



FCC Radio Test Report

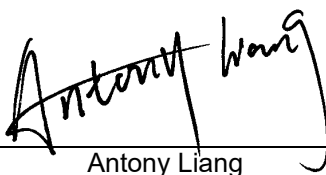
FCC ID: G95OWM7111

This report concerns: **Original Grant**

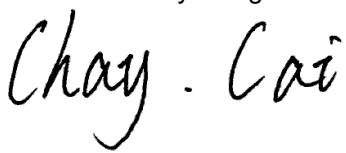
Project No. : 2406C089B
Equipment : IoT gateway
Brand Name : Vantiva
Test Model : OWM7111IOT
Series Model : OWM7111IOT1
Applicant : Vantiva USA LLC
Address : 4855 Peachtree Industrial Blvd. Suite 200 Norcross, Georgia 30092
Manufacturer : Vantiva USA LLC
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Factory : FUHONG PRECISION COMPONENT (BAC GIANG) COMPANY LIMITED
Address : Dinh Tram Industrial Zone.Nenh Ward Viet Yen Town.Bac Giang Province. Vietnam
Date of Receipt : Jun. 25, 2024
Date of Test : Jun. 25, 2024 ~ Aug. 21, 2024
Issued Date : Sep. 27, 2024
Report Version : R00
Test Sample : Engineering Sample No.: DG2024062512 for radiated and AC conducted power line emission, DG2024062515 for others.
Standard(s) : FCC CFR Title 47, Part 15, Subpart E

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

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. BTL assumes no responsibility for the data provided by the customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by BTL.

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BTL's laboratory quality assurance procedures are in compliance with the ISO/IEC 17025: 2017 requirements, and accredited by the conformity assessment authorities listed in this test report.

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 No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2406C089B	R00	Original Report.	Sep. 27, 2024	Valid

1. APPLICABLE STANDARDS

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

ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of A2LA:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart E				
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)	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
 - ☒ Outdoor access point device
 - ☒ Indoor access point device
 - ☐ Fixed point-to-point access points device
 - ☐ Client device

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Dalang, Dongguan City, Guangdong People's Republic of China.

BTL's Registration Number for FCC: 747969

BTL's Designation Number for FCC: CN1377

2.2 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	2.88

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB01	CISPR	9kHz ~ 30MHz	2.36

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	30MHz ~ 200MHz	V	4.40
		30MHz ~ 200MHz	H	3.62
		200MHz ~ 1,000MHz	V	4.58
		200MHz ~ 1,000MHz	H	3.98

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB03 (3m)	CISPR	1GHz ~ 6GHz	4.08
		6GHz ~ 18GHz	4.62

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB03 (1m)	CISPR	18 ~ 26.5 GHz	3.36
		26.5 ~ 40 GHz	3.58

C. Other Measurement test:

Test Item	Uncertainty
Bandwidth	0.90 %
Maximum Output Power	1.3 dB
Power Spectral Density	1.4 dB
Frequency Stability	2.7 ppm
Temperature	0.8 °C
Humidity	2.2 %

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

2.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By	Test Date
AC Power Line Conducted Emissions	25°C	60%	AC 120V/60Hz	Hayden Chen	Jul. 17, 2024
Radiated Emissions-9kHz to 30MHz	23°C	46%	AC 120V/60Hz	Hayden Chen	Aug. 05, 2024
Radiated Emissions-30MHz to 1000MHz	26°C	56%	AC 120V/60Hz	Allen Tong	Jul. 17, 2024
Radiated Emissions-Above 1000 MHz	24°C	58%	AC 120V/60Hz	Allen Tong	Jul. 28, 2024
	25°C	53%	AC 120V/60Hz	Jensen Zhou	Jul. 28, 2024
	25°C	55%	AC 120V/60Hz	Allen Tong	Jul. 18, 2024
Bandwidth	22°C	52%	PoE 54V	Steve Zhou	Jul. 21, 2024
Maximum Output Power	22-24°C	48%	PoE 54V	Steve Zhou	Jul. 12, 2024 ~ Aug. 08, 2024
Power Spectral Density	23°C	58%	PoE 54V	Parker Yang	Jul. 20, 2024
	22°C	52%	PoE 54V	Steve Zhou	Jul. 21, 2024
Frequency Stability	Normal & Extreme	52%	Normal & Extreme	Steve Zhou	Jul. 21, 2024

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	IoT gateway
Brand Name	Vantiva
Test Model	OWM7111IOT
Series Model	OWM7111IOT1
Model Difference(s)	Indoor access point device model: OWM7111IOT Outdoor access point device model : OWM7111IOT1
Software Version	5043_OWM7111IOT_FSW_V07
Hardware Version	FGR
Power Source	DC Voltage supplied from PoE Power Supply. Model: ADP-46PH-54-2- 54046EPCU
Power Rating	INPUT: 100-240V~ 50/60Hz OUTPUT: 54.0V===0.85A
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 802.11ac(VHT20): 25.83 dBm (0.3828 W)
Maximum Output Power UNII-3 Non Beamforming	IEEE 802.11ac(VHT20): 26.34 dBm (0.4305 W)
Maximum Output Power UNII-1 Beamforming	IEEE 802.11ac(VHT20): 24.16 dBm (0.4159 W)
Maximum Output Power UNII-3 Beamforming	IEEE 802.11ac(VHT20): 26.11 dBm (0.4083 W)

Note:

1. 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. Antenna Specification:

Ant.	Brand	IPN	Antenna Type	Connector	Gain (dBi)	Note
1	Vantiva	6338351C	PCB	IPEX	7.00	UNII-1
2	Vantiva	6338352C	PCB	IPEX	7.50	
1	Vantiva	6338351C	PCB	IPEX	7.40	UNII-3
2	Vantiva	6338352C	PCB	IPEX	8.90	

Note:

- For CDD: UNII-1 Directional gain=6.25 dBi; So, the UNII-1 output power limit is 30-(6.25-6)=29.75, the power spectral density limit is 17-(6.25-6)=16.75.
UNII-3 Directional gain=6.38 dBi; So, the UNII-3 output power limit is 30-(6.38-6)=29.62, the power spectral density limit is 30-(6.38-6)=29.62.

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k/20}$ if the k th antenna is being fed by spatial stream j , or zero if it is not;
 G_k is the gain in dBi of the k th antenna.

- For TXBF: UNII-1 Directional gain=6.30 dBi. So, the output power limit is 30-(6.30-6)=29.70.
UNII-3 Directional gain=6.83 dBi. So, the output power limit is 30-(6.83-6)=29.17.
- No TXBF: The maximum directional gain at any elevation angle above 30 degrees as measured from the horizon is -4.96 dBi.
- For TX BF: The maximum directional gain at any elevation angle above 30 degrees as measured from the horizon is -3.21 dBi.

4. 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)

3.2 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 Channel 36/40/48 (UNII-1)
Mode 2	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)
Mode 3	TX AC(VHT40) Mode Channel 38/46 (UNII-1)
Mode 4	TX AC(VHT80) Mode Channel 42 (UNII-1)
Mode 5	TX AX(HE20) Mode Channel 36/40/48 (UNII-1)
Mode 6	TX AX(HE40) Mode Channel 38/46 (UNII-1)
Mode 7	TX AX(HE80) Mode Channel 42 (UNII-1)
Mode 8	TX A Mode Channel 149/157/165 (UNII-3)
Mode 9	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)
Mode 10	TX AC(VHT40) Mode Channel 151/159 (UNII-3)
Mode 11	TX AC(VHT80) Mode Channel 155 (UNII-3)
Mode 12	TX AX(HE20) Mode Channel 149/157/165 (UNII-3)
Mode 13	TX AX(HE40) Mode Channel 151/159 (UNII-3)
Mode 14	TX AX(HE80) Mode Channel 155 (UNII-3)
Mode 15	TX AC(VHT20) Mode Channel 149 (UNII-3)

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(VHT20) Mode Channel 149 (UNII-3)

Radiated Emissions Test - Below 1GHz	
Final Test Mode	Description
Mode 15	TX AC(VHT20) Mode Channel 149 (UNII-3)

Radiated Emissions Test - Above 1GHz_Non Beamforming	
Final Test Mode	Description
Mode 1	TX A Mode Channel 36/40/48 (UNII-1)
Mode 2	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)
Mode 3	TX AC(VHT40) Mode Channel 38/46 (UNII-1)
Mode 4	TX AC(VHT80) Mode Channel 42 (UNII-1)
Mode 5	TX AX(HE20) Mode Channel 36/40/48 (UNII-1)
Mode 6	TX AX(HE40) Mode Channel 38/46 (UNII-1)
Mode 7	TX AX(HE80) Mode Channel 42 (UNII-1)
Mode 8	TX A Mode Channel 149/157/165 (UNII-3)
Mode 9	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)
Mode 10	TX AC(VHT40) Mode Channel 151/159 (UNII-3)
Mode 11	TX AC(VHT80) Mode Channel 155 (UNII-3)
Mode 12	TX AX(HE20) Mode Channel 149/157/165 (UNII-3)
Mode 13	TX AX(HE40) Mode Channel 151/159 (UNII-3)
Mode 14	TX AX(HE80) Mode Channel 155 (UNII-3)

Maximum Output Power test_Non Beamforming	
Final Test Mode	Description
Mode 1	TX A Mode Channel 36/40/48 (UNII-1)
Mode 2	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)
Mode 3	TX AC(VHT40) Mode Channel 38/46 (UNII-1)
Mode 4	TX AC(VHT80) Mode Channel 42 (UNII-1)
Mode 5	TX AX(HE20) Mode Channel 36/40/48 (UNII-1)
Mode 6	TX AX(HE40) Mode Channel 38/46 (UNII-1)
Mode 7	TX AX(HE80) Mode Channel 42 (UNII-1)
Mode 8	TX A Mode Channel 149/157/165 (UNII-3)
Mode 9	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)
Mode 10	TX AC(VHT40) Mode Channel 151/159 (UNII-3)
Mode 11	TX AC(VHT80) Mode Channel 155 (UNII-3)
Mode 12	TX AX(HE20) Mode Channel 149/157/165 (UNII-3)
Mode 13	TX AX(HE40) Mode Channel 151/159 (UNII-3)
Mode 14	TX AX(HE80) Mode Channel 155 (UNII-3)

Maximum Output Power test_Beamforming	
Final Test Mode	Description
Mode 2	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)
Mode 3	TX AC(VHT40) Mode Channel 38/46 (UNII-1)
Mode 4	TX AC(VHT80) Mode Channel 42 (UNII-1)
Mode 5	TX AX(HE20) Mode Channel 36/40/48 (UNII-1)
Mode 6	TX AX(HE40) Mode Channel 38/46 (UNII-1)
Mode 7	TX AX(HE80) Mode Channel 42 (UNII-1)
Mode 8	TX A Mode Channel 149/157/165 (UNII-3)
Mode 9	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)
Mode 10	TX AC(VHT40) Mode Channel 151/159 (UNII-3)
Mode 11	TX AC(VHT80) Mode Channel 155 (UNII-3)
Mode 12	TX AX(HE20) Mode Channel 149/157/165 (UNII-3)
Mode 13	TX AX(HE40) Mode Channel 151/159 (UNII-3)
Mode 14	TX AX(HE80) Mode Channel 155 (UNII-3)

Other Conducted_Non Beamforming	
Final Test Mode	Description
Mode 1	TX A Mode Channel 36/40/48 (UNII-1)
Mode 2	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)
Mode 3	TX AC(VHT40) Mode Channel 38/46 (UNII-1)
Mode 4	TX AC(VHT80) Mode Channel 42 (UNII-1)
Mode 5	TX AX(HE20) Mode Channel 36/40/48 (UNII-1)
Mode 6	TX AX(HE40) Mode Channel 38/46 (UNII-1)
Mode 7	TX AX(HE80) Mode Channel 42 (UNII-1)
Mode 8	TX A Mode Channel 149/157/165 (UNII-3)
Mode 9	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)
Mode 10	TX AC(VHT40) Mode Channel 151/159 (UNII-3)
Mode 11	TX AC(VHT80) Mode Channel 155 (UNII-3)
Mode 12	TX AX(HE20) Mode Channel 149/157/165 (UNII-3)
Mode 13	TX AX(HE40) Mode Channel 151/159 (UNII-3)
Mode 14	TX AX(HE80) Mode Channel 155 (UNII-3)

Note:

- (1) For AC power line conducted emissions and radiated emission below 1 GHz test, the TX AC(VHT20) Mode Channel 149 (UNII-3) is found to be the worst case and recorded.
- (2) For radiated emission above 1 GHz test, the spurious points of 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 emission Harmonic 18-40GHz test, only tested the worst case 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 are tested, the worst case are IEEE 802.11a mode, IEEE 802.11ac(VHT20) mode, IEEE 802.11ac(VHT40) mode, IEEE 802.11ac(VHT80) mode, IEEE 802.11ax(HE20) mode, IEEE 802.11ax(HE40) mode and IEEE 802.11ax(HE80) mode, only the worst cases are documented for other test items.
- (6) The measurements for Output Power are tested, the Non Beamforming and Beamforming are recorded in the report. The worst case is Non Beamforming and only the worst case is documented for other test items.
- (7) For radiated emission above 1 GHz of Harmonic test: The polarization of Vertical and Horizontal are evaluated, the worst case is Horizontal and recorded.
- (8) For radiated emission above 1 GHz of Bandedge test: The polarization of Vertical and Horizontal are evaluated, the worst case is Vertical and recorded.
- (9) IEEE 802.11ax mode only supports full RU, so only the full RU is evaluated and measured inside report.
- (10)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.

3.3 PARAMETERS OF TEST SOFTWARE

Non Beamforming

UNII-1			
Test Software Version	accessMTool_REL_3_2_0_0		
Frequency (MHz)	5180	5200	5240
IEEE 802.11a	83	89	87
IEEE 802.11ac(VHT20)	84	89	86
IEEE 802.11ax(HE20)	82	89	86
Frequency (MHz)	5190	5230	
IEEE 802.11ac(VHT40)	75	85	
IEEE 802.11ax(HE40)	75	88	
Frequency (MHz)	5210		
IEEE 802.11ac(VHT80)	74		
IEEE 802.11ax(HE80)	70		

UNII-3			
Test Software Version	accessMTool_REL_3_2_0_0		
Frequency (MHz)	5745	5785	5825
IEEE 802.11a	88	89	90
IEEE 802.11ac(VHT20)	88	89	92
IEEE 802.11ax(HE20)	88	89	92
Frequency (MHz)	5755	5795	
IEEE 802.11ac(VHT40)	86	88	
IEEE 802.11ax(HE40)	86	88	
Frequency (MHz)	5775		
IEEE 802.11ac(VHT80)	85		
IEEE 802.11ax(HE80)	84		

Beamforming

UNII-1			
Test Software Version	accessMTool_REL_3_2_0_0		
Frequency (MHz)	5180	5200	5240
IEEE 802.11ac(VHT20)	83	82	79
IEEE 802.11ax(HE20)	81	81	80
Frequency (MHz)	5190	5230	
IEEE 802.11ac(VHT40)	74	79	
IEEE 802.11ax(HE40)	74	80	
Frequency (MHz)	5210		
IEEE 802.11ac(VHT80)	73		
IEEE 802.11ax(HE80)	69		

UNII-3			
Test Software Version	accessMTool_REL_3_2_0_0		
Frequency (MHz)	5745	5785	5825
IEEE 802.11ac(VHT20)	87	88	91
IEEE 802.11ax(HE20)	87	88	91
Frequency (MHz)	5755	5795	
IEEE 802.11ac(VHT40)	85	87	
IEEE 802.11ax(HE40)	85	87	
Frequency (MHz)	5775		
IEEE 802.11ac(VHT80)	84		
IEEE 802.11ax(HE80)	83		

3.4 DUTY CYCLE

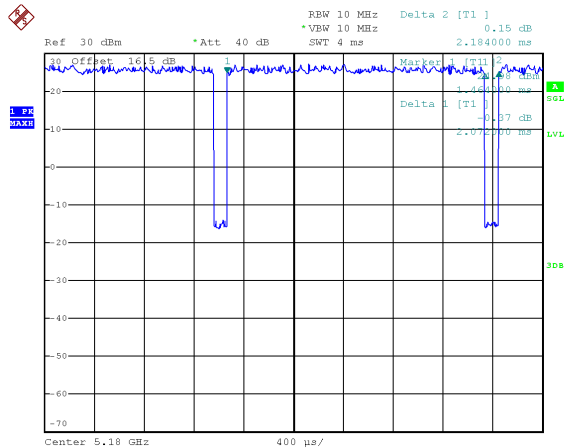
If duty cycle is $\geq 98\%$, duty factor is not required.

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.

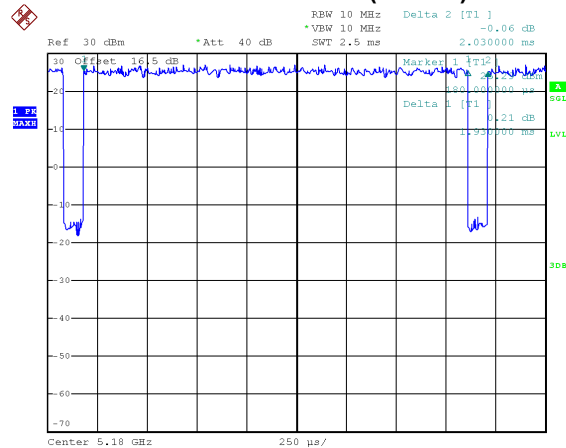
IEEE 802.11a



Date: 20.JUL.2024 14:42:10

Duty cycle = $2.072 \text{ ms} / 2.184 \text{ ms} = 94.87\%$
Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.23$

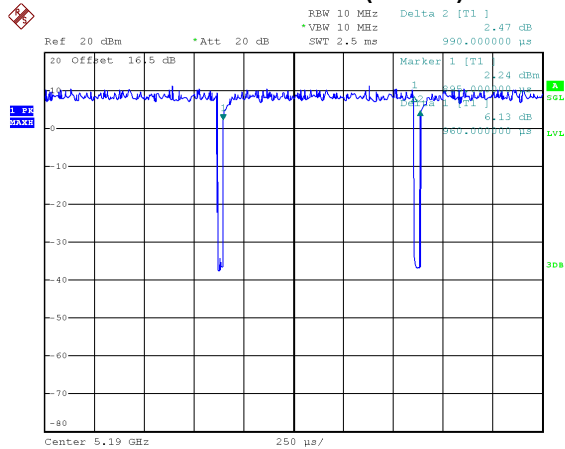
IEEE 802.11ac(VHT20)



Date: 20.JUL.2024 14:45:13

Duty cycle = $1.930 \text{ ms} / 2.030 \text{ ms} = 95.07\%$
Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.22$

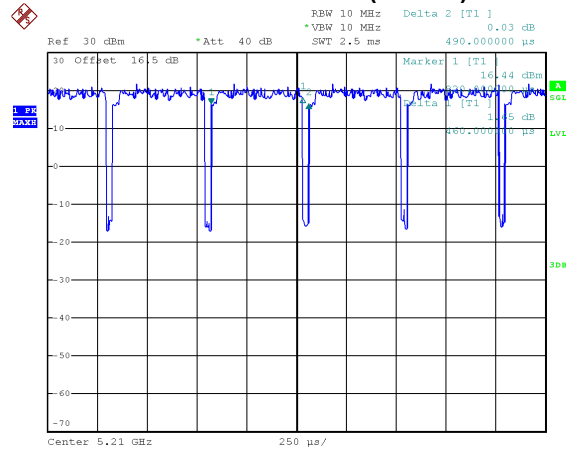
IEEE 802.11ac(VHT40)



Date: 20.AUG.2024 15:36:30

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

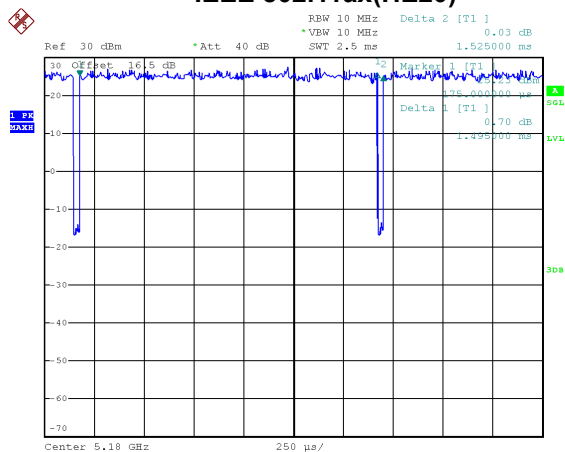
IEEE 802.11ac(VHT80)



Date: 20.JUL.2024 14:47:30

Duty cycle = $0.460 \text{ ms} / 0.490 \text{ ms} = 93.88\%$
Duty Factor = $10 \log(1 / \text{Duty cycle}) = 0.27$

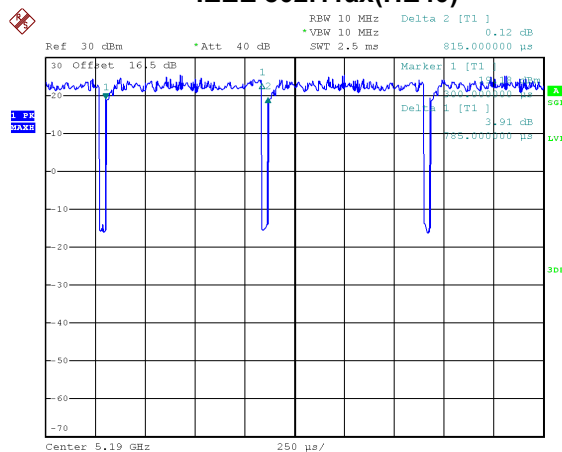
IEEE 802.11ax(HE20)



Date: 20.JUL.2024 14:50:31

Duty cycle = 1.495 ms / 1.525 ms = 98.03%
Duty Factor = 10 log(1 / Duty cycle) = 0.00

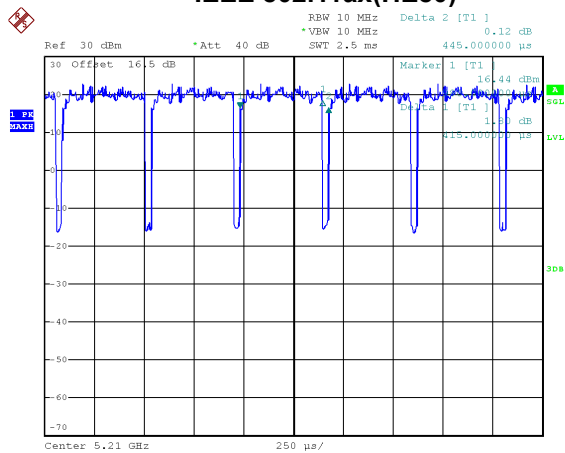
IEEE 802.11ax(HE40)



Date: 20.JUL.2024 14:51:22

Duty cycle = 0.785 ms / 0.815 ms = 96.32%
Duty Factor = 10 log(1 / Duty cycle) = 0.16

IEEE 802.11ax(HE80)



Date: 20.JUL.2024 14:56:12

Duty cycle = 0.415 ms / 0.445 ms = 93.26%
Duty Factor = 10 log(1 / Duty cycle) = 0.30

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 483 Hz (Duty cycle < 98%).

For 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 518 Hz (Duty cycle < 98%).

For 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 1042 Hz (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 2174 Hz (Duty cycle < 98%).

For 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%).

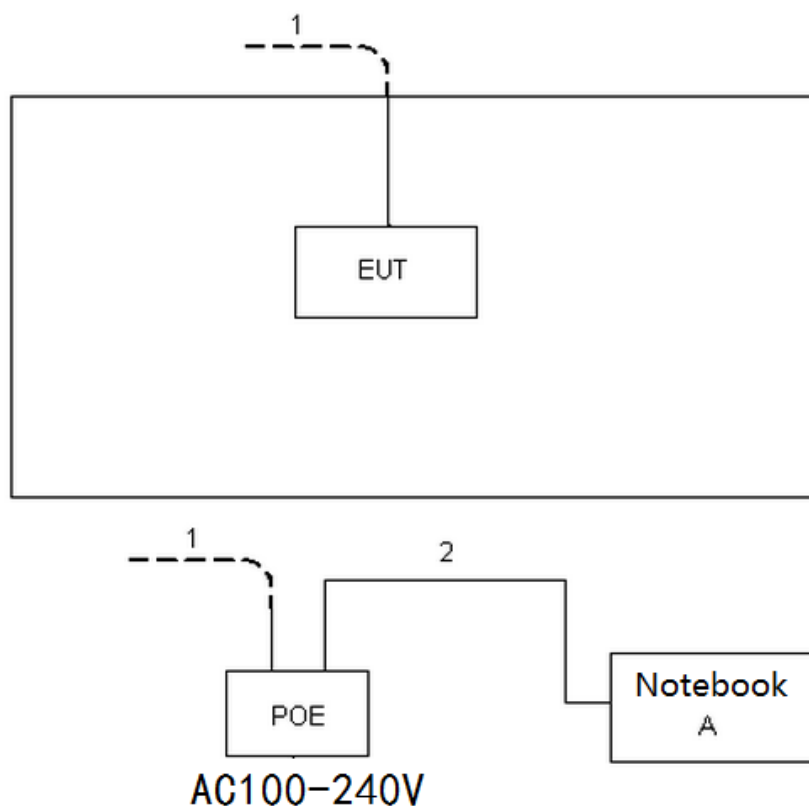
For IEEE 802.11ax(HE40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1274 Hz (Duty cycle < 98%).

For 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 2410 Hz (Duty cycle < 98%).

3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.6 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	RJ45 Cable	NO	NO	10m
2	RJ45 Cable	NO	NO	1m

3.7 CUSTOMER INFORMATION DESCRIPTION

- 1) The antenna gain and beamforming gain are provided by the manufacturer.
- 2) Except for AC power line conducted emissions and radiated emissions, the results of all test items include cable losses. All cable losses are provided by the testing laboratory.

4. AC POWER LINE CONDUCTED EMISSIONS

4.1 LIMIT

Frequency (MHz)	Limit (dB μ V)	
	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.

4.2 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.

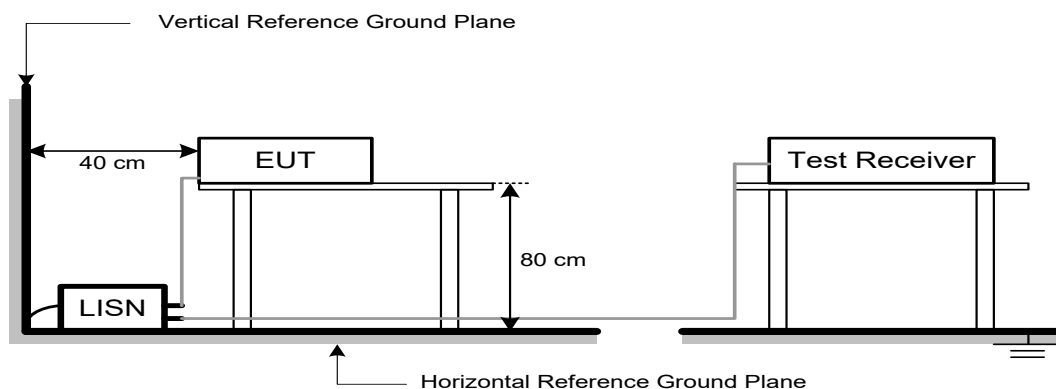
The following table is the setting of the receiver:

Receiver Parameter	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.3 DEVIATION FROM TEST STANDARD

No deviation

4.4 TEST SETUP



4.5 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.

4.6 TEST RESULTS

Please refer to the APPENDIX A.

5. RADIATED EMISSIONS

5.1 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 (Above 1000 MHz)

Frequency (MHz)	EIRP Limit (dBm/MHz)	Band edge at 3m (dBμV/m)	Harmonic at 1m (dBμV/m)
5150-5250	-27	68.2	77.7 (Note 3)
5250-5350	-27	68.2	77.7 (Note 3)
5470-5725	-27	68.2	77.7 (Note 3)
5725-5850 NOTE (2)	-27	68.2	77.7 (Note 3)
	10	105.2	114.7 (Note 3)
	15.6	110.8	120.3 (Note 3)
	27	122.2	131.7 (Note 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.

(3)

$$FS_{\text{limit}} = FS_{\text{max}} - 20\log\left(\frac{d_{\text{limit}}}{d_{\text{measure}}}\right)$$

$20\log(d_{\text{limit}}/d_{\text{measure}}) = 20\log(3/1) = 9.5 \text{ dB}$.

FS_{limit} : Harmonic at 3m Peak and Average limit.

FS_{max} : Harmonic at 1m Peak and Average Maximum value.

d_{limit} : Harmonic at 3m test distance.

d_{measure} : Harmonic Actual test distance.

5.2 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 or 1m 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.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic or 40 GHz, whichever is lower
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for PK value 1 MHz / 1/T Hz for AVG value

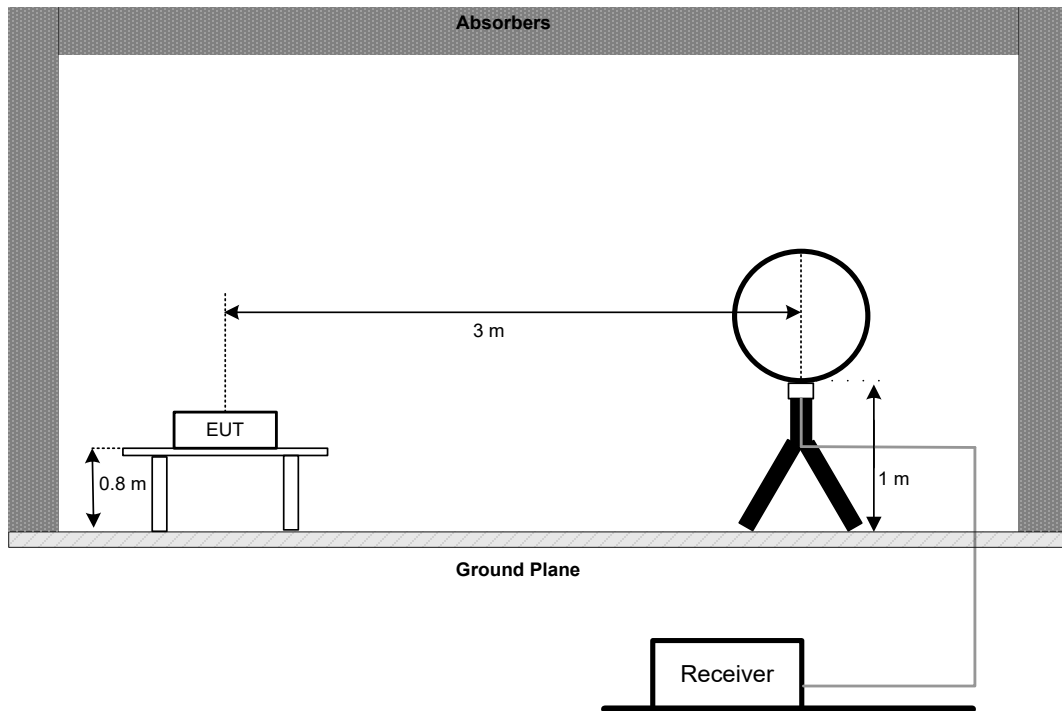
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~40 GHz for PK/AVG detector

5.3 DEVIATION FROM TEST STANDARD

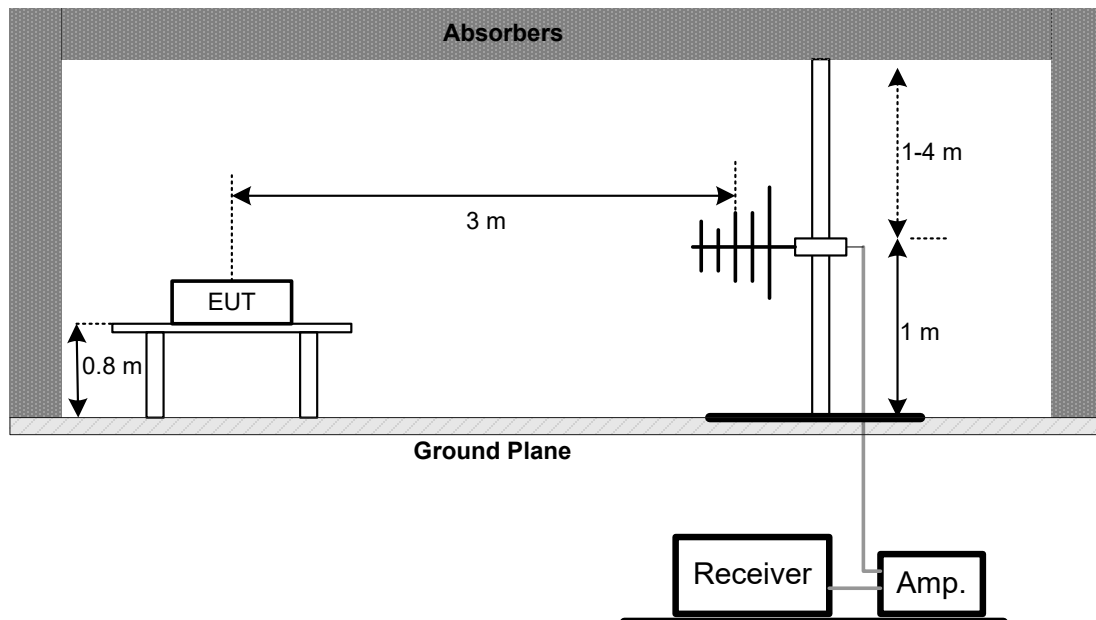
No deviation.

5.4 TEST SETUP

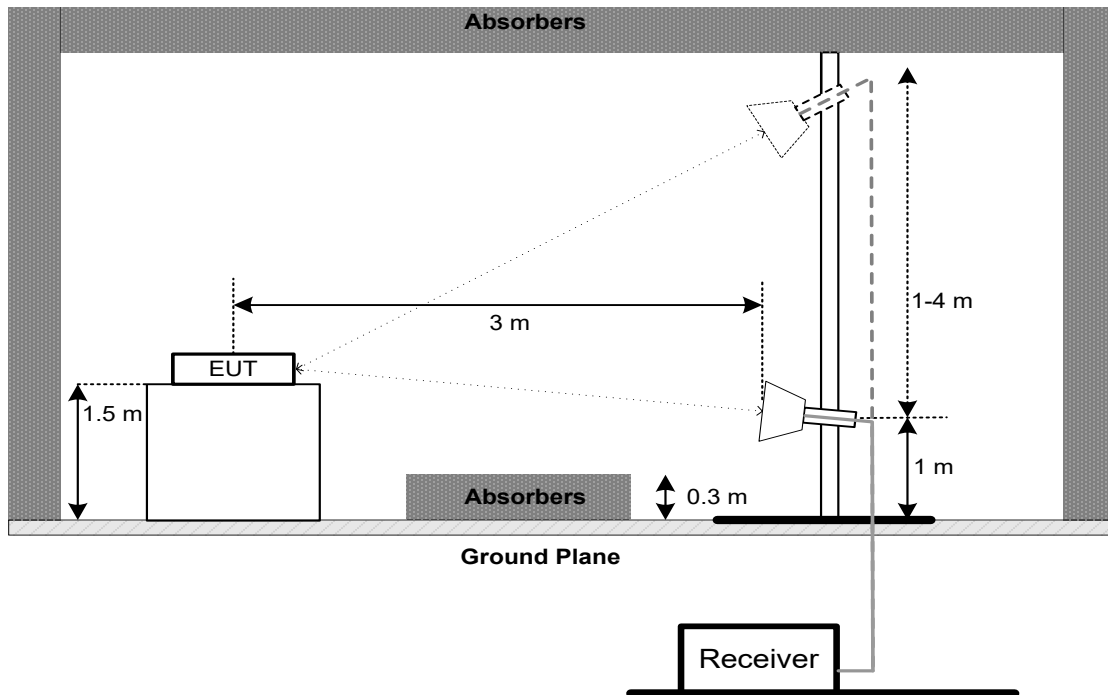
9 kHz to 30 MHz



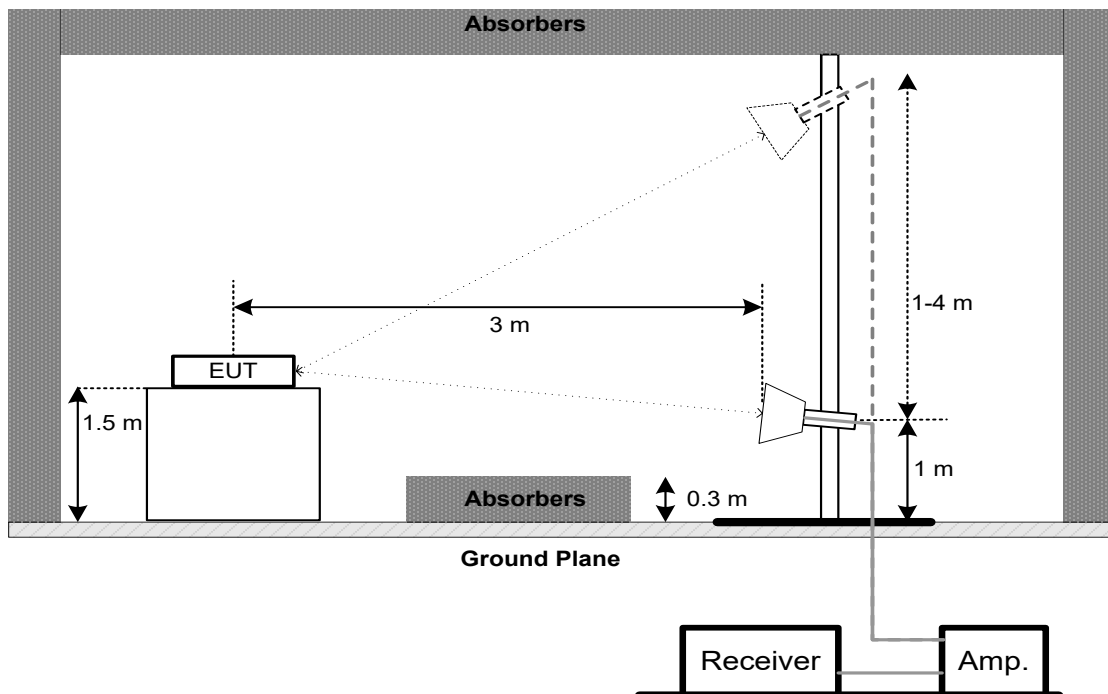
30 MHz to 1 GHz

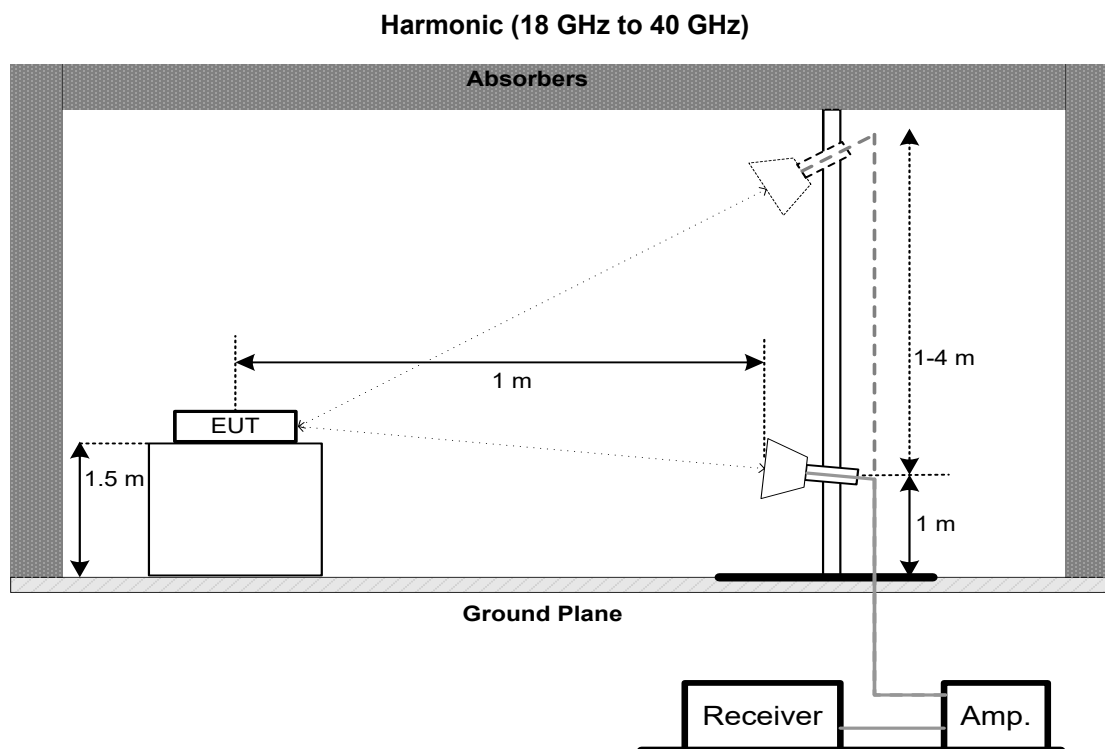


Above 1 GHz Band edge



Harmonic (1 GHz to 18 GHz)





5.5 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.

5.6 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.

5.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

5.8 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.

6. BANDWIDTH

6.1 LIMIT

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

6.2 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
Span Frequency	> 26 dB Bandwidth
RBW	Appromiximately 1% of the emission bandwidth
VBW	> RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For UNII-3:

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

For 99% Occupied Bandwidth:

Spectrum Parameter	Setting
Span Frequency	1.5 times to 5 times the OBW
RBW	1% to 5% of the OBW
VBW	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

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

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 E.

7. MAXIMUM OUTPUT POWER

7.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a)	Maximum Output Power	AP device: 1 Watt (30 dBm) Client device: 250 mW (23.98 dBm)	5150-5250
		1 Watt (30dBm)	5725-5850

Note:

- 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.

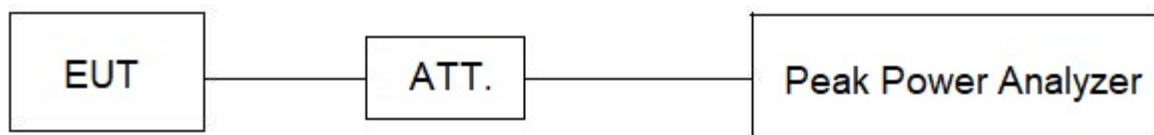
7.2 TEST PROCEDURE

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

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 F.

8. POWER SPECTRAL DENSITY

8.1 LIMIT

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

8.2 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
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
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	100 kHz.
VBW	300 kHz.
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. Then, add $10 \log (500 \text{ kHz}/100 \text{ kHz})$ to the measured result, i.e. 7 dB.
- During the test of U-NII 3 PSD, the measurement result with RBW=100kHz has been added 7 dB by compensating offset. For example, the cable loss is 13 dB, and the final offset is $13 + 7 = 20 \text{ dB}$ when RBW=100kHz is used.

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 G.

9. FREQUENCY STABILITY

9.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 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

9.2 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:

Spectrum Parameter	Setting
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

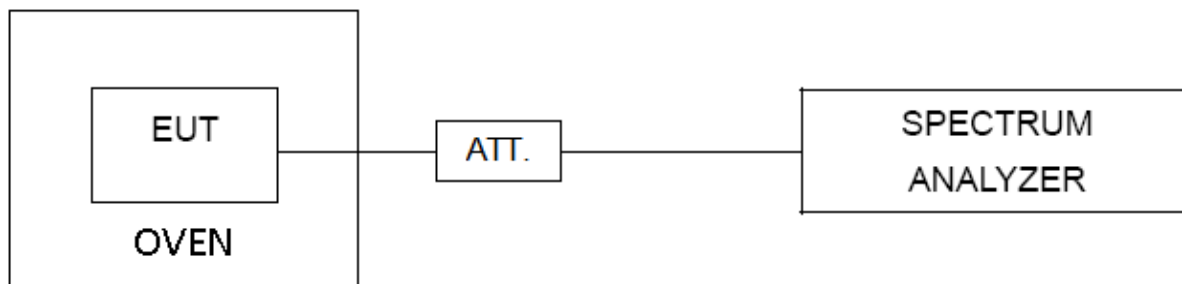
c. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

d. User manual temperature is -40°C~55°C.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULTS

Please refer to the APPENDIX H.

10. 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	Dec. 22, 2024
2	TWO-LINE V-NETWORK	R&S	ENV216	101447	Dec. 22, 2024
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
4	Cable	N/A	SFT205-NMNM-9M-001	9M	Nov. 27, 2024
5	643 Shield Room	ETS	6*4*3	N/A	N/A

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60 B-034	Mar. 30, 2025
2	MXE EMI Receiver	Keysight	N9038A	MY56400091	Dec. 22, 2024
3	Cable	N/A	RW2350-3.8A-NMB M-1.5M	N/A	Jun. 09, 2025
4	Cable	N/A	RG 213/U	N/A	Jun. 09, 2025
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	966 Chamber room	ETS	9*6*6	N/A	May 16, 2025

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	1462	Dec. 13, 2024
2	Attenuator	EMC INSTRUMENT	EMCI-N-6-06	AT-06009	Dec. 13, 2024
3	Preamplifier	EMC INSTRUMENT	EMC001330	980998	Nov. 17, 2024
4	Cable	RegalWay	LMR400-NMNM-12.5m	N/A	Jun. 06, 2025
5	Cable	RegalWay	LMR400-NMNM-3m	N/A	Jun. 06, 2025
6	Cable	RegalWay	LMR400-NMNM-0.5m	N/A	Jun. 06, 2025
7	Receiver	Agilent	N9038A	MY52130039	Dec. 22, 2024
8	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A
9	Positioning Controller	MF	MF-7802	N/A	N/A
10	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
11	966 Chamber room	CM	9*6*6	N/A	May 16, 2025

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	MXA Signal Analyzer	KEYSIGHT	N9020B	MY63380204	Nov. 17, 2024
2	Receiver	Agilent	N9038A	MY52130039	Dec. 22, 2024
3	Double Ridged Guide Antenna	ETS	3115	75789	Jun. 15, 2025
4	Cable	RegalWay	RWLP50-4.0A-SMS M-12.5M	N/A	Jul. 03, 2025
5	Cable	RegalWay	RWLP50-4.0A-NM RASM-2.5M	N/A	Jul. 03, 2025
6	Cable	RegalWay	RWLP50-4.0A-NM RASMRA-0.8M	N/A	Jul. 03, 2025
7	Preamplifier	EMC INSTRUMENT	EMC184045SE	980905	Nov. 19, 2024
8	Cable	RegalWay	RWLP50-2.6A-2.92 M2.92M-1.1M	N/A	Jul. 26, 2024
9	Cable	Tonscend	HF160-KMKM-3M	N/A	Jul. 26, 2024
10	Broad-Band Horn Antenna	Schwarzbeck	BBHA9170(3m)	9170-319	Jun. 16, 2025
11	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A
12	Filter	STI	STI15-9969	N/A	May 31, 2025
13	966 Chamber room	CM	9*6*6	N/A	May 19, 2025
14	Positioning Controller	MF	MF-7802	N/A	N/A
15	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

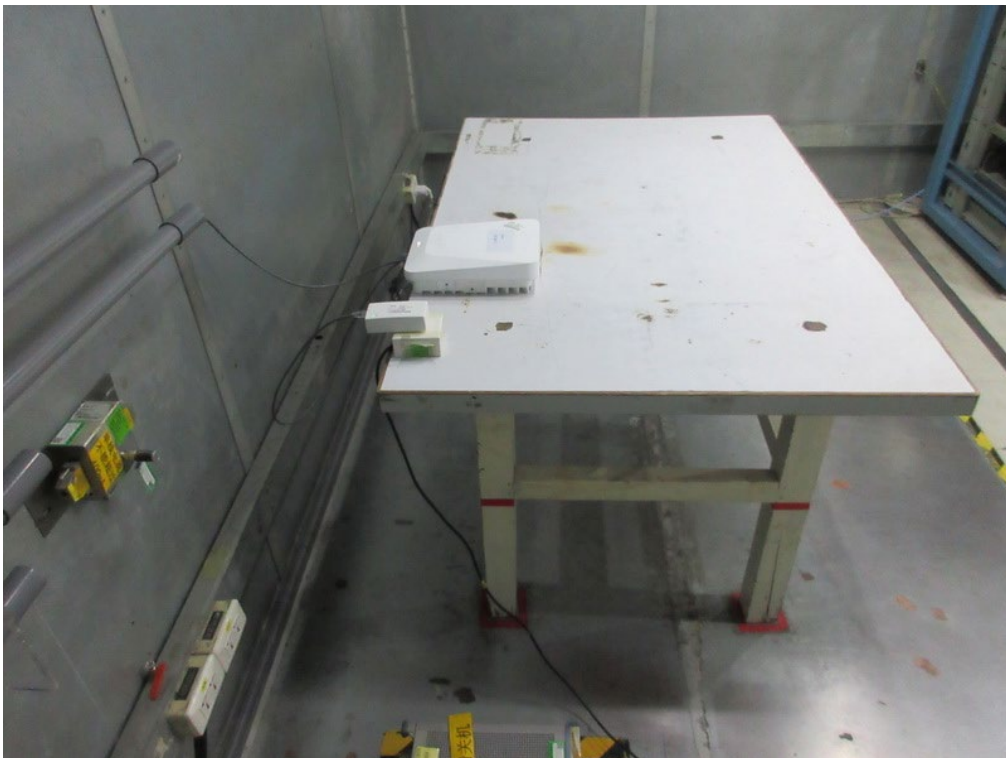
Bandwidth & Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP38	100852	May 31, 2025
2	Measurement Software	BTL	BTL Conducted Test	N/A	N/A
3	Isolation attenuator	Z-Link	ASMA-16-18-2W	N/A	N/A

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Peak Power Analyzer	Keysight	8990B	MY51000506	May 31, 2025
2	Wideband power sensor	Keysight	N1923A	MY58310004	May 31, 2025
3	Isolation attenuator	Z-Link	ASMA-10-18-2W	N/A	N/A

Frequency Stability					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP38	100852	May 31, 2025
2	Measurement Software	BTL	BTL Conducted Test	N/A	N/A
3	Isolation attenuator	Z-Link	ASMA-16-18-2W	N/A	N/A
4	Desktop Constant Temperature Chamber	BELL	BTH-50C	20170306001	Jan. 19, 2025
5	AC power source	Preen	AFC-S-1250	F123080107	May 06, 2025
6	Cable	Woke	20210802 001	RWP50-402-SMSM-1M	N/A

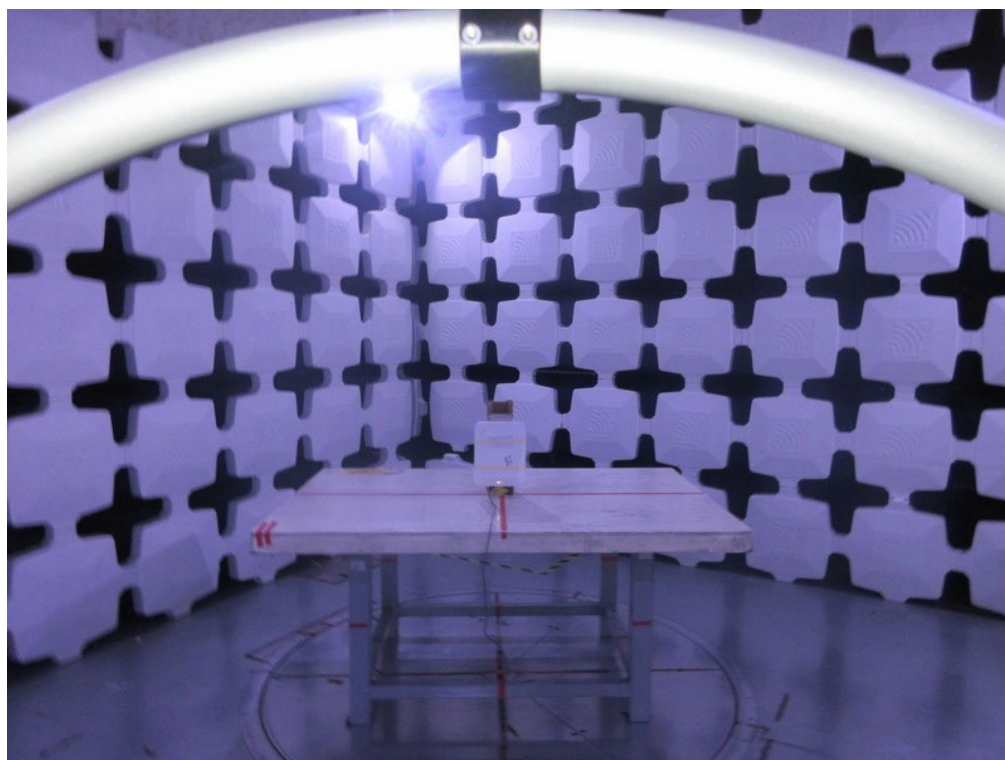
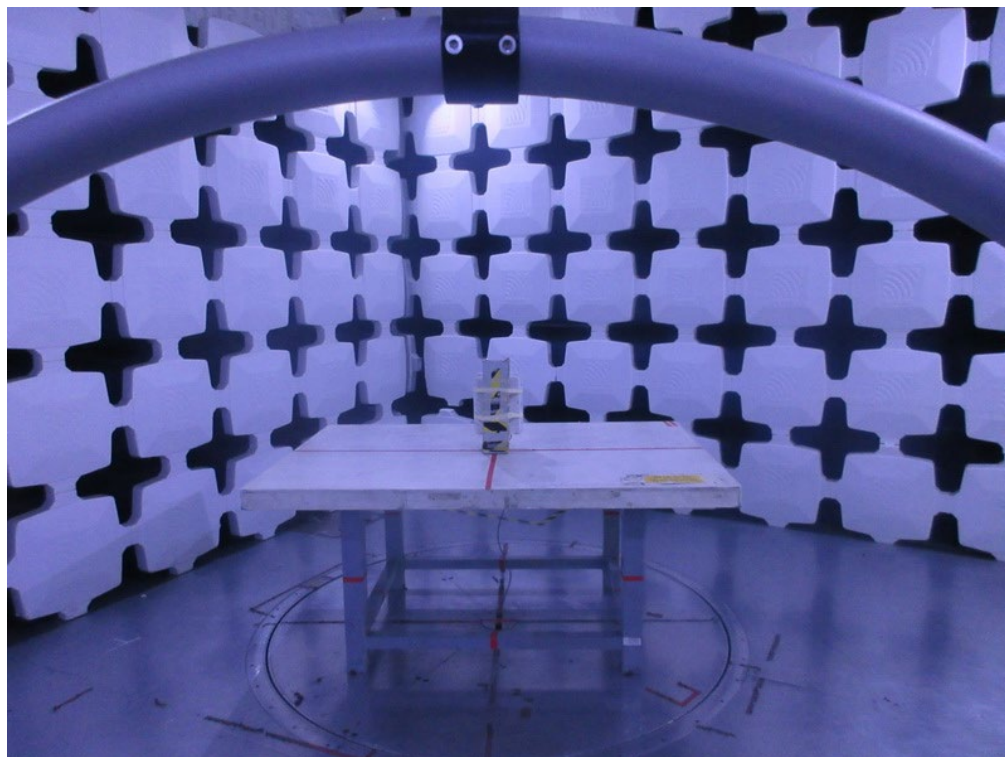
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

11. EUT TEST PHOTOS**AC Power Line Conducted Emissions Test Photos**

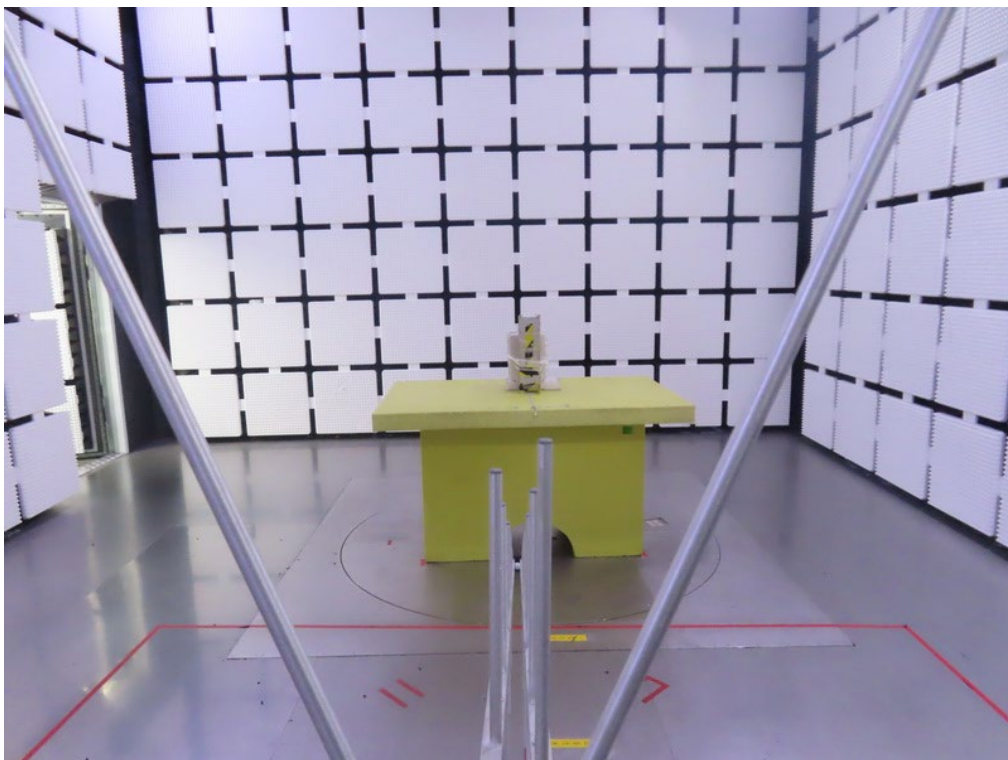
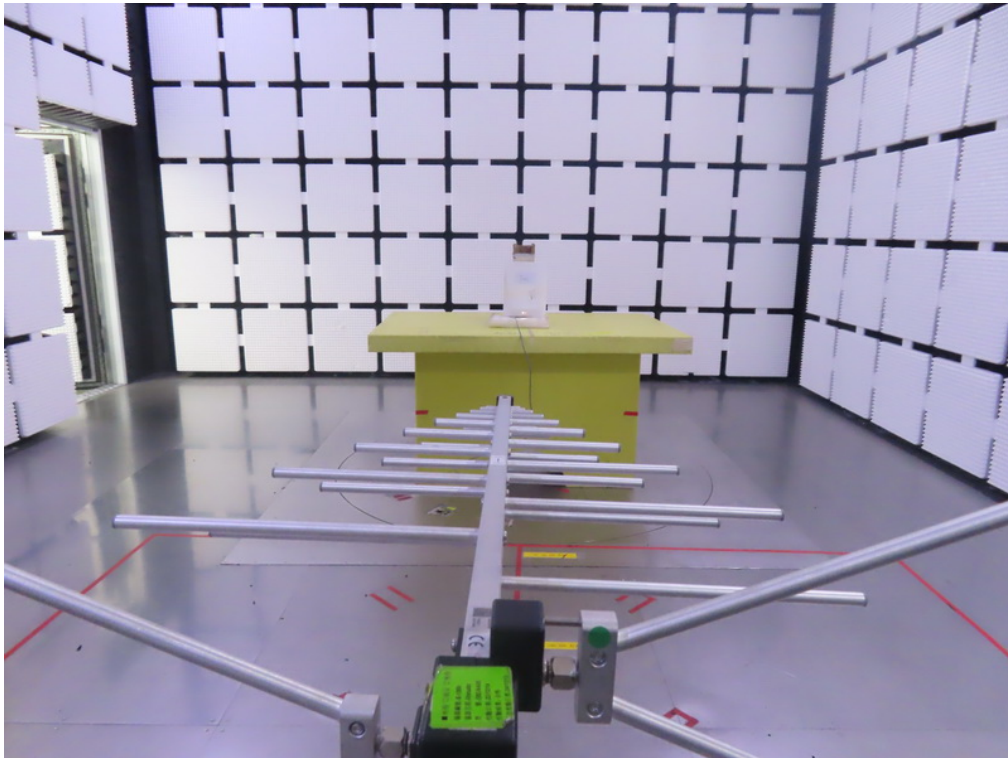
Radiated Emissions Test Photos

9 kHz to 30 MHz



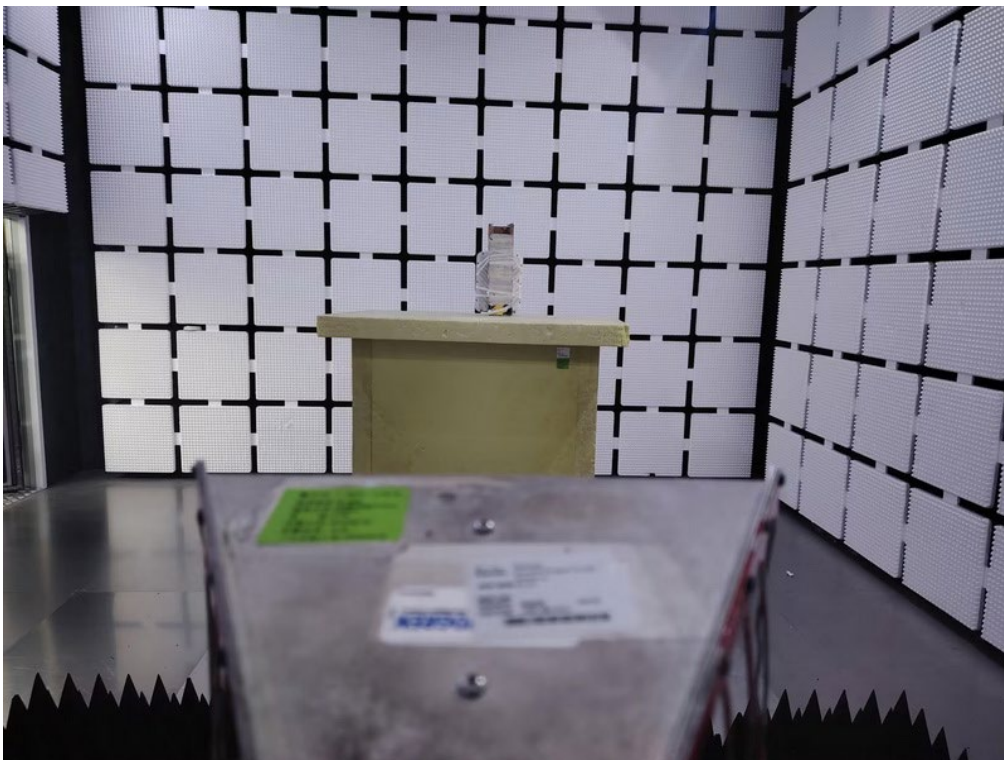
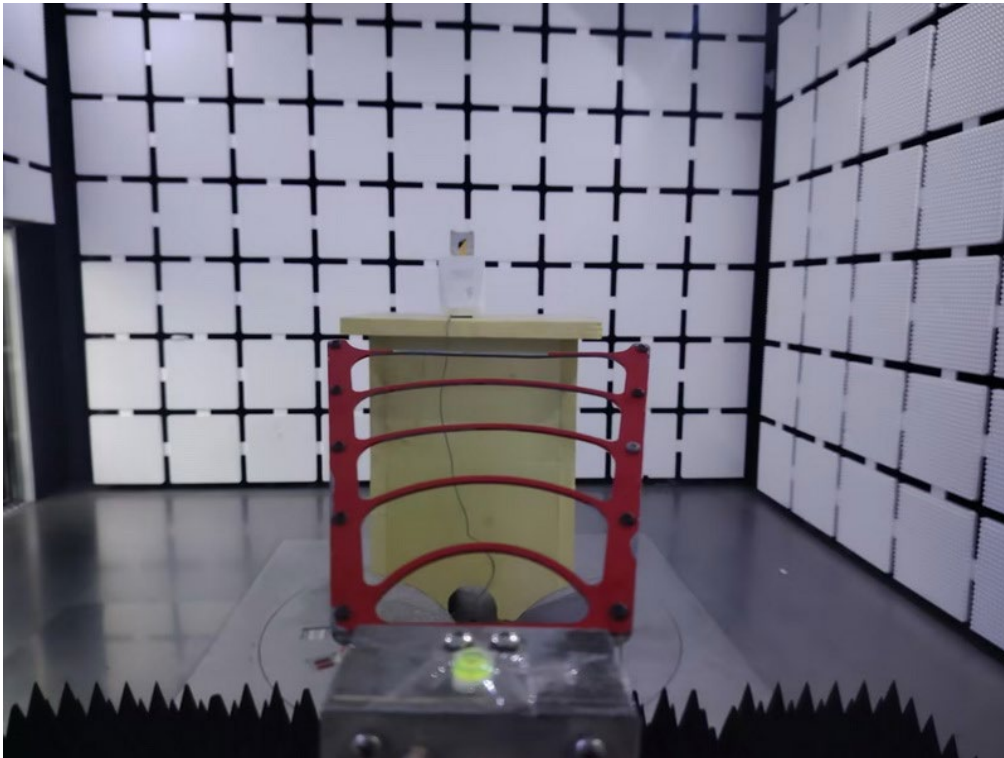
Radiated Emissions Test Photos

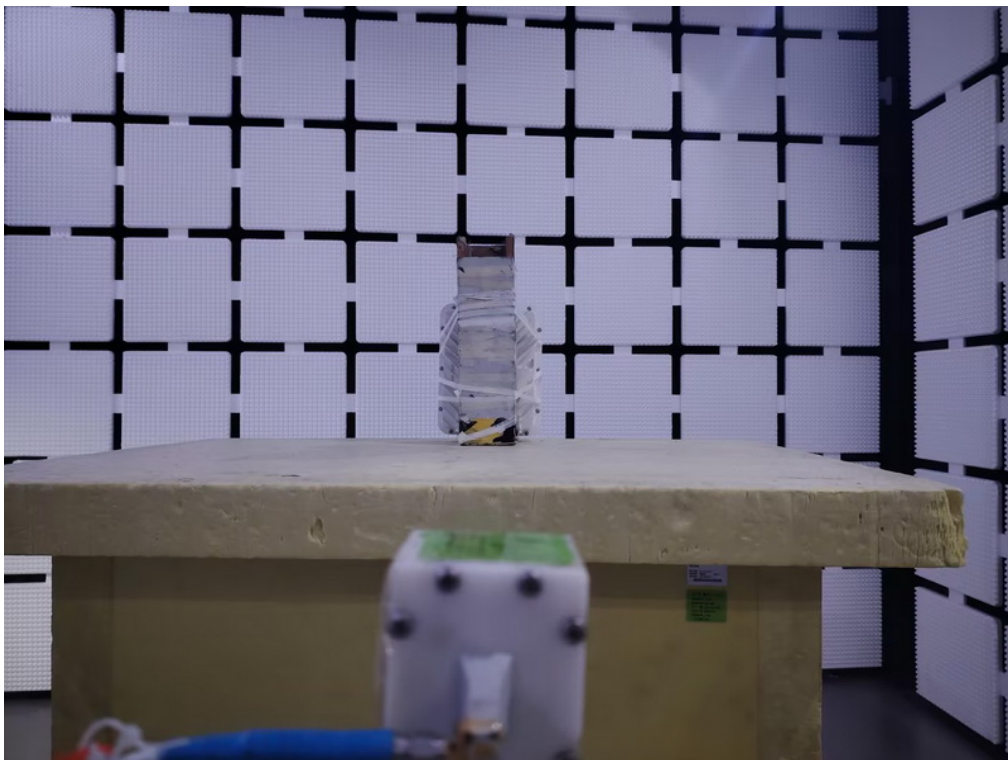
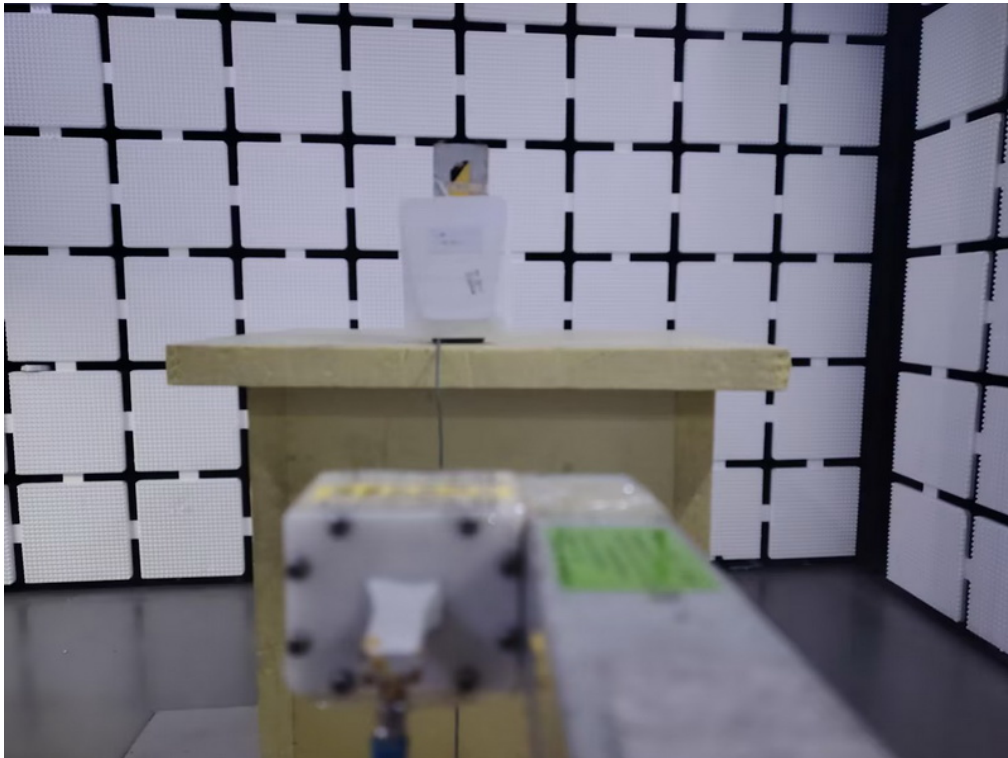
30 MHz to 1 GHz



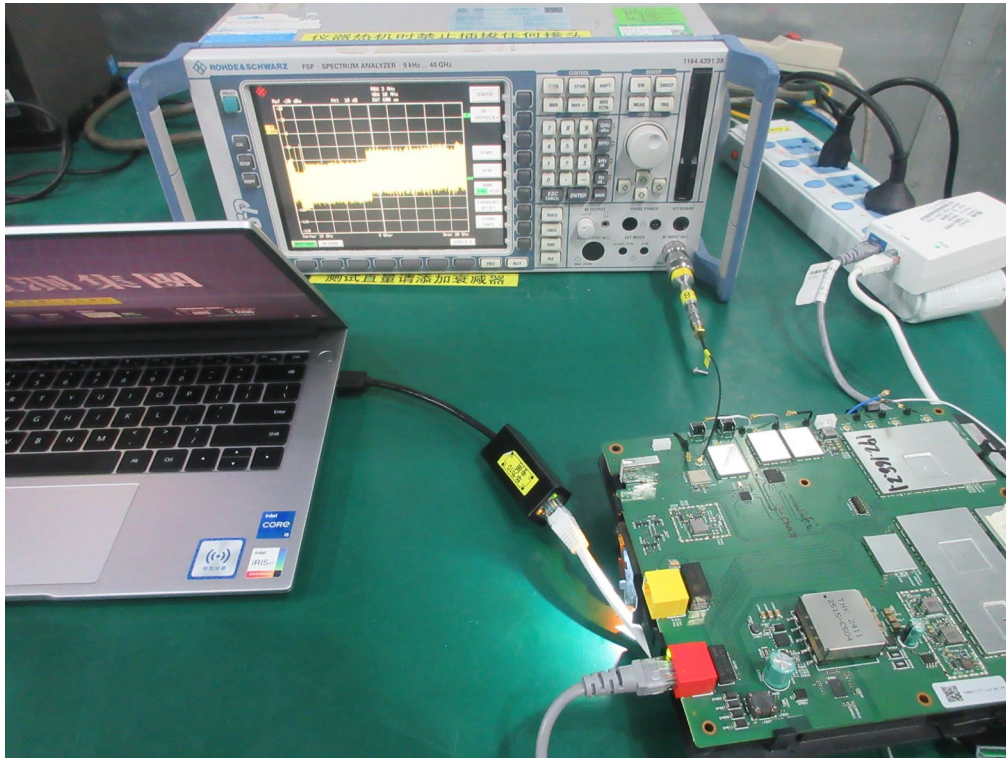
Radiated Emissions Test Photos

1 GHz to 18 GHz



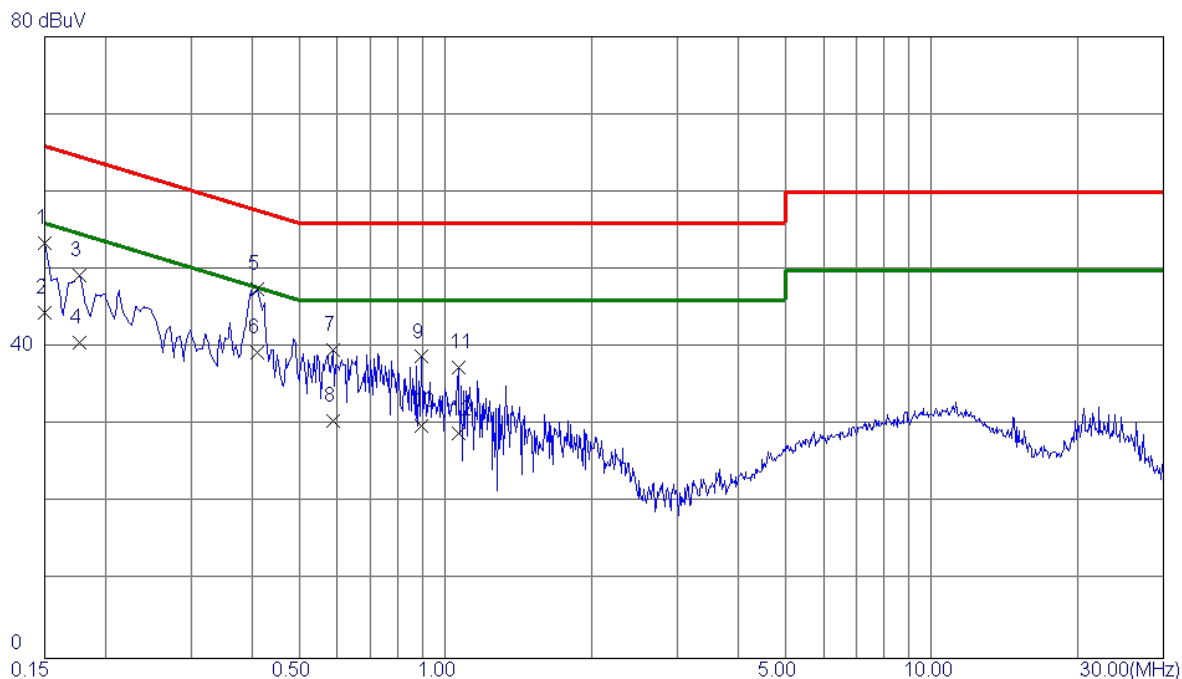
Radiated Emissions Test Photos**Above 18 GHz**

Conducted Test Photos



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Phase	Line
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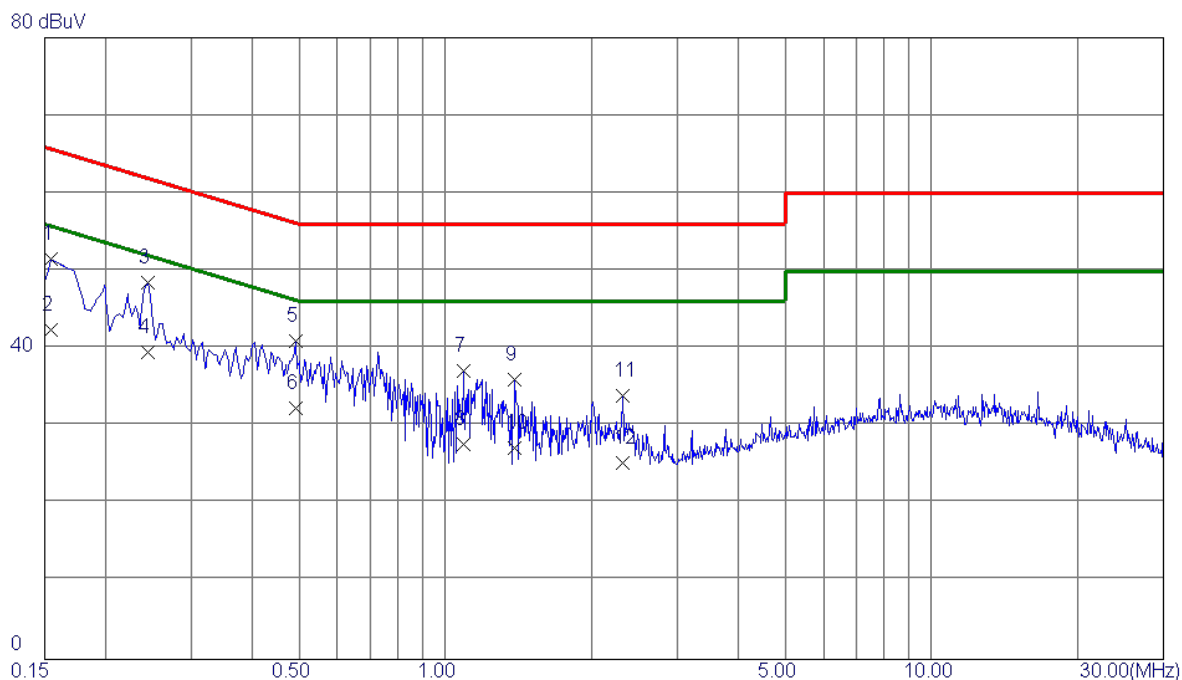


No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1500	43.55	9.96	53.51	66.00	-12.49	QP	
2	0.1500	34.50	9.96	44.46	56.00	-11.54	AVG	
3	0.1770	39.30	9.97	49.27	64.63	-15.36	QP	
4	0.1770	30.60	9.97	40.57	54.63	-14.06	AVG	
5	0.4110	37.04	10.43	47.47	57.63	-10.16	QP	
6 *	0.4110	28.89	10.43	39.32	47.63	-8.31	AVG	
7	0.5865	28.95	10.80	39.75	56.00	-16.25	QP	
8	0.5865	19.80	10.80	30.60	46.00	-15.40	AVG	
9	0.8925	27.61	11.19	38.80	56.00	-17.20	QP	
10	0.8925	18.70	11.19	29.89	46.00	-16.11	AVG	
11	1.0635	26.21	11.28	37.49	56.00	-18.51	QP	
12	1.0635	17.60	11.28	28.88	46.00	-17.12	AVG	

REMARKS:

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Phase	Neutral
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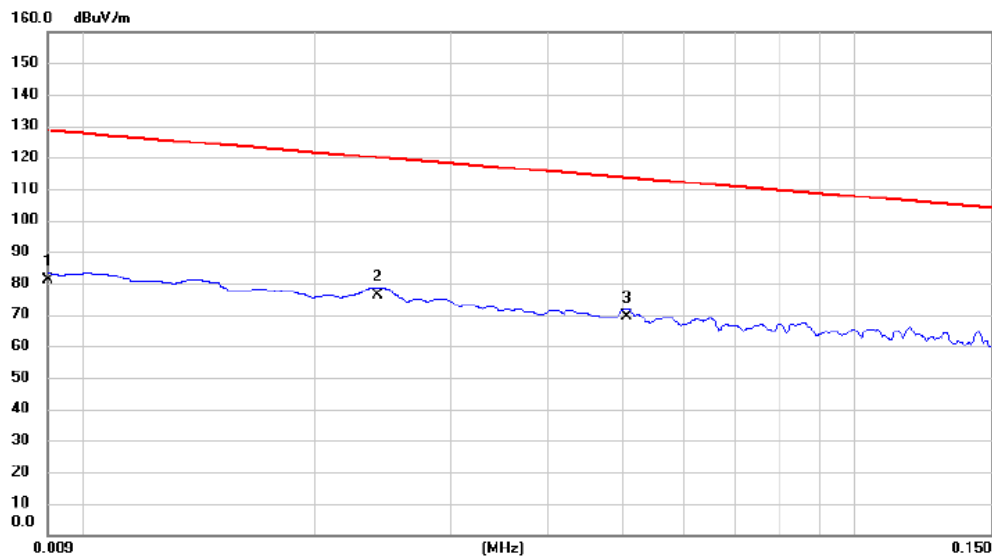
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1545	41.64	9.93	51.57	65.75	-14.18	QP	
2	0.1545	32.51	9.93	42.44	55.75	-13.31	AVG	
3	0.2445	38.41	10.02	48.43	61.94	-13.51	QP	
4 *	0.2445	29.49	10.02	39.51	51.94	-12.43	AVG	
5	0.4920	30.34	10.57	40.91	56.13	-15.22	QP	
6	0.4920	21.80	10.57	32.37	46.13	-13.76	AVG	
7	1.0905	25.84	11.24	37.08	56.00	-18.92	QP	
8	1.0905	16.40	11.24	27.64	46.00	-18.36	AVG	
9	1.3920	24.81	11.24	36.05	56.00	-19.95	QP	
10	1.3920	15.90	11.24	27.14	46.00	-18.86	AVG	
11	2.3190	23.25	10.68	33.93	56.00	-22.07	QP	
12	2.3190	14.61	10.68	25.29	46.00	-20.71	AVG	

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 AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Ant 0°
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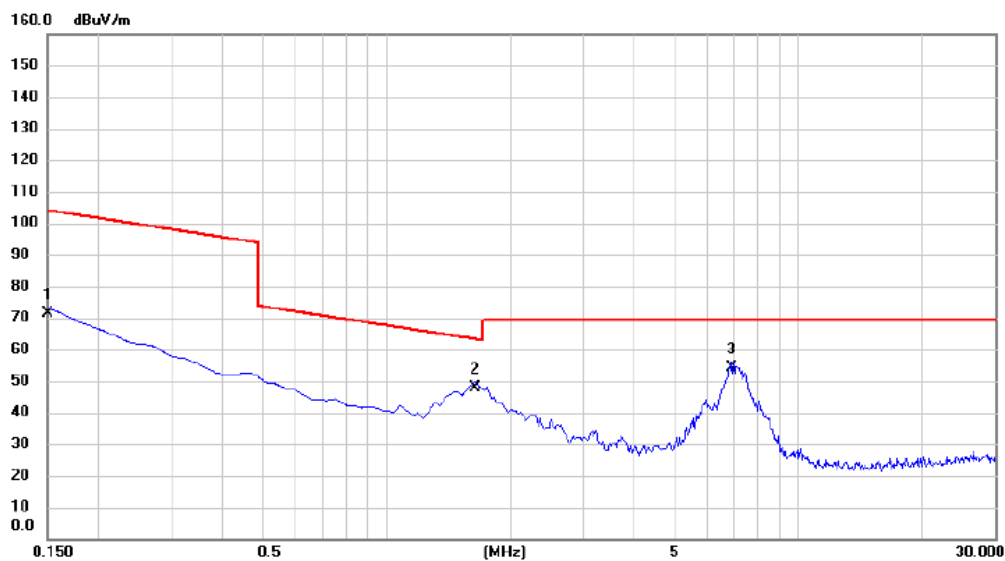


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0090	60.78	20.40	81.18	128.52	-47.34	AVG	
2	*	0.0241	55.12	20.92	76.04	119.96	-43.92	AVG	
3		0.0507	48.26	21.20	69.46	113.50	-44.04	AVG	

REMARKS:

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Ant 0°
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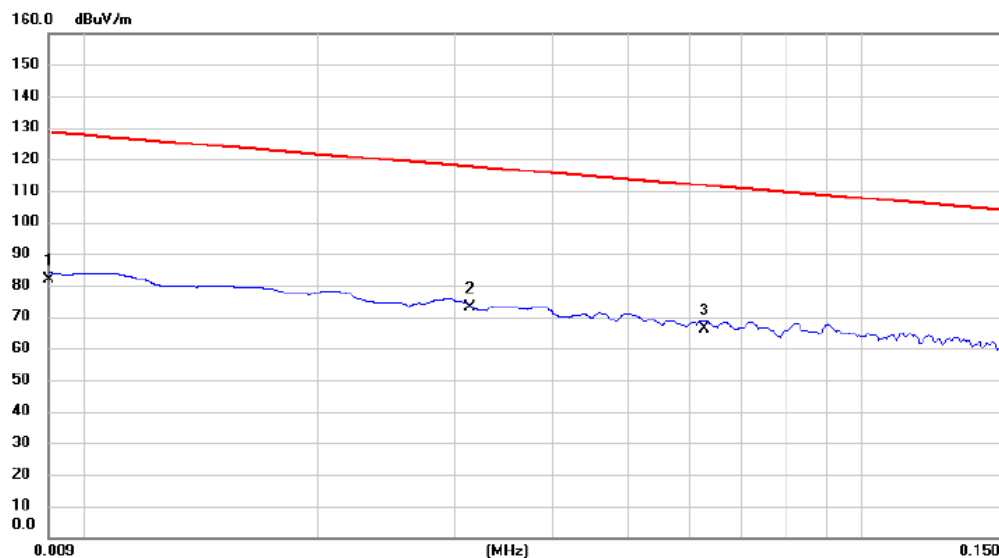
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.1500	50.32	21.27	71.59	104.09	-32.50	AVG	
2		1.6425	26.78	21.14	47.92	63.29	-15.37	QP	
3	*	6.8662	33.12	21.19	54.31	69.54	-15.23	QP	

REMARKS:

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

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Ant 90°
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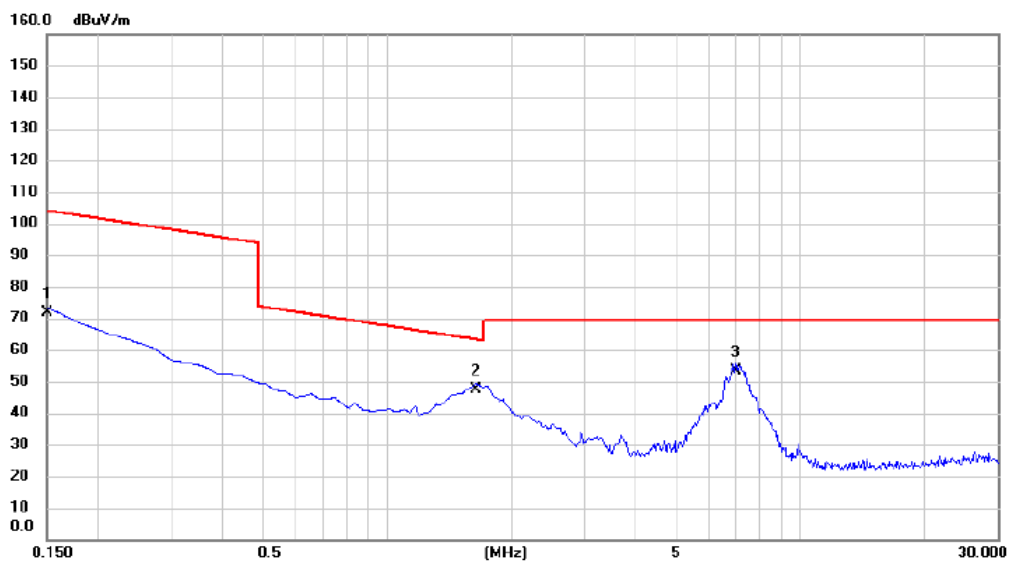


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.0090	61.32	20.40	81.72	128.52	-46.80	AVG	
2 *	0.0313	51.79	21.11	72.90	117.69	-44.79	AVG	
3	0.0627	45.15	21.24	66.39	111.66	-45.27	AVG	

REMARKS:

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Ant 90°
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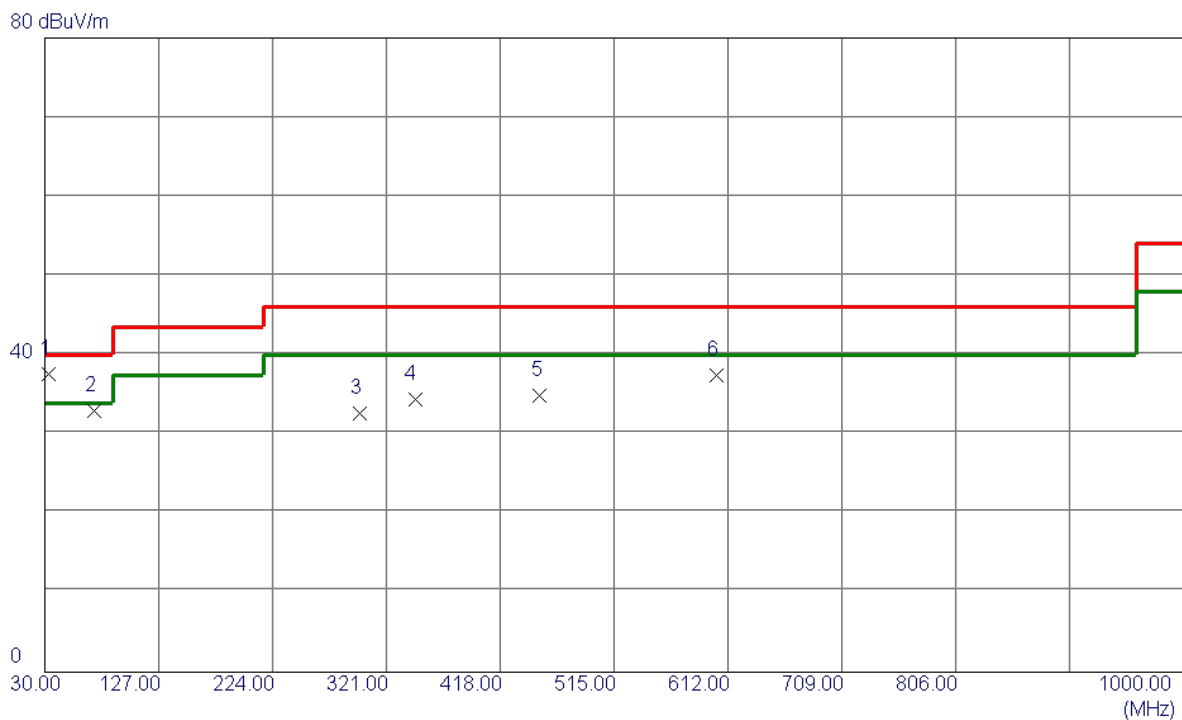
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.1500	50.36	21.27	71.63	104.09	-32.46	AVG	
2 *	1.6425	26.45	21.14	47.59	63.29	-15.70	QP	
3	6.9856	32.14	21.19	53.33	69.54	-16.21	QP	

REMARKS:

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

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Vertical
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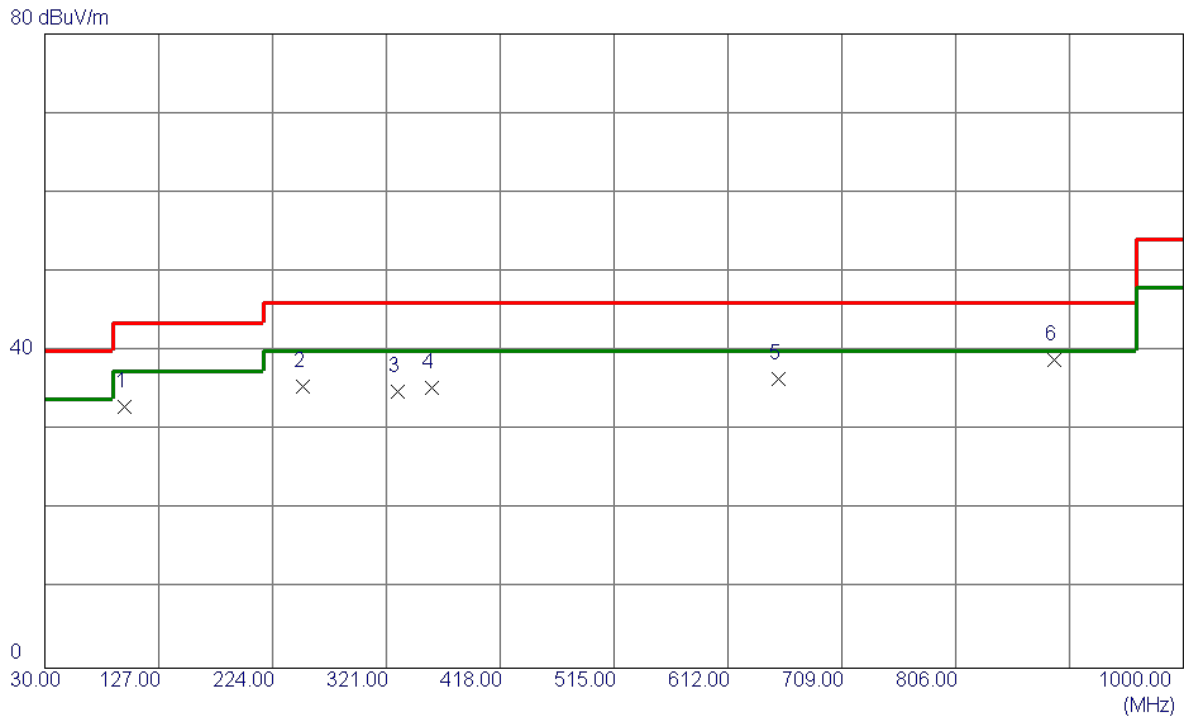


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	32.9100	50.22	-12.57	37.65	40.00	-2.35	QP	
2	71.7100	46.75	-13.80	32.95	40.00	-7.05	Peak	
3	298.2049	43.29	-10.62	32.67	46.00	-13.33	Peak	
4	345.2500	43.87	-9.49	34.38	46.00	-11.62	Peak	
5	451.9500	41.64	-6.75	34.89	46.00	-11.11	Peak	
6	602.7849	40.95	-3.55	37.40	46.00	-8.60	Peak	

REMARKS:

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Horizontal
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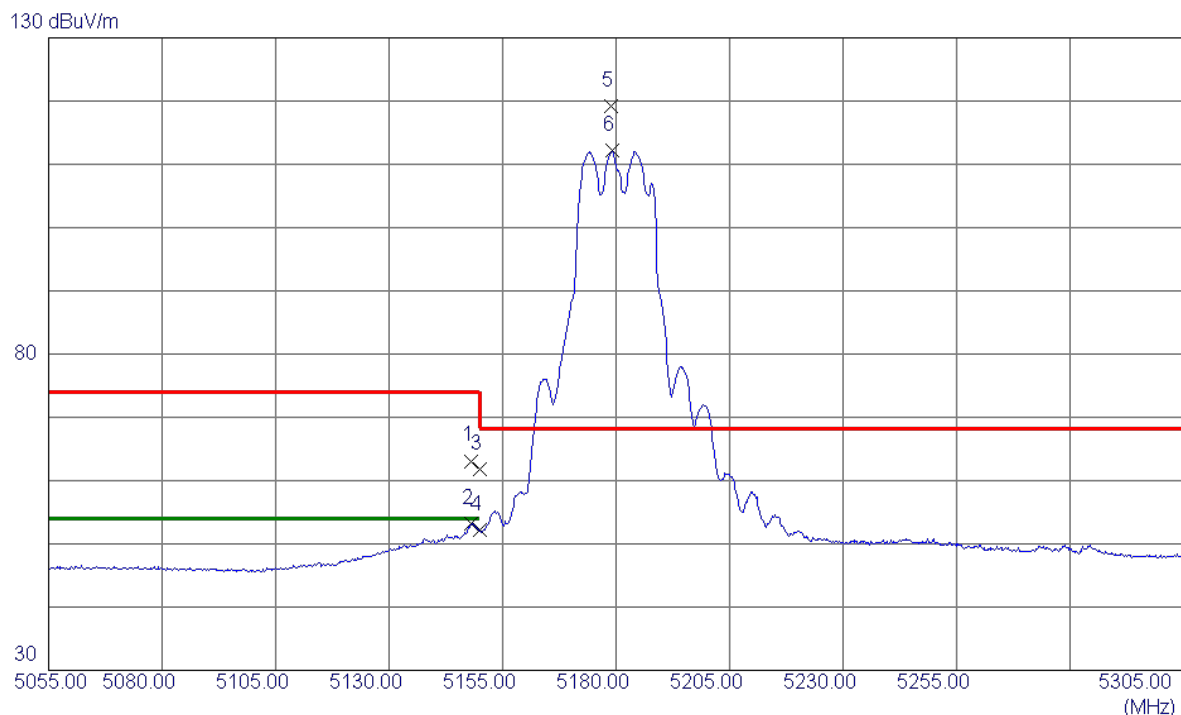
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	97.9000	49.22	-16.28	32.94	43.50	-10.56	Peak	
2	250.1900	47.84	-12.35	35.49	46.00	-10.51	Peak	
3	330.7000	44.59	-9.65	34.94	46.00	-11.06	Peak	
4	359.8000	44.68	-9.38	35.30	46.00	-10.70	Peak	
5	655.1650	39.29	-2.77	36.52	46.00	-9.48	Peak	
6 *	889.9050	38.78	0.16	38.94	46.00	-7.06	Peak	

REMARKS:

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

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

Test Mode	UNII-1_TX A Mode 5180 MHz	Polarization	Vertical
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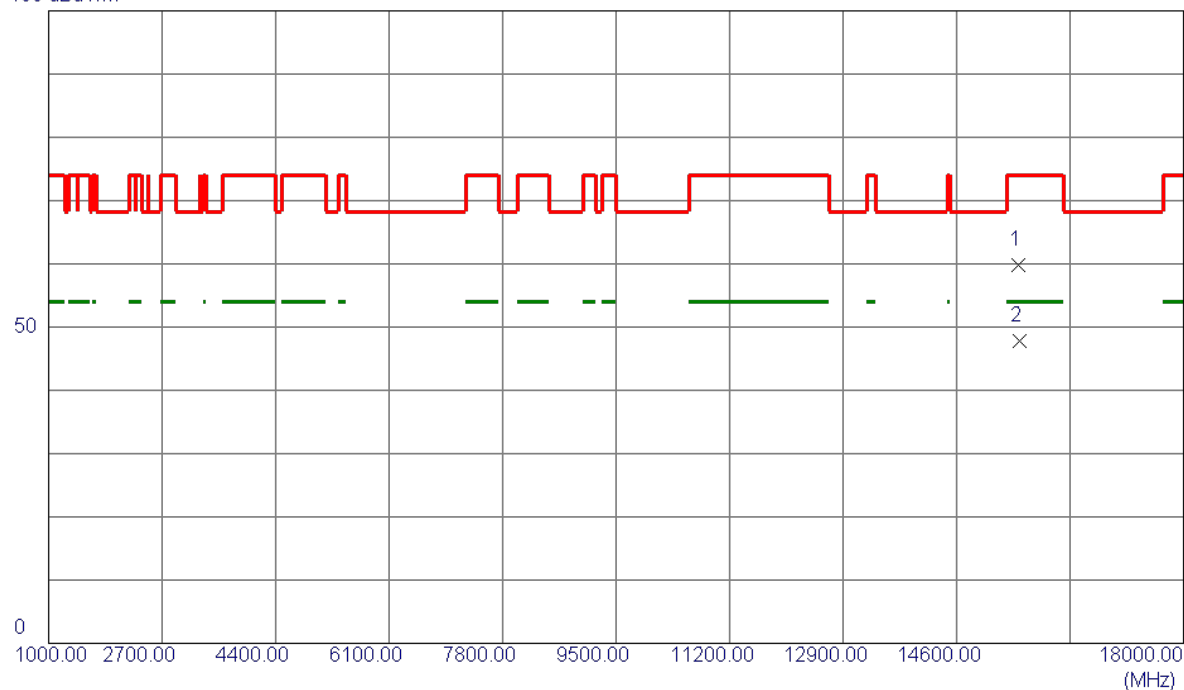
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5148.1250	49.54	13.56	63.10	74.00	-10.90	Peak	
2	5148.1250	39.72	13.56	53.28	54.00	-0.72	AVG	
3	5150.0000	48.16	13.56	61.72	74.00	-12.28	Peak	
4	5150.0000	38.69	13.56	52.25	54.00	-1.75	AVG	
5 *	5179.0000	105.64	13.62	119.26	68.20	51.06	Peak	No Limit
6	5179.2500	98.61	13.62	112.23	999.00	-886.77	AVG	No Limit

REMARKS:

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

Test Mode	UNII-1_TX A Mode 5180 MHz	Polarization	Horizontal
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100 dBuV/m

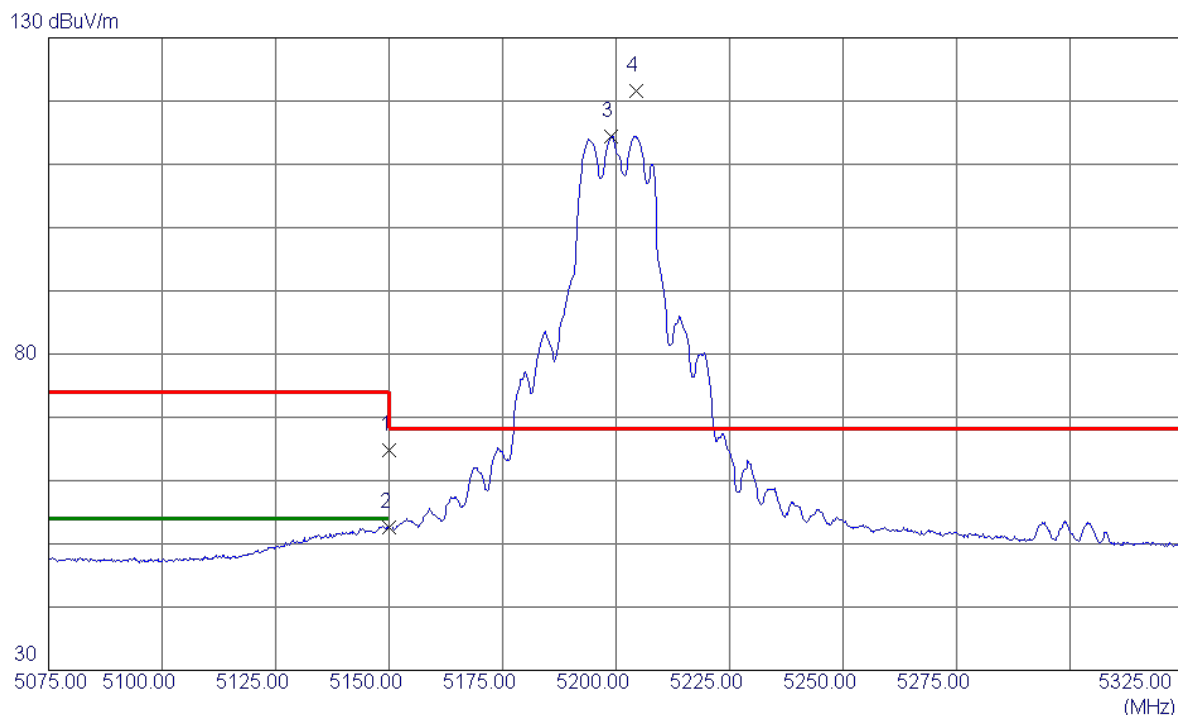


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	15534.4500	50.91	8.89	59.80	74.00	-14.20	Peak	
2 *	15541.1500	38.89	8.90	47.79	54.00	-6.21	AVG	

REMARKS:

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

Test Mode	UNII-1_TX A Mode 5200 MHz	Polarization	Vertical
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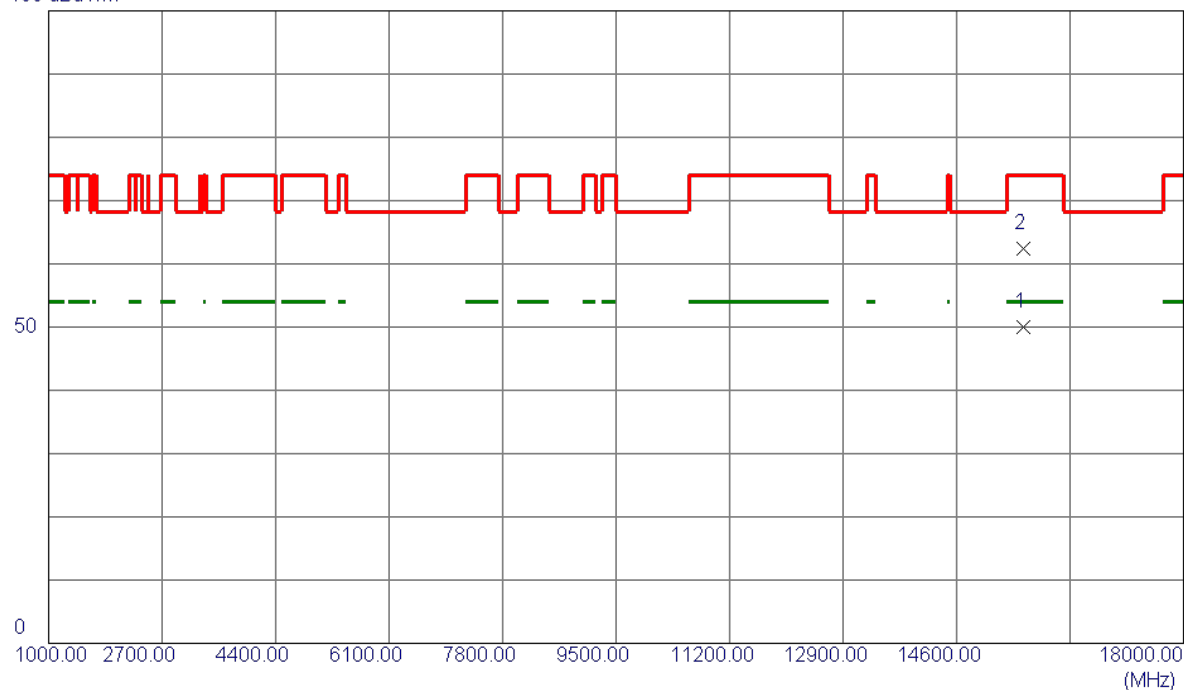
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	51.19	13.56	64.75	74.00	-9.25	Peak	
2	5150.0000	38.96	13.56	52.52	54.00	-1.48	AVG	
3	5199.0000	100.80	13.66	114.46	999.00	-884.54	AVG	No Limit
4 *	5204.5000	108.01	13.67	121.68	68.20	53.48	Peak	No Limit

REMARKS:

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

Test Mode	UNII-1_TX A Mode 5200 MHz	Polarization	Horizontal
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100 dBuV/m



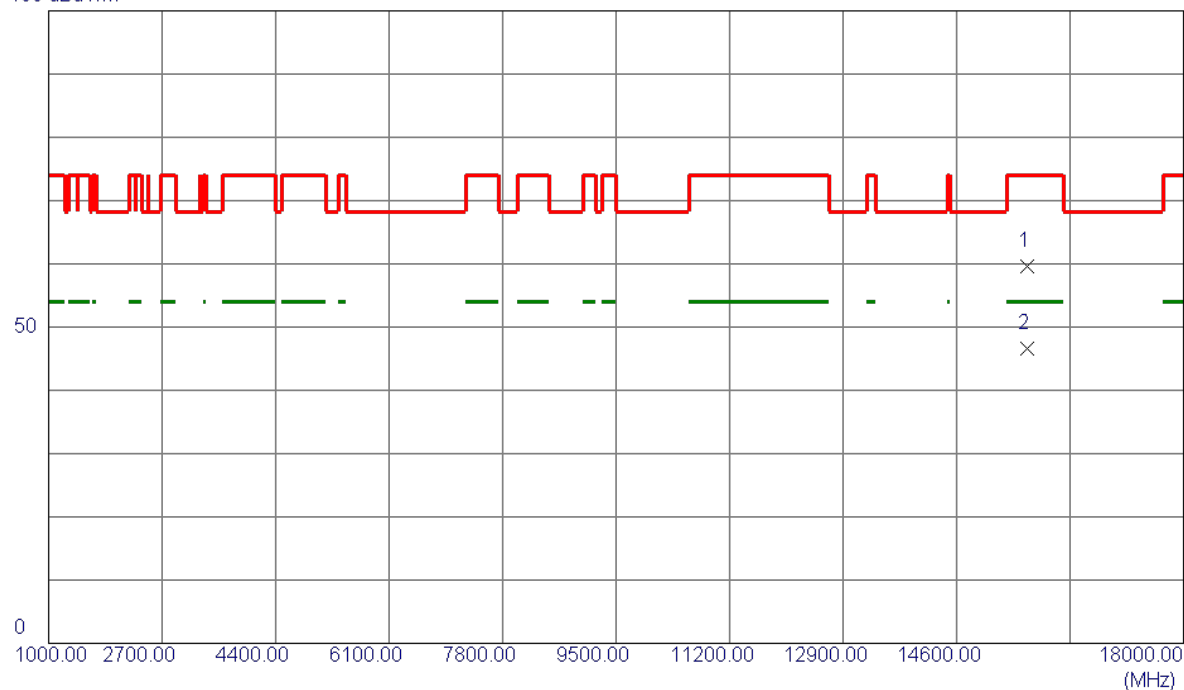
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15599.9500	40.99	8.99	49.98	54.00	-4.02	AVG	
2	15601.6500	53.42	8.99	62.41	74.00	-11.59	Peak	

REMARKS:

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

Test Mode	UNII-1_TX A Mode 5240 MHz	Polarization	Horizontal
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100 dBuV/m

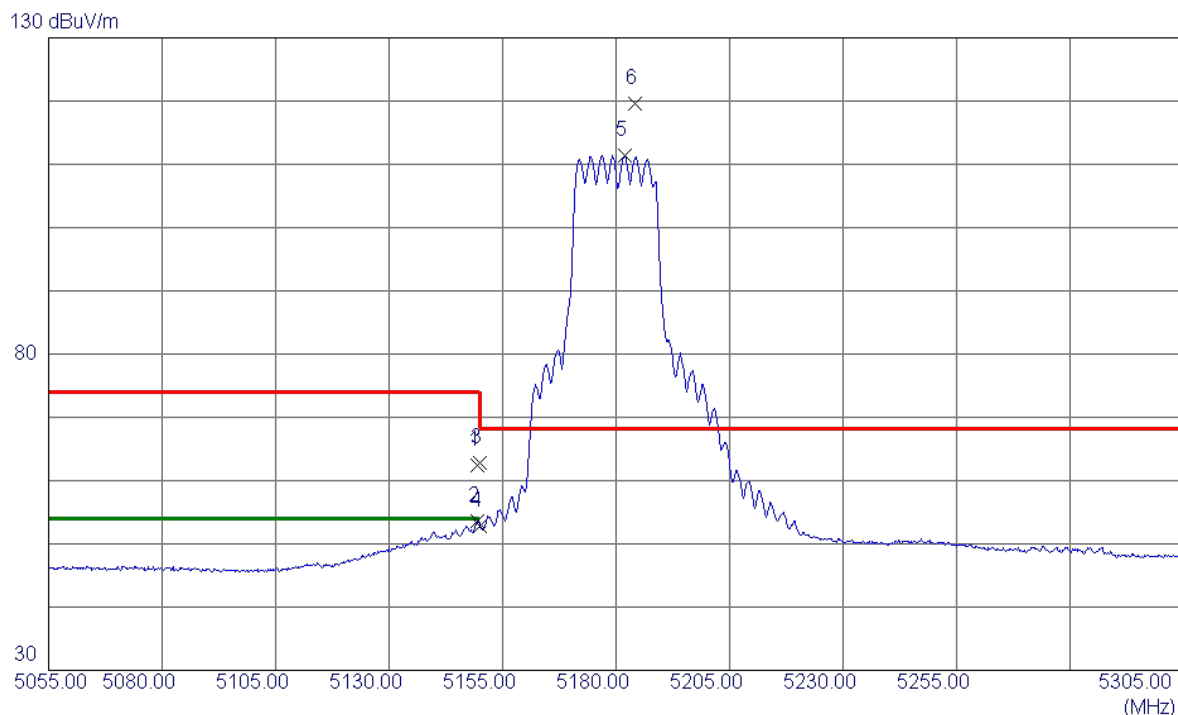


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	15654.4000	50.56	9.07	59.63	74.00	-14.37	Peak	
2 *	15660.6000	37.52	9.07	46.59	54.00	-7.41	AVG	

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT20) Mode 5180 MHz	Polarization	Vertical
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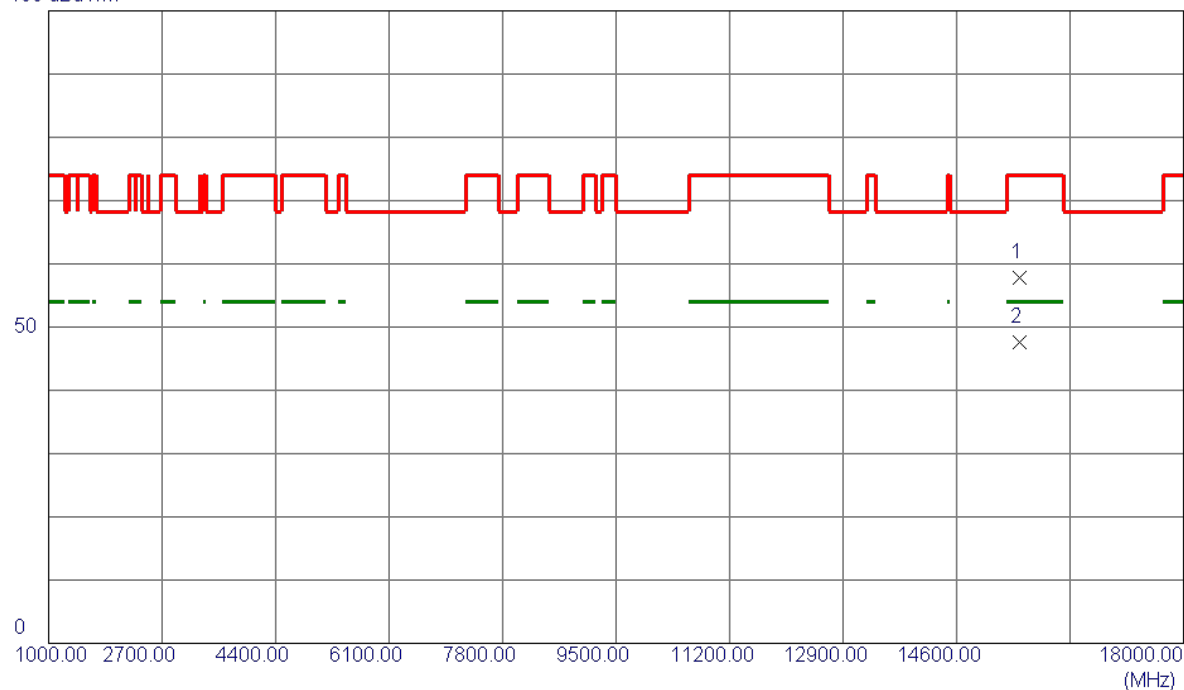
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5149.5000	48.93	13.56	62.49	74.00	-11.51	Peak	
2	5149.5000	40.09	13.56	53.65	54.00	-0.35	AVG	
3	5150.0000	49.18	13.56	62.74	74.00	-11.26	Peak	
4	5150.0000	39.33	13.56	52.89	54.00	-1.11	AVG	
5	5181.8750	97.85	13.63	111.48	999.00	-887.52	AVG	No Limit
6 *	5184.2500	105.91	13.63	119.54	68.20	51.34	Peak	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT20) Mode 5180 MHz	Polarization	Horizontal
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100 dBuV/m

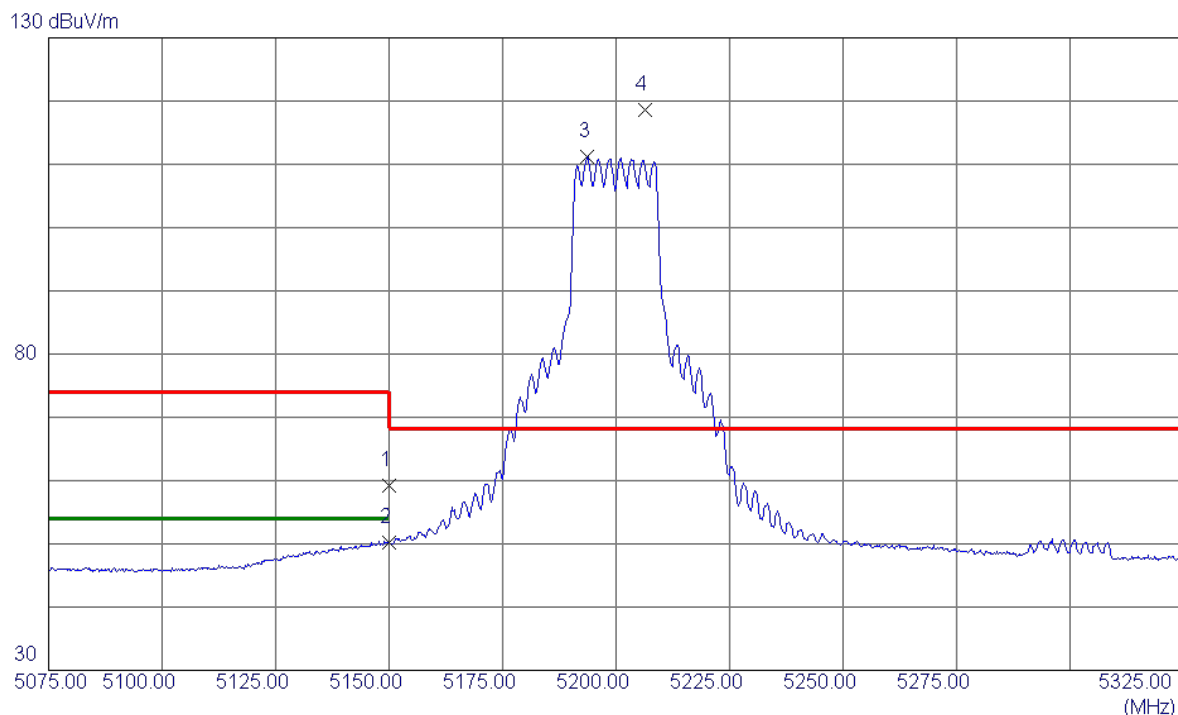


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	15541.5000	48.85	8.90	57.75	74.00	-16.25	Peak	
2 *	15543.4000	38.71	8.91	47.62	54.00	-6.38	AVG	

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT20) Mode 5200 MHz	Polarization	Vertical
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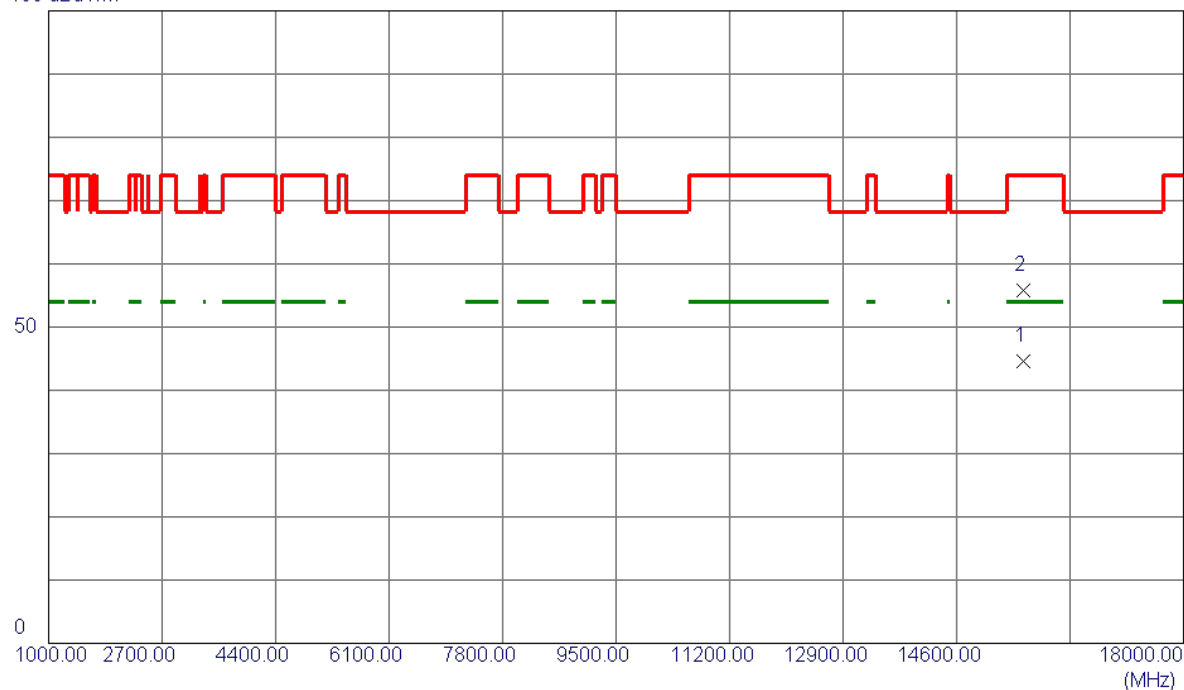
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	45.65	13.56	59.21	74.00	-14.79	Peak	
2	5150.0000	36.67	13.56	50.23	54.00	-3.77	AVG	
3	5193.7500	97.49	13.65	111.14	999.00	-887.86	AVG	No Limit
4 *	5206.5000	104.84	13.68	118.52	68.20	50.32	Peak	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT20) Mode 5200 MHz	Polarization	Horizontal
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100 dBuV/m



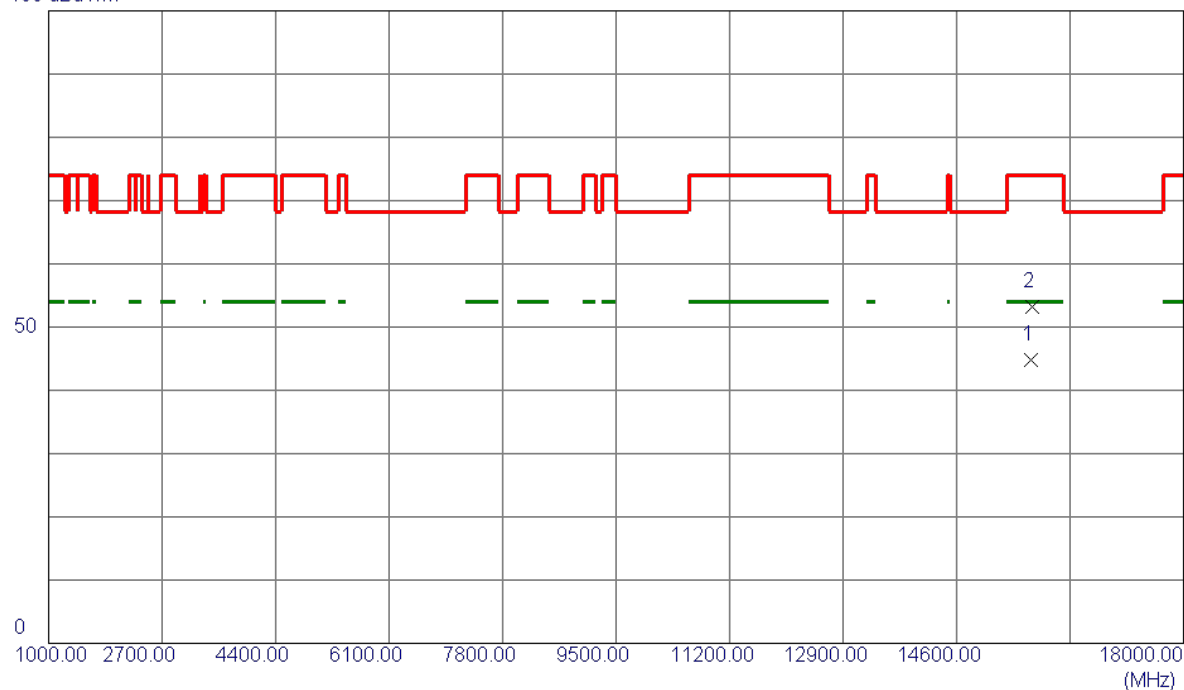
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15598.7500	35.70	8.99	44.69	54.00	-9.31	AVG	
2	15608.2500	46.76	9.00	55.76	74.00	-18.24	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT20) Mode 5240 MHz	Polarization	Horizontal
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100 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15723.3500	35.63	9.16	44.79	54.00	-9.21	AVG	
2	15729.0500	43.98	9.17	53.15	74.00	-20.85	Peak	

REMARKS:

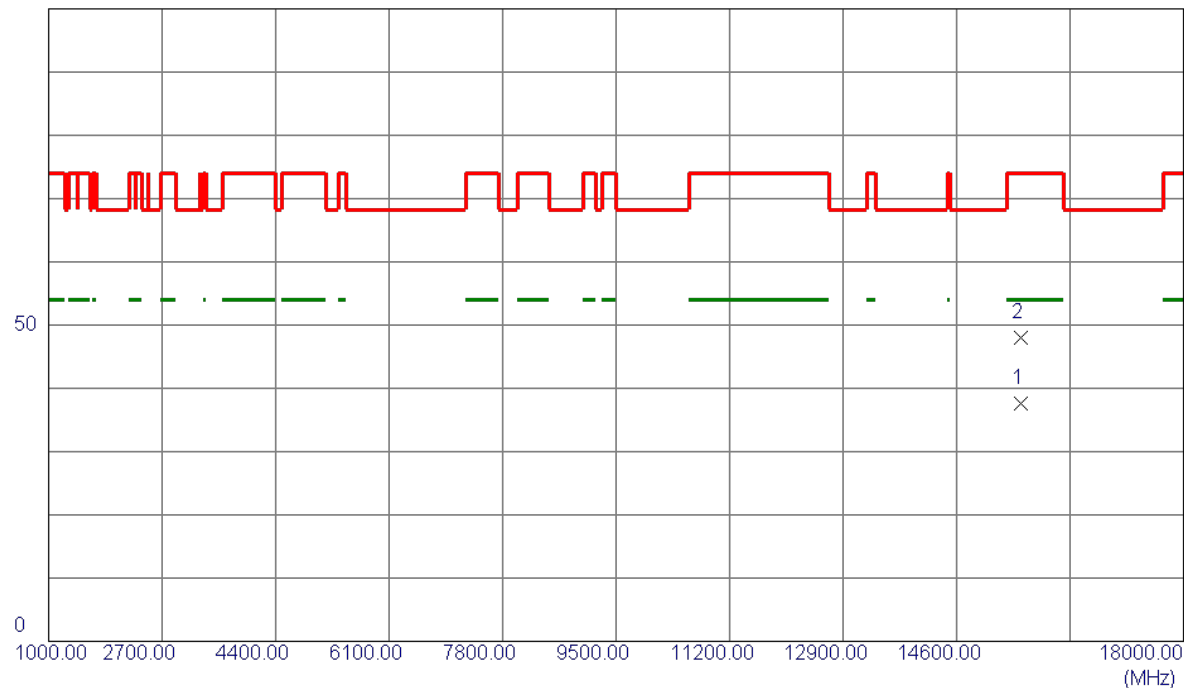
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	5149.3000	48.14	13.56	61.70	74.00	-12.30	Peak	
2	5149.3000	38.75	13.56	52.31	54.00	-1.69	AVG	
3	5150.0000	46.07	13.56	59.63	74.00	-14.37	Peak	
4	5150.0000	37.80	13.56	51.36	54.00	-2.64	AVG	
5	5182.2000	91.04	13.63	104.67	999.00	-894.33	AVG	No Limit
6 *	5182.4000	98.18	13.63	111.81	68.20	43.61	Peak	No Limit

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

Test Mode	UNII-1_TX AC(VHT40) Mode 5190 MHz	Polarization	Horizontal
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100 dBuV/m

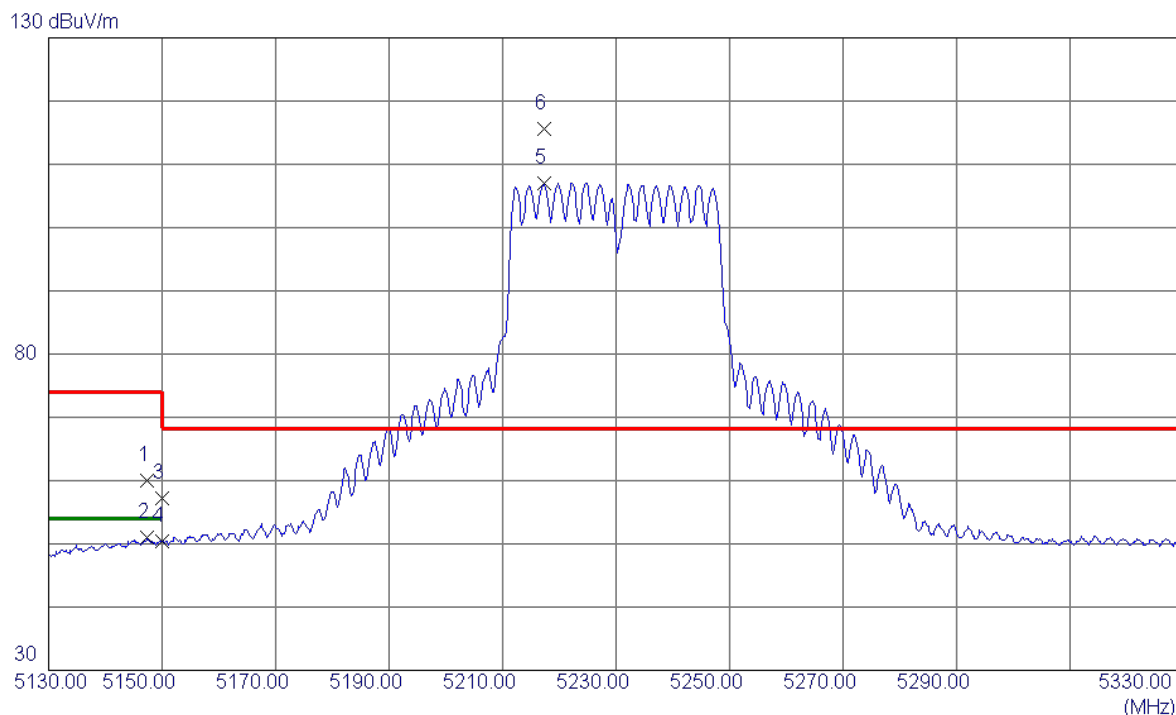


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15570.0000	28.66	8.95	37.61	54.00	-16.39	AVG	
2	15570.8000	39.05	8.95	48.00	74.00	-26.00	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT40) Mode 5230 MHz	Polarization	Vertical
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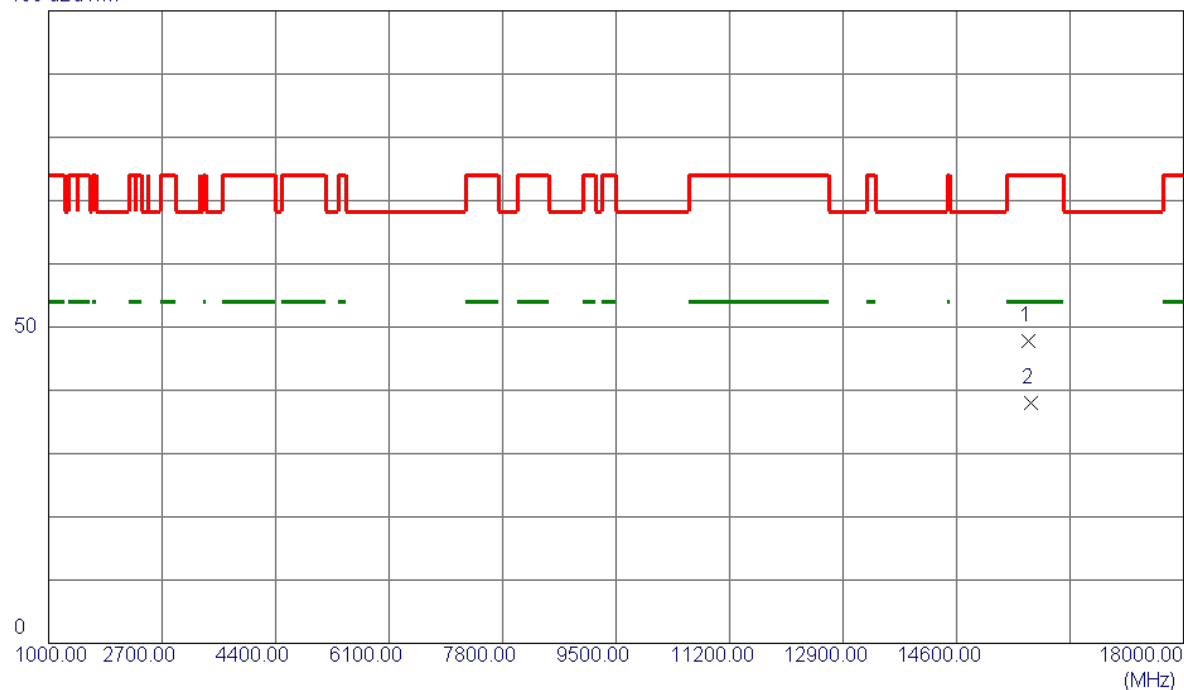
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5147.4000	46.50	13.56	60.06	74.00	-13.94	Peak	
2	5147.4000	37.42	13.56	50.98	54.00	-3.02	AVG	
3	5150.0000	43.72	13.56	57.28	74.00	-16.72	Peak	
4	5150.0000	36.92	13.56	50.48	54.00	-3.52	AVG	
5	5217.3000	93.31	13.70	107.01	999.00	-891.99	AVG	No Limit
6 *	5217.4000	101.99	13.70	115.69	68.20	47.49	Peak	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT40) Mode 5230 MHz	Polarization	Horizontal
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100 dBuV/m

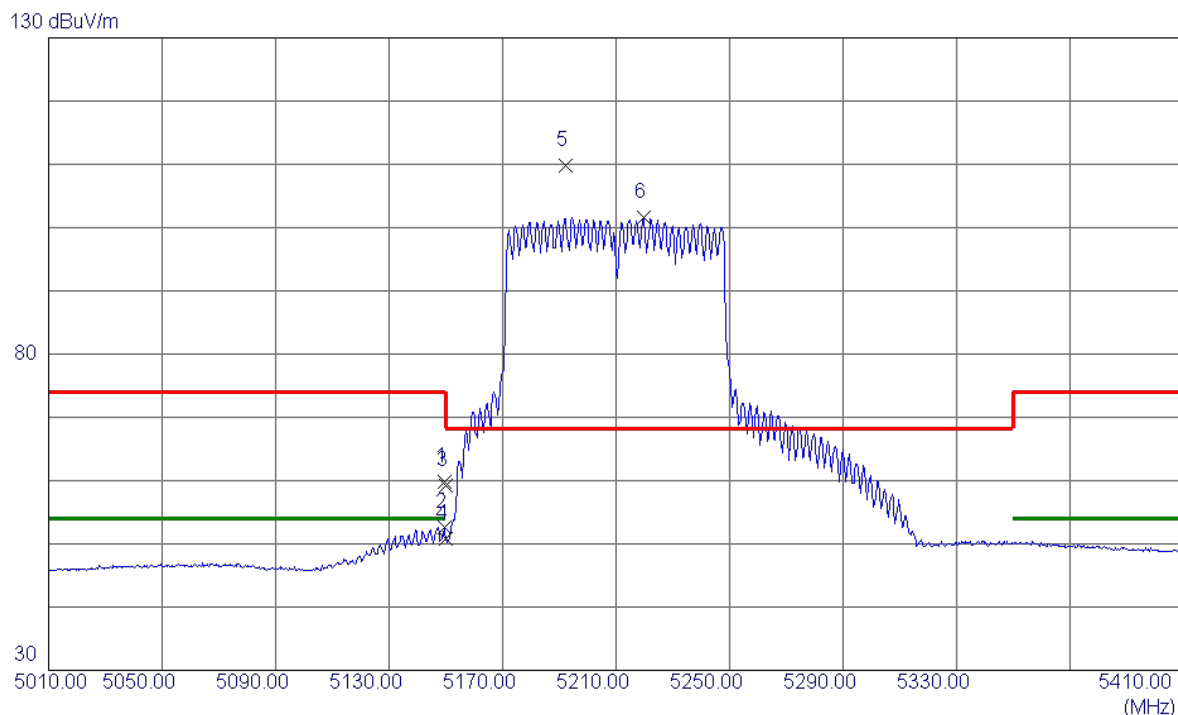


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	15674.0000	38.74	9.09	47.83	74.00	-26.17	Peak	
2 *	15712.2500	28.88	9.15	38.03	54.00	-15.97	AVG	

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT80) Mode 5210 MHz	Polarization	Vertical
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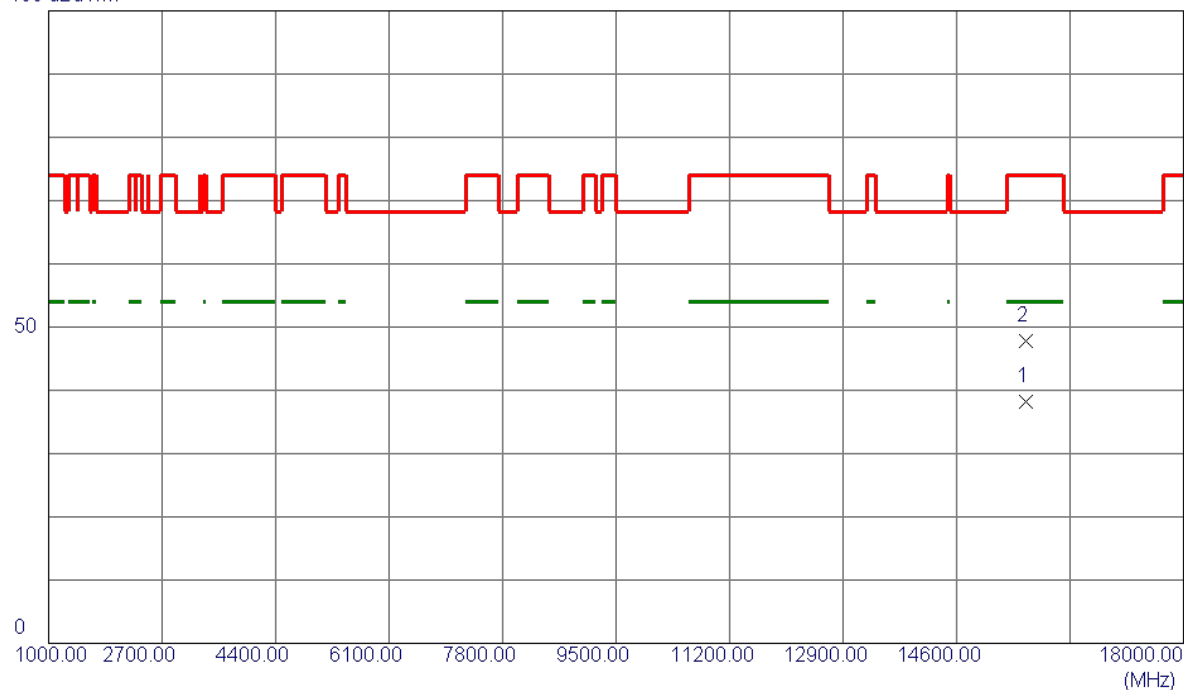
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5149.4000	46.24	13.56	59.80	74.00	-14.20	Peak	
2	5149.4000	39.11	13.56	52.67	54.00	-1.33	AVG	
3	5150.0000	45.67	13.56	59.23	74.00	-14.77	Peak	
4	5150.0000	37.17	13.56	50.73	54.00	-3.27	AVG	
5 *	5192.4000	96.10	13.65	109.75	68.20	41.55	Peak	No Limit
6	5219.8000	87.91	13.70	101.61	999.00	-897.39	AVG	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AC(VHT80) Mode 5210 MHz	Polarization	Horizontal
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100 dBuV/m

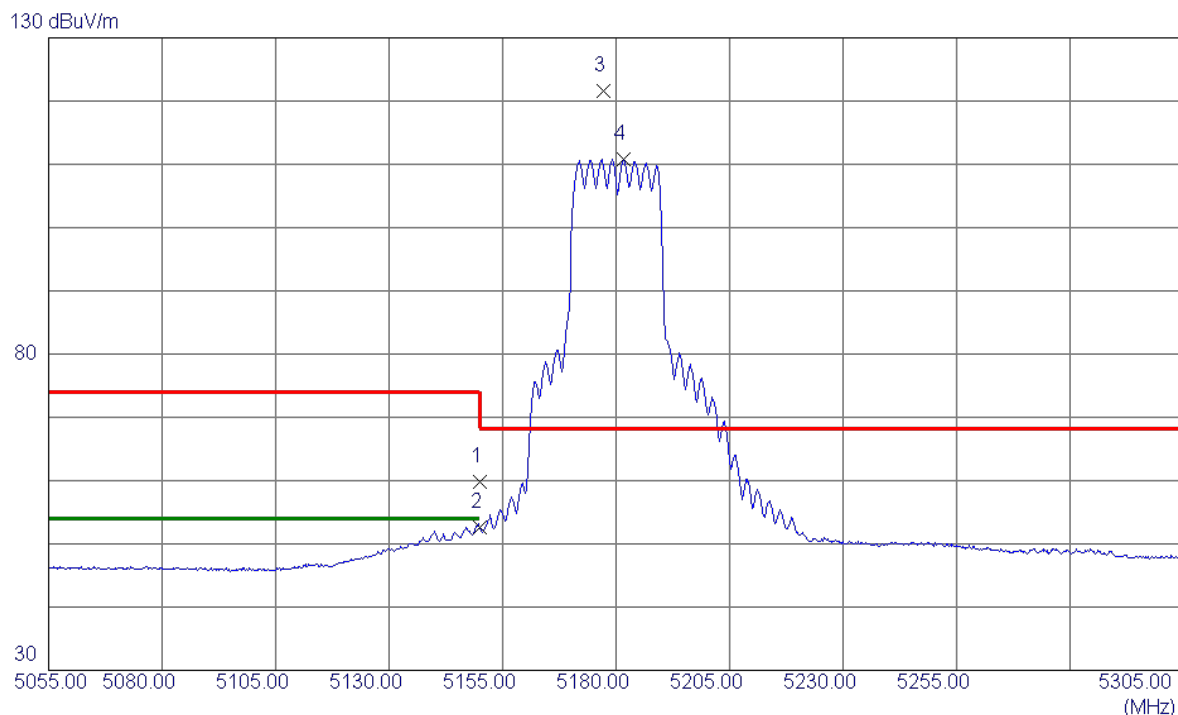


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15630.0500	29.13	9.03	38.16	54.00	-15.84	AVG	
2	15632.8000	38.79	9.03	47.82	74.00	-26.18	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AX(HE20) Mode 5180 MHz	Polarization	Vertical
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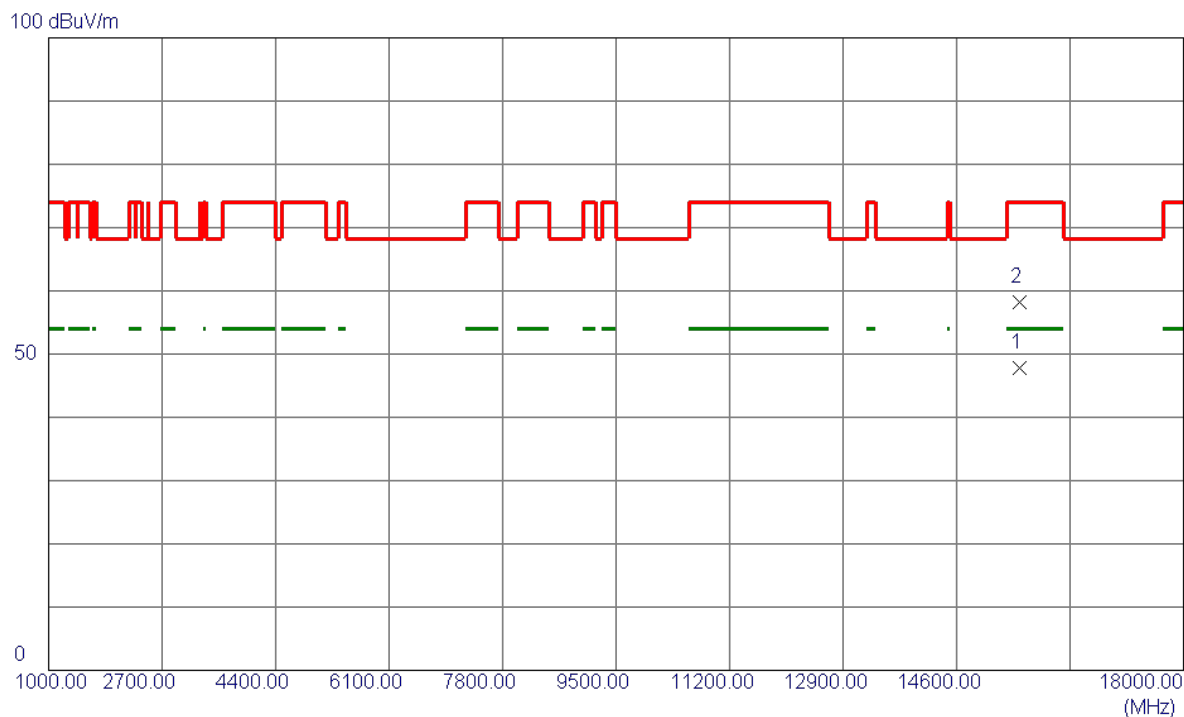


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	46.32	13.56	59.88	74.00	-14.12	Peak	
2	5150.0000	39.08	13.56	52.64	54.00	-1.36	AVG	
3 *	5177.2500	107.97	13.62	121.59	68.20	53.39	Peak	No Limit
4	5181.6250	97.23	13.63	110.86	999.00	-888.14	AVG	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AX(HE20) Mode 5180 MHz	Polarization	Horizontal
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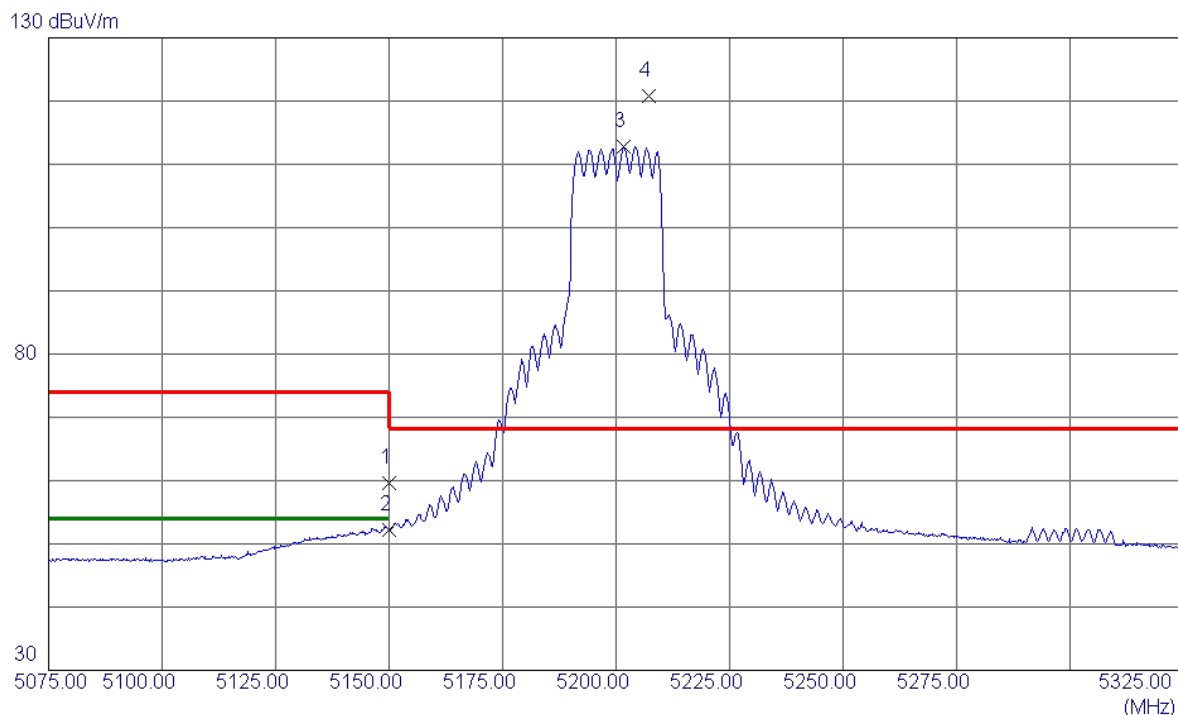


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15540.9500	38.93	8.90	47.83	54.00	-6.17	AVG	
2	15547.6000	49.38	8.91	58.29	74.00	-15.71	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AX(HE20) Mode 5200 MHz	Polarization	Vertical
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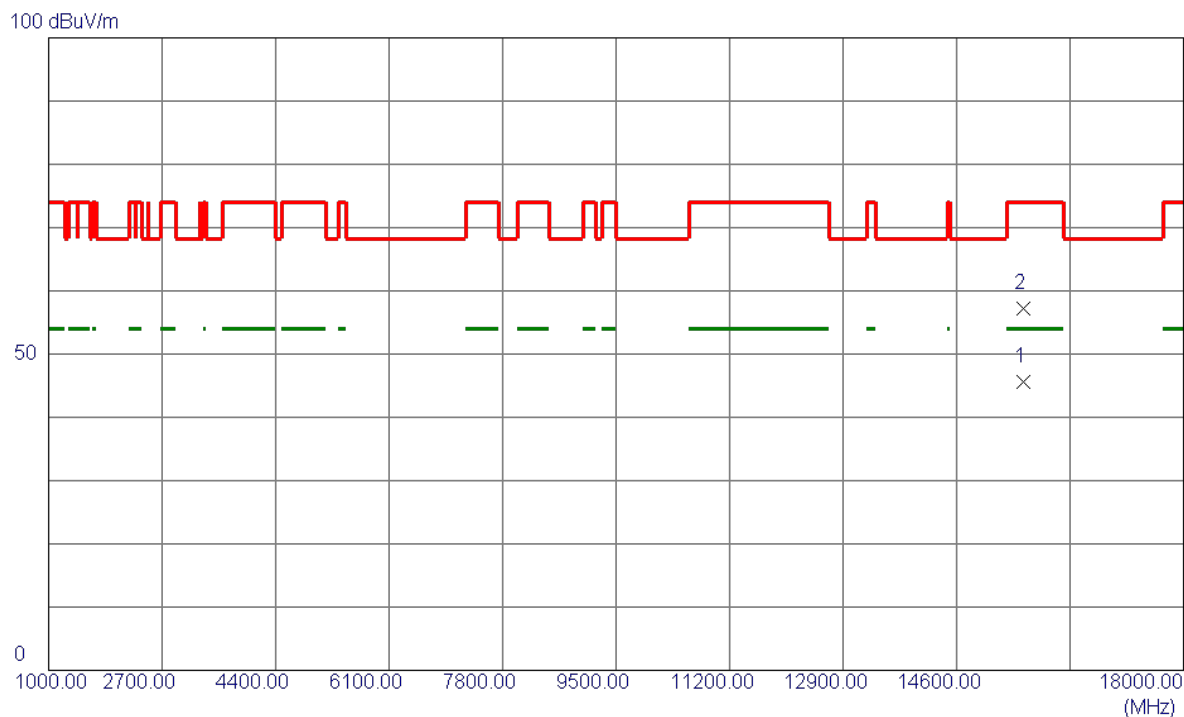


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	46.02	13.56	59.58	74.00	-14.42	Peak	
2	5150.0000	38.72	13.56	52.28	54.00	-1.72	AVG	
3	5201.7500	99.18	13.67	112.85	999.00	-886.15	AVG	No Limit
4 *	5207.1250	107.08	13.68	120.76	68.20	52.56	Peak	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AX(HE20) Mode 5200 MHz	Polarization	Horizontal
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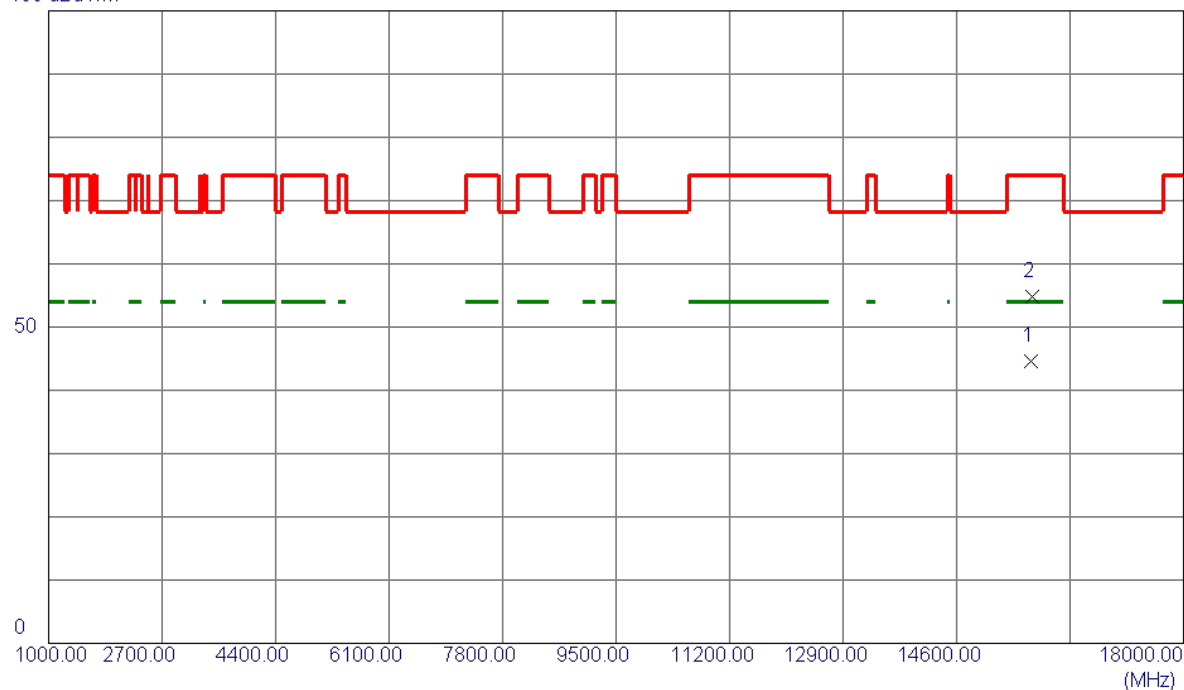
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15600.8500	36.68	8.99	45.67	54.00	-8.33	AVG	
2	15601.5500	48.29	8.99	57.28	74.00	-16.72	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AX(HE20) Mode 5240 MHz	Polarization	Horizontal
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100 dBuV/m

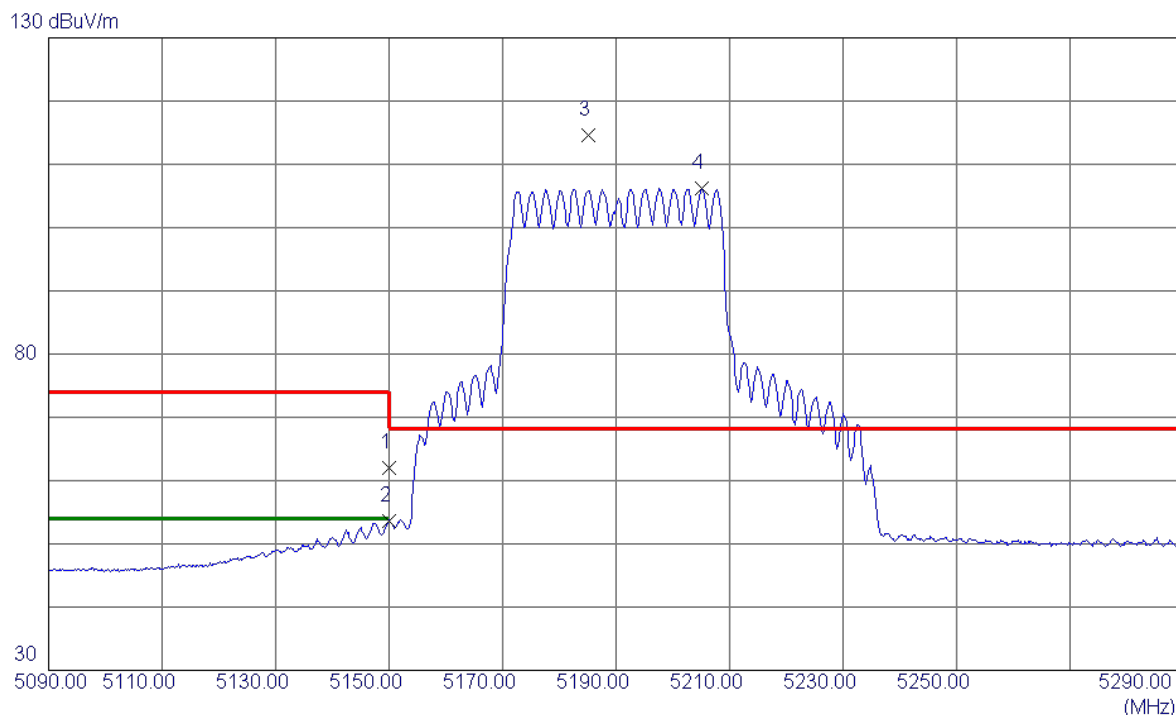


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15716.7500	35.48	9.15	44.63	54.00	-9.37	AVG	
2	15728.8500	45.60	9.17	54.77	74.00	-19.23	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AX(HE40) Mode 5190 MHz	Polarization	Vertical
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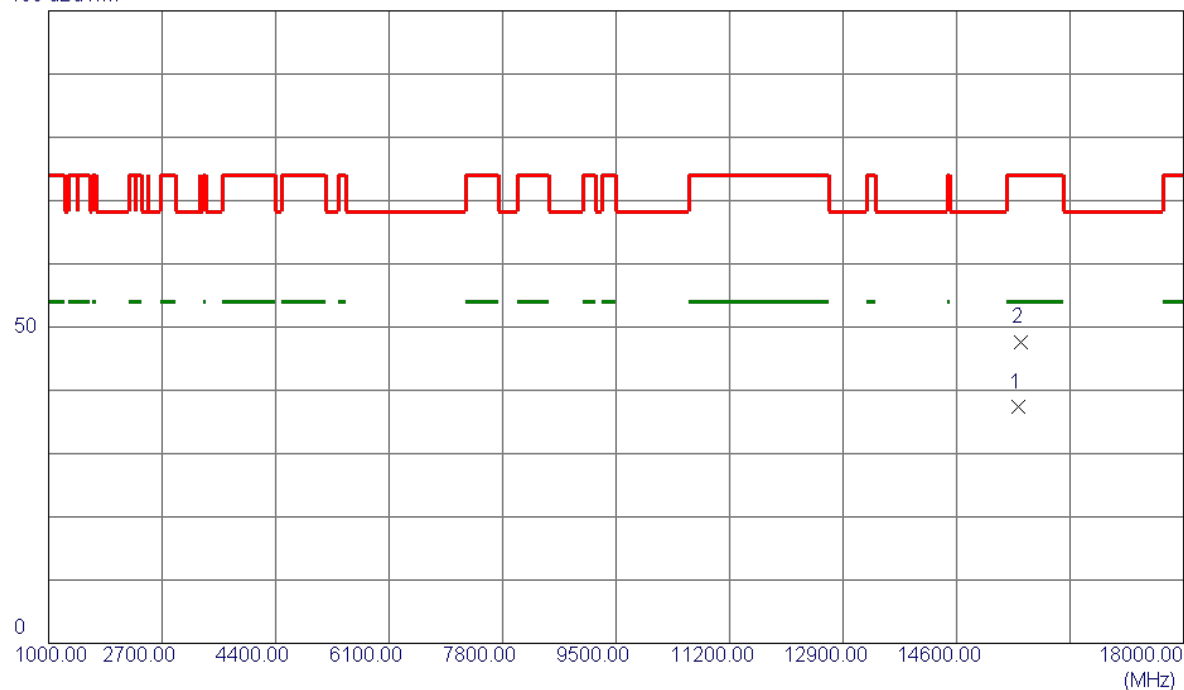
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5150.0000	48.48	13.56	62.04	74.00	-11.96	Peak	
2	5150.0000	40.00	13.56	53.56	54.00	-0.44	AVG	
3 *	5185.1000	100.99	13.63	114.62	68.20	46.42	Peak	No Limit
4	5205.2000	92.45	13.67	106.12	999.00	-892.88	AVG	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AX(HE40) Mode 5190 MHz	Polarization	Horizontal
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100 dBuV/m

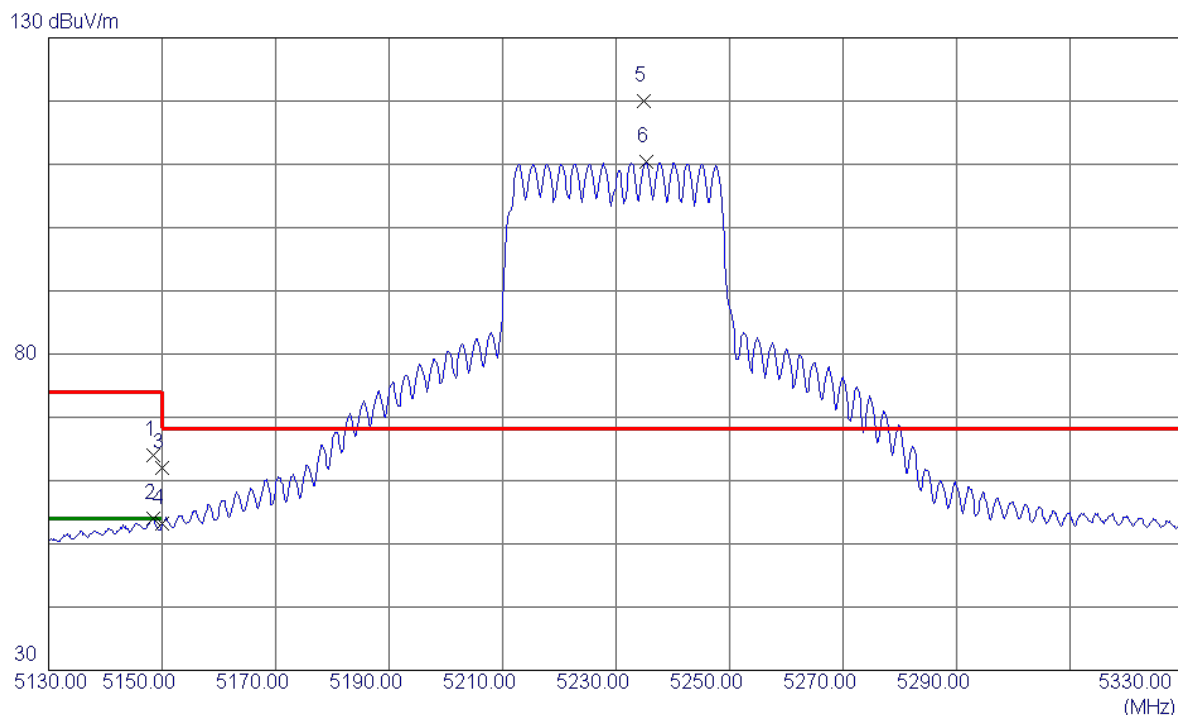


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15525.3500	28.42	8.88	37.30	54.00	-16.70	AVG	
2	15565.0500	38.60	8.94	47.54	74.00	-26.46	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AX(HE40) Mode 5230 MHz	Polarization	Vertical
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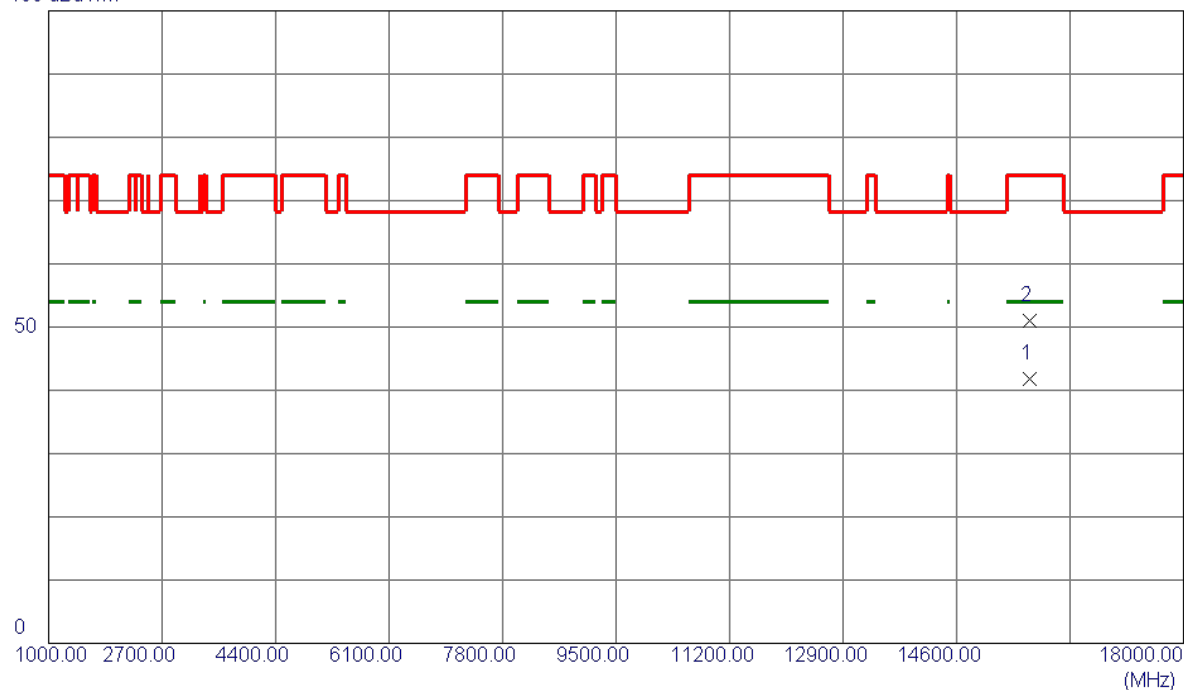
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5148.4000	50.35	13.56	63.91	74.00	-10.09	Peak	
2	5148.4000	40.42	13.56	53.98	54.00	-0.02	AVG	
3	5150.0000	48.52	13.56	62.08	74.00	-11.92	Peak	
4	5150.0000	39.62	13.56	53.18	54.00	-0.82	AVG	
5 *	5234.9000	106.21	13.74	119.95	68.20	51.75	Peak	No Limit
6	5235.3000	96.65	13.74	110.39	999.00	-888.61	AVG	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AX(HE40) Mode 5230 MHz	Polarization	Horizontal
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100 dBuV/m

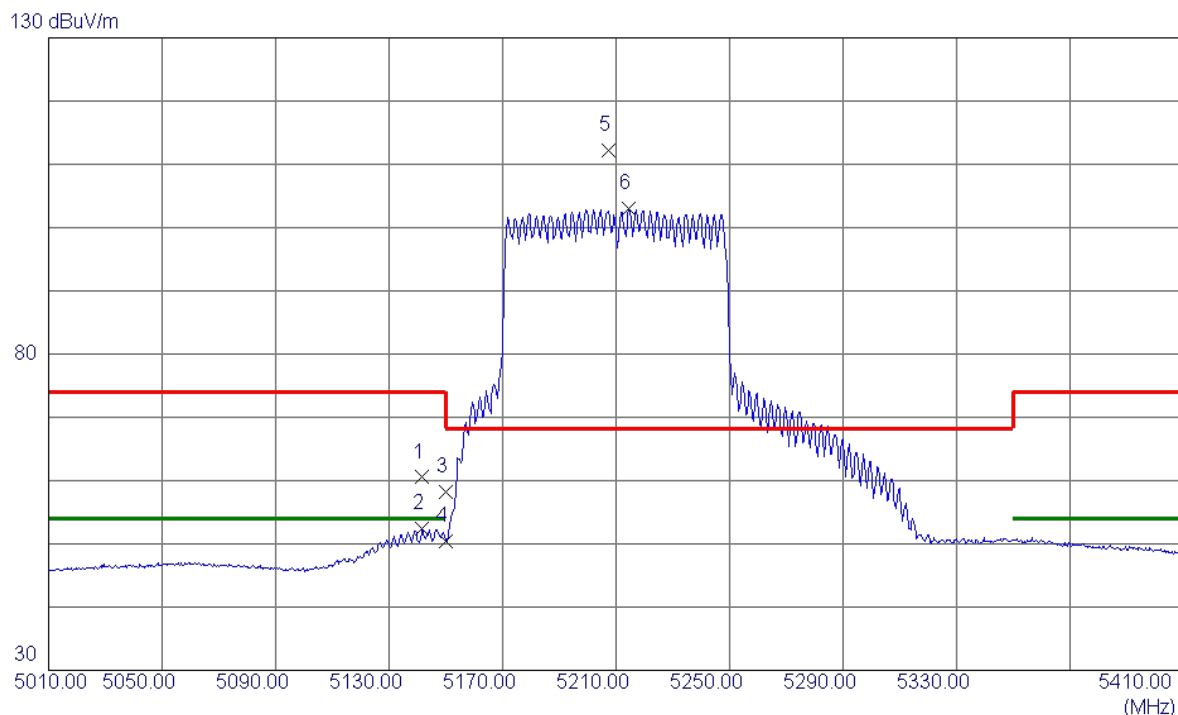


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15686.6500	32.73	9.11	41.84	54.00	-12.16	AVG	
2	15689.3500	41.94	9.12	51.06	74.00	-22.94	Peak	

REMARKS:

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

Test Mode	UNII-1_TX AX(HE80) Mode 5210 MHz	Polarization	Vertical
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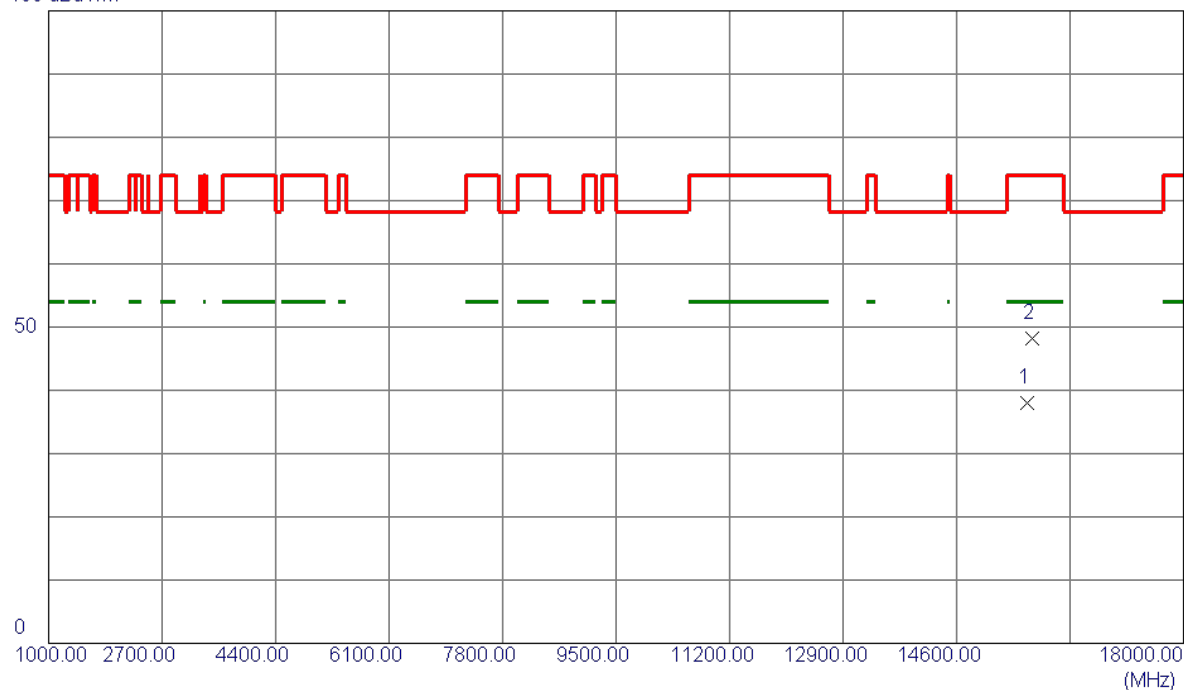
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5141.6000	46.96	13.54	60.50	74.00	-13.50	Peak	
2	5141.6000	38.83	13.54	52.37	54.00	-1.63	AVG	
3	5150.0000	44.57	13.56	58.13	74.00	-15.87	Peak	
4	5150.0000	36.82	13.56	50.38	54.00	-3.62	AVG	
5 *	5207.2000	98.53	13.68	112.21	68.20	44.01	Peak	No Limit
6	5214.6000	89.30	13.69	102.99	999.00	-896.01	AVG	No Limit

REMARKS:

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

Test Mode	UNII-1_TX AX(HE80) Mode 5210 MHz	Polarization	Horizontal
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100 dBuV/m

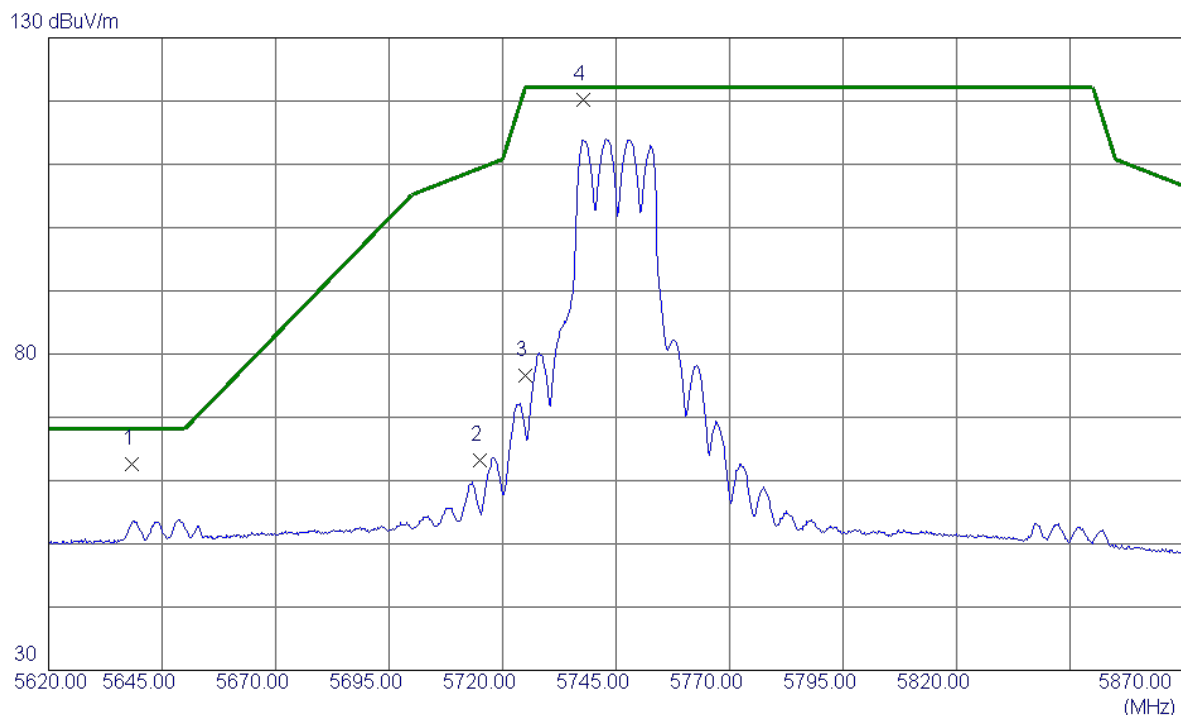


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	15667.2000	28.99	9.08	38.07	54.00	-15.93	AVG	
2	15727.5000	39.05	9.17	48.22	74.00	-25.78	Peak	

REMARKS:

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

Test Mode	UNII-3_TX A Mode 5745 MHz	Polarization	Vertical
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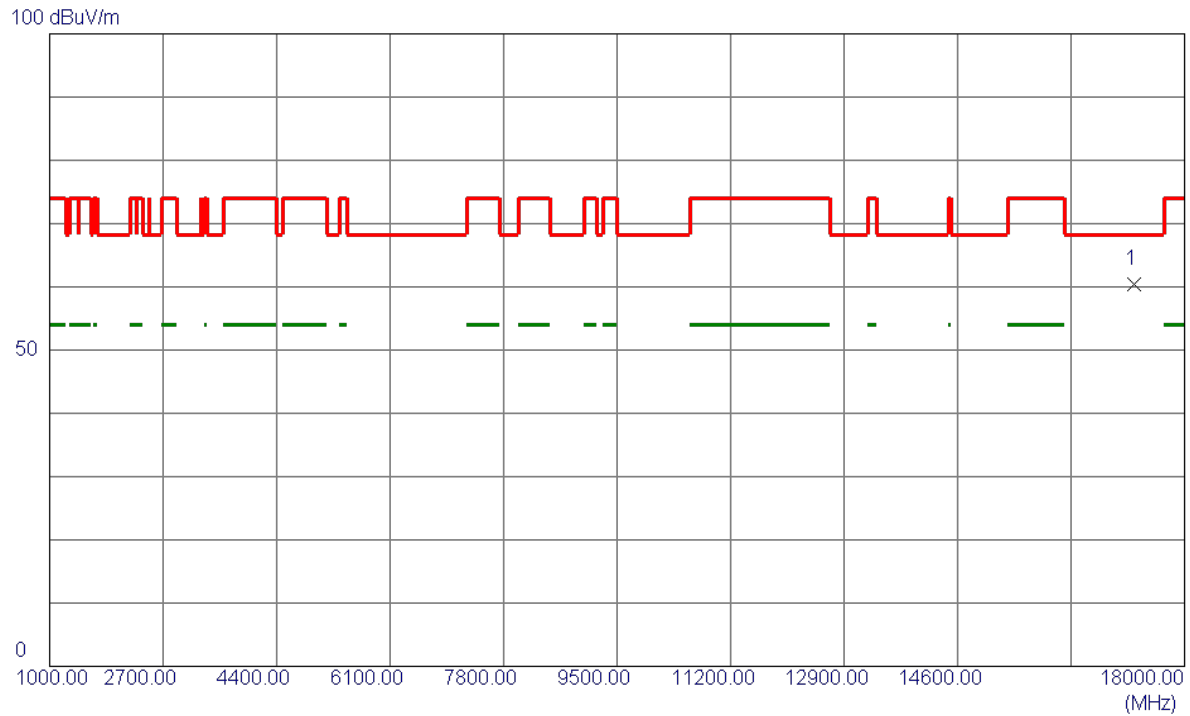


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5638.3750	47.81	14.72	62.53	68.20	-5.67	Peak	
2	5715.0000	48.21	14.97	63.18	109.40	-46.22	Peak	
3	5725.0000	61.62	15.00	76.62	122.20	-45.58	Peak	
4 *	5737.7500	105.22	15.04	120.26	122.20	-1.94	Peak	No Limit

REMARKS:

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

Test Mode	UNII-3_TX A Mode 5745 MHz	Polarization	Horizontal
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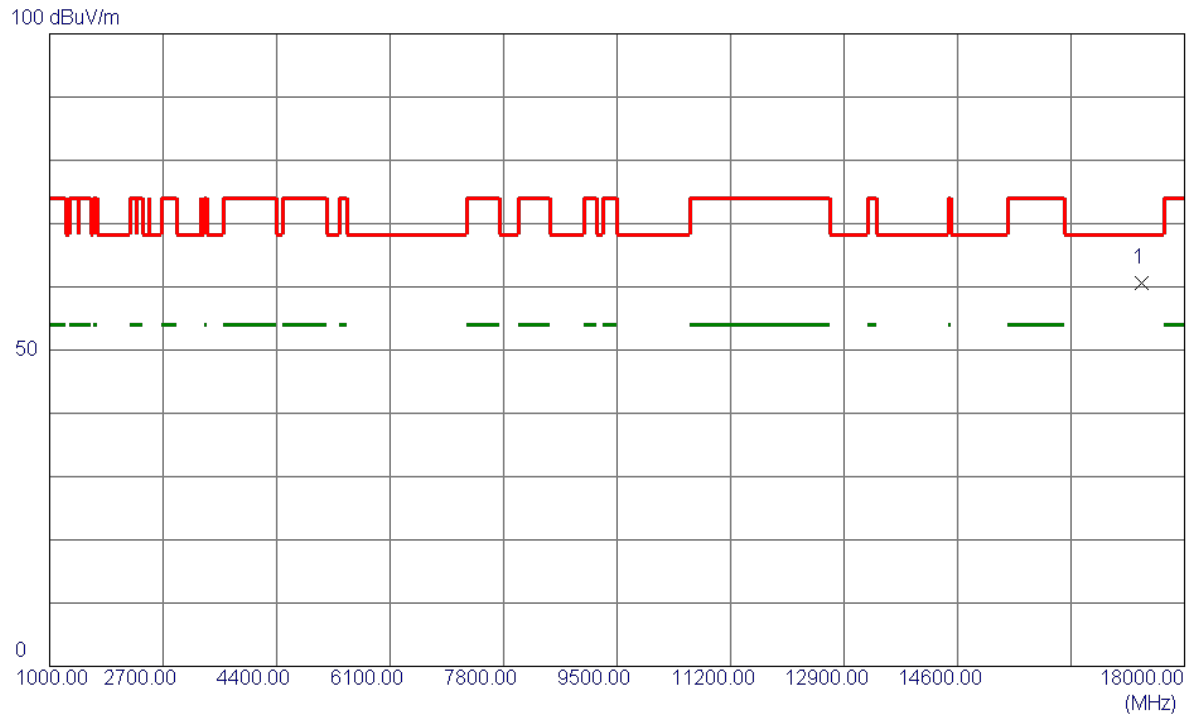


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17239.1500	48.38	11.96	60.34	68.20	-7.86	Peak	

REMARKS:

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

Test Mode	UNII-3_TX A Mode 5785 MHz	Polarization	Horizontal
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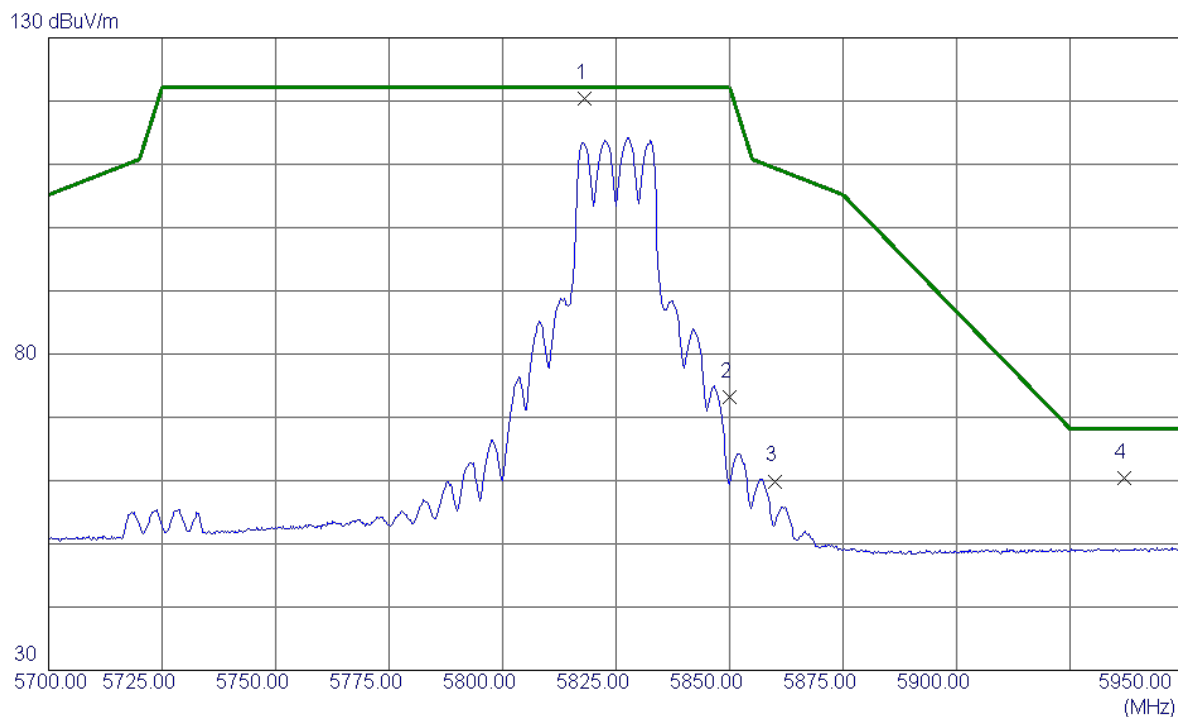


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17365.5000	48.35	12.34	60.69	68.20	-7.51	Peak	

REMARKS:

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

Test Mode	UNII-3_TX A Mode 5825 MHz	Polarization	Vertical
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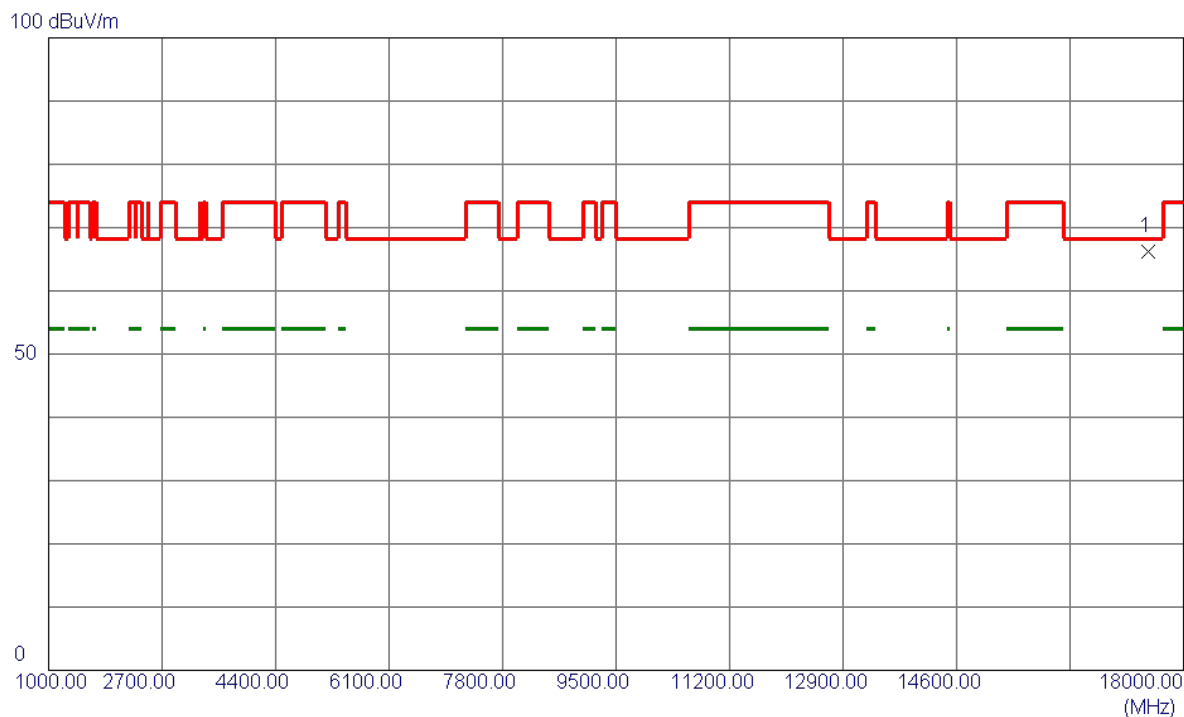


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5818.0000	105.07	15.29	120.36	122.20	-1.84	Peak	No Limit
2	5850.0000	57.89	15.39	73.28	122.20	-48.92	Peak	
3	5860.0000	44.47	15.43	59.90	109.40	-49.50	Peak	
4	5937.0000	44.77	15.67	60.44	68.20	-7.76	Peak	

REMARKS:

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

Test Mode	UNII-3_TX A Mode 5825 MHz	Polarization	Horizontal
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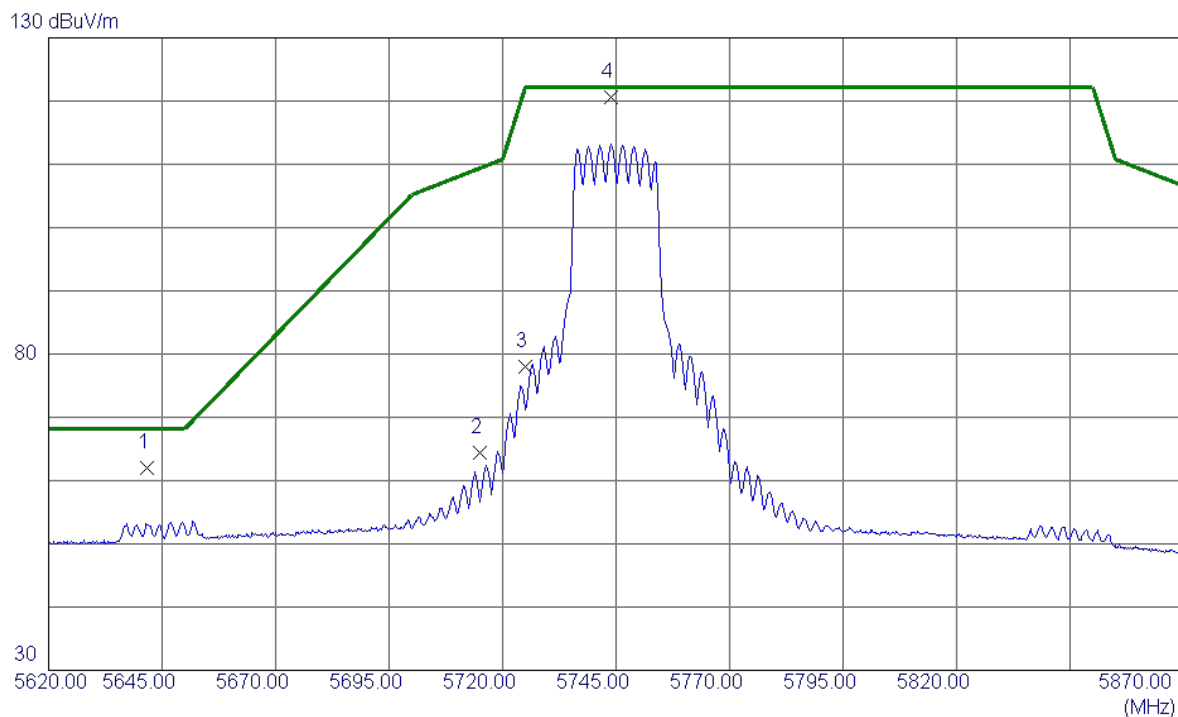


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17476.4500	53.47	12.66	66.13	68.20	-2.07	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT20) Mode 5745 MHz	Polarization	Vertical
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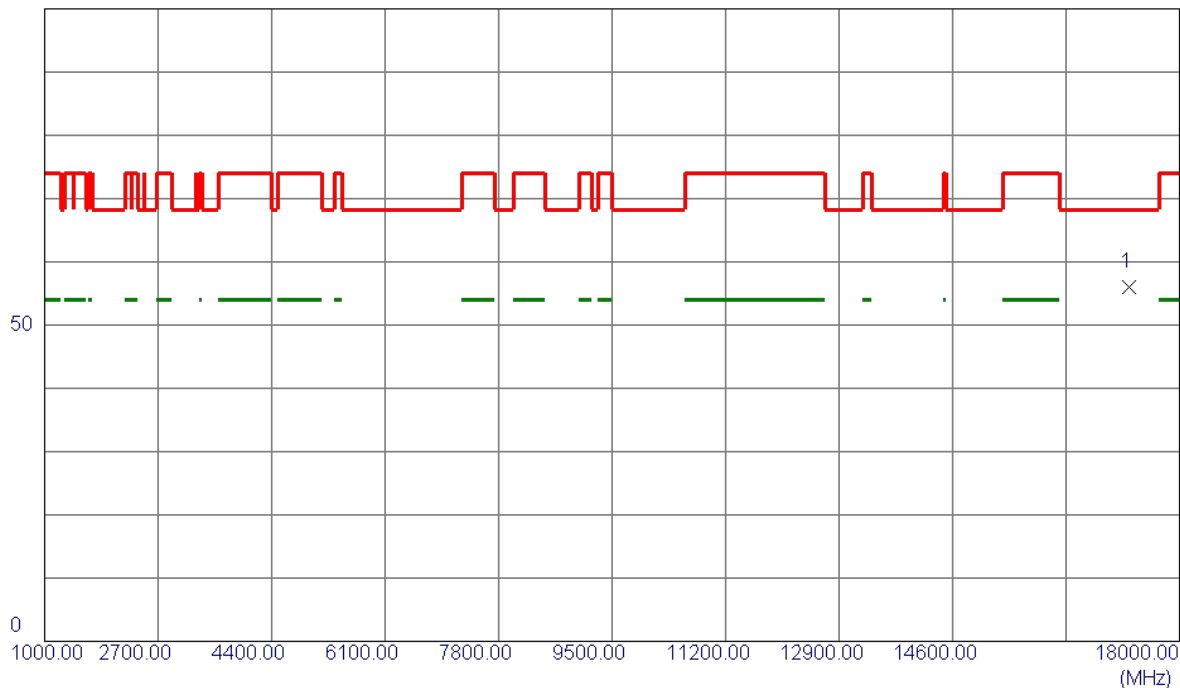
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5641.7500	47.29	14.73	62.02	68.20	-6.18	Peak	
2	5715.0000	49.39	14.97	64.36	109.40	-45.04	Peak	
3	5725.0000	62.98	15.00	77.98	122.20	-44.22	Peak	
4 *	5743.8750	105.48	15.06	120.54	122.20	-1.66	Peak	No Limit

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT20) Mode 5745 MHz	Polarization	Horizontal
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100 dBuV/m

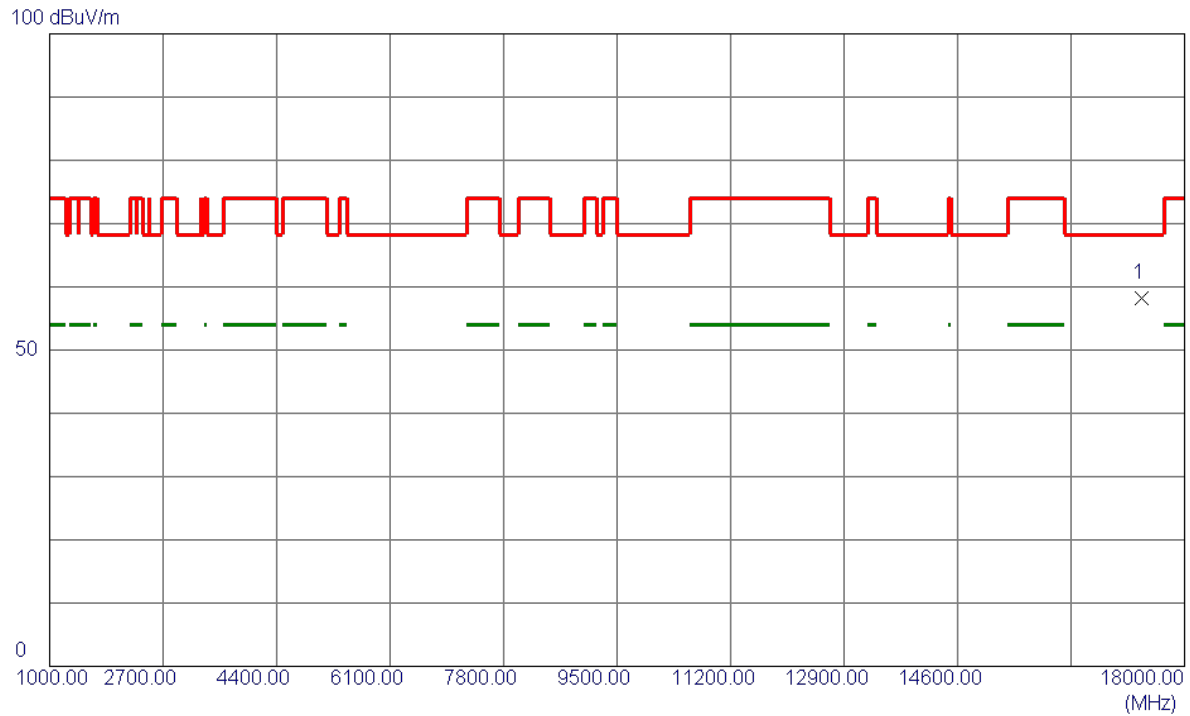


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17240.1000	44.13	11.96	56.09	68.20	-12.11	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT20) Mode 5785 MHz	Polarization	Horizontal
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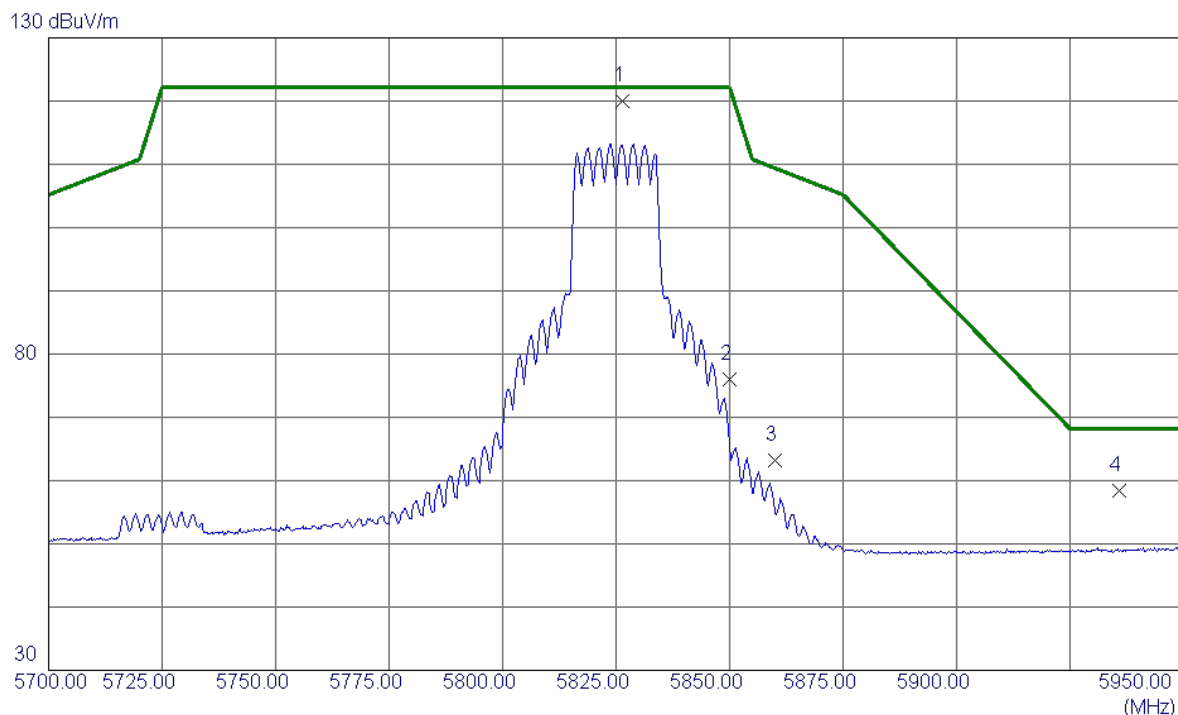


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17356.1500	45.93	12.31	58.24	68.20	-9.96	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT20) Mode 5825 MHz	Polarization	Vertical
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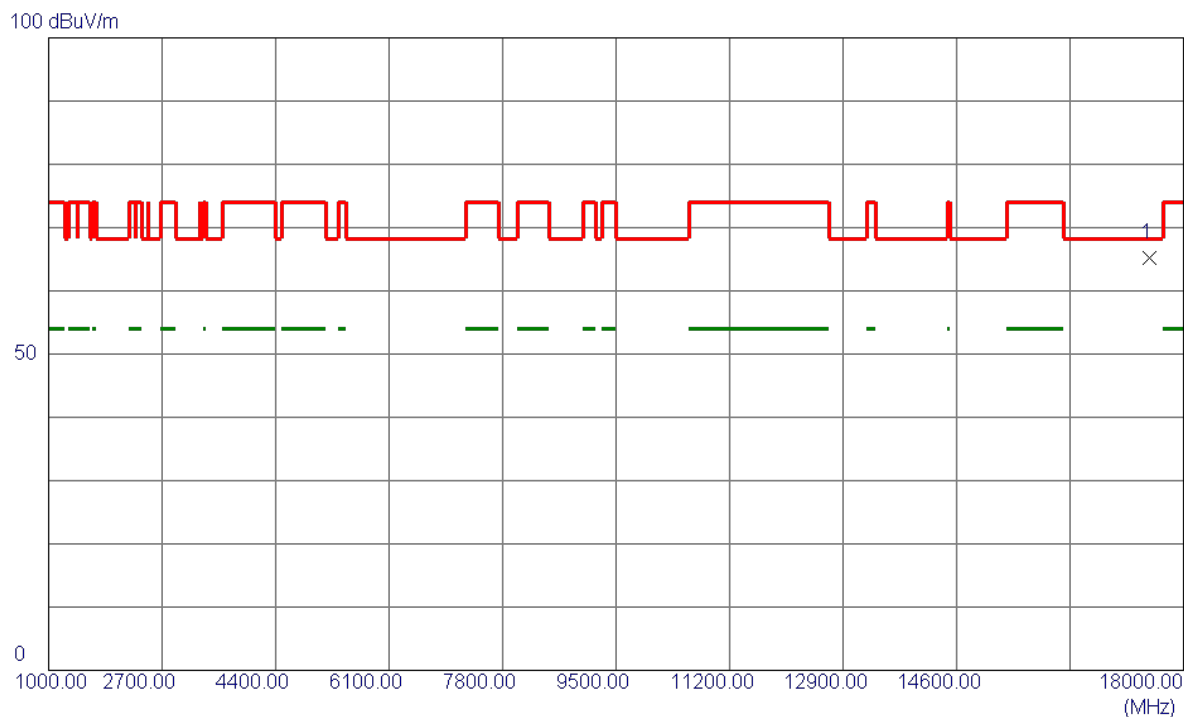


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5826.5000	104.77	15.32	120.09	122.20	-2.11	Peak	No Limit
2	5850.0000	60.56	15.39	75.95	122.20	-46.25	Peak	
3	5860.0000	47.83	15.43	63.26	109.40	-46.14	Peak	
4	5935.8750	42.75	15.67	58.42	68.20	-9.78	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT20) Mode 5825 MHz	Polarization	Horizontal
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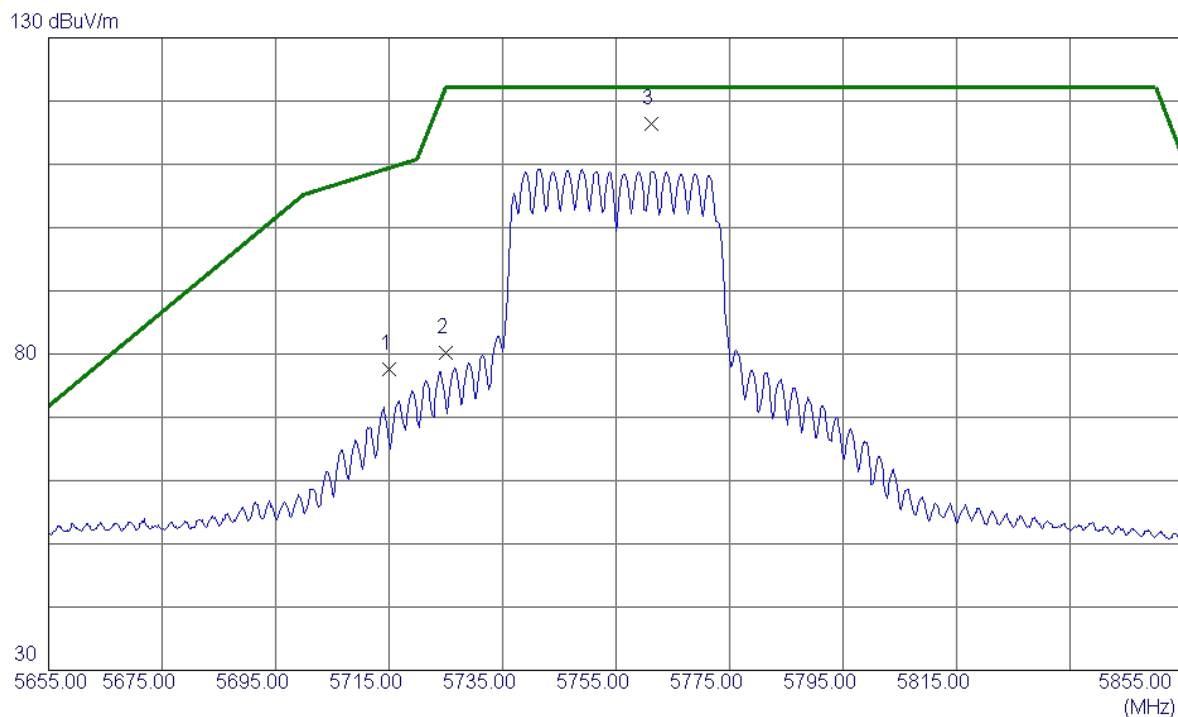


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17482.8500	52.55	12.68	65.23	68.20	-2.97	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT40) Mode 5755 MHz	Polarization	Vertical
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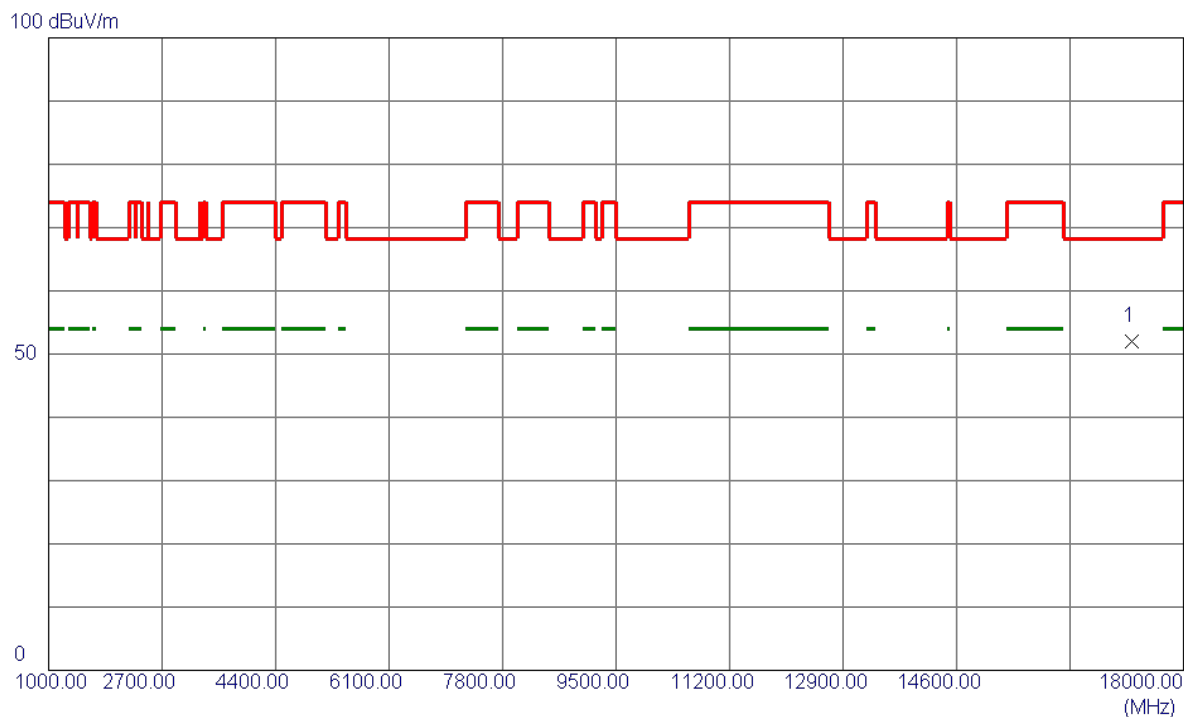


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5715.0000	62.57	14.97	77.54	109.40	-31.86	Peak	
2	5725.0000	65.13	15.00	80.13	122.20	-42.07	Peak	
3 *	5761.3000	101.35	15.11	116.46	122.20	-5.74	Peak	No Limit

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT40) Mode 5755 MHz	Polarization	Horizontal
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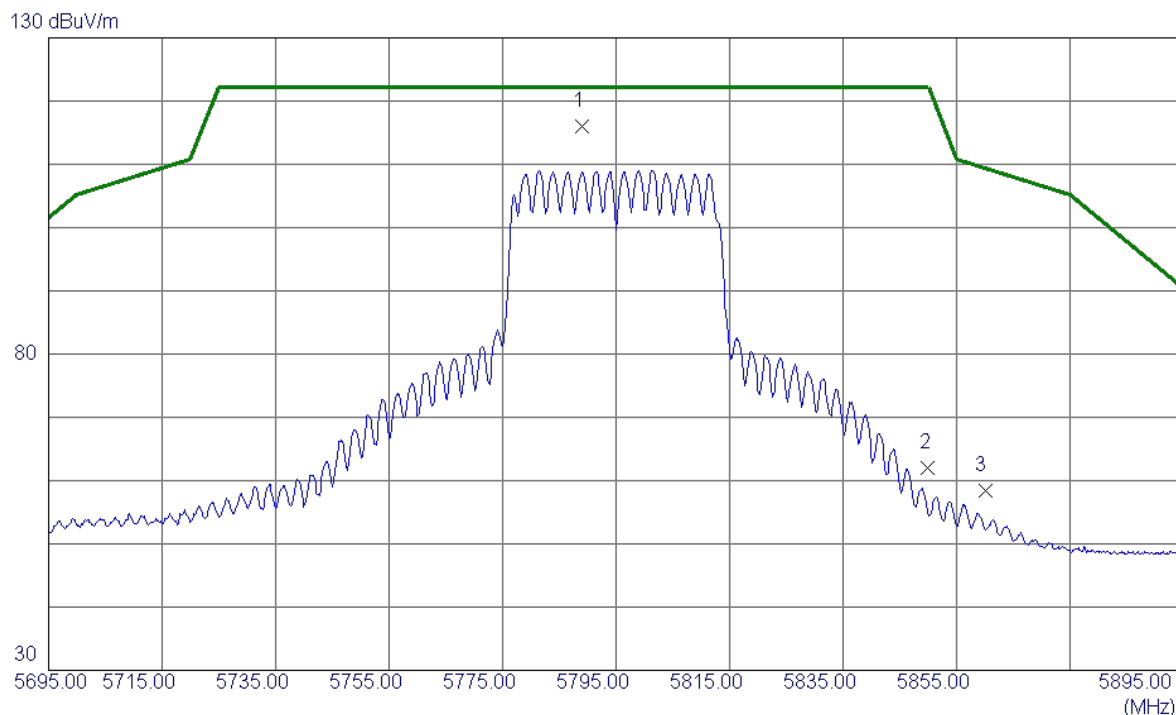


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17219.3500	40.02	11.90	51.92	68.20	-16.28	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT40) Mode 5795 MHz	Polarization	Vertical
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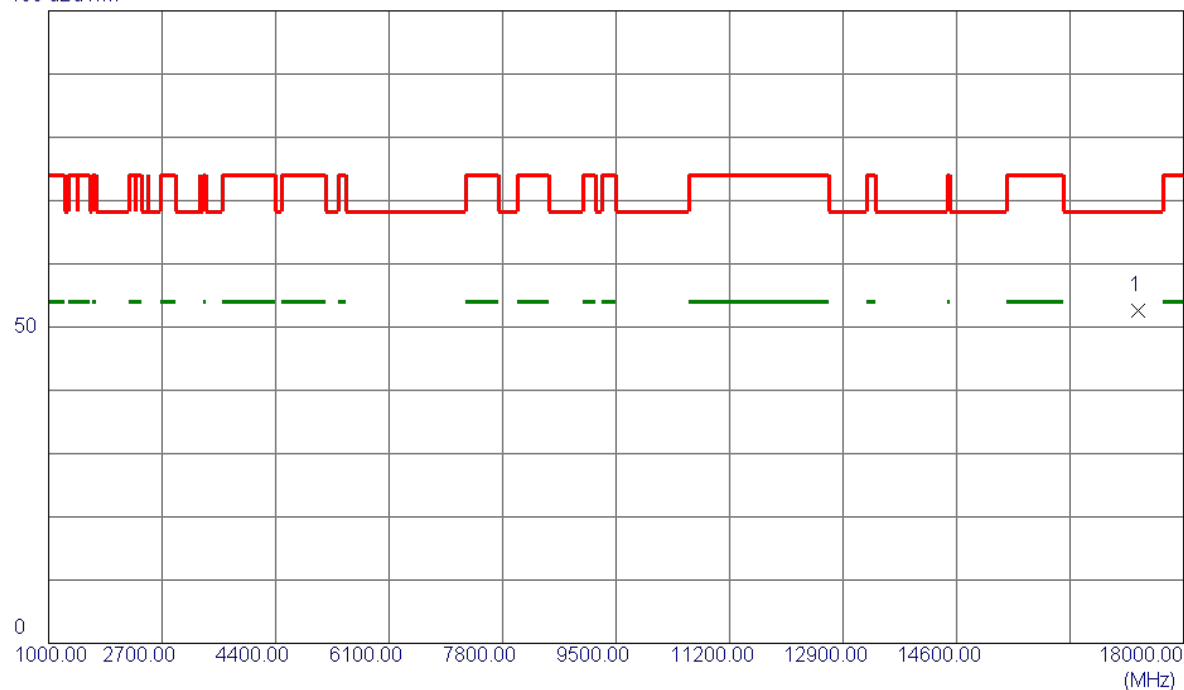
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5788.9000	100.71	15.20	115.91	122.20	-6.29	Peak	No Limit
2	5850.0000	46.67	15.39	62.06	122.20	-60.14	Peak	
3	5860.0000	43.02	15.43	58.45	109.40	-50.95	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT40) Mode 5795 MHz	Polarization	Horizontal
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100 dBuV/m

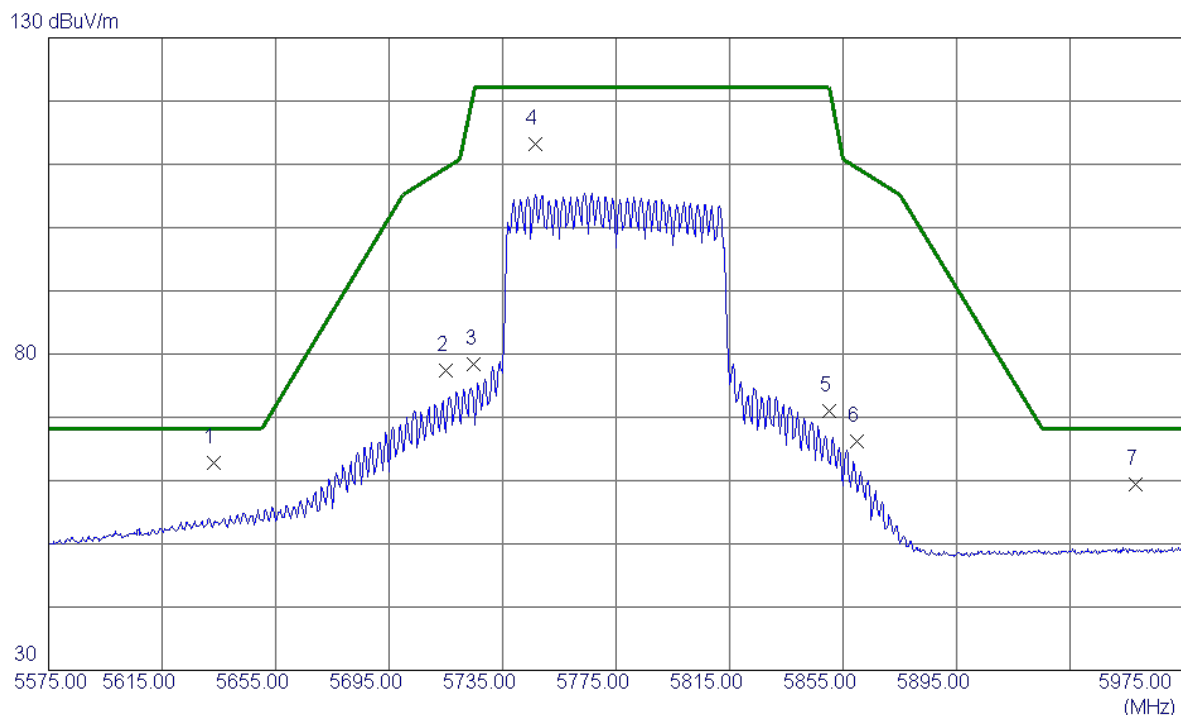


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17323.6000	40.30	12.21	52.51	68.20	-15.69	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT80) Mode 5775 MHz	Polarization	Vertical
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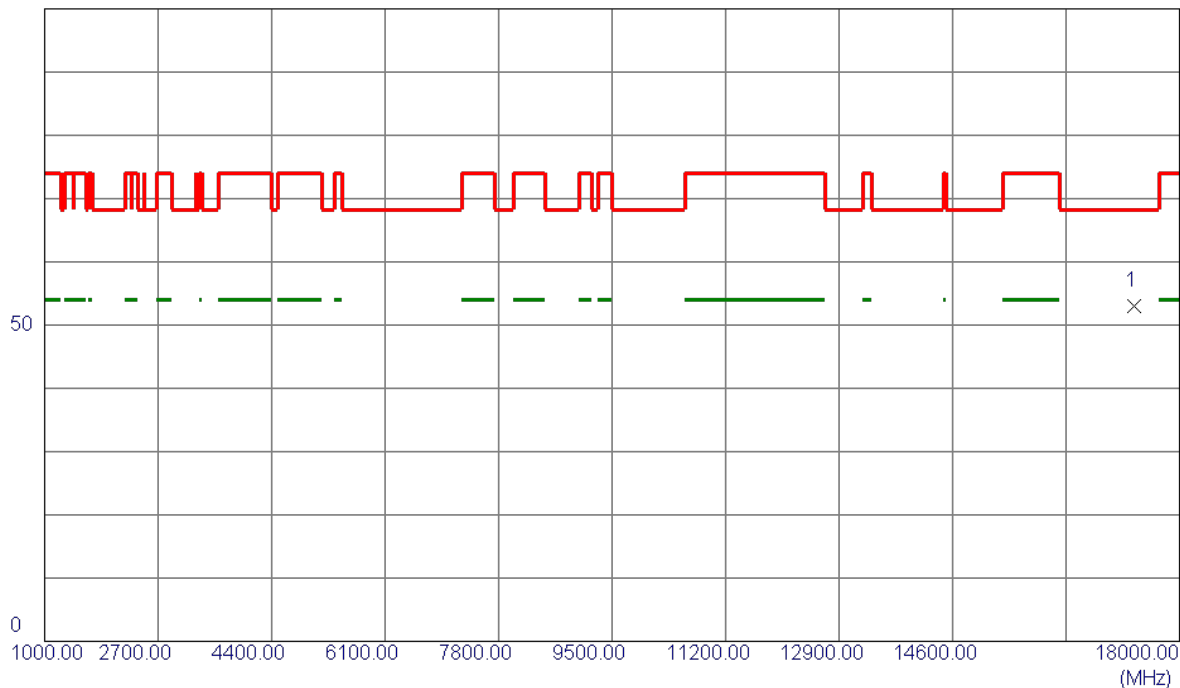
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5633.0000	48.14	14.71	62.85	68.20	-5.35	Peak	
2	5715.0000	62.52	14.97	77.49	109.40	-31.91	Peak	
3	5725.0000	63.40	15.00	78.40	122.20	-43.80	Peak	
4	5746.4000	98.05	15.07	113.12	122.20	-9.08	Peak	No Limit
5	5850.0000	55.69	15.39	71.08	122.20	-51.12	Peak	
6	5860.0000	50.71	15.43	66.14	109.40	-43.26	Peak	
7	5958.2000	43.66	15.74	59.40	68.20	-8.80	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AC(VHT80) Mode 5775 MHz	Polarization	Horizontal
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100 dBuV/m

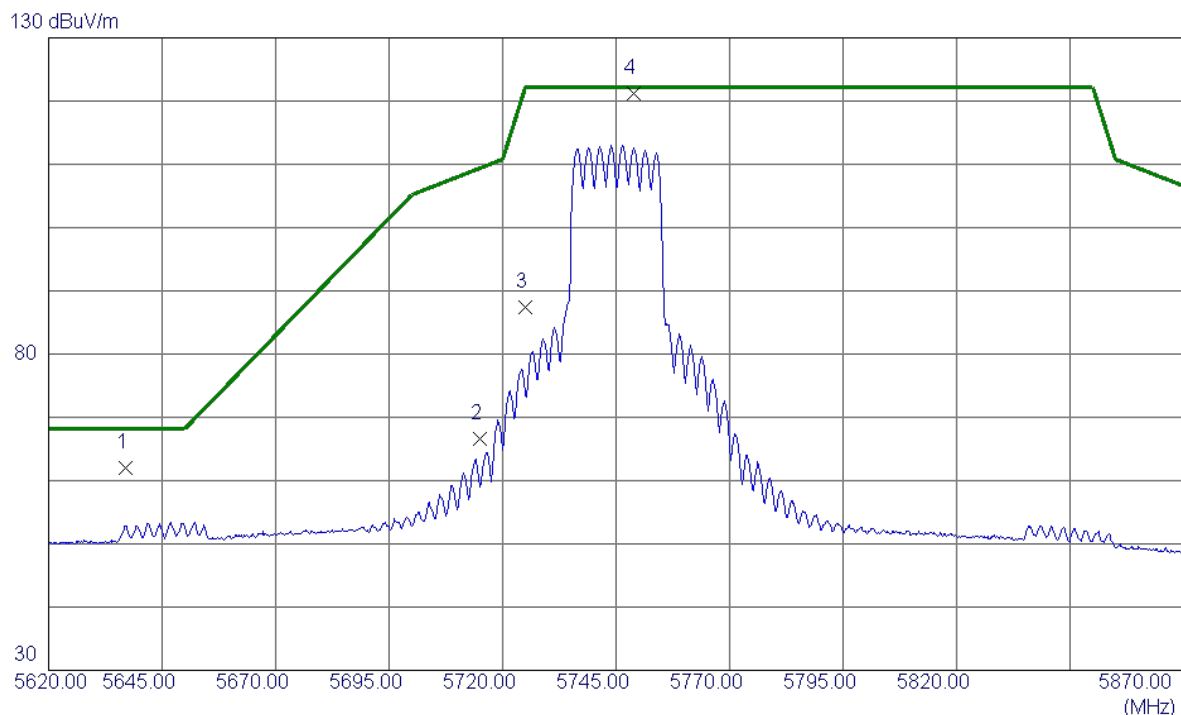


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17324.8000	40.70	12.21	52.91	68.20	-15.29	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE20) Mode 5745 MHz	Polarization	Vertical
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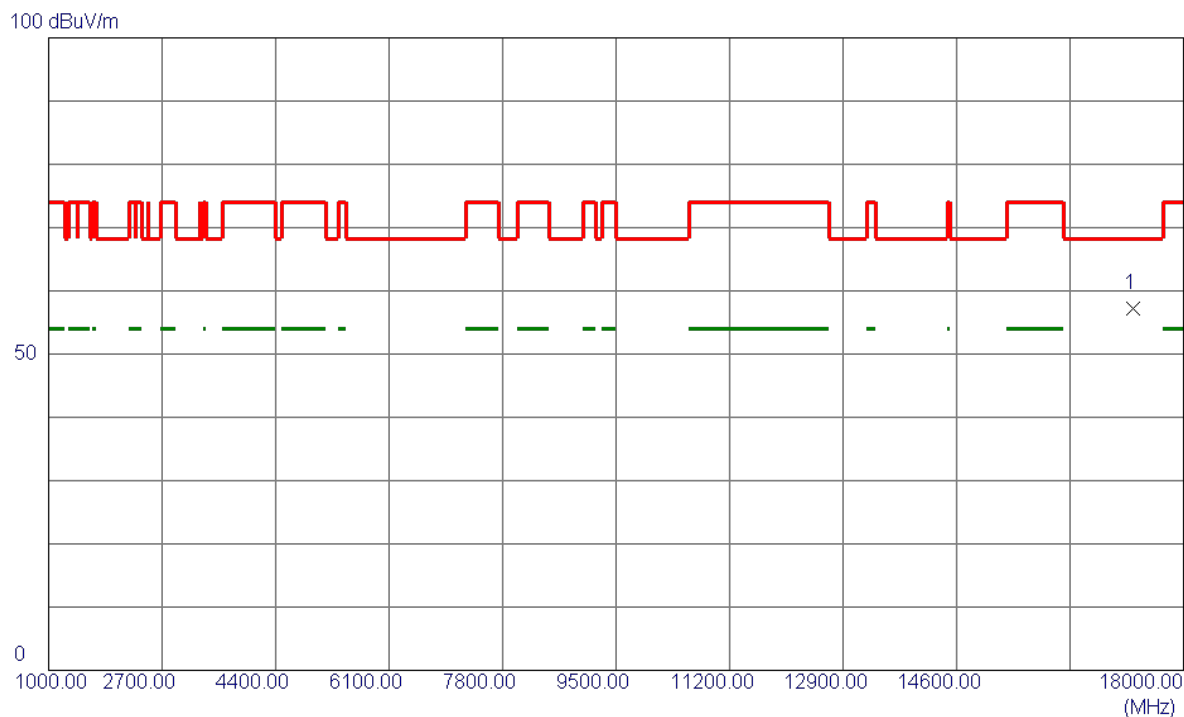


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5636.8750	47.33	14.72	62.05	68.20	-6.15	Peak	
2	5715.0000	51.67	14.97	66.64	109.40	-42.76	Peak	
3	5725.0000	72.40	15.00	87.40	122.20	-34.80	Peak	
4 *	5748.8750	106.13	15.07	121.20	122.20	-1.00	Peak	No Limit

REMARKS:

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

Test Mode	UNII-3_TX AX(HE20) Mode 5745 MHz	Polarization	Horizontal
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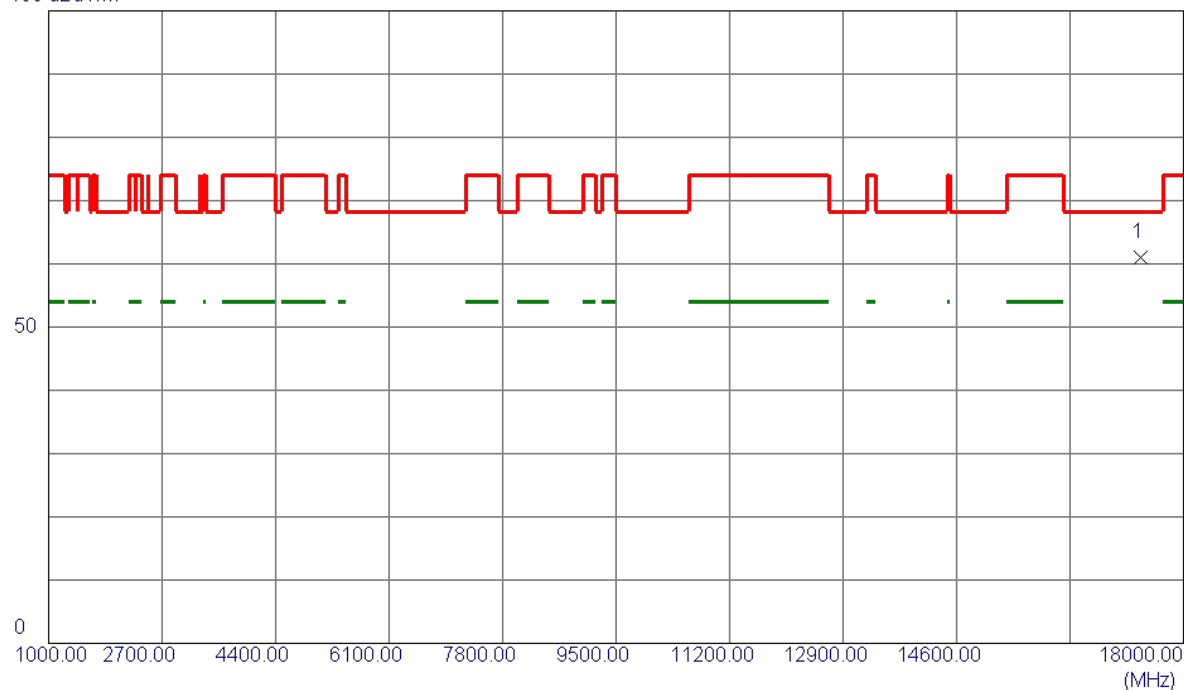
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17237.4500	45.30	11.96	57.26	68.20	-10.94	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE20) Mode 5785 MHz	Polarization	Horizontal
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100 dBuV/m

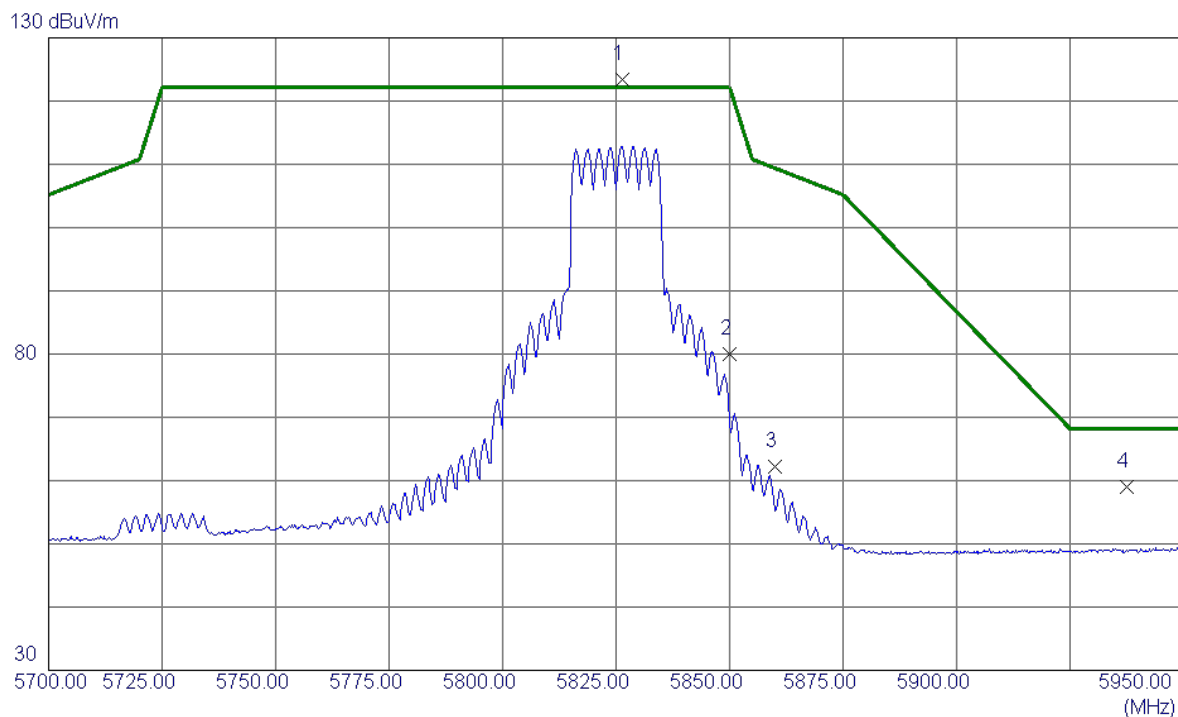


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17353.1000	48.73	12.30	61.03	68.20	-7.17	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE20) Mode 5825 MHz	Polarization	Vertical
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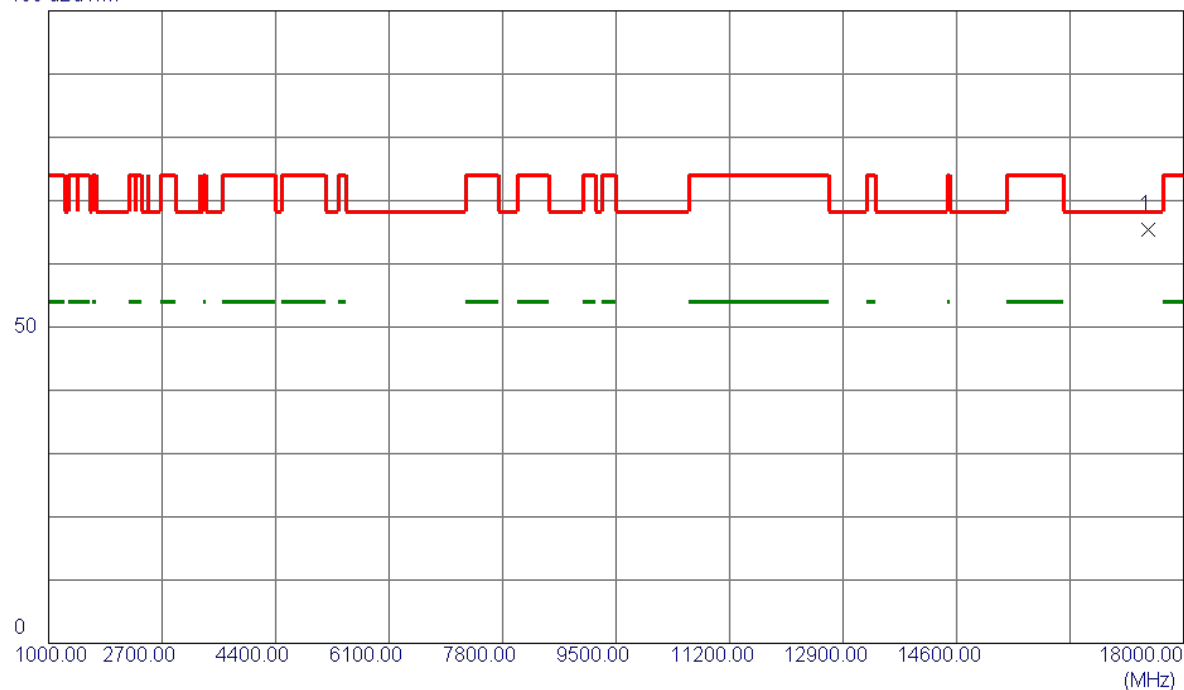
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5826.2500	108.09	15.32	123.41	122.20	1.21	Peak	No Limit
2	5850.0000	64.58	15.39	79.97	122.20	-42.23	Peak	
3	5860.0000	46.82	15.43	62.25	109.40	-47.15	Peak	
4	5937.3750	43.31	15.67	58.98	68.20	-9.22	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE20) Mode 5825 MHz	Polarization	Horizontal
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100 dBuV/m

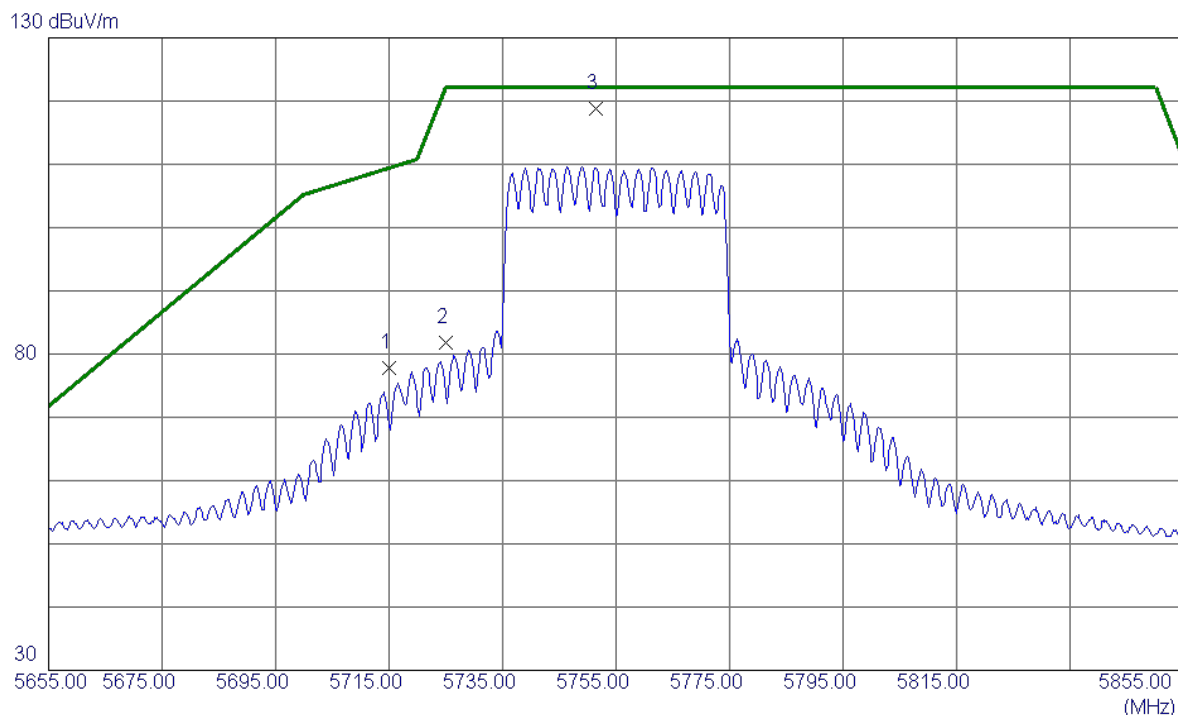


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17476.2000	52.67	12.66	65.33	68.20	-2.87	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE40) Mode 5755 MHz	Polarization	Vertical
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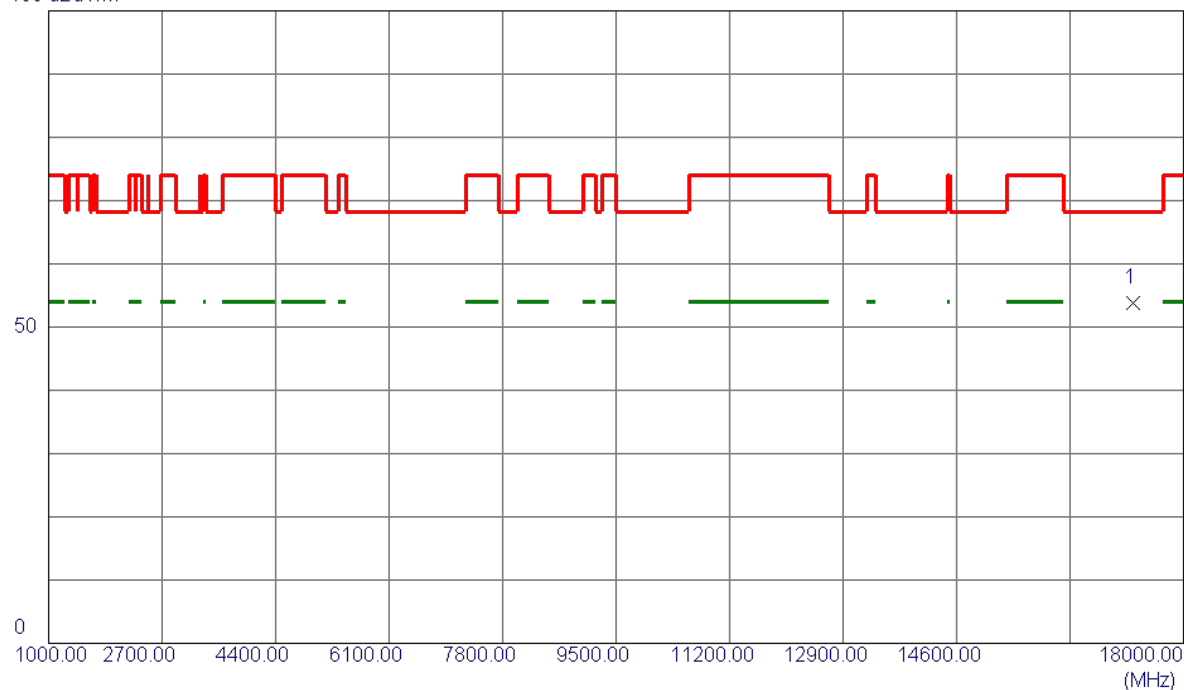
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	5715.0000	62.86	14.97	77.83	109.40	-31.57	Peak	
2	5725.0000	66.82	15.00	81.82	122.20	-40.38	Peak	
3 *	5751.5000	103.76	15.08	118.84	122.20	-3.36	Peak	No Limit

REMARKS:

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

Test Mode	UNII-3_TX AX(HE40) Mode 5755 MHz	Polarization	Horizontal
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100 dBuV/m

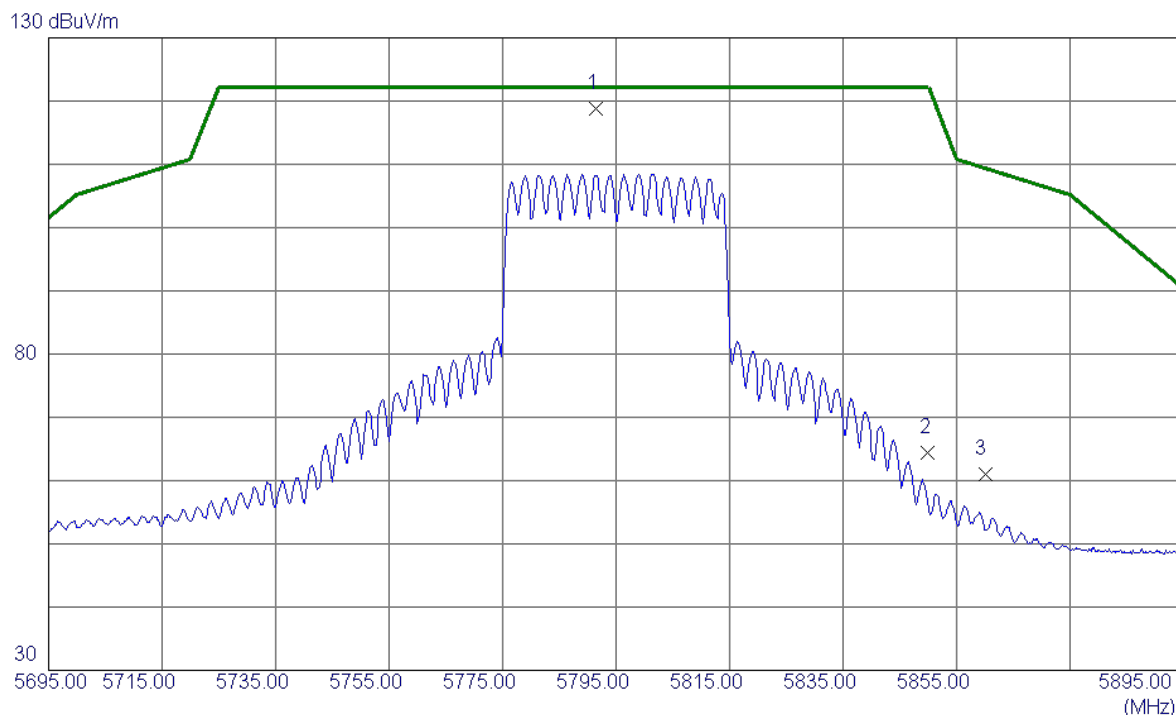


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17240.0000	41.90	11.96	53.86	68.20	-14.34	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE40) Mode 5795 MHz	Polarization	Vertical
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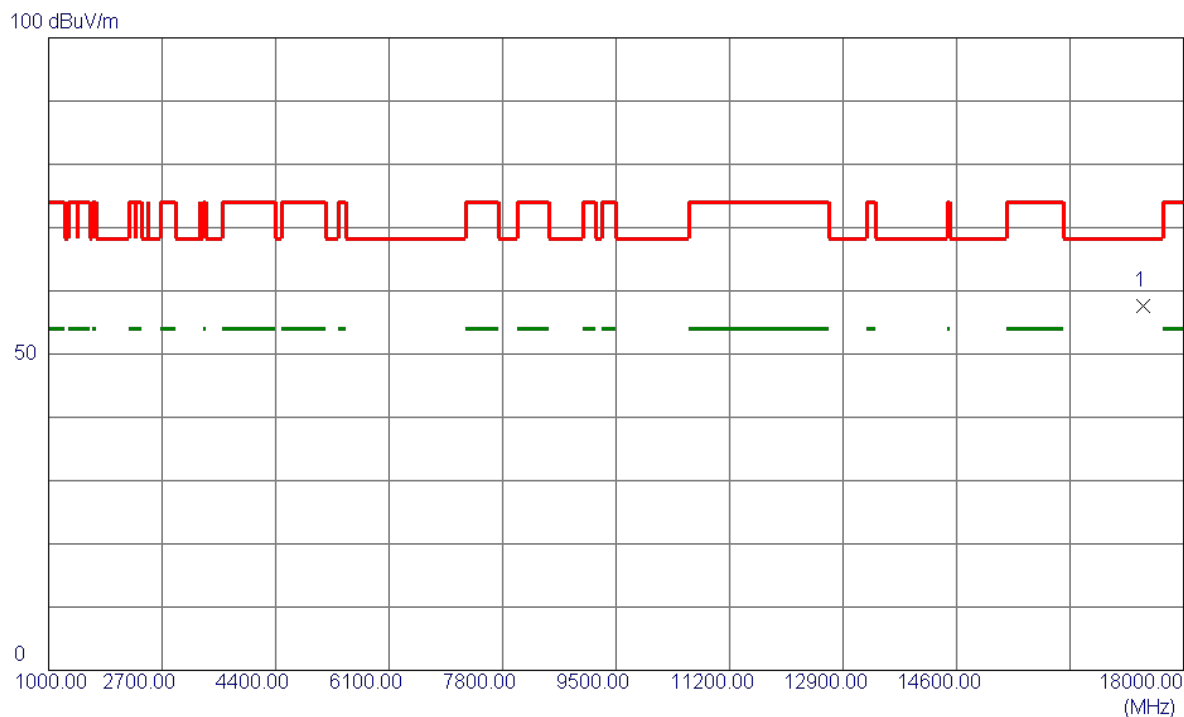


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5791.5000	103.55	15.21	118.76	122.20	-3.44	Peak	No Limit
2	5850.0000	48.93	15.39	64.32	122.20	-57.88	Peak	
3	5860.0000	45.55	15.43	60.98	109.40	-48.42	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE40) Mode 5795 MHz	Polarization	Horizontal
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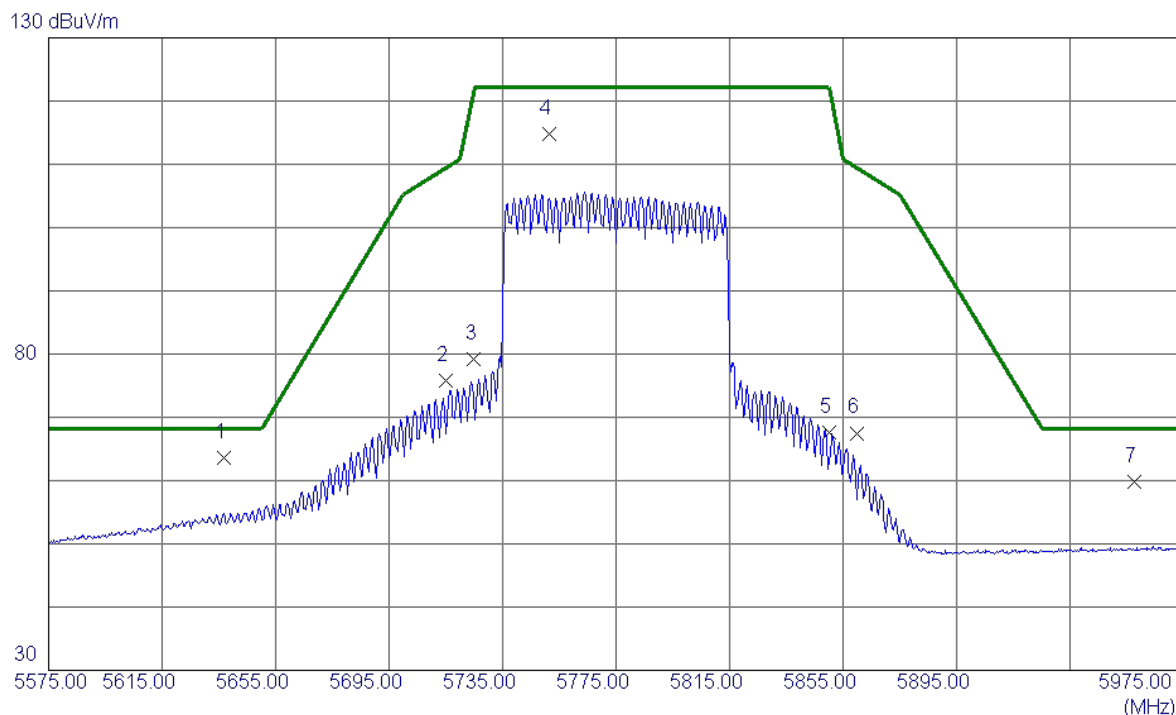


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17394.8000	45.26	12.42	57.68	68.20	-10.52	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE80) Mode 5775 MHz	Polarization	Vertical
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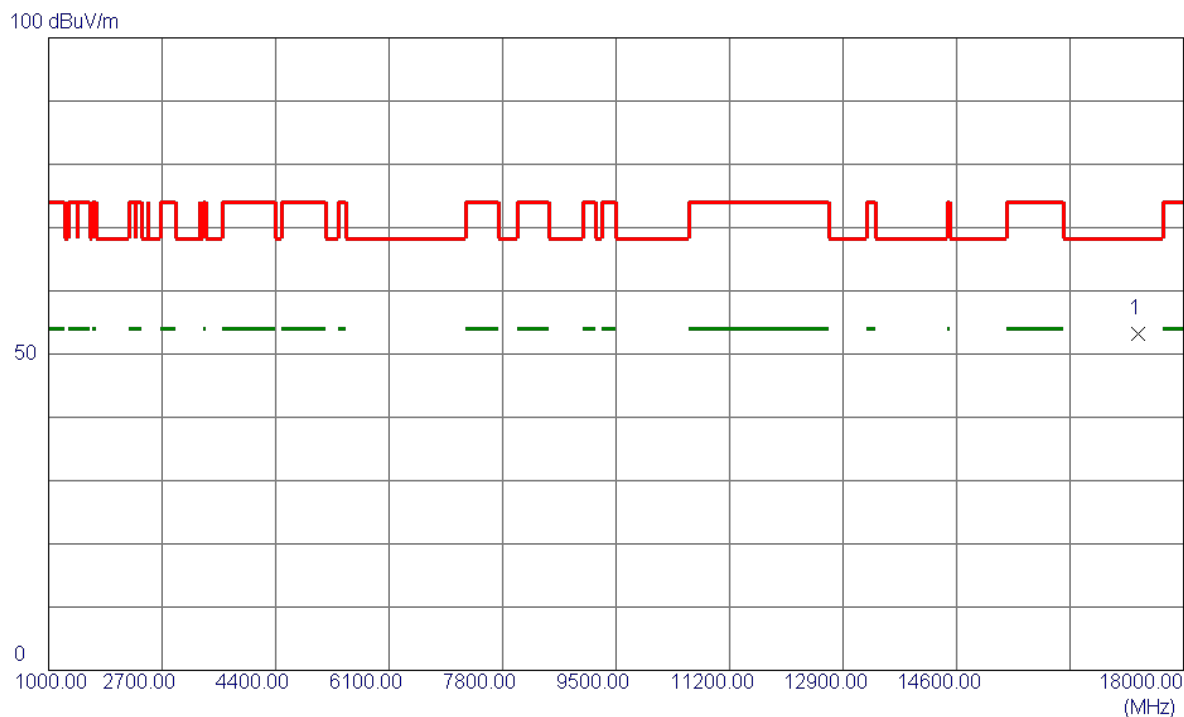


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	5636.8000	48.90	14.72	63.62	68.20	-4.58	Peak	
2	5715.0000	60.79	14.97	75.76	109.40	-33.64	Peak	
3	5725.0000	64.19	15.00	79.19	122.20	-43.01	Peak	
4	5751.4000	99.66	15.08	114.74	122.20	-7.46	Peak	No Limit
5	5850.0000	52.21	15.39	67.60	122.20	-54.60	Peak	
6	5860.0000	52.07	15.43	67.50	109.40	-41.90	Peak	
7	5957.6000	44.03	15.74	59.77	68.20	-8.43	Peak	

REMARKS:

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

Test Mode	UNII-3_TX AX(HE80) Mode 5775 MHz	Polarization	Horizontal
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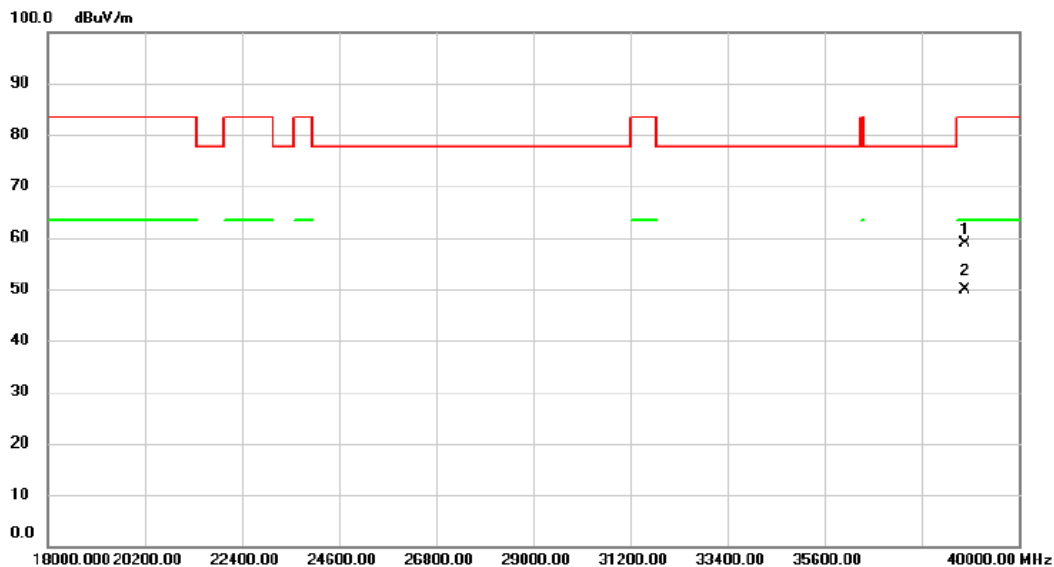


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	17312.0000	40.95	12.18	53.13	68.20	-15.07	Peak	

REMARKS:

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Vertical
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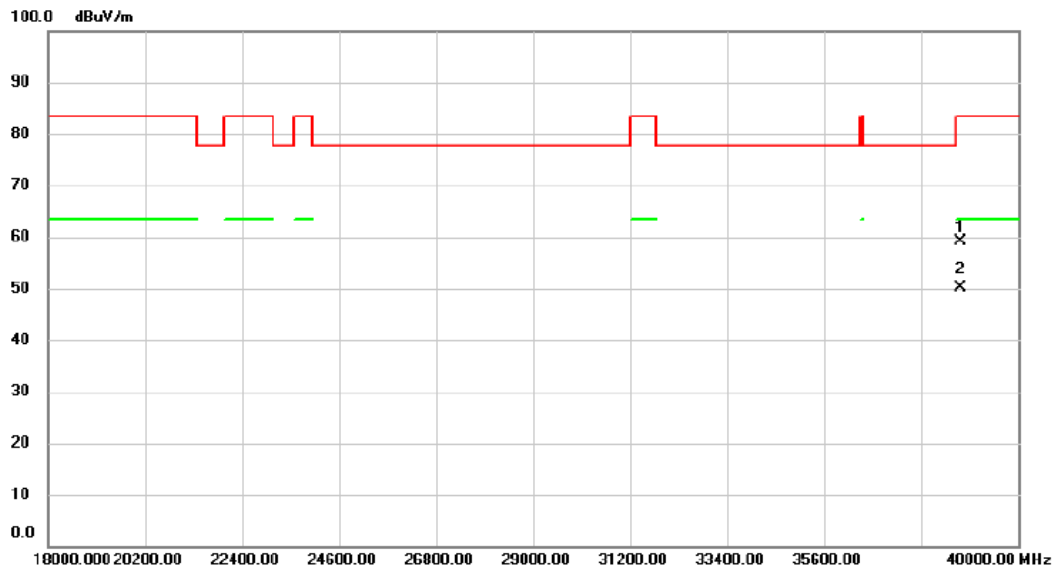


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		38790.00	54.17	4.71	58.88	83.50	-24.62	peak	
2	*	38790.00	45.23	4.71	49.94	63.50	-13.56	AVG	

REMARKS:

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

Test Mode	TX AC(VHT20) Mode Channel 149 (UNII-3)	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		38680.00	54.58	4.44	59.02	83.50	-24.48	peak	
2	*	38680.00	45.61	4.44	50.05	63.50	-13.45	AVG	

REMARKS:

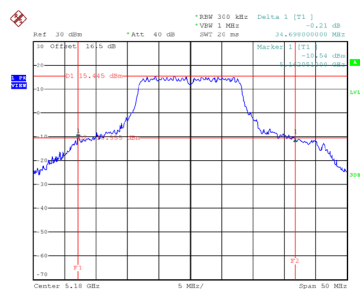
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX E - BANDWIDTH

Test Mode	UNII-1_TX A Mode
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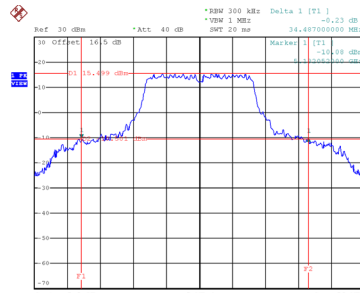
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)
36	5180	34.698	18.400
40	5200	34.487	18.200
48	5240	26.990	17.600

CH36



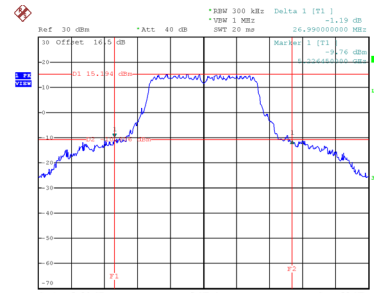
Date: 21.JUL.2024 12:45:16

CH40
26 dB Bandwidth



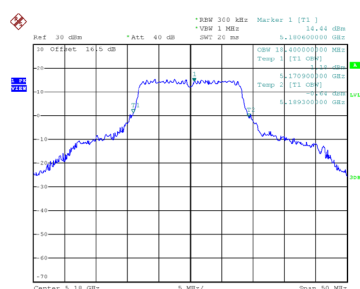
Date: 21.JUL.2024 12:45:56

CH48

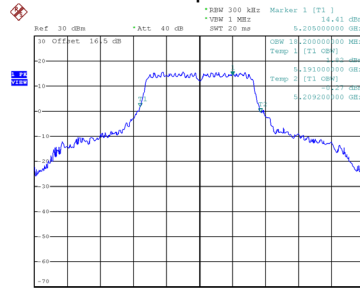


Date: 21.JUL.2024 12:46:44

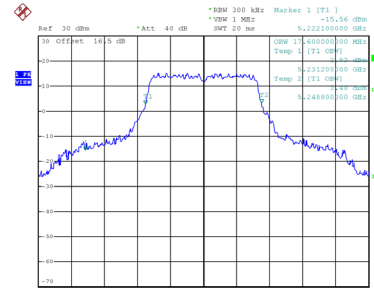
99 % Occupied Bandwidth



Date: 21.JUL.2024 12:44:52



Date: 21.JUL.2024 12:45:30

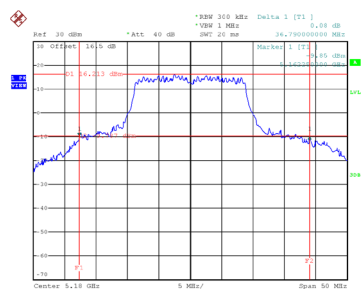


Date: 21.JUL.2024 12:46:05

Test Mode	UNII-1_TX AC(VHT20) Mode
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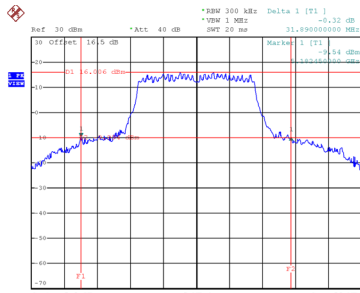
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)
36	5180	36.790	18.900
40	5200	31.890	18.600
48	5240	25.689	18.400

CH36



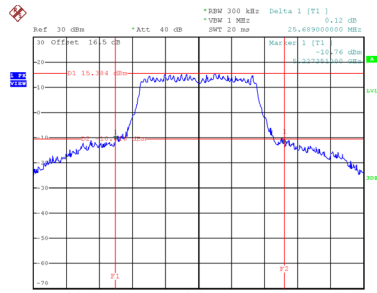
Date: 21.JUL.2024 12:15:06

CH40
26 dB Bandwidth



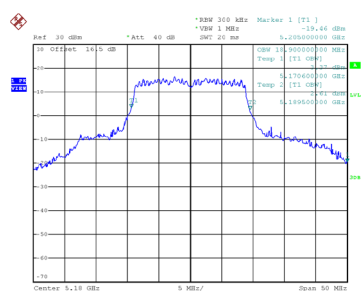
Date: 21.JUL.2024 12:15:07

CH48

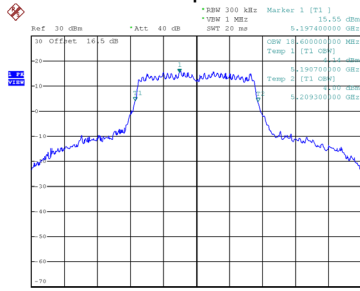


Date: 21.JUL.2024 12:15:17

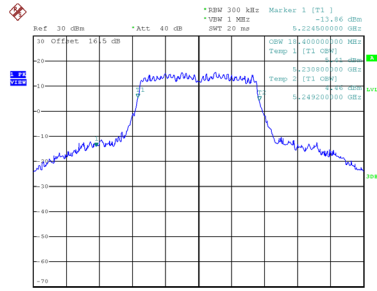
99 % Occupied Bandwidth



Date: 21.JUL.2024 12:15:17



Date: 21.JUL.2024 12:15:14

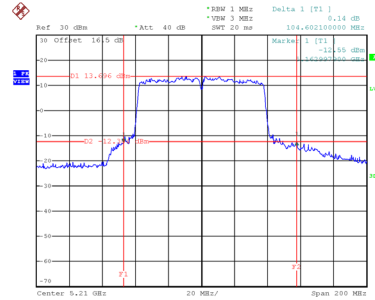


Date: 21.JUL.2024 12:15:16

Test Mode	UNII-1_TX AC(VHT80) Mode
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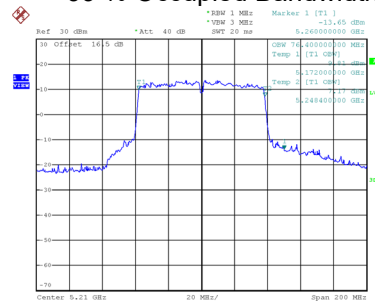
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)
42	5210	104.602	76.400

CH42 26 dB Bandwidth



Date: 21.JUL.2024 13:45:20

99 % Occupied Bandwidth

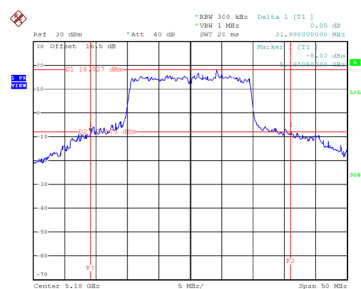


Date: 21.JUL.2024 13:44:36

Test Mode	UNII-1_TX AX(HE20) Mode
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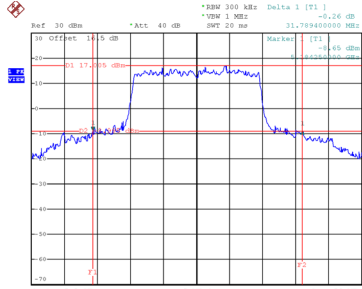
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)
36	5180	31.998	19.600
40	5200	31.789	19.600
48	5240	24.550	19.400

CH36



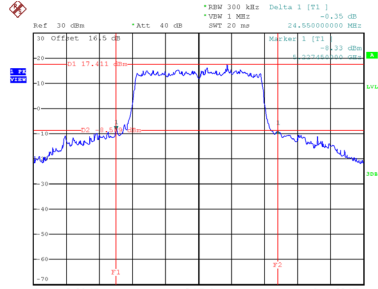
Date: 21.JUL.2024 13:08:14

CH40
26 dB Bandwidth



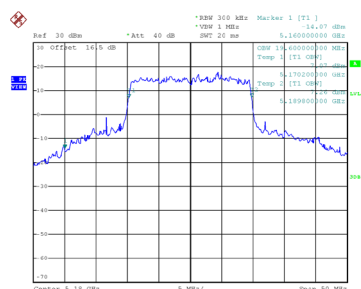
Date: 21.JUL.2024 13:09:19

CH48

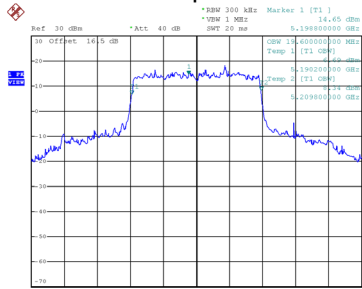


Date: 21.JUL.2024 13:10:21

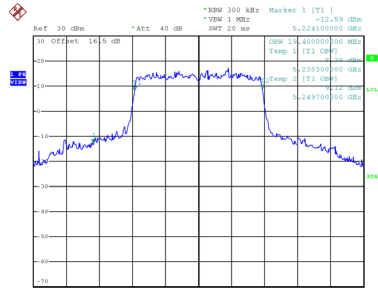
99 % Occupied Bandwidth



Date: 21.JUL.2024 13:08:07



Date: 21.JUL.2024 13:09:02



Date: 21.JUL.2024 13:09:48