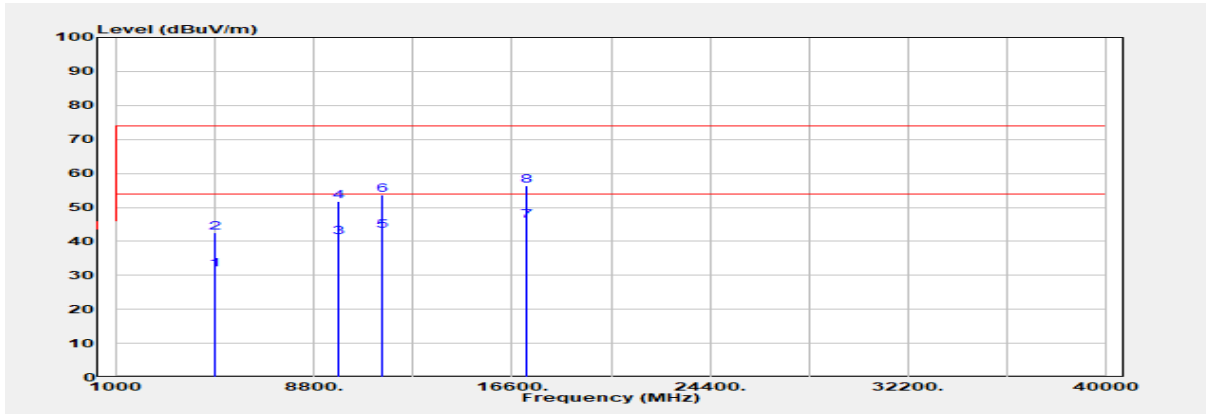
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
4884.000	Average	30.90	0.97	31.87	54.00	-22.13
4884.000	Peak	40.34	0.97	41.31	74.00	-32.69
9768.000	Average	28.13	12.90	41.03	54.00	-12.97
9768.000	Peak	38.60	12.90	51.50	74.00	-22.50
11440.000	Average	28.23	14.50	42.74	54.00	-11.26
11440.000	Peak	38.91	14.50	53.41	74.00	-20.59
17160.000	Average	27.37	18.68	46.05	54.00	-7.95
17160.000	Peak	38.62	18.68	57.30	74.00	-16.70

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Report Number :TERF2410002921E2
Operation Mode :802.11a+BLE 125k
Test Frequency :5720 MHz+2442 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Horizontal
Engineer :Pony Chen



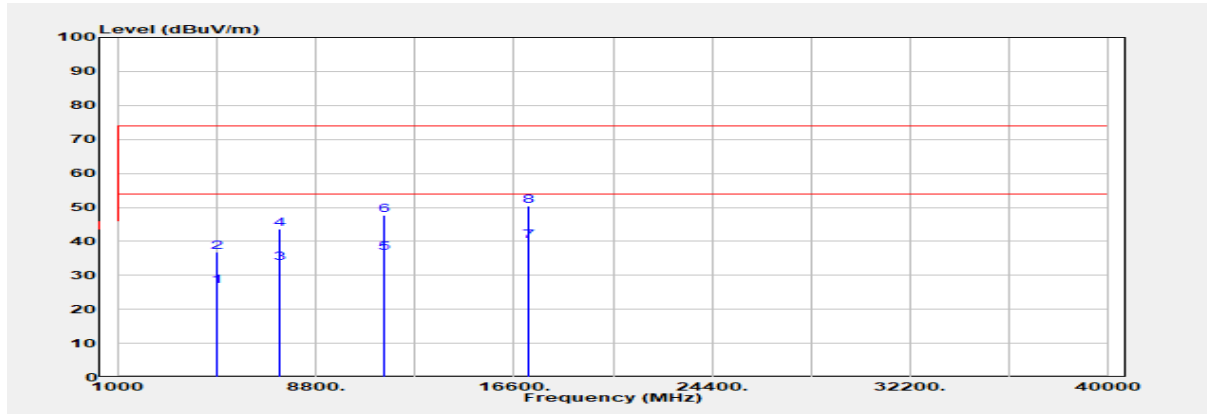
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
4884.000	Average	30.77	0.97	31.74	54.00	-22.26
4884.000	Peak	41.64	0.97	42.61	74.00	-31.39
9768.000	Average	28.34	12.90	41.24	54.00	-12.76
9768.000	Peak	38.92	12.90	51.82	74.00	-22.18
11440.000	Average	28.47	14.50	42.97	54.00	-11.03
11440.000	Peak	39.05	14.50	53.55	74.00	-20.45
17160.000	Average	27.45	18.68	46.13	54.00	-7.87
17160.000	Peak	37.58	18.68	56.25	74.00	-17.75

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4.
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Vertical
Engineer :Pony Chen



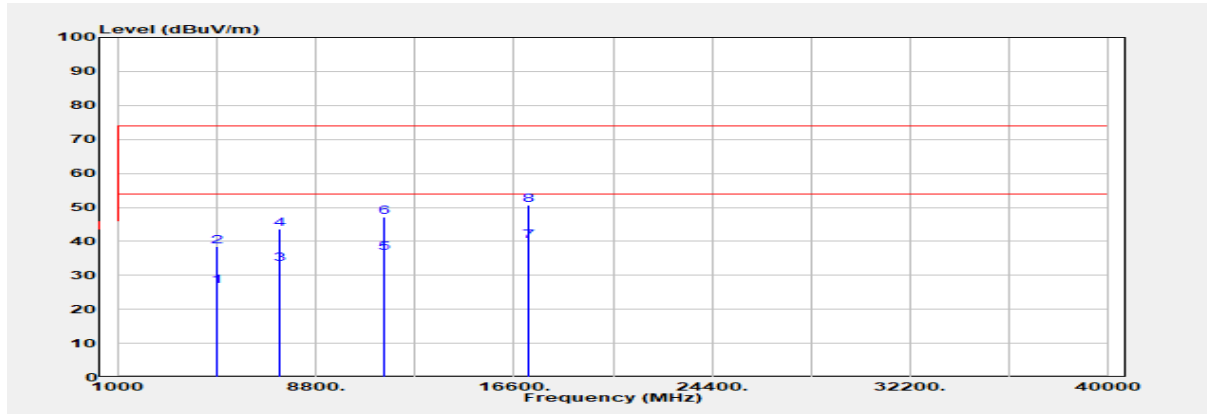
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
4880.000	Average	25.80	1.00	26.80	54.00	-27.20
4880.000	Peak	35.80	1.00	36.80	74.00	-37.20
7320.000	Average	24.72	8.76	33.48	54.00	-20.52
7320.000	Peak	34.80	8.76	43.56	74.00	-30.44
11440.000	Average	22.20	14.50	36.71	54.00	-17.29
11440.000	Peak	33.11	14.50	47.62	74.00	-26.38
17160.000	Average	21.33	18.68	40.01	54.00	-13.99
17160.000	Peak	31.82	18.68	50.50	74.00	-23.50

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Report Number :TERF2410002921E2
Operation Mode :802.11a+IEEE 802.15.4.
Test Frequency :5720 MHz+2440 MHz
Test Mode :Tx
EUT Pol :E2 Plane

Test Site :SAC D
Test Date :2024-11-14
Temp./Humi. :22.3 °C/61%
Antenna Pol. :Horizontal
Engineer :Pony Chen



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
4880.000	Average	25.77	1.00	26.77	54.00	-27.23
4880.000	Peak	37.39	1.00	38.40	74.00	-35.60
7320.000	Average	24.62	8.76	33.37	54.00	-20.63
7320.000	Peak	34.95	8.76	43.71	74.00	-30.29
11440.000	Average	22.15	14.50	36.66	54.00	-17.34
11440.000	Peak	32.65	14.50	47.16	74.00	-26.84
17160.000	Average	21.40	18.68	40.07	54.00	-13.93
17160.000	Peak	31.93	18.68	50.61	74.00	-23.39

~ End of Report ~

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