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Test Report

Certification

FCC ID	2AJAC-T5IW
Equipment Under Test	T5IW8, T5IW11
Test Report Serial No	V081322_01
Dates of Test	March 3 - June 26, 2025
Report Issue Date	December 30, 2025

Test Specifications:	Applicant:
FCC Part 15, Subpart E	Snap One LLC 1800 Continental Blvd., Suite 200-300 Charlotte NC 28273 U.S.A.



Certification of Engineering Report

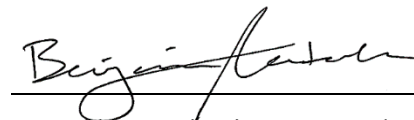
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Applicant	Snap One LLC
Manufacturer	Snap One LLC
Brand Name	Snap One
Model Number	T5IW8, T5IW11
FCC ID	2AJAC-T5IW

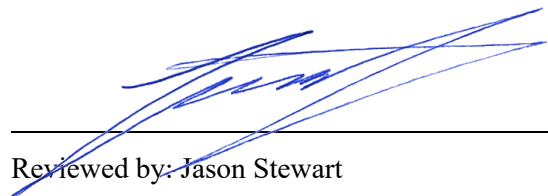
On this 30th day of December 2025, I, individually and for VPI Laboratories, Inc., certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

Although NVLAP has accredited the VPI Laboratories, Inc. EMC testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

VPI Laboratories, Inc.



Tested by: Benjamin N. Antczak



Reviewed by: Jason Stewart

Revision History		
Revision	Description	Date
01	Original Report Release	December 30, 2025

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1 Client Information

1.1 Applicant

Company Name	Snap One LLC 1800 Continental Blvd., Suite 200-300 Charlotte NC 28273 U.S.A.
Contact Name	Roger Midgley
Title	Sr. Regulatory Compliance Engineer

1.2 Manufacturer

Company Name	Snap One LLC 1800 Continental Blvd., Suite 200-300 Charlotte NC 28273 U.S.A.
Contact Name	Roger Midgley
Title	Sr. Regulatory Compliance Engineer

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	SnapOne
Model Number	T5IW8, T5IW11
Serial Numbers	000FFF0AB6E6 (T5IW8 Radiated Emissions)
	000FFF0AB6EB (T5IW11 Radiated Emissions)
	000FFF0AB6F4 (T5IW Antenna-Port Conducted Emissions)
Dimensions (cm)	14.5 x 20.8 x 2.5 (T5IW8)
	18.2 x 26.6 x 2.5 (T5IW11)
Peak In-Band Gain (dBi)	2.9 (T5IW8)
	3.3 (T5IW11)

2.2 Description of EUT

The T5IW8 and T5IW11 (“T5” or “EUT”) are home control touchscreens for use in Snap One smart home systems. The devices differ in size, 8 inch and 11 inch, respectively. All transmitter components are identical. Devices are powered via 54VDC PoE and for testing used a 54VDC 1.1A LUMA LUM-A20-POE60W. Antenna gains were evaluated in manufacturer-provided JAE Industry, Ltd. report DCF-C-447 (21,04). The devices contain a 5GHz transmitter capable of operating in two 20MHz bandwidth modulation schemes: 802.11a (“A-Mode”), 802.11n(“N20-Mode”); device is also capable of operating in a 40MHz bandwidth modulation scheme: 802.11n (“N40-Mode”).

All modulation schemes utilize the following channel map and the RF output power set levels found to be compliant with applicable limits:

Channel	Frequency (MHz)	A-Mode Power Set	N20-Mode Power Set	N40-Mode Power Set	TPC Required?
UNII1 (5150-5250MHz)					
36	5180	15	15	N/A	N/A
38 (40MHz BW)	5190	N/A	N/A	12	N/A
40	5200	20	20	N/A	N/A
44	5220	20	20	N/A	N/A
46 (40MHz BW)	5230	N/A	N/A	18	N/A
48	5240	20	20	N/A	N/A
UNII2A (5250-5350MHz)					
52	5260	20	20	N/A	No
54 (40MHz BW)	5270	N/A	N/A	18	No
56	5280	20	20	N/A	No
60	5300	20	20	N/A	No
62 (40MHz BW)	5310	N/A	N/A	12	No
64	5320	17	17	N/A	No

Channel	Frequency (MHz)	A-Mode Power Set	N20-Mode Power Set	N40-Mode Power Set	TPC Required?
UNII2C (5470-5725MHz)					
100	5500	15	15	N/A	No
102 (40MHz BW)	5510	N/A	N/A	12	No
104	5520	20	20	N/A	No
108	5540	20	20	N/A	No
110 (40MHz BW)	5550	N/A	N/A	17	No
112	5560	20	20	N/A	No
116	5580	20	20	N/A	No
118 (40MHz BW)	5590	N/A	N/A	20	No
120	5600	20	20	N/A	No
124	5620	20	20	N/A	No
126 (40MHz BW)	5630	N/A	N/A	20	No
128	5640	20	20	N/A	No
132	5660	20	20	N/A	No
134 (40MHz BW)	5670	N/A	N/A	15	No
136	5680	20	20	N/A	No
140	5700	16	16	N/A	No
UNII3 (5725-5850MHz)					
149	5745	20	20	N/A	N/A
151 (40MHz BW)	5755	N/A	N/A	19	N/A
153	5765	20	20	N/A	N/A
157	5785	20	20	N/A	N/A
159 (40MHz BW)	5795	N/A	N/A	20	N/A
161	5805	20	20	N/A	N/A
165	5825	20	20	N/A	N/A

2.2.1 Modes of Operation

EUT is intended to operate indoors as a client device. EUT is fixed but incapable of fixed point-to-point architecture.

2.2.2 DFS Capabilities

EUT utilizes DFS but cannot operate in a master operational mode. Therefore, only the requirement for channel move time is applicable.

2.3 EUT and Support Equipment

The EUT and support equipment used during the test are listed below.

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: Snap One MN: T5IW8, T5IW11 (Note 1) SN: See Section 2.1	8 Inch and 11 Inch In-Wall Smart-Home Control Screen	See Section 2.4
BN: LUMA MN: LUM-A20-POE60W SN: ST2347002206701320	54VDC 1.1A PoE++ Injector	PoE Input / Cat5e Ethernet (Note 2)
BN: Trendnet MN: TEG-S50TXE SN: CA06225006898	Network Switch	No Connection to EUT (POE Injector's Data Port / Cat 5e Ethernet)
BN: Netgear MN: R7000 SN: 44214877A4B41	Network Router	No Connection to EUT (Network Switch / Cat 5e Ethernet)
BN: Linksys MN: EA8300 SN: 21P10M25A07785	DFS Network Router	Antenna Port Conducted Connection through R&S Switching Unit (Network Switch / Cat 5e Ethernet)
BN: Lenovo MN: ThinkPad T460s SN: N/A	PC Laptop	No Connection to EUT (Network Switch / Cat 5e Ethernet)
BN: Panasonic MN: Toughbook CF-31 SN: N/A	DFS Router Control Laptop	No Connection to EUT (DFS Router Network / Cat 5e Ethernet)

Notes: (1) EUT

(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this standard.

2.4 Interface Ports on EUT

EUT contains a single PoE port:

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
PoE	1 of 1 (Radiated Emissions)	Cat 5e Ethernet / 7 meters
PoE	1 of 1 (Antenna-Port Conducted Emissions)	Cat 5e Ethernet / 1 meter

2.5 Modifications Incorporated/Special Accessories on EUT

The following modifications were made to the EUT by the Client during testing to comply with the specification. This report is not complete without an accompanying signed attestation, that the product will have all of the documented modifications incorporated into the product when manufactured and placed on the market.

- RF Power level output set to levels listed in Section 2.2.

2.6 Deviation from Test Standard

There were no deviations from the test specification.

2.7 Scope of This Report

This report covers the circuitry of the devices subject to FCC Part 15, Subpart E for the UNII bands. The circuitry of the device is additionally subject to, and found to be compliant with, FCC Part 15 Subparts C. Compliance with Subpart C is covered in VPI Laboratories, Inc. report V081318_01 for 802.11 wifi schemes, and V081319_01 for BLE and Bluetooth FHSS schemes.

The circuitry of the UNII device is additionally subject to FCC Part 15 Subparts B. Compliance with Subpart B was not evaluated by VPI Laboratories, Inc.

3 Test Specification, Methods and Procedures

3.1 Test Specification

Title	FCC PART 15, Subpart E (47 CFR 15) 15.203, 15.207, 15.209, and 15.407
Purpose of Test	The tests were performed to demonstrate initial compliance
UNII References	KDB 789033 Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

3.2 Methods & Procedures

3.2.1 §15.203 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered in compliance with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

3.2.2 §15.207 Conducted Limits

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50*	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

*Decreases with the logarithm of the frequency.

Table 1: Limits for conducted emissions at mains ports of Class B ITE.

3.2.3 §15.407 Operation within the UNII Bands

Emission bandwidth is determined by measuring the width of the signal between points that are 26 dB down relative to the maximum level of the carrier center frequency.

Maximum conducted output power is the total transmit power delivered to all antennas, averaged across all symbols when operating at maximum power control level. If multiple modulation methods are possible, then the highest total transmit power in any mode is considered the maximum conducted output power.

Power spectral density is the total energy output per unit bandwidth from a transmitter operating at maximum power level divided by the total duration of transmission.

Measurements for UNII operation are taken over intervals of continuous transmissions. Measurements are taken using a minimum of resolution bandwidth of 1 MHz. If lower resolution bandwidths are used, measurement energies must be integrated to show the total power over 1 MHz. Emission limits are taken at the highest and lowest channels available to the manufacturer.

Although not covered in this test report, frequency stability must be ensured by manufacturer under all conditions of normal operation.

3.2.3.1 Power Limits in the Band 5150 – 5250 MHz (“UNII-1”)

Access points operating either indoors or outdoors, maximum conducted output power over the frequency band 5.15 – 5.25 GHz (“UNII-1”) shall not exceed 1 W (30 dBm) as long as the maximum antenna gain does not exceed 6 dBi. In addition, maximum power spectral density shall not exceed 17 dBm in any 1 MHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi.

Outdoor access points additionally may not exceed 125 mW (21 dBm) maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon.

Only fixed point-to-point access points may employ antennas with directional gain of up to 23 dBi without reducing conducted output power. However, for every 1 dB gain over 23 dBi, maximum conducted output power and maximum power spectral density must be reduced by 1 dB. The 23 dBi exception is only applicable to fixed, point-to-point access points, and is not acceptable for point to multi-point, omni-directional, or multi-point to point architectures.

Client devices shall not exceed conducted output power of 250 mW (24 dBm) as long as the maximum antenna gain does not exceed 6 dBi. In addition, maximum power spectral density shall not exceed 11 dBm for any 1 MHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi.

Emissions outside the band 5.15 – 5.35 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz.

3.2.3.2 Power Limits in the Bands 5250 – 5350 MHz and 5470 – 5725 MHz (“UNII-2”)

Maximum conducted output power over the frequency bands 5.25-5.35 GHz and 5.47-5.725 GHz (“UNII-2A” and “UNII-2C,” collectively, “UNII-2”) shall not exceed the lesser of: 250 mW (24 dBm); or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz (MHz). Maximum power spectral density shall additionally not exceed 11 dBm in any 1 MHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi.

For transmitters operating in the UNII-2A band, emissions outside the band 5.15 – 5.35 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz. For those transmitters operating in the UNII-2C band, emissions outside the UNII-2C band shall not exceed an e.i.r.p. of -27 dBm/MHz.

Transmitters operating in the UNII-2 bands for which e.i.r.p. exceeds 500 mW (27 dBm) must employ a transmit power control (TPC) mechanism, giving the device the capability of operating at least 6 dB below the mean EIRP of 30 dBm.

3.2.3.3 Power Limits in the Band 5725 – 5850 MHz (“UNII-3”)

Maximum conducted output power over the frequency bands 5.725 – 5.85 GHz (“UNII-3”) shall not exceed 1 W (30 dBm). Maximum power spectral density shall not exceed 30 dBm in any 500 kHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi. Fixed point-to-point operations may utilize antennas exceeding 6 dBi without reducing the transmitter conducted power; this exception is only applicable to fixed, point-to-point transmitters, and is not acceptable for point to multi-point, omni-directional, or multi-point to point architectures.

For transmitters operating in the UNII-3 band, emissions 75 MHz above or below the band-edge shall not exceed an e.i.r.p. of -27 dBm/MHz. For those emissions within 75 MHz and 25 MHz of the band-edge the limit increases linearly to 10 dBm/MHz. For those emissions within 25 MHz and 5 MHz of the band-edge the limit increases linearly to 15.6 dBm/MHz. For those emissions within 5 MHz of the band-edge the limit increases linearly to the band-edge to 27 dBm/MHz.

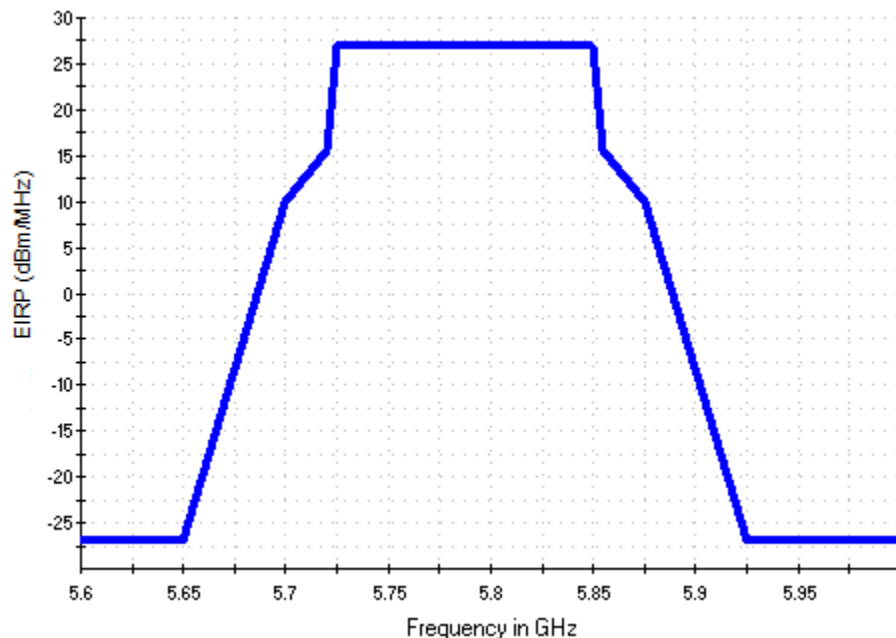


Figure 1. Emission limit for transmitters operating in the UNII-3 (5.725 – 5.850 GHz) band

Transmitters operating in the UNII-3 band shall also have a 6 dB bandwidth of at least 500 kHz.

3.2.3.4 Radar Detection Function of Dynamic Frequency Selection

UNII devices that operate with any part of their 26 dB emission bandwidth in the UNII-2 bands must employ a DFS radar detection mechanism to avoid co-channel operation with radar systems. Upon detection of radar signals, the channel must be flagged as containing a radar system and must not be utilized for at least 30 minutes (“Non-occupancy Period”).

All DFS devices must fulfil the Channel Move Time requirement, forcing all transmissions to cease operating on a channel within 10 seconds of detecting a radar signal. Transmissions may continue with normal traffic for a maximum of 200 ms after the detection of radar, but only control and management signals may exist after 200 ms to assist in the vacating of the occupied channel. Control and management signals are not allowed after 10 seconds.

Only DFS devices operating as a master device must fulfil the Channel Availability Check time requirement. Master devices must check if there are radar signals already operating on a channel before initiating transmission (or changing channels). If no radar signals are detected above the DFS detection threshold within 60 seconds, the channel may be utilized. Initial channel selection may be either randomly selected or manually selected.

The DFS detection threshold is -64 dBm for devices with a maximum e.i.r.p. between 200 mW and 1 W. Devices for which e.i.r.p. is less than 200 mW and for which maximum power spectral density is less than 10 dBm per 1 MHz band shall have a DFS threshold of -62 dBm.

Radar signals must be detected at 100 percent of the device's emission bandwidth. DFS detection threshold is the received power averaged over 1µs and referenced to a 0 dBi antenna.

Some standards such as IEEE 801.11.ax allow wideband transmissions that are “notched” or “punctured” upon radar detection (e.g., 160 MHz wideband transmissions wherein a 20 MHz portion of the bandwidth is not utilized). For such transmission schemes, the remaining emissions of the notched signal shall not bleed into the notch (i.e., 26 dB or 99% bandwidth is outside the notch). Channel closing and moving times must be met when notches are utilized.

3.2.4 UNII Band Channel Aggregation

EUTs which utilize “straddle” channels (Channel 50 at 160 MHz BW, Channel 138 at 80 MHz BW, Channel 142 at 40 MHz BW, or Channel 144 at 20 MHz BW) are subject to the requirements of the bands they straddle. For example, Channel 42 + 138 (80 MHz + 80 MHz) are distributed over (and straddle) the UNII-1 and UNII-2 bands.

Straddle channel 50 is considered operating in both UNII-1 and UNII-2A; straddle channels 138, 142, and 144 are considered operating in both UNII-2C and UNII-3.

3.2.4.1 Conducted Output Power in the Case of Channel Aggregation

For such transmissions, conducted output power is calculated as the summed power of segments located within the band, where the band edge replaces the -26 dB point of the straddling signal. In the example shown in Figure 1, power requirements must be met for both UNII-2 and UNII-3. While it is acceptable to sum the power of the entire transmission in a band (e.g., top-line $P_{U-NII-2C}$ and $P_{U-NII-3}$), individual measurements over the 26 dB bandwidth of each carrier frequency (or to the band edge) may also be summed ($P_A + P_B$ for UNII-2 band requirements and $P_{U-NII-3}$ for UNII-3 band requirements).

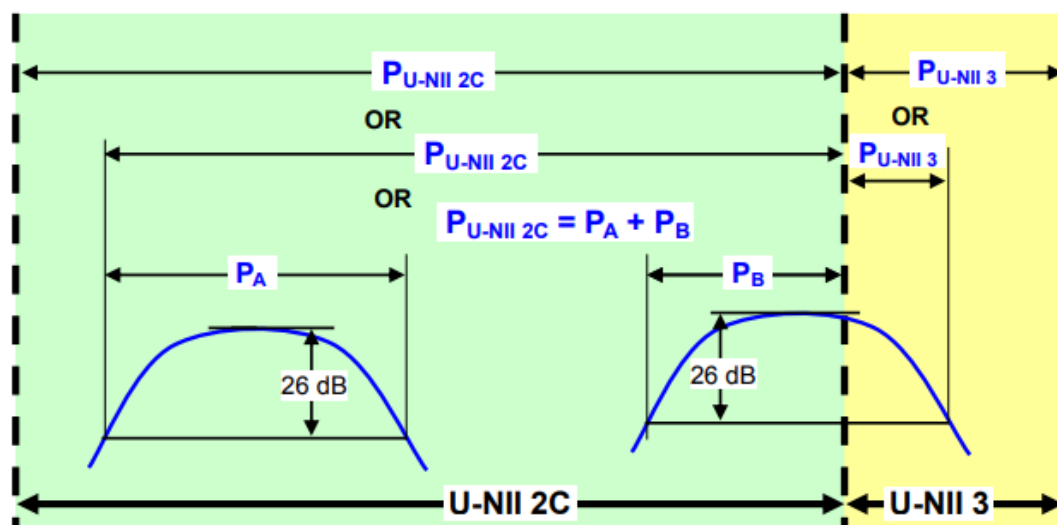


Figure 1. Conducted output power measurement examples (KDB 789033 D02 v02r01, p 21)

3.2.4.2 Emissions Bandwidths in the Case of Channel Aggregation

Emissions bandwidth is defined based upon overlap of the 26 dB bandwidths of each channel individually.

For those transmissions where the 26 dB bandwidths overlap, the emission bandwidth (EWB) is the difference between the outer -26 dB points.

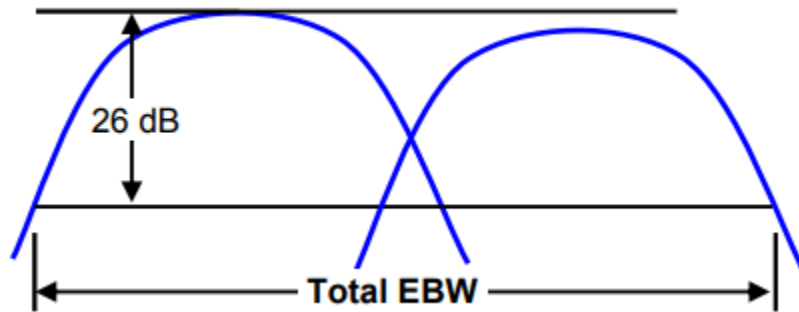


Figure 2. Overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 18)

For those transmissions where the 26 dB bandwidths do not overlap, the emission bandwidth is the sum of the individual 26 dB bandwidths, and each segment is measured independently.

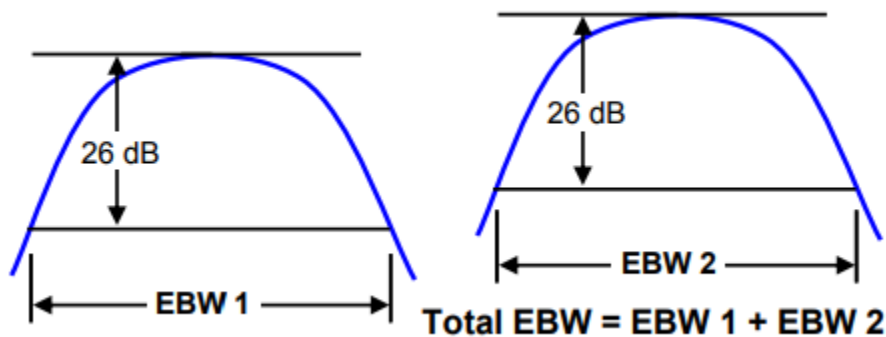


Figure 3. Non-overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 18)

Finally, for those transmissions which cross into other UNII bands, the band boundary serves as one edge for that band, while the other edge is measured from the peak of the contiguous segment.

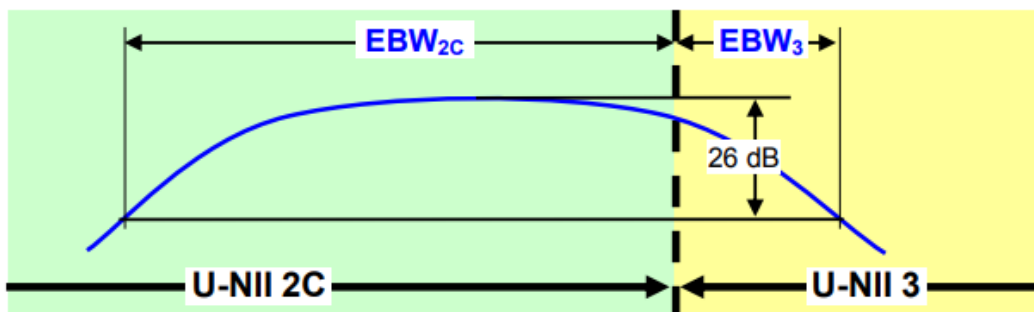


Figure 4. Non-overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 19)

3.2.4.3 Additional Requirements for UNII Devices

UNII devices are subject to requirements imposed by the National Environmental Policy Act. Manufacturers are responsible for applying RF radiation exposure requirements specified in 47 CFR 1.1307(b), 2.1091, and 2.1093 as appropriate (47 CFR 15.407(f)). Such requirements include (but are not limited to) routine environmental evaluation for RF exposure prior to equipment authorization or use (47 CFR 1.1307(b)(2)(i)) and additional evaluation of RF radiation exposure for mobile and portable devices (47 CFR 2.1091 and 2.1093, respectively).

3.3 Test Procedure

VPI Laboratories, Inc. is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Lab Code: 100272-0, which is effective until September 30, 2026. VPI Laboratories, Inc. carries FCC Accreditation Designation Number US5263. VPI Laboratories main office is located at 313 W 12800 S, Suite 311, Draper, UT 84020. The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033, and 47 CFR Part 15. Radiated testing was performed at the VPI Laboratories, Inc. Wanship Upper Open Area Test Site, located at 29145 Old Lincoln Highway, Wanship, UT. Conducted testing was performed at VPI Laboratories main office. This location is listed on NVLAP scope under the lines for C63.4 and C63.10.

4 Operation of EUT During Testing

4.1 Operating Environment

Power Supply	120 VAC
AC Mains Frequency	60 Hz

4.2 Operating Modes

The transmitter was tested for radiated emissions on a single axis consistent with only installation orientation on both T5IW variants while in a constant transmit mode. The AC mains voltage to the AC adapter was varied as required by §15.31(e) with no change seen in the voltage supplied to the transmitter or in transmitter characteristics.

The worst-case data rate was found to be 13.5Mb/s for 40MHz channels, 6Mb/s for 20MHz channels in A Mode, and 6.5Mb/s for 20MHz channels in N20 Mode. Transmitter was tested at minimum while in a constant transmit mode at the upper, middle, and lower channels. Power level set points increase for channels as the center frequencies move away from the band edges. In those cases each stepped channel was fully tested at or above the maximum power set level listed in Section 2.2.

4.3 EUT Exercise Software

ADB with root access and Snap One FCC Test Firmware were installed on EUT's Android platform to remotely control transmitter output power, modulation scheme, and transmitting frequency.

5 Summary of Test Results

5.1 FCC Part 15, Subpart E

5.1.1 Summary of Tests

Section	Environmental Phenomena	Frequency Range (MHz)	Result
15.205 (15.407(b)(7))	Spurious Emissions in Restricted Bands	30 - 40000	Complied
15.207 (15.407(b)(6))	Conducted Disturbance at Mains Ports	0.15 to 30	Complied
15.209 (15.407(b)(6))	General Field Strength Limits	30 - 40000	Complied
15.403(i)	Emissions Bandwidth	5150 – 5250, 5250 – 5725, 5725 - 5850	Complied
15.407(e)	Minimum Emission Bandwidth	5725 – 5850	Complied
15.407(a)	Maximum Conducted Output Power	5150 – 5250, 5250 – 5725, 5725 - 5850	Complied
15.407(a)(1)	EIRP above 30 Degrees	5150 – 5250	Note 1
15.407(a)	Maximum Power Spectral Density	5150 – 5250, 5250 – 5725, 5725 - 5850	Complied
15.407(b)(6)	Unwanted Emissions	30 - 40000	Complied
Note 1: EUT does not operate outdoors and therefore requirement is not applicable.			

5.2 Result

In the configuration tested, the EUT complied with the requirements of the specification.

6 Measurements, Examinations and Derived Results

6.1 General Comments and Results

This section contains the test results only. Details of the test methods used and a list of the test equipment used during the measurements can be found in Section 7 of this report.

6.1.1 §15.203 Antenna Requirements

The EUT uses a printed PCB with a Microcoax cable connection to the transmitter circuitry. Antenna gains were evaluated in manufacturer-provided JAE Industry, Ltd. report DCF-C-447 (21,04).

Pk Antenna Gain (dBi)	2.9	(T5IW8)
	3.3	(T5IW11)

For antennas with gain greater than 6 dBi, limits become tighter in certain UNII bands and operational modes. No adjustments to limits were required.

6.1.1.1 Result

In the configurations tested the EUT complied with the requirements of the specification.

6.1.2 §15.207 Conducted Emissions at AC Mains Ports

All modes were evaluated while transmitting on channel 36 (5180MHz) at the maximum possible power level (20). No changes to the conducted antenna-port emissions were seen when power to the AC Mains port were observed.

6.1.2.1 Hot Lead 120VAC (T5IW8):

Frequency (MHz)	Detector	Receiver Reading (dBµV)	Correction Factor (dB)	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
0.15	Peak (Note 1)	39.4	11.8	51.1	56.0	-4.9
0.16	Peak (Note 1)	35.7	11.6	47.3	55.4	-8.0
0.20	Peak (Note 1)	32.7	11.2	43.9	53.6	-9.7
0.23	Peak (Note 1)	32.0	10.9	42.9	52.3	-9.4
0.45	Peak (Note 1)	29.8	10.3	40.1	46.9	-6.8
9.9	Peak (Note 1)	27.1	10.5	37.6	50.0	-12.4
18.3	Peak (Note 1)	31.7	10.8	42.4	50.0	-7.6
19.7	Peak (Note 1)	31.0	10.9	41.8	50.0	-8.2

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

6.1.2.2 Neutral Lead 120VAC (T5IW8):

Frequency (MHz)	Detector	Receiver Reading (dBµV)	Correction Factor (dB)	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
0.16	Peak (Note 1)	35.4	11.7	47.1	55.5	-8.4
0.19	Peak (Note 1)	36.5	11.3	47.8	54.2	-6.4
0.20	Peak (Note 1)	34.9	11.2	46.1	53.6	-7.5
0.22	Peak (Note 1)	29.1	11.0	40.1	52.9	-12.8
0.45	Peak (Note 1)	27.7	10.3	38.0	46.9	-8.9
0.47	Peak (Note 1)	25.2	10.3	35.5	46.4	-10.9
10.0	Peak (Note 1)	27.5	10.5	37.9	50.0	-12.1
18.3	Peak (Note 1)	31.8	10.8	42.6	50.0	-7.4
19.7	Peak (Note 1)	31.5	10.9	42.3	50.0	-7.7

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

6.1.2.3 Hot Lead 120VAC (T5IW11):

Frequency (MHz)	Detector	Receiver Reading (dBµV)	Correction Factor (dB)	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
0.15	Peak (Note 1)	38.4	11.8	50.2	56.0	-5.8
0.16	Peak (Note 1)	36.4	11.6	48.0	55.2	-7.3

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB)	Measured Level (dBμV)	Class B Limit (dBμV)	Margin (dB)
0.19	Peak (Note 1)	33.8	11.2	45.0	53.9	-8.9
0.34	Peak (Note 1)	27.0	10.5	37.6	49.3	-11.7
0.45	Peak (Note 1)	28.1	10.3	38.4	46.9	-8.5
9.8	Peak (Note 1)	26.4	10.5	36.9	50.0	-13.1
18.3	Peak (Note 1)	29.3	10.8	40.1	50.0	-9.9
21.7	Peak (Note 1)	28.9	11.1	39.9	50.0	-10.1

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

6.1.2.4 Neutral Lead 120VAC (T5IW11):

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB)	Measured Level (dBμV)	Class B Limit (dBμV)	Margin (dB)
0.16	Peak (Note 1)	37.3	11.6	48.9	55.2	-6.3
0.19	Peak (Note 1)	33.8	11.3	45.1	54.1	-9.0
0.24	Peak (Note 1)	29.8	10.9	40.7	52.1	-11.4
0.45	Peak (Note 1)	27.4	10.3	37.7	46.9	-9.2
0.47	Peak (Note 1)	25.4	10.3	35.7	46.4	-10.8
10.2	Peak (Note 1)	28.5	10.5	38.9	50.0	-11.1
18.3	Peak (Note 1)	28.5	10.8	39.3	50.0	-10.7
23.1	Peak (Note 1)	27.8	11.1	38.9	50.0	-11.1

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

6.1.2.5 Result

The EUT complied with the specification limit by a margin of 4.9 dB.

6.1.3 Duty Cycle, Transmission Duration, and Maximum Power Control

EUT was incapable of 100% duty cycle at maximum power control. Duty cycle and maximum-power transmission duration for each tested mode of operation is shown here. The average correction factor is determined by the equation $CF = 10 \times \log \frac{1}{DC}$, where DC is the duty cycle represented as a decimal value between 0 and 1. The Correction Factor is added to average measurements in this evaluation where noted.

Mode	Data rate	Duty Cycle	Channel Occupancy Duration	Transmission Duration	Average Correction Factor (dB)
802.11a	6 Mbps	0.984	1.21 ms	1.23 ms	0.07
802.11n (20MHz)	6.5 Mbps	0.981	1.04 ms	1.06 ms	0.08
802.11n (40MHz)	13.5 Mbps	0.965	569.8 μ s	590.3 μ s	0.15

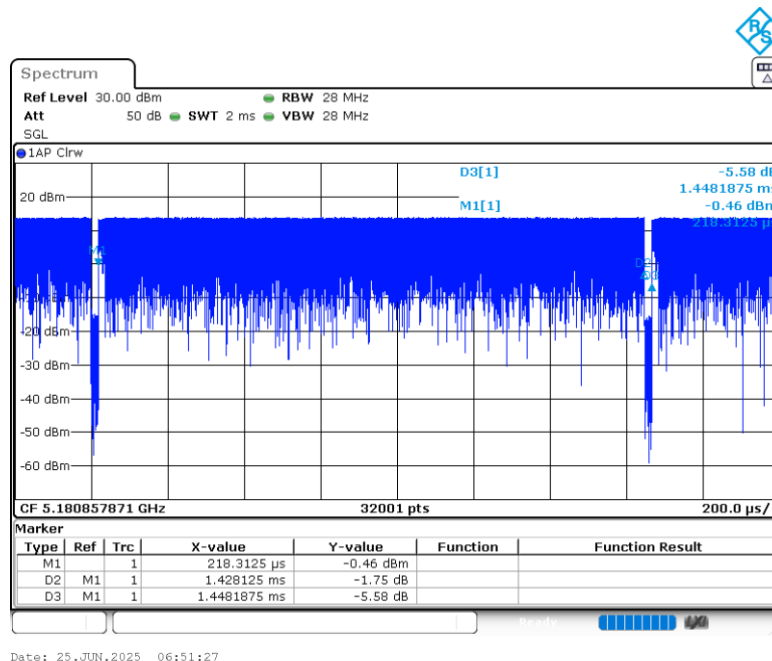


Figure 1. Duty Cycle Measurement, 802.11a Mode

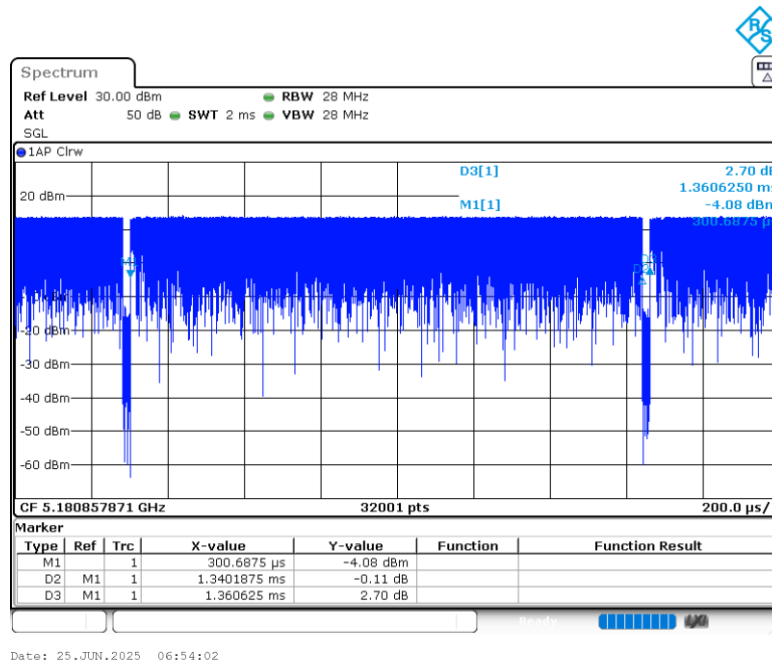


Figure 2. Duty Cycle Measurement, 802.11n 20MHz Mode

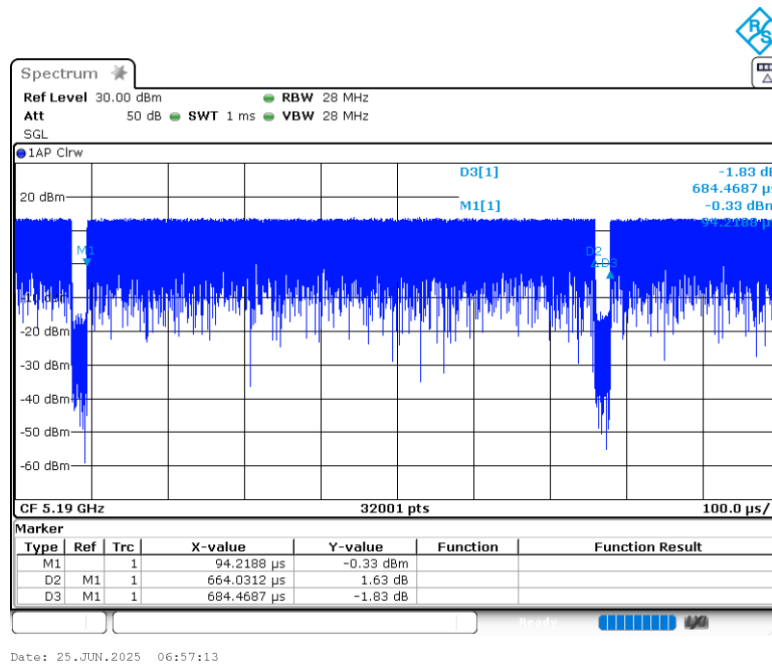


Figure 3. Duty Cycle Measurement, 802.11n 40MHz Mode

6.2 Test Results for UNII 1 Band (5150-5250 MHz)

6.2.1 802.11a Mode

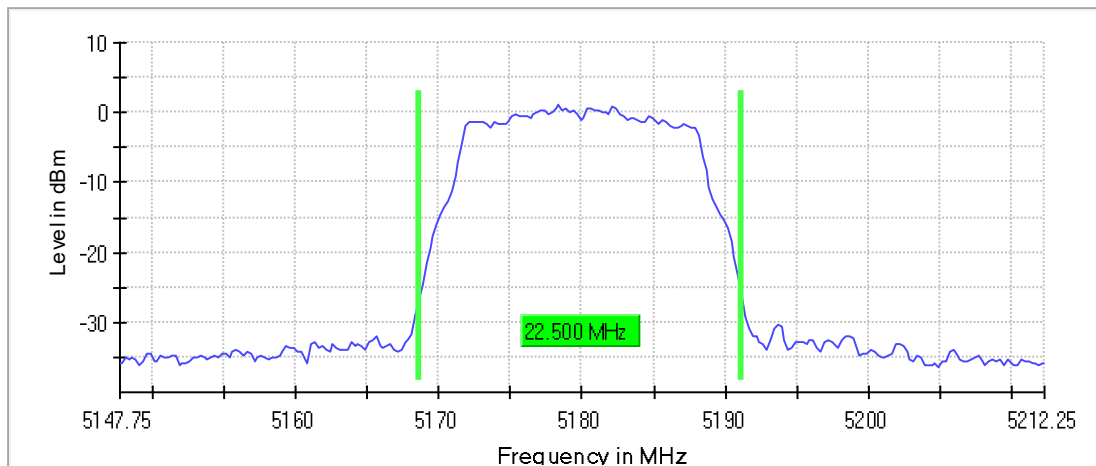
6.2.1.1 §15.403 26dB Bandwidth (UNII 1)

Bandwidths were measured at the intended power set level per channel.

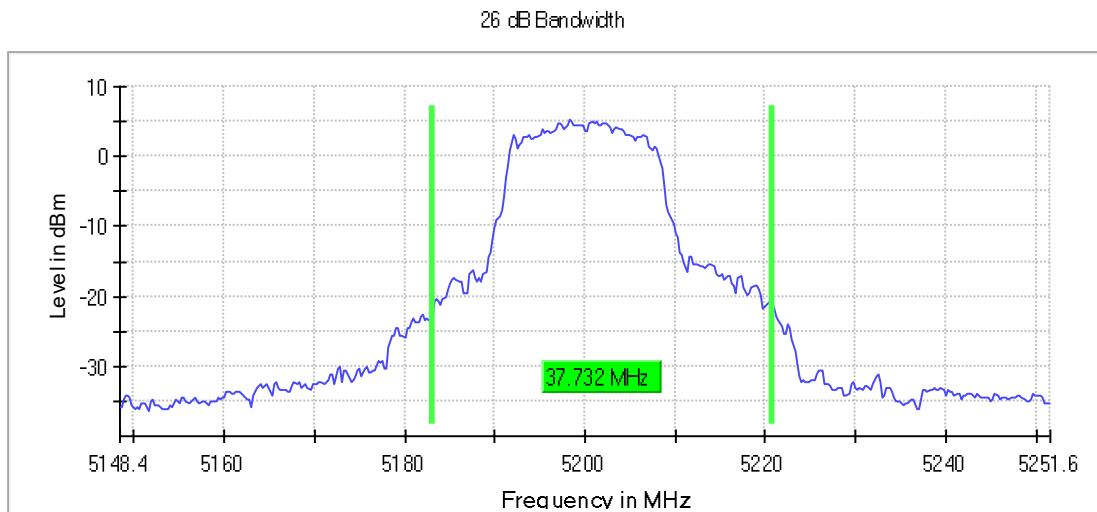
Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5180	22.5
5200	37.7
5220	37.5
5240	37.5

Table 2: 26 dB Emissions Bandwidth

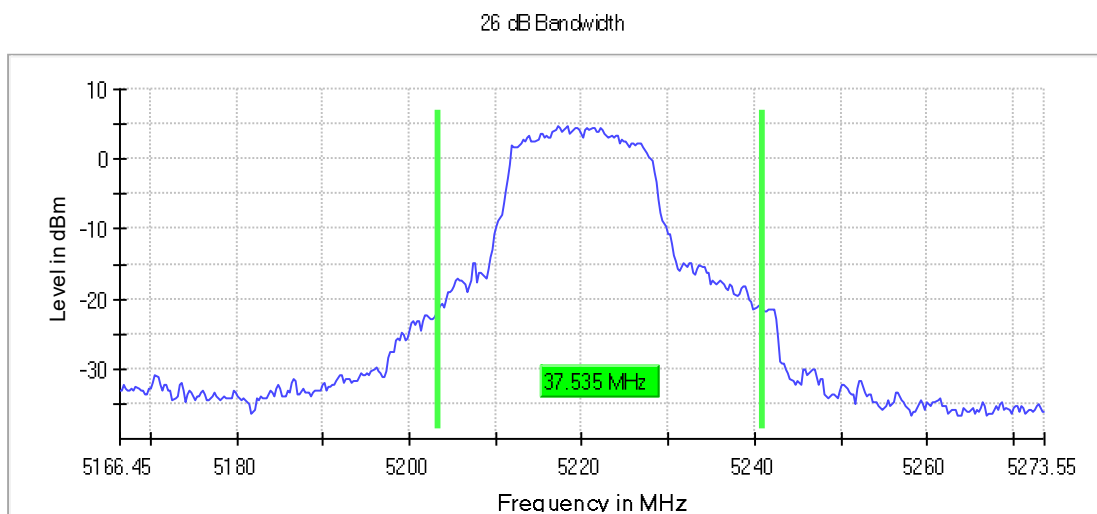
26 dB Bandwidth



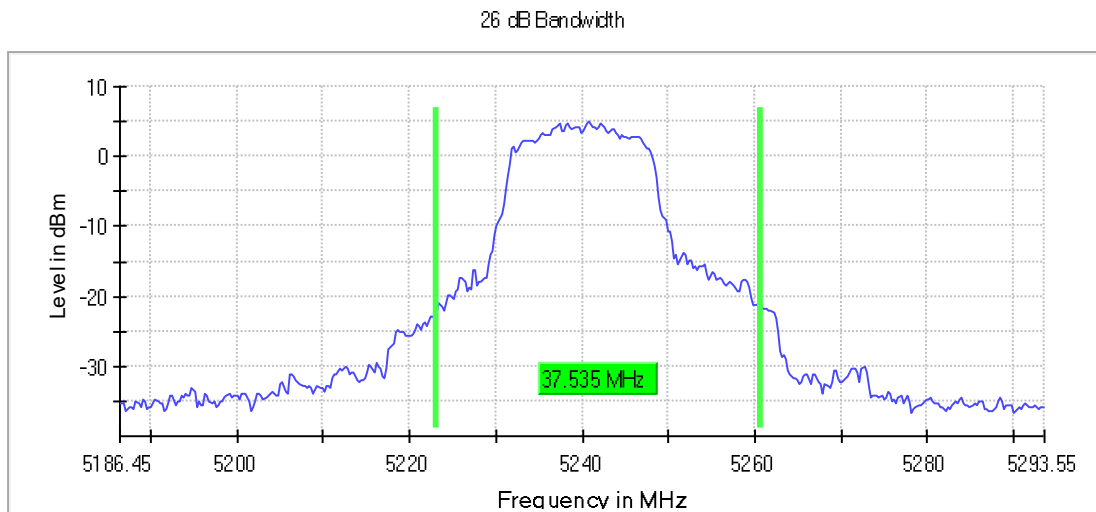
Graph 1: 26 dB Emissions Bandwidth Transmitting at 5180 MHz



Graph 2: 26 dB Emissions Bandwidth Transmitting at 5200 MHz



Graph 3: 26 dB Emissions Bandwidth Transmitting at 5220 MHz



Graph 4: 26 dB Emissions Bandwidth Transmitting at 5240 MHz

6.2.1.2 §15.407(a) Power Limits: Maximum Conducted Output Power (UNII 1)

The following tables show the adjusted conducted power limits.

UNII-1 Conducted Power Limits

Maximum conducted power limits for the UNII-1 band are adjusted based on the isotropic antenna gain, wireless architecture, and the mode of operation.

Wireless Architecture	Operating Mode	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	Client	3.3	6	0.0	24	24

Table 3: UNII-1 maximum conducted power limits based upon antenna gain and operational mode.

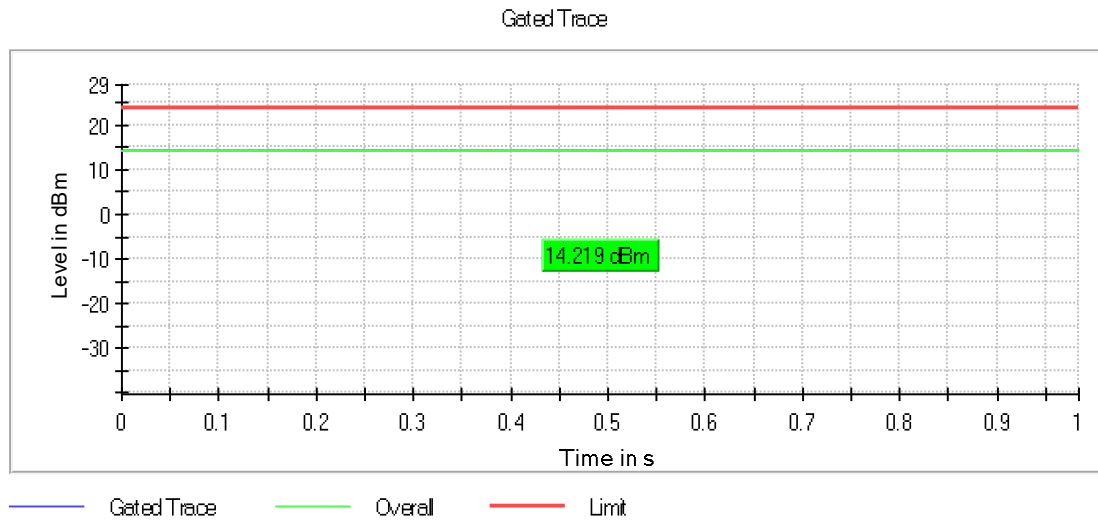
Power was measured for the low, middle, and high channel at the maximum power level possible (20) using KDB 789033 D02 method PM-G and a gated power meter which does not require an average correction factor.

UNII-1 Conducted Power Measurement – AP Architecture, Client Mode

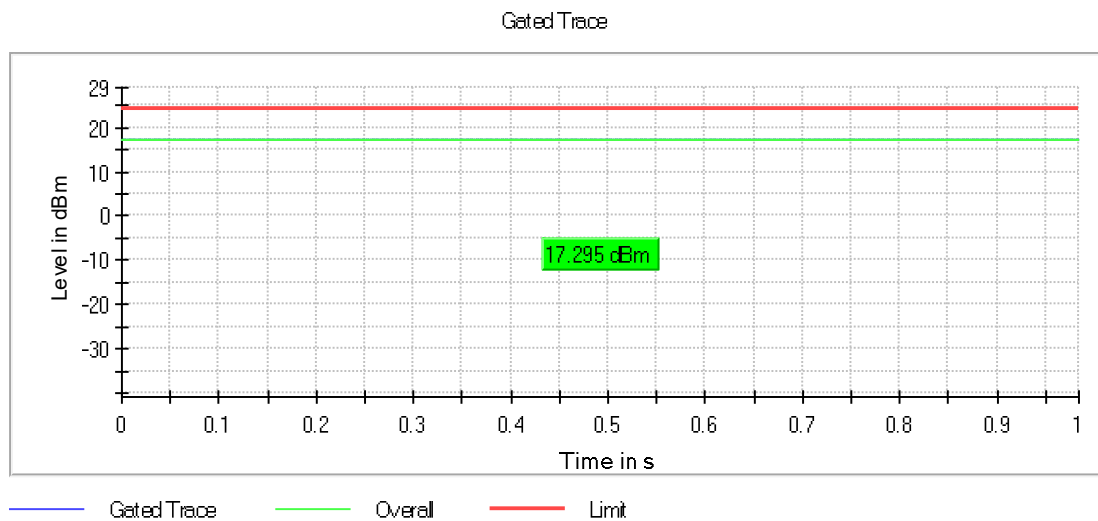
Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)
5180	14.2	24	-9.8
5200	17.3	24	-6.7
5220	17.3	24	-6.7
5240	17.2	24	-6.8

Result

In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.7 dB.



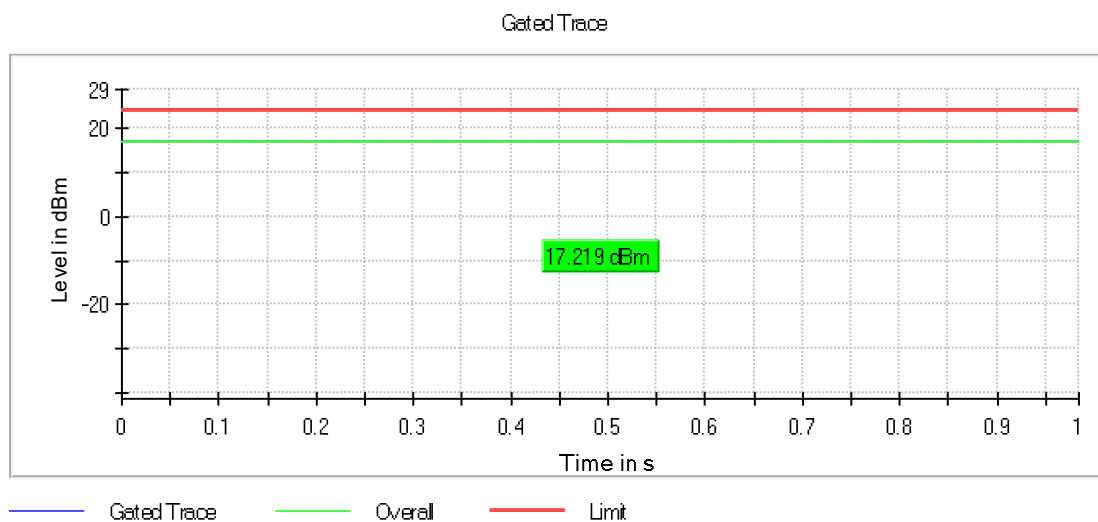
Graph 5: PM-G Power Transmitting at 5180 MHz (Power Level 16)



Graph 6: PM-G Power Transmitting at 5200 MHz (Power Level 20)



Graph 7: PM-G Power Transmitting at 5220 MHz (Power Level 20)



Graph 8: PM-G Power Transmitting at 5240 MHz (Power Level 20)

6.2.1.3 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 1)

The following tables show the adjusted power spectral density limits.

UNII-1 Power Spectral Density Limits

Power spectral density limits for the UNII-1 band are adjusted based on isotropic antenna gain, wireless architecture, and the mode of operation.

Wireless Architecture	Operational Mode	Antenna Gain (dBi)	Default Gain (dBi)	Limit Adjustment (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	Client	3.3	6	0	11	11

Table 4: UNII-1 Power spectral density limits based upon antenna gain and operational mode.

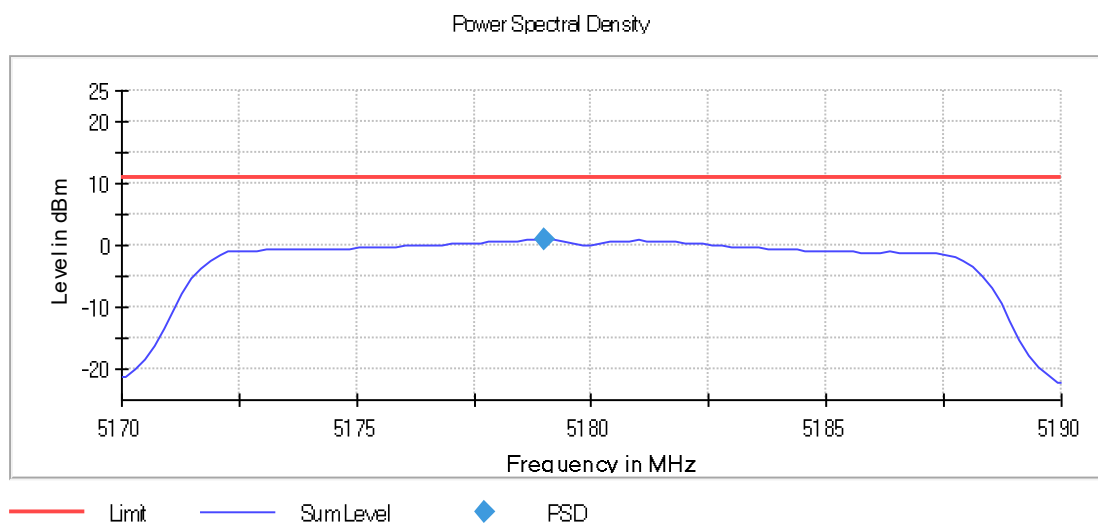
PSD was measured at the intended power set level per channel using Method SA-1 Alternative. See Section 6.2.3 for measurement graphics.

UNII-1 Power Spectral Density Measurements – AP Architecture, Client Mode

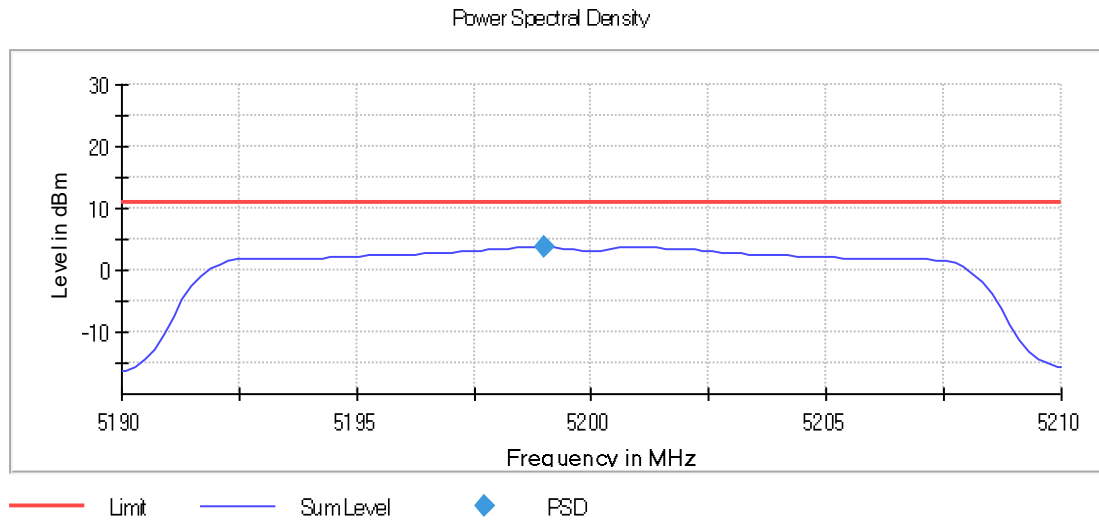
Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5180	0.9	11	-10.1
5200	3.8	11	-7.2
5220	3.9	11	-7.1
5240	3.6	11	-7.4

Result

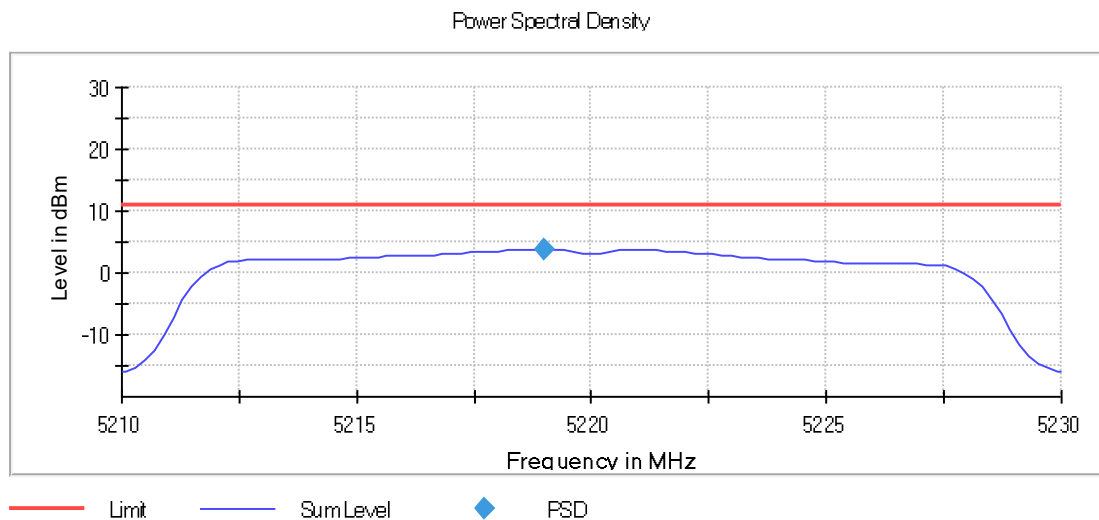
In the configurations tested the EUT complied with the requirements of the specification with a margin of 7.1 dB.



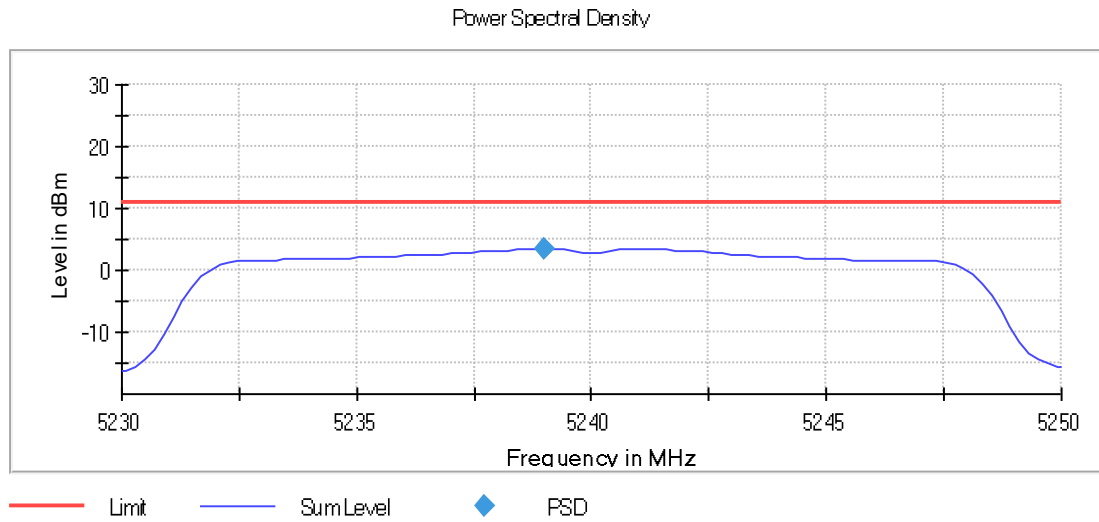
Graph 9: PSD Transmitting at 5180 MHz (Power Level 16)



Graph 10: PSD Transmitting at 5200 MHz (Power Level 20)



Graph 11: PSD Transmitting at 5220 MHz (Power Level 20)



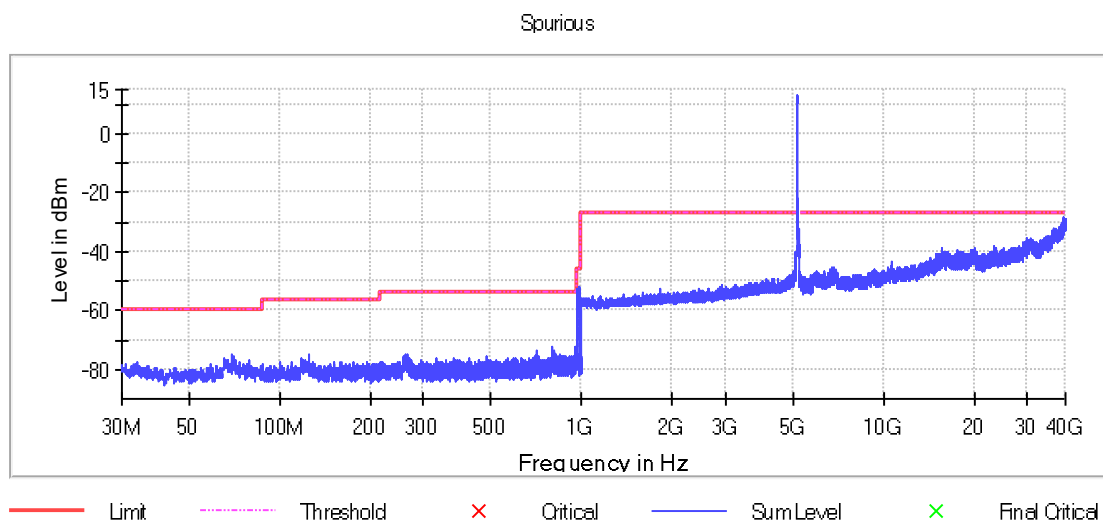
Graph 12: PSD Transmitting at 5240 MHz (Power Level 20)

6.2.1.4 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 1)

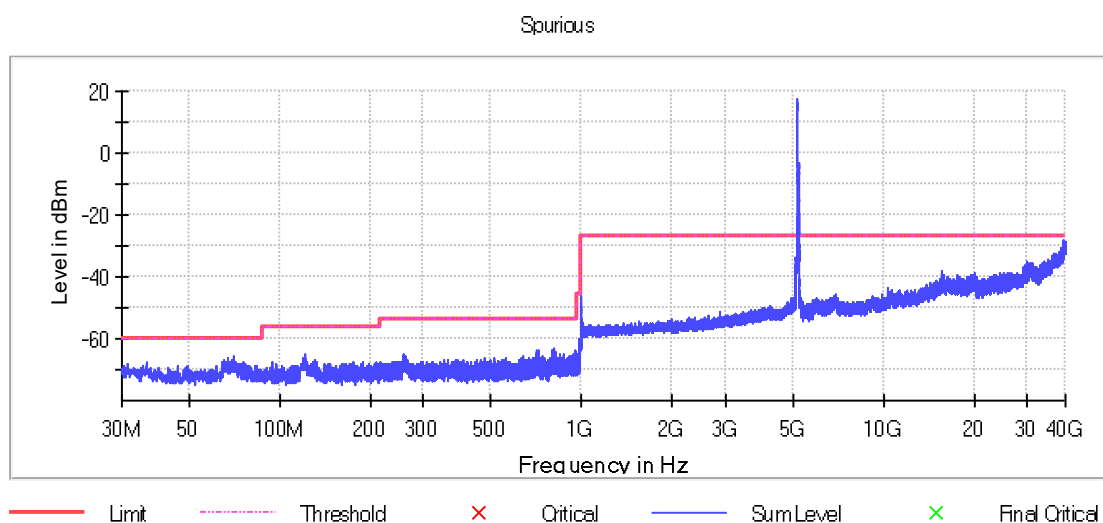
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20). Radiated emissions were measured on both T5IW8 and T5IW11.

Undesirable Emissions were also measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest gain antenna (3.3dBi) according to C63.10, sections 11.12.2.2 and 11.12.2.6. Frequencies below 1000MHz were tested for compliance with 15.209 limits with 100kHz RBW at the intended power set level per channel shown in Section 2.3 and noted below. Measurement graphs show max-peak detector results. Below 1000 MHz, when emissions approach the limit, those frequencies are measured with a quasi-peak detector to determine compliance, and those results will be tabulated below the measurement graph.

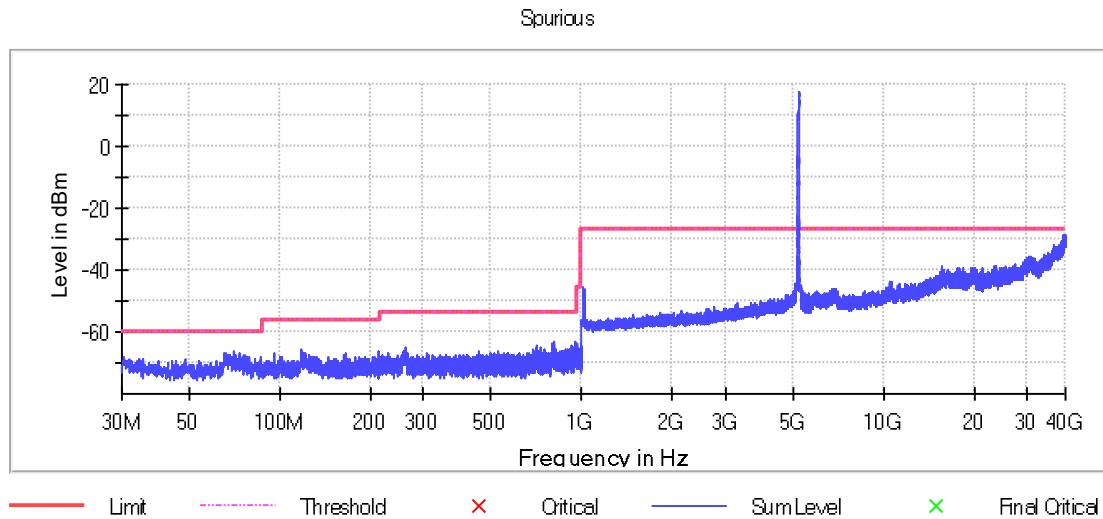
Emissions Transmitting 5180 MHz at Power Level 16:



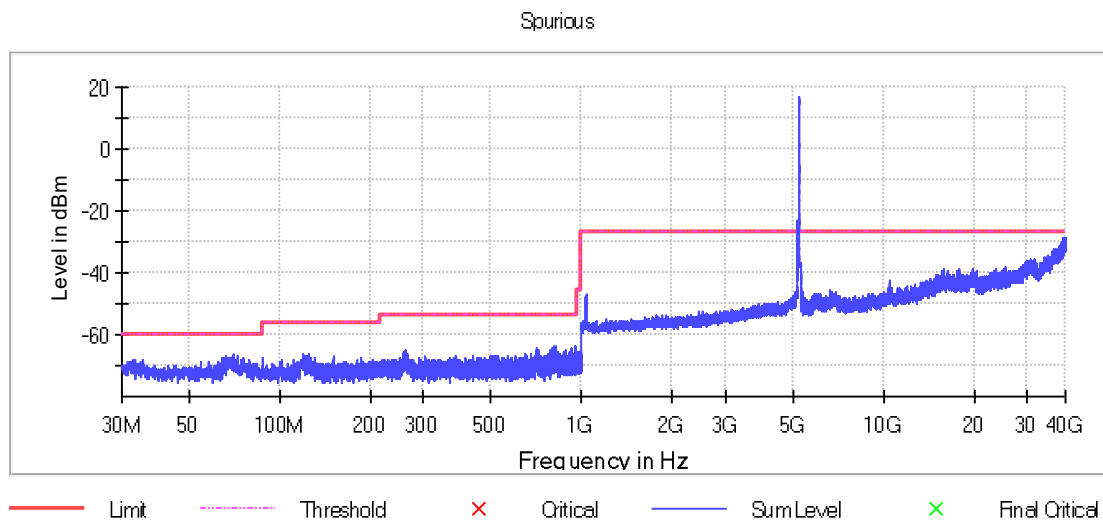
Emissions Transmitting 5200 MHz at Power Level 20:



Emissions Transmitting 5220 MHz at Power Level 20:



Emissions Transmitting 5240 MHz at Power Level 20:



T5IW8 Radiated Emissions Above 1000MHz Transmitting 5180 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10360.5	Peak	Vertical	41.6	14.9	56.5	74.0	-17.5
10361.7	Average	Vertical	29.2	14.9	44.1	54.0	-9.9
10358.8	Peak	Horizontal	43.2	14.9	58.1	74.0	-15.9
10360.8	Average	Horizontal	30.8	14.9	45.7	54.0	-8.3
15533.8	Peak	Vertical	43.2	16.9	60.0	74.0	-14.0
15541.1	Average	Vertical	29.6	16.8	46.5	54.0	-7.5

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15543.4	Peak	Horizontal	44.3	16.8	61.1	74.0	-12.9
15537.1	Average	Horizontal	31.2	16.8	48.1	54.0	-5.9
20714.1	Peak	Vertical	34.5	17.7	52.2	74.0	-21.8
20719.8	Average	Vertical	21.9	17.7	39.6	54.0	-14.4
20707.0	Peak	Horizontal	35.0	17.8	52.7	74.0	-21.3
20719.8	Average	Horizontal	22.4	17.7	40.1	54.0	-13.9
25876.2	Peak	Vertical	30.8	22.8	53.7	74.0	-20.3
25890.4	Average	Vertical	16.6	22.8	39.5	54.0	-14.5
25865.2	Peak	Horizontal	30.2	22.8	53.0	74.0	-21.0
25895.8	Average	Horizontal	17.6	22.8	40.5	54.0	-13.6
30994.1	Peak	Vertical	31.1	26.5	57.6	74.0	-16.4
31001.2	Average	Vertical	17.9	26.6	44.4	54.0	-9.6
31039.1	Peak	Horizontal	30.6	26.9	57.5	74.0	-16.5
30997.7	Average	Horizontal	17.9	26.5	44.5	54.0	-9.5
36193.2	Peak	Vertical	30.1	28.7	58.8	74.0	-15.3
36201.0	Average	Vertical	16.1	28.7	44.8	54.0	-9.2
36217.6	Peak	Horizontal	29.7	28.7	58.4	74.0	-15.6
36215.5	Average	Horizontal	15.9	28.7	44.6	54.0	-9.4

T5IW8 Radiated Emissions Above 1000MHz Transmitting 5220 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10439.0	Peak	Vertical	39.7	14.9	54.6	74.0	-19.4
10441.4	Average	Vertical	27.1	14.9	42.0	54.0	-12.1
10438.9	Peak	Horizontal	41.5	14.9	56.4	74.0	-17.6
10440.1	Average	Horizontal	29.1	14.9	44.0	54.0	-10.0
15653.8	Peak	Vertical	44.2	16.2	60.4	74.0	-13.6
15657.1	Average	Vertical	30.4	16.2	46.5	54.0	-7.5
15654.1	Peak	Horizontal	46.1	16.2	62.3	74.0	-11.7
15657.0	Average	Horizontal	32.4	16.2	48.6	54.0	-5.4
20839.7	Peak	Vertical	33.9	17.0	50.9	74.0	-23.1

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
20879.9	Average	Vertical	21.7	16.7	38.4	54.0	-15.6
20868.8	Peak	Horizontal	34.3	16.8	51.1	74.0	-22.9
20879.8	Average	Horizontal	21.8	16.7	38.5	54.0	-15.5
26041.5	Peak	Vertical	29.9	22.7	52.5	74.0	-21.5
26072.3	Average	Vertical	16.1	22.6	38.6	54.0	-15.4
26123.0	Peak	Horizontal	29.7	22.4	52.1	74.0	-21.9
26096.3	Average	Horizontal	16.6	22.5	39.1	54.0	-14.9
31363.9	Peak	Vertical	28.3	28.3	56.6	74.0	-17.4
31367.3	Average	Vertical	15.0	28.3	43.3	54.0	-10.7
31293.7	Peak	Horizontal	28.5	28.1	56.6	74.0	-17.4
31327.9	Average	Horizontal	14.9	28.2	43.1	54.0	-10.9
36480.2	Peak	Vertical	29.3	29.1	58.5	74.0	-15.5
36500.5	Average	Vertical	15.6	29.1	44.7	54.0	-9.3
36498.8	Peak	Horizontal	29.2	29.1	58.3	74.0	-15.7
36506.6	Average	Horizontal	15.8	29.1	44.9	54.0	-9.2

T5IW8 Radiated Emissions Above 1000MHz Transmitting 5240 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10475.3	Peak	Vertical	39.1	14.9	54.0	74.0	-20.0
10477.2	Average	Vertical	26.9	14.9	41.8	54.0	-12.3
10479.3	Peak	Horizontal	40.8	14.9	55.8	74.0	-18.3
10481.7	Average	Horizontal	28.3	14.9	43.2	54.0	-10.8
15713.9	Peak	Vertical	42.2	15.9	58.1	74.0	-15.9
15721.4	Average	Vertical	28.8	15.8	44.6	54.0	-9.4
15713.7	Peak	Horizontal	45.2	15.9	61.0	74.0	-13.0
15715.9	Average	Horizontal	31.6	15.8	47.5	54.0	-6.5
20947.2	Peak	Vertical	33.6	16.8	50.5	74.0	-23.6
20960.0	Average	Vertical	21.3	16.9	38.2	54.0	-15.8
20962.9	Peak	Horizontal	33.5	16.9	50.4	74.0	-23.6
20960.1	Average	Horizontal	21.3	16.9	38.2	54.0	-15.8

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
26233.0	Peak	Vertical	30.5	22.0	52.5	74.0	-21.5
26204.4	Average	Vertical	16.7	22.1	38.7	54.0	-15.3
26179.2	Peak	Horizontal	30.1	22.2	52.3	74.0	-21.7
26198.8	Average	Horizontal	17.2	22.1	39.3	54.0	-14.7
31517.9	Peak	Vertical	30.9	28.3	59.2	74.0	-14.8
31468.1	Average	Vertical	17.0	28.4	45.5	54.0	-8.6
31460.5	Peak	Horizontal	30.7	28.4	59.1	74.0	-14.9
31450.8	Average	Horizontal	17.4	28.5	45.8	54.0	-8.2
36613.9	Peak	Vertical	30.0	28.9	58.9	74.0	-15.1
36708.4	Average	Vertical	16.0	28.7	44.6	54.0	-9.4
36724.5	Peak	Horizontal	29.7	28.6	58.4	74.0	-15.6
36727.7	Average	Horizontal	16.1	28.6	44.8	54.0	-9.3

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5180 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10360.3	Peak	Vertical	37.5	14.9	52.4	74.0	-21.6
10358.3	Average	Vertical	24.4	14.9	39.3	54.0	-14.7
10356.6	Peak	Horizontal	38.2	14.9	53.1	74.0	-20.9
10355.8	Average	Horizontal	25.8	14.9	40.7	54.0	-13.3
15551.4	Peak	Vertical	36.5	16.8	53.3	74.0	-20.7
15536.8	Average	Vertical	23.8	16.8	40.6	54.0	-13.4
15542.4	Peak	Horizontal	36.9	16.8	53.7	74.0	-20.3
15532.2	Average	Horizontal	24.0	16.9	40.8	54.0	-13.2
20711.7	Peak	Vertical	35.0	17.7	52.7	74.0	-21.3
20719.5	Average	Vertical	21.6	17.7	39.3	54.0	-14.7
20719.3	Peak	Horizontal	34.9	17.7	52.6	74.0	-21.4
20719.5	Average	Horizontal	22.2	17.7	39.9	54.0	-14.1
25857.4	Peak	Vertical	30.4	22.8	53.2	74.0	-20.8
25900.2	Average	Vertical	17.2	22.8	40.0	54.0	-14.0
25903.9	Peak	Horizontal	31.7	22.8	54.5	74.0	-19.5

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
25899.6	Average	Horizontal	18.0	22.8	40.9	54.0	-13.1
31040.0	Peak	Vertical	31.1	26.9	58.0	74.0	-16.0
31087.7	Average	Vertical	17.1	27.2	44.3	54.0	-9.7
31069.9	Peak	Horizontal	30.6	27.1	57.7	74.0	-16.3
31078.2	Average	Horizontal	17.5	27.1	44.6	54.0	-9.4
36184.8	Peak	Vertical	30.3	28.6	58.9	74.0	-15.1
36327.0	Average	Vertical	16.0	28.9	44.9	54.0	-9.2
36277.4	Peak	Horizontal	30.0	28.8	58.8	74.0	-15.3
36271.3	Average	Horizontal	16.3	28.8	45.0	54.0	-9.0

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5220 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10444.7	Peak	Vertical	37.3	14.9	52.2	74.0	-21.8
10441.4	Average	Vertical	23.9	14.9	38.8	54.0	-15.2
10442.8	Peak	Horizontal	38.3	14.9	53.2	74.0	-20.9
10441.8	Average	Horizontal	24.8	14.9	39.7	54.0	-14.3
15661.2	Peak	Vertical	37.0	16.2	53.1	74.0	-20.9
15656.9	Average	Vertical	23.9	16.2	40.1	54.0	-13.9
15650.7	Peak	Horizontal	37.4	16.2	53.6	74.0	-20.4
15657.5	Average	Horizontal	24.5	16.2	40.6	54.0	-13.4
20829.0	Peak	Vertical	34.8	17.0	51.8	74.0	-22.2
20879.4	Average	Vertical	21.9	16.7	38.6	54.0	-15.4
20865.1	Peak	Horizontal	35.2	16.8	52.0	74.0	-22.0
20879.5	Average	Horizontal	22.2	16.7	38.9	54.0	-15.1
26115.6	Peak	Vertical	30.4	22.4	52.8	74.0	-21.2
26048.9	Average	Vertical	16.7	22.7	39.3	54.0	-14.7
26150.6	Peak	Horizontal	30.4	22.3	52.7	74.0	-21.3
26104.5	Average	Horizontal	17.4	22.5	39.9	54.0	-14.1
31404.4	Peak	Vertical	29.2	28.5	57.7	74.0	-16.3
31409.5	Average	Vertical	16.3	28.5	44.7	54.0	-9.3

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
31404.8	Peak	Horizontal	29.9	28.5	58.4	74.0	-15.6
31389.8	Average	Horizontal	15.9	28.4	44.3	54.0	-9.7
36529.5	Peak	Vertical	29.1	29.0	58.2	74.0	-15.8
36494.6	Average	Vertical	15.6	29.1	44.7	54.0	-9.3
36610.6	Peak	Horizontal	29.5	28.9	58.3	74.0	-15.7
36491.3	Average	Horizontal	15.8	29.1	44.9	54.0	-9.1

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5240 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10473.3	Peak	Vertical	36.9	14.9	51.8	74.0	-22.3
10481.9	Average	Vertical	23.7	14.9	38.6	54.0	-15.4
10476.2	Peak	Horizontal	37.6	14.9	52.5	74.0	-21.6
10477.7	Average	Horizontal	24.7	14.9	39.6	54.0	-14.4
15712.7	Peak	Vertical	36.3	15.9	52.1	74.0	-21.9
15708.7	Average	Vertical	23.4	15.9	39.3	54.0	-14.7
15702.2	Peak	Horizontal	36.9	15.9	52.8	74.0	-21.2
15715.2	Average	Horizontal	23.9	15.9	39.7	54.0	-14.3
20950.9	Peak	Vertical	34.2	16.8	51.0	74.0	-23.0
20959.6	Average	Vertical	21.2	16.9	38.1	54.0	-15.9
20934.2	Peak	Horizontal	34.4	16.8	51.1	74.0	-22.9
20959.8	Average	Horizontal	21.6	16.9	38.5	54.0	-15.5
26210.4	Peak	Vertical	30.4	22.1	52.5	74.0	-21.5
26193.4	Average	Vertical	17.0	22.1	39.1	54.0	-14.9
26151.3	Peak	Horizontal	30.2	22.3	52.5	74.0	-21.5
26190.6	Average	Horizontal	17.2	22.1	39.4	54.0	-14.6
31464.1	Peak	Vertical	30.1	28.4	58.5	74.0	-15.5
31473.5	Average	Vertical	16.6	28.4	45.0	54.0	-9.0
31467.4	Peak	Horizontal	30.5	28.4	58.9	74.0	-15.1
31448.5	Average	Horizontal	17.1	28.5	45.6	54.0	-8.4
36724.9	Peak	Vertical	29.8	28.6	58.4	74.0	-15.6

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
36706.3	Average	Vertical	15.9	28.7	44.5	54.0	-9.5
36764.2	Peak	Horizontal	29.5	28.5	58.1	74.0	-15.9
36701.2	Average	Horizontal	16.0	28.7	44.7	54.0	-9.3

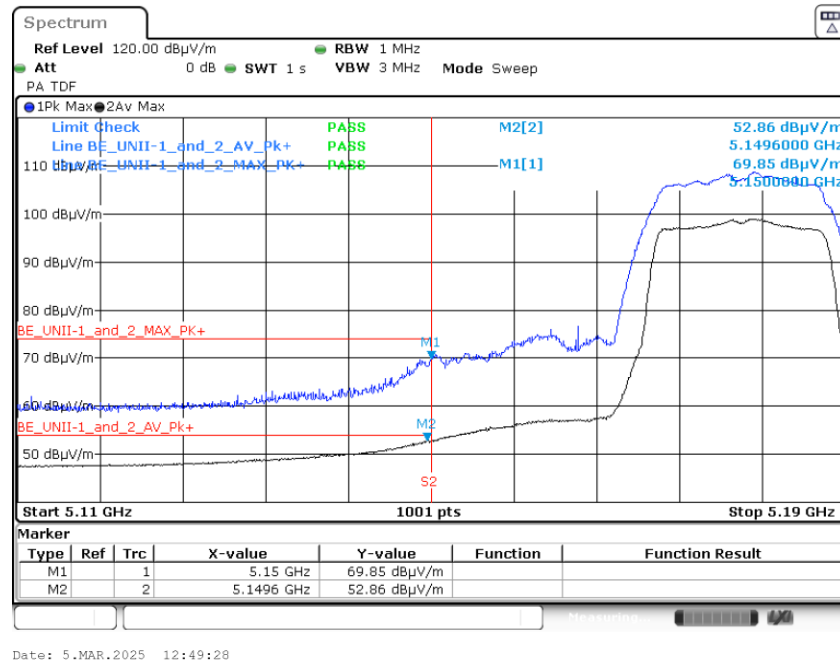
Result

The EUT complied with the specification limit by a margin of 5.4 dB.

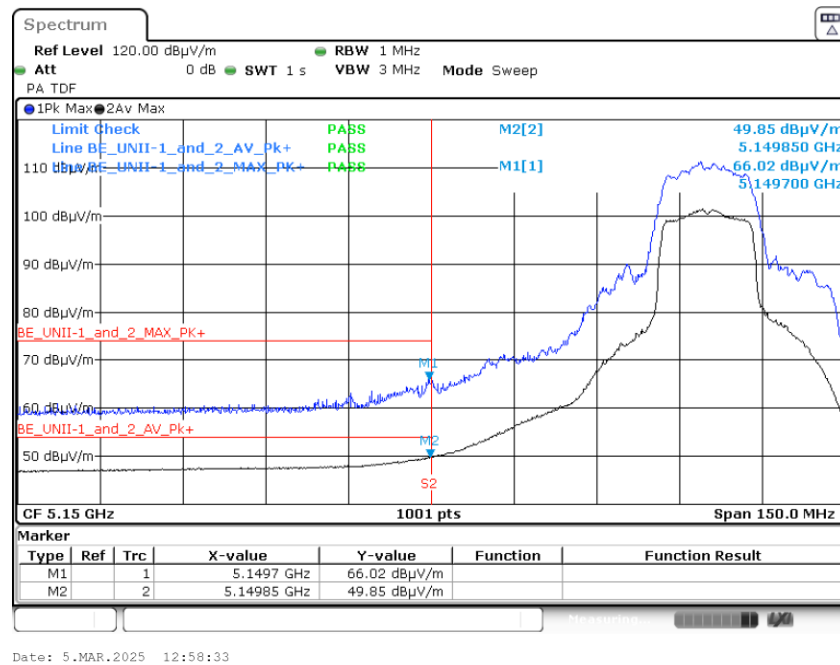
6.2.1.5 §15.407(b) Undesirable Emissions – Band Edges (UNII 1)

Band Edge were tested radiated at or above the intended power setting per channel.

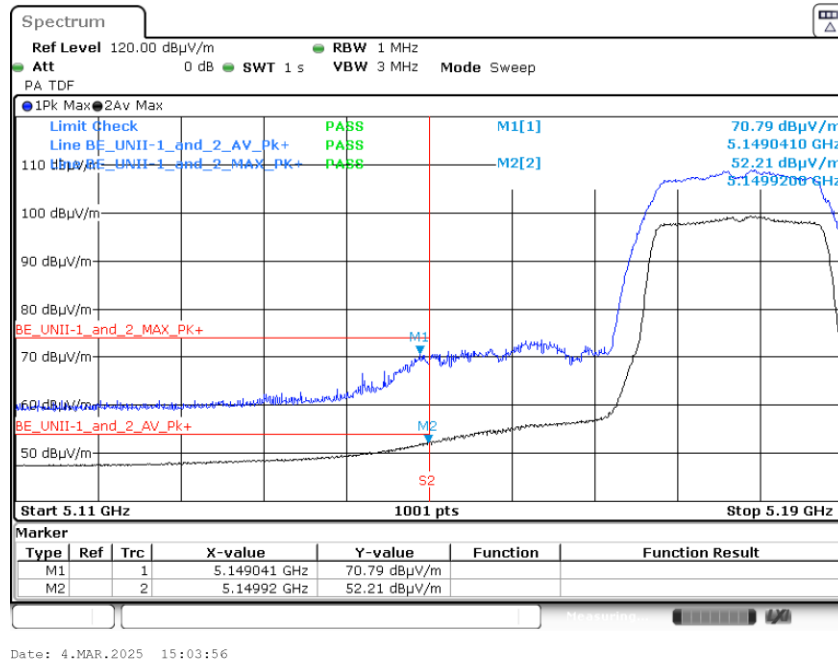
T5IW8 Transmitting on 5180 MHz (Power Level 17):



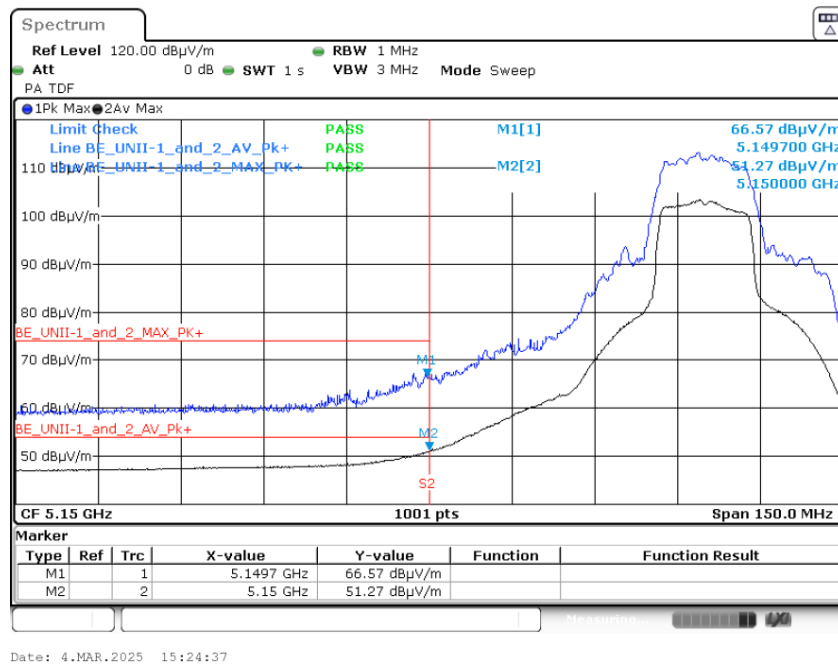
T5IW8 Transmitting on 5200 MHz (Power Level 20):



T5IW11 Transmitting on 5180 MHz (Power Level 16):



T5IW11 Transmitting on 5200 MHz (Power Level 20):



Result

The EUT complied with the specification.

6.2.1.6 §15.407(a)(1) Power Limits: Outdoor EIRP (UNII 1)

EUT does not operate outdoors.

Result

In the configurations tested the EUT complied with the requirements of the specification.

6.2.2 802.11n-20 Mode

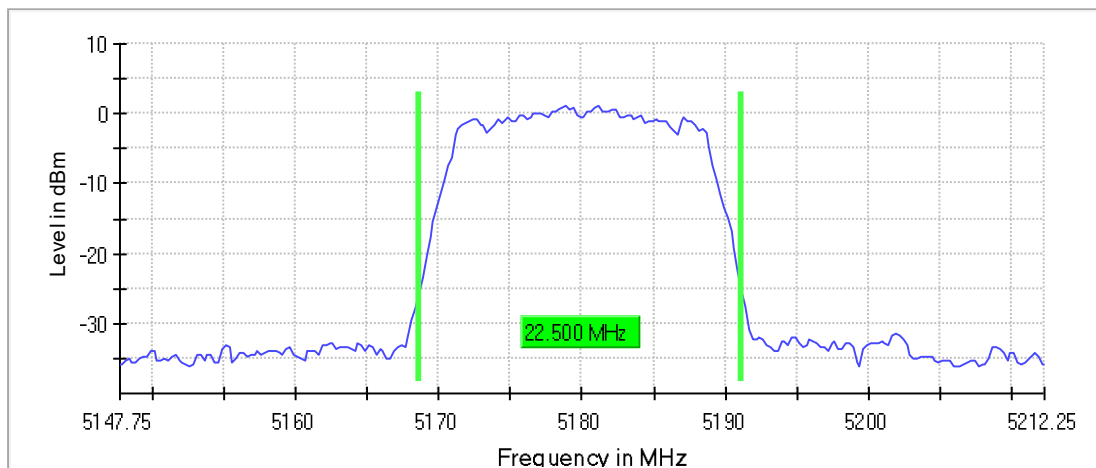
6.2.2.1 §15.403 26dB Bandwidth (UNII 1)

Bandwidths were measured at the intended power set level per channel.

Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5180	22.5
5200	42.5
5220	41.5
5240	38.3

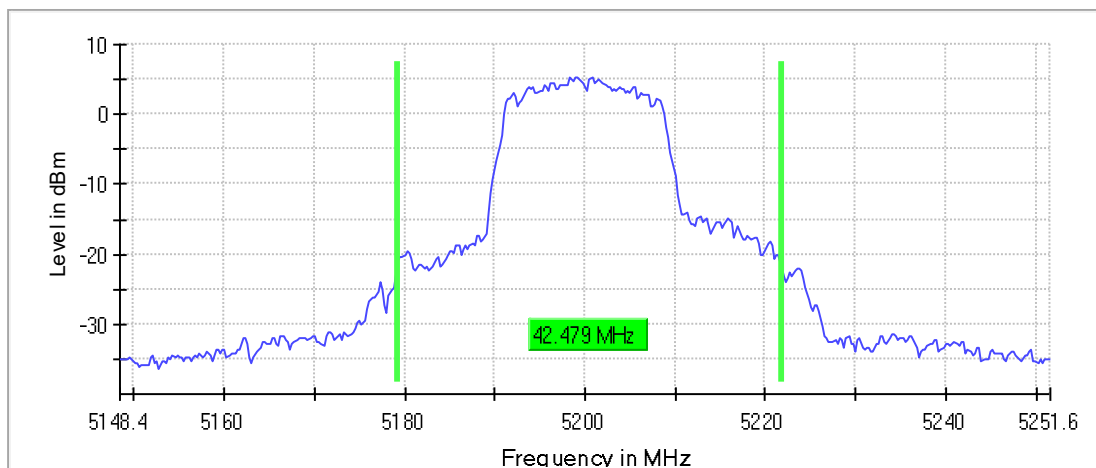
Table 5: 26 dB Emissions Bandwidth

26 dB Bandwidth

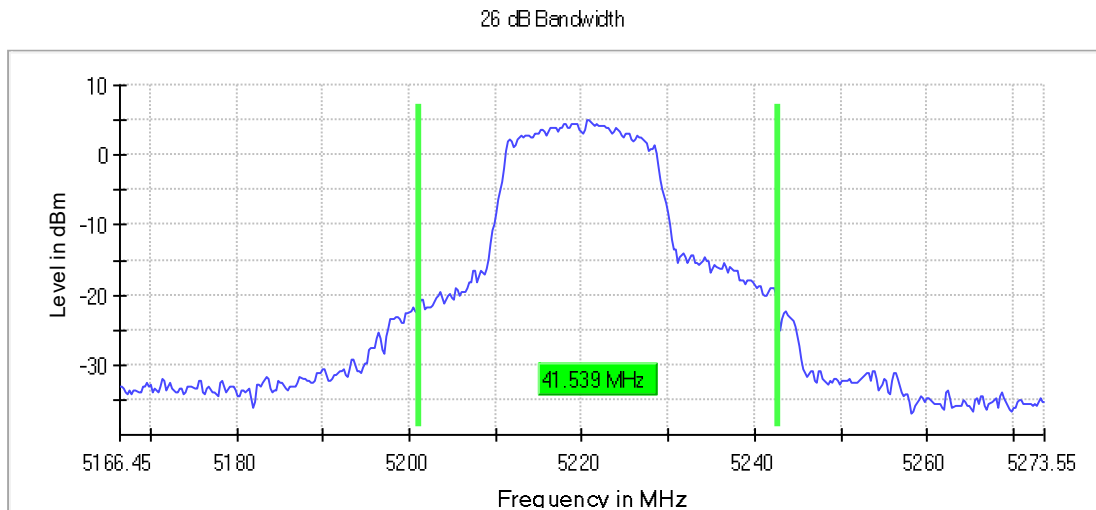


Graph 13: 26 dB Emissions Bandwidth Transmitting at 5180 MHz

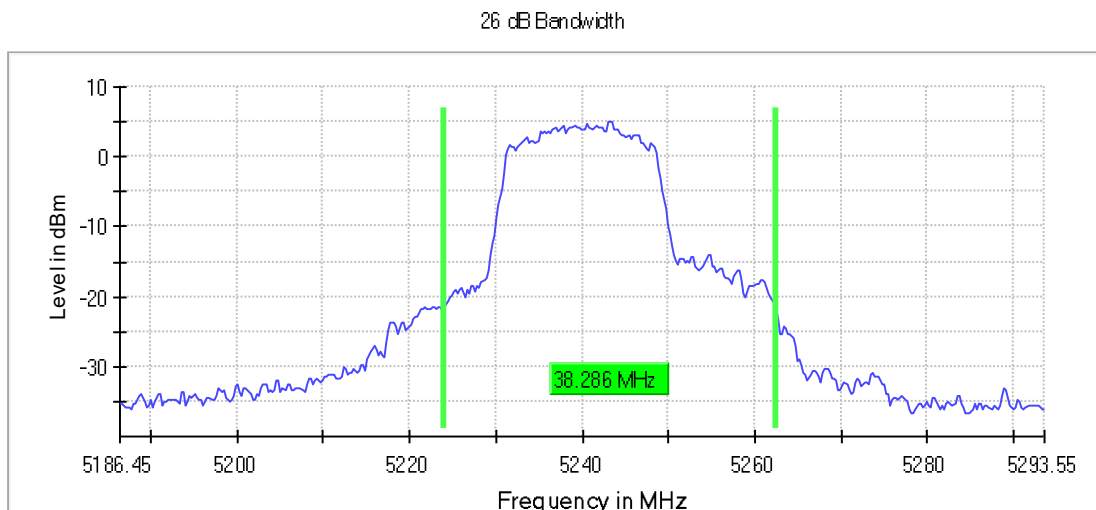
26 dB Bandwidth



Graph 14: 26 dB Emissions Bandwidth Transmitting at 5200 MHz



Graph 15: 26 dB Emissions Bandwidth Transmitting at 5220 MHz



Graph 16: 26 dB Emissions Bandwidth Transmitting at 5240 MHz

6.2.2.2 §15.407(a) Power Limits: Maximum Conducted Output Power (UNII 1)

The following tables show the adjusted conducted power limits.

UNII-1 Conducted Power Limits

Maximum conducted power limits for the UNII-1 band are adjusted based on the isotropic antenna gain, wireless architecture, and the mode of operation.

Wireless Architecture	Operating Mode	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	Client	3.3	6	0.0	24	24

Table 6: UNII-1 maximum conducted power limits based upon antenna gain and operational mode.

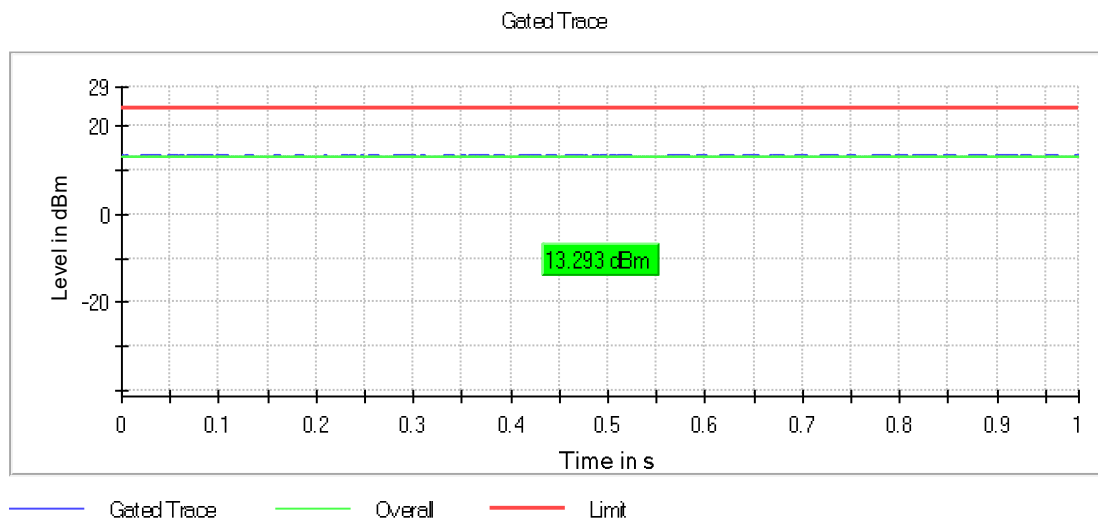
Power was measured for the low, middle, and high channel at the maximum power level possible (20) using KDB 789033 D02 method PM-G and a gated power meter which does not require an average correction factor.

UNII-1 Conducted Power Measurement – AP Architecture, Client Mode

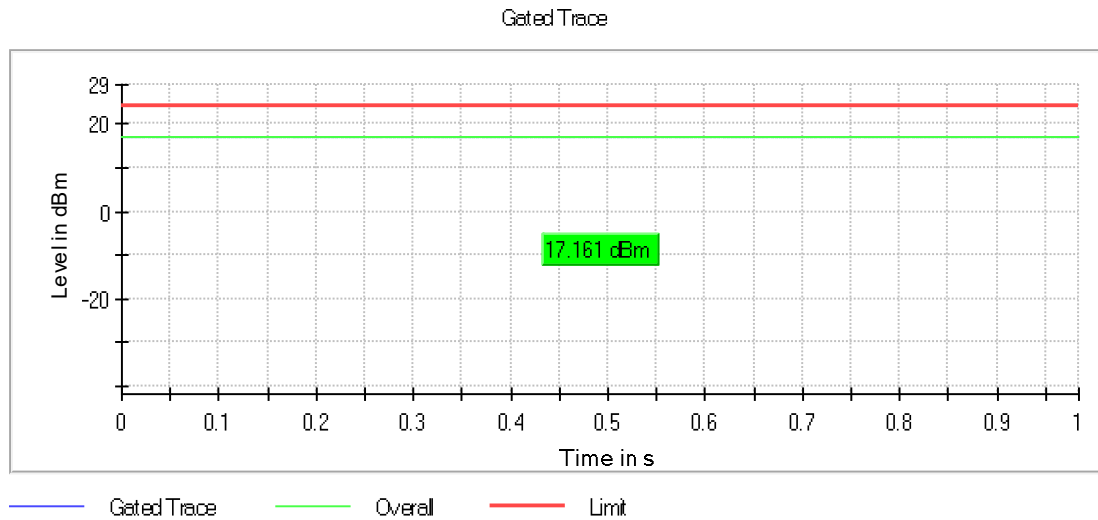
Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)
5180	13.3	24	-10.7
5200	17.2	24	-6.8
5220	17.3	24	-6.7
5240	17.1	24	-6.9

Result

In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.7 dB.



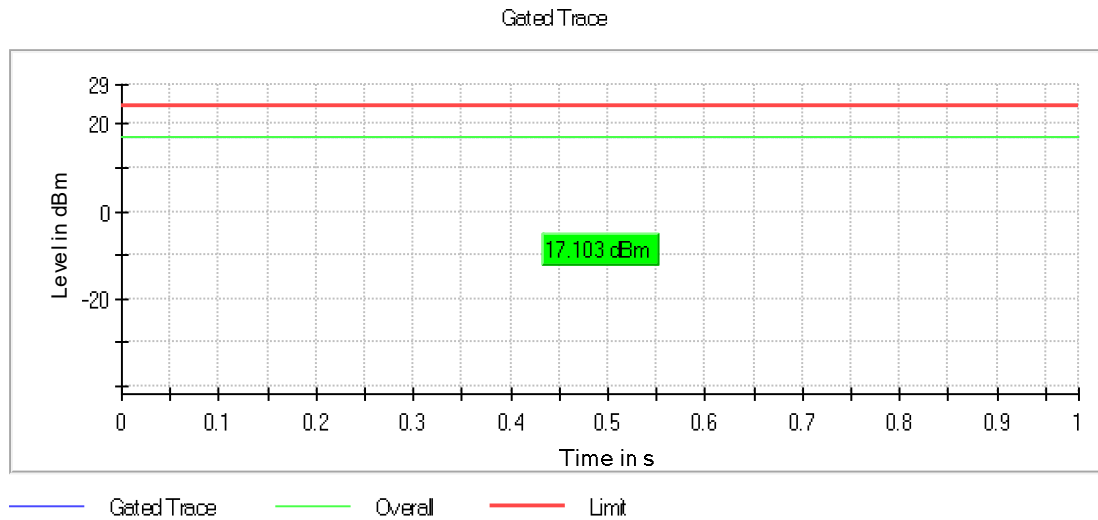
Graph 17: PM-G Power Transmitting at 5180 MHz (Power Level 15)



Graph 18: PM-G Power Transmitting at 5200 MHz (Power Level 20)



Graph 19: PM-G Power Transmitting at 5220 MHz (Power Level 20)



Graph 20: PM-G Power Transmitting at 5240 MHz (Power Level 20)

6.2.2.3 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 1)

The following tables show the adjusted power spectral density limits.

UNII-1 Power Spectral Density Limits

Power spectral density limits for the UNII-1 band are adjusted based on isotropic antenna gain, wireless architecture, and the mode of operation.

Wireless Architecture	Operational Mode	Antenna Gain (dBi)	Default Gain (dBi)	Limit Adjustment (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	Client	3.3	6	0	11	11

Table 7: UNII-1 Power spectral density limits based upon antenna gain and operational mode.

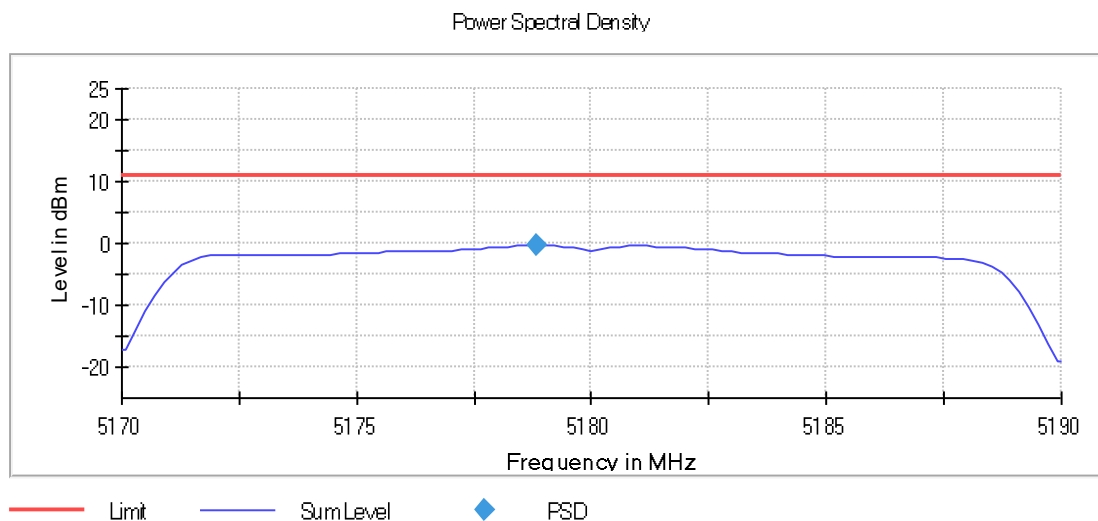
PSD was measured at the intended power set level per channel using Method SA-1 Alternative. See Section 6.2.3 for measurement graphics.

UNII-1 Power Spectral Density Measurements – AP Architecture, Client Mode

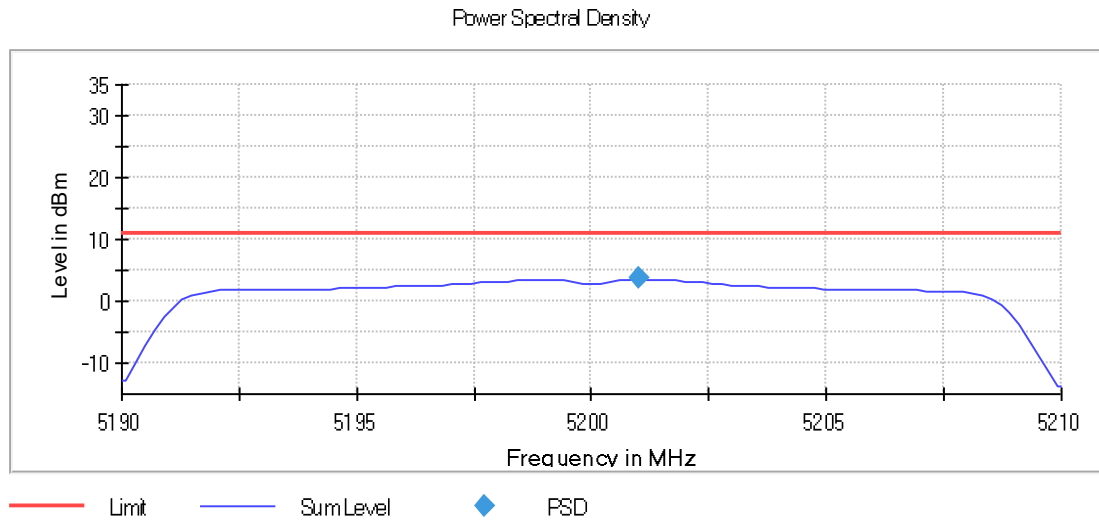
Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5180	-0.2	11	-11.2
5200	3.6	11	-7.4
5220	3.7	11	-7.3
5240	3.4	11	-7.6

Result

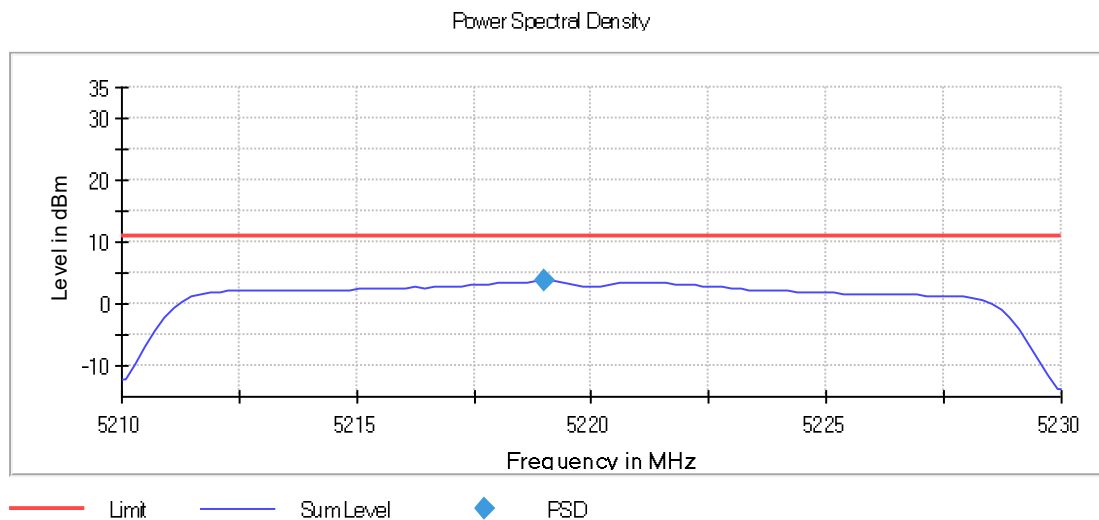
In the configurations tested the EUT complied with the requirements of the specification with a margin of 7.3 dB.



Graph 21: PSD Transmitting at 5180 MHz (Power Level 15)

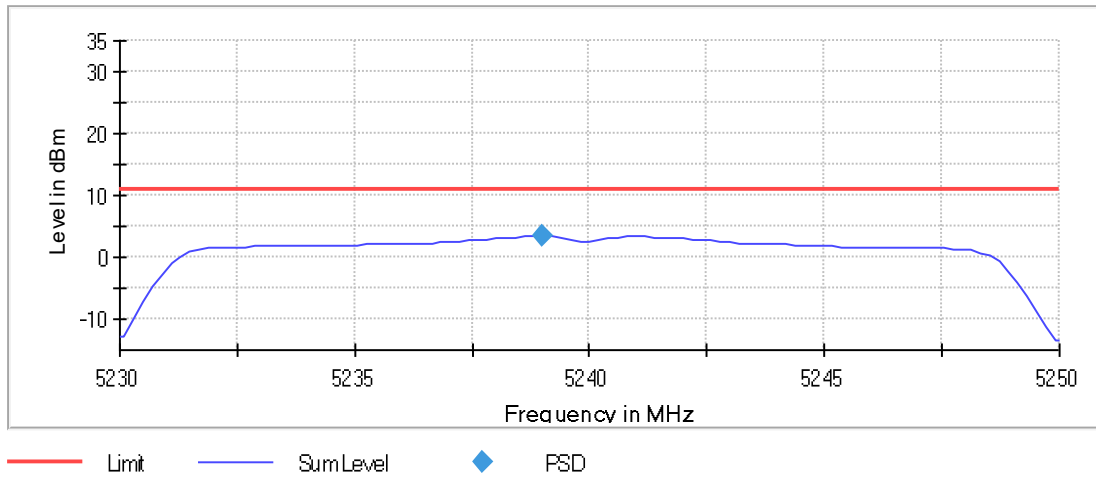


Graph 22: PSD Transmitting at 5200 MHz (Power Level 20)



Graph 23: PSD Transmitting at 5220 MHz (Power Level 20)

Power Spectral Density



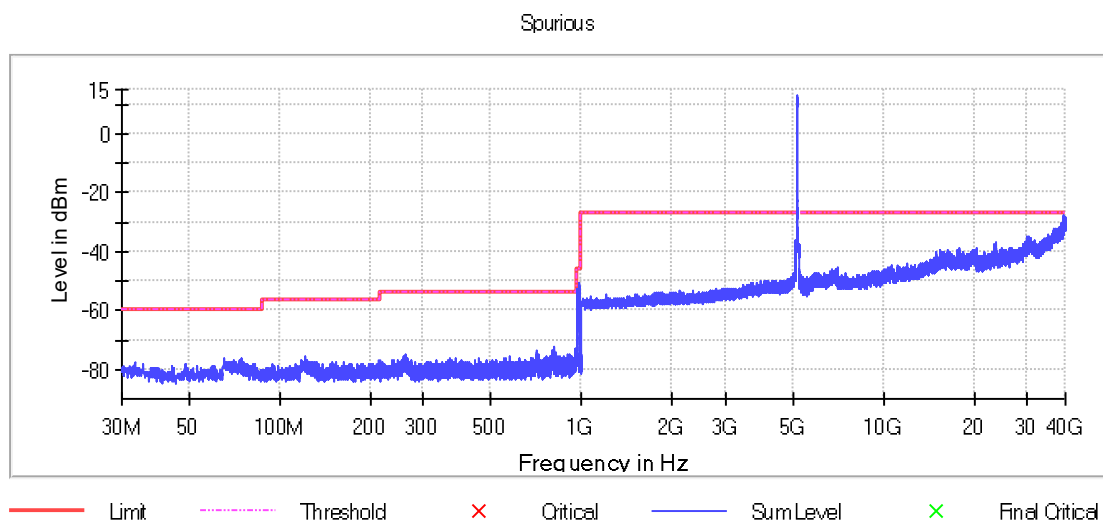
Graph 24: PSD Transmitting at 5240 MHz (Power Level 20)

6.2.2.4 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 1)

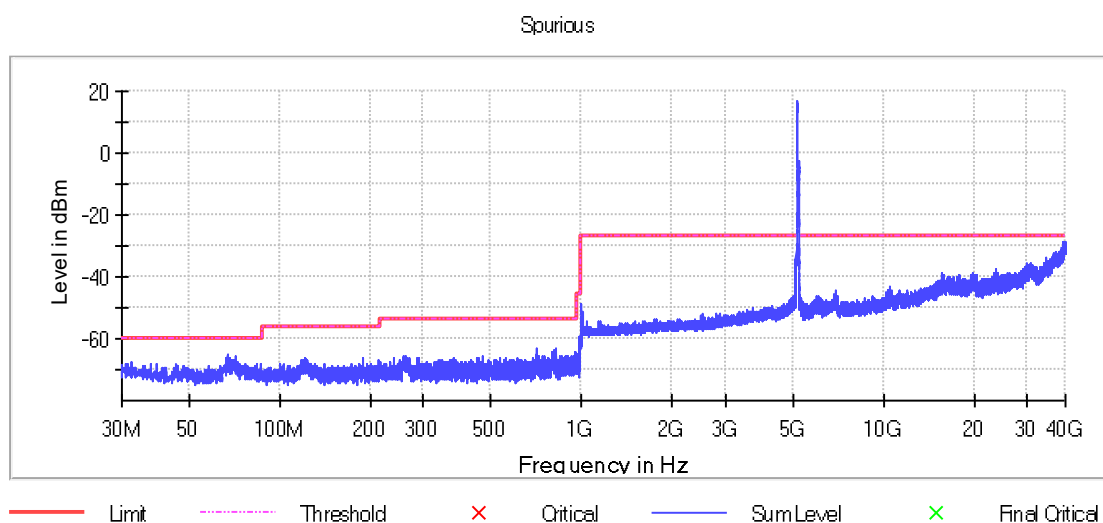
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20). Radiated emissions were measured on both T5IW8 and T5IW11.

Undesirable Emissions were also measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest gain antenna (3.3dBi) according to C63.10, sections 11.12.2.2 and 11.12.2.6. Frequencies below 1000MHz were tested for compliance with 15.209 limits with 100kHz RBW at the intended power set level per channel shown in Section 2.3 and noted below. Measurement graphs show max-peak detector results. Below 1000 MHz, when emissions approach the limit, those frequencies are measured with a quasi-peak detector to determine compliance, and those results will be tabulated below the measurement graph.

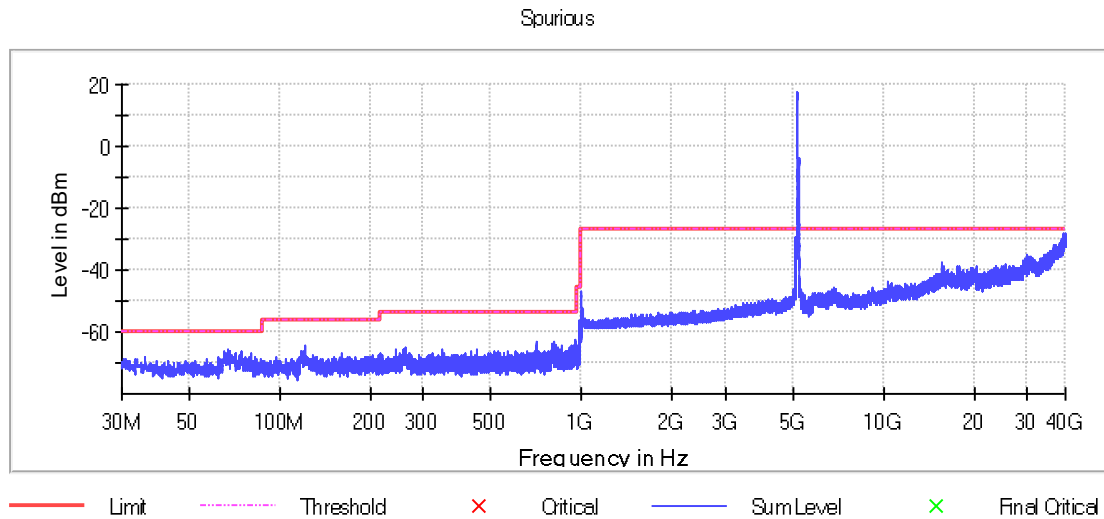
Emissions Transmitting 5180 MHz at Power Level 15:



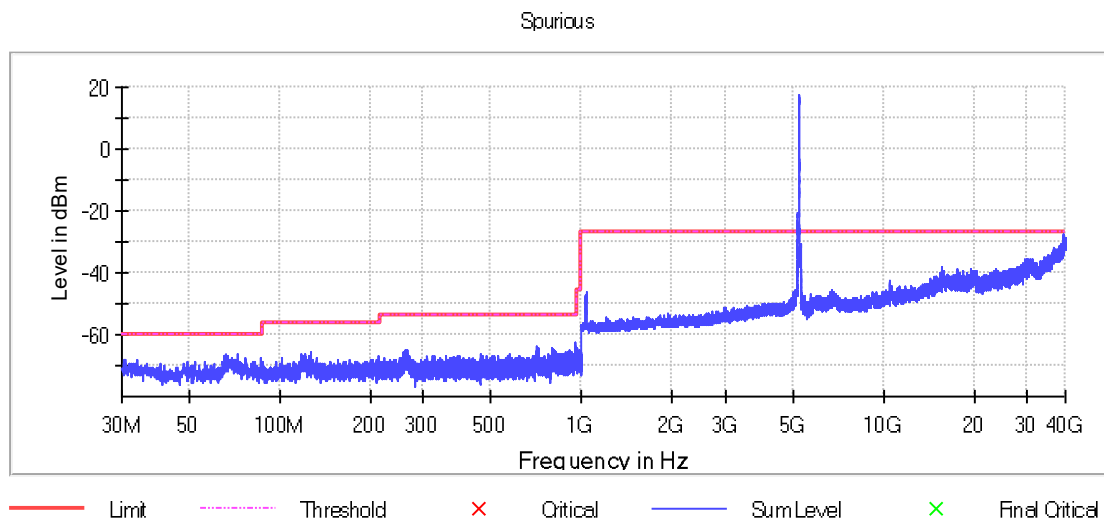
Emissions Transmitting 5200 MHz at Power Level 20:



Emissions Transmitting 5220 MHz at Power Level 20:



Emissions Transmitting 5240 MHz at Power Level 20:



T5IW8 Radiated Emissions Above 1000MHz Transmitting 5180 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10359.9	Peak	Vertical	41.7	14.9	56.6	74.0	-17.4
10358.6	Average	Vertical	29.2	14.9	44.1	54.0	-10.0
10360.7	Peak	Horizontal	43.2	14.9	58.1	74.0	-15.9
10359.9	Average	Horizontal	31.1	14.9	46.0	54.0	-8.0
15528.8	Peak	Vertical	41.6	16.9	58.5	74.0	-15.6
15539.7	Average	Vertical	29.6	16.8	46.4	54.0	-7.6

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15537.6	Peak	Horizontal	43.4	16.8	60.3	74.0	-13.7
15537.5	Average	Horizontal	30.6	16.8	47.4	54.0	-6.6
20692.0	Peak	Vertical	35.4	17.9	53.3	74.0	-20.7
20719.9	Average	Vertical	23.1	17.7	40.8	54.0	-13.2
20712.9	Peak	Horizontal	35.8	17.7	53.5	74.0	-20.5
20719.9	Average	Horizontal	23.7	17.7	41.4	54.0	-12.6
25896.9	Peak	Vertical	31.4	22.8	54.2	74.0	-19.8
25850.1	Average	Vertical	18.1	22.8	40.9	54.0	-13.1
25899.6	Peak	Horizontal	31.6	22.8	54.4	74.0	-19.6
25900.3	Average	Horizontal	19.0	22.8	41.8	54.0	-12.2
31056.2	Peak	Vertical	29.8	27.0	56.7	74.0	-17.3
31088.5	Average	Vertical	15.4	27.2	42.7	54.0	-11.3
31071.7	Peak	Horizontal	30.0	27.1	57.1	74.0	-16.9
31039.9	Average	Horizontal	17.0	26.9	43.9	54.0	-10.2
36283.1	Peak	Vertical	27.5	28.8	56.3	74.0	-17.7
36230.0	Average	Vertical	14.2	28.7	42.9	54.0	-11.1
36262.1	Peak	Horizontal	28.3	28.8	57.1	74.0	-16.9
36230.4	Average	Horizontal	15.3	28.7	44.0	54.0	-10.0

T5IW8 Radiated Emissions Above 1000MHz Transmitting 5220 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10438.0	Peak	Vertical	39.7	14.9	54.6	74.0	-19.4
10436.6	Average	Vertical	26.8	14.9	41.7	54.0	-12.3
10439.9	Peak	Horizontal	41.8	14.9	56.6	74.0	-17.4
10439.9	Average	Horizontal	28.7	14.9	43.6	54.0	-10.5
15656.1	Peak	Vertical	42.5	16.2	58.7	74.0	-15.3
15660.1	Average	Vertical	29.7	16.2	45.8	54.0	-8.2
15643.4	Peak	Horizontal	44.6	16.3	60.8	74.0	-13.2
15661.1	Average	Horizontal	32.1	16.2	48.2	54.0	-5.8
20885.6	Peak	Vertical	35.6	16.7	52.3	74.0	-21.7

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
20879.9	Average	Vertical	22.9	16.7	39.6	54.0	-14.4
20829.4	Peak	Horizontal	36.0	17.0	53.0	74.0	-21.0
20879.8	Average	Horizontal	23.2	16.7	39.9	54.0	-14.1
26092.8	Peak	Vertical	30.8	22.5	53.3	74.0	-20.8
26051.9	Average	Vertical	17.5	22.6	40.1	54.0	-13.9
26091.9	Peak	Horizontal	31.4	22.5	53.9	74.0	-20.1
26097.5	Average	Horizontal	18.6	22.5	41.1	54.0	-12.9
31391.5	Peak	Vertical	26.9	28.4	55.3	74.0	-18.7
31367.9	Average	Vertical	13.2	28.3	41.5	54.0	-12.5
31320.7	Peak	Horizontal	26.4	28.2	54.6	74.0	-19.4
31377.4	Average	Horizontal	13.6	28.4	42.0	54.0	-12.0
36608.0	Peak	Vertical	26.4	28.9	55.3	74.0	-18.7
36598.4	Average	Vertical	13.4	28.9	42.3	54.0	-11.7
36541.5	Peak	Horizontal	27.2	29.0	56.2	74.0	-17.8
36589.1	Average	Horizontal	13.8	28.9	42.7	54.0	-11.3

T5IW8 Radiated Emissions Above 1000MHz Transmitting 5240 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10475.3	Peak	Vertical	39.1	14.9	54.0	74.0	-20.0
10477.2	Average	Vertical	26.9	14.9	41.8	54.0	-12.3
10479.3	Peak	Horizontal	40.8	14.9	55.8	74.0	-18.3
10481.7	Average	Horizontal	28.3	14.9	43.2	54.0	-10.8
15713.9	Peak	Vertical	42.2	15.9	58.1	74.0	-15.9
15721.4	Average	Vertical	28.8	15.8	44.6	54.0	-9.4
15713.7	Peak	Horizontal	45.2	15.9	61.0	74.0	-13.0
15715.9	Average	Horizontal	31.6	15.8	47.5	54.0	-6.5
20947.2	Peak	Vertical	33.6	16.8	50.5	74.0	-23.6
20960.0	Average	Vertical	21.3	16.9	38.2	54.0	-15.8
20962.9	Peak	Horizontal	33.5	16.9	50.4	74.0	-23.6
20960.1	Average	Horizontal	21.3	16.9	38.2	54.0	-15.8

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
26233.0	Peak	Vertical	30.5	22.0	52.5	74.0	-21.5
26204.4	Average	Vertical	16.7	22.1	38.7	54.0	-15.3
26179.2	Peak	Horizontal	30.1	22.2	52.3	74.0	-21.7
26198.8	Average	Horizontal	17.2	22.1	39.3	54.0	-14.7
31517.9	Peak	Vertical	30.9	28.3	59.2	74.0	-14.8
31468.1	Average	Vertical	17.0	28.4	45.5	54.0	-8.6
31460.5	Peak	Horizontal	30.7	28.4	59.1	74.0	-14.9
31450.8	Average	Horizontal	17.4	28.5	45.8	54.0	-8.2
36613.9	Peak	Vertical	30.0	28.9	58.9	74.0	-15.1
36708.4	Average	Vertical	16.0	28.7	44.6	54.0	-9.4
36724.5	Peak	Horizontal	29.7	28.6	58.4	74.0	-15.6
36727.7	Average	Horizontal	16.1	28.6	44.8	54.0	-9.3

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5180 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10353.5	Peak	Vertical	36.8	14.9	51.7	74.0	-22.3
10358.7	Average	Vertical	24.1	14.9	39.0	54.0	-15.0
10354.7	Peak	Horizontal	38.0	14.9	52.9	74.0	-21.1
10356.9	Average	Horizontal	25.6	14.9	40.5	54.0	-13.5
15520.0	Peak	Vertical	37.1	16.9	54.0	74.0	-20.0
15530.1	Average	Vertical	23.4	16.9	40.3	54.0	-13.7
15531.2	Peak	Horizontal	36.4	16.9	53.3	74.0	-20.8
15536.0	Average	Horizontal	23.9	16.8	40.7	54.0	-13.3
20687.4	Peak	Vertical	36.9	17.8	54.7	74.0	-19.3
20720.0	Average	Vertical	24.1	17.7	41.8	54.0	-12.2
20683.3	Peak	Horizontal	38.0	17.8	55.8	74.0	-18.2
20719.6	Average	Horizontal	24.9	17.7	42.6	54.0	-11.4
25925.7	Peak	Vertical	32.5	22.8	55.4	74.0	-18.6
25897.8	Average	Vertical	19.0	22.8	41.8	54.0	-12.2
25936.3	Peak	Horizontal	32.5	22.8	55.3	74.0	-18.7

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
25897.5	Average	Horizontal	20.1	22.8	42.9	54.0	-11.1
31000.6	Peak	Vertical	30.0	26.6	56.6	74.0	-17.4
31000.3	Average	Vertical	16.5	26.6	43.1	54.0	-10.9
31062.7	Peak	Horizontal	28.8	27.0	55.8	74.0	-18.2
31067.9	Average	Horizontal	14.9	27.1	42.0	54.0	-12.0
36208.6	Peak	Vertical	27.5	28.7	56.2	74.0	-17.8
36283.3	Average	Vertical	13.9	28.8	42.7	54.0	-11.3
36309.6	Peak	Horizontal	26.7	28.9	55.5	74.0	-18.5
36276.2	Average	Horizontal	14.2	28.8	43.0	54.0	-11.0

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5220 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10424.2	Peak	Vertical	37.2	14.9	52.1	74.0	-21.9
10441.6	Average	Vertical	23.7	14.9	38.6	54.0	-15.4
10445.0	Peak	Horizontal	37.9	14.9	52.8	74.0	-21.2
10436.9	Average	Horizontal	24.7	14.9	39.6	54.0	-14.4
15666.8	Peak	Vertical	37.4	16.1	53.5	74.0	-20.5
15650.7	Average	Vertical	23.6	16.2	39.8	54.0	-14.2
15650.7	Peak	Horizontal	37.2	16.2	53.4	74.0	-20.6
15657.4	Average	Horizontal	24.1	16.2	40.3	54.0	-13.7
20866.9	Peak	Vertical	37.5	16.8	54.3	74.0	-19.7
20879.9	Average	Vertical	23.4	16.7	40.2	54.0	-13.9
20935.2	Peak	Horizontal	37.3	16.8	54.1	74.0	-19.9
20879.5	Average	Horizontal	24.0	16.7	40.8	54.0	-13.2
26066.9	Peak	Vertical	32.0	22.6	54.6	74.0	-19.4
26088.5	Average	Vertical	18.9	22.5	41.4	54.0	-12.6
26036.7	Peak	Horizontal	33.1	22.7	55.8	74.0	-18.2
26102.3	Average	Horizontal	19.5	22.5	41.9	54.0	-12.1
31329.9	Peak	Vertical	26.5	28.2	54.7	74.0	-19.3
31399.9	Average	Vertical	13.8	28.5	42.2	54.0	-11.8

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
31355.1	Peak	Horizontal	26.8	28.3	55.1	74.0	-18.9
31349.0	Average	Horizontal	13.4	28.3	41.7	54.0	-12.3
36519.0	Peak	Vertical	27.5	29.1	56.6	74.0	-17.4
36548.0	Average	Vertical	13.9	29.0	42.9	54.0	-11.1
36584.9	Peak	Horizontal	28.1	28.9	57.0	74.0	-17.0
36585.6	Average	Horizontal	14.0	28.9	42.9	54.0	-11.1

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5240 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10471.8	Peak	Vertical	37.4	14.9	52.3	74.0	-21.7
10481.4	Average	Vertical	23.8	14.9	38.7	54.0	-15.3
10470.6	Peak	Horizontal	37.5	14.9	52.4	74.0	-21.6
10480.4	Average	Horizontal	24.8	14.9	39.7	54.0	-14.3
15726.8	Peak	Vertical	36.3	15.8	52.1	74.0	-21.9
15696.3	Average	Vertical	23.4	15.9	39.4	54.0	-14.6
15696.5	Peak	Horizontal	37.1	15.9	53.1	74.0	-20.9
15718.3	Average	Horizontal	23.8	15.8	39.7	54.0	-14.4
21000.6	Peak	Vertical	36.6	17.0	53.6	74.0	-20.4
20959.4	Average	Vertical	23.0	16.9	39.9	54.0	-14.1
20921.5	Peak	Horizontal	36.8	16.7	53.6	74.0	-20.4
20959.6	Average	Horizontal	24.0	16.9	40.8	54.0	-13.2
26174.1	Peak	Vertical	32.3	22.2	54.5	74.0	-19.5
26192.1	Average	Vertical	19.1	22.1	41.3	54.0	-12.7
26214.6	Peak	Horizontal	32.6	22.1	54.7	74.0	-19.3
26197.8	Average	Horizontal	19.4	22.1	41.5	54.0	-12.5
31441.3	Peak	Vertical	28.0	28.5	56.5	74.0	-17.5
31444.1	Average	Vertical	14.3	28.5	42.8	54.0	-11.2
31475.5	Peak	Horizontal	28.3	28.4	56.7	74.0	-17.3
31473.1	Average	Horizontal	14.7	28.4	43.1	54.0	-10.9
36640.5	Peak	Vertical	26.9	28.8	55.7	74.0	-18.3

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
36699.1	Average	Vertical	13.8	28.7	42.5	54.0	-11.6
36738.2	Peak	Horizontal	27.4	28.6	56.0	74.0	-18.0
36673.5	Average	Horizontal	13.7	28.7	42.4	54.0	-11.6

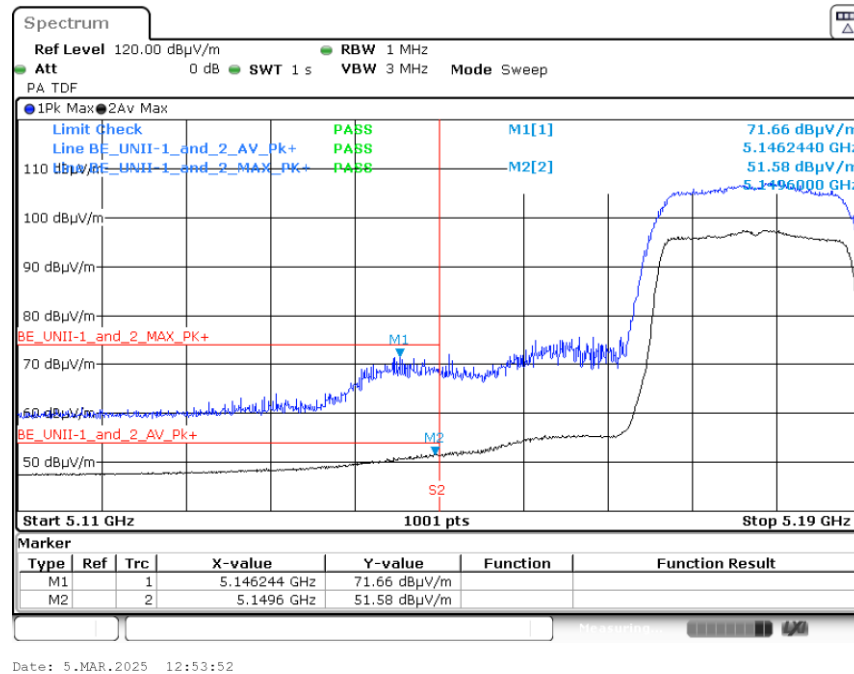
Result

The EUT complied with the specification limit by a margin of 5.8 dB.

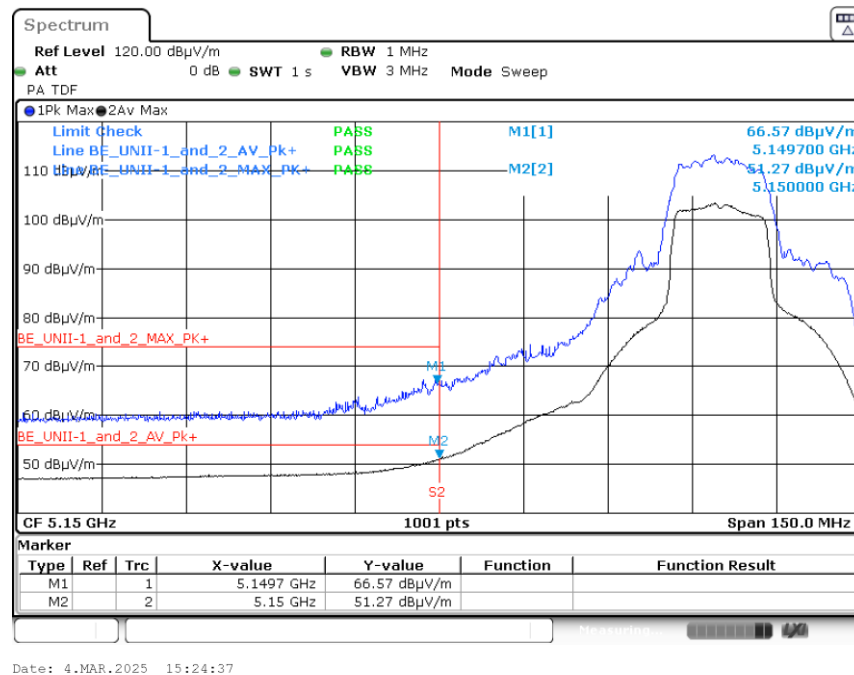
6.2.2.5 §15.407(b) Undesirable Emissions – Band Edges (UNII 1)

Band Edge were tested radiated at or above the intended power setting per channel.

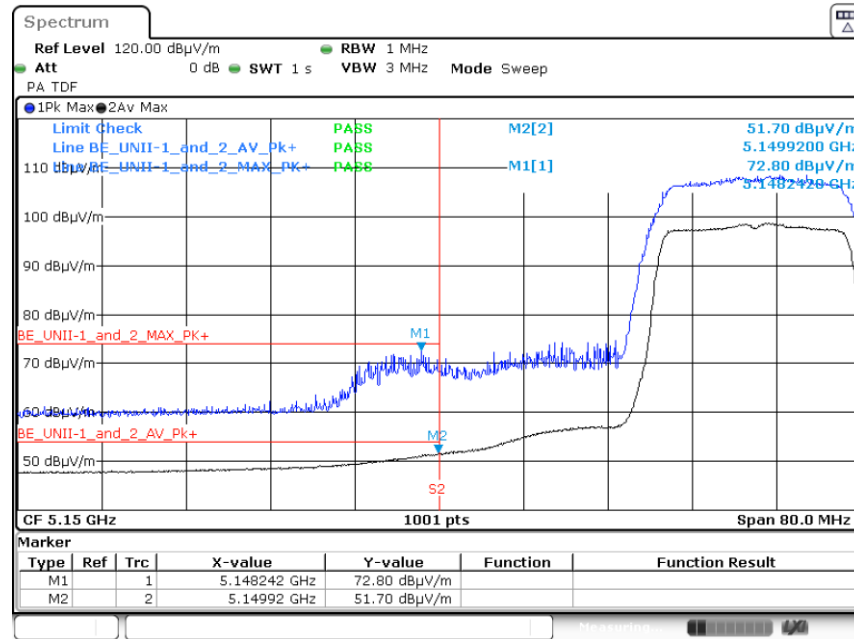
T5IW8 Transmitting on 5180 MHz (Power Level 16):



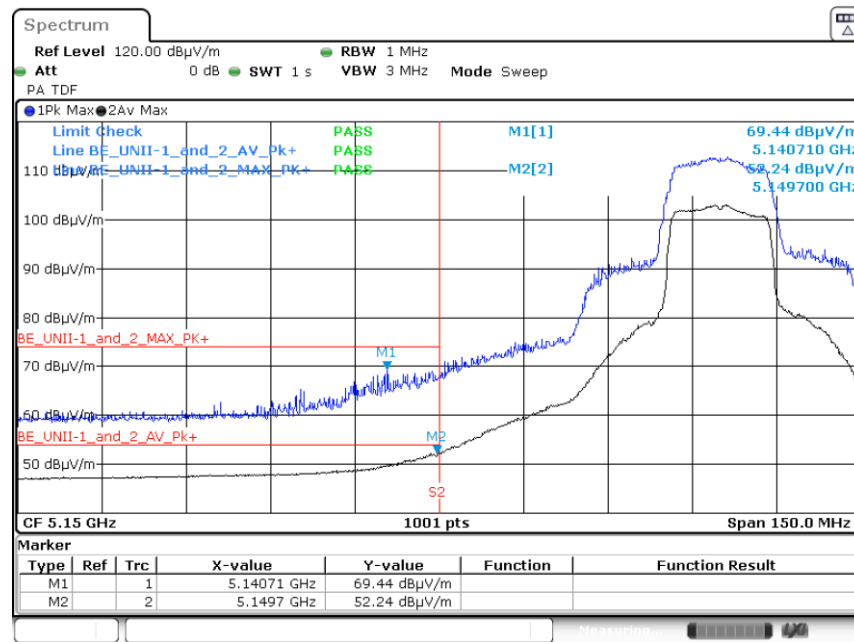
T5IW8 Transmitting on 5200 MHz (Power Level 20):



T5IW11 Transmitting on 5180 MHz (Power Level 15):



T5IW11 Transmitting on 5200 MHz (Power Level 20):



Result

The EUT complied with the specification.

6.2.2.6 §15.407(a)(1) Power Limits: Outdoor EIRP (UNII 1)

EUT does not operate outdoors.

Result

In the configurations tested the EUT complied with the requirements of the specification.

6.2.3 802.11n-40 Mode

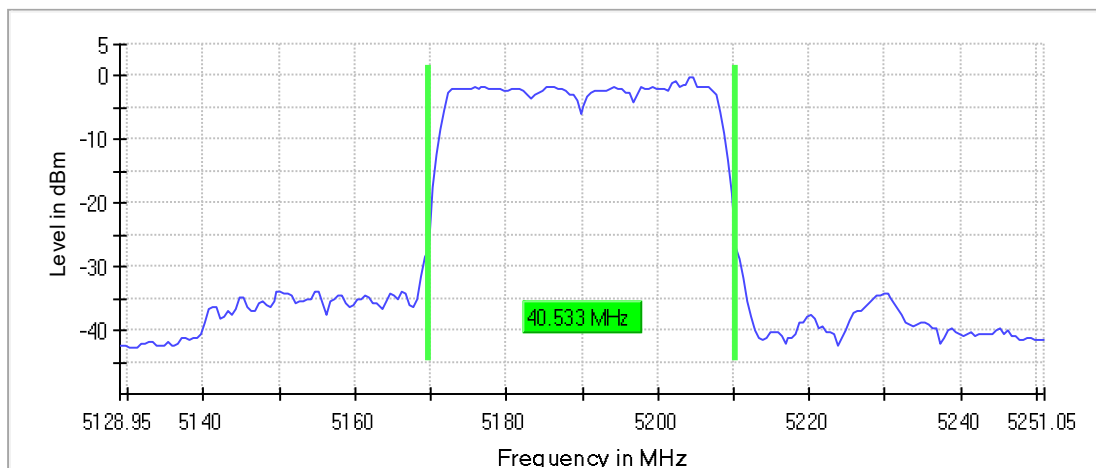
6.2.3.1 §15.403 26dB Bandwidth (UNII 1)

Bandwidths were measured at the intended power set level per channel.

Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5190	40.5
5230	67.1

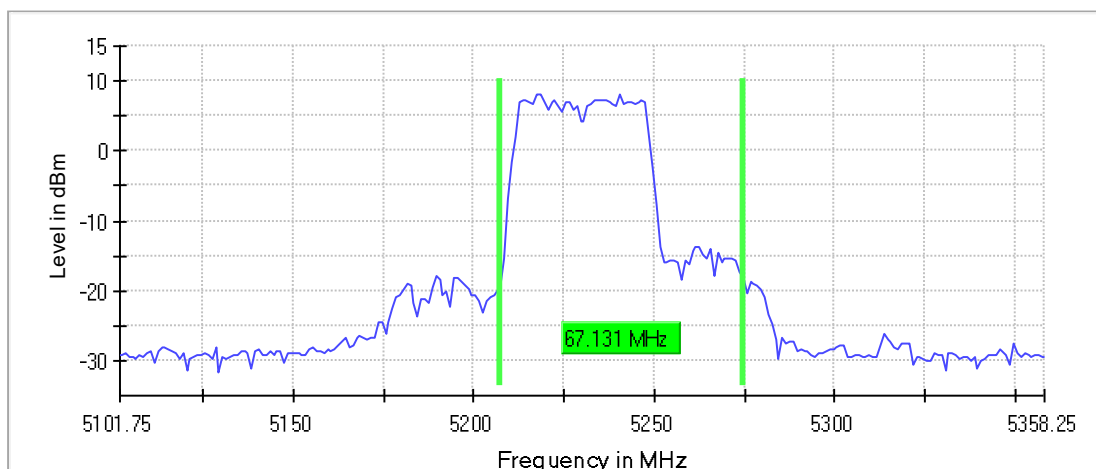
Table 8: 26 dB Emissions Bandwidth

26 dB Bandwidth



Graph 25: 26 dB Emissions Bandwidth Transmitting at 5190 MHz

26 dB Bandwidth



Graph 26: 26 dB Emissions Bandwidth Transmitting at 5230 MHz

6.2.3.2 §15.407(a) Power Limits: Maximum Conducted Output Power (UNII 1)

The following tables show the adjusted conducted power limits.

UNII-1 Conducted Power Limits

Maximum conducted power limits for the UNII-1 band are adjusted based on the isotropic antenna gain, wireless architecture, and the mode of operation.

Wireless Architecture	Operating Mode	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	Client	3.3	6	0.0	24	24

Table 9: UNII-1 maximum conducted power limits based upon antenna gain and operational mode.

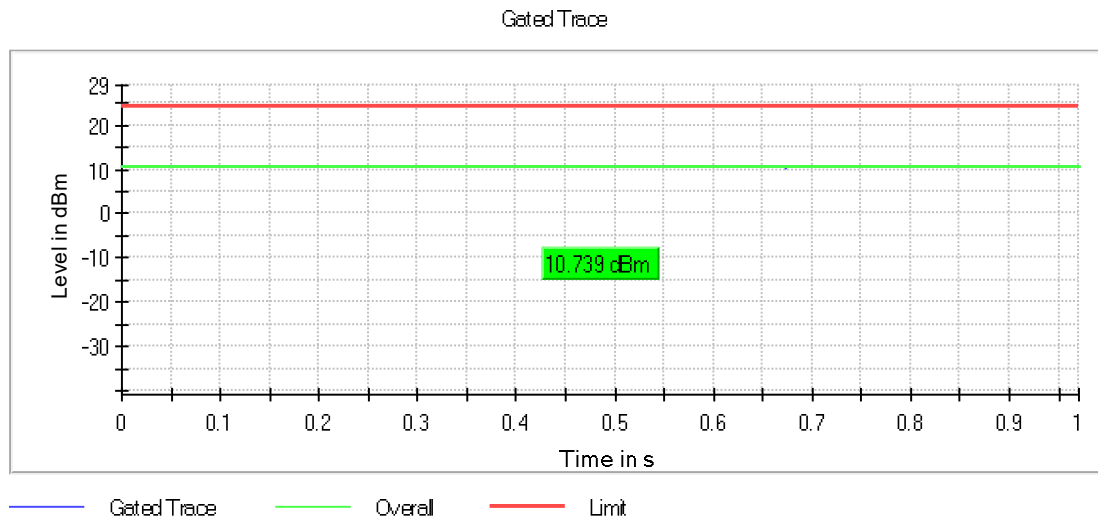
Power was measured for the low, middle, and high channel at the maximum power level possible (20) using KDB 789033 D02 method PM-G and a gated power meter which does not require an average correction factor.

UNII-1 Conducted Power Measurement – AP Architecture, Client Mode

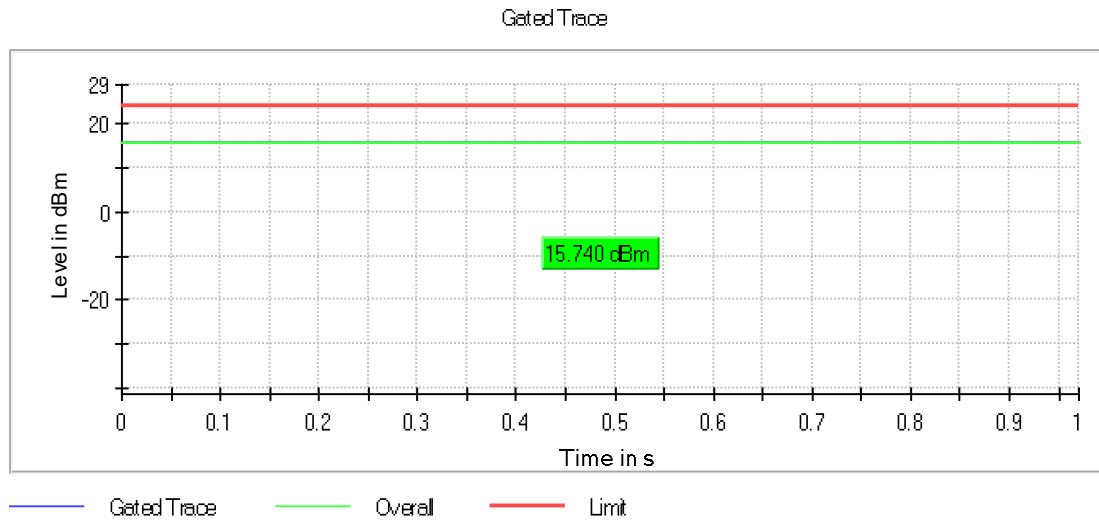
Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)
5190	10.7	24	-13.3
5230	15.7	24	-8.3

Result

In the configurations tested the EUT complied with the requirements of the specification with a margin of 8.3 dB.



Graph 27: PM-G Power Transmitting at 5190 MHz (Power Level 12)



Graph 28: PM-G Power Transmitting at 5230 MHz (Power Level 18)

6.2.3.3 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 1)

The following tables show the adjusted power spectral density limits.

UNII-1 Power Spectral Density Limits

Power spectral density limits for the UNII-1 band are adjusted based on isotropic antenna gain, wireless architecture, and the mode of operation.

Wireless Architecture	Operational Mode	Antenna Gain (dBi)	Default Gain (dBi)	Limit Adjustment (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	Client	3.3	6	0	11	11

Table 10: UNII-1 Power spectral density limits based upon antenna gain and operational mode.

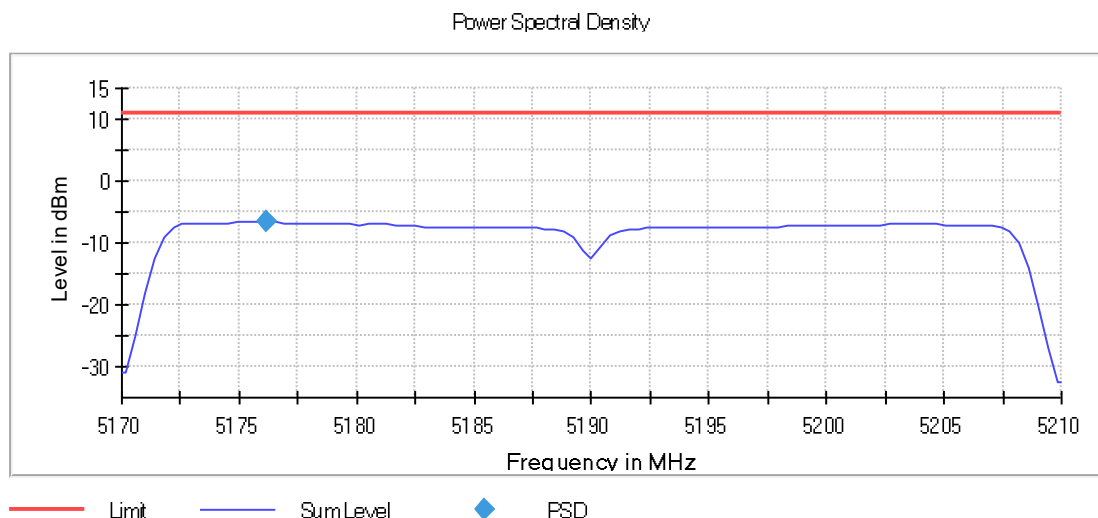
PSD was measured at the intended power set level per channel using Method SA-1 Alternative. See Section 6.2.3 for measurement graphics.

UNII-1 Power Spectral Density Measurements – AP Architecture, Client Mode

Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5190	-6.6	11	-17.6
5230	-1.6	11	-12.6

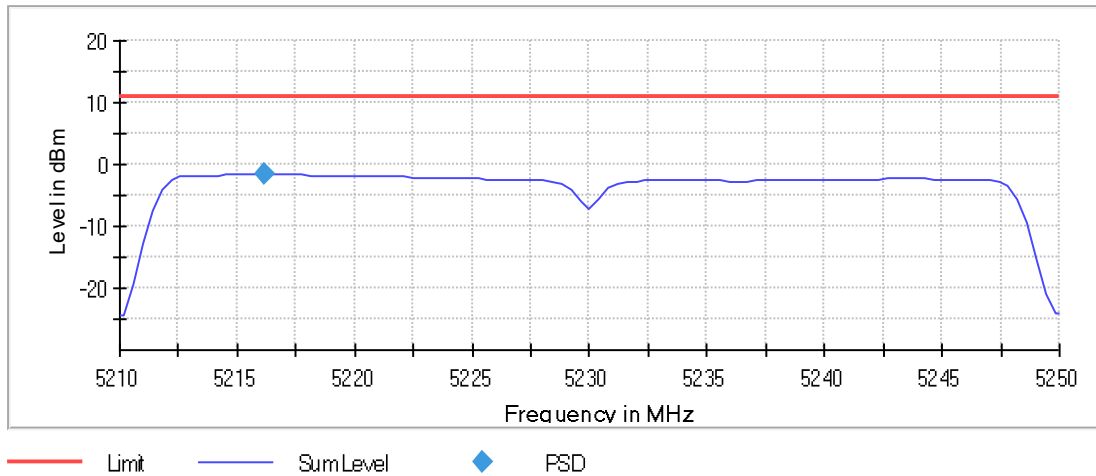
Result

In the configurations tested the EUT complied with the requirements of the specification with a margin of 12.6 dB.



Graph 29: PSD Transmitting at 5190 MHz (Power Level 12)

Power Spectral Density



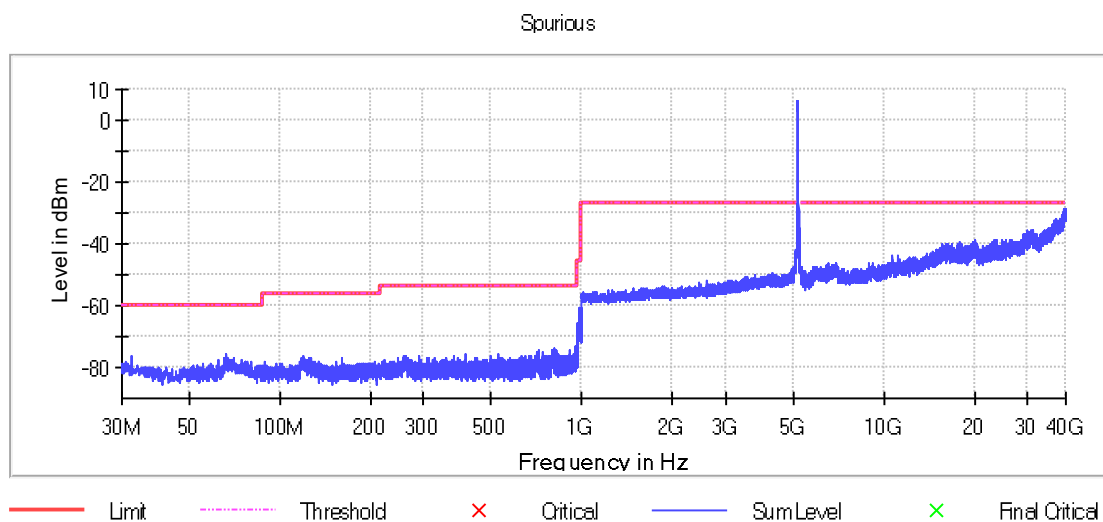
Graph 30: PSD Transmitting at 5230 MHz (Power Level 18)

6.2.3.4 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 1)

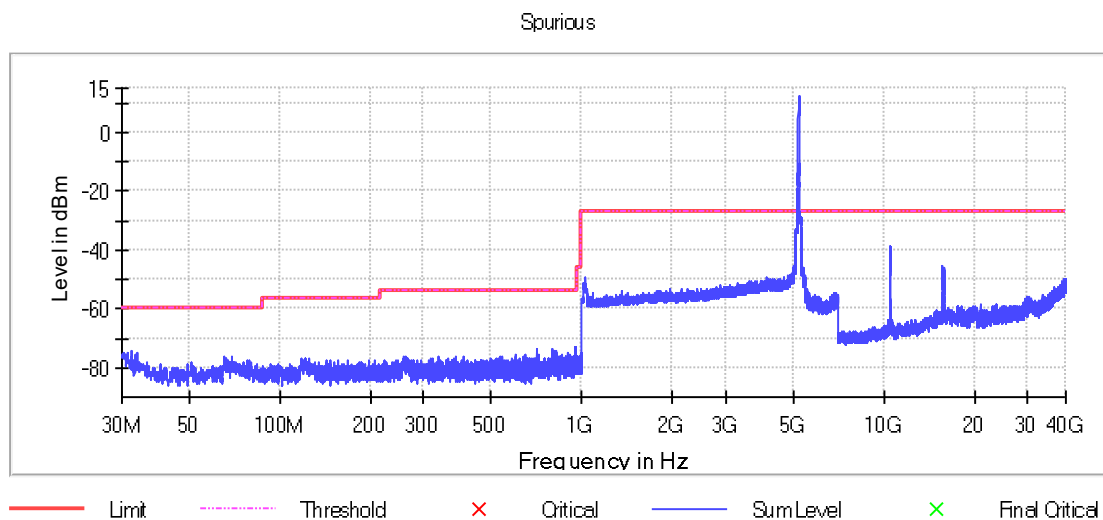
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20). Radiated emissions were measured on both T5IW8 and T5IW11.

Undesirable Emissions were also measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest gain antenna (3.3dBi) according to C63.10, sections 11.12.2.2 and 11.12.2.6. Frequencies below 1000MHz were tested for compliance with 15.209 limits with 100kHz RBW at the intended power set level per channel shown in Section 2.3 and noted below. Measurement graphs show max-peak detector results. Below 1000 MHz, when emissions approach the limit, those frequencies are measured with a quasi-peak detector to determine compliance, and those results will be tabulated below the measurement graph.

Emissions Transmitting 5190 MHz at Power Level 12:



Emissions Transmitting 5230 MHz at Power Level 18:



T5IW8 Radiated Emissions Above 1000MHz Transmitting 5190 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10381.2	Peak	Vertical	40.7	14.9	55.6	74.0	-18.4
10379.1	Average	Vertical	27.1	14.9	42.0	54.0	-12.0
10376.6	Peak	Horizontal	41.5	14.9	56.4	74.0	-17.6
10378.9	Average	Horizontal	28.9	14.9	43.8	54.0	-10.2
15557.3	Peak	Vertical	40.1	16.8	56.8	74.0	-17.2
15560.0	Average	Vertical	27.7	16.7	44.5	54.0	-9.5
15560.7	Peak	Horizontal	41.0	16.7	57.8	74.0	-16.2
15573.3	Average	Horizontal	28.7	16.7	45.4	54.0	-8.6
20701.0	Peak	Vertical	34.8	17.8	52.6	74.0	-21.4
20759.8	Average	Vertical	22.6	17.5	40.0	54.0	-14.0
20695.8	Peak	Horizontal	36.3	17.8	54.2	74.0	-19.8
20760.0	Average	Horizontal	22.8	17.5	40.3	54.0	-13.7
25898.8	Peak	Vertical	31.8	22.8	54.6	74.0	-19.4
25913.3	Average	Vertical	18.1	22.8	41.0	54.0	-13.1
25895.0	Peak	Horizontal	31.5	22.8	54.3	74.0	-19.7
25941.8	Average	Horizontal	18.4	22.8	41.3	54.0	-12.7
31135.2	Peak	Vertical	27.9	27.5	55.4	74.0	-18.6
31069.5	Average	Vertical	15.5	27.1	42.6	54.0	-11.4
31076.7	Peak	Horizontal	28.9	27.1	56.0	74.0	-18.0
31020.3	Average	Horizontal	16.7	26.7	43.4	54.0	-10.6
36376.2	Peak	Vertical	28.2	29.0	57.2	74.0	-16.8
36375.9	Average	Vertical	14.4	29.0	43.4	54.0	-10.6
36264.6	Peak	Horizontal	29.8	28.8	58.5	74.0	-15.5
36242.5	Average	Horizontal	15.1	28.7	43.8	54.0	-10.2

T5IW8 Radiated Emissions Above 1000MHz Transmitting 5230 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
10453.6	Peak	Vertical	38.5	14.9	53.4	74.0	-20.6
10461.0	Average	Vertical	25.6	14.9	40.5	54.0	-13.5

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10459.2	Peak	Horizontal	39.7	14.9	54.6	74.0	-19.4
10460.6	Average	Horizontal	27.6	14.9	42.5	54.0	-11.5
15681.6	Peak	Vertical	41.1	16.0	57.1	74.0	-16.9
15680.1	Average	Vertical	27.8	16.0	43.8	54.0	-10.2
15699.2	Peak	Horizontal	42.3	15.9	58.2	74.0	-15.8
15686.7	Average	Horizontal	29.9	16.0	45.9	54.0	-8.1
20948.4	Peak	Vertical	34.7	16.8	51.5	74.0	-22.5
20919.8	Average	Vertical	22.1	16.7	38.8	54.0	-15.2
20826.2	Peak	Horizontal	35.0	17.1	52.1	74.0	-21.9
20920.0	Average	Horizontal	22.1	16.7	38.8	54.0	-15.2
26055.0	Peak	Vertical	31.8	22.6	54.4	74.0	-19.6
26047.8	Average	Vertical	18.0	22.7	40.7	54.0	-13.3
26068.0	Peak	Horizontal	32.5	22.6	55.1	74.0	-18.9
26154.8	Average	Horizontal	18.3	22.3	40.6	54.0	-13.4
31469.7	Peak	Vertical	28.5	28.4	57.0	74.0	-17.0
31473.6	Average	Vertical	15.0	28.4	43.4	54.0	-10.6
31406.7	Peak	Horizontal	28.3	28.5	56.8	74.0	-17.2
31410.6	Average	Horizontal	14.8	28.5	43.3	54.0	-10.7
36547.0	Peak	Vertical	28.4	29.0	57.4	74.0	-16.6
36564.5	Average	Vertical	14.8	29.0	43.7	54.0	-10.3
36625.4	Peak	Horizontal	29.0	28.8	57.8	74.0	-16.2
36596.4	Average	Horizontal	15.1	28.9	44.0	54.0	-10.0

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5190 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10379.0	Peak	Vertical	40.4	14.9	55.3	74.0	-18.7
10379.0	Average	Vertical	28.1	14.9	43.0	54.0	-11.0
10352.4	Peak	Horizontal	39.7	14.9	54.6	74.0	-19.4
10378.5	Average	Horizontal	27.2	14.9	42.1	54.0	-11.9
15564.3	Peak	Vertical	37.2	16.7	53.9	74.0	-20.1

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15559.8	Average	Vertical	24.9	16.7	41.7	54.0	-12.4
15568.8	Peak	Horizontal	37.5	16.7	54.2	74.0	-19.8
15556.5	Average	Horizontal	24.8	16.8	41.5	54.0	-12.5
20681.4	Peak	Vertical	36.1	17.8	53.9	74.0	-20.1
20759.6	Average	Vertical	22.7	17.5	40.2	54.0	-13.8
20710.6	Peak	Horizontal	36.2	17.7	54.0	74.0	-20.0
20759.8	Average	Horizontal	22.8	17.5	40.3	54.0	-13.7
25894.5	Peak	Vertical	32.2	22.8	55.1	74.0	-18.9
25944.5	Average	Vertical	18.9	22.8	41.7	54.0	-12.3
25950.5	Peak	Horizontal	32.5	22.8	55.3	74.0	-18.7
25943.0	Average	Horizontal	19.3	22.8	42.1	54.0	-11.9
31046.4	Peak	Vertical	30.4	26.9	57.3	74.0	-16.7
31004.4	Average	Vertical	17.6	26.6	44.2	54.0	-9.8
31020.9	Peak	Horizontal	30.8	26.7	57.6	74.0	-16.5
31004.7	Average	Horizontal	17.8	26.6	44.3	54.0	-9.7
36225.4	Peak	Vertical	29.5	28.7	58.2	74.0	-15.8
36254.8	Average	Vertical	15.6	28.8	44.4	54.0	-9.6
36331.1	Peak	Horizontal	28.8	28.9	57.7	74.0	-16.3
36326.5	Average	Horizontal	15.5	28.9	44.4	54.0	-9.6

T5IW11 Radiated Emissions Above 1000MHz Transmitting 5230 MHz at Power Level 20:

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10444.3	Peak	Vertical	39.4	14.9	54.3	74.0	-19.7
10460.7	Average	Vertical	26.8	14.9	41.7	54.0	-12.3
10457.2	Peak	Horizontal	39.2	14.9	54.1	74.0	-19.9
10458.8	Average	Horizontal	26.8	14.9	41.7	54.0	-12.4
15647.4	Peak	Vertical	36.3	16.2	52.5	74.0	-21.5
15683.6	Average	Vertical	24.1	16.0	40.1	54.0	-13.9
15680.7	Peak	Horizontal	36.8	16.0	52.9	74.0	-21.2
15680.1	Average	Horizontal	24.4	16.0	40.4	54.0	-13.6

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
20884.4	Peak	Vertical	35.3	16.7	52.0	74.0	-22.0
20919.4	Average	Vertical	22.4	16.7	39.1	54.0	-14.9
20986.0	Peak	Horizontal	35.8	17.0	52.8	74.0	-21.2
20919.6	Average	Horizontal	22.8	16.7	39.5	54.0	-14.5
26077.5	Peak	Vertical	32.0	22.6	54.5	74.0	-19.5
26100.8	Average	Vertical	18.7	22.5	41.2	54.0	-12.8
26163.5	Peak	Horizontal	32.3	22.2	54.5	74.0	-19.5
26137.5	Average	Horizontal	19.2	22.3	41.5	54.0	-12.5
31401.9	Peak	Vertical	29.6	28.5	58.0	74.0	-16.0
31361.4	Average	Vertical	14.8	28.3	43.1	54.0	-10.9
31440.3	Peak	Horizontal	29.8	28.5	58.3	74.0	-15.8
31439.7	Average	Horizontal	15.9	28.5	44.4	54.0	-9.6
36625.1	Peak	Vertical	29.4	28.8	58.2	74.0	-15.8
36624.4	Average	Vertical	15.7	28.8	44.5	54.0	-9.5
36630.3	Peak	Horizontal	29.0	28.8	57.8	74.0	-16.2
36708.0	Average	Horizontal	15.9	28.7	44.6	54.0	-9.5

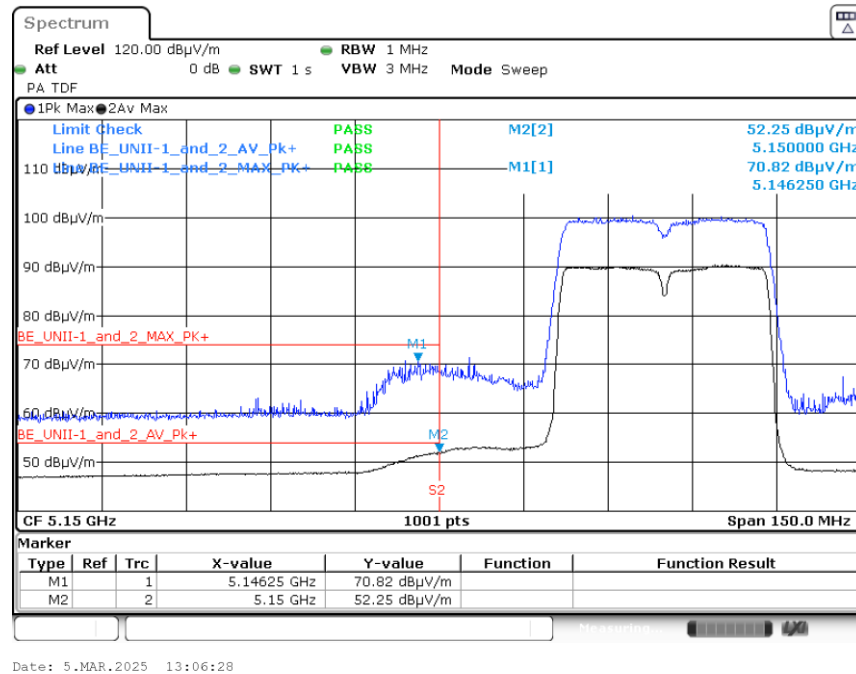
Result

The EUT complied with the specification limit by a margin of 8.1 dB.

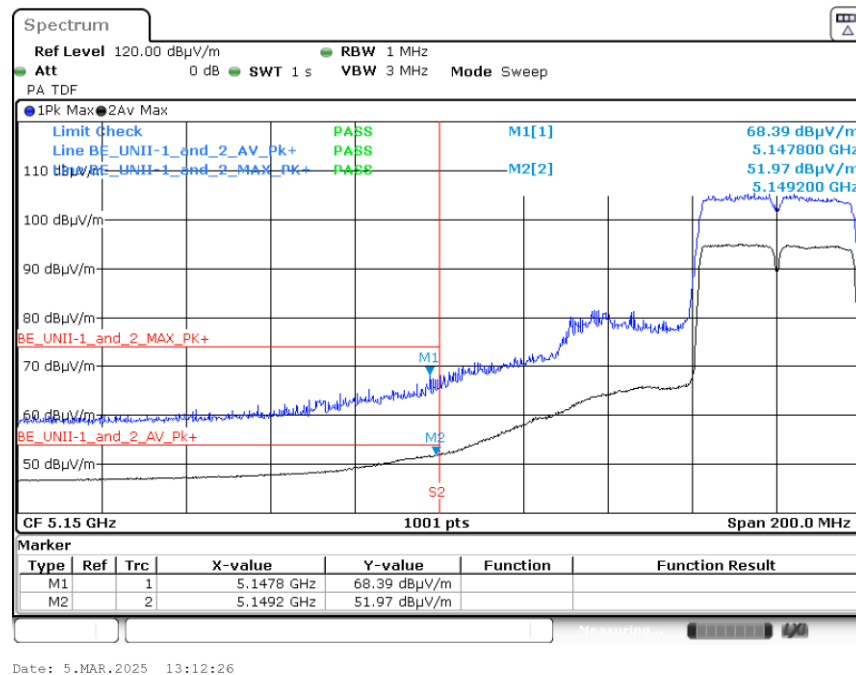
6.2.3.5 §15.407(b) Undesirable Emissions – Band Edges (UNII 1)

Band Edge were tested radiated at or above the intended power setting per channel.

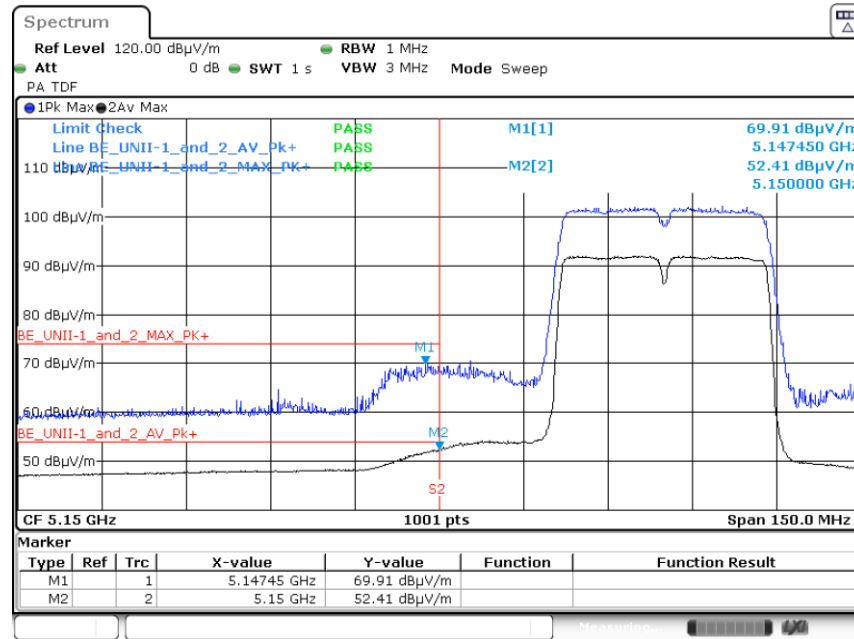
T5IW8 Transmitting on 5190 MHz (Power Level 12):



T5IW8 Transmitting on 5230 MHz (Power Level 18):

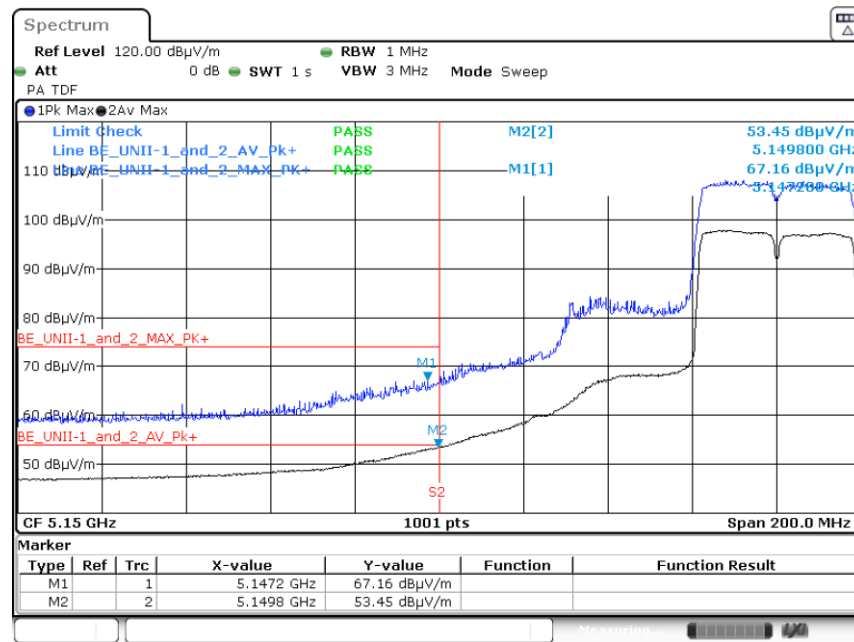


T5IW11 Transmitting on 5190 MHz (Power Level 12):



Date: 4.MAR.2025 15:20:36

T5IW11 Transmitting on 5230 MHz (Power Level 18):



Date: 4.MAR.2025 15:32:56

Result

The EUT complied with the specification.

6.2.3.6 §15.407(a)(1) Power Limits: Outdoor EIRP (UNII 1)

EUT does not operate outdoors.

Result

In the configurations tested the EUT complied with the requirements of the specification.

6.3 UNII 2 Band (5250-5725 MHz)

6.3.1 802.11a Mode

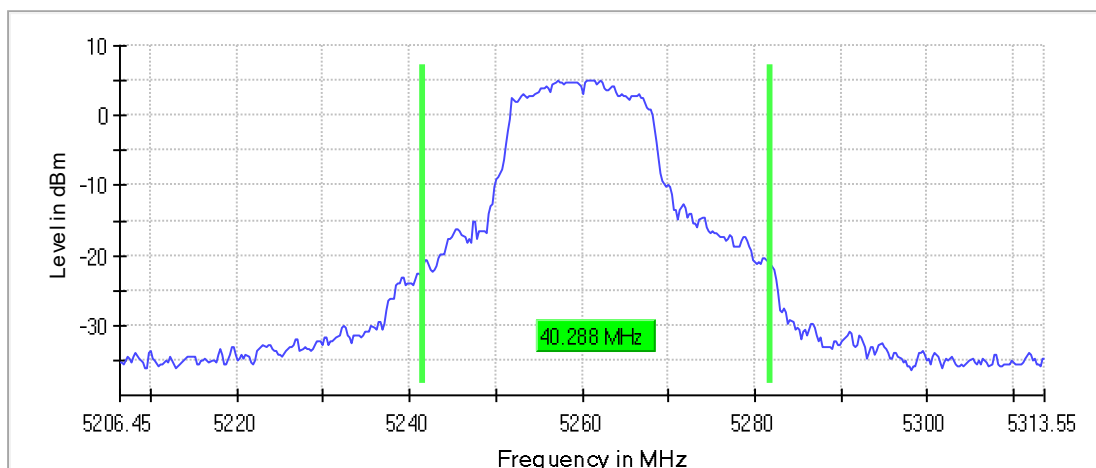
6.3.1.1 §15.403 26dB Bandwidth (UNII 2)

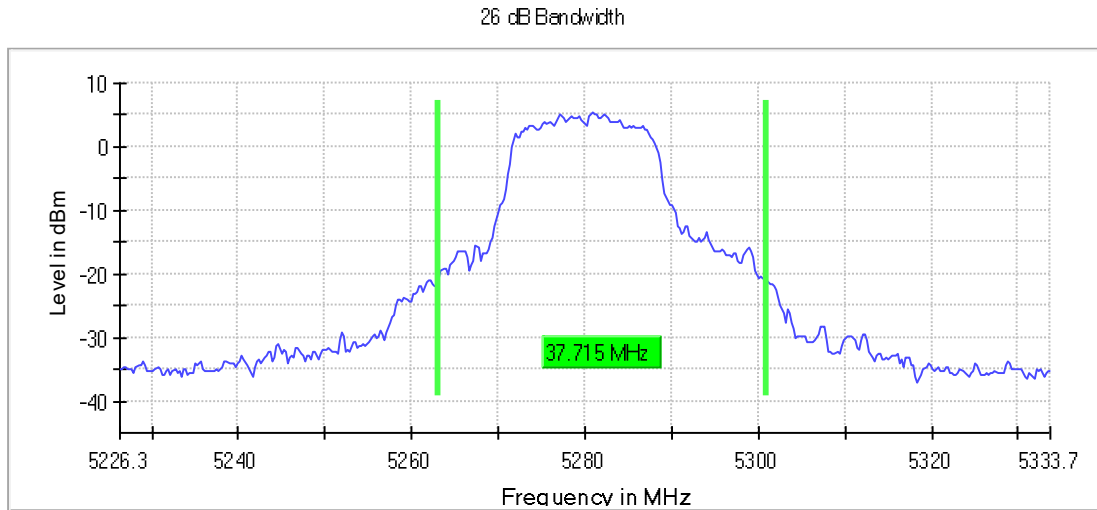
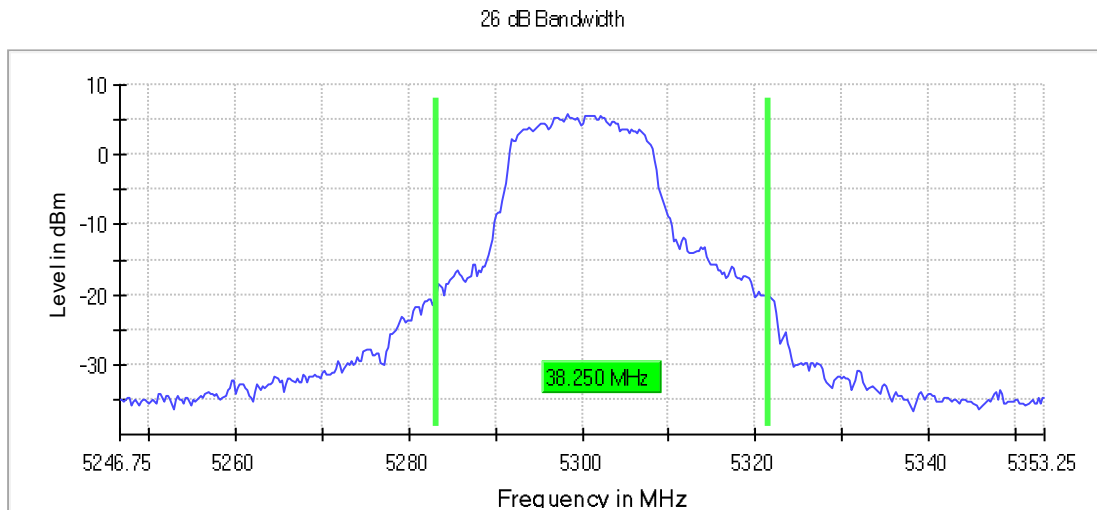
Bandwidths were measured at the intended power set level per channel.

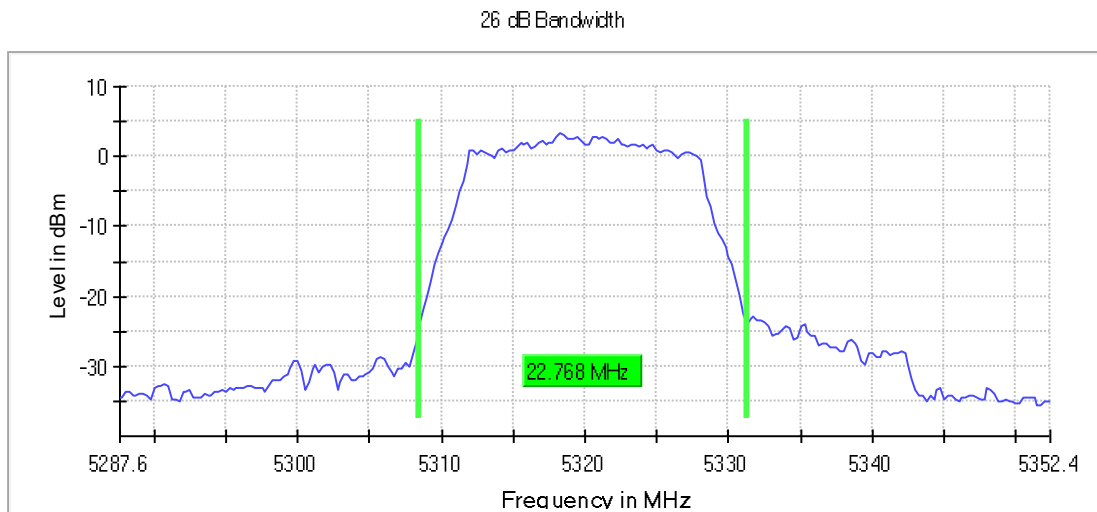
Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5260	40.3
5280	37.7
5300	38.3
5320	22.8
5500	22.8
5520	35.5
5540	35.5
5560	36.7
5580	35.5
5600	36.3
5620	35.5
5640	36.3
5660	36.3
5680	39.5
5700	23.0

Table 11: 26 dB Emissions Bandwidth

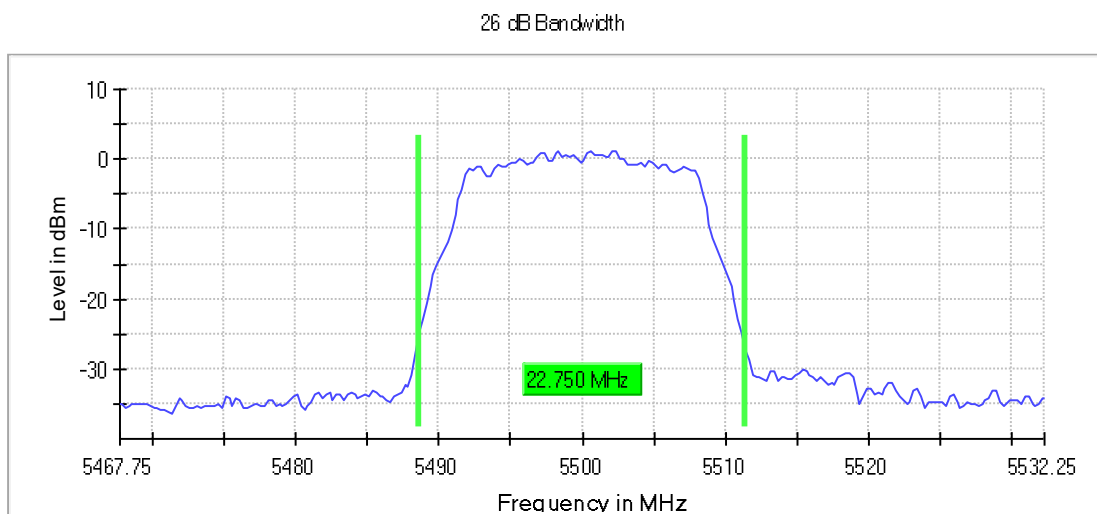
26 dB Bandwidth



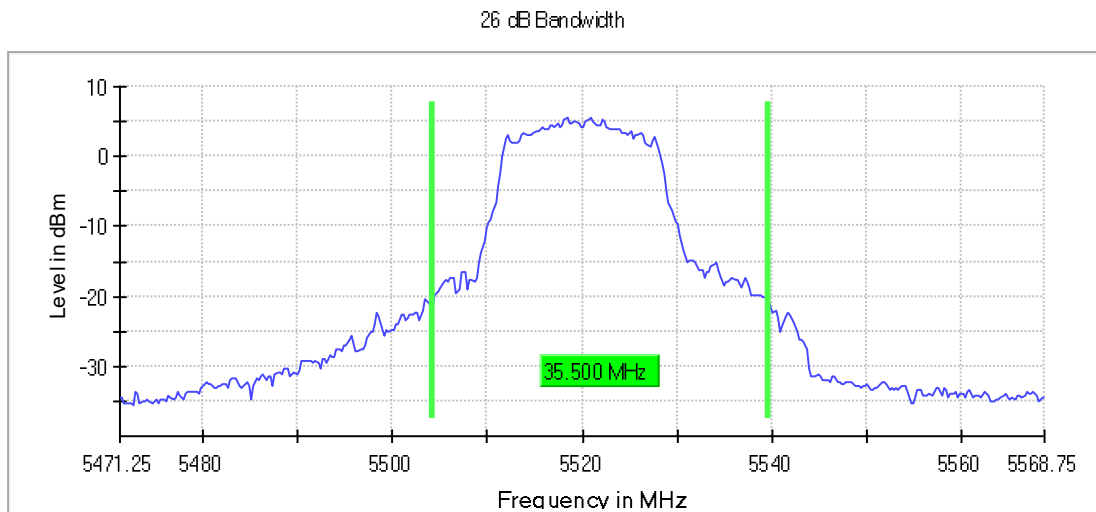
Graph 31: 26 dB Emissions Bandwidth Transmitting at 5260 MHz

Graph 32: 26 dB Emissions Bandwidth Transmitting at 5280 MHz

Graph 33: 26 dB Emissions Bandwidth Transmitting at 5300 MHz



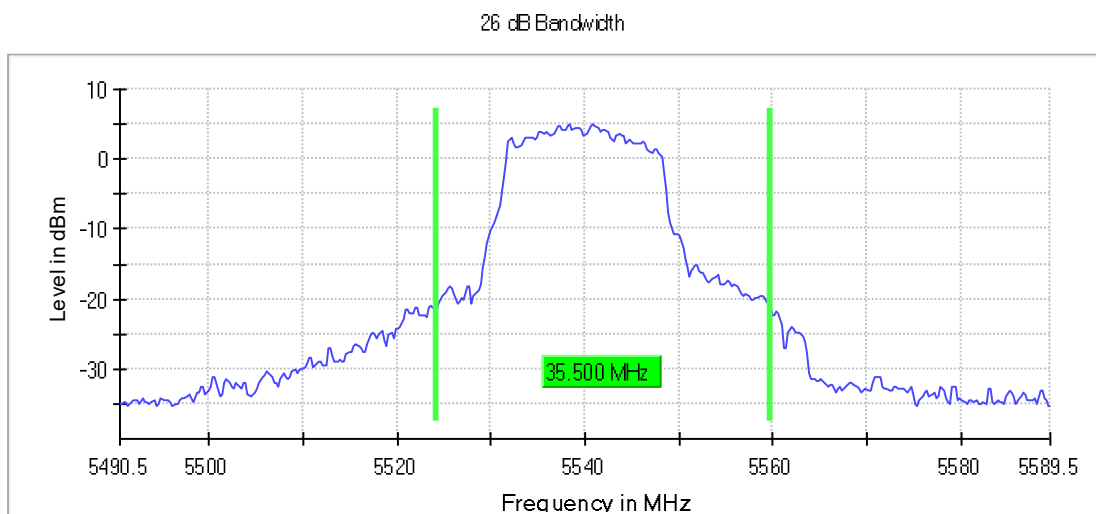
Graph 34: 26 dB Emissions Bandwidth Transmitting at 5320 MHz



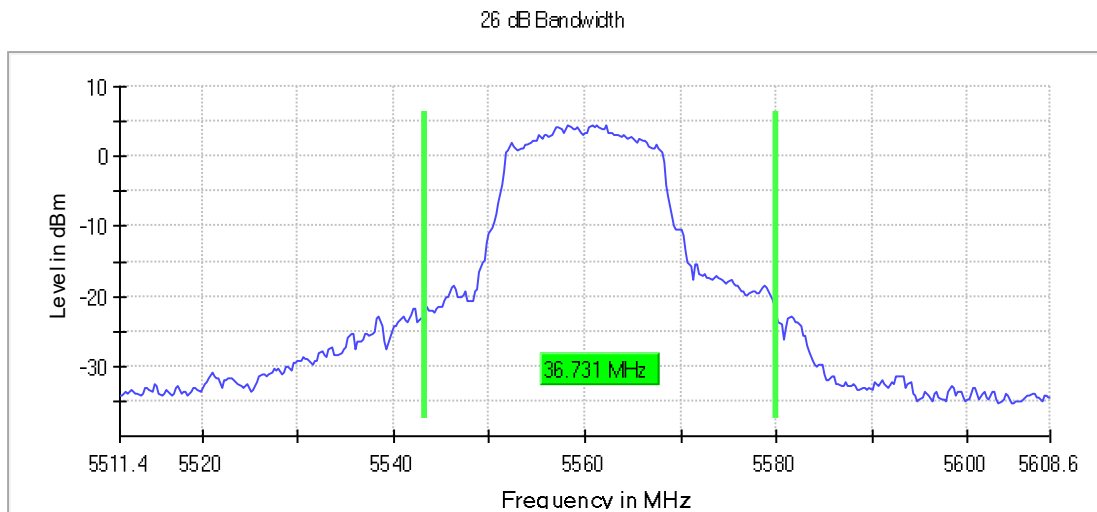
Graph 35: 26 dB Emissions Bandwidth Transmitting at 5500 MHz



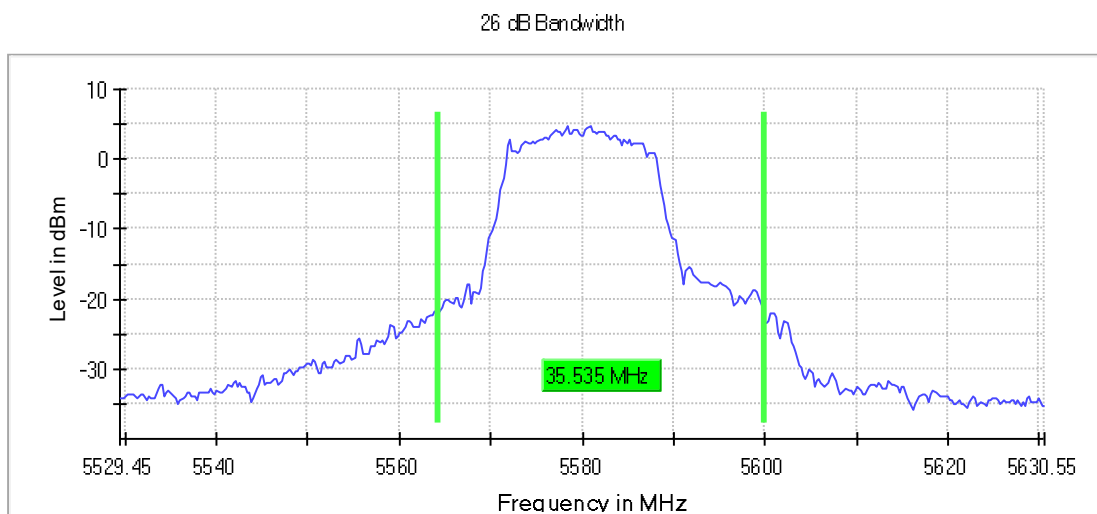
Graph 36: 26 dB Emissions Bandwidth Transmitting at 5520 MHz



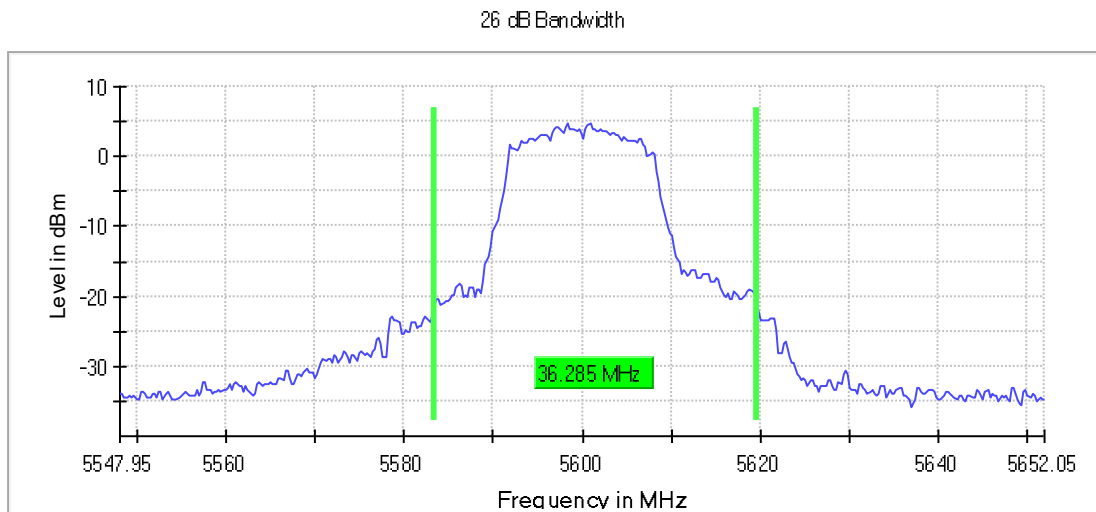
Graph 37: 26 dB Emissions Bandwidth Transmitting at 5540 MHz



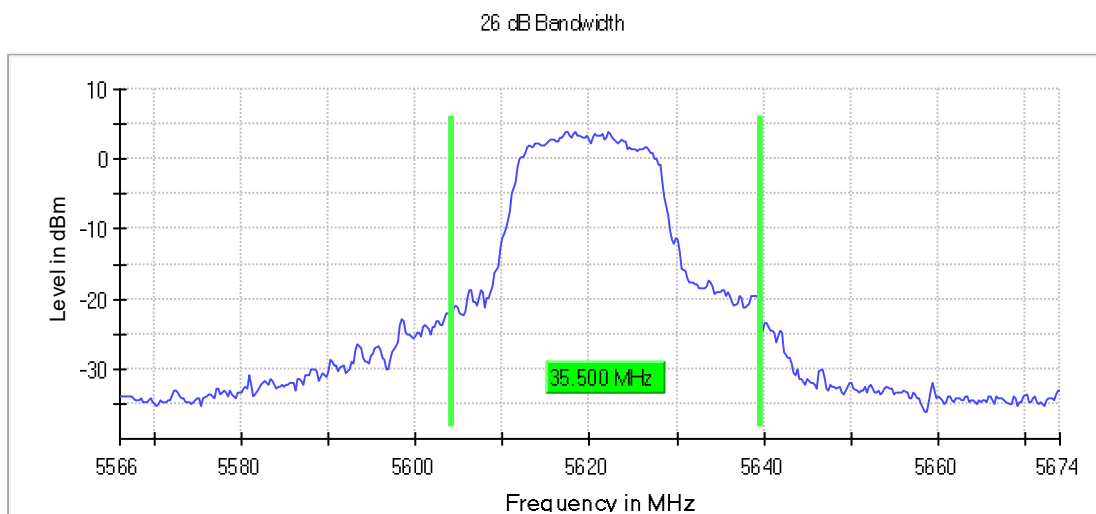
Graph 38: 26 dB Emissions Bandwidth Transmitting at 5560 MHz



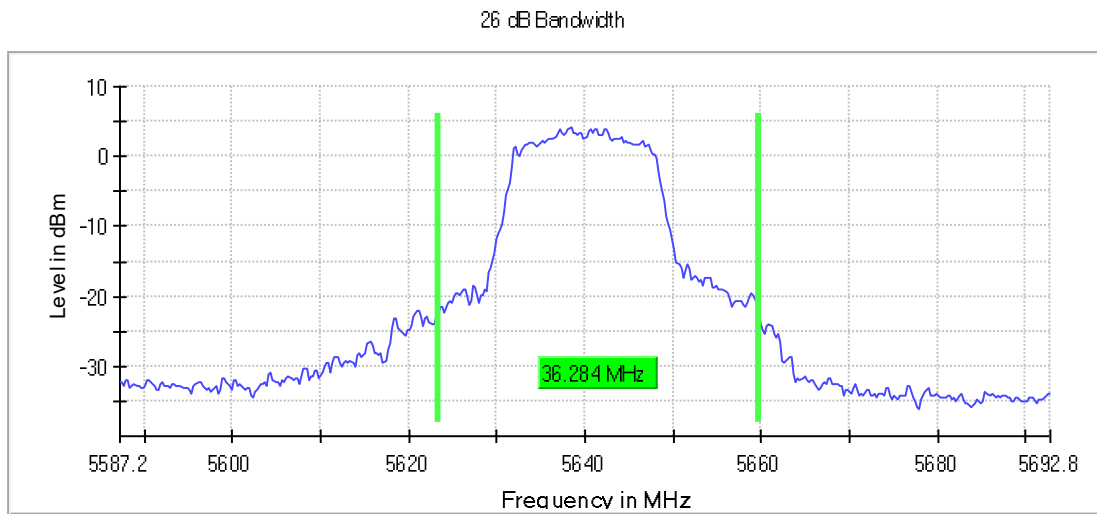
Graph 39: 26 dB Emissions Bandwidth Transmitting at 5580 MHz



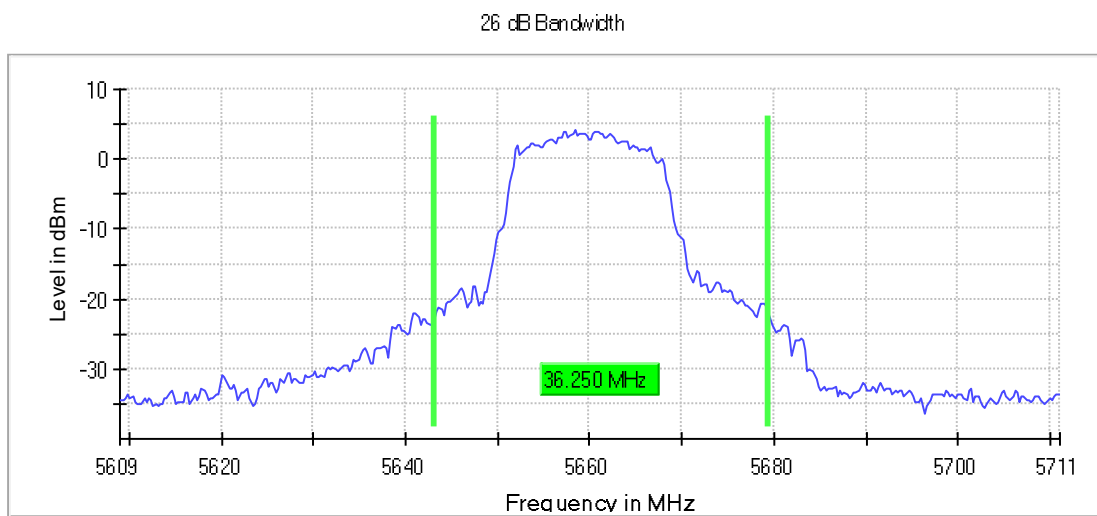
Graph 40: 26 dB Emissions Bandwidth Transmitting at 5600 MHz



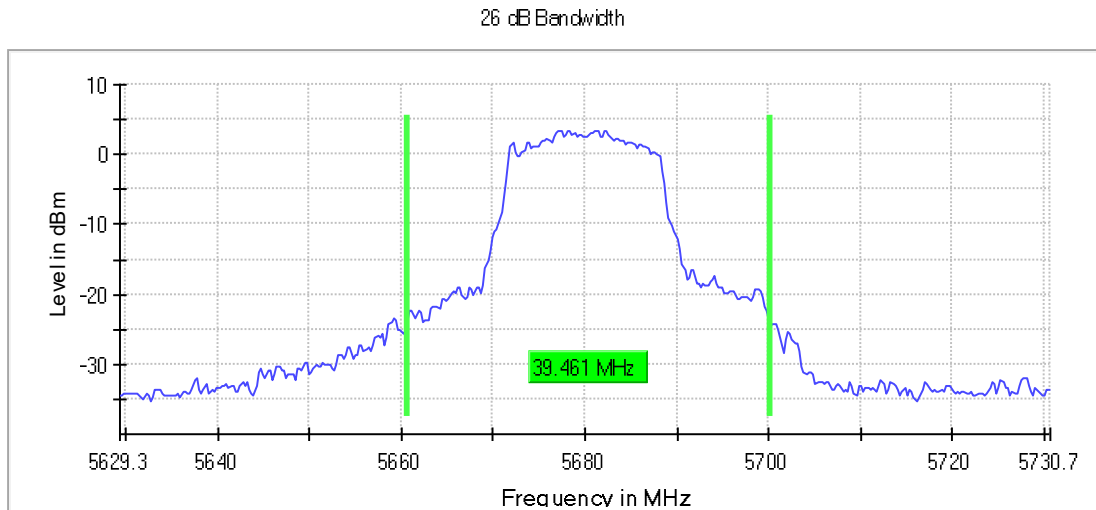
Graph 41: 26 dB Emissions Bandwidth Transmitting at 5620 MHz



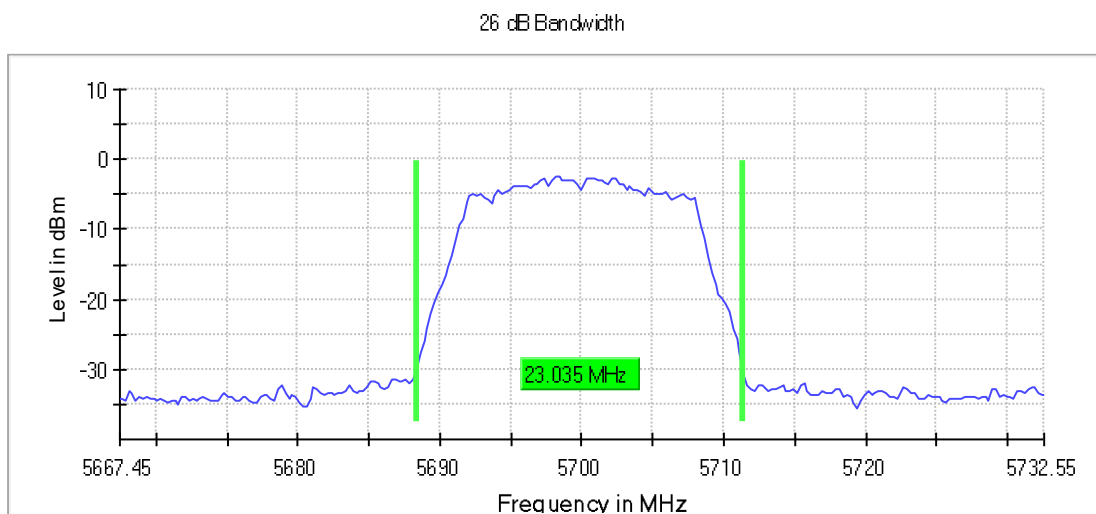
Graph 42: 26 dB Emissions Bandwidth Transmitting at 5640 MHz



Graph 43: 26 dB Emissions Bandwidth Transmitting at 5660 MHz



Graph 44: 26 dB Emissions Bandwidth Transmitting at 5680 MHz



Graph 45: 26 dB Emissions Bandwidth Transmitting at 5700 MHz

6.3.1.2 §15.407(a) Power Limits: Maximum Conducted Output Power (UNII 2)

Maximum conducted power limits for the UNII-2 band are adjusted based on the isotropic antenna gain and measured 26 dB bandwidth to a maximum limit of 24dBm. Transmitters exceeding 27 dBm must employ a transmit power control (TCP) mechanism.

Transmitting Frequency (MHz)	Measured 26 dB BW (MHz)	11 dBm + 10 log EWB (dBm)	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
5260	40.3	27.1	3.3	6	0	24.0	24.0
5280	37.7	26.8	3.3	6	0	24.0	24.0

Transmitting Frequency (MHz)	Measured 26 dB BW (MHz)	11 dBm + 10 log EWB (dBm)	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
5300	38.3	26.8	3.3	6	0	24.0	24.0
5320	22.8	24.6	3.3	6	0	24.0	24.0
5500	22.8	24.6	3.3	6	0	24.0	24.0
5520	35.5	26.5	3.3	6	0	24.0	24.0
5540	35.5	26.5	3.3	6	0	24.0	24.0
5560	36.7	26.6	3.3	6	0	24.0	24.0
5580	35.5	26.5	3.3	6	0	24.0	24.0
5600	36.3	26.6	3.3	6	0	24.0	24.0
5620	35.5	26.5	3.3	6	0	24.0	24.0
5640	36.3	26.6	3.3	6	0	24.0	24.0
5660	36.3	26.6	3.3	6	0	24.0	24.0
5680	39.5	27.0	3.3	6	0	24.0	24.0
5700	23.0	24.6	3.3	6	0	24.0	24.0

Table 12: UNII-2 maximum conducted power limits based on antenna gain and measured 26 dB emissions bandwidth

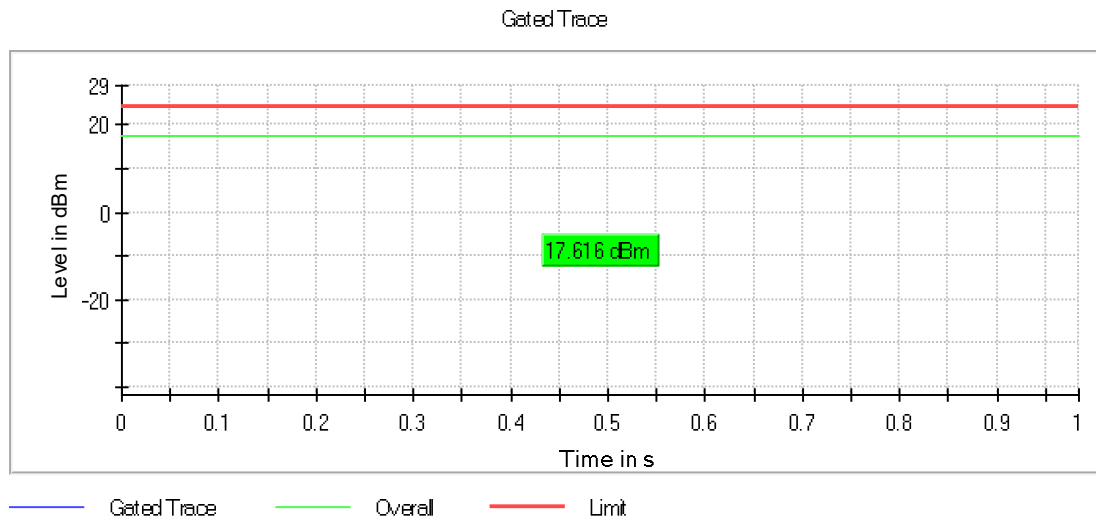
Power was measured for the low, middle, and high channel at the maximum power level possible (20) using KDB 789033 D02 method PM-G and a gated power meter which does not require an average correction factor.

UNII-2 Conducted Power Measurement

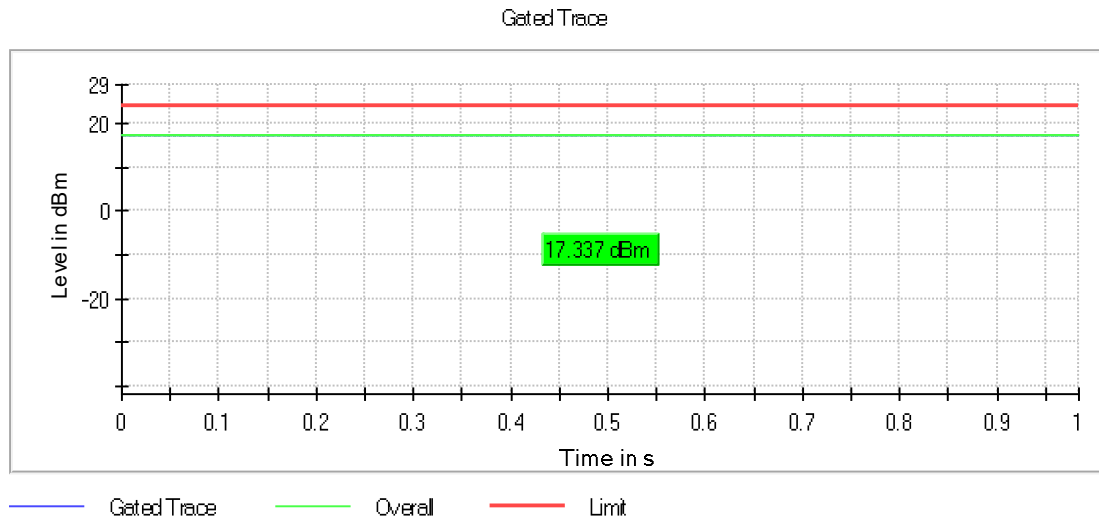
Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)	TCP Required
5260	17.6	24.0	-6.4	No
5280	17.3	24.0	-6.7	No
5300	17.5	24.0	-6.5	No
5320	15.0	24.0	-9.0	No
5500	11.7	24.0	-12.3	No
5520	15.7	24.0	-8.3	No
5540	15.2	24.0	-8.8	No
5560	15.2	24.0	-8.8	No
5580	15.2	24.0	-8.8	No
5600	15.1	24.0	-8.9	No
5620	15.2	24.0	-8.8	No
5640	15.2	24.0	-8.8	No
5660	15.1	24.0	-8.9	No
5680	14.9	24.0	-9.1	No
5700	6.9	24.0	-17.1	No

Result

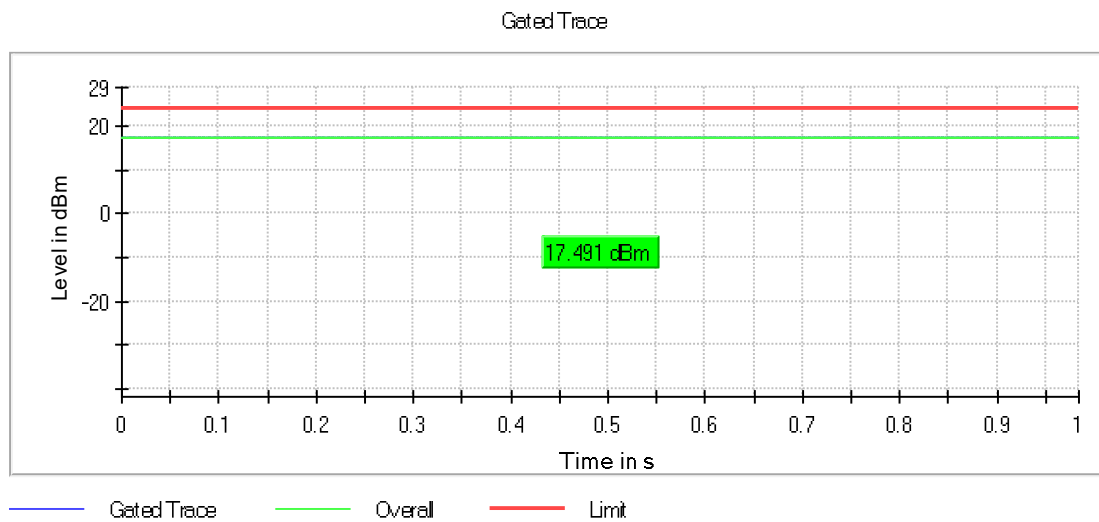
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.4 dB and does not require a transmit power control mechanism.



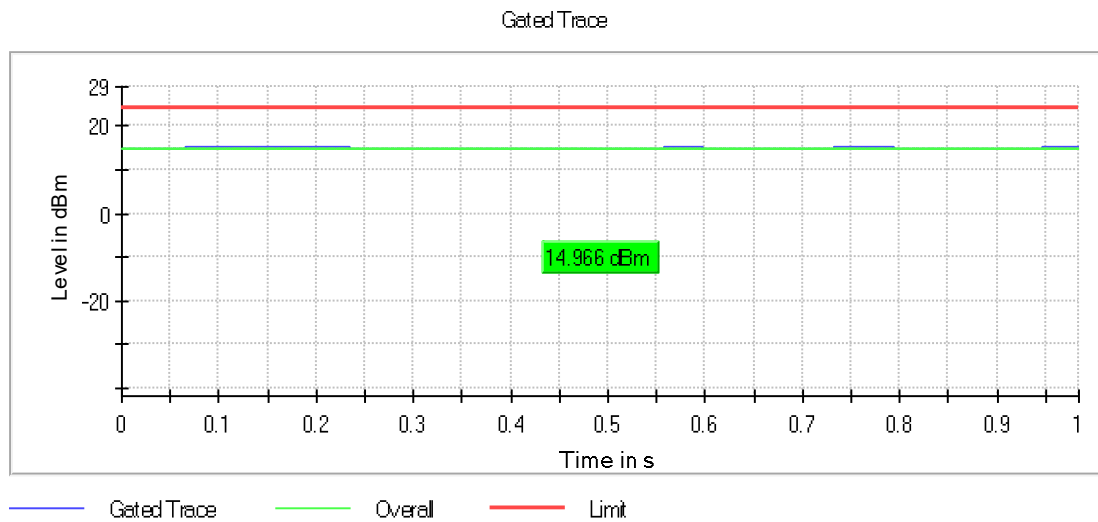
Graph 46: PM-G Power Transmitting at 5260 MHz (Power Level 20)



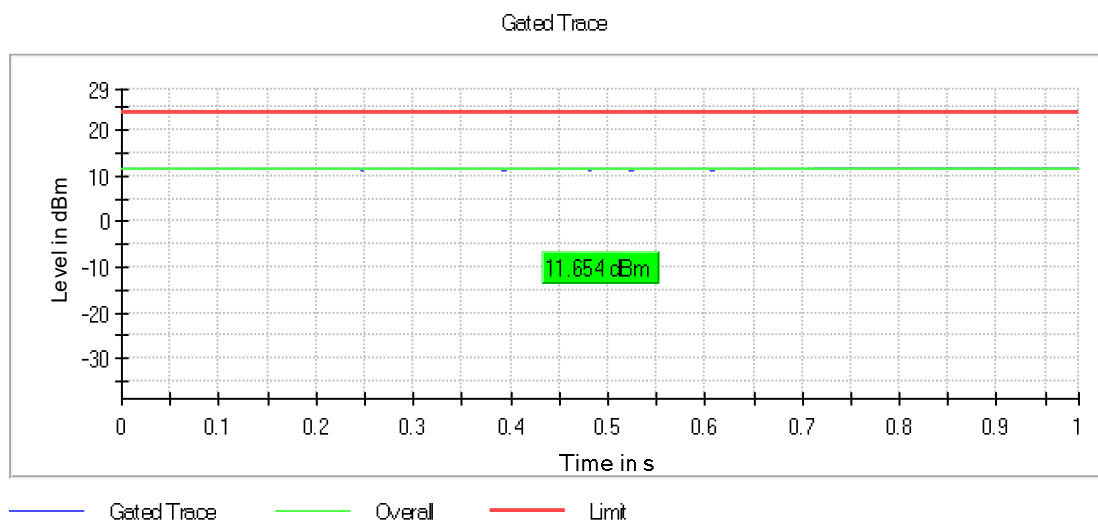
Graph 47: PM-G Power Transmitting at 5280 MHz (Power Level 20)



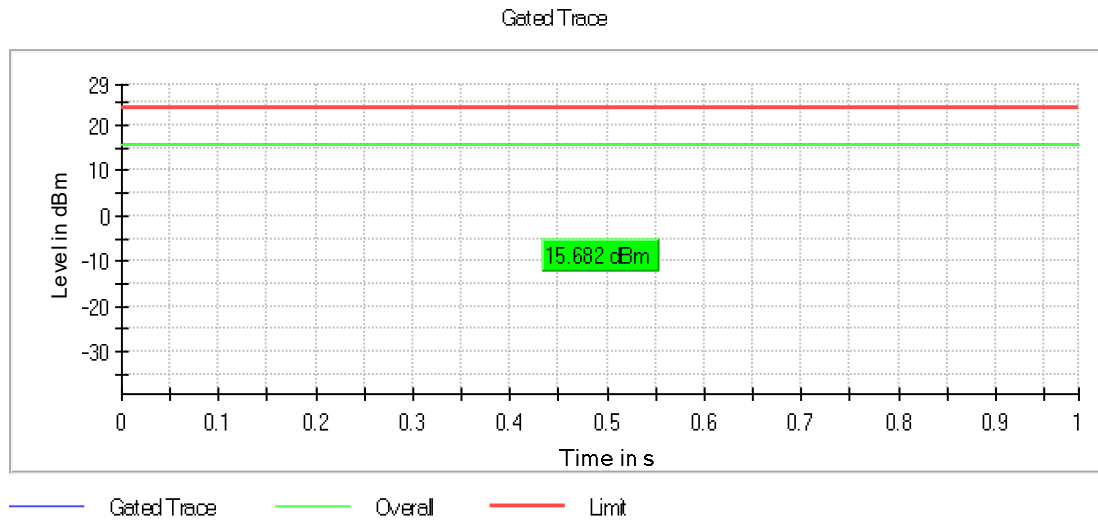
Graph 48: PM-G Power Transmitting at 5300 MHz (Power Level 20)



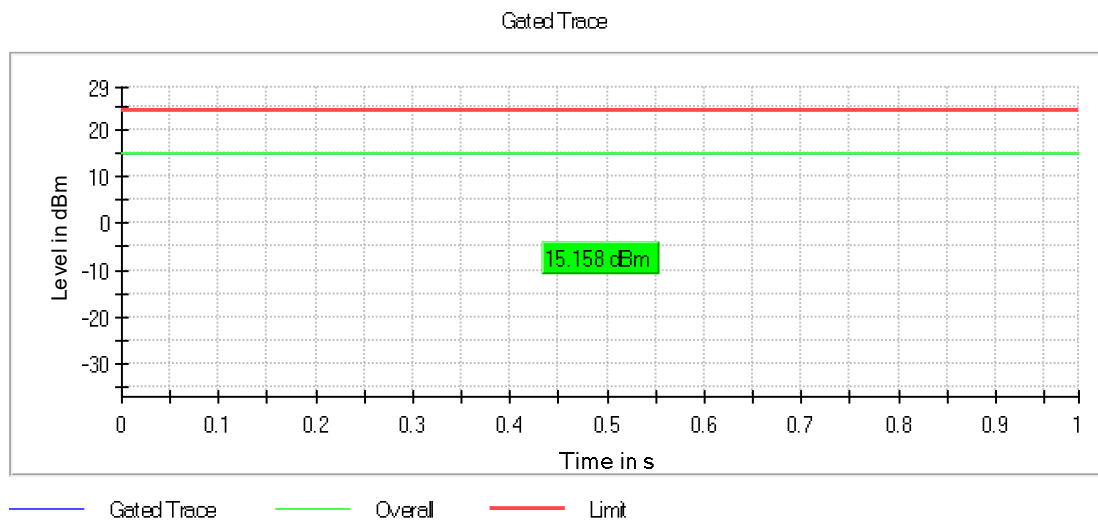
Graph 49: PM-G Power Transmitting at 5320 MHz (Power Level 17)



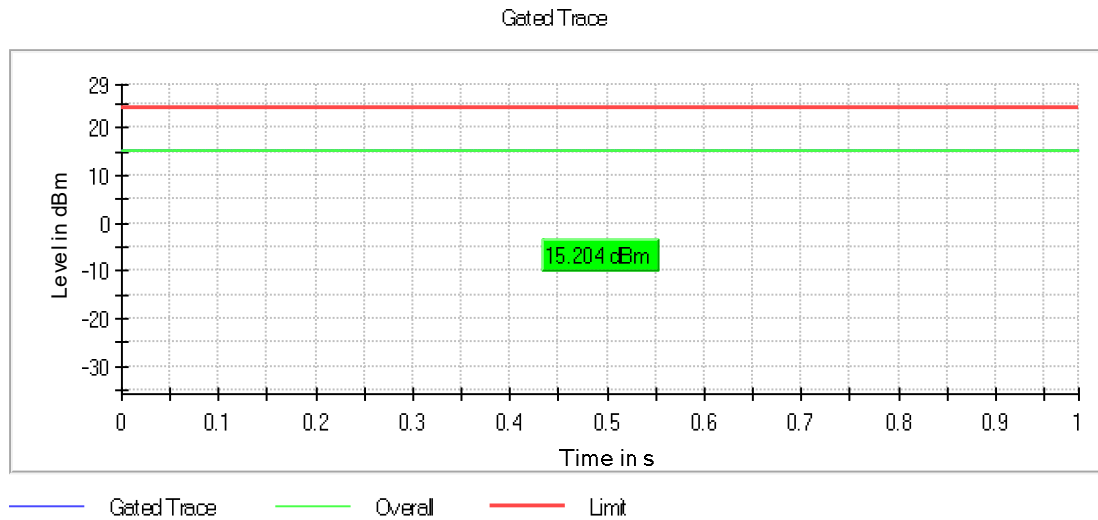
Graph 50: PM-G Power Transmitting at 5500 MHz (Power Level 16)



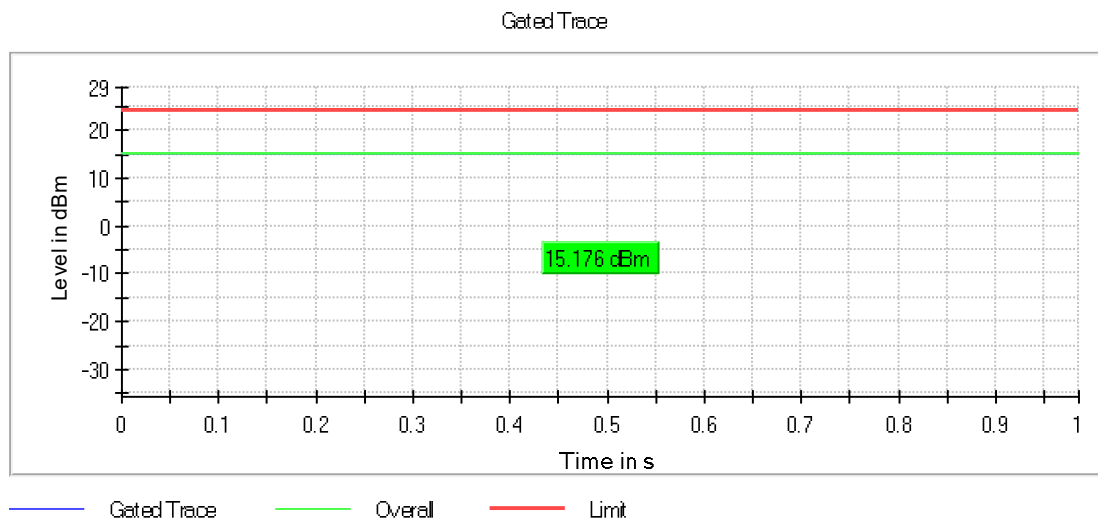
Graph 51: PM-G Power Transmitting at 5520 MHz (Power Level 20)



Graph 52: PM-G Power Transmitting at 5540 MHz (Power Level 20)



Graph 53: PM-G Power Transmitting at 5560 MHz (Power Level 20)



Graph 54: PM-G Power Transmitting at 5580 MHz (Power Level 20)



Graph 55: PM-G Power Transmitting at 5600 MHz (Power Level 20)



Graph 56: PM-G Power Transmitting at 5620 MHz (Power Level 20)