

FCC Test Report

For

Smart AI Camera

Model Number : AIPC-02-SW, AIPC-01-SW

FCC ID : 2AX6X-AIPC-02-SW

Report Number : RF-S840-1203-361

Date of Receipt : April 16, 2021

Date of Report : July 23, 2021

Prepared for

Simpnic co., Ltd.

16F.-6, No. 79, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221006, Taiwan (R.O.C.)



Prepared by

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Verification of Compliance

Equipment under Test : Smart AI Camera
Model No. : AIPC-02-SW, AIPC-01-SW
FCC ID : 2AX6X-AIPC-02-SW
Manufacturer : SpotCam Co. Ltd.
Applicant : Simpnic co., Ltd.
Address : 16F.-6, No. 79, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221006, Taiwan (R.O.C.)
Applicable Standards : 47 CFR part 15, Subpart C
ANSI 63.10:2013
RSS-247 Issue 2
RSS-Gen Issue 5
Date of Testing : April 19 ~ June 28, 2021
Deviation : The method, configuration and arrangement of the tests are following the requirement of customer and the applicable standards cited above.
Condition of Test Sample : Mass Production



We, **Central Research Technology Co.**, hereby certify that one sample of the designated product was tested in our facility during the period mentioned above. The test records, data evaluation and Equipment Under Test (EUT) configurations shown in the present report are true and accurate representation of the measurements of the sample's RF characteristics under the conditions herein specified.

The test results show that the EUT as described in the present report is in compliance with the requirements set forth in the standards mentioned above and apply to the tested sample identified in the present report only. The test report shall not be reproduced, except in its entirety, without the written approval of Central Research Technology Co.

PREPARED BY : Rosa Hsieh , **DATE** : July 23, 2021
(Rosa Hsieh/System Executive)

APPROVED BY : Cathy Chen , **DATE** : July 23, 2021
(Cathy Chen/ Technical Manager)

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1 General Description

1.1 General Description of EUT

Equipment under Test : Smart AI Camera
Model No. : AIPC-02-SW, AIPC-01-SW
Power in : 5Vdc
Frequency Range : 802.11b/g/n HT20: 2412 MHz – 2462 MHz
802.11n HT40: 2422 MHz – 2452 MHz
Modular Function : GFSK, OFDM
Channel No. : 802.11b/g/n HT20:11
802.11n HT40:7
Antenna Spec : Brand/Mode No.: Sunnyway/ IPC03
Type: FPCB Antenna
Antenna Gain : 2.38dBi

The difference between AIPC-02-SW and AIPC-01-SW is for zoom module specification only. The appearance and PCB layout of them are all the same. AIPC-02-SW was taken as the representative condition for test and its data are recorded in the present document.

Channel List:

802.11 b/g/n HT20

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452		

802.11n HT40

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447		

Test Mode

Test item	Mode	Operation Frequency	Test Voltage
Conducted power test/ Radiated emission above 1 GHz	11b	CH 1 , CH 6, CH 11	110 Vac
	11g	CH 1 , CH 6, CH 11	
	11n HT20	CH 1 , CH 6, CH 11	
	11n HT40	CH 3, CH 6, CH 9	
Radiated emission below 1 GHz	Normal mode		120 Vac
Power line conducted emission	Normal mode		120 Vac

According to the preliminary test for 110Vac and 120 Vac, it was found 110 Vac is worse. It was taken as the representative condition for test and its data are recorded in the present document.

Power setting:

Mode	Operation Frequency	Software power setting value
11b	CH 1 , CH 6, CH 11	47, 63, 63
11g	CH 1 , CH 6, CH 11	47, 63, 63
11n HT20	CH 1 , CH 6, CH 11	46, 63, 63
11n HT40	CH 3, CH 6, CH 9	37, 63, 47

EUT Test step:

1. EUT Connect with PC/NB.
2. Turn on the power.
3. Operation test software:REALTEK 11n 8188FU USB WLAN NIC MP Kit V1.2
4. Adjust test mode, channel, setting power.
5. Press start testing.
6. EUT run test program and transmit signal.

1.2 Applied standards

(1) 6 dB Bandwidth

According to FCC 15.247(a)(2)(i), the minimum 6 dB bandwidth shall be at least 500 kHz.

(2) Maximun Peak Output Power

According to FCC 15.247(b)(3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

According to FCC 15.247(b) (4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, 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 (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) 100 kHz bandwidth outside of band

According to FCC 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph FCC 15.247(b)(3), the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in FCC 15.209(a) is not required. Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a), must also comply with the radiated emission limits specified in FCC 15.209(a).

(4) Power Density

According to FCC 15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

(5) Radiated emission measurements

For intentional device, according to FCC 15.209, the general requirement of field strength of radiated emissions from intentional radiator at a distance of 3 meters shall not exceed the below table.

Frequency (MHz)	Measurement Distance (m)	Field Strength (uV/m)	Field Strength (dBuV/m)
0.009-0.490	300	2400/F(kHz)	
0.490-1.705	30	24000/F(kHz)	
1.705-30.0	3	30	29.5
30 – 88	3	100	40.0
88 – 216	3	150	43.5
216 – 960	3	200	46.0
above 1610	3	500	54.0

Note1 : At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

Note 2: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade)

(6) Conduction Emission Requirement

For intentional device, according to FCC 15.207(a), line conduction emission limit is as below table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

(7) Restricted Band

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			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

1.3 Test result

Test Item	FCC standard section	Report section	Test result
6 dB bandwidth	FCC 15.247(a)(2)(i)	2	PASS
Maximun Peak Output Power	FCC 15.247(b)(3)	3	PASS *
Power Density	FCC 15.247(e)	4	PASS
100 kHz bandwidth outside of band	FCC 15.247(d)	5	PASS
Radiated emission measurements	FCC 15.209	6	PASS
Power line conducted	FCC 15.207(a)	7	PASS

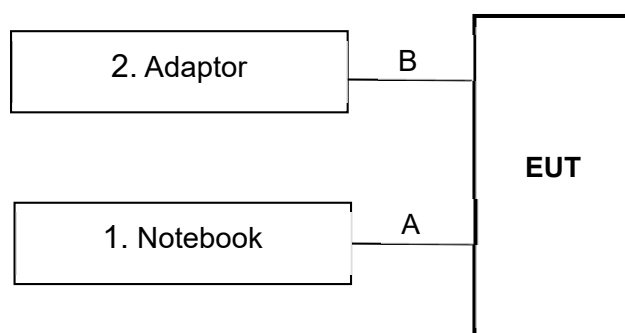
Note: Test item subcontracted to MRT "***" Marked.

According to ANSI C63.10, determining compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

1.4 The Support Units

No.	Unit	Model No.	Trade Name	Power Code	Supported by lab.	Note
1.	Notebook	ProBook 6470b	HP		√	
2.	Adaptor	AD07TW	Mi		√	Power line conducted measurement
		GTA85-0502000JP	GPO			Others measurement

1.5 Layout of Setup



Connecting Cables :

No.	Cable	Length	Shielded	Core	Shielded Backshell	Supported by lab.	Note
A	USB Testing line	1.0m					
B	USB cable	1.55m					

1.6 Test Instruments

Conducted Emission Test (Excluded Maximum Peak Output Power)

Test Site and Equipment	Manufacturer	Model No. /Serial No.	Last Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV40/ 101609	2020/10/16	2021/10/16
RF cable	JMCA	MWX/ C0150~C0153, C0161~C0163	2020/12/3	2021/12/3
Test software	R&S	EMC32/ V11.10.00	NCR	NCR
Test room	N/A	TR13	NCR	NCR

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR: No Calibration Required.

Maximum Peak Output Power

Test Site and Equipment	Manufacturer	Model No. /Serial No.	Last Calibration Date	Calibration Due Date
USB Wideband Power Sensor	KEYSIGHT	U2021XA/ MRTTWA00015	2021/3/24	2022/3/24

Note:

1. Subcontracted to MRT

Radiated Emission Test (Below 1GHz)

Test Site and Equipment	Manufacturer	Model No. /Serial No.	Last Calibration Date	Calibration Due Date
EMI Receiver	R&S	ESCS30/ 836858/020	2020/10/30	2021/10/30
Spectrum Alayzer	Agilent	E4407B/ MY45106795	2020/6/23	2021/6/23
Antenna	SCHWARZBECK & Mini-Circuits	VULB 9168 & BW-N5W5+/ VULB 9168-668 & 003	2021/5/6	2022/5/6
Pre-amplifer	Mini-circuit	ZKL-1R5+/ 004	2021/1/17	2021/7/17
RF cable	JYEBAO	0214/ C0080-4 + C0080-1 + C0080- 2+RSU(CRC- 011/11)+C0080-3	2021/1/17	2021/7/17
Test software	Audix	e3/ V6.20110303a1	NCR	NCR
Semi-anechoic chamber	ETS. LINDGREN	TR11/ 906-A	2021/4/10	2022/4/10

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.
3. The calibration date of the semi-anechoic chamber listed above is the date of NSA measurement.

Radiated Emission Test (Above 1 GHz)

Test Site and Equipment	Manufacturer	Model No. /Serial No.	Last Calibration Date	Calibration Due Date
Antenna	EMCO	3117/ 0082847	2020/11/3	2021/11/3
Antenna	Com-Power	AH-840/ 101098	2020/12/31	2021/12/31
Pre-amplifier	MITEQ	TTA1800-30-HG- N-M/ 1904295	2020/10/28	2021/10/28
RFcable	Suhner	Sucoflex 106P / C0091	2020/10/5	2021/10/5
RFcable	JMCA	MWX241/B/ C0103~C0104	2021/4/9	2022/4/9
MXA signal analyzer	KeySight	N9020A/ MY54420147	2020/7/2	2021/7/2
Test software	Audix	e3/ V9 20150907c	NCR	NCR
Semi-anechoic chamber	ETS. LINDGREN	TR1/ 17627-B	2021/2/9	2022/2/9

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.
3. The calibration date of the chamber TR1 listed above is the date of site VSWR measurement.

For Power Line Conducted Measurement

Test Site and Equipment	Manufacturer	Model No./ Serial No.	Last Calibration Date	Calibration Due Date
Test Receiver	R&S	ESCI/ 100316/003	2021/4/9	2022/4/9
LISN	R&S	ESH2-Z5/ 880669/039	2021/4/23	2022/4/23
2 nd LISN	R&S	ESH2-Z5/ 836613/001	2020/8/31	2021/8/31
50Ω terminator	SHHNER	65 BNC-50-0-1/133 NE/004	2021/6/1	2022/6/1
RF Cable	JYBAO	0214/ C0113 + RSU + C0114	2021/2/17	2021/8/17
RF Cable	JYBAO	0214/ C0112 + RSU + C0114	2021/2/17	2021/8/17
Test Software	Audix	e3/ V6.20110303a1	NCR	NCR
TR20 shielded room	ETS LINDGREN	T R20/ 17873-2	NCR	NCR

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.

1.7 Test Capability

Test Facility

The test facility used for evaluating the conformance of the EUT with each standard in the present report meets what required in CISPR16 series and ANSI C63.4:2014 amended as per ANSI 63.4a:2017.

Test Room	Type of Test Room	Descriptions
TR1	10m semi-anechoic chamber (23m × 14m × 9m)	For the radiated emission measurement (below 1GHz)
TR1	3m fully-anechoic chamber (23m × 14m × 9m)	For the radiated emission measurement (above 1GHz)
TR11	3m semi-anechoic chamber (9m × 6m × 6m)	For the radiated emission measurement (below 1GHz)
TR13	Test Site	For the RF conducted emission measurement.
TR5	Shielding Room (8m×5m×4m)	For the conducted emission measurement.
TR20	Shielding Room (8.5mX4mX2.4m)	

Test Laboratory Competence Information

Central Research Technology Co. has been accredited / filed / authorized by the agencies listed in the following table.

Certificate	Nation	Agency	Code	Mark
Accreditation Certificate	USA	NVLAP	200575-0	ISO/IEC 17025
	USA	FCC	TW1104, TW0019	ISO/IEC 17025
	R.O.C. (Taiwan)	TAF	0905	ISO/IEC 17025
	R.O.C. (Taiwan)	BSMI	SL2-IN-E-0033, SL2-IS-E-0033, SL2-R1/R2-E-0033, SL2-A1-E-0033, SL2-L1-E-0033	ISO/IEC 17025
	Canada	ISED	TW0905	ISO/IEC 17025
Site Filing Document	Japan	VCCI	R-11527,C-11609,T-11441, G-10010,C-20010, G-10614, T-20009	Test facility list & NSA Data
Authorization Certificate	Germany	TUV	UA 50235497	ISO/IEC 17025

The copy of each certificate can be downloaded from our web site: www.crc-lab.com

1.8 Measurement Uncertainty

The assessed measurement uncertainty with a suitable coverage factor K to ensure 95% confidence level for the normal distribution are shown as below, the values are less than U_{CISPR} in table 1 of CISPR 16-4-2.

Test Item	Measurement Uncertainty	
Radiated Emission: (9kHz~30MHz)	Horizontal 3.92dB ; Vertical 3.92dB	
Radiated Emission: (30MHz~1000MHz)	Horizontal 4.42dB ; Vertical 5.98dB	
Radiated Emission: (1GHz~6GHz)	Horizontal 4.60dB ; Vertical 4.48dB	
Radiated Emission: (6GHz~18GHz)	Horizontal 4.66dB ; Vertical 4.58dB	
Radiated Emission: (18GHz~40GHz)	Horizontal 4.74dB ; Vertical 4.76dB	
Line Conducted Emission	NSLK-8128-RC	2.48 dB
	ENV 4200	2.52 dB
	ESH2-Z5	2.20 dB

2 6dB Bandwidth

Result: Pass

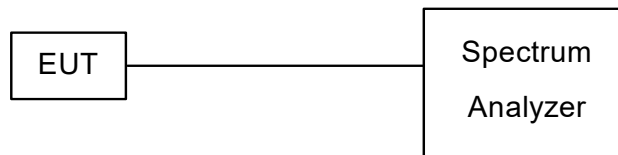
2.1 Applied standard

According to According to FCC 15.247(a)(2)(i), the minimum 6 dB bandwidth shall be at least 500 kHz.

2.2 Measurement Procedure

- a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.
- b. A software provided by client enabled the EUT to transmit data at middle channel frequencies individually.
- c. Test procedures follow ANSI C63.10 Section 11.8.
- d. Measure the 6dB bandwidth and compare with the required limit.

2.3 Test configuration



2.4 Test Data

Test Mode : Continuous Transmitting

Tester : Wayne

Ambient Temperature : 25°C

Relative Humidity : 67%

802.11b

Operating Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
2412	8.20	> 500
2437	8.85	> 500
2462	8.95	> 500

802.11g

Operating Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
2412	16.60	> 500
2437	16.50	> 500
2462	16.60	> 500

802.11n HT20

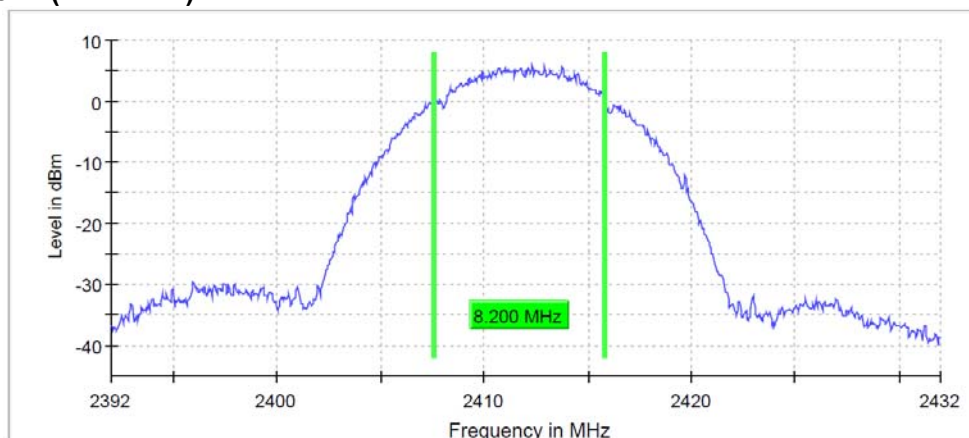
Operating Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
2412	17.80	> 500
2437	17.80	> 500
2462	17.80	> 500

802.11n HT40

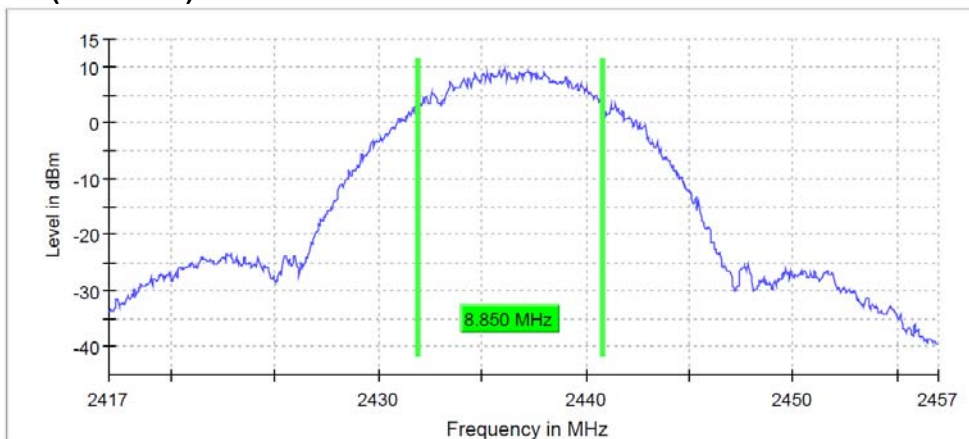
Operating Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
2422	36.50	> 500
2437	38.60	> 500
2452	36.55	> 500

802.11b

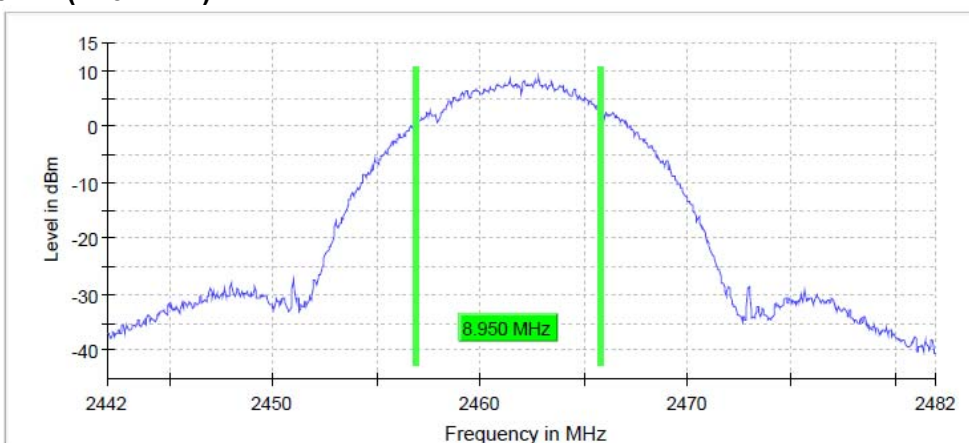
Channel 1 (2412MHz)



Channel 6 (2437MHz)

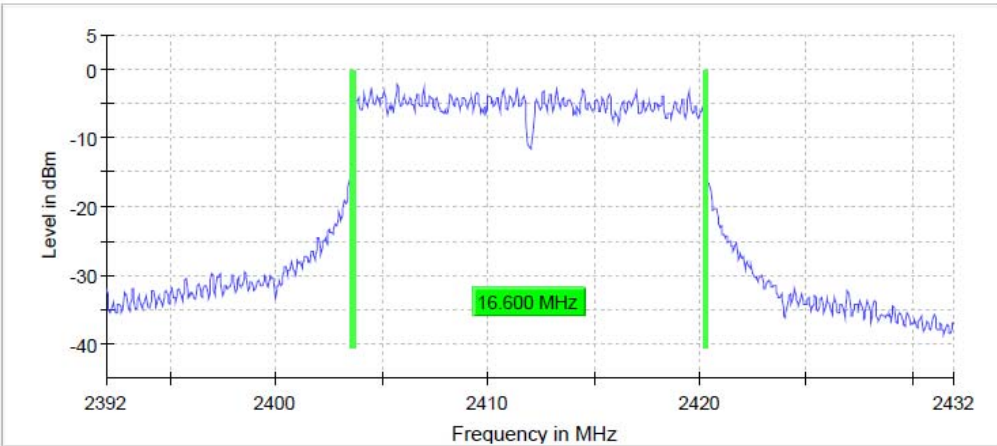


Channel 11 (2462MHz)

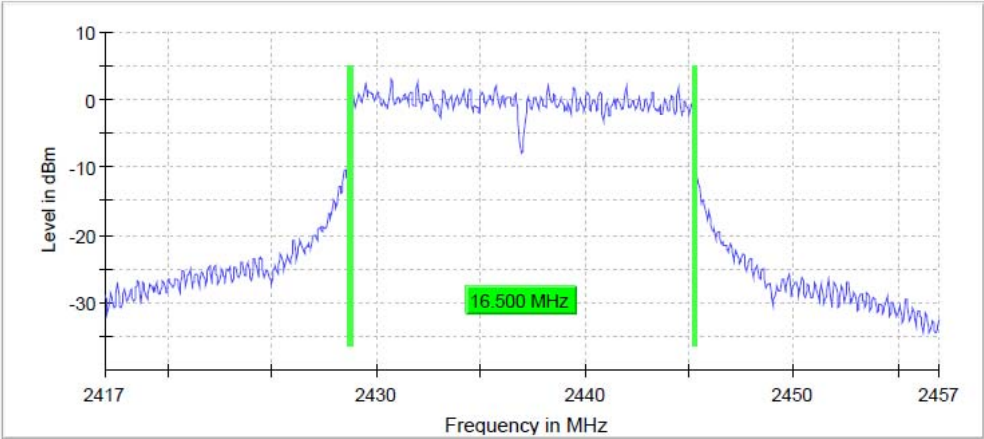


802.11g

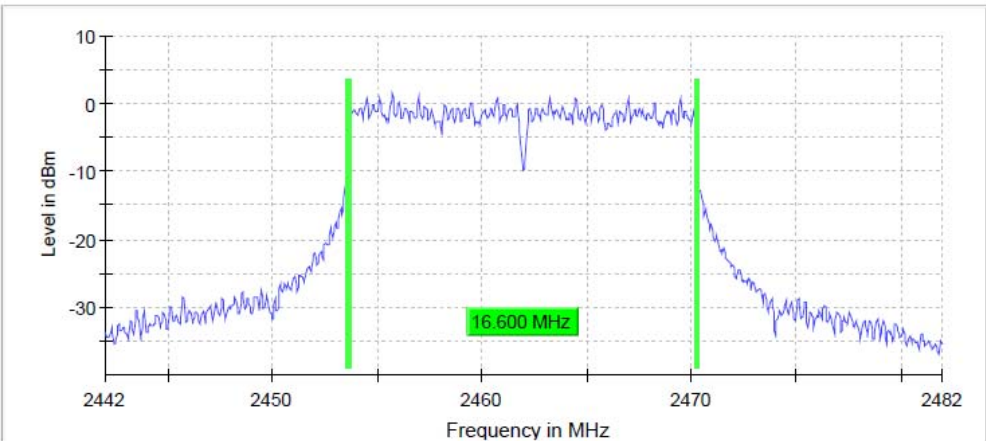
Channel 1 (2412MHz)



Channel 6 (2437MHz)

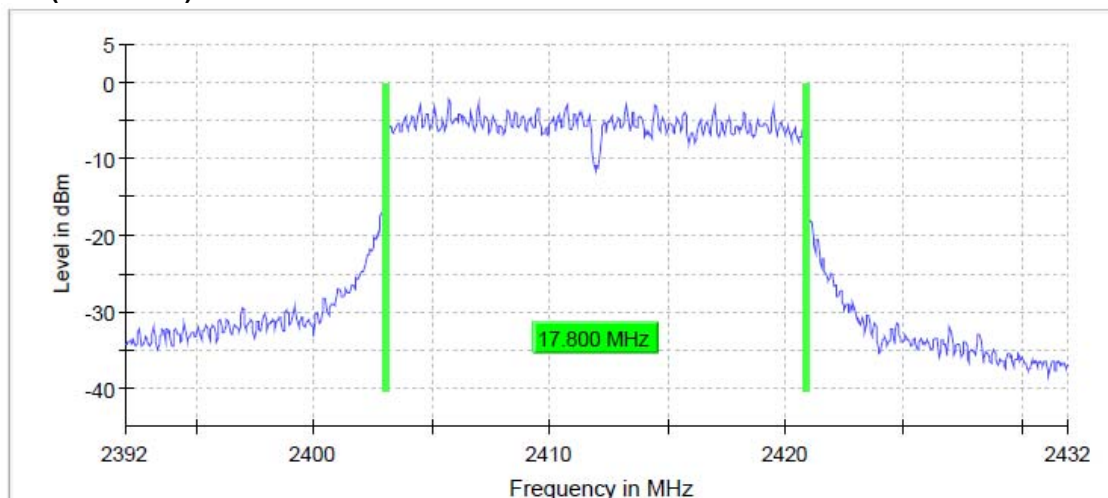


Channel 11 (2462MHz)

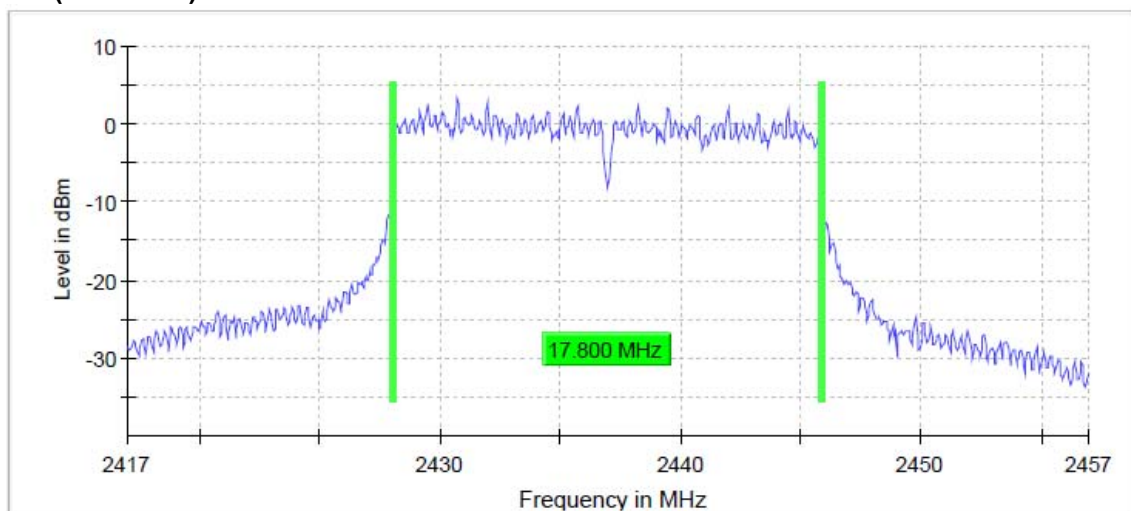


802.11n HT20

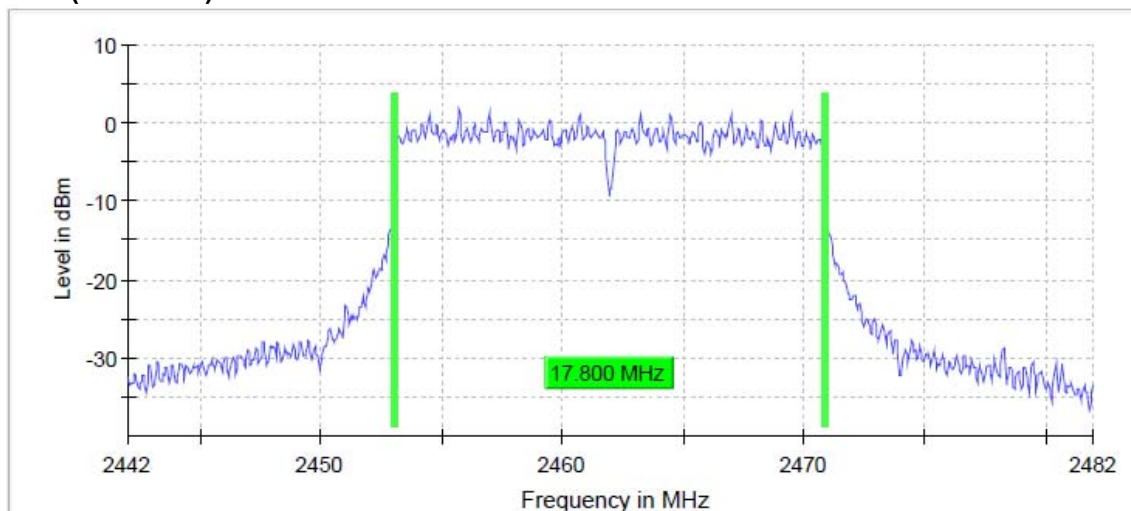
Channel 1 (2412MHz)



Channel 6 (2437MHz)

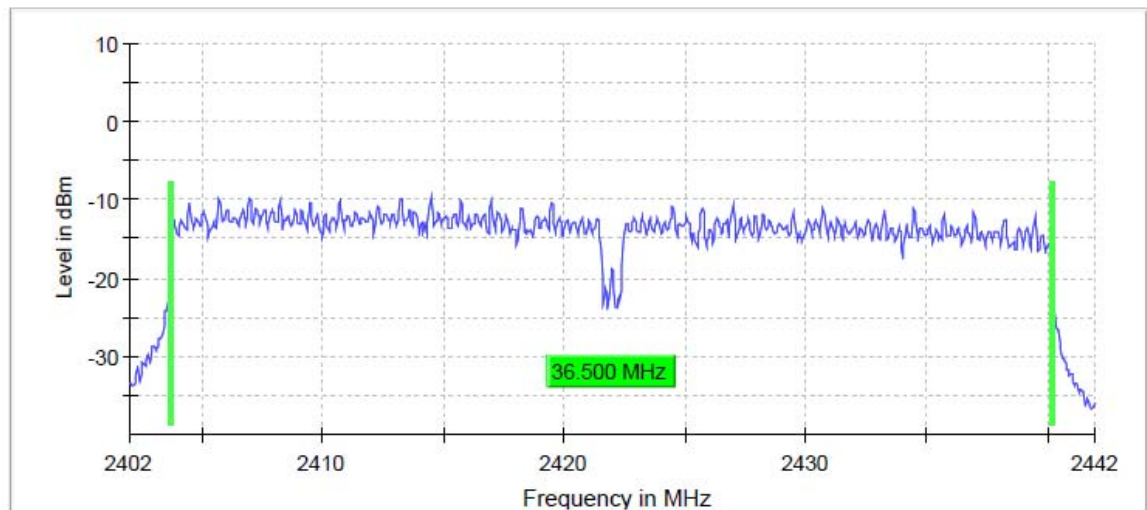


Channel 11 (2462MHz)

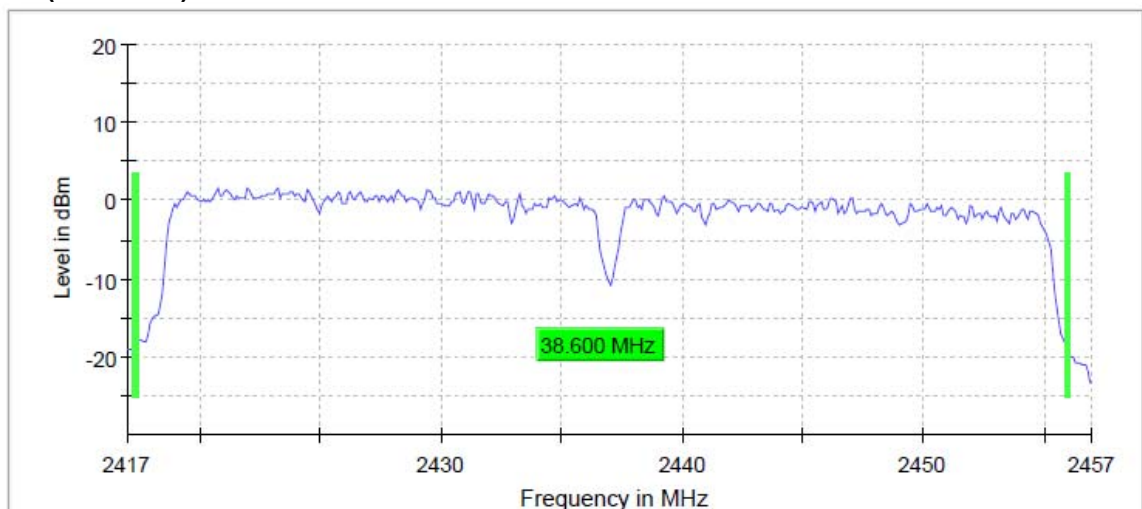


802.11n HT40

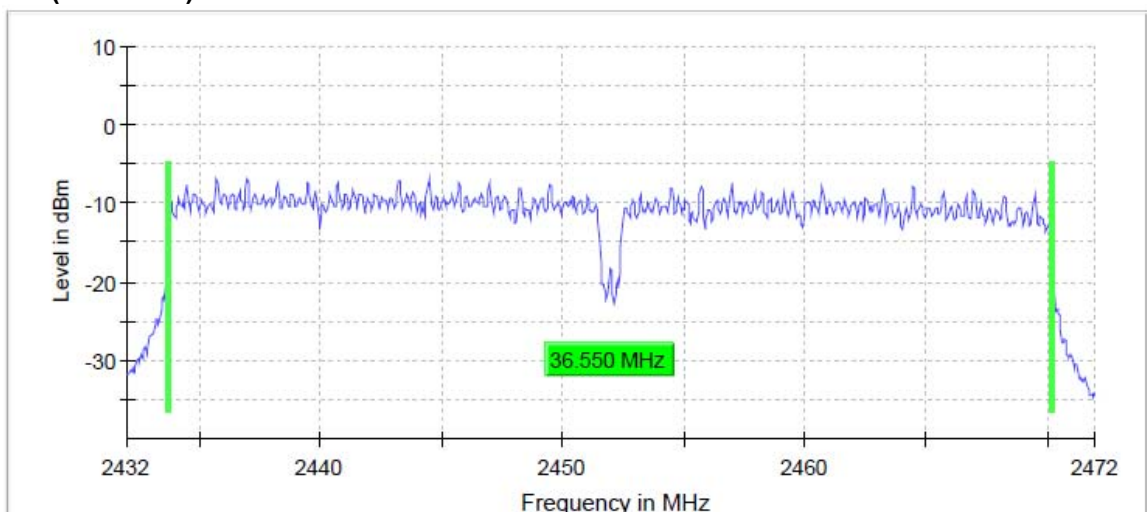
Channel 3 (2422MHz)



Channel 6 (2437MHz)



Channel 9 (2452MHz)



3 Maximum Peak Output Power

Result: Pass

3.1 Applied standard

According to FCC 15.247(b)(3), for systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

3.2 Measurement Procedure

- a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.
- b. Test procedures follow ANSI 63.10 section 11.9.
- c. Measurement the Maximum Peak Output Power and compare with the required limit.

3.3 Test configuration



3.4 Test Data

Product	Smart AI Camera	Temperature	25°C
Test Engineer	Fran	Relative Humidity	54%
Test Site	SR2	Test Date	2021/6/24

Mode	Ch. No.	Freq. (MHz)	Data Rate	Output Power (dBm)		Limit	Test Result
				Average	Peak		
11b	1	2412	11Mbps	11.96	14.88	1 Watt (30dBm)	Pass
	6	2437		16.46	19.15	1 Watt (30dBm)	Pass
	11	2462		14.90	17.76	1 Watt (30dBm)	Pass
11g	1	2412	54Mbps	5.68	16.42	1 Watt (30dBm)	Pass
	6	2437		11.73	19.65	1 Watt (30dBm)	Pass
	11	2462		9.62	18.27	1 Watt (30dBm)	Pass
11n-HT20	1	2412	MCS7	5.61	13.92	1 Watt (30dBm)	Pass
	6	2437		11.52	19.94	1 Watt (30dBm)	Pass
	11	2462		10.30	18.55	1 Watt (30dBm)	Pass
11n-HT40	3	2422	MCS7	-0.23	11.29	1 Watt (30dBm)	Pass
	6	2437		10.74	19.69	1 Watt (30dBm)	Pass
	9	2452		2.80	12.42	1 Watt (30dBm)	Pass

Note: Output power = Reading value on power meter + cable loss °

4 Peak Power Spectral Density

Result: Pass

4.1 Applied standard

According to FCC 15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.2 Measurement Procedure

- a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.
- b. Test procedures follow ANSI 63.10 section 11.10.
- c. Measure the peak power spectral density and compare with the required limit.

4.3 Test configuration



4.4 Test Data

Test Mode : Continuous Transmitting

Tester : Wayne

Ambient Temperature : 25°C

Relative Humidity : 67%

802.11b

Operating Frequency (MHz)	Power Density		Limit (dBm/3kHz)	Margin (dB)
	(dBm/100kHz)	(dBm/3kHz)		
2412	6.30	-	8	1.70
2437	> 8	-6.23	8	14.23
2462	>8	-5.22	8	13.22

802.11g

Operating Frequency (MHz)	Power Density (dBm/100kHz)	Limit (dBm/3kHz)	Margin (dB)
2412	-2.23	8	10.23
2437	3.04	8	4.96
2462	1.39	8	6.61

802.11n HT20

Operating Frequency (MHz)	Power Density (dBm/100kHz)	Limit (dBm/3kHz)	Margin (dB)
2412	-2.24	8	10.24
2437	3.14	8	4.86
2462	1.65	8	6.35

802.11n HT40

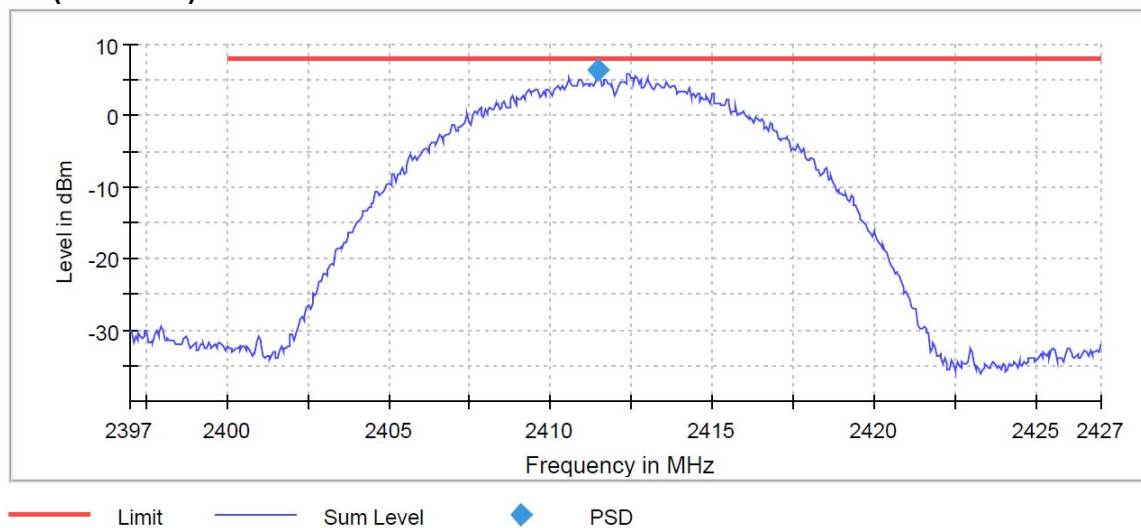
Operating Frequency (MHz)	Power Density (dBm/100kHz)	Limit (dBm/3kHz)	Margin (dB)
2422	-9.65	8	17.65
2437	0.28	8	7.72
2452	-7.02	8	15.02

Note:

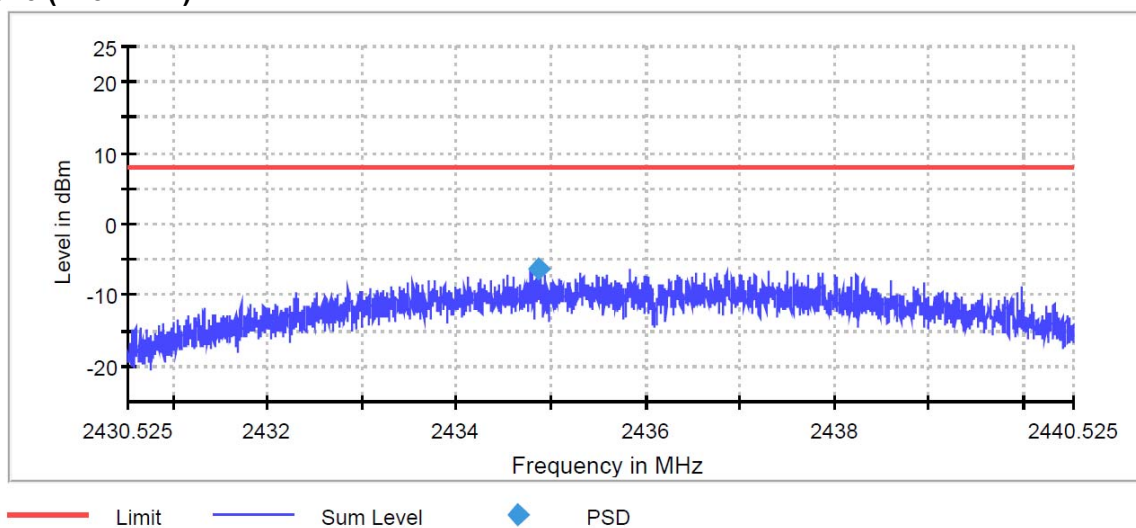
1. Margin (dB) = Limit – Peak Power

802.11b

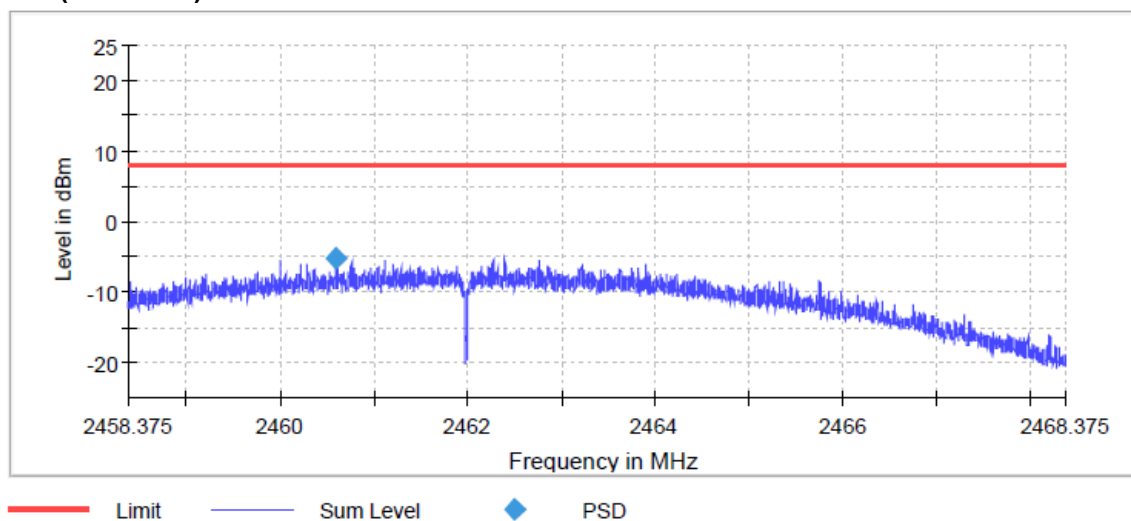
Channel 1 (2412MHz)



Channel 6 (2437MHz)

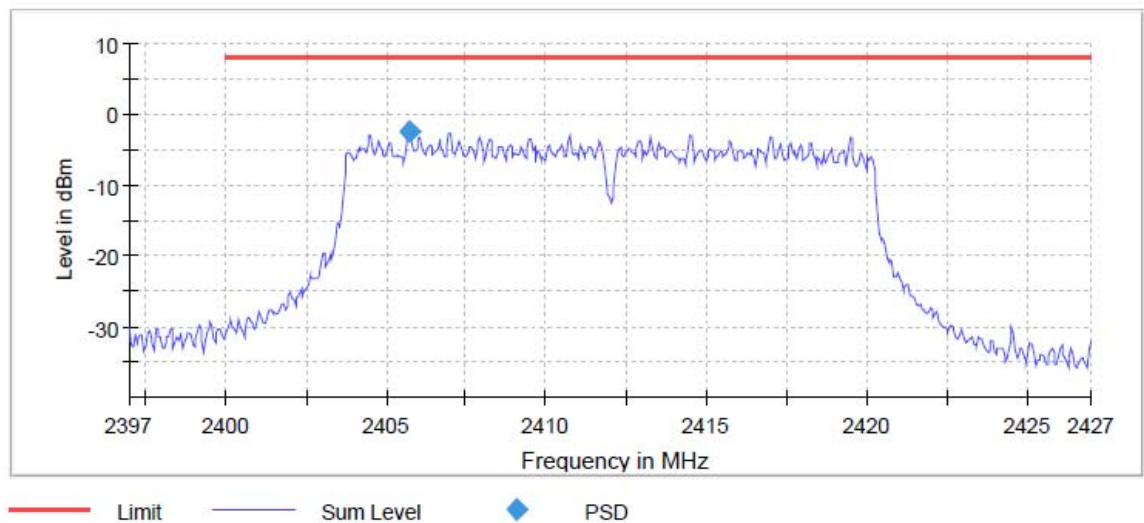


Channel 11 (2462MHz)

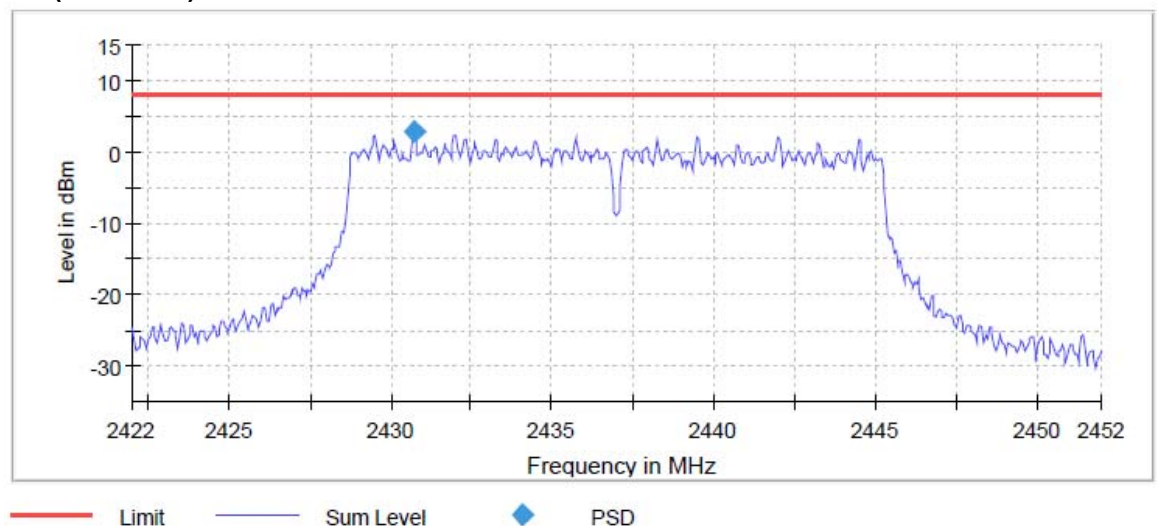


802.11g

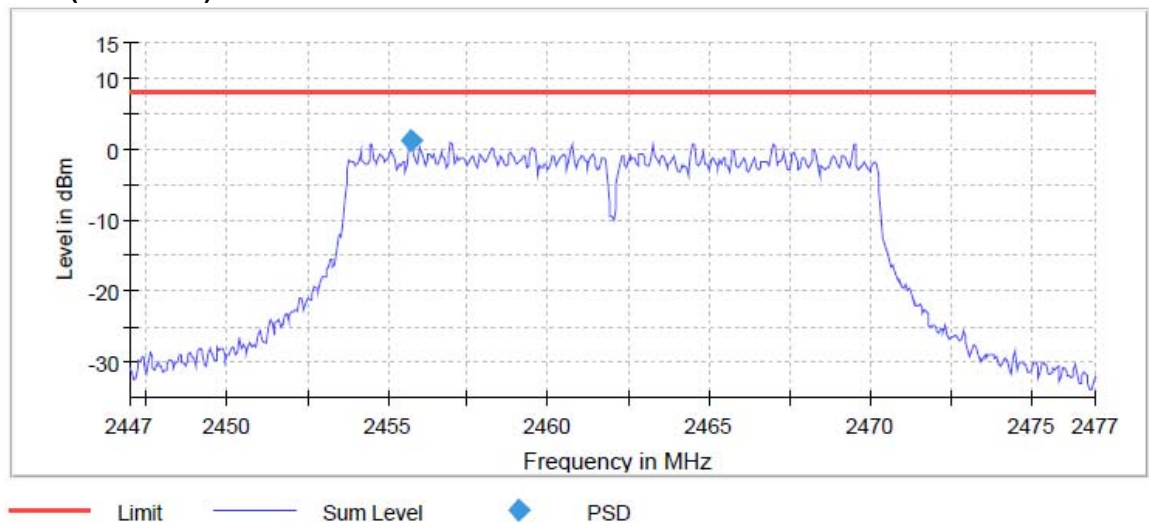
Channel 1 (2412MHz)



Channel 6 (2437MHz)

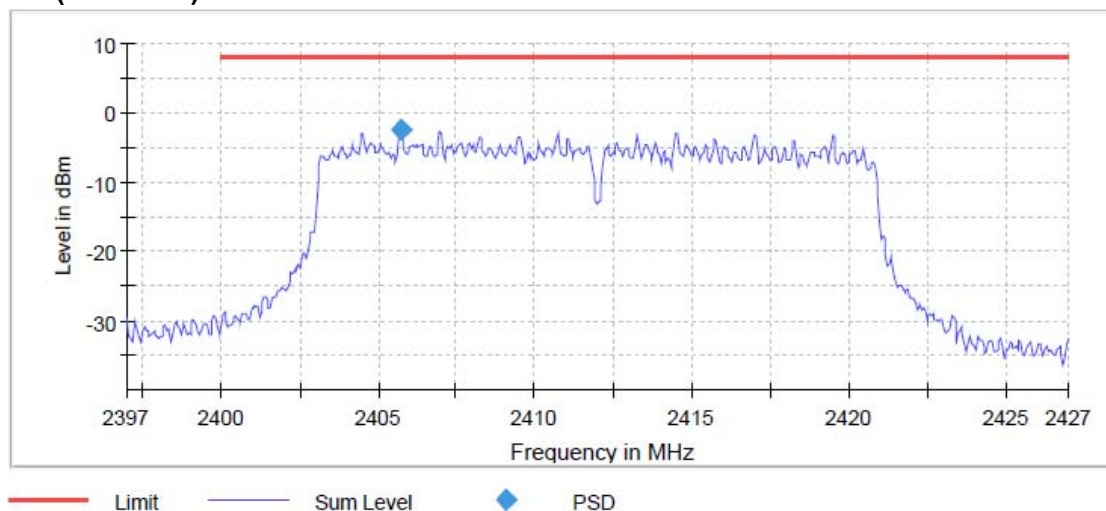


Channel 11 (2462MHz)

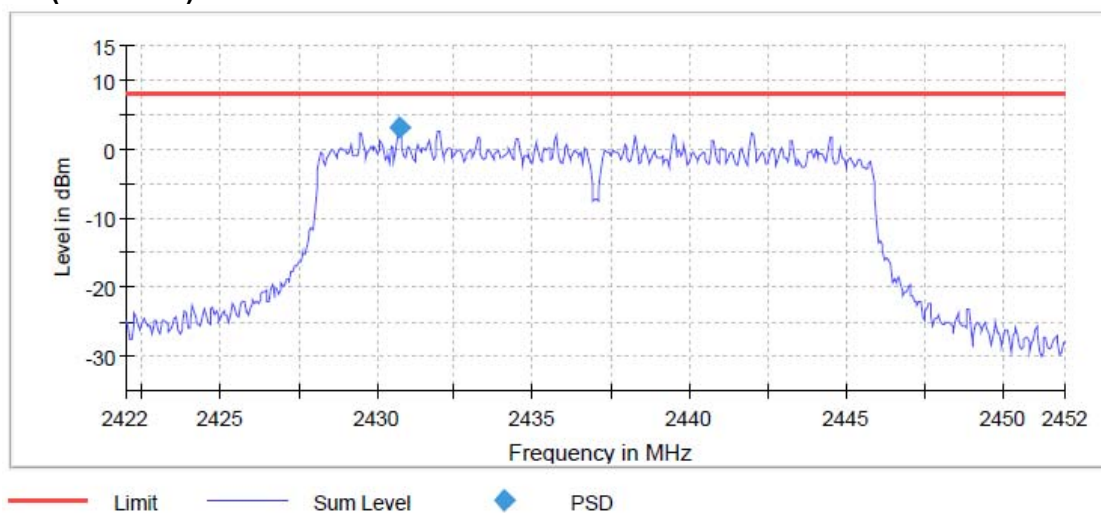


802.11n 20HT

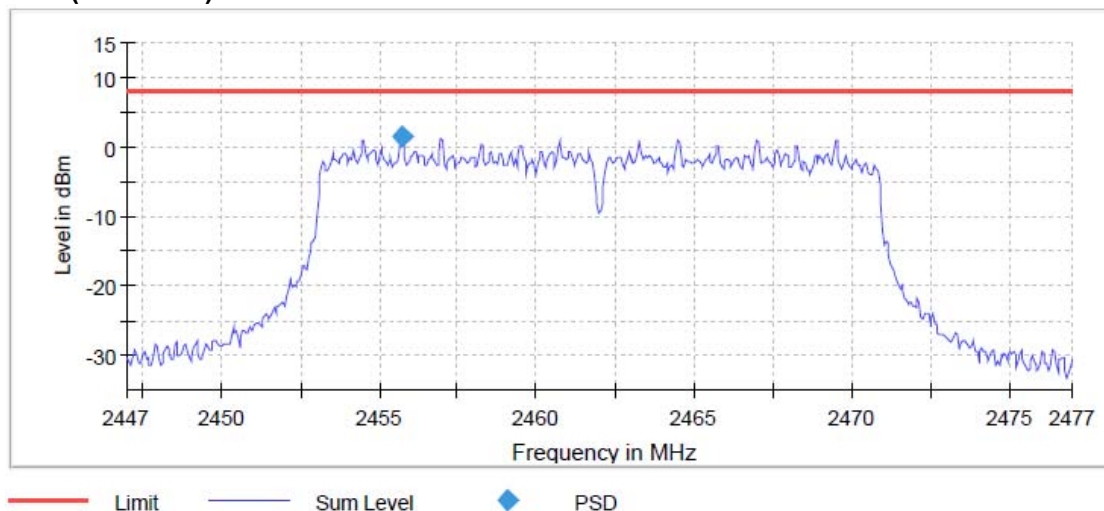
Channel 1 (2412MHz)



Channel 6 (2437MHz)

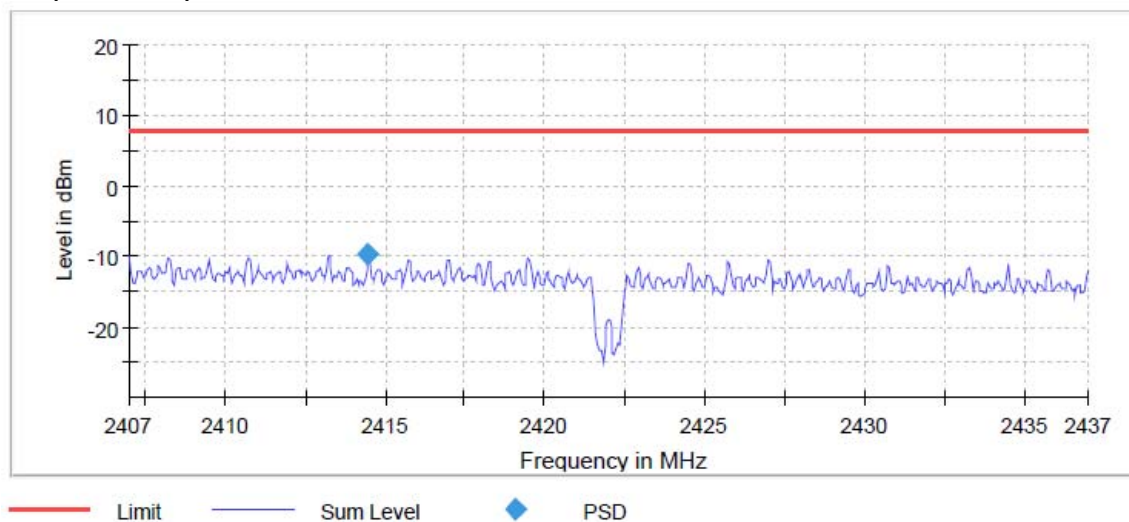


Channel 11 (2462MHz)

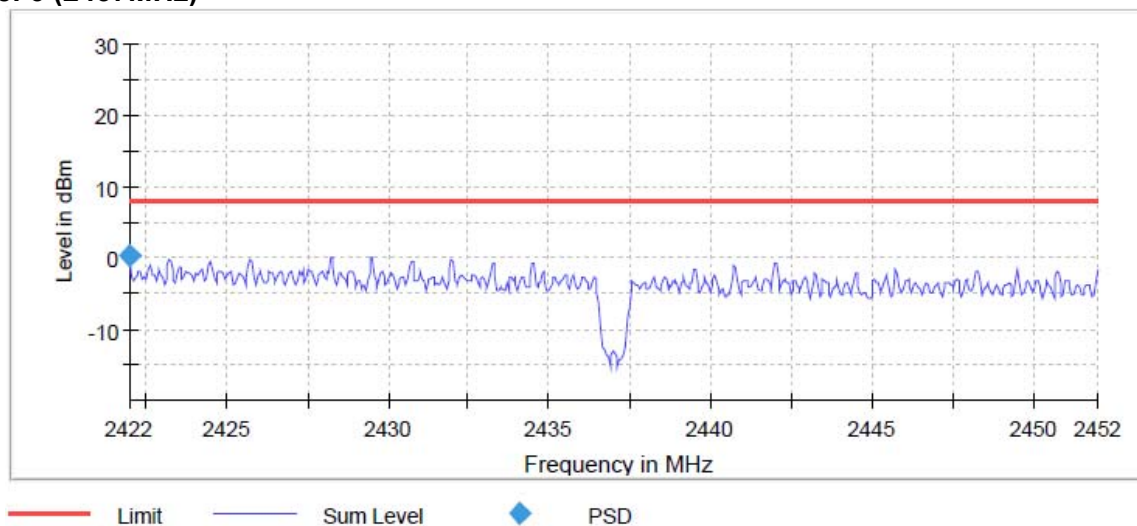


802.11n 40HT

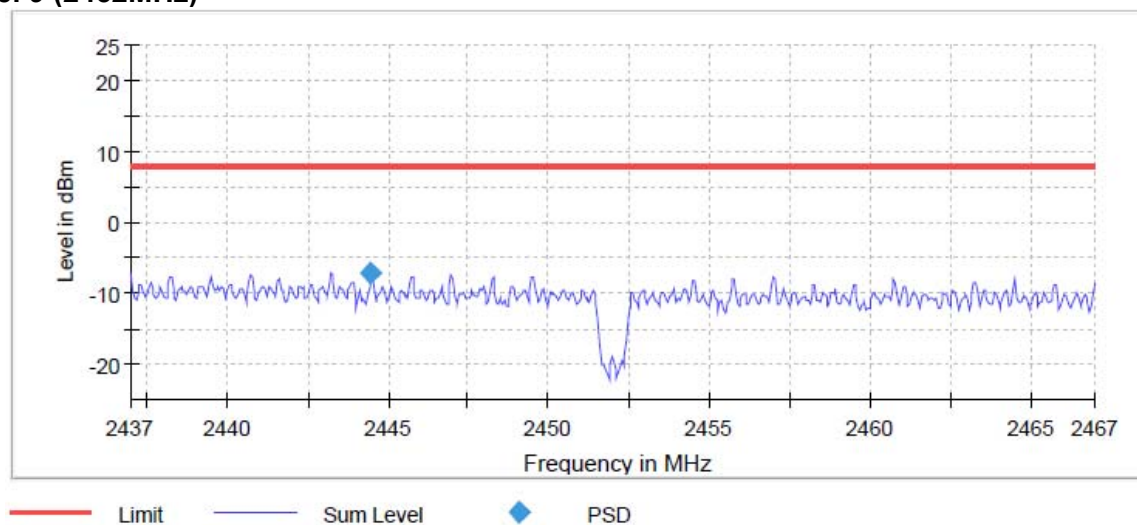
Channel 3 (2422MHz)



Channel 6 (2437MHz)



Channel 9 (2452MHz)



5 RF Antenna Conducted spurious

Result: Pass

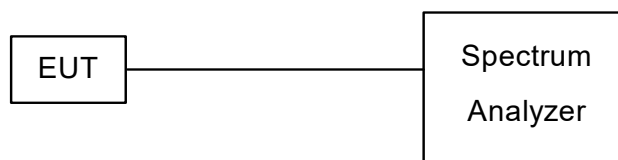
5.1 Applied standard

According to FCC 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph FCC 15.247(b)(3), the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in FCC 15.209(a) are not required.

5.2 Measurement Procedure

- a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.
- b. The software provided by client enabled the EUT to transmit data at low and high channel frequencies individually.
- c. Test procedures follow ANSI 63.10 section 11.11.
- d. Measurement the conducted spurious and compare with the required limit.

5.3 Test configuration



5.4 Test Data

Bandedge

Test Mode : Continuous transmitter

Tester : Wayne

Ambient Temperature : 25°C

Relative Humidity : 67%

802.11b

Operating Frequency (MHz)	Max emission of in band (dBm)	Frequency of out band max emission (MHz)	Max emission of out band (dBm)	Limit (dBm)	Margin (dB)
2412	8.4	2397.98	-27.6	-11.6	16.0
2462	10.1	2491.23	-36.5	-9.9	26.6

802.11g

Operating Frequency (MHz)	Max emission of in band (dBm)	Frequency of out band max emission (MHz)	Max emission of out band (dBm)	Limit (dB)	Margin (dB)
2412	0.3	2396.98	-27.9	-19.7	8.2
2462	3.9	2484.08	-36.0	-16.1	19.9

802.11n HT20

Operating Frequency (MHz)	Max emission of in band (dBm)	Frequency of out band max emission (MHz)	Max emission of out band (dBm)	Limit (dBm)	Margin (dB)
2412	0.2	2397.03	-27.4	-19.8	7.6
2462	4.1	2483.53	-32.4	-15.9	16.5

802.11n HT40

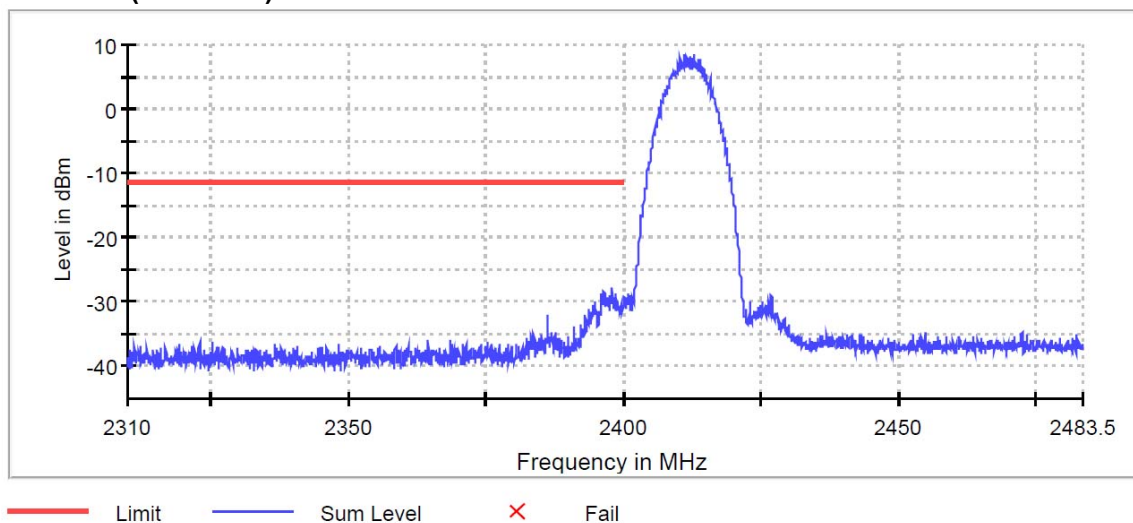
Operating Frequency (MHz)	Max emission of in band (dBm)	Frequency of out band max emission (MHz)	Max emission of out band (dBm)	Limit (dBm)	Margin (dB)
2422	-7.3	2398.23	-29.4	-27.3	2.1
2452	-4.6	2484.76	-35.6	-24.6	11.0

Note:

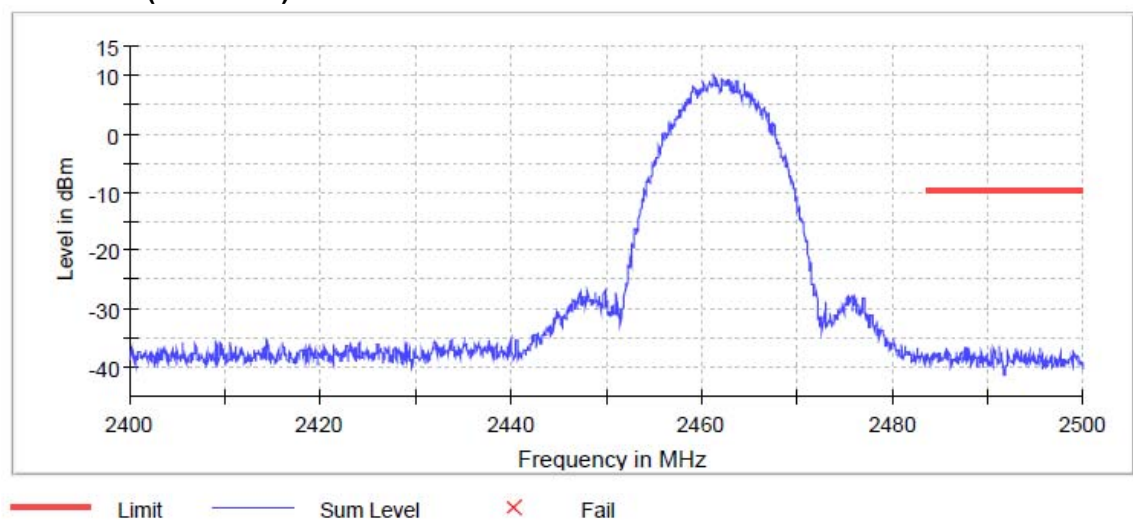
1. Limit(dBm) = Max emission of in band - 20
2. Margin (dB) = Limit – Max emission of out band

802.11b

Channel 1 (2412MHz)

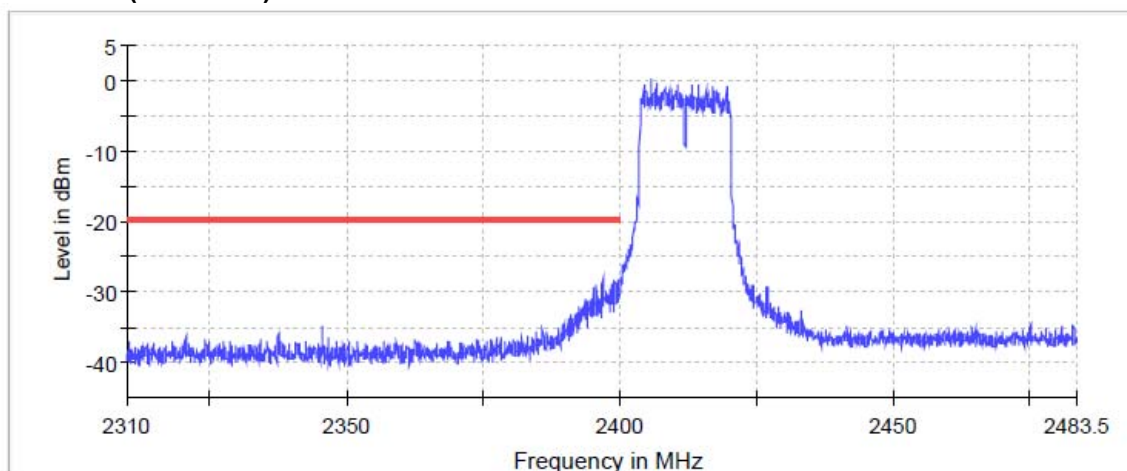


Channel 11 (2462MHz)



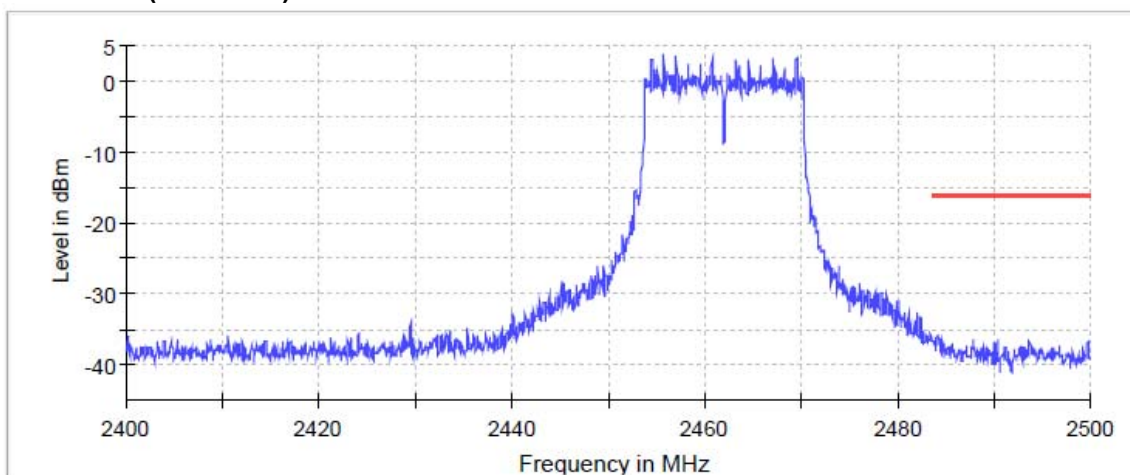
802.11g

Channel 1 (2412MHz)



— Limit — Sum Level × Fail

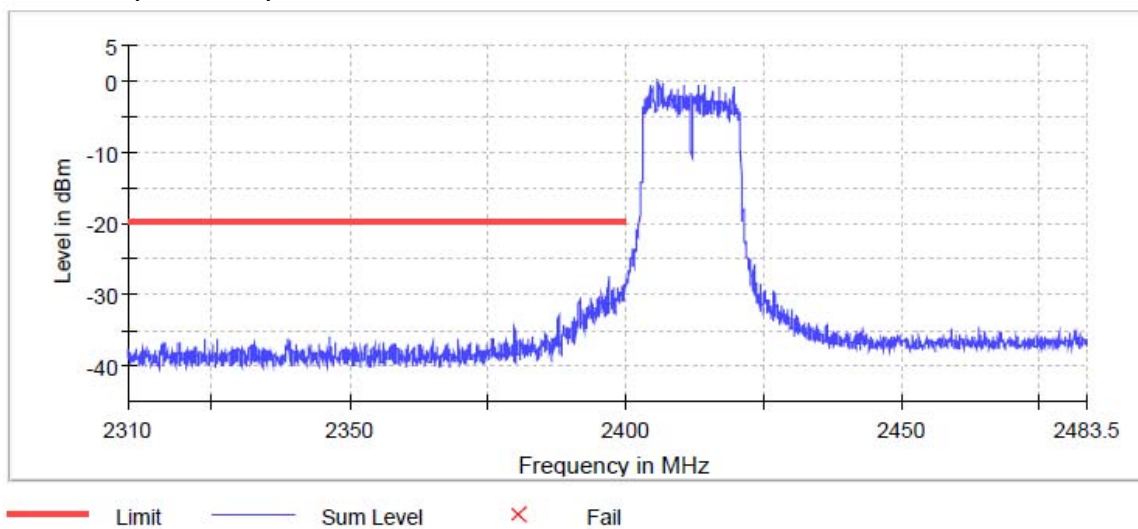
Channel 11 (2462MHz)



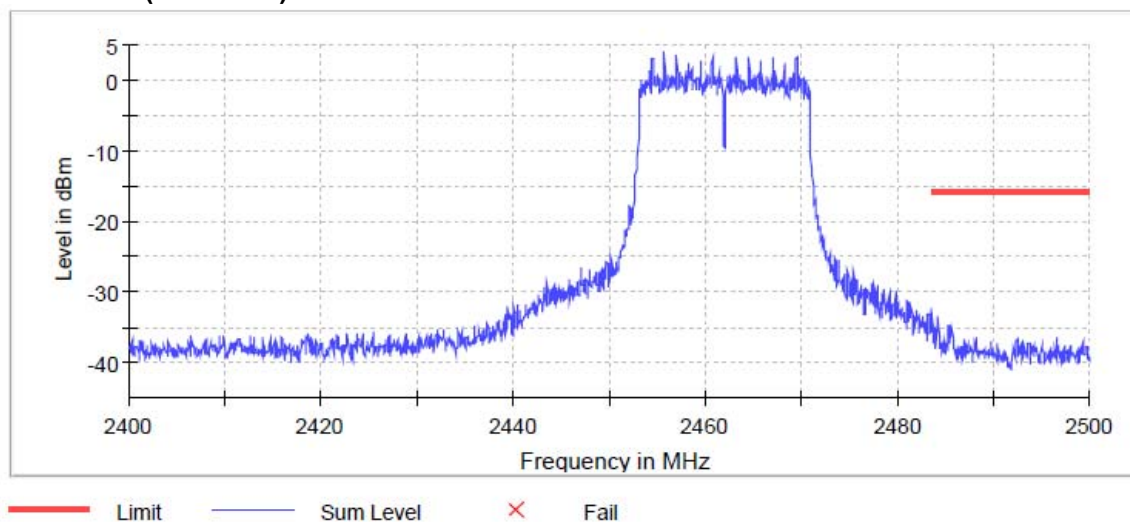
— Limit — Sum Level × Fail

802.11n HT20

Channel 1 (2412MHz)

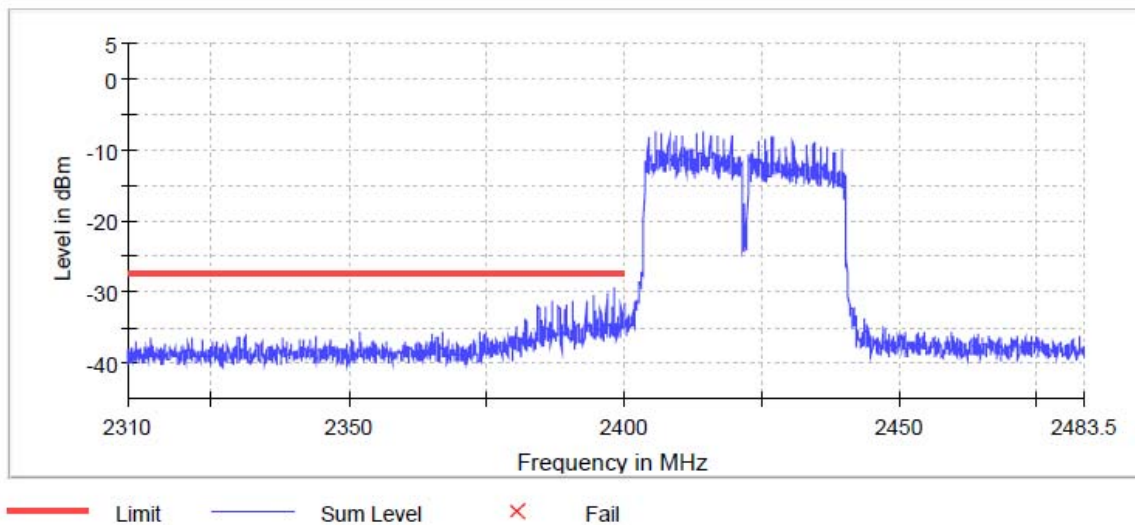


Channel 11 (2462MHz)

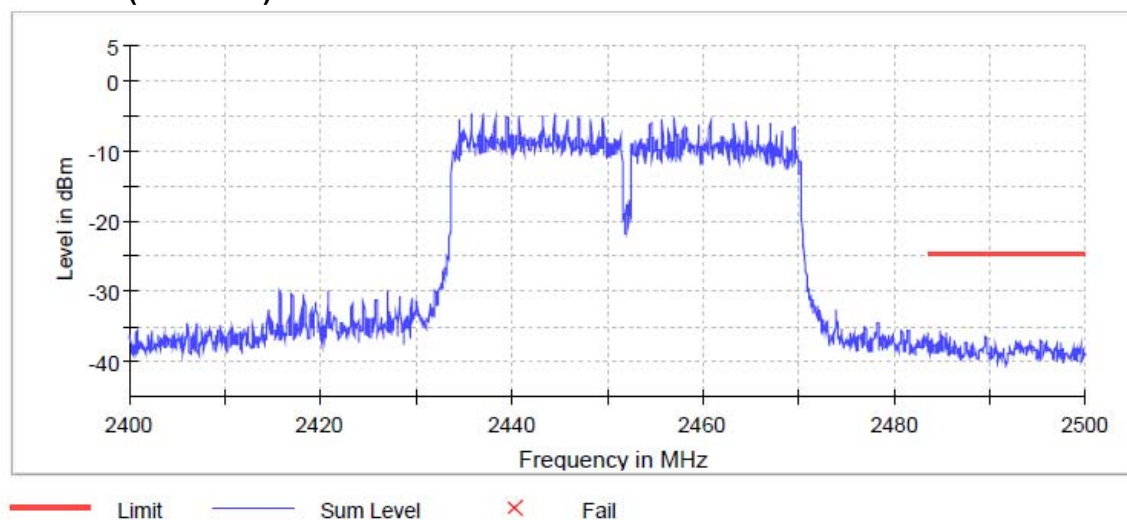


802.11n HT40

Channel 3 (2422MHz)



Channel 9 (2452MHz)



Out of band emission

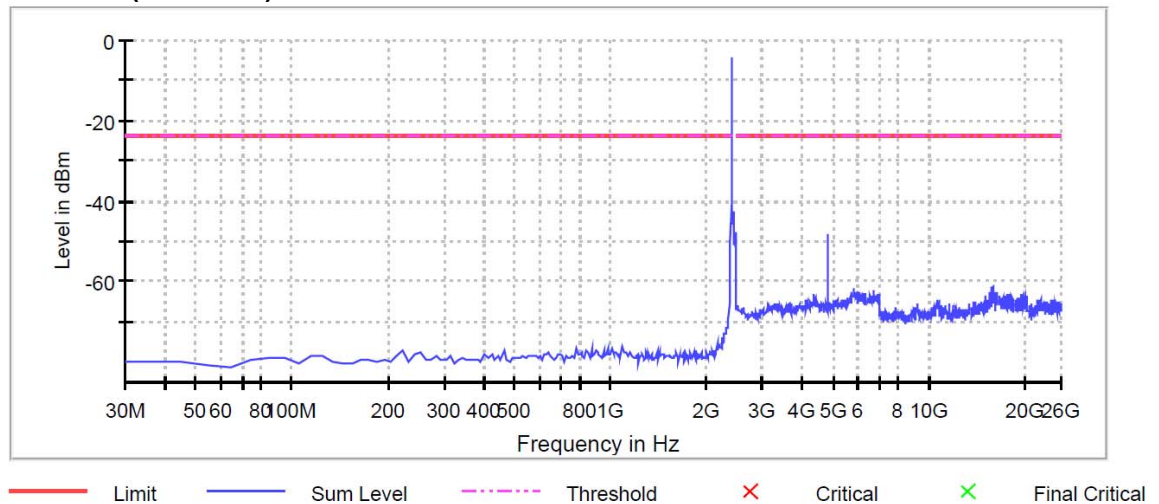
Test Mode : Continuous transmitter

Tester : Wayne

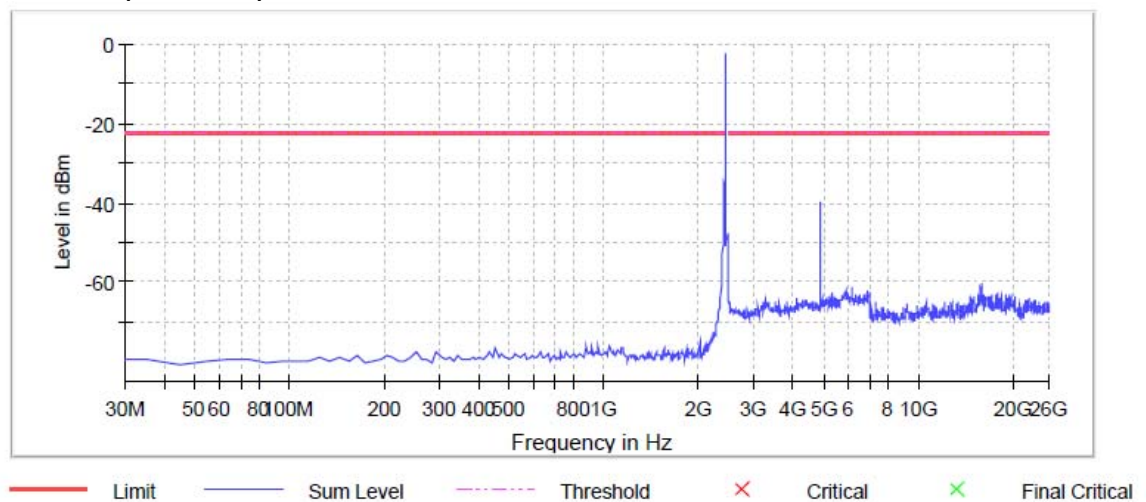
Ambient Temperature : 25°C

Relative Humidity : 67%

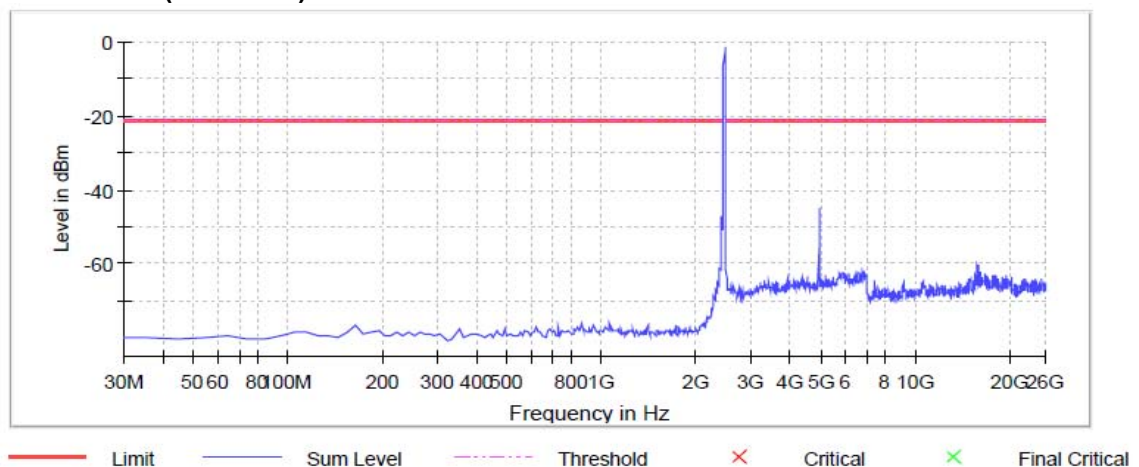
Channel 1 (2412MHz)



Channel 6 (2437MHz)

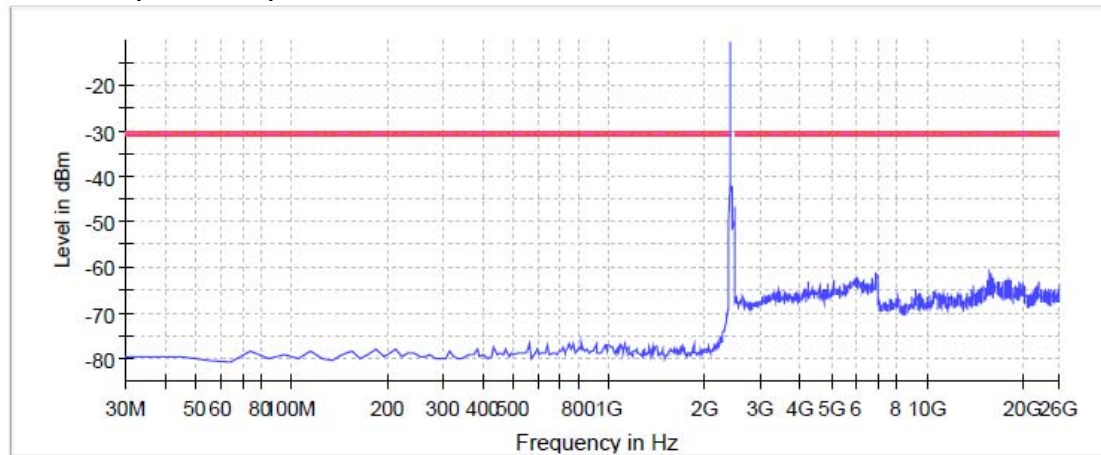


Channel 11 (2462MHz)



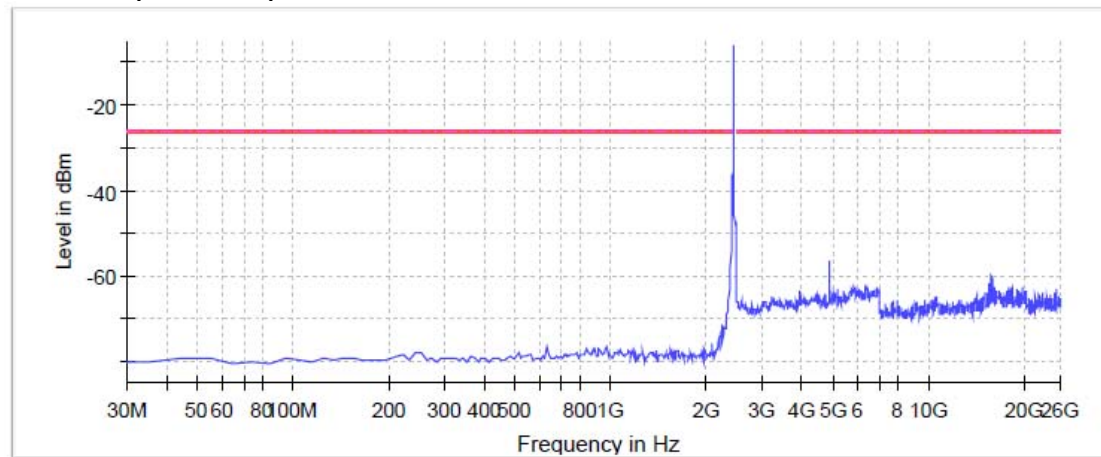
802.11g

Channel 1 (2412MHz)



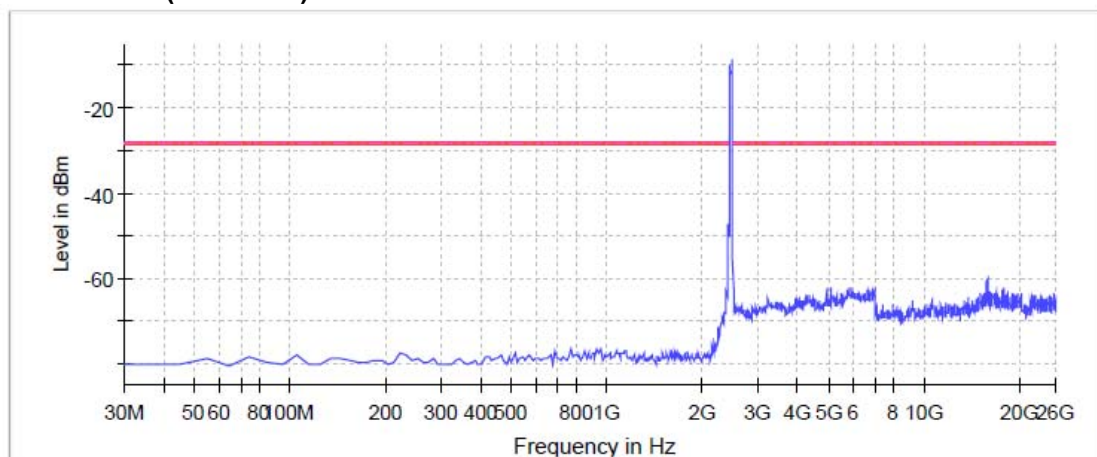
— Limit — Sum Level - - - Threshold × Critical × Final Critical

Channel 6 (2437MHz)



— Limit — Sum Level - - - Threshold × Critical × Final Critical

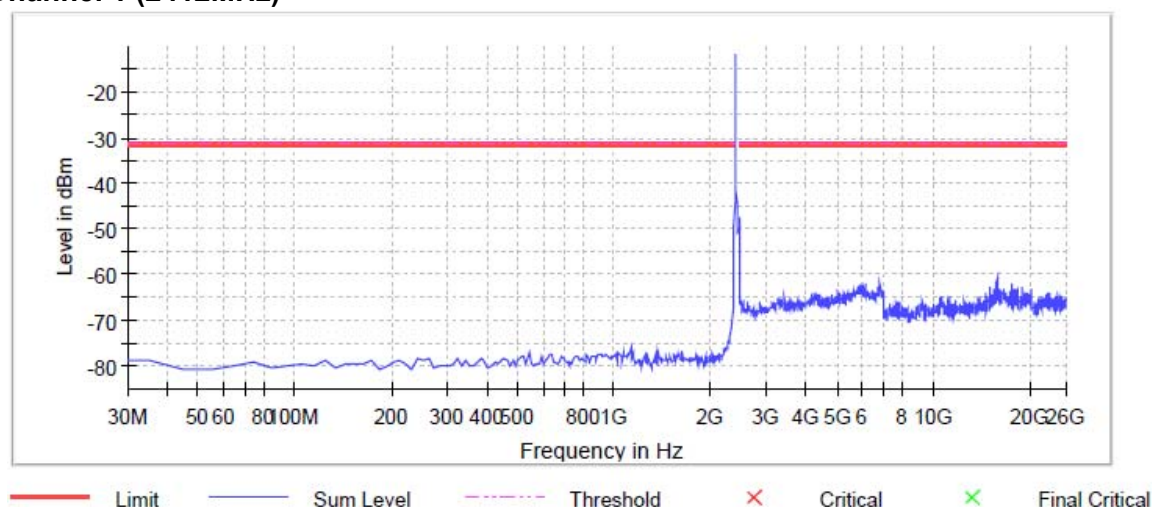
Channel 11 (2462MHz)



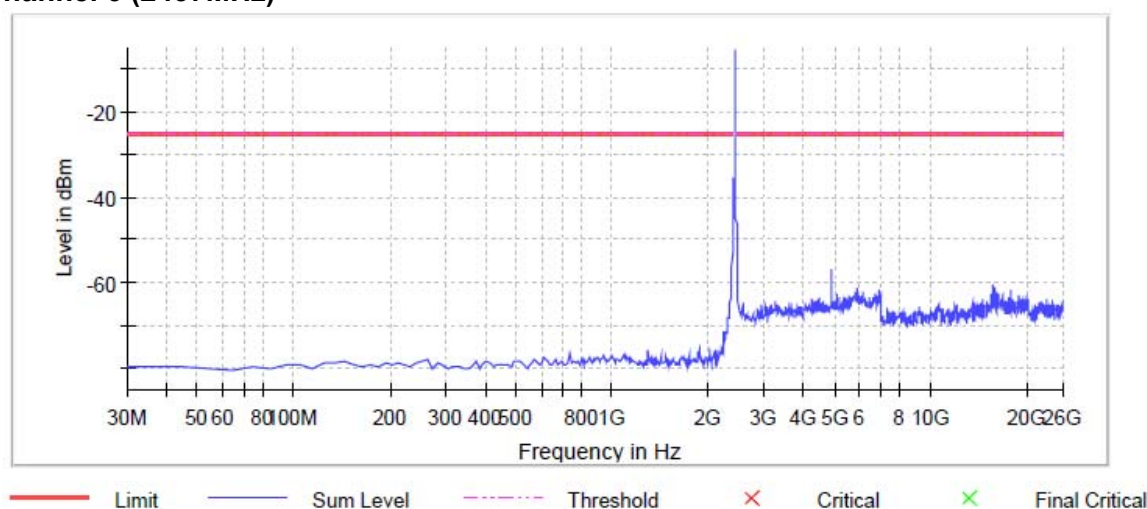
— Limit — Sum Level - - - Threshold × Critical × Final Critical

802.11n HT20

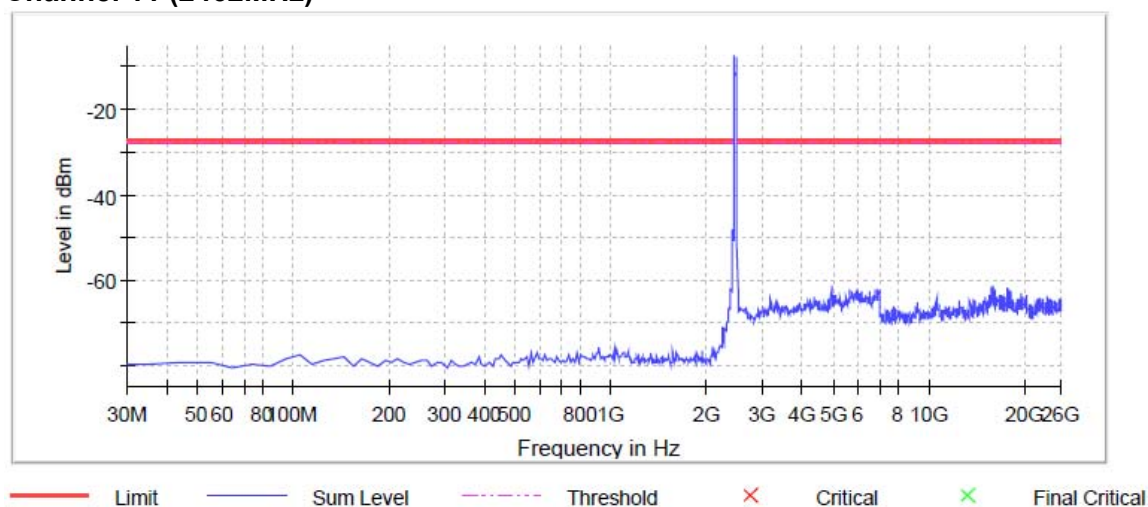
Channel 1 (2412MHz)



Channel 6 (2437MHz)

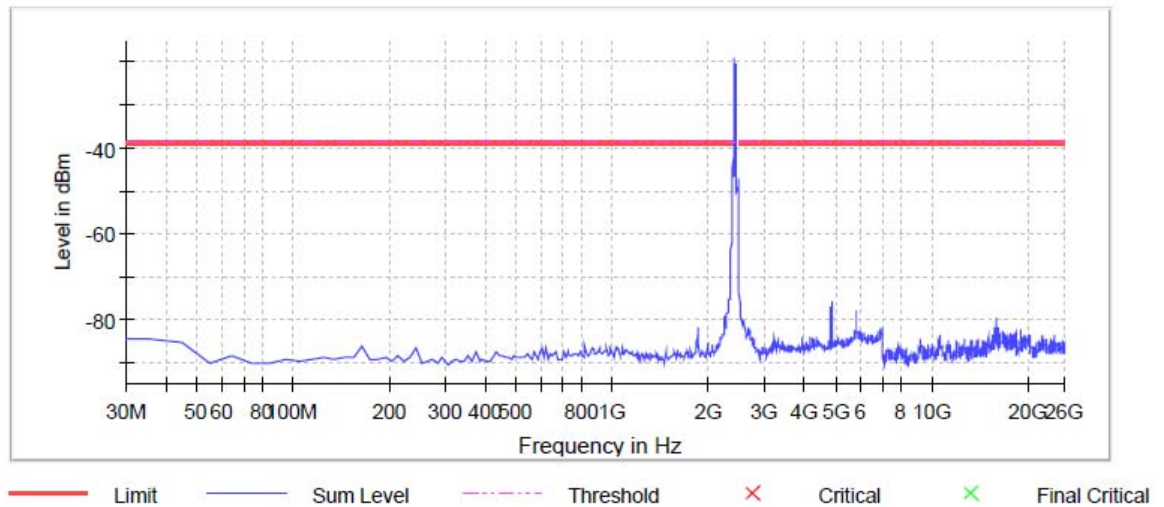


Channel 11 (2462MHz)

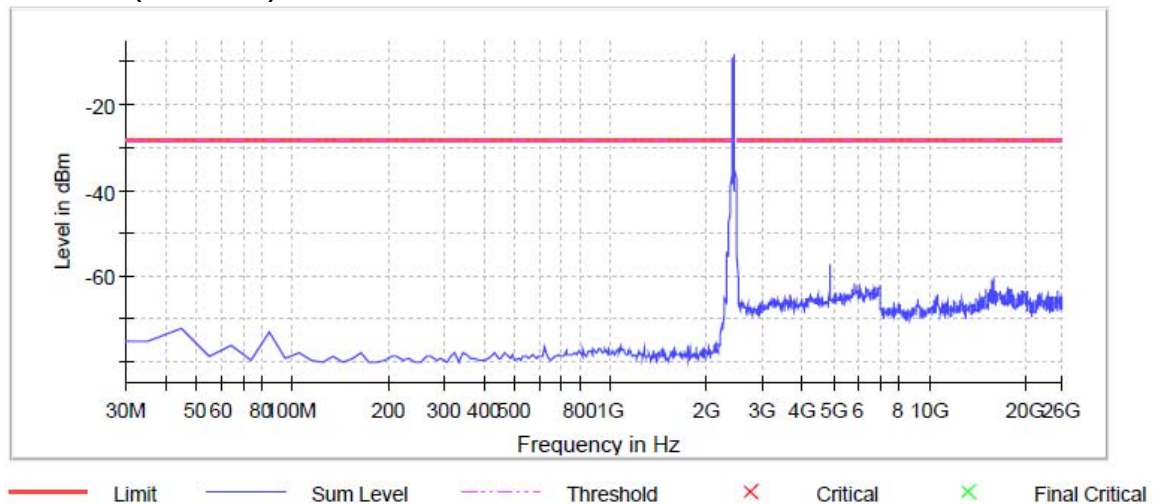


802.11n HT40

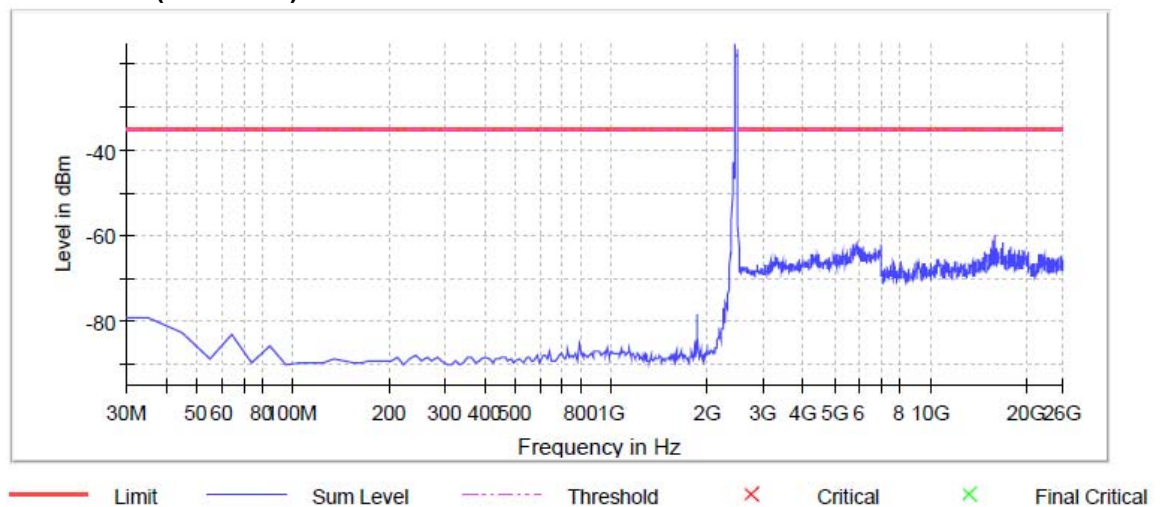
Channel 3 (2422MHz)



Channel 6 (2437MHz)



Channel 9 (2452MHz)



6 Radiated Emission

Result: Pass

6.1 Applied standard

According to FCC 15.247(d), fall in the restricted bands, as defined in FCC 15.205(a), must also comply with the radiated emission limits specified in FCC 15.209(a).

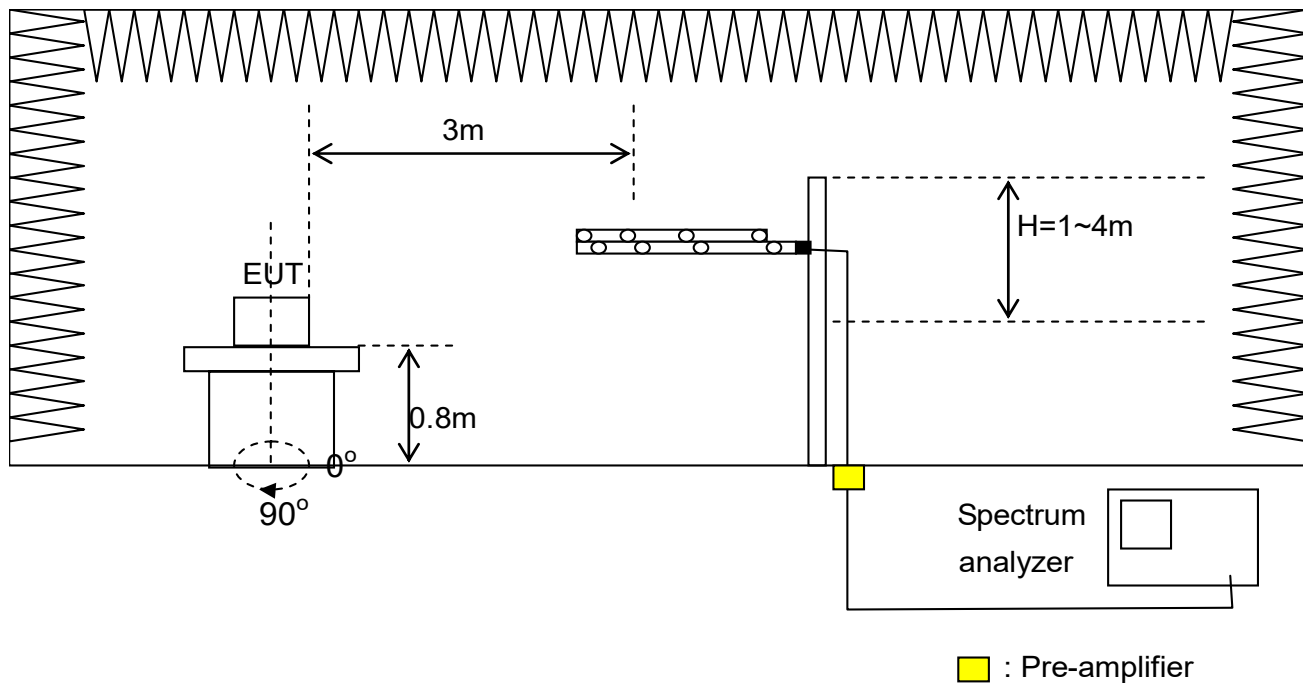
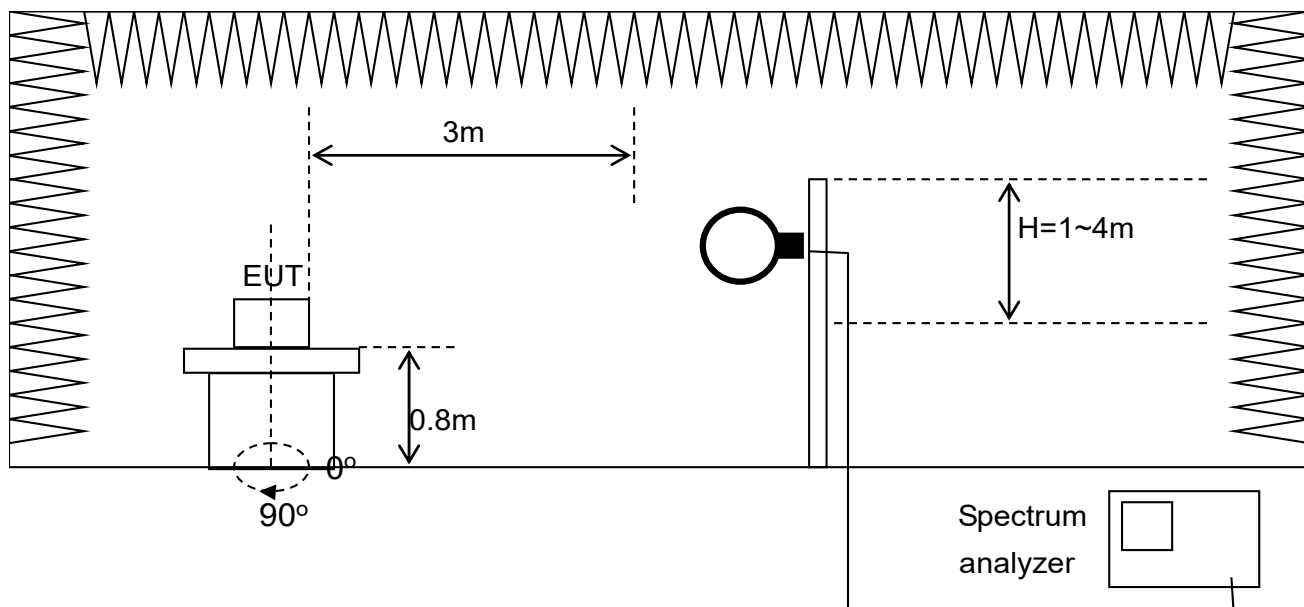
The amplitude of spurious emission are attenuated by more than 20 dB below the permissible value has no need to be reported.

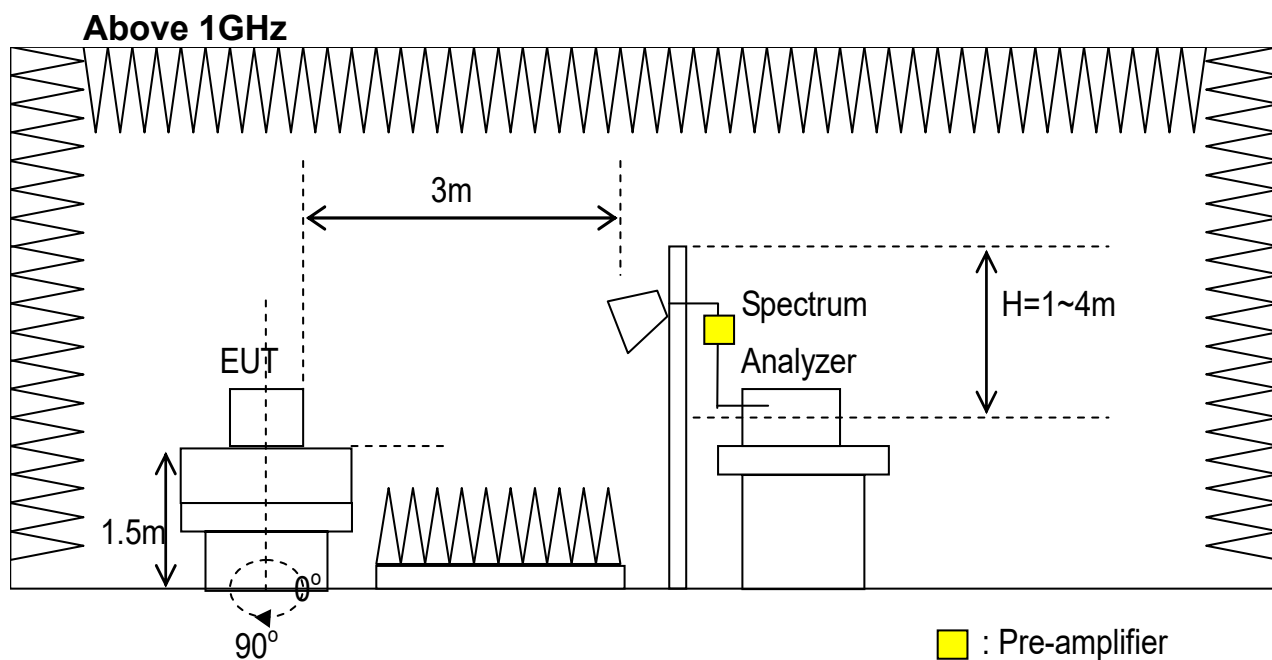
6.2 Measurement Procedure

- a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.
- b. A software provided by client enabled the EUT to transmit and receive data at operating frequency.(if necessary)
- c. If the EUT is tabletop equipment, it should be placed on a wooden table with a height of 0.8 meters above the reference ground plane in the semi-anechoic chamber. If the EUT is floor-standing equipment, it should be placed on a non-conducted support with a height of 12 millimeters above the reference ground plane in the semi-anechoic chamber.
- d. The EUT is set 3m away from the interference receiving antenna.
- e. Rapidly sweep the signal in the test frequency range by using the spectrum through the Maximum-peak detector.
- f. Rotate the EUT from 0° to 360° and position the receiving antenna at heights from 1 to 4 meters above the reference ground plane continuously to determine at least six frequencies associated with higher emission levels and record them.
- g. Then measure each frequency found from step f. by using the spectrum with rotating the EUT and positioning the receiving antenna height to determine the maximum level.
- h. For measurement of frequency below 1000MHz, set the receiver detector to be Quasi-Peak per CISPR 16-1 to find out the maximum level occurred.
- i. For measurement of frequency above 1000MHz, set the spectrum detector to be Peak or Average to find out the maximum level occurred, if any.
- j. Record frequency, azimuth angle of the turntable, height, and polarization of the receiving antenna and compare the maximum level with the required limit.
- k. Change the receiving antenna to another polarization to measure radiated emission by following step e. to j. again.
- l. If the peak emission level below 1000MHz measured from step f. is 4dB lower than the limit specified, then the emission values presented will be the peak value only. Otherwise, accurate Q.P. value will be measured and presented.
- m. If the peak emission level above 1000MHz measured from step f. is 20dB lower than the limit specified, then the emission values presented will be the peak value only. Otherwise, accurate A.V. value will be measured and presented.

6.3 Test configuration

Below 1GHz

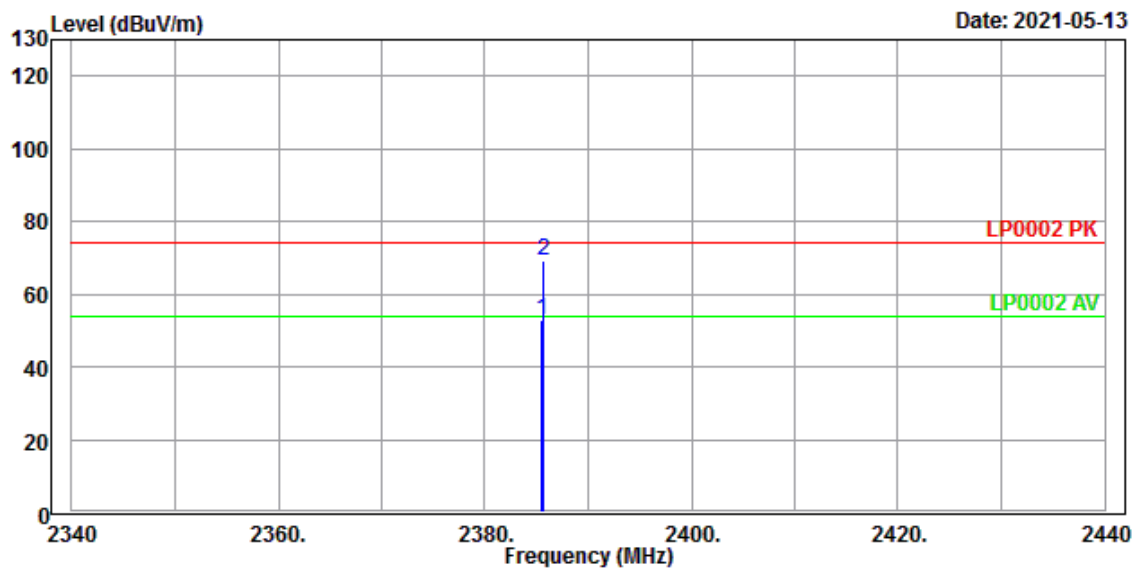




6.4 Test Data

Bandedge

Test Mode : Continuous Transmitting, 802.11b, 2412 MHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



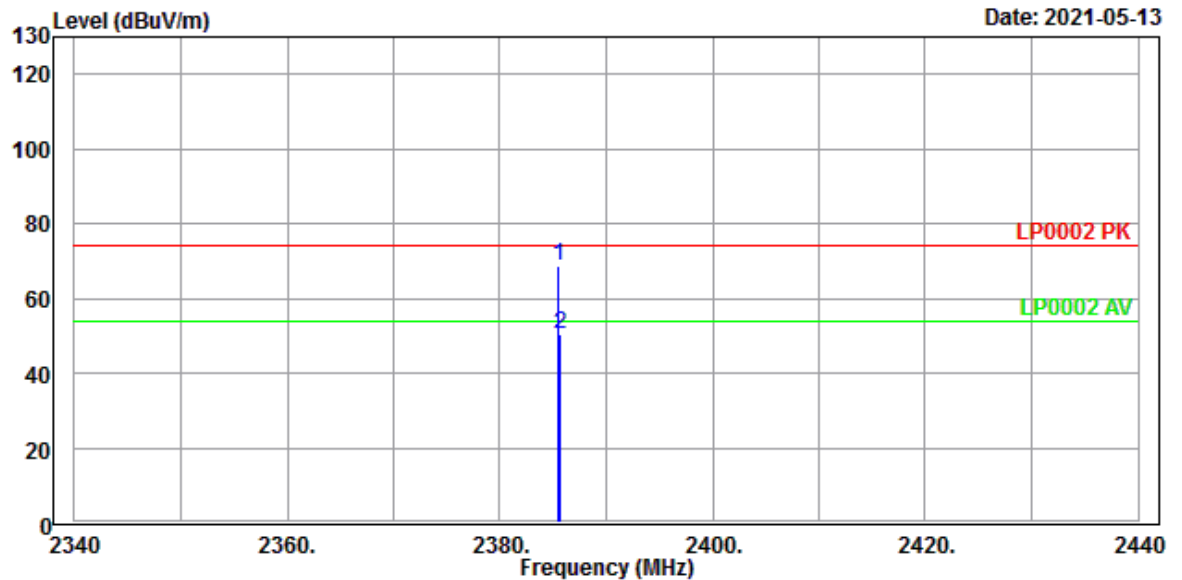
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2385.500	52.72	18.59	34.13	54.00	-1.28	154	204	HORIZONTAL	Average
2	2385.700	69.45	35.32	34.13	74.00	-4.55	154	204	HORIZONTAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11b, 2412 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



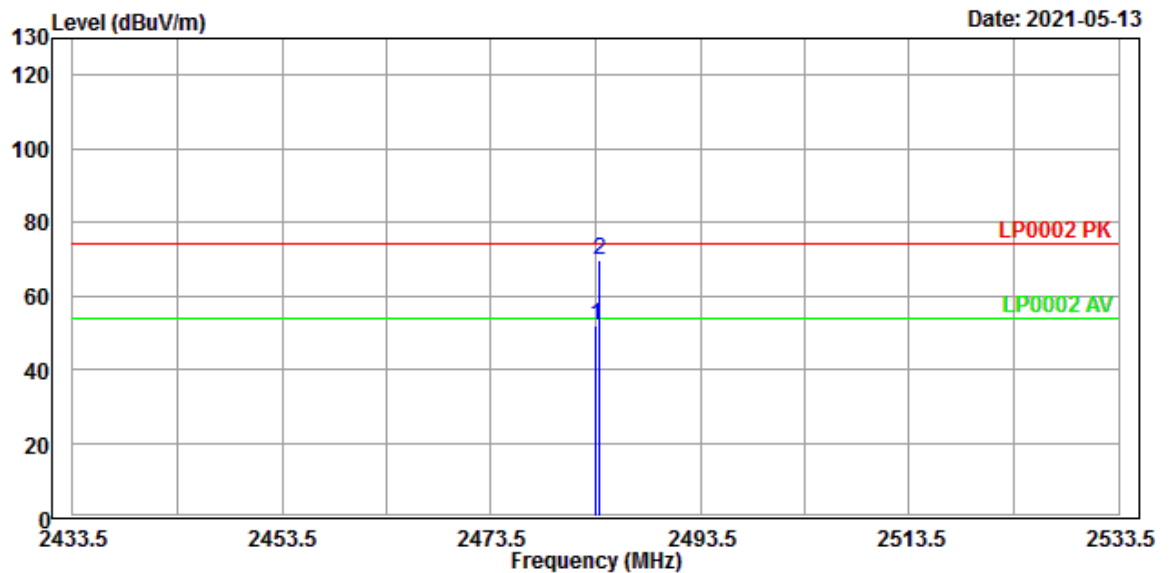
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Limit Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2385.500	68.67	34.54	34.13	74.00	-5.33	195	217	VERTICAL	Peak
2	2385.700	50.45	16.32	34.13	54.00	-3.55	195	217	VERTICAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11b, 2462 MHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



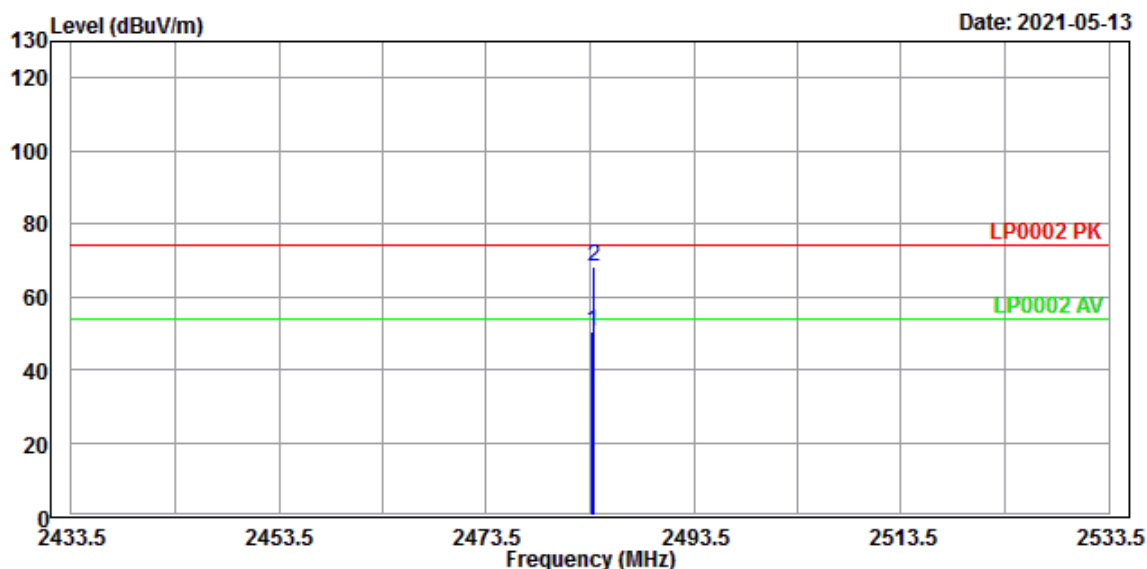
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.500	52.01	17.57	34.44	54.00	-1.99	165	192	HORIZONTAL	Average
2	2483.900	69.50	35.06	34.44	74.00	-4.50	165	192	HORIZONTAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11b, 2462 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



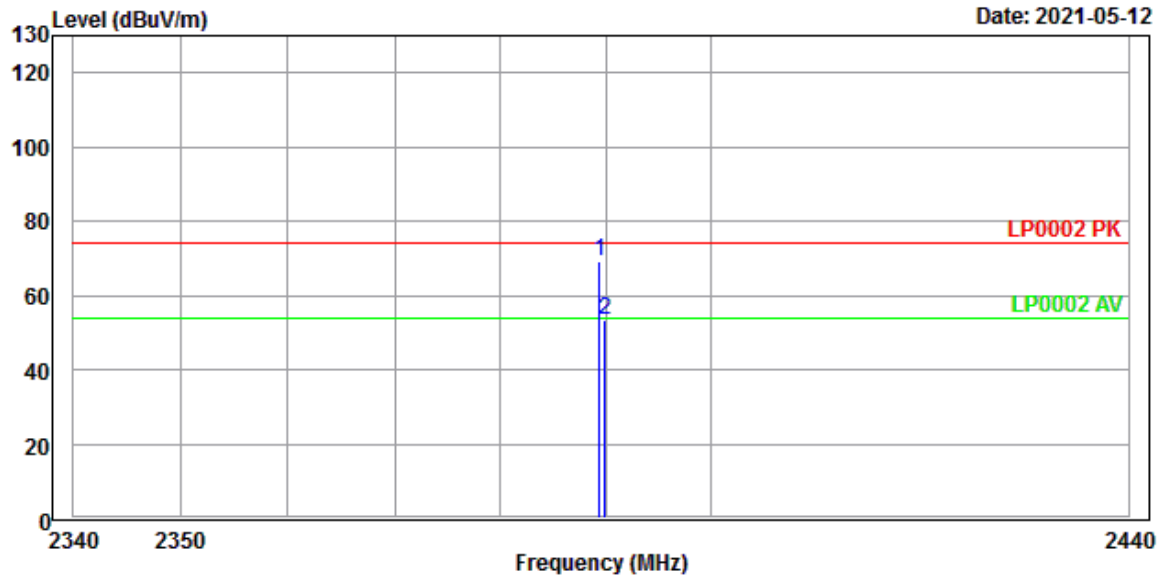
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Limit Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.700	50.59	16.15	34.44	54.00	-3.41	164	221	VERTICAL	Average
2	2483.800	68.03	33.59	34.44	74.00	-5.97	164	221	VERTICAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11g, 2412 MHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



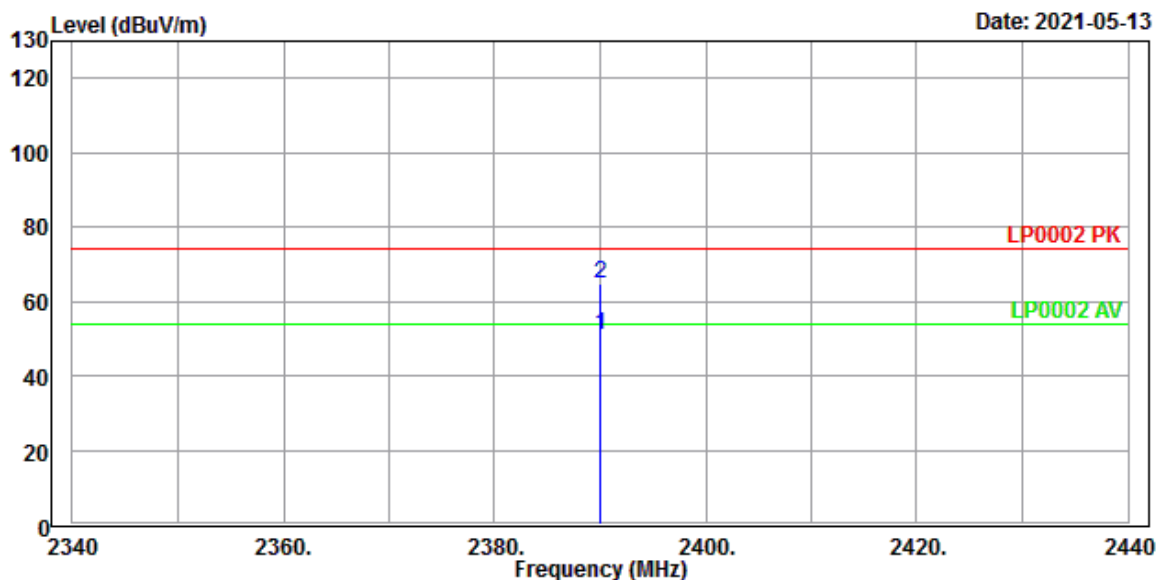
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Limit Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.300	69.29	35.16	34.13	74.00	-4.71	184	189	HORIZONTAL	Peak
2	2389.800	53.19	19.06	34.13	54.00	-0.81	184	189	HORIZONTAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11g, 2412 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



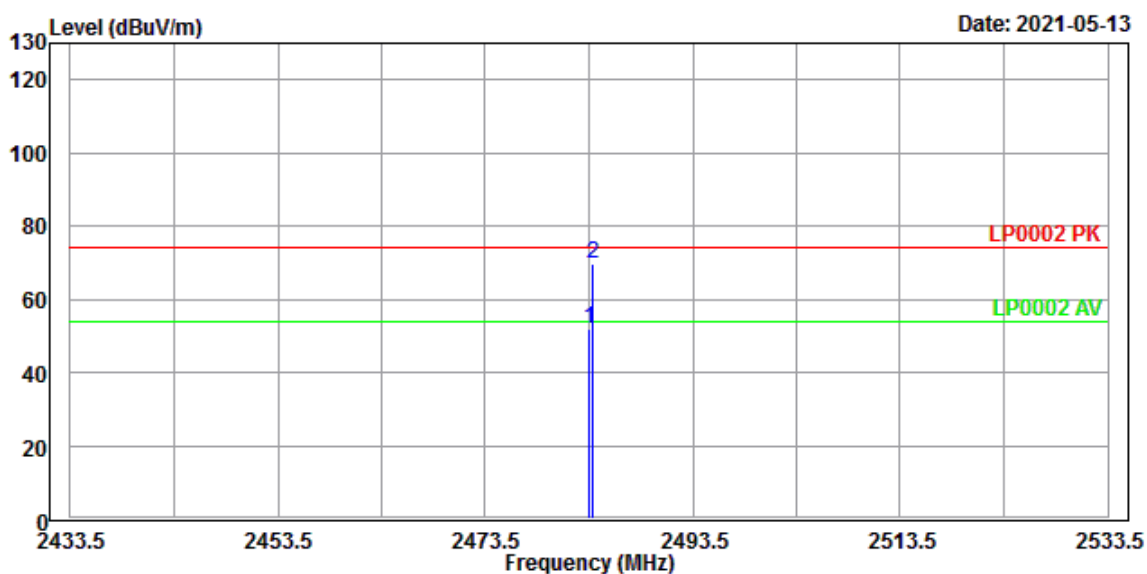
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2390.000	50.98	16.85	34.13	54.00	-3.02	177	215	VERTICAL	Average
2	2390.000	64.70	30.57	34.13	74.00	-9.30	177	215	VERTICAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11g, 2462 MHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



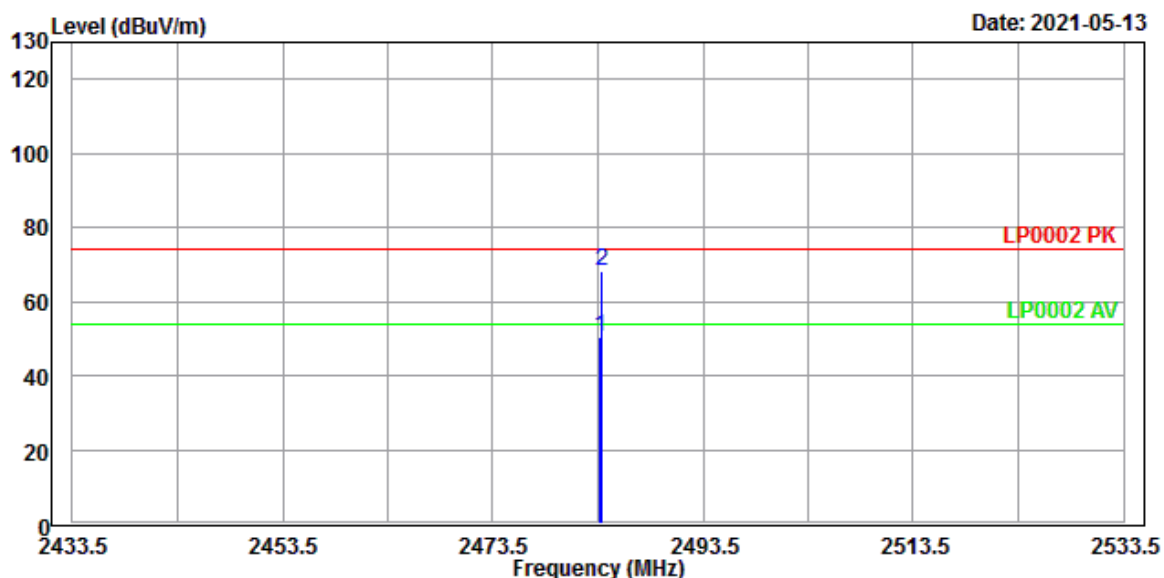
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.500	52.01	17.57	34.44	54.00	-1.99	165	192	HORIZONTAL	Average
2	2483.900	69.50	35.06	34.44	74.00	-4.50	165	192	HORIZONTAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11g, 2462 MHz
Polarization : Vertical Tester : Jeffry
Ambient Temperature : 23°C Relative Humidity : 48%



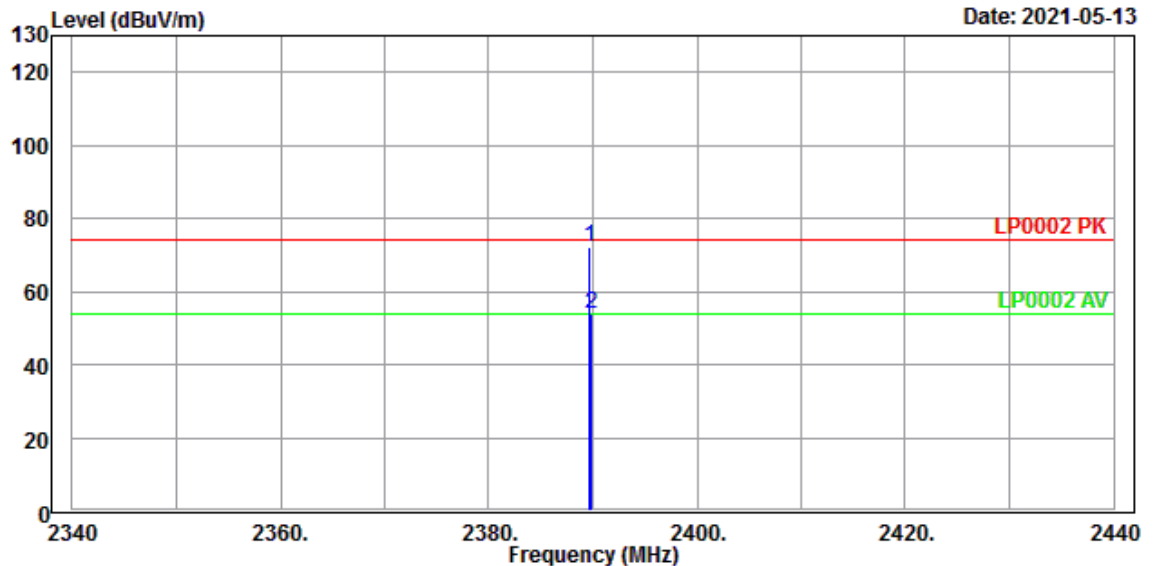
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.700	50.59	16.15	34.44	54.00	-3.41	164	221	VERTICAL	Average
2	2483.800	68.03	33.59	34.44	74.00	-5.97	164	221	VERTICAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT20, 2412 MHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



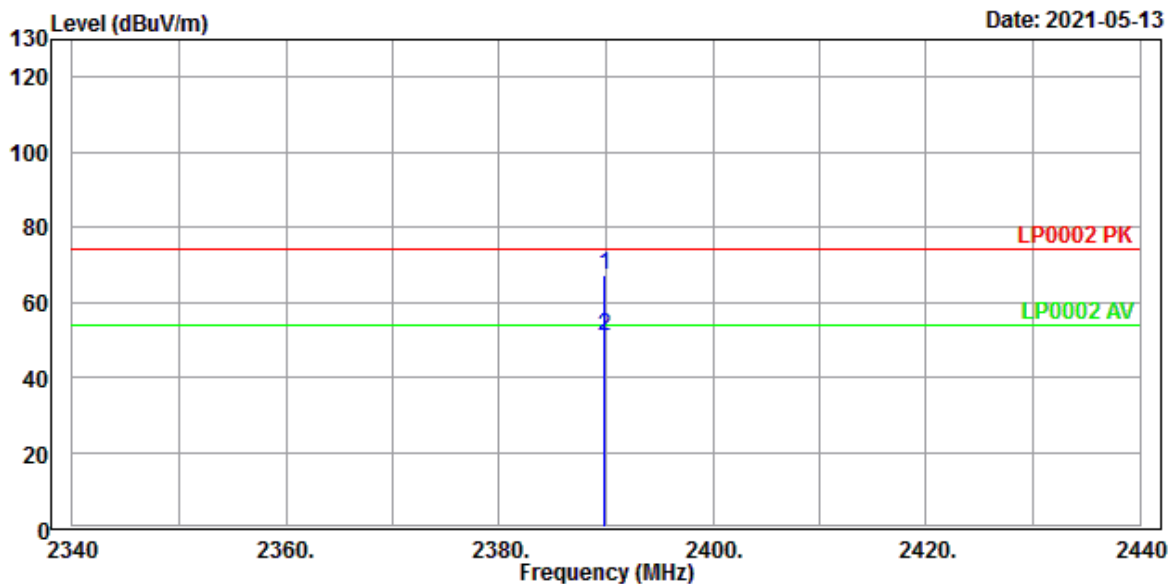
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.600	72.22	38.09	34.13	74.00	-1.78	153	212	HORIZONTAL	Peak
2	2389.800	53.84	19.71	34.13	54.00	-0.16	153	212	HORIZONTAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT20, 2412 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



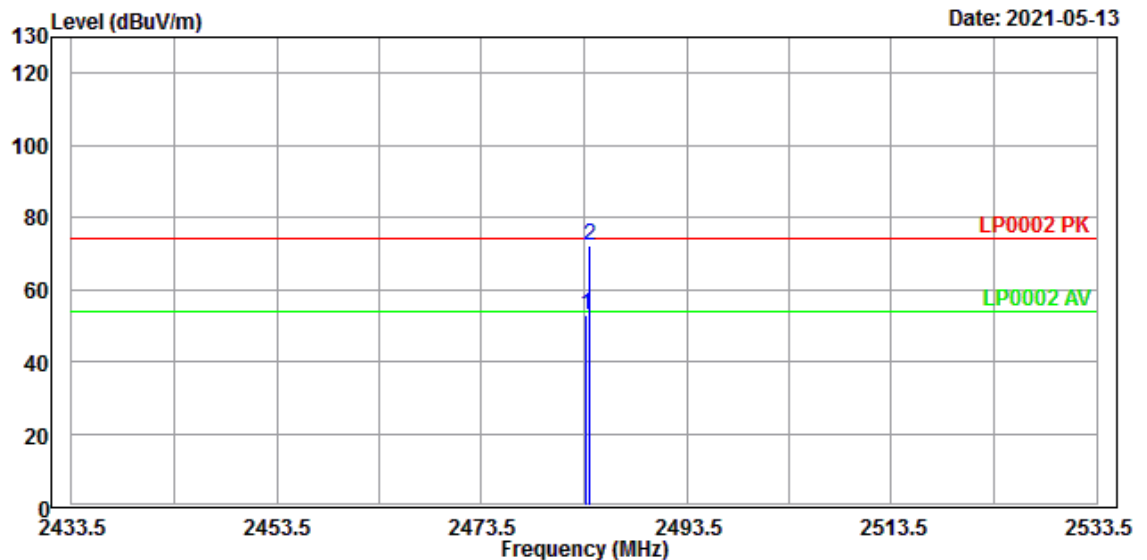
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.800	67.21	33.08	34.13	74.00	-6.79	150	181	VERTICAL	Peak
2	2389.900	50.90	16.77	34.13	54.00	-3.10	150	181	VERTICAL	Average

Note:

1. Level (dBUV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT20, 2462 MHz
Polarization : Horizontal Tester : Jeffry
Ambient Temperature : 23°C Relative Humidity : 48%



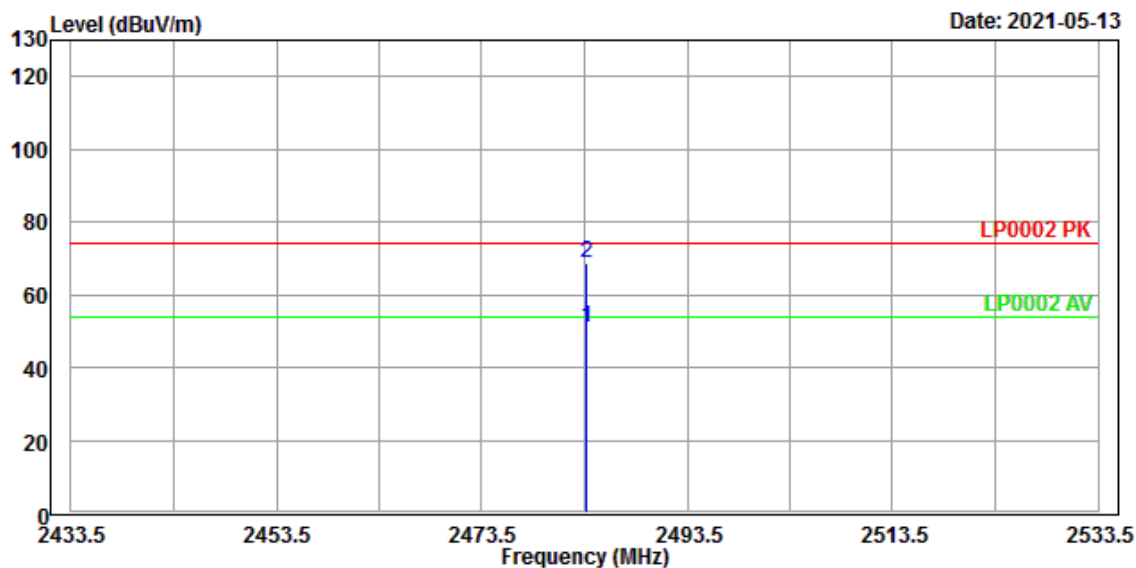
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.600	52.97	18.53	34.44	54.00	-1.03	159	184	HORIZONTAL	Average
2	2484.000	72.37	37.93	34.44	74.00	-1.63	159	184	HORIZONTAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT20, 2462 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



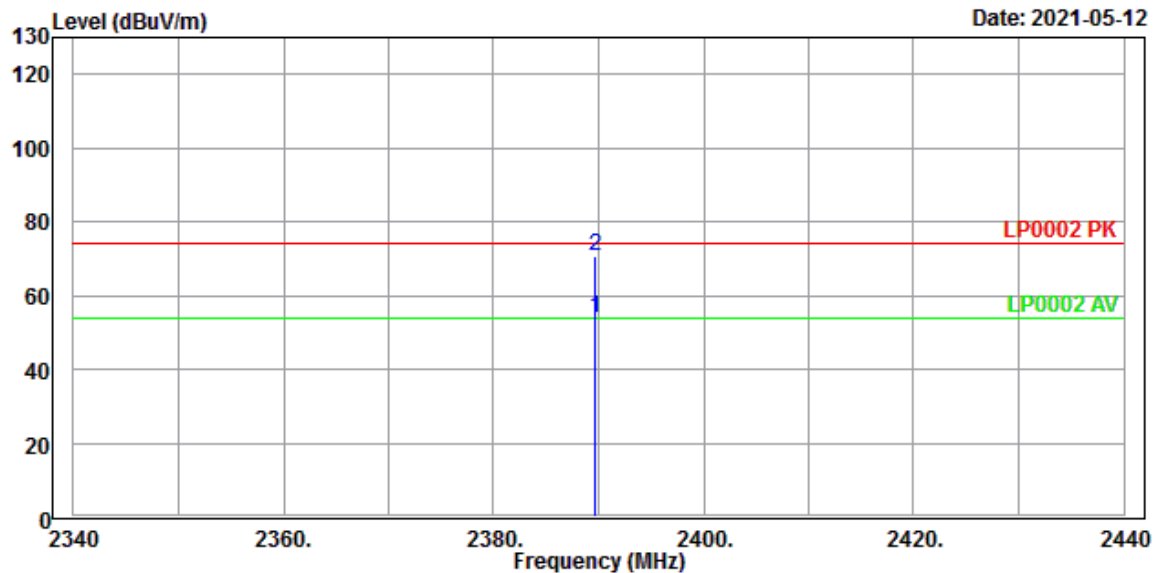
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.600	50.92	16.48	34.44	54.00	-3.08	165	222	VERTICAL	Average
2	2483.600	68.77	34.33	34.44	74.00	-5.23	165	222	VERTICAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT40, 2422 MHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



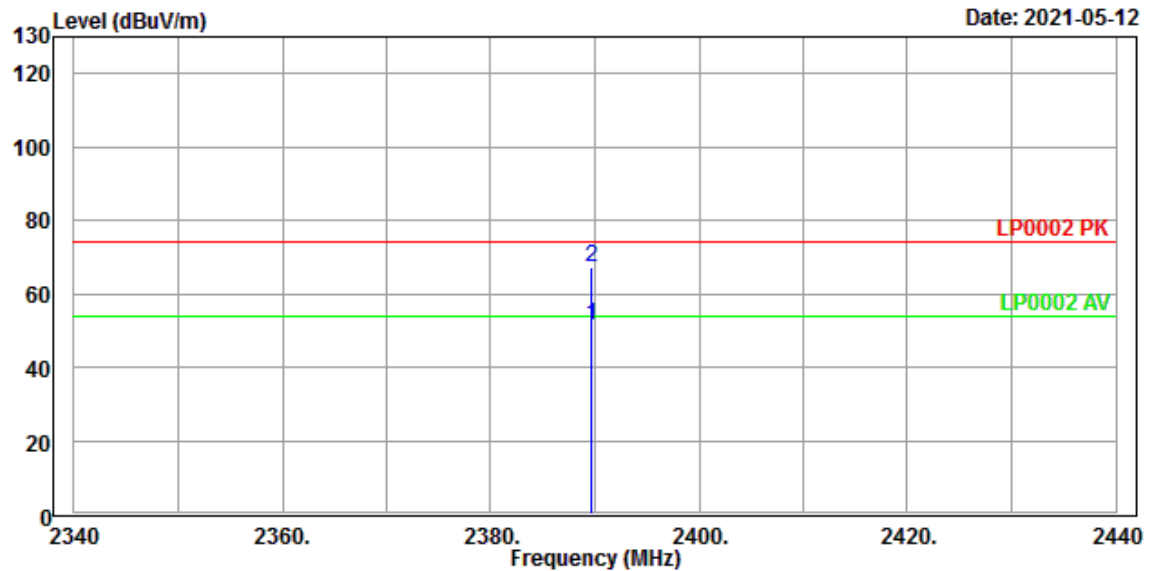
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBUV/m	dBUV	dB/m	dBUV/m	dB	cm	deg		
1	2389.600	53.88	19.75	34.13	54.00	-0.12	201	192	HORIZONTAL	Average
2	2389.700	70.79	36.66	34.13	74.00	-3.21	201	192	HORIZONTAL	Peak

Note:

1. Level (dBUV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT40, 2422 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.600	51.27	17.14	34.13	54.00	-2.73	161	217	VERTICAL	Average
2	2389.600	67.17	33.04	34.13	74.00	-6.83	161	217	VERTICAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

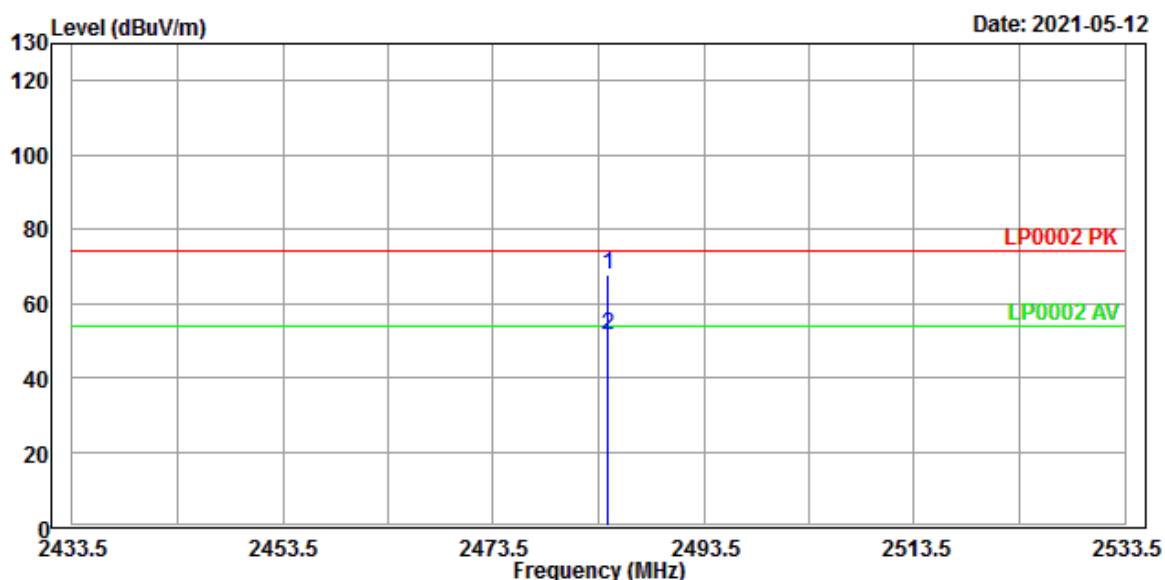
Test Mode : Continuous Transmitting, 802.11n HT40, 2452 MHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 23°C

Relative Humidity : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

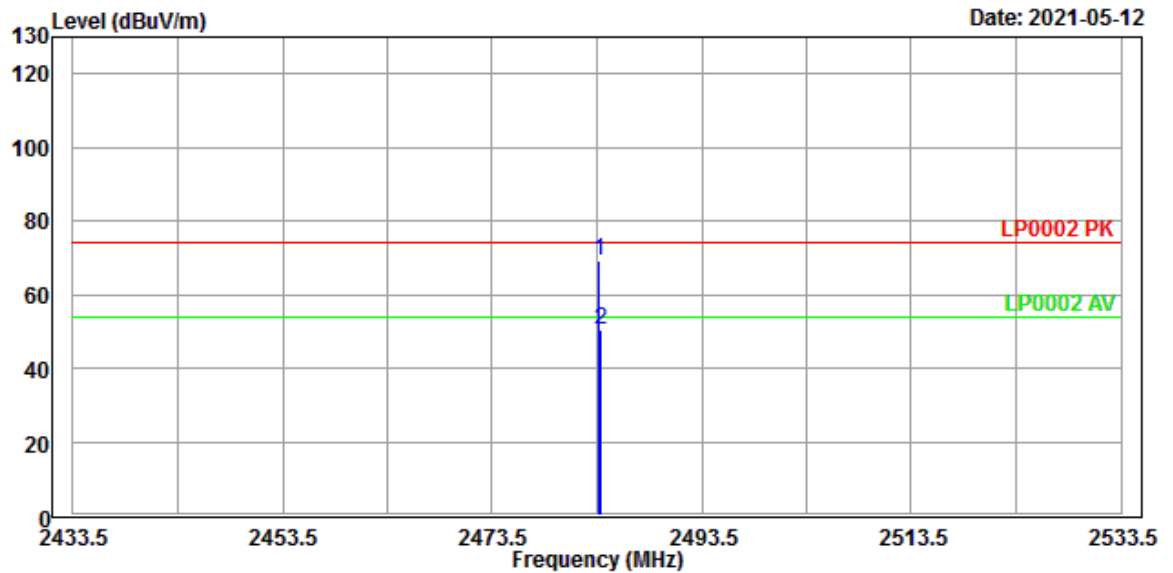
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Limit Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2484.300	67.92	33.48	34.44	74.00	-6.08	186	181	HORIZONTAL	Peak
2	2484.400	51.25	16.81	34.44	54.00	-2.75	186	181	HORIZONTAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Test Mode : Continuous Transmitting, 802.11n HT40, 2452 MHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2483.600	69.00	34.56	34.44	74.00	-5.00	193	216	VERTICAL	Peak
2	2483.800	50.62	16.18	34.44	54.00	-3.38	193	216	VERTICAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line

Radiated Emission Measurement below 1000MHz

Test Mode : Normal

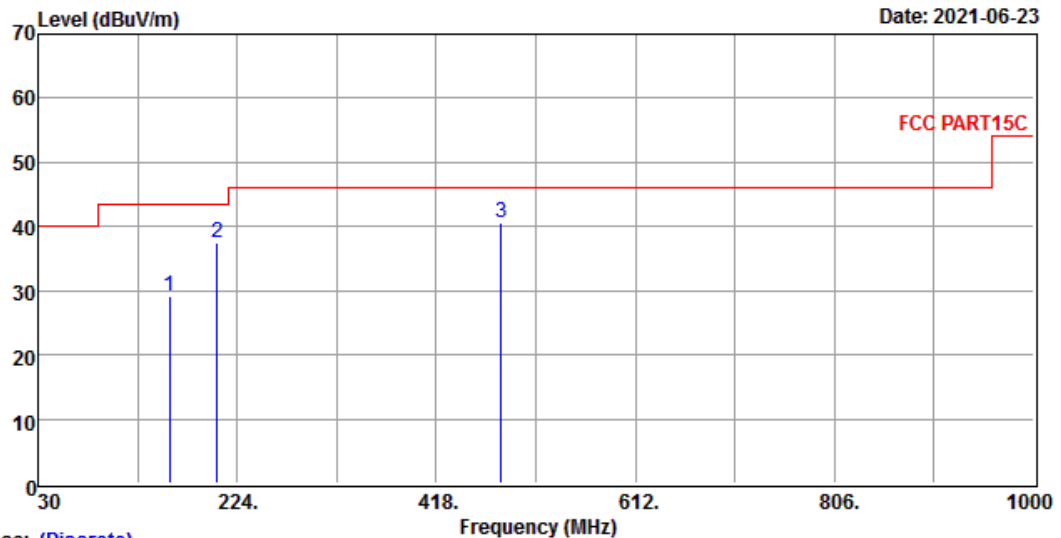
Test Range : 30 MHz ~1 GHz

Polarization : Horizontal

Tester : Martin

Ambient Temperature : 25°C

Relative Humidity : 58%



Trace: (Discrete)

Site : TR11 9*6*6 chamber
 Condition : FCC PART15C 3m VULB_9168-668 HORIZONTAL
 Power : 120V / 60Hz
 Operator : Martin T25 H58 P1017

	Freq	Level	Read	Limit	Over	A/Pos	T/Pos		
	MHz	dBuV/m	Level	Factor	Line	Limit		Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
1	158.040	29.05	49.78	-20.73	43.50	-14.45	201	155 VERTICAL	QP
2	204.600	37.50	61.48	-23.98	43.50	-6.00	181	211 VERTICAL	QP
3	481.050	40.68	56.18	-15.50	46.00	-5.32	100	248 VERTICAL	QP

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. QK. is abbreviation of Quasi-Peak
5. The emission levels were too lower against the limit of frequency 9 kHz~ 30 MHz.

Test Mode : Normal

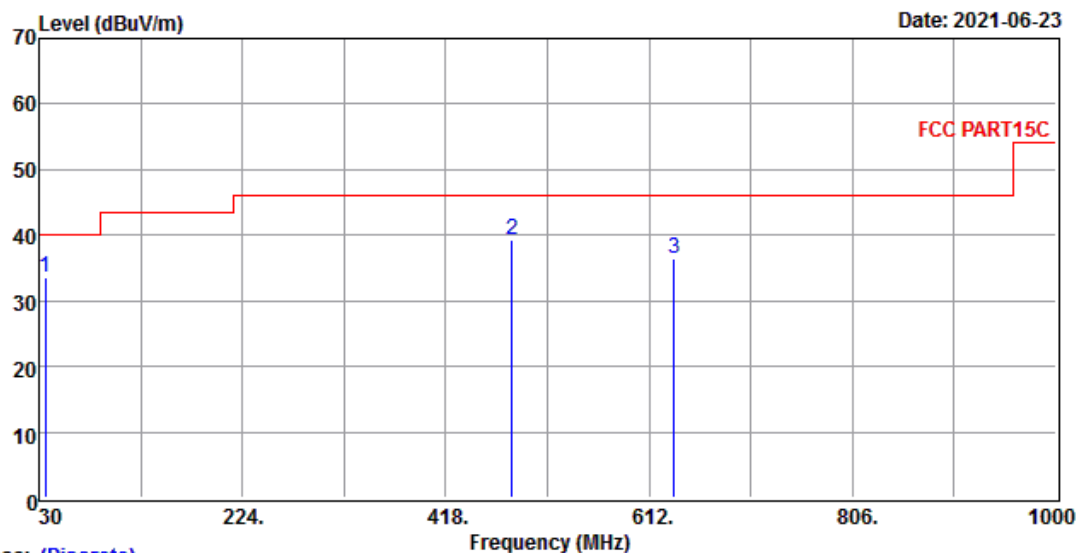
Test Range : 30 MHz ~1GHz

Polarization : Vertical

Tester : Martin

Ambient Temperature : 25°C

Relative Humidity : 58%



Site : TR11 9*6*6 chamber
 Condition : FCC PART15C 3m VULB_9168-668 VERTICAL
 Power : 120V / 60Hz
 Operator : Martin T25 H58 P1017

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	35.820	33.53	55.76	-22.23	40.00	-6.47	100	360	VERTICAL	QP
2	481.050	39.38	54.88	-15.50	46.00	-6.62	100	214	VERTICAL	QP
3	636.250	36.32	48.36	-12.04	46.00	-9.68	100	167	VERTICAL	QP

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. QK. is abbreviation of Quasi-Peak
5. The emission levels were too lower against the limit of frequency 9 kHz~ 30 MHz.

Radiated Emission Measurement above 1000MHz

Test Mode : Continuous Transmitting, 802.11b , 2412 MHz

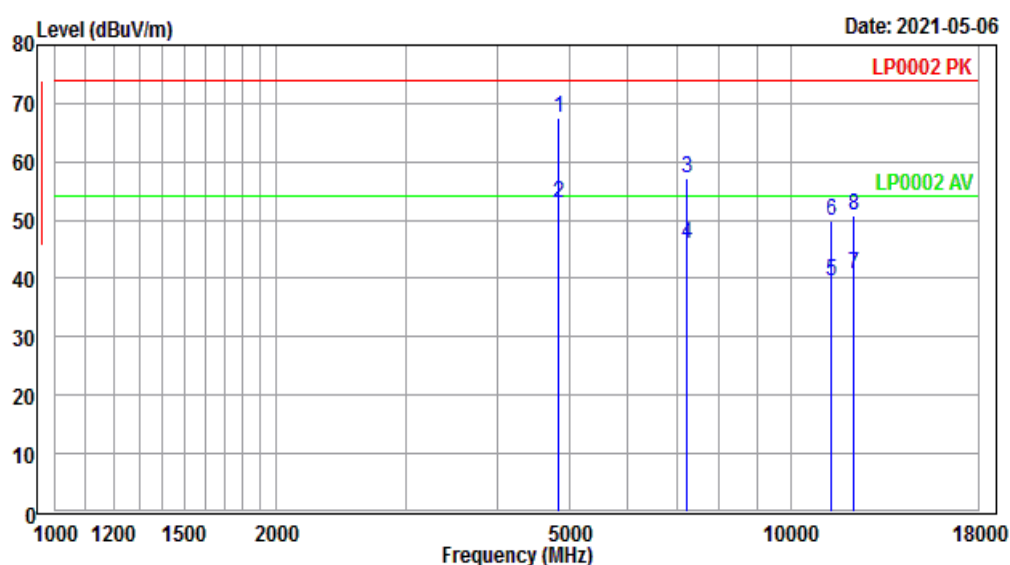
Test Range : 1 GHz ~ 25GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4824.003	67.51	83.50	-15.99	74.00	-6.49	205	360	HORIZONTAL Peak
2	4824.862	52.81	68.80	-15.99	54.00	-1.19	209	355	HORIZONTAL Average
3	7236.171	57.06	69.93	-12.87	74.00	-16.94	196	185	HORIZONTAL Peak
4	7236.864	46.07	58.94	-12.87	54.00	-7.93	198	182	HORIZONTAL Average
5	11347.370	39.69	48.26	-8.57	54.00	-14.31	161	136	HORIZONTAL Average
6	11347.400	49.83	58.40	-8.57	74.00	-24.17	163	134	HORIZONTAL Peak
7	12207.570	40.64	48.36	-7.72	54.00	-13.36	123	65	HORIZONTAL Average
8	12207.700	50.68	58.40	-7.72	74.00	-23.32	129	60	HORIZONTAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11b , 2412 MHz

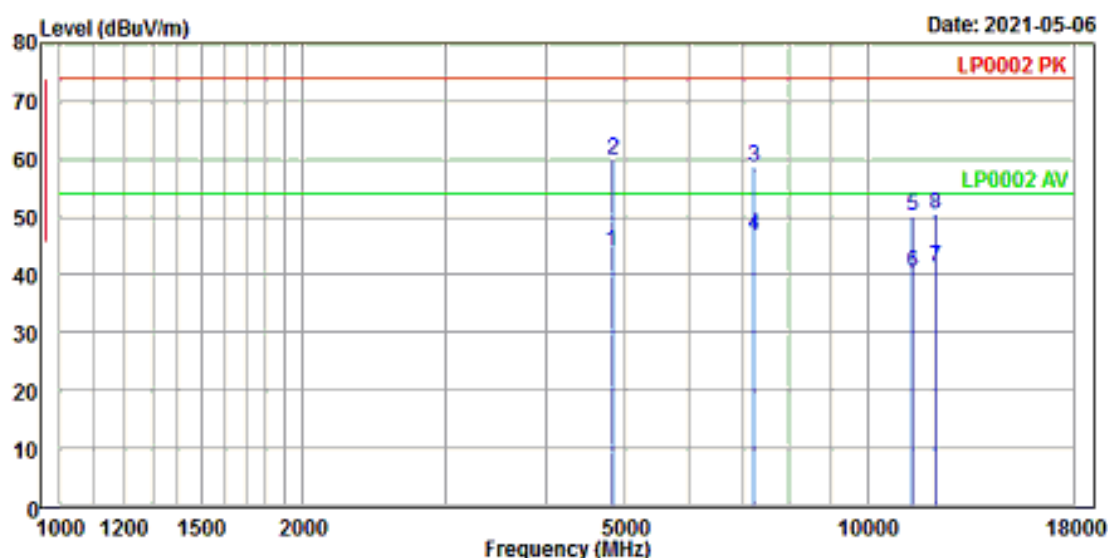
Test Range : 1 GHz ~ 25 GHz

Polarization : Vertical

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	Apos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4823.221	44.01	60.00	-15.99	54.00	-9.99	154	260	VERTICAL Average
2	4823.946	59.99	75.98	-15.99	74.00	-14.01	150	265	VERTICAL Peak
3	7236.147	58.65	71.52	-12.87	74.00	-15.35	170	155	VERTICAL Peak
4	7236.940	46.76	59.63	-12.87	54.00	-7.24	174	159	VERTICAL Average
5	11369.470	50.13	58.69	-8.56	74.00	-23.87	130	283	VERTICAL Peak
6	11369.480	40.40	48.96	-8.56	54.00	-13.60	136	280	VERTICAL Average
7	12145.350	41.24	48.95	-7.71	54.00	-12.76	161	159	VERTICAL Average
8	12145.620	50.58	58.30	-7.72	74.00	-23.42	169	155	VERTICAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11b , 2437 MHz

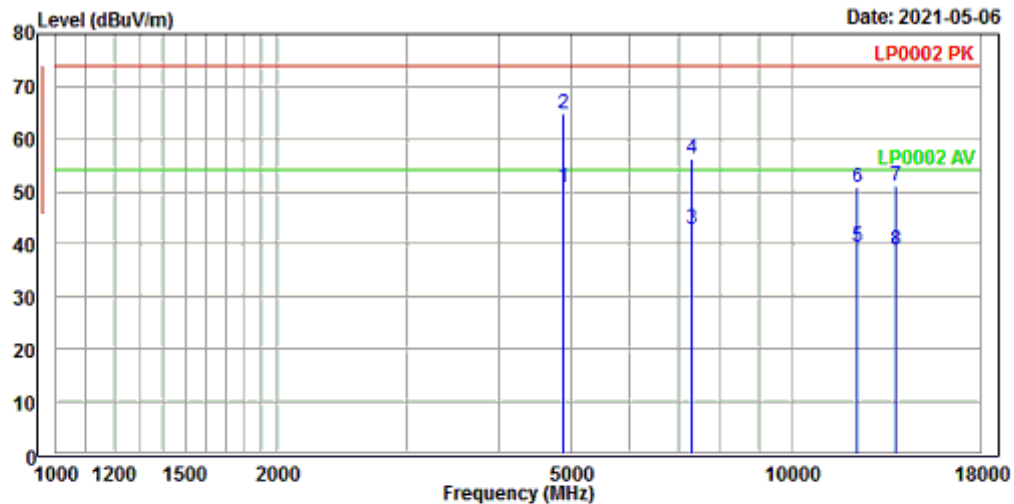
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4873.290	50.80	66.85	-16.05	54.00	-3.20	178	3	HORIZONTAL Average
2	4873.929	64.73	80.79	-16.06	74.00	-9.27	172	0	HORIZONTAL Peak
3	7310.510	42.94	55.88	-12.94	54.00	-11.06	149	144	HORIZONTAL Average
4	7310.999	56.34	69.28	-12.94	74.00	-17.66	145	149	HORIZONTAL Peak
5	12278.260	39.44	47.22	-7.78	54.00	-14.56	134	207	HORIZONTAL Average
6	12278.890	50.69	58.47	-7.78	74.00	-23.31	131	201	HORIZONTAL Peak
7	13859.130	51.09	61.33	-10.24	74.00	-22.91	197	106	HORIZONTAL Peak
8	13859.360	38.83	49.07	-10.24	54.00	-15.17	192	101	HORIZONTAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11b , 2437 MHz

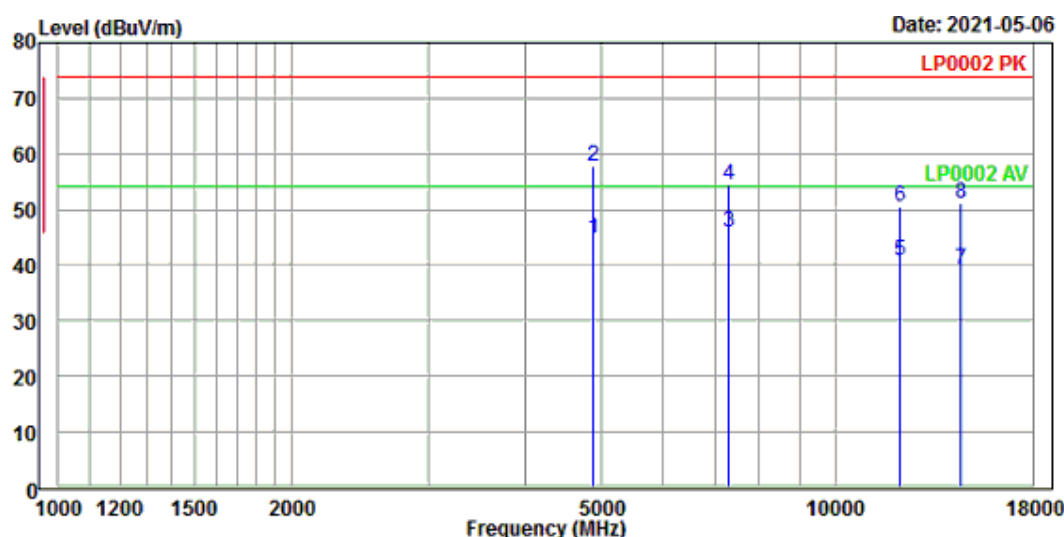
Test Range : 1 GHz ~ 25 GHz

Polarization : Vertical

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4873.883	44.57	60.63	-16.06	54.00	-9.43	178	251	VERTICAL Average
2	4873.974	57.86	73.92	-16.06	74.00	-16.14	174	253	VERTICAL Peak
3	7307.000	45.88	58.82	-12.94	54.00	-8.12	156	152	VERTICAL Average
4	7307.332	54.58	67.52	-12.94	74.00	-19.42	151	158	VERTICAL Peak
5	12113.260	40.91	48.64	-7.73	54.00	-13.09	172	127	VERTICAL Average
6	12113.530	50.40	58.13	-7.73	74.00	-23.60	178	123	VERTICAL Peak
7	14563.050	39.34	49.44	-10.10	54.00	-14.66	122	210	VERTICAL Average
8	14563.910	50.97	61.07	-10.10	74.00	-23.03	125	209	VERTICAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11b , 2462 MHz

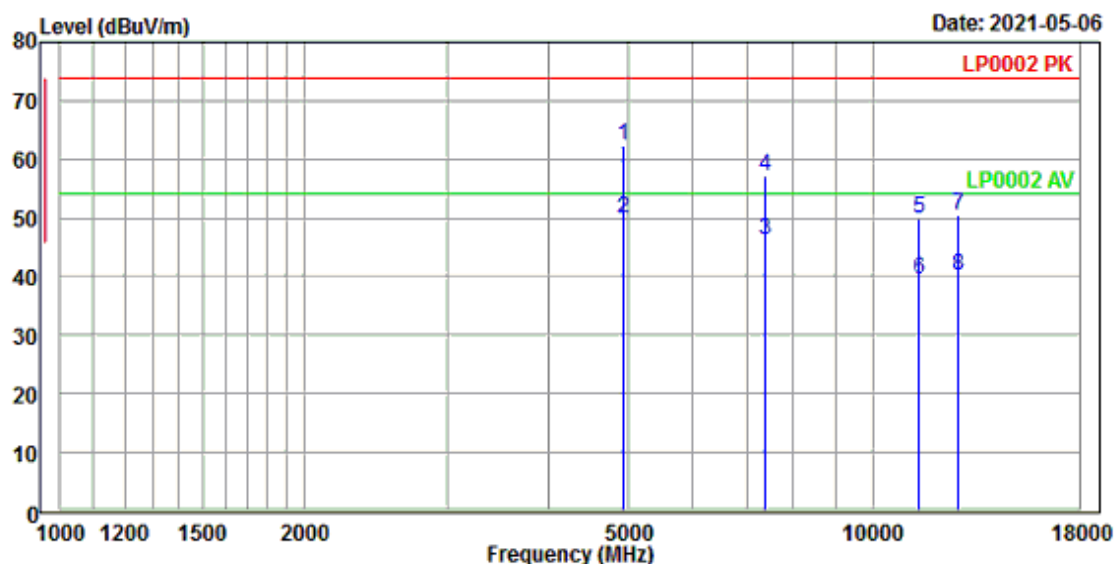
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4924.117	62.25	78.30	-16.05	74.00	-11.75	194	28	HORIZONTAL Peak
2	4924.308	49.81	65.85	-16.04	54.00	-4.19	198	30	HORIZONTAL Average
3	7385.636	46.14	58.94	-12.80	54.00	-7.86	222	140	HORIZONTAL Average
4	7385.799	57.19	69.99	-12.80	74.00	-16.81	226	143	HORIZONTAL Peak
5	11405.120	49.79	58.33	-8.54	74.00	-24.21	151	213	HORIZONTAL Peak
6	11405.260	39.42	47.96	-8.54	54.00	-14.58	155	218	HORIZONTAL Average
7	12766.230	50.50	58.64	-8.14	74.00	-23.50	132	281	HORIZONTAL Peak
8	12766.360	40.22	48.36	-8.14	54.00	-13.78	134	286	HORIZONTAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11b , 2462 MHz

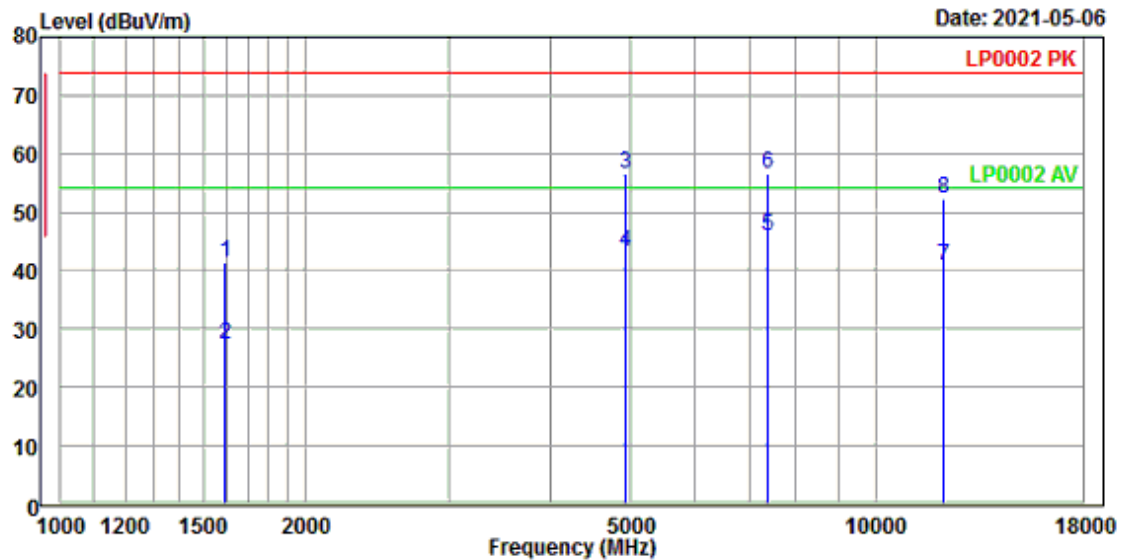
Test Range : 1 GHz ~ 25 GHz

Polarization : Vertical

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1594.460	41.47	63.14	-21.67	74.00	-32.53	183	336	VERTICAL Peak
2	1594.573	27.41	49.08	-21.67	54.00	-26.59	184	330	VERTICAL Average
3	4924.029	56.47	72.52	-16.05	74.00	-17.53	196	180	VERTICAL Peak
4	4924.094	43.32	59.37	-16.05	54.00	-10.68	192	184	VERTICAL Average
5	7385.467	45.84	58.64	-12.80	54.00	-8.16	154	160	VERTICAL Average
6	7385.843	56.73	69.53	-12.80	74.00	-17.27	156	163	VERTICAL Peak
7	12154.260	40.64	48.36	-7.72	54.00	-13.36	174	118	VERTICAL Average
8	12154.830	52.26	59.98	-7.72	74.00	-21.74	172	113	VERTICAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11g , 2412 MHz

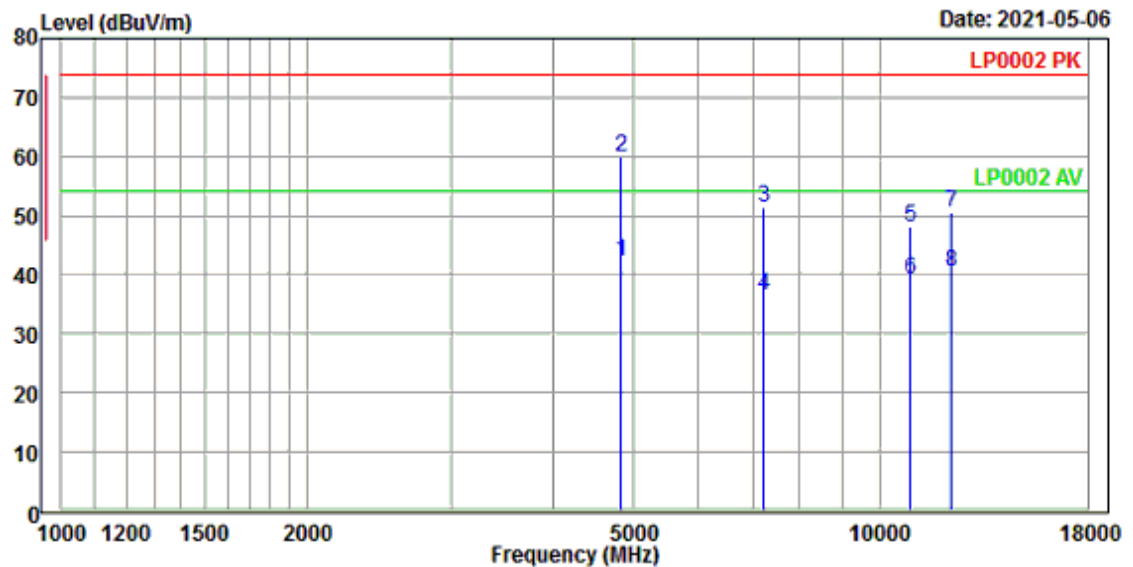
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		cm	deg		
1	4824.136	42.25	58.24	-15.99	54.00	-11.75		143	8	HORIZONTAL	Average
2	4824.201	60.03	76.02	-15.99	74.00	-13.97		146	5	HORIZONTAL	Peak
3	7232.184	51.55	64.42	-12.87	74.00	-22.45		177	153	HORIZONTAL	Peak
4	7232.432	36.49	49.36	-12.87	54.00	-17.51		170	156	HORIZONTAL	Average
5	10931.030	48.14	57.06	-8.92	74.00	-25.86		149	49	HORIZONTAL	Peak
6	10931.470	39.34	48.26	-8.92	54.00	-14.66		157	55	HORIZONTAL	Average
7	12244.000	50.46	58.21	-7.75	74.00	-23.54		179	103	HORIZONTAL	Peak
8	12244.360	40.51	48.26	-7.75	54.00	-13.49		172	106	HORIZONTAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11g , 2412 MHz

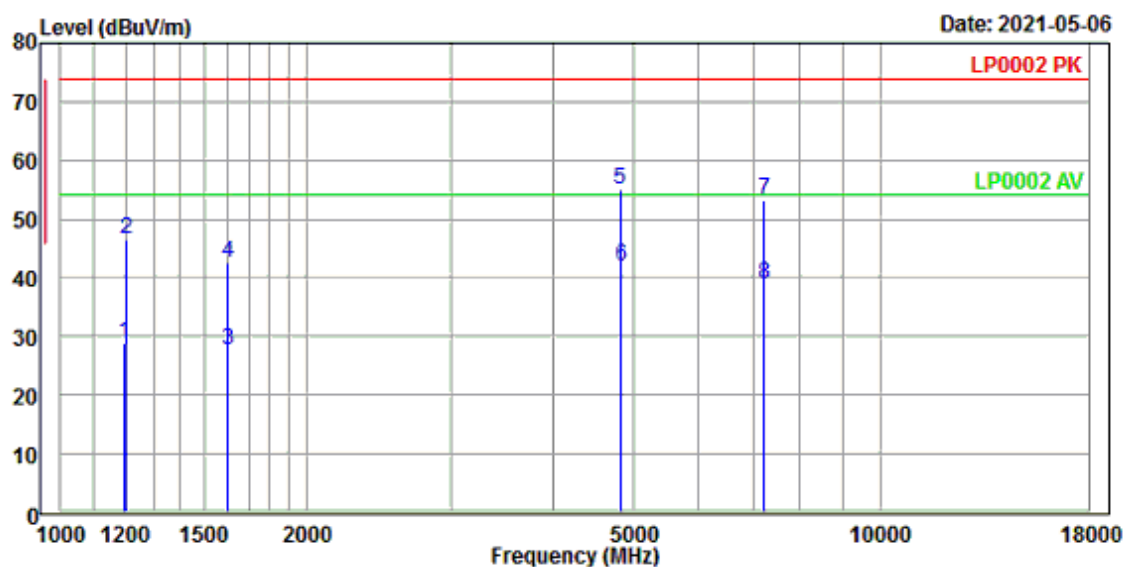
Test Range : 1 GHz ~ 25 GHz

Polarization : Vertical

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1198.020	28.81	49.95	-21.14	54.00	-25.19	158	143	VERTICAL Average
2	1198.824	46.64	67.78	-21.14	74.00	-27.36	153	148	VERTICAL Peak
3	1597.004	27.80	49.44	-21.64	54.00	-26.20	175	4	VERTICAL Average
4	1597.430	42.48	64.11	-21.63	74.00	-31.52	178	0	VERTICAL Peak
5	4823.785	54.93	70.92	-15.99	74.00	-19.07	233	132	VERTICAL Peak
6	4823.949	41.86	57.85	-15.99	54.00	-12.14	232	137	VERTICAL Average
7	7231.673	53.30	66.17	-12.87	74.00	-20.70	181	159	VERTICAL Peak
8	7231.832	38.87	51.74	-12.87	54.00	-15.13	188	154	VERTICAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11g , 2437 MHz

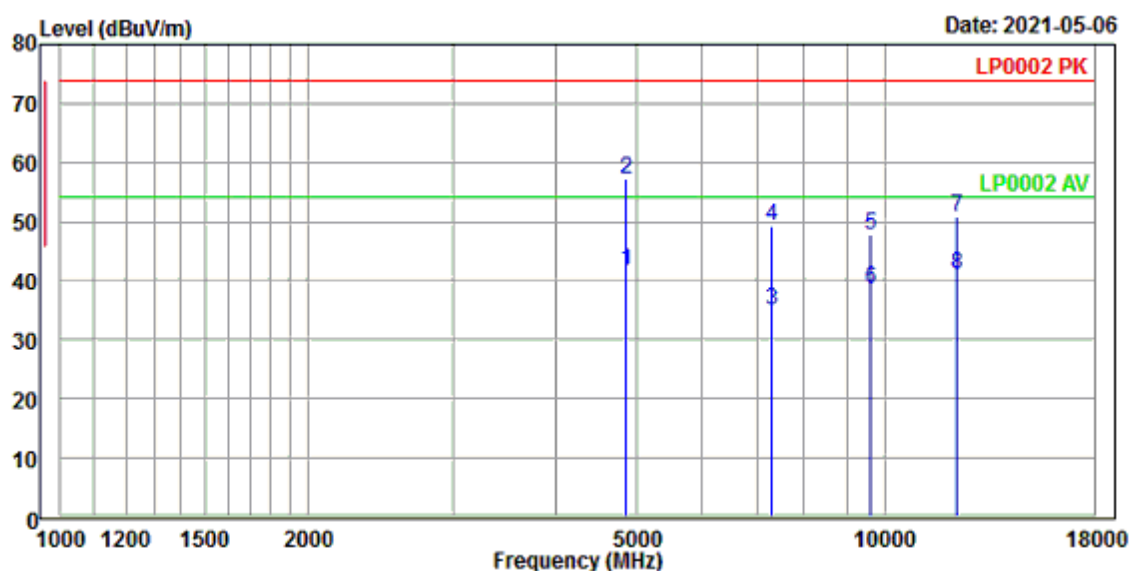
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4869.608	41.70	57.74	-16.04	54.00	-12.30	195	10	HORIZONTAL Average
2	4869.833	57.10	73.14	-16.04	74.00	-16.90	191	8	HORIZONTAL Peak
3	7311.268	35.05	47.99	-12.94	54.00	-18.95	146	58	HORIZONTAL Average
4	7311.464	49.19	62.13	-12.94	74.00	-24.81	142	53	HORIZONTAL Peak
5	9619.445	47.73	58.48	-10.75	74.00	-26.27	178	215	HORIZONTAL Peak
6	9619.753	38.51	49.26	-10.75	54.00	-15.49	172	219	HORIZONTAL Average
7	12269.330	50.71	58.48	-7.77	74.00	-23.29	130	287	HORIZONTAL Peak
8	12269.410	41.17	48.94	-7.77	54.00	-12.83	137	285	HORIZONTAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11g , 2437 MHz

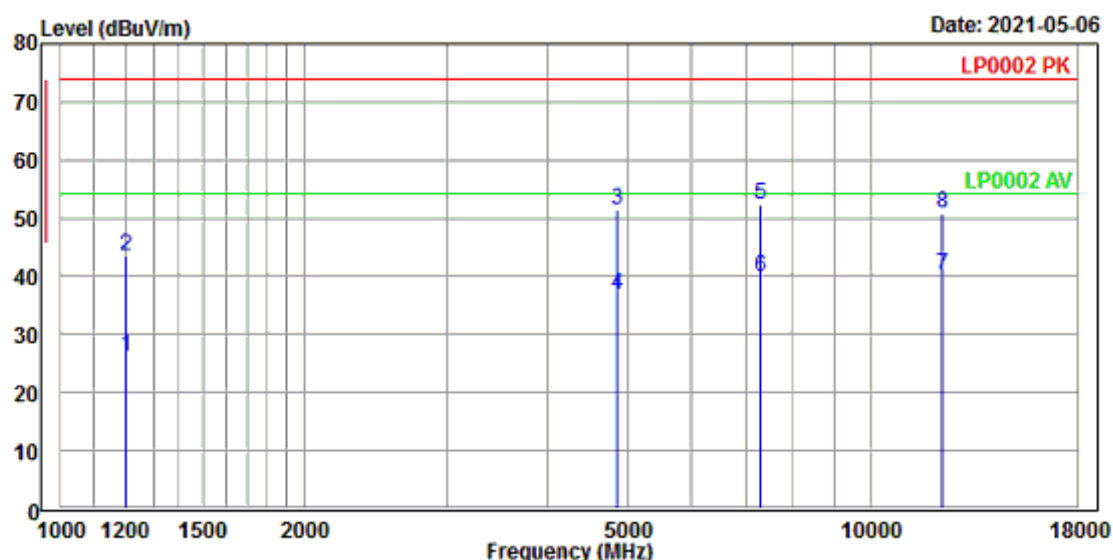
Test Range : 1 GHz ~ 25 GHz

Polarization : Vertical

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1198.673	26.22	47.36	-21.14	54.00	-27.78	170	219	VERTICAL Average
2	1198.768	43.60	64.74	-21.14	74.00	-30.40	172	215	VERTICAL Peak
3	4868.506	51.26	67.29	-16.03	74.00	-22.74	257	255	VERTICAL Peak
4	4868.988	36.82	52.86	-16.04	54.00	-17.18	259	252	VERTICAL Average
5	7310.569	52.42	65.36	-12.94	74.00	-21.58	182	154	VERTICAL Peak
6	7310.674	39.92	52.86	-12.94	54.00	-14.08	186	150	VERTICAL Average
7	12239.270	40.22	47.97	-7.75	54.00	-13.78	148	232	VERTICAL Average
8	12239.890	50.69	58.44	-7.75	74.00	-23.31	143	236	VERTICAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11g , 2462 MHz

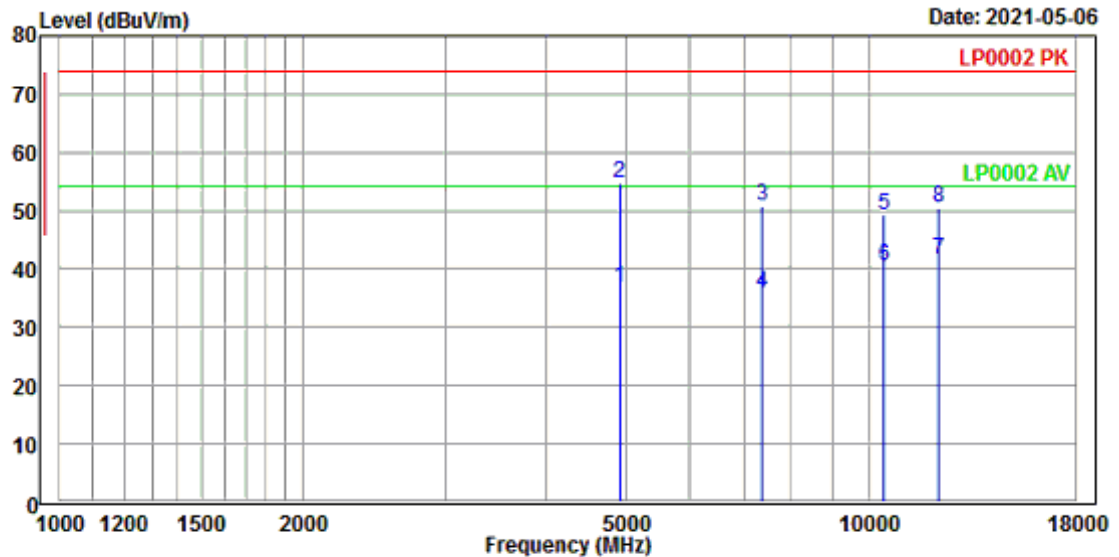
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4921.123	36.68	52.74	-16.06	54.00	-17.32	178	32	HORIZONTAL Average
2	4921.226	54.60	70.66	-16.06	74.00	-19.40	171	27	HORIZONTAL Peak
3	7380.865	50.89	63.70	-12.81	74.00	-23.11	214	165	HORIZONTAL Peak
4	7380.880	35.94	48.75	-12.81	54.00	-18.06	211	169	HORIZONTAL Average
5	10441.060	49.30	58.75	-9.45	74.00	-24.70	161	212	HORIZONTAL Peak
6	10441.180	40.37	49.82	-9.45	54.00	-13.63	164	217	HORIZONTAL Average
7	12212.460	41.53	49.25	-7.72	54.00	-12.47	138	264	HORIZONTAL Average
8	12212.880	50.55	58.27	-7.72	74.00	-23.45	135	269	HORIZONTAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11g , 2462 MHz

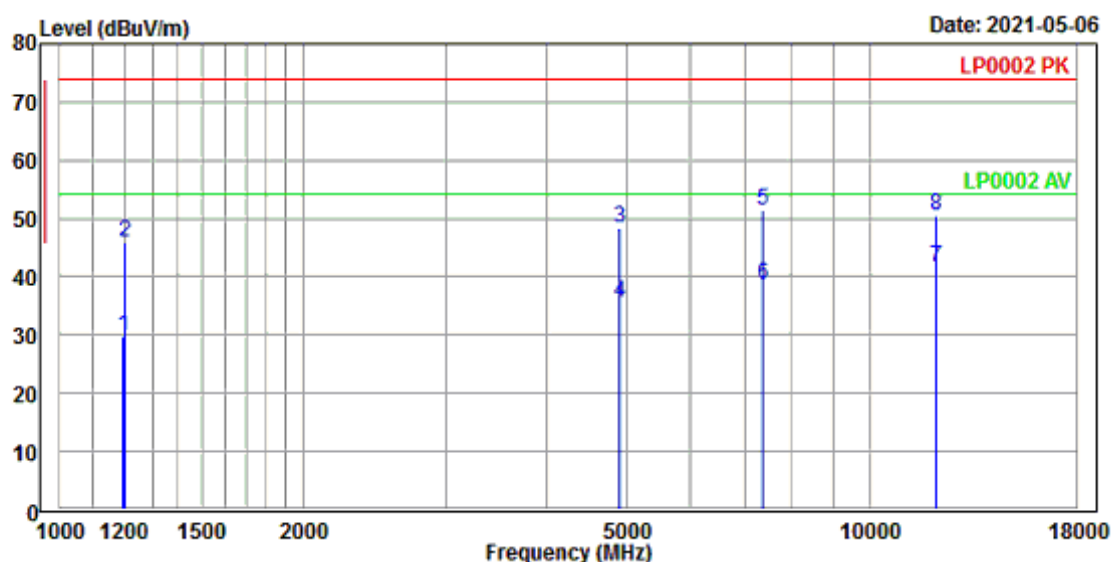
Test Range : 1 GHz ~ 25 GHz

Polarization : Vertical

Tester : Jeffry

Ambient Temperature : 24°C

Relative Humidity : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL

POWER : 110V 60HZ

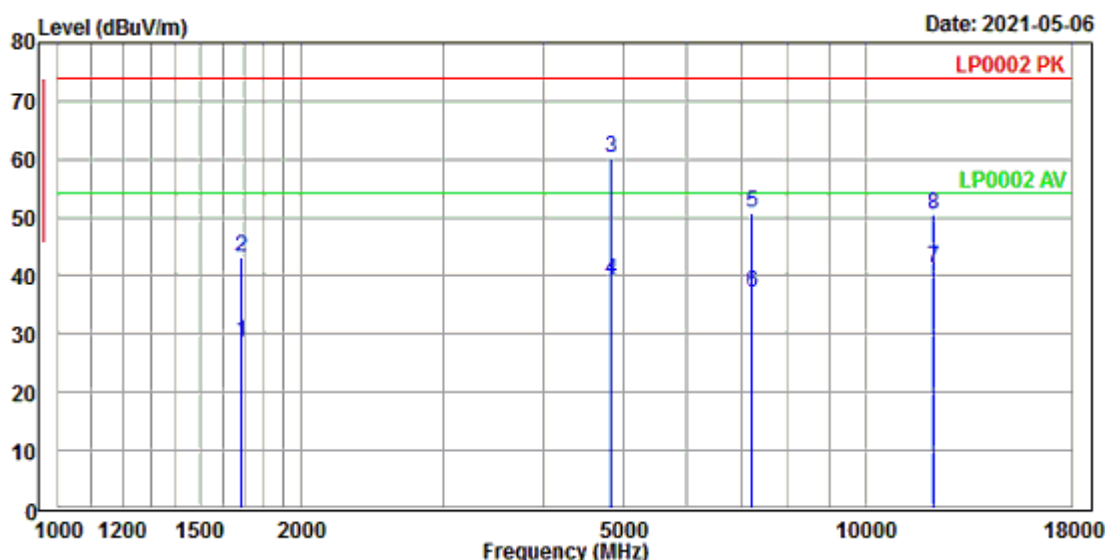
OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1198.017	29.71	50.85	-21.14	54.00	-24.29	157	152	VERTICAL Average
2	1198.954	45.80	66.94	-21.14	74.00	-28.20	152	155	VERTICAL Peak
3	4919.060	48.47	64.55	-16.08	74.00	-25.53	182	183	VERTICAL Peak
4	4919.449	35.68	51.75	-16.07	54.00	-18.32	186	187	VERTICAL Average
5	7383.534	51.41	64.21	-12.80	74.00	-22.59	155	159	VERTICAL Peak
6	7383.943	38.66	51.46	-12.80	54.00	-15.34	158	151	VERTICAL Average
7	12053.000	41.71	49.45	-7.74	54.00	-12.29	131	71	VERTICAL Average
8	12053.870	50.35	58.09	-7.74	74.00	-23.65	124	67	VERTICAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT20 , 2412 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 24°C **Relative Humidity** : 60%



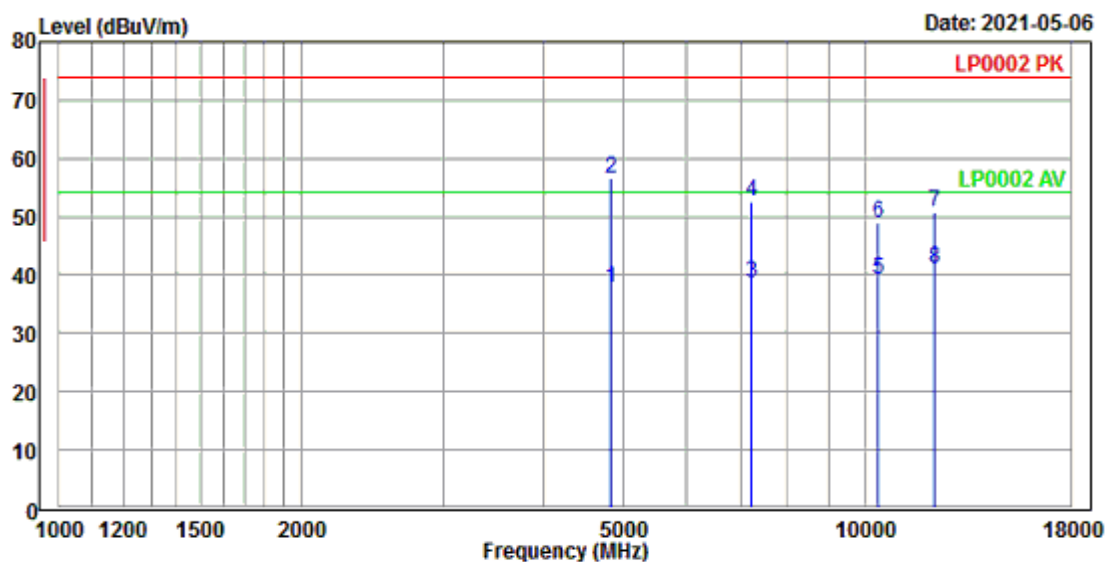
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1681.053	28.51	48.97	-20.46	54.00	-25.49	150	156	HORIZONTAL Average
2	1681.271	43.20	63.66	-20.46	74.00	-30.80	156	153	HORIZONTAL Peak
3	4825.066	60.35	76.34	-15.99	74.00	-13.65	187	360	HORIZONTAL Peak
4	4825.768	39.28	55.27	-15.99	54.00	-14.72	180	353	HORIZONTAL Average
5	7231.230	50.84	63.71	-12.87	74.00	-23.16	147	168	HORIZONTAL Peak
6	7231.989	36.97	49.84	-12.87	54.00	-17.03	149	163	HORIZONTAL Average
7	12121.640	41.41	49.13	-7.72	54.00	-12.59	168	122	HORIZONTAL Average
8	12121.940	50.40	58.12	-7.72	74.00	-23.60	166	128	HORIZONTAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT20 , 2412 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 24°C **Relative Humidity** : 60%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:24 H:60 P:1020

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4825.151	37.87	53.86	-15.99	54.00	-16.13	257	124	VERTICAL Average
2	4825.364	56.52	72.51	-15.99	74.00	-17.48	251	129	VERTICAL Peak
3	7231.198	38.67	51.54	-12.87	54.00	-15.33	148	172	VERTICAL Average
4	7231.213	52.58	65.45	-12.87	74.00	-21.42	146	170	VERTICAL Peak
5	10379.200	39.16	48.64	-9.48	54.00	-14.84	166	144	VERTICAL Average
6	10379.580	49.01	58.49	-9.48	74.00	-24.99	162	140	VERTICAL Peak
7	12165.160	50.66	58.37	-7.71	74.00	-23.34	129	199	VERTICAL Peak
8	12165.780	40.92	48.63	-7.71	54.00	-13.08	123	202	VERTICAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT20 , 2437 MHz

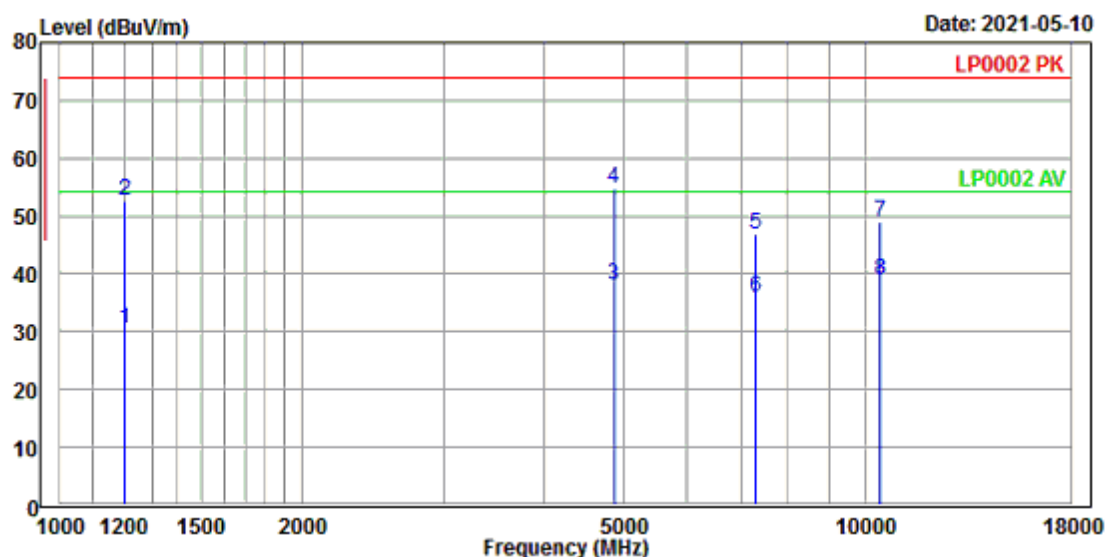
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 23°C

Relative Humidity : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

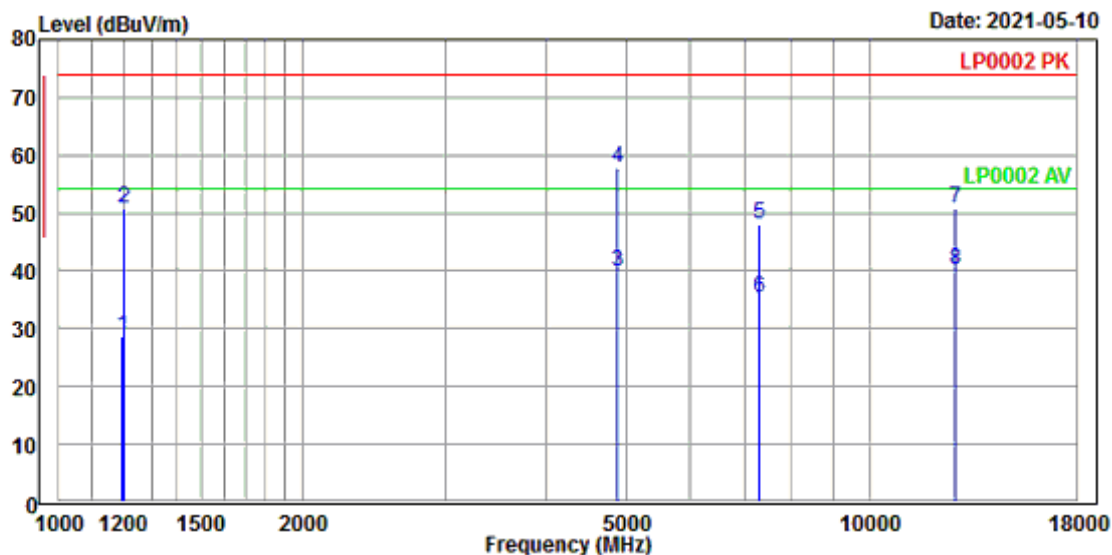
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1198.643	30.39	51.53	-21.14	54.00	-23.61	165	155	HORIZONTAL Average
2	1198.785	52.73	73.87	-21.14	74.00	-21.27	169	158	HORIZONTAL Peak
3	4872.191	37.90	53.95	-16.05	54.00	-16.10	150	353	HORIZONTAL Average
4	4872.550	54.68	70.73	-16.05	74.00	-19.32	157	360	HORIZONTAL Peak
5	7309.594	46.98	59.92	-12.94	74.00	-27.02	175	203	HORIZONTAL Peak
6	7309.754	36.03	48.97	-12.94	54.00	-17.97	171	206	HORIZONTAL Average
7	10449.070	49.03	58.48	-9.45	74.00	-24.97	150	167	HORIZONTAL Peak
8	10449.130	39.01	48.46	-9.45	54.00	-14.99	157	169	HORIZONTAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT20 , 2437 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



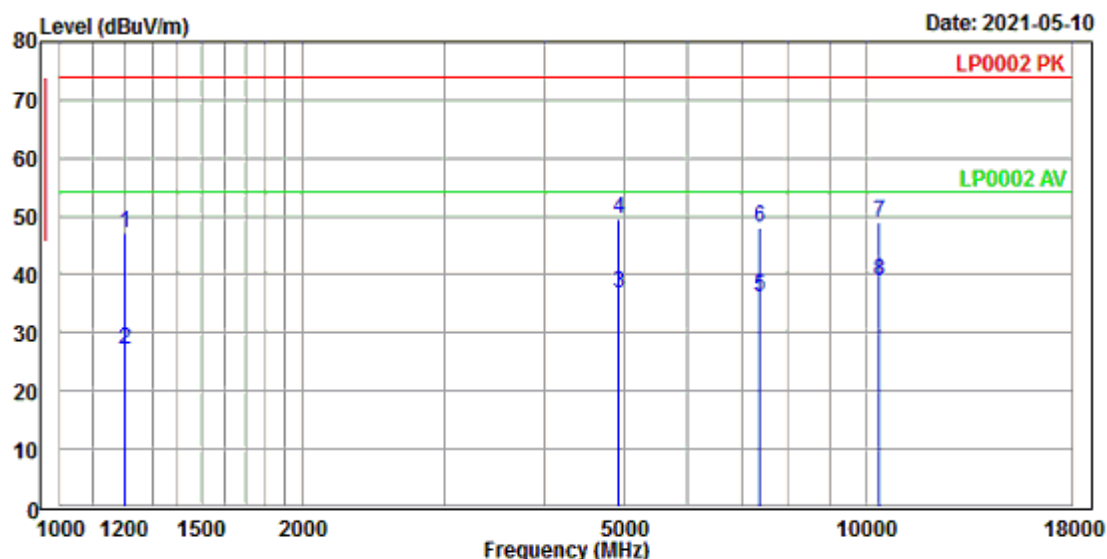
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Line	Limit				
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1198.033	28.60	49.74	-21.14	54.00	-25.40	116	140	VERTICAL Average
2	1198.720	50.76	71.90	-21.14	74.00	-23.24	115	145	VERTICAL Peak
3	4873.047	39.78	55.83	-16.05	54.00	-14.22	125	150	VERTICAL Average
4	4873.223	57.83	73.88	-16.05	74.00	-16.17	117	154	VERTICAL Peak
5	7308.164	48.05	60.99	-12.94	74.00	-25.95	150	51	VERTICAL Peak
6	7308.636	35.42	48.36	-12.94	54.00	-18.58	157	59	VERTICAL Average
7	12751.090	50.67	58.80	-8.13	74.00	-23.33	138	147	VERTICAL Peak
8	12751.260	40.24	48.37	-8.13	54.00	-13.76	132	149	VERTICAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT20 , 2462 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



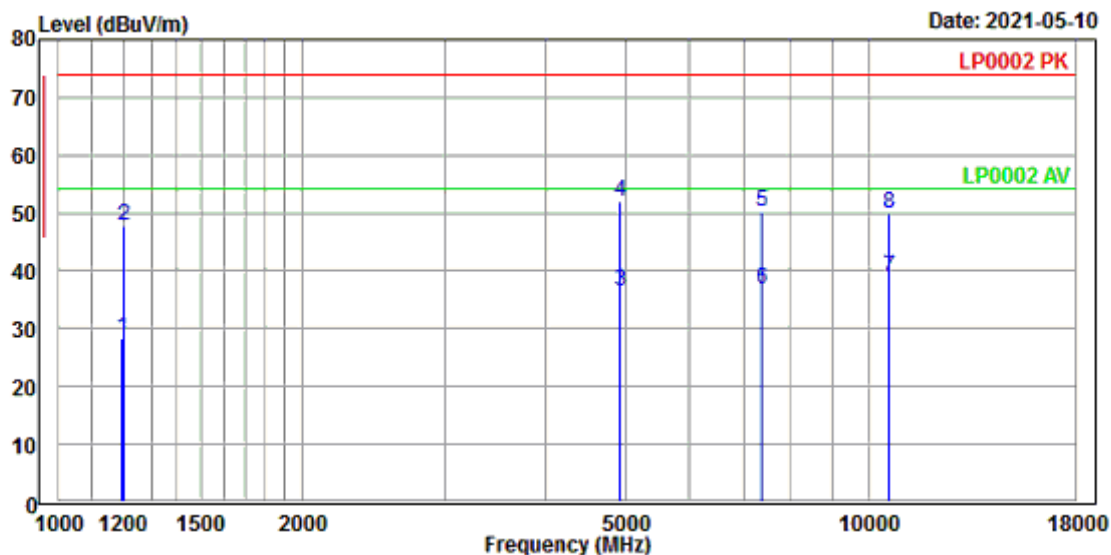
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		cm	deg		
1	1199.065	47.07	68.21	-21.14	74.00	-26.93		167	119	HORIZONTAL	Peak
2	1199.100	27.21	48.35	-21.14	54.00	-26.79		162	125	HORIZONTAL	Average
3	4924.340	36.80	52.84	-16.04	54.00	-17.20		205	346	HORIZONTAL	Average
4	4924.944	49.51	65.55	-16.04	74.00	-24.49		202	349	HORIZONTAL	Peak
5	7378.277	36.13	48.95	-12.82	54.00	-17.87		177	185	HORIZONTAL	Average
6	7378.993	48.03	60.85	-12.82	74.00	-25.97		172	188	HORIZONTAL	Peak
7	10369.320	48.91	58.40	-9.49	74.00	-25.09		144	256	HORIZONTAL	Peak
8	10369.550	38.88	48.37	-9.49	54.00	-15.12		147	252	HORIZONTAL	Average

Note:

- Level (dBuV/m) = Read level + Factor.
- Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
- Over Limit (dB) = Level – Limit line
- No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT20 , 2462 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	1198.018	28.22	49.36	-21.14	54.00	-25.78	185	354	VERTICAL Average
2	1198.932	47.85	68.99	-21.14	74.00	-26.15	180	360	VERTICAL Peak
3	4922.117	36.61	52.67	-16.06	54.00	-17.39	212	117	VERTICAL Average
4	4922.654	52.09	68.14	-16.05	74.00	-21.91	210	113	VERTICAL Peak
5	7383.217	50.28	63.08	-12.80	74.00	-23.72	176	144	VERTICAL Peak
6	7383.370	36.72	49.52	-12.80	54.00	-17.28	179	149	VERTICAL Average
7	10589.560	38.92	48.25	-9.33	54.00	-15.08	145	262	VERTICAL Average
8	10589.840	49.93	59.26	-9.33	74.00	-24.07	141	260	VERTICAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT40 , 2422 MHz

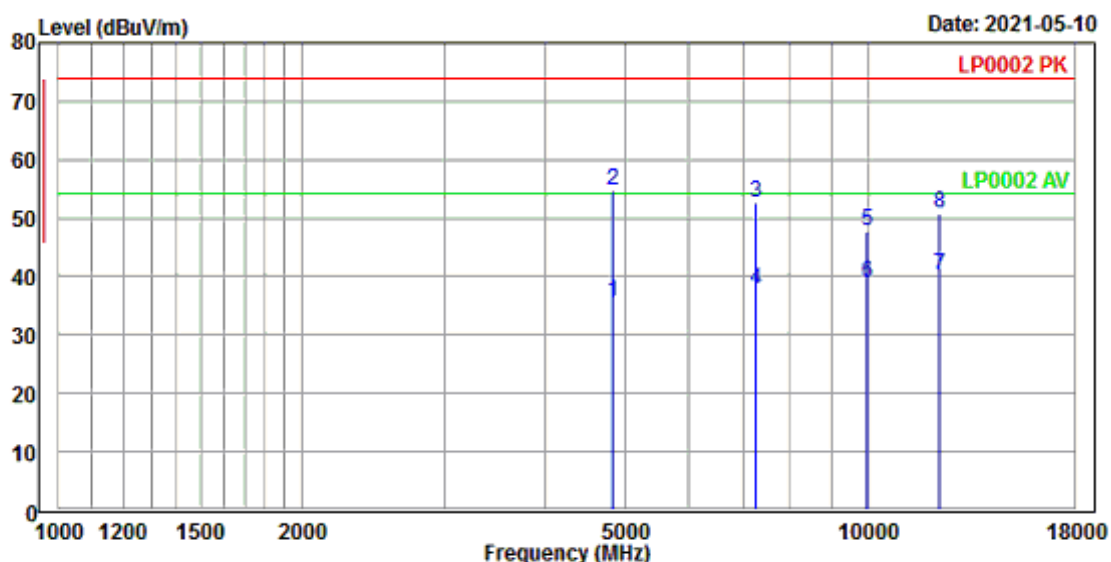
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 23°C

Relative Humidity : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

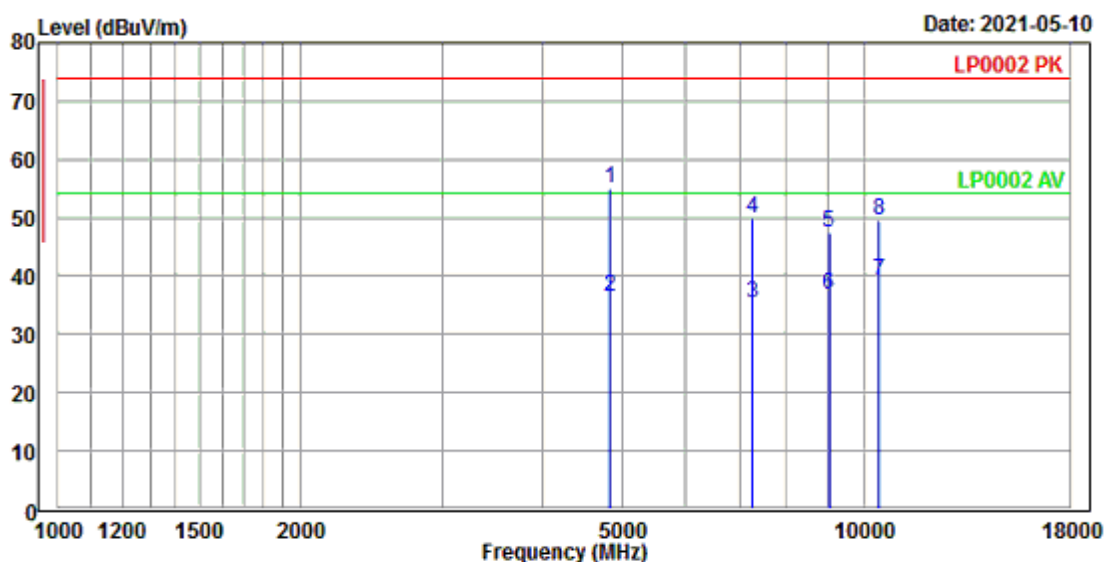
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4846.255	35.51	51.47	-15.96	54.00	-18.49	167	334	HORIZONTAL Average
2	4846.938	54.60	70.56	-15.96	74.00	-19.40	164	337	HORIZONTAL Peak
3	7253.827	52.51	65.41	-12.90	74.00	-21.49	184	143	HORIZONTAL Peak
4	7253.854	37.85	50.75	-12.90	54.00	-16.15	189	147	HORIZONTAL Average
5	9992.169	47.86	57.58	-9.72	74.00	-26.14	144	217	HORIZONTAL Peak
6	9992.767	39.02	48.73	-9.71	54.00	-14.98	149	213	HORIZONTAL Average
7	12278.040	40.07	47.85	-7.78	54.00	-13.93	167	183	HORIZONTAL Average
8	12278.320	50.86	58.64	-7.78	74.00	-23.14	161	187	HORIZONTAL Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT40 , 2422 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4837.691	55.17	71.14	-15.97	74.00	-18.83	173	88 VERTICAL	Peak
2	4837.954	36.39	52.36	-15.97	54.00	-17.61	176	90 VERTICAL	Average
3	7255.510	35.36	48.26	-12.90	54.00	-18.64	158	150 VERTICAL	Average
4	7255.946	49.89	62.78	-12.89	74.00	-24.11	151	154 VERTICAL	Peak
5	9040.585	47.32	58.68	-11.36	74.00	-26.68	166	233 VERTICAL	Peak
6	9040.907	36.89	48.25	-11.36	54.00	-17.11	163	231 VERTICAL	Average
7	10425.720	39.29	48.75	-9.46	54.00	-14.71	138	148 VERTICAL	Average
8	10425.790	49.45	58.91	-9.46	74.00	-24.55	135	148 VERTICAL	Peak

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT40 · 2437 MHz

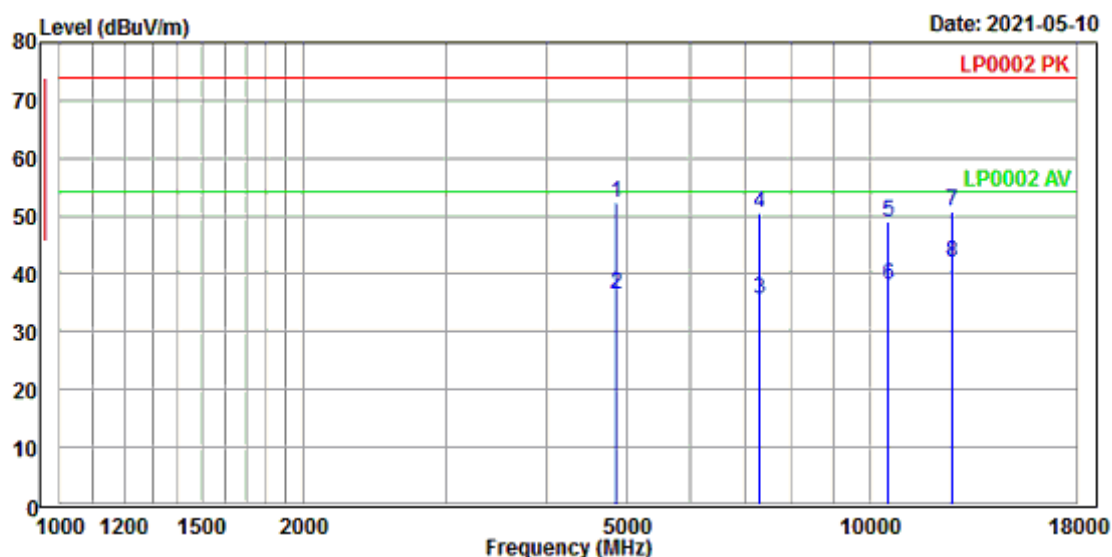
Test Range : 1 GHz ~ 25 GHz

Polarization : Horizontal

Tester : Jeffry

Ambient Temperature : 23°C

Relative Humidity : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL

POWER : 110V 60HZ

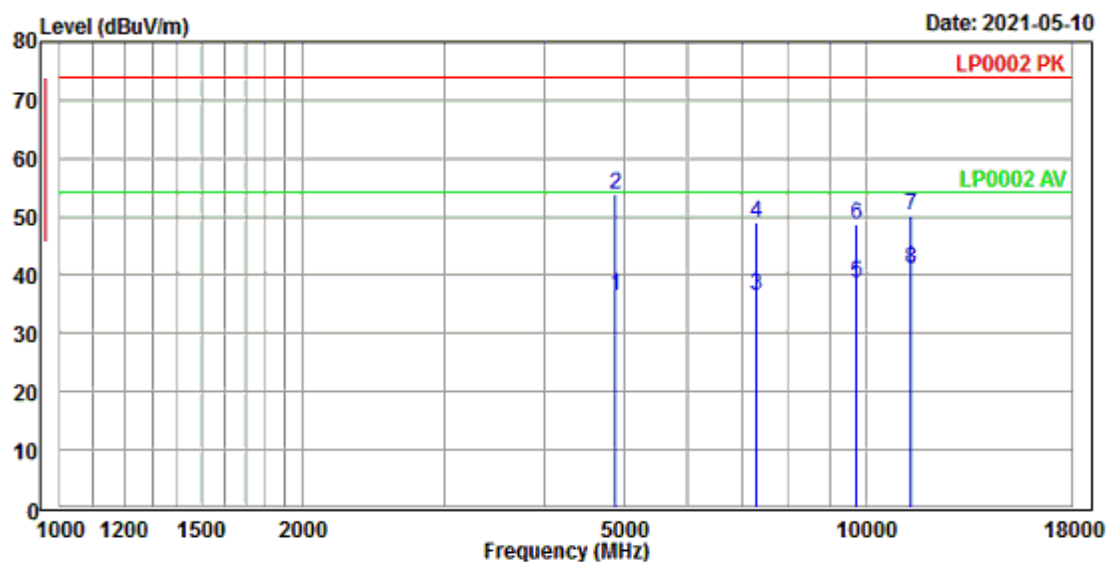
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4866.079	52.47	68.49	-16.02	74.00	-21.53	196	340	HORIZONTAL Peak
2	4866.203	36.61	52.63	-16.02	54.00	-17.39	199	344	HORIZONTAL Average
3	7291.457	35.54	48.47	-12.93	54.00	-18.46	143	128	HORIZONTAL Average
4	7291.523	50.38	63.31	-12.93	74.00	-23.62	149	123	HORIZONTAL Peak
5	10519.300	49.03	58.45	-9.42	74.00	-24.97	167	223	HORIZONTAL Peak
6	10519.780	38.10	47.52	-9.42	54.00	-15.90	164	220	HORIZONTAL Average
7	12608.060	50.86	58.90	-8.04	74.00	-23.14	144	92	HORIZONTAL Peak
8	12608.890	41.91	49.95	-8.04	54.00	-12.09	142	100	HORIZONTAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT40 , 2437 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



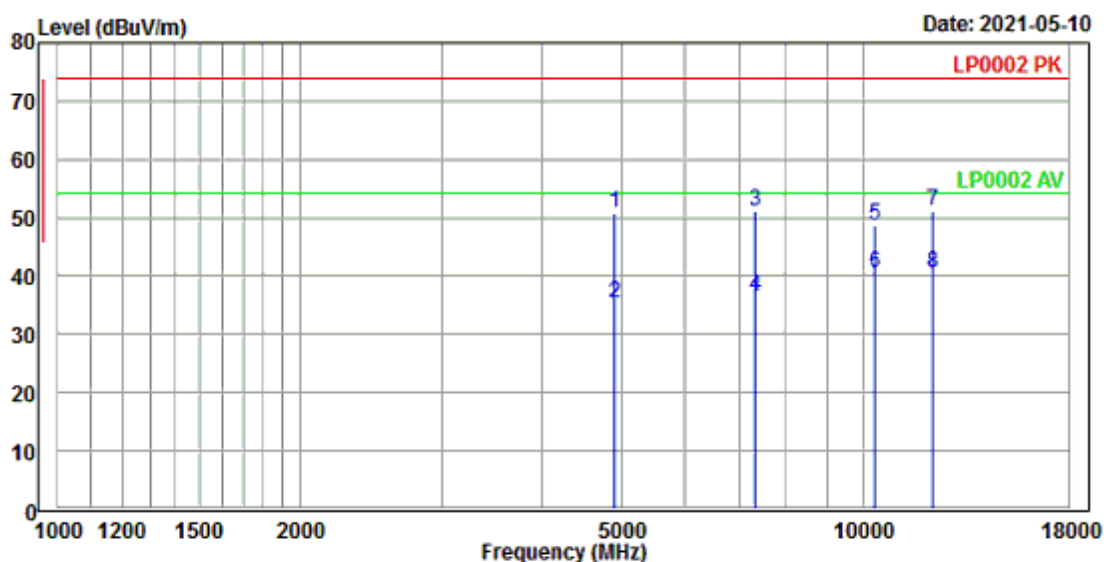
Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4876.194	36.40	52.47	-16.07	54.00	-17.60	183	112 VERTICAL	Average
2	4876.990	53.77	69.85	-16.08	74.00	-20.23	179	118 VERTICAL	Peak
3	7318.371	36.49	49.42	-12.93	54.00	-17.51	167	174 VERTICAL	Average
4	7318.514	48.94	61.87	-12.93	74.00	-25.06	161	170 VERTICAL	Peak
5	9704.181	38.48	48.98	-10.50	54.00	-15.52	134	256 VERTICAL	Average
6	9704.427	48.65	59.15	-10.50	74.00	-25.35	133	251 VERTICAL	Peak
7	11348.650	50.06	58.63	-8.57	74.00	-23.94	164	183 VERTICAL	Peak
8	11348.680	41.06	49.63	-8.57	54.00	-12.94	160	187 VERTICAL	Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT40 , 2452 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Horizontal **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



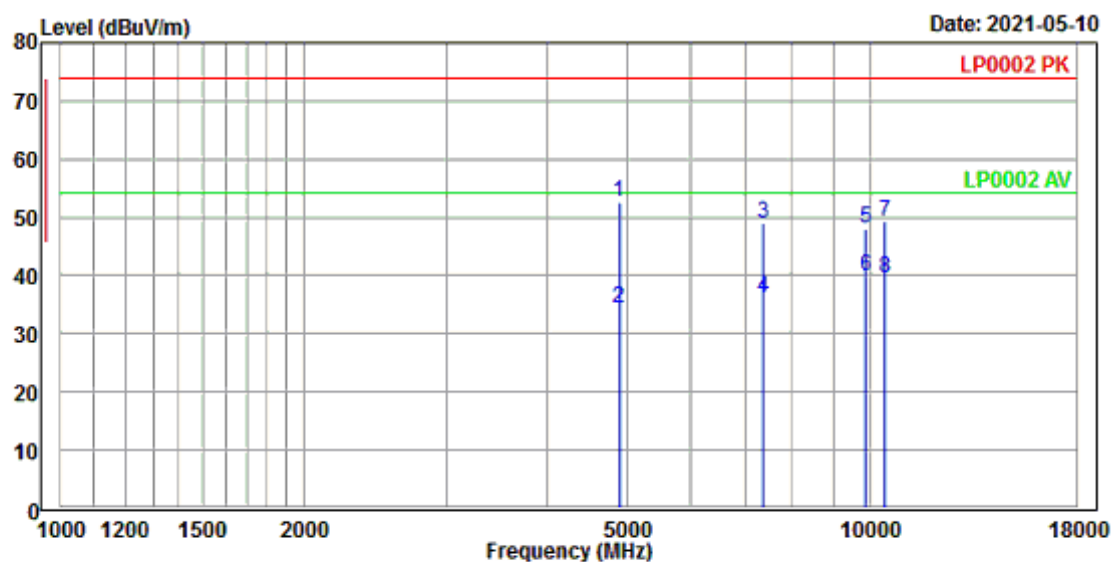
Condition : LP0002 PK 3m EMCO_3117_82847 HORIZONTAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4897.641	50.73	66.90	-16.17	74.00	-23.27	155	94	HORIZONTAL Peak
2	4897.817	35.20	51.37	-16.17	54.00	-18.80	153	100	HORIZONTAL Average
3	7344.333	51.14	64.05	-12.91	74.00	-22.86	147	144	HORIZONTAL Peak
4	7344.369	36.36	49.27	-12.91	54.00	-17.64	140	148	HORIZONTAL Average
5	10336.700	48.82	58.34	-9.52	74.00	-25.18	165	76	HORIZONTAL Peak
6	10336.900	40.38	49.90	-9.52	54.00	-13.62	162	79	HORIZONTAL Average
7	12203.430	50.96	58.67	-7.71	74.00	-23.04	141	116	HORIZONTAL Peak
8	12203.440	40.52	48.23	-7.71	54.00	-13.48	147	111	HORIZONTAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line.
4. No signal can be detected above 18 GHz, so the graphs are omitted.

Test Mode : Continuous Transmitting, 802.11n HT40 , 2452 MHz
Test Range : 1 GHz ~ 25 GHz
Polarization : Vertical **Tester** : Jeffry
Ambient Temperature : 23°C **Relative Humidity** : 48%



Condition : LP0002 PK 3m EMCO_3117_82847 VERTICAL
POWER : 110V 60HZ
OPERATOR : JEFFRY T:23 H:48 P:1018

	Freq	Level	Read	Limit	Over	APos	TPos	Pol/Phase	Remark
	MHz	dBuV/m	Level	Factor	Line	Limit			
			dBuV	dB/m	dBuV/m	dB	cm	deg	
1	4896.700	52.53	68.70	-16.17	74.00	-21.47	165	118	VERTICAL Peak
2	4896.946	34.46	50.63	-16.17	54.00	-19.54	168	114	VERTICAL Average
3	7363.152	49.12	61.98	-12.86	74.00	-24.88	140	180	VERTICAL Peak
4	7363.631	36.10	48.96	-12.86	54.00	-17.90	143	186	VERTICAL Average
5	9862.721	47.96	58.00	-10.04	74.00	-26.04	168	276	VERTICAL Peak
6	9862.828	39.94	49.98	-10.04	54.00	-14.06	163	273	VERTICAL Average
7	10420.200	49.41	58.87	-9.46	74.00	-24.59	153	176	VERTICAL Peak
8	10420.620	39.47	48.93	-9.46	54.00	-14.53	151	178	VERTICAL Average

Note:

1. Level (dBuV/m) = Read level + Factor.
2. Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. Over Limit (dB) = Level – Limit line
4. No signal can be detected above 18 GHz, so the graphs are omitted.

7 Conducted Emission Measurement

Result: Pass

7.1 Limits for Emission Measurement

According to FCC 15.207(a), line conduction emission limit is as below table.

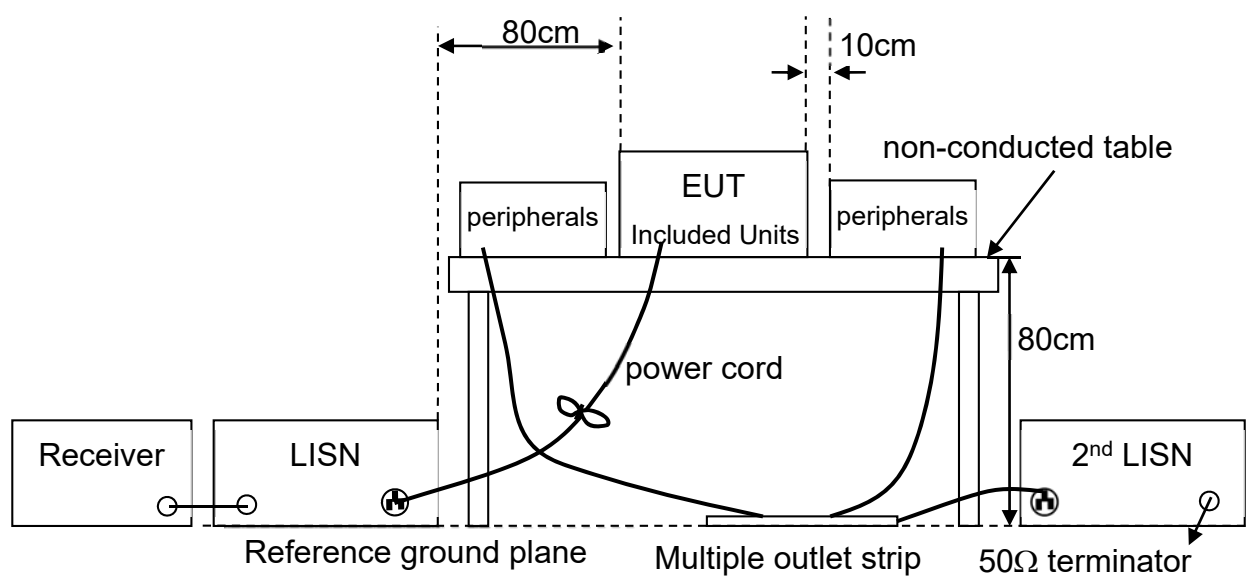
Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

7.2 Test Procedures

- a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.
- b. If the EUT is tabletop equipment, it was placed on a non-conducted table with a height of 0.8 meters above the reference ground plane and 0.4 meters from the conducting wall of the shielded room. Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height of 12 millimeters above the reference ground plane.
- c. Connect the EUT's power source to the appropriate power mains through the LISN.
- d. All the other peripherals are connected to the 2nd LISN, if any.
- e. The LISN was placed 0.8 meters from the EUT and at least 0.8 meters from other units and other metal planes.
- f. Measure the conducted emissions on each power line (Neutral Line and Line 1 – Hot side) of the EUT's power source by using the test receiver connected to the coupling RF output port of LISN.
- g. Rapidly scan the signal from 150kHz to 30MHz by using the receiver through the Maximum-Peak detector to determine those frequencies associated with higher emission levels for each measured line.
- h. Then measure the maximum level of conducted disturbance for each frequency found from step g. by using the receiver through the Quasi-Peak and Average detectors per CISPR 16-1.
- i. Record the level for each frequency and compare with the required limit.

7.3 Test Configurations



7.4 Test Data

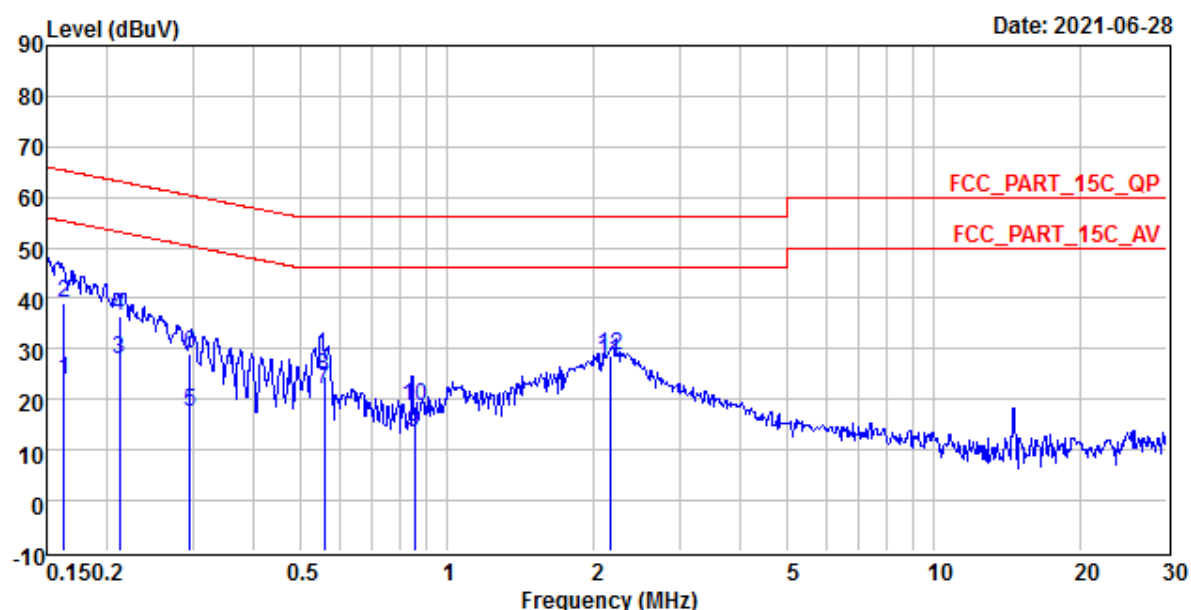
Test Mode : Normal

Phase : Line

Tester : David Lu

Ambient Temperature : 27°C

Relative Humidity : 51%



Site : TR20
 Condition : FCC_PART_15C_QP ESH2-Z5 LINE
 Power : 120V/60Hz
 Operator : David Lu T27 H51 P1009

	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.163	23.96	10.27	13.69	55.32	-31.36	LINE	Average
2	0.163	38.89	10.27	28.62	65.32	-26.43	LINE	QP
3	0.211	28.06	10.28	17.78	53.15	-25.09	LINE	Average
4	0.211	36.63	10.28	26.35	63.15	-26.52	LINE	QP
5	0.296	17.58	10.31	7.27	50.37	-32.79	LINE	Average
6	0.296	29.22	10.31	18.91	60.37	-31.15	LINE	QP
7	0.558	22.12	10.34	11.78	46.00	-23.88	LINE	Average
8	0.558	24.45	10.34	14.11	56.00	-31.55	LINE	QP
9	0.854	13.30	10.36	2.94	46.00	-32.70	LINE	Average
10	0.854	18.61	10.36	8.25	56.00	-37.39	LINE	QP
11	2.155	27.41	10.46	16.95	46.00	-18.59	LINE	Average
12	2.155	28.73	10.46	18.27	56.00	-27.27	LINE	QP

Note:

1. Emission Level = reading value + correction factor.
2. Correction factor = cable loss + insertion loss of LISN.
3. Q.P. is abbreviation of quasi-peak.

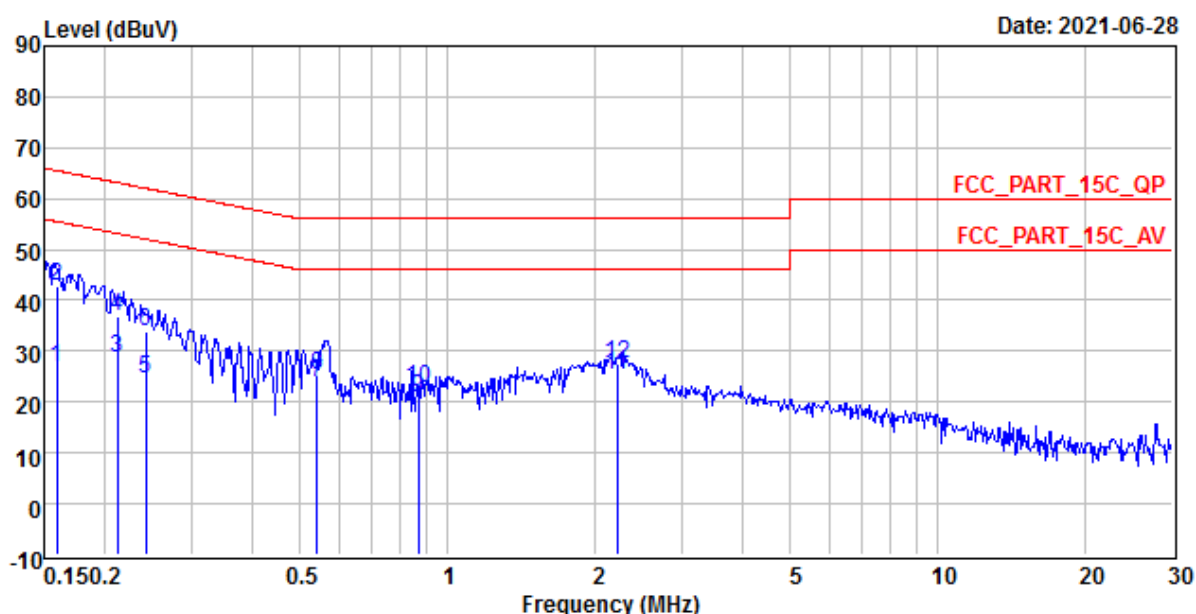
Test Mode : Normal

Phase : Neutral

Tester : David Lu

Ambient Temperature : 27°C

Relative Humidity : 51%



Site : TR20
 Condition : FCC_PART_15C_QP ESH2-Z5 NEUTRAL
 Power : 120V/60Hz
 Operator : David Lu T27 H51 P1009

	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.159	26.64	10.29	16.35	55.51	-28.87	NEUTRAL	Average
2	0.159	42.69	10.29	32.40	65.51	-22.82	NEUTRAL	QP
3	0.212	28.83	10.29	18.54	53.14	-24.31	NEUTRAL	Average
4	0.212	36.71	10.29	26.42	63.14	-26.43	NEUTRAL	QP
5	0.242	24.68	10.29	14.39	52.03	-27.35	NEUTRAL	Average
6	0.242	33.74	10.29	23.45	62.03	-28.29	NEUTRAL	QP
7	0.540	23.74	10.35	13.39	46.00	-22.26	NEUTRAL	Average
8	0.540	25.29	10.35	14.94	56.00	-30.71	NEUTRAL	QP
9	0.871	20.70	10.37	10.33	46.00	-25.30	NEUTRAL	Average
10	0.871	22.59	10.37	12.22	56.00	-33.41	NEUTRAL	QP
11	2.210	25.38	10.47	14.91	46.00	-20.62	NEUTRAL	Average
12	2.210	27.40	10.47	16.93	56.00	-28.60	NEUTRAL	QP

Note:

1. Emission Level = reading value + correction factor.
2. Correction factor = cable loss + insertion loss of LISN.
3. Q.P. is abbreviation of quasi-peak.