

RF MEASUREMENT REPORT

FCC ID: P27R8CLARO

Applicant: Sercomm Corporation

Application Type: Certification

Product: MÓDEM(Fibra óptica)

Model No.: R8

Brand Name: SERCOMM

FCC Classification: Digital Transmission System (DTS)

FCC Rule Part(s): Part 15 Subpart C (Section 15.247)

Test Date: December 04 ~ 20, 2021

Reviewed By:

Approved By:



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
2111RSU080-U1	Rev. 01	Initial Report	01-13-2022	Invalid
2111RSU080-U1	Rev. 02	Add note about adapter	01-18-2022	Valid

CONTENTS

Description	Page
1. General Information	5
1.1. Applicant	5
1.2. Manufacturer	5
1.3. Testing Facility	5
1.4. Product Information	6
1.5. Radio Specification	6
1.6. Working Frequencies	7
1.7. Antenna Details	7
2. Test Configuration	8
2.1. Test Mode	8
2.2. Test System Connection Diagram	8
2.3. Test System Details	8
2.4. Test Software	8
2.5. Applied Standards	9
2.6. Duty Cycle	9
2.7. Test Environment Condition	10
3. Antenna Requirements	10
4. Measuring Instrument	11
5. Measurement Uncertainty	12
6. Test Result	13
6.1. Summary	13
6.2. 6dB Bandwidth	14
6.2.1. Test Limit	14
6.2.2. Test Procedure used	14
6.2.3. Test Setting	14
6.2.4. Test Setup	14
6.2.5. Test Result	14
6.3. Output Power	15
6.3.1. Test Limit	15
6.3.2. Test Procedure Used	15
6.3.3. Test Setting	15
6.3.4. Test Setup	15
6.3.5. Test Result	15
6.4. Power Spectral Density	16
6.4.1. Test Limit	16

6.4.2.	Test Procedure Used	16
6.4.3.	Test Setting	16
6.4.4.	Test Setup	17
6.4.5.	Test Result	17
6.5.	Conducted Band Edge and Out-of-Band Emissions	18
6.5.1.	Test Limit	18
6.5.2.	Test Procedure Used	18
6.5.3.	Test Setting	18
6.5.4.	Test Setup	19
6.5.5.	Test Result	19
6.6.	Radiated Spurious Emission	20
6.6.1.	Test Limit	20
6.6.2.	Test Procedure Used	20
6.6.3.	Test Setting	20
6.6.4.	Test Setup	22
6.6.5.	Test Result	22
6.7.	Radiated Restricted Band Edge	23
6.7.1.	Test Limit	23
6.7.2.	Test Procedure Used	24
6.7.3.	Test Setting	24
6.7.4.	Test Setup	25
6.7.5.	Test Result	25
6.8.	AC Conducted Emissions	26
6.8.1.	Test Limit	26
6.8.2.	Test Setup	26
6.8.3.	Test Result	26
7.	Conclusion	27
	Appendix A – Test Result	28
	Appendix B – Test Setup Photograph	105
	Appendix C – EUT Photograph	106

1. General Information

1.1. Applicant

Sercomm Corporation

8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.

1.2. Manufacturer

Sercomm Corporation

8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.

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	MÓDEM(Fibra óptica)
Model No.	R8
Brand Name	SERCOMM
Wi-Fi Specification	802.11a/b/g/n/ac
Antenna Information	Refer to section 1.7
Serial Number	53434F4DA0B00026
Accessories	
Adapter 1#	Model No.: PU18W120ULB18-DLP-00 Input Power: 100 - 240V ~ 50/60Hz, 0.7A Output Power: 12V dc 1.5A 18W
Adapter 2#	Model No.: MS-V1500R120-018H0-US Input Power: 100 - 240V ~ 50/60Hz, 0.6A max Output Power: 12V dc 1.5A
Remark:	
1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	
2. Adapter 2# was used for all RF testing.	

1.5. Radio Specification

Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462MHz 802.11n-HT40: 2422 ~ 2452MHz
Channel Number	802.11b/g/n-HT20: 11 802.11n-HT40: 7
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps

1.6. Working Frequencies

802.11b/g/n-HT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	--	--

802.11n-HT40

Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz
06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	--	--	--	--

1.7. Antenna Details

Antenna Type	Frequency Band (MHz)	Tx Paths	Max Antenna Gain (dBi)	Beamforming Directional Gain (dBi)	CDD Directional Gain (dBi)	
					For Power	For PSD
PIFA & Dipole Antenna	2412 ~ 2462	2	3.3	--	3.3	6.31
	5150 ~ 5250	4	4.1	10.12	4.1	10.12
	5250 ~ 5350	4	4.1	10.12	4.1	10.12
	5470 ~ 5725	4	4.1	10.12	4.1	10.12
	5725 ~ 5850	4	4.0	10.10	4.0	10.10

Remark:

- The EUT supports Cyclic Delay Diversity (CDD) mode except 802.11b mode, and CDD signals are correlated.

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
Array Gain = $10 \log (N_{ANT} / N_{SS})$ dB;
- For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB for $N_{ANT} \leq 4$;

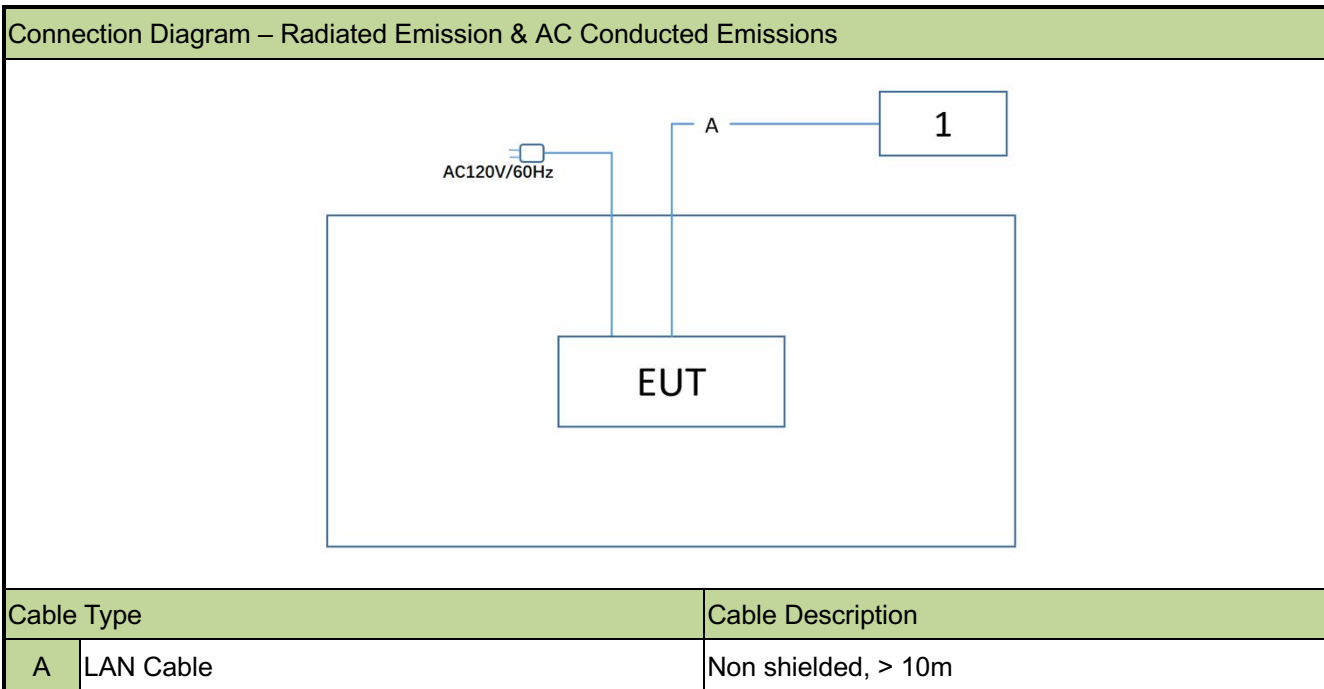
- The EUT also supports Beam Forming mode, and the Beam Forming support 802.11ac, not include 802.11a/b/g/n. BF Directional gain = $G_{ANT} + 10 \log (N_{ANT})$.

2. Test Configuration

2.1. Test Mode

Mode 1: Transmit by 802.11b (1Mbps) (CDD mode)
Mode 2: Transmit by 802.11g (6Mbps) (CDD mode)
Mode 3: Transmit by 802.11n-HT20 (MCS0) (CDD mode)
Mode 4: Transmit by 802.11n-HT40 (MCS0) (CDD mode)

2.2. Test System Connection Diagram



2.3. Test System Details

Product	Manufacturer	Model No.
1 Notebook	Lenovo	E495

2.4. Test Software

The test utility software used during testing was “accessMTool.exe”, and the version was 3.2.1.4.

Note: Final power setting please refer to operational description.

2.5. Applied Standards

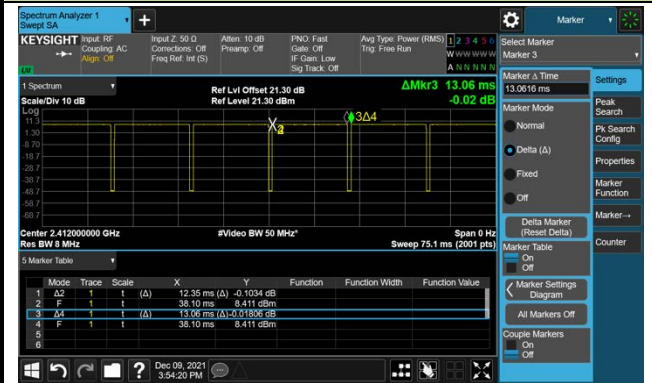
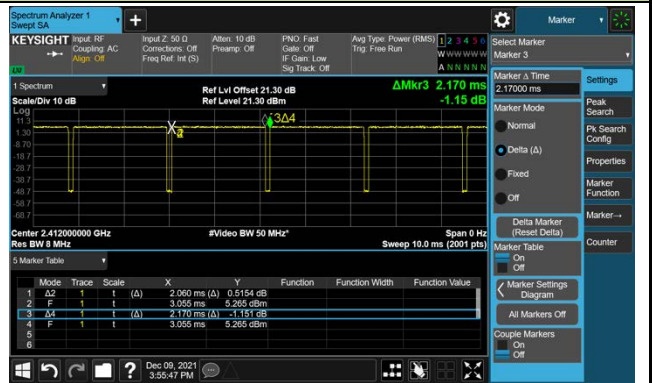
According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

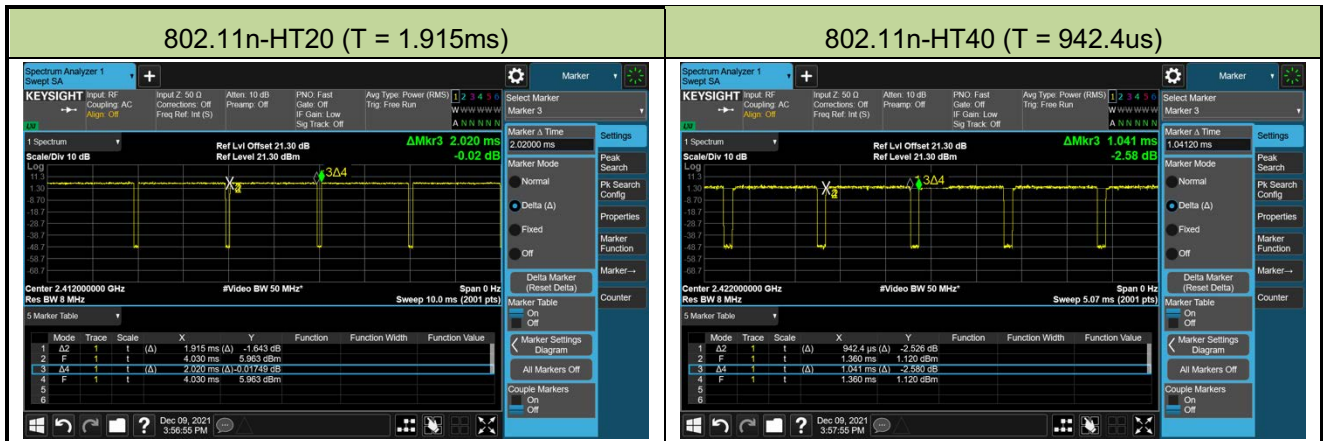
- FCC Part 15.247
- KDB 558074 D01v05r02
- KDB 662911 D01v02r01
- ANSI C63.10-2013

2.6. Duty Cycle

2.4GHz WLAN (DTS) operation is possible in 20MHz & 40MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Test Mode	Duty Cycle
802.11b	94.56%
802.11g	94.93%
802.11n-HT20	94.80%
802.11n-HT40	90.53%
Duty Cycle (T = Transmission Duration)	
802.11b (T = 12.35ms)	802.11g (T = 2.060ms)



2.7. Test Environment Condition

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

3. Antenna Requirements

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. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2021/12/24	SIP-AC1
Preamplifier	EMCI	EMC051845SE	MRTSUE06600	1 year	2022/11/8	SIP-AC1
Horn Antenna	R&S	HF907	MRTSUE06610	1 year	2022/8/5	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06616	1 year	2022/11/2	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06620	1 year	2022/11/28	SIP-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06645	1 year	2022/8/26	SIP-AC1
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2022/1/12	SIP-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2022/6/24	SIP-AC1
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2022/6/24	SIP-AC3
Signal Analyzer	Keysight	N9010B	MRTSUE06603	1 year	2022/10/31	SIP-AC3
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2022/6/9	SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06598	1 year	2022/11/9	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2022/9/12	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06619	1 year	2022/11/2	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06622	1 year	2022/11/28	SIP-AC3
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2022/1/14	SIP-AC3
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06646	1 year	2022/8/26	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2021/12/24	SIP-AC3
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2022/6/8	SIP-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06612	1 year	2022/6/24	SIP-SR2
Thermohygrometer	testo	608-H1	MRTSUE06621	1 year	2022/11/28	SIP-SR2
Shielding Room	MIX-BEP	SIP-SR2	MRTSUE06949	/	/	SIP-SR2
Temperature Chamber	BAOYT	BYG-408CS	MRTSUE06847	1 year	2022/2/23	SIP-TR1
Thermohygrometer	testo	Testo 608-H1	MRTSUE11022	1 year	2022/11/2	SIP-TR1
Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2022/8/8	SIP-TR1
Signal Generator	R&S	SMU200A	MRTSUE06489	1 year	2022/2/23	SIP-TR1
USB Power Sensor	Keysight	U2021XA	MRTSUE06595	1 year	2022/9/7	SIP-TR1
USB Power Sensor	Keysight	U2021XA	MRTSUE06596	1 year	2022/9/7	SIP-TR1
Signal Generator	Keysight	N5182B	MRTSUE06605	1 year	2022/10/31	SIP-TR1

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 $k = 2$.

AC 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 Density		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.
- Output power test was verified over all data rates of each mode (data refers to operational description), and then choose the maximum power output (low data rate) for the final test of each channel.
- For radiated emission tests, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

6.2. 6dB Bandwidth

6.2.1. Test Limit

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

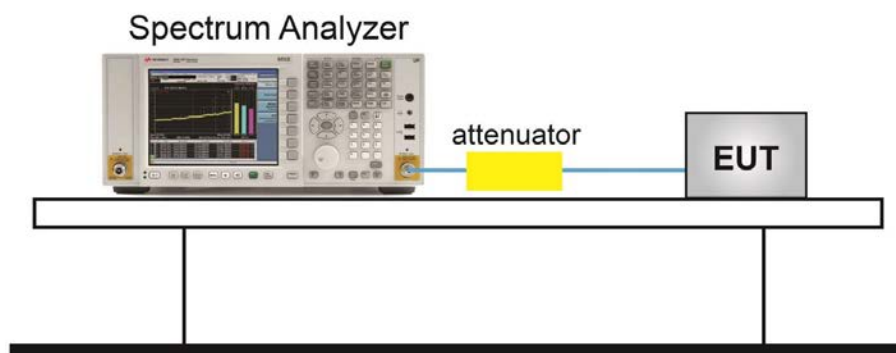
6.2.2. Test Procedure used

ANSI C63.10 - 2013 - Section 11.8

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. $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.1.

6.3. Output Power

6.3.1. Test Limit

The maximum output 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

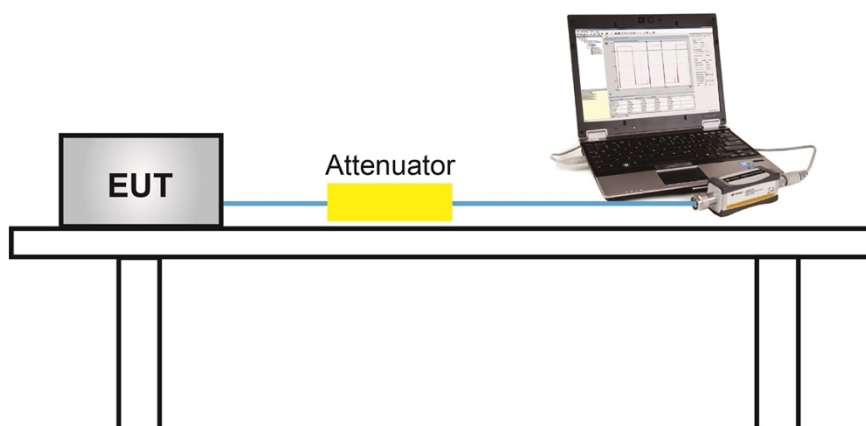
ANSI C63.10 - 2013 - Section 11.9.2.3.2

6.3.3. Test Setting

Average Power Measurement

Average 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 power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.2.

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.

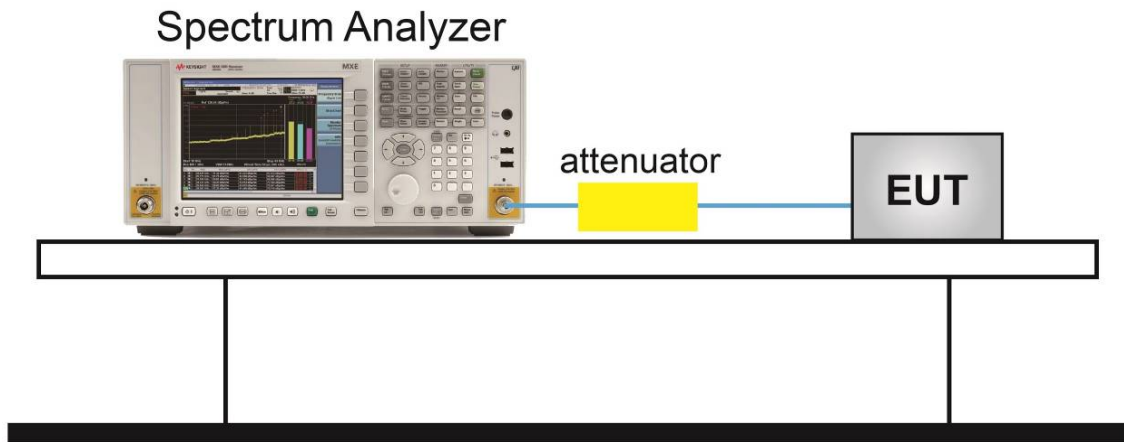
6.4.2. Test Procedure Used

ANSI C63.10 - 2013 - Section 11.10.5

6.4.3. Test Setting

1. Measure the duty cycle (x) of the transmitter output signal.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. RBW = 10 kHz.
5. VBW = 30 kHz.
6. Detector = RMS.
7. Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span}/\text{RBW}$.
8. Sweep time = auto couple.
9. Don't use sweep triggering. Allow sweep to "free run".
10. Employ trace averaging (RMS) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. Add $10 \log (1/x)$, where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).

6.4.4. Test Setup



6.4.5. Test Result

Refer to Appendix A.3.

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 30dB 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

6.5.3. Test Settling

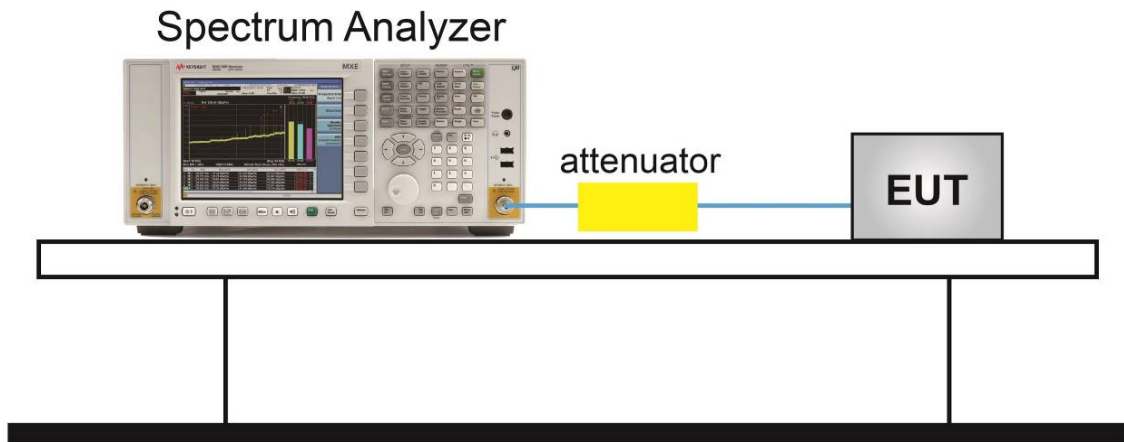
Reference level measurement

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 $\geq 3 \times$ 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.4.

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 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/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
> 1000MHz	1MHz

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

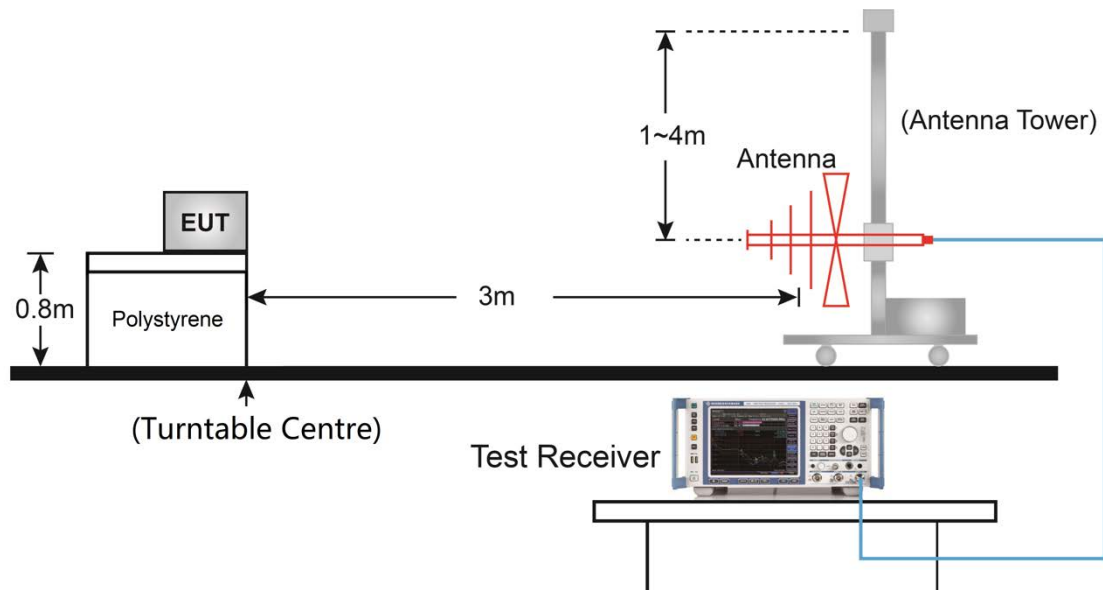
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

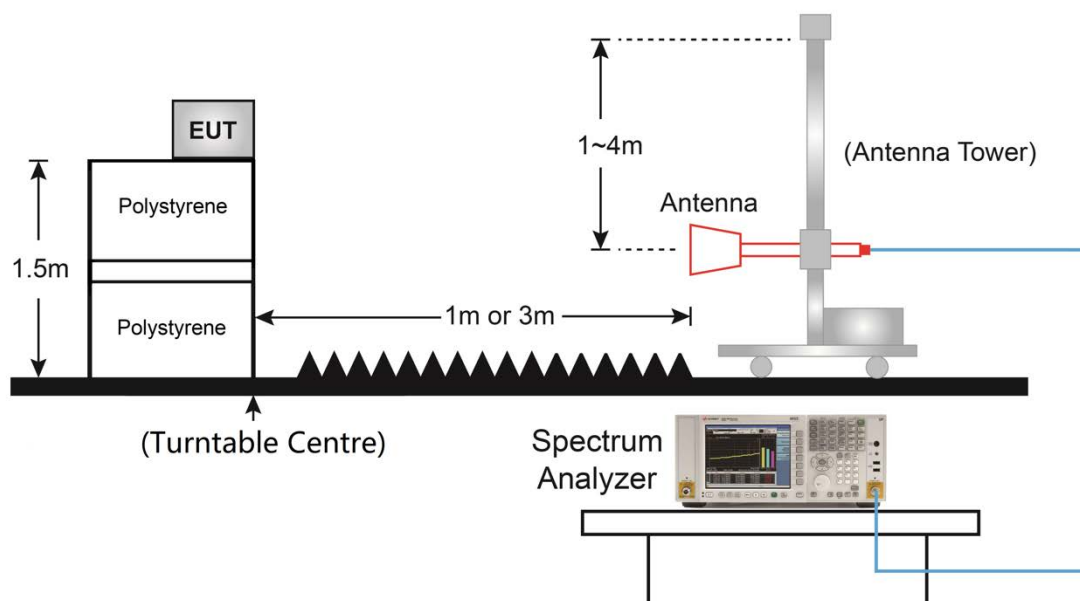
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. 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.5.

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		
Frequency [MHz]	Field Strength [uV/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

ANSI C63.10-2013 Section 6.6

ANSI C63.10-2013 Section 11.13

6.7.3. Test Setting

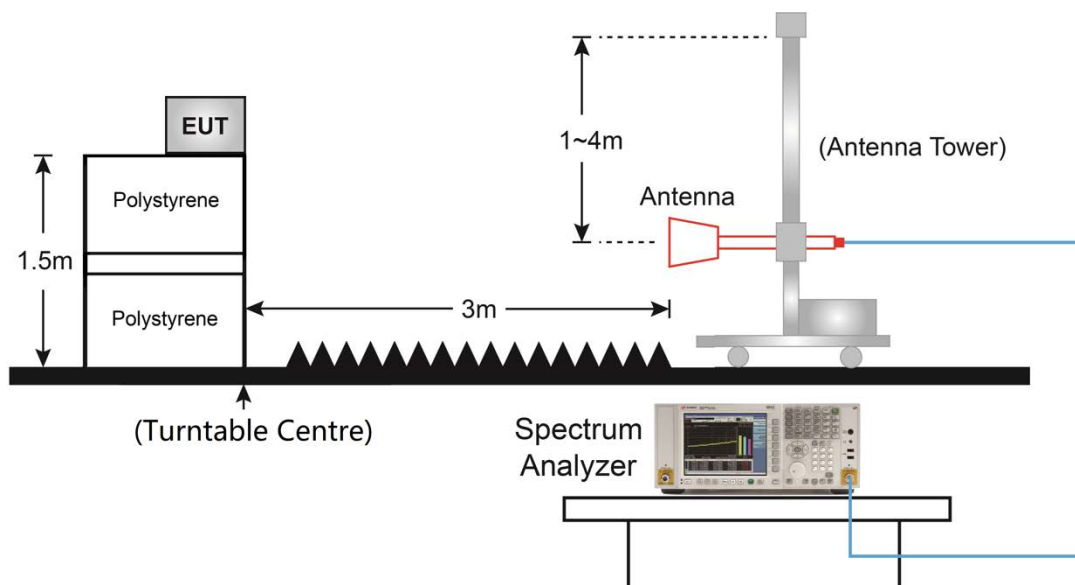
Peak Field Strength Measurements

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 Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW $\geq 1/T$
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

6.7.4. Test Setup



6.7.5. Test Result

Refer to Appendix A.6.

6.8. AC Conducted Emissions

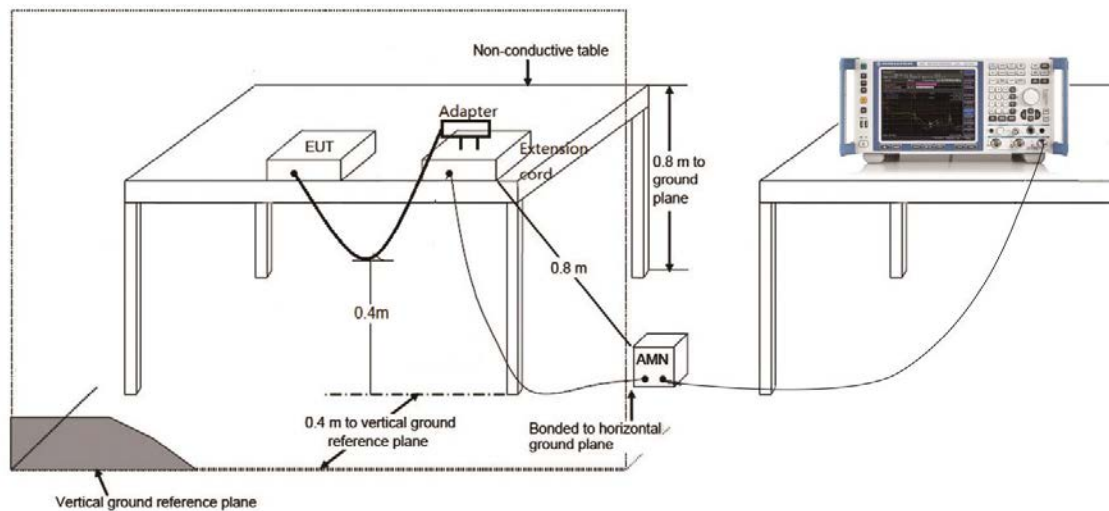
6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
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.7.

7. Conclusion

The data collected relate only the item(s) tested and show that the device is in compliance with Part 15C of the FCC rules.

Appendix A – Test Result

A.1 6dB Bandwidth Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2021/12/09		

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
11b	1Mbps	01	2412	7.100	≥ 0.5
11b	1Mbps	06	2437	7.099	≥ 0.5
11b	1Mbps	11	2462	7.101	≥ 0.5
11g	6Mbps	01	2412	16.40	≥ 0.5
11g	6Mbps	06	2437	16.39	≥ 0.5
11g	6Mbps	11	2462	16.39	≥ 0.5
11n-HT20	MCS0	01	2412	17.64	≥ 0.5
11n-HT20	MCS0	06	2437	17.64	≥ 0.5
11n-HT20	MCS0	11	2462	17.64	≥ 0.5
11n-HT40	MCS0	03	2422	36.39	≥ 0.5
11n-HT40	MCS0	06	2437	36.39	≥ 0.5
11n-HT40	MCS0	09	2452	36.37	≥ 0.5

802.11b 6dB Bandwidth

Channel 01 (2412MHz)



Channel 06 (2437MHz)

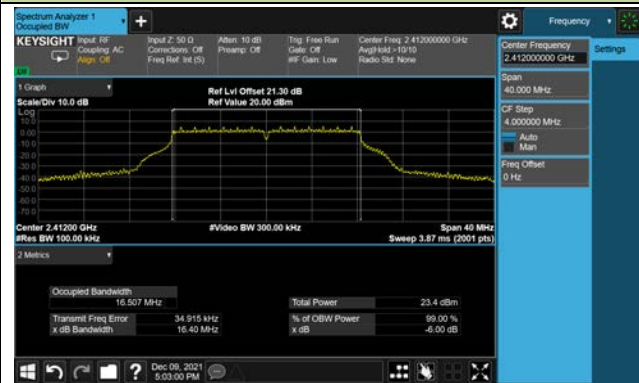


Channel 11 (2462MHz)



802.11g 6dB Bandwidth

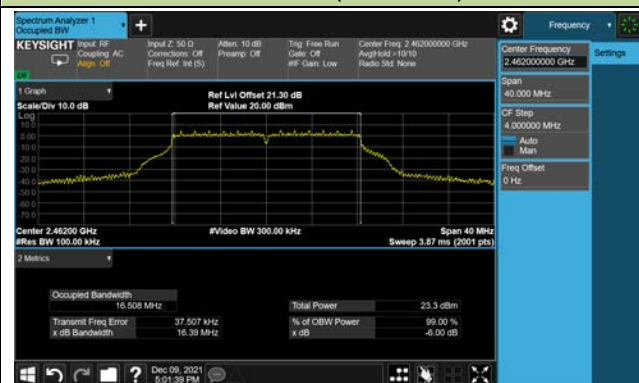
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



802.11n-HT20 6dB Bandwidth

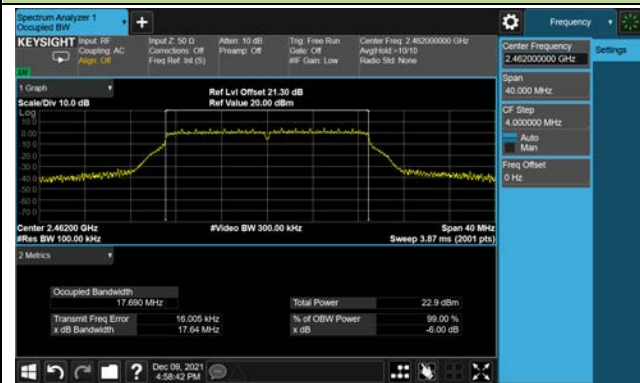
Channel 01 (2412MHz)



Channel 06 (2437MHz)

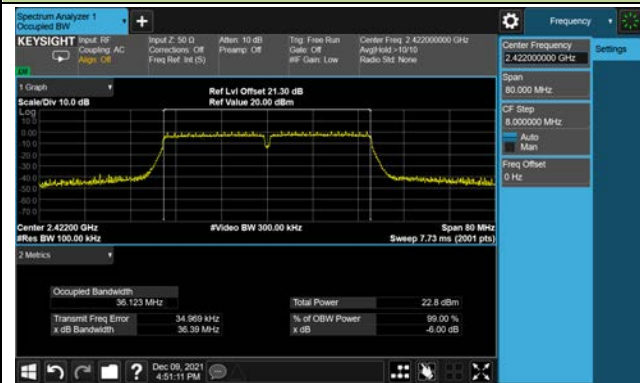


Channel 11 (2462MHz)

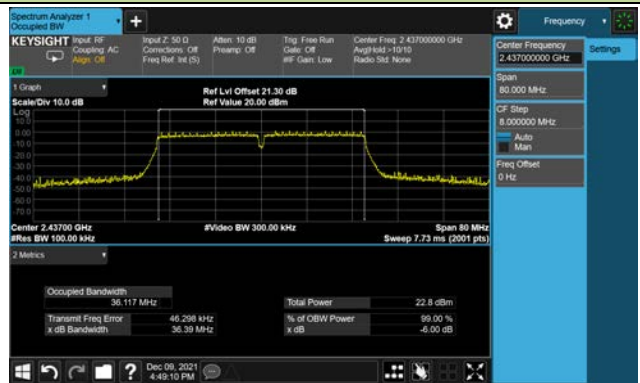


802.11n-HT40 6dB Bandwidth

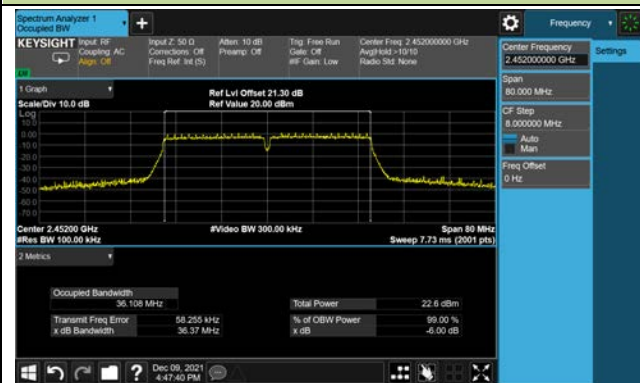
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



A.2 Output Power Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2021/12/10		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Limit (dBm)
				Ant 0	Ant 1		
11b	1Mbps	01	2412	--	21.16	21.16	≤ 30.00
11b	1Mbps	06	2437	--	21.80	21.80	≤ 30.00
11b	1Mbps	11	2462	--	20.23	20.23	≤ 30.00
11g	6Mbps	01	2412	16.38	17.00	19.71	≤ 30.00
11g	6Mbps	06	2437	18.34	18.66	21.51	≤ 30.00
11g	6Mbps	11	2462	16.73	16.87	19.81	≤ 30.00
11n-HT20	MCS0	01	2412	15.21	15.36	18.30	≤ 30.00
11n-HT20	MCS0	02	2417	17.81	18.02	20.93	≤ 30.00
11n-HT20	MCS0	06	2437	18.34	18.46	21.41	≤ 30.00
11n-HT20	MCS0	11	2462	15.38	16.06	18.74	≤ 30.00
11n-HT40	MCS0	03	2422	15.21	15.54	18.39	≤ 30.00
11n-HT40	MCS0	06	2437	15.48	15.77	18.64	≤ 30.00
11n-HT40	MCS0	09	2452	15.27	15.35	18.32	≤ 30.00

Note: Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$ (dBm).

A.3 Power Spectral Density Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2021/12/09		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	AVG PSD (dBm/ 10kHz)		Duty Cycle (%)	Total PSD (dBm/ 10kHz)	Limit (dBm/ 3kHz)
				Ant 0	Ant 1			
11b	1Mbps	01	2412	--	-5.43	94.56	-5.18	≤ 8.00
11b	1Mbps	06	2437	--	-4.63	94.56	-4.38	≤ 8.00
11b	1Mbps	11	2462	--	-5.97	94.56	-5.73	≤ 8.00
11g	6Mbps	01	2412	-12.32	-11.04	94.93	-8.40	≤ 7.69
11g	6Mbps	06	2437	-10.12	-9.77	94.93	-6.70	≤ 7.69
11g	6Mbps	11	2462	-12.82	-12.80	94.93	-9.58	≤ 7.69
11n-HT20	MCS0	01	2412	-14.45	-14.41	94.80	-11.18	≤ 7.69
11n-HT20	MCS0	06	2437	-11.82	-10.49	94.80	-7.86	≤ 7.69
11n-HT20	MCS0	11	2462	-14.18	-13.84	94.80	-10.77	≤ 7.69
11n-HT40	MCS0	03	2422	-17.34	-16.98	90.53	-13.71	≤ 7.69
11n-HT40	MCS0	06	2437	-17.01	-16.51	90.53	-13.31	≤ 7.69
11n-HT40	MCS0	09	2452	-17.33	-17.24	90.53	-13.84	≤ 7.69

Note 1: When EUT duty cycle ≤ 98%, Total AVG PSD = $10 \cdot \log \{10^{(\text{Ant 0 AVG PSD}/10)} + 10^{(\text{Ant 1 AVG PSD}/10)}\} + 10 \cdot \log (1/\text{Duty Cycle})$.

Note 2: The Power Spectral Density limit as below:

802.11b: PSD Limit (dBm/3kHz) = 8 dBm/3kHz.

802.11g/n-HT20/n-HT40: PSD Limit (dBm/3kHz) = 8 - (6.31 - 6) = 7.69 dBm/3kHz.

802.11g - AVGPSD-Ant 0

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



802.11n-HT20 - AVGPSD -Ant 0

Channel 01 (2412MHz)



Channel 06 (2437MHz)

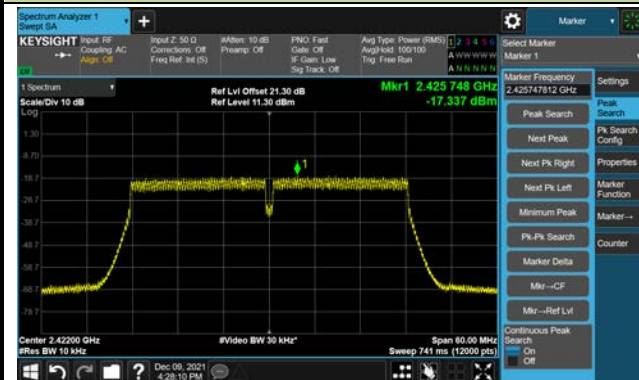


Channel 11 (2462MHz)

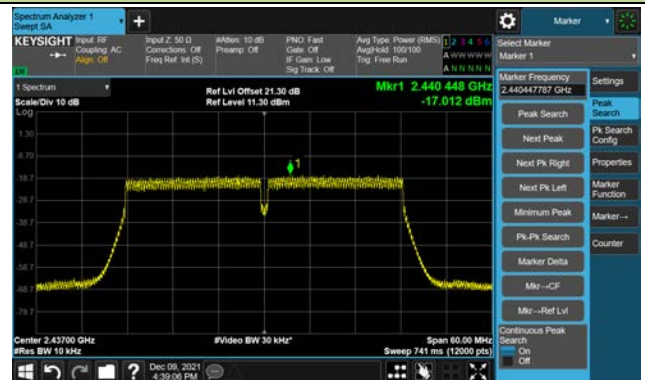


802.11n-HT40 – AVGPSD -Ant 0

Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



802.11b AVGPDS -Ant 1

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



802.11g - AVGPDS-Ant 1

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

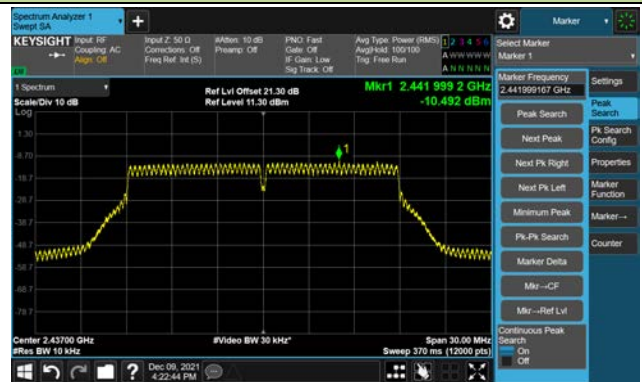


802.11n-HT20 – AVGPSD -Ant 1

Channel 01 (2412MHz)



Channel 06 (2437MHz)

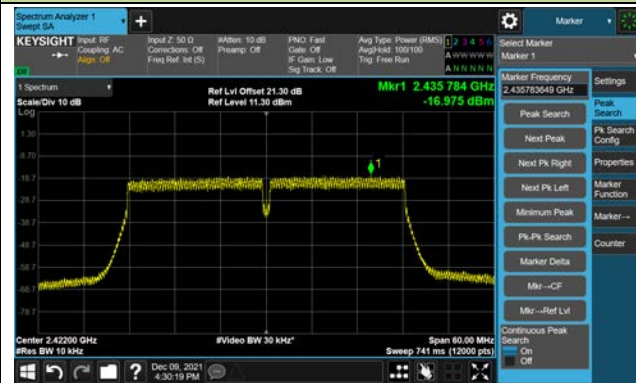


Channel 11 (2462MHz)

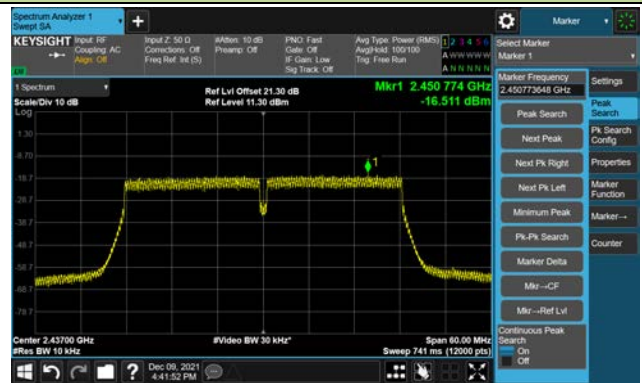


802.11n-HT40 – AVGPSD -Ant 1

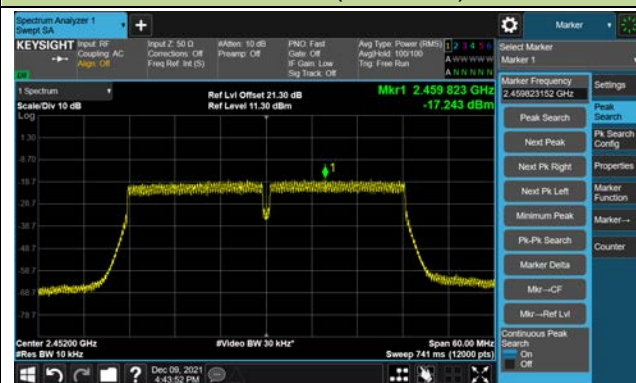
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



A.4 Conducted Band Edge and Out-of-Band Emissions Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2021/12/09		

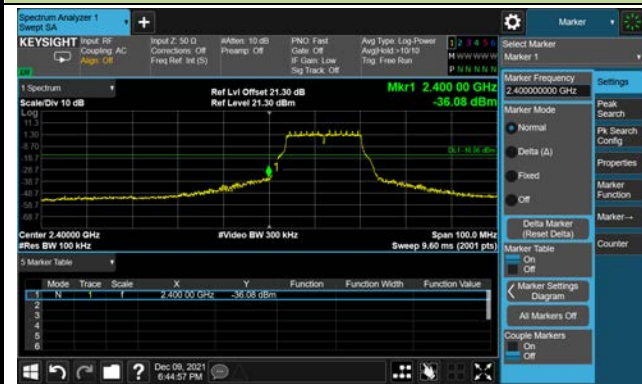
Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit
11b	1Mbps	01	2412	30dBc
11b	1Mbps	06	2437	30dBc
11b	1Mbps	11	2462	30dBc
11g	6Mbps	01	2412	30dBc
11g	6Mbps	06	2437	30dBc
11g	6Mbps	11	2462	30dBc
11n-HT20	MCS0	01	2412	30dBc
11n-HT20	MCS0	06	2437	30dBc
11n-HT20	MCS0	11	2462	30dBc
11n-HT40	MCS0	03	2422	30dBc
11n-HT40	MCS0	06	2437	30dBc
11n-HT40	MCS0	09	2452	30dBc



802.11g Out-of-Band Emissions -Ant 0

Channel 01 (2412MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 11 (2462MHz)

High Band Edge



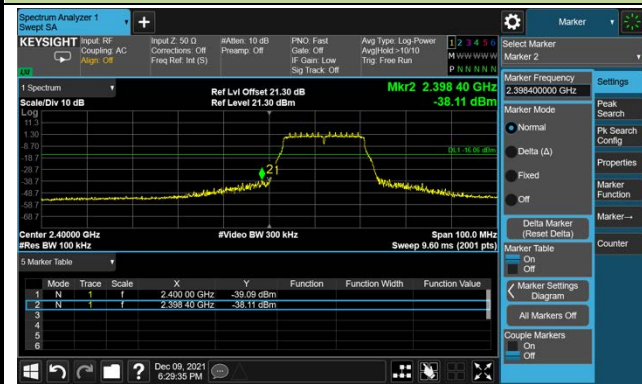
Spurious Emission



802.11n-HT20 Out-of-Band Emissions -Ant 0

Channel 01 (2412MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 11 (2462MHz)

High Band Edge



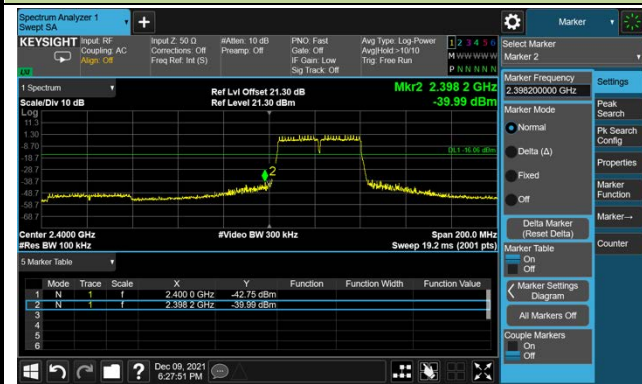
Spurious Emission



802.11n-HT40 Out-of-Band Emissions -Ant 0

Channel 03 (2422MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 09 (2452MHz)

High Band Edge



Spurious Emission



802.11b Out-of-Band Emissions -Ant 1

Channel 01 (2412MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 11 (2462MHz)

High Band Edge



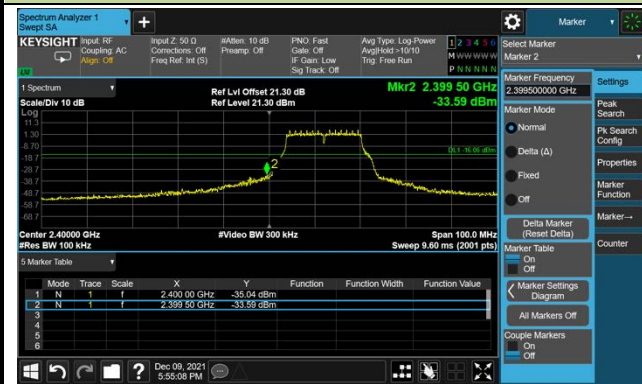
Spurious Emission



802.11g Out-of-Band Emissions -Ant 1

Channel 01 (2412MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 11 (2462MHz)

High Band Edge



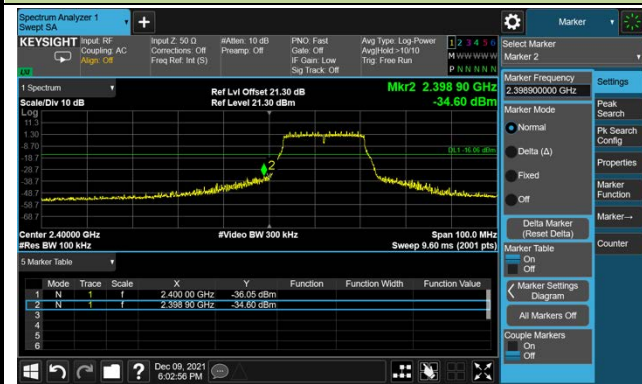
Spurious Emission



802.11n-HT20 Out-of-Band Emissions -Ant 1

Channel 01 (2412MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 11 (2462MHz)

High Band Edge



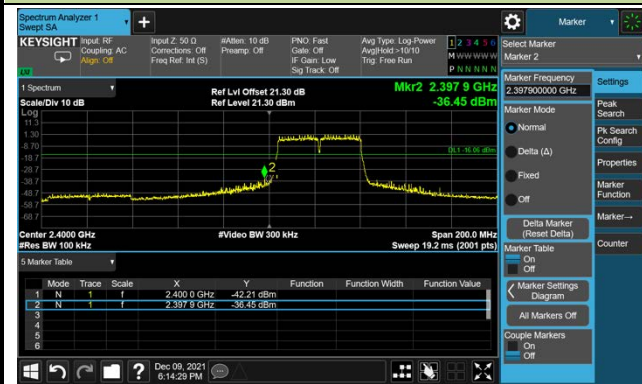
Spurious Emission



802.11n-HT40 Out-of-Band Emissions -Ant 1

Channel 03 (2422MHz)

Low Band Edge



Spurious Emission



Channel 06 (2437MHz)

Spurious Emission



Channel 09 (2452MHz)

High Band Edge



Spurious Emission



A.5 Radiated Spurious Emission Test Result

Test Site	SIP-AC3	Test Engineer	Kyrie Xie
Test Date	2021/12/04~2021/12/07	Test Mode	802.11b
Remark:	Average measurement was not performed if peak level lower than average limit.		

Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
01	8310.0	48.8	-4.9	43.9	74.0	-30.1	Peak	Horizontal
	11905.5	49.0	-3.3	45.7	74.0	-28.3	Peak	Horizontal
	15934.5	46.4	2.9	49.3	74.0	-24.7	Peak	Horizontal
	8293.0	48.5	-4.9	43.6	74.0	-30.4	Peak	Vertical
	10817.5	48.2	-3.1	45.1	74.0	-28.9	Peak	Vertical
	15824.0	45.3	3.6	48.9	74.0	-25.1	Peak	Vertical
06	4876.0	53.3	-9.3	44.0	74.0	-30.0	Peak	Horizontal
	7307.0	61.7	-6.5	55.2	74.0	-18.8	Peak	Horizontal
	7307.0	59.7	-6.5	53.2	54.0	-0.8	Average	Horizontal
	11897.0	49.0	-3.2	45.8	74.0	-28.2	Peak	Horizontal
	3652.0	54.7	-10.7	44.0	74.0	-30.0	Peak	Vertical
	7307.0	60.5	-6.5	54.0	74.0	-20.0	Peak	Vertical
	7307.0	58.0	-6.5	51.5	54.0	-2.5	Average	Vertical
	11353.0	48.9	-3.6	45.3	74.0	-28.7	Peak	Vertical
11	7383.5	60.5	-6.4	54.1	74.0	-19.9	Peak	Horizontal
	7383.5	58.4	-6.4	52.0	54.0	-2.0	Average	Horizontal
	12118.0	48.6	-3.1	45.5	74.0	-28.5	Peak	Horizontal
	15424.5	45.2	3.1	48.3	74.0	-25.7	Peak	Horizontal
	7383.5	59.6	-6.4	53.2	74.0	-20.8	Peak	Vertical
	7383.5	57.5	-6.4	51.1	54.0	-2.9	Average	Vertical
	12135.0	48.9	-3.2	45.7	74.0	-28.3	Peak	Vertical
	15637.0	46.0	2.6	48.6	74.0	-25.4	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	SIP-AC3	Test Engineer	Kyrie Xie
Test Date	2021/12/04~2021/12/07	Test Mode	802.11g
Remark:	Average measurement was not performed if peak level lower than average limit.		

Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
01	8208.0	48.9	-5.2	43.7	74.0	-30.3	Peak	Horizontal
	12152.0	48.3	-3.4	44.9	74.0	-29.1	Peak	Horizontal
	15977.0	45.5	3.3	48.8	74.0	-25.2	Peak	Horizontal
	8437.5	48.8	-4.6	44.2	74.0	-29.8	Peak	Vertical
	11378.5	48.8	-3.6	45.2	74.0	-28.8	Peak	Vertical
	15433.0	45.9	3.1	49.0	74.0	-25.0	Peak	Vertical
06	7315.5	61.1	-6.4	54.7	74.0	-19.3	Peak	Horizontal
	7315.5	52.7	-6.4	46.3	54.0	-7.7	Average	Horizontal
	8480.0	48.0	-4.3	43.7	74.0	-30.3	Peak	Horizontal
	11693.0	47.9	-3.5	44.4	74.0	-29.6	Peak	Horizontal
	4000.5	51.7	-10.0	41.7	74.0	-32.3	Peak	Vertical
	7315.5	58.8	-6.4	52.4	74.0	-21.6	Peak	Vertical
	7315.5	49.4	-6.4	43.0	54.0	-11.0	Average	Vertical
	11038.5	48.4	-3.4	45.0	74.0	-29.0	Peak	Vertical
11	7392.0	57.6	-6.4	51.2	74.0	-22.8	Peak	Horizontal
	7392.0	55.2	-6.4	48.8	54.0	-5.2	Average	Horizontal
	12534.5	48.4	-2.4	46.0	74.0	-28.0	Peak	Horizontal
	16062.0	44.8	3.8	48.6	74.0	-25.4	Peak	Horizontal
	7392.0	58.6	-6.4	52.2	74.0	-21.8	Peak	Vertical
	7392.0	56.4	-6.4	50.0	54.0	-4.0	Average	Vertical
	12084.0	48.7	-3.2	45.5	74.0	-28.5	Peak	Vertical
	15730.5	45.9	3.1	49.0	74.0	-25.0	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	SIP-AC3	Test Engineer	Kyrie Xie
Test Date	2021/12/04~2021/12/07	Test Mode	802.11n-HT20
Remark:	Average measurement was not performed if peak level lower than average limit.		

Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
01	8395.0	49.0	-4.7	44.3	74.0	-29.7	Peak	Horizontal
	12067.0	50.4	-3.4	47.0	74.0	-27.0	Peak	Horizontal
	16053.5	46.4	3.6	50.0	74.0	-24.0	Peak	Horizontal
	8233.5	48.8	-5.1	43.7	74.0	-30.3	Peak	Vertical
	10766.5	48.0	-3.1	44.9	74.0	-29.1	Peak	Vertical
	15756.0	45.7	3.3	49.0	74.0	-25.0	Peak	Vertical
06	7315.5	59.9	-6.4	53.5	74.0	-20.5	Peak	Horizontal
	7315.5	53.1	-6.4	46.7	54.0	-7.3	Average	Horizontal
	8276.0	46.7	-5.0	41.7	74.0	-32.3	Peak	Horizontal
	11786.5	48.7	-3.5	45.2	74.0	-28.8	Peak	Horizontal
	3652.0	54.0	-10.7	43.3	74.0	-30.7	Peak	Vertical
	7315.5	58.4	-6.4	52.0	74.0	-22.0	Peak	Vertical
	7315.5	48.8	-6.4	42.4	54.0	-11.6	Average	Vertical
	11081.0	47.8	-3.3	44.5	74.0	-29.5	Peak	Vertical
11	7392.0	54.1	-6.4	47.7	74.0	-26.3	Peak	Horizontal
	11897.0	48.4	-3.2	45.2	74.0	-28.8	Peak	Horizontal
	15747.5	44.8	3.3	48.1	74.0	-25.9	Peak	Horizontal
	7392.0	54.8	-6.4	48.4	74.0	-25.6	Peak	Vertical
	12305.0	48.2	-2.8	45.4	74.0	-28.6	Peak	Vertical
	15739.0	45.1	3.3	48.4	74.0	-25.6	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)

Test Site	SIP-AC3	Test Engineer	Kyrie Xie
Test Date	2021/12/04~2021/12/07	Test Mode	802.11n-HT40
Remark:	Average measurement was not performed if peak level lower than average limit.		

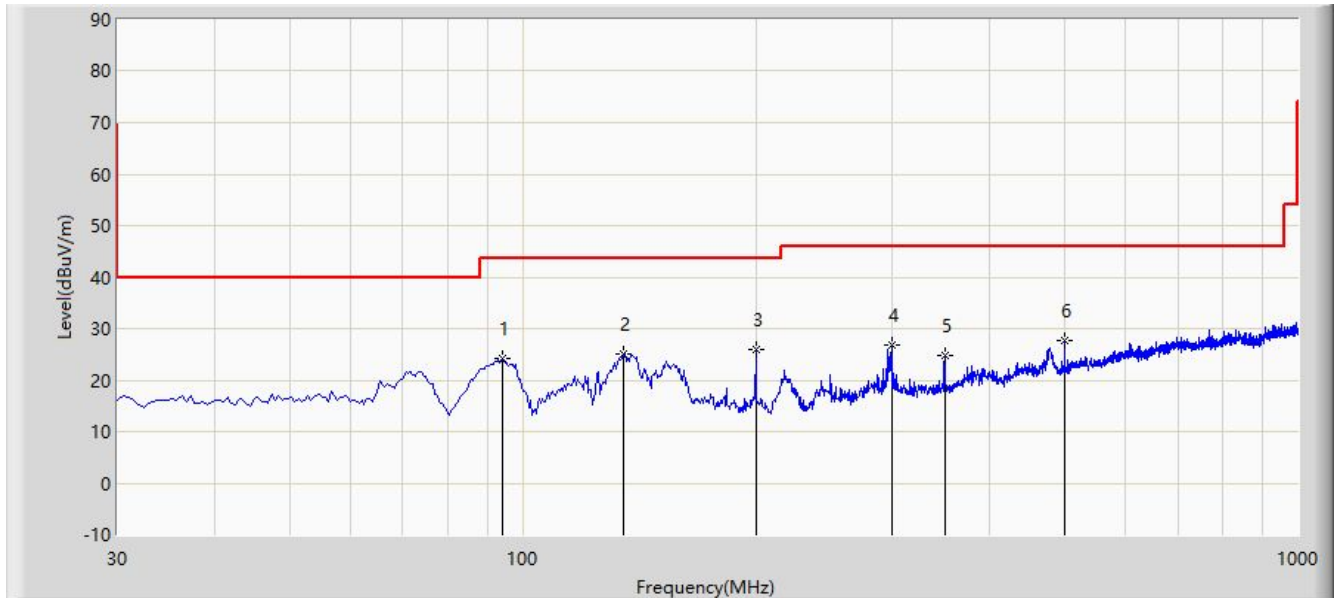
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
03	8191.0	48.8	-5.1	43.7	74.0	-30.3	Peak	Horizontal
	11990.5	48.6	-3.0	45.6	74.0	-28.4	Peak	Horizontal
	16096.0	46.2	2.9	49.1	74.0	-24.9	Peak	Horizontal
	8301.5	48.6	-4.9	43.7	74.0	-30.3	Peak	Vertical
	11897.0	48.0	-3.2	44.8	74.0	-29.2	Peak	Vertical
	16045.0	45.5	3.3	48.8	74.0	-25.2	Peak	Vertical
06	7298.5	52.4	-6.5	45.9	74.0	-28.1	Peak	Horizontal
	8386.5	48.6	-4.7	43.9	74.0	-30.1	Peak	Horizontal
	11888.5	48.8	-3.5	45.3	74.0	-28.7	Peak	Horizontal
	7324.0	51.2	-6.4	44.8	74.0	-29.2	Peak	Vertical
	8369.5	48.5	-4.7	43.8	74.0	-30.2	Peak	Vertical
	11021.5	47.5	-3.3	44.2	74.0	-29.8	Peak	Vertical
09	8174.0	49.6	-5.3	44.3	74.0	-29.7	Peak	Horizontal
	12526.0	47.5	-2.3	45.2	74.0	-28.8	Peak	Horizontal
	15764.5	45.4	3.1	48.5	74.0	-25.5	Peak	Horizontal
	8386.5	49.3	-4.7	44.6	74.0	-29.4	Peak	Vertical
	11990.5	47.7	-3.0	44.7	74.0	-29.3	Peak	Vertical
	15756.0	46.1	3.3	49.4	74.0	-24.6	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: SIP-AC1	Time: 2021/12/08
Limit: FCC_Part15.209_RE(3m)	Engineer: Kyrie Xie
Probe: SIP-AC1_VULB 9168 _30-1000MHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2422MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			94.020	24.108	11.663	-19.392	43.500	12.445	PK
2			134.760	25.156	8.228	-18.344	43.500	16.928	PK
3		*	199.750	25.836	11.414	-17.664	43.500	14.422	PK
4			299.660	26.679	8.351	-19.321	46.000	18.328	PK
5			350.100	24.866	5.565	-21.134	46.000	19.301	PK
6			499.965	27.727	4.946	-18.273	46.000	22.781	PK

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

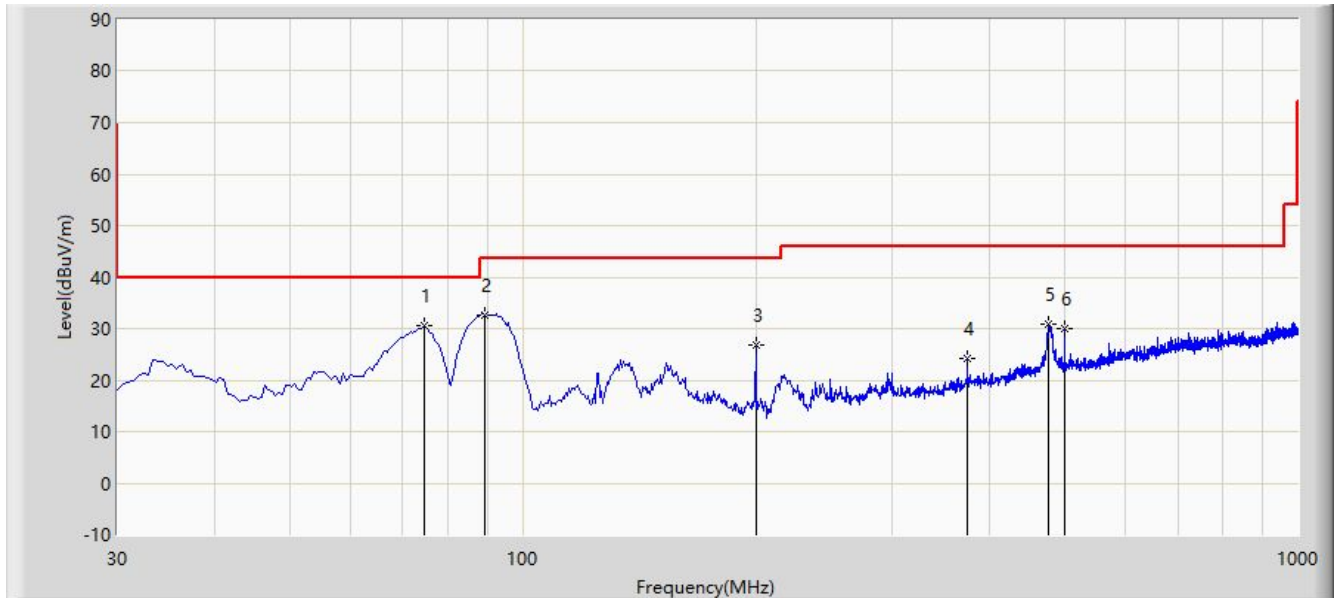
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

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.

Site: SIP-AC1	Time: 2021/12/08
Limit: FCC_Part15.209_RE(3m)	Engineer: Kyrie Xie
Probe: SIP-AC1_VULB 9168 _30-1000MHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at channel 2422MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		*	74.620	30.545	15.769	-9.455	40.000	14.776	PK
2			89.170	32.712	20.611	-10.788	43.500	12.101	PK
3			199.750	26.813	12.391	-16.687	43.500	14.422	PK
4			374.835	24.131	3.910	-21.869	46.000	20.221	PK
5			477.655	30.758	8.132	-15.242	46.000	22.626	PK
6			499.965	29.969	7.188	-16.031	46.000	22.781	PK

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

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

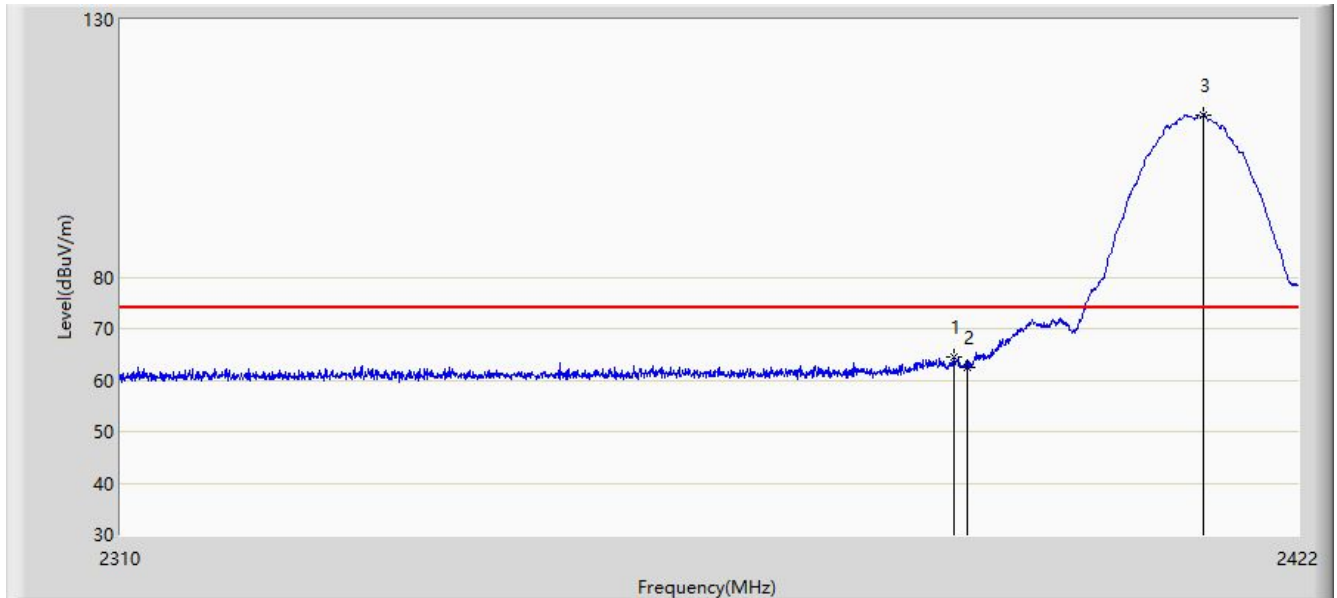
Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

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.

A.6 Radiated Restricted Band Edge Test Result

Site: SIP-AC3	Time: 2021/12/07 - 17:10
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11b	

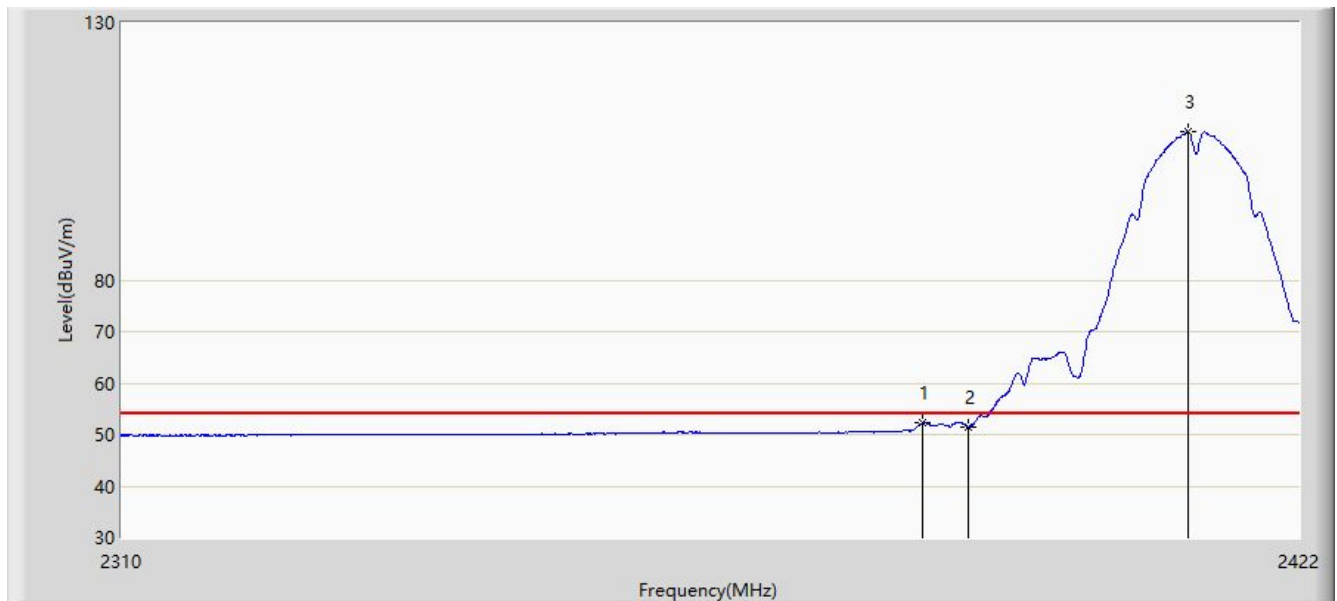


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2388.680	64.430	32.499	-9.570	74.000	31.931	PK
2			2390.000	62.504	30.565	-11.496	74.000	31.939	PK
3		*	2412.816	111.528	79.442	N/A	N/A	32.086	PK

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

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

Site: SIP-AC3	Time: 2021/12/07 - 17:03
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11b	

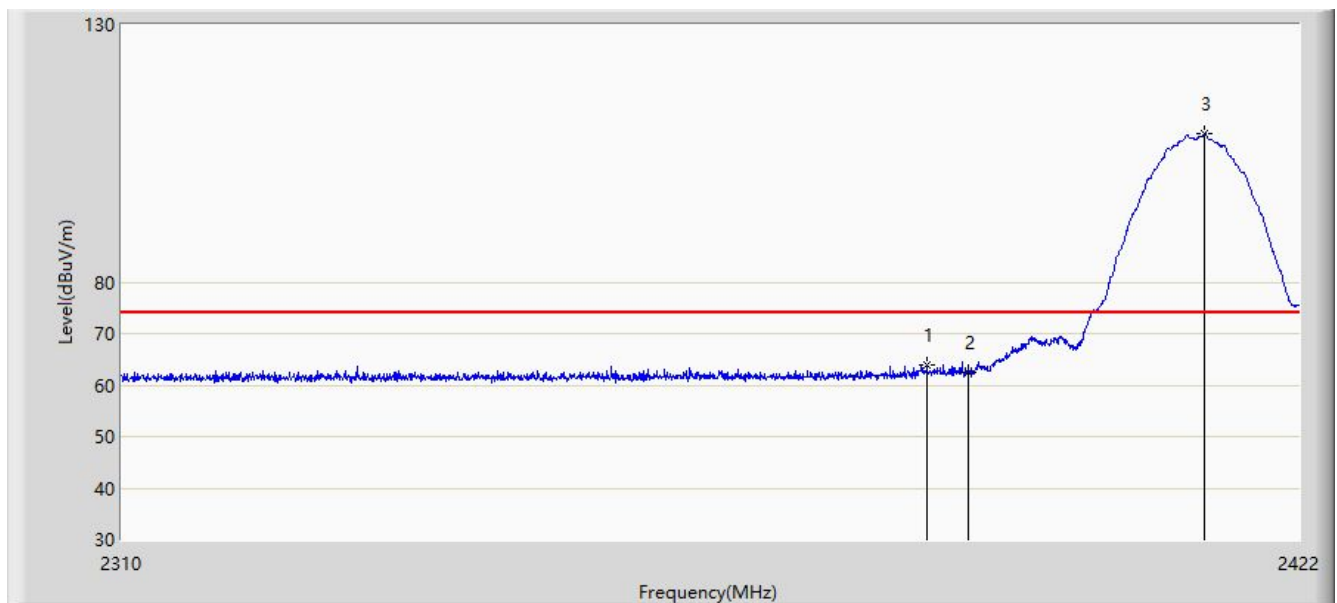


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2385.656	52.222	20.309	-1.778	54.000	31.913	AV
2			2390.000	51.490	19.551	-2.510	54.000	31.939	AV
3	X	*	2411.248	108.835	76.747	N/A	N/A	32.089	AV

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

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

Site: SIP-AC3	Time: 2021/12/07 - 17:11
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11b	

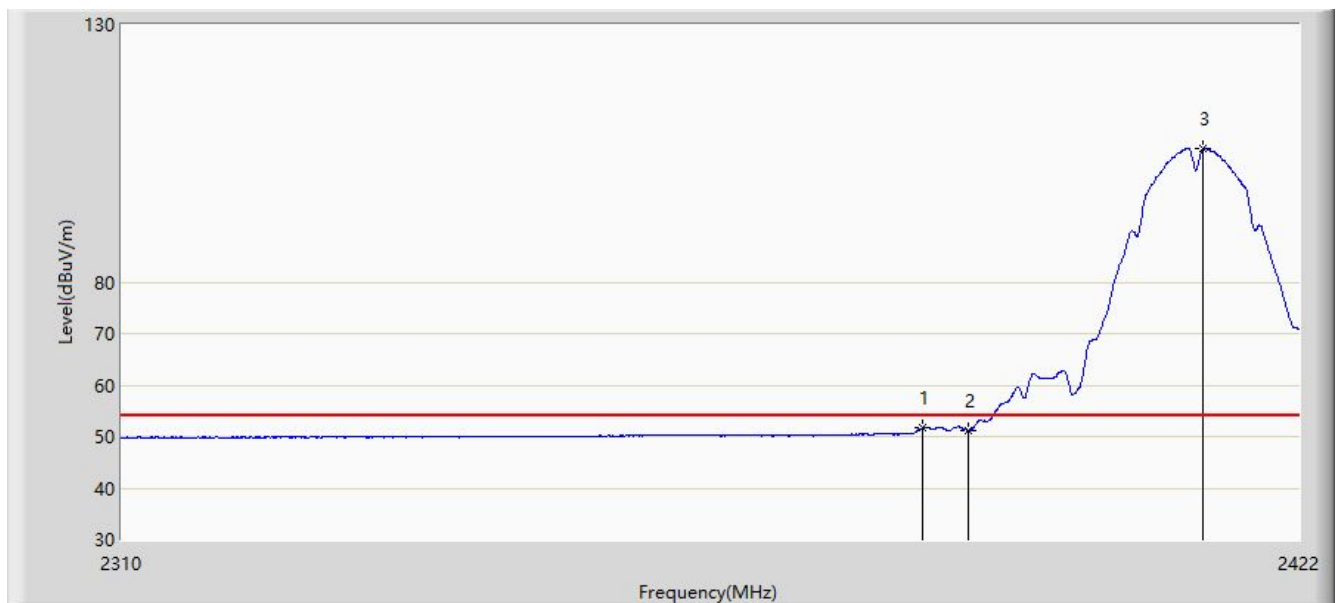


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2386.048	64.056	32.141	-9.944	74.000	31.915	PK
2			2390.000	62.479	30.540	-11.521	74.000	31.939	PK
3		*	2412.872	108.727	76.641	N/A	N/A	32.086	PK

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

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

Site: SIP-AC3	Time: 2021/12/07 - 17:15
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11b	

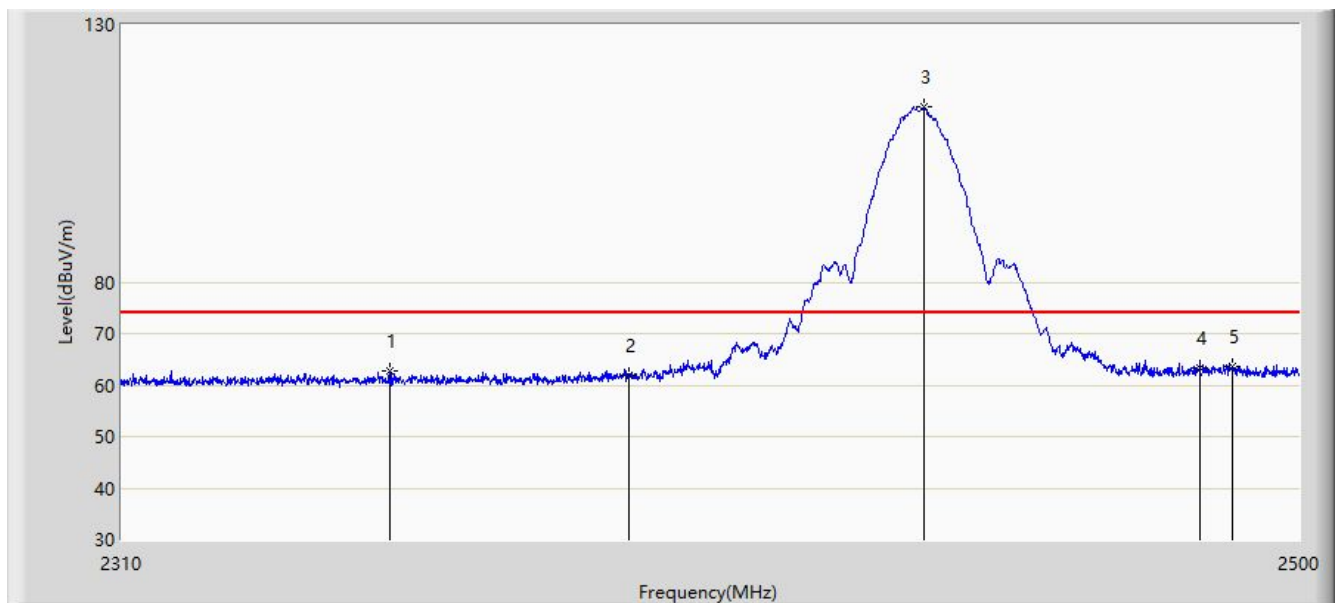


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2385.656	51.769	19.856	-2.231	54.000	31.913	AV
2			2390.000	51.161	19.222	-2.839	54.000	31.939	AV
3		*	2412.704	105.983	73.897	N/A	N/A	32.087	AV

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:23
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2437MHz by 802.11b	

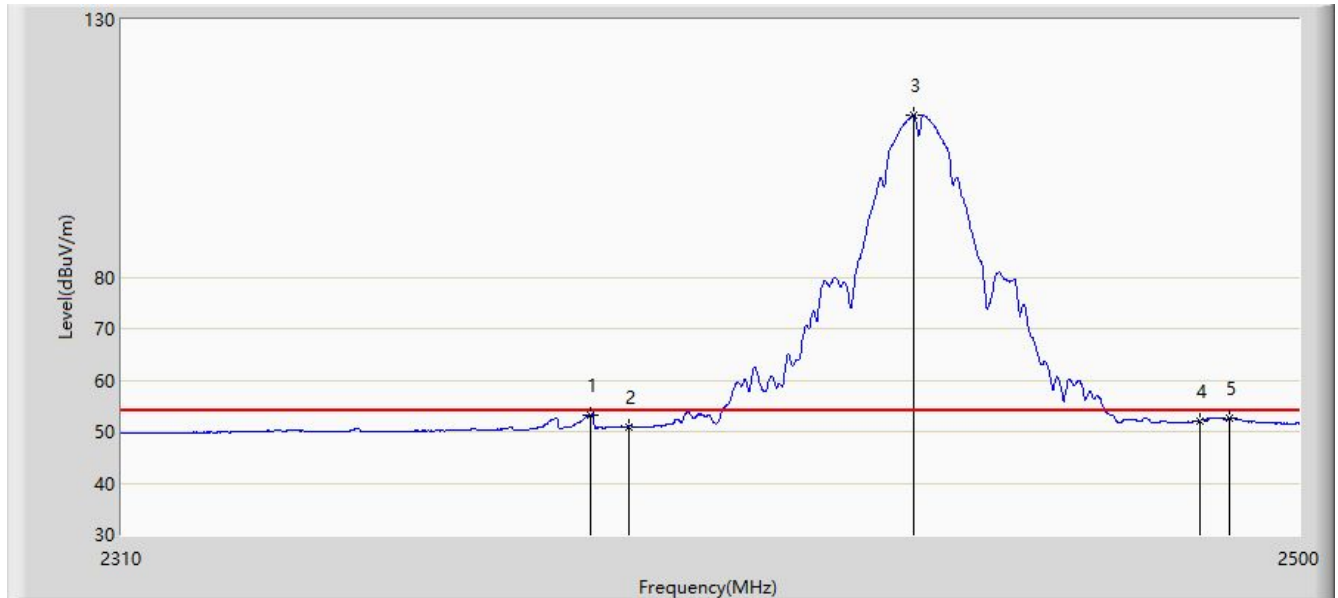


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2351.990	62.763	30.923	-11.237	74.000	31.839	PK
2			2390.000	61.850	29.911	-12.150	74.000	31.939	PK
3		*	2437.965	113.958	81.863	N/A	N/A	32.095	PK
4			2483.500	63.446	31.131	-10.554	74.000	32.315	PK
5			2488.790	63.747	31.405	-10.253	74.000	32.341	PK

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

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

Site: SIP-AC3	Time: 2021/12/07 - 15:56
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2437MHz by 802.11b	

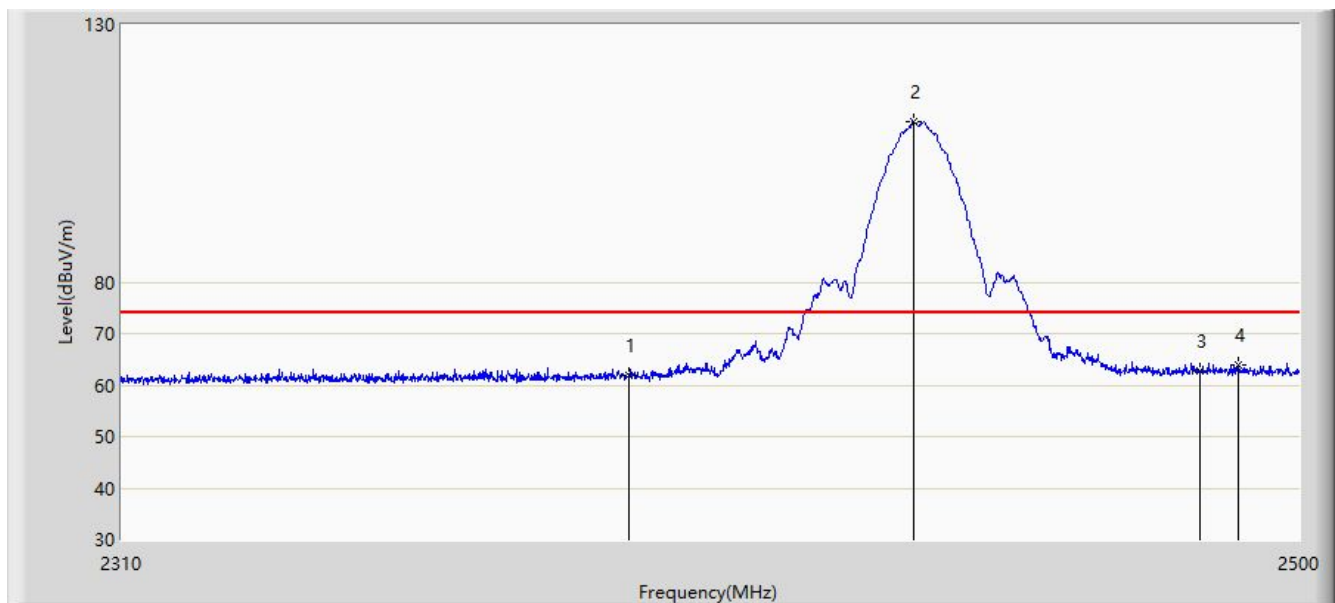


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2383.815	53.174	21.272	-0.826	54.000	31.902	AV
2			2390.000	50.934	18.995	-3.066	54.000	31.939	AV
3	X	*	2436.160	111.583	79.493	N/A	N/A	32.090	AV
4			2483.500	52.125	19.810	-1.875	54.000	32.315	AV
5			2488.505	52.632	20.292	-1.368	54.000	32.340	AV

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:25
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2437MHz by 802.11b	

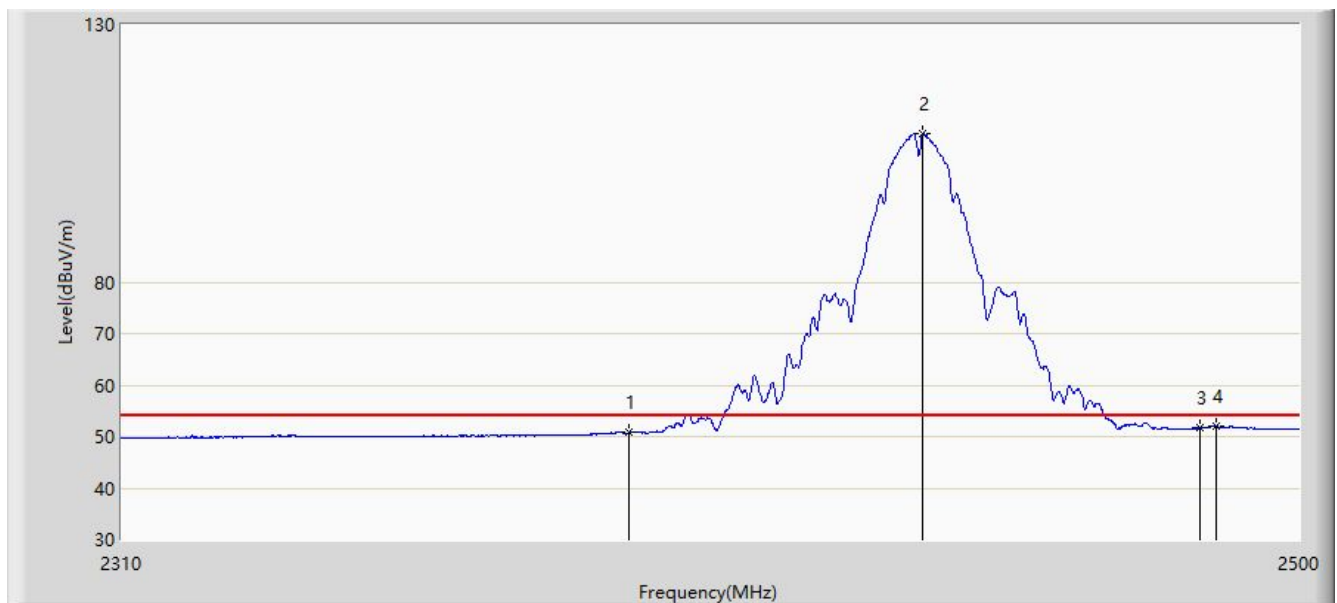


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2390.000	61.805	29.866	-12.195	74.000	31.939	PK
2		*	2436.160	111.139	79.049	N/A	N/A	32.090	PK
3			2483.500	62.666	30.351	-11.334	74.000	32.315	PK
4			2489.835	64.000	31.653	-10.000	74.000	32.347	PK

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:28
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2437MHz by 802.11b	

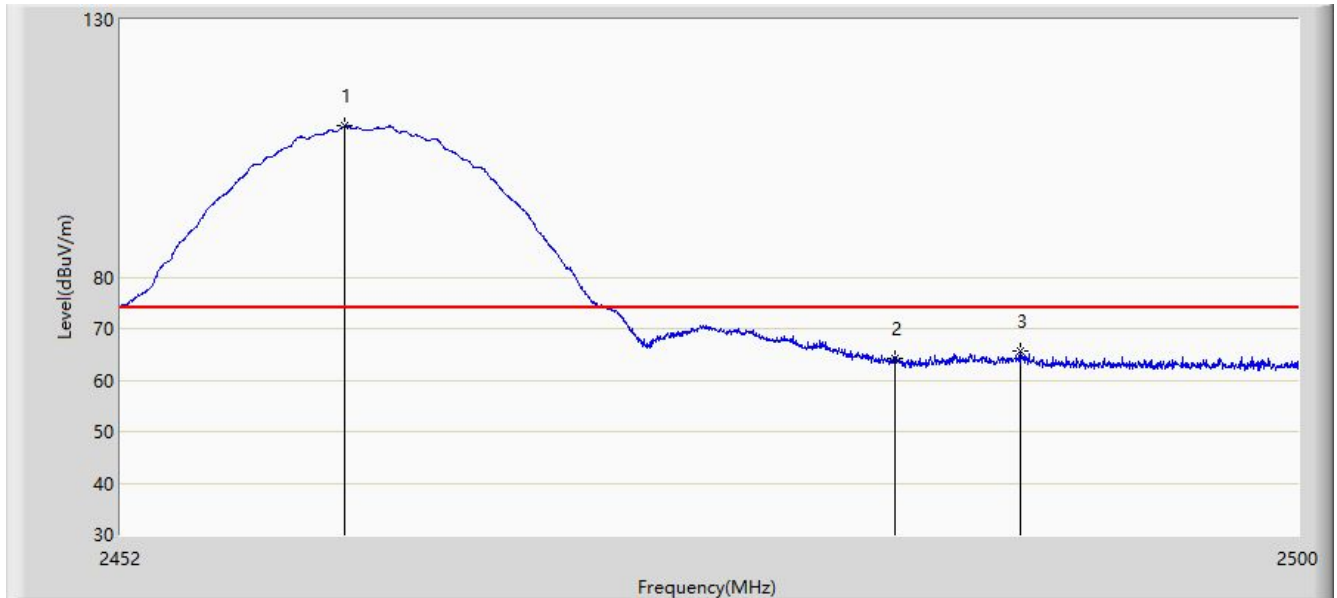


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2390.000	50.774	18.835	-3.226	54.000	31.939	AV
2	X	*	2437.680	108.909	76.815	54.909	54.000	32.094	AV
3			2483.500	51.660	19.345	-2.340	54.000	32.315	AV
4			2486.130	52.005	19.677	-1.995	54.000	32.328	AV

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:07
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2462MHz by 802.11b	

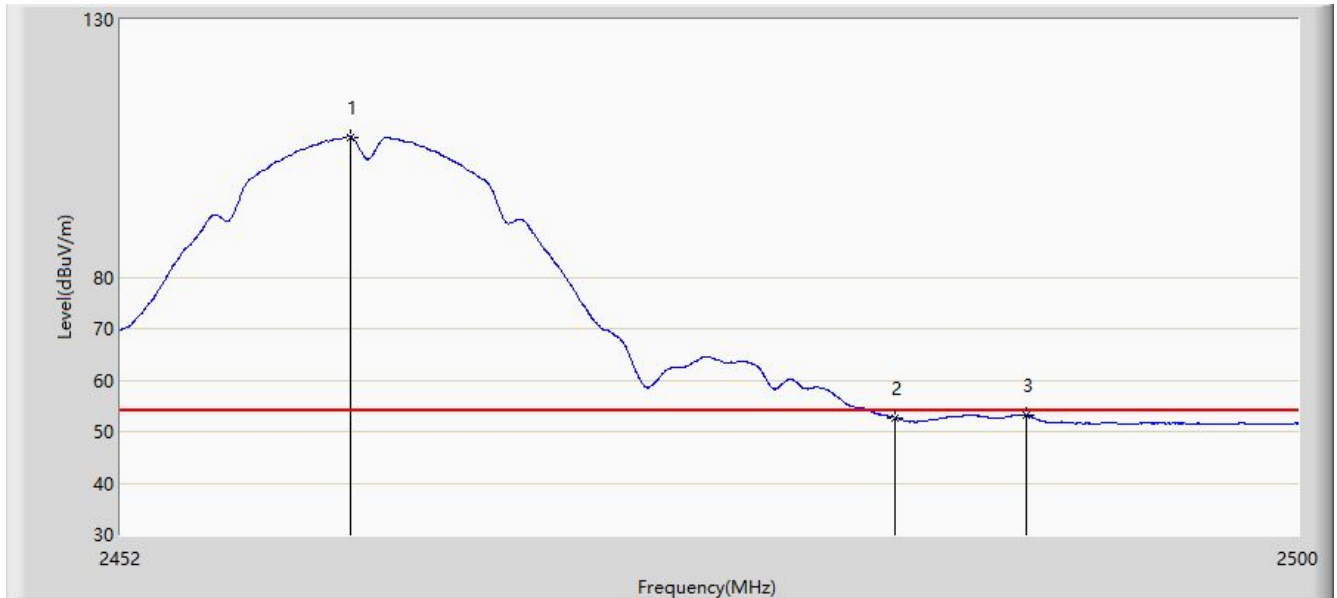


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2461.096	109.370	77.151	N/A	N/A	32.219	PK
2			2483.500	64.124	31.809	-9.876	74.000	32.315	PK
3			2488.624	65.605	33.264	-8.395	74.000	32.341	PK

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:06
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2462MHz by 802.11b	

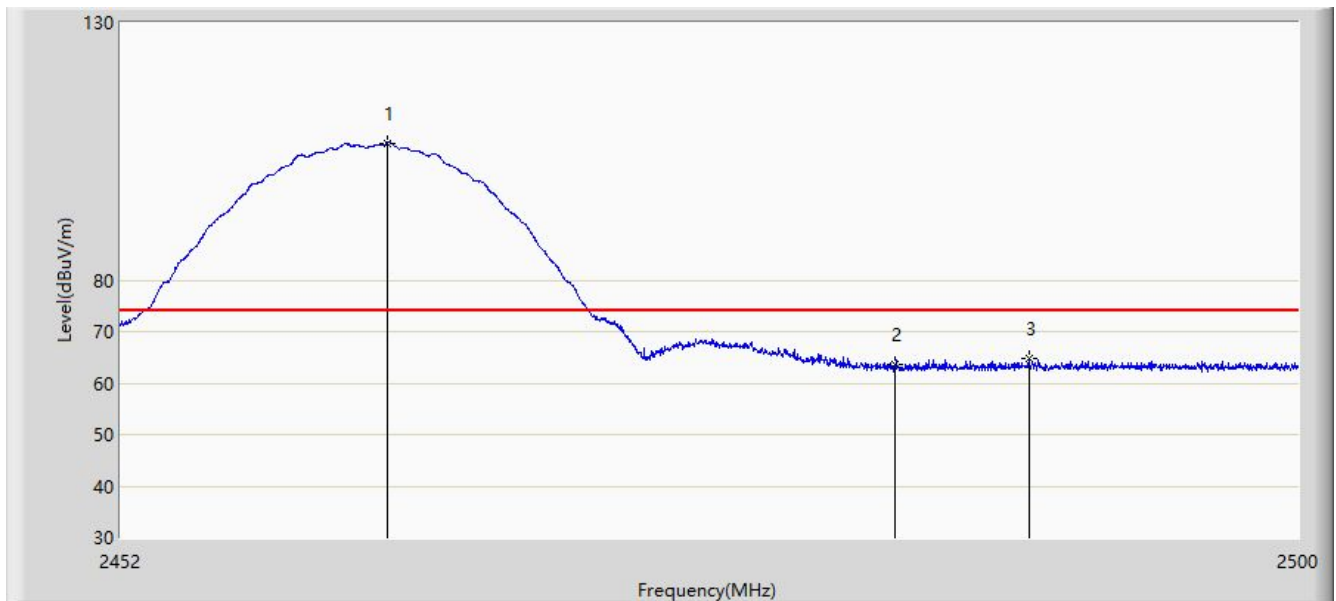


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		*	2461.312	107.227	75.006	N/A	N/A	32.221	AV
2			2483.500	52.639	20.324	-1.361	54.000	32.315	AV
3			2488.840	53.191	20.849	-0.809	54.000	32.342	AV

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:10
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2462MHz by 802.11b	

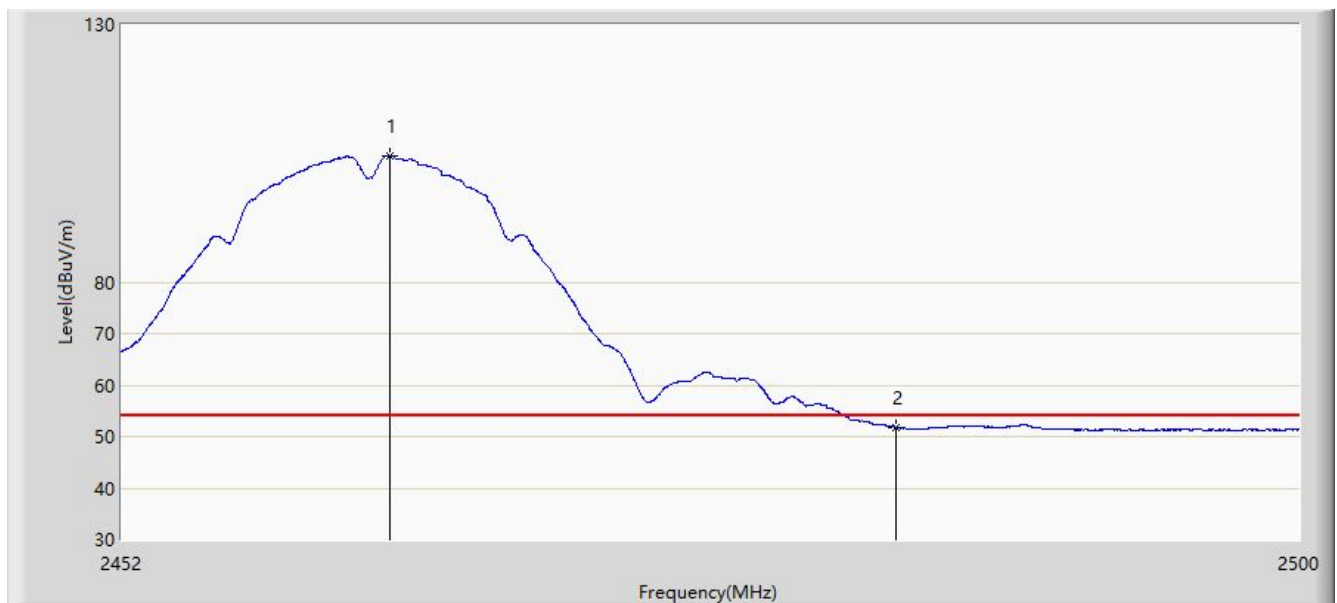


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2462.800	106.578	74.350	N/A	N/A	32.228	PK
2			2483.500	63.511	31.196	-10.489	74.000	32.315	PK
3			2488.960	64.746	32.403	-9.254	74.000	32.343	PK

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

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

Site: SIP-AC3	Time: 2021/12/07 - 16:21
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2462MHz by 802.11b	

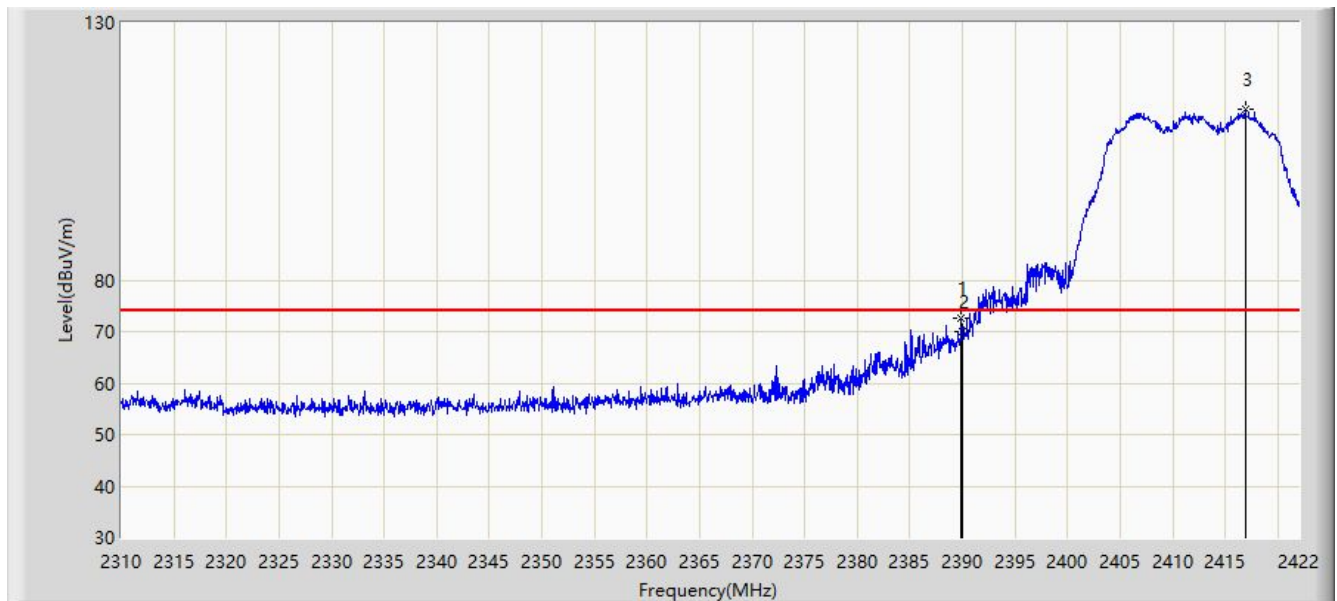


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		*	2462.872	104.518	72.289	N/A	N/A	32.229	AV
2			2483.500	51.745	19.430	-2.255	54.000	32.315	AV

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

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

Site: SIP-AC3	Time: 2021/12/04 - 00:26
Limit: FCC_Part15_Band Edge(3m)	Engineer: Edward Zhang
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11g	

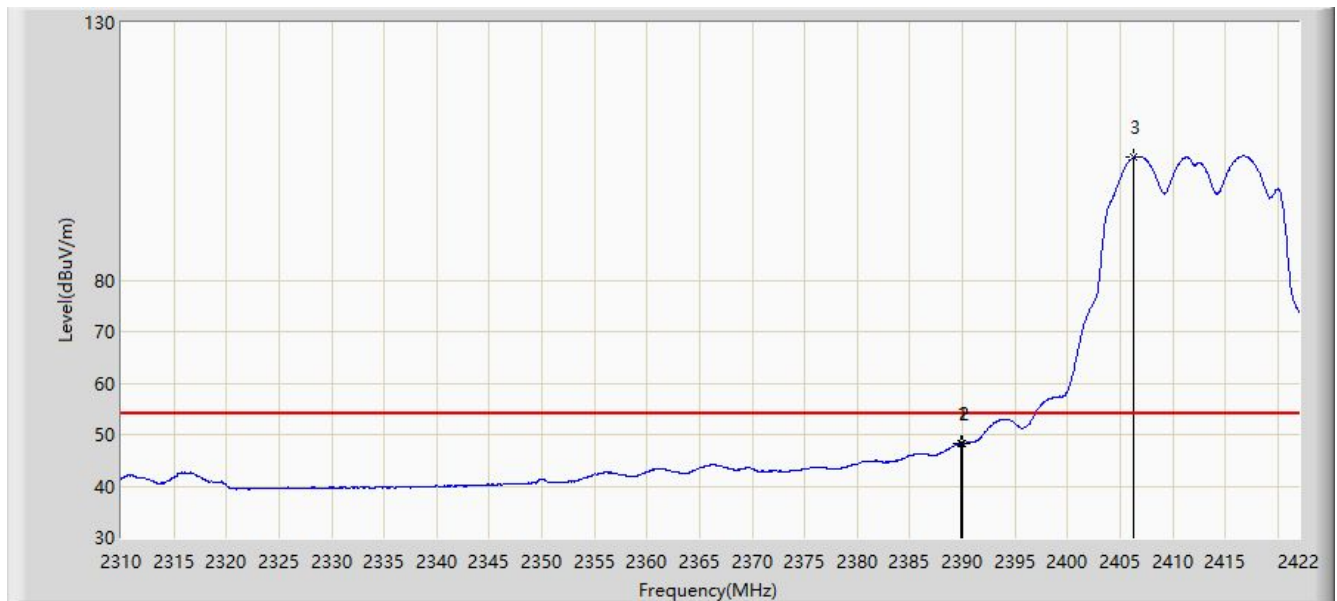


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2389.856	72.557	40.619	-1.443	74.000	31.938	PK
2			2390.000	70.075	38.136	-3.925	74.000	31.939	PK
3		*	2416.960	113.080	80.999	N/A	N/A	32.081	PK

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

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

Site: SIP-AC3	Time: 2021/12/04 - 00:36
Limit: FCC_Part15_Band Edge(3m)	Engineer: Edward Zhang
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11g	

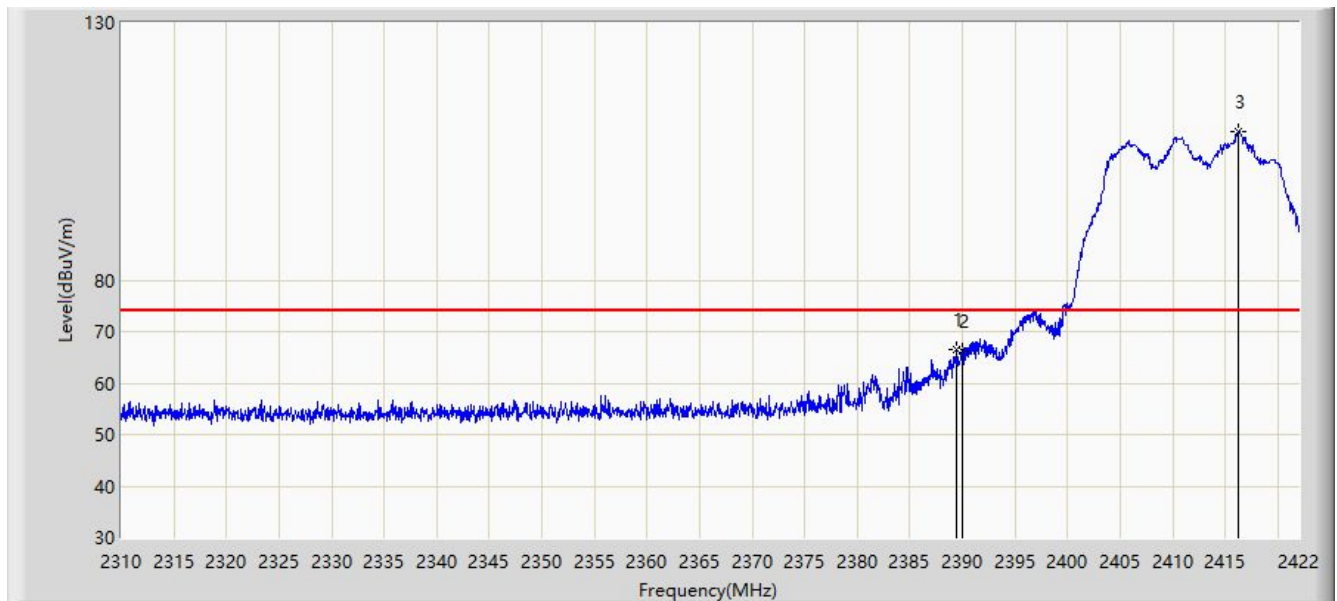


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2389.912	48.357	16.419	-5.643	54.000	31.938	AV
2			2390.000	48.343	16.404	-5.657	54.000	31.939	AV
3		*	2406.320	103.789	71.735	N/A	N/A	32.054	AV

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

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

Site: SIP-AC3	Time: 2021/12/04 - 00:38
Limit: FCC_Part15_Band Edge(3m)	Engineer: Edward Zhang
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11g	

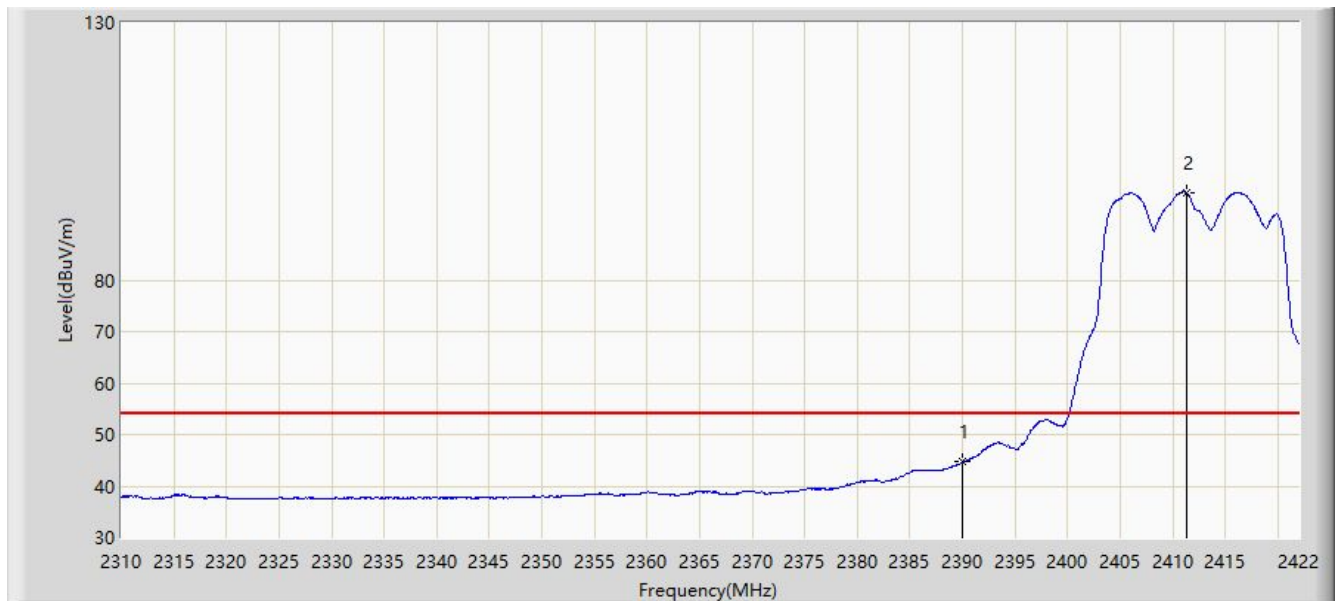


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2389.464	66.410	34.474	-7.590	74.000	31.936	PK
2			2390.000	66.116	34.177	-7.884	74.000	31.939	PK
3		*	2416.232	108.778	76.696	N/A	N/A	32.082	PK

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

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

Site: SIP-AC3	Time: 2021/12/04 - 00:40
Limit: FCC_Part15_Band Edge(3m)	Engineer: Edward Zhang
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Vertical
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11g	

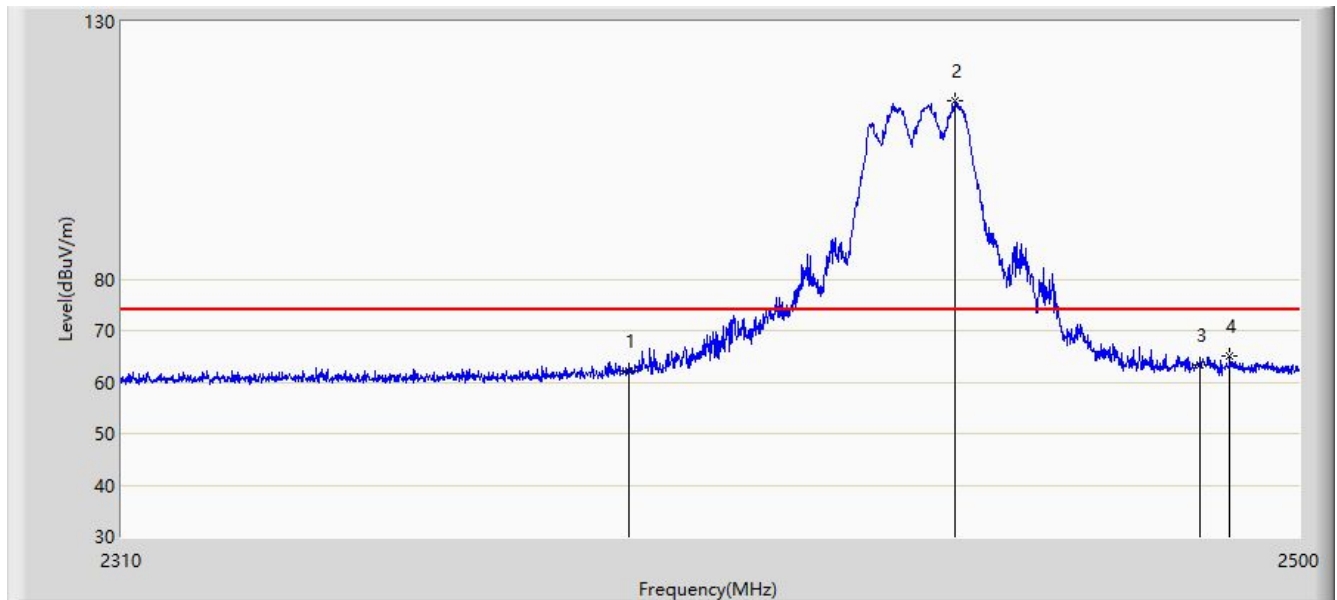


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			2390.000	44.646	12.707	-9.354	54.000	31.939	AV
2		*	2411.304	96.953	64.865	N/A	N/A	32.088	AV

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

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

Site: SIP-AC3	Time: 2021/12/07 - 17:43
Limit: FCC_Part15_Band Edge(3m)	Engineer: Stephen Dong
Probe: SIP-AC3_HF907_102861_1-18GHz	Polarity: Horizontal
EUT: MÓDEM(Fibra óptica)	Power: AC 120V/60Hz
Note: Transmit at 2437MHz by 802.11g	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			2390.000	62.179	30.240	-11.821	74.000	31.939	PK
2		*	2442.905	114.701	82.593	N/A	N/A	32.108	PK
3			2483.500	63.383	31.068	-10.617	74.000	32.315	PK
4			2488.505	65.207	32.867	-8.793	74.000	32.340	PK

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

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