

FCC Radio Test Report

FCC ID: 2ADQY525831

This report concerns: Original Grant

Project No. : 1909H029
Equipment : Manageable Wireless AC1300 Dual-Band Gigabit PoE Indoor Access Point and Router
Brand Name : Intellinet
Test Model : 525831
Series Model : N/A
Applicant : Intracom Asia Co.,Ltd
Address : 4F., No. 77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
Date of Receipt : Sep. 09, 2019
Date of Test : Sep. 16, 2019~Jan.16, 2020
Issued Date : Jan.16, 2020
Report Version : R01
Test Sample : Engineering Sample No.: SH2019090922
Standard(s) : FCC Part15, Subpart E(15.407)
ANSI C63.10-2013
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 27, 2019
R01	Add the AC 240V test data of conducted emission.	Jan.16, 2020

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart E(15.407)				
Standard(s) Section	Test Item	Test Result	Judgement	Remark
15.207 15.407(b)	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.407(b) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS	-----
15.407(a) 15.407(e)	Spectrum Bandwidth	APPENDIX E	PASS	-----
15.407(a)	Maximum Output Power	APPENDIX F	PASS	-----
15.407(a)	Power Spectral Density	APPENDIX G	PASS	-----
15.407(g)	Frequency Stability	APPENDIX H	PASS	-----
15.203	Antenna Requirements	-----	PASS	-----
15.407(c)	Automatically Discontinue Transmission	-----	PASS	NOTE (2)

Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. the EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.
- (3) For UNII-1 this device was functioned as a
 Access point device Client device

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China

BTL's Test Firm Registration Number for FCC: 476765

BTL's Designation Number for FCC: CN1241

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB01	CISPR	9 KHz~30 MHz	V	3.79
		9 KHz~30 MHz	H	3.57
		30 MHz~200 MHz	V	4.04
		30 MHz~200 MHz	H	3.76
		200 MHz~1,000 MHz	V	4.24
		200 MHz~1,000 MHz	H	3.84
		1 GHz~18 GHz	V	4.46
		1 GHz~18 GHz	H	4.40
		18 GHz~40 GHz	V	3.95
		18 GHz~40 GHz	H	3.95

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	22°C	53%	AC 120V/60Hz	Forest Li
Radiated Emissions-9K-30MHz	22°C	45%	AC 120V/60Hz	Forest Li
Radiated Emissions-30 MHz to 1GHz	22°C	55%	AC 120V/60Hz	Forest Li
Radiated Emissions-Above 1000 MHz	22°C	55%	AC 120V/60Hz	Forest Li
Spectrum Bandwidth	22°C	54%	AC 120V/60Hz	Forest Li
Maximum Output Power	22°C	54%	AC 120V/60Hz	Forest Li
Power Spectral Density	22°C	54%	AC 120V/60Hz	Forest Li
Frequency Stability	Normal & Extreme	54%	Normal & Extreme	Forest Li

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Manageable Wireless AC1300 Dual-Band Gigabit PoE Indoor Access Point and Router
Brand Name	Intellinet
Test Model	525831
Series Model	N/A
Model Difference(s)	N/A
Software Version	V1.0
Hardware Version	V1.1
Power Source	Supplied from AC/DC adapter Brand /model: AMIGO/AMS200-1201500FU
Power Rating	I/P: 100-240V ~ 50/60Hz 0.8A Max O/P: 12V --- 1.5A
Operation Frequency	UNII-1: 5150 MHz~5250 MHz UNII-3: 5725 MHz~5850 MHz
Modulation Type	OFDM
Bit Rate of Transmitter	Up to 866 Mbps

Maximum Conducted Output Power for UNII-1 (2TX)	IEEE 802.11a: 21.20 dBm (0.1318 W) IEEE 802.11n (HT20): 18.83 dBm (0.0764 W) IEEE 802.11n (HT40): 19.03 dBm (0.0800 W) IEEE 802.11ac (VHT20): 19.06 dBm (0.0805 W) IEEE 802.11ac (VHT40): 18.97 dBm (0.0789 W) IEEE 802.11ac (VHT80): 18.85 dBm (0.0767 W)
Maximum Conducted Output Power for UNII-3 (2TX)	IEEE 802.11a: 20.79 dBm (0.1200 W) IEEE 802.11n (HT20): 18.63 dBm (0.0729 W) IEEE 802.11n (HT40): 18.65 dBm (0.0733 W) IEEE 802.11ac (VHT20): 18.82 dBm (0.0762 W) IEEE 802.11ac (VHT40): 18.89 dBm (0.0774 W) IEEE 802.11ac (VHT80): 18.57 dBm (0.0719 W)

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

3. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	FPC	IPEX	3.3
2	N/A	N/A	FPC	IPEX	3.8

Note:

This EUT supports CDD, and antenna gains are not equal, directional gain= $G_{ANT} + \text{Array Gain}$, so the power spectral density Directional gain = $G_{ANT} + 10 \cdot \lg(N_{ANT}) = 3.8 + 3 = 6.8$, the UNII-1 power spectral density limit is $17 - 6.8 + 6 = 16.2$, the UNII-3 power spectral density limit is $30 - 6.8 + 6 = 29.2$, for power measurements, directional gain= $G_{ANT} = 3.8$.

4. Table for Antenna Configuration:

Operating Mode	TX Mode	2TX
IEEE 802.11a		V (Ant. 1 + Ant. 2)
IEEE 802.11n (HT20)		V (Ant. 1 + Ant. 2)
IEEE 802.11n (HT40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ac (VHT20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ac (VHT40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ac (VHT80)		V (Ant. 1 + Ant. 2)

2.2 TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48 (UNII-1)
Mode 2	TX N (HT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 3	TX N (HT40) Mode / CH38, CH46 (UNII-1)
Mode 4	TX AC (VHT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 5	TX AC (VHT40) Mode / CH38, CH46 (UNII-1)
Mode 6	TX AC (VHT80) Mode / CH42 (UNII-1)
Mode 7	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 8	TX N (HT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 9	TX N (HT40) Mode / CH151,CH159 (UNII-3)
Mode 10	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 11	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 12	TX AC (VHT80) Mode / CH155 (UNII-3)
Mode 13	TX A Mode / CH48 (UNII-1)

Following mode(s) as (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 13	TX A Mode / CH48 (UNII-1)

Radiated emissions test	
Final Test Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48 (UNII-1)
Mode 2	TX AC (VHT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 3	TX AC (VHT40) Mode / CH38, CH46 (UNII-1)
Mode 4	TX AC (VHT80) Mode / CH42 (UNII-1)
Mode 5	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 6	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 7	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 8	TX AC (VHT80) Mode / CH155 (UNII-3)

Conducted test	
Test Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48 (UNII-1)
Mode 4	TX AC (VHT20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 5	TX AC (VHT40) Mode / CH38, CH46 (UNII-1)
Mode 6	TX AC (VHT80) Mode / CH42 (UNII-1)
Mode 7	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 10	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 11	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 12	TX AC (VHT80) Mode / CH155 (UNII-3)

Note :

- (1) For radiated emission below 1 GHz test, the IEEE 802.11a is found to be the worst case and recorded.
- (2) For radiated emission above 1 GHz test, 1GHz~26.5GHz and 26.5GHz~40GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

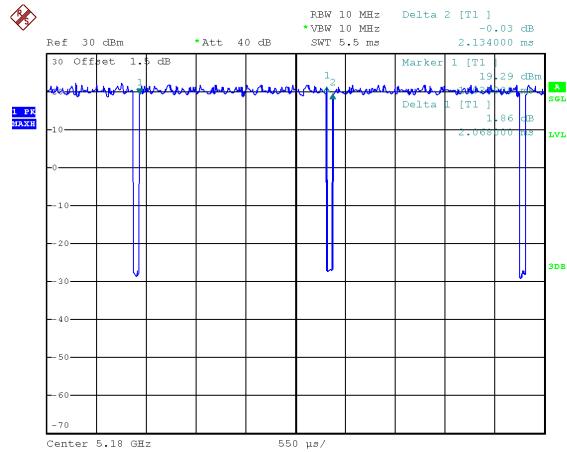
2.3 PARAMETERS OF TEST SOFTWARE

Test Software	artgui.exe		
Test Frequency (MHz)	5180	5200	5240
IEEE 802.11a	24	24	24
IEEE 802.11n (HT20)	23	23	22
IEEE 802.11ac (VHT20)	20	22	22
Test Frequency (MHz)	5190	5230	
IEEE 802.11n (HT40)	23	23	
IEEE 802.11ac (VHT40)	23	22	
Test Frequency (MHz)	5745	5785	5825
IEEE 802.11a	22	22	21
IEEE 802.11ac (VHT20)	20	20	19
IEEE 802.11n (HT20)	20	20	19
Test Frequency (MHz)	5755	5795	
IEEE 802.11n (HT40)	19	20	
IEEE 802.11ac (VHT40)	19	20	
Test Frequency (MHz)	5210		
IEEE 802.11ac (VHT80)	24		
Test Frequency (MHz)	5775		
IEEE 802.11ac (VHT80)	23		

2.4 DUTY CYCLE

If duty cycle is $\geq 98\%$, duty factor is not required.
 If duty cycle is $< 98\%$, duty factor shall be considered.
 The output power = measured power + duty factor.

IEEE 802.11a



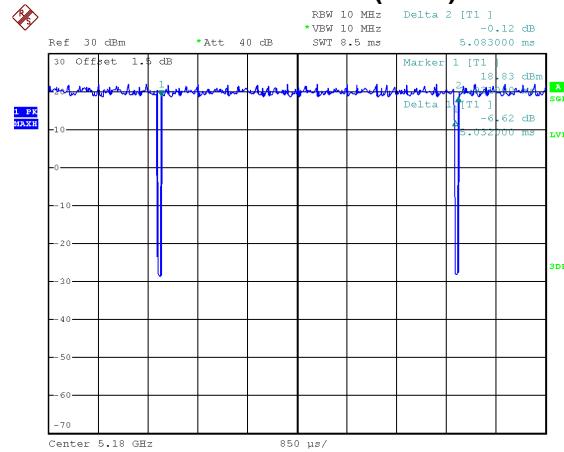
Date: 12.OCT.2019 15:45:34

$$\text{Duty cycle} = 2.068 \text{ ms} / 2.134 \text{ ms} = 96.91\%$$

$$\text{Duty Factor} = 10 * \log(1 / \text{Duty cycle}) = 0.14 \text{ dB}$$

IEEE 802.11n (HT20)

IEEE 802.11n (HT20)

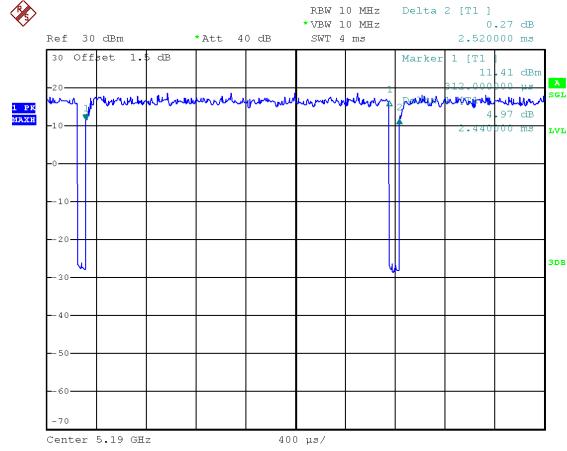


Date: 12.OCT.2019 15:51:41

$$\text{Duty cycle} = 5.032 \text{ ms} / 5.083 \text{ ms} = 99.00\%$$

$$\text{Duty Factor} = 10 * \log(1 / \text{Duty cycle}) = 0.00 \text{ dB}$$

IEEE 802.11n (HT40)

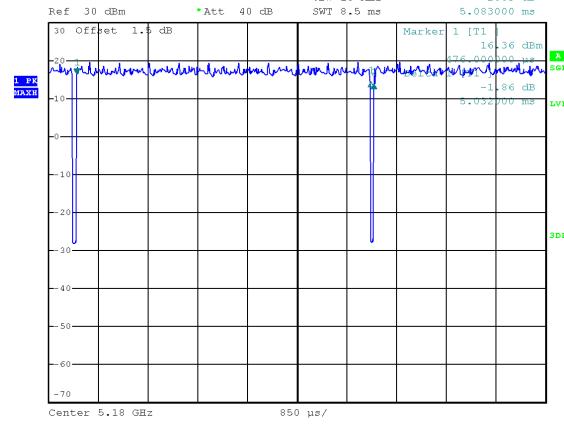


Date: 12.OCT.2019 15:56:34

$$\text{Duty cycle} = 2.440 \text{ ms} / 2.520 \text{ ms} = 96.83\%$$

$$\text{Duty Factor} = 10 * \log(1 / \text{Duty cycle}) = 0.14 \text{ dB}$$

IEEE 802.11ac (VHT20)

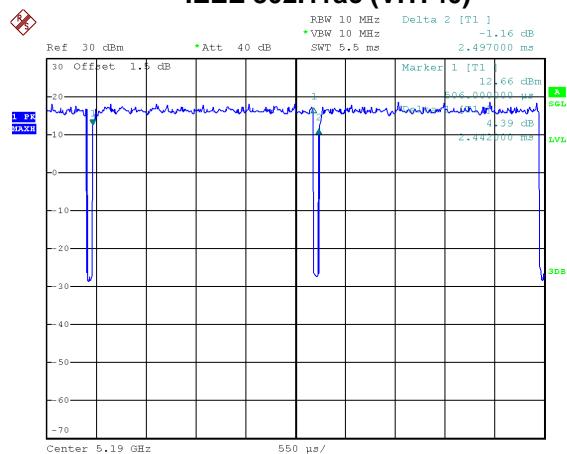


Date: 12.OCT.2019 15:55:17

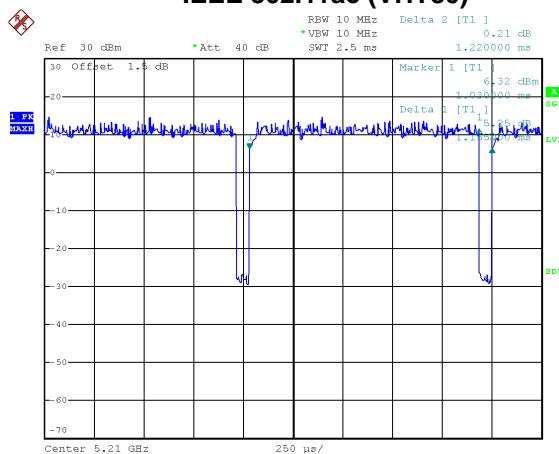
$$\text{Duty cycle} = 5.032 \text{ ms} / 5.083 \text{ ms} = 99.00\%$$

$$\text{Duty Factor} = 10 * \log(1 / \text{Duty cycle}) = 0.00 \text{ dB}$$

IEEE 802.11ac (VHT40)



IEEE 802.11ac (VHT80)



Date: 12.OCT.2019 15:59:32

Duty cycle = 2.442 ms / 2.497 ms = 97.80%
 Duty Factor = $10 * \log(1 / \text{Duty cycle}) = 0.10 \text{ dB}$

Date: 12.OCT.2019 16:00:57

Duty cycle = 1.155 ms / 1.220 ms = 94.67%
 Duty Factor = $10 * \log(1 / \text{Duty cycle}) = 0.24 \text{ dB}$

NOTE:

For IEEE 802.11a:

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 0.48 kHz (Duty cycle < 98%).

IEEE 802.11n (HT20) and IEEE 802.11ac (VHT20):

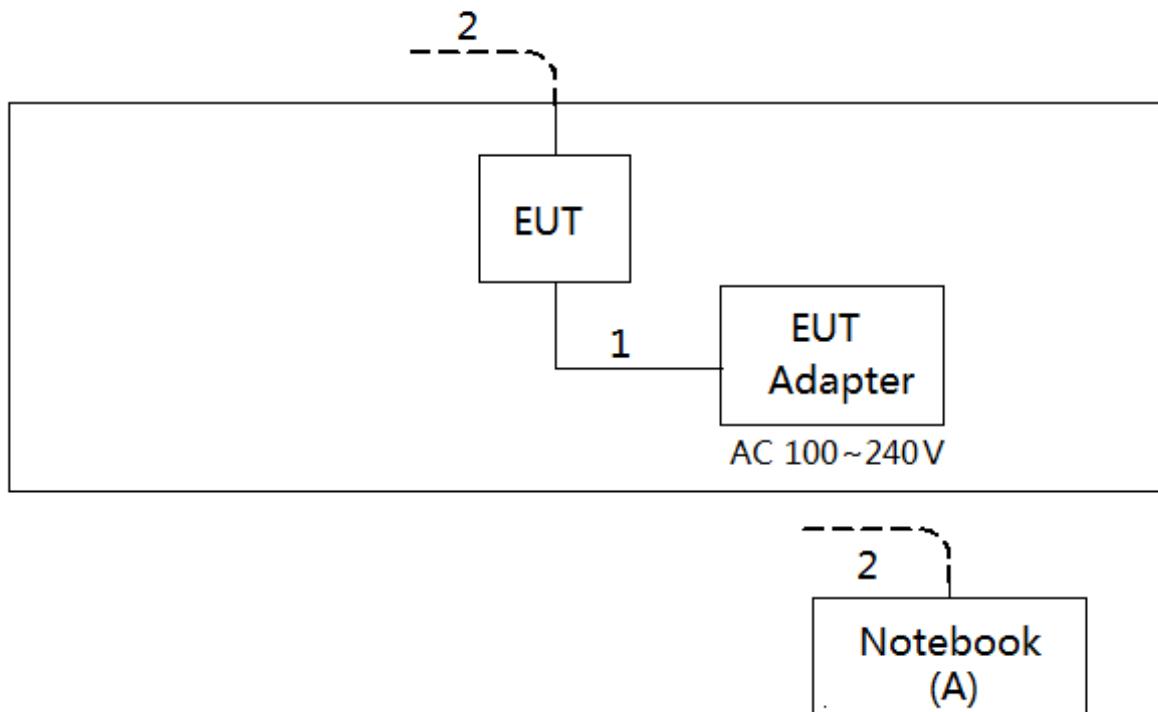
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 0.01 kHz (Duty cycle > 98%).

For IEEE 802.11n (HT40) and IEEE 802.11ac (VHT40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 41 kHz (Duty cycle < 98%).

For IEEE 802.11ac (VHT80):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 0.87 kHz (Duty cycle < 98%).

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**2.6 SUPPORT UNITS**

Item	Equipment	Brand	Model/Type No.	Series No.
A	Notebook	N/A	N/A	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC cable	N/A	N/A	1m
2	RJ 45 cable	N/A	N/A	10m

3. AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 - 46*
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

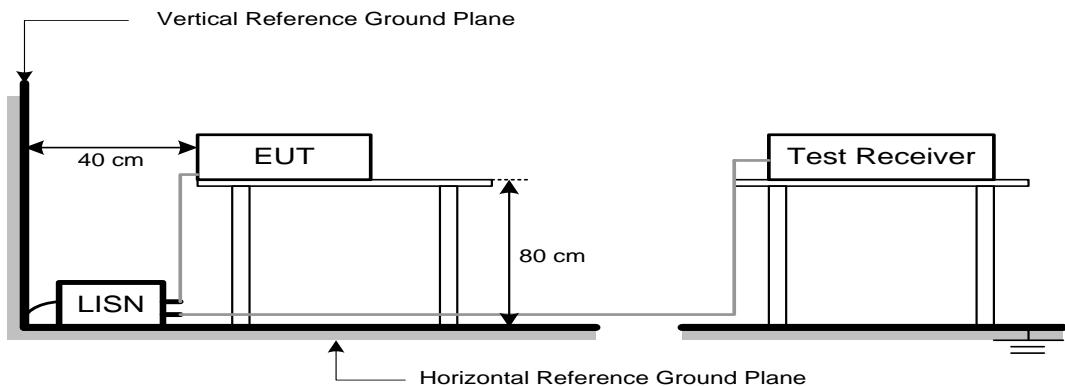
3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.3 DEVIATION FROM TEST STANDARD

No deviation

3.4 TEST SETUP



3.5 EUT OPERATION CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

The EUT was programmed to be in continuously transmitting/TX mode.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

4. RADIATED EMISSIONS TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dB μ V/m)
5150-5250	-27	68.3
5250-5350	-27	68.3
5470-5725	-27	68.3
	-27 NOTE (2)	68.3
5725-5850	10 NOTE (2)	105.3
	15.6 NOTE (2)	110.9
	27 NOTE (2)	122.3

NOTE:

(1) The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m}, \text{ where } P \text{ is the eirp (Watts)}$$

(2) According to 15.407(b)(4)(i), all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

4.2 TEST PROCEDURE

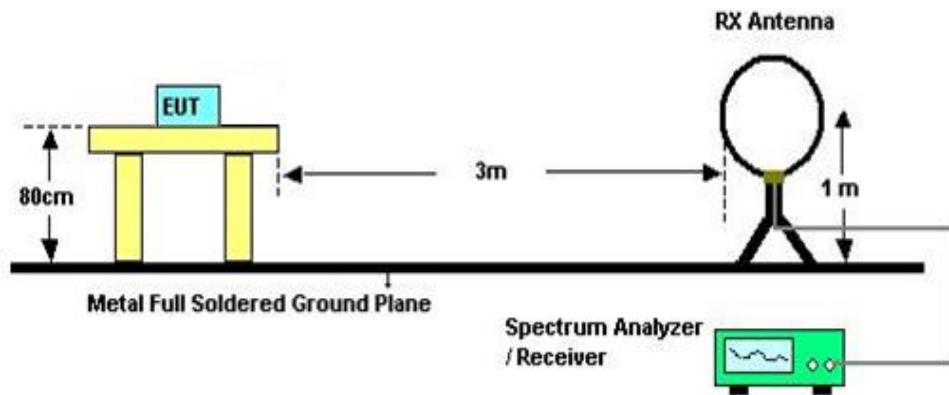
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.3 DEVIATION FROM TEST STANDARD

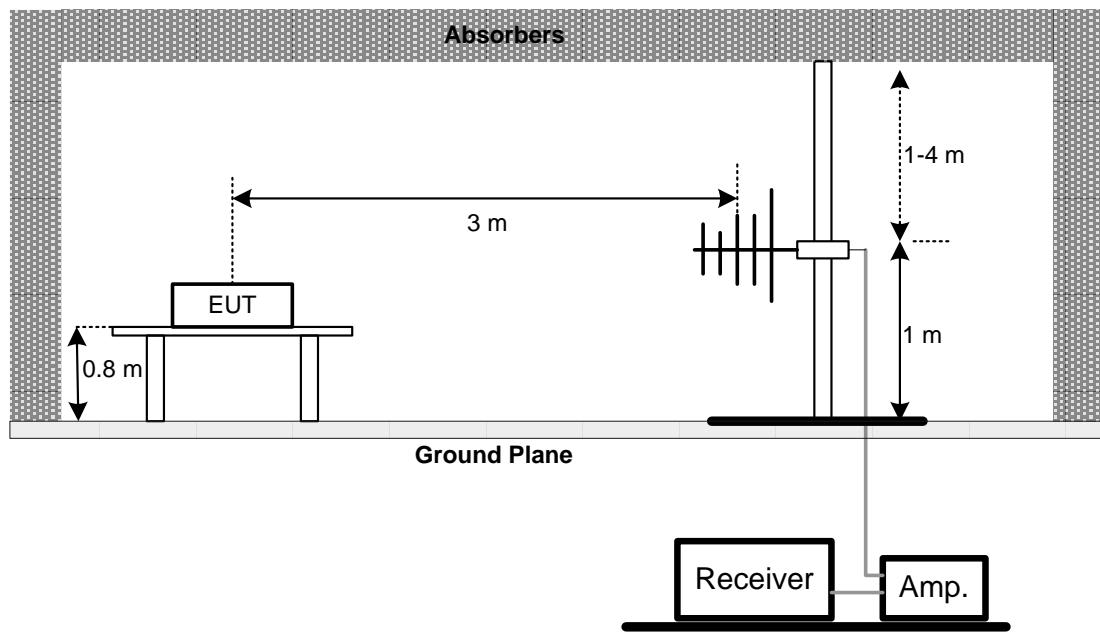
No deviation

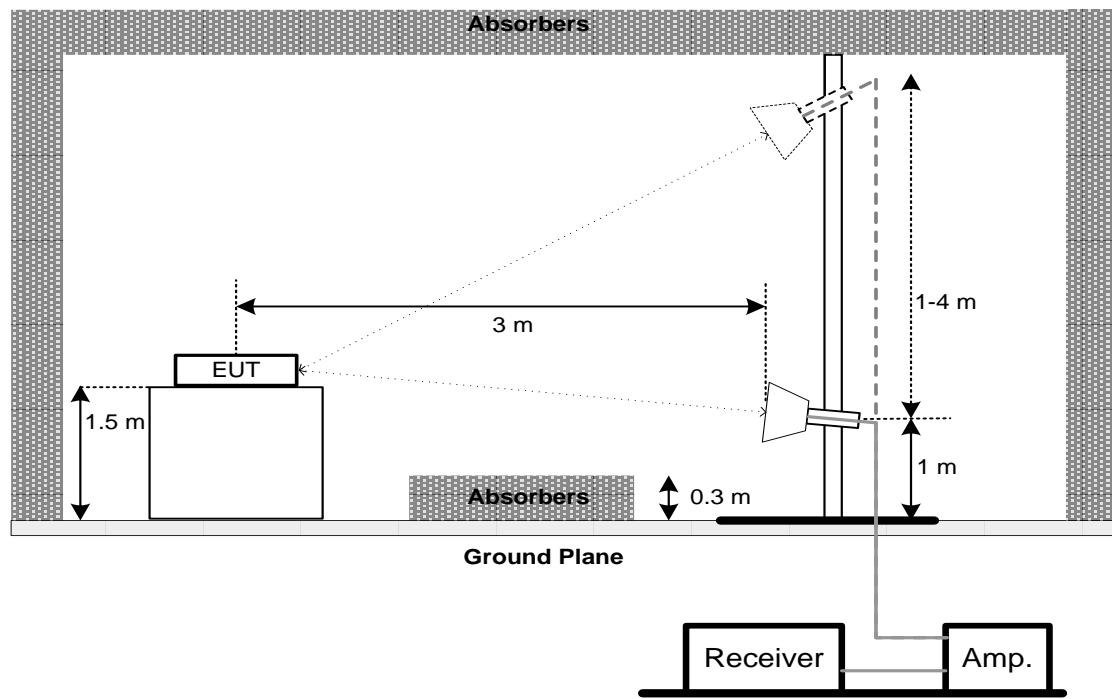
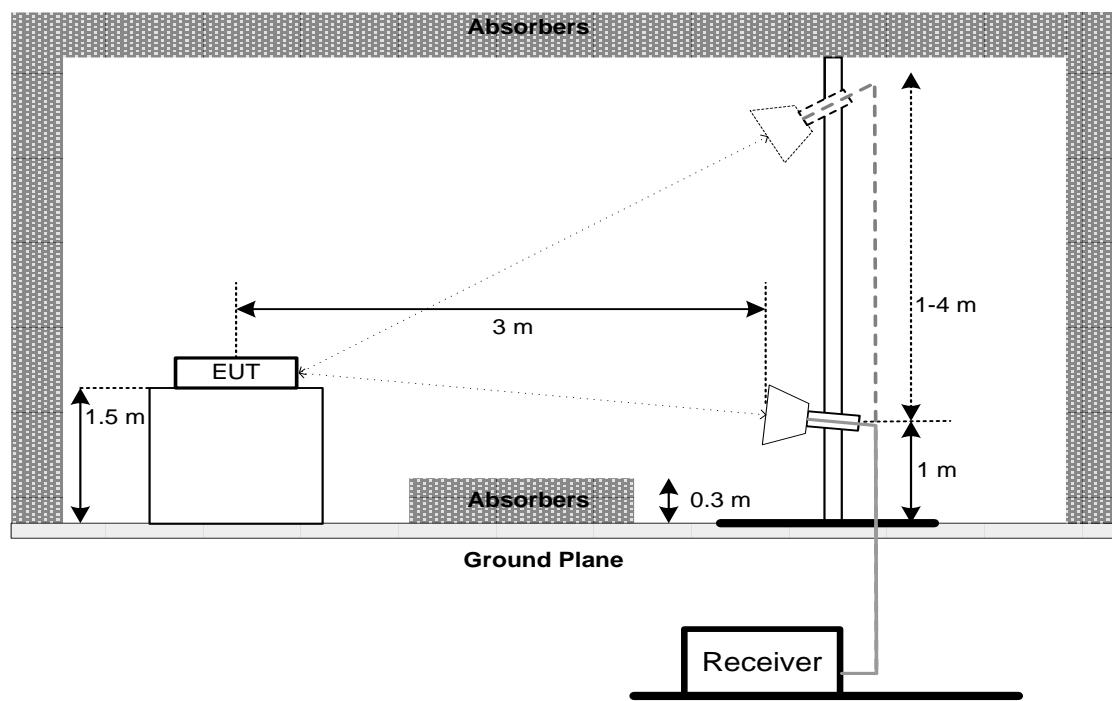
4.4 TEST SETUP

9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz**Above 1 GHz**
Band edge

4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS - 9 KHZ to 30 MHZ

Please refer to the APPENDIX B

Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULTS - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

4.8 TEST RESULTS - ABOVE 1000 MHz

Please refer to the APPENDIX D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5. BANDWIDTH TEST

5.1 LIMIT

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a) 15.407(e)	26 dB Bandwidth	-	5150-5250
	26 dB Bandwidth	-	5250-5350
	26 dB Bandwidth	-	5470-5725
	6 dB Bandwidth	Minimum 500 kHz	5725-5850

5.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below
- a. Spectrum Setting:

For UNII-1, UNII-2A, UNII-2C:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 26 dB Bandwidth
RBW	300 kHz (Bandwidth 20 MHz) 1 MHz (Bandwidth 40 MHz and 80 MHz)
VBW	1 MHz (Bandwidth 20 MHz) 3 MHz (Bandwidth 40 MHz and 80 MHz)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For UNII-3:

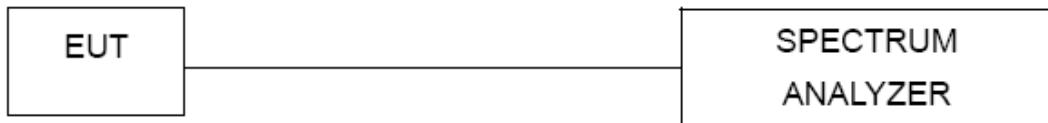
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	6 dB Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

- Measured the spectrum width with power higher than 26 dB below carrier

5.3 TEST PROCEDURE

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX E.

Note: Only the worst case be reported.

6. MAXIMUM OUTPUT POWER TEST

6.1 LIMIT

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Conducted Output Power	AP device: 1 Watt (30 dBm) Client device: 250 mW (24 dBm)	5150-5250
		250 mW (24 dBm)	5250-5350
		250 mW (24 dBm)	5470-5725
		1 Watt (30dBm)	5725-5850

Note:

- a. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- b. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10\log B$, where B is the 26dB Bandwidth in megahertz.

6.2 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- b. Test test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX F.

7. POWER SPECTRAL DENSITY TEST

7.1 LIMIT

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Power Spectral Density	AP device: 17 dBm/MHz	5150-5250
		Client device: 11 dBm/MHz	
		11 dBm/MHz	5250-5350
		11 dBm/MHz	5470-5725
		30 dBm/500 kHz	5725-5850

7.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1 MHz.
VBW	\geq 3 MHz.
Detector	RMS
Trace average	100 trace
Sweep Time	Auto

Note:

- For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 1 MHz and VBW at 3 MHz if the spectrum analyzer does not have 500 kHz RBW.
- The value measured with RBW=1 MHz is to be added with $10\log(500 \text{ kHz}/1 \text{ MHz})$ which is -3 dB. For example, if the measured value is +10dBm using RBW=1 MHz (that is +10 dBm/MHz), then the converted value will be +7dBm/500kHz.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX G.

8. FREQUENCY STABILITY MEASUREMENT

8.1 LIMIT

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(g)	Frequency Stability	An emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.	5150-5250
			5250-5350
			5470-5725
			5725-5850

8.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting:

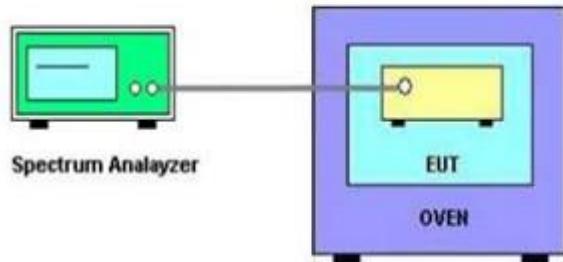
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

- The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
- User manual temperature is 0°C~40°C.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX H.

9. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 29, 2020
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Sep. 01, 2020
3	EMI Test Receiver	R&S	ESCI	100082	Mar. 29, 2020
4	50Ω coaxial switch	Anritsu	MP59B	6201750902	Mar. 29, 2020
5	Cable	10m	EMCRG400-BM-NM-10000	170628	Apr. 17, 2020
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	Mar. 29, 2020
2	Cable	N/A	EMCRG400-BM-NM-10000	170628	Apr. 17, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	9120D	00206960	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480545	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
9	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020
10	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020
11	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
12	Test Cable	emci	EMC102-KM-KM-800	170654	Apr. 17, 2020
13	Test Cable	emci	Super Reliable-40G-SS11-7000	W0030860001	Apr. 17, 2020
14	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

Conducted Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

Frequency Stability					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
2	Temperature And Humidity Box	Blue pand	BPHS-120B	170616454	Sep. 01, 2020

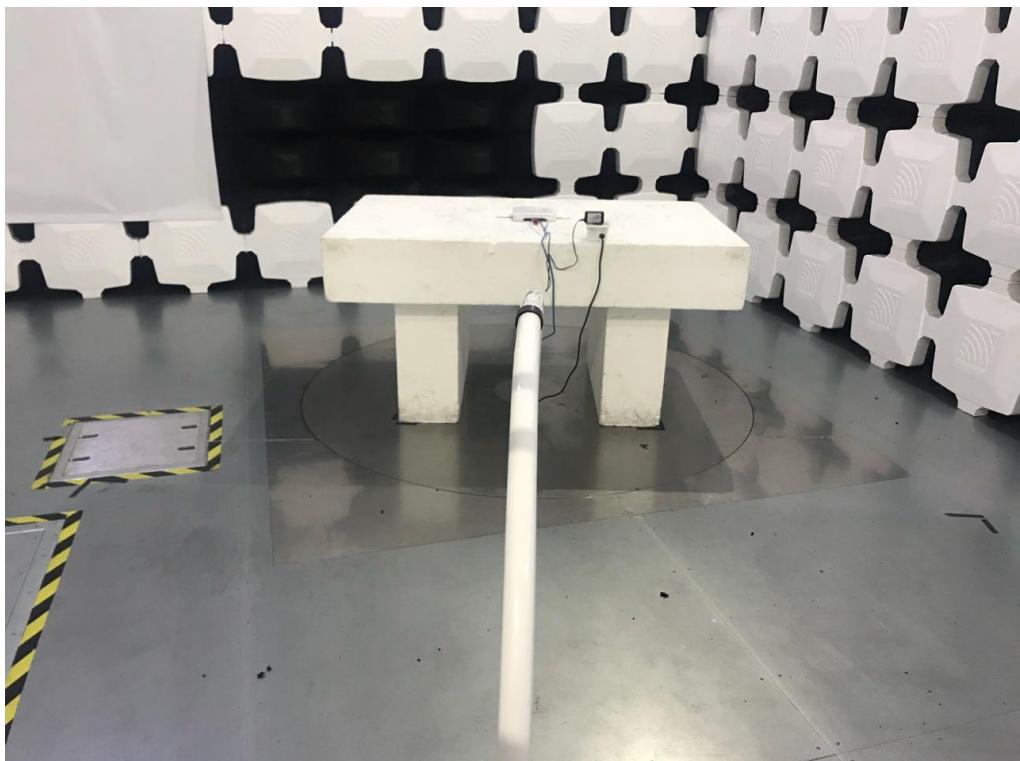
Remark: "N/A" denotes no model name, serial no. or calibration specified.

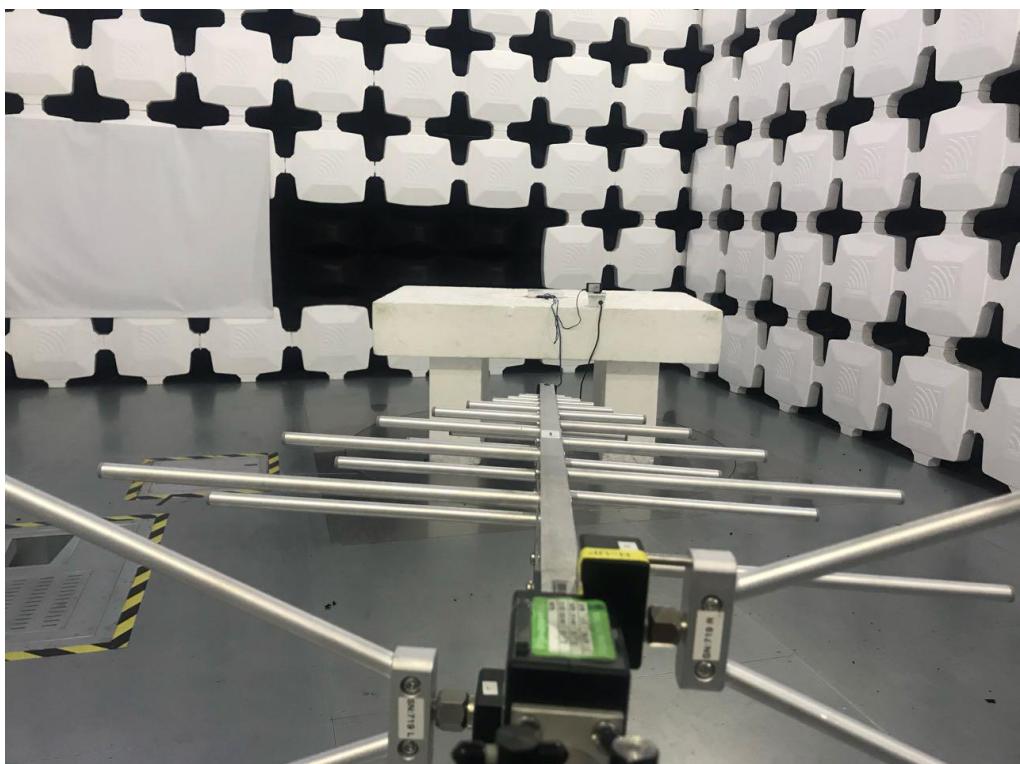
All calibration period of equipment list is one year.

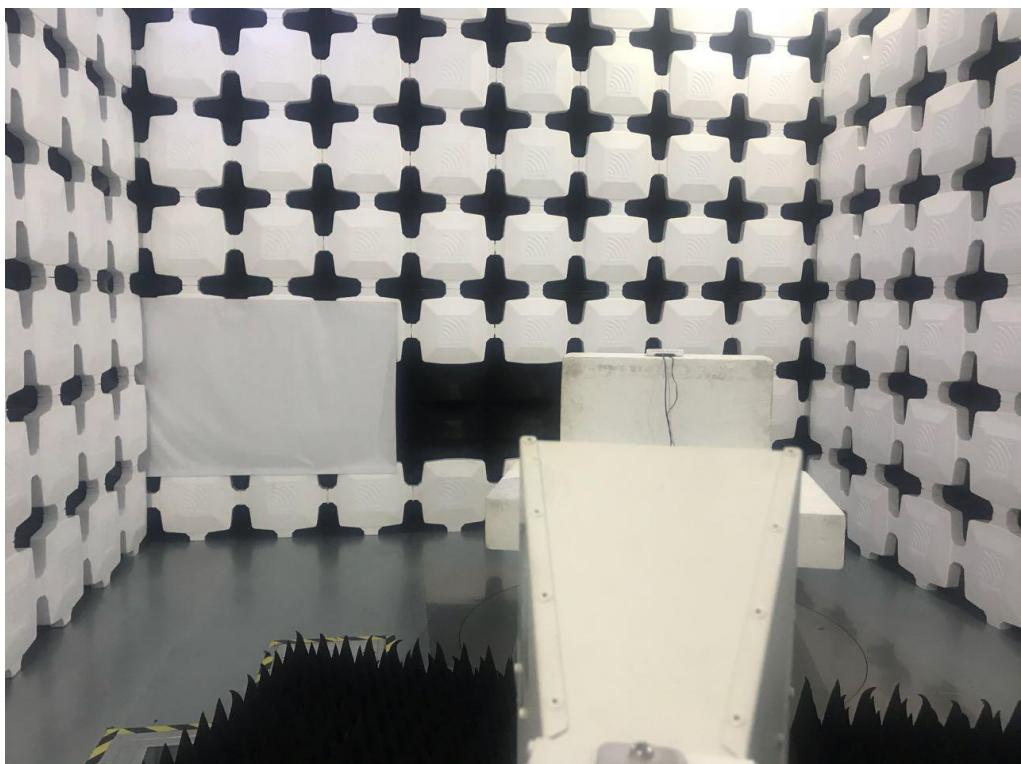
10. EUT TEST PHOTOS

Radiated Emissions Test Photos

9 kHz to 30 MHz

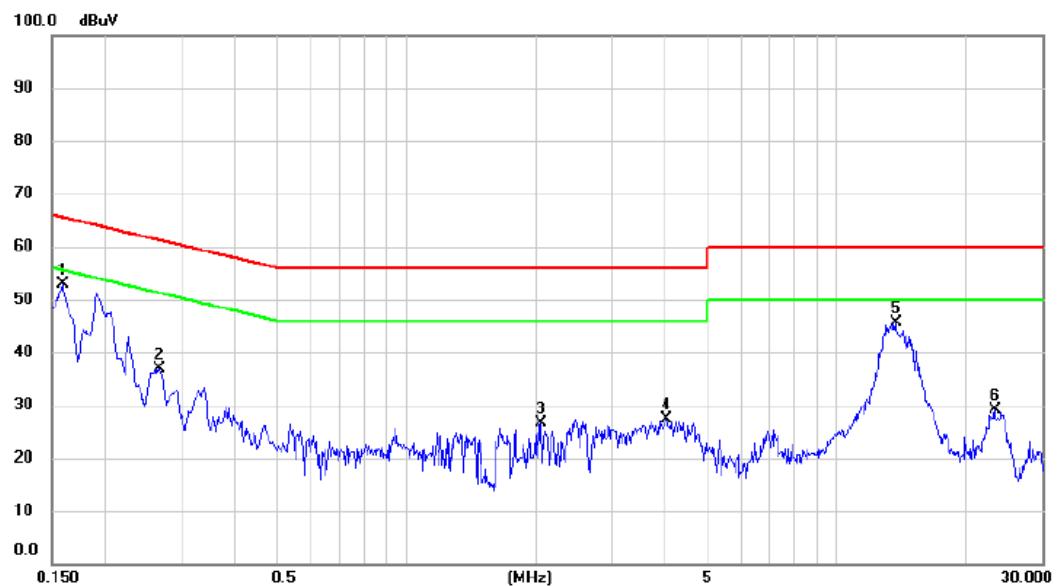


Radiated Emissions Test Photos**30 MHz to 1 GHz**

Radiated Emissions Test Photos**Above 1 GHz**

APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode:	TX A Mode / CH48 (UNII-1)	Test Voltage:	AC 120V/60Hz
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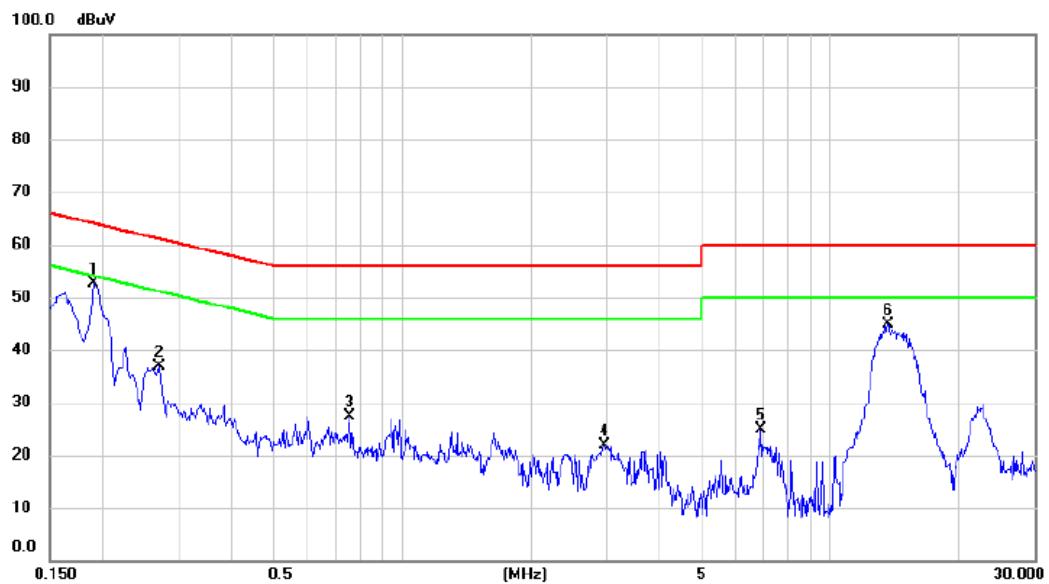
Line

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
1	*	0.1590	43.13	9.77	52.90	65.52	-12.62	peak	
2		0.2670	26.97	9.85	36.82	61.21	-24.39	peak	
3		2.0490	16.72	9.98	26.70	56.00	-29.30	peak	
4		4.0064	17.23	10.04	27.27	56.00	-28.73	peak	
5		13.7263	35.47	10.10	45.57	60.00	-14.43	peak	
6		23.2800	18.76	10.39	29.15	60.00	-30.85	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode:	TX A Mode / CH48 (UNII-1)	Test Voltage:	AC 120V/60Hz
------------	---------------------------	---------------	--------------

Neutral

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV	dBuV	dB		
1	*	0.1905	43.11	9.63	52.74	64.01	-11.27	peak	
2		0.2714	27.05	9.75	36.80	61.07	-24.27	peak	
3		0.7530	17.44	9.82	27.26	56.00	-28.74	peak	
4		2.9624	11.78	10.03	21.81	56.00	-34.19	peak	
5		6.9000	14.63	10.14	24.77	60.00	-35.23	peak	
6		13.6500	34.81	10.12	44.93	60.00	-15.07	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode:	TX A Mode / CH48 (UNII-1)	Test Voltage:	AC 240V/50Hz
------------	---------------------------	---------------	--------------

Line

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Comment
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1680	31.66	9.79	41.45	65.06	-23.61	peak
2		0.1815	29.69	9.81	39.50	64.42	-24.92	peak
3		0.2535	24.89	9.87	34.76	61.64	-26.88	peak
4		0.3390	23.79	9.84	33.63	59.23	-25.60	peak
5		0.4335	22.74	9.92	32.66	57.19	-24.53	peak
6		6.3645	22.39	10.11	32.50	60.00	-27.50	peak

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode:	TX A Mode / CH48 (UNII-1)	Test Voltage:	AC 240V/50Hz
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Neutral

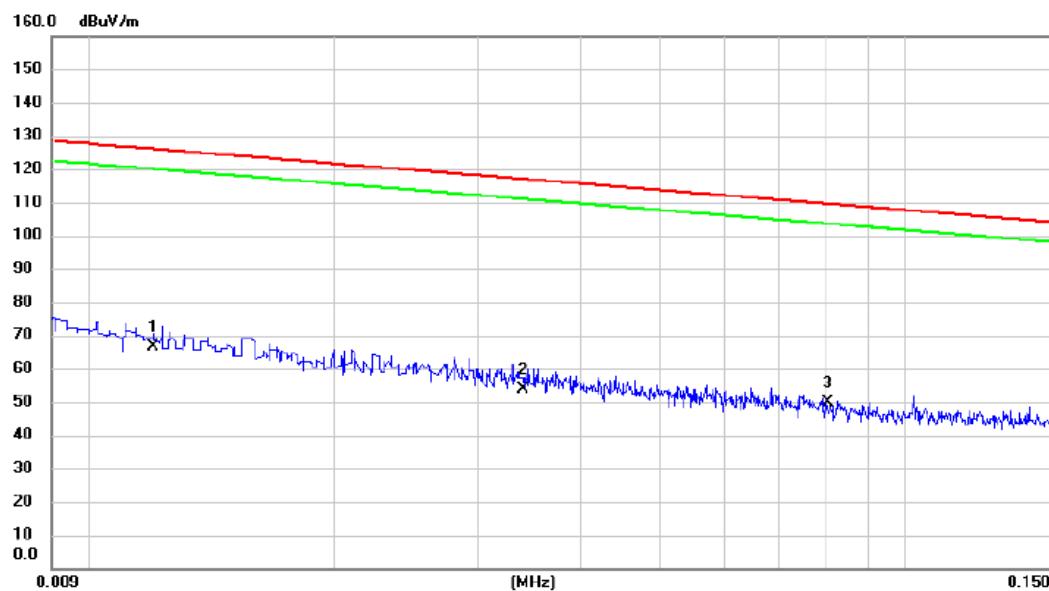
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1545	31.94	9.62	41.56	65.75	-24.19	peak	
2		0.2400	26.92	9.71	36.63	62.10	-25.47	peak	
3		0.3435	22.70	9.79	32.49	59.12	-26.63	peak	
4	*	0.4290	23.50	9.77	33.27	57.27	-24.00	peak	
5		1.3020	13.24	9.80	23.04	56.00	-32.96	peak	
6		6.4185	22.45	10.11	32.56	60.00	-27.44	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Test Mode: TX A MODE CHANNEL 48

Ant 0°

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0120	-10.50	77.18	66.68	126.02	-59.34	AVG	
2		0.0340	-14.75	68.50	53.75	116.98	-63.23	AVG	
3		0.0802	-10.46	60.08	49.62	109.52	-59.90	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX A MODE CHANNEL 48

Ant 0°

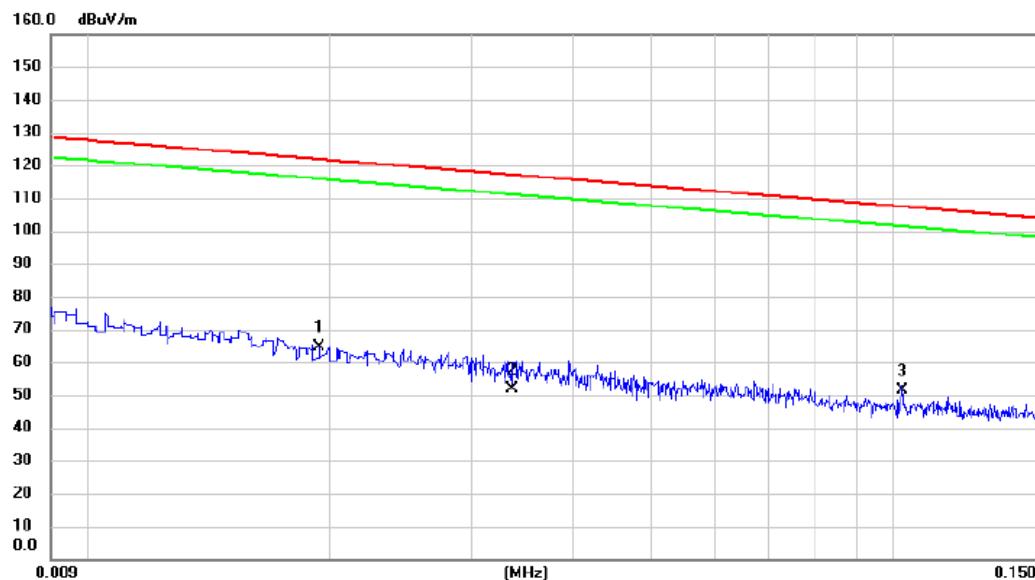
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Comment
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dB	Detector	
1		0.3285	-3.52	48.07	44.55	97.27	-52.72	AVG
2	*	1.1730	4.45	40.78	45.23	66.22	-20.99	QP
3		13.5464	4.18	38.17	42.35	69.54	-27.19	QP

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX A MODE CHANNEL 48

Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0194	-8.03	72.67	64.64	121.85	-57.21	AVG	
2		0.0336	-16.82	68.62	51.80	117.08	-65.28	AVG	
3	*	0.1026	-6.64	57.85	51.21	107.38	-56.17	QP	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX A MODE CHANNEL 48

Ant 90°



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1		0.2070	-0.64	51.86	51.22	101.29	-50.07	AVG
2	*	1.0294	3.71	41.13	44.84	67.35	-22.51	QP
3		5.7260	4.36	37.77	42.13	69.54	-27.41	QP

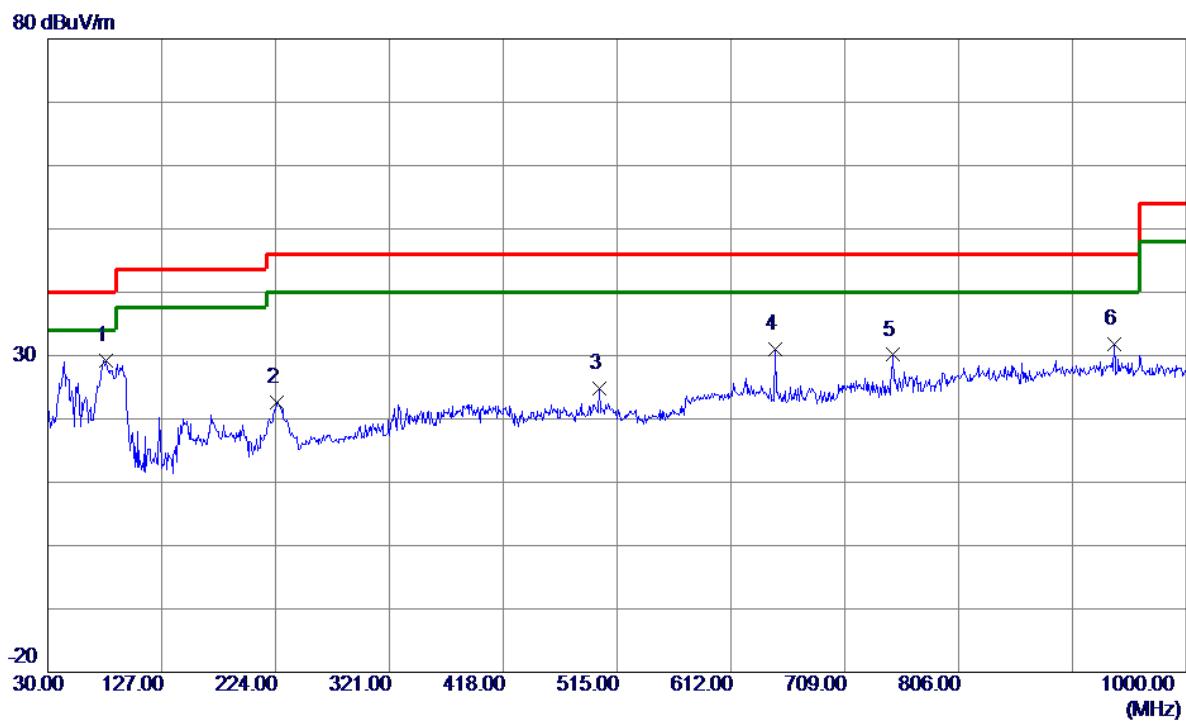
REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1 GHZ

Test Mode: TX A MODE CHANNEL 48

Vertical



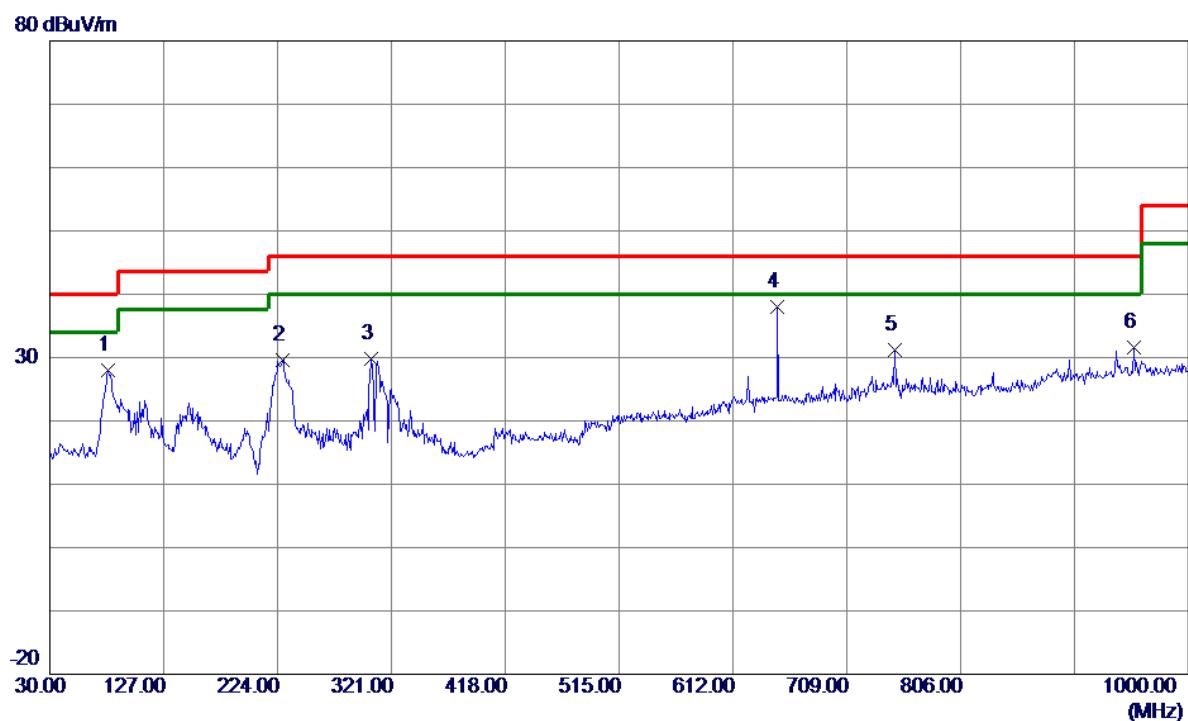
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin Detector	Comment
1 *	79.4700	49.45	-20.29	29.16	40.00	-10.84	Peak
2	225.4550	40.29	-17.63	22.66	46.00	-23.34	Peak
3	499.9650	37.42	-12.63	24.79	46.00	-21.21	Peak
4	649.8300	39.42	-8.51	30.91	46.00	-15.09	Peak
5	750.2250	36.76	-6.66	30.10	46.00	-15.90	Peak
6	938.4050	37.05	-5.21	31.84	46.00	-14.16	Peak

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX A MODE CHANNEL 48

Horizontal



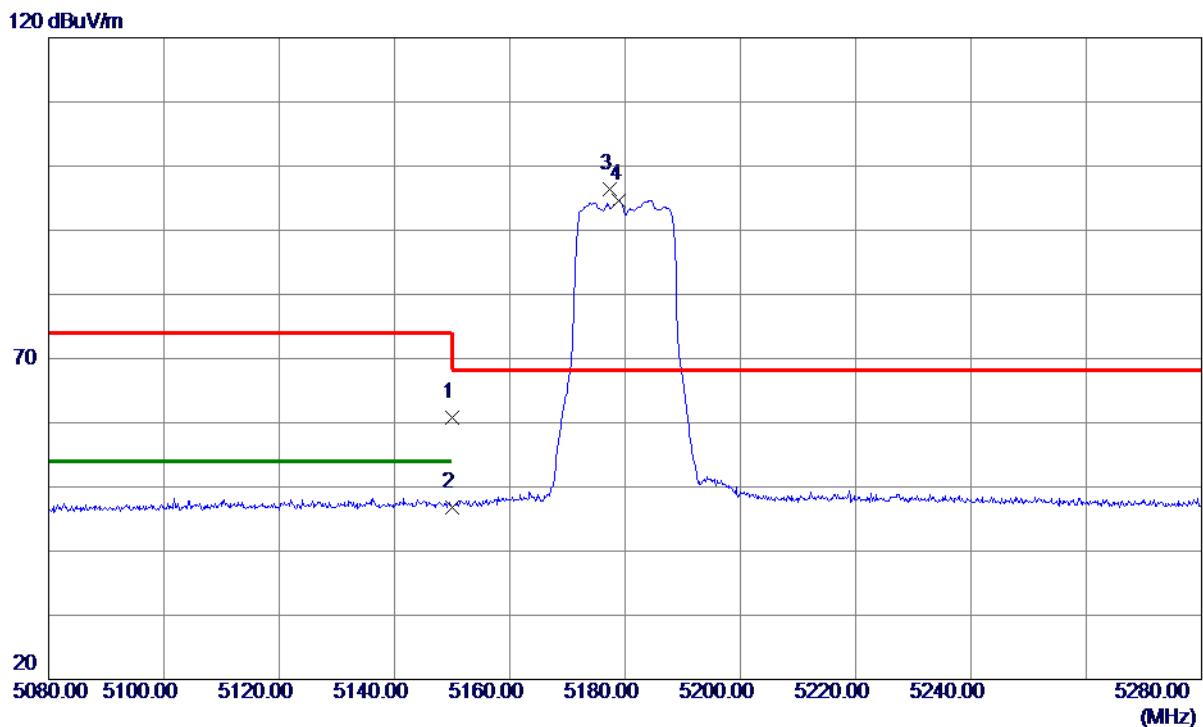
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	79.4700	48.28	-20.29	27.99	40.00	-12.01	Peak	
2	228.3650	47.11	-17.45	29.66	46.00	-16.34	Peak	
3	303.5400	44.10	-14.26	29.84	46.00	-16.16	Peak	
4 *	649.8300	46.44	-8.51	37.93	46.00	-8.07	Peak	
5	749.7400	37.90	-6.67	31.23	46.00	-14.77	Peak	
6	953.4400	36.79	-5.13	31.66	46.00	-14.34	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

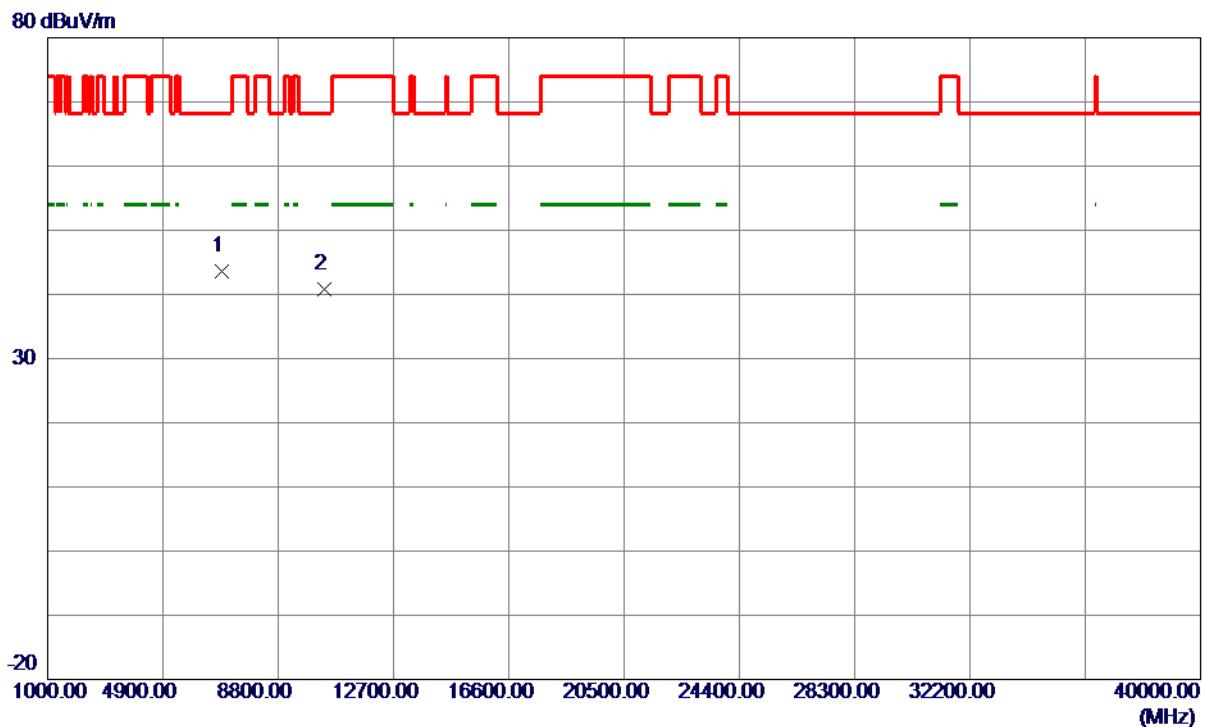
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	21.81	39.07	60.88	74.00	-13.12	Peak	
2	5150.0000	7.77	39.07	46.84	54.00	-7.16	AVG	
3 *	5177.3000	57.33	39.10	96.43	68.30	28.13	Peak	No limit
4	5179.0000	55.59	39.11	94.70	999.00	-904.30	AVG	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

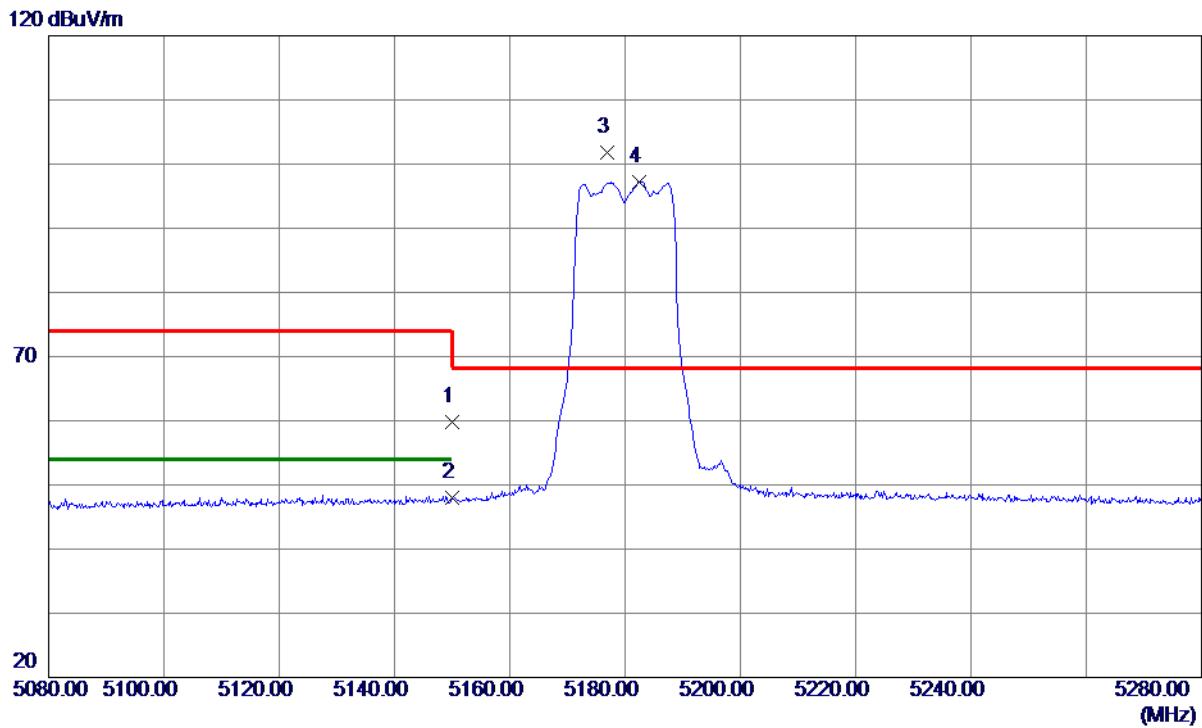
Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6906.6670	47.26	-3.63	43.63	68.30	-24.67	Peak	
2	10360.0000	38.60	2.13	40.73	68.30	-27.57	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

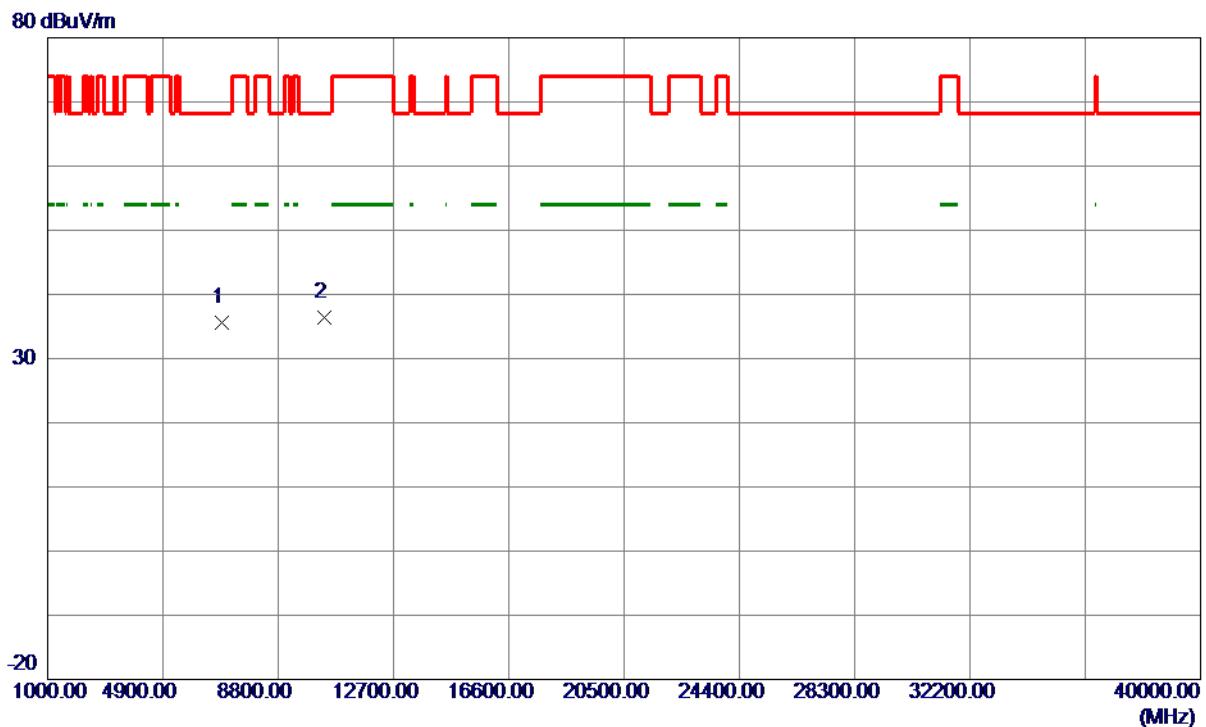
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	5150.0000	20.80	39.07	59.87	74.00	-14.13	Peak	
2	5150.0000	9.01	39.07	48.08	54.00	-5.92	AVG	
3 *	5176.8000	62.72	39.10	101.82	68.30	33.52	Peak	No limit
4	5182.4000	58.14	39.11	97.25	999.00	-901.75	AVG	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5180 MHz

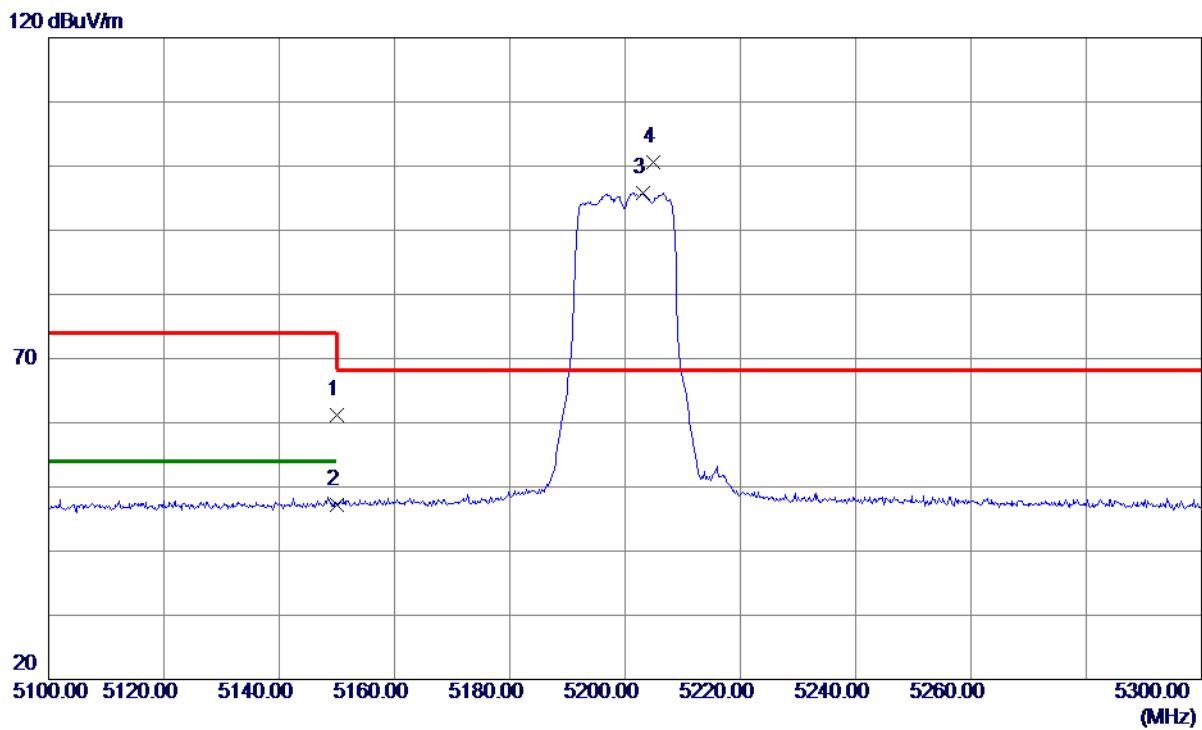
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	6906.7970	39.24	-3.63	35.61	68.30	-32.69	Peak	
2 *	10360.3500	34.25	2.13	36.38	68.30	-31.92	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5200 MHz

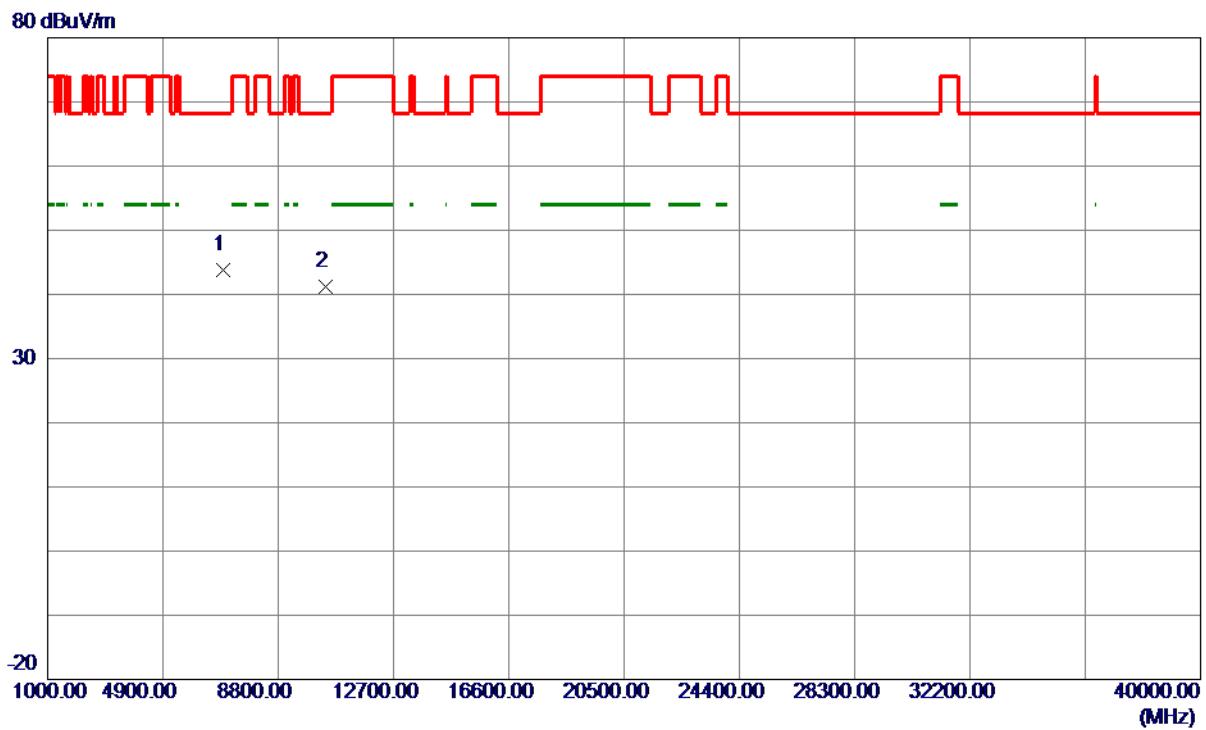
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	22.08	39.07	61.15	74.00	-12.85	Peak	
2	5150.0000	8.12	39.07	47.19	54.00	-6.81	AVG	
3	5203.1000	56.73	39.14	95.87	999.00	-903.13	AVG	No limit
4 *	5204.9000	61.55	39.14	100.69	68.30	32.39	Peak	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5200 MHz

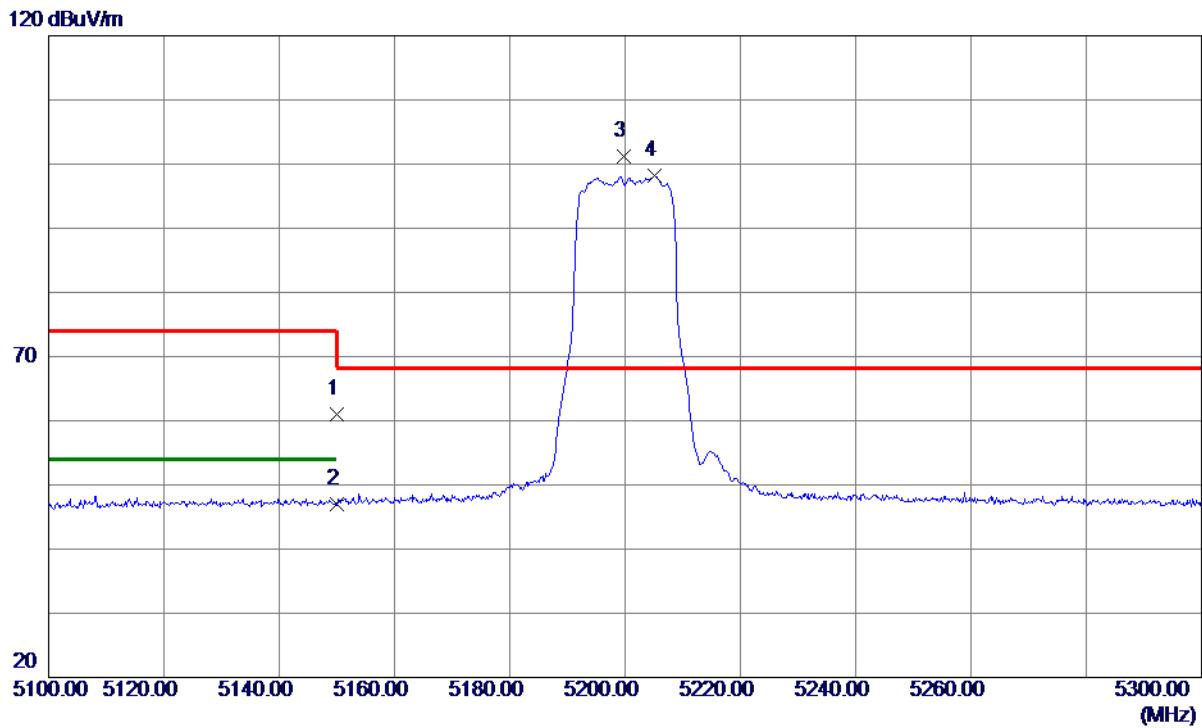
Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6933.3830	47.35	-3.53	43.82	68.30	-24.48	Peak	
2	10400.0000	39.01	2.14	41.15	68.30	-27.15	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5200 MHz

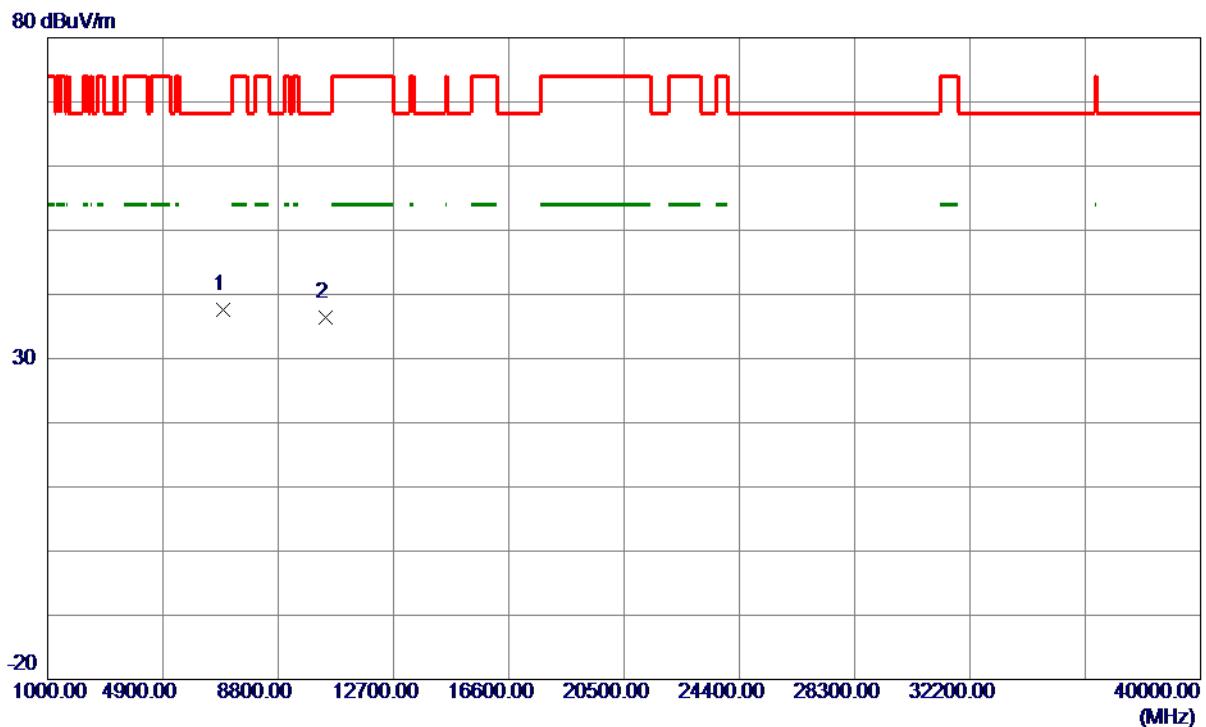
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	21.94	39.07	61.01	74.00	-12.99	Peak	
2	5150.0000	7.84	39.07	46.91	54.00	-7.09	AVG	
3 *	5199.7000	62.04	39.13	101.17	68.30	32.87	Peak	No limit
4	5205.1000	59.04	39.14	98.18	999.00	-900.82	AVG	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5200 MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6933.3330	41.18	-3.53	37.65	68.30	-30.65	Peak	
2	10400.0000	34.26	2.14	36.40	68.30	-31.90	Peak	

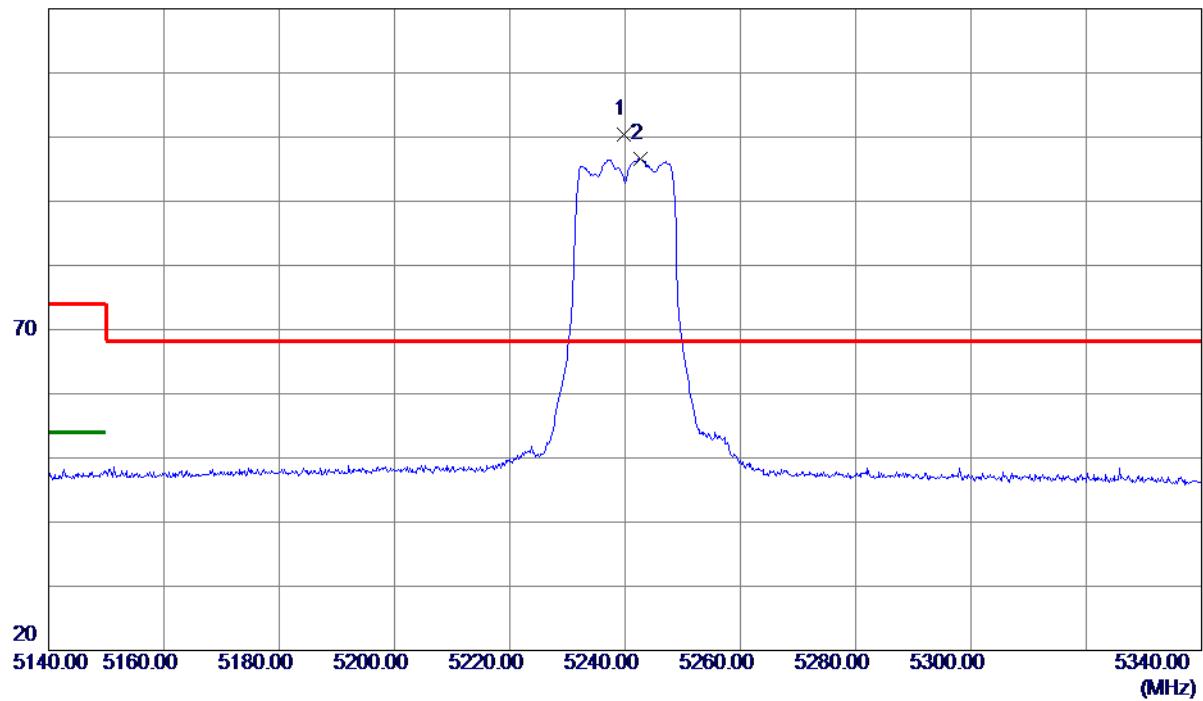
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

Vertical

120 dBuV/m

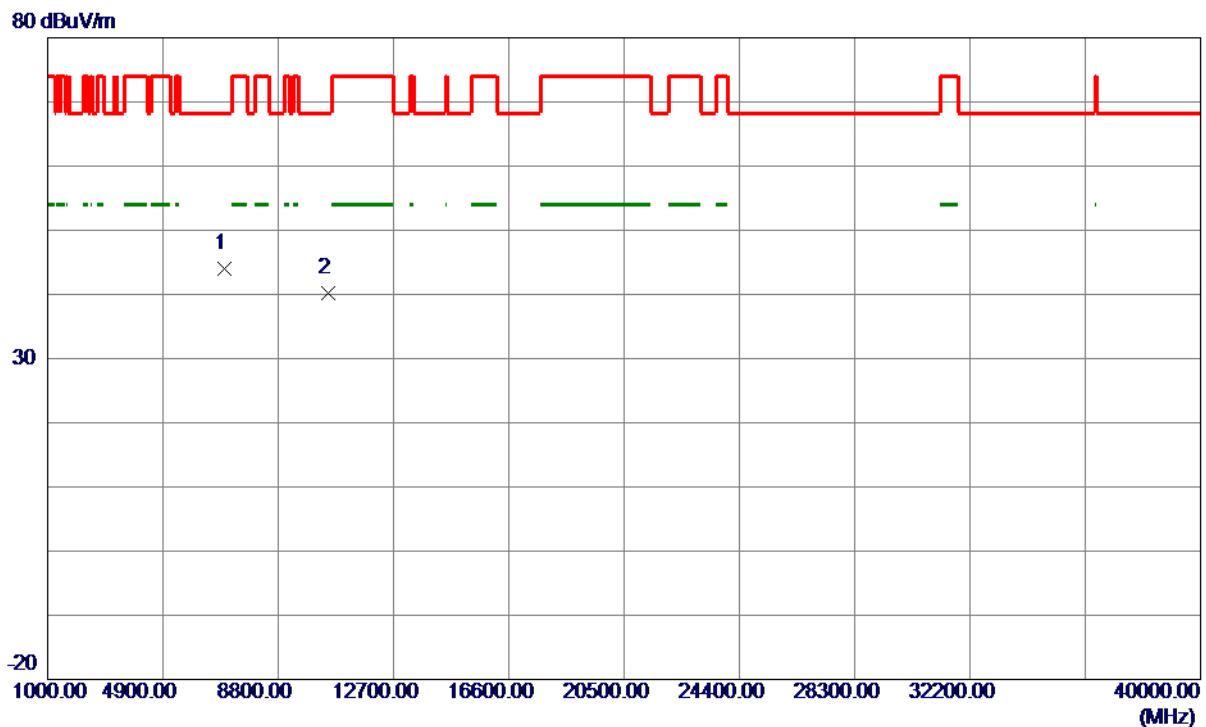


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector
1 *	5239.7000	61.15	39.18	100.33	68.30	32.03	Peak
2	5242.7000	57.45	39.19	96.64	999.00	-902.36	AVG

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

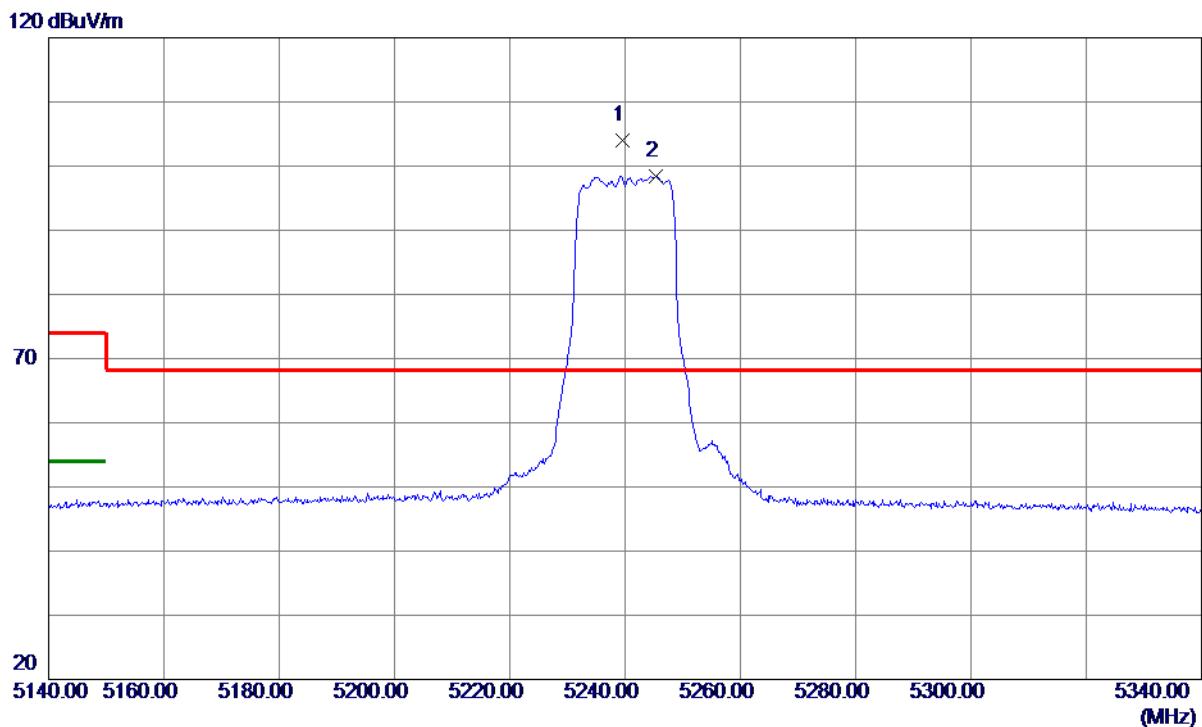
Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector
1 *	6986.7300	47.26	-3.34	43.92	68.30	-24.38	Peak
2	10480.0000	38.08	2.15	40.23	68.30	-28.07	Peak

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

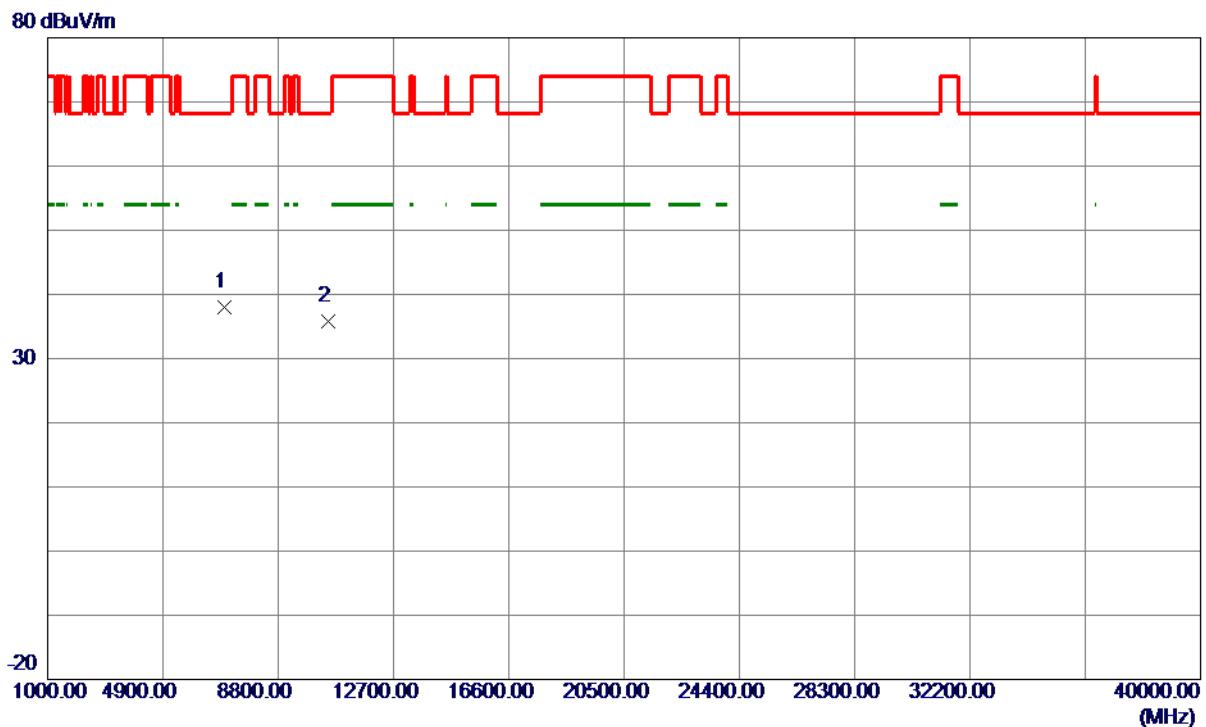
Horizontal

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment	dBuV/m	dB		
	MHz	dBuV/m	dB		dBuV/m	dB		
1 *	5239.6000	64.88	39.18	104.06	68.30	35.76	Peak	No limit
2	5245.4000	59.24	39.19	98.43	999.00	-900.57	AVG	No limit

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX A Mode 5240 MHz

Horizontal

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment				
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6986.7600	41.43	-3.34	38.09	68.30	-30.21	Peak	
2	10476.4600	33.64	2.15	35.79	68.30	-32.51	Peak	

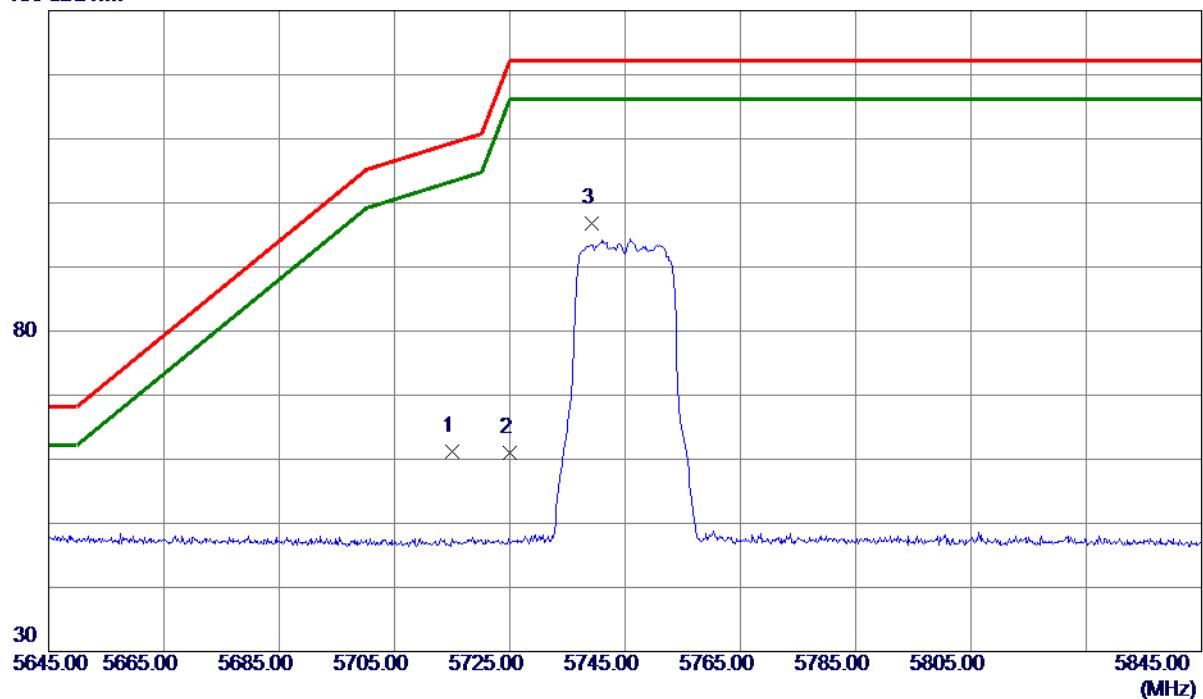
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

Vertical

130 dBuV/m

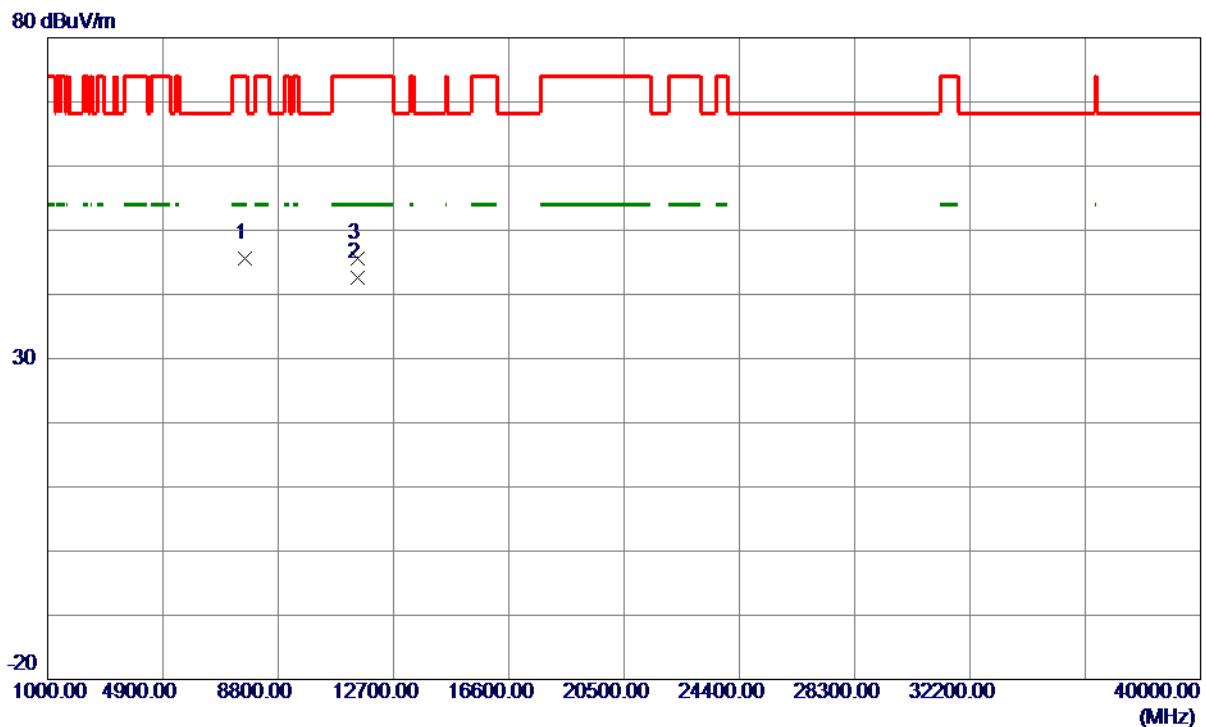


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Margin	
							Detector	Comment
1	5715.0000	21.16	40.02	61.18	109.40	-48.22	Peak	
2	5725.0000	20.99	40.05	61.04	122.20	-61.16	Peak	
3 *	5739.2000	56.71	40.08	96.79	122.20	-25.41	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

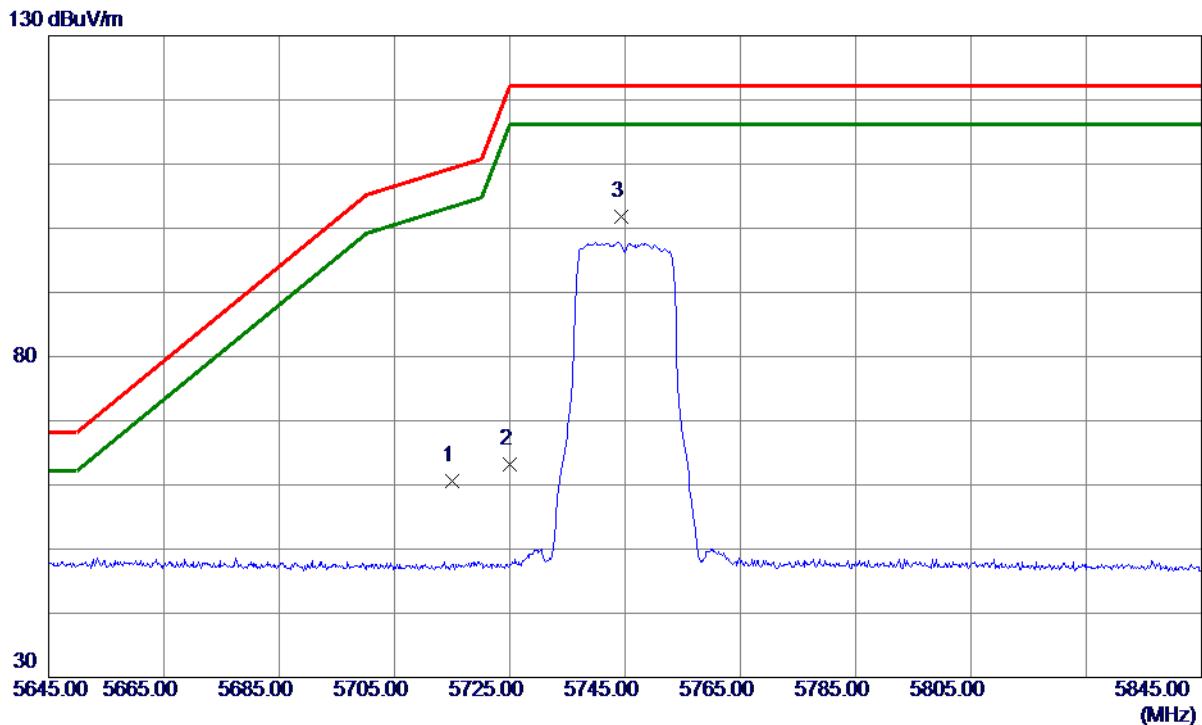
Vertical

No.	Freq. MHz	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
		dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	7660.0400	47.81	-2.20	45.61	74.00	-28.39	Peak	
2 *	11487.8500	38.82	3.84	42.66	54.00	-11.34	AVG	
3	11489.2300	41.84	3.84	45.68	74.00	-28.32	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

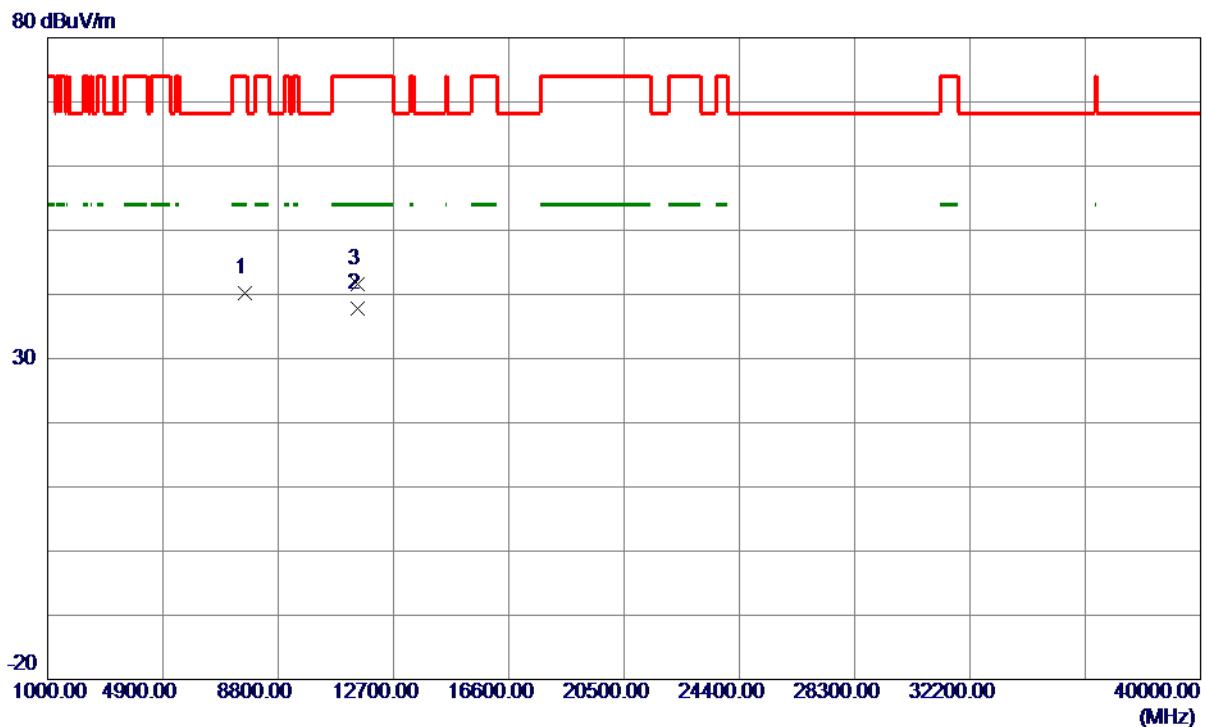
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	5715.0000	20.49	40.02	60.51	109.40	-48.89	Peak	
2	5725.0000	23.20	40.05	63.25	122.20	-58.95	Peak	
3 *	5744.3000	61.80	40.09	101.89	122.20	-20.31	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5745 MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	7659.9900	42.49	-2.20	40.29	74.00	-33.71	Peak	
2 *	11486.2800	33.96	3.85	37.81	54.00	-16.19	AVG	
3	11488.6010	37.84	3.84	41.68	74.00	-32.32	Peak	

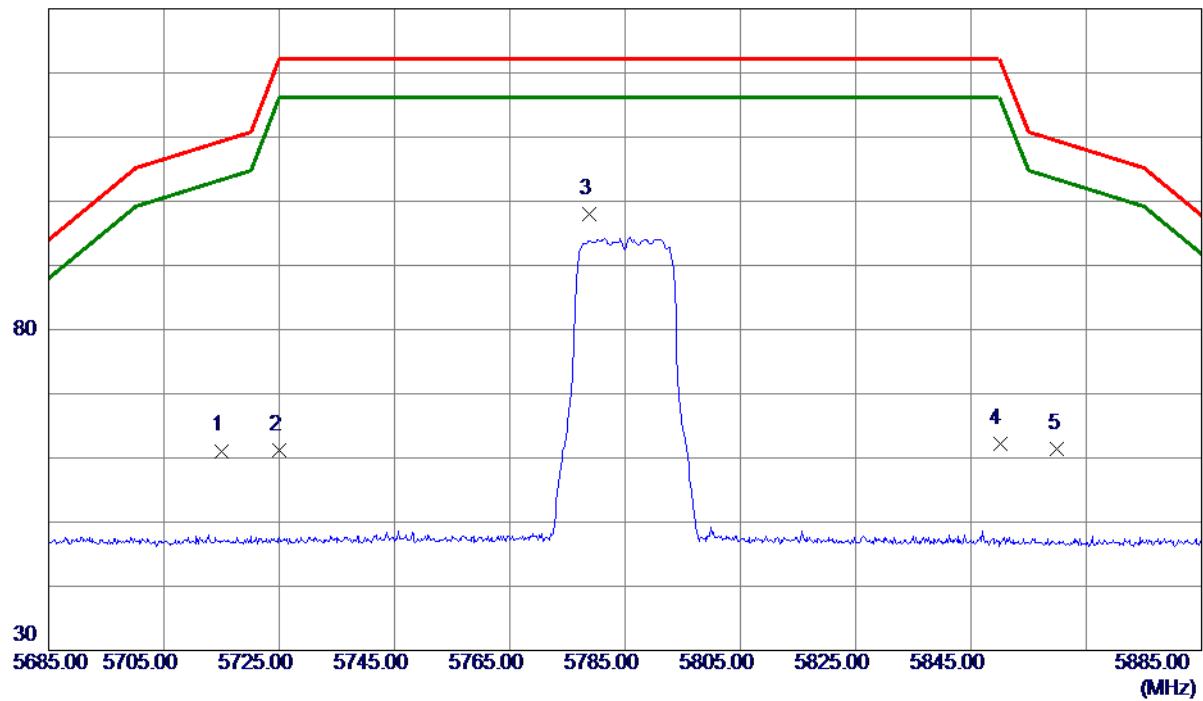
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

Vertical

130 dBuV/m

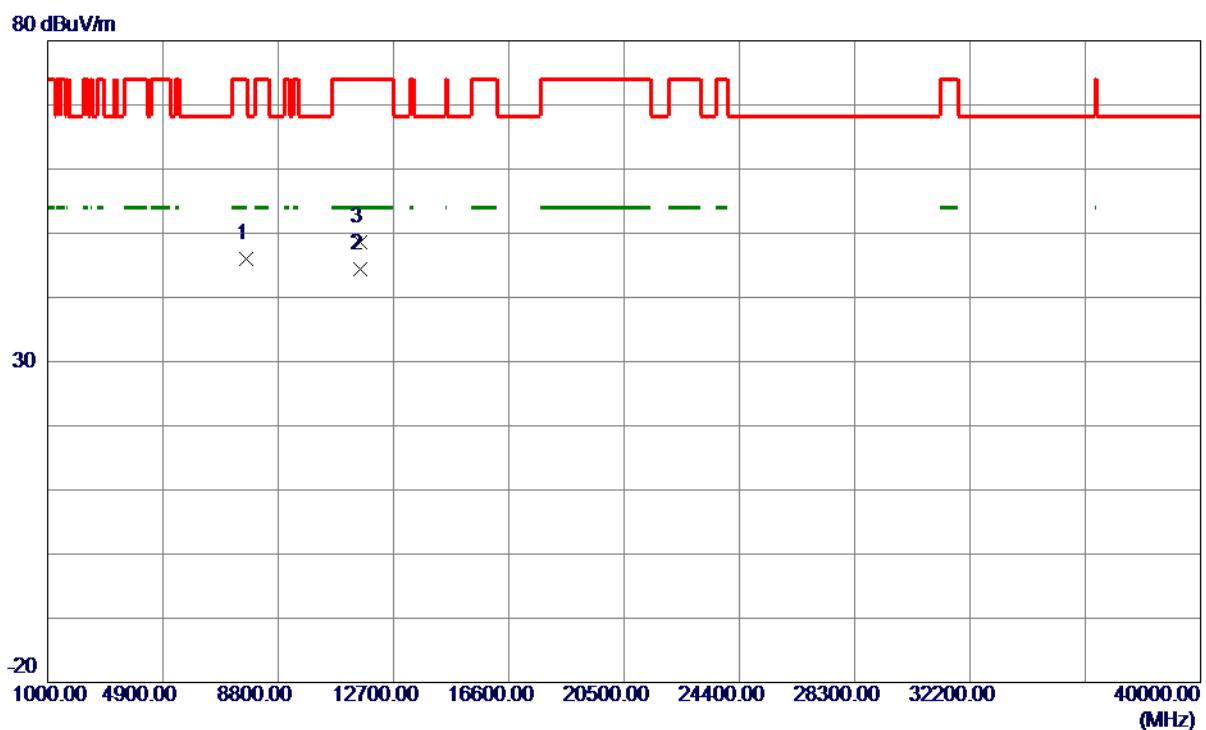


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5715.0000	21.08	40.02	61.10	109.40	-48.30	Peak	
2	5725.0000	21.15	40.05	61.20	122.20	-61.00	Peak	
3 *	5778.7000	57.79	40.17	97.96	122.20	-24.24	Peak	
4	5850.0000	21.81	40.34	62.15	122.20	-60.05	Peak	
5	5860.0000	20.99	40.37	61.36	109.40	-48.04	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

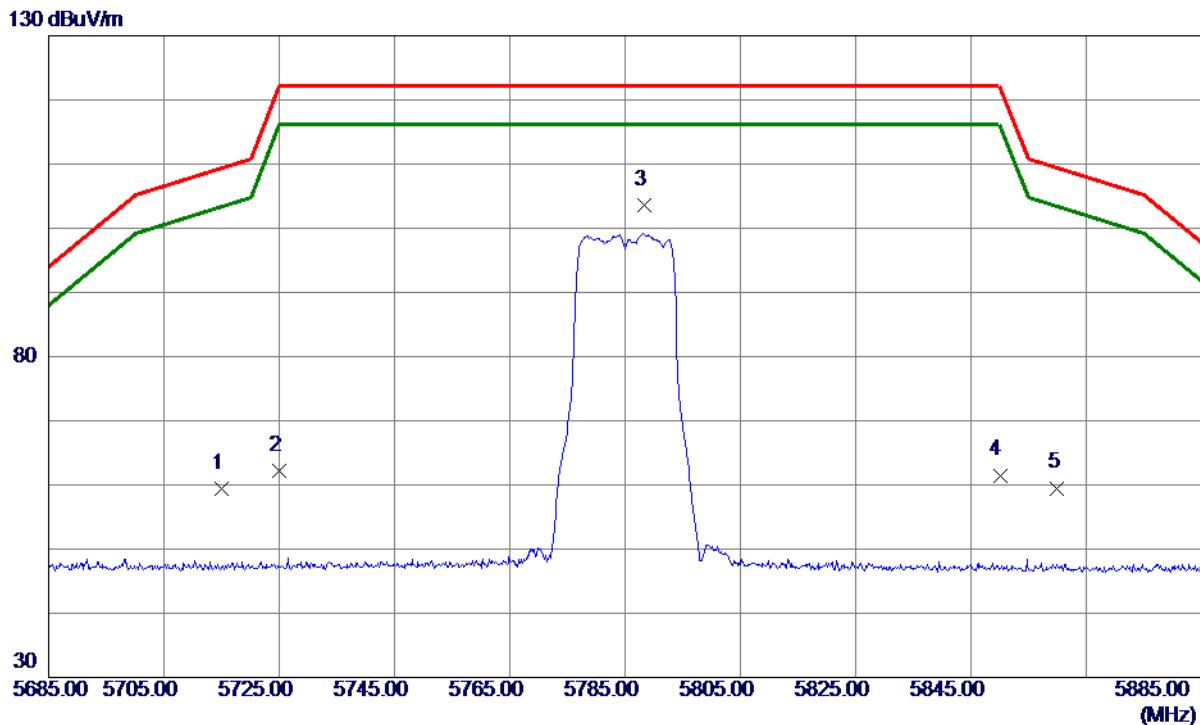
Vertical

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment				
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	7713.3900	48.22	-2.13	46.09	74.00	-27.91	Peak	
2 *	11570.0500	40.53	3.79	44.32	54.00	-9.68	AVG	
3	11572.0320	44.79	3.79	48.58	74.00	-25.42	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

Horizontal

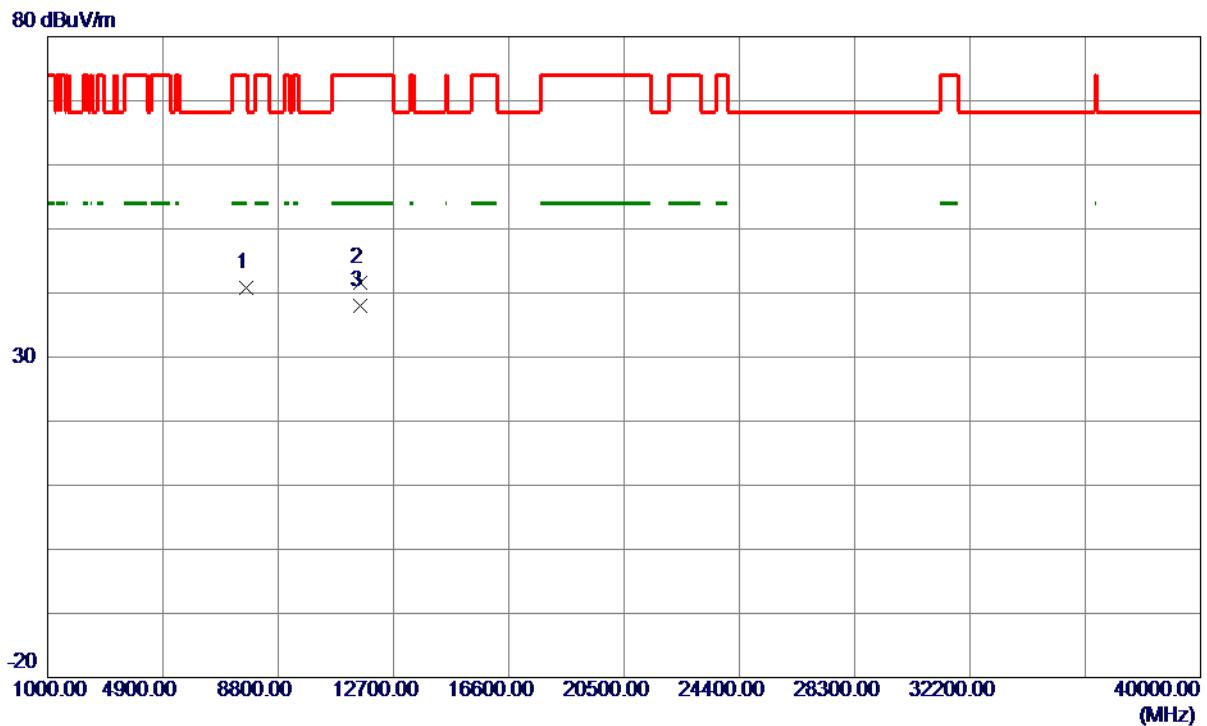
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5715.0000	19.32	40.02	59.34	109.40	-50.06	Peak	
2	5725.0000	22.06	40.05	62.11	122.20	-60.09	Peak	
3 *	5788.3000	63.44	40.20	103.64	122.20	-18.56	Peak	
4	5850.0000	21.16	40.34	61.50	122.20	-60.70	Peak	
5	5860.0000	19.13	40.37	59.50	109.40	-49.90	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5785 MHz

Horizontal

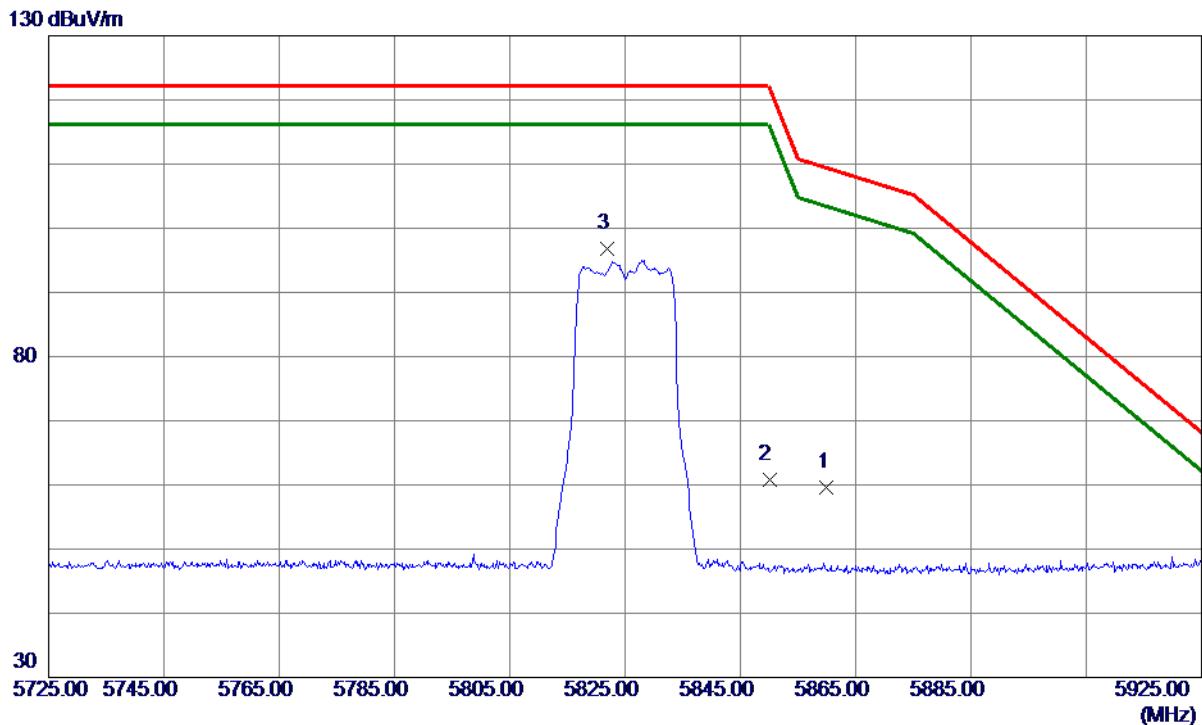


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector
1	7713.3300	42.87	-2.13	40.74	74.00	-33.26	Peak
2	11565.3000	37.77	3.79	41.56	74.00	-32.44	Peak
3 *	11567.2600	34.21	3.79	38.00	54.00	-16.00	AVG

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

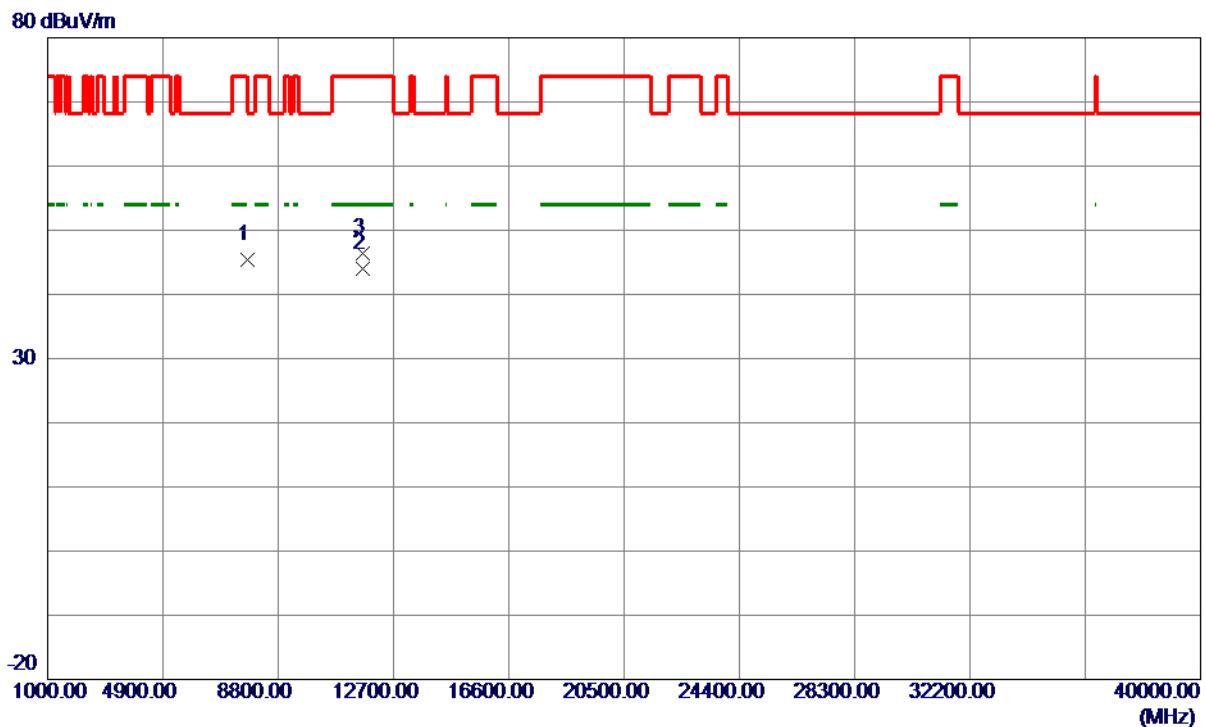
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	5860.0000	19.28	40.37	59.65	109.40	-49.75	Peak	
2	5850.0000	20.41	40.34	60.75	122.20	-61.45	Peak	
3 *	5821.9000	56.49	40.28	96.77	122.20	-25.43	Peak	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

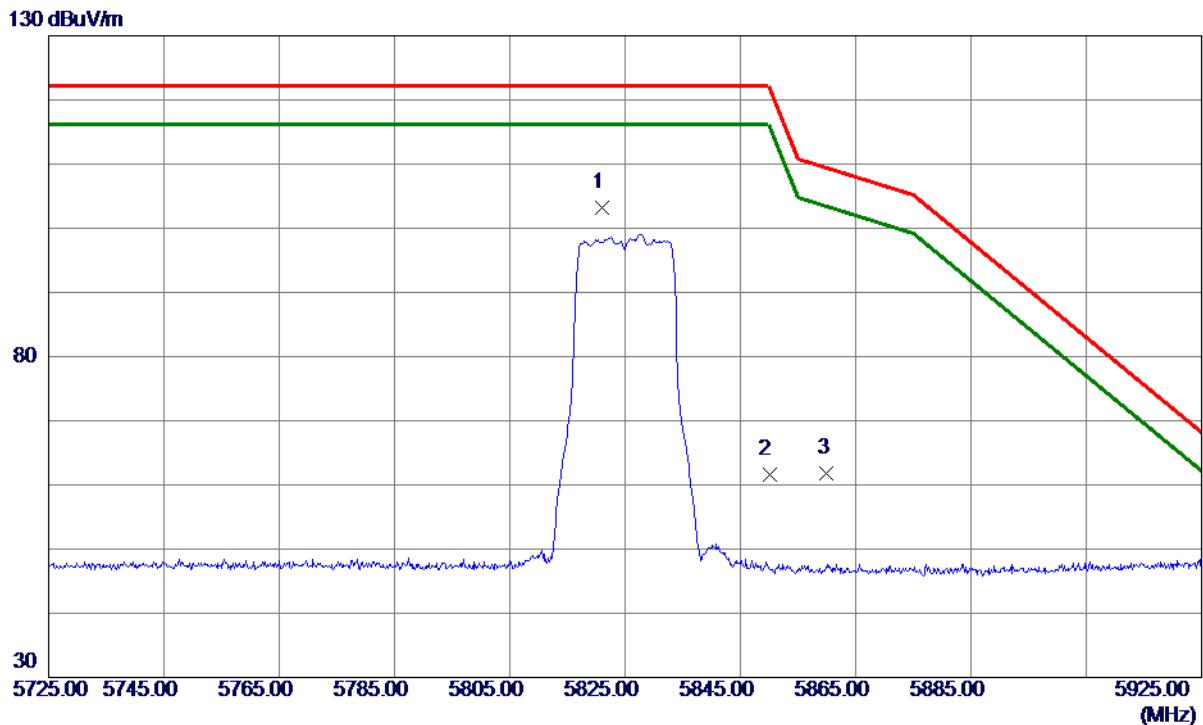
Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	7766.7000	47.49	-2.06	45.43	68.30	-22.87	Peak	
2 *	11650.2500	40.29	3.74	44.03	54.00	-9.97	AVG	
3	11652.3099	42.74	3.74	46.48	74.00	-27.52	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

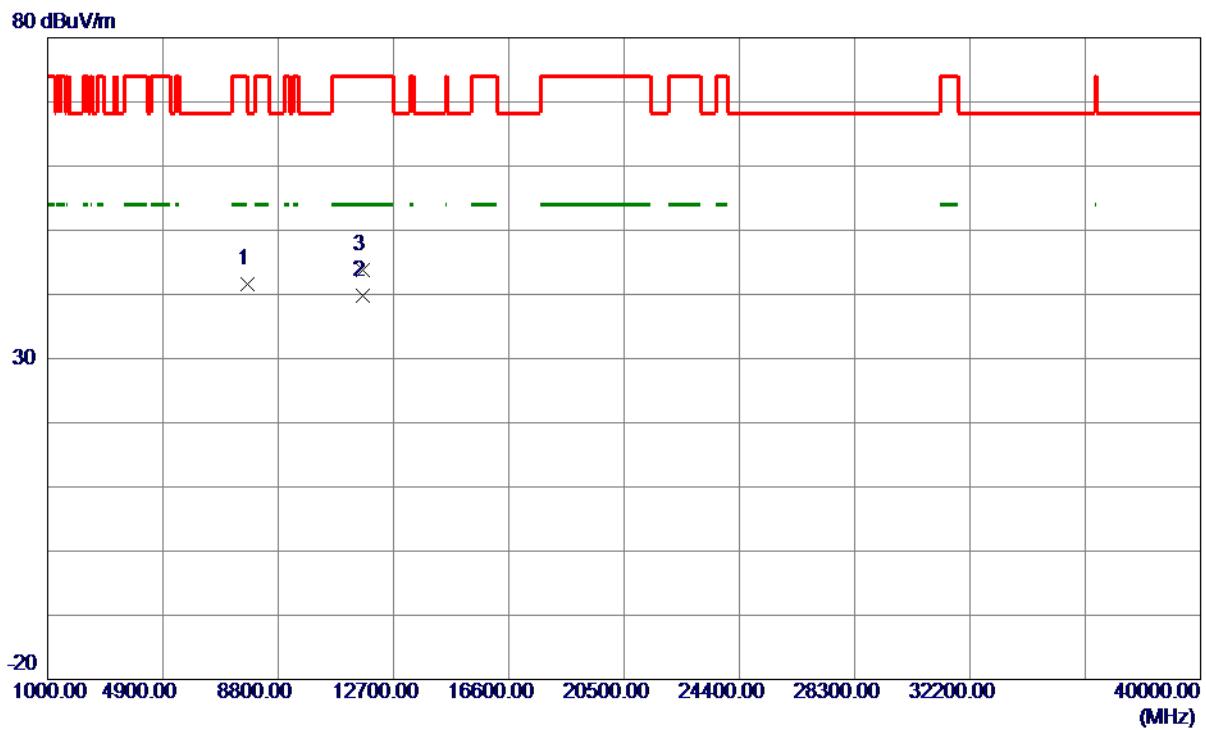
Horizontal

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment	dBuV/m	dB		
	MHz	dBuV/m	dB					
1 *	5820.9000	63.00	40.27	103.27	122.20	-18.93	Peak	
2	5850.0000	21.26	40.34	61.60	122.20	-60.60	Peak	
3	5860.0000	21.39	40.37	61.76	109.40	-47.64	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX A Mode 5825 MHz

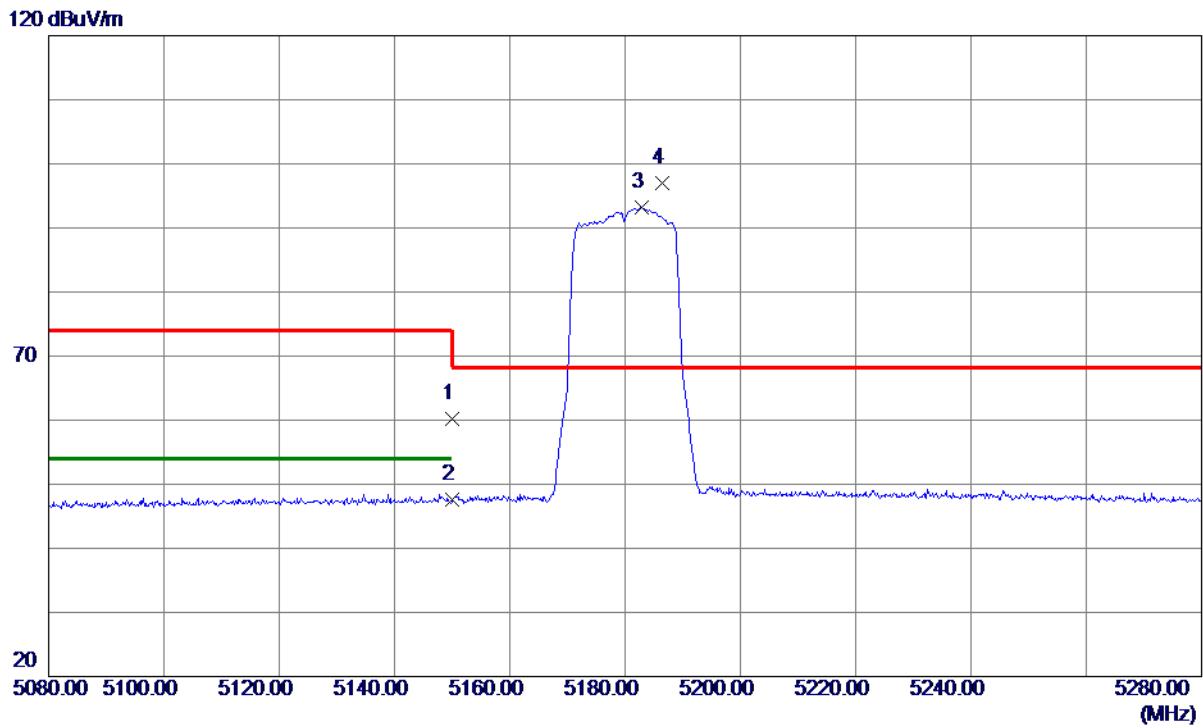
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	7766.6950	43.69	-2.06	41.63	68.30	-26.67	Peak	
2 *	11650.1100	36.00	3.74	39.74	54.00	-14.26	AVG	
3	11651.8800	40.05	3.74	43.79	74.00	-30.21	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5180 MHz

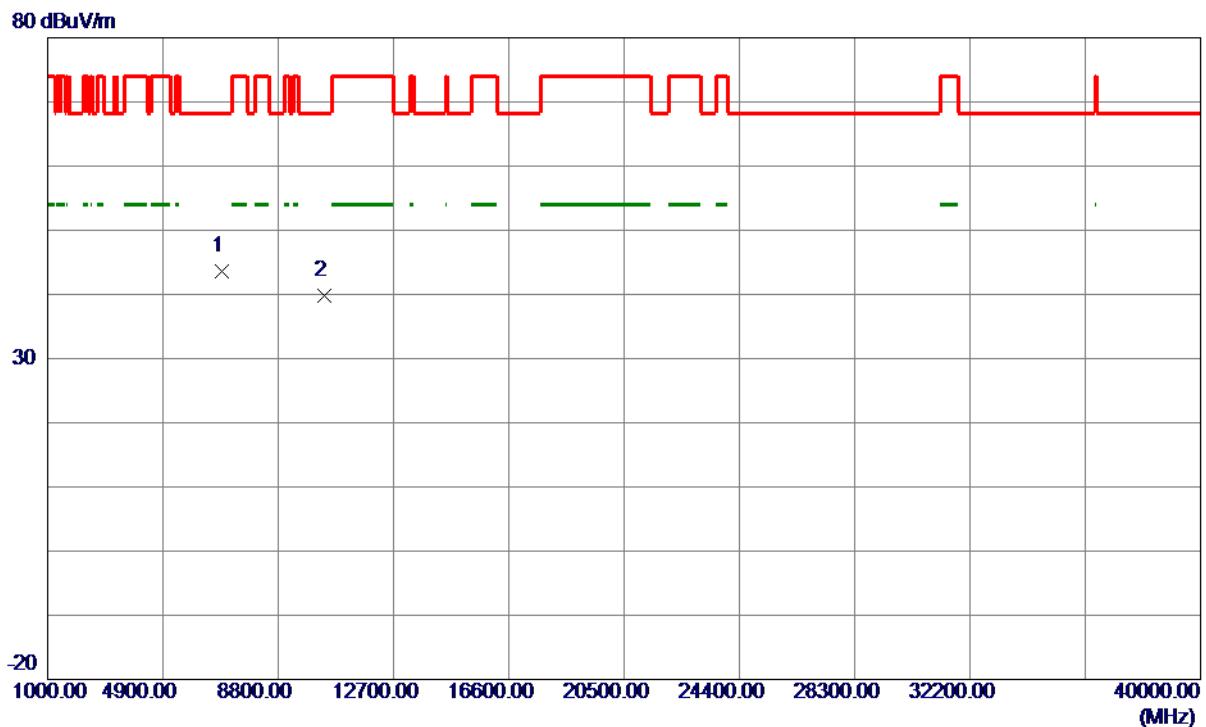
Vertical

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment				
1	5150.0000	21.12	39.07	60.19	74.00	-13.81	Peak	
2	5150.0000	8.50	39.07	47.57	54.00	-6.43	AVG	
3	5182.9000	54.16	39.11	93.27	999.00	-905.73	AVG	No limit
4 *	5186.4000	57.97	39.11	97.08	68.30	28.78	Peak	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5180 MHz

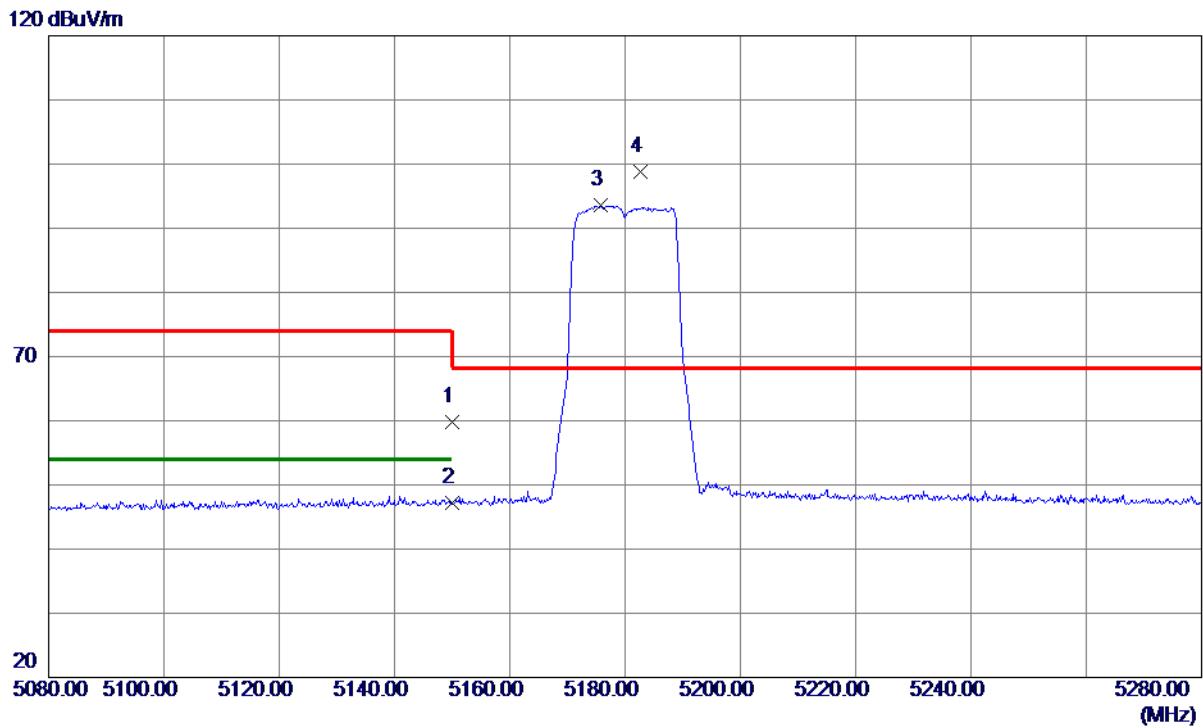
Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6906.7270	47.20	-3.63	43.57	68.30	-24.73	Peak	
2	10360.0300	37.68	2.13	39.81	68.30	-28.49	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5180 MHz

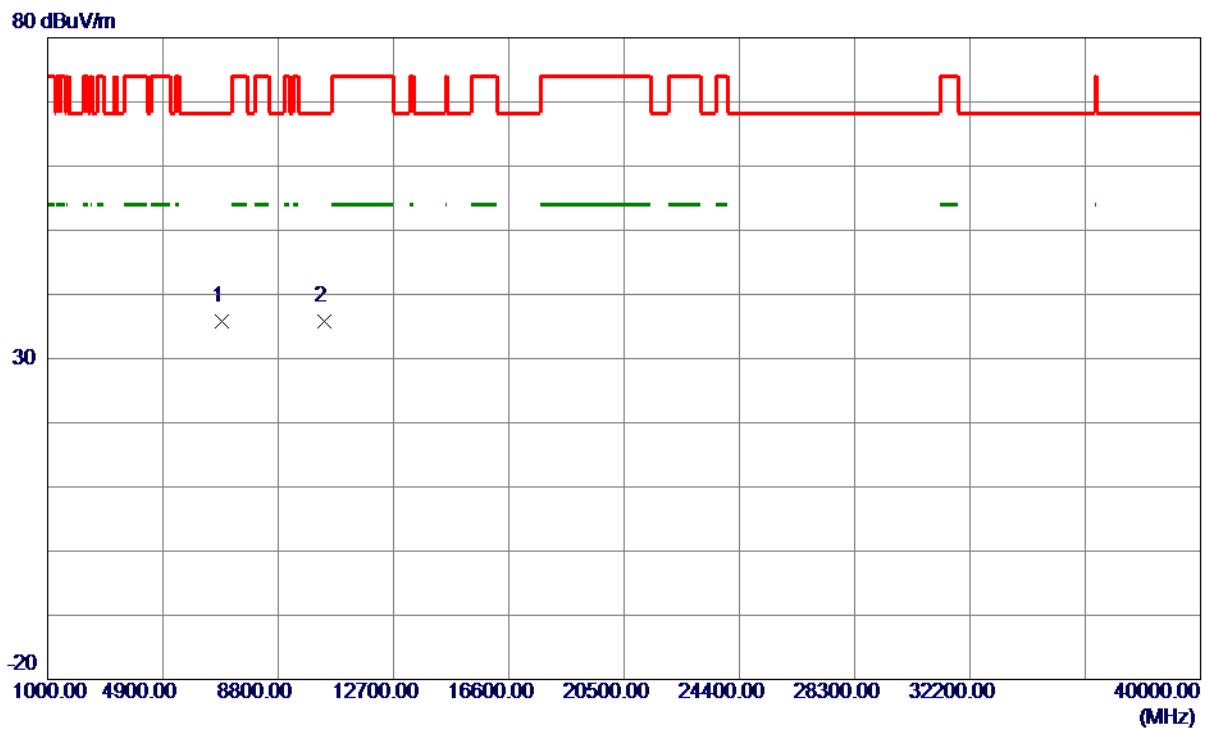
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	20.68	39.07	59.75	74.00	-14.25	Peak	
2	5150.0000	8.11	39.07	47.18	54.00	-6.82	AVG	
3	5175.8000	54.52	39.10	93.62	999.00	-905.38	AVG	No limit
4 *	5182.7000	59.64	39.11	98.75	68.30	30.45	Peak	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5180 MHz

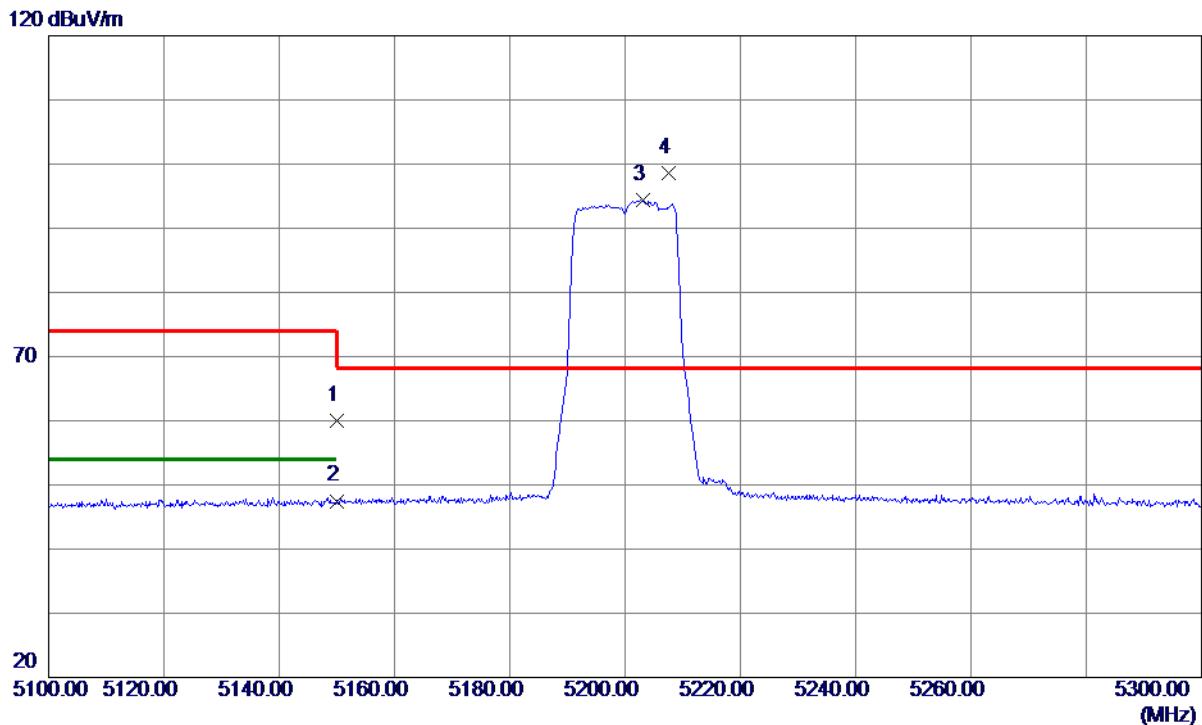
Horizontal

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment				
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6906.6670	39.40	-3.63	35.77	68.30	-32.53	Peak	
2	10360.6900	33.59	2.13	35.72	68.30	-32.58	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5200 MHz

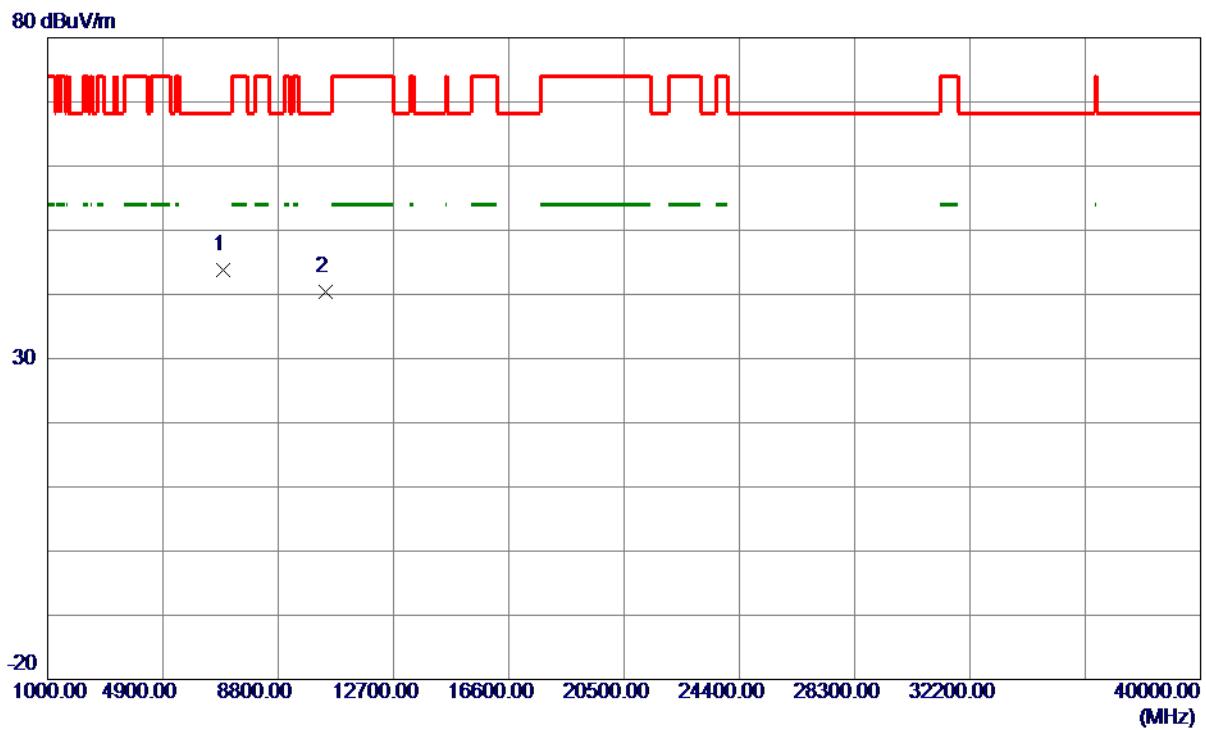
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	20.85	39.07	59.92	74.00	-14.08	Peak	
2	5150.0000	8.43	39.07	47.50	54.00	-6.50	AVG	
3	5203.1000	55.35	39.14	94.49	999.00	-904.51	AVG	No limit
4 *	5207.6000	59.45	39.14	98.59	68.30	30.29	Peak	No limit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5200 MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	6933.3530	47.36	-3.53	43.83	68.30	-24.47	Peak	
2	10400.0199	38.34	2.14	40.48	68.30	-27.82	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.