

FCC Radio Test Report

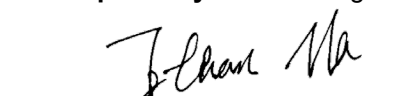
FCC ID: TE7AX20V2

This report concerns: Original Grant

Project No. : 2008C188
Equipment : AX1800 Dual-Band Wi-Fi 6 Router
Brand Name : tp-link
Test Model : Archer AX20
Series Model : Archer AX21, Archer AX1800
Applicant : TP-Link Technologies Co., Ltd.
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Manufacturer : TP-Link Technologies Co., Ltd.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Date of Receipt : Aug. 31, 2020
Date of Test : Sep. 02, 2020 ~ Oct. 20, 2020
Issued Date : Nov. 10, 2020
Report Version : R00
Test Sample : Engineering Sample No.: DG2020090140 for conducted, DG2020090141 for radiated.
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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BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

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.	Nov. 10, 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	Judgment	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	NOTE (2)
15.407(c)	Automatically Discontinue Transmission	-----	PASS	NOTE (3)

Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.
- (3) 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.
- (4) 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.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

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. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150kHz ~ 30MHz	2.68

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9kHz ~ 30MHz	V	3.79
		9kHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.26
		30MHz ~ 200MHz	H	3.38
		200MHz ~ 1,000MHz	V	3.98
		200MHz ~ 1,000MHz	H	3.94
		1GHz ~ 6GHz	-	4.58
		6GHz ~ 18GHz	-	5.18
		18GHz ~ 26.5GHz	-	3.62
		26.5GHz ~ 40GHz	-	4.00

C. Other Measurement:

Test Item	Uncertainty
Spectrum Bandwidth	±3.8 %
Maximum Output Power	±0.95 dB
Power Spectral Density	±0.86 dB
Frequency Stability	±0.16 dB
Temperature	±0.08 °C
Time	±0.58 %
Supply voltages	±0.3 %

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	25°C	53%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-9K-30MHz	25°C	60%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-30 MHz to 1GHz	26°C	52%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-Above 1000 MHz	24°C	60%	AC 120V/60Hz	Kwok Guo
Spectrum Bandwidth	26°C	48%	AC 120V/60Hz	Hayden Chen
Maximum Output Power	26°C	48%	AC 120V/60Hz	Evan Yang
Power Spectral Density	26°C	48%	AC 120V/60Hz	Hayden Chen
Frequency Stability	Normal & Extreme	48%	Normal & Extreme	Hayden Chen

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	AX1800 Dual-Band Wi-Fi 6 Router
Brand Name	tp-link
Test Model	Archer AX20
Series Model	Archer AX21, Archer AX1800
Model Difference(s)	1# Only different in model name between model Archer AX20 and model Archer AX1800. 2# The model name and shell are different between model Archer AX20 and Archer AX21.
HVIN	Archer AX20V2
Power Source	DC voltage supplied from AC adapter. Model: T120150-2B1
Power Rating	I/P: 100-240V ~50/60Hz 0.6A O/P: 12V $\overline{\overline{=}}$ 1.5A
Operation Frequency Band(s)	UNII-1: 5150 MHz~5250 MHz UNII-3: 5725 MHz~5850 MHz
Modulation Type	IEEE 802.11a/n/ac: OFDM IEEE 802.11ax: OFDMA
Bit Rate of Transmitter	IEEE 802.11a: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps IEEE 802.11ac: up to 866.7 Mbps IEEE 802.11ax: up to 1201 Mbps
Maximum Output Power _UNII-1 Non Beamforming	IEEE 802.11a: 27.70 dBm (0.5888 W) IEEE 802.11ac (VHT20): 28.08 dBm (0.6427 W) IEEE 802.11ac (VHT40): 29.27 dBm (0.8453 W) IEEE 802.11ac (VHT80): 22.29 dBm (0.1694 W) IEEE 802.11ax (HE20): 28.47 dBm (0.7031 W) IEEE 802.11ax (HE40): 29.10 dBm (0.8128 W) IEEE 802.11ax (HE80): 22.42 dBm (0.1746 W)
Maximum Output Power _UNII-3 Non Beamforming	IEEE 802.11a: 29.22 dBm (0.8356 W) IEEE 802.11ac (VHT20): 29.06 dBm (0.8054 W) IEEE 802.11ac (VHT40): 29.10 dBm (0.8128 W) IEEE 802.11ac (VHT80): 26.94 dBm (0.4943 W) IEEE 802.11ax (HE20): 29.11 dBm (0.8147 W) IEEE 802.11ax (HE40): 29.14 dBm (0.8204 W) IEEE 802.11ax (HE80): 26.72 dBm (0.4699 W)
Maximum Output Power _UNII-1 Beamforming	IEEE 802.11ac (VHT20): 27.76 dBm (0.5970 W) IEEE 802.11ac (VHT40): 27.36 dBm (0.5445 W) IEEE 802.11ac (VHT80): 21.14 dBm (0.1300 W) IEEE 802.11ax (HE20): 28.36 dBm (0.6855 W) IEEE 802.11ax (HE40): 27.31 dBm (0.5383 W) IEEE 802.11ax (HE80): 21.06 dBm (0.1276 W)
Maximum Output Power _UNII-3 Beamforming	IEEE 802.11ac (VHT20): 28.76 dBm (0.7516 W) IEEE 802.11ac (VHT40): 28.77 dBm (0.7534 W) IEEE 802.11ac (VHT80): 26.42 dBm (0.4385 W) IEEE 802.11ax (HE20): 28.79 dBm (0.7568 W) IEEE 802.11ax (HE40): 28.92 dBm (0.7798 W) IEEE 802.11ax (HE80): 25.97 dBm (0.3954 W)

Note:

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

2. Channel List:

IEEE 802.11a IEEE 802.11n (HT20) IEEE 802.11ac (VHT20) IEEE 802.11ax (HE20)		IEEE 802.11n (HT40) IEEE 802.11ac (VHT40) IEEE 802.11ax (HE40)		IEEE 802.11ac (VHT80) IEEE 802.11ax (HE80)	
UNII-1		UNII-1		UNII-1	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

IEEE 802.11a IEEE 802.11n (HT20) IEEE 802.11ac (VHT20) IEEE 802.11ax (HE20)		IEEE 802.11n (HT40) IEEE 802.11ac (VHT40) IEEE 802.11ax (HE40)		IEEE 802.11ac (VHT80) IEEE 802.11ax (HE80)	
UNII-3		UNII-3		UNII-3	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

3. RU Configuration:

IEEE 802.11ax (HE20)	Resource Unit	242 Tone(20M)
	Specific Resource Unit	61
IEEE 802.11ax (HE40)	Resource Unit	484 Tone(40M)
	Specific Resource Unit	65
IEEE 802.11ax (HE80)	Resource Unit	996 Tone(80M)
	Specific Resource Unit	67

Remark: IEEE 802.11ax mode only supports the highest tone, so the highest tone was evaluated and measured inside report.

4. Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Note
1	tp-link	3101503061	Dipole	I-PEX	2.17	UNII-1
2	tp-link	3101502648	Dipole	I-PEX	2.17	
1	tp-link	3101503061	Dipole	I-PEX	2.94	UNII-3
2	tp-link	3101502648	Dipole	I-PEX	2.94	

Note:

- This EUT supports CDD, and all antennas have the same gain, Directional gain = $G_{ANT} + \text{Array Gain}$. For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the UNII-1 Directional gain=2.17, the UNII-3 Directional gain=2.94.
For power spectral density measurements, $N_{ANT}=2$, $N_{SS} = 1$.
So the UNII-1 Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})\text{dBi}$
= $2.17 + 10\log(2/1)\text{dBi} = 5.18$, the UNII-3 Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})\text{dBi}$
= $2.94 + 10\log(2/1)\text{dBi} = 5.95$.
- Beamforming Gain: 3 dB. So the UNII-1 Directional gain = $3 + 2.17 = 5.17$, the UNII-3 Directional gain = $3 + 2.94 = 5.94$.

5. Table for Antenna Configuration:
For Non Beamforming:

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)
IEEE 802.11ax (HE20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax (HE40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax (HE80)		V (Ant. 1 + Ant. 2)

For Beamforming:

Operating Mode	TX Mode	2TX
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)
IEEE 802.11ax (HE20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax (HE40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ax (HE80)		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 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 AX (HE20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 6	TX AX (HE40) Mode / CH38, CH46 (UNII-1)
Mode 7	TX AX (HE80) Mode / CH42 (UNII-1)
Mode 8	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 9	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 10	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 11	TX AC (VHT80) Mode / CH155 (UNII-3)
Mode 12	TX AX (HE20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 13	TX AX (HE40) Mode / CH151,CH159 (UNII-3)
Mode 14	TX AX (HE80) Mode / CH155 (UNII-3)
Mode 15	TX AC(VHT40) Mode / CH46 (UNII-1)

Following mode(s) was (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 15	TX AC(VHT40) Mode / CH46 (UNII-1)

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 15	TX AC(VHT40) Mode / CH46 (UNII-1)

Radiated emissions test - Above 1GHz_Non Beamforming	
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 AX (HE20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 6	TX AX (HE40) Mode / CH38, CH46 (UNII-1)
Mode 7	TX AX (HE80) Mode / CH42 (UNII-1)
Mode 8	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 9	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 10	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 11	TX AC (VHT80) Mode / CH155 (UNII-3)
Mode 12	TX AX (HE20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 13	TX AX (HE40) Mode / CH151,CH159 (UNII-3)
Mode 14	TX AX (HE80) Mode / CH155 (UNII-3)

Maximum Output Power_Non Beamforming	
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 AX (HE20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 6	TX AX (HE40) Mode / CH38, CH46 (UNII-1)
Mode 7	TX AX (HE80) Mode / CH42 (UNII-1)
Mode 8	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 9	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 10	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 11	TX AC (VHT80) Mode / CH155 (UNII-3)
Mode 12	TX AX (HE20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 13	TX AX (HE40) Mode / CH151,CH159 (UNII-3)
Mode 14	TX AX (HE80) Mode / CH155 (UNII-3)

Maximum Output Power_Beamforming	
Final Test Mode	Description
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 AX (HE20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 6	TX AX (HE40) Mode / CH38, CH46 (UNII-1)
Mode 7	TX AX (HE80) Mode / CH42 (UNII-1)
Mode 9	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 10	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 11	TX AC (VHT80) Mode / CH155 (UNII-3)
Mode 12	TX AX (HE20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 13	TX AX (HE40) Mode / CH151,CH159 (UNII-3)
Mode 14	TX AX (HE80) Mode / CH155 (UNII-3)

Other Conducted test_Non Beamforming	
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 AX (HE20) Mode / CH36, CH40, CH48 (UNII-1)
Mode 6	TX AX (HE40) Mode / CH38, CH46 (UNII-1)
Mode 7	TX AX (HE80) Mode / CH42 (UNII-1)
Mode 8	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 9	TX AC (VHT20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 10	TX AC (VHT40) Mode / CH151,CH159 (UNII-3)
Mode 11	TX AC (VHT80) Mode / CH155 (UNII-3)
Mode 12	TX AX (HE20) Mode / CH149,CH157,CH165 (UNII-3)
Mode 13	TX AX (HE40) Mode / CH151,CH159 (UNII-3)
Mode 14	TX AX (HE80) Mode / CH155 (UNII-3)

Note:

- (1) For radiated emission below 1 GHz test, the IEEE 802.11ac40 channel 46 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.
- (3) For Radiated emissions above 1GHz test, the vertical and horizontal polarities have tested, the worst case is vertical and recorded.
- (4) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
- (5) The measurements for Output Power were tested, the Non Beamforming and Beamforming are recorded in the report. The worst case was Non Beamforming and only worst case were documented for other test items.
- (6) VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

2.3 PARAMETERS OF TEST SOFTWARE

Non Beamforming

UNII-1			
Test Software	accessMTool V3.0.0.5		
Test Frequency (MHz)	5180	5200	5240
IEEE 802.11a	83	83	84
IEEE 802.11ac (VHT20)	84	85	85
IEEE 802.11ax (HE20)	82	84	85
Test Frequency (MHz)	5190	5230	
IEEE 802.11ac (VHT40)	68	91	
IEEE 802.11ax (HE40)	67	90	
Test Frequency (MHz)	5210		
IEEE 802.11ac (VHT80)	65		
IEEE 802.11ax (HE80)	64		

UNII-3			
Test Software	accessMTool V3.0.0.5		
Test Frequency (MHz)	5745	5785	5825
IEEE 802.11a	94	94	94
IEEE 802.11ac (VHT20)	93	93	93
IEEE 802.11ax (HE20)	92	93	93
Test Frequency (MHz)	5755	5795	
IEEE 802.11ac (VHT40)	93	93	
IEEE 802.11ax (HE40)	91	91	
Test Frequency (MHz)	5775		
IEEE 802.11ac (VHT80)	87		
IEEE 802.11ax (HE80)	87		

Beamforming

UNII-1			
Test Software	accessMTool V3.0.0.5		
Test Frequency (MHz)	5180	5200	5240
IEEE 802.11ac (VHT20)	76	85	85
IEEE 802.11ax (HE20)	72	84	85
Test Frequency (MHz)	5190	5230	
IEEE 802.11ac (VHT40)	58	84	
IEEE 802.11ax (HE40)	58	83	
Test Frequency (MHz)	5210		
IEEE 802.11ac (VHT80)	58		
IEEE 802.11ax (HE80)	58		

UNII-3			
Test Software	accessMTool V3.0.0.5		
Test Frequency (MHz)	5745	5785	5825
IEEE 802.11ac (VHT20)	92	92	92
IEEE 802.11ax (HE20)	91	92	92
Test Frequency (MHz)	5755	5795	
IEEE 802.11ac (VHT40)	92	92	
IEEE 802.11ax (HE40)	90	90	
Test Frequency (MHz)	5775		
IEEE 802.11ac (VHT80)	84		
IEEE 802.11ax (HE80)	82		

2.4 DUTY CYCLE

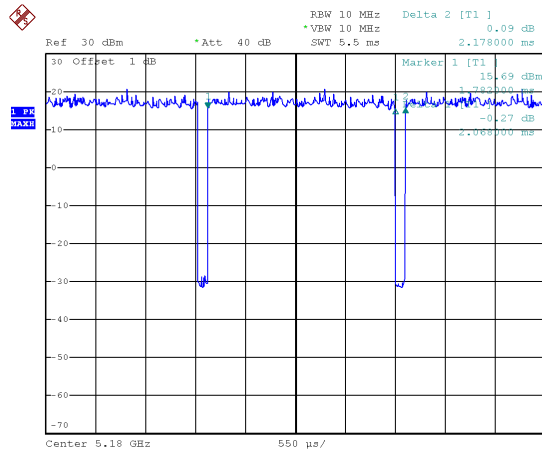
If duty cycle is $\geq 98\%$, duty factor is not required.

If duty cycle is $< 98\%$, duty factor shall be considered.

The output power = measured power + duty factor.

The power spectral density = measured power spectral density + duty factor.

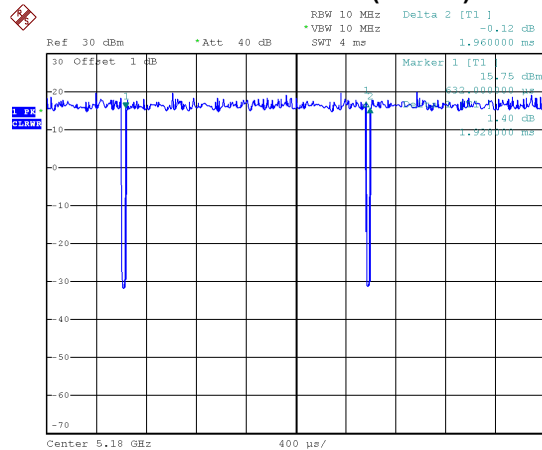
IEEE 802.11a



Date: 1.JAN.2003 02:00:52

Duty cycle = 2.068 ms / 2.178 ms = 94.95%
 Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.23$

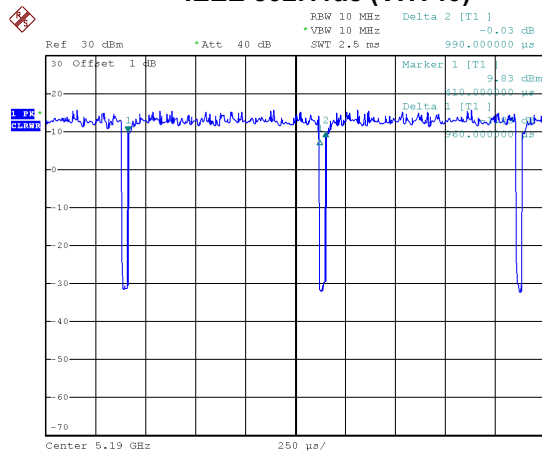
IEEE 802.11ac (VHT20)



Date: 1.JAN.2003 02:01:54

Duty cycle = 1.928 ms / 1.960 ms = 98.37%
 Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.00$

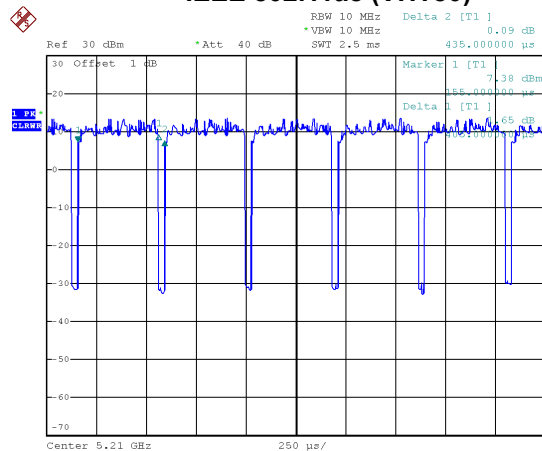
IEEE 802.11ac (VHT40)



Date: 1.JAN.2003 02:03:47

Duty cycle = 0.960 ms / 0.990 ms = 96.97%
 Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.13$

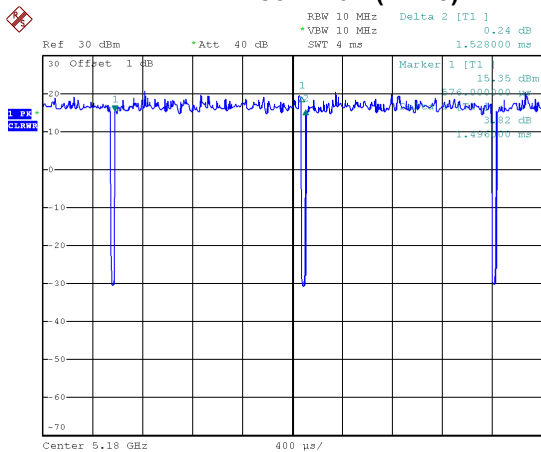
IEEE 802.11ac (VHT80)



Date: 1.JAN.2003 02:04:04

Duty cycle = 0.405 ms / 0.435 ms = 93.10%
 Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.31$

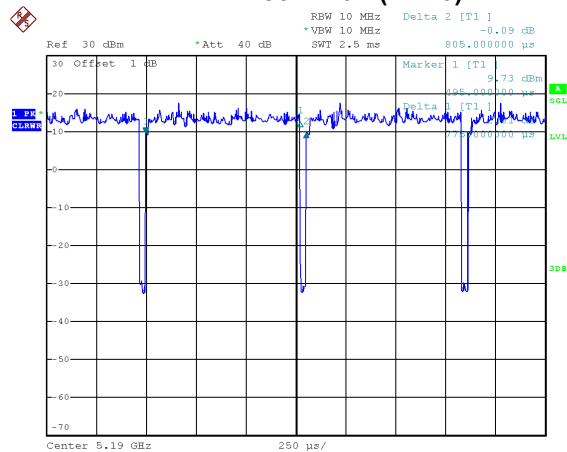
IEEE 802.11ax (HE20)



Date: 1.JAN.2003 02:07:59

Duty cycle = 1.496 ms / 1.528 ms = 97.91%
Duty Factor = 10 log(1 / Duty cycle) = 0.09

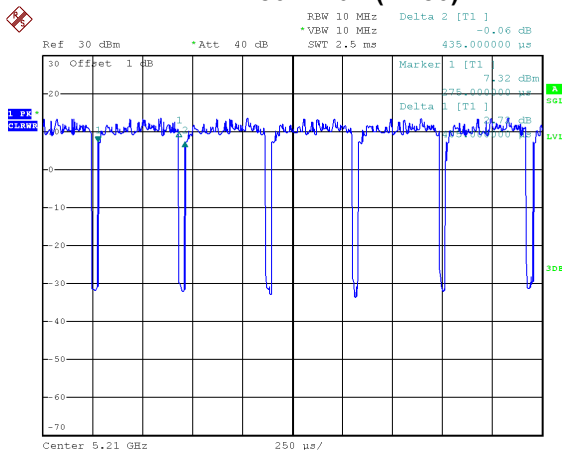
IEEE 802.11ax (HE40)



Date: 1.JAN.2003 02:06:09

Duty cycle = 0.775 ms / 0.805 ms = 96.27%
Duty Factor = 10 log(1 / Duty cycle) = 0.16

IEEE 802.11ax (HE80)



Date: 1.JAN.2003 02:06:20

Duty cycle = 0.405 ms / 0.435 ms = 93.10%
Duty Factor = 10 log(1 / Duty cycle) = 0.31

NOTE:

For IEEE 802.11a, IEEE 802.11ac (VHT20) and IEEE 802.11ax (HE20):

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

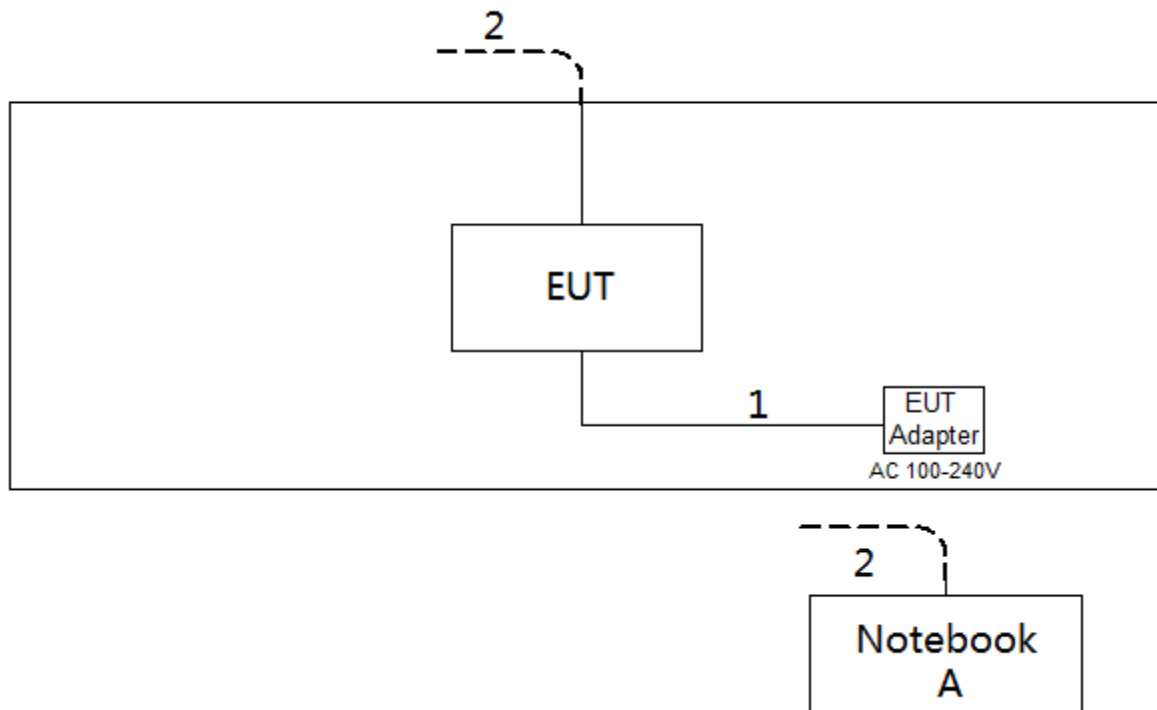
For IEEE 802.11ac (VHT40) and IEEE 802.11ax (HE40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2 kHz (Duty cycle < 98%).

For IEEE 802.11ac (VHT80) and IEEE 802.11ax (HE80):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 kHz (Duty cycle < 98%).

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.6 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
A	Notebook	Dell	Inspiron 15-7559	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m
2	RJ45 Cable	NO	NO	10m

3. AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 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

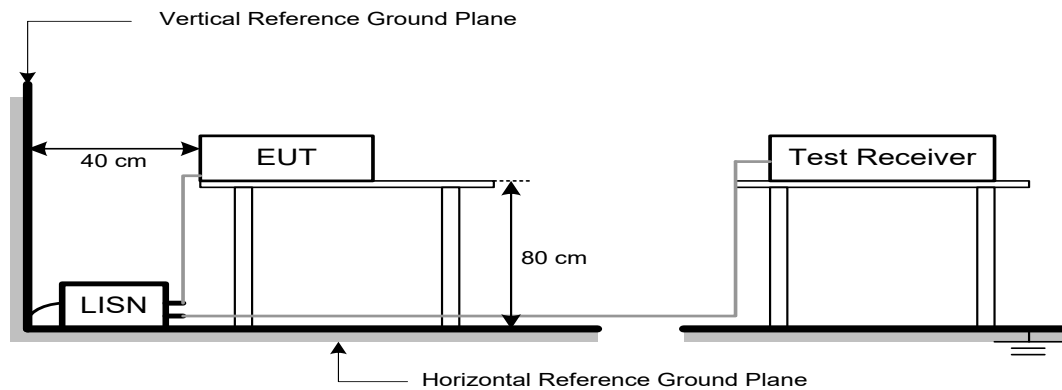
3.2 TEST PROCEDURE

- 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 (dBμV/m)
5150-5250	-27	68.3
5725-5850	-27 NOTE (2)	68.3
	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:

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

- (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

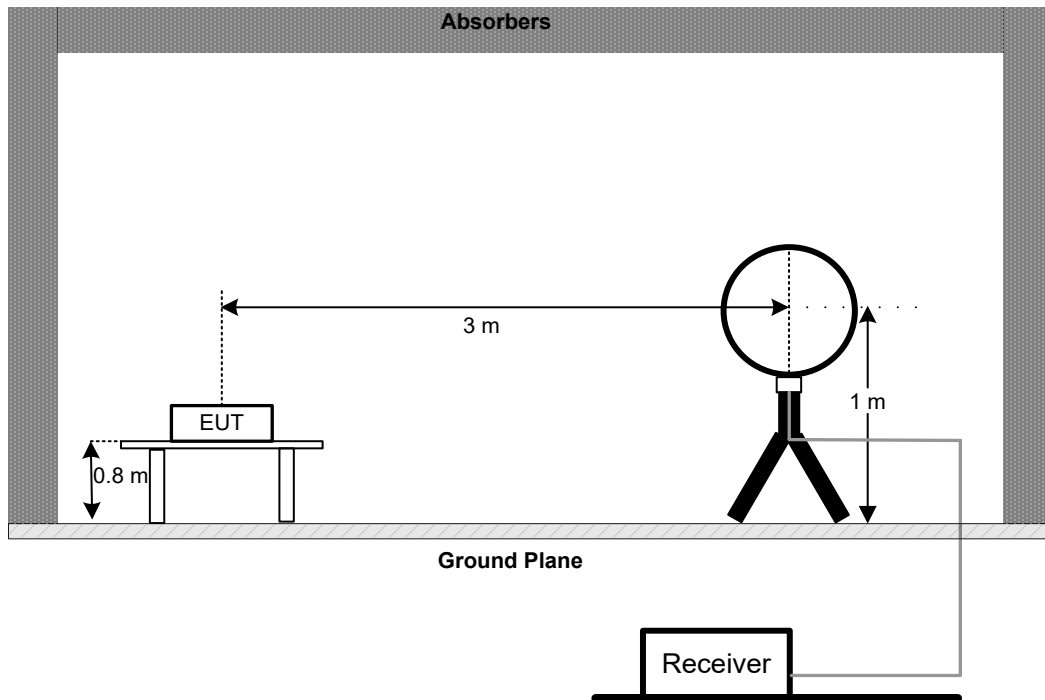
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance 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

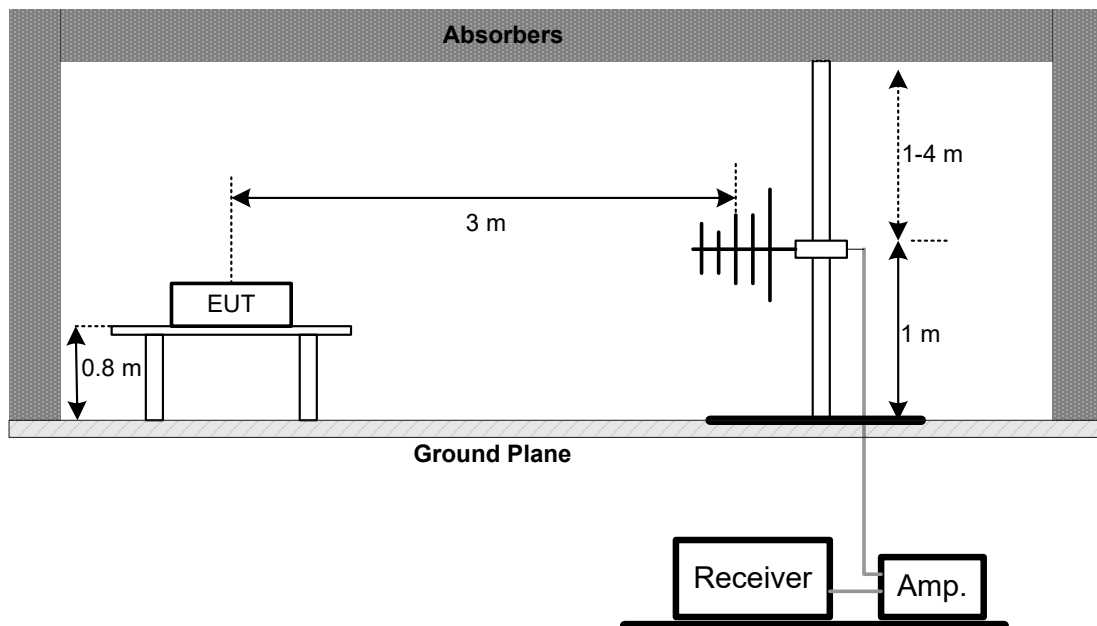
No deviation

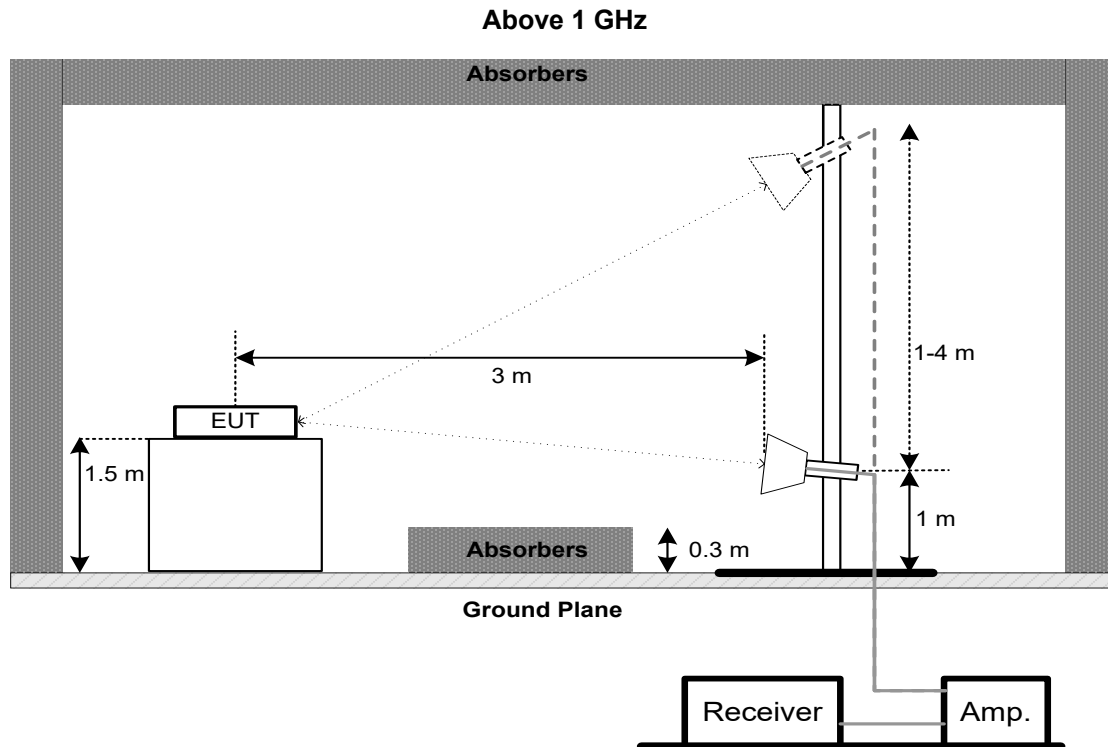
4.4 TEST SETUP

9 kHz to 30 MHz



30 MHz to 1 GHz





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) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (2) 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)	26 dB Bandwidth	-	5150-5250
15.407(e)	6 dB Bandwidth	Minimum 500 kHz	5725-5850

5.2 TEST PROCEDURE

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

- b. Spectrum Setting:

For UNII-1:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 26 dB Bandwidth
RBW	300 kHz (Bandwidth 20 MHz and 40 MHz) 1 MHz (Bandwidth 80 MHz)
VBW	1 MHz (Bandwidth 20 MHz and 40 MHz) 3 MHz (Bandwidth 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

- c. Measured the spectrum width with power higher than 26 dB / 6 dB below carrier.

5.3 DEVIATION FROM STANDARD

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.

6. MAXIMUM OUTPUT POWER TEST

6.1 LIMIT

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

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 Client device: 11 dBm/MHz	5150-5250
		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:

For UNII-1:

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

For UNII-3:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1 MHz.
VBW	≥ 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 100kHz and VBW at 300kHz if the spectrum analyzer does not have 500 kHz RBW.
- The value measured with RBW=100kHz is to be added with $10\log(500 \text{ kHz}/100\text{kHz})$ which is +7 dB. During the test, the offset has added 7 dB, For example, if the offset value is +14dB , then the converted value will be $14+7=21\text{dB}$ using RBW=100kHz.

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
			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:

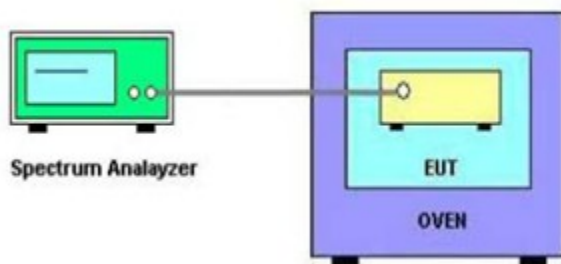
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

- 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	EMI Test Receiver	R&S	ESCI	100382	Feb. 28, 2021
2	LISN	EMCO	3816/2	52765	Mar. 01, 2021
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Feb. 28, 2021
4	50Ω Terminator	SHX	TF5-3	15041305	Mar. 01, 2021
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	Cable	N/A	RG223	12m	Mar. 10, 2021
7	643 Shield Room	ETS	6*4*3m	N/A	N/A

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	EM	EM-6876-1	230	Apr. 16, 2021
2	Cable	N/A	RG 213/U	N/A	May 29, 2021
3	EMI Test Receiver	R&S	ESCI	100895	Feb. 28, 2021
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2021
2*	Amplifier	HP	8447D	2944A09673	Aug. 11, 2021
3	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 22, 2021
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	May 12, 2021
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jul. 07, 2021
3	Amplifier	Agilent	8449B	3008A02333	Mar. 01, 2021
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 07, 2021
5	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	N/A	EMC104-SM-SM-6 000	N/A	May 09, 2021
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
10	Band Reject Filter	Micro-Tronics	BRC50705-01	10	Feb. 28, 2021
11	Band Reject Filter	Micro-Tronics	BRC50703-01	7	Feb. 28, 2021
12	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 25, 2021
2	RF Cable	Tongkaichuan	N/A	N/A	N/A
3	DC Block	Mini	N/A	N/A	N/A

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 01, 2021
2	RF Cable	Tongkaichuan	N/A	N/A	N/A
3	DC Block	Mini	N/A	N/A	N/A

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 25, 2021
2	RF Cable	Tongkaichuan	N/A	N/A	N/A
3	DC Block	Mini	N/A	N/A	N/A

Frequency Stability					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 25, 2021
2	Precision Oven Tester	CEPREI	CEEC-M64T-40	15-008	Feb. 28, 2021
3	RF Cable	Tongkaichuan	N/A	N/A	N/A
4	DC Block	Mini	N/A	N/A	N/A

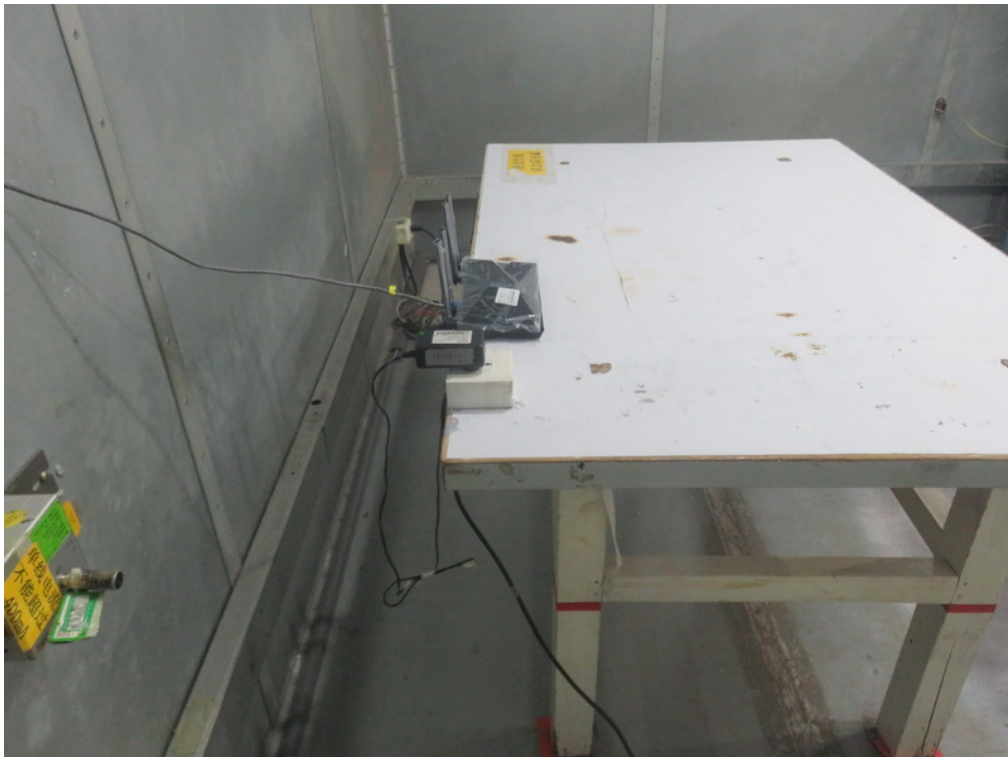
Remark: "N/A" denotes no model name, serial no. or calibration specified.

"*" calibration period of equipment list is three year.

Except * item, all calibration period of equipment list is one year.

10. EUT TEST PHOTOS

AC Power Line Conducted Emissions Test Photos

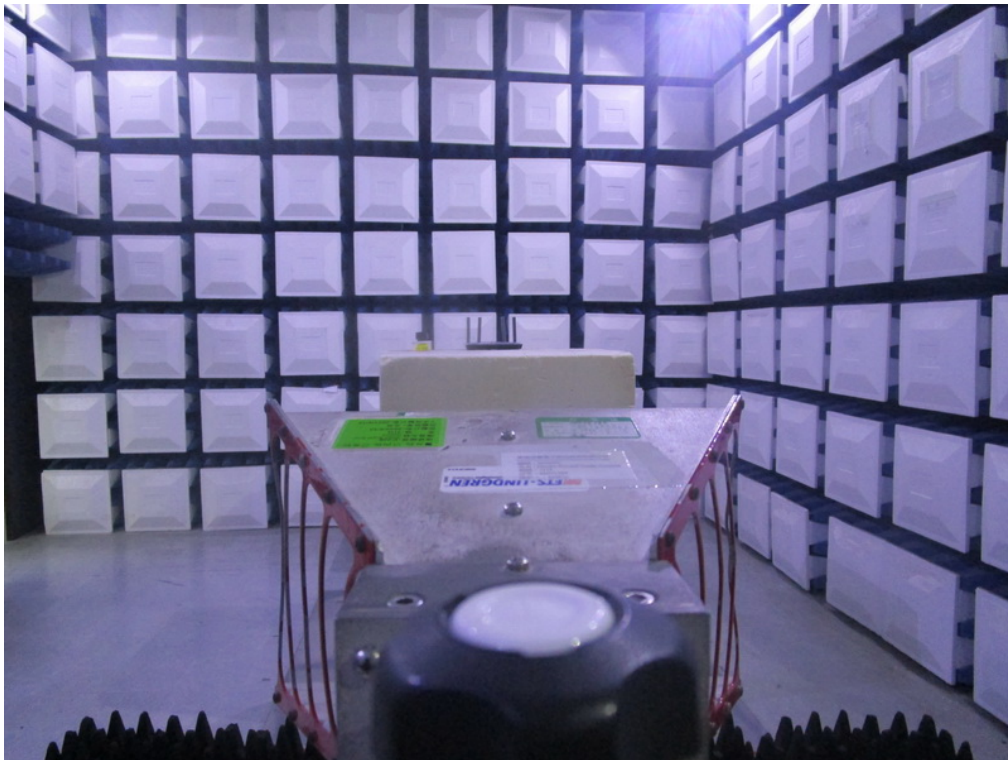


Radiated Emissions Test Photos**9 kHz to 30 MHz**

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

Radiated Emissions Test Photos

Above 1 GHz



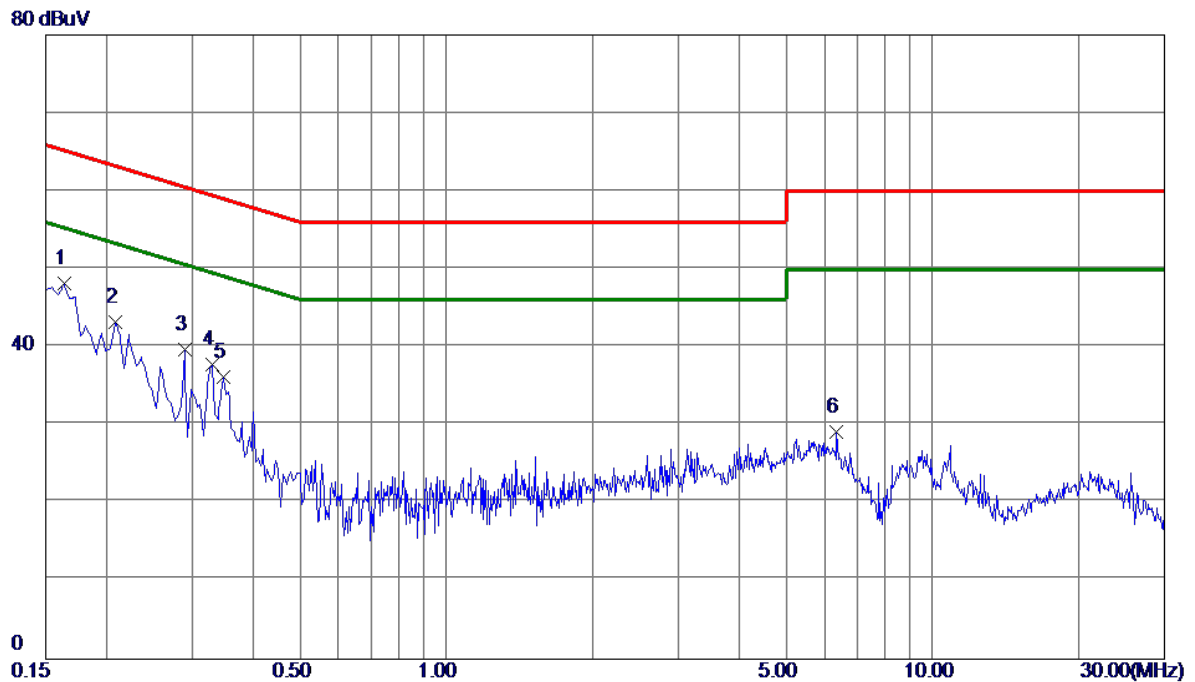
Conducted Test Photos



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode: TX AC40 MODE CHANNEL 46

Line



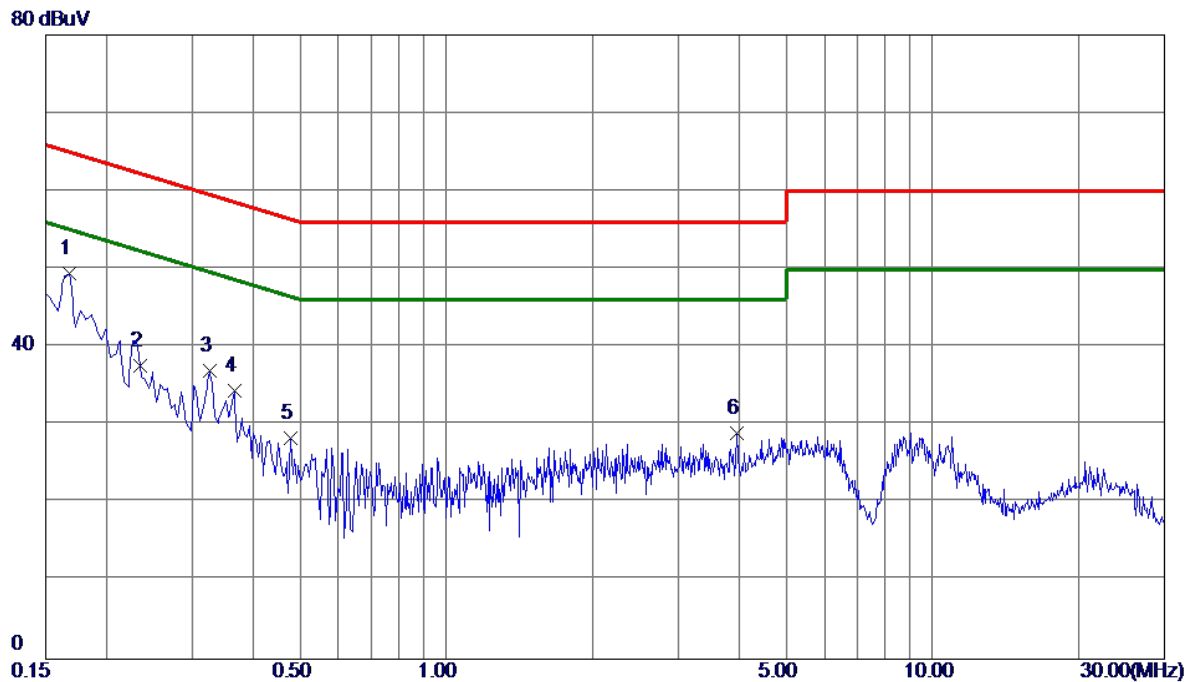
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1635	38.36	9.77	48.13	65.28	-17.15	Peak	
2	0.2085	33.30	9.90	43.20	63.26	-20.06	Peak	
3	0.2895	29.72	9.89	39.61	60.54	-20.93	Peak	
4	0.3300	27.83	9.90	37.73	59.45	-21.72	Peak	
5	0.3480	26.22	9.91	36.13	59.01	-22.88	Peak	
6	6.3555	18.65	10.43	29.08	60.00	-30.92	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.
- (3) The test result has included the cable loss.

Test Mode: TX AC40 MODE CHANNEL 46

Neutral



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1680	39.51	9.88	49.39	65.06	-15.67	Peak	
2	0.2341	27.66	9.99	37.65	62.30	-24.65	Peak	
3	0.3255	26.94	10.04	36.98	59.57	-22.59	Peak	
4	0.3660	24.39	10.06	34.45	58.59	-24.14	Peak	
5	0.4785	18.23	10.13	28.36	56.37	-28.01	Peak	
6	3.9525	18.36	10.59	28.95	56.00	-27.05	Peak	

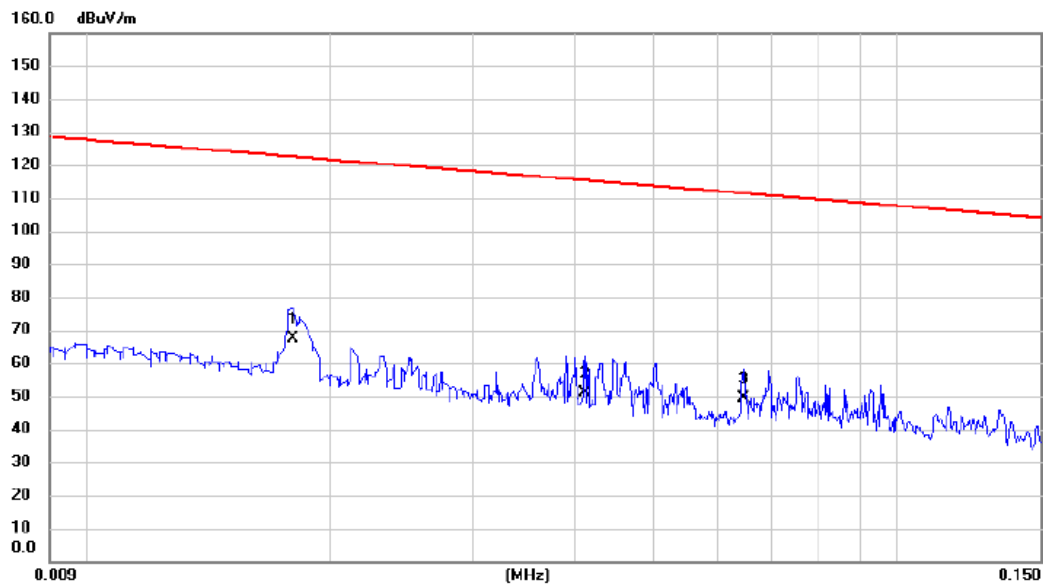
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.
- (3) The test result has included the cable loss.

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Test Mode:	TX AC40 MODE CHANNEL 46
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Ant 0°



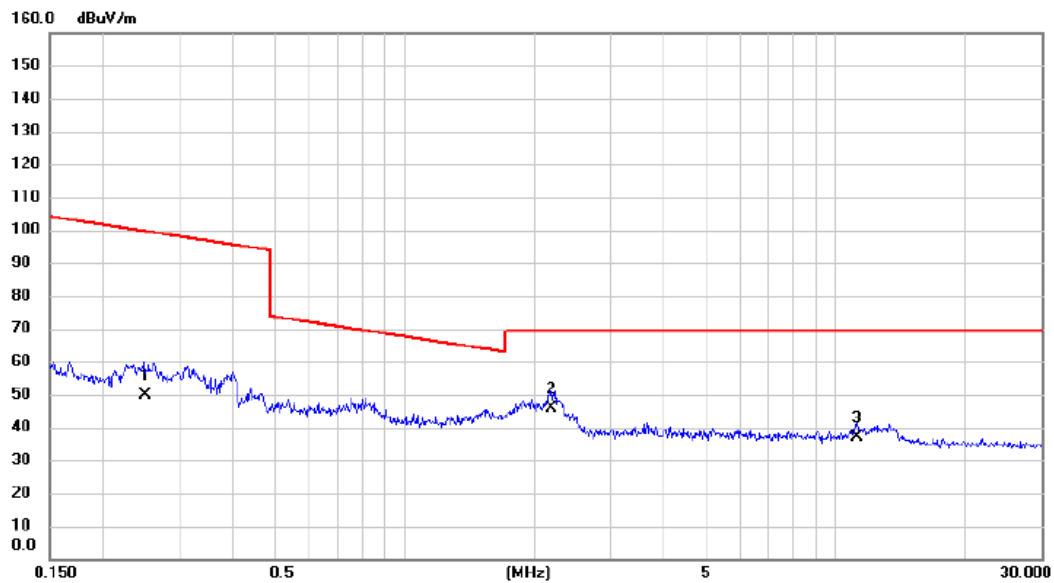
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0180	53.47	13.84	67.31	122.50	-55.19	AVG	
2		0.0412	38.41	12.65	51.06	115.31	-64.25	AVG	
3		0.0646	36.82	12.51	49.33	111.40	-62.07	AVG	

REMARKS:

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

Test Mode: TX AC40 MODE CHANNEL 46

Ant 0°



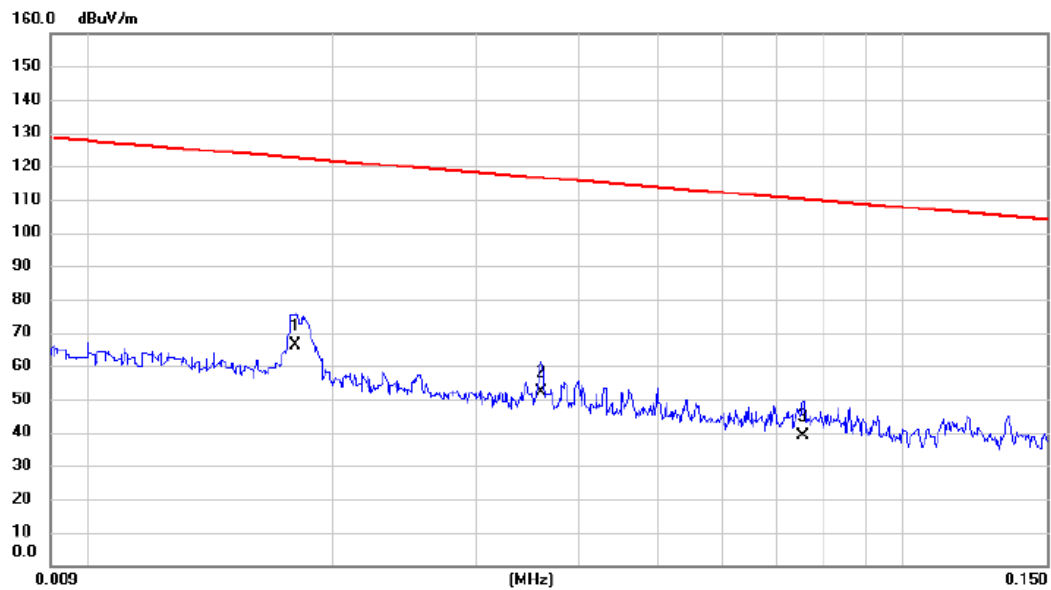
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2495	37.18	12.64	49.82	99.66	-49.84	AVG	
2	*	2.1898	34.43	11.21	45.64	69.54	-23.90	QP	
3		11.1977	25.48	11.51	36.99	69.54	-32.55	QP	

REMARKS:

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

Test Mode: TX AC40 MODE CHANNEL 46

Ant 90°



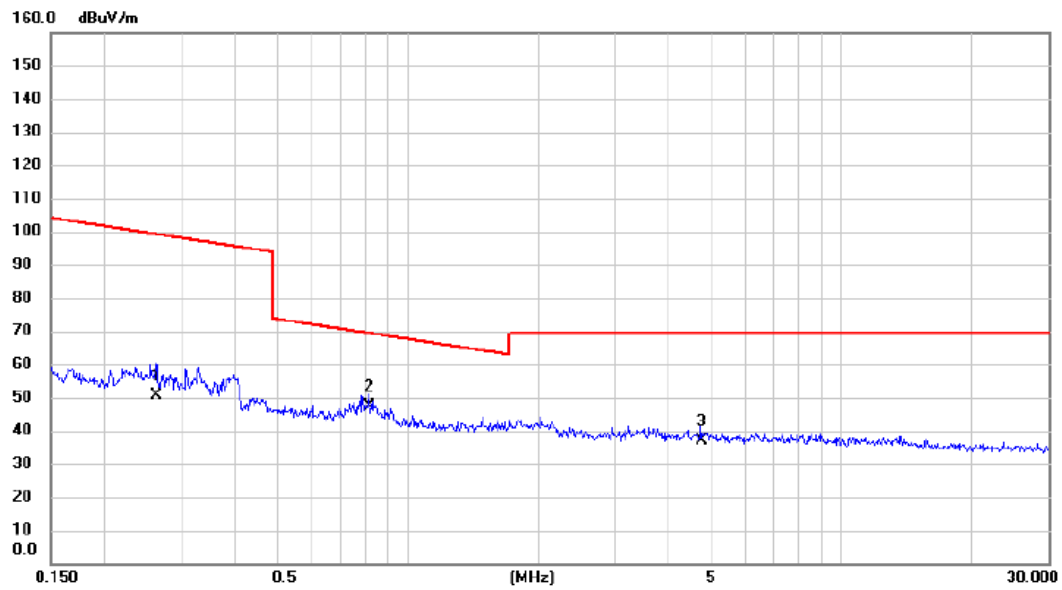
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0180	52.30	13.84	66.14	122.50	-56.36	AVG	
2		0.0360	39.45	12.79	52.24	116.48	-64.24	AVG	
3		0.0755	26.49	12.57	39.06	110.05	-70.99	AVG	

REMARKS:

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

Test Mode: TX AC40 MODE CHANNEL 46

Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2630	38.15	12.60	50.75	99.21	-48.46	AVG	
2	*	0.8131	35.42	11.87	47.29	69.40	-22.11	QP	
3		4.7464	25.78	11.05	36.83	69.54	-32.71	QP	

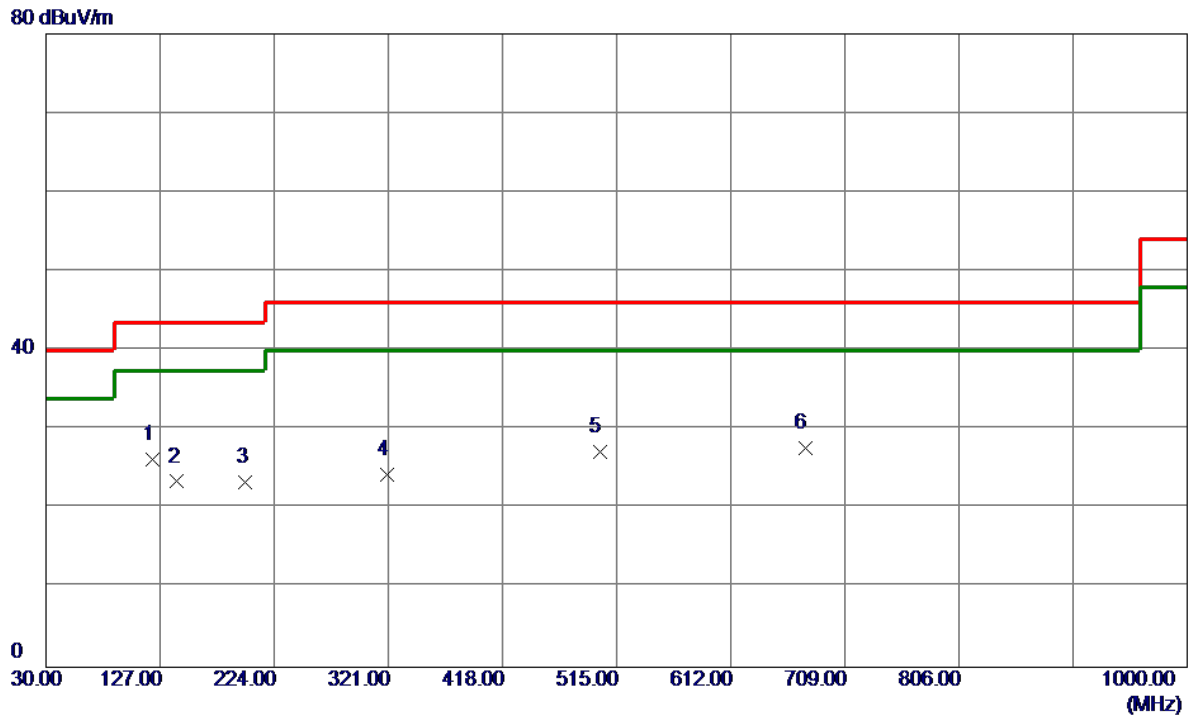
REMARKS:

- (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 AC40 MODE CHANNEL 46

Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	120. 2100	38. 98	-12. 74	26. 24	43. 50	-17. 26	Peak	
2	141. 5500	35. 90	-12. 46	23. 44	43. 50	-20. 06	Peak	
3	199. 7500	38. 22	-14. 79	23. 43	43. 50	-20. 07	Peak	
4	320. 0300	34. 97	-10. 68	24. 29	46. 00	-21. 71	Peak	
5	500. 4500	34. 48	-7. 26	27. 22	46. 00	-18. 78	Peak	
6	675. 0500	31. 63	-3. 92	27. 71	46. 00	-18. 29	Peak	

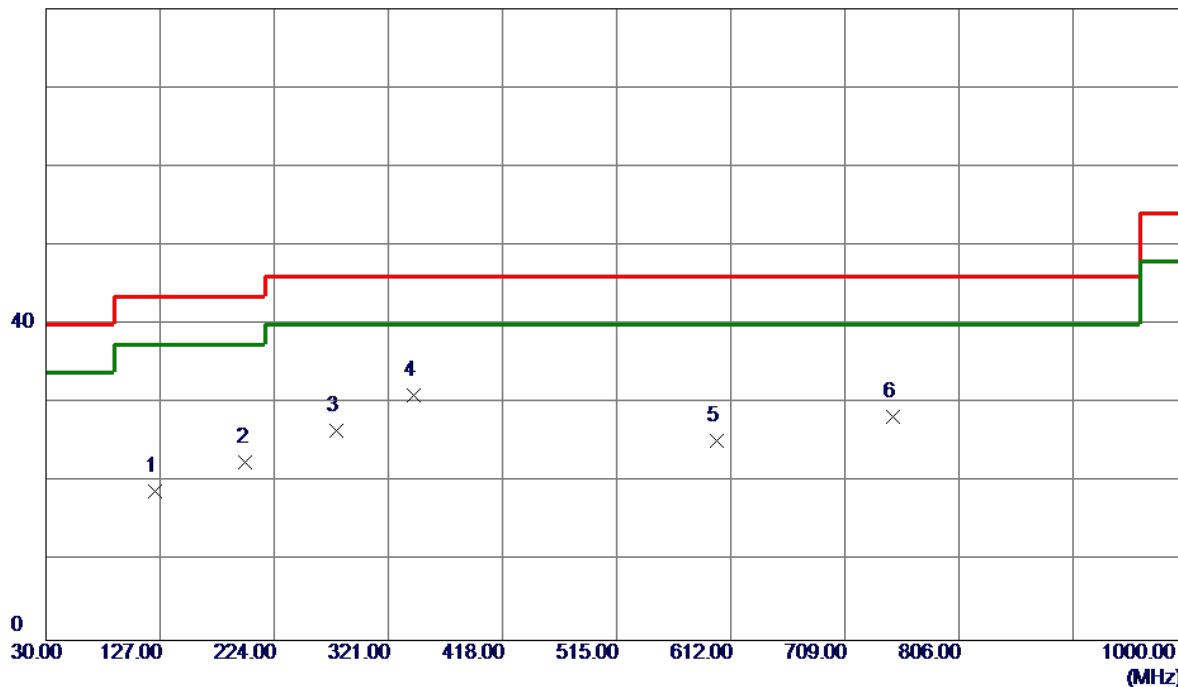
REMARKS:

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

Test Mode:	TX AC40 MODE CHANNEL 46
------------	-------------------------

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	123.1200	31.60	-12.74	18.86	43.50	-24.64	Peak	
2	199.7500	37.38	-14.79	22.59	43.50	-20.91	Peak	
3	276.3800	38.86	-12.34	26.52	46.00	-19.48	Peak	
4 *	342.3400	41.34	-10.33	31.01	46.00	-14.99	Peak	
5	600.3600	30.63	-5.34	25.29	46.00	-20.71	Peak	
6	749.7400	31.54	-3.21	28.33	46.00	-17.67	Peak	

REMARKS:

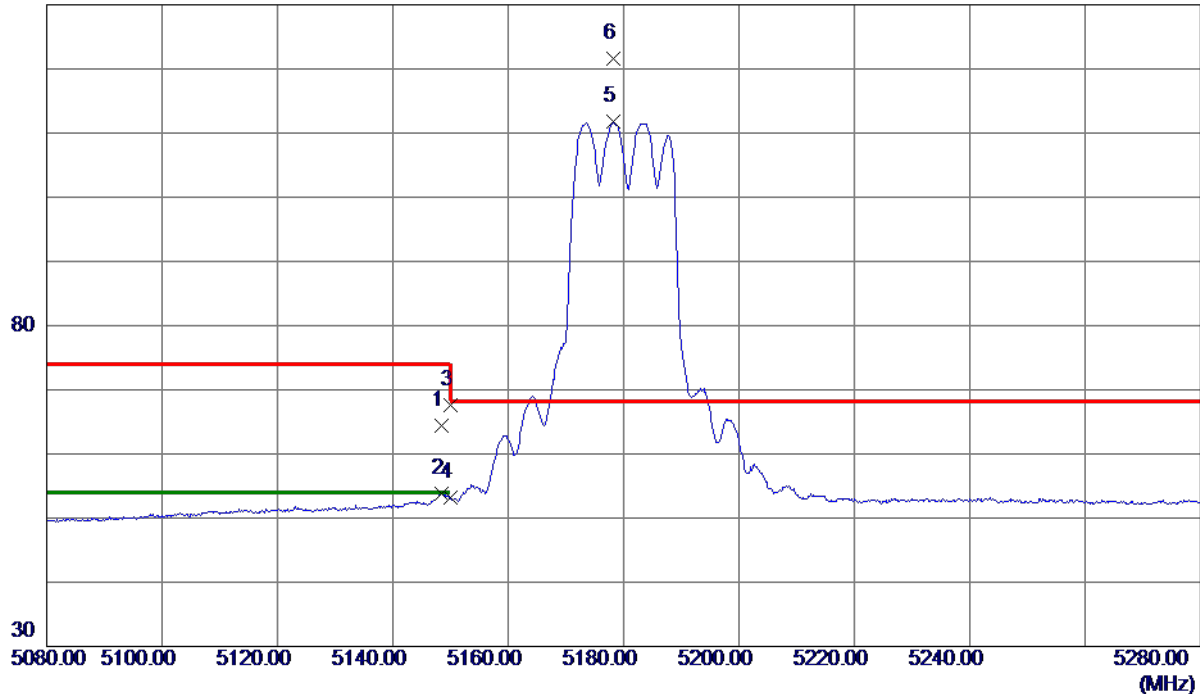
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

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

Vertical

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	5148.4000	45.47	18.94	64.41	74.00	-9.59	Peak	
2	5148.4000	34.90	18.94	53.84	54.00	-0.16	AVG	
3	5150.0000	48.68	18.95	67.63	74.00	-6.37	Peak	
4	5150.0000	34.20	18.95	53.15	54.00	-0.85	AVG	
5	5178.2000	92.70	19.02	111.72	999.00	-887.28	AVG	No Limit
6 *	5178.3000	102.64	19.02	121.66	68.30	53.36	Peak	No Limit

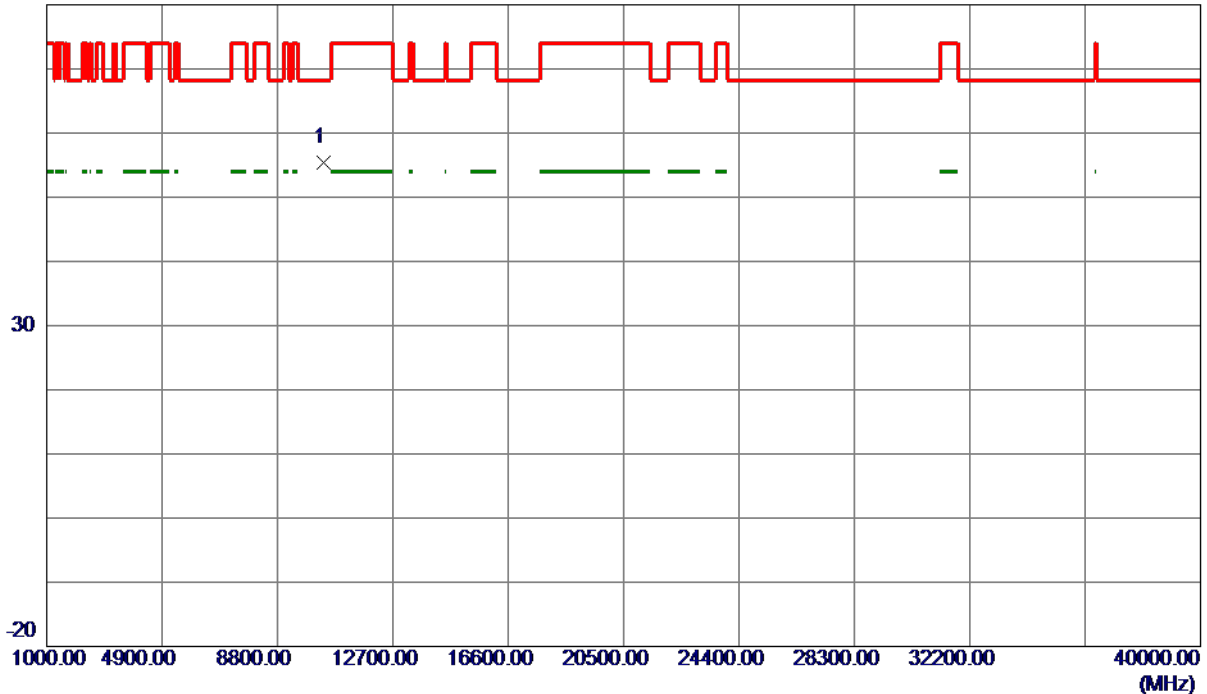
REMARKS:

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

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

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10361.2000	40.30	15.11	55.41	68.30	-12.89	Peak	

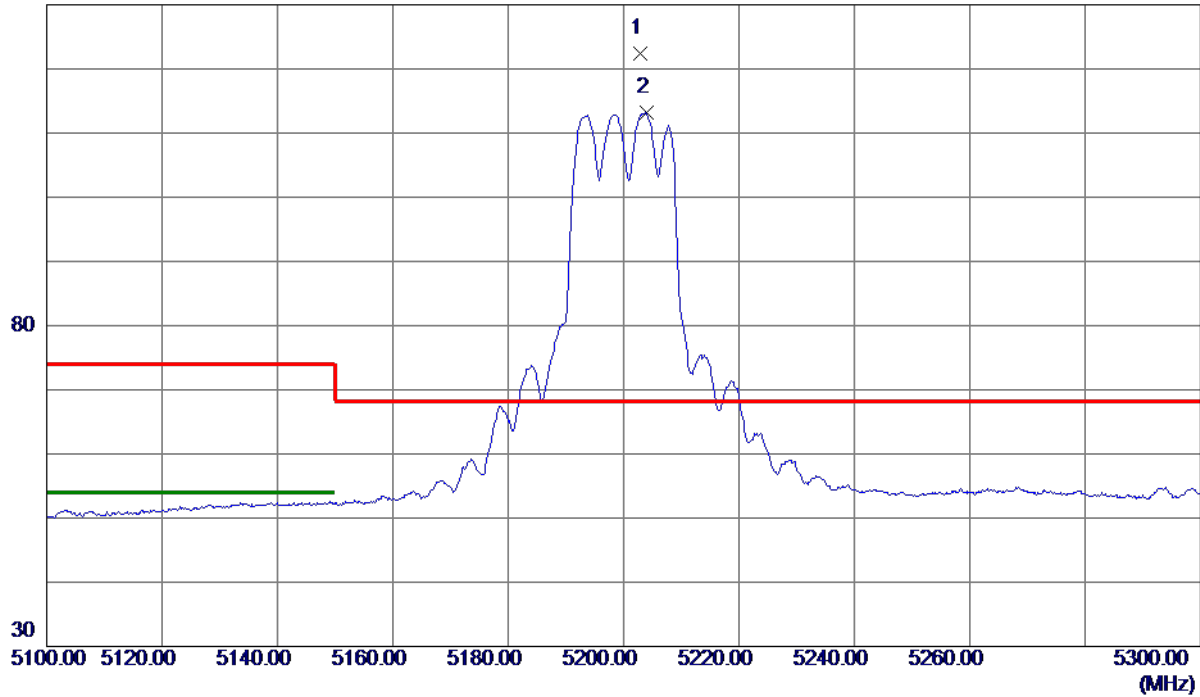
REMARKS:

- (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

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 *	5202.9000	103.39	19.09	122.48	68.30	54.18	Peak	No Limit
2	5204.0000	94.20	19.09	113.29	999.00	-885.71	AVG	No Limit

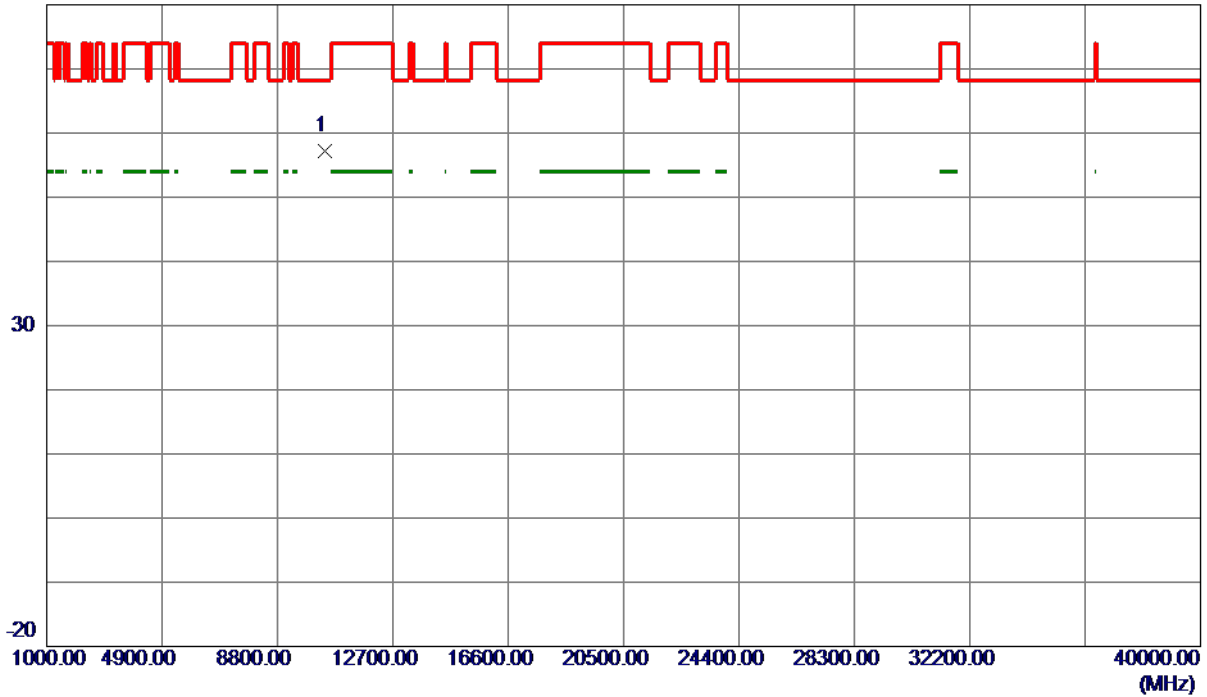
REMARKS:

- (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

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10396.1700	41.98	15.16	57.14	68.30	-11.16	Peak	

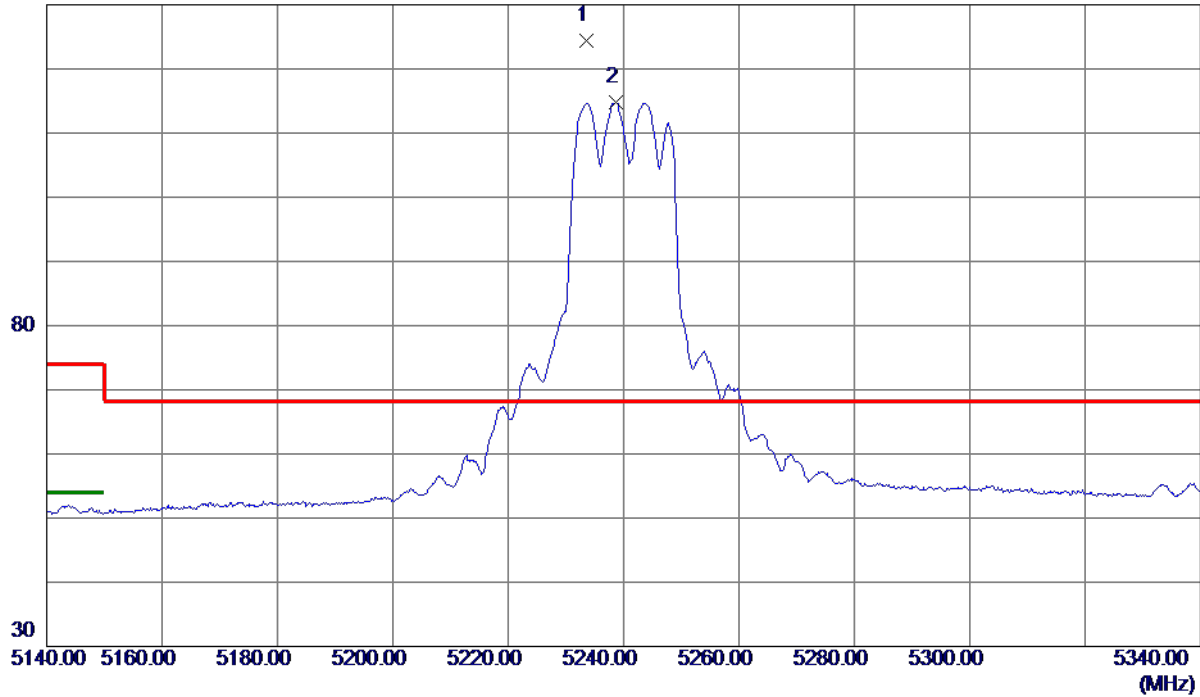
REMARKS:

- (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

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 *	5233.6000	105.23	19.17	124.40	68.30	56.10	Peak	No Limit
2	5238.7000	95.55	19.18	114.73	999.00	-884.27	AVG	No Limit

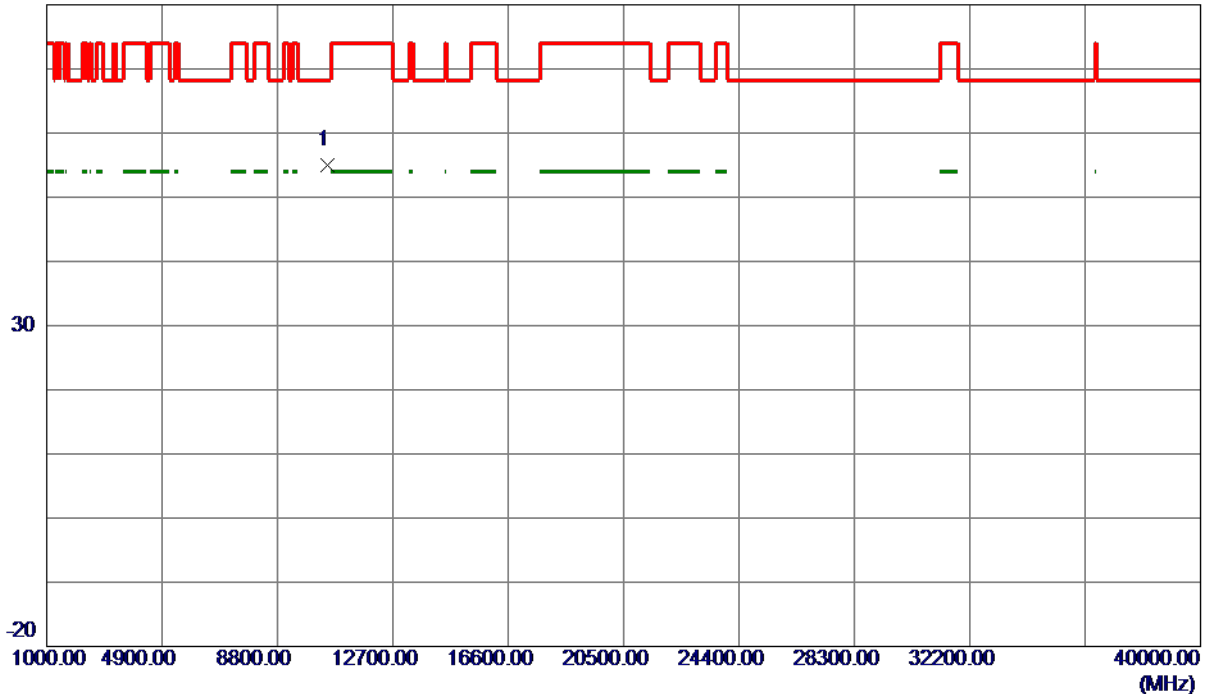
REMARKS:

- (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

Vertical

80 dBuV/m



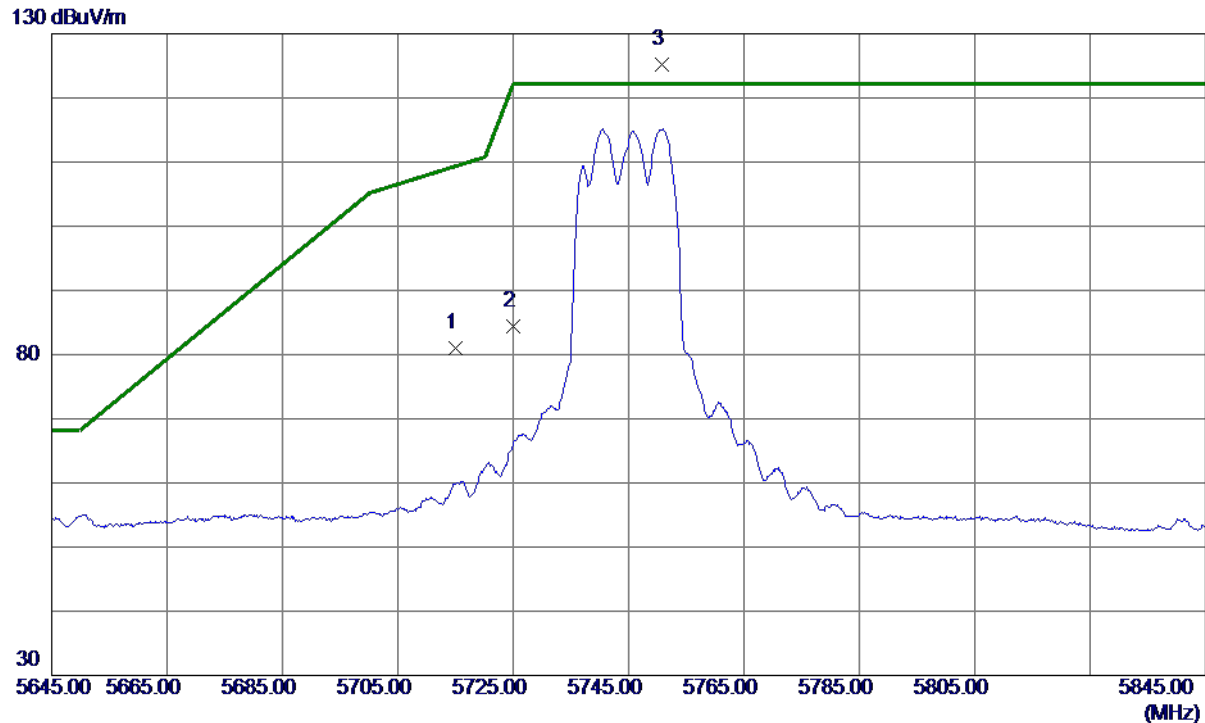
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10476.5500	39.76	15.28	55.04	68.30	-13.26	Peak	

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 dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5715.0000	60.99	20.01	81.00	109.40	-28.40	Peak	
2	5725.0000	64.29	20.02	84.31	122.20	-37.89	Peak	
3 *	5750.7000	105.24	20.04	125.28	122.20	3.08	Peak	No Limit

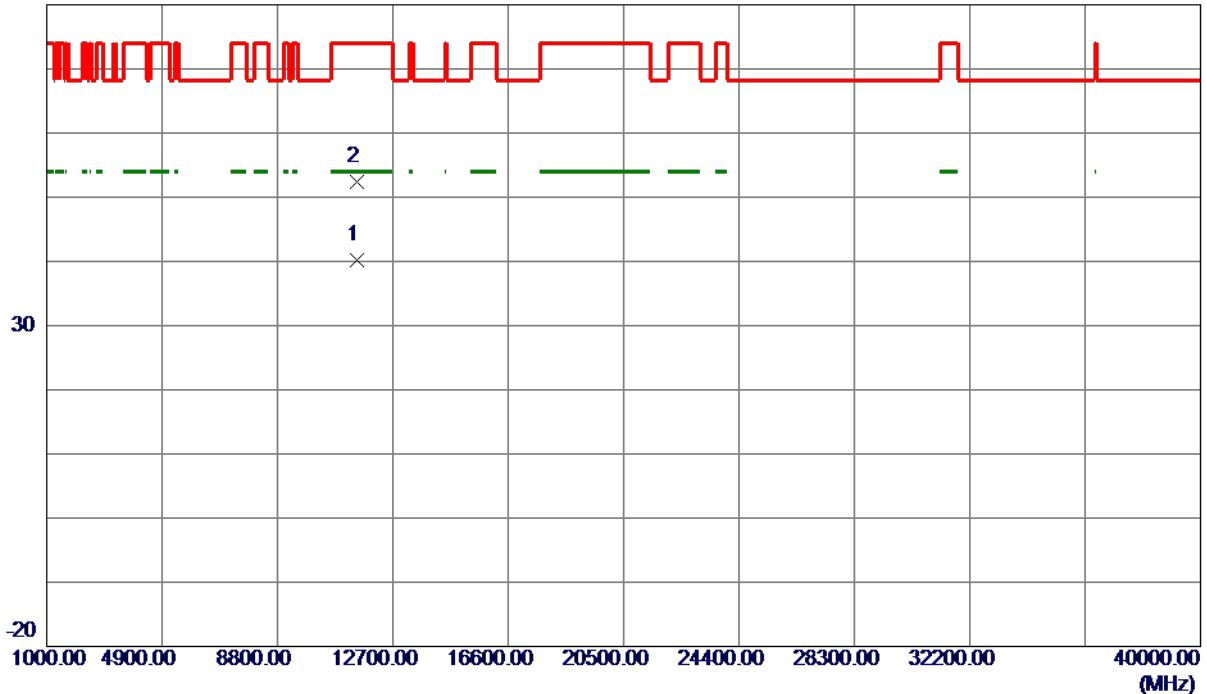
REMARKS:

- (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

80 dBuV/m



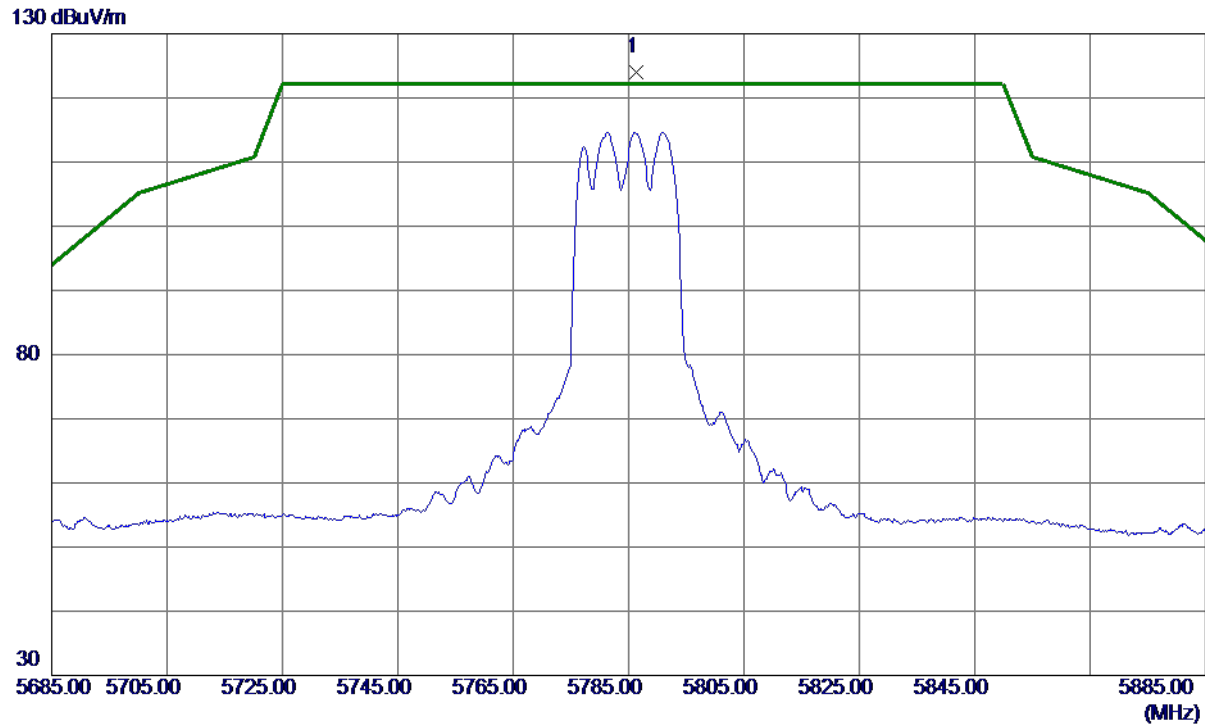
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	11486.3800	22.96	17.15	40.11	54.00	-13.89	AVG	
2	11486.5000	35.16	17.15	52.31	74.00	-21.69	Peak	

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. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5786.3000	103.96	20.06	124.02	122.20	1.82	Peak	No Limit

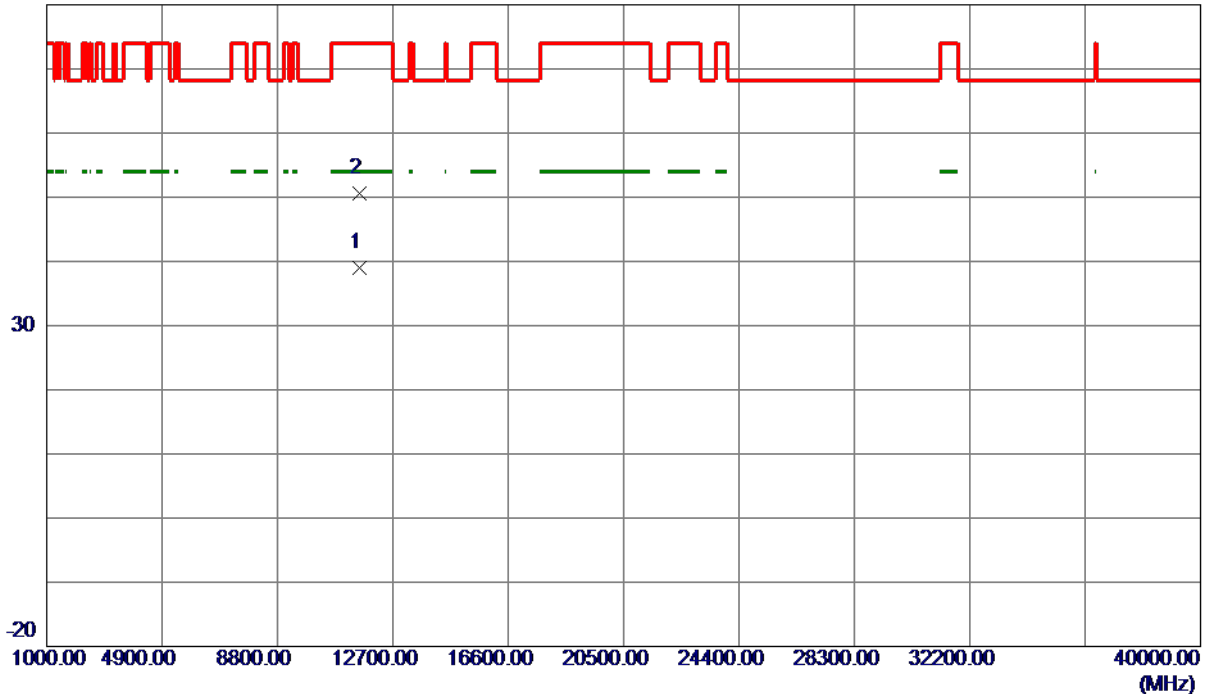
REMARKS:

- (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

80 dBuV/m



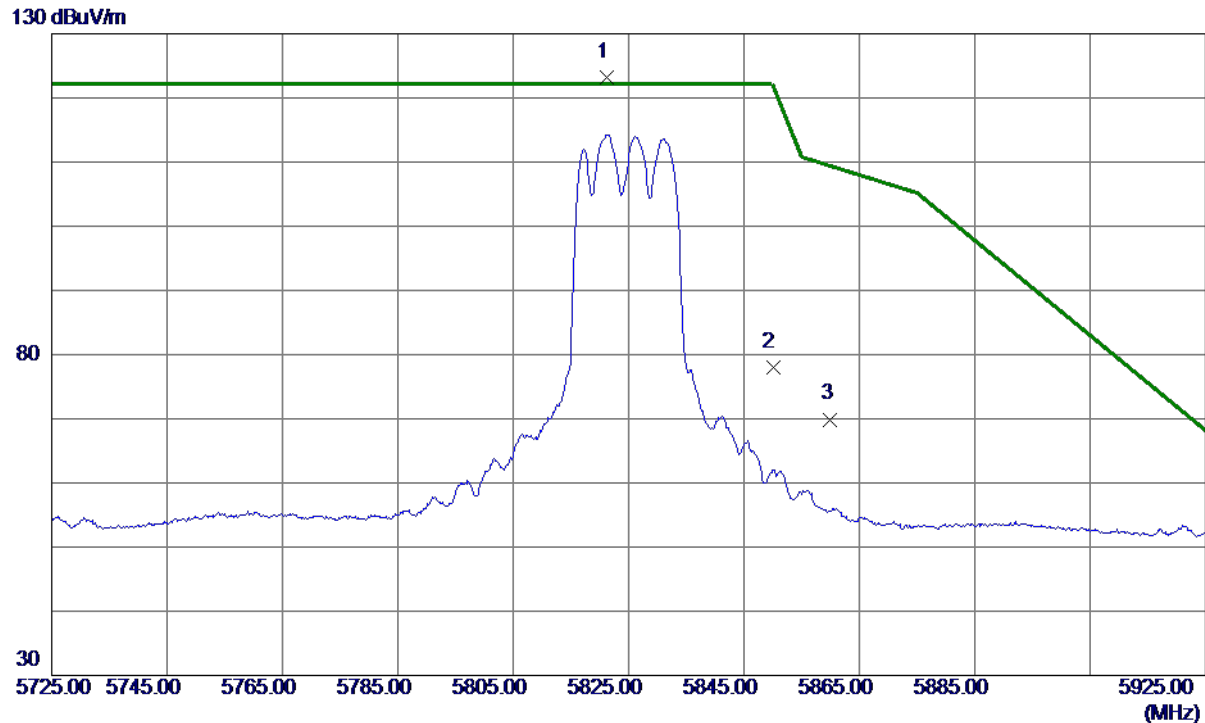
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	11567.8700	21.83	17.25	39.08	54.00	-14.92	AVG	
2	11572.3400	33.42	17.26	50.68	74.00	-23.32	Peak	

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 5825 MHz

Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5821.2000	103.17	20.09	123.26	122.20	1.06	Peak	No Limit
2	5850.0000	57.86	20.11	77.97	122.20	-44.23	Peak	
3	5860.0000	49.78	20.12	69.90	109.40	-39.50	Peak	

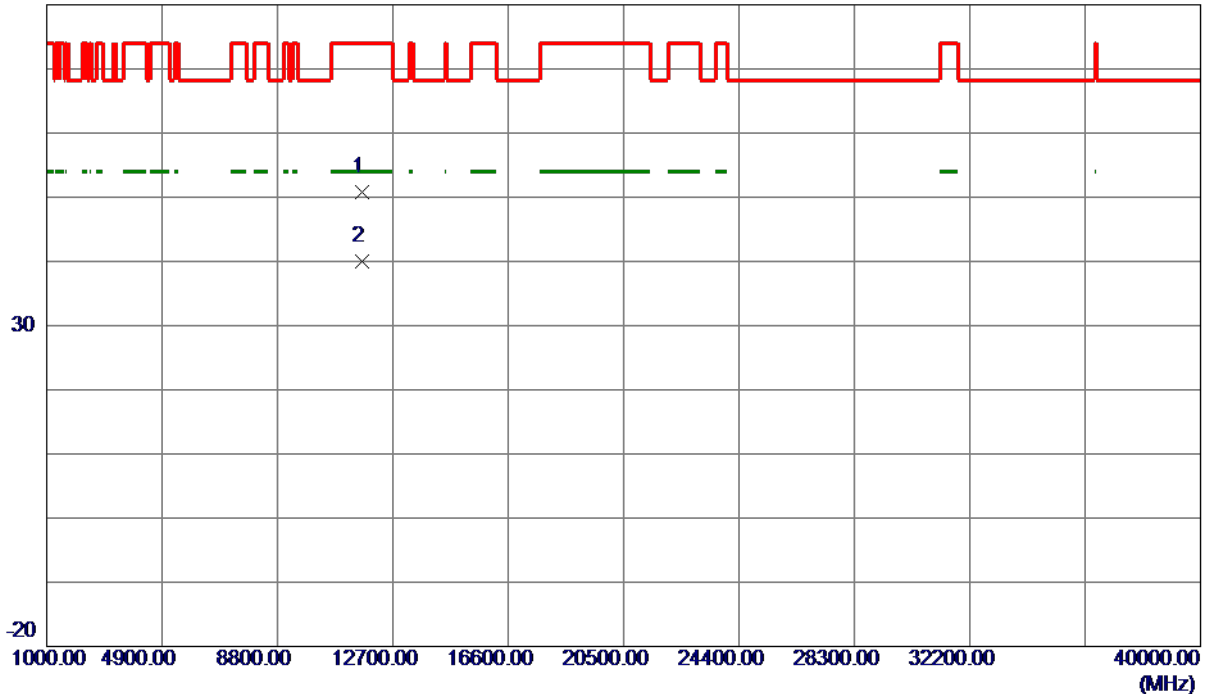
REMARKS:

- (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

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	11648.3400	33.51	17.33	50.84	74.00	-23.16	Peak	
2 *	11651.8620	22.60	17.33	39.93	54.00	-14.07	AVG	

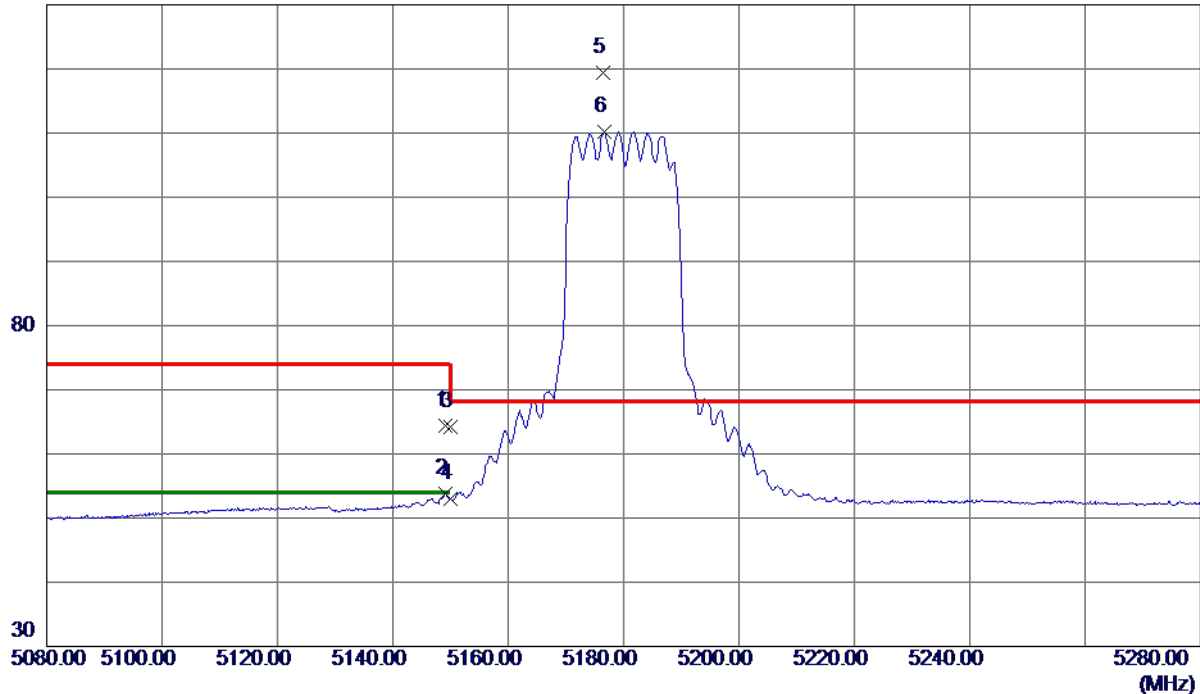
REMARKS:

- (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

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	5149.1000	45.49	18.95	64.44	74.00	-9.56	Peak	
2	5149.1000	34.89	18.95	53.84	54.00	-0.16	AVG	
3	5150.0000	45.31	18.95	64.26	74.00	-9.74	Peak	
4	5150.0000	34.13	18.95	53.08	54.00	-0.92	AVG	
5 *	5176.4000	100.46	19.02	119.48	68.30	51.18	Peak	No Limit
6	5176.6000	91.18	19.02	110.20	999.00	-888.80	AVG	No Limit

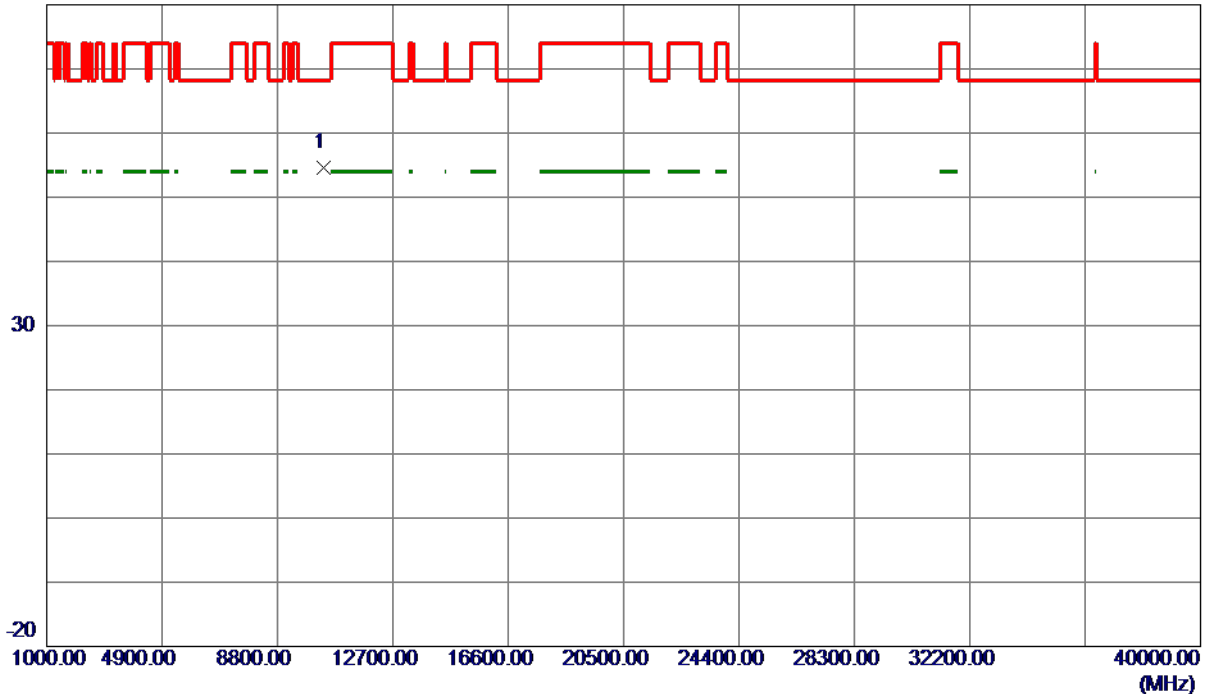
REMARKS:

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

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

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10360.5700	39.55	15.11	54.66	68.30	-13.64	Peak	

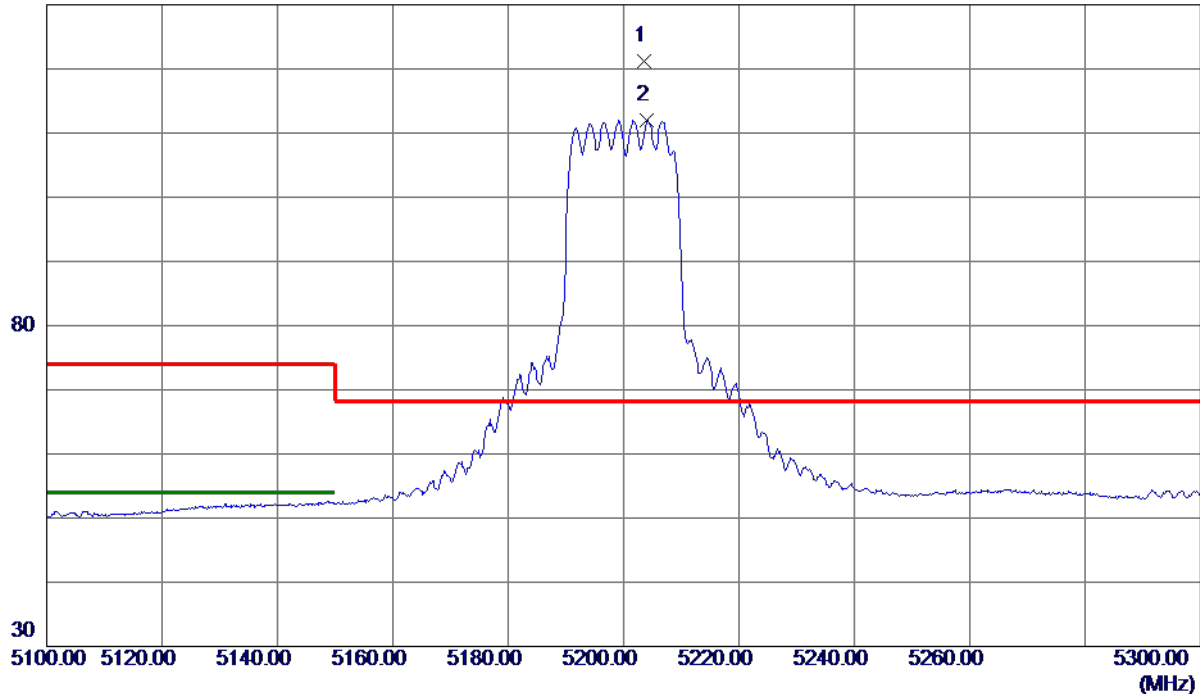
REMARKS:

- (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

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 *	5203.5000	102.08	19.09	121.17	68.30	52.87	Peak	No Limit
2	5204.1000	92.96	19.09	112.05	999.00	-886.95	AVG	No Limit

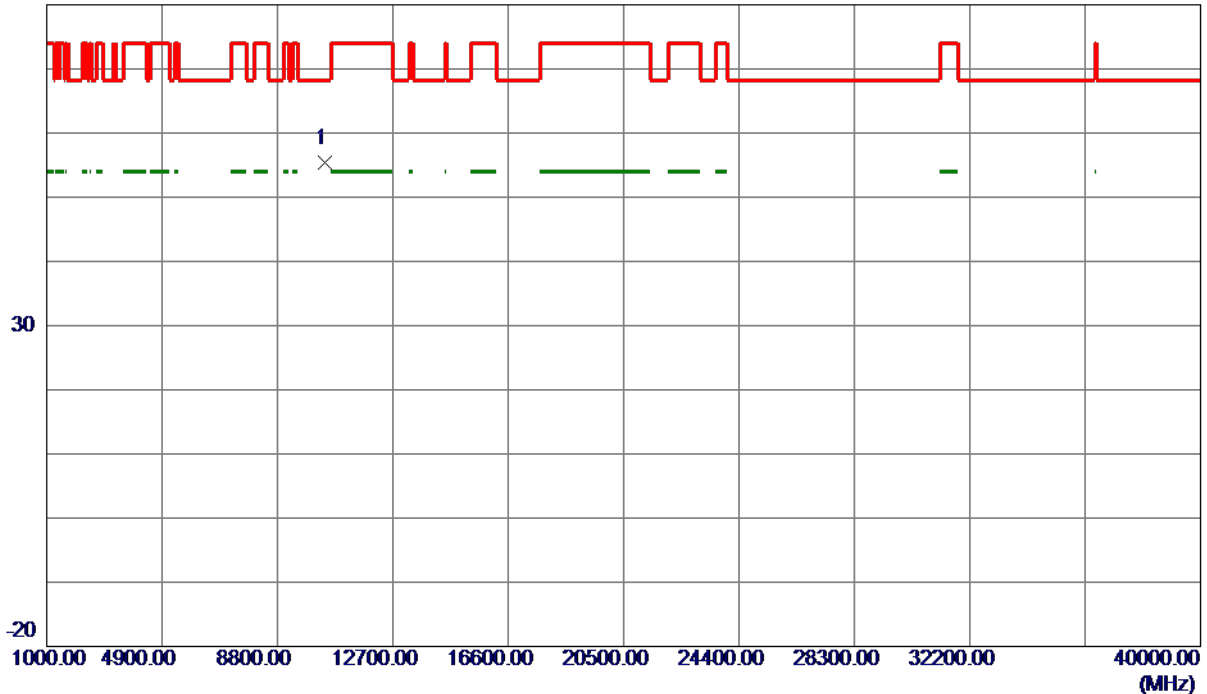
REMARKS:

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

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

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10398.0900	40.14	15.16	55.30	68.30	-13.00	Peak	

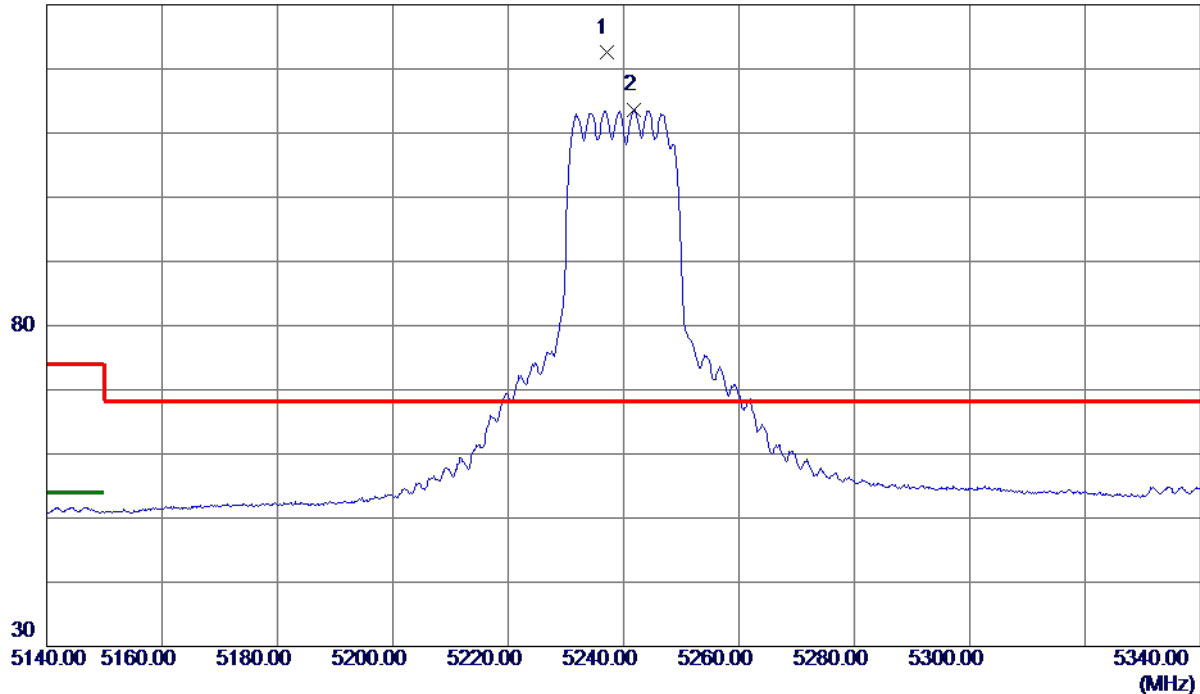
REMARKS:

- (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 5240 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 *	5237.0000	103.33	19.17	122.50	68.30	54.20	Peak	No Limit
2	5241.8000	94.36	19.19	113.55	999.00	-885.45	AVG	No Limit

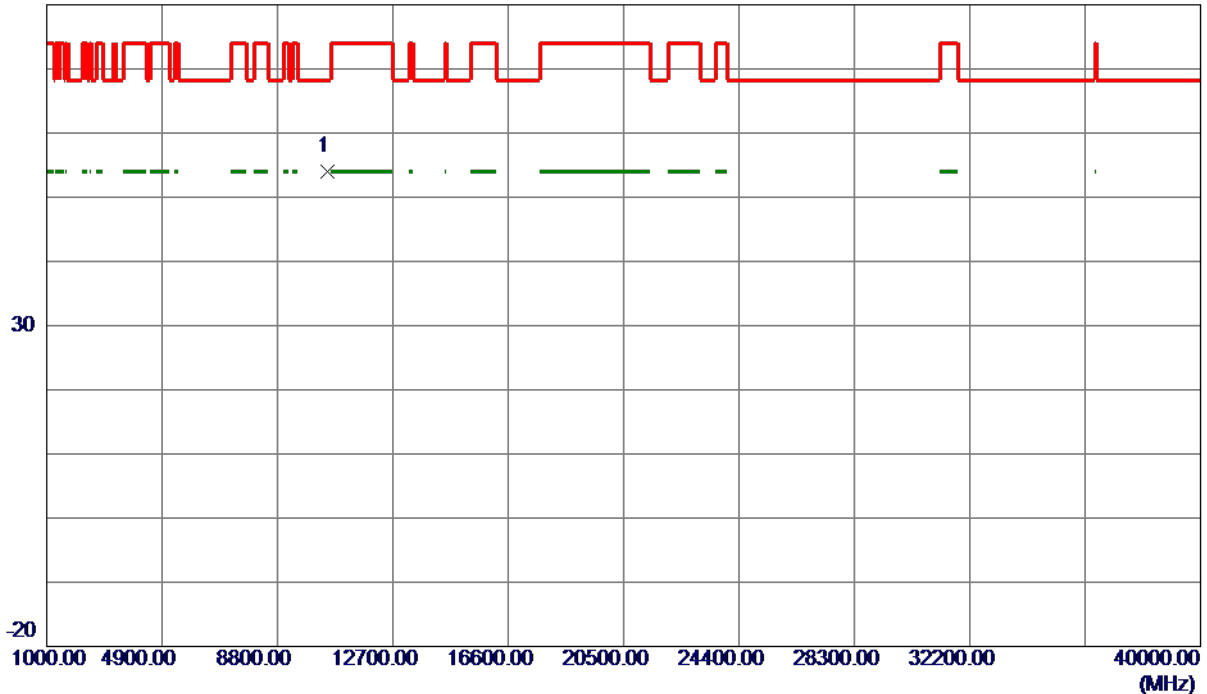
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT20) Mode 5240 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10476.2750	38.80	15.28	54.08	68.30	-14.22	Peak	

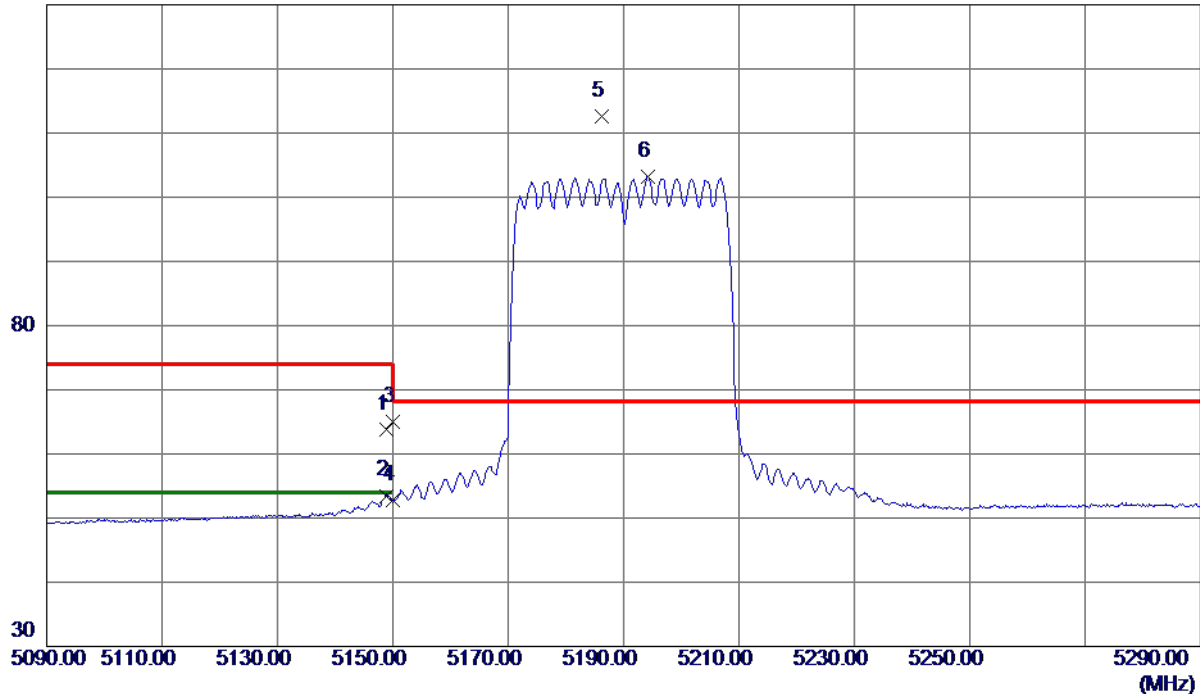
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT40) Mode 5190 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	5148.8000	44.80	18.95	63.75	74.00	-10.25	Peak	
2	5148.8000	34.55	18.95	53.50	54.00	-0.50	AVG	
3	5150.0000	46.03	18.95	64.98	74.00	-9.02	Peak	
4	5150.0000	33.78	18.95	52.73	54.00	-1.27	AVG	
5 *	5186.3000	93.56	19.04	112.60	68.30	44.30	Peak	No Limit
6	5194.2000	84.19	19.06	103.25	999.00	-895.75	AVG	No Limit

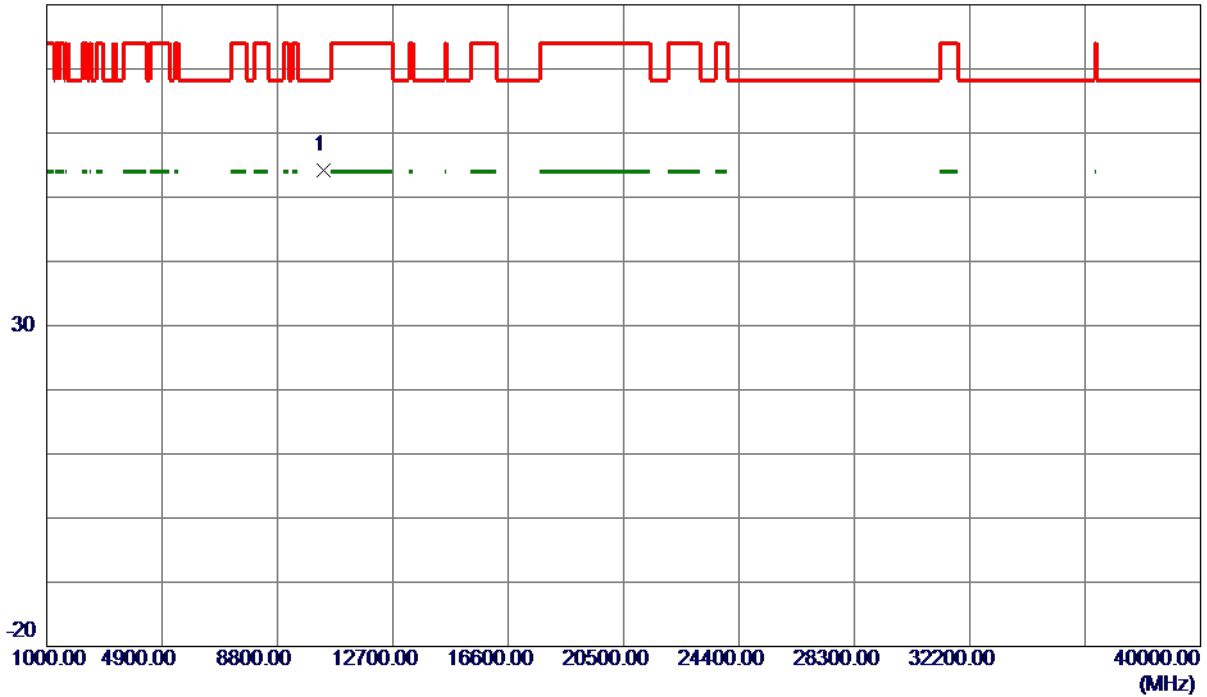
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT40) Mode 5190 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10380.8600	39.02	15.14	54.16	68.30	-14.14	Peak	

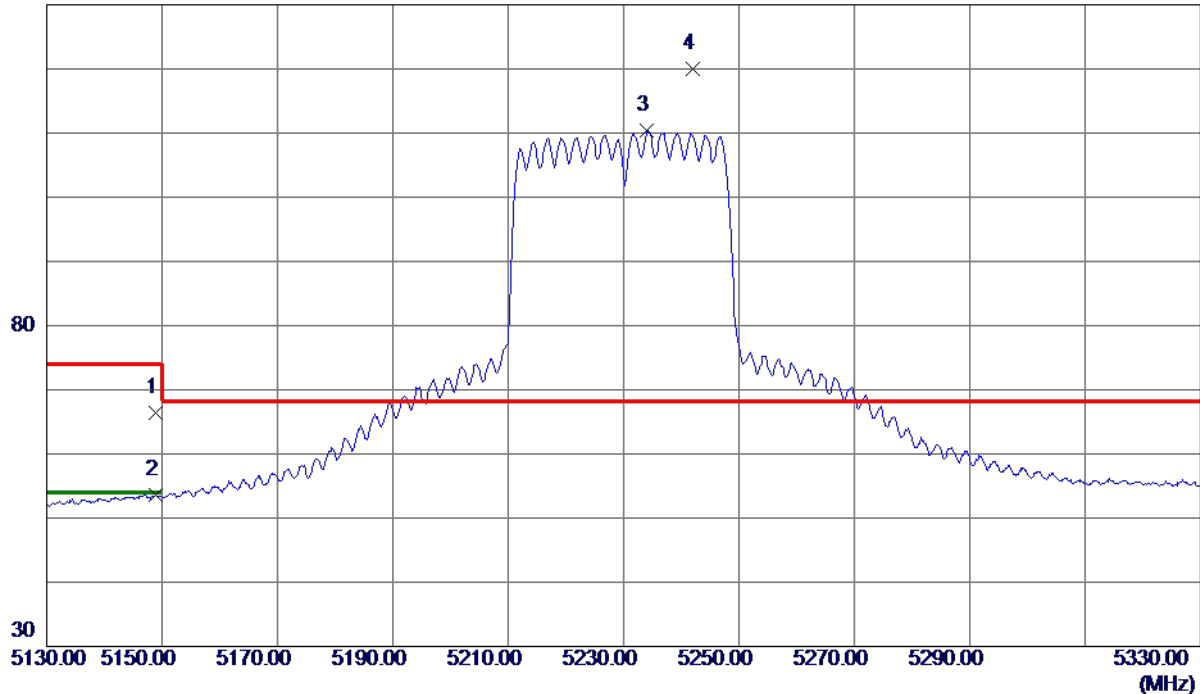
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT40) Mode 5230 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	5148.9000	47.49	18.95	66.44	74.00	-7.56	Peak	
2	5148.9000	34.66	18.95	53.61	54.00	-0.39	AVG	
3	5234.1000	91.19	19.17	110.36	999.00	-888.64	AVG	No Limit
4 *	5242.0000	100.89	19.19	120.08	68.30	51.78	Peak	No Limit

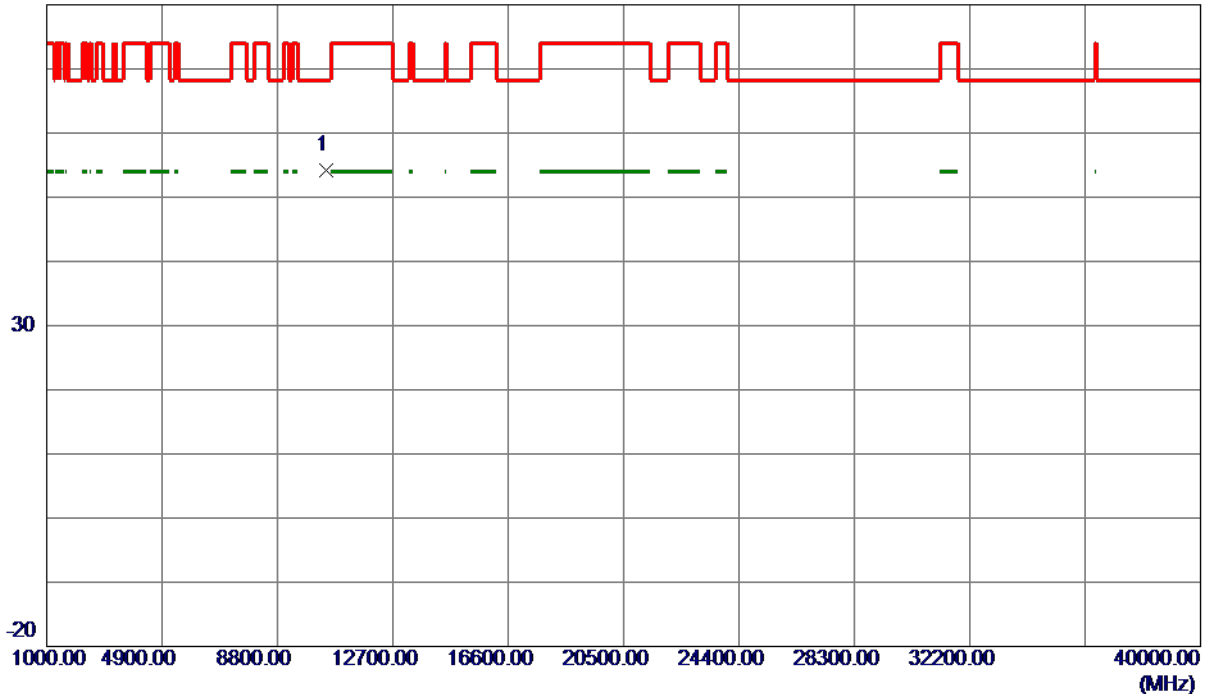
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT40) Mode 5230 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10456.5500	38.96	15.25	54.21	68.30	-14.09	Peak	

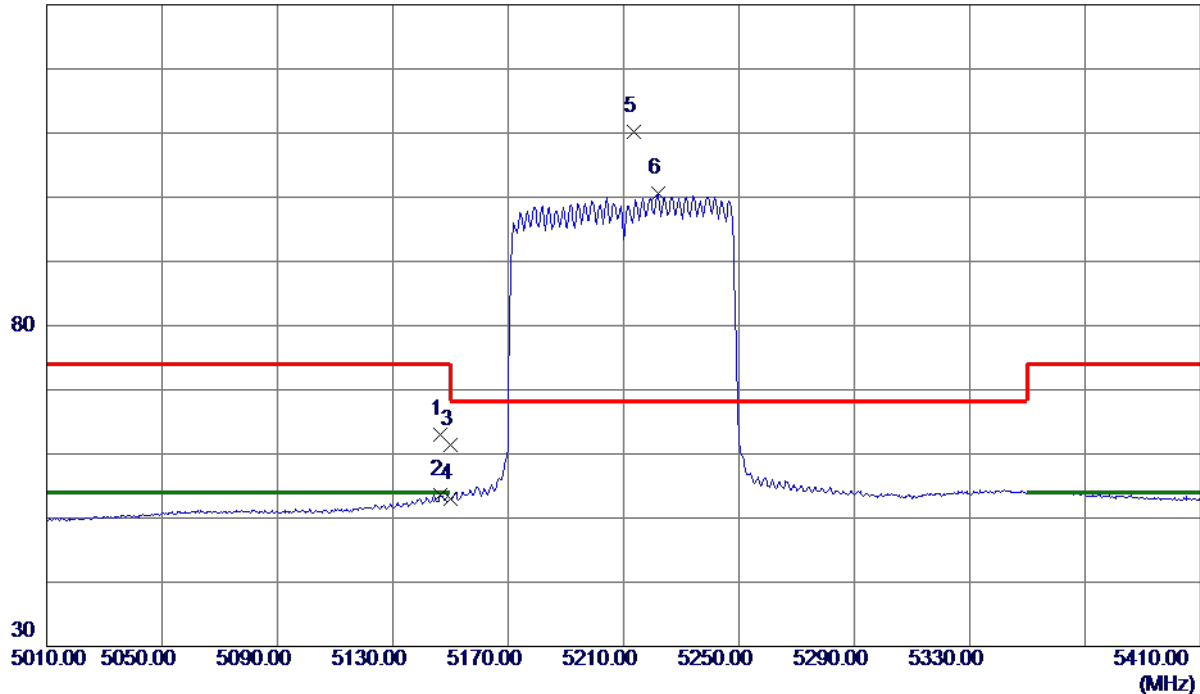
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT80) Mode 5210 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	5146.4000	44.00	18.94	62.94	74.00	-11.06	Peak	
2	5146.4000	34.66	18.94	53.60	54.00	-0.40	AVG	
3	5150.0000	42.53	18.95	61.48	74.00	-12.52	Peak	
4	5150.0000	34.05	18.95	53.00	54.00	-1.00	AVG	
5 *	5213.4000	91.02	19.11	110.13	68.30	41.83	Peak	No Limit
6	5221.8000	81.38	19.13	100.51	999.00	-898.49	AVG	No Limit

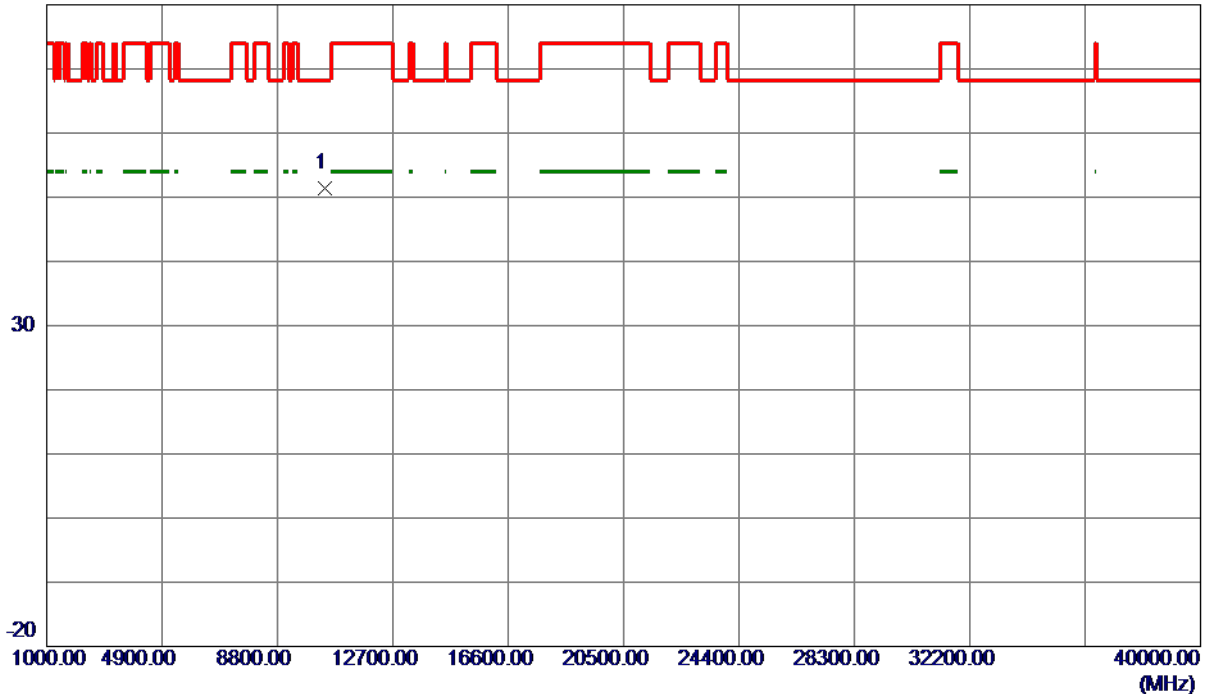
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AC (VHT80) Mode 5210 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	10415.7150	36.27	15.19	51.46	68.30	-16.84	Peak	

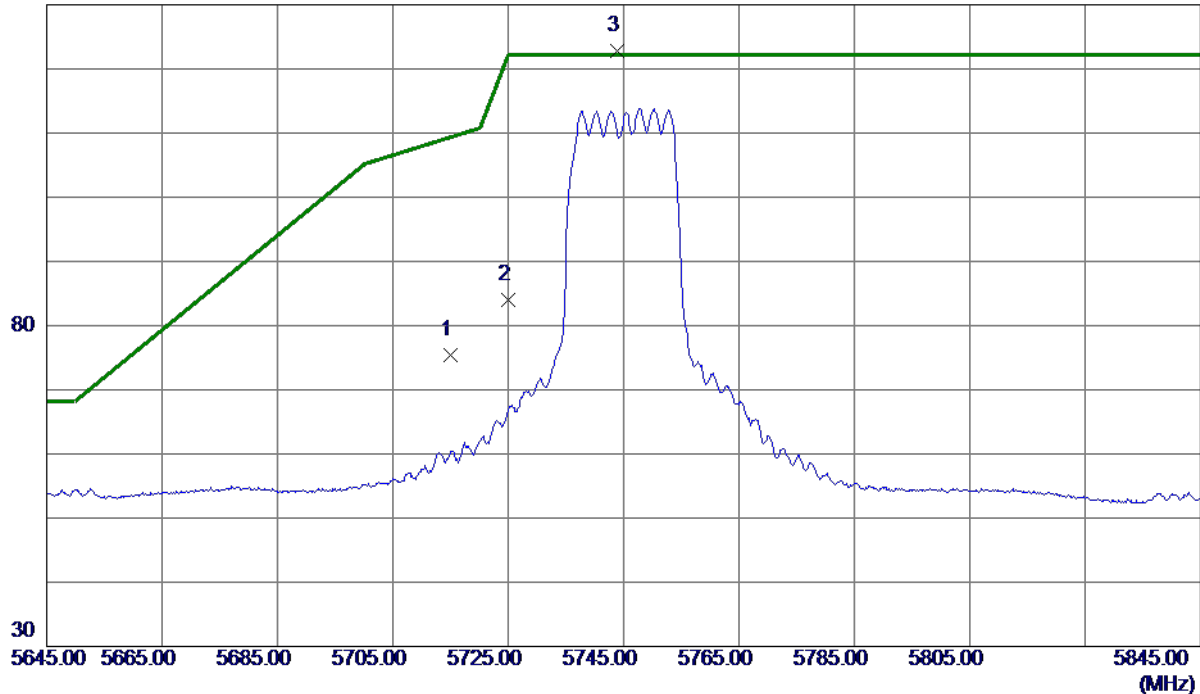
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT20) 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	Detector	Comment
1	5715.0000	55.34	20.01	75.35	109.40	-34.05	Peak	
2	5725.0000	64.07	20.02	84.09	122.20	-38.11	Peak	
3 *	5743.9000	102.85	20.03	122.88	122.20	0.68	Peak	No Limit

REMARKS:

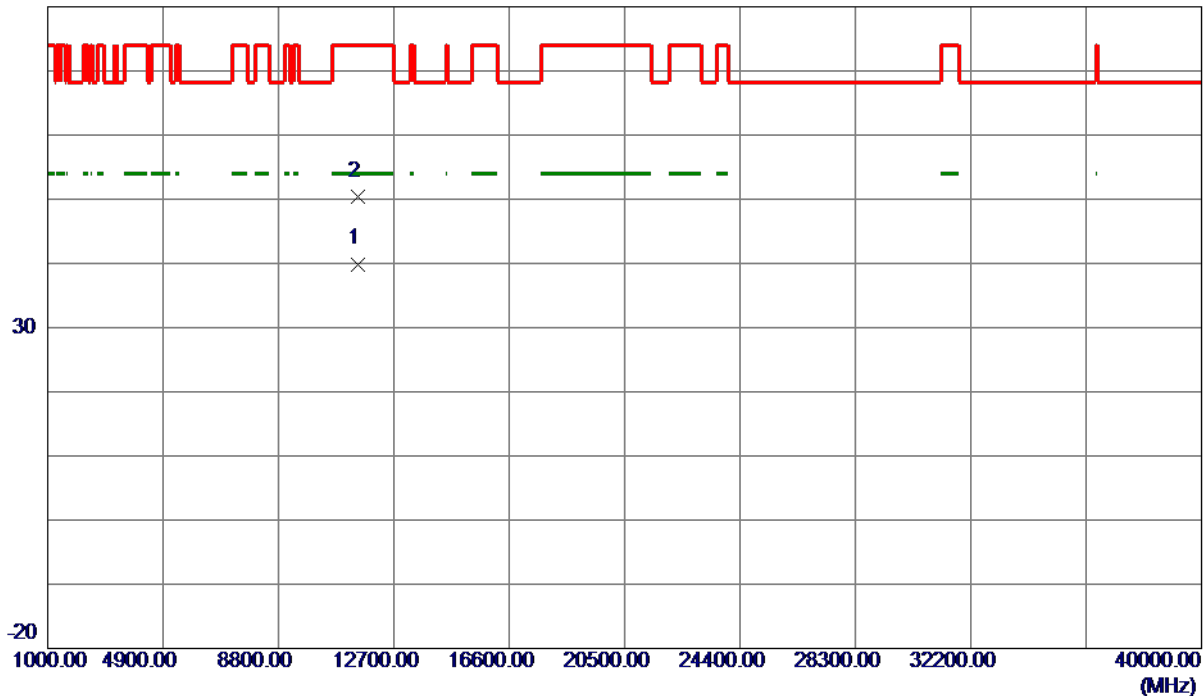
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT20) Mode 5745 MHz

Vertical

80 dBuV/m



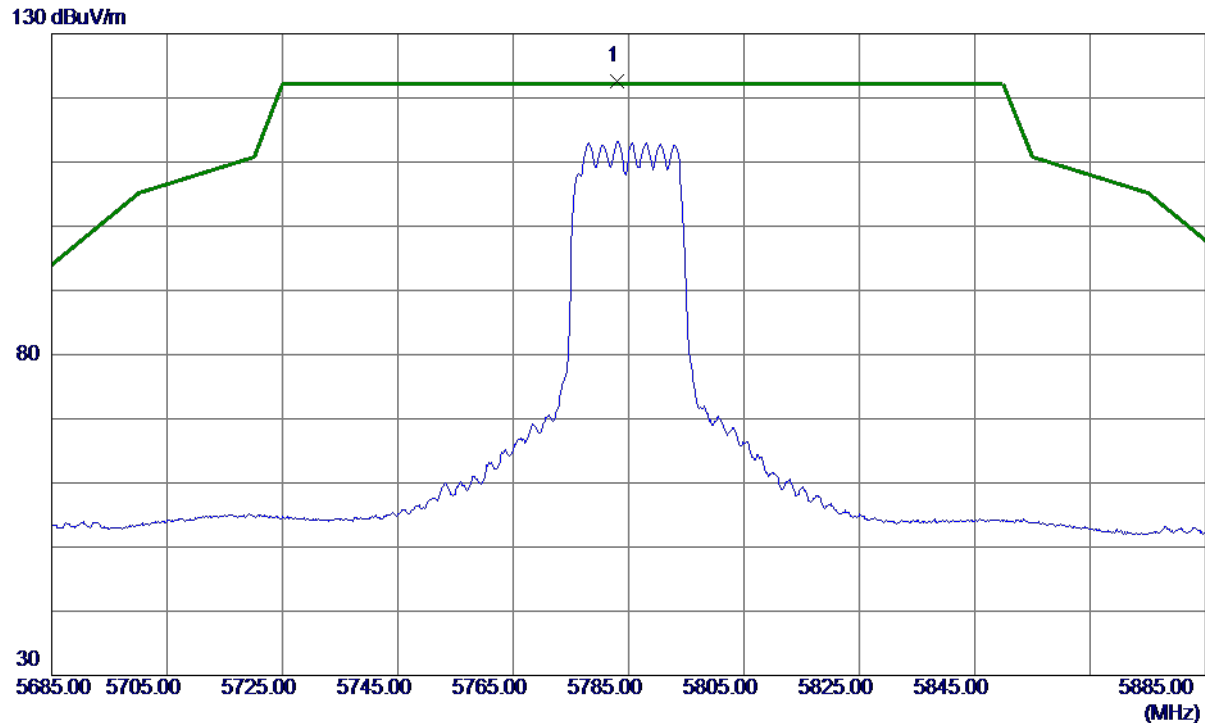
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	11487.7630	22.75	17.15	39.90	54.00	-14.10	AVG	
2	11488.8150	33.20	17.16	50.36	74.00	-23.64	Peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT20) Mode 5785 MHz

Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5783.0000	102.49	20.06	122.55	122.20	0.35	Peak	No Limit

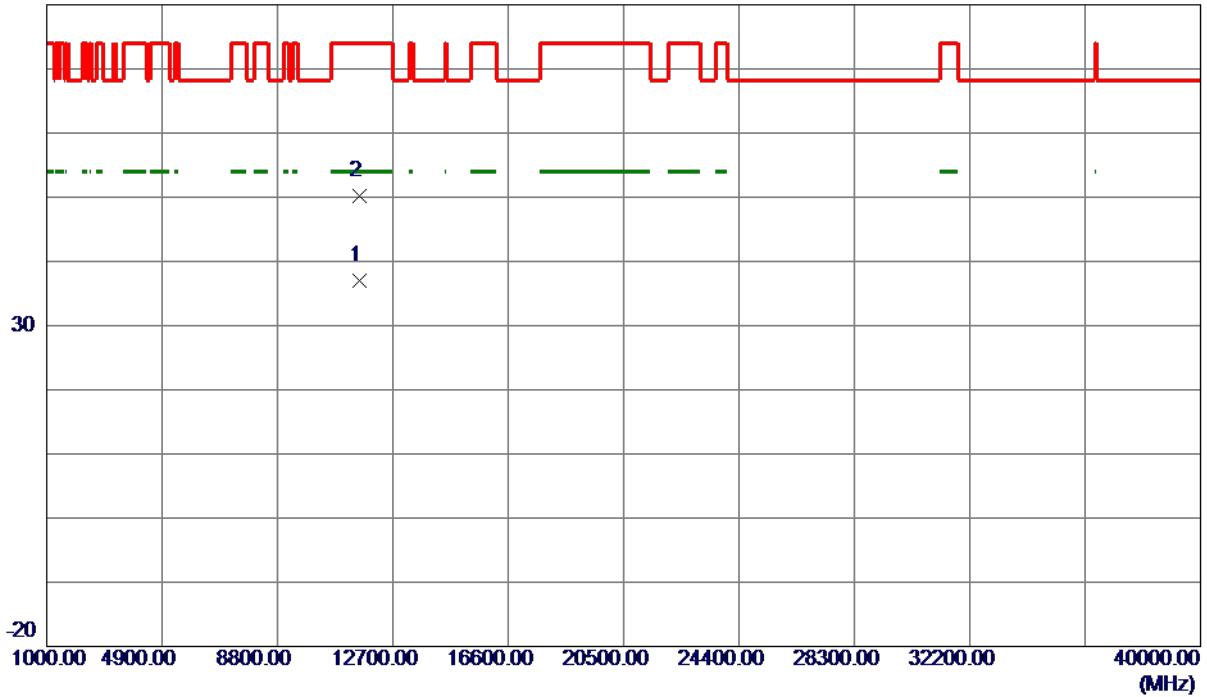
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT20) Mode 5785 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	11567.5380	19.66	17.25	36.91	54.00	-17.09	AVG	
2	11569.0000	32.86	17.25	50.11	74.00	-23.89	Peak	

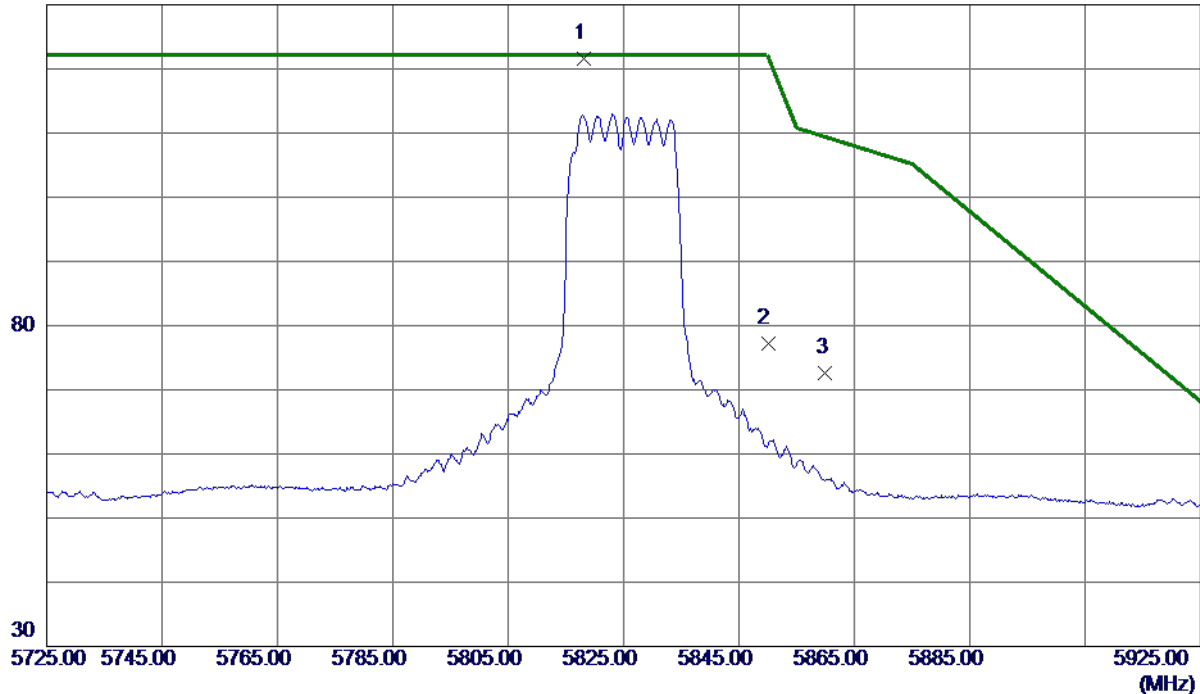
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT20) Mode 5825 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 *	5818.2000	101.51	20.09	121.60	122.20	-0.60	Peak	No Limit
2	5850.0000	57.11	20.11	77.22	122.20	-44.98	Peak	
3	5860.0000	52.48	20.12	72.60	109.40	-36.80	Peak	

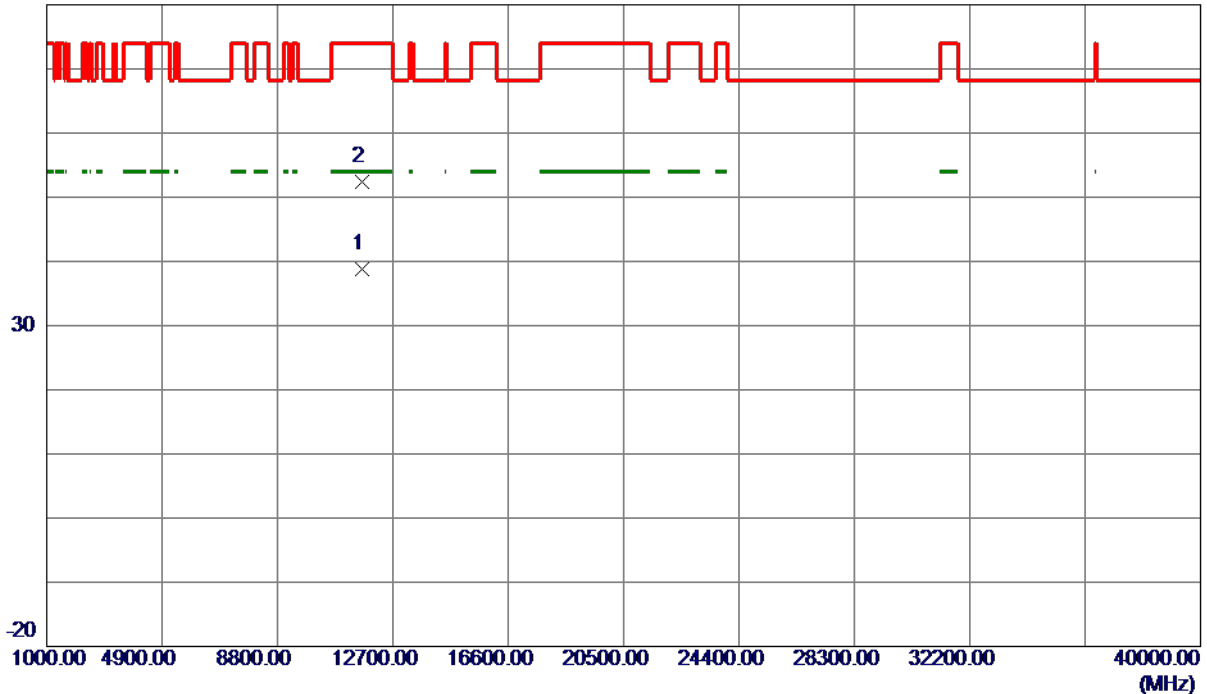
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT20) Mode 5825 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	11650.5970	21.51	17.33	38.84	54.00	-15.16	AVG	
2	11650.6100	34.98	17.33	52.31	74.00	-21.69	Peak	

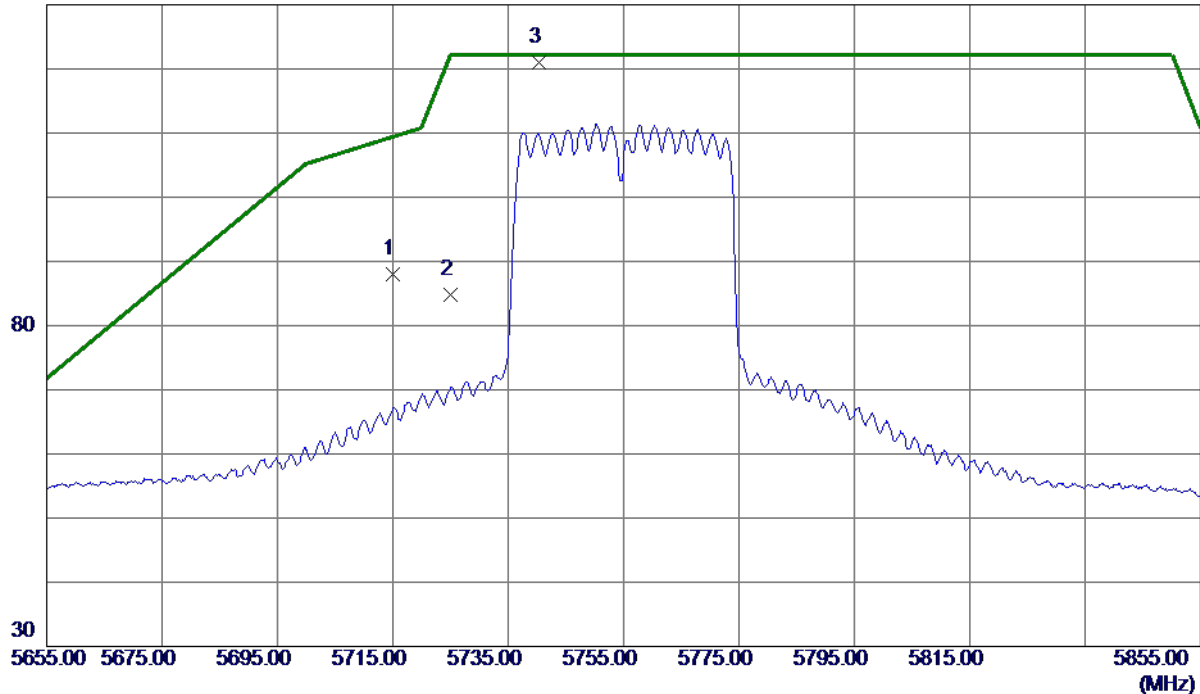
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT40) Mode 5755 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	67.91	20.01	87.92	109.40	-21.48	Peak	
2	5725.0000	64.84	20.02	84.86	122.20	-37.34	Peak	
3 *	5740.4000	101.05	20.03	121.08	122.20	-1.12	Peak	No Limit

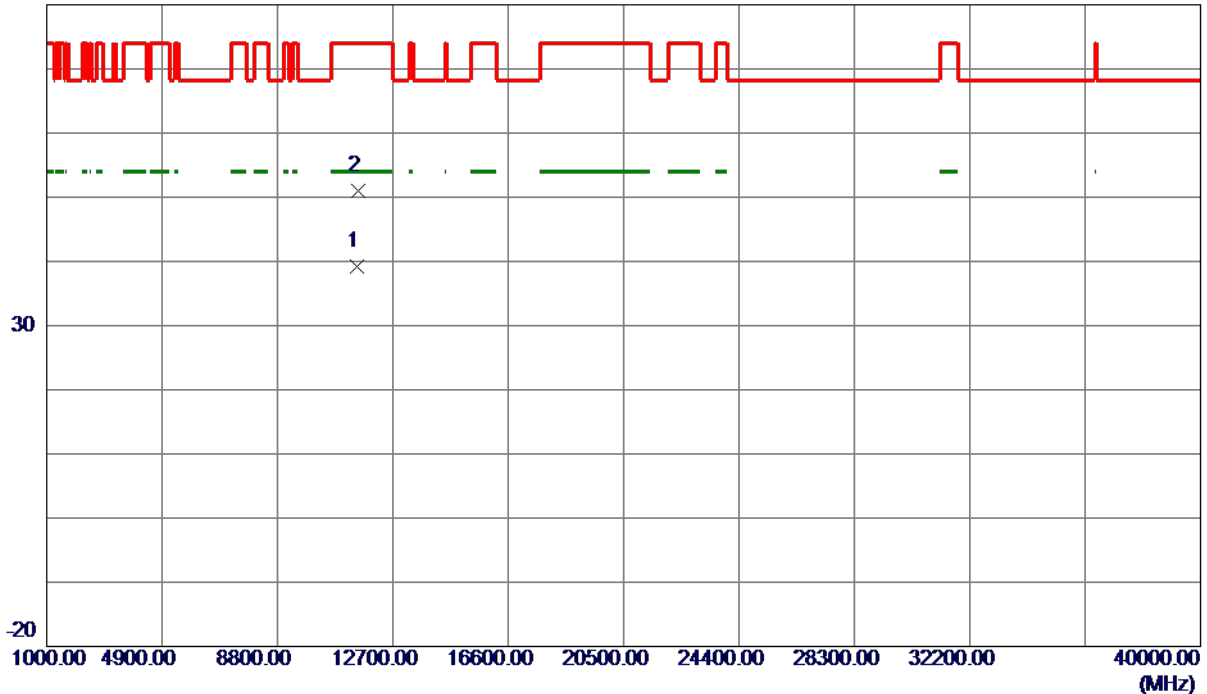
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT40) Mode 5755 MHz

Vertical

80 dBuV/m



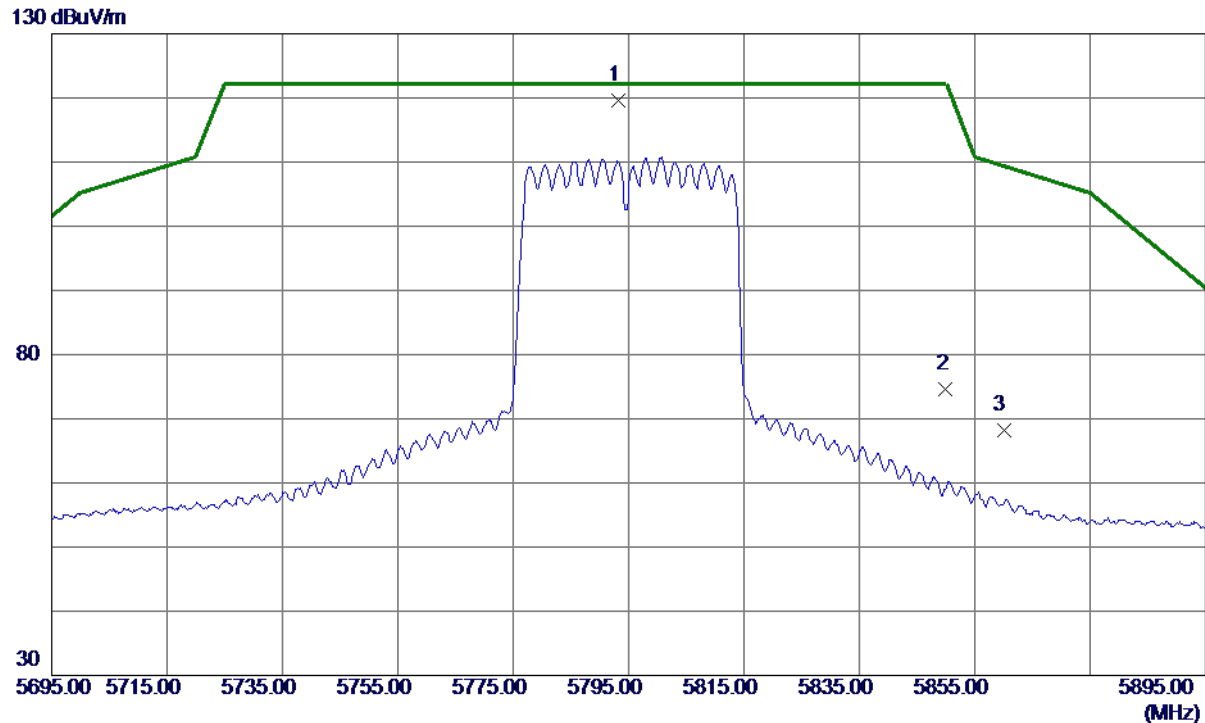
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	11507.8500	21.92	17.20	39.12	54.00	-14.88	AVG	
2	11508.5970	33.77	17.20	50.97	74.00	-23.03	Peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT40) Mode 5795 MHz

Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5793.2000	99.51	20.07	119.58	122.20	-2.62	Peak	No Limit
2	5850.0000	54.46	20.11	74.57	122.20	-47.63	Peak	
3	5860.0000	48.01	20.12	68.13	109.40	-41.27	Peak	

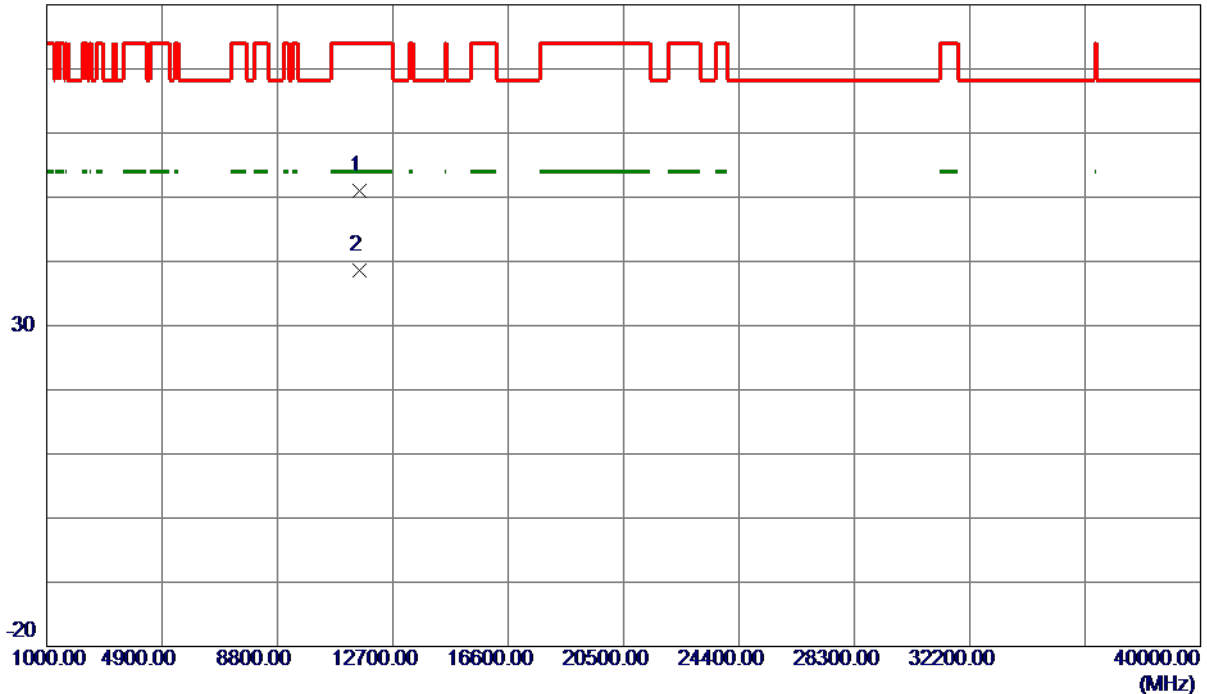
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT40) Mode 5795 MHz

Vertical

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	11588.3150	33.74	17.27	51.01	74.00	-22.99	Peak	
2 *	11591.5220	21.40	17.27	38.67	54.00	-15.33	AVG	

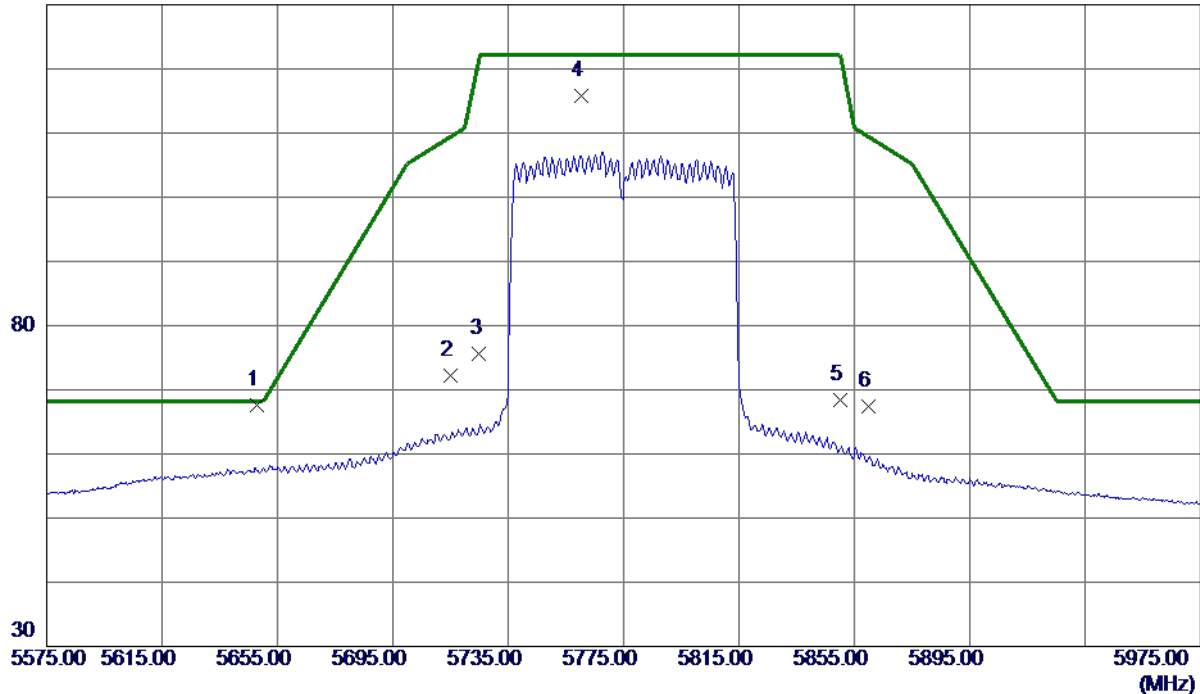
REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT80) Mode 5775 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 *	5648.0000	47.65	19.96	67.61	68.20	-0.59	Peak	
2	5715.0000	52.19	20.01	72.20	109.40	-37.20	Peak	
3	5725.0000	55.56	20.02	75.58	122.20	-46.62	Peak	
4	5760.2000	95.80	20.04	115.84	122.20	-6.36	Peak	No Limit
5	5850.0000	48.35	20.11	68.46	122.20	-53.74	Peak	
6	5860.0000	47.26	20.12	67.38	109.40	-42.02	Peak	

REMARKS:

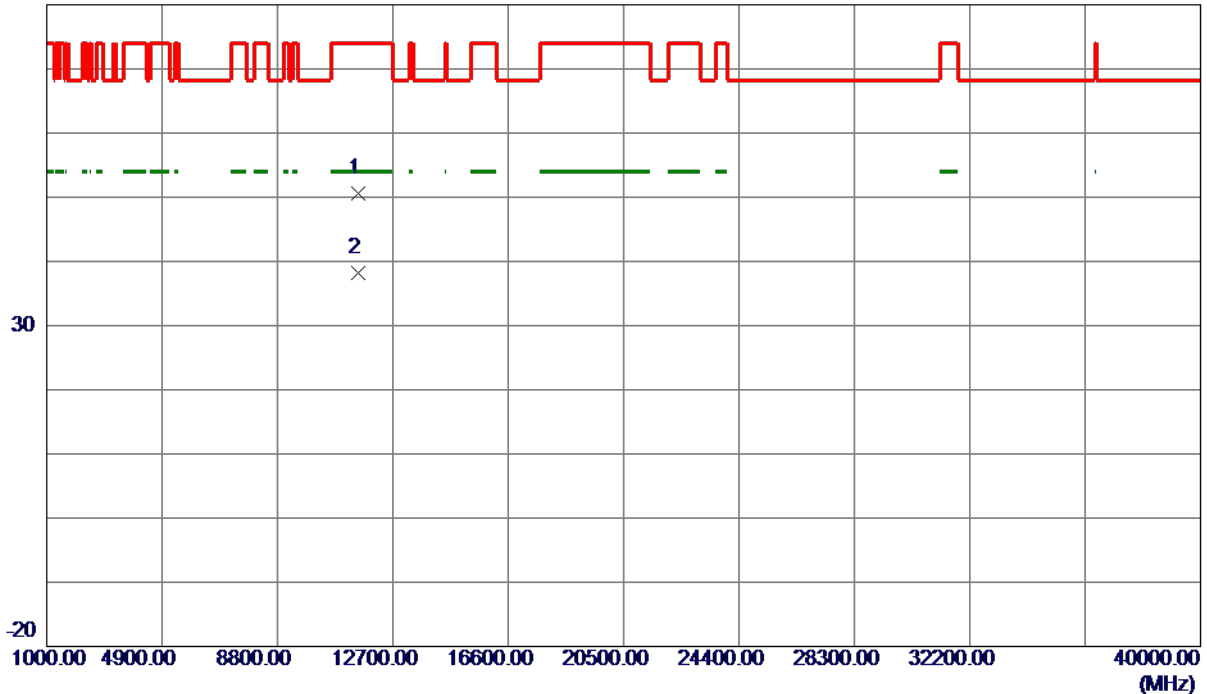
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX AC (VHT80) Mode 5775 MHz

Vertical

80 dBuV/m

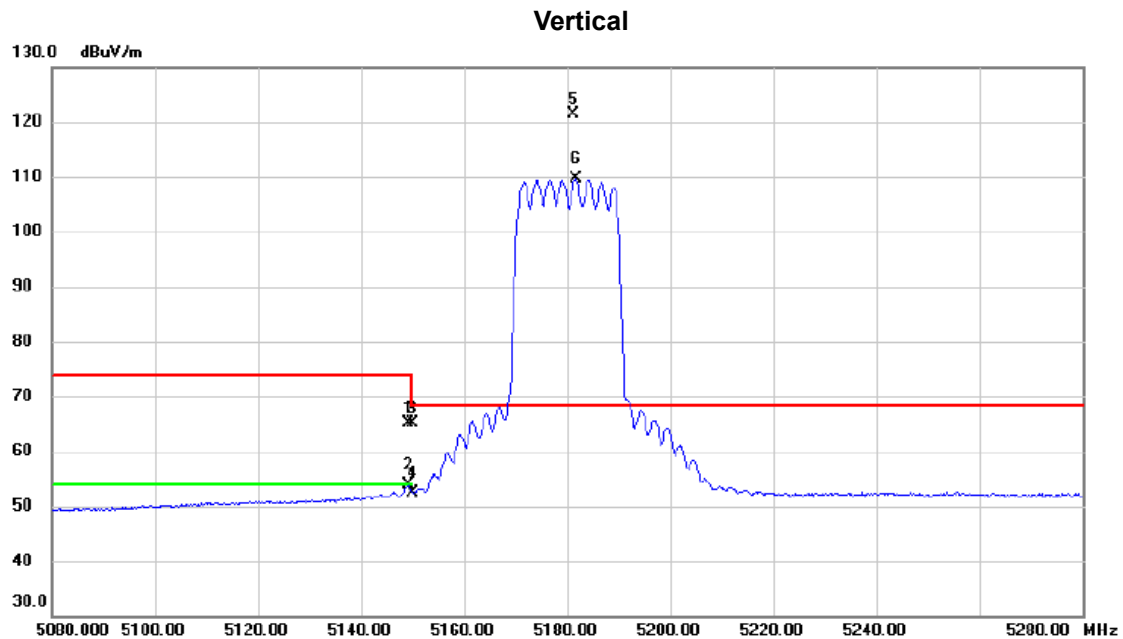


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	11550.9269	33.42	17.24	50.66	74.00	-23.34	Peak	
2 *	11550.9800	21.03	17.24	38.27	54.00	-15.73	AVG	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE20) Mode 5180 MHz



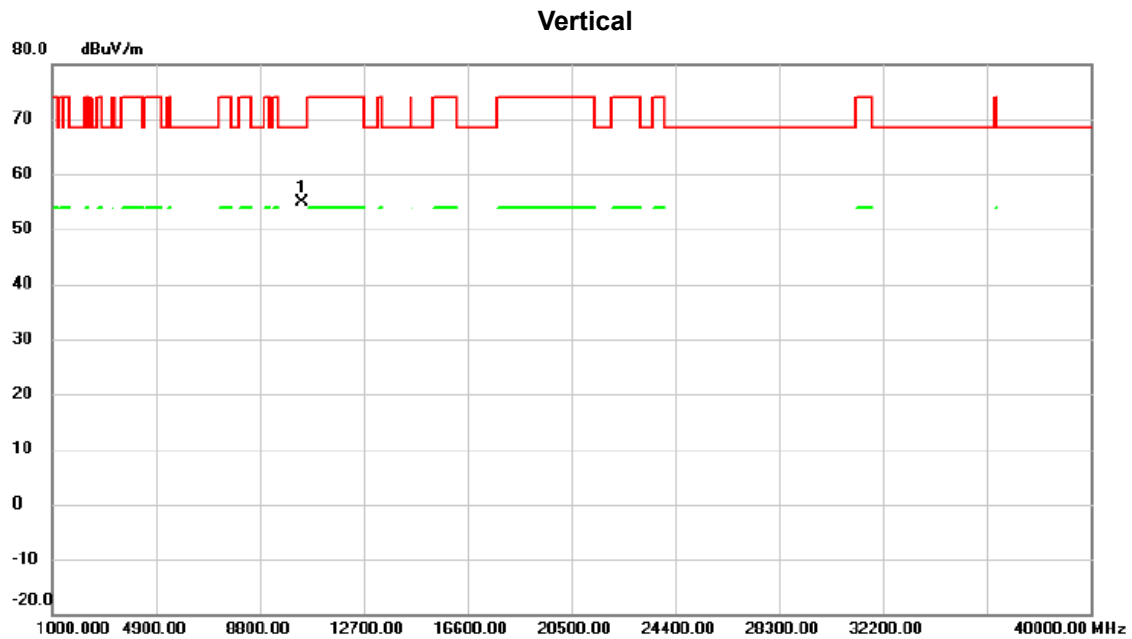
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		5149.200	46.11	18.95	65.06	74.00	-8.94	peak	
2		5149.200	34.84	18.95	53.79	54.00	-0.21	AVG	
3		5150.000	46.11	18.95	65.06	74.00	-8.94	peak	
4		5150.000	33.55	18.95	52.50	54.00	-1.50	AVG	
5	*	5181.300	102.28	19.03	121.31	68.30	53.01	peak	No Limit
6	X	5181.700	90.63	19.03	109.66	68.30	41.36	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 AX (HE20) Mode 5180 MHz

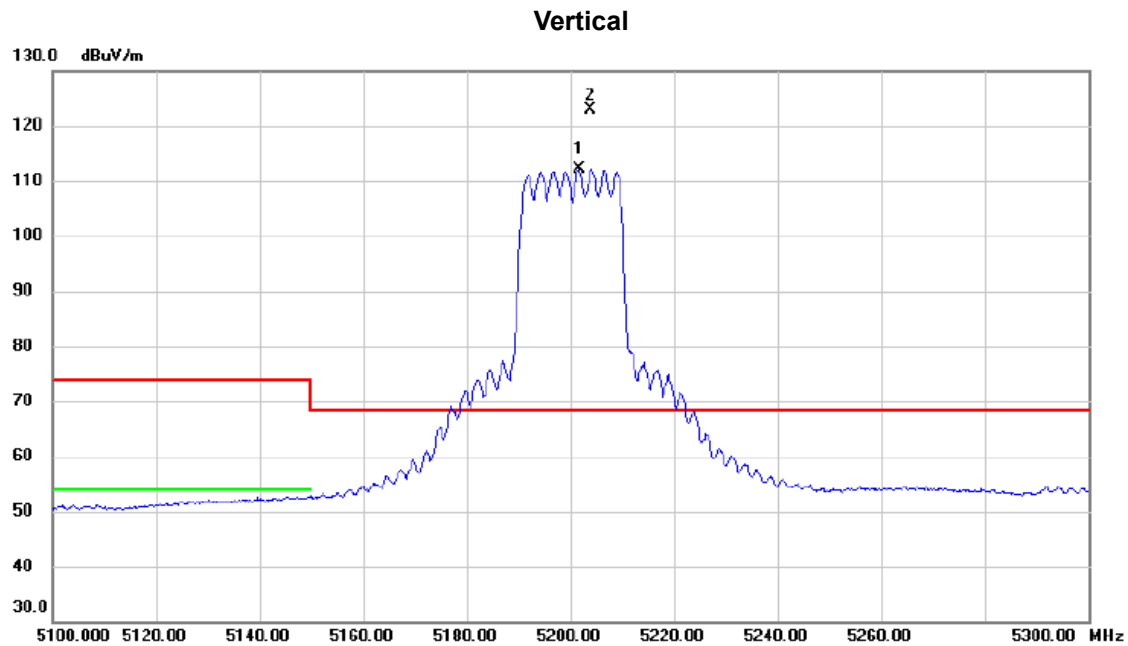


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10361.025	39.77	15.11	54.88	68.30	-13.42	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE20) Mode 5200 MHz

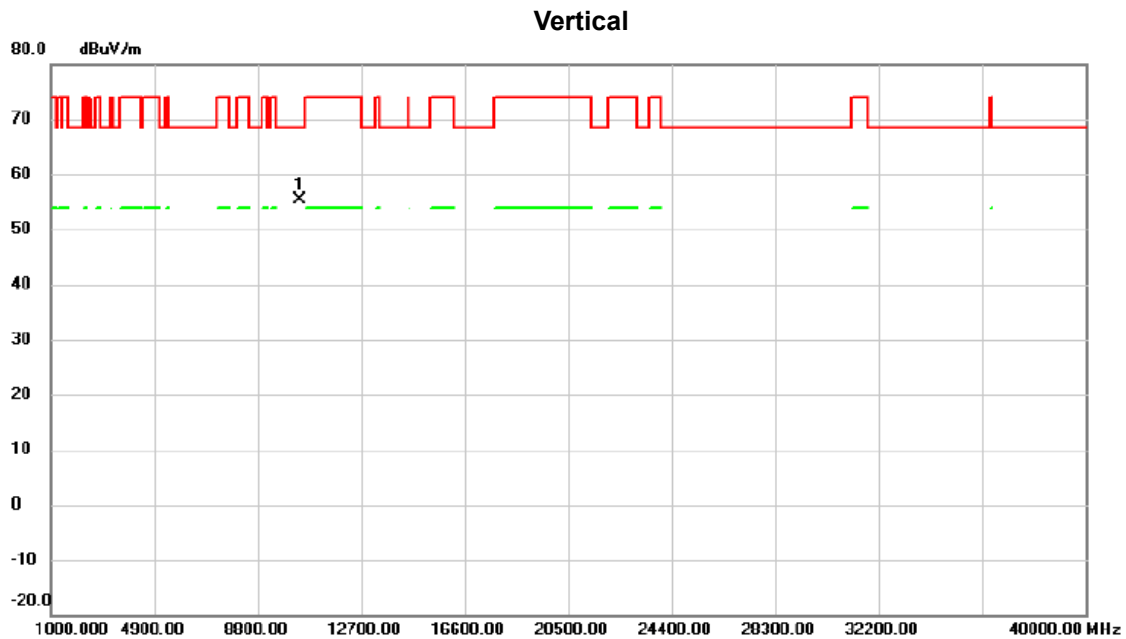


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	5201.700	92.95	19.08	112.03	68.30	43.73	AVG	No Limit
2	*	5203.900	103.71	19.08	122.79	68.30	54.49	peak	No Limit

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE20) Mode 5200 MHz

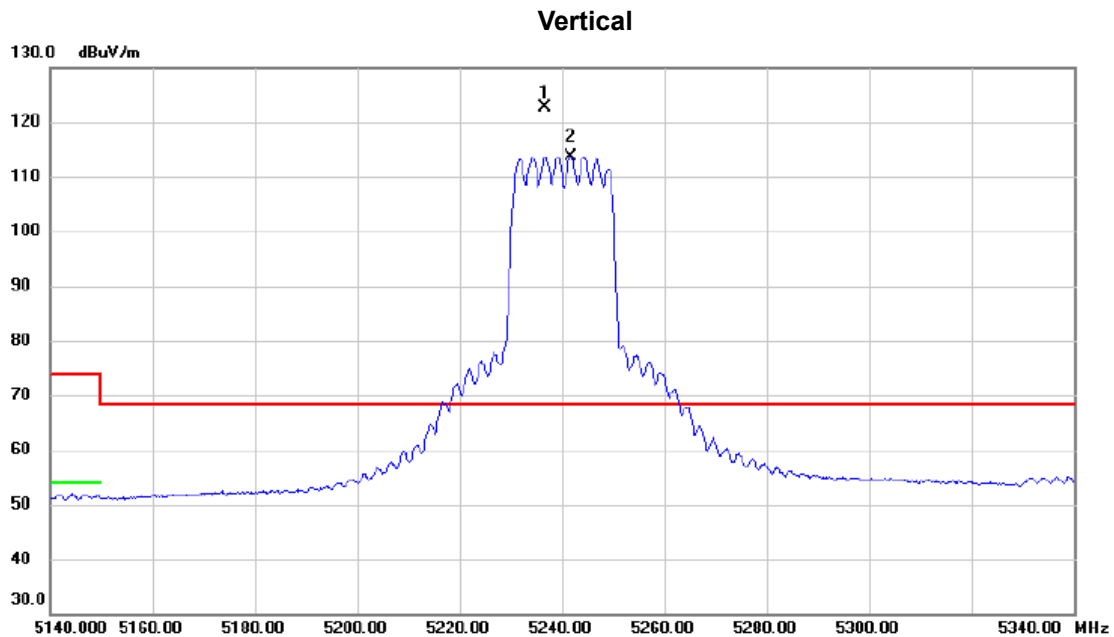


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10403.130	40.23	15.17	55.40	68.30	-12.90	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE20) Mode 5240 MHz



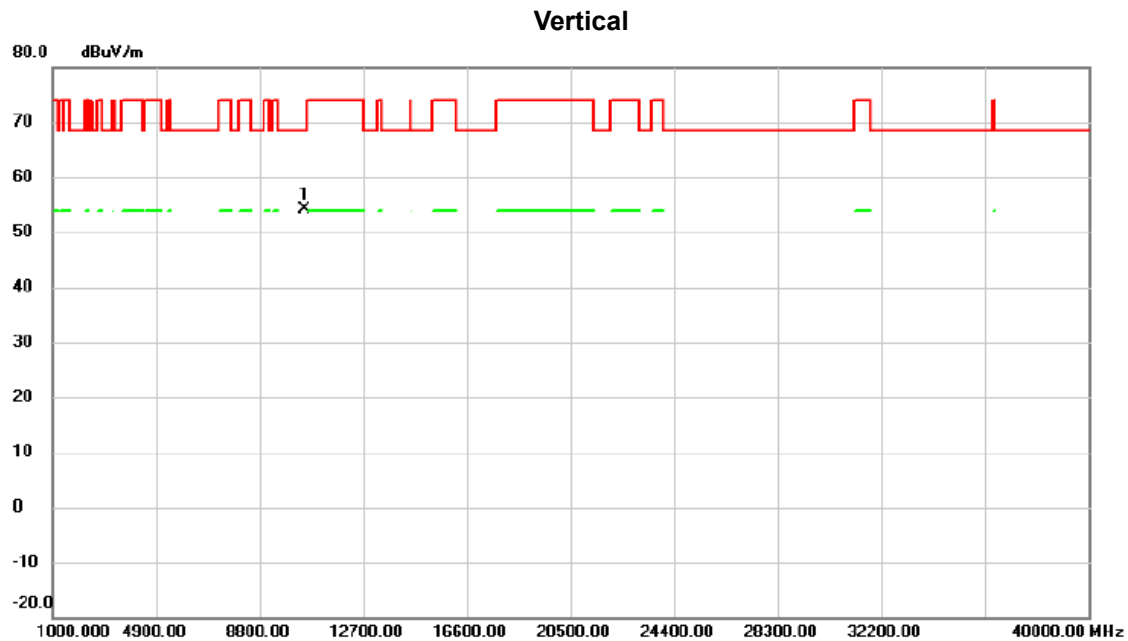
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	5236.600	103.47	19.17	122.64	68.30	54.34	peak	No Limit
2	X	5241.700	94.50	19.18	113.68	68.30	45.38	AVG	No Limit

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE20) Mode 5240 MHz

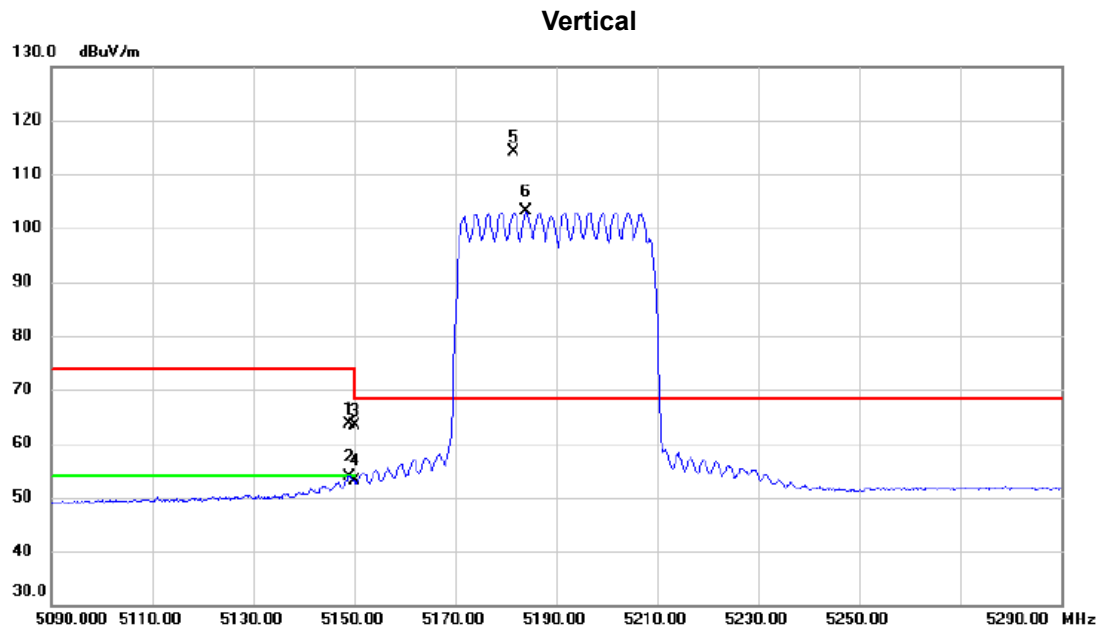


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10475.925	38.86	15.28	54.14	68.30	-14.16	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE40) Mode 5190 MHz

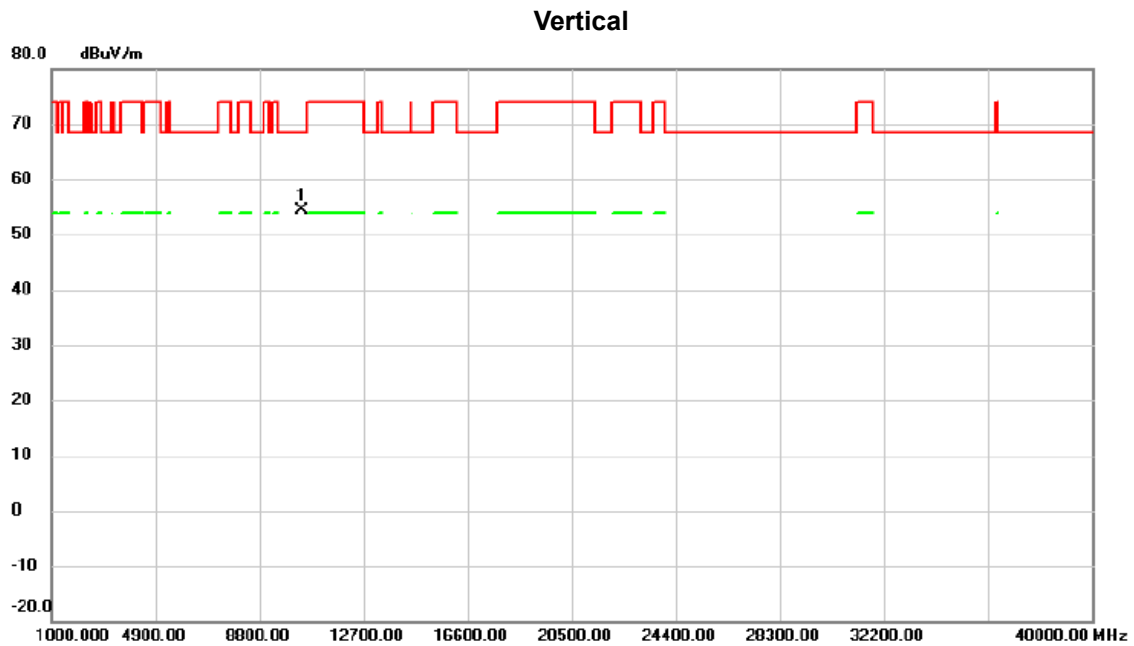


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		5149.000	44.58	18.95	63.53	74.00	-10.47	peak	
2		5149.000	34.97	18.95	53.92	54.00	-0.08	AVG	
3		5150.000	44.37	18.95	63.32	74.00	-10.68	peak	
4		5150.000	34.11	18.95	53.06	54.00	-0.94	AVG	
5	*	5181.600	95.03	19.03	114.06	68.30	45.76	peak	No Limit
6	X	5184.100	84.07	19.03	103.10	68.30	34.80	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 AX (HE40) Mode 5190 MHz

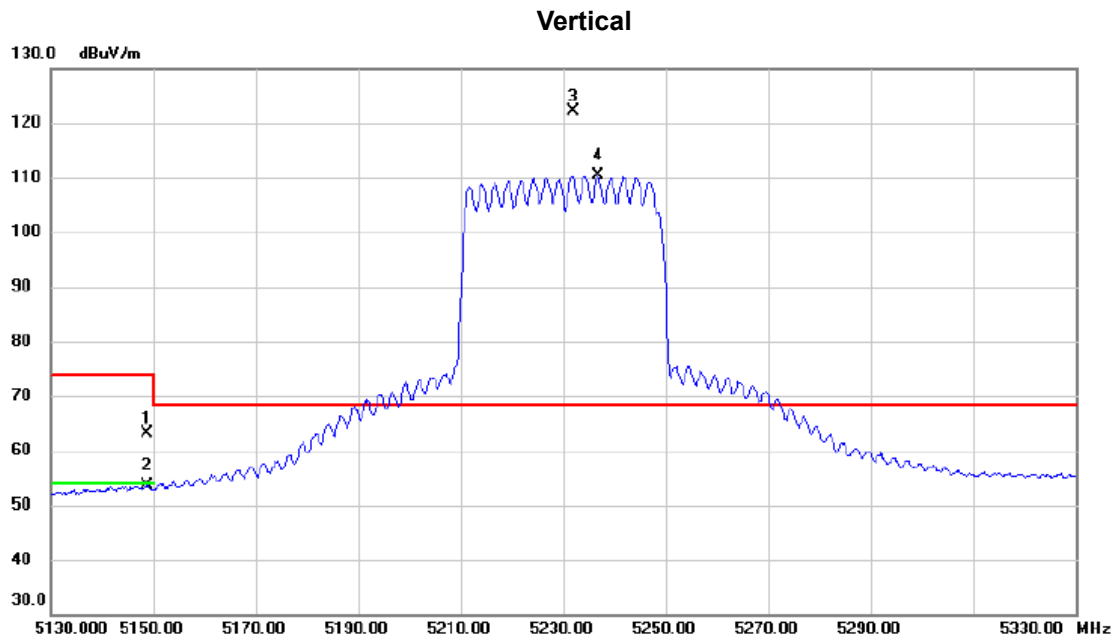


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10381.075	39.14	15.13	54.27	68.30	-14.03	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE40) Mode 5230 MHz

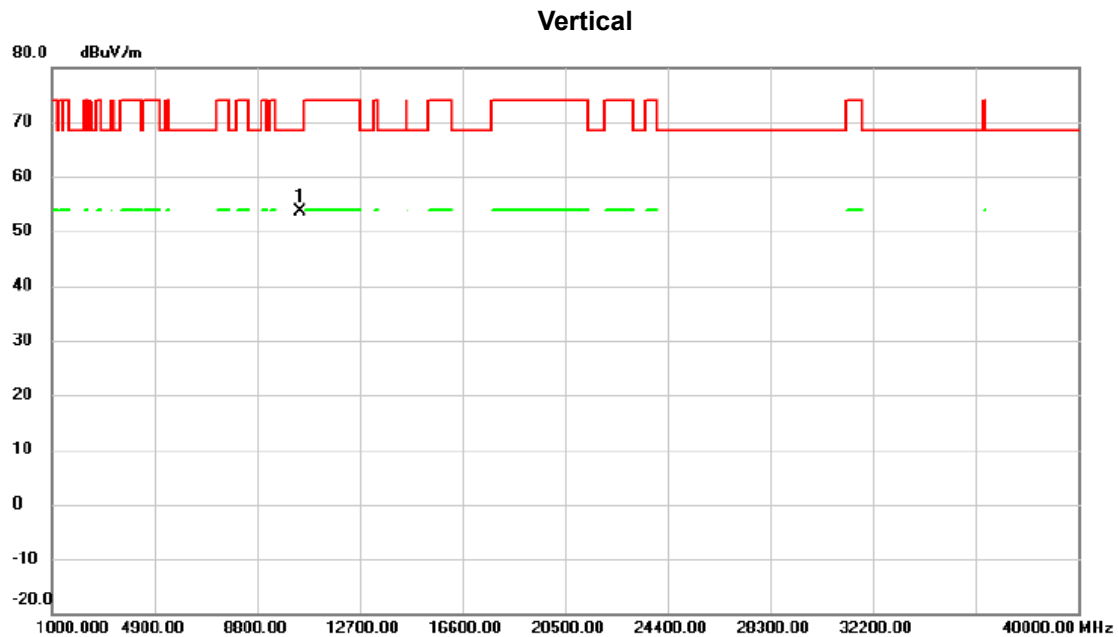


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		5148.700	44.11	18.95	63.06	74.00	-10.94	peak	
2		5148.700	34.58	18.95	53.53	54.00	-0.47	AVG	
3	*	5231.900	102.87	19.16	122.03	68.30	53.73	peak	No Limit
4	X	5236.900	91.20	19.17	110.37	68.30	42.07	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 AX (HE40) Mode 5230 MHz

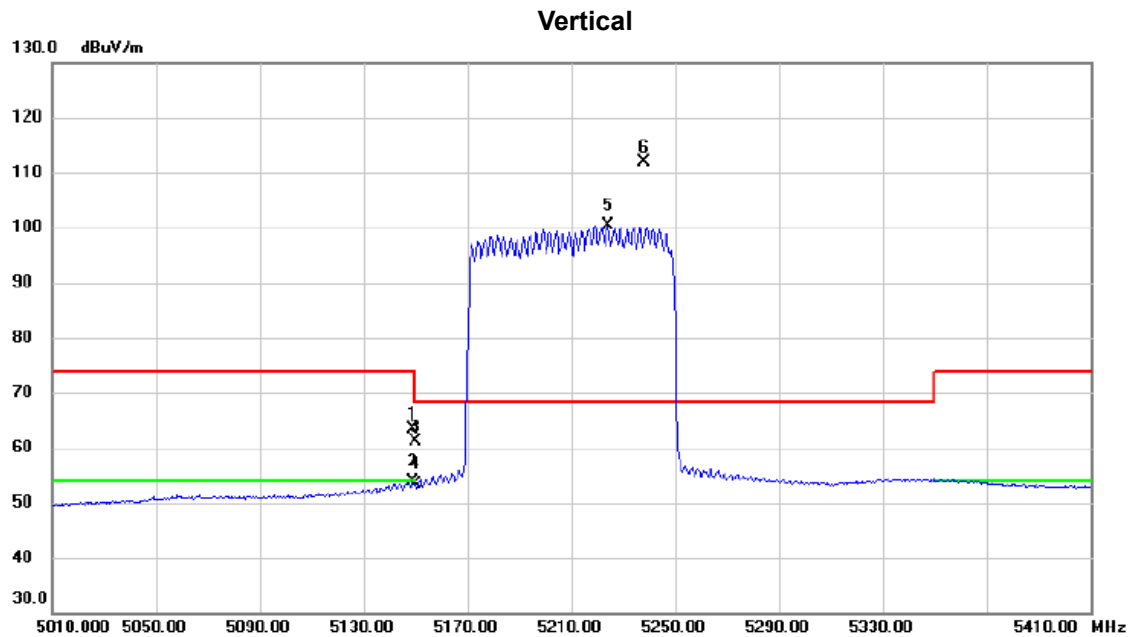


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10456.335	38.42	15.26	53.68	68.30	-14.62	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-1_TX AX (HE80) Mode 5210 MHz

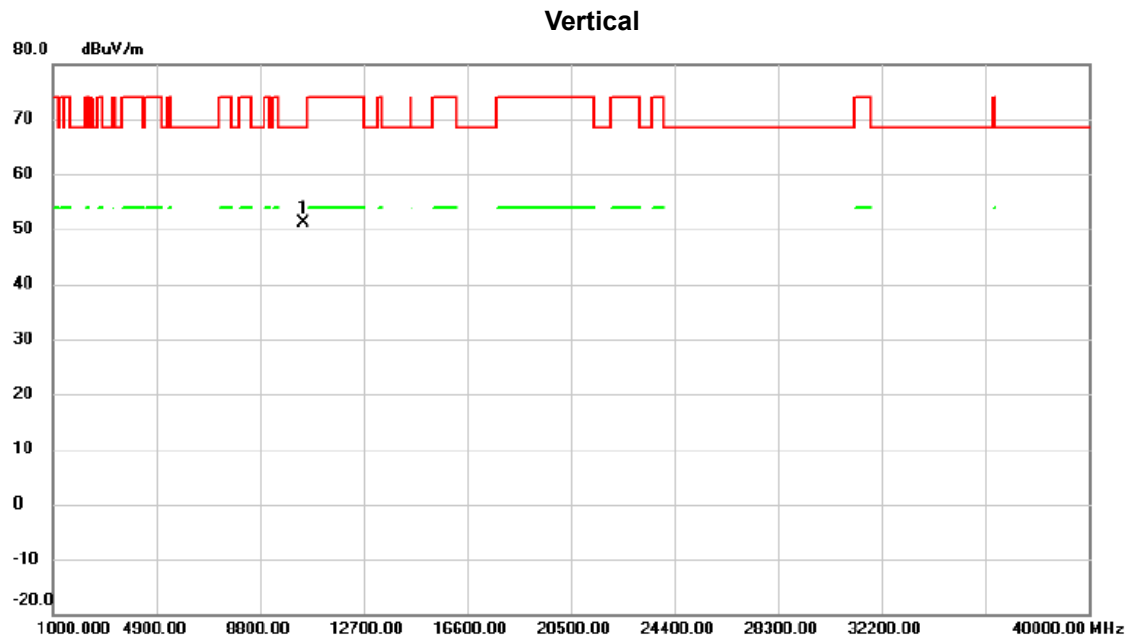


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		5149.000	44.44	18.95	63.39	74.00	-10.61	peak	
2		5149.000	34.90	18.95	53.85	54.00	-0.15	AVG	
3		5150.000	42.28	18.95	61.23	74.00	-12.77	peak	
4		5150.000	34.32	18.95	53.27	54.00	-0.73	AVG	
5	X	5224.000	81.14	19.13	100.27	68.30	31.97	AVG	No Limit
6	*	5238.200	92.74	19.18	111.92	68.30	43.62	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 AX (HE80) Mode 5210 MHz

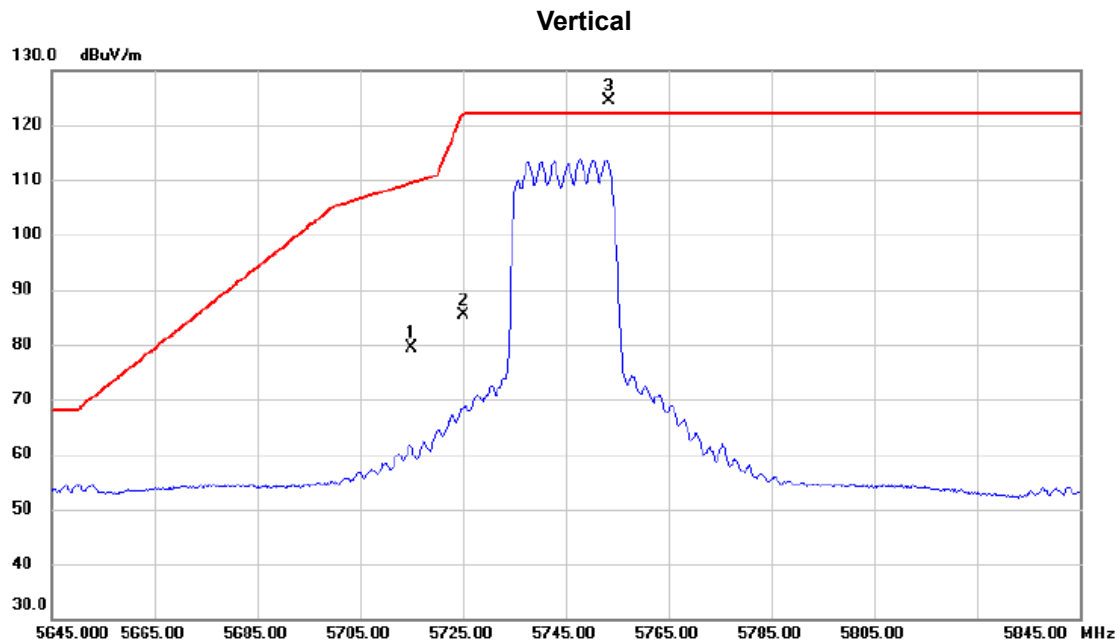


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10420.530	35.97	15.21	51.18	68.30	-17.12	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE20) Mode 5745 MHz

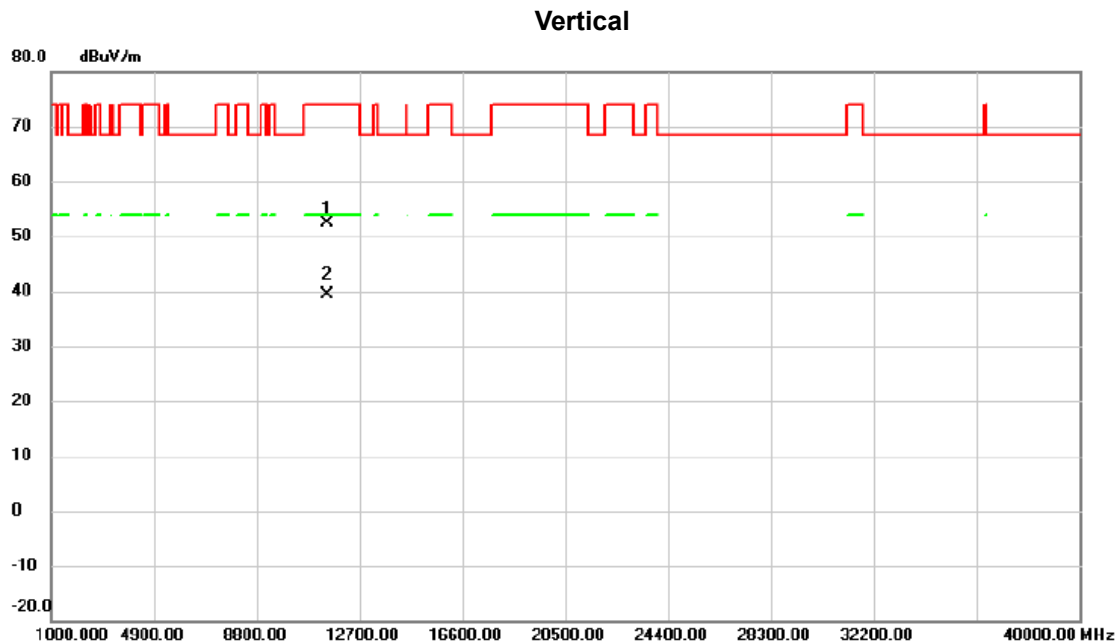


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		5715.000	59.47	20.02	79.49	109.40	-29.91	peak	
2		5725.000	65.36	20.02	85.38	122.20	-36.82	peak	
3	*	5753.300	104.40	20.04	124.44	122.20	2.24	peak	No Limit

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE20) Mode 5745 MHz

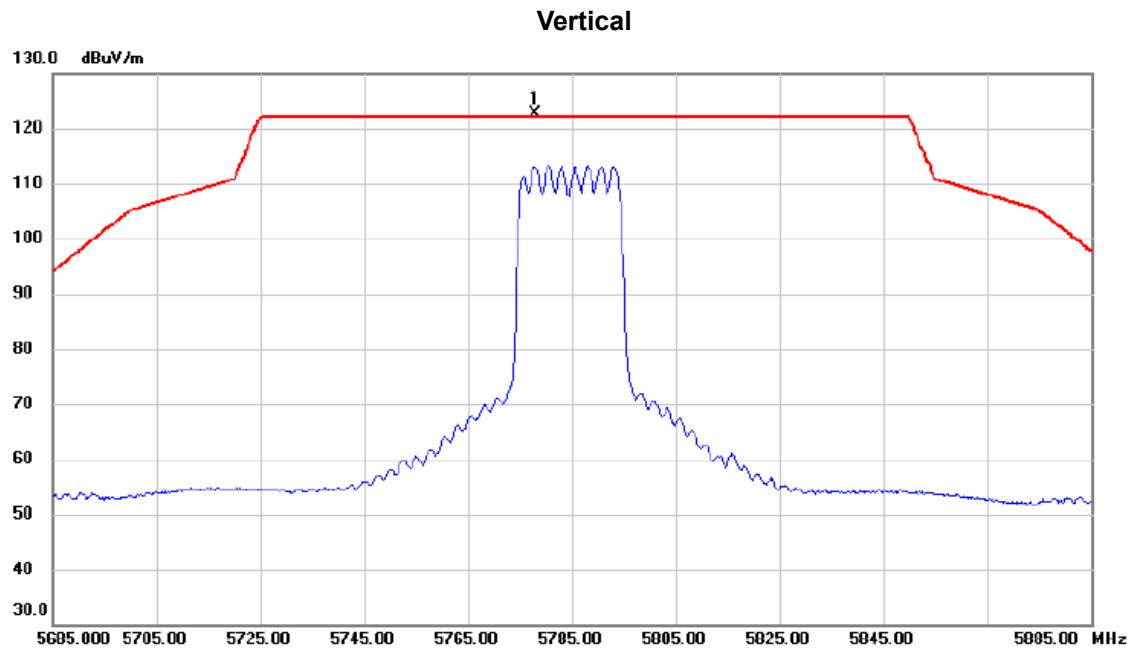


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11488.548	35.32	17.16	52.48	74.00	-21.52	peak	
2	*	11488.595	22.24	17.16	39.40	54.00	-14.60	AVG	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE20) Mode 5785 MHz

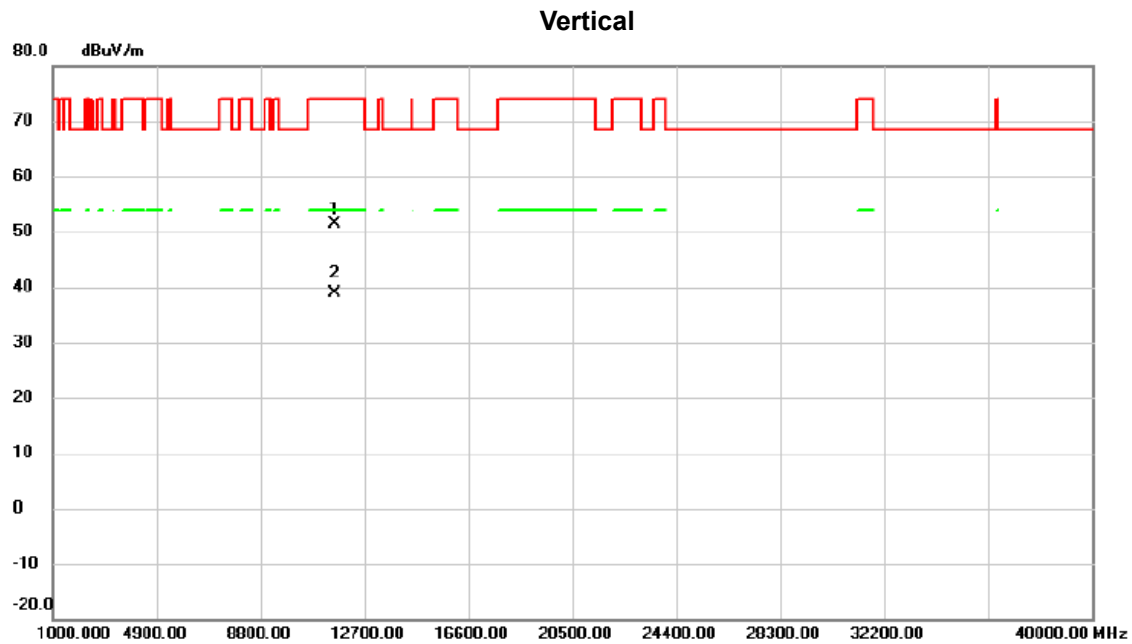


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	5777.900	102.53	20.06	122.59	122.20	0.39	peak	No Limit

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE20) Mode 5785 MHz

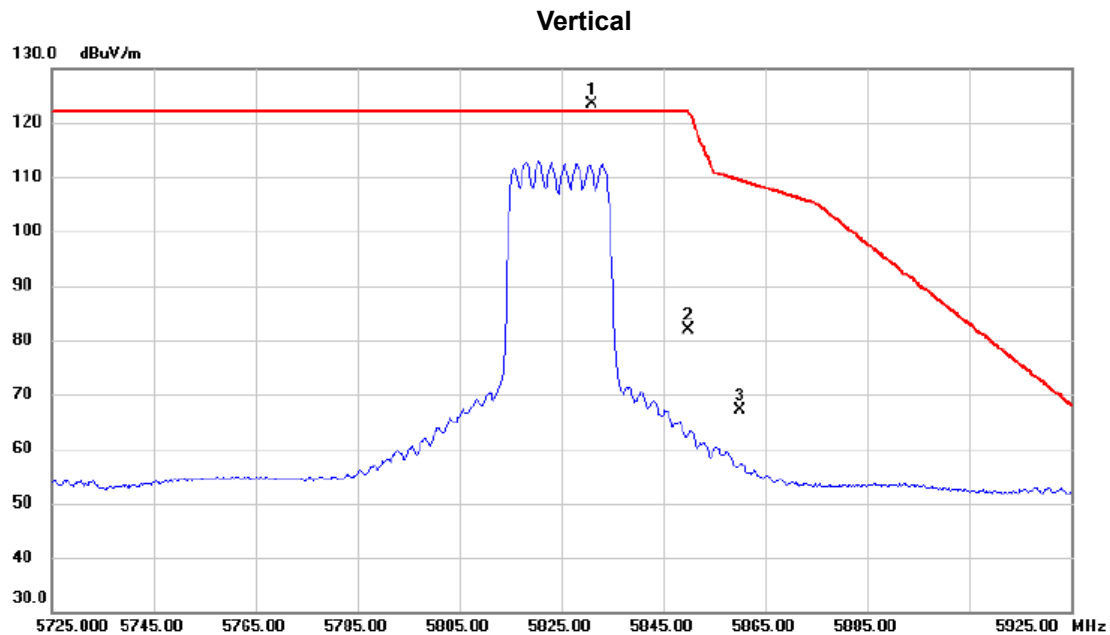


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		11568.108	34.09	17.25	51.34	74.00	-22.66	peak	
2	*	11568.987	21.70	17.25	38.95	54.00	-15.05	AVG	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE20) Mode 5825 MHz



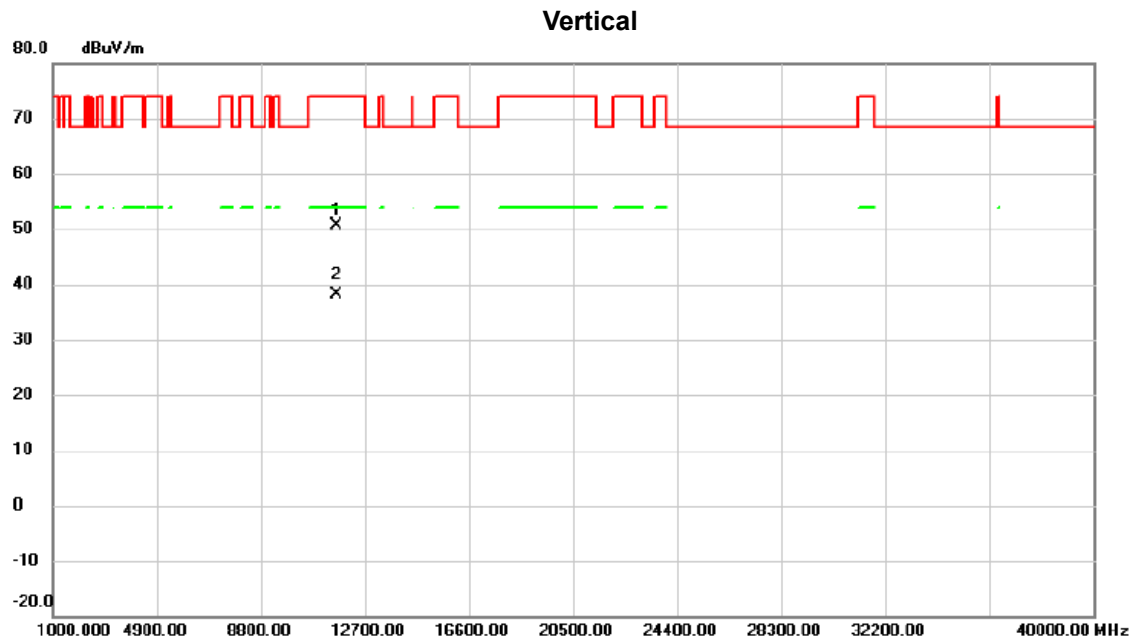
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	5831.000	103.30	20.09	123.39	122.20	1.19	peak	No Limit
2		5850.000	61.87	20.11	81.98	122.20	-40.22	peak	
3		5860.000	47.00	20.11	67.11	109.40	-42.29	peak	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE20) Mode 5825 MHz

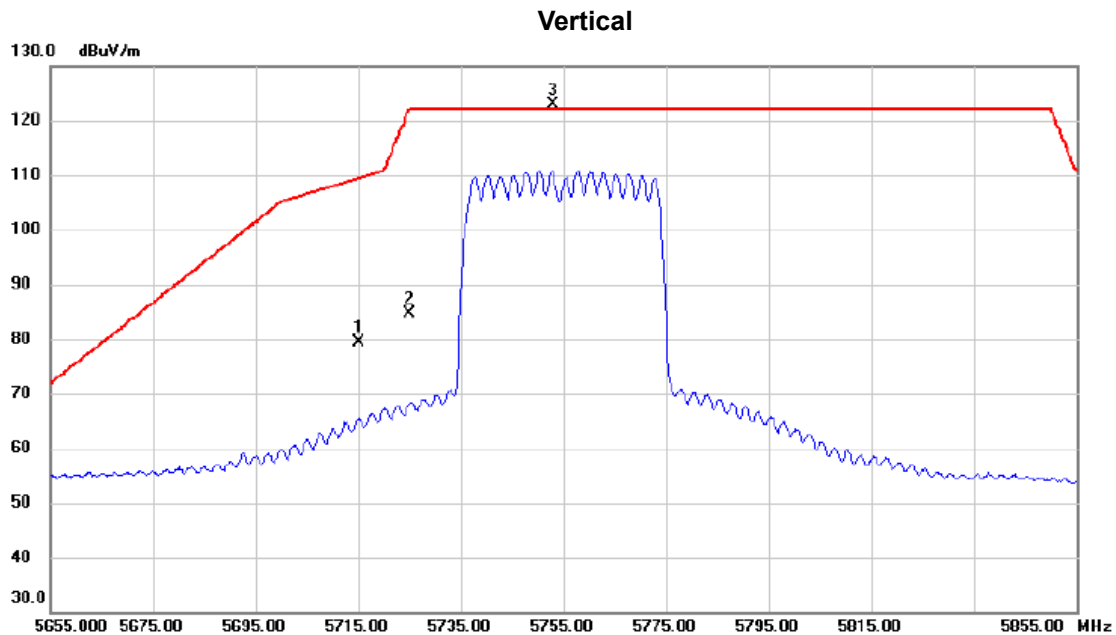


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		11648.765	33.41	17.32	50.73	74.00	-23.27	peak	
2	*	11651.153	20.72	17.33	38.05	54.00	-15.95	AVG	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE40) Mode 5755 MHz

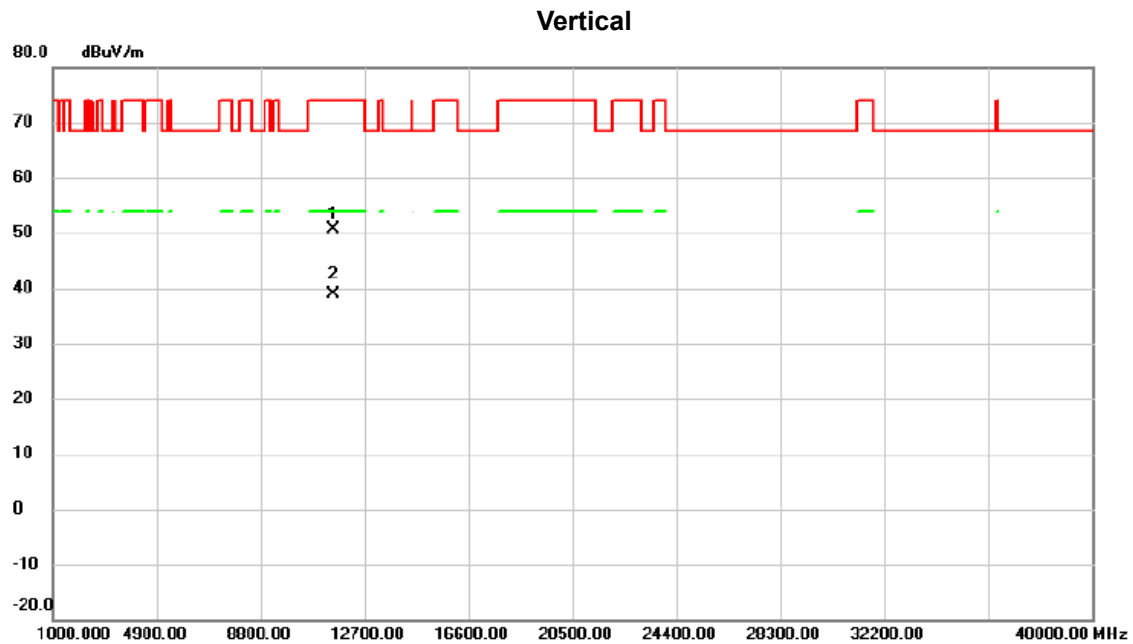


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		5715.000	59.43	20.02	79.45	109.40	-29.95	peak	
2		5725.000	64.66	20.02	84.68	122.20	-37.52	peak	
3	*	5752.900	102.78	20.05	122.83	122.20	0.63	peak	No Limit

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE40) Mode 5755 MHz

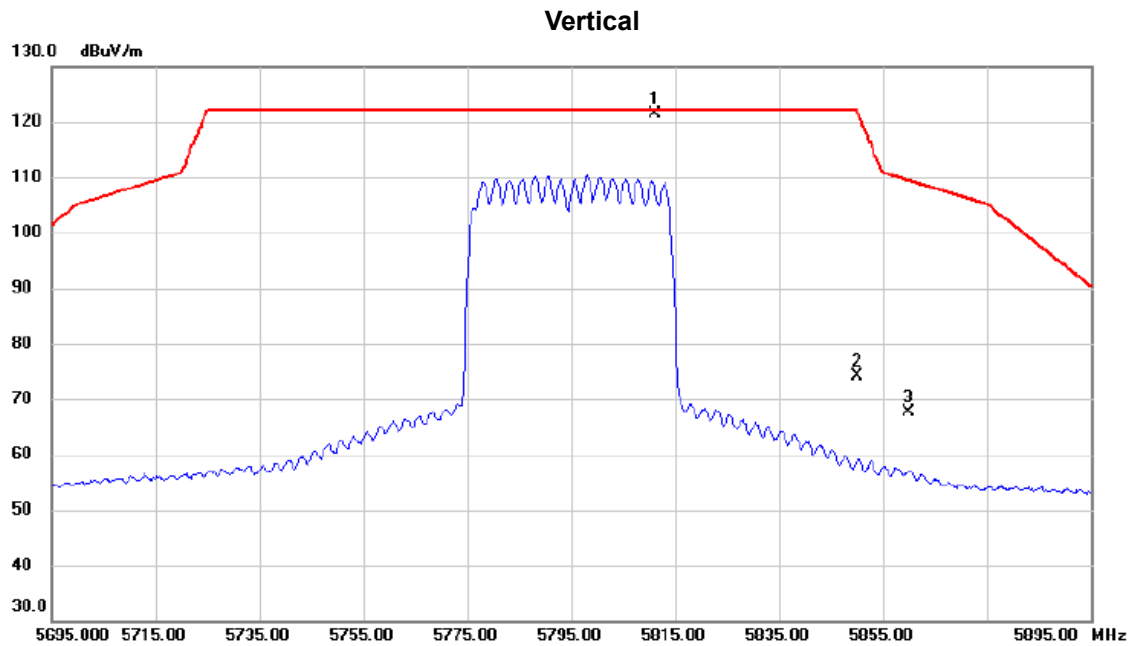


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		11508.753	33.49	17.20	50.69	74.00	-23.31	peak	
2	*	11508.962	21.74	17.20	38.94	54.00	-15.06	AVG	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE40) Mode 5795 MHz

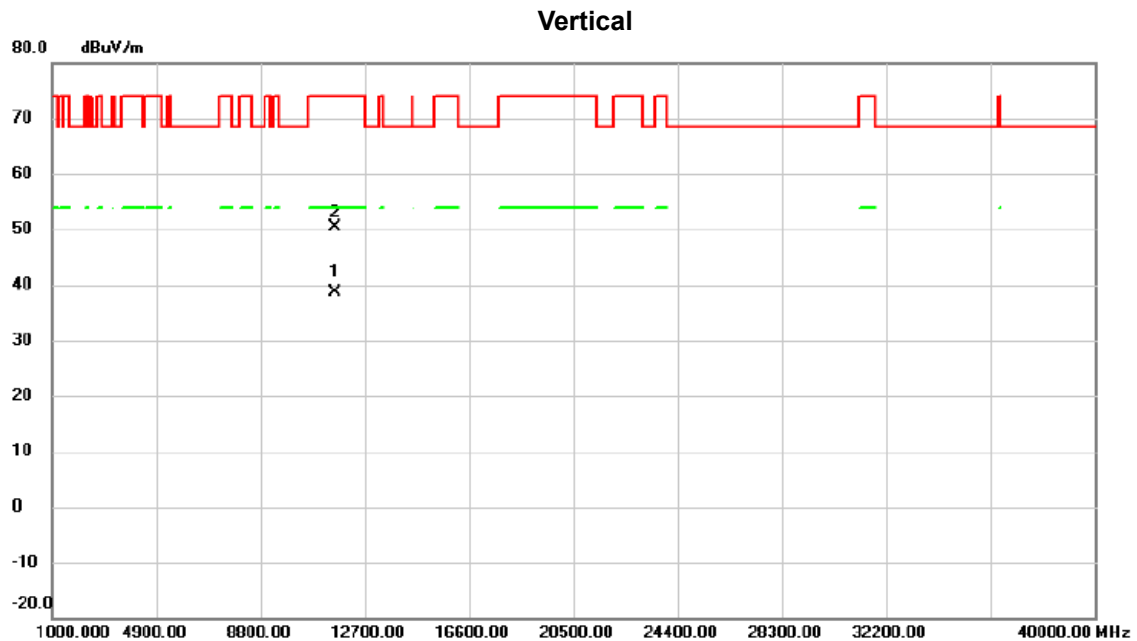


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	5811.100	101.40	20.08	121.48	122.20	-0.72	peak	No Limit
2		5850.000	54.05	20.11	74.16	122.20	-48.04	peak	
3		5860.000	47.59	20.11	67.70	109.40	-41.70	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE40) Mode 5795 MHz

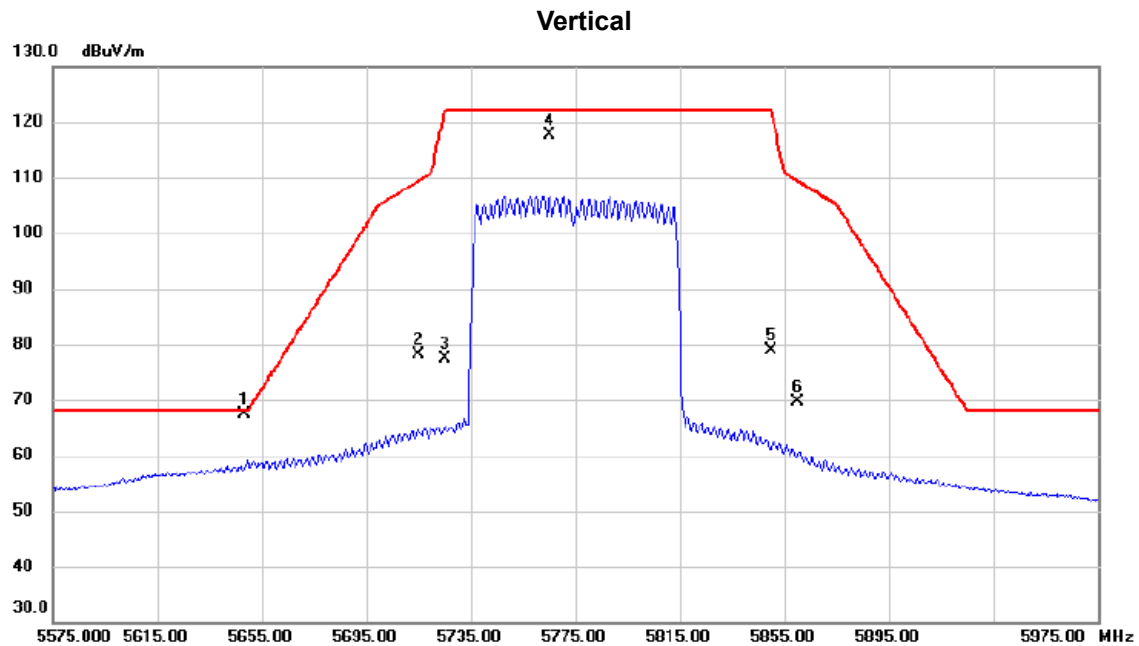


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	11588.788	21.35	17.28	38.63	54.00	-15.37	AVG	
2		11589.315	33.22	17.28	50.50	74.00	-23.50	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE80) Mode 5775 MHz

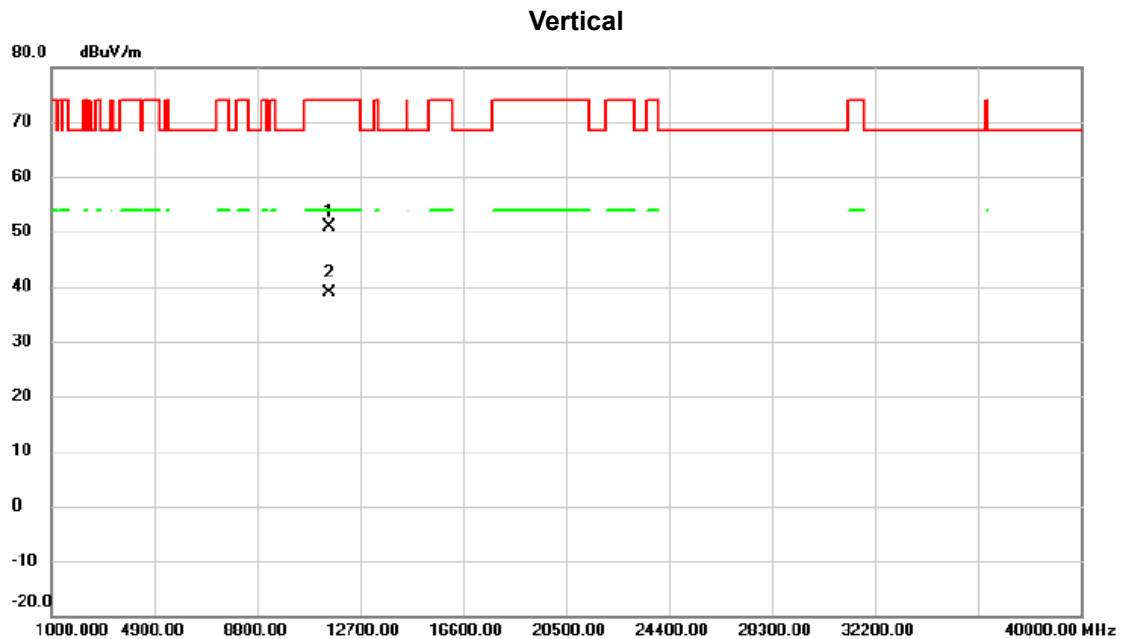


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	5648.500	47.45	19.96	67.41	68.20	-0.79	peak	
2		5715.000	58.04	20.02	78.06	109.40	-31.34	peak	
3		5725.000	57.44	20.02	77.46	122.20	-44.74	peak	
4		5765.200	97.67	20.05	117.72	122.20	-4.48	peak	No Limit
5		5850.000	58.87	20.11	78.98	122.20	-43.22	peak	
6		5860.000	49.42	20.11	69.53	109.40	-39.87	peak	

REMARKS:

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

Orthogonal Axis	X
Test Mode	UNII-3_TX AX (HE80) Mode 5775 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		11548.712	33.69	17.23	50.92	74.00	-23.08	peak	
2	*	11552.030	21.54	17.24	38.78	54.00	-15.22	AVG	

REMARKS:

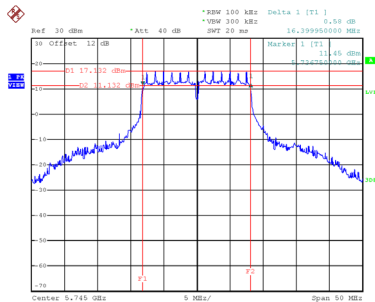
- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E - BANDWIDTH

Test Mode	UNII-3_TX A Mode
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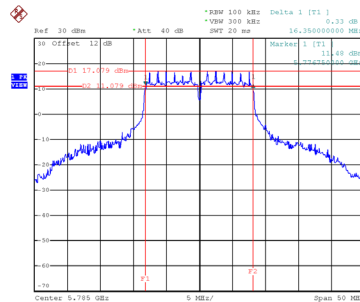
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
149	5745	16.40	18.10	500	Complies
157	5785	16.35	18.50	500	Complies
165	5825	16.35	19.10	500	Complies

CH149



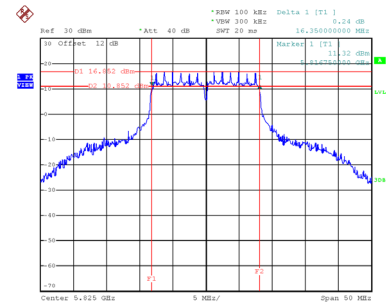
Date: 23.SEP.2020 09:49:44

CH157
6 dB Bandwidth



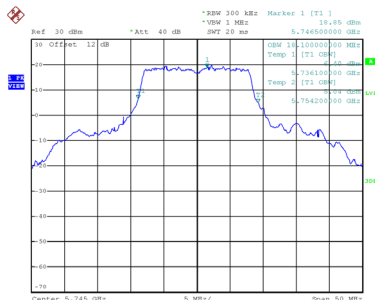
Date: 23.SEP.2020 09:50:58

CH165

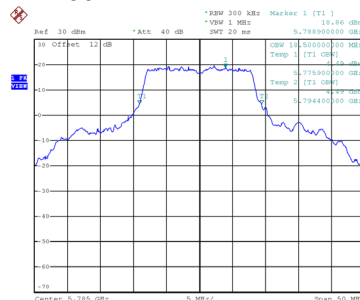


Date: 23.SEP.2020 09:52:42

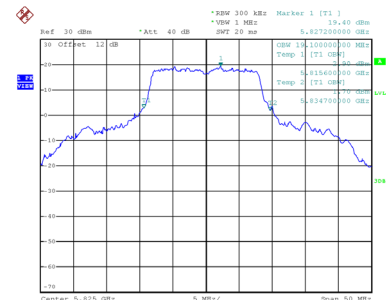
99 % Emission Bandwidth



Date: 23.SEP.2020 09:48:01



Date: 23.SEP.2020 09:50:25

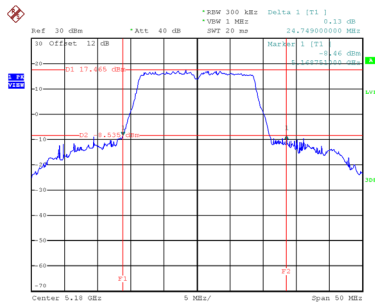


Date: 23.SEP.2020 09:52:10

Test Mode	UNII-1_TX AC (VHT20) Mode
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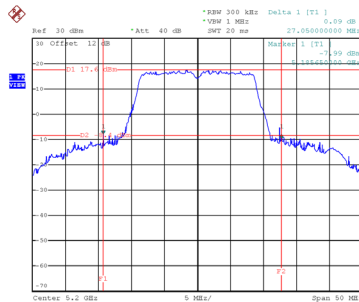
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)
36	5180	24.75	18.40
40	5200	27.05	18.40
48	5240	22.75	18.40

CH36



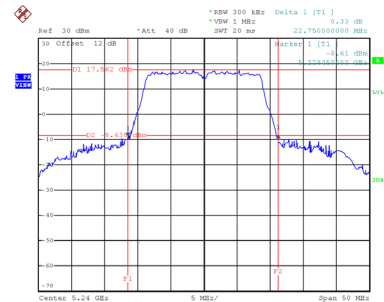
Date: 23.SEP.2020 09:55:16

CH40
26 dB Bandwidth



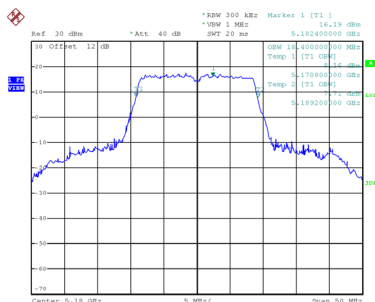
Date: 23.SEP.2020 09:57:00

CH48

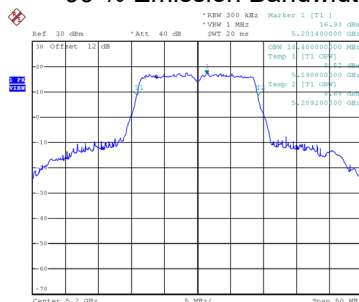


Date: 23.SEP.2020 09:58:17

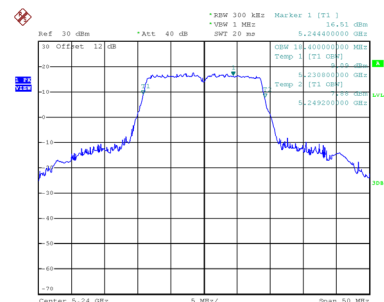
99 % Emission Bandwidth



Date: 23.SEP.2020 09:54:47



Date: 23.SEP.2020 09:56:32

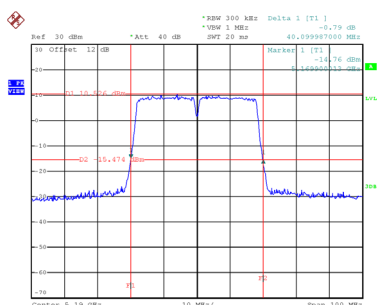


Date: 23.SEP.2020 09:57:47

Test Mode	UNII-1_TX AC (VHT40) Mode
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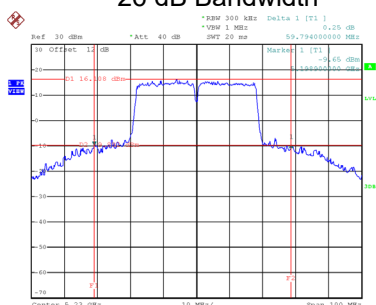
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)
38	5190	40.10	37.00
46	5230	59.79	37.80

CH38



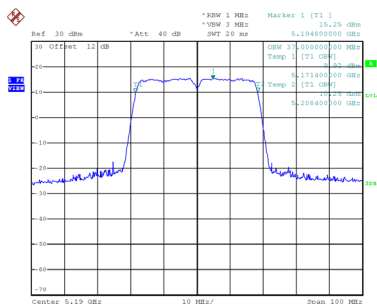
Date: 23.SEP.2020 10:06:51

CH46
26 dB Bandwidth

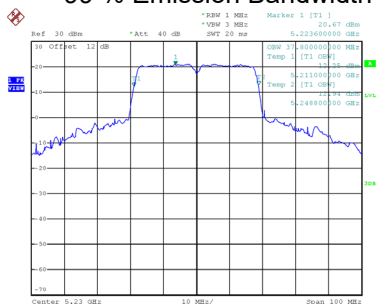


Date: 23.SEP.2020 10:09:58

99 % Emission Bandwidth



Date: 23.SEP.2020 10:06:14



Date: 23.SEP.2020 10:09:25