RF MEASUREMENT REPORT

FCC ID:	2AUBBFL30F
Applicant:	China Starwin Science & Technology Co., Ltd
Product:	Flat Panel Integrated Satellite Communication Terminal
Model No.:	FL30F-M
Trademark:	StarWin
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part15 Subpart C (Section 15.247)
Test Date:	August 30 ~ December 02, 2021

Reviewed By: Jame Yuan

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.
The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2112RSU001-U1	Rev. 01	Initial Report	12-30-2021	Valid

Note: This report was based on original report no. 2108RSU028-U1 (FCC ID: 2AUBBFL30P). The applicant has changed satellite operating frequency via software, all hardware is same, so all Bluetooth test data are same.

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1. General Information

1.1. Applicant

China Starwin Science & Technology Co., Ltd

Floor 3th, Building B, No. 2 Keyuannan 2nd Road, High-tech Zone, Chengdu, China

1.2. Manufacturer

China Starwin Science & Technology Co., Ltd

Floor 3th, Building B, No. 2 Keyuannan 2nd Road, High-tech Zone, Chengdu, China

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou – Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China **Laboratory Location (Suzhou – SIP)** 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: L3261-190725				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Flat Panel Integrated Satellite Communication Terminal
Model No.	FL30F-M
Hardware Version	XY-PB-FL30-202111
Software Version	XY-PB-FL30-V2.02
Wi-Fi Specification	802.11b/g/n
Bluetooth Version	v4.2 single mode, BLE only
Satellite Specification	Transmit: 14.00~14.50GHz Receive: 10.70~12.75GHz
GNSS Specification	GPS, BDS
Operating Temperature	-25 ~ 50 °C
Power Type	AC/DC Adapter
Antenna Information	Refer to section 1.5
Accessories	
AC/DC Adapter	Model: GST160A24 Input: 100-240VAC, 50/60Hz, 2.0A Output: 24VDC, 6.67A, 160W MAX
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification

Frequency Range	2402 ~ 2480MHz
Channel Number	40
Data Rate	Up to 2Mbps
Type of Modulation	GFSK
Channel Spacing	2MHz
Antenna Type	PCB Antenna
Antenna Gain	1.5dBi

Note: For other features of this EUT, test report will be issued separately.

1.6. Working Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz
03	2408 MHz	04	2410 MHz	05	2412 MHz
06	2414 MHz	07	2416 MHz	08	2418 MHz
09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz
15	2432 MHz	16	2434 MHz	17	2436 MHz
18	2438 MHz	19	2440 MHz	20	2442 MHz
21	2444 MHz	22	2446 MHz	23	2448 MHz
24	2450 MHz	25	2452 MHz	26	2454 MHz
27	2456 MHz	28	2458 MHz	29	2460 MHz
30	2462 MHz	31	2464 MHz	32	2466 MHz
33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz
39	2480 MHz	--	--	--	--

2. Test Configuration

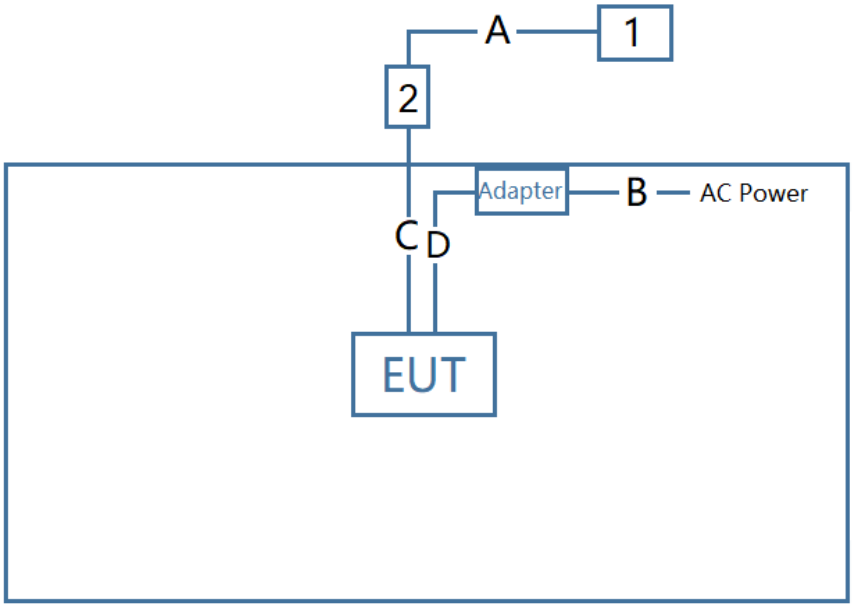
2.1. Test Mode

Mode 1: Transmit by BLE-1Mbps
Mode 2: Transmit by BLE-2Mbps

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.

Connection Diagram



Cable Type		Cable Description
A	USB Cable	Shielded, <2.0m
B	Power Cable	Non-Shielded, <3.0m
C	Serial Cable	Shielded, <2.0m
D	Power Cable	Non-Shielded, <3.0m

Product		Manufacturer	Model No.
1	Notebook	DELL	P62G
2	CC Debug	NA	NA

Note 1: The test utility software used during testing was “SmartRF_Studio”, and the version was “v2.6.0”

Note 2: Power setting refer to operation description.

2.3. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.247
- KDB 558074 D01v05r02
- ANSI C63.10-2013

2.4. Test Environment Condition

Ambient Temp.	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. Antenna Requirement

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antenna of the device is **permanently attached.**
- There are no provisions for connection to an external antenna.

Conclusion:

The unit complies with the requirement of §15.203.

4. Test Equipment Calibration Date

No.	Instrument	Manufacturer	Model No.	Asset No.	Last Cali. Date	Cali. Due Date	Test Site
1	EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2022/1/4	WZ-AC1
2	Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2022/9/16	WZ-AC1
3	Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2022/11/12	WZ-AC1
4	TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2022/8/5	WZ-AC1
5	Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2022/4/29	WZ-AC1
6	Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2022/6/28	WZ-AC1
7	Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2022/1/6	WZ-AC1
8	Thermohygrometer	testo	Testo 608-H1	MRTSUE11039	1 year	2022/11/11	WZ-AC1
9	Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2022/10/28	WZ-AC1/WZ-AC2
10	Horn Antenna	ETS	3117	MRTSUE06257	1 year	2022/9/25	WZ-AC1/WZ-AC2
11	Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2021/12/14	WZ-AC1/WZ-AC2
12	TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2022/5/24	WZ-AC2
13	EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2022/6/24	WZ-AC2
14	Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2021/12/8	WZ-AC2
15	Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2022/10/21	WZ-AC2
16	Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2022/11/12	WZ-AC2
17	Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2022/4/29	WZ-AC2
18	Thermohygrometer	testo	Testo 608-H1	MRTSUE11038	1 year	2022/11/11	WZ-AC2
19	Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2022/6/8	WZ-SR2
20	Shielding Room	MIX-BEP	WZ-SR2	MRTSUE06215	/	/	WZ-SR2
21	Thermohygrometer	testo	608-H1	MRTSUE06404	1 year	2022/6/28	WZ-SR2
22	Four-Line V-Network	R&S	ENV432	MRTSUE06615	1 year	2022/10/10	WZ-SR2
23	EMI Test Receiver	R&S	ESR3	MRTSUE06909	1 year	2022/11/1	WZ-SR2
24	USB Power Sensor	Agilent	U2021XA	MRTSUE06030	1 year	2022/10/10	WZ-SR3/WZ-SR5
25	Signal Generator	R&S	SMU200A	MRTSUE06490	1 year	2022/2/23	WZ-SR4/WZ-SR5/ WZ-SR6
26	Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2022/4/13	WZ-SR5
27	Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2022/6/28	WZ-SR5
28	Shielding Room	HUAMING	WZ-SR5	MRTSUE06442	/	/	WZ-SR5
29	Signal Analyzer	Keysight	N9010B	MRTSUE06457	1 year	2022/6/24	WZ-SR5

Software	Version	Function
EMI Software	V3	EMI Test Software

5. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Conducted Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Disturbance
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): Horizontal: 30MHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~40GHz: 6.40dB Vertical: 30MHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.78dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.13dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.15dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.28%

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.247(a)(2)	6dB Bandwidth	Conducted	Pass
15.247(b)(3)	Output Power		Pass
15.247(e)	Power Spectral Dendity		Pass
15.247(d)	Band Edge / Out- of-Band Emissions		Pass
15.205, 15.209	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

Remark:

The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.

6.2. 6dB Bandwidth

6.2.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

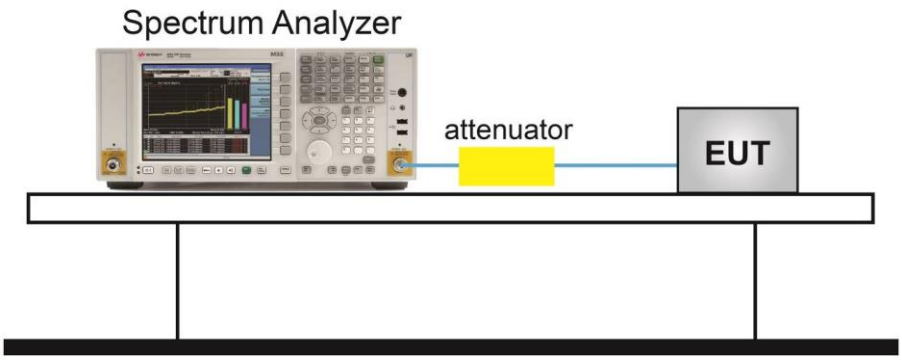
6.2.2. Test Procedure used

ANSI C63.10-2013 - Section 11.8 (6dB bandwidth)

6.2.3. Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. VBW ≥ 3 × RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace was allowed to stabilize

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.

6.3. Output Power

6.3.1. Test Limit

The maximum out power shall be less 1 Watt (30dBm).

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.3.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.9.1.3 PKPM1 Peak-reading power meter method

ANSI C63.10-2013 - Section 11.9.2.3.2 Method AVGPM-G

6.3.3. Test Setting

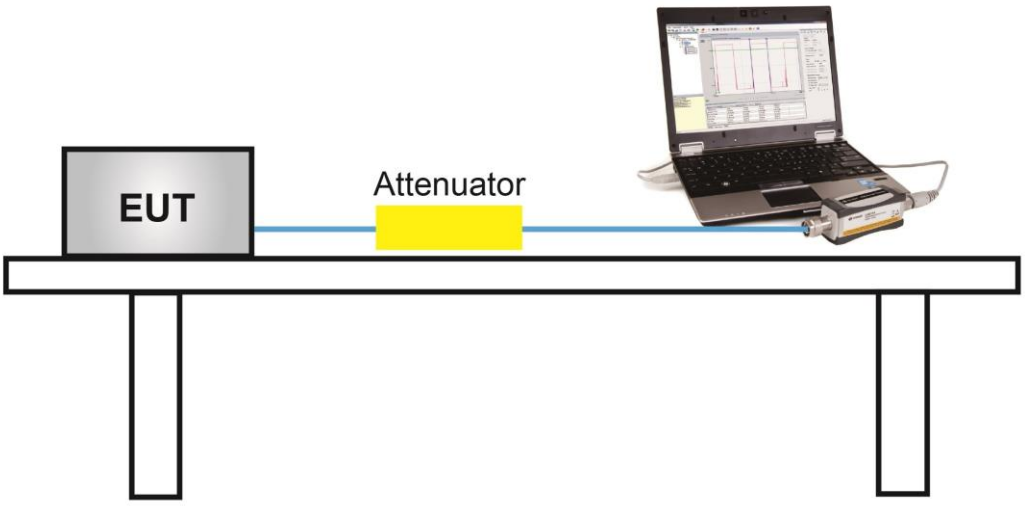
Method PKPM1 (Peak power measurement)

Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

Method AVGPM-G (Measurement using a gated RF average-reading power meter)

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.

6.4. Power Spectral Density

6.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

The same method of determining the conducted output power shall be used to determine the power spectral density.

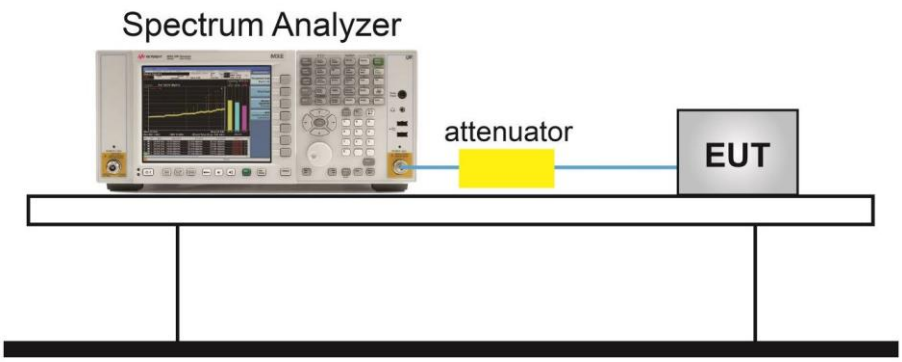
6.4.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.10.2.

6.4.3. Test Setting

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3kHz
4. VBW = 10kHz
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Trace was allowed to stabilize

6.4.4. Test Setup



6.4.5.Test Result

Refer to Appendix A.

6.5. Conducted Band Edge and Out-of-Band Emissions

6.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

6.5.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.11.2 & 11.11.3.

6.5.3. Test Setting

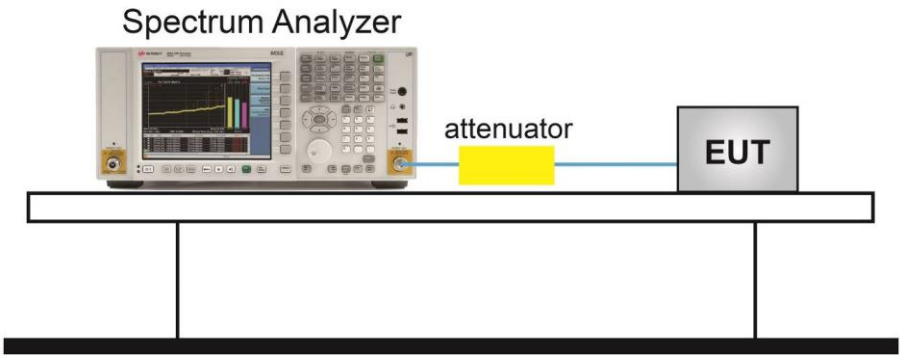
Reference level measurement

1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW ≥ 3 x RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100KHz
3. VBW = 300KHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

6.5.4. Test Setup



6.5.5. Test Result

Refer to Appendix A.

6.6. Radiated Spurious Emission

6.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured 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

6.6.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.11 & 11.12

ANSI C63.10-2013 Section 6.3 (General Requirements)

ANSI C63.10-2013 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10-2013 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10-2013 Section 6.6 (Standard test method above 1GHz)

6.6.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. Span was set greater than 1MHz

3. RBW = as specified in Table 1

4. Detector = CISPR quasi-peak

5. Sweep time = auto couple

6. Trace was allowed to stabilize

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW = 3MHz

4. Detector = peak

5. Sweep time = auto couple

6. Trace mode = max hold

7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.

4. Detector = Peak

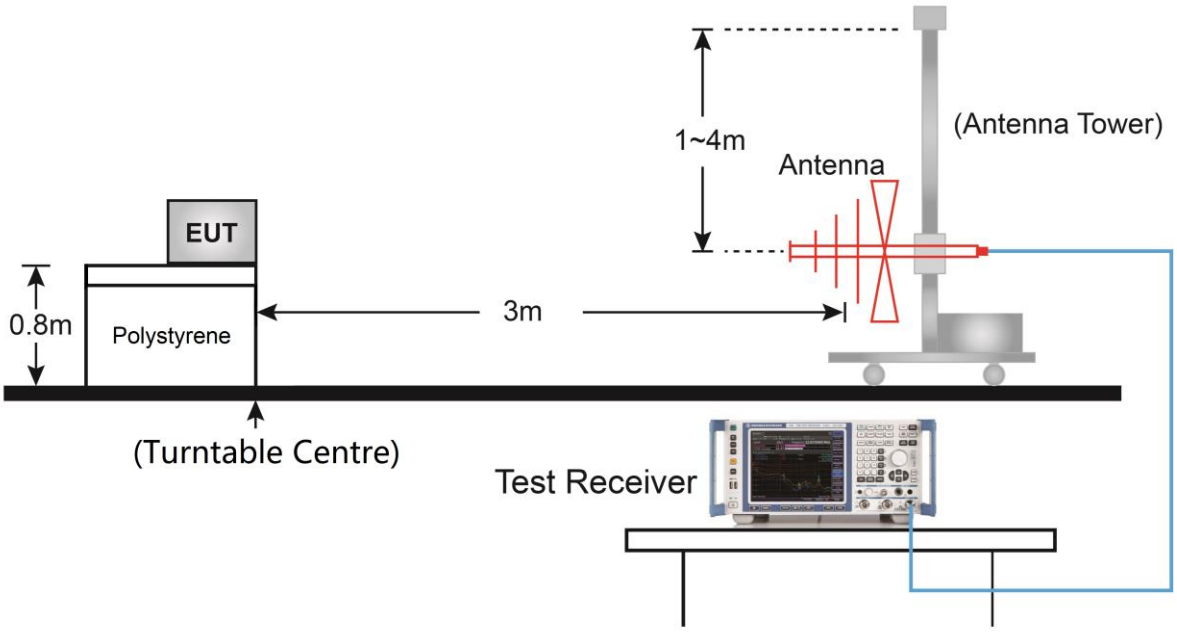
5. Sweep time = auto

6. Trace mode = max hold

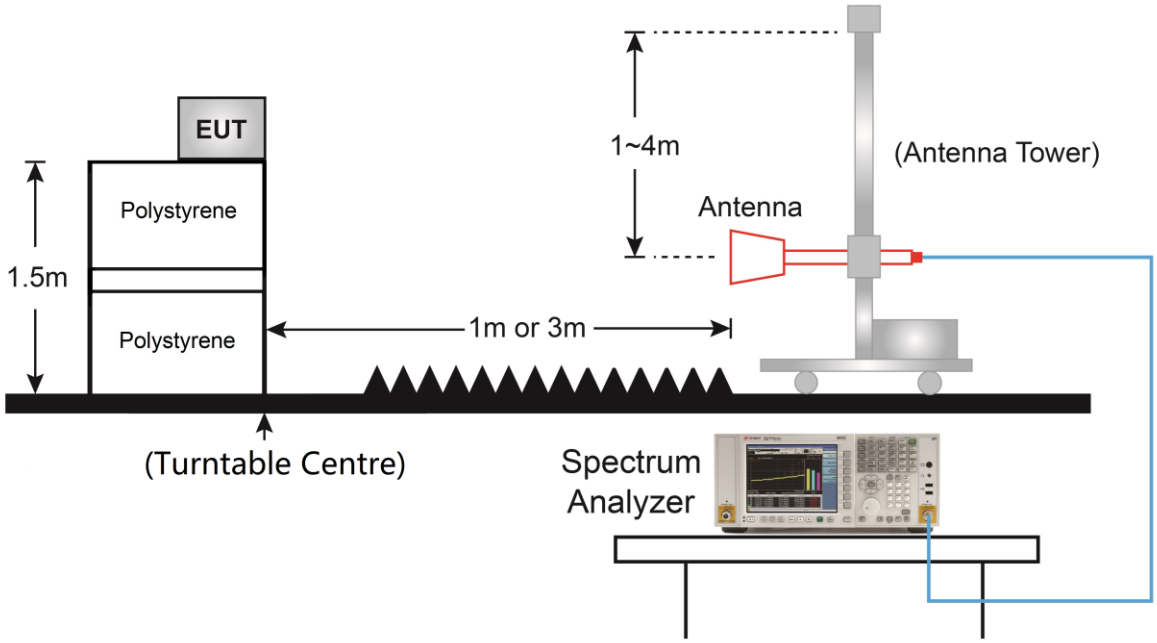
7. Trace was allowed to stabilize

6.6.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.6.5. Test Result

Refer to Appendix A.

6.7. Radiated Restricted Band Edge

6.7.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

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

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency [MHz]	Field Strength [μV/m]	Measured 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

6.7.2. Test Procedure Used

ANSI C63.10-2013 Section 6.3 (General Requirements)

ANSI C63.10-2013 Section 6.6 (Standard test method above 1GHz)

6.7.3. Test Setting

Peak Field Strength Measurements

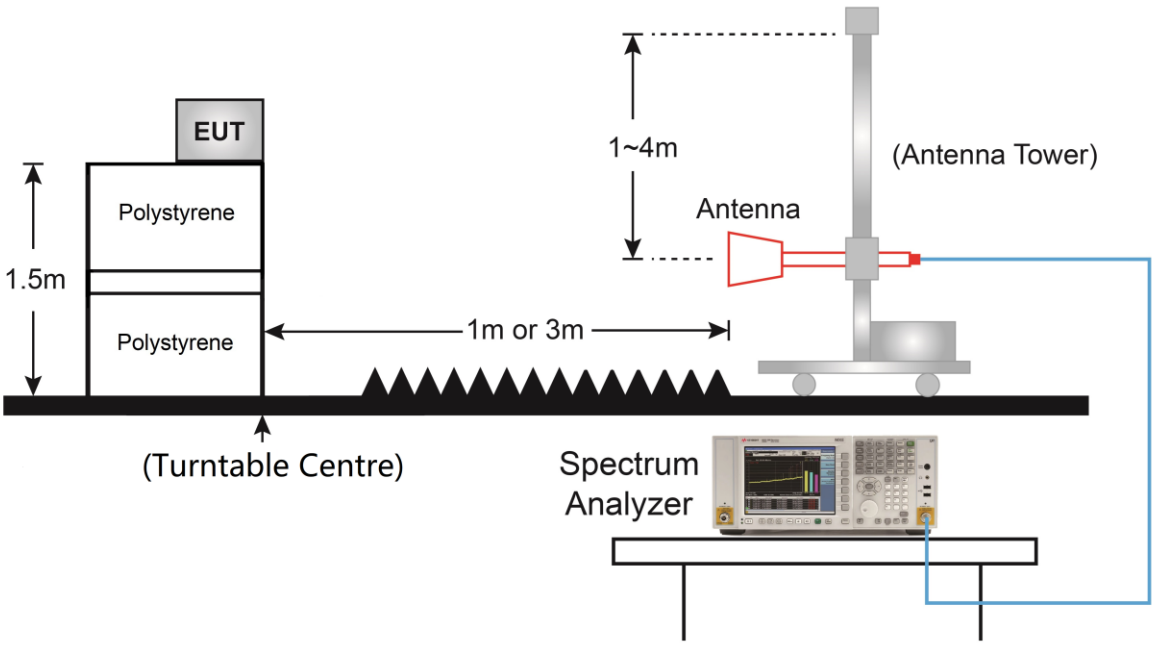
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

   If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

6.7.4. Test Setup



6.7.5. Test Result

Refer to Appendix A.

6.8. AC Conducted Emissions

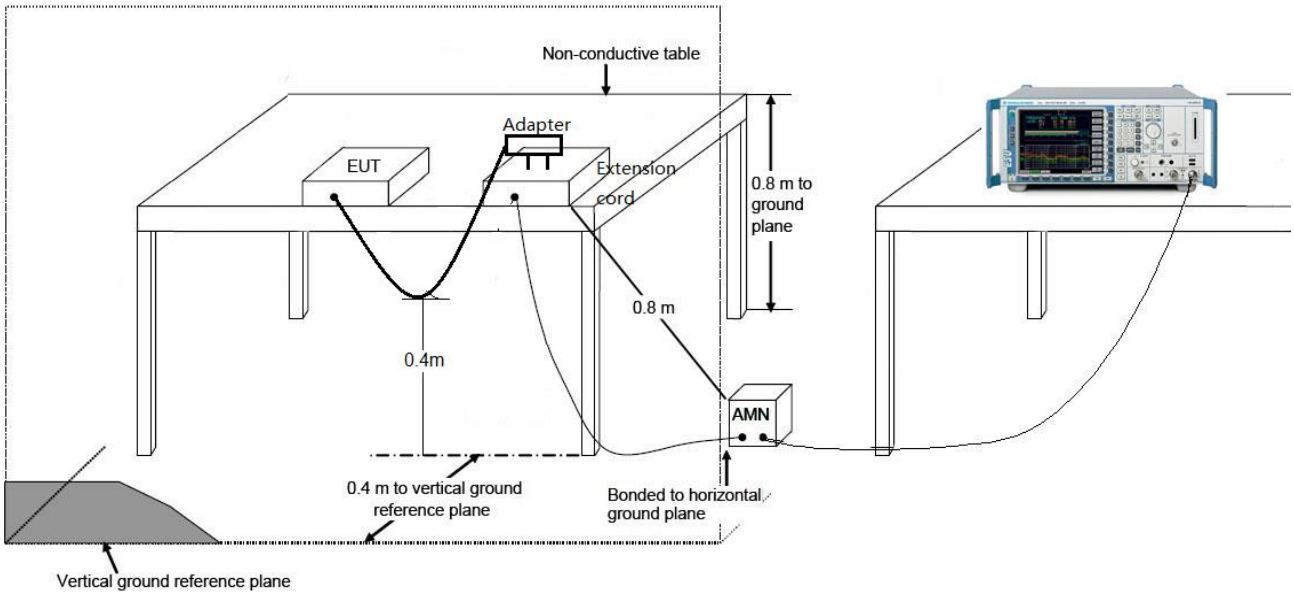
6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.8.2. Test Setup



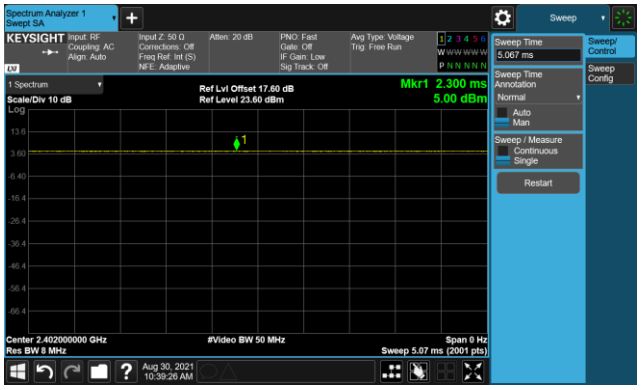
6.8.3. Test Result

Refer to Appendix A.

Appendix A - Test Result

A.1 Duty Cycle Test Result

Test Mode	Duty Cycle
BLE-1Mbps	100%
BLE-2Mbps	100%

Duty Cycle	
BLE-1Mbps	BLE-2Mbps
	

A.2 6dB Bandwidth Test Result

Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2021/08/30		

Test Mode	Data Rate	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
BLE	1Mbps	00	2402	0.710	≥ 0.5
BLE	1Mbps	19	2440	0.720	≥ 0.5
BLE	1Mbps	39	2480	0.735	≥ 0.5
BLE	2Mbps	00	2402	1.341	≥ 0.5
BLE	2Mbps	19	2440	1.484	≥ 0.5
BLE	2Mbps	39	2480	1.435	≥ 0.5

BLE-1Mbps 6dB Bandwidth

Channel 00 (2402MHz)

Channel 19 (2440MHz)

Channel 39 (2480MHz)

BLE-2Mbps 6dB Bandwidth	
Channel 00 (2402MHz)	Channel 19 (2440MHz)
Channel 39 (2480MHz)	

A.3 Output Power Test Result

Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2021/09/26		

Test Result of Peak Output Power

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
BLE	1Mbps	00	2402	5.00	≤ 30.00	Pass
BLE	1Mbps	19	2440	4.91	≤ 30.00	Pass
BLE	1Mbps	39	2480	4.77	≤ 30.00	Pass
BLE	2Mbps	00	2402	5.03	≤ 30.00	Pass
BLE	2Mbps	19	2440	4.89	≤ 30.00	Pass
BLE	2Mbps	39	2480	4.79	≤ 30.00	Pass

Test Result of Average Output Power (Reporting Only)

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Average Power (dBm)	Limit (dBm)	Result
BLE	1Mbps	00	2402	4.62	≤ 30.00	Pass
BLE	1Mbps	19	2440	4.56	≤ 30.00	Pass
BLE	1Mbps	39	2480	4.43	≤ 30.00	Pass
BLE	2Mbps	00	2402	4.71	≤ 30.00	Pass
BLE	2Mbps	19	2440	4.56	≤ 30.00	Pass
BLE	2Mbps	39	2480	4.43	≤ 30.00	Pass

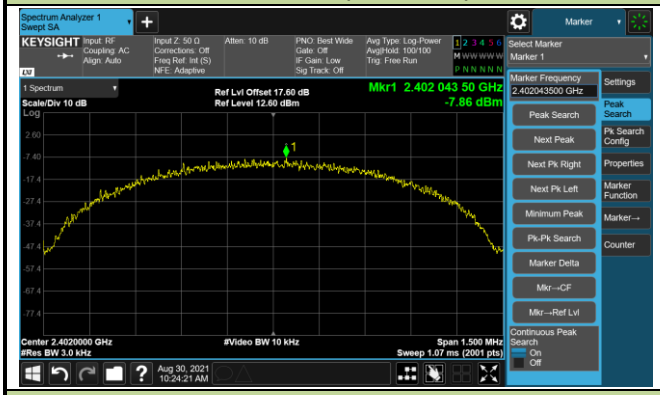
A.4 Power Spectral Density Test Result

Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2021/08/30		

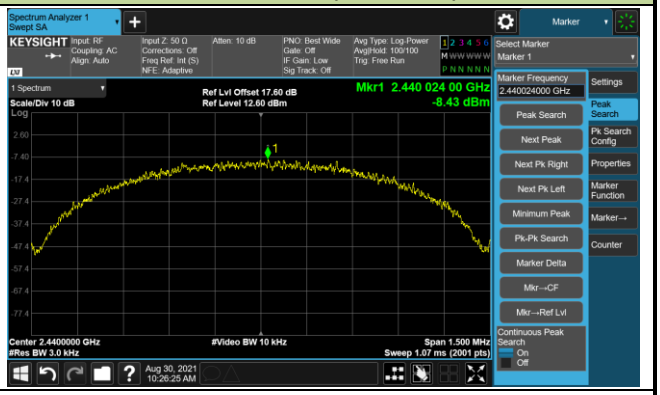
Test Mode	Data Rate	Channel No.	Frequency (MHz)	PSD Result (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE	1Mbps	00	2402	-7.86	≤ 8.00	Pass
BLE	1Mbps	19	2440	-8.43	≤ 8.00	Pass
BLE	1Mbps	39	2480	-7.94	≤ 8.00	Pass
BLE	2Mbps	00	2402	-10.39	≤ 8.00	Pass
BLE	2Mbps	19	2440	-10.50	≤ 8.00	Pass
BLE	2Mbps	39	2480	-11.15	≤ 8.00	Pass

BLE-1Mbps PSD

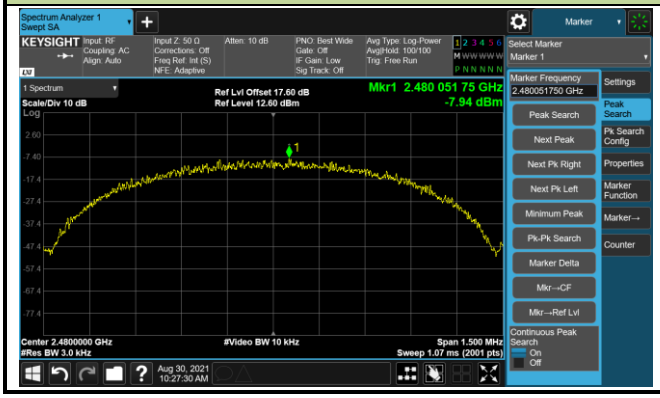
Channel 00 (2402MHz)

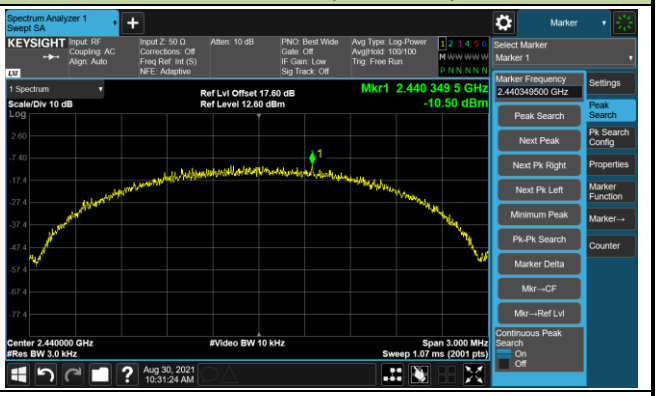
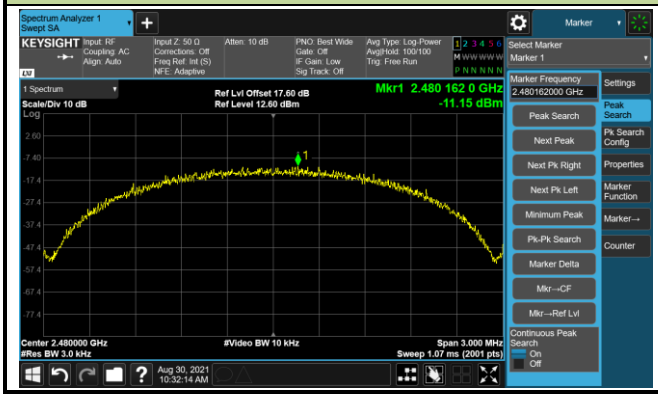


Channel 19 (2440MHz)



Channel 39 (2480MHz)

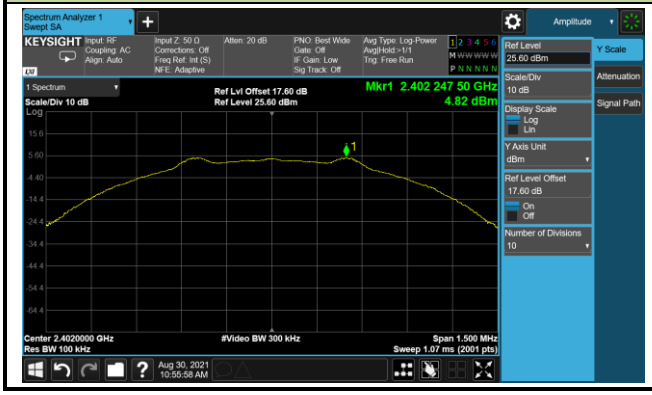


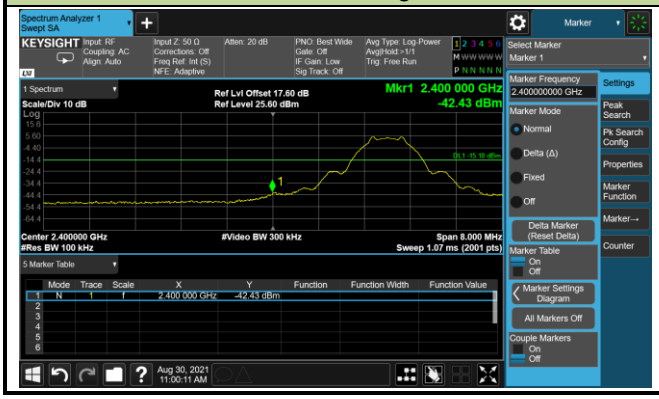
BLE-2Mbps PSD	
Channel 00 (2402MHz)	Channel 19 (2440MHz)
	
Channel 39 (2480MHz)	
	

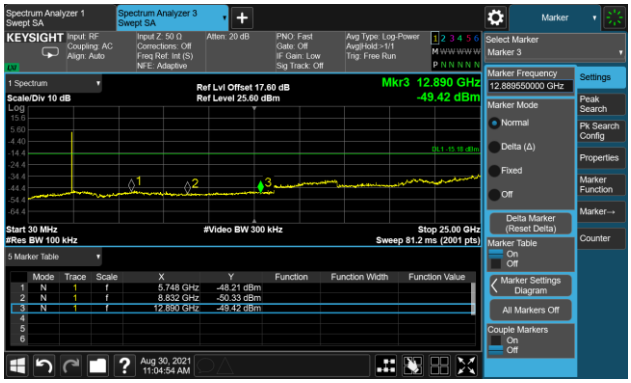
A.5 Conducted Band Edge and Out-of-Band Emissions Test Result

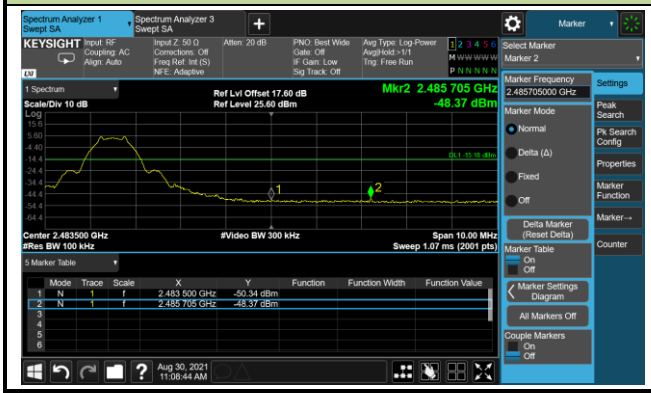
Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2021/08/30		

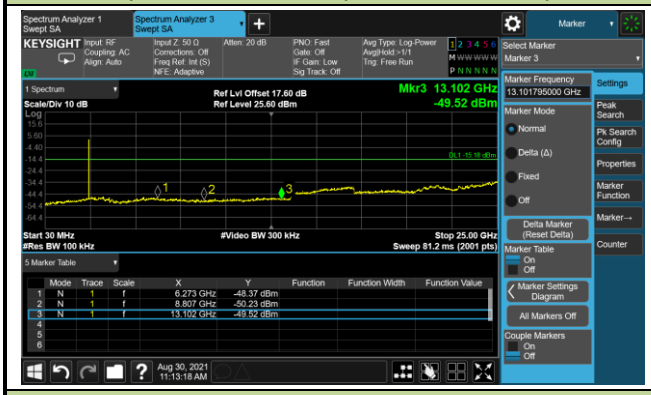
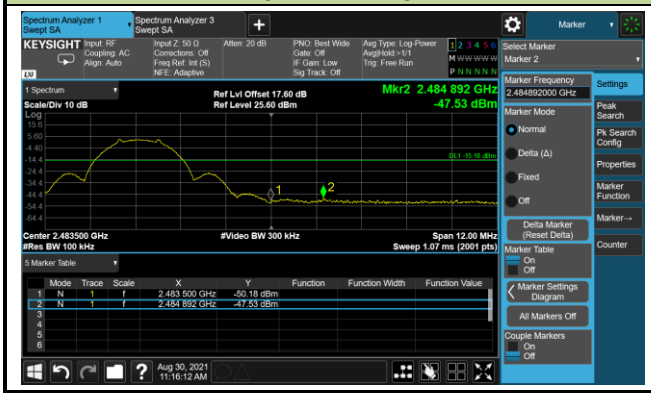
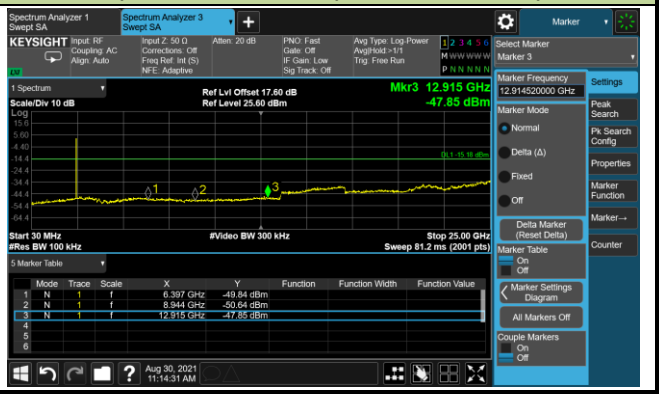
Test Mode	Data Rate	Channel No.	Frequency (MHz)	Limit (dBc)	Result
BLE	1Mbps	00	2402	20	Pass
BLE	1Mbps	19	2440	20	Pass
BLE	1Mbps	39	2480	20	Pass
BLE	2Mbps	00	2402	20	Pass
BLE	2Mbps	19	2440	20	Pass
BLE	2Mbps	39	2480	20	Pass

Reference Level	
	

BLE-1Mbps Out-of-Band Emissions	
Channel 00 (2402MHz)	
Low Band Edge	Spurious Emission (30MHz ~ 25GHz)
	

Channel 19 (2440MHz)	
Spurious Emission (30MHz ~ 25GHz)	
	

Channel 39 (2480MHz)	
High Band Edge	Spurious Emission (30MHz ~ 25GHz)
	

BLE-2Mbps Out-of-Band Emissions	
Channel 00 (2402MHz)	
Low Band Edge	Spurious Emission (30MHz ~ 25GHz)
Channel 19 (2440MHz)	
Spurious Emission (30MHz ~ 25GHz)	
	
Channel 39 (2480MHz)	
High Band Edge	Spurious Emission (30MHz ~ 25GHz)
	

A.6 Radiated Spurious Emission Test Result

Test Site	WZ-AC1	Test Engineer	Tommy Tang
Test Date	2021/09/29	Test Mode	BLE-1Mbps
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
01	5054.5	36.1	4.4	40.5	74.0	-33.5	Peak	Horizontal
	7460.0	35.5	9.3	44.8	74.0	-29.2	Peak	Horizontal
	11565.5	35.9	14.4	50.3	74.0	-23.7	Peak	Horizontal
	4085.5	37.2	1.8	39.0	74.0	-35.0	Peak	Vertical
	7698.0	36.2	9.0	45.2	74.0	-28.8	Peak	Vertical
	11064.0	35.2	14.7	49.9	74.0	-24.1	Peak	Vertical
19	5122.5	35.6	4.9	40.5	74.0	-33.5	Peak	Horizontal
	7409.0	36.1	9.1	45.2	74.0	-28.8	Peak	Horizontal
	11200.0	34.9	13.4	48.3	74.0	-25.7	Peak	Horizontal
	4655.0	36.5	3.2	39.7	74.0	-34.3	Peak	Vertical
	7485.5	35.9	8.9	44.8	74.0	-29.2	Peak	Vertical
	11174.5	35.0	13.4	48.4	74.0	-25.6	Peak	Vertical
39	4672.0	36.1	3.7	39.8	74.0	-34.2	Peak	Horizontal
	7545.0	36.6	9.2	45.8	74.0	-28.2	Peak	Horizontal
	11574.0	35.5	14.4	49.9	74.0	-24.1	Peak	Horizontal
	5071.5	36.9	4.4	41.3	74.0	-32.7	Peak	Vertical
	7596.0	36.9	9.2	46.1	74.0	-27.9	Peak	Vertical
	11531.5	34.4	14.7	49.1	74.0	-24.9	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Test Site	WZ-AC1	Test Engineer	Tommy Tang
Test Date	2021/09/29	Test Mode	BLE-2Mbps
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

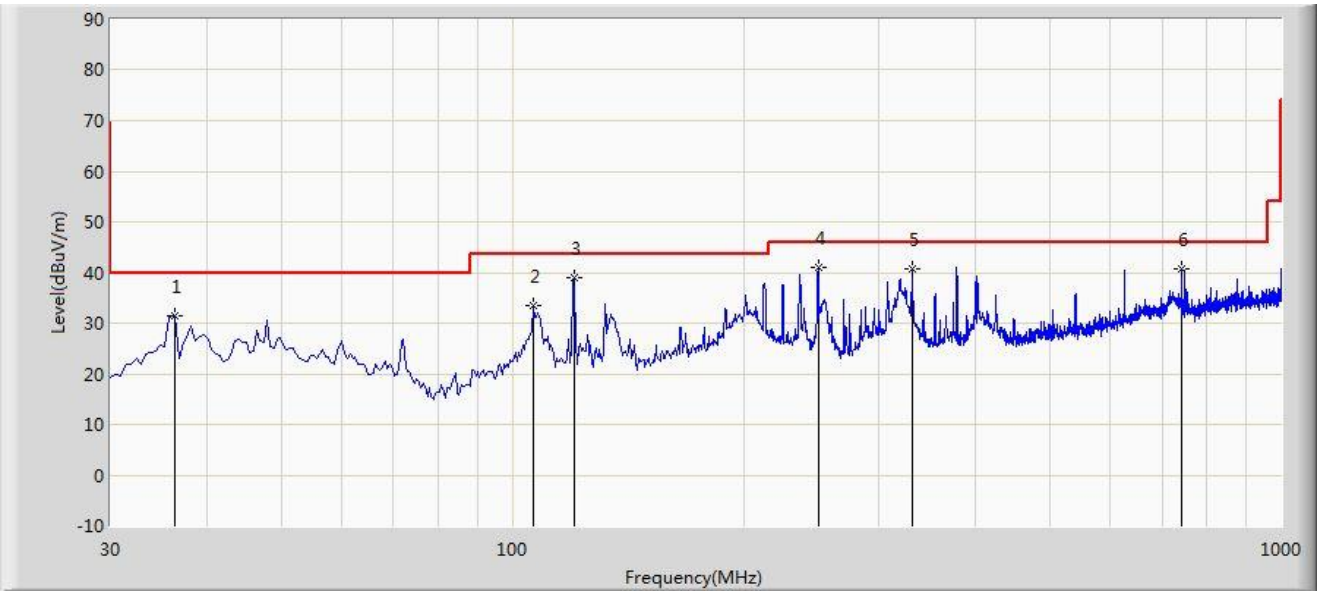
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
01	3975.0	36.9	1.4	38.3	74.0	-35.7	Peak	Horizontal
	5029.0	36.6	4.4	41.0	74.0	-33.0	Peak	Horizontal
	10936.5	35.6	15.0	50.6	74.0	-23.4	Peak	Horizontal
	4128.0	37.3	1.8	39.1	74.0	-34.9	Peak	Vertical
	5054.5	37.1	4.4	41.5	74.0	-32.5	Peak	Vertical
	11115.0	35.1	14.6	49.7	74.0	-24.3	Peak	Vertical
19	4842.0	35.7	3.9	39.6	74.0	-34.4	Peak	Horizontal
	7502.5	34.7	8.9	43.6	74.0	-30.4	Peak	Horizontal
	11514.5	36.2	13.2	49.4	74.0	-24.6	Peak	Horizontal
	4808.0	38.8	3.8	42.6	74.0	-31.4	Peak	Vertical
	7664.0	35.9	8.7	44.6	74.0	-29.4	Peak	Vertical
	11378.5	35.8	13.4	49.2	74.0	-24.8	Peak	Vertical
39	4009.0	37.3	1.4	38.7	74.0	-35.3	Peak	Horizontal
	4765.5	36.2	3.9	40.1	74.0	-33.9	Peak	Horizontal
	10987.5	35.4	14.8	50.2	74.0	-23.8	Peak	Horizontal
	3932.5	37.9	1.2	39.1	74.0	-34.9	Peak	Vertical
	4961.0	36.0	4.1	40.1	74.0	-33.9	Peak	Vertical
	11608.0	36.0	14.4	50.4	74.0	-23.6	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

The Result of Radiated Emission below 1GHz:

Site: WZ-AC2	Time: 2021/10/08 - 15:26
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC2_VULB9162_0.03-7GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			36.305	31.319	13.002	-8.681	40.000	18.316	PK
2			106.630	33.463	15.036	-10.037	43.500	18.427	PK
3		*	120.210	39.034	22.429	-4.466	43.500	16.604	PK
4			250.190	41.133	21.258	-4.867	46.000	19.874	PK
5			331.185	40.769	18.891	-5.231	46.000	21.879	PK
6			741.495	40.839	11.297	-5.161	46.000	29.542	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

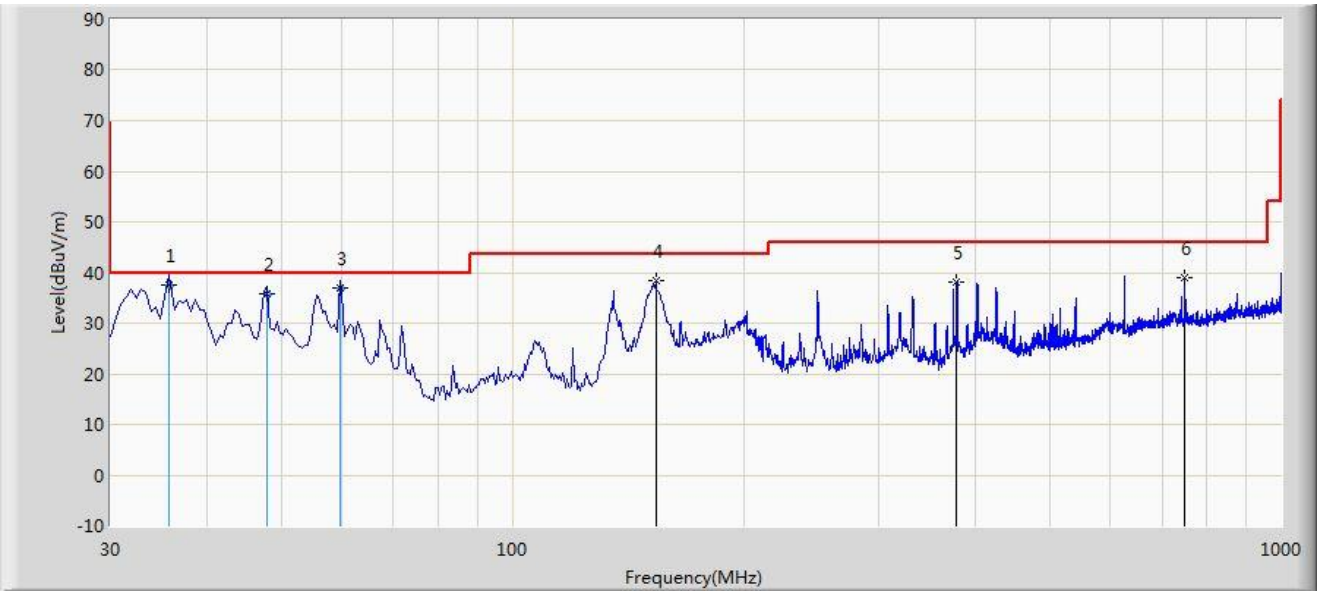
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Note 3: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Note 4: The equipment only be configured to operate under its worst case situation with respect to output power.

Site: WZ-AC2	Time: 2021/10/08 - 16:34
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC2_VULB9162_0.03-7GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	35.820	37.594	19.400	-2.406	40.000	18.194	QP
2			47.945	35.715	15.200	-4.285	40.000	20.515	QP
3			59.585	36.951	17.600	-3.049	40.000	19.350	QP
4			153.675	38.423	23.106	-5.077	43.500	15.318	PK
5			378.715	38.063	15.336	-7.937	46.000	22.727	PK
6			750.225	39.012	9.297	-6.988	46.000	29.716	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

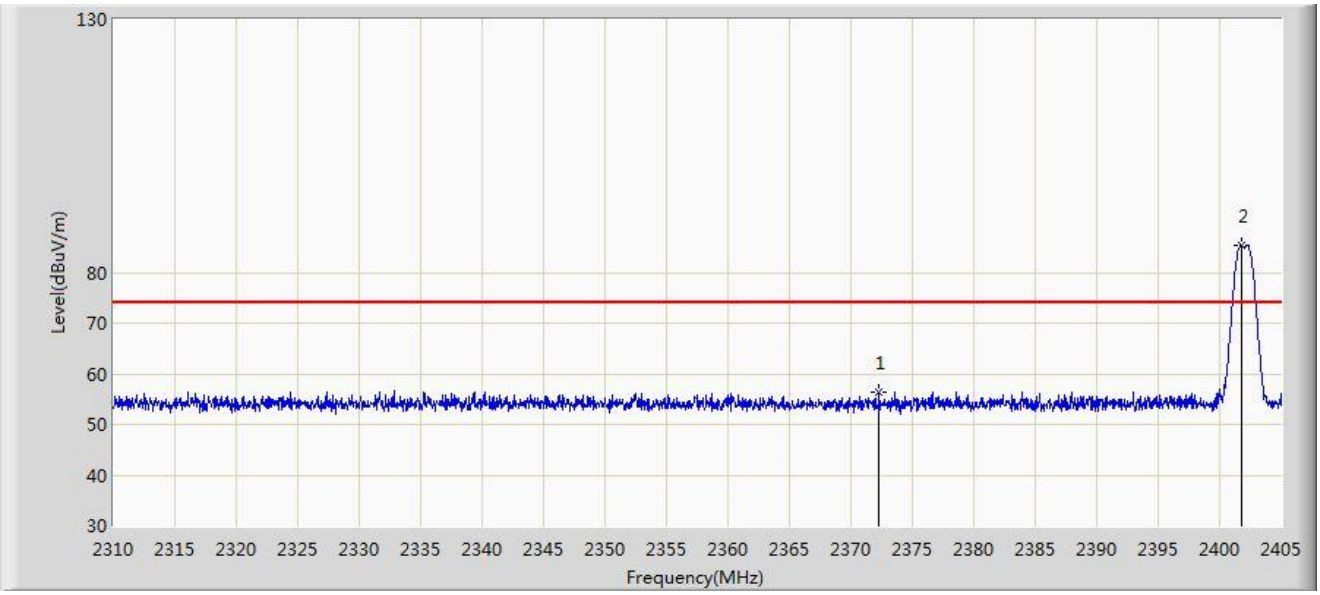
Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Note 3: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Note 4: The equipment only be configured to operate under its worst case situation with respect to output power.

A.7 Radiated Restricted Band Edge Test Result

Site: WZ-AC1	Time: 2021/09/28 - 22:55
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2402MHz	

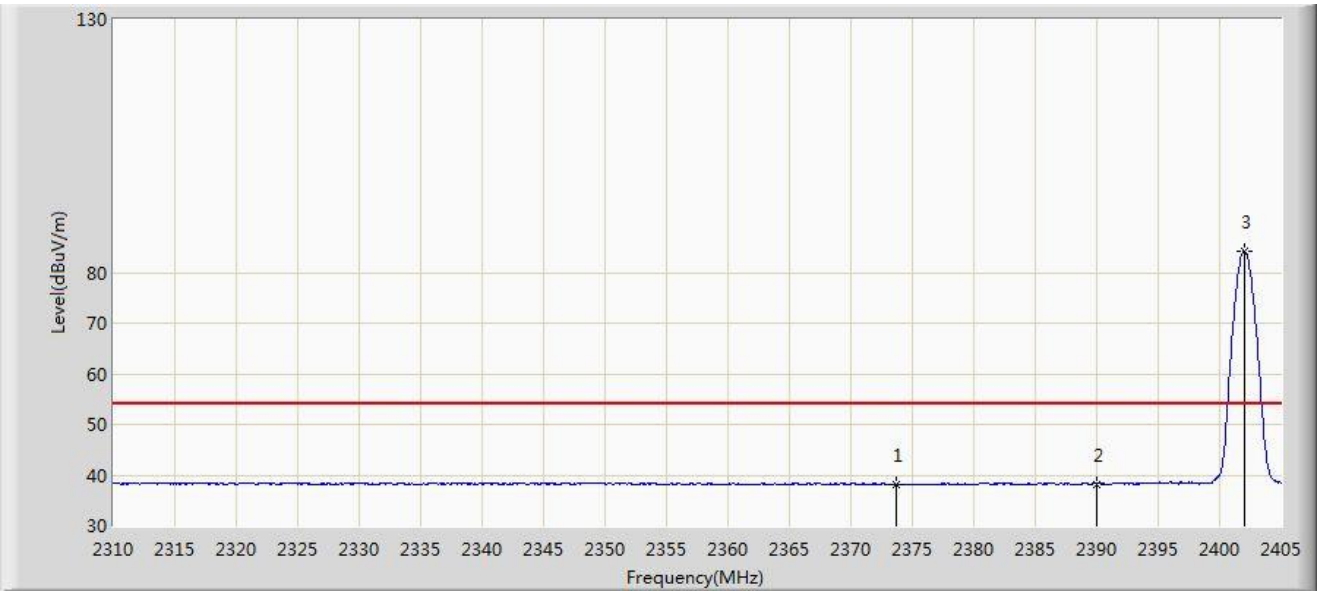


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2372.320	56.360	25.310	-17.640	74.000	31.050	PK
2		*	2401.770	85.304	54.295	N/A	N/A	31.009	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:06
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2402MHz	

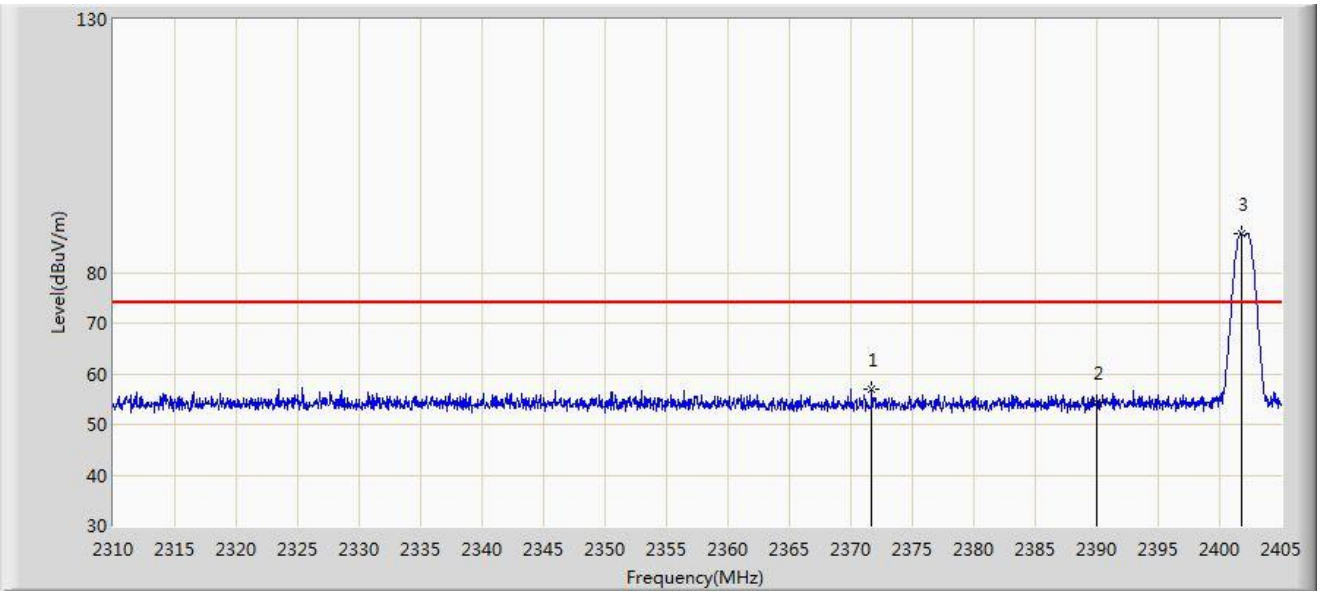


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2373.650	38.231	7.183	-15.769	54.000	31.049	AV
2			2390.000	38.196	7.163	-15.804	54.000	31.034	AV
3		*	2402.008	84.122	53.114	N/A	N/A	31.008	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 22:58
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2402MHz	

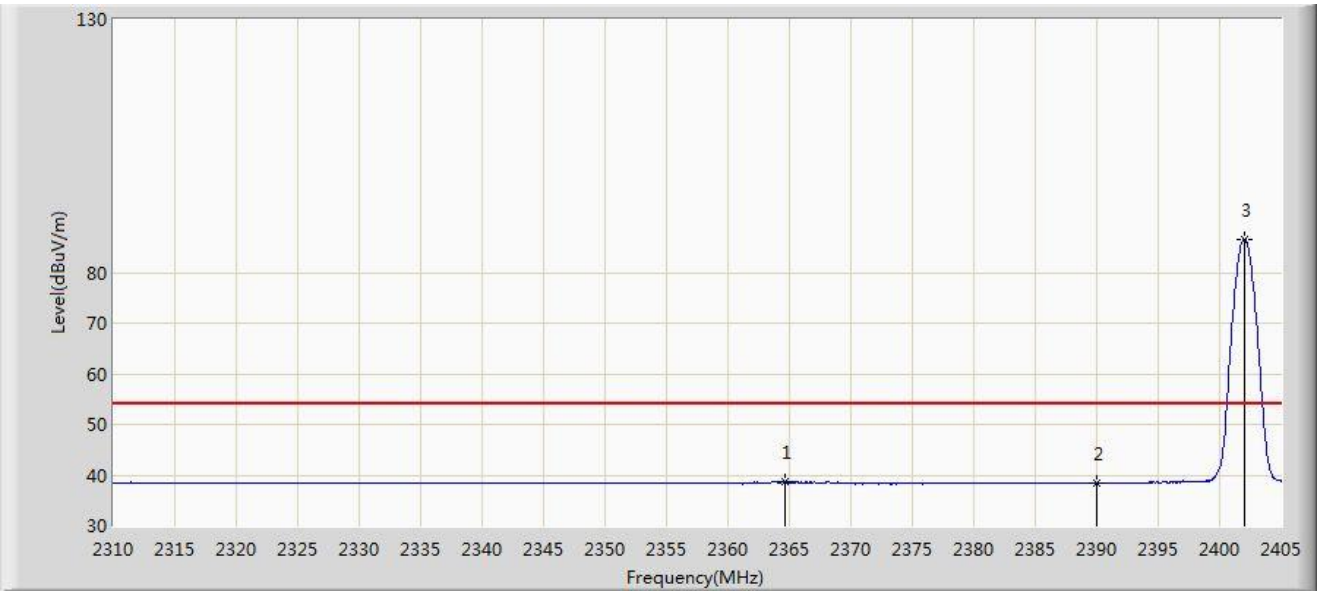


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2371.702	57.056	26.005	-16.944	74.000	31.051	PK
2			2390.000	54.483	23.450	-19.517	74.000	31.034	PK
3		*	2401.770	87.645	56.636	N/A	N/A	31.009	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:00
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2402MHz	

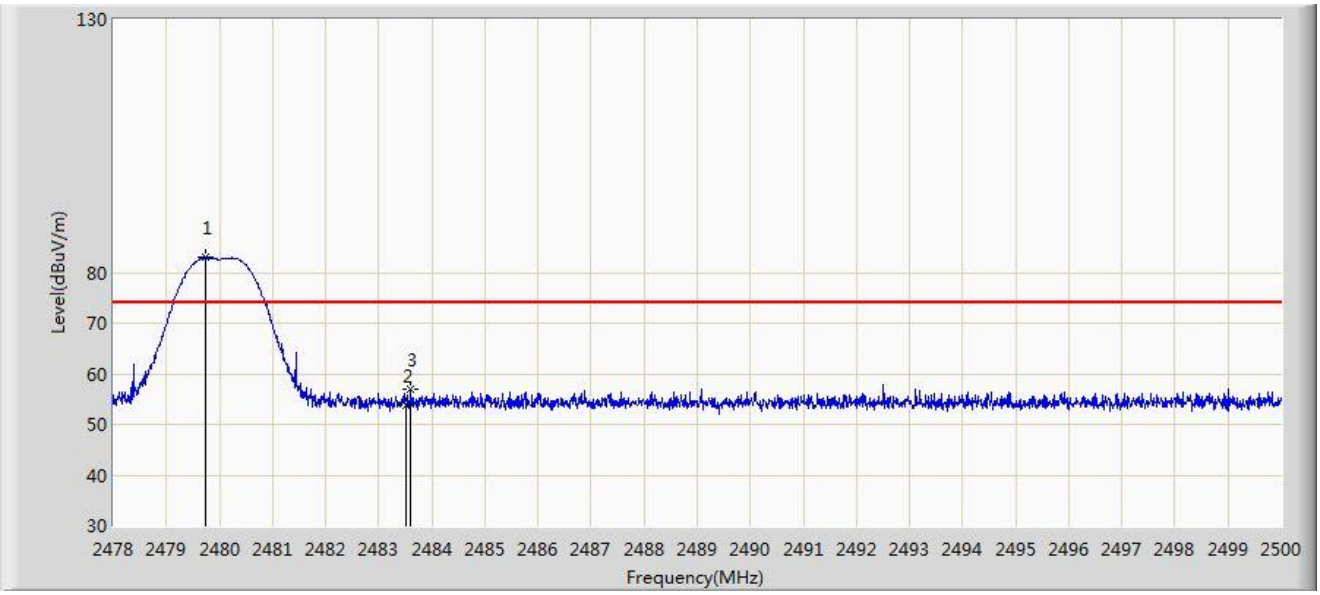


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2364.625	38.776	7.709	-15.224	54.000	31.066	AV
2			2390.000	38.367	7.334	-15.633	54.000	31.034	AV
3		*	2402.008	86.566	55.558	N/A	N/A	31.008	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:09
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2480MHz	

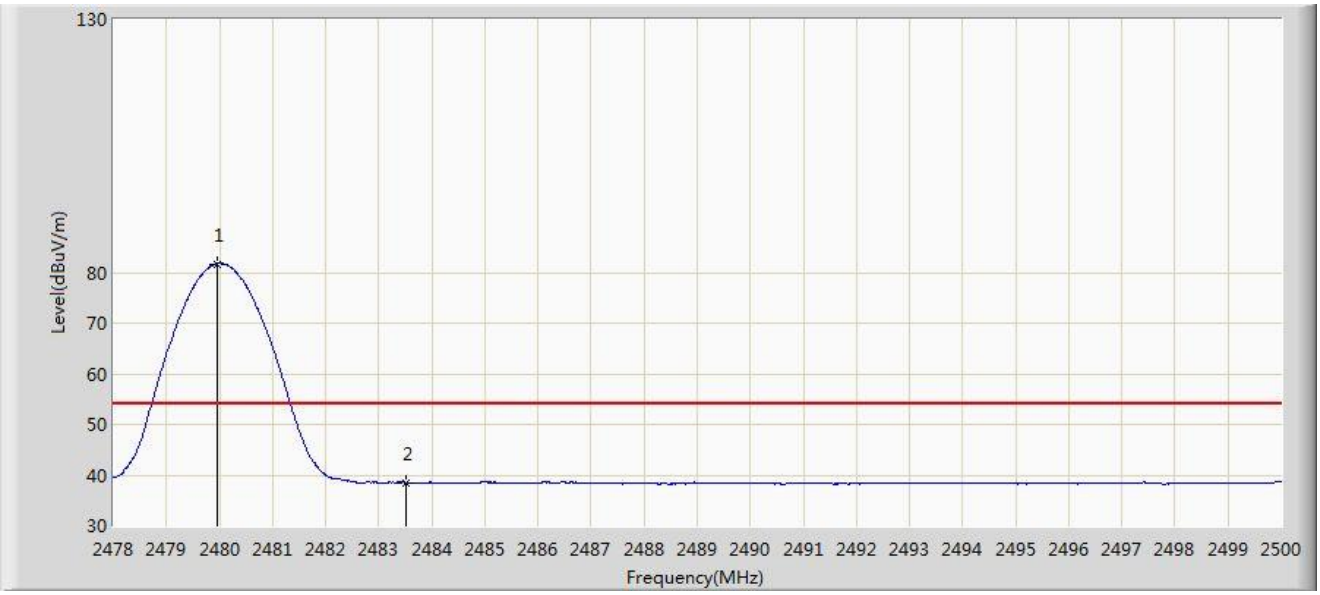


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.738	82.917	52.041	N/A	N/A	30.876	PK
2			2483.500	53.687	22.799	-20.313	74.000	30.888	PK
3			2483.610	57.098	26.210	-16.902	74.000	30.888	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:12
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2480MHz	

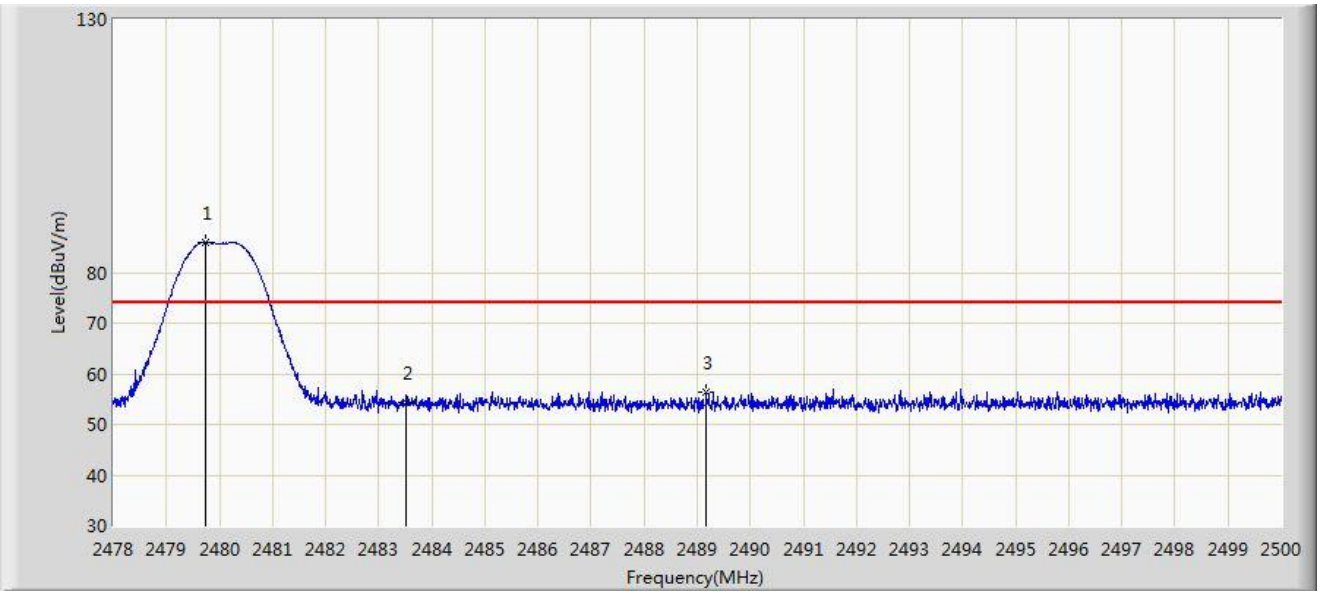


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.947	81.728	50.851	N/A	N/A	30.876	AV
2			2483.500	38.447	7.559	-15.553	54.000	30.888	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:13
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2480MHz	

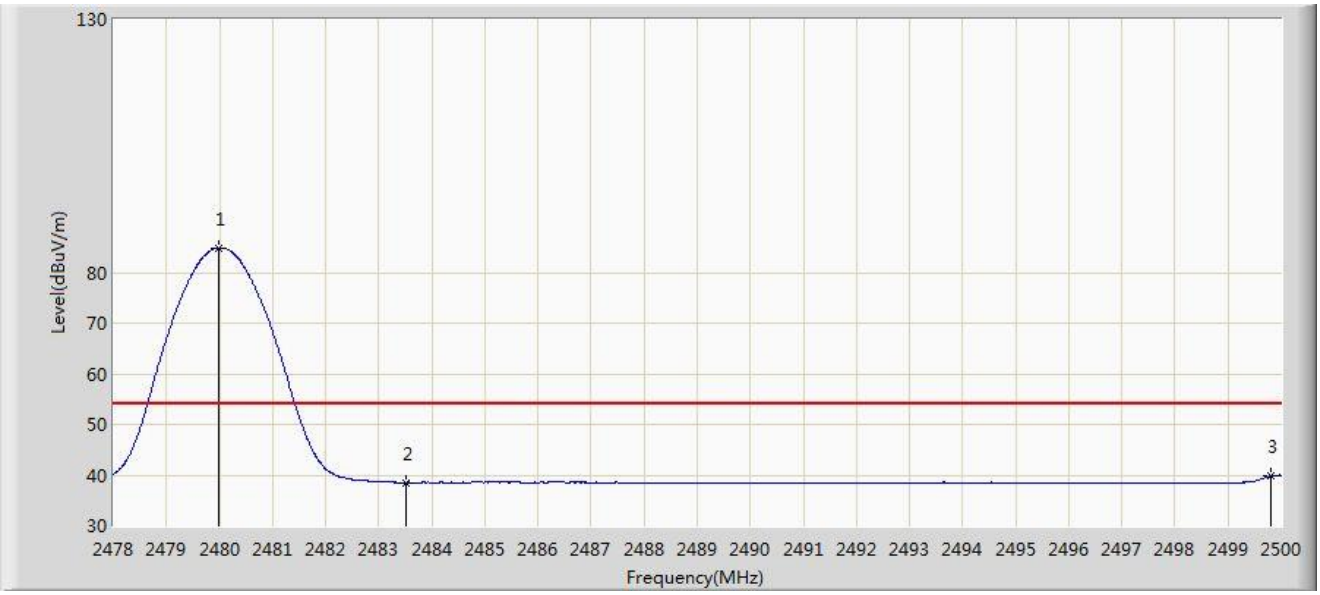


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.749	86.000	55.124	N/A	N/A	30.876	PK
2			2483.500	54.448	23.560	-19.552	74.000	30.888	PK
3			2489.176	56.274	25.368	-17.726	74.000	30.906	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:15
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-1Mbps at Channel 2480MHz	

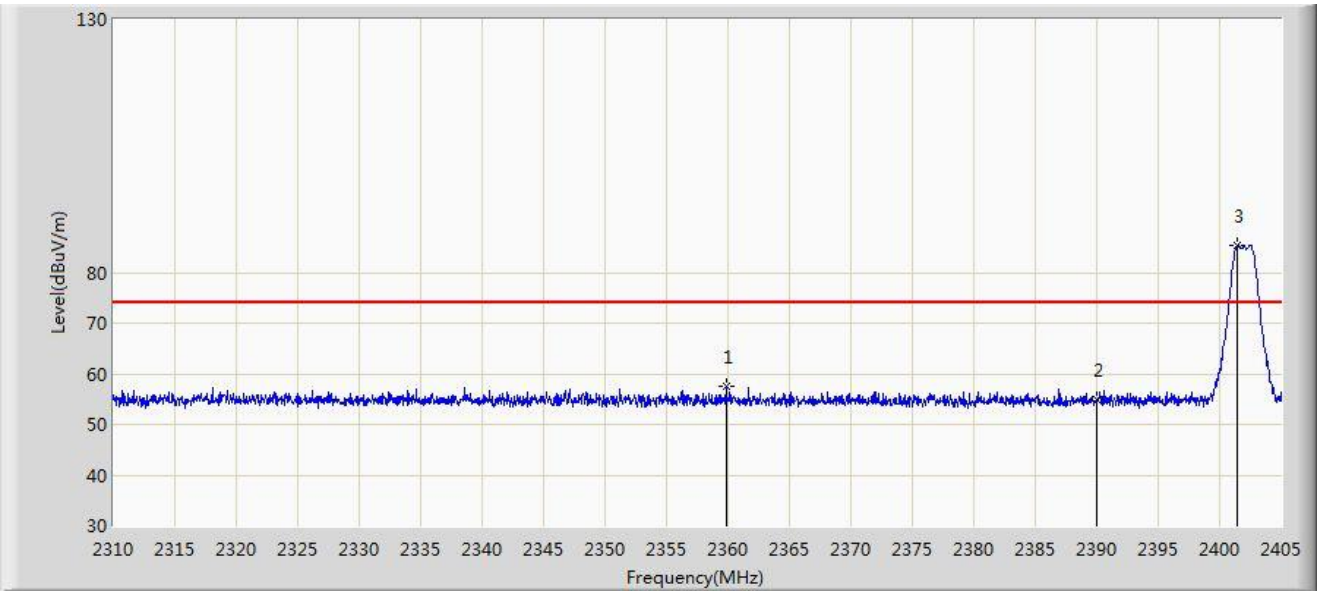


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.991	84.892	54.015	N/A	N/A	30.876	AV
2			2483.500	38.504	7.616	-15.496	54.000	30.888	AV
3			2499.802	39.800	8.877	-14.200	54.000	30.923	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:18
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	

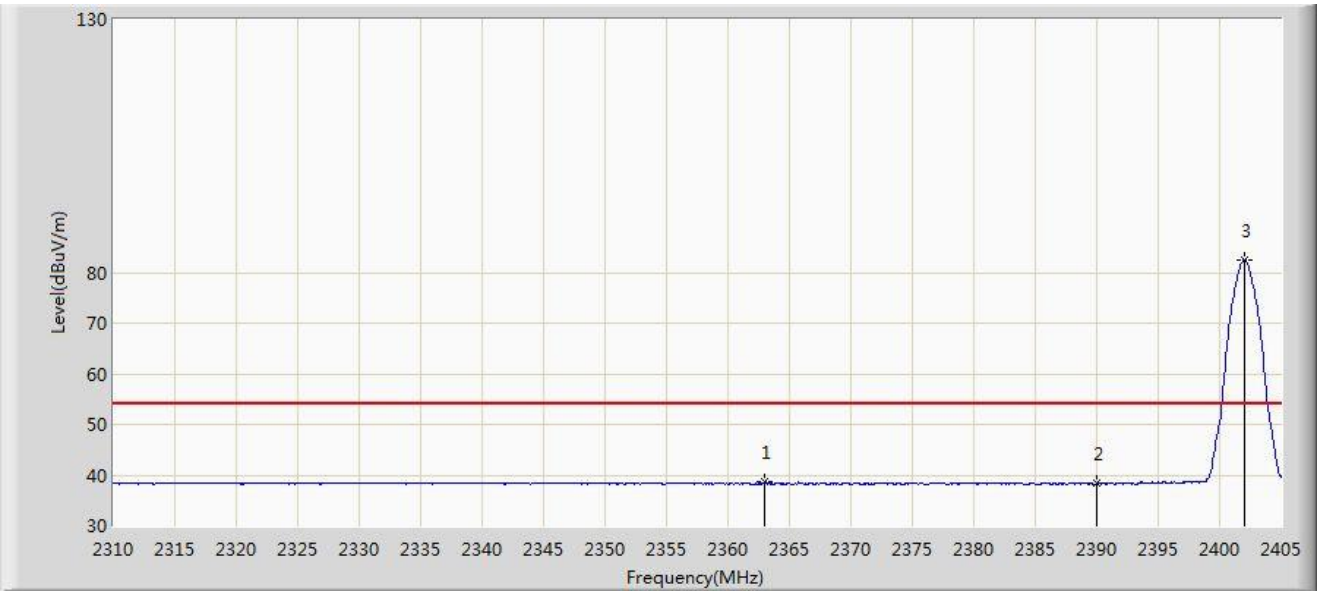


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2359.827	57.430	26.333	-16.570	74.000	31.097	PK
2			2390.000	54.845	23.812	-19.155	74.000	31.034	PK
3		*	2401.485	85.411	54.401	N/A	N/A	31.010	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	

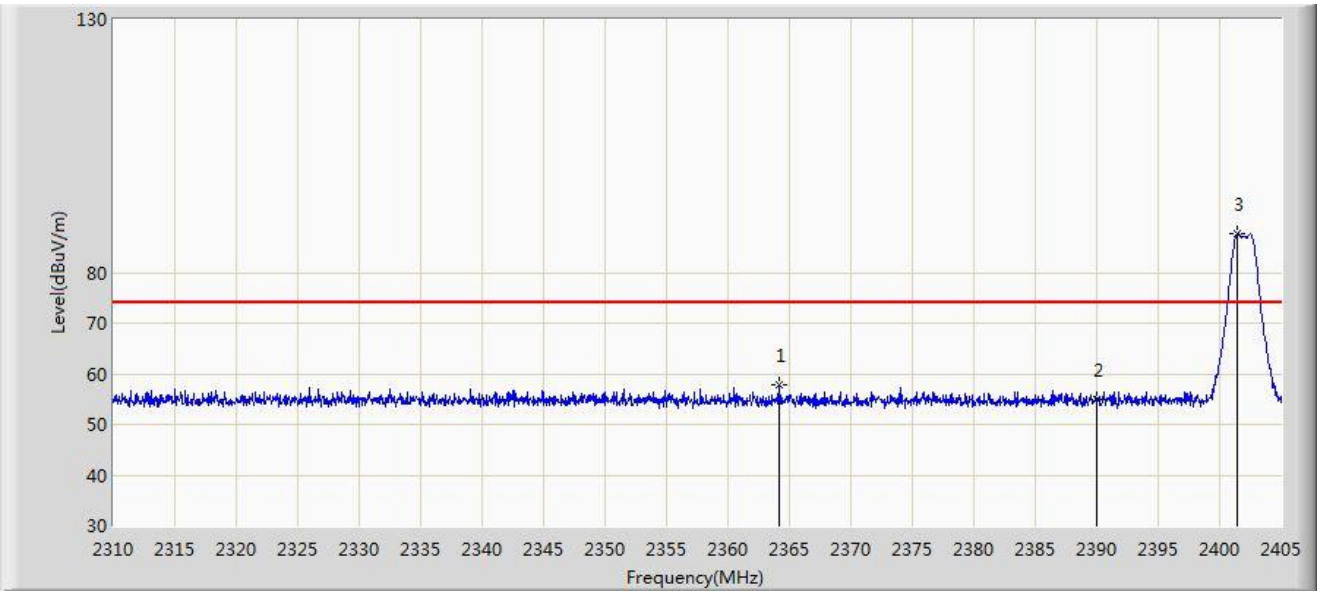


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2363.010	38.595	7.518	-15.405	54.000	31.076	AV
2			2390.000	38.377	7.344	-15.623	54.000	31.034	AV
3		*	2402.008	82.507	51.499	N/A	N/A	31.008	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	

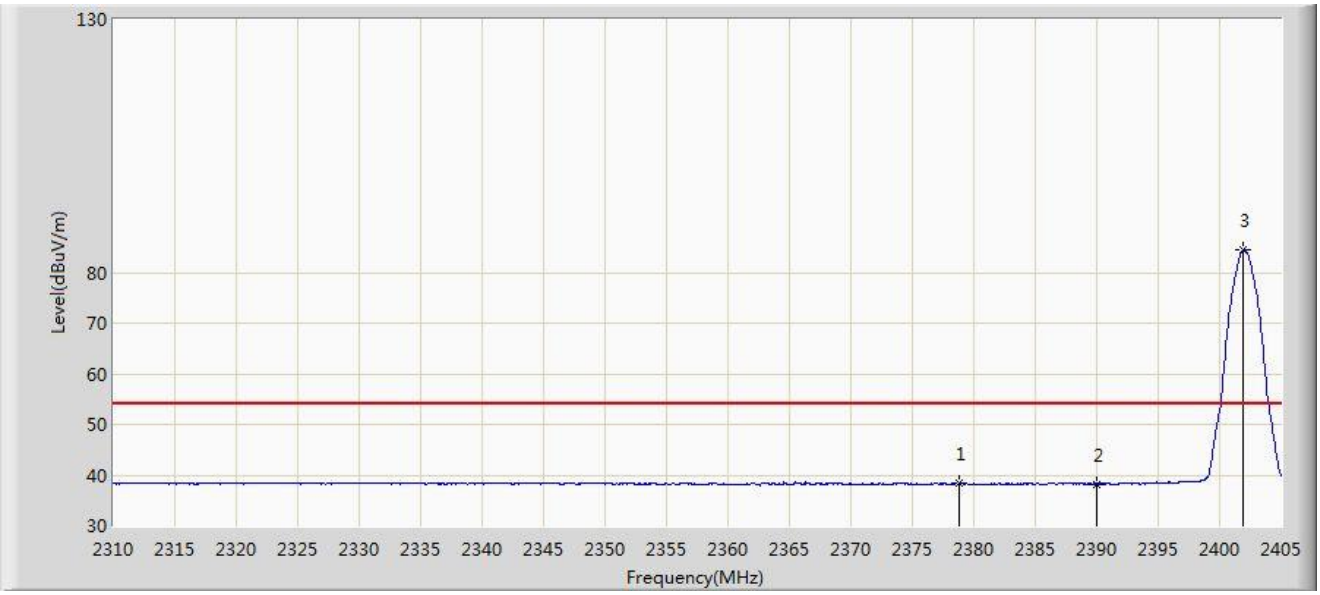


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2364.198	57.752	26.683	-16.248	74.000	31.070	PK
2			2390.000	54.901	23.868	-19.099	74.000	31.034	PK
3		*	2401.485	87.682	56.672	N/A	N/A	31.010	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:32
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	

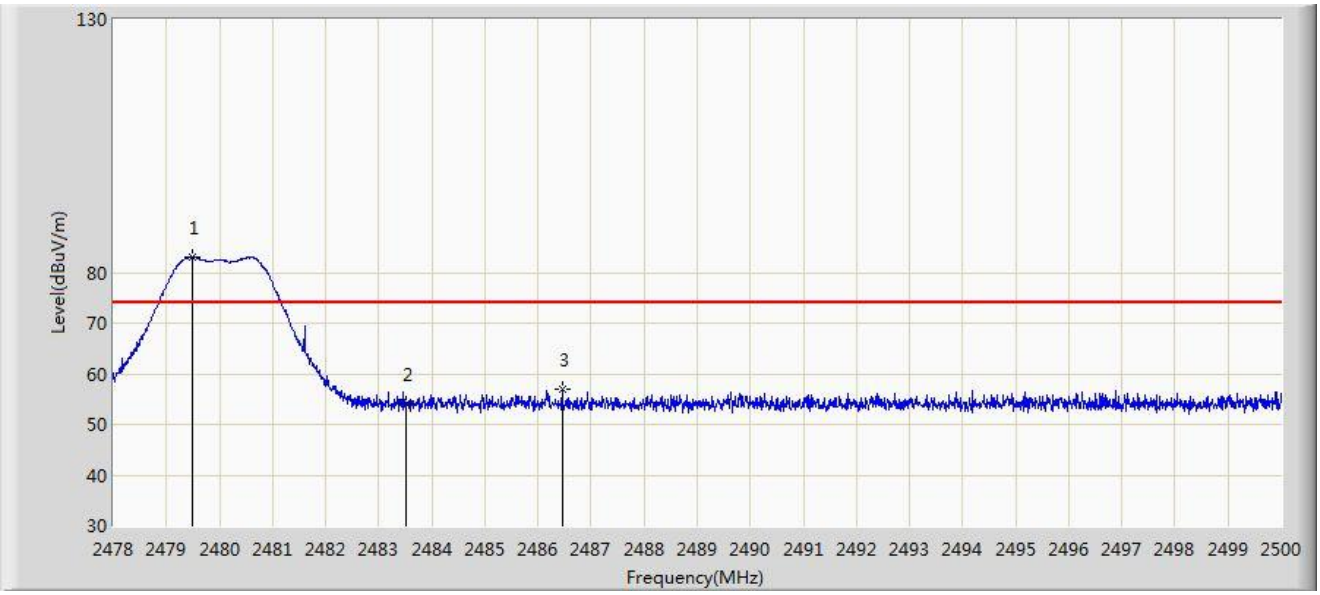


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2378.780	38.380	7.337	-15.620	54.000	31.043	AV
2			2390.000	38.256	7.223	-15.744	54.000	31.034	AV
3		*	2401.960	84.527	53.519	N/A	N/A	31.008	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:33
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2480MHz	

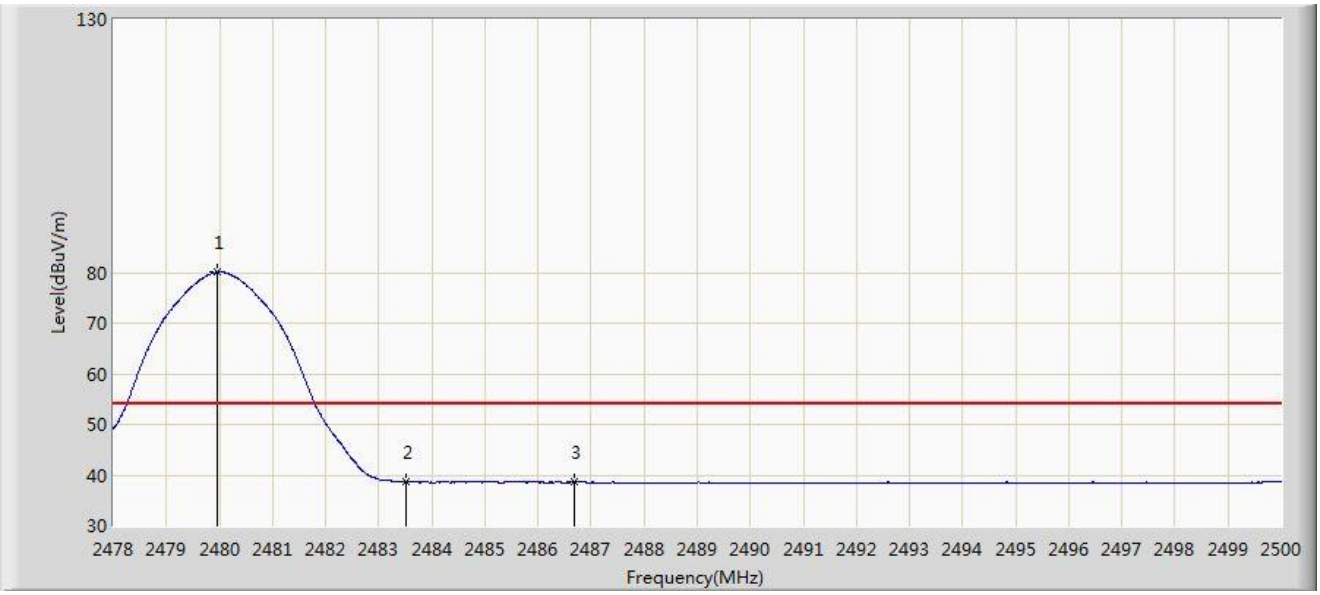


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.496	83.082	52.207	N/A	N/A	30.876	PK
2			2483.500	54.184	23.296	-19.816	74.000	30.888	PK
3			2486.459	57.020	26.123	-16.980	74.000	30.898	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:37
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2480MHz	

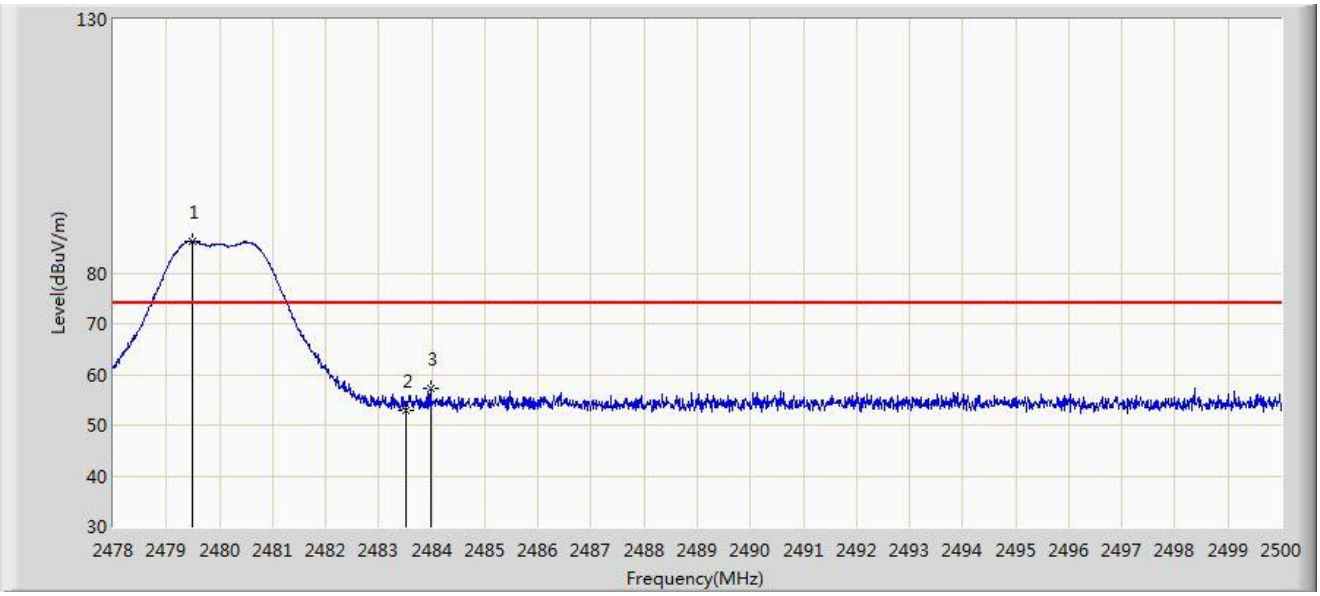


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.969	80.045	49.168	N/A	N/A	30.876	AV
2			2483.500	38.681	7.793	-15.319	54.000	30.888	AV
3			2486.679	38.557	7.659	-15.443	54.000	30.898	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:37
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2480MHz	

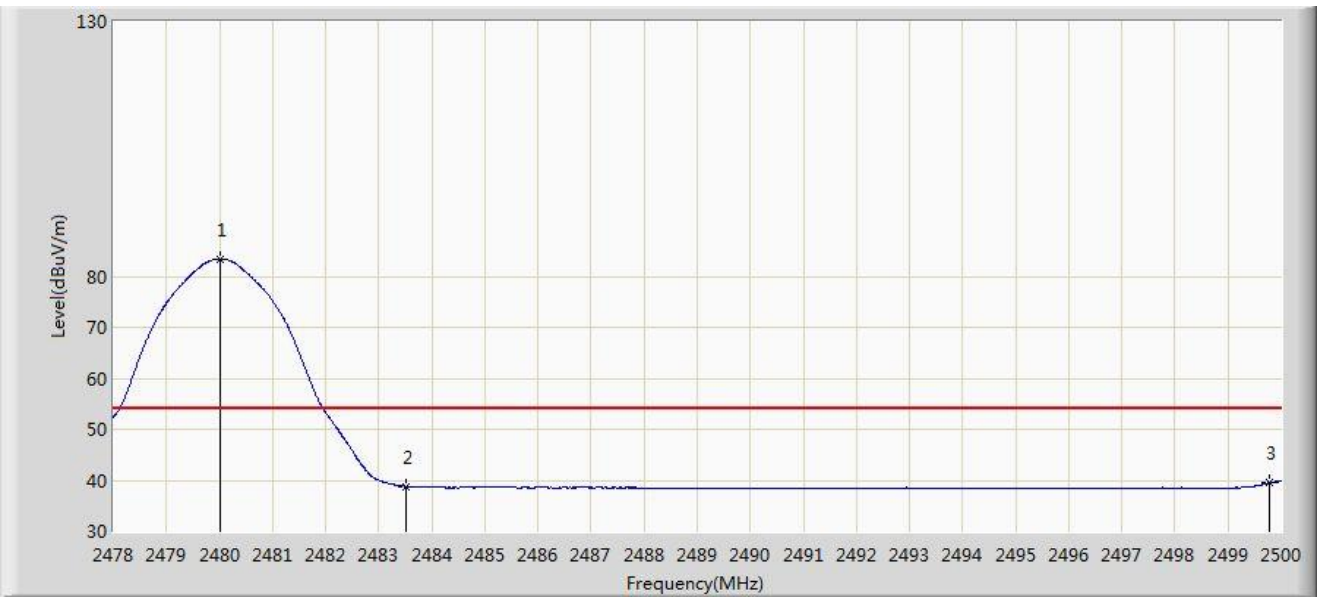


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2479.485	86.292	55.417	N/A	N/A	30.876	PK
2			2483.500	53.021	22.133	-20.979	74.000	30.888	PK
3			2483.973	57.390	26.501	-16.610	74.000	30.889	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/09/28 - 23:43
Limit: FCC_Part15.209_RE(3m)	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2480MHz	



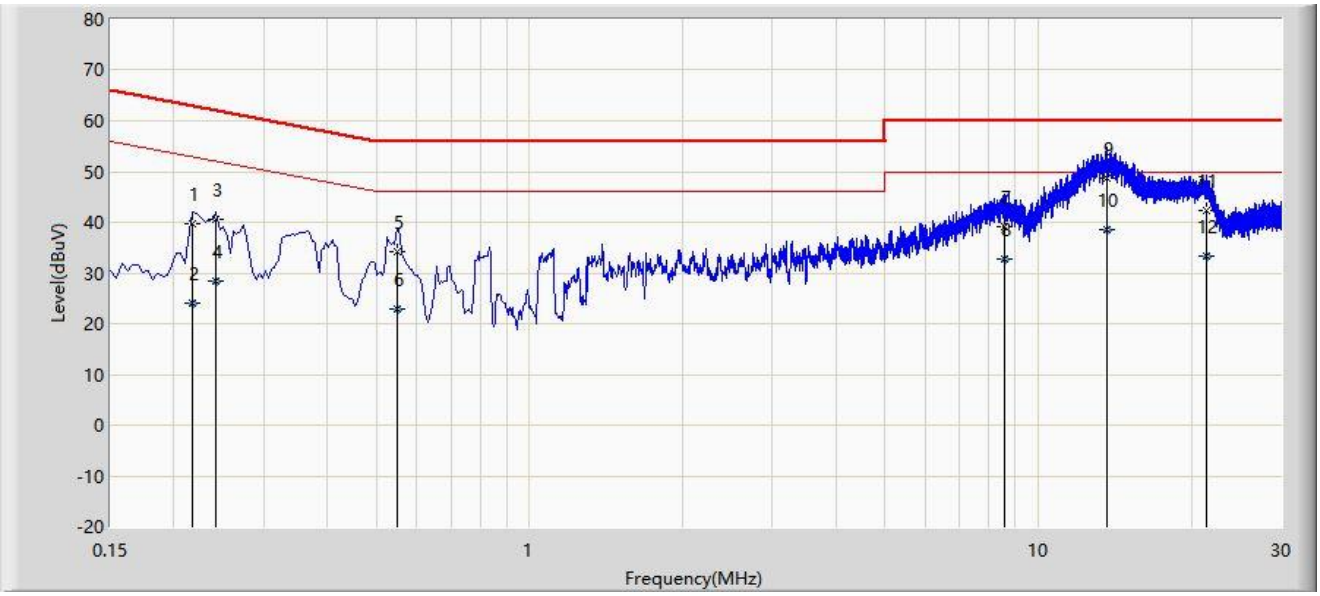
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2480.002	83.428	52.551	N/A	N/A	30.877	AV
2			2483.500	38.805	7.917	-15.195	54.000	30.888	AV
3			2499.769	39.478	8.555	-14.522	54.000	30.923	AV

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

A.8 AC Conducted Emissions Test Result

Site: WZ-SR2	Time: 2021/12/02 - 17:32
Limit: FCC_Part15.207_CE_AC Power	Engineer: Helen Han
Probe: ENV216_101683_Filter Off	Polarity: Line
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	

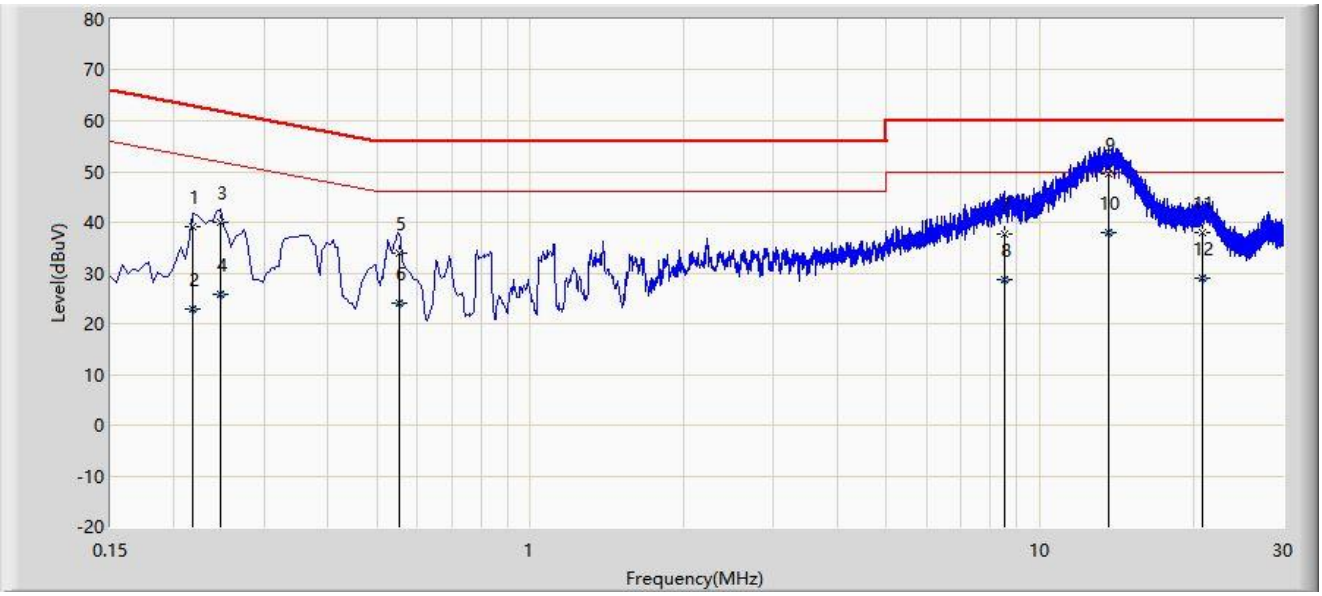


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.218	39.599	29.769	-23.295	62.895	9.830	QP
2			0.218	23.933	14.103	-28.962	52.895	9.830	AV
3			0.242	40.478	30.647	-21.550	62.027	9.831	QP
4			0.242	28.401	18.570	-23.627	52.027	9.831	AV
5			0.550	34.277	24.433	-21.723	56.000	9.844	QP
6			0.550	22.944	13.100	-23.056	46.000	9.844	AV
7			8.558	39.153	28.685	-20.847	60.000	10.468	QP
8			8.558	32.790	22.322	-17.210	50.000	10.468	AV
9		*	13.638	48.674	38.120	-11.326	60.000	10.553	QP
10			13.638	38.514	27.961	-11.486	50.000	10.553	AV
11			21.430	42.362	31.562	-17.638	60.000	10.800	QP
12			21.430	33.242	22.442	-16.758	50.000	10.800	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: WZ-SR2	Time: 2021/12/02 - 17:46
Limit: FCC_Part15.207_CE_AC Power	Engineer: Helen Han
Probe: ENV216_101683_Filter Off	Polarity: Neutral
EUT: Flat Panel Integrated Satellite Communication Terminal	Power: AC 120V/60Hz
Test Mode: Transmit by BLE-2Mbps at Channel 2402MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.218	39.259	29.448	-23.636	62.895	9.811	QP
2			0.218	22.941	13.130	-29.954	52.895	9.811	AV
3			0.246	39.954	30.141	-21.938	61.891	9.813	QP
4			0.246	25.790	15.978	-26.101	51.891	9.813	AV
5			0.554	33.796	23.964	-22.204	56.000	9.832	QP
6			0.554	23.924	14.092	-22.076	46.000	9.832	AV
7			8.522	37.795	27.334	-22.205	60.000	10.461	QP
8			8.522	28.795	18.334	-21.205	50.000	10.461	AV
9		*	13.626	49.460	38.972	-10.540	60.000	10.488	QP
10			13.626	38.049	27.561	-11.951	50.000	10.488	AV
11			20.906	37.927	27.216	-22.073	60.000	10.711	QP
12			20.906	29.041	18.330	-20.959	50.000	10.711	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Appendix B – Test Setup Photograph

Refer to “2112RSU001-UT” file.

Appendix C – EUT Photograph

Refer to “2112RSU01-UE” file.

The End