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Test Report

Certification

FCC ID	2AJAC-ESSTRPRE4
Equipment Under Test	EA-STREAM-PRE-4
Test Report Serial No	V082019_01
Dates of Test	October 28 – November 13, 2025
Report Issue Date	January 28, 2026

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	EA-STREAM-PRE-4
FCC ID	2AJAC-ESSTRPRE4

On this 28th day of January 2026, 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	January 28, 2026

Table of Contents

1	Client Information.....	5
1.1	Applicant.....	5
1.2	Manufacturer.....	5
2	Equipment Under Test (EUT).....	6
2.1	Identification of EUT	6
2.2	Description of EUT	6
2.3	EUT and Support Equipment	7
2.4	Interface Ports on EUT	8
2.5	Modifications Incorporated/Special Accessories on EUT	8
2.6	Deviation from Test Standard	9
2.7	Scope of This Report	9
3	Test Specification, Methods and Procedures	10
3.1	Test Specification.....	10
3.2	Methods & Procedures.....	10
3.3	Test Procedure	15
4	Operation of EUT During Testing	16
4.1	Operating Environment.....	16
4.2	Operating Modes.....	16
4.3	EUT Exercise Software.....	16
5	Summary of Test Results	17
5.1	FCC Part 15, Subpart E.....	17
5.2	Result	17
6	Measurements, Examinations and Derived Results	18
6.1	General Comments and Results	18
6.2	Test Results for the UNII 1 Band (5150-5250 MHz)	22
6.3	Test Results for the UNII 2 Band (5250-5725 MHz)	50
6.4	Test Results for the UNII 3 Band (5725-5850 MHz)	118
7	Test Procedures and Test Equipment.....	151
7.1	Conducted Emissions at Mains Ports.....	151
7.2	Direct Connection at the Antenna Port Test	152
7.3	Radiated Emissions	153
7.4	Equipment Calibration	156
7.5	Measurement Uncertainty	156
8	Photographs	157

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	EA-STREAM-PRE-4
Serial Numbers	Engineering Unit
Dimensions (cm)	43.0 x 27.0 x 4.0
Mfr. Declared Antenna Gain (dBi)	4.0

2.2 Description of EUT

The EA-STREAM-PRE-4 is a streaming amplifier for use in home and commercial media environments. The EUT is powered directly by AC Mains. The antenna is a NIC Components NAN-E Series RP-SMA articulating duck antenna, NAN-E108x9B2AR, and gains are provided in the A revision of the NAN-E Series datasheet, revision A dated December 17, 2020. The devices contain a 5GHz transmitter capable of operating in two 20MHz bandwidth modulation schemes: 802.11a (“A-Mode”) and 802.11n (“N20-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 (6Mbps)	N20-Mode (7Mbps)	TPC?
UNII1 (5150-5250MHz)				
36	5180	14	15	N/A
40	5200	20	20	N/A
44	5220	20	20	N/A
48	5240	20	20	N/A
UNII2A (5250-5350MHz)				
52	5260	20	20	No
56	5280	20	20	No
60	5300	20	20	No
64	5320	16	16	No
UNII2C (5470-5725MHz)				
100	5500	14	14	No
104	5520	18	18	No
108	5540	20	20	No
112	5560	20	20	No
(Table Continued Next Page)				

Channel	Frequency (MHz)	A-Mode (6Mbps)	N20-Mode (7Mbps)	TPC?
UNII2C (5470-5725MHz) Continued				
116	5580	20	20	No
120	5600	20	20	No
124	5620	20	20	No
128	5640	20	20	No
132	5660	20	20	No
136	5680	19	19	No
140	5700	14	15	No
UNII3 (5725-5850MHz)				
149	5745	20	20	N/A
153	5765	20	20	N/A
157	5785	20	20	N/A
161	5805	20	20	N/A
165	5825	20	20	N/A

2.2.1 Modes of Operation

EUT is intended to operate indoors as a client device. EUT is 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: EA-STREAM-PRE-4 (Note 1) SN: See Section 2.1	Wireless Enabled Streaming Amplifier	See Section 2.4
BN: Trendnet MN: TEG-S50TXE SN: CA06225006898	Network Switch (Note 2)	Network / Cat 5e Ethernet
BN: Netgear MN: R7000 SN: 44214877A4B41	Network Router	No Connection to EUT (Network Switch / Cat 5e Ethernet)

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: Lenovo MN: ThinkPad T460s SN: N/A	PC Laptop	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: 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

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
NETWORK	1 of 1	Cat 5e Ethernet / 7 meters
12V TRIG OUT	0 of 4	N/A
USB	0 of 1	N/A
IR IN	0 of 1	N/A
IR OUT	0 of 1	N/A
SOURCE IN 1 (OPTICAL)	0 of 1	N/A
SOURCE IN 1 (RCA)	0 of 1	N/A
SOURCE IN 2	0 of 2	N/A
ZONE OUT L	0 of 1	N/A
ZONE OUT R	0 of 1	N/A
ZONE OUT (OPTICAL)	0 of 4	N/A
ZONE OUT (RCA)	0 of 4	N/A

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-3 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 V082018 for 2.4GHz 802.11 wifi 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 Technology, 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.

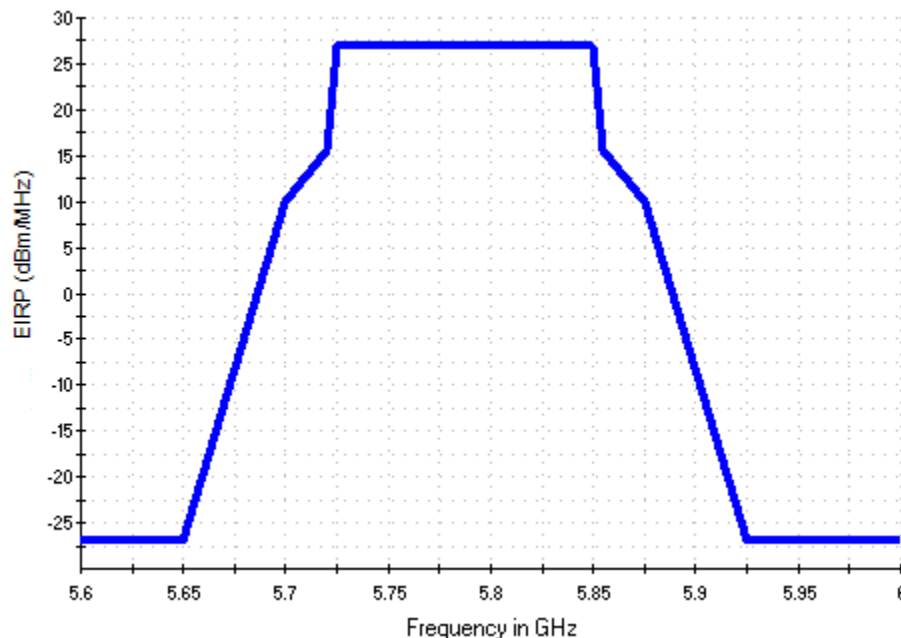


Figure 1. Emission limit for transmitters operating in the UNII-3 (5.725 – 5.850 GHz) band

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 1 μ s 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).

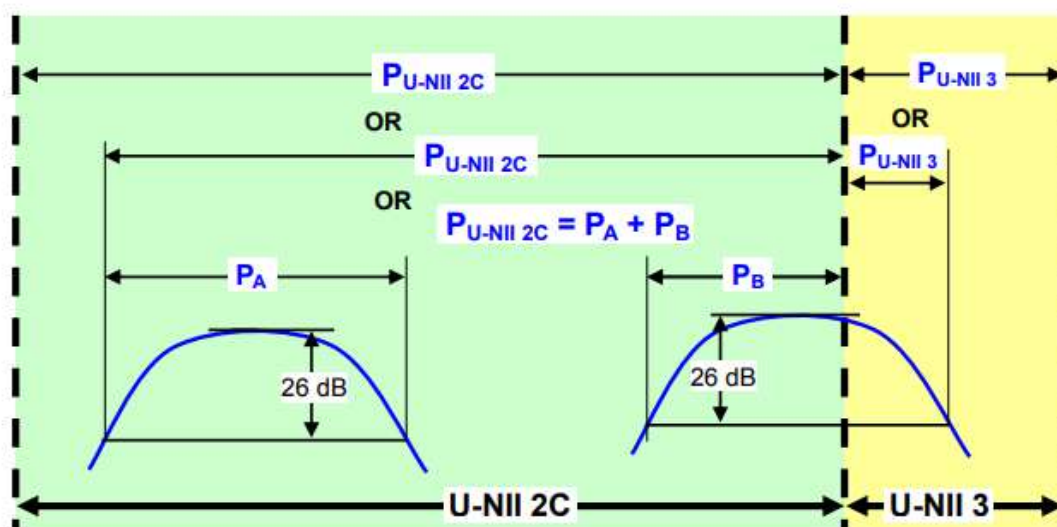


Figure 1. Conducted output power measurement examples (KDB 789033 D02 v02r01, p 21)

3.2.4.2 Emission 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.

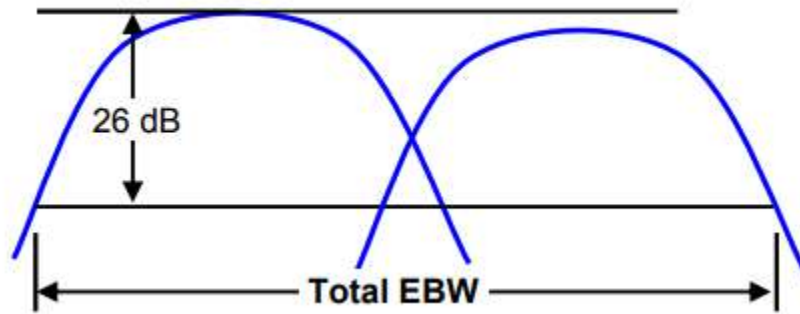


Figure 2. Overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 18)

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.

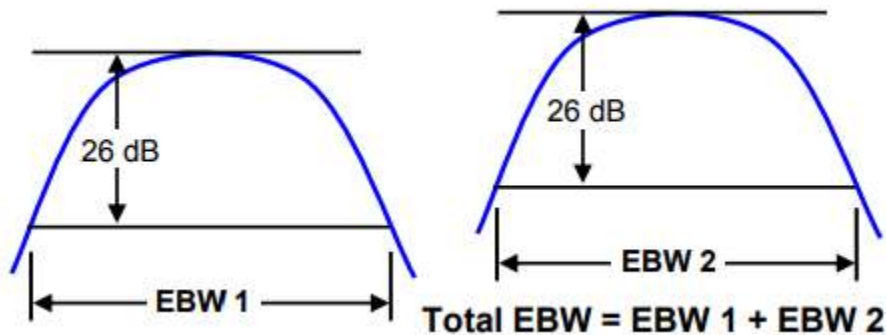


Figure 3. Non-overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 18)

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.

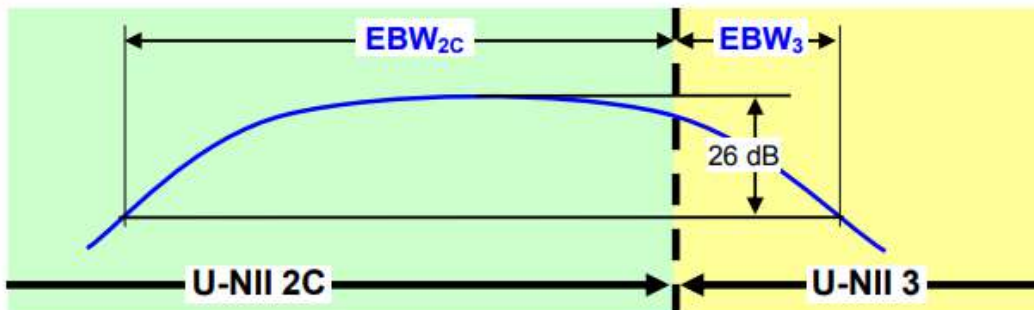


Figure 4. Non-overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 19)

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 Technology, Inc. is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Lab Code: 100272-0, which is effective until September 30, 2026. VPI Technology, Inc. carries FCC Accreditation Designation Number US5263. VPI Technology 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. Testing was performed at the VPI Technology, Inc. Wanship Upper Open Area Test Site, located at 29145 Old Lincoln Highway, Wanship, UT. 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 EUT was tested for radiated emissions on a single axis consistent with desktop placement. EUT was tested on low, middle, and high channels for each UNII band 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. EUT antenna articulates, and was set to the angle of maximum coupling for polarized radiated measurements.

The worst-case data rate was found to be 6Mb/s for 20MHz channels in A20 Mode, and 7Mb/s for 20MHz channels in N20 Mode. Power level set points increase as each channel moves 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

SSH access and Snap One FCC Test Firmware were installed on the EUT 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)	Emission 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 an NIC Components Corp. RP-SMA 90° articulating duck antenna, NAN-E108x9B2AR with a peak gain of 2.7dBi in the 2.4-2.5GHz band. Gain data is taken from NAN-E SERIES WIFI EXTERNAL ANTENNA data sheet, revision A, dated December 17, 2020.

Pk Antenna Gain (dBi)	4.0
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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

Frequency (MHz)	Detector	Receiver Reading (dBµV)	Correction Factor (dB)	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
0.15	Quasi-Peak (Note 2)	29.8	11.8	41.5	65.9	-24.4
0.15	Average (Note 2)	21.5	11.8	33.3	55.9	-22.7
0.18	Quasi-Peak (Note 2)	38.8	11.3	50.1	64.4	-14.4
0.18	Average (Note 2)	31.9	11.3	43.2	54.4	-11.2
0.21	Peak (Note 1)	35.0	11.1	46.1	53.2	-7.1
0.25	Peak (Note 1)	35.6	10.8	46.4	51.9	-5.4
0.84	Peak (Note 1)	30.7	10.1	40.9	46.0	-5.1
0.88	Peak (Note 1)	28.8	10.1	39.0	46.0	-7.1

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.

Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.

Table 2: AC Mains Conducted Emissions, Hot Lead

6.1.2.2 Neutral Lead:

Frequency (MHz)	Detector	Receiver Reading (dBµV)	Correction Factor (dB)	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
0.15	Quasi-Peak (Note 2)	27.1	11.9	39.0	66.0	-27.0
0.15	Average (Note 2)	18.0	11.9	29.8	56.0	-26.2
0.18	Quasi-Peak (Note 2)	36.5	11.4	47.9	64.3	-16.4
0.18	Average (Note 2)	27.6	11.4	39.0	54.3	-15.3
0.23	Peak (Note 1)	36.9	11.0	47.8	52.6	-4.8
0.24	Peak (Note 1)	34.5	10.9	45.4	52.1	-6.7
0.28	Peak (Note 1)	33.7	10.7	44.4	50.7	-6.3

Frequency (MHz)	Detector	Receiver Reading (dB μ V)	Correction Factor (dB)	Measured Level (dB μ V)	Class B Limit (dB μ V)	Margin (dB)
0.86	Peak (Note 1)	30.9	10.1	41.0	46.0	-5.0
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. Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.						

Table 3: AC Mains Conducted Emissions, Neutral Lead**6.1.2.3 Result**

The EUT complied with the specification limit by a margin of 4.8 dB.

6.1.3 Duty Cycle, Transmission Duration, and Maximum Power Control

EUT was incapable of 100% duty cycle at maximum power control. 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. Duty cycle and maximum-power transmission duration for each tested mode of operation is shown here as measured by the R&S OSP unit, and all power measurements shown herein are gated and do not use the Average Correction Factor.

Mode	Data rate	Duty Cycle	Average Correction Factor (dB)
802.11a	6 Mbps	0.9345	0.294
802.11n	7 Mbps	0.6296	2.009

Table 4: Test Modes and Duty Cycle Average Correction Factors

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

6.2.1 802.11a Mode

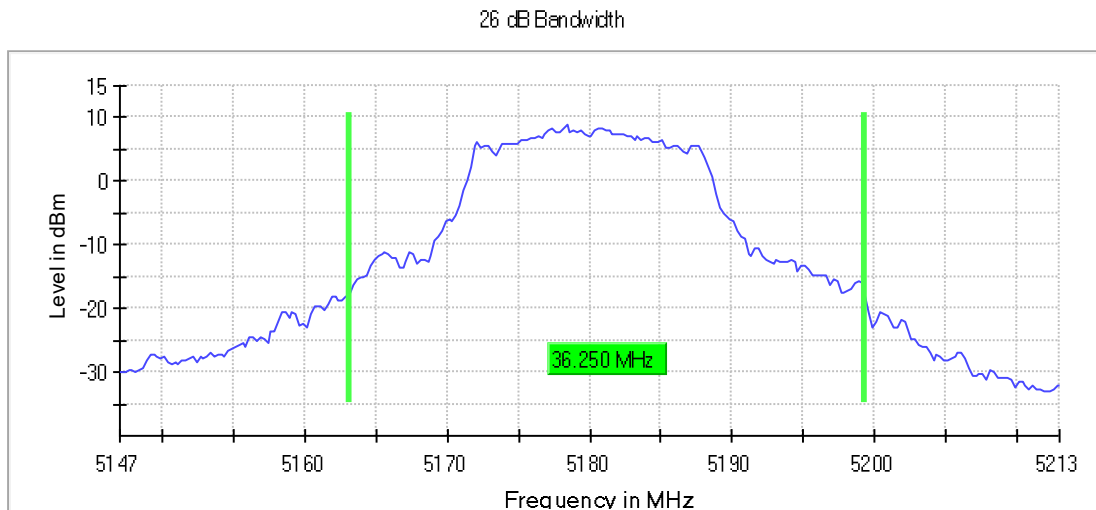
6.2.1.1 §15.403 26dB Bandwidth (UNII 1)

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

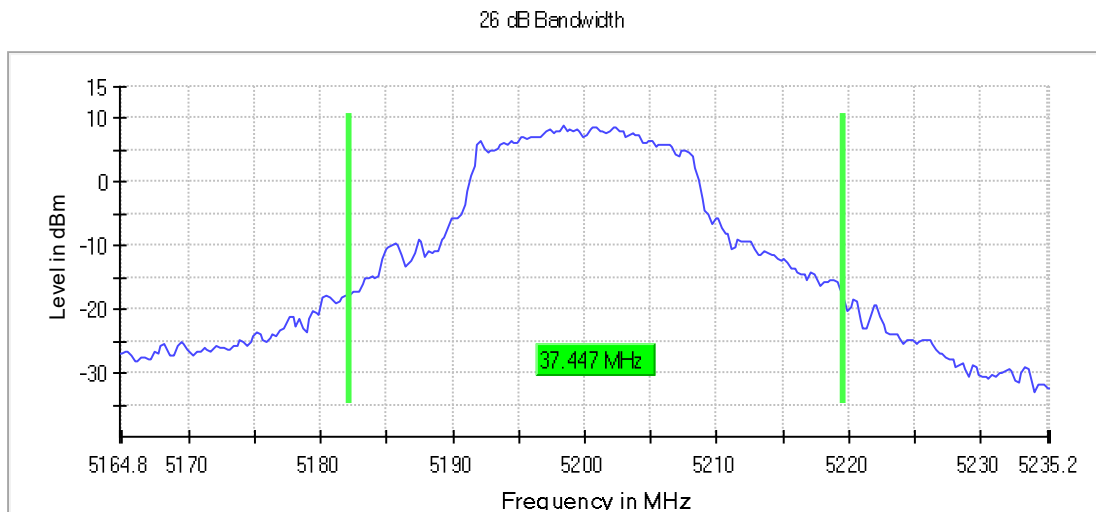
The 26dB emission bandwidths are shown below with RBW of 400 kHz and VBW of 1 MHz

Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5180	36.3
5200	37.5
5240	36.7

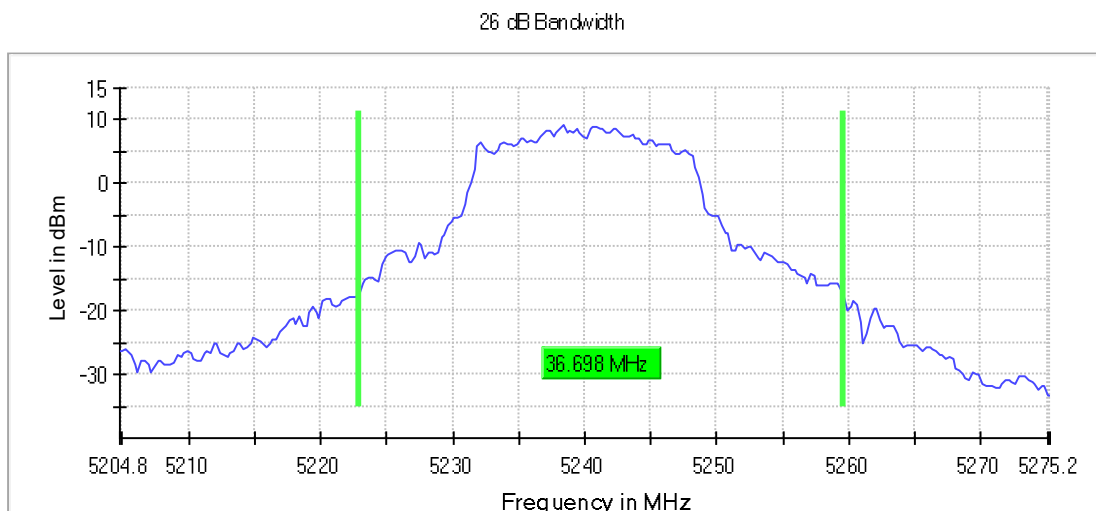
Table 5: 26 dB Emission Bandwidth



Graph 1: 26 dB Emission Bandwidth Transmitting at 5180 MHz



Graph 2: 26 dB Emission Bandwidth Transmitting at 5200 MHz



Graph 3: 26 dB Emission 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	4.0	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.

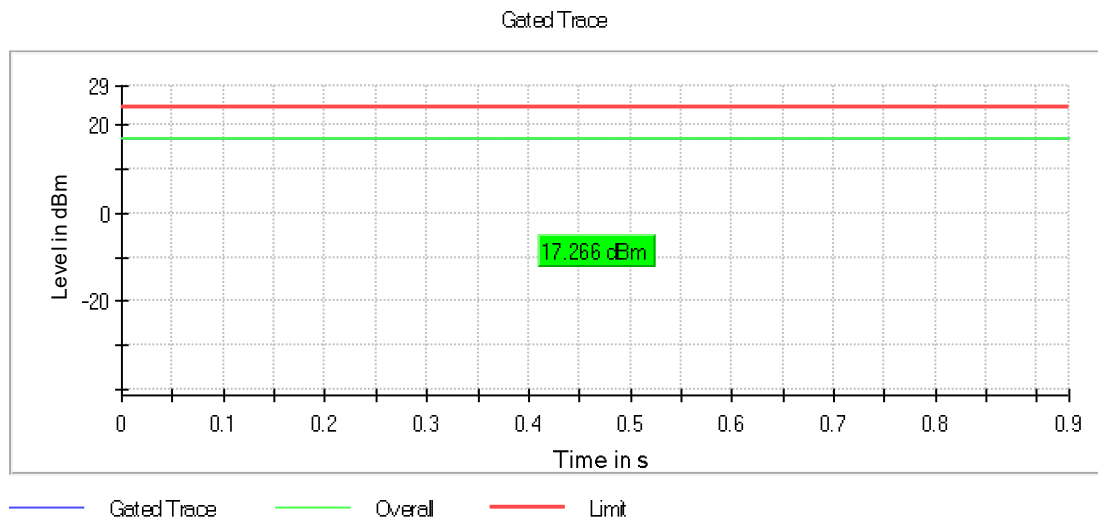
UNII-1 Conducted Power Measurement – AP Architecture, Client Mode

Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)
5180	17.3	24	-6.7
5200	17.5	24	-6.5
5240	17.8	24	-6.2

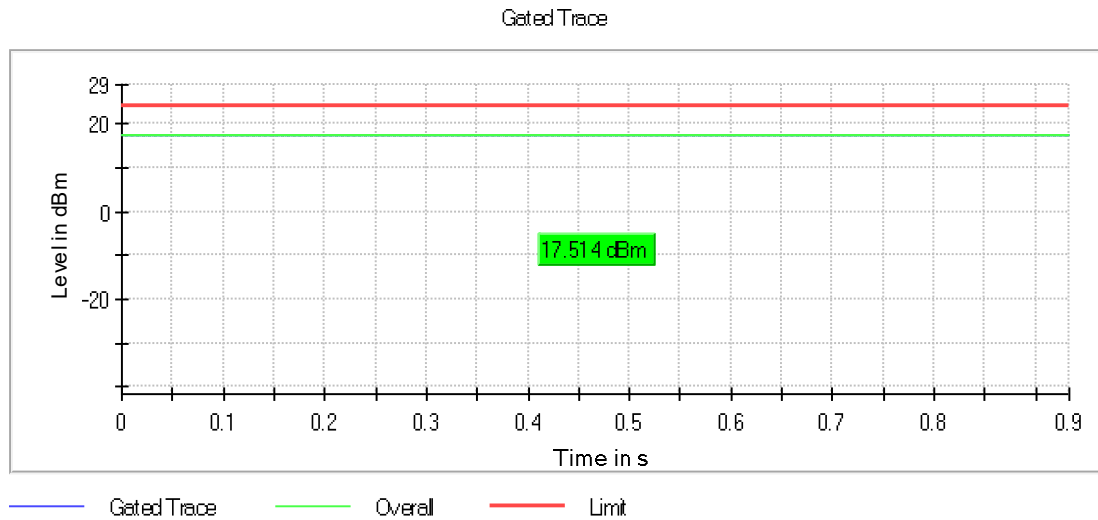
Table 7: PM-G Conducted Output Power Measurements

Result

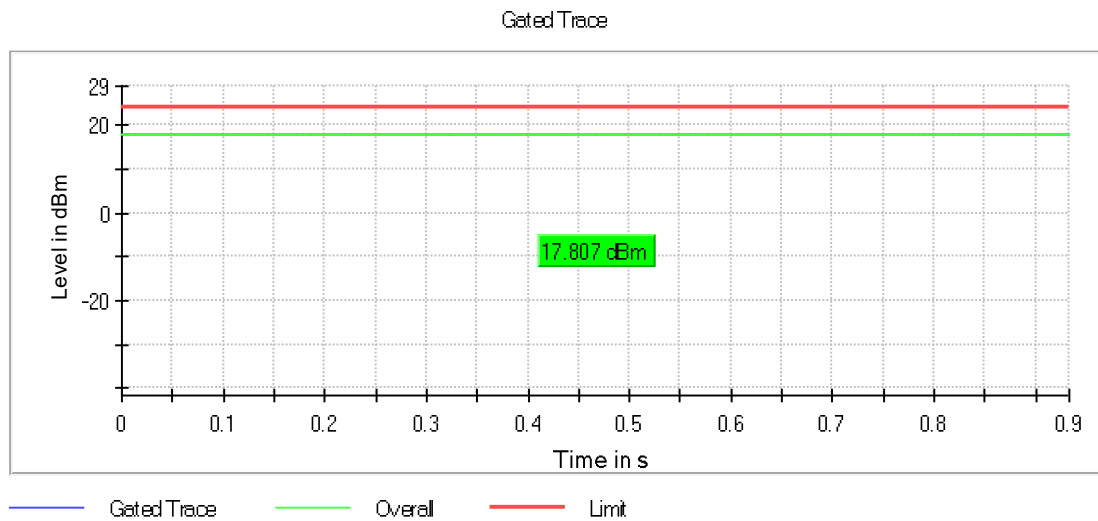
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.2 dB.



Graph 4: PM-G Power Transmitting at 5180 MHz (Power Level 20)



Graph 5: PM-G Power Transmitting at 5200 MHz (Power Level 20)



Graph 6: 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	4.0	6	0	11	11

Table 8: 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.

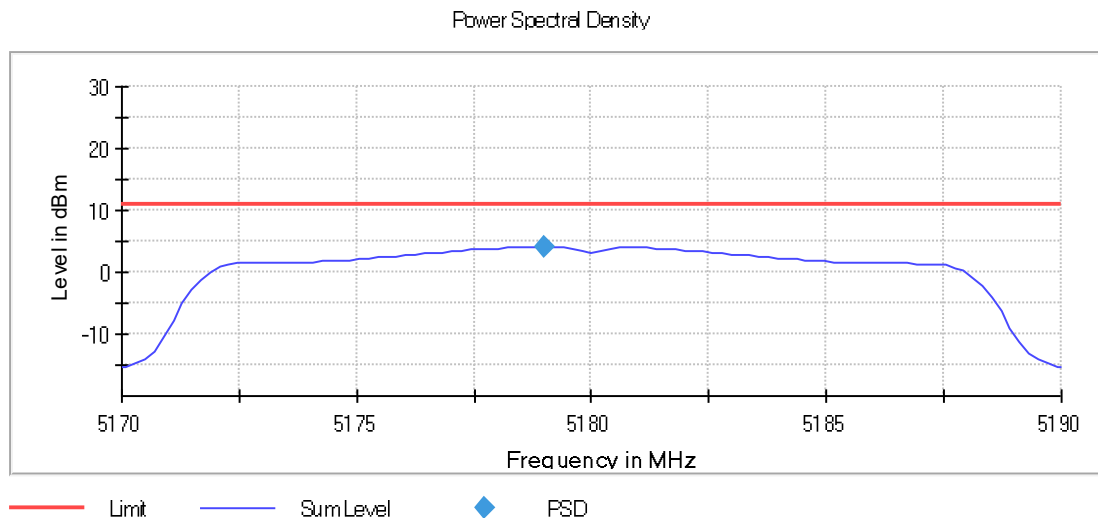
UNII-1 Power Spectral Density Measurements – AP Architecture, Client Mode

Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5180	4.2	11	-6.8
5200	4.6	11	-6.4
5240	4.5	11	-6.5

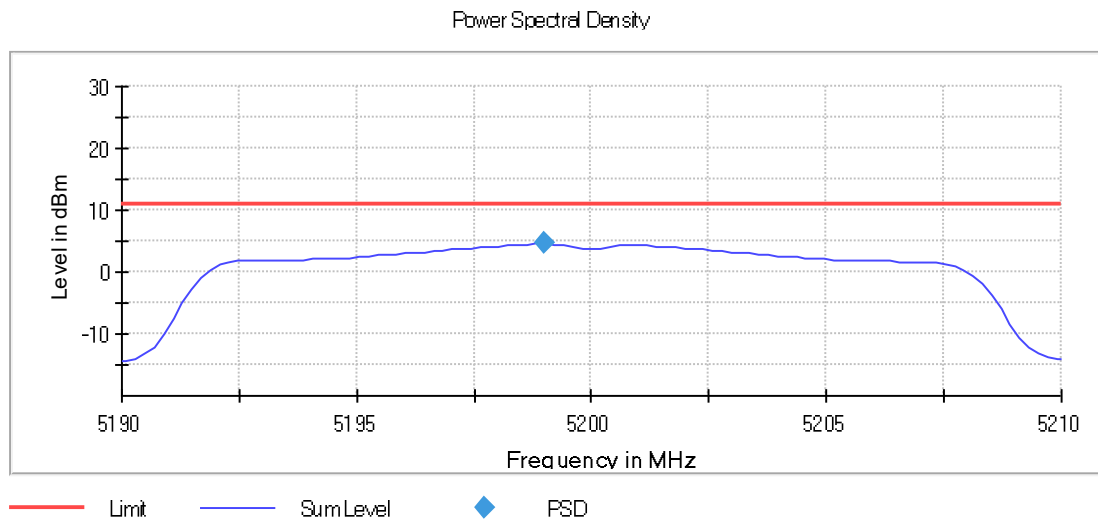
Table 9: SA-1 Alternative PSD Measurements

Result

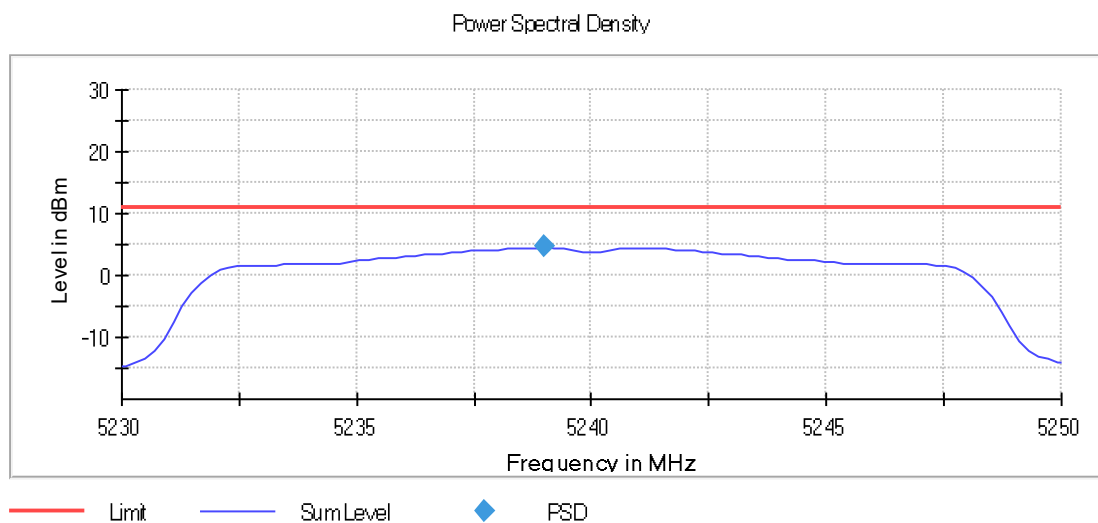
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.4 dB.



Graph 7: PSD Transmitting at 5180 MHz (Power Level 20)



Graph 8: PSD Transmitting at 5200 MHz (Power Level 20)



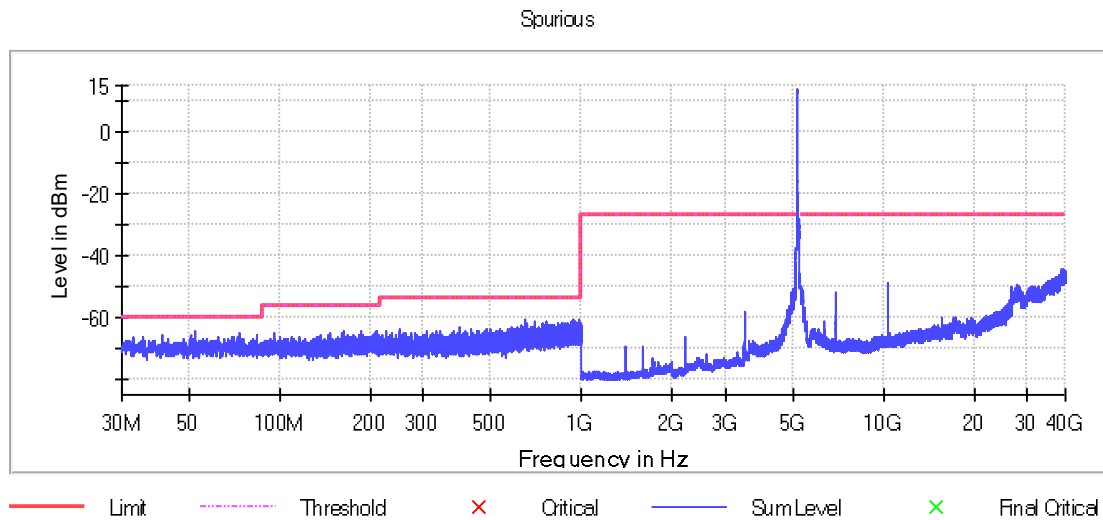
Graph 9: PSD Transmitting at 5240 MHz (Power Level 20)

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

Undesirable Emissions were measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest in-band antenna gain (4.0dBi) 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.

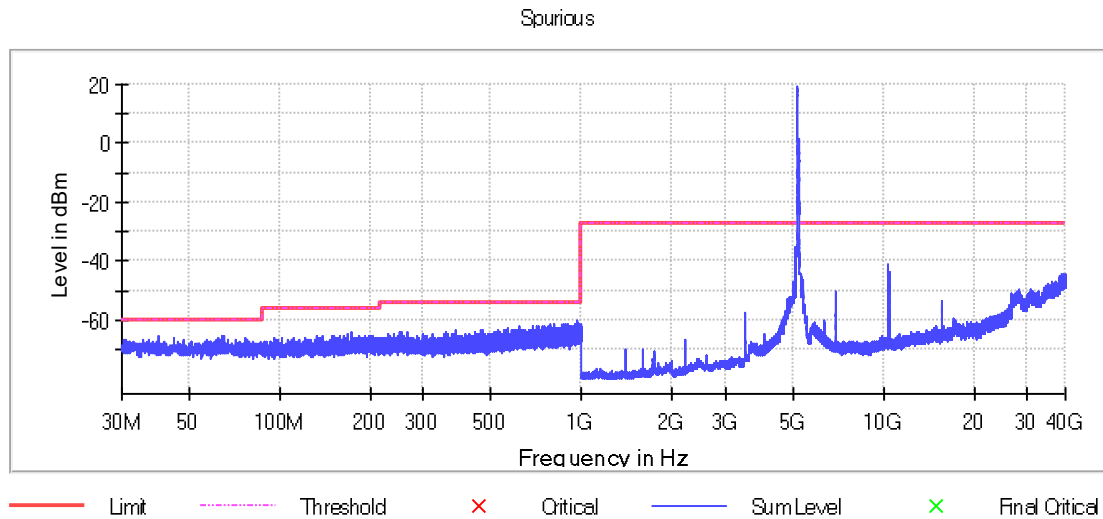
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the highest possible transmit power (20dBm).

Antenna Port Conducted Emissions Transmitting 5180 MHz at Power Level 14:



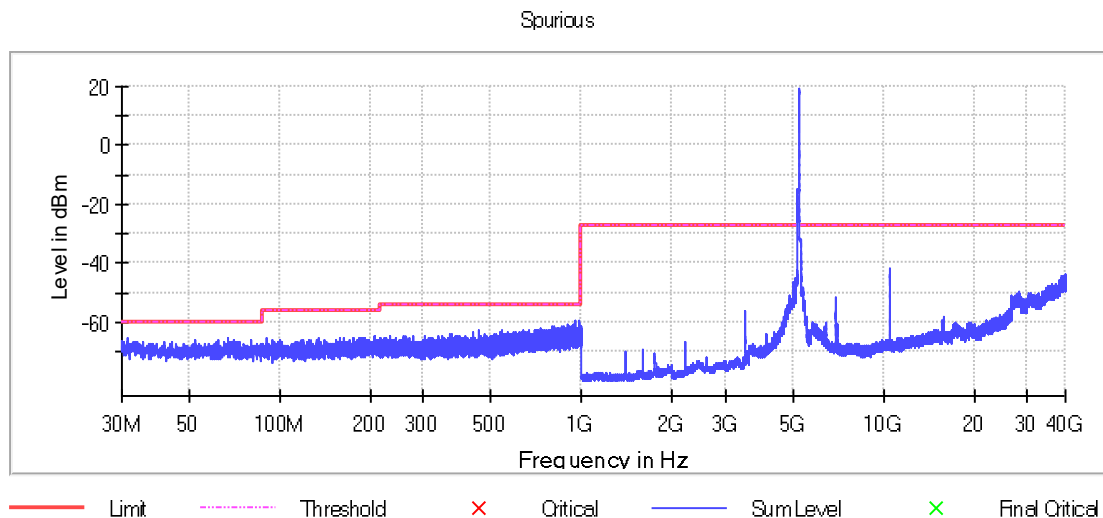
Graph 10: Antenna Port Conducted Spurious Emissions, UNII-1 Low Channel

Antenna Port Conducted Emissions Transmitting 5200 MHz at Power Level 20:



Graph 11: Antenna Port Conducted Spurious Emissions, UNII-1 Middle Channel

Antenna Port Conducted Emissions Transmitting 5240 MHz at Power Level 20:



Graph 12: Antenna Port Conducted Spurious Emissions, UNII-1 High Channel

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)
10368.6	Peak	Vertical	35.9	12.2	48.1	74.0	-25.9
10357.5	Average	Vertical	22.9	12.2	35.1	54.0	-18.9

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10359.0	Peak	Horizontal	41.9	12.2	54.1	74.0	-19.9
10360.0	Average	Horizontal	28.8	12.2	41.1	54.0	-13.0
15547.8	Peak	Vertical	35.4	14.3	49.8	74.0	-24.3
15535.1	Average	Vertical	21.7	14.4	36.0	54.0	-18.0
15537.9	Peak	Horizontal	36.1	14.4	50.5	74.0	-23.5
15542.3	Average	Horizontal	22.7	14.3	37.1	54.0	-17.0
20696.7	Peak	Vertical	36.8	17.8	54.6	74.0	-19.4
20689.9	Average	Vertical	23.8	17.9	41.6	54.0	-12.4
20676.6	Peak	Horizontal	35.5	17.8	53.2	74.0	-20.8
20685.7	Average	Horizontal	21.8	17.8	39.6	54.0	-14.4
25897.3	Peak	Vertical	32.4	22.8	55.2	74.0	-18.8
25868.7	Average	Vertical	19.2	22.8	42.1	54.0	-12.0
25874.5	Peak	Horizontal	30.8	22.8	53.7	74.0	-20.3
25871.4	Average	Horizontal	17.3	22.8	40.1	54.0	-13.9
31043.6	Peak	Vertical	29.2	26.9	56.1	74.0	-17.9
31039.9	Average	Vertical	15.9	26.9	42.8	54.0	-11.3
31054.3	Peak	Horizontal	29.2	27.0	56.2	74.0	-17.8
31049.0	Average	Horizontal	15.3	26.9	42.2	54.0	-11.8
36204.6	Peak	Vertical	27.9	28.7	56.6	74.0	-17.4
36201.8	Average	Vertical	14.5	28.7	43.2	54.0	-10.8
36195.5	Peak	Horizontal	27.8	28.7	56.5	74.0	-17.5
36186.5	Average	Horizontal	13.9	28.7	42.6	54.0	-11.4

Table 10: Radiated Spurious Emissions, UNII-1 Low Channel

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)
10437.4	Peak	Vertical	36.3	12.3	48.6	74.0	-25.4
10436.2	Average	Vertical	23.3	12.3	35.6	54.0	-18.4
10439.0	Peak	Horizontal	38.1	12.3	50.5	74.0	-23.5
10437.8	Average	Horizontal	25.2	12.3	37.6	54.0	-16.4

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)
15677.8	Peak	Vertical	34.8	14.5	49.3	74.0	-24.7
15660.8	Average	Vertical	21.5	14.4	35.9	54.0	-18.1
15635.4	Peak	Horizontal	35.3	14.3	49.6	74.0	-24.4
15655.8	Average	Horizontal	22.4	14.4	36.8	54.0	-17.2
20822.5	Peak	Vertical	35.5	17.1	52.5	74.0	-21.5
20822.5	Average	Vertical	21.9	17.1	39.0	54.0	-15.0
20827.4	Peak	Horizontal	35.2	17.0	52.3	74.0	-21.8
20837.8	Average	Horizontal	21.7	17.0	38.6	54.0	-15.4
26166.6	Peak	Vertical	31.6	22.2	53.8	74.0	-20.2
26048.7	Average	Vertical	17.5	22.7	40.2	54.0	-13.8
26041.1	Peak	Horizontal	30.5	22.7	53.2	74.0	-20.8
26047.4	Average	Horizontal	17.1	22.7	39.7	54.0	-14.3
31326.7	Peak	Vertical	26.8	28.2	55.0	74.0	-19.0
31277.9	Average	Vertical	12.9	28.0	40.9	54.0	-13.1
31381.9	Peak	Horizontal	27.0	28.4	55.4	74.0	-18.6
31391.1	Average	Horizontal	13.9	28.4	42.3	54.0	-11.7
36602.6	Peak	Vertical	27.5	28.9	56.4	74.0	-17.6
36497.4	Average	Vertical	13.9	29.1	43.0	54.0	-11.0
36632.0	Peak	Horizontal	27.5	28.8	56.3	74.0	-17.7
36598.4	Average	Horizontal	13.9	28.9	42.8	54.0	-11.2

Table 11: Radiated Spurious Emissions, UNII-1 Middle Channel

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)
10479.6	Peak	Vertical	36.7	12.5	49.1	74.0	-24.9
10482.3	Average	Vertical	23.5	12.5	36.0	54.0	-18.0
10483.1	Peak	Horizontal	37.2	12.5	49.6	74.0	-24.4
10482.1	Average	Horizontal	25.1	12.5	37.6	54.0	-16.4
15719.6	Peak	Vertical	34.7	14.6	49.2	74.0	-24.8
15717.1	Average	Vertical	21.5	14.6	36.1	54.0	-17.9

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)
15698.7	Peak	Horizontal	35.4	14.6	50.0	74.0	-24.0
15720.9	Average	Horizontal	22.1	14.6	36.7	54.0	-17.4
20922.2	Peak	Vertical	35.3	16.7	52.0	74.0	-22.0
20924.0	Average	Vertical	21.6	16.7	38.3	54.0	-15.7
20938.8	Peak	Horizontal	35.2	16.8	52.0	74.0	-22.0
20921.1	Average	Horizontal	21.5	16.7	38.2	54.0	-15.8
26145.1	Peak	Vertical	31.2	22.3	53.5	74.0	-20.5
26144.5	Average	Vertical	17.5	22.3	39.8	54.0	-14.2
26136.0	Peak	Horizontal	30.8	22.3	53.2	74.0	-20.8
26142.0	Average	Horizontal	17.2	22.3	39.5	54.0	-14.5
31445.2	Peak	Vertical	28.5	28.5	56.9	74.0	-17.1
31444.3	Average	Vertical	15.4	28.5	43.9	54.0	-10.1
31468.1	Peak	Horizontal	28.3	28.4	56.7	74.0	-17.3
31439.1	Average	Horizontal	14.9	28.5	43.4	54.0	-10.6
36776.0	Peak	Vertical	28.5	28.5	57.1	74.0	-17.0
36688.0	Average	Vertical	14.3	28.7	43.0	54.0	-11.0
36633.8	Peak	Horizontal	27.7	28.8	56.6	74.0	-17.5
36651.2	Average	Horizontal	13.9	28.8	42.6	54.0	-11.4

Table 12: Radiated Spurious Emissions, UNII-1 High Channel

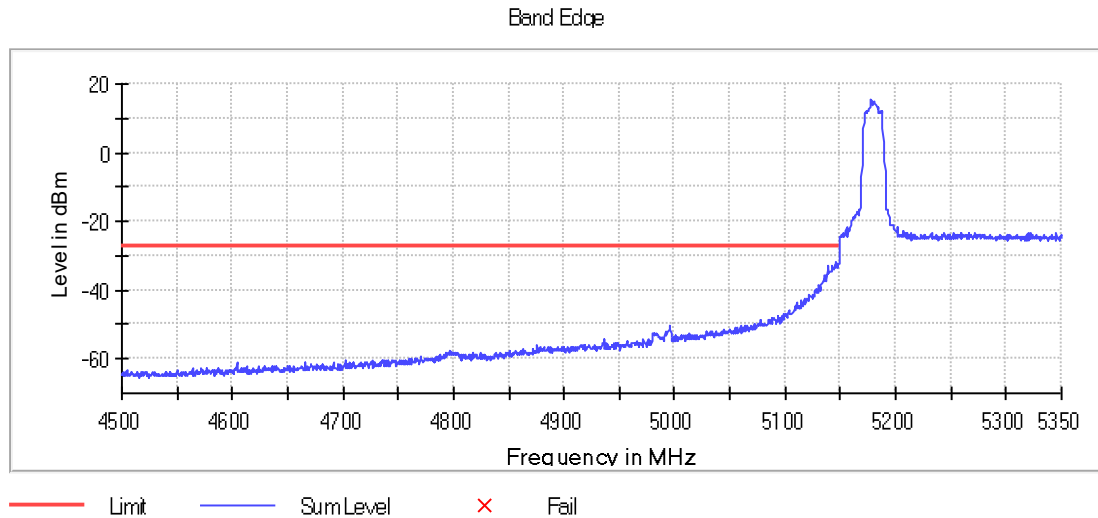
Result

The EUT complied with the specification limit by a margin of 10.1 dB.

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

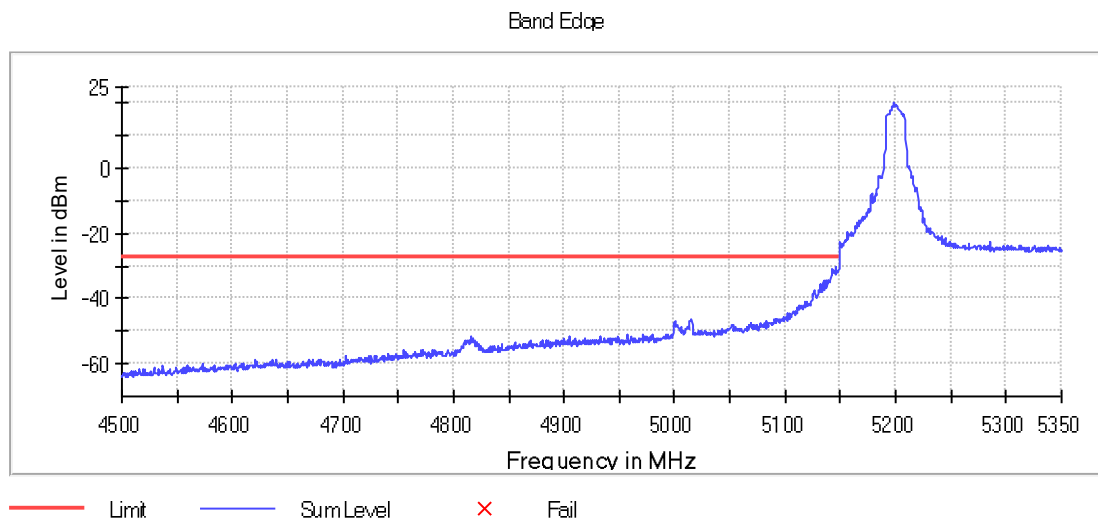
Radiated and antenna port conducted measurements of the UNII-1 band edge are shown below.

Antenna Port Conducted Band Edge Transmitting on 5180 MHz (Power Level 14):



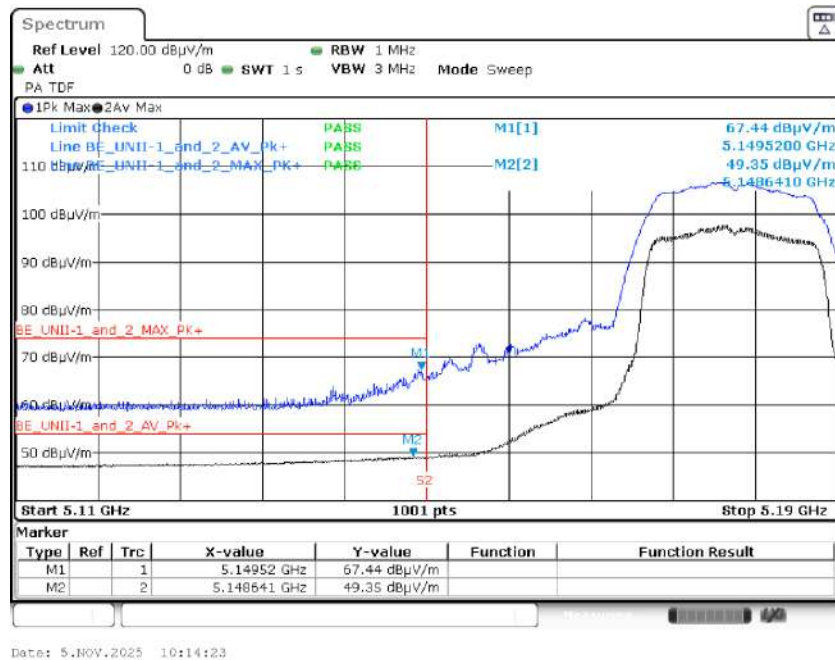
Graph 13: Antenna Port Conducted Band Edge, UNII-1 Low Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5200 MHz (Power Level 20):



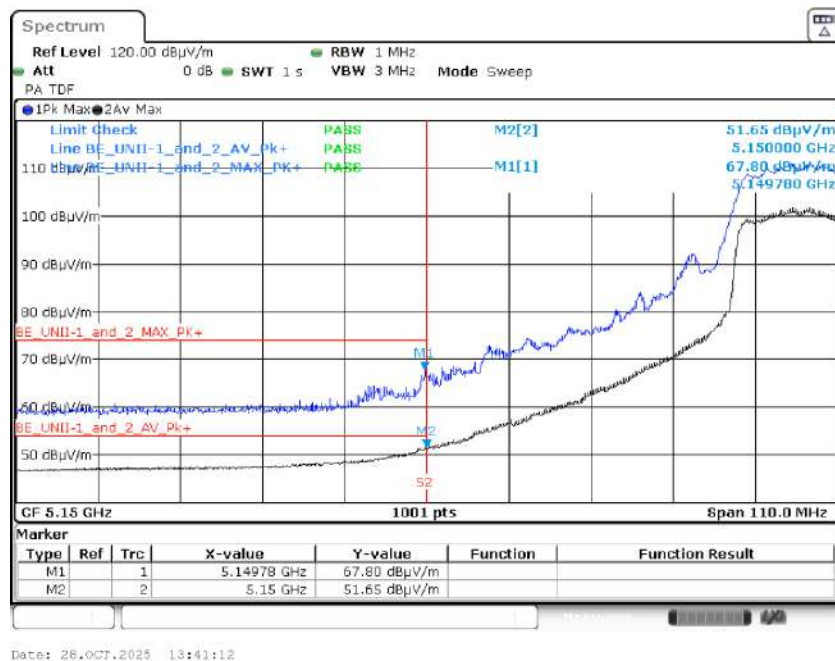
Graph 14: Antenna Port Conducted Band Edge, UNII-1 Low Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5180 MHz (Power Level 14):



Graph 15: Radiated Band Edge, UNII-1 Low Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5200 MHz (Power Level 20):



Graph 16: Radiated Band Edge, UNII-1 Low Channel 2 (Stepped Power Level)

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 Mode

6.2.2.1 §15.403 26dB Bandwidth (UNII 1)

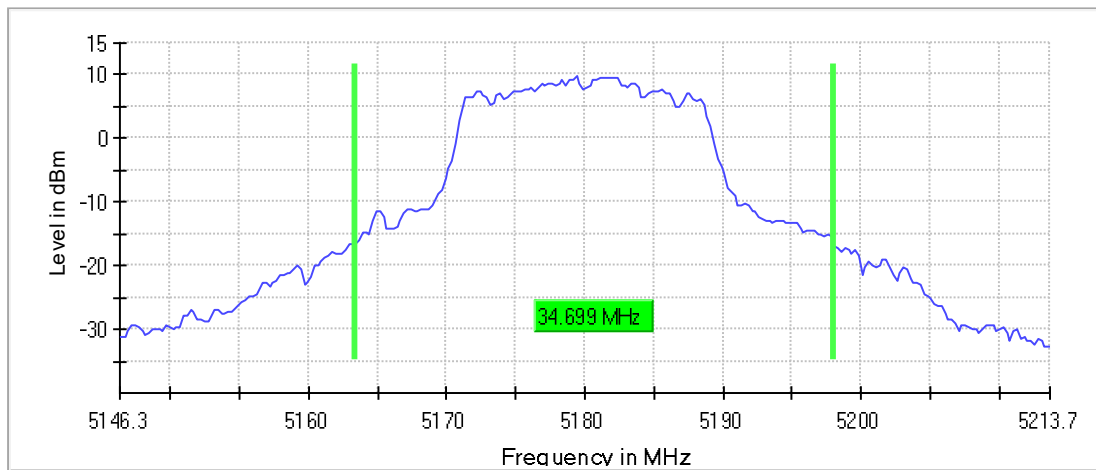
Bandwidths were measured at the intended power set level per channel.

The 26dB emission bandwidths are shown below with RBW of 400 kHz and VBW of 1 MHz

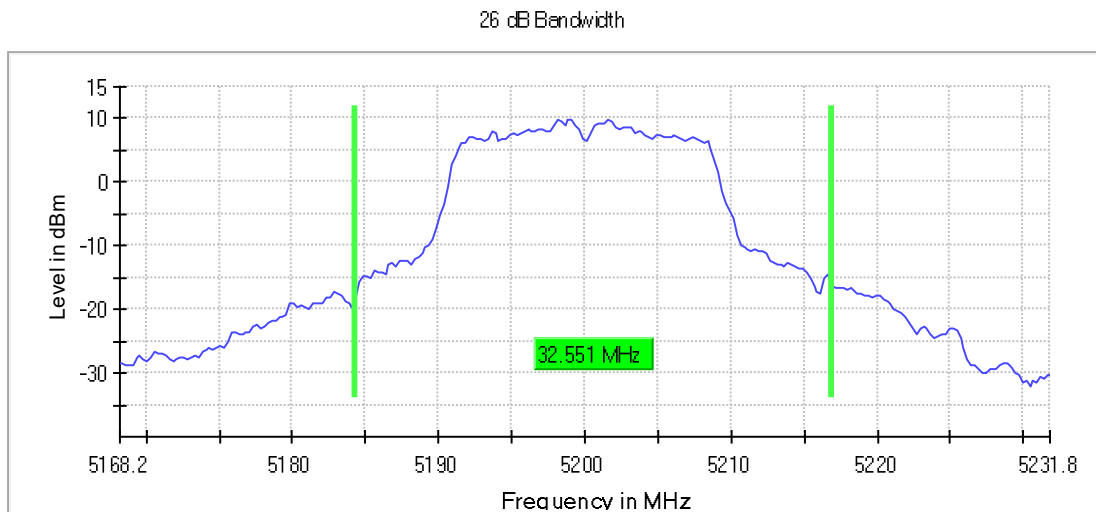
Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5180	34.7
5200	32.6
5240	34.3

Table 13: 26 dB Emission Bandwidth

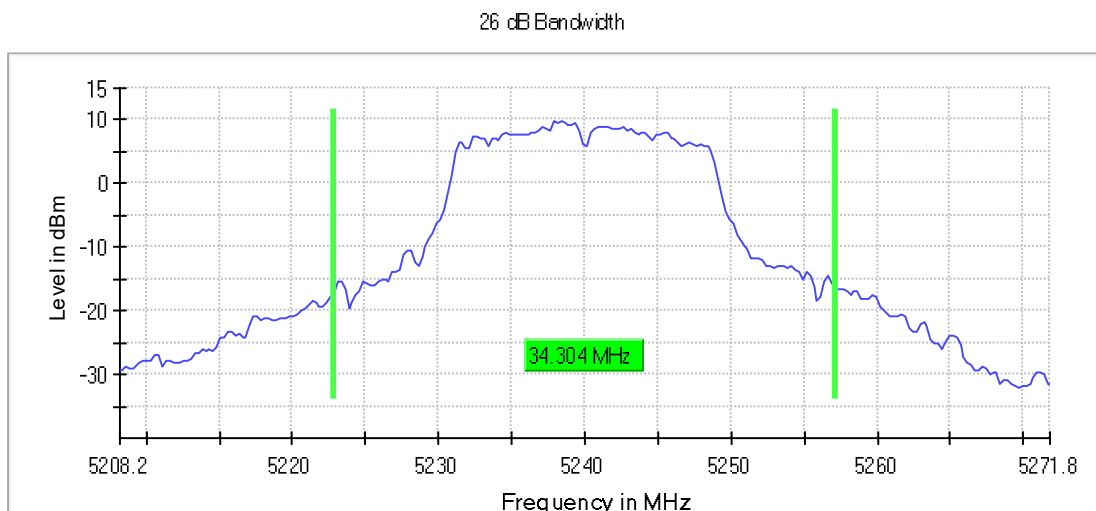
26 dB Bandwidth



Graph 17: 26 dB Emission Bandwidth Transmitting at 5180 MHz



Graph 18: 26 dB Emission Bandwidth Transmitting at 5200 MHz



Graph 19: 26 dB Emission 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	4.0	6	0.0	24	24

Table 14: 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.

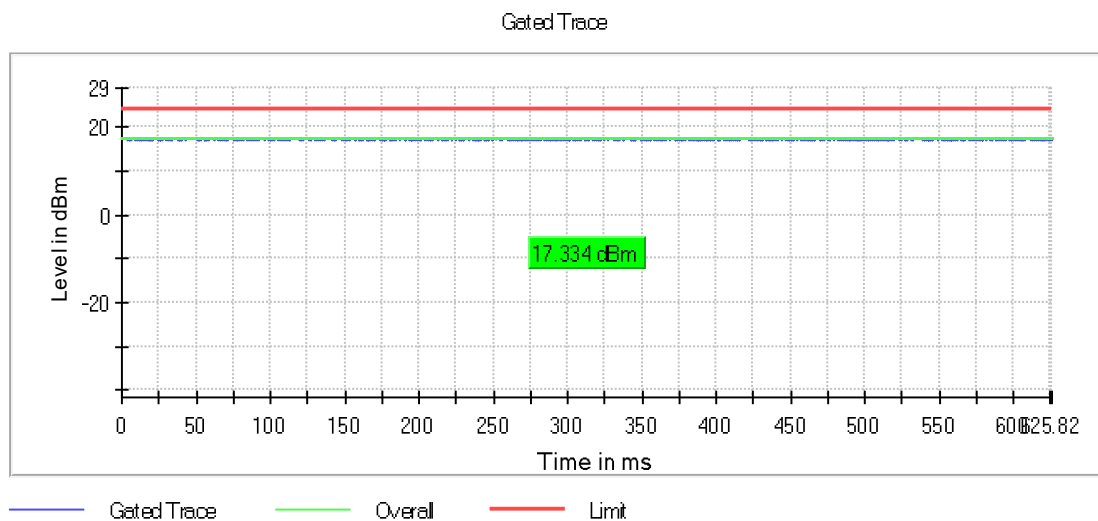
UNII-1 Conducted Power Measurement – AP Architecture, Client Mode

Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)
5180	17.3	24	-6.7
5200	17.5	24	-6.5
5240	18.0	24	-6.0

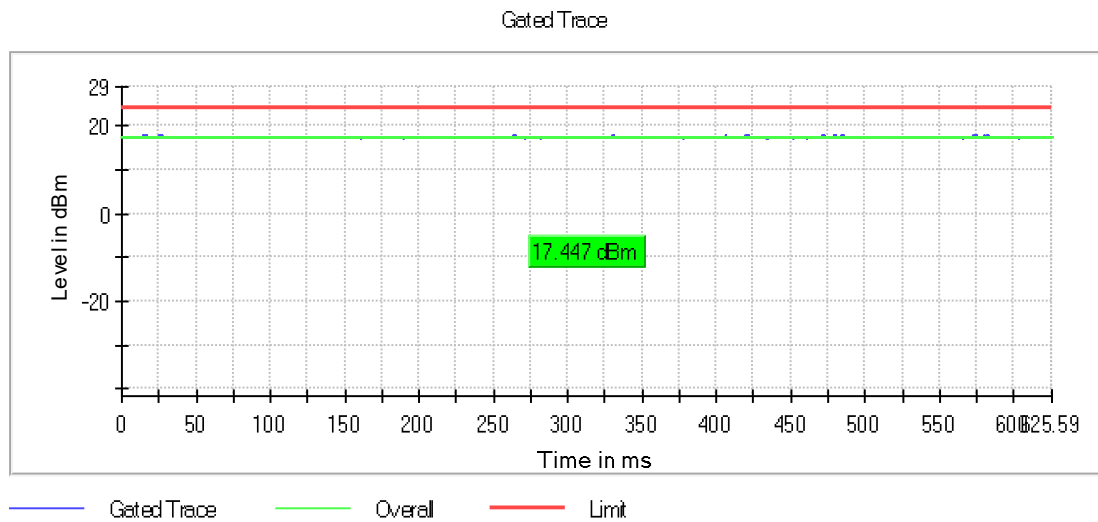
Table 15: PM-G Conducted Output Power Measurements

Result

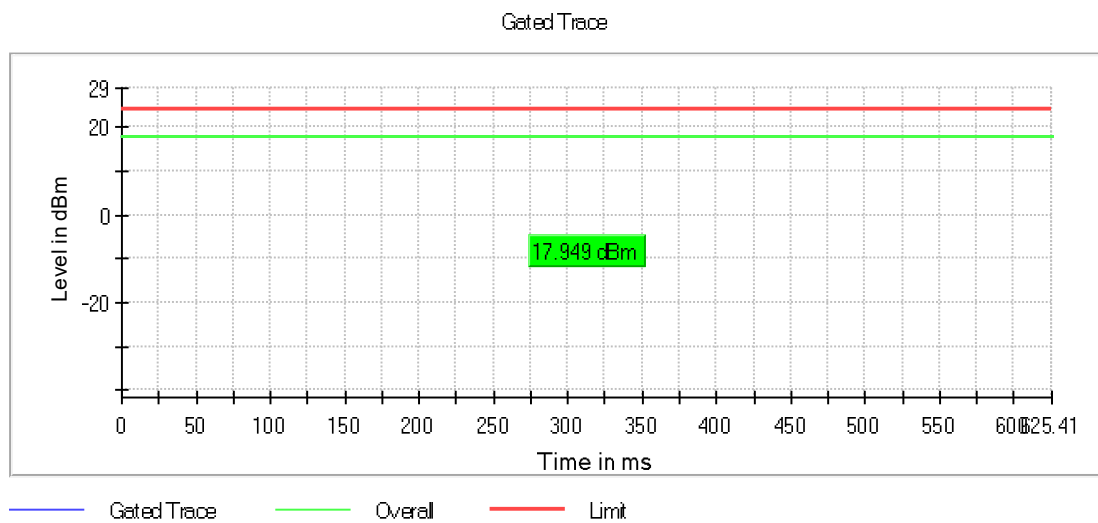
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.0 dB.



Graph 20: PM-G Power Transmitting at 5180 MHz (Power Level 20)



Graph 21: PM-G Power Transmitting at 5200 MHz (Power Level 20)



Graph 22: 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	4.0	6	0	11	11

Table 16: 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.

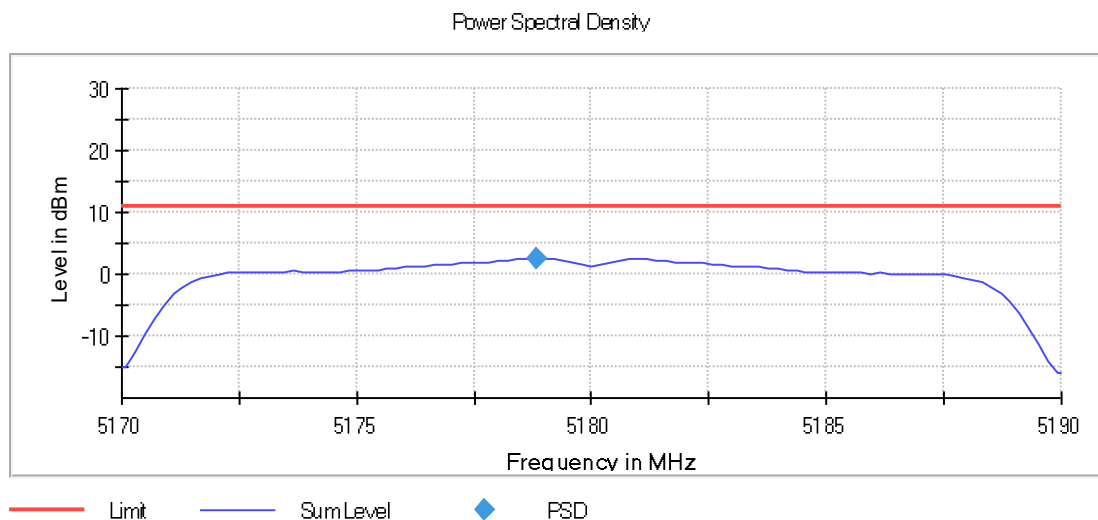
UNII-1 Power Spectral Density Measurements – AP Architecture, Client Mode

Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5180	2.5	11	-8.5
5200	2.9	11	-8.1
5240	3.0	11	-8.0

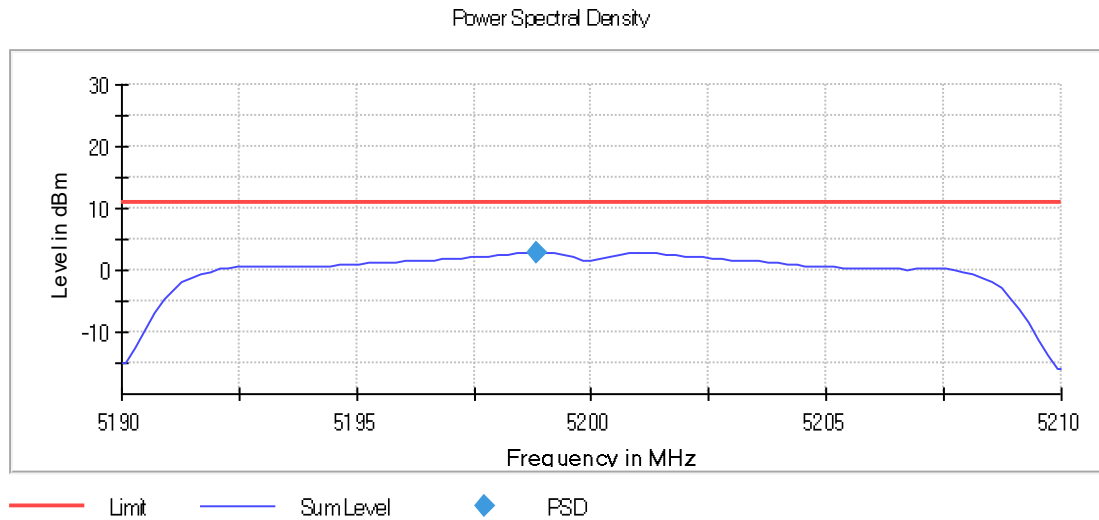
Table 17: SA-1 Alternative PSD Measurements

Result

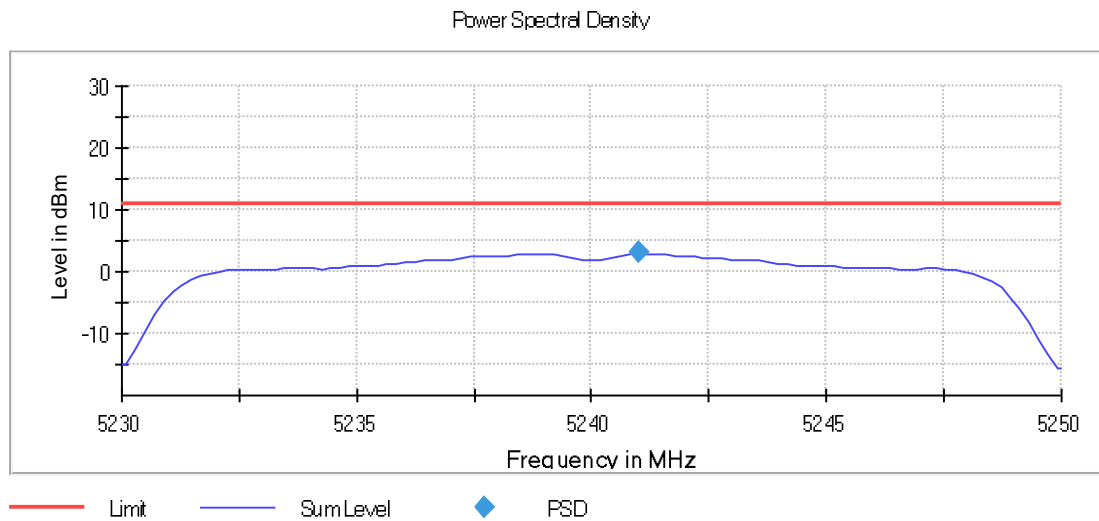
In the configurations tested the EUT complied with the requirements of the specification with a margin of 8.0 dB.



Graph 23: PSD Transmitting at 5180 MHz (Power Level 20)



Graph 24: PSD Transmitting at 5200 MHz (Power Level 20)



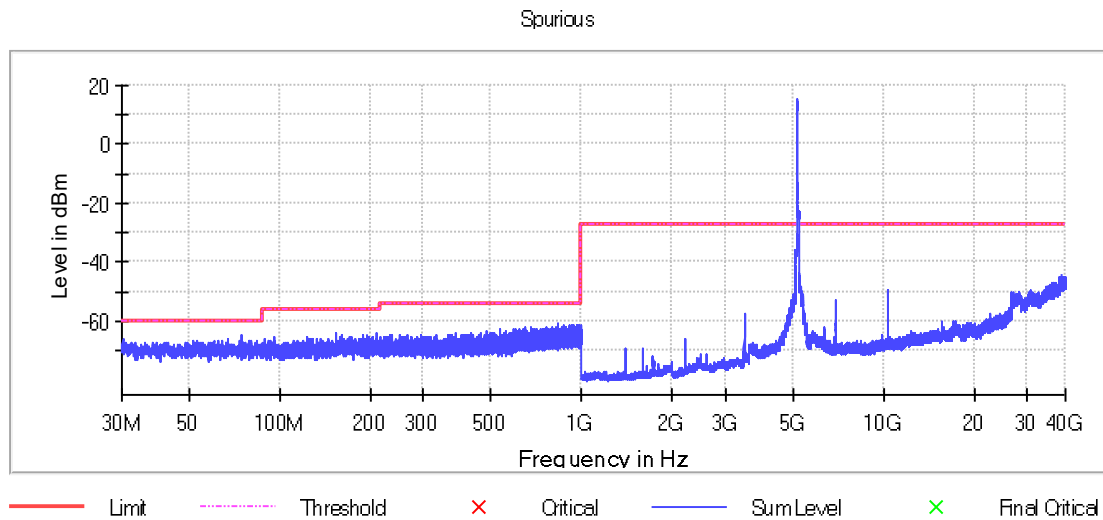
Graph 25: PSD Transmitting at 5240 MHz (Power Level 20)

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

Undesirable Emissions were measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest in-band antenna gain (4.0dBi) 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.

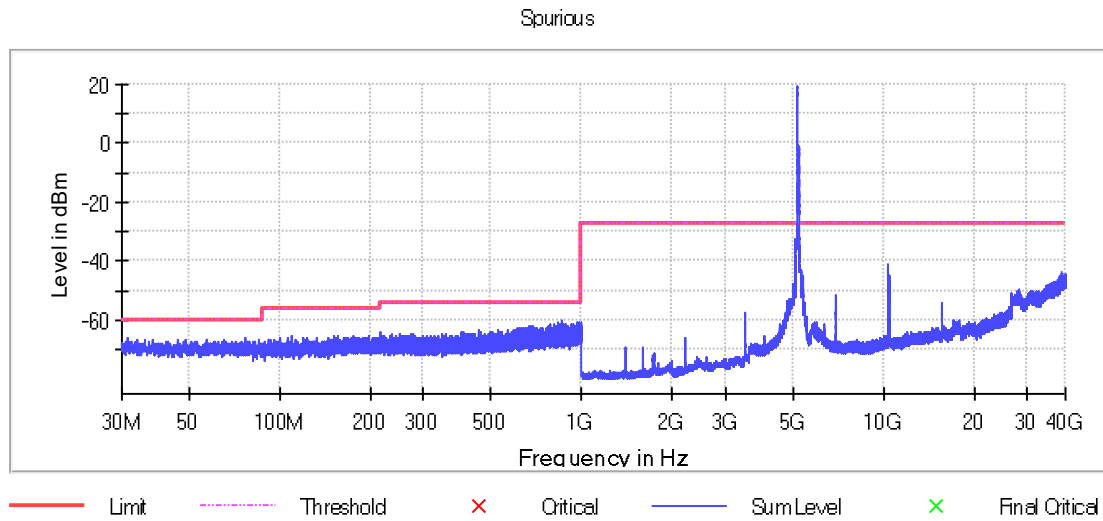
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the highest possible transmit power (20dBm).

Antenna Port Conducted Emissions Transmitting 5180 MHz at Power Level 15:



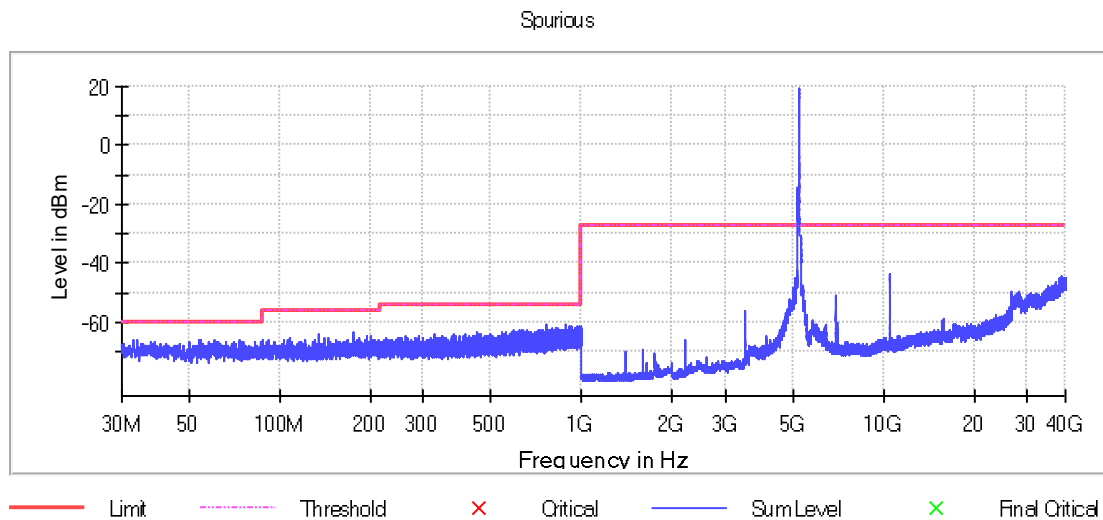
Graph 26: Antenna Port Conducted Spurious Emissions, UNII-1 Low Channel

Antenna Port Conducted Emissions Transmitting 5200 MHz at Power Level 20:



Graph 27: Antenna Port Conducted Spurious Emissions, UNII-1 Middle Channel

Antenna Port Conducted Emissions Transmitting 5240 MHz at Power Level 20:



Graph 28: Antenna Port Conducted Spurious Emissions, UNII-1 High Channel

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)
10362.3	Peak	Vertical	36.5	12.2	48.7	74.0	-25.3
10358.7	Average	Vertical	22.9	12.2	35.2	54.0	-18.8

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10356.5	Peak	Horizontal	39.3	12.3	51.6	74.0	-22.4
10358.5	Average	Horizontal	26.4	12.2	38.7	54.0	-15.3
15514.7	Peak	Vertical	35.2	14.5	49.6	74.0	-24.4
15547.4	Average	Vertical	21.5	14.3	35.8	54.0	-18.2
15544.0	Peak	Horizontal	35.6	14.3	49.9	74.0	-24.1
15547.2	Average	Horizontal	22.0	14.3	36.4	54.0	-17.6
20691.1	Peak	Vertical	35.8	17.9	53.6	74.0	-20.4
20689.4	Average	Vertical	22.6	17.9	40.4	54.0	-13.6
20690.7	Peak	Horizontal	35.2	17.9	53.1	74.0	-20.9
20689.5	Average	Horizontal	21.8	17.9	39.7	54.0	-14.3
25864.5	Peak	Vertical	31.5	22.8	54.4	74.0	-19.6
25860.0	Average	Vertical	18.0	22.8	40.8	54.0	-13.2
25844.4	Peak	Horizontal	30.6	22.8	53.5	74.0	-20.6
25875.3	Average	Horizontal	17.2	22.8	40.1	54.0	-13.9
31078.0	Peak	Vertical	29.1	27.1	56.3	74.0	-17.7
31040.4	Average	Vertical	15.7	26.9	42.6	54.0	-11.5
31053.9	Peak	Horizontal	28.9	27.0	55.9	74.0	-18.1
31046.3	Average	Horizontal	15.3	26.9	42.2	54.0	-11.8
36218.0	Peak	Vertical	28.1	28.7	56.8	74.0	-17.3
36205.0	Average	Vertical	14.3	28.7	43.0	54.0	-11.0
36300.1	Peak	Horizontal	27.2	28.8	56.0	74.0	-18.0
36208.3	Average	Horizontal	13.9	28.7	42.6	54.0	-11.4

Table 18: Radiated Spurious Emissions, UNII-1 Low Channel

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)
10452.1	Peak	Vertical	36.1	12.4	48.5	74.0	-25.5
10439.1	Average	Vertical	22.8	12.3	35.1	54.0	-18.9
10438.5	Peak	Horizontal	37.5	12.3	49.8	74.0	-24.2
10438.7	Average	Horizontal	24.4	12.3	36.8	54.0	-17.3

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15647.4	Peak	Vertical	35.0	14.3	49.3	74.0	-24.7
15653.4	Average	Vertical	21.4	14.4	35.7	54.0	-18.3
15673.3	Peak	Horizontal	35.2	14.5	49.7	74.0	-24.3
15660.0	Average	Horizontal	21.8	14.4	36.2	54.0	-17.8
20844.8	Peak	Vertical	35.0	16.9	52.0	74.0	-22.0
20834.6	Average	Vertical	21.8	17.0	38.8	54.0	-15.2
20886.4	Peak	Horizontal	35.2	16.7	51.9	74.0	-22.1
20820.7	Average	Horizontal	21.6	17.1	38.7	54.0	-15.3
26080.5	Peak	Vertical	31.0	22.5	53.6	74.0	-20.5
26052.3	Average	Vertical	17.2	22.6	39.9	54.0	-14.1
26040.9	Peak	Horizontal	30.8	22.7	53.5	74.0	-20.5
26051.3	Average	Horizontal	17.1	22.7	39.8	54.0	-14.2
31383.4	Peak	Vertical	27.2	28.4	55.6	74.0	-18.4
31374.9	Average	Vertical	13.8	28.4	42.2	54.0	-11.8
31382.1	Peak	Horizontal	26.8	28.4	55.2	74.0	-18.8
31384.6	Average	Horizontal	13.6	28.4	42.0	54.0	-12.0
36561.2	Peak	Vertical	27.4	29.0	56.4	74.0	-17.6
36598.4	Average	Vertical	14.0	28.9	42.9	54.0	-11.1
36564.2	Peak	Horizontal	27.2	29.0	56.1	74.0	-17.9
36593.1	Average	Horizontal	13.8	28.9	42.7	54.0	-11.3

Table 19: Radiated Spurious Emissions, UNII-1 Middle Channel

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)
10472.3	Peak	Vertical	35.6	12.4	48.1	74.0	-26.0
10478.4	Average	Vertical	22.8	12.5	35.3	54.0	-18.7
10472.6	Peak	Horizontal	36.6	12.4	49.0	74.0	-25.0
10478.5	Average	Horizontal	24.2	12.5	36.7	54.0	-17.3
15701.2	Peak	Vertical	34.4	14.6	49.0	74.0	-25.0
15714.5	Average	Vertical	21.4	14.6	35.9	54.0	-18.1

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)
15731.3	Peak	Horizontal	35.0	14.5	49.5	74.0	-24.5
15717.0	Average	Horizontal	21.7	14.6	36.3	54.0	-17.7
20925.4	Peak	Vertical	35.3	16.7	52.1	74.0	-22.0
20950.6	Average	Vertical	21.4	16.8	38.2	54.0	-15.8
20990.4	Peak	Horizontal	34.5	17.0	51.5	74.0	-22.5
20952.6	Average	Horizontal	21.2	16.9	38.1	54.0	-15.9
26261.2	Peak	Vertical	31.3	21.9	53.2	74.0	-20.9
26143.8	Average	Vertical	17.3	22.3	39.6	54.0	-14.4
26235.9	Peak	Horizontal	31.1	22.0	53.0	74.0	-21.0
26232.0	Average	Horizontal	17.5	22.0	39.5	54.0	-14.5
31438.7	Peak	Vertical	29.1	28.5	57.6	74.0	-16.4
31480.3	Average	Vertical	15.5	28.4	43.9	54.0	-10.2
31431.0	Peak	Horizontal	28.1	28.5	56.6	74.0	-17.4
31483.2	Average	Horizontal	15.2	28.4	43.6	54.0	-10.4
36609.7	Peak	Vertical	27.5	28.9	56.4	74.0	-17.6
36598.7	Average	Vertical	14.0	28.9	42.9	54.0	-11.1
36606.3	Peak	Horizontal	27.8	28.9	56.6	74.0	-17.4
36595.8	Average	Horizontal	13.8	28.9	42.7	54.0	-11.3

Table 20: Radiated Spurious Emissions, UNII-1 High Channel

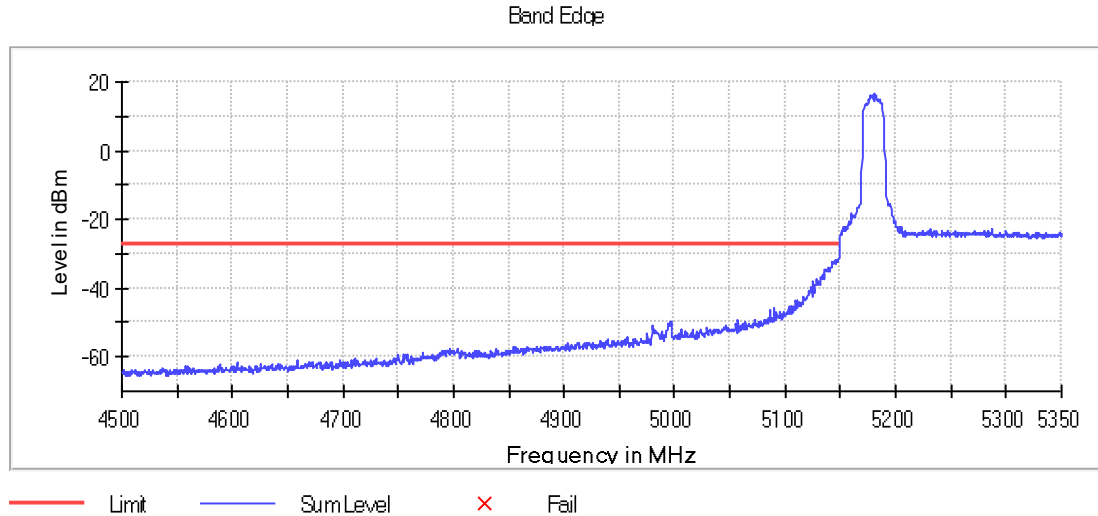
Result

The EUT complied with the specification limit by a margin of 10.2 dB.

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

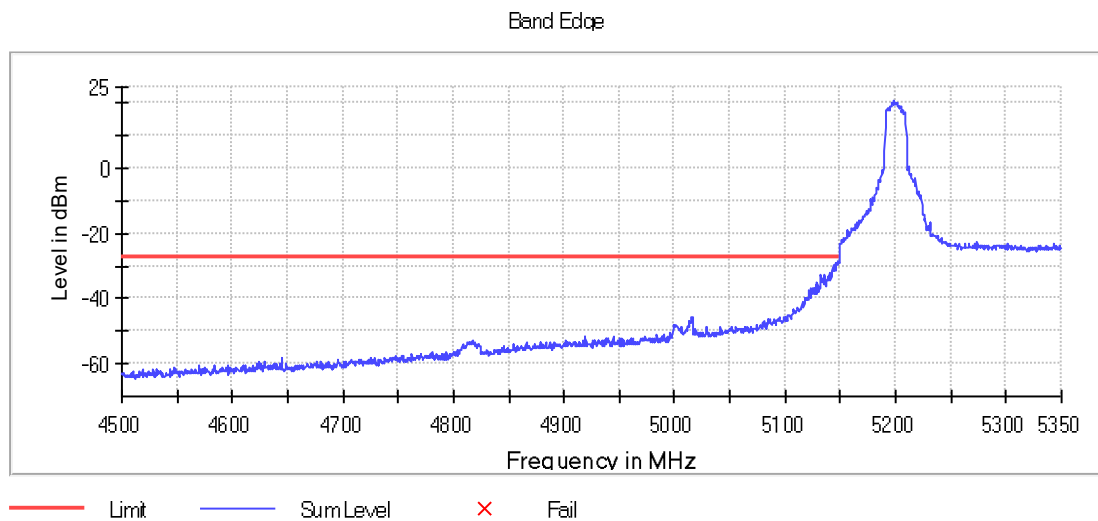
Radiated and antenna port conducted measurements of the UNII-1 band edge are shown below.

Antenna Port Conducted Band Edge Transmitting on 5180 MHz (Power Level 15):



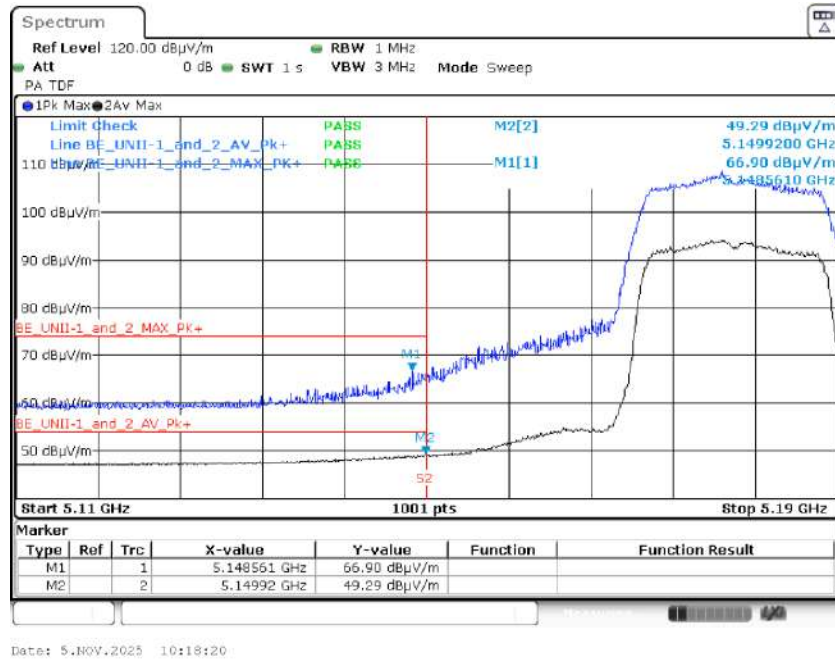
Graph 29: Antenna Port Conducted Band Edge, UNII-1 Low Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5200 MHz (Power Level 20):



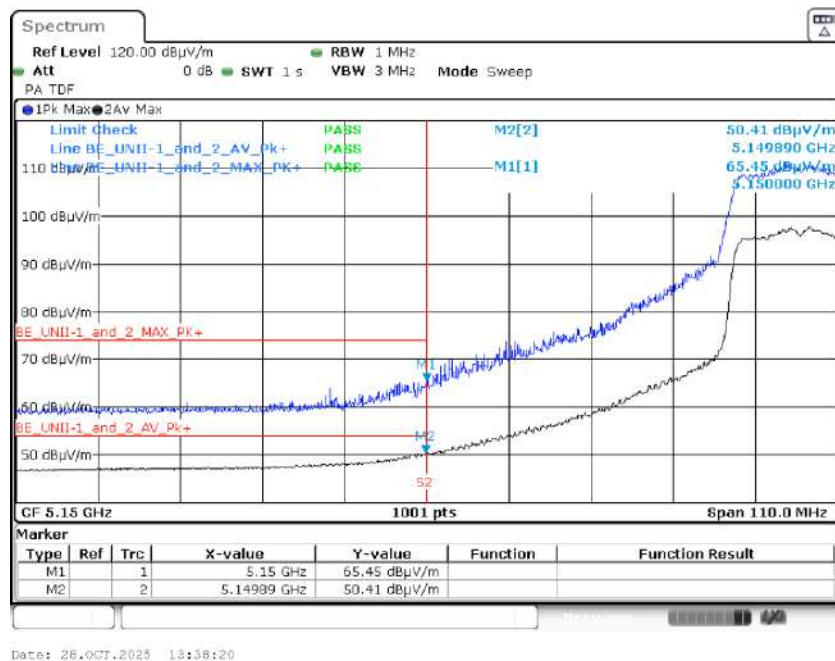
Graph 30: Antenna Port Conducted Band Edge, UNII-1 Low Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5180 MHz (Power Level 15):



Graph 31: Radiated Band Edge, UNII-1 Low Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5200 MHz (Power Level 20):



Graph 32: Radiated Band Edge, UNII-1 Low Channel 2 (Stepped Power Level)

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.

6.3 Test Results for the UNII 2 Band (5250-5725 MHz)

6.3.1 802.11a Mode

6.3.1.1 §15.403 26dB Bandwidth (UNII 2)

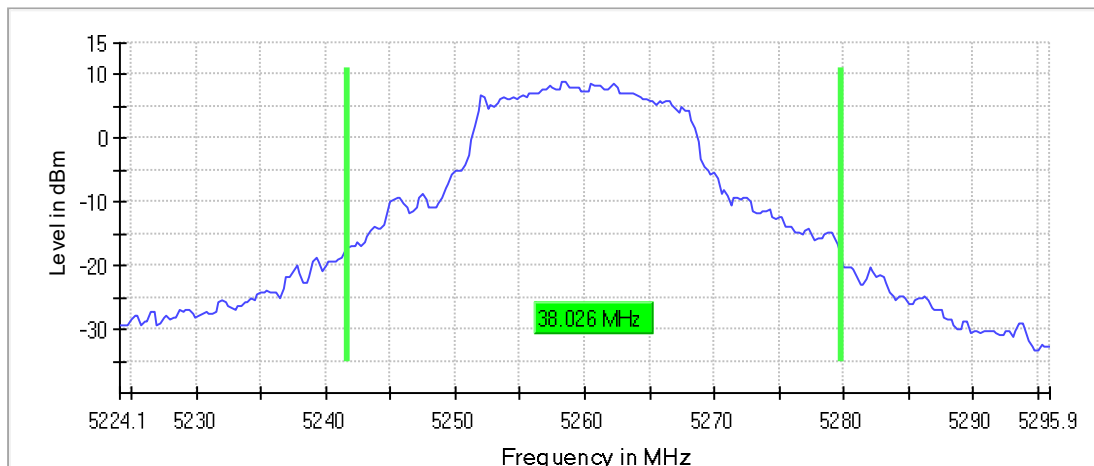
Bandwidths were measured at the maximum possible output power, 20dBm.

The 26dB emission bandwidths are shown below with RBW of 400 kHz and VBW of 1 MHz

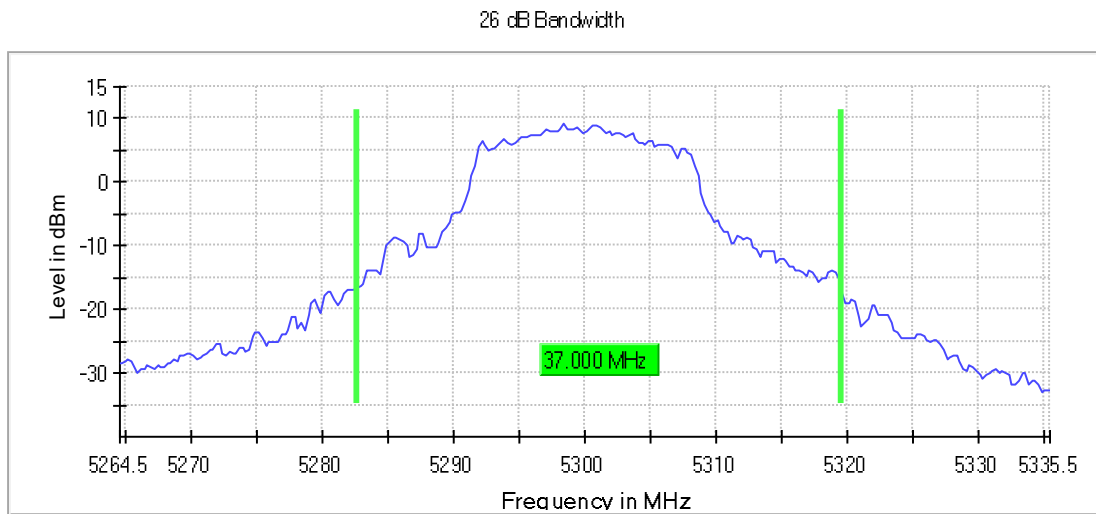
Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5260	38.0
5300	37.0
5320	37.3
5500	37.7
5600	38.2
5700	37.5

Table 21: 26 dB Emission Bandwidth

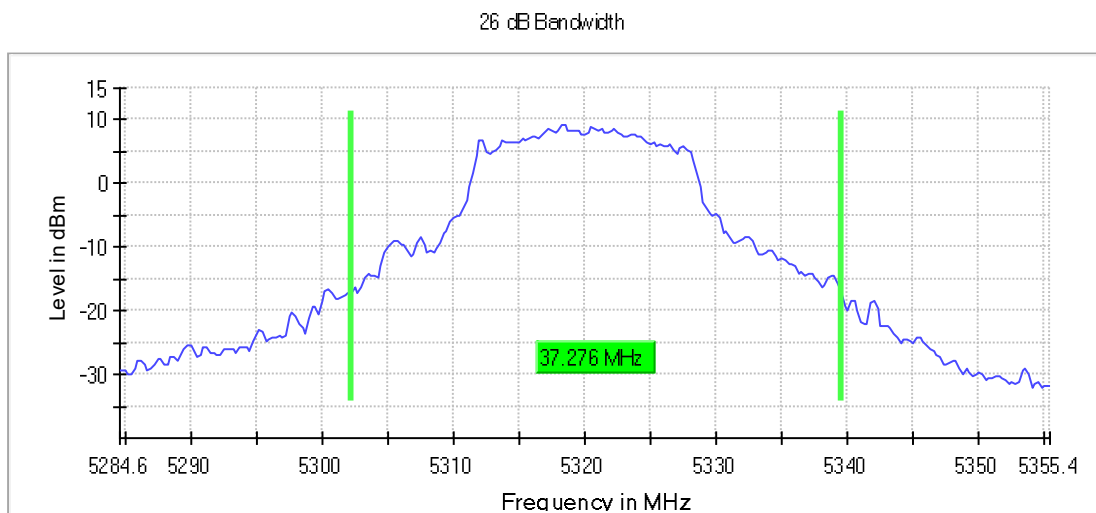
26 dB Bandwidth



Graph 33: 26 dB Emission Bandwidth Transmitting at 5260 MHz

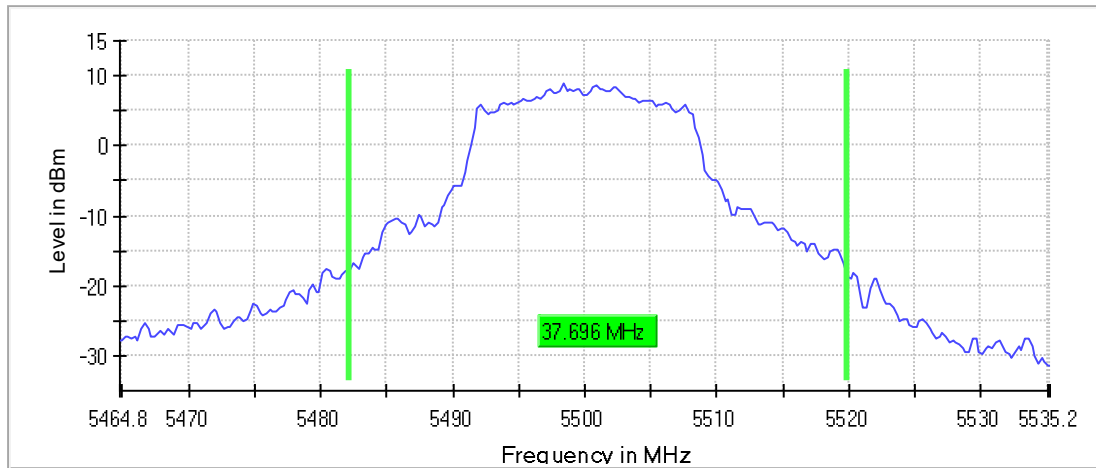


Graph 34: 26 dB Emission Bandwidth Transmitting at 5300 MHz



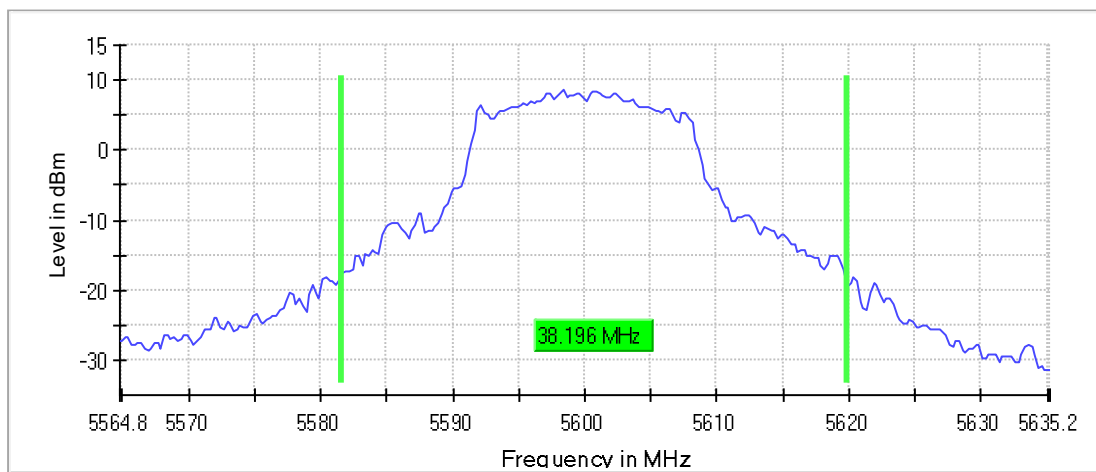
Graph 35: 26 dB Emission Bandwidth Transmitting at 5320 MHz

26 dB Bandwidth

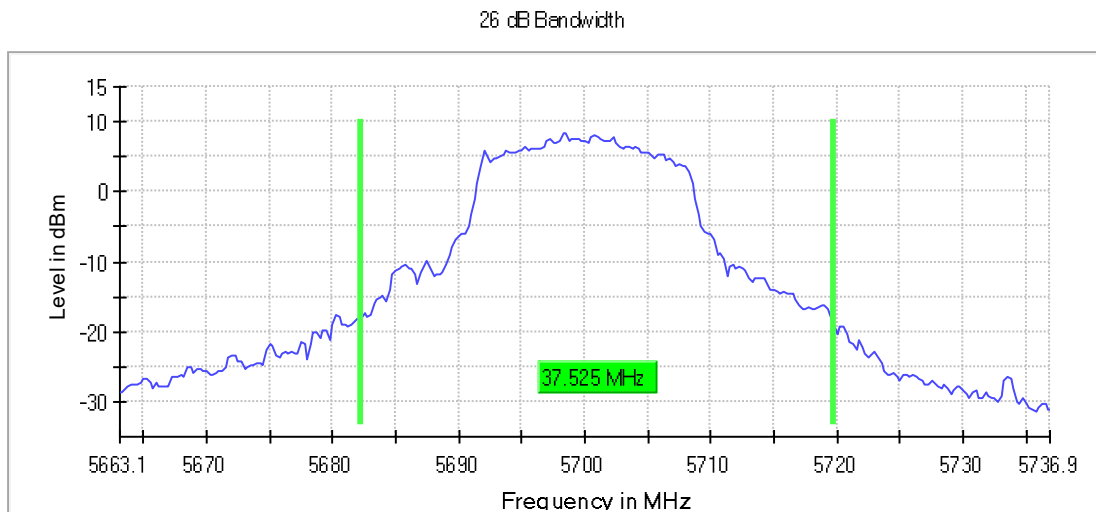


Graph 36: 26 dB Emission Bandwidth Transmitting at 5500 MHz

26 dB Bandwidth



Graph 37: 26 dB Emission Bandwidth Transmitting at 5600 MHz



Graph 38: 26 dB Emission 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.

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	38.0	26.8	4.0	6	0	24.0	24.0
5300	37.0	26.7	4.0	6	0	24.0	24.0
5320	37.3	26.7	4.0	6	0	24.0	24.0
5500	37.7	26.8	4.0	6	0	24.0	24.0
5600	38.2	26.8	4.0	6	0	24.0	24.0
5700	37.5	26.7	4.0	6	0	24.0	24.0

Table 22: 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	17.5	24.0	-6.5	No
5300	17.7	24.0	-6.3	No
5320	17.7	24.0	-6.3	No
5500	17.4	24.0	-6.6	No
5600	17.6	24.0	-6.4	No
5700	17.2	24.0	-6.8	No

Table 23: PM-G Conducted Output Power Measurements

Result

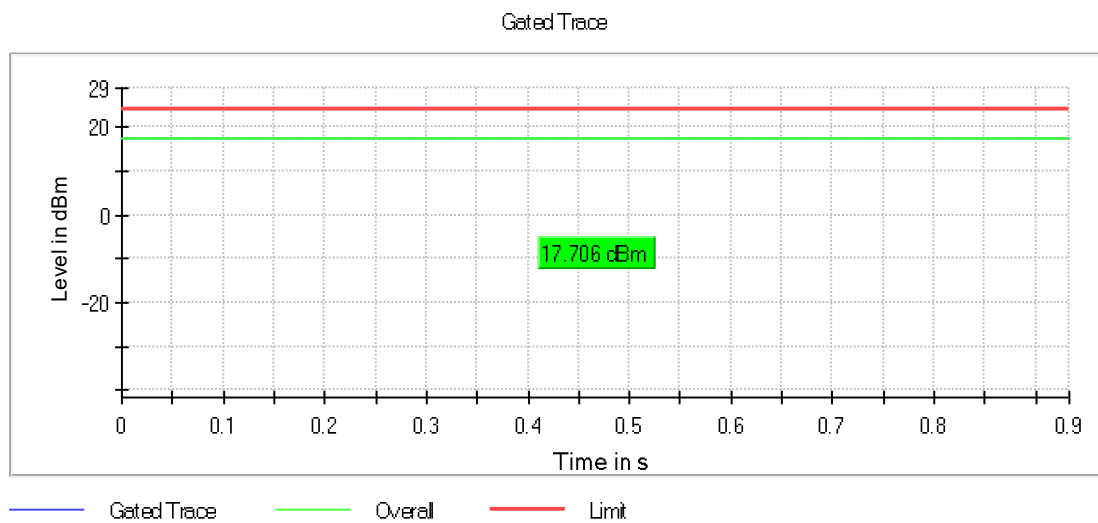
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.3 dB and does not require a transmit power control mechanism.



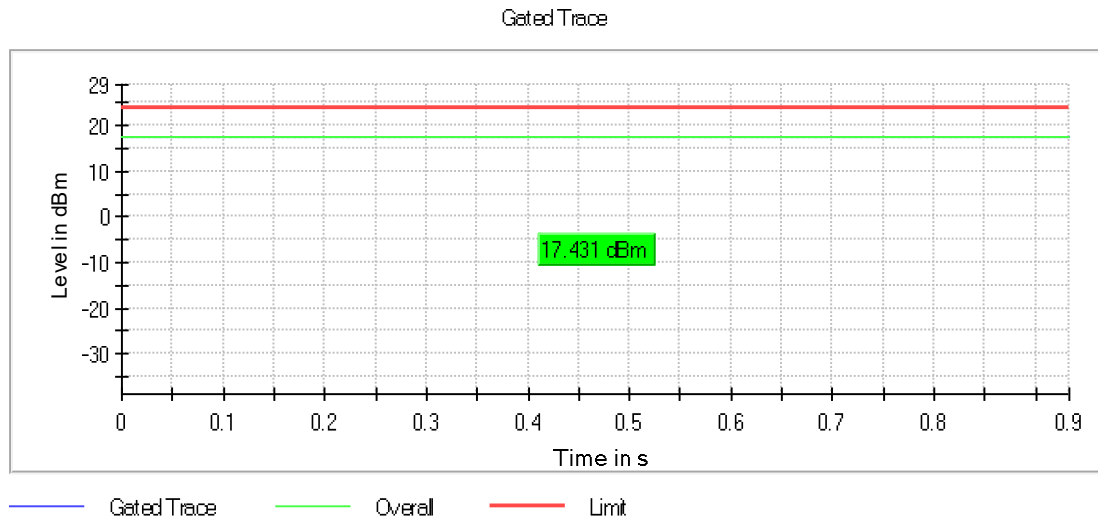
Graph 39: PM-G Power Transmitting at 5260 MHz (Power Level 20)



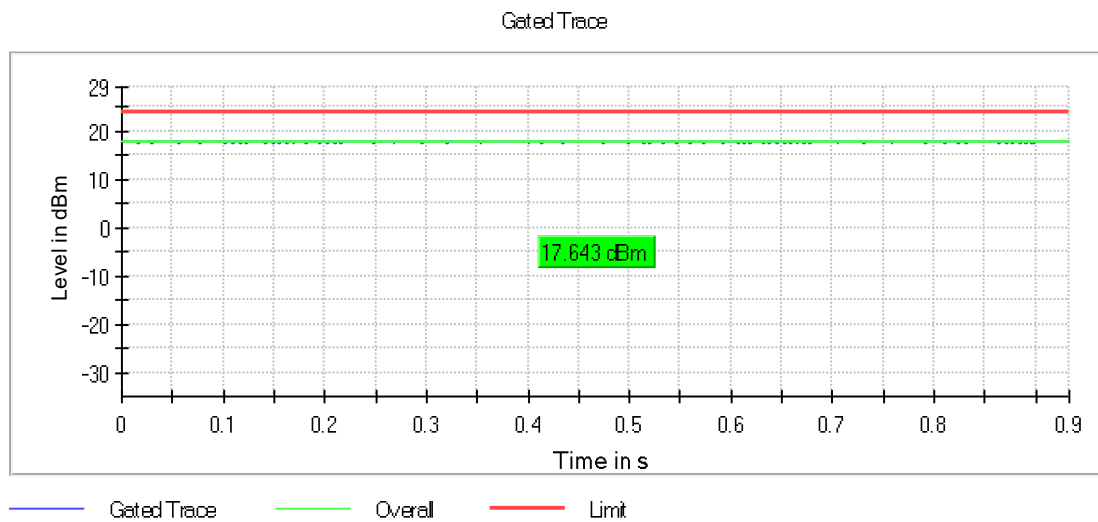
Graph 40: PM-G Power Transmitting at 5300 MHz (Power Level 20)



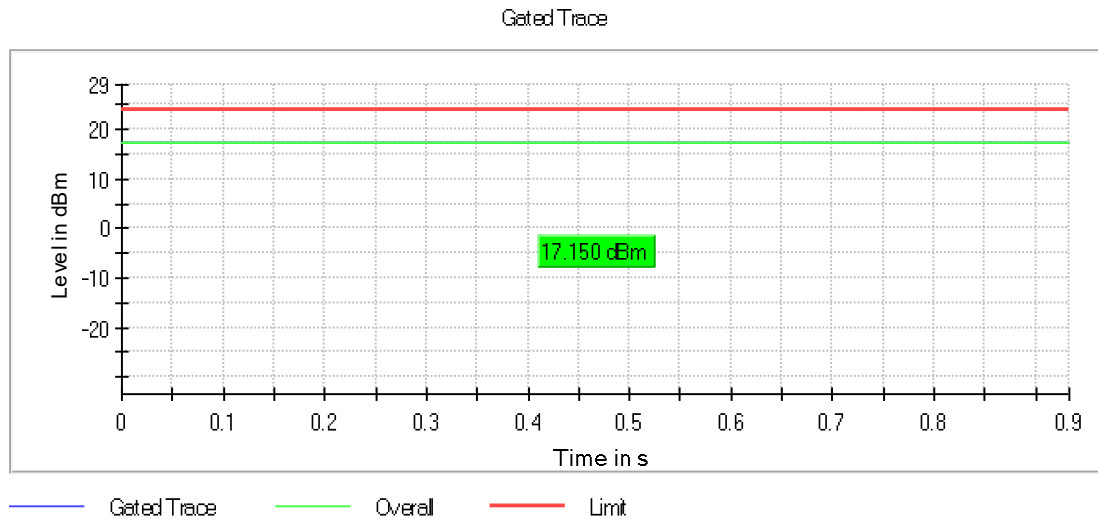
Graph 41: PM-G Power Transmitting at 5320 MHz (Power Level 20)



Graph 42: PM-G Power Transmitting at 5500 MHz (Power Level 20)



Graph 43: PM-G Power Transmitting at 5600 MHz (Power Level 20)



Graph 44: PM-G Power Transmitting at 5700 MHz (Power Level 20)

6.3.1.3 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 2)

The following tables show the adjusted power spectral density limits.

UNII-2 Power Spectral Density Limits

Power spectral density limits for the UNII-2 band are adjusted based on isotropic antenna gain.

Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
4.0	6	0	11	11

Table 24: UNII-2 Power spectral density limits based upon antenna gain

PSD was measured using Method SA-1 Alternative.at the maximum possible power set level, 20dBm.

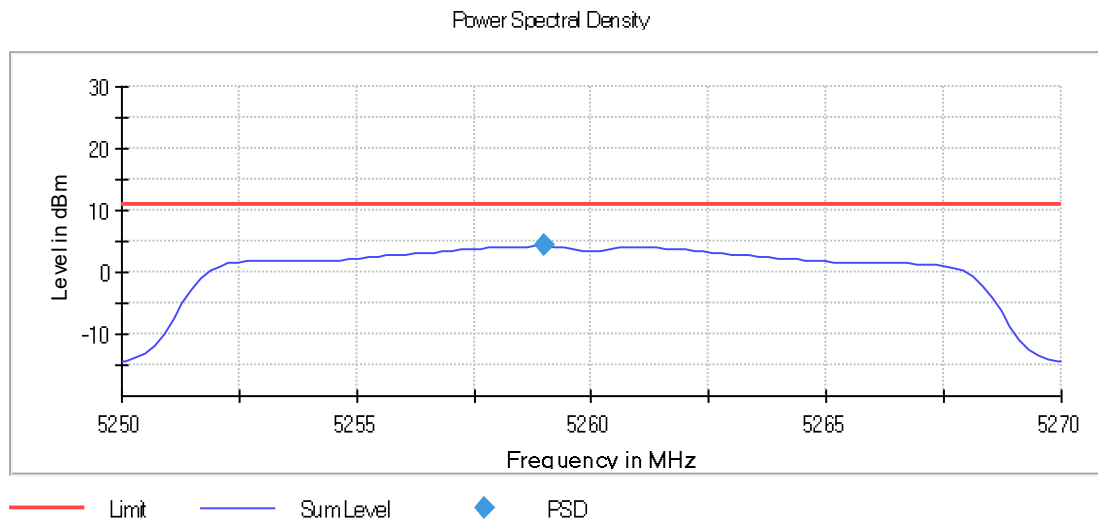
UNII-2 Power Spectral Density Measurements

Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5260	4.3	11	-6.7
5300	4.6	11	-6.4
5320	4.6	11	-6.4
5500	4.2	11	-6.8
5600	4.2	11	-6.8
5700	3.7	11	-7.3

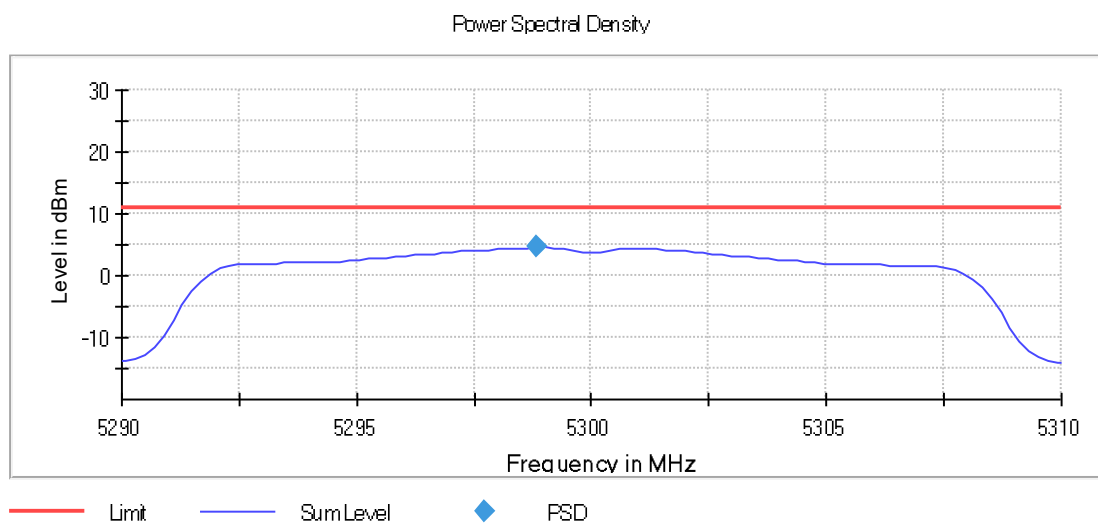
Table 25: SA-1 Alternative PSD Measurements

Result

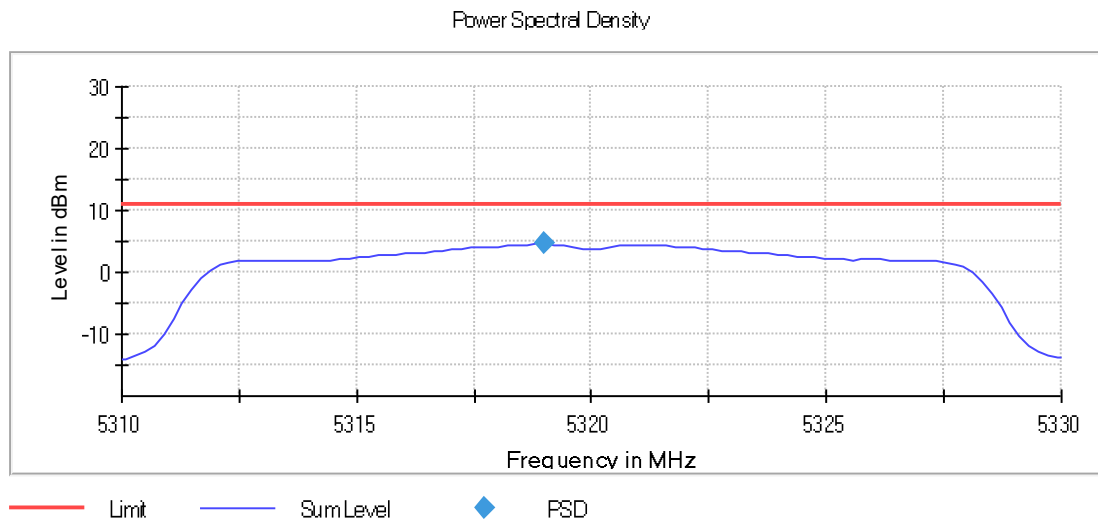
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.4 dB.



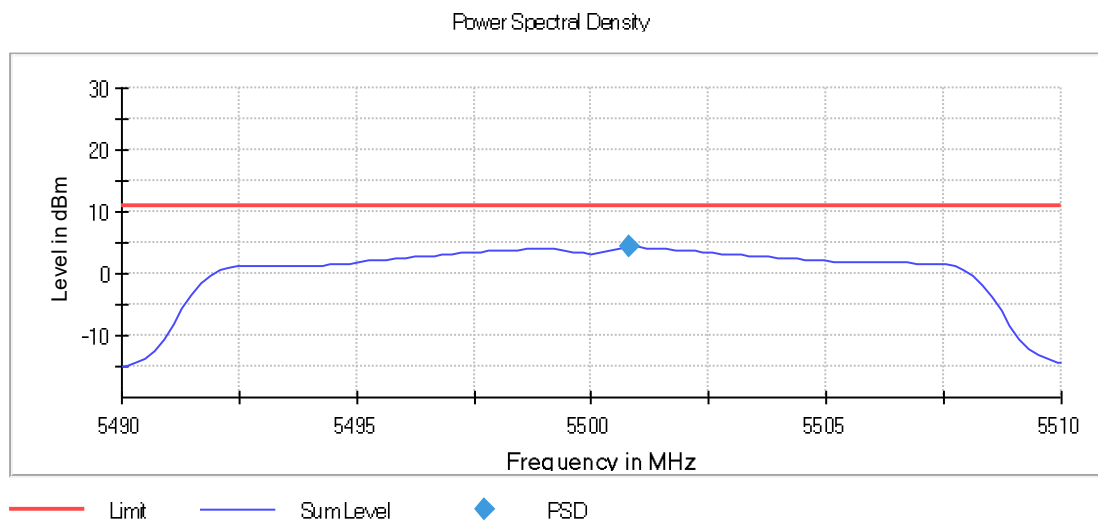
Graph 45: PSD Transmitting at 5260 MHz (Power Level 20)



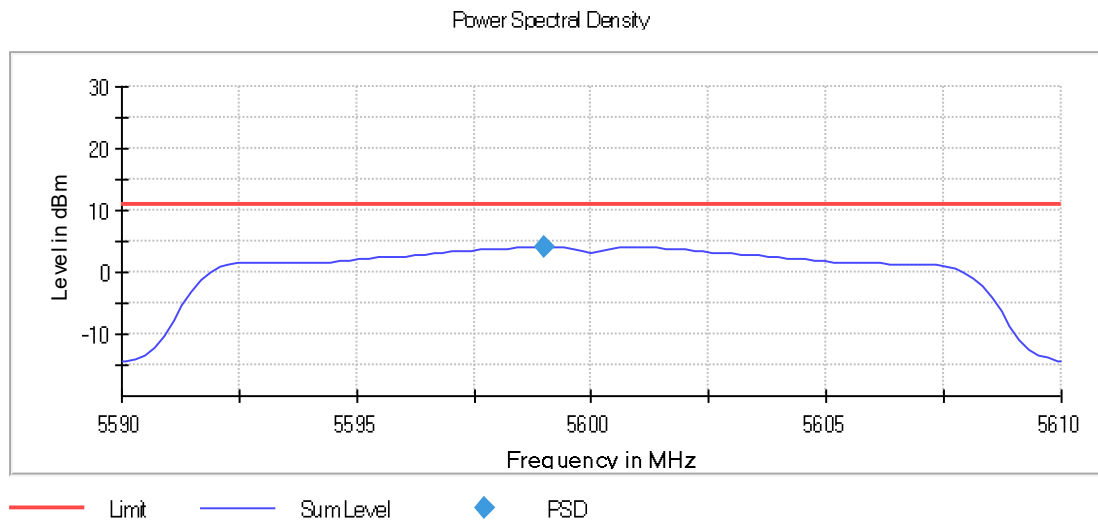
Graph 46: PSD Transmitting at 5300 MHz (Power Level 20)



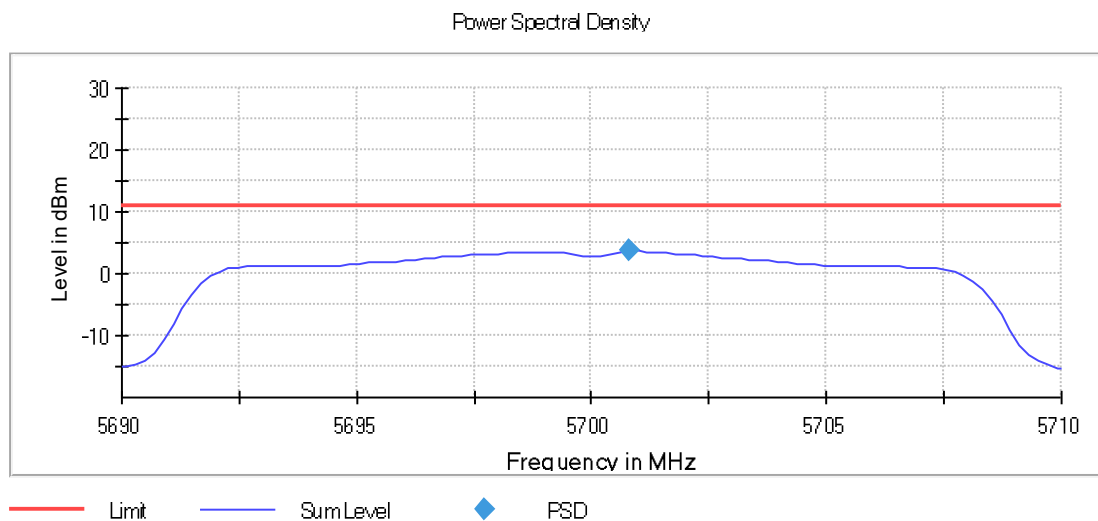
Graph 47: PSD Transmitting at 5320 MHz (Power Level 20)



Graph 48: PSD Transmitting at 5500 MHz (Power Level 20)



Graph 49: PSD Transmitting at 5600 MHz (Power Level 20)



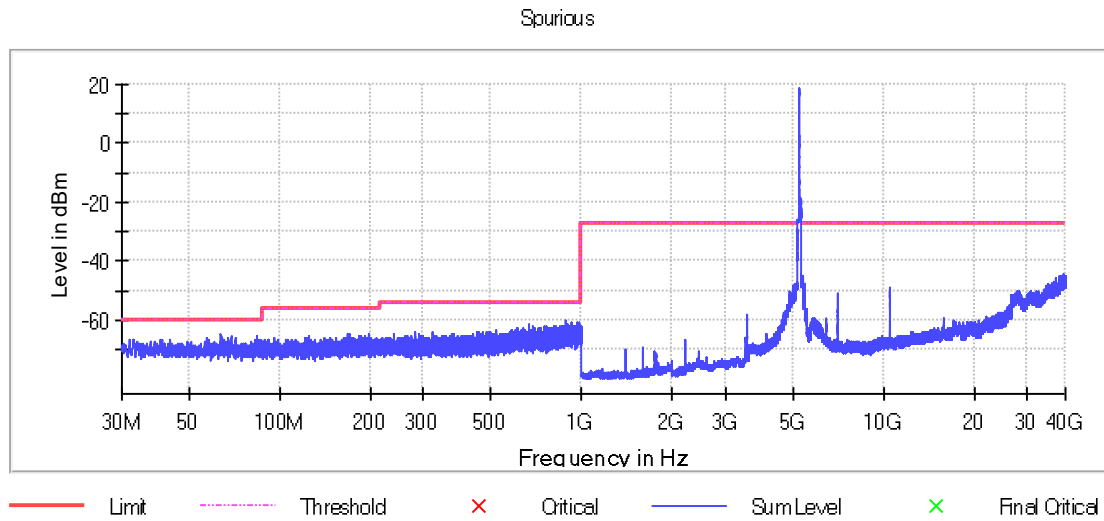
Graph 50: PSD Transmitting at 5700 MHz (Power Level 20)

6.3.1.4 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 2)

Undesirable Emissions were measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest in-band antenna gain (4.0 dBi) 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.

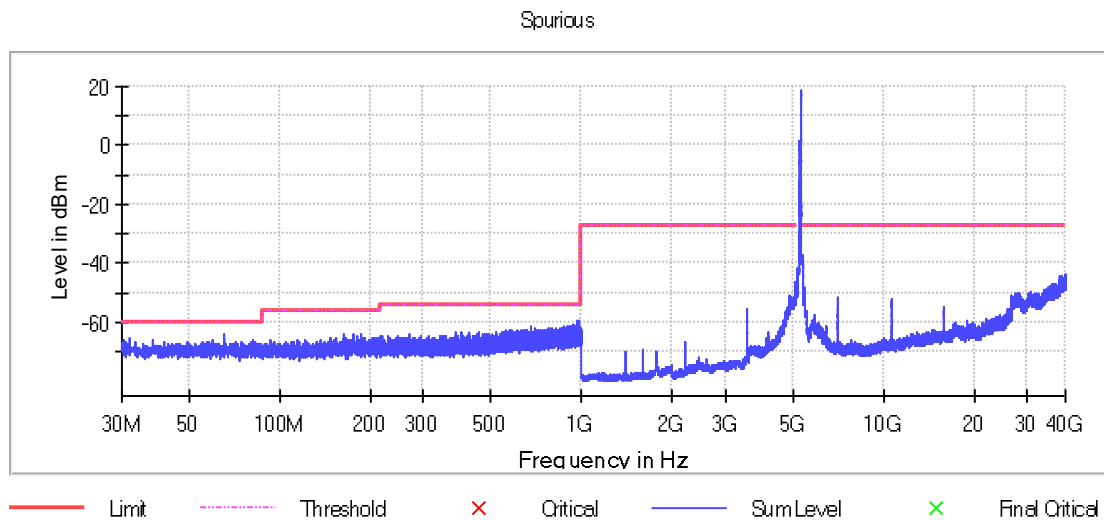
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20).

Antenna Port Conducted Emissions Transmitting 5260 MHz at Power Level 20:



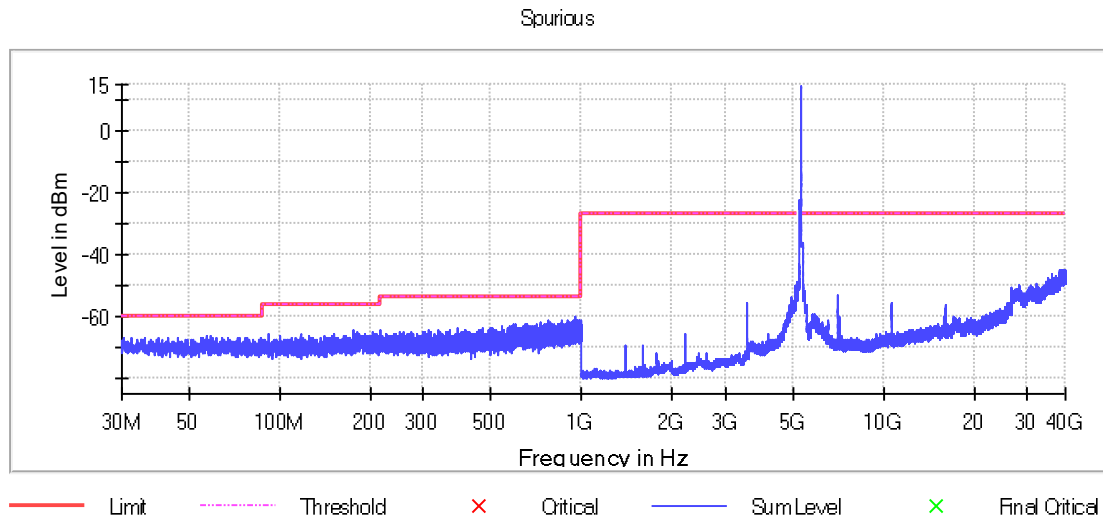
Graph 51: Antenna Port Conducted Spurious Emissions, UNII-2A Low Channel

Antenna Port Conducted Emissions Transmitting 5300 MHz at Power Level 20:



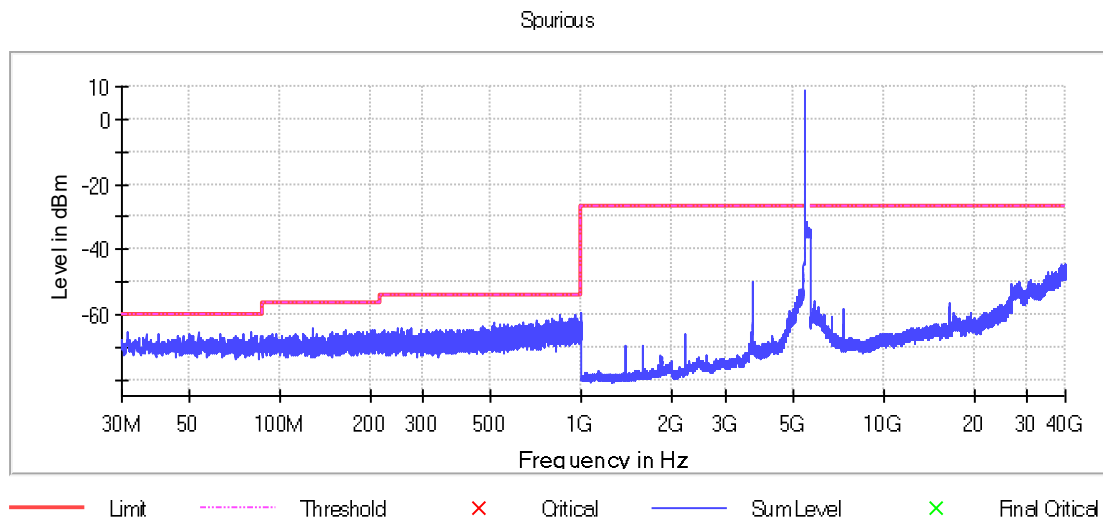
Graph 52: Antenna Port Conducted Spurious Emissions, UNII-2A Middle Channel

Antenna Port Conducted Emissions Transmitting 5320 MHz at Power Level 16:



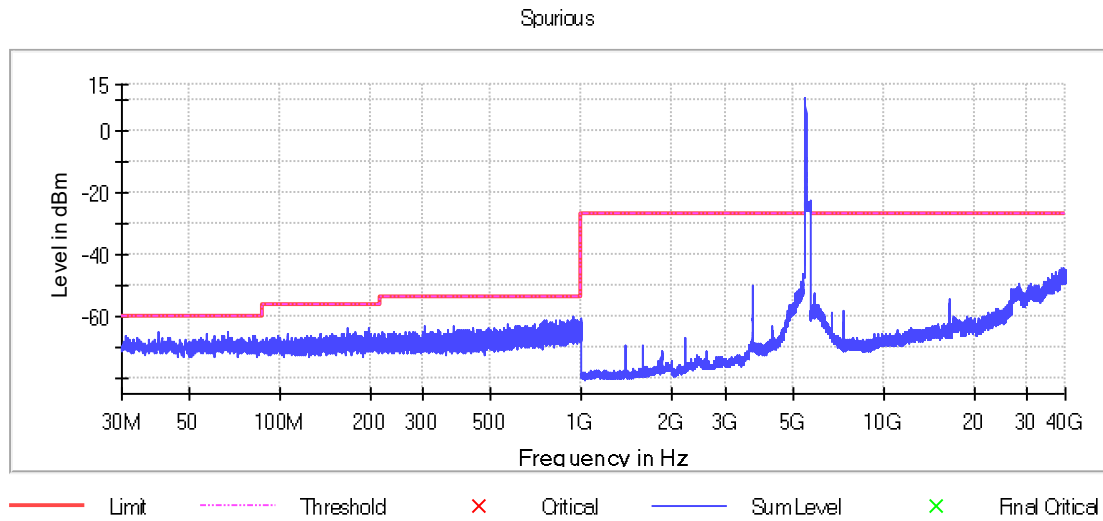
Graph 53: Antenna Port Conducted Spurious Emissions, UNII-2A High Channel (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5500 MHz at Power Level 14:



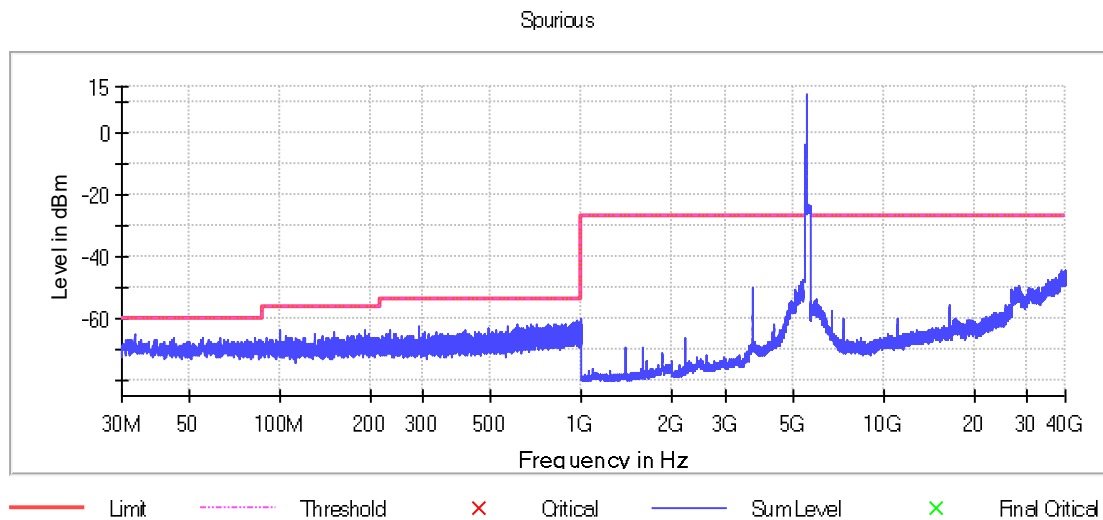
Graph 54: Antenna Port Conducted Spurious Emissions, UNII-2C Low Channel 1 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5520 MHz at Power Level 18:



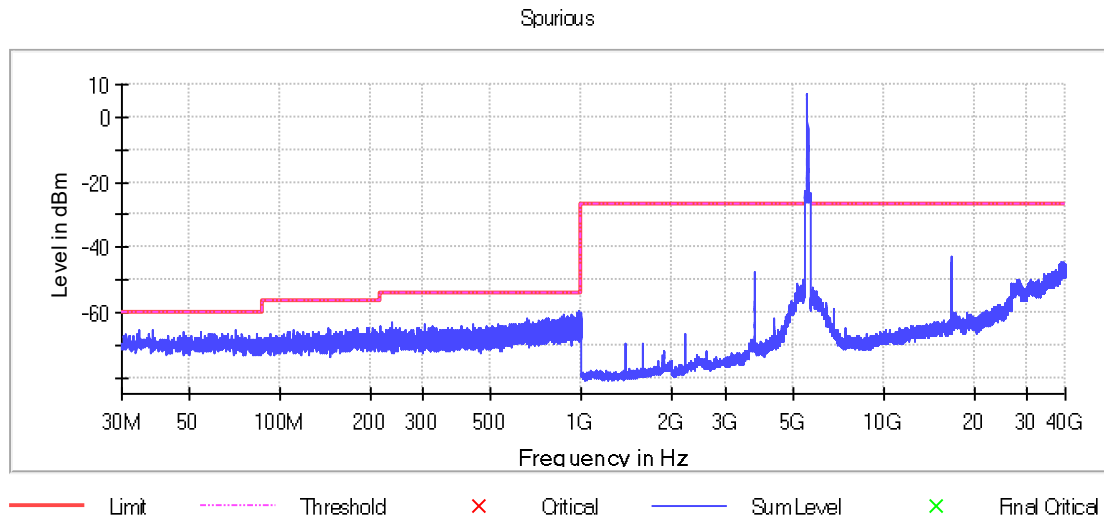
Graph 55: Antenna Port Conducted Spurious Emissions, UNII-2C Low Channel 2 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5540 MHz at Power Level 20:



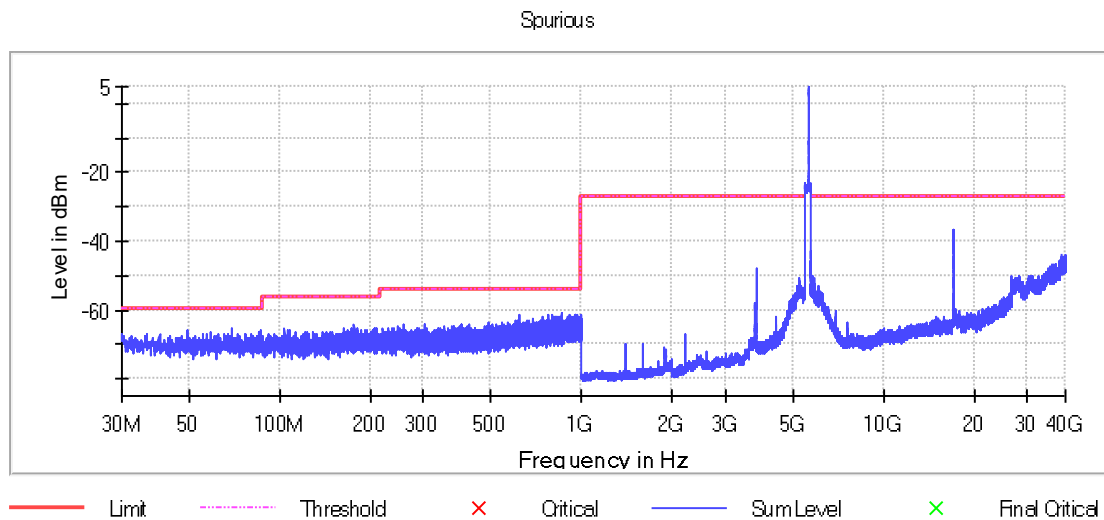
Graph 56: Antenna Port Conducted Spurious Emissions, UNII-2C Low Channel 3 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5600 MHz at Power Level 20:



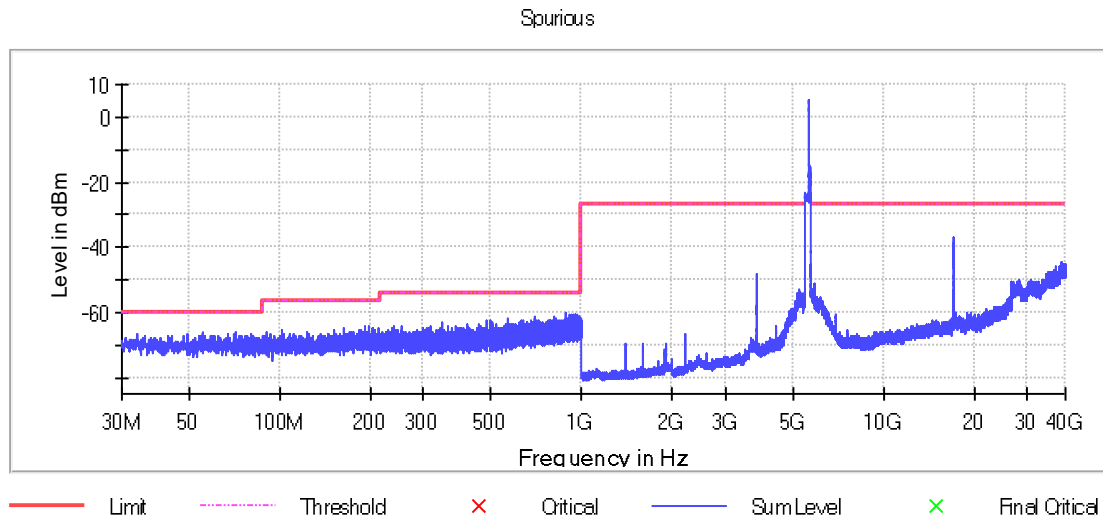
Graph 57: Antenna Port Conducted Spurious Emissions, UNII-2C Middle Channel

Antenna Port Conducted Emissions Transmitting 5660 MHz at Power Level 20:



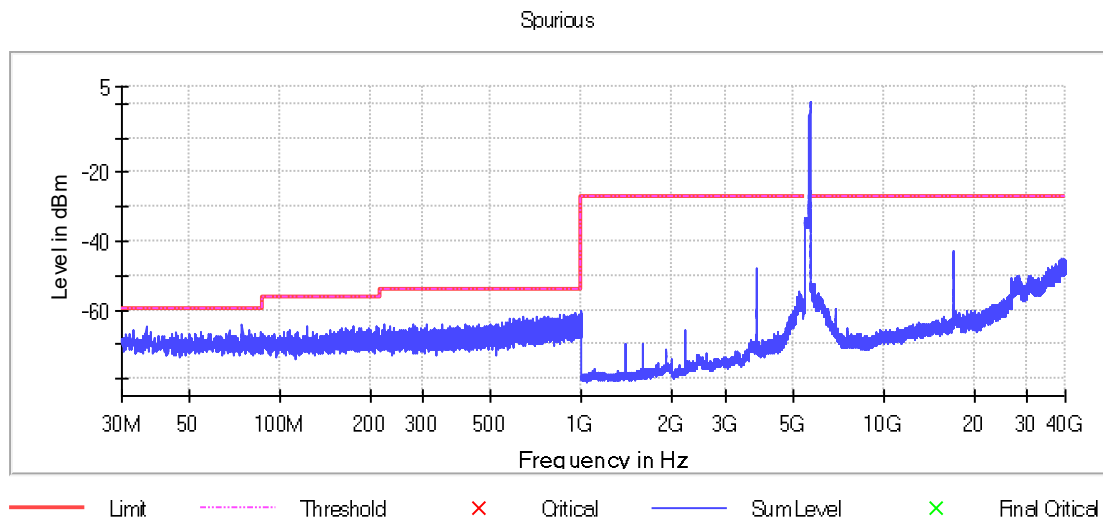
Graph 58: Antenna Port Conducted Spurious Emissions, UNII-2C High Channel 1 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5680 MHz at Power Level 19:



Graph 59: Antenna Port Conducted Spurious Emissions, UNII-2C High Channel 2 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5700 MHz at Power Level 14:



Graph 60: Antenna Port Conducted Spurious Emissions, UNII-2C High Channel 3 (Stepped Power Level)

Radiated Emissions Above 1000MHz Transmitting 5260 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)
10516.1	Peak	Vertical	36.4	12.6	49.0	74.0	-25.0
10515.8	Average	Vertical	24.1	12.6	36.7	54.0	-17.3

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10519.2	Peak	Horizontal	37.1	12.7	49.8	74.0	-24.2
10519.8	Average	Horizontal	24.5	12.7	37.1	54.0	-16.9
15778.7	Peak	Vertical	34.9	14.5	49.4	74.0	-24.6
15776.5	Average	Vertical	21.4	14.5	35.9	54.0	-18.1
15777.9	Peak	Horizontal	34.5	14.5	49.0	74.0	-25.0
15777.2	Average	Horizontal	21.4	14.5	35.9	54.0	-18.1
21027.5	Peak	Vertical	38.6	17.2	55.8	74.0	-18.2
21029.3	Average	Vertical	25.1	17.2	42.3	54.0	-11.7
21056.4	Peak	Horizontal	38.7	17.3	56.0	74.0	-18.0
21048.5	Average	Horizontal	25.2	17.3	42.4	54.0	-11.6
26256.8	Peak	Vertical	37.3	21.9	59.2	74.0	-14.8
26368.9	Average	Vertical	24.2	21.8	46.0	54.0	-8.0
26308.0	Peak	Horizontal	37.9	21.8	59.8	74.0	-14.3
26351.9	Average	Horizontal	24.1	21.8	45.9	54.0	-8.1
31635.8	Peak	Vertical	31.6	28.0	59.6	74.0	-14.4
31478.8	Average	Vertical	17.8	28.4	46.2	54.0	-7.8
31569.9	Peak	Horizontal	29.8	28.1	57.9	74.0	-16.1
31558.4	Average	Horizontal	16.3	28.2	44.5	54.0	-9.5
36778.2	Peak	Vertical	30.6	28.5	59.1	74.0	-14.9
36799.2	Average	Vertical	17.1	28.5	45.5	54.0	-8.5
36812.9	Peak	Horizontal	30.1	28.4	58.5	74.0	-15.5
36743.4	Average	Horizontal	16.0	28.6	44.6	54.0	-9.5

Table 26: Radiated Spurious Emissions, UNII-2A Low Channel

Radiated Emissions Above 1000MHz Transmitting 5300 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)
10595.9	Peak	Vertical	35.9	12.9	48.8	74.0	-25.2
10595.7	Average	Vertical	23.2	12.9	36.1	54.0	-17.9
10598.7	Peak	Horizontal	35.7	13.0	48.6	74.0	-25.4
10595.9	Average	Horizontal	22.9	12.9	35.9	54.0	-18.2

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15873.9	Peak	Vertical	34.9	14.8	49.7	74.0	-24.3
15903.1	Average	Vertical	22.0	15.0	37.0	54.0	-17.0
15903.4	Peak	Horizontal	34.1	15.0	49.0	74.0	-25.0
15897.1	Average	Horizontal	21.6	14.9	36.5	54.0	-17.5
21164.0	Peak	Vertical	38.3	17.7	55.9	74.0	-18.1
21166.8	Average	Vertical	24.8	17.7	42.5	54.0	-11.6
21231.9	Peak	Horizontal	38.4	17.8	56.2	74.0	-17.8
21174.3	Average	Horizontal	24.9	17.7	42.6	54.0	-11.4
26494.5	Peak	Vertical	39.0	21.7	60.7	74.0	-13.4
26458.6	Average	Vertical	24.7	21.7	46.4	54.0	-7.6
26481.2	Peak	Horizontal	38.7	21.7	60.4	74.0	-13.6
26448.6	Average	Horizontal	24.7	21.7	46.5	54.0	-7.6
26574.5	Peak	Vertical	32.0	24.6	56.6	74.0	-17.4
26500.6	Average	Vertical	18.9	24.4	43.3	54.0	-10.7
26545.5	Peak	Horizontal	31.4	24.5	55.8	74.0	-18.2
26561.4	Average	Horizontal	18.0	24.5	42.5	54.0	-11.5
31716.1	Peak	Vertical	30.7	27.7	58.5	74.0	-15.6
31724.6	Average	Vertical	17.8	27.7	45.5	54.0	-8.5
31726.2	Peak	Horizontal	30.2	27.7	57.9	74.0	-16.1
31730.3	Average	Horizontal	16.7	27.7	44.4	54.0	-9.6

Table 27: Radiated Spurious Emissions, UNII-2A Middle Channel

Radiated Emissions Above 1000MHz Transmitting 5320 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)
10631.3	Peak	Vertical	34.7	13.1	47.8	74.0	-26.2
10638.5	Average	Vertical	21.9	13.2	35.1	54.0	-18.9
10642.8	Peak	Horizontal	35.0	13.2	48.2	74.0	-25.9
10638.3	Average	Horizontal	21.9	13.2	35.1	54.0	-18.9
15959.5	Peak	Vertical	33.7	15.5	49.1	74.0	-24.9
15953.0	Average	Vertical	21.2	15.4	36.6	54.0	-17.4

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15952.1	Peak	Horizontal	33.7	15.4	49.1	74.0	-24.9
15958.5	Average	Horizontal	21.3	15.5	36.8	54.0	-17.2
21314.2	Peak	Vertical	38.3	18.1	56.4	74.0	-17.6
21318.9	Average	Vertical	25.1	18.1	43.2	54.0	-10.8
21335.0	Peak	Horizontal	38.6	18.1	56.7	74.0	-17.4
21314.7	Average	Horizontal	25.3	18.1	43.4	54.0	-10.6
26652.5	Peak	Vertical	32.0	25.0	57.0	74.0	-17.0
26649.4	Average	Vertical	18.5	25.0	43.4	54.0	-10.6
26585.2	Peak	Horizontal	31.6	24.7	56.2	74.0	-17.8
26629.7	Average	Horizontal	17.9	24.9	42.8	54.0	-11.2
31897.1	Peak	Vertical	30.3	27.3	57.6	74.0	-16.4
31913.2	Average	Vertical	17.3	27.3	44.6	54.0	-9.4
31909.0	Peak	Horizontal	30.6	27.3	57.9	74.0	-16.1
31912.8	Average	Horizontal	17.0	27.3	44.3	54.0	-9.7
37293.8	Peak	Vertical	30.7	28.9	59.6	74.0	-14.4
37280.3	Average	Vertical	17.1	28.9	46.0	54.0	-8.0
37302.0	Peak	Horizontal	30.2	28.9	59.1	74.0	-14.9
37282.6	Average	Horizontal	16.7	28.9	45.7	54.0	-8.4

Table 28: Radiated Spurious Emissions, UNII-2A High Channel

Radiated Emissions Above 1000MHz Transmitting 5500 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)
11001.8	Peak	Vertical	38.3	13.6	51.9	74.0	-22.1
11001.7	Average	Vertical	26.3	13.6	39.9	54.0	-14.1
11002.4	Peak	Horizontal	37.6	13.6	51.3	74.0	-22.8
11002.1	Average	Horizontal	24.4	13.6	38.0	54.0	-16.0
16497.1	Peak	Vertical	37.5	17.6	55.1	74.0	-19.0
16502.1	Average	Vertical	24.7	17.6	42.3	54.0	-11.7
16503.1	Peak	Horizontal	36.8	17.6	54.4	74.0	-19.6
16500.7	Average	Horizontal	24.1	17.6	41.6	54.0	-12.4

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
21946.2	Peak	Vertical	40.8	19.4	60.1	74.0	-13.9
22035.6	Average	Vertical	25.9	19.3	45.2	54.0	-8.8
22047.4	Peak	Horizontal	39.0	19.3	58.3	74.0	-15.7
21984.4	Average	Horizontal	25.4	19.4	44.8	54.0	-9.2
27510.7	Peak	Vertical	33.9	23.1	57.0	74.0	-17.0
27468.2	Average	Vertical	19.9	23.3	43.2	54.0	-10.9
27455.6	Peak	Horizontal	32.7	23.3	56.0	74.0	-18.0
27447.2	Average	Horizontal	19.1	23.3	42.4	54.0	-11.6
32991.5	Peak	Vertical	30.6	27.4	58.0	74.0	-16.1
32925.7	Average	Vertical	17.0	27.5	44.5	54.0	-9.5
32921.9	Peak	Horizontal	29.9	27.5	57.4	74.0	-16.6
32927.1	Average	Horizontal	16.1	27.5	43.6	54.0	-10.4
38462.6	Peak	Vertical	30.6	29.3	59.8	74.0	-14.2
38453.0	Average	Vertical	17.4	29.2	46.7	54.0	-7.3
38549.8	Peak	Horizontal	29.8	29.5	59.3	74.0	-14.7
38550.6	Average	Horizontal	16.8	29.5	46.3	54.0	-7.7

Table 29: Radiated Spurious Emissions, UNII-2C Low Channel

Radiated Emissions Above 1000MHz Transmitting 5600 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)
11201.7	Peak	Vertical	37.6	14.1	51.7	74.0	-22.3
11201.9	Average	Vertical	25.4	14.1	39.5	54.0	-14.5
11216.0	Peak	Horizontal	35.6	14.2	49.8	74.0	-24.2
11196.0	Average	Horizontal	22.7	14.1	36.8	54.0	-17.2
16794.0	Peak	Vertical	37.0	18.8	55.8	74.0	-18.2
16801.6	Average	Vertical	24.4	18.8	43.2	54.0	-10.9
16803.1	Peak	Horizontal	37.6	18.8	56.3	74.0	-17.7
16797.0	Average	Horizontal	25.2	18.8	44.0	54.0	-10.0
22384.3	Peak	Vertical	39.2	19.4	58.5	74.0	-15.5
22347.2	Average	Vertical	25.6	19.3	44.9	54.0	-9.1

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
22358.8	Peak	Horizontal	38.6	19.3	58.0	74.0	-16.1
22344.2	Average	Horizontal	25.3	19.3	44.6	54.0	-9.4
28043.1	Peak	Vertical	34.4	22.5	57.0	74.0	-17.1
28020.3	Average	Vertical	20.5	22.6	43.1	54.0	-10.9
28055.1	Peak	Horizontal	33.1	22.5	55.6	74.0	-18.4
27947.2	Average	Horizontal	19.2	22.9	42.1	54.0	-11.9
33522.4	Peak	Vertical	29.9	27.1	56.9	74.0	-17.1
33516.1	Average	Vertical	16.4	27.1	43.5	54.0	-10.5
33537.2	Peak	Horizontal	28.5	27.0	55.5	74.0	-18.5
33521.3	Average	Horizontal	15.5	27.1	42.5	54.0	-11.5
39286.9	Peak	Vertical	28.0	34.2	62.2	74.0	-11.8
39276.7	Average	Vertical	15.1	34.0	49.1	54.0	-4.9
39283.0	Peak	Horizontal	27.4	34.1	61.5	74.0	-12.5
39279.6	Average	Horizontal	14.5	34.1	48.6	54.0	-5.4

Table 30: Radiated Spurious Emissions, UNII-2C Middle Channel

Radiated Emissions Above 1000MHz Transmitting 5700 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)
11391.1	Peak	Vertical	37.6	14.0	51.6	74.0	-22.4
11396.8	Average	Vertical	25.1	14.0	39.1	54.0	-14.9
11398.6	Peak	Horizontal	36.6	14.0	50.6	74.0	-23.4
11402.4	Average	Horizontal	24.4	14.0	38.3	54.0	-15.7
17104.4	Peak	Vertical	36.3	20.1	56.4	74.0	-17.6
17103.3	Average	Vertical	22.7	20.1	42.8	54.0	-11.2
17093.8	Peak	Horizontal	37.7	20.1	57.8	74.0	-16.2
17097.5	Average	Horizontal	25.5	20.1	45.6	54.0	-8.4
22833.5	Peak	Vertical	40.0	20.5	60.5	74.0	-13.5
22747.3	Average	Vertical	26.2	20.4	46.6	54.0	-7.4
22805.5	Peak	Horizontal	39.5	20.5	60.0	74.0	-14.0
22780.0	Average	Horizontal	26.0	20.5	46.4	54.0	-7.6

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)
28488.3	Peak	Vertical	34.7	22.3	57.1	74.0	-17.0
28570.8	Average	Vertical	20.6	22.4	43.1	54.0	-10.9
28562.0	Peak	Horizontal	33.5	22.4	55.9	74.0	-18.1
28509.5	Average	Horizontal	20.0	22.4	42.4	54.0	-11.6
34141.7	Peak	Vertical	29.4	28.9	58.3	74.0	-15.7
34117.9	Average	Vertical	16.2	28.9	45.1	54.0	-8.9
34242.8	Peak	Horizontal	29.0	28.7	57.7	74.0	-16.3
34207.4	Average	Horizontal	15.5	28.8	44.2	54.0	-9.8
39946.3	Peak	Vertical	28.3	38.0	66.2	74.0	-7.8
39939.1	Average	Vertical	15.9	37.8	53.7	54.0	-0.3
39954.7	Peak	Horizontal	27.4	38.1	65.5	74.0	-8.5
39956.1	Average	Horizontal	14.6	38.2	52.8	54.0	-1.2

Table 31: Radiated Spurious Emissions, UNII-2C High Channel

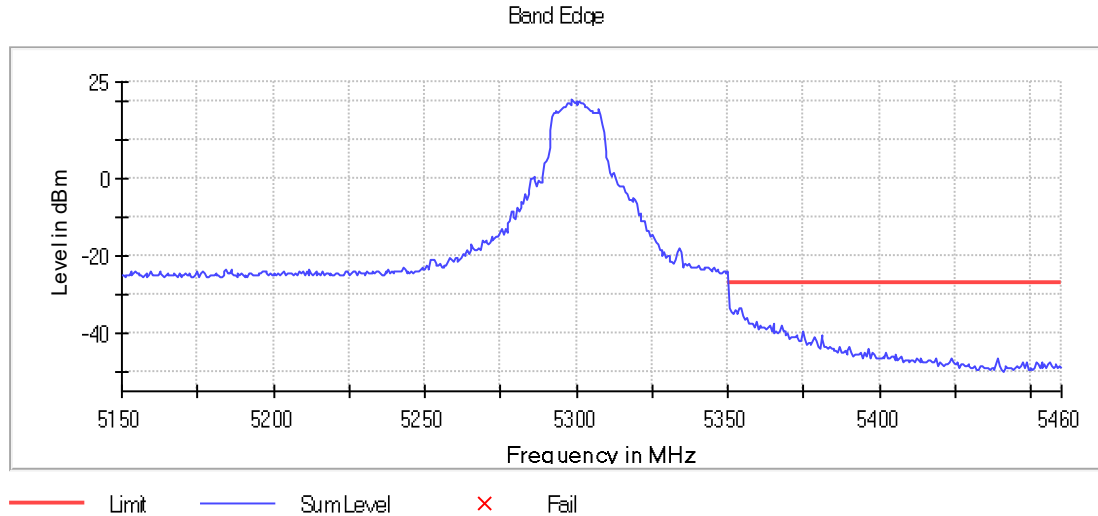
Result

The EUT complied with the specification limit by a margin of 0.3 dB.

6.3.1.5 §15.407(b) Undesirable Emissions – Band Edges (UNII 2)

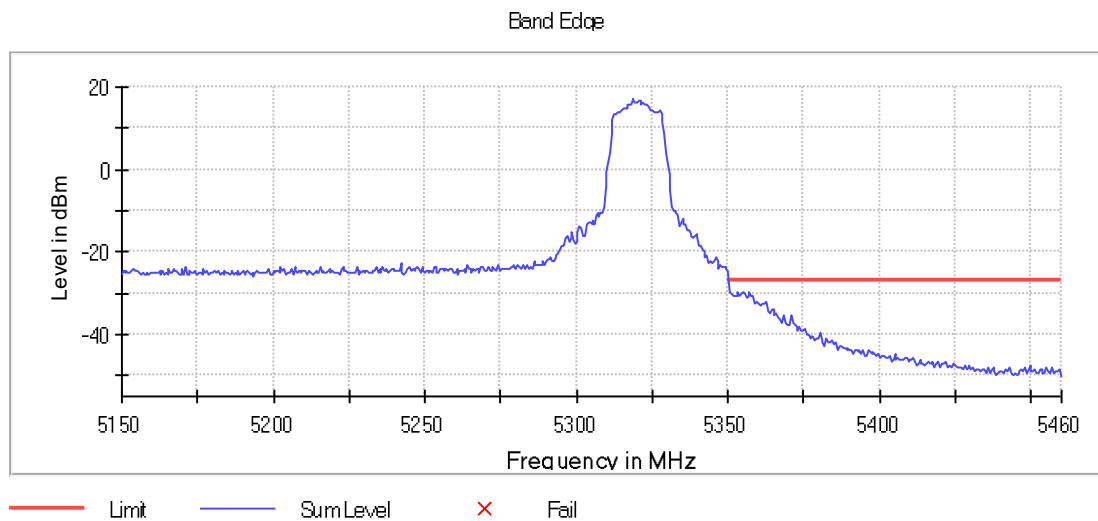
Radiated and antenna port conducted measurements of the UNII-2 band edges are shown below.

Antenna Port Conducted Band Edge Transmitting on 5300 MHz (Power Level 20):



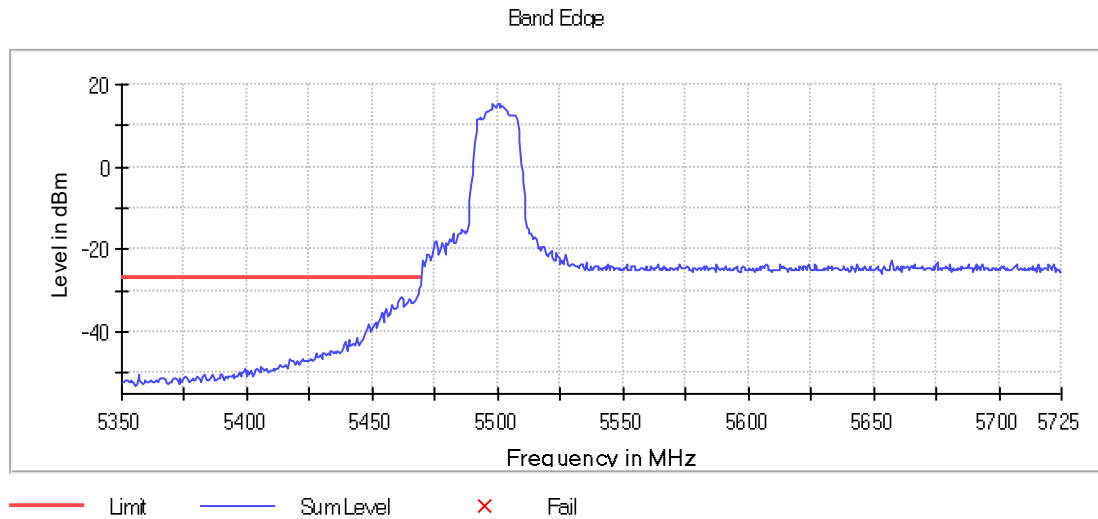
Graph 61: Antenna Port Conducted Band Edge, UNII-2A High Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5320 MHz (Power Level 16):



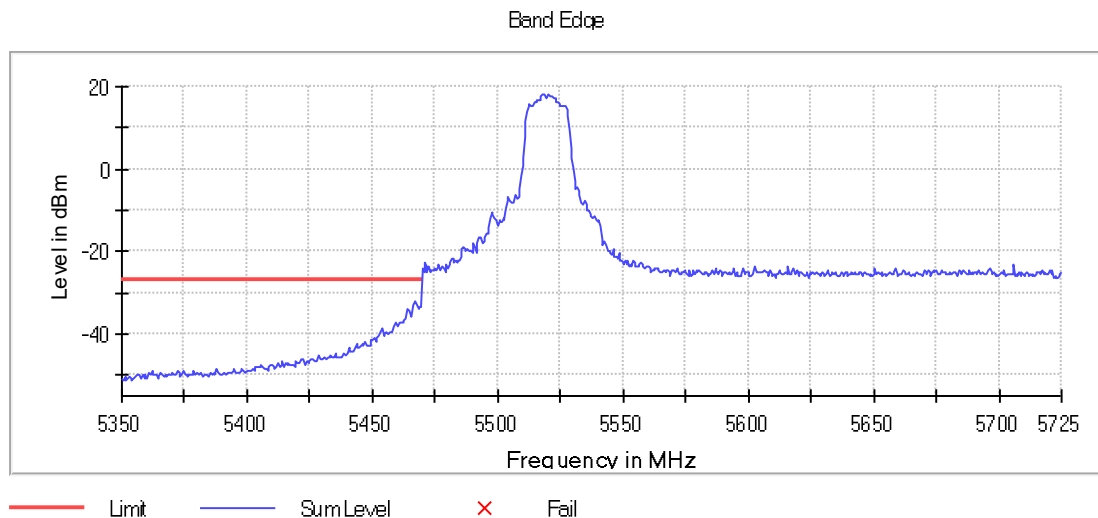
Graph 62: Antenna Port Conducted Band Edge, UNII-2A High Channel 2 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5500 MHz (Power Level 14):



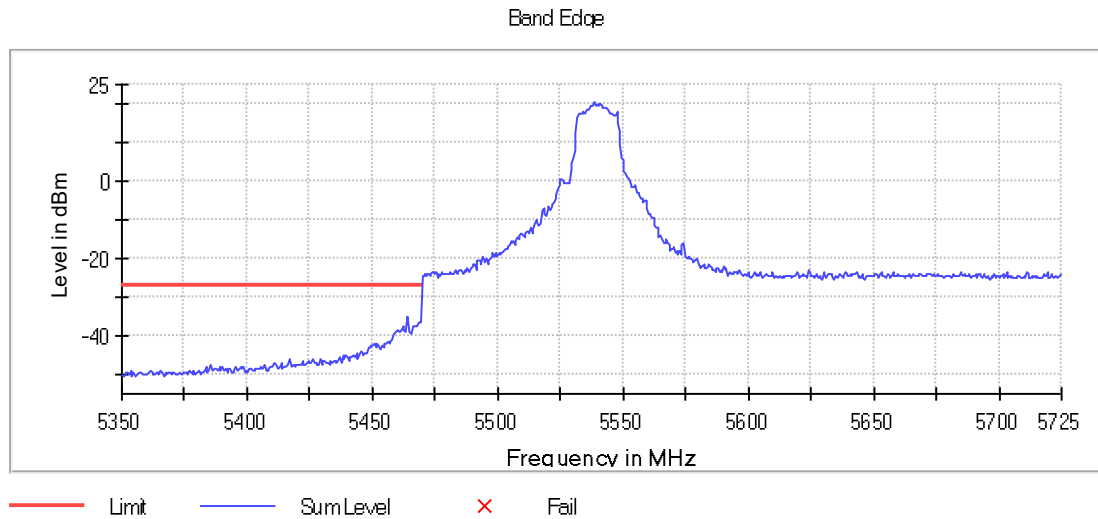
Graph 63: Antenna Port Conducted Band Edge, UNII-2C Low Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5520 MHz (Power Level 18):



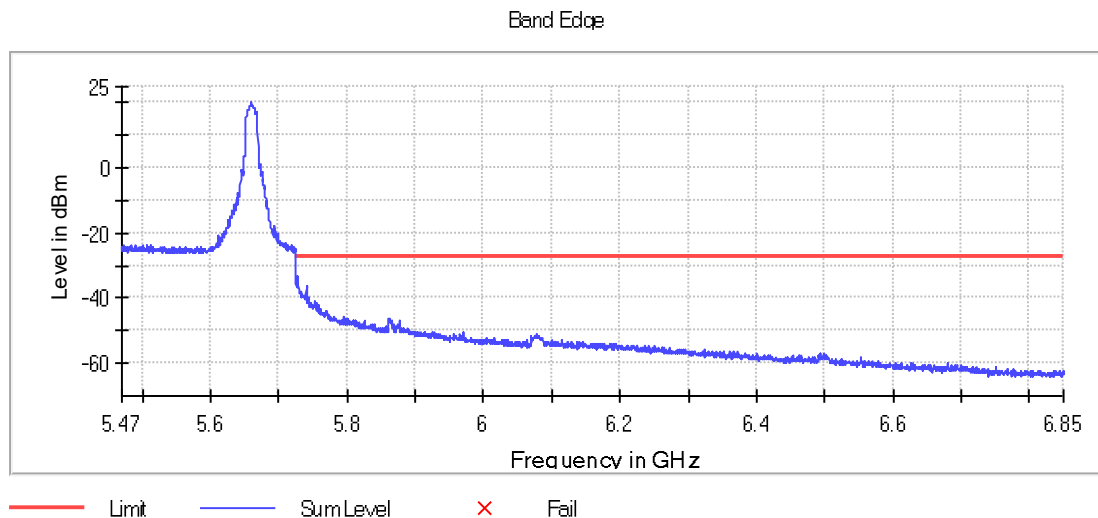
Graph 64: Antenna Port Conducted Band Edge, UNII-2C Low Channel 2 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5540 MHz (Power Level 20):



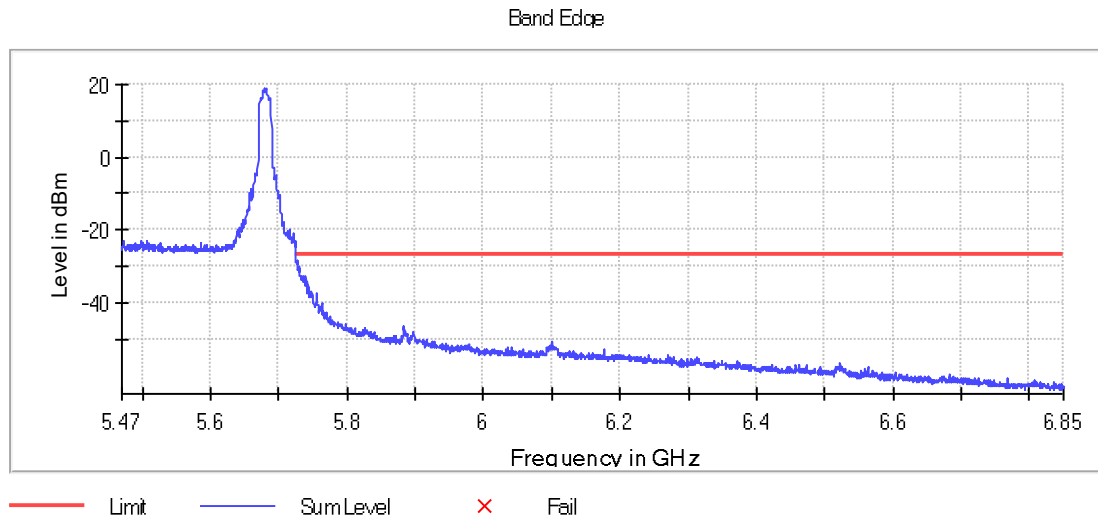
Graph 65: Antenna Port Conducted Band Edge, UNII-2C Low Channel 3 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5660 MHz (Power Level 20):



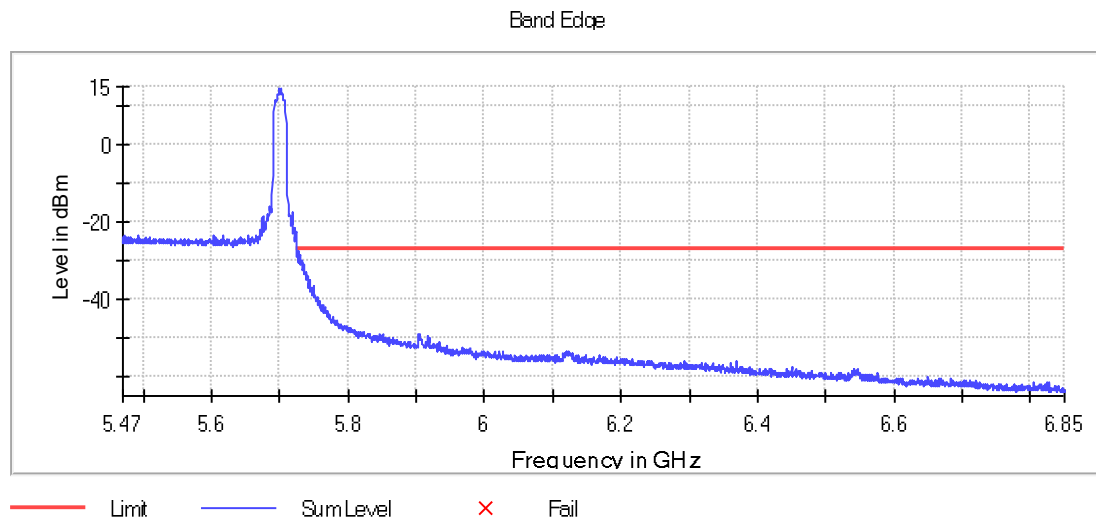
Graph 66: Antenna Port Conducted Band Edge, UNII-2C High Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5680 MHz (Power Level 19):



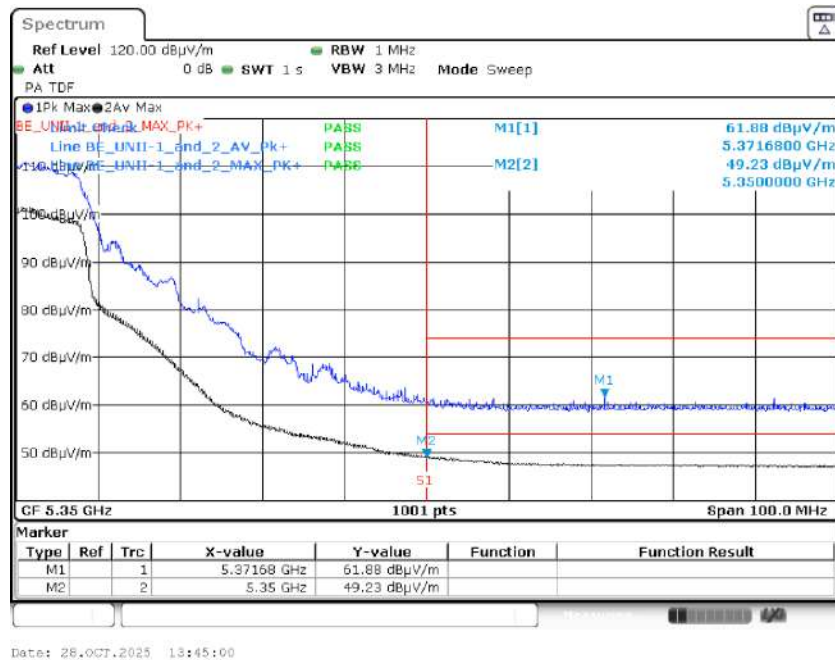
Graph 67: Antenna Port Conducted Band Edge, UNII-2C High Channel 2 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5700 MHz (Power Level 14):



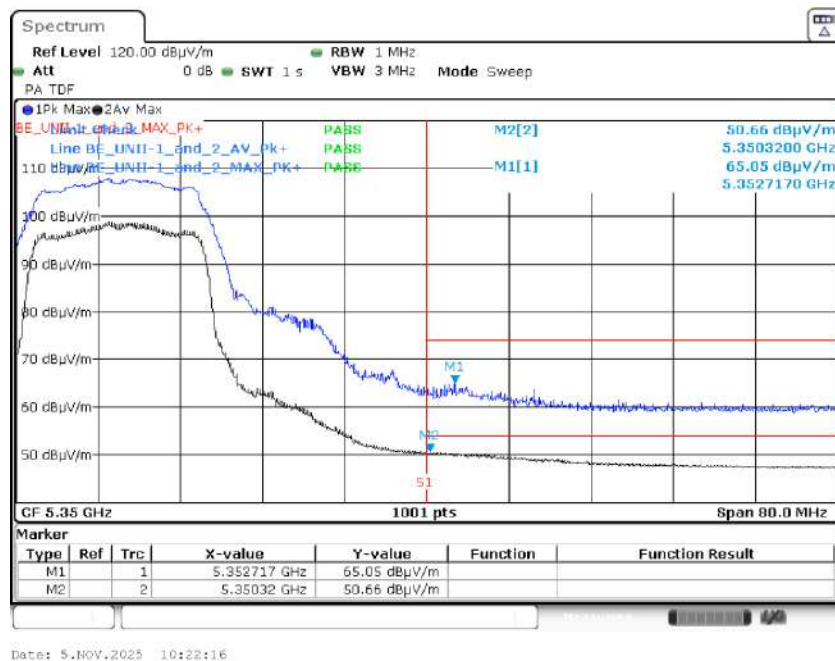
Graph 68: Antenna Port Conducted Band Edge, UNII-2C High Channel 3 (Stepped Power Level)

Radiated Band Edge Transmitting on 5300 MHz (Power Level 20):



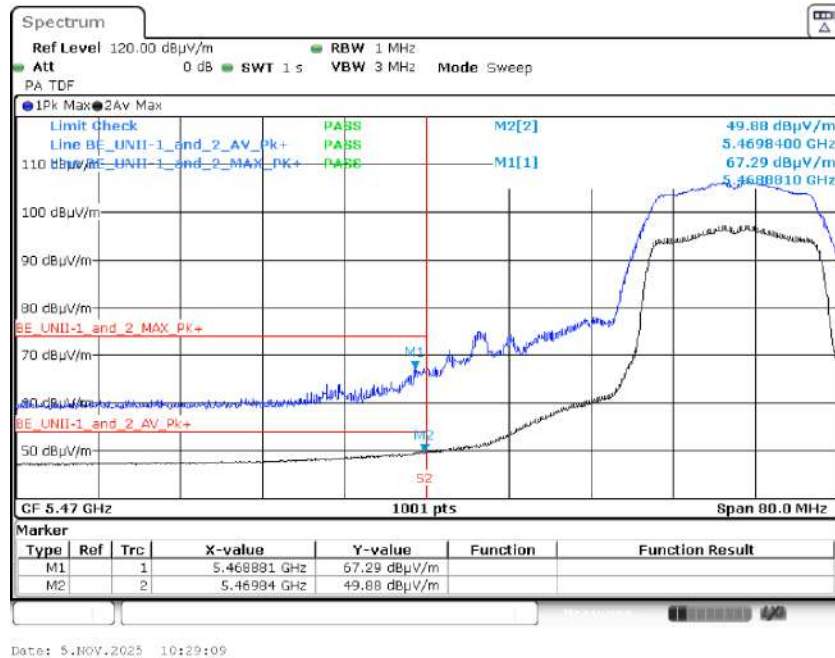
Graph 69: Radiated Band Edge, UNII-2A High Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5320 MHz (Power Level 16):



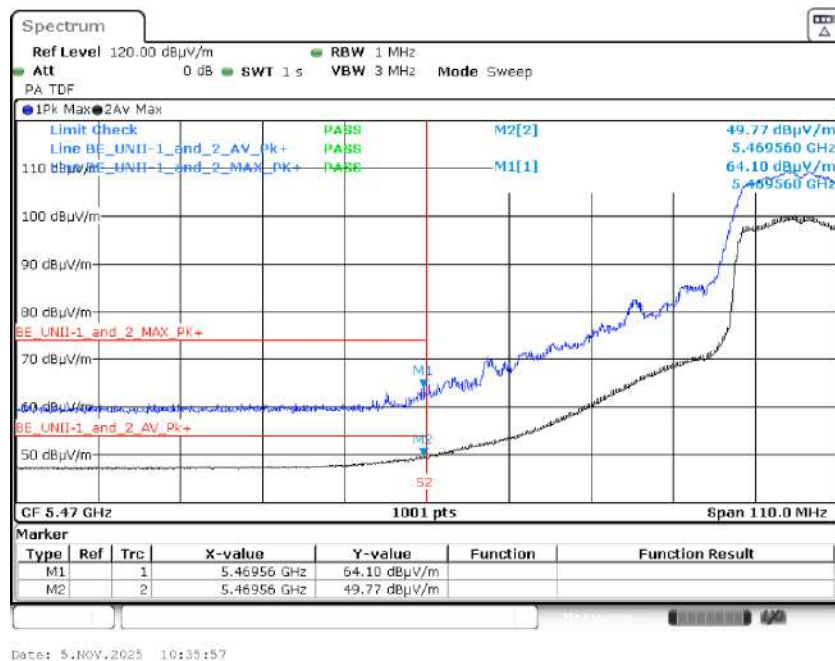
Graph 70: Radiated Band Edge, UNII-2A High Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5500 MHz (Power Level 14):



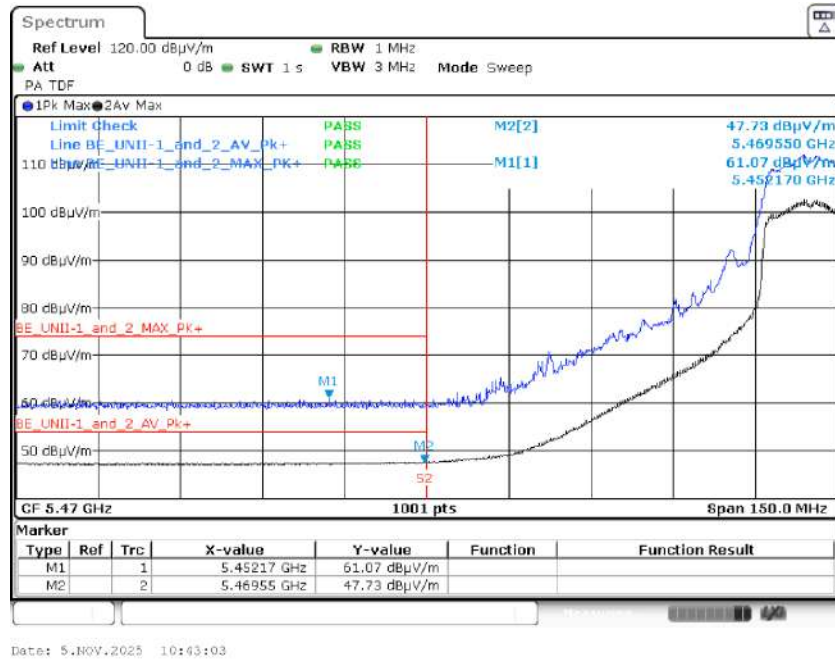
Graph 71: Radiated Band Edge, UNII-2C Low Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5520 MHz (Power Level 18):



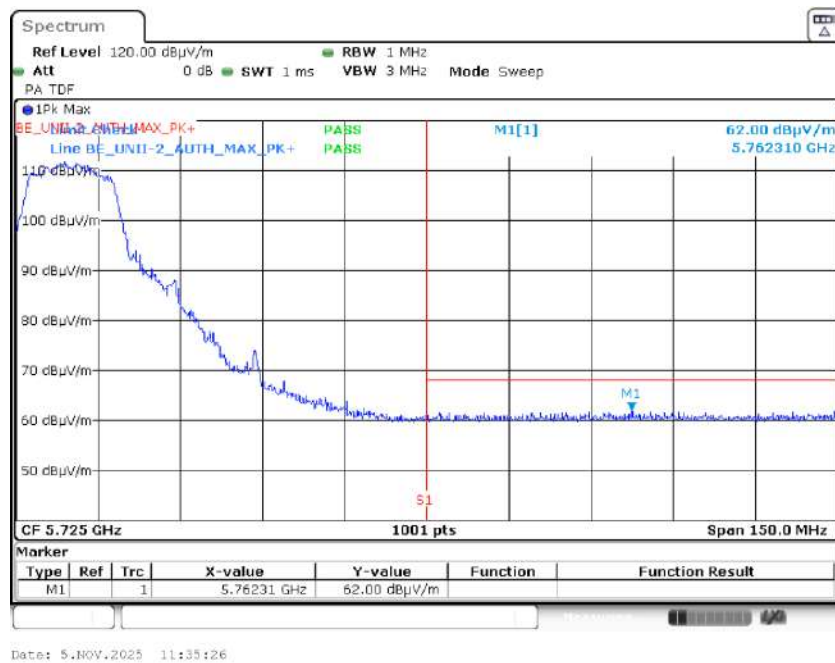
Graph 72: Radiated Band Edge, UNII-2C Low Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5540 MHz (Power Level 20):



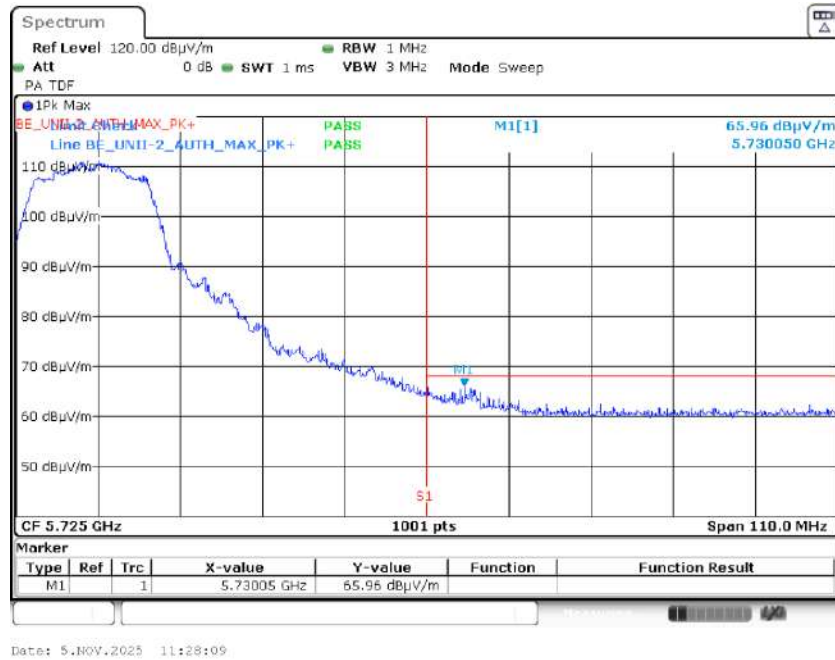
Graph 73: Radiated Band Edge, UNII-2C Low Channel 3 (Stepped Power Level)

Radiated Band Edge Transmitting on 5660 MHz (Power Level 20):



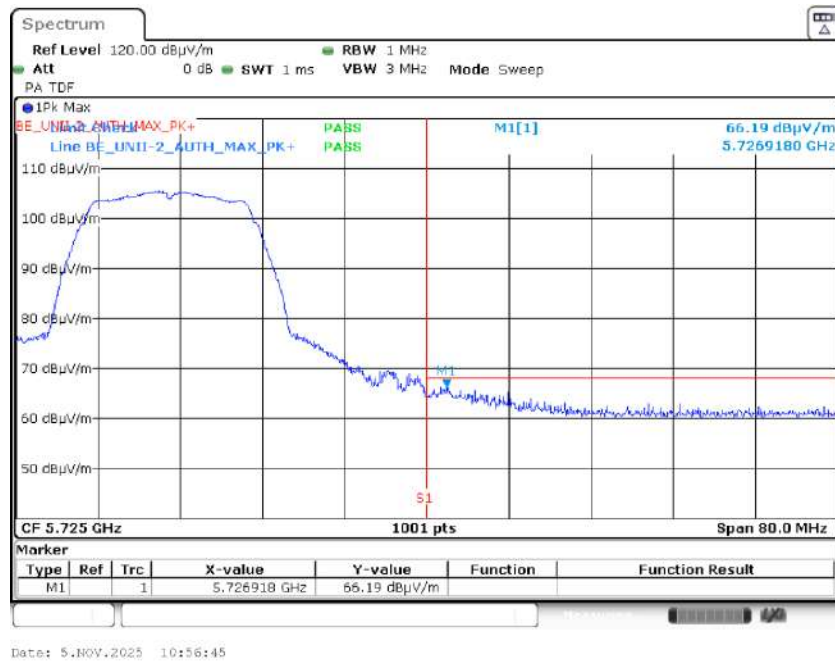
Graph 74: Radiated Band Edge, UNII-2C High Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5680 MHz (Power Level 19):



Graph 75: Radiated Band Edge, UNII-2C High Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5700 MHz (Power Level 14):



Graph 76: Radiated Band Edge, UNII-2C Low Channel 3 (Stepped Power Level)

Result

The EUT complied with the specification.

6.3.1.6 §15.407(h)(1) TPC (UNII 2)

Based upon the conducted output power measurements, EUT does not require a transmit power control mechanism to operate in the UNII-2 band in the configuration tested.

Result

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

6.3.1.7 §15.407(h)(2) DFS (UNII 2)

EUT is a Client device and does not contain In-Service Monitoring. EUT was tested on Channel 100 (5500 MHz) with a Netgear R7000 Router (FCC ID #PY313200233) as the Master Device.

Radar Detection (UNII 2)

EUT does not operate as a Master device in the UNII-2 Band and cannot detect radar in the configurations tested.

Result

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

Master Device Channel Availability Check Time (UNII 2)

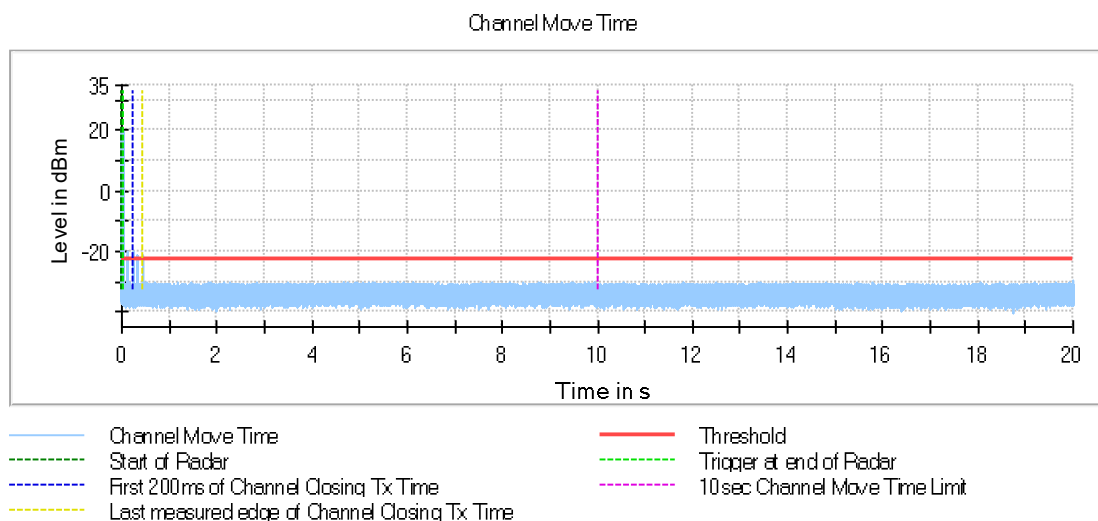
EUT does not operate as a master device in the UNII-2 Band and cannot detect radar in the configurations tested.

Result

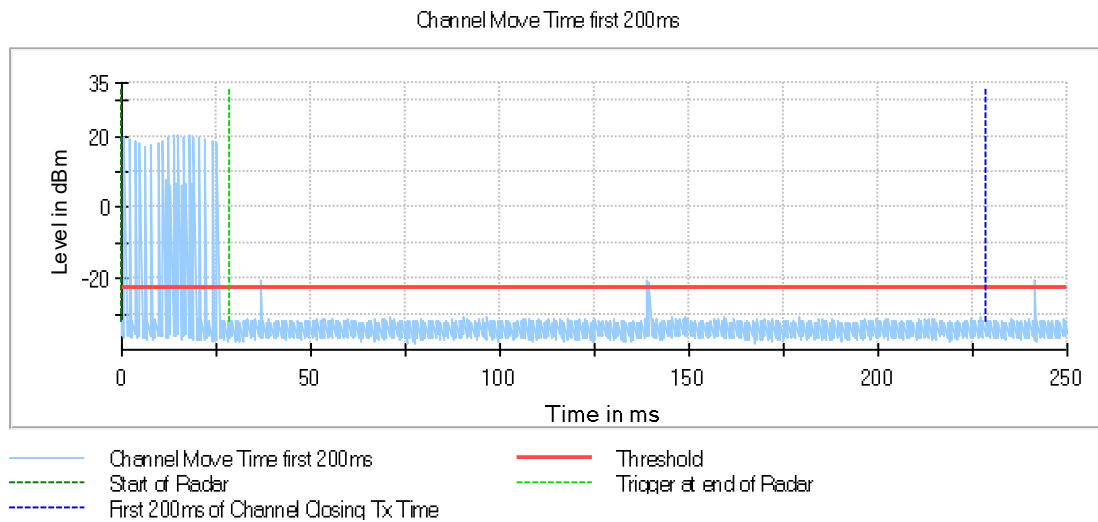
In the configurations tested the EUT complied with the requirements of the specification.

Channel Closing Transmission Time and Channel Move Time (UNII 2)

Upon receiving a clear channel command from a Master device, EUT cleared transmissions within 10 seconds.



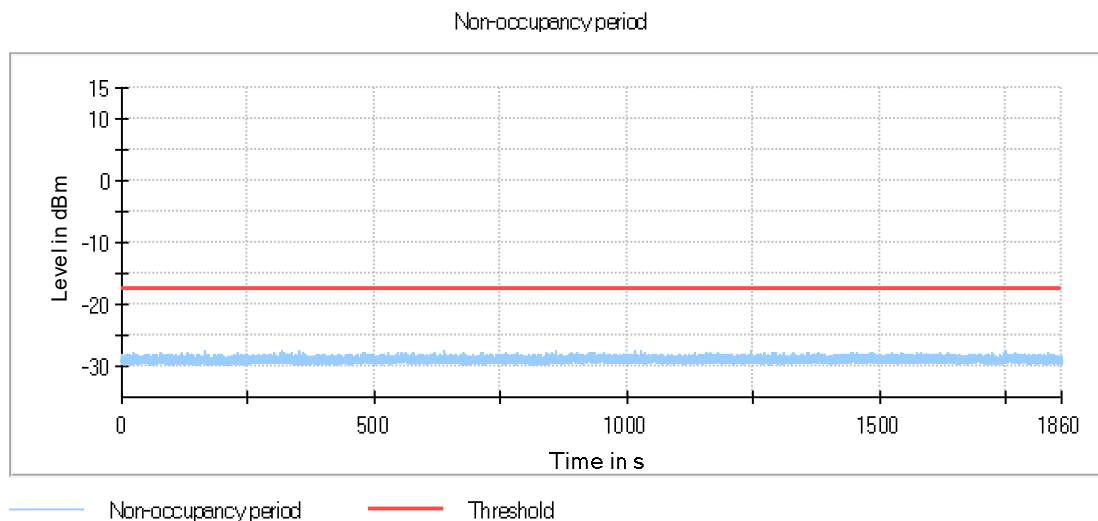
Graph 77: EUT 5500 MHz Channel Close Time and Channel Move Time



Graph 78: EUT 5500 MHz First 250 ms (Channel Closing Tx Time)

Channel Non-Occupancy Period (UNII 2)

Upon receiving Clear Channel command, EUT did not transmit in that channel for 30 minutes.



Graph 79: EUT 5500 MHz Non-Occupancy Period of 30 minutes.

Result

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

6.3.2 802.11n Mode

6.3.2.1 §15.403 26dB Bandwidth (UNII 2)

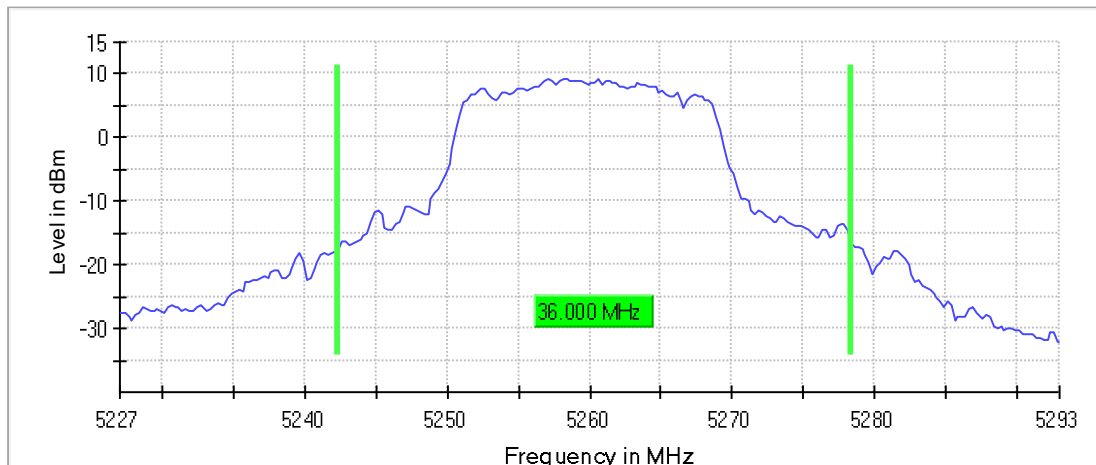
Bandwidths were measured at the maximum possible output power, 20dBm.

The 26dB emission bandwidths are shown below with RBW of 400 kHz and VBW of 1 MHz

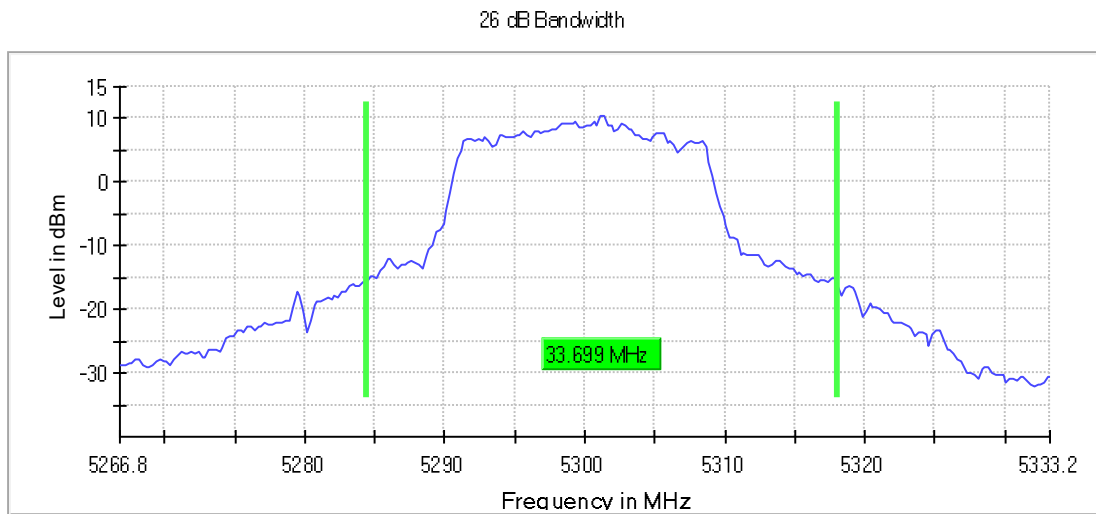
Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5260	36.0
5300	33.7
5320	34.2
5500	34.3
5600	33.3
5700	35.2

Table 32: 26 dB Emission Bandwidth

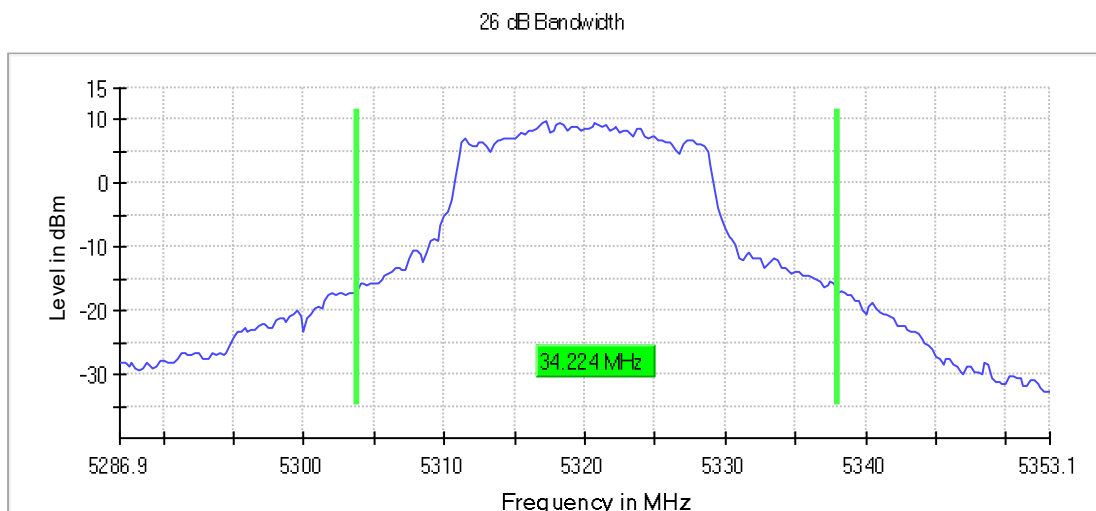
26 dB Bandwidth



Graph 80: 26 dB Emission Bandwidth Transmitting at 5260 MHz

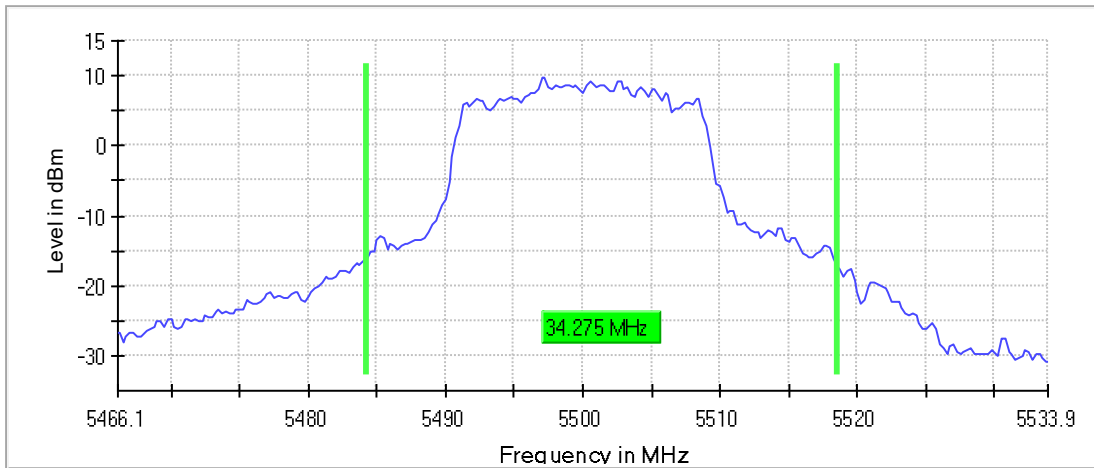


Graph 81: 26 dB Emission Bandwidth Transmitting at 5300 MHz



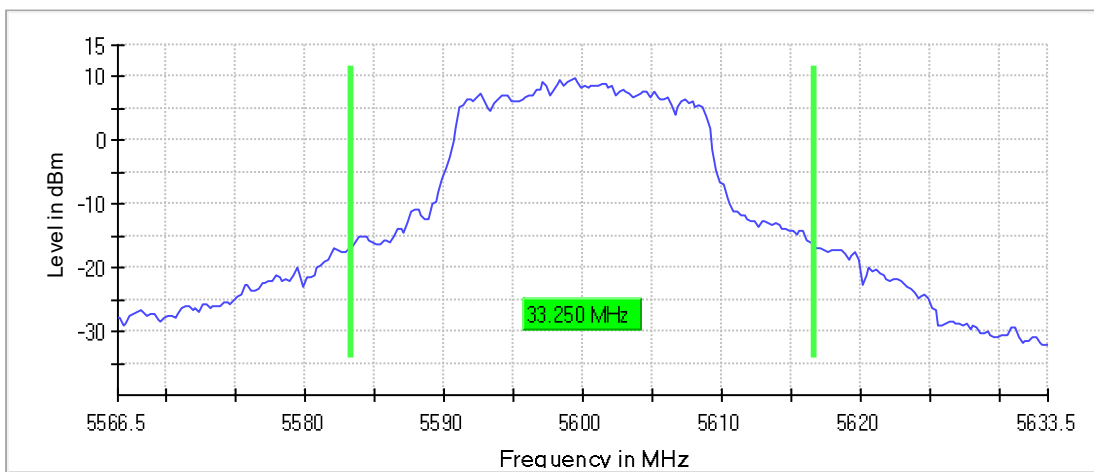
Graph 82: 26 dB Emission Bandwidth Transmitting at 5320 MHz

26 dB Bandwidth

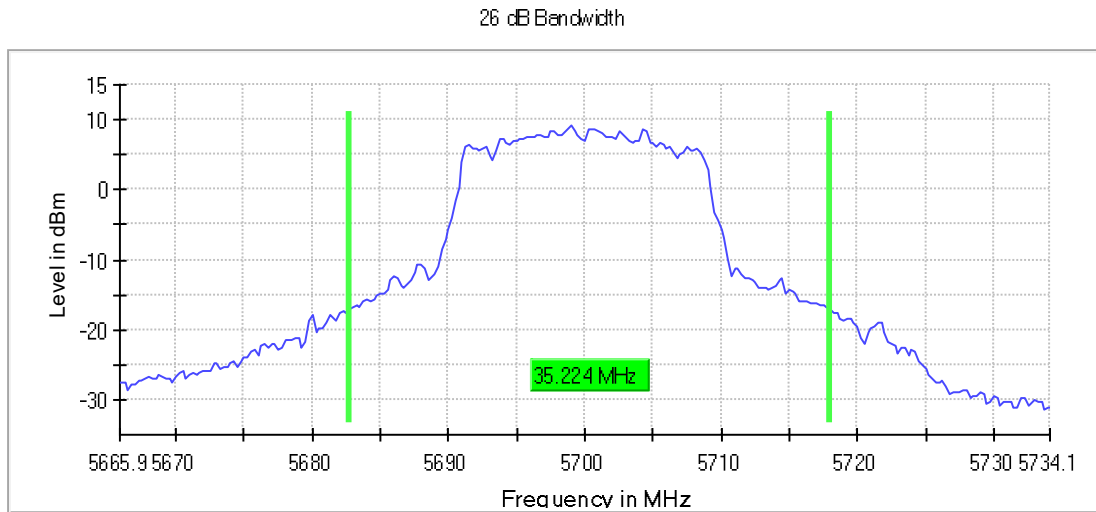


Graph 83: 26 dB Emission Bandwidth Transmitting at 5500 MHz

26 dB Bandwidth



Graph 84: 26 dB Emission Bandwidth Transmitting at 5600 MHz



Graph 85: 26 dB Emission Bandwidth Transmitting at 5700 MHz

6.3.2.2 §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.

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	36.0	26.6	4.0	6	0	24.0	24.0
5300	33.7	26.3	4.0	6	0	24.0	24.0
5320	34.2	26.3	4.0	6	0	24.0	24.0
5500	34.3	26.4	4.0	6	0	24.0	24.0
5600	33.3	26.2	4.0	6	0	24.0	24.0
5700	35.2	26.5	4.0	6	0	24.0	24.0

Table 33: 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.

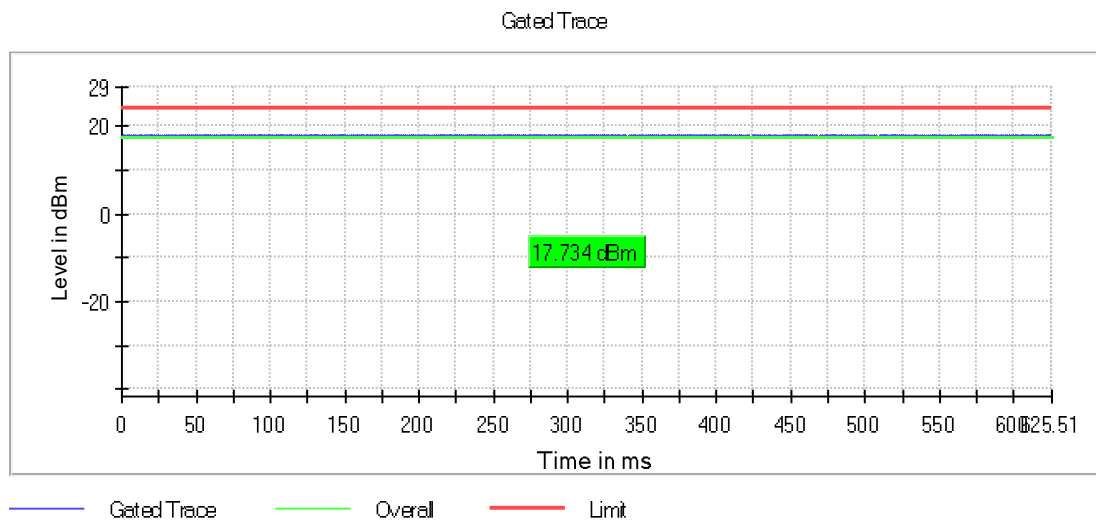
UNII-2 Conducted Power Measurement

Frequency (MHz)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)	TCP Required
5260	17.7	24.0	-6.3	No
5300	17.7	24.0	-6.3	No
5320	17.6	24.0	-6.4	No
5500	17.5	24.0	-6.5	No
5600	17.7	24.0	-6.3	No
5700	17.4	24.0	-6.6	No

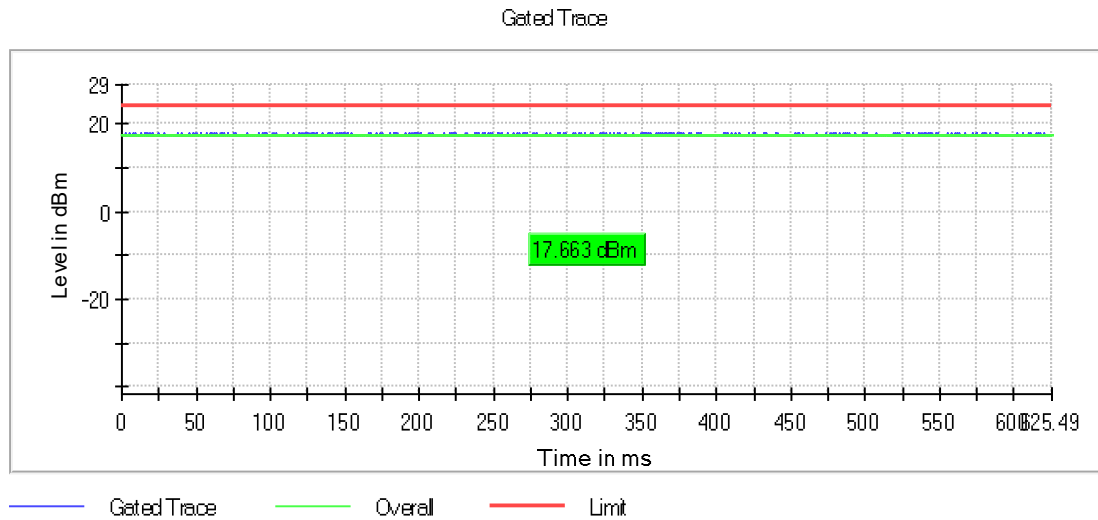
Table 34: PM-G Conducted Output Power Measurements

Result

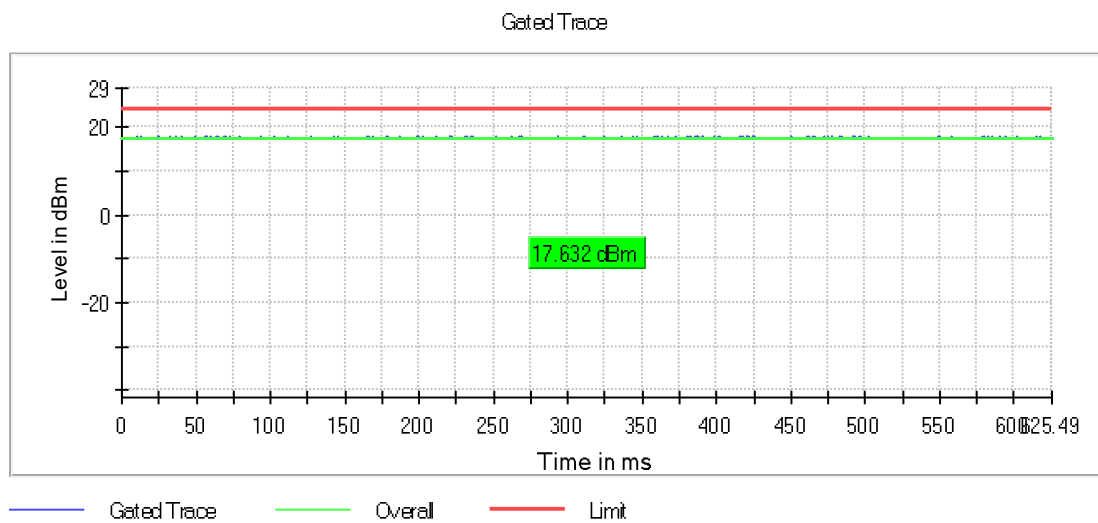
In the configurations tested the EUT complied with the requirements of the specification with a margin of 6.3 dB and does not require a transmit power control mechanism.



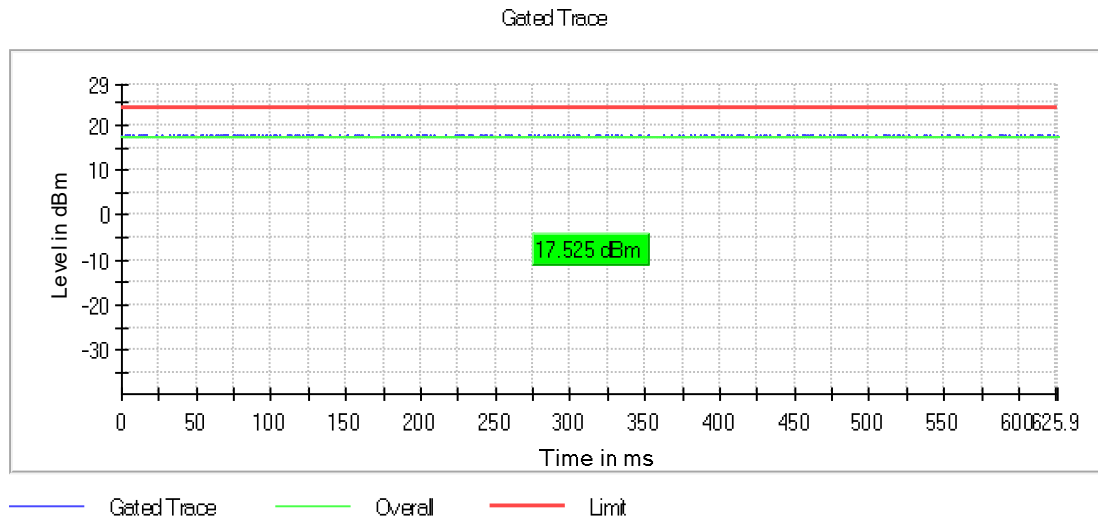
Graph 86: PM-G Power Transmitting at 5260 MHz (Power Level 20)



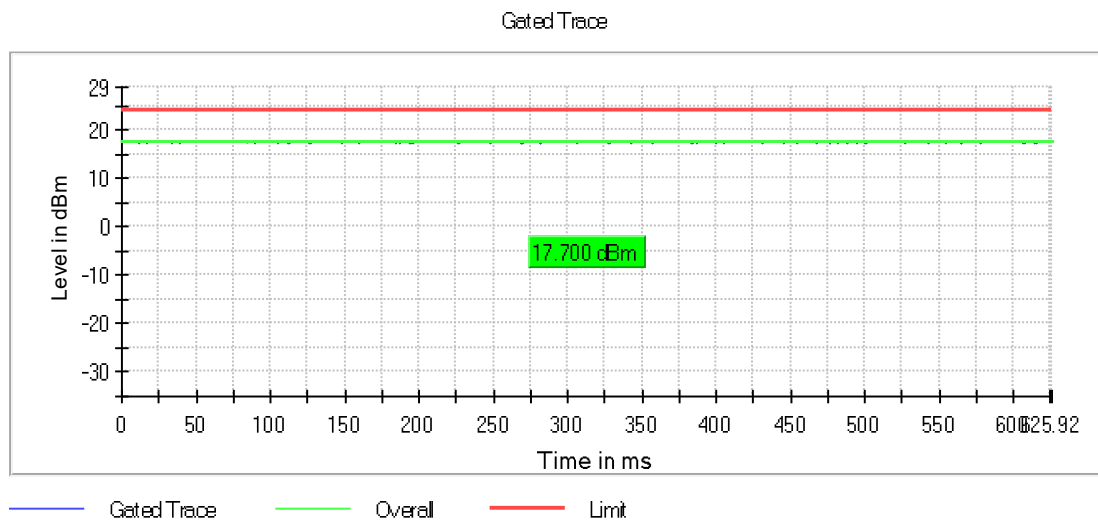
Graph 87: PM-G Power Transmitting at 5300 MHz (Power Level 20)



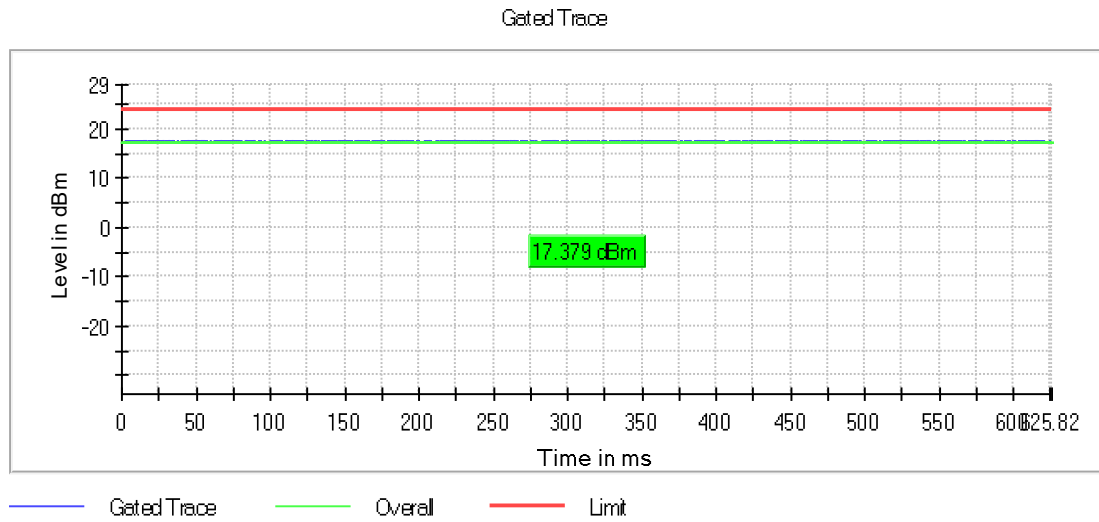
Graph 88: PM-G Power Transmitting at 5320 MHz (Power Level 20)



Graph 89: PM-G Power Transmitting at 5500 MHz (Power Level 20)



Graph 90: PM-G Power Transmitting at 5600 MHz (Power Level 20)



Graph 91: PM-G Power Transmitting at 5700 MHz (Power Level 20)

6.3.2.3 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 2)

The following tables show the adjusted power spectral density limits.

UNII-2 Power Spectral Density Limits

Power spectral density limits for the UNII-2 band are adjusted based on isotropic antenna gain.

Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
4.0	6	0	11	11

Table 35: UNII-2 Power spectral density limits based upon antenna gain

PSD was measured using Method SA-1 Alternative.at the maximum possible power set level, 20dBm.

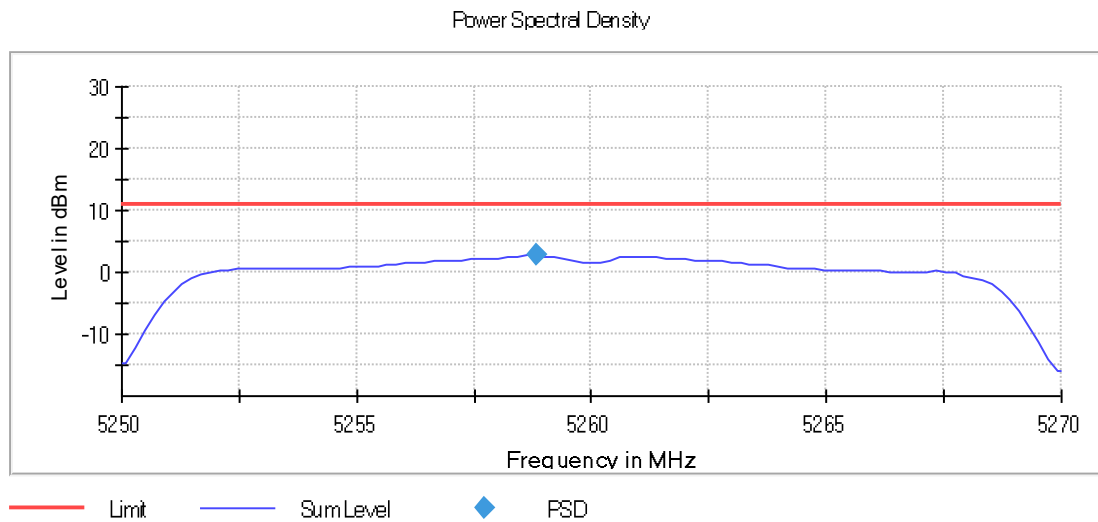
UNII-2 Power Spectral Density Measurements

Frequency (MHz)	Conducted Power Density (dBm/MHz)	Conducted Power Density Limit (dBm/MHz)	Margin (dB)
5260	2.7	11	-8.3
5300	2.8	11	-8.2
5320	2.7	11	-8.3
5500	2.5	11	-8.5
5600	2.6	11	-8.4
5700	2.1	11	-8.9

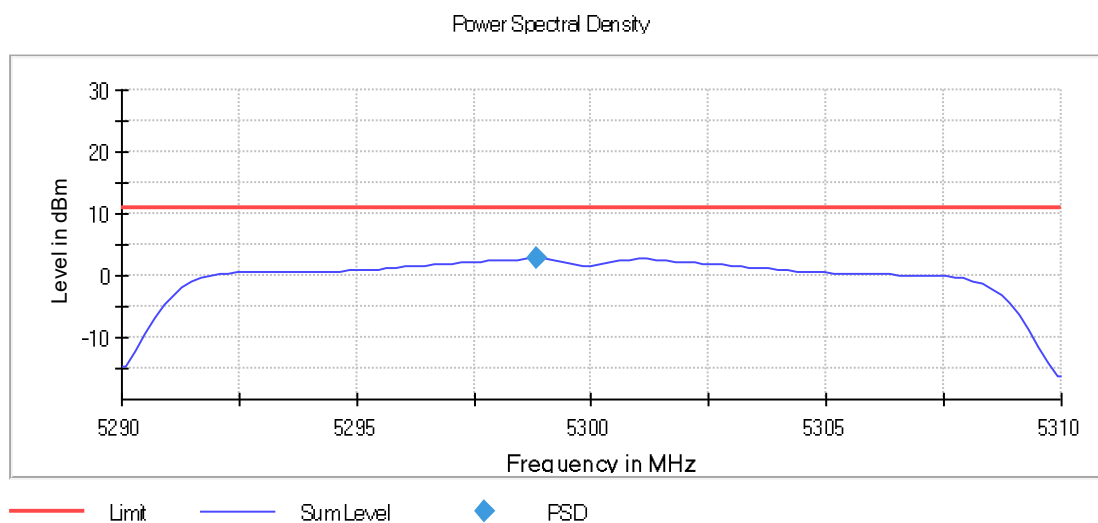
Table 36: SA-1 Alternative PSD Measurements

Result

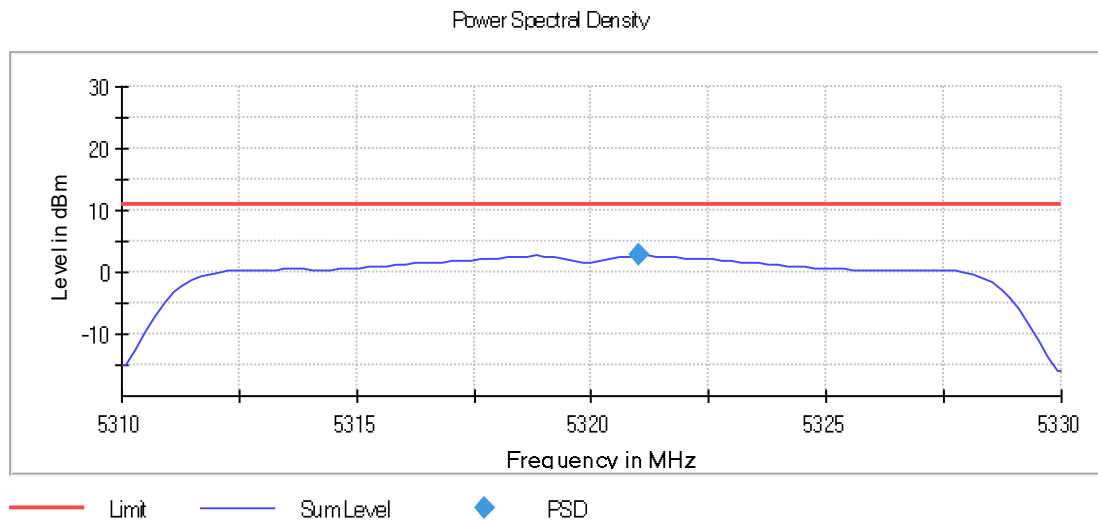
In the configurations tested the EUT complied with the requirements of the specification with a margin of 8.2 dB.



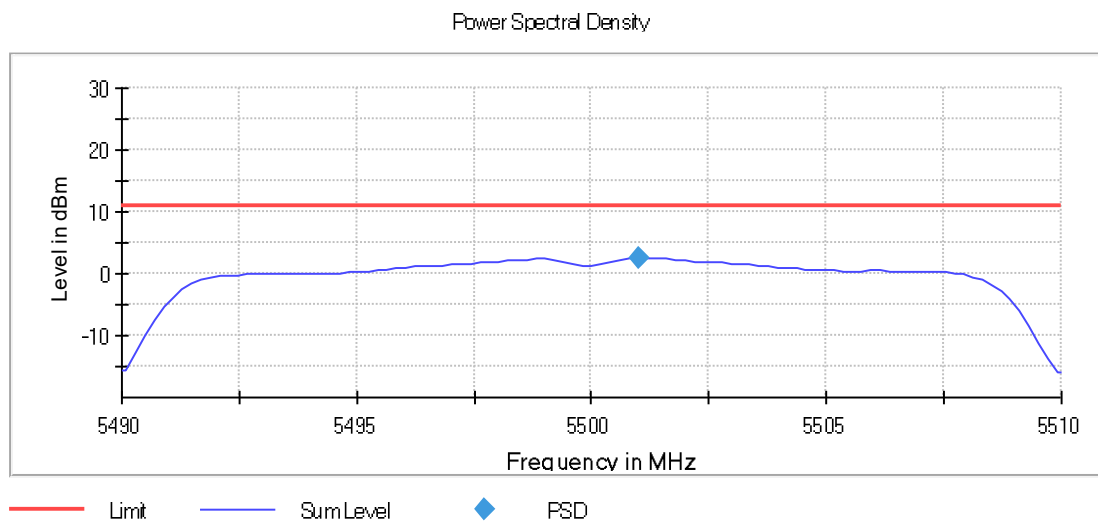
Graph 92: PSD Transmitting at 5260 MHz (Power Level 20)



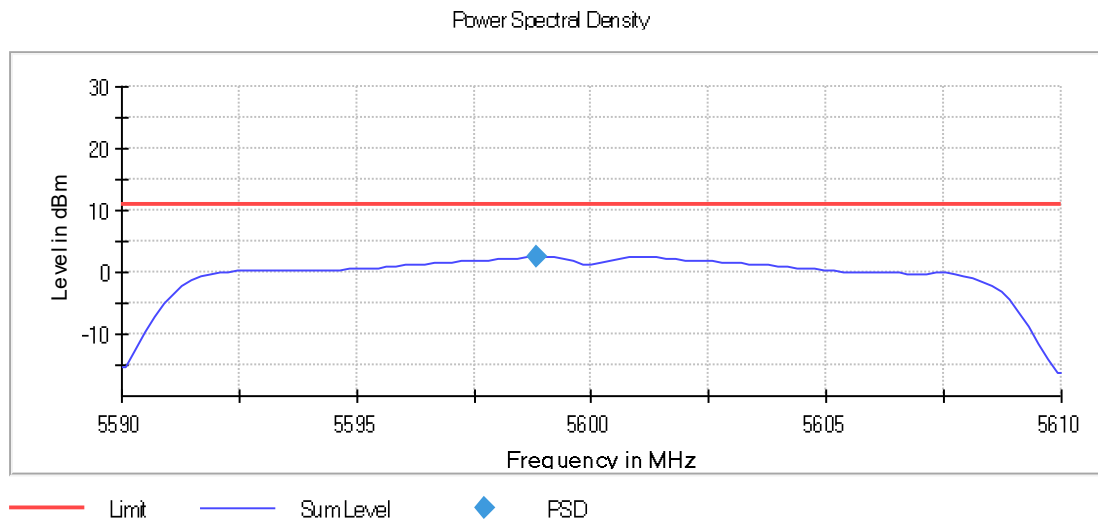
Graph 93: PSD Transmitting at 5300 MHz (Power Level 20)



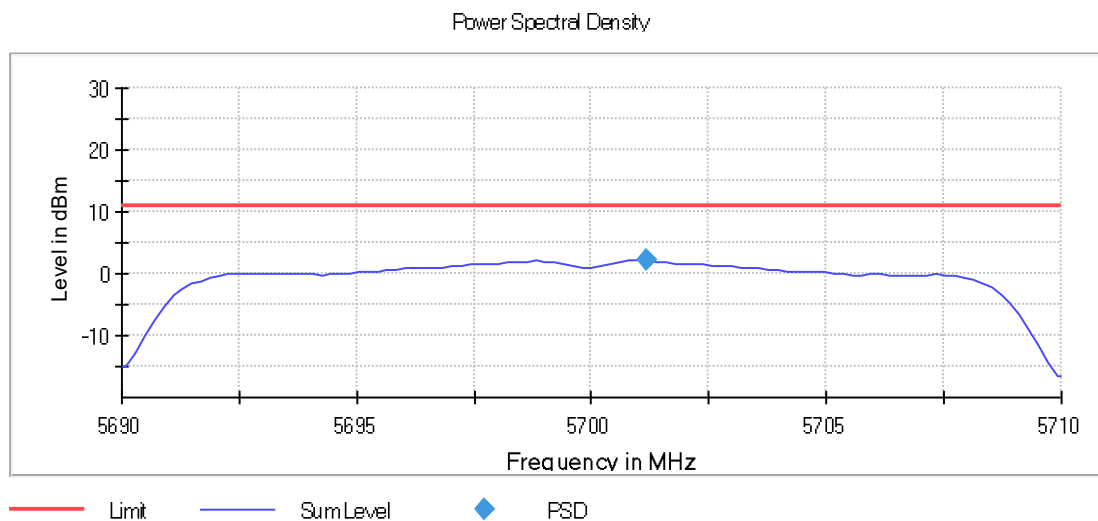
Graph 94: PSD Transmitting at 5320 MHz (Power Level 20)



Graph 95: PSD Transmitting at 5500 MHz (Power Level 20)



Graph 96: PSD Transmitting at 5600 MHz (Power Level 20)



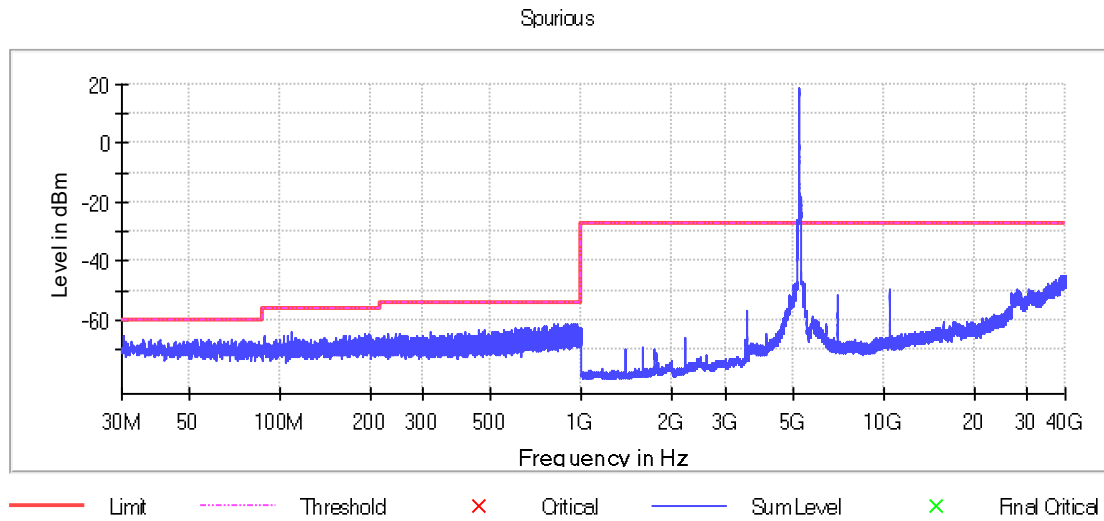
Graph 97: PSD Transmitting at 5700 MHz (Power Level 20)

6.3.2.4 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 2)

Undesirable Emissions were measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest in-band antenna gain (4.0 dBi) 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.

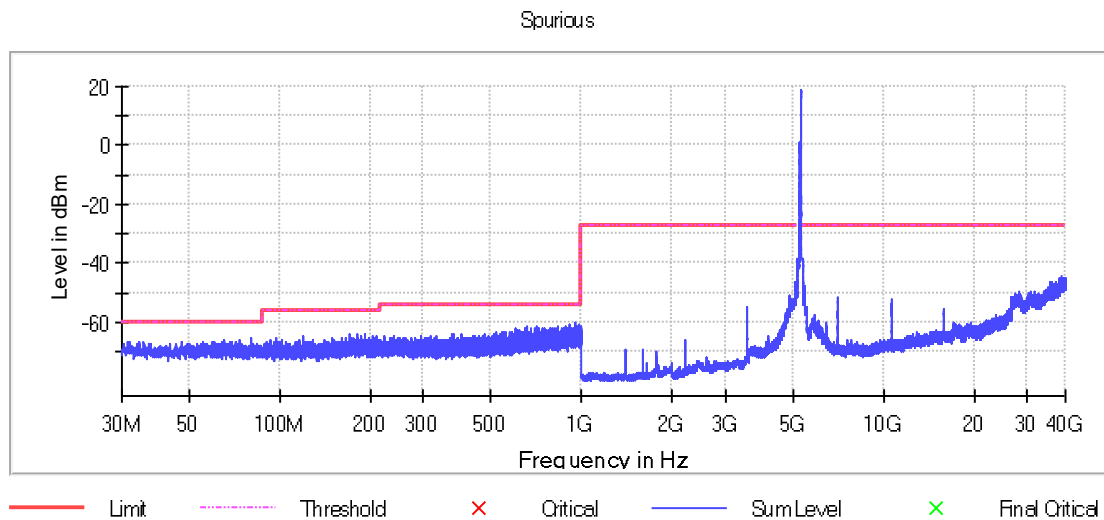
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20).

Antenna Port Conducted Emissions Transmitting 5260 MHz at Power Level 20:



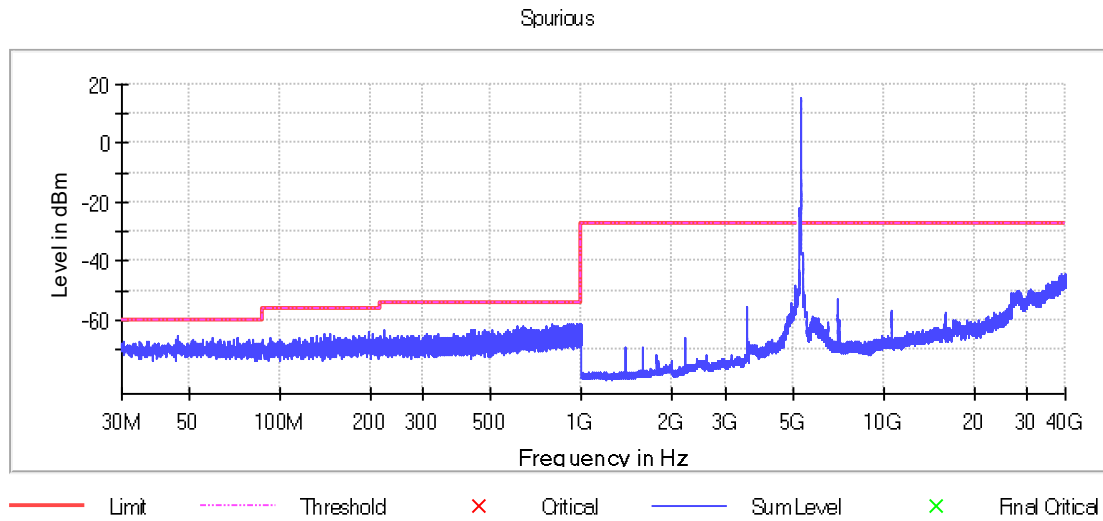
Graph 98: Antenna Port Conducted Spurious Emissions, UNII-2A Low Channel

Antenna Port Conducted Emissions Transmitting 5300 MHz at Power Level 20:



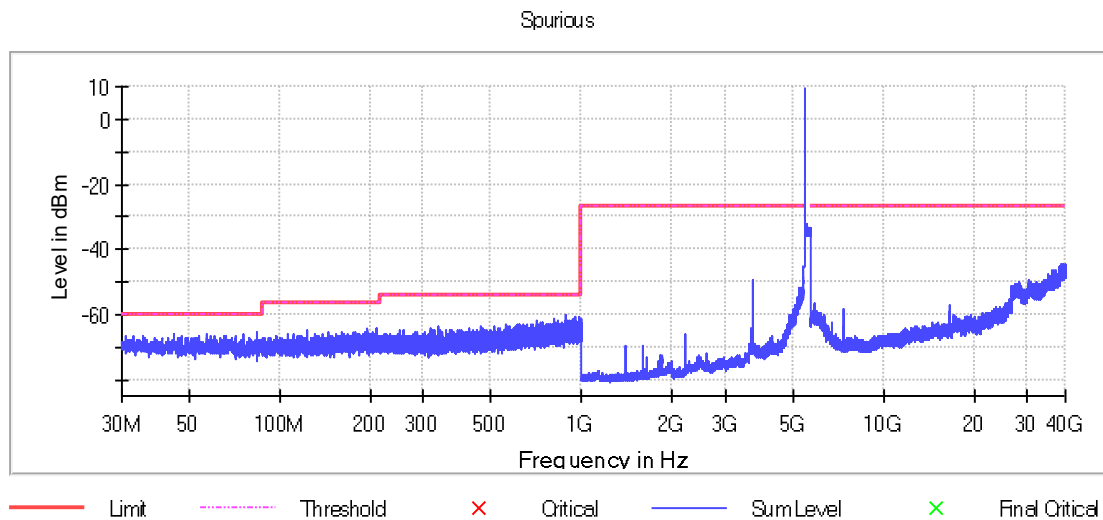
Graph 99: Antenna Port Conducted Spurious Emissions, UNII-2A Middle Channel

Antenna Port Conducted Emissions Transmitting 5320 MHz at Power Level 16:



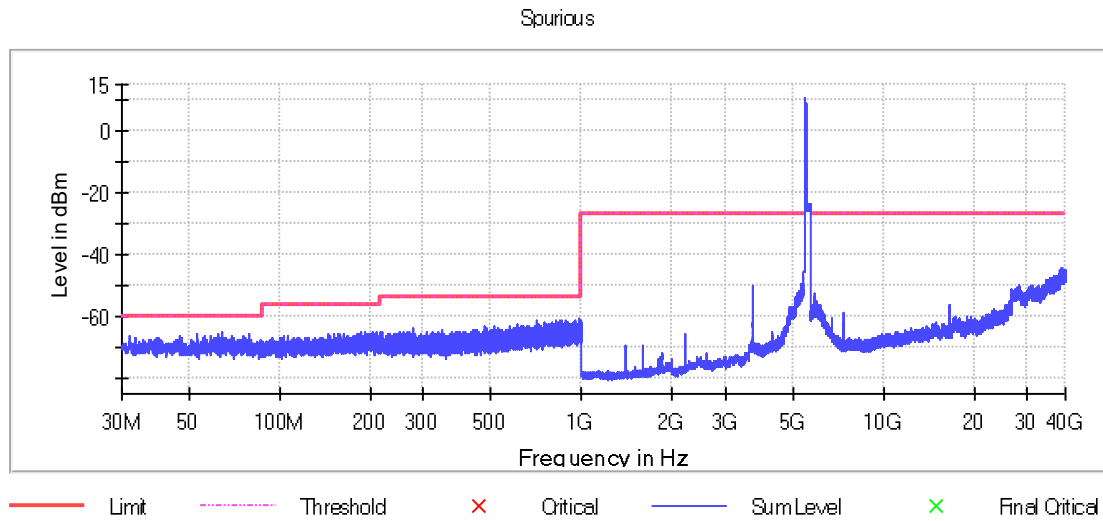
Graph 100: Antenna Port Conducted Spurious Emissions, UNII-2A High Channel (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5500 MHz at Power Level 14:



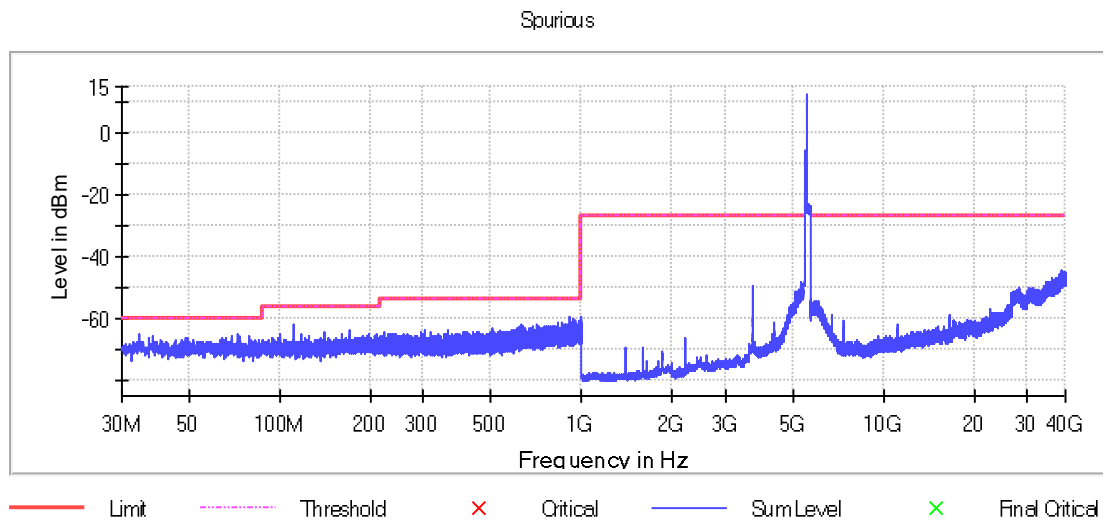
Graph 101: Antenna Port Conducted Spurious Emissions, UNII-2C Low Channel 1 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5520 MHz at Power Level 18:



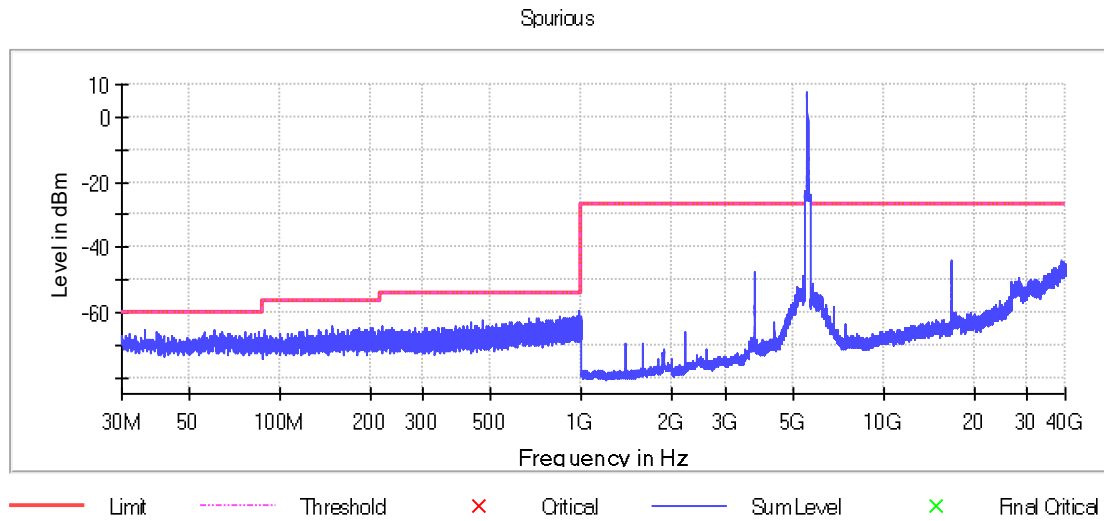
Graph 102: Antenna Port Conducted Spurious Emissions, UNII-2C Low Channel 2 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5540 MHz at Power Level 20:



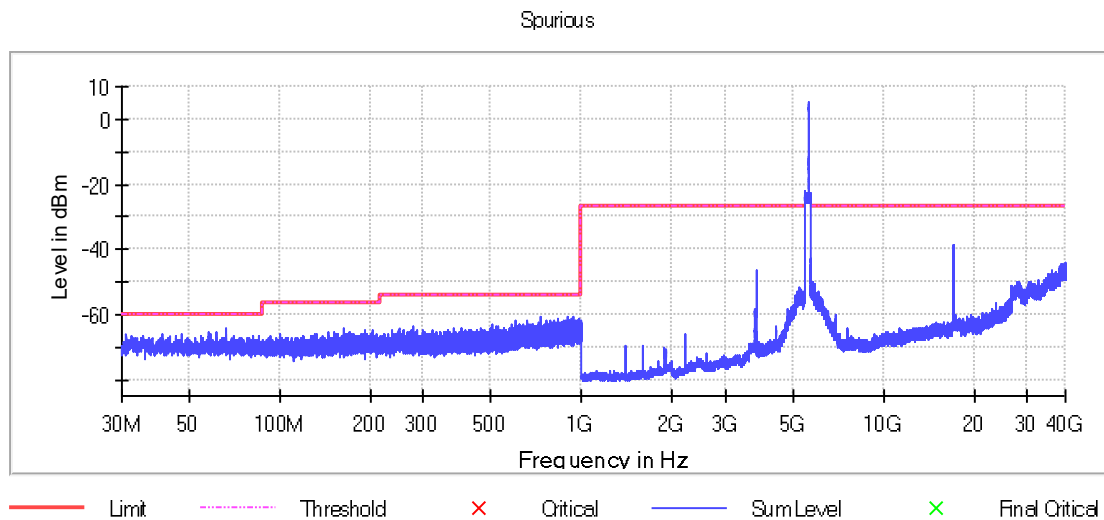
Graph 103: Antenna Port Conducted Spurious Emissions, UNII-2C Low Channel 3 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5600 MHz at Power Level 20:



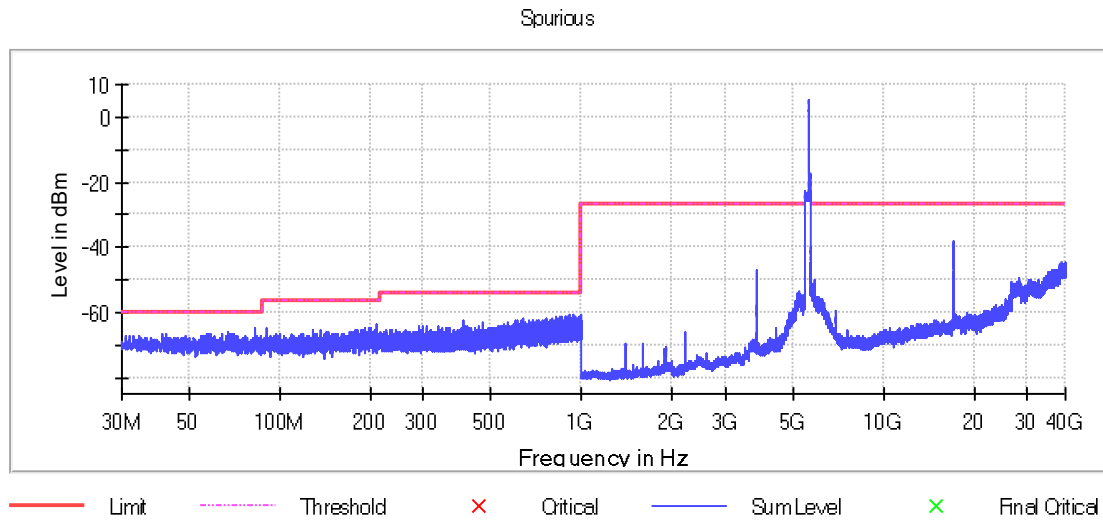
Graph 104: Antenna Port Conducted Spurious Emissions, UNII-2C Middle Channel

Antenna Port Conducted Emissions Transmitting 5660 MHz at Power Level 20:



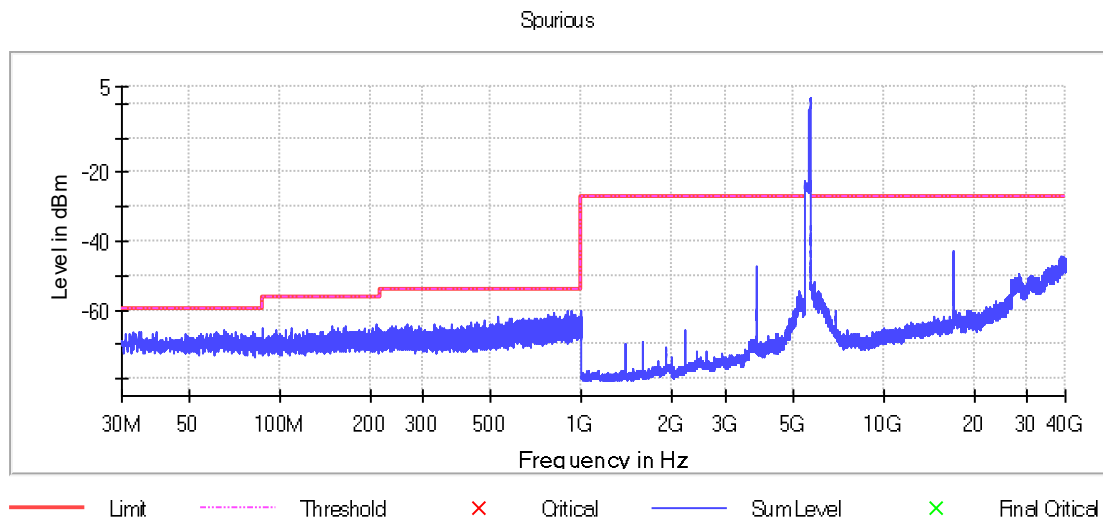
Graph 105: Antenna Port Conducted Spurious Emissions, UNII-2C High Channel 1 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5680 MHz at Power Level 19:



Graph 106: Antenna Port Conducted Spurious Emissions, UNII-2C High Channel 2 (Stepped Power Level)

Antenna Port Conducted Emissions Transmitting 5700 MHz at Power Level 15:



Graph 107: Antenna Port Conducted Spurious Emissions, UNII-2C High Channel 3 (Stepped Power Level)

Radiated Emissions Above 1000MHz Transmitting 5260 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)
10532.5	Peak	Vertical	36.0	12.7	48.7	74.0	-25.3
10519.0	Average	Vertical	23.0	12.7	35.7	54.0	-18.3

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10516.5	Peak	Horizontal	35.9	12.6	48.5	74.0	-25.5
10518.9	Average	Horizontal	23.4	12.7	36.0	54.0	-18.0
15779.6	Peak	Vertical	34.9	14.5	49.3	74.0	-24.7
15777.4	Average	Vertical	21.3	14.5	35.8	54.0	-18.2
15790.4	Peak	Horizontal	34.1	14.5	48.5	74.0	-25.5
15781.1	Average	Horizontal	21.2	14.5	35.7	54.0	-18.3
21073.4	Peak	Vertical	39.0	17.4	56.3	74.0	-17.7
21068.7	Average	Vertical	25.1	17.4	42.5	54.0	-11.5
21062.3	Peak	Horizontal	38.9	17.3	56.2	74.0	-17.8
21076.5	Average	Horizontal	25.1	17.4	42.5	54.0	-11.5
26343.5	Peak	Vertical	37.7	21.8	59.5	74.0	-14.5
26269.6	Average	Vertical	24.0	21.8	45.9	54.0	-8.1
26343.1	Peak	Horizontal	38.1	21.8	59.9	74.0	-14.1
26345.2	Average	Horizontal	24.2	21.8	46.0	54.0	-8.0
31554.2	Peak	Vertical	30.1	28.2	58.3	74.0	-15.7
31573.0	Average	Vertical	16.6	28.1	44.7	54.0	-9.3
31570.1	Peak	Horizontal	29.7	28.1	57.9	74.0	-16.2
31555.9	Average	Horizontal	16.3	28.2	44.5	54.0	-9.5
36783.3	Peak	Vertical	29.9	28.5	58.4	74.0	-15.6
36751.1	Average	Vertical	16.3	28.6	44.9	54.0	-9.1
36885.1	Peak	Horizontal	29.9	28.4	58.4	74.0	-15.7
36755.1	Average	Horizontal	16.0	28.6	44.6	54.0	-9.4

Table 37: Radiated Spurious Emissions, UNII-2A Low Channel

Radiated Emissions Above 1000MHz Transmitting 5300 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)
10599.6	Peak	Vertical	34.9	13.0	47.9	74.0	-26.2
10598.9	Average	Vertical	22.2	13.0	35.2	54.0	-18.8
10598.6	Peak	Horizontal	34.3	13.0	47.3	74.0	-26.7
10598.9	Average	Horizontal	22.0	13.0	34.9	54.0	-19.1

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15896.9	Peak	Vertical	34.1	14.9	49.0	74.0	-25.0
15893.5	Average	Vertical	21.2	14.9	36.1	54.0	-17.9
15884.0	Peak	Horizontal	34.2	14.9	49.1	74.0	-25.0
15903.7	Average	Horizontal	21.2	15.0	36.2	54.0	-17.8
21175.5	Peak	Vertical	38.3	17.7	56.0	74.0	-18.0
21171.4	Average	Vertical	24.8	17.7	42.5	54.0	-11.5
21149.2	Peak	Horizontal	38.9	17.6	56.5	74.0	-17.5
21153.7	Average	Horizontal	25.0	17.6	42.6	54.0	-11.4
26479.7	Peak	Vertical	38.5	21.7	60.2	74.0	-13.8
26470.8	Average	Vertical	24.7	21.7	46.4	54.0	-7.6
26489.7	Peak	Horizontal	38.5	21.7	60.2	74.0	-13.8
26459.9	Average	Horizontal	24.8	21.7	46.5	54.0	-7.5
26565.9	Peak	Vertical	32.0	24.6	56.6	74.0	-17.4
26555.3	Average	Vertical	18.3	24.5	42.8	54.0	-11.2
26523.3	Peak	Horizontal	31.5	24.4	55.9	74.0	-18.1
26500.3	Average	Horizontal	17.9	24.4	42.3	54.0	-11.7
31838.0	Peak	Vertical	30.3	27.5	57.8	74.0	-16.2
31726.0	Average	Vertical	17.3	27.7	45.0	54.0	-9.0
31722.8	Peak	Horizontal	29.8	27.7	57.5	74.0	-16.5
31724.6	Average	Horizontal	16.7	27.7	44.4	54.0	-9.6

Table 38: Radiated Spurious Emissions, UNII-2A Middle Channel

Radiated Emissions Above 1000MHz Transmitting 5320 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)
10648.4	Peak	Vertical	34.9	13.2	48.1	74.0	-25.9
10634.8	Average	Vertical	21.4	13.2	34.6	54.0	-19.4
10638.3	Peak	Horizontal	34.5	13.2	47.7	74.0	-26.3
10638.4	Average	Horizontal	21.7	13.2	34.9	54.0	-19.1
15976.6	Peak	Vertical	34.5	15.7	50.2	74.0	-23.8
15955.9	Average	Vertical	21.0	15.5	36.4	54.0	-17.6

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15964.0	Peak	Horizontal	33.9	15.5	49.4	74.0	-24.6
15958.7	Average	Horizontal	21.0	15.5	36.5	54.0	-17.5
21274.6	Peak	Vertical	38.6	18.0	56.5	74.0	-17.5
21329.7	Average	Vertical	25.2	18.1	43.3	54.0	-10.7
21280.2	Peak	Horizontal	38.9	18.0	56.8	74.0	-17.2
21324.9	Average	Horizontal	25.3	18.1	43.4	54.0	-10.6
26656.7	Peak	Vertical	32.1	25.0	57.1	74.0	-16.9
26662.0	Average	Vertical	18.3	25.0	43.4	54.0	-10.6
26631.4	Peak	Horizontal	31.7	24.9	56.6	74.0	-17.4
26665.7	Average	Horizontal	17.9	25.0	42.9	54.0	-11.1
31882.0	Peak	Vertical	30.7	27.4	58.1	74.0	-15.9
31907.4	Average	Vertical	17.2	27.3	44.5	54.0	-9.5
31878.1	Peak	Horizontal	30.3	27.4	57.7	74.0	-16.3
31906.5	Average	Horizontal	16.9	27.3	44.2	54.0	-9.8
37260.4	Peak	Vertical	30.6	28.9	59.4	74.0	-14.6
37278.9	Average	Vertical	17.1	28.9	46.0	54.0	-8.1
37295.7	Peak	Horizontal	30.2	28.9	59.1	74.0	-14.9
37279.5	Average	Horizontal	16.7	28.9	45.6	54.0	-8.4

Table 39: Radiated Spurious Emissions, UNII-2A High Channel

Radiated Emissions Above 1000MHz Transmitting 5500 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)
10998.6	Peak	Vertical	36.2	13.6	49.8	74.0	-24.2
10998.8	Average	Vertical	23.6	13.6	37.2	54.0	-16.8
10997.4	Peak	Horizontal	35.9	13.6	49.5	74.0	-24.5
10998.7	Average	Horizontal	23.2	13.6	36.9	54.0	-17.1
16499.0	Peak	Vertical	36.5	17.6	54.0	74.0	-20.0
16503.7	Average	Vertical	22.7	17.6	40.3	54.0	-13.7
16503.0	Peak	Horizontal	35.7	17.6	53.3	74.0	-20.7
16502.2	Average	Horizontal	23.0	17.6	40.6	54.0	-13.4

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
21962.6	Peak	Vertical	39.0	19.4	58.4	74.0	-15.7
21982.2	Average	Vertical	25.6	19.4	44.9	54.0	-9.1
21993.8	Peak	Horizontal	38.8	19.4	58.2	74.0	-15.8
21952.4	Average	Horizontal	25.3	19.4	44.7	54.0	-9.3
27470.9	Peak	Vertical	33.3	23.2	56.5	74.0	-17.5
27470.9	Average	Vertical	19.8	23.2	43.0	54.0	-11.0
27457.4	Peak	Horizontal	32.5	23.3	55.7	74.0	-18.3
27455.5	Average	Horizontal	19.3	23.3	42.5	54.0	-11.5
32922.6	Peak	Vertical	30.3	27.5	57.7	74.0	-16.3
32927.8	Average	Vertical	16.9	27.5	44.3	54.0	-9.7
32924.0	Peak	Horizontal	29.0	27.5	56.5	74.0	-17.5
32921.3	Average	Horizontal	16.1	27.5	43.5	54.0	-10.5
38530.7	Peak	Vertical	30.6	29.4	60.0	74.0	-14.0
38551.9	Average	Vertical	17.4	29.5	46.9	54.0	-7.2
38548.9	Peak	Horizontal	29.8	29.5	59.3	74.0	-14.7
38550.4	Average	Horizontal	16.8	29.5	46.3	54.0	-7.7

Table 40: Radiated Spurious Emissions, UNII-2C Low Channel

Radiated Emissions Above 1000MHz Transmitting 5600 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)
11202.5	Peak	Vertical	36.6	14.1	50.7	74.0	-23.3
11198.6	Average	Vertical	23.7	14.1	37.8	54.0	-16.2
11207.5	Peak	Horizontal	35.6	14.2	49.8	74.0	-24.2
11198.3	Average	Horizontal	22.4	14.1	36.6	54.0	-17.4
16803.7	Peak	Vertical	36.2	18.8	55.0	74.0	-19.0
16799.7	Average	Vertical	22.9	18.8	41.6	54.0	-12.4
16807.7	Peak	Horizontal	37.3	18.8	56.1	74.0	-17.9
16802.3	Average	Horizontal	23.6	18.8	42.3	54.0	-11.7
22354.8	Peak	Vertical	39.9	19.3	59.2	74.0	-14.8
22349.6	Average	Vertical	25.4	19.3	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)
22372.4	Peak	Horizontal	38.8	19.4	58.1	74.0	-15.9
22449.8	Average	Horizontal	24.9	19.6	44.5	54.0	-9.5
28030.0	Peak	Vertical	33.3	22.6	55.9	74.0	-18.1
27943.6	Average	Vertical	19.7	23.0	42.7	54.0	-11.3
28020.1	Peak	Horizontal	33.4	22.6	56.0	74.0	-18.0
27944.2	Average	Horizontal	19.2	23.0	42.2	54.0	-11.8
33511.6	Peak	Vertical	29.7	27.1	56.8	74.0	-17.2
33521.3	Average	Vertical	16.1	27.1	43.1	54.0	-10.9
33515.8	Peak	Horizontal	28.1	27.1	55.2	74.0	-18.8
33512.2	Average	Horizontal	15.3	27.1	42.3	54.0	-11.7
39288.4	Peak	Vertical	28.7	34.2	63.0	74.0	-11.0
39282.7	Average	Vertical	15.1	34.1	49.2	54.0	-4.8
39283.4	Peak	Horizontal	27.7	34.1	61.9	74.0	-12.1
39286.1	Average	Horizontal	14.2	34.2	48.4	54.0	-5.6

Table 41: Radiated Spurious Emissions, UNII-2C Middle Channel

Radiated Emissions Above 1000MHz Transmitting 5700 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)
11396.3	Peak	Vertical	37.1	14.0	51.0	74.0	-23.0
11398.3	Average	Vertical	23.2	14.0	37.1	54.0	-16.9
11397.1	Peak	Horizontal	35.7	14.0	49.7	74.0	-24.3
11401.3	Average	Horizontal	23.0	14.0	36.9	54.0	-17.1
17104.1	Peak	Vertical	34.4	20.1	54.5	74.0	-19.5
17102.4	Average	Vertical	21.4	20.1	41.5	54.0	-12.5
17097.8	Peak	Horizontal	38.7	20.1	58.8	74.0	-15.2
17096.7	Average	Horizontal	24.1	20.1	44.2	54.0	-9.8
22842.5	Peak	Vertical	39.6	20.5	60.1	74.0	-13.9
22748.2	Average	Vertical	26.0	20.4	46.5	54.0	-7.6
22786.6	Peak	Horizontal	39.9	20.5	60.4	74.0	-13.6
22760.2	Average	Horizontal	25.9	20.4	46.4	54.0	-7.7

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)
28509.6	Peak	Vertical	33.5	22.4	55.8	74.0	-18.2
28521.9	Average	Vertical	20.3	22.4	42.7	54.0	-11.3
28498.5	Peak	Horizontal	33.4	22.4	55.7	74.0	-18.3
28515.9	Average	Horizontal	19.9	22.4	42.2	54.0	-11.8
34216.6	Peak	Vertical	29.3	28.8	58.1	74.0	-15.9
34117.6	Average	Vertical	15.9	28.9	44.8	54.0	-9.2
34134.1	Peak	Horizontal	29.1	28.9	58.0	74.0	-16.0
34137.0	Average	Horizontal	15.3	28.9	44.2	54.0	-9.8
39962.1	Peak	Vertical	28.3	38.3	66.6	74.0	-7.4
39956.1	Average	Vertical	15.1	38.2	53.3	54.0	-0.7
39950.8	Peak	Horizontal	27.5	38.0	65.5	74.0	-8.5
39955.9	Average	Horizontal	14.4	38.1	52.5	54.0	-1.5

Table 42: Radiated Spurious Emissions, UNII-2C High Channel

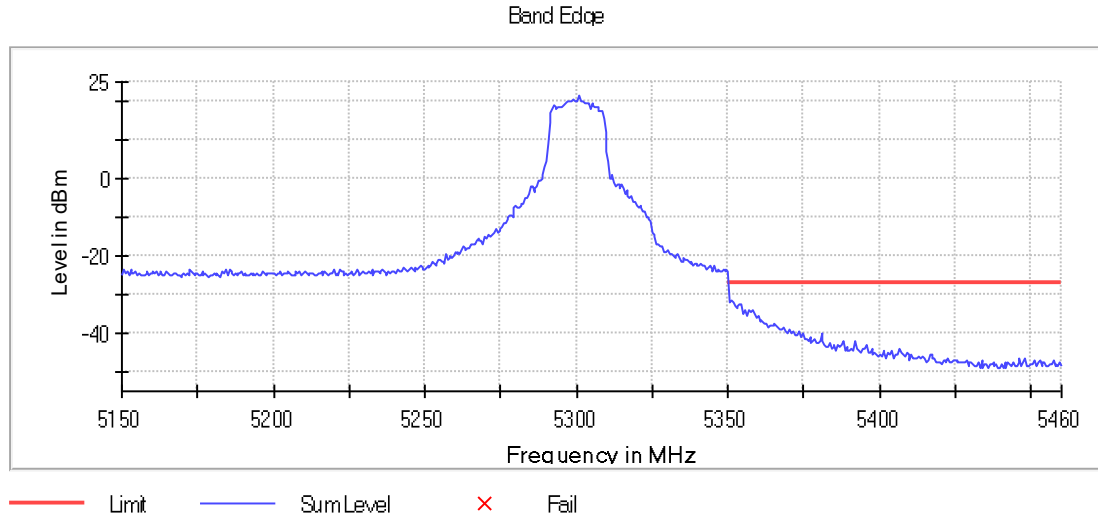
Result

The EUT complied with the specification limit by a margin of 0.7 dB.

6.3.2.5 §15.407(b) Undesirable Emissions – Band Edges (UNII 2)

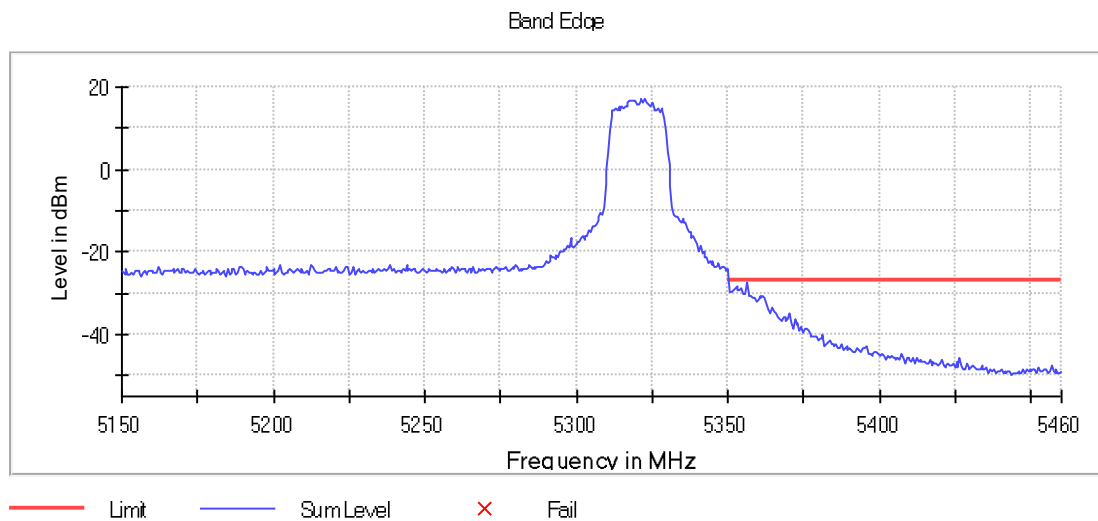
Band Edge were tested radiated at or above the intended power setting per channel.

Antenna Port Conducted Band Edge Transmitting on 5300 MHz (Power Level 20):



Graph 108: Antenna Port Conducted Band Edge, UNII-2A High Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5320 MHz (Power Level 16):

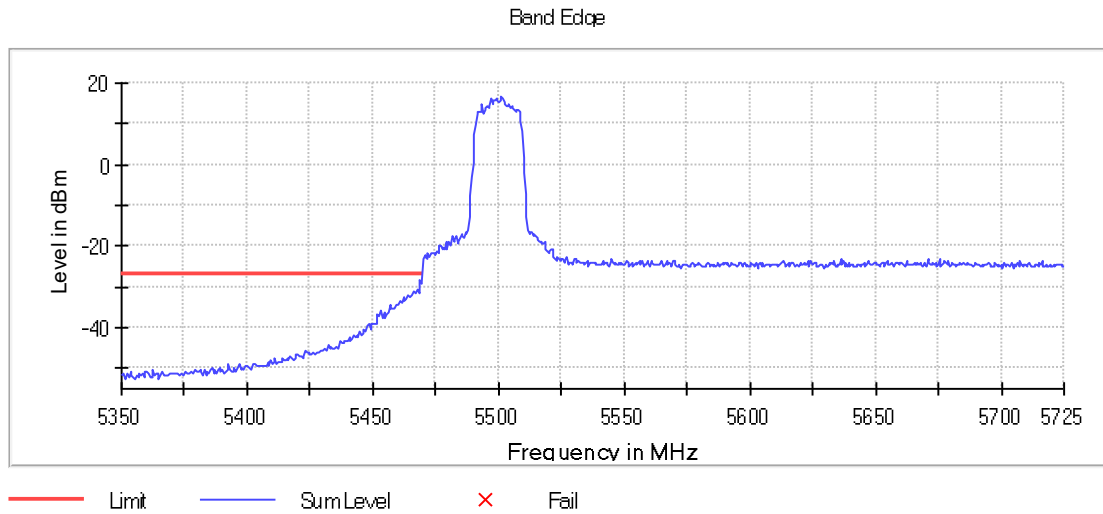


Graph 109: Antenna Port Conducted Band Edge, UNII-2A High Channel 2 (Stepped Power Level)

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
5356.05	-27.5	-27.0	0.5

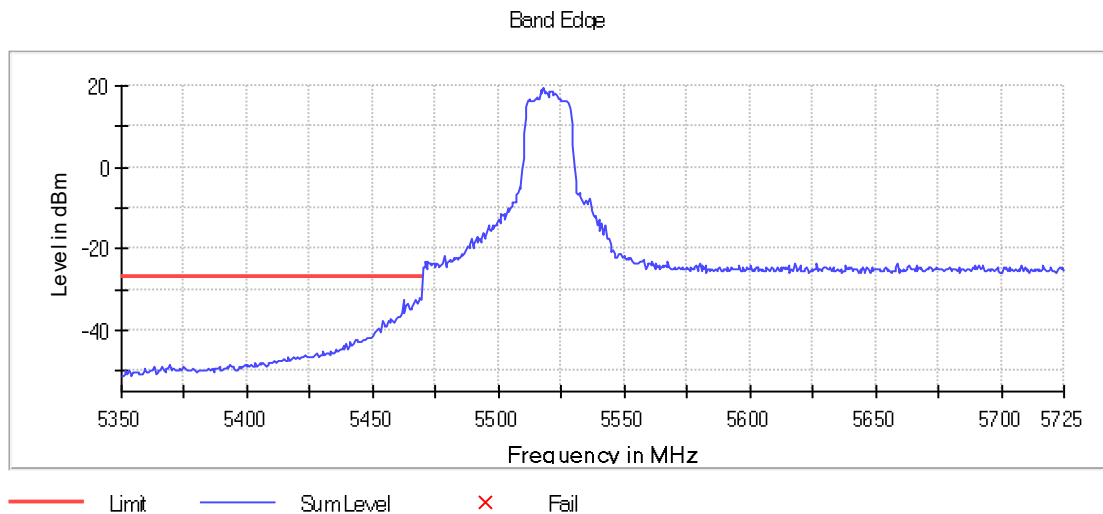
Table 43: Critical Frequency Transmitting 5320 MHz at Power Level 16

Antenna Port Conducted Band Edge Transmitting on 5500 MHz (Power Level 14):



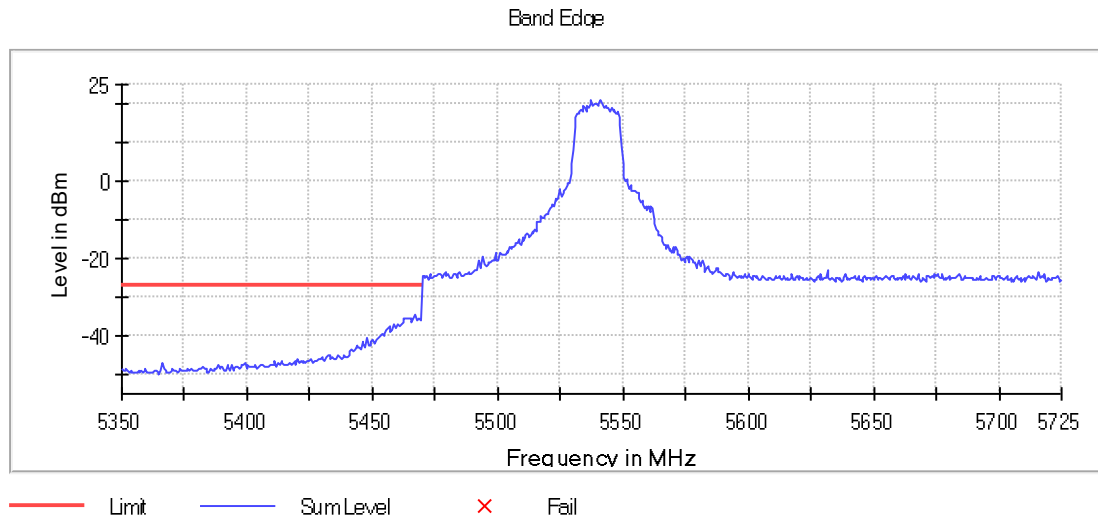
Graph 110: Antenna Port Conducted Band Edge, UNII-2C Low Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5520 MHz (Power Level 18):



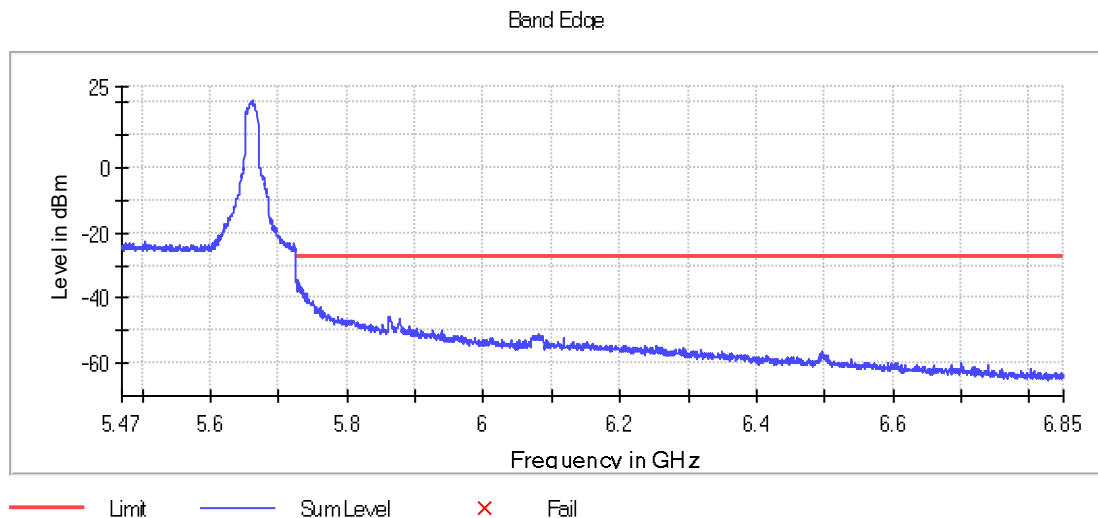
Graph 111: Antenna Port Conducted Band Edge, UNII-2C Low Channel 2 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5540 MHz (Power Level 20):



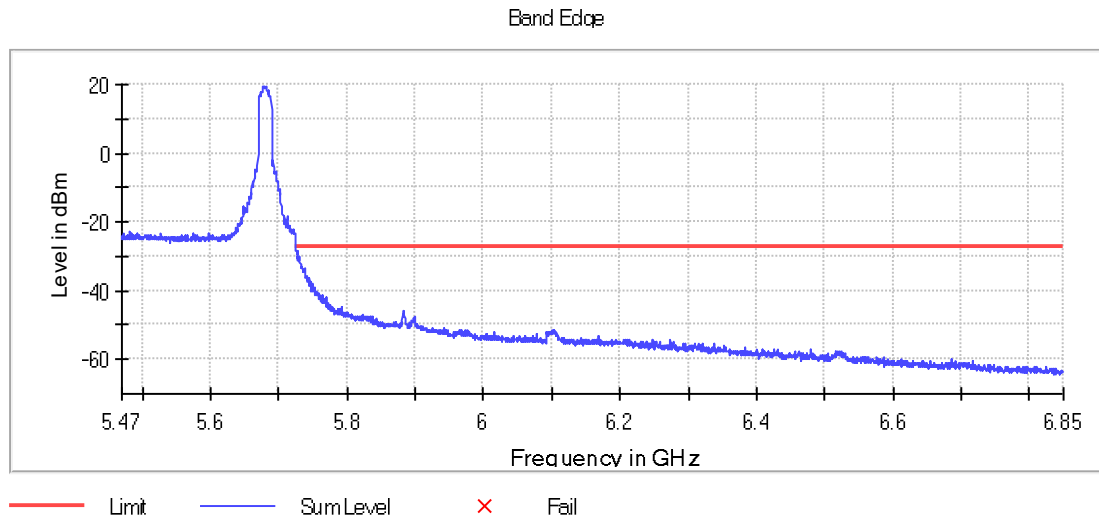
Graph 112: Antenna Port Conducted Band Edge, UNII-2C Low Channel 3 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5660 MHz (Power Level 20):



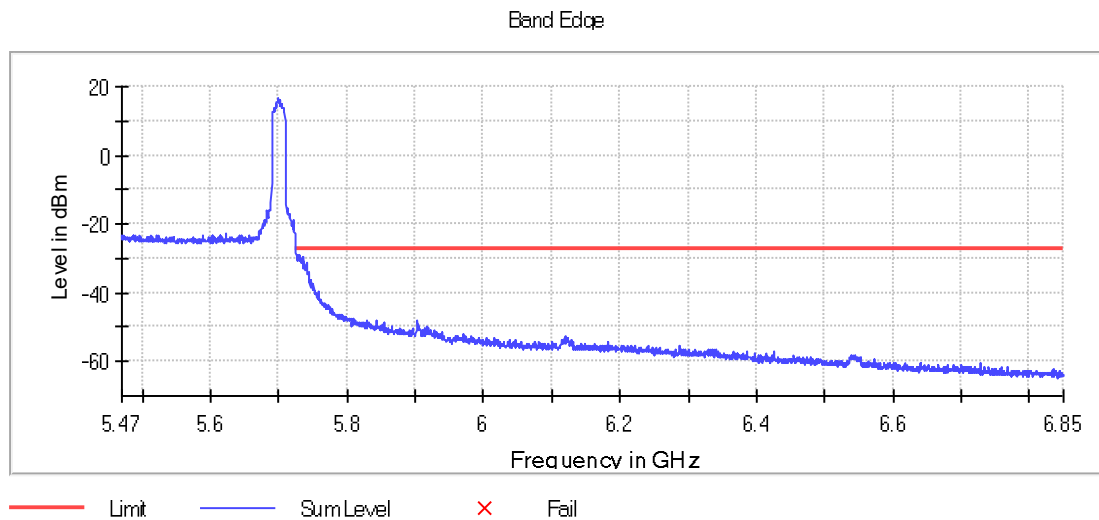
Graph 113: Antenna Port Conducted Band Edge, UNII-2C High Channel 1 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5680 MHz (Power Level 19):



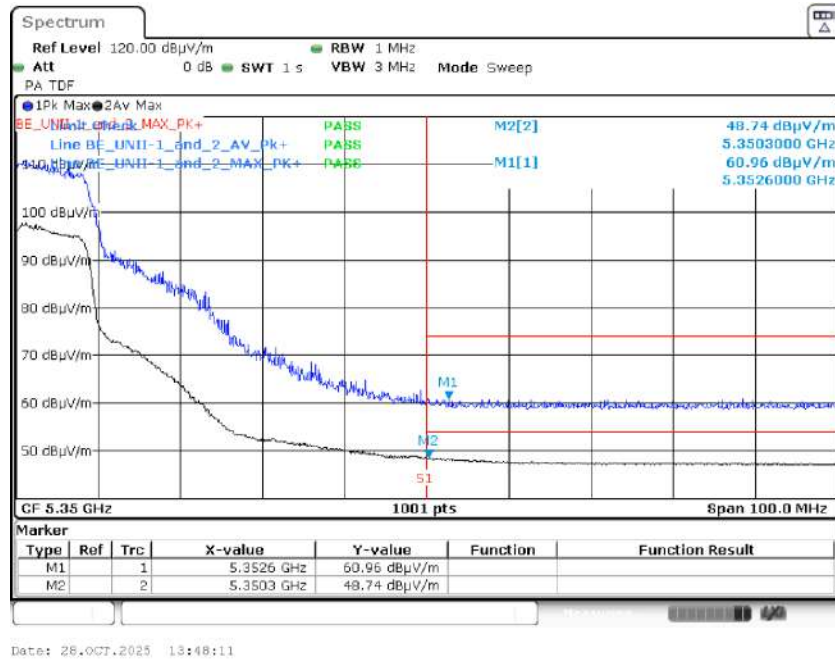
Graph 114: Antenna Port Conducted Band Edge, UNII-2C High Channel 2 (Stepped Power Level)

Antenna Port Conducted Band Edge Transmitting on 5700 MHz (Power Level 15):



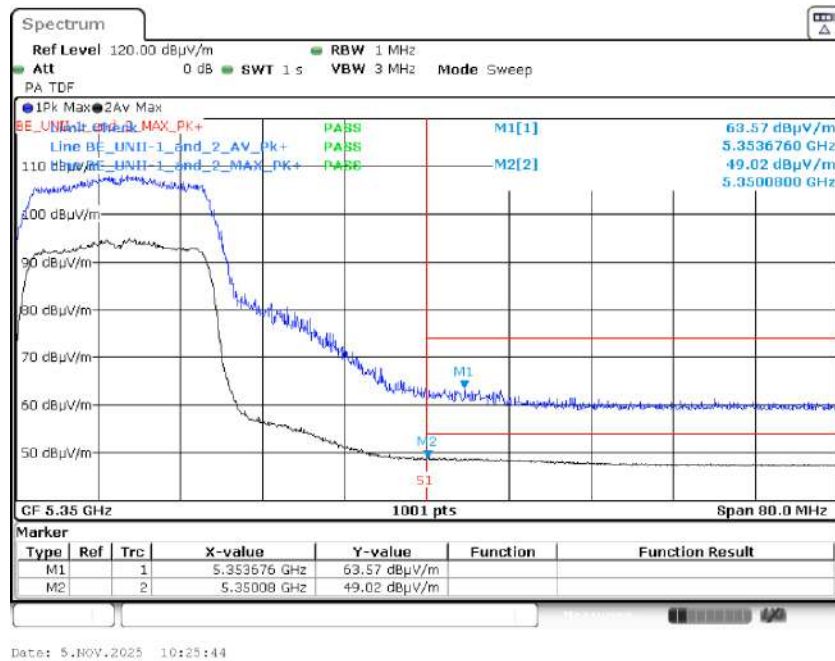
Graph 115: Antenna Port Conducted Band Edge, UNII-2C High Channel 3 (Stepped Power Level)

Radiated Band Edge Transmitting on 5300 MHz (Power Level 20):



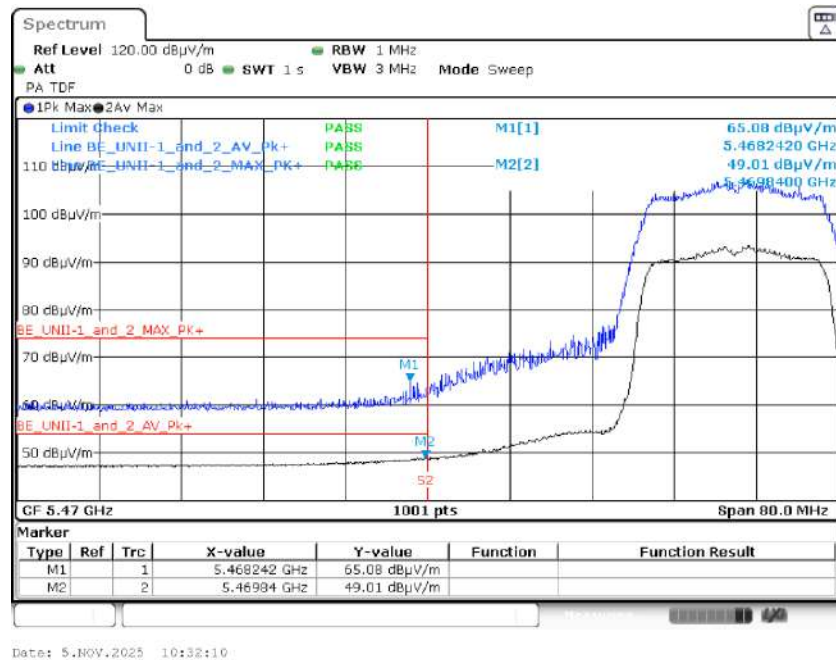
Graph 116: Radiated Band Edge, UNII-2A High Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5320 MHz (Power Level 16):



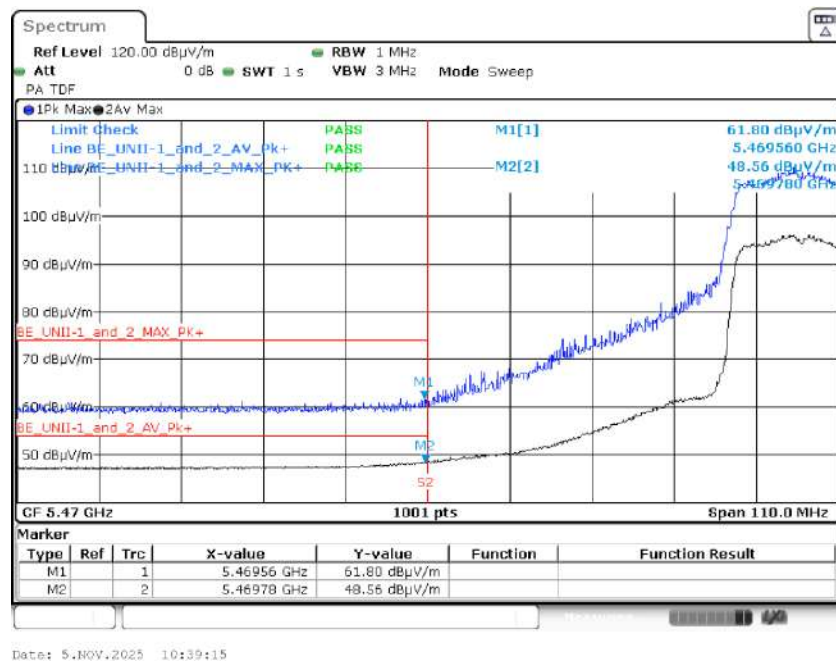
Graph 117: Radiated Band Edge, UNII-2A High Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5500 MHz (Power Level 14):



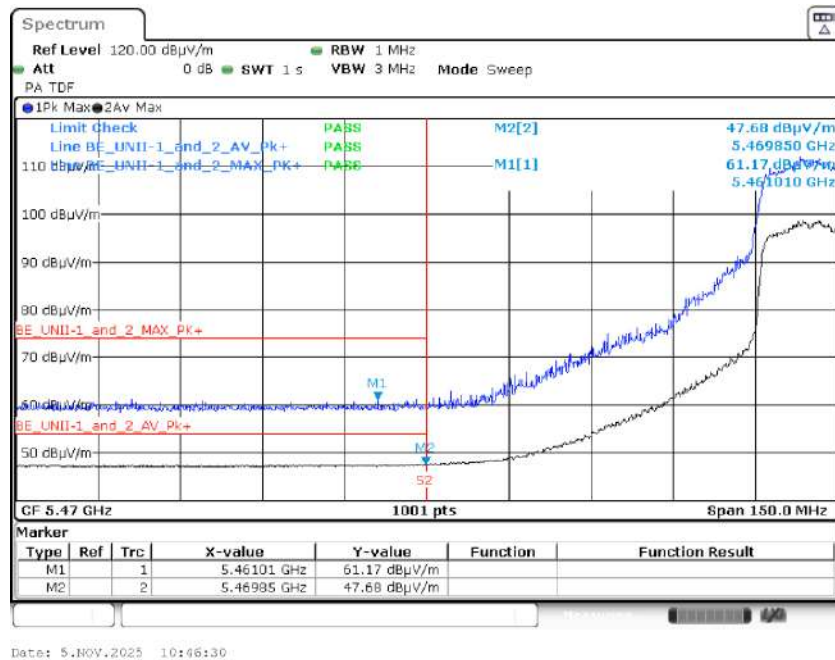
Graph 118: Radiated Band Edge, UNII-2C Low Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5520 MHz (Power Level 18):



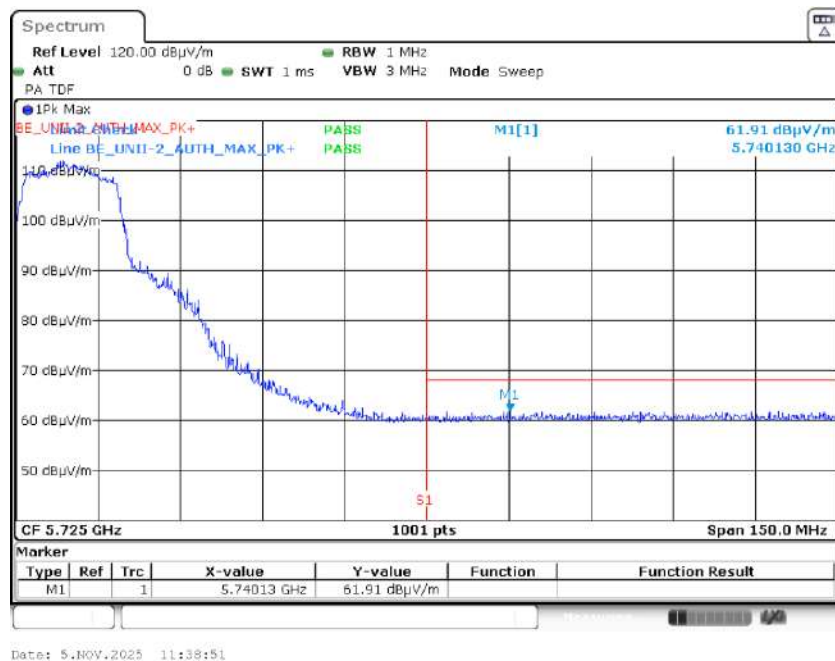
Graph 119: Radiated Band Edge, UNII-2C Low Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5540 MHz (Power Level 20):



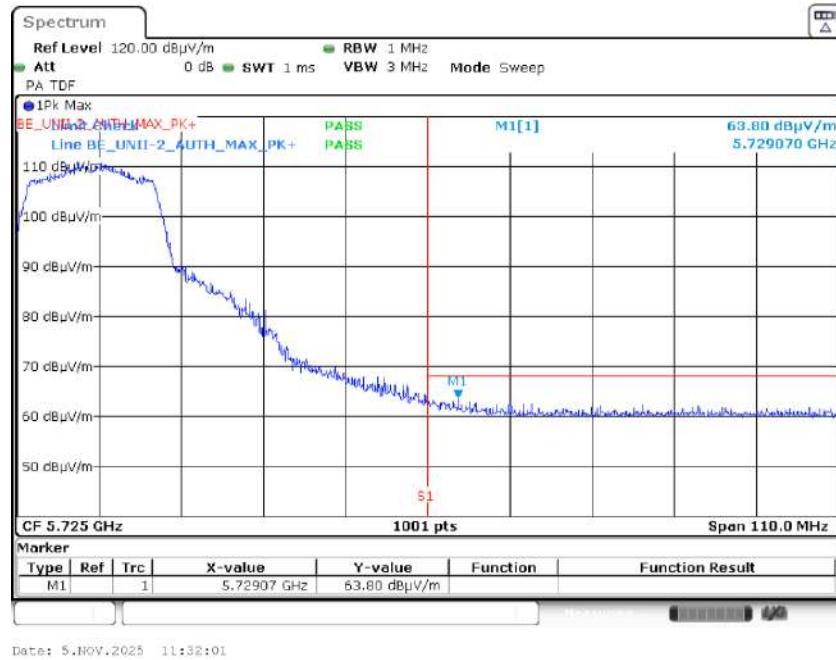
Graph 120: Radiated Band Edge, UNII-2C Low Channel 3 (Stepped Power Level)

Radiated Band Edge Transmitting on 5660 MHz (Power Level 20):



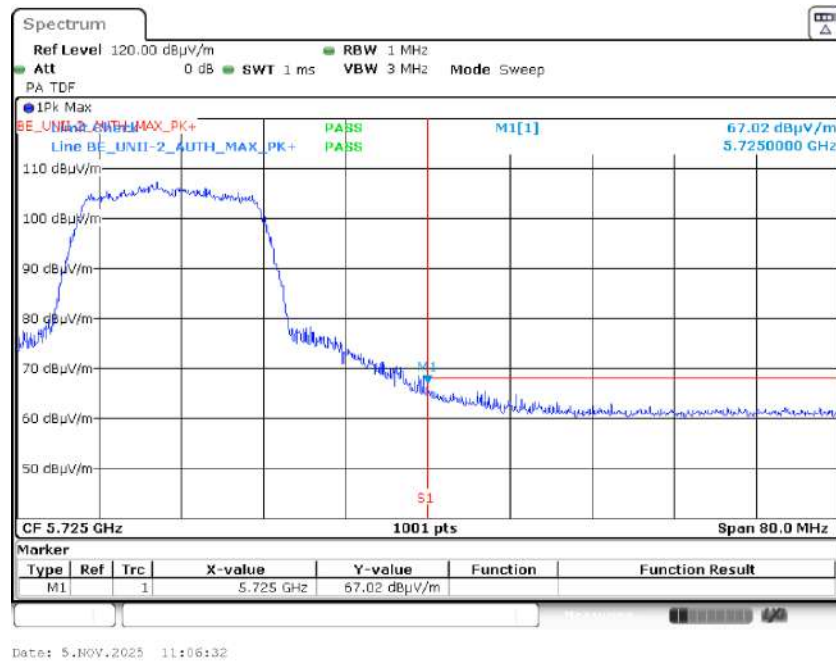
Graph 121: Radiated Band Edge, UNII-2C High Channel 1 (Stepped Power Level)

Radiated Band Edge Transmitting on 5680 MHz (Power Level 19):



Graph 122: Radiated Band Edge, UNII-2C High Channel 2 (Stepped Power Level)

Radiated Band Edge Transmitting on 5700 MHz (Power Level 15):



Graph 123: Radiated Band Edge, UNII-2C High Channel 3 (Stepped Power Level)

Result

The EUT complied with the specification.

6.3.2.6 §15.407(h)(1) TPC (UNII 2)

Based upon the conducted output power measurements, EUT does not require a transmit power control mechanism to operate in the UNII-2 band in the configuration tested.

Result

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

6.3.2.7 §15.407(h)(2) DFS (UNII 2)

EUT is a Client device and does not contain In-Service Monitoring. EUT was tested on Channel 140 (5700 MHz) with a Netgear R7000 Router (FCC ID #PY313200233) as the Master Device.

Radar Detection (UNII 2)

EUT does not operate as a Master device in the UNII-2 Band and cannot detect radar in the configurations tested.

Result

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

Master Device Channel Availability Check Time (UNII 2)

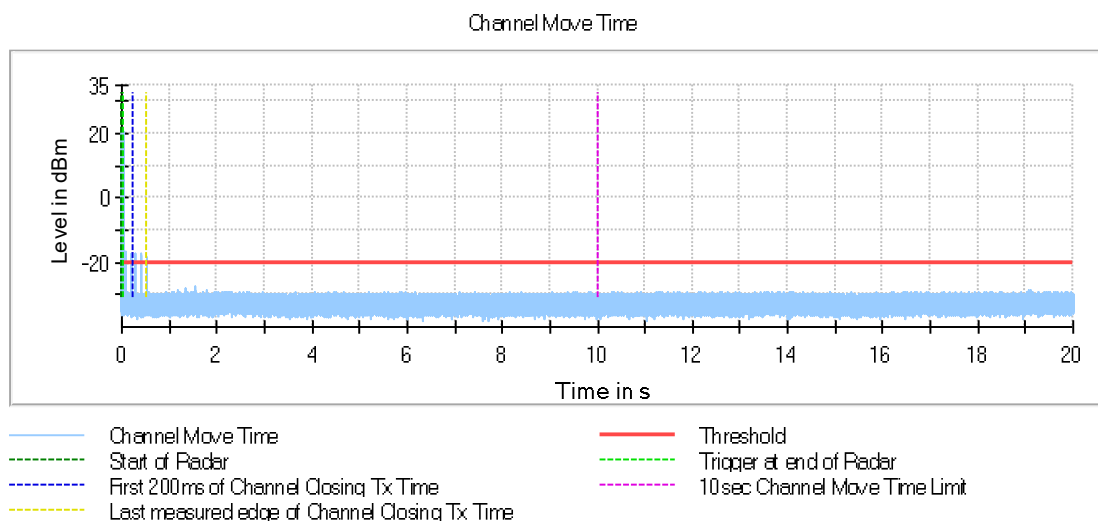
EUT does not operate as a master device in the UNII-2 Band and cannot detect radar in the configurations tested.

Result

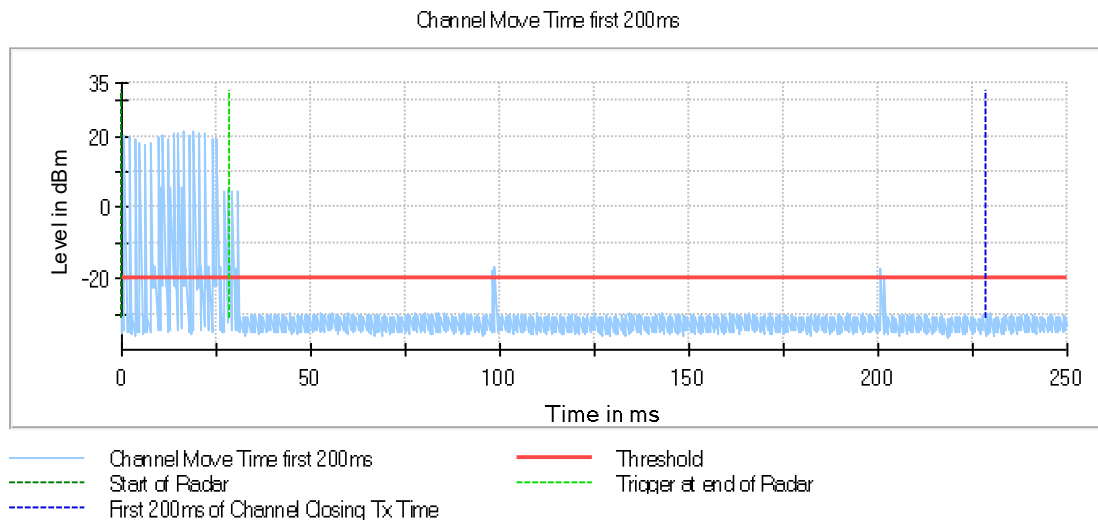
In the configurations tested the EUT complied with the requirements of the specification.

Channel Closing Transmission Time and Channel Move Time (UNII 2)

Upon receiving a clear channel command from a Master device, EUT cleared transmissions within 10 seconds.



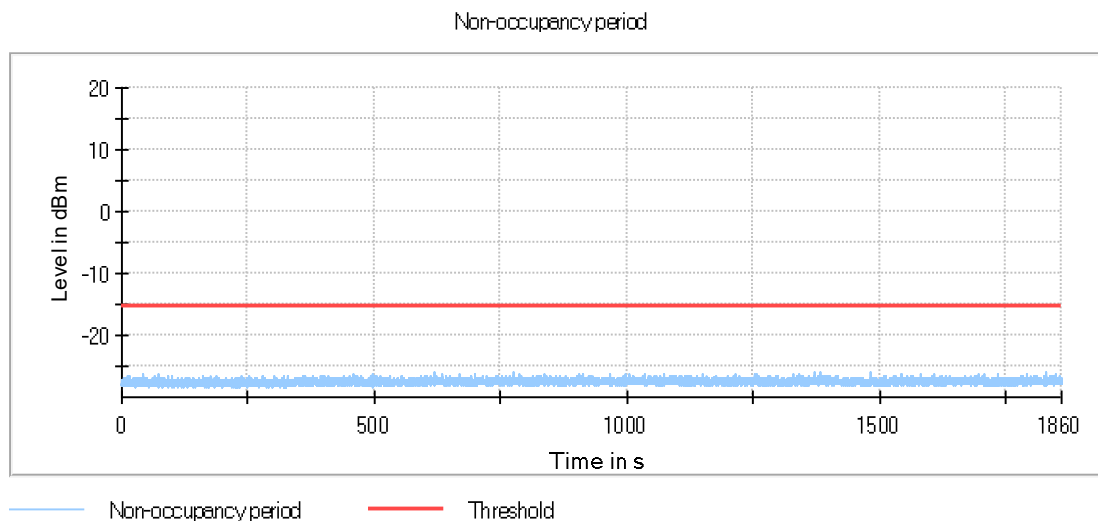
Graph 124: EUT 5700 MHz Channel Close Time and Channel Move Time



Graph 125: EUT 5700 MHz First 200 ms (Channel Closing Tx Time)

Channel Non-Occupancy Period (UNII 2)

Upon receiving Clear Channel command, EUT did not transmit in that channel for 30 minutes.



Graph 126: EUT 5700 MHz Non-Occupancy Period of 30 minutes.

Result

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

6.4 Test Results for the UNII 3 Band (5725-5850 MHz)

6.4.1 802.11a Mode

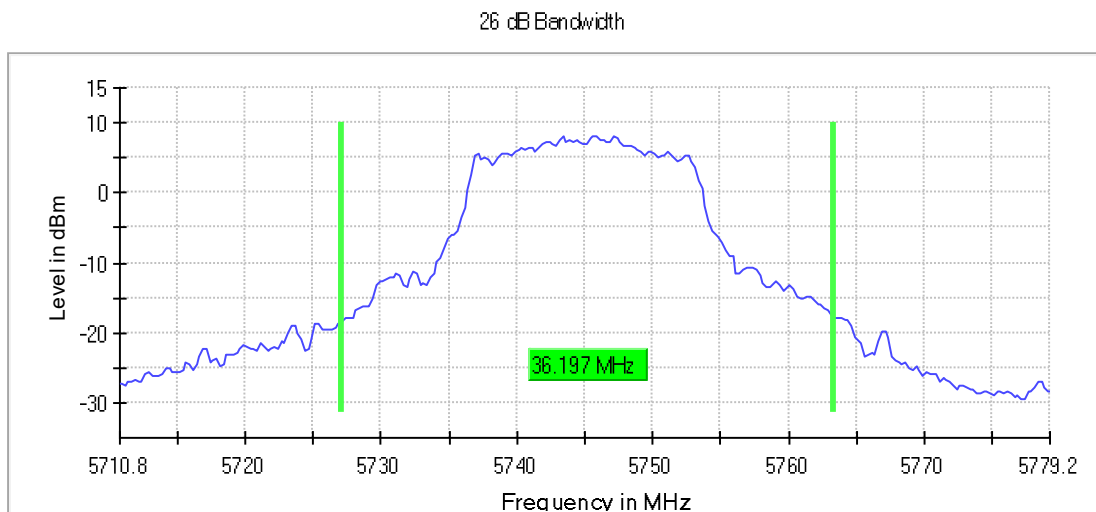
6.4.1.1 §15.403 26dB Bandwidth (UNII 3)

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

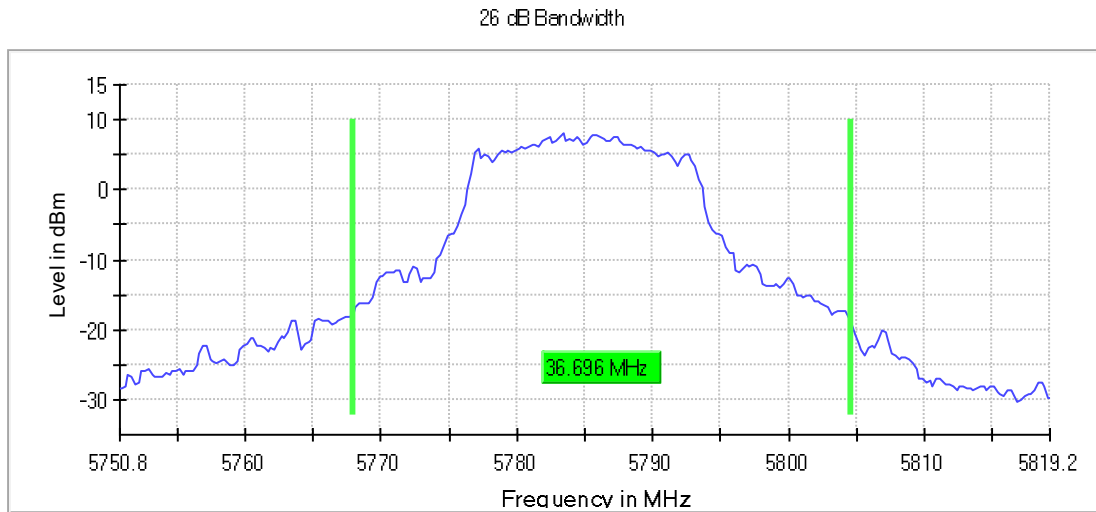
The 26dB emission bandwidths are shown below with RBW of 400 kHz and VBW of 1 MHz

Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5745	36.2
5785	36.7
5825	37.0

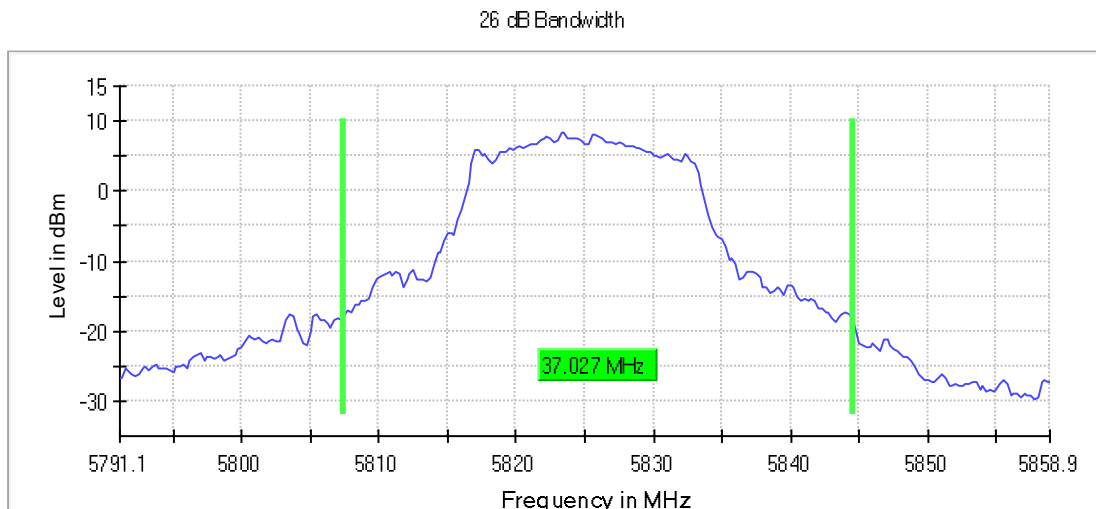
Table 44: 26 dB Emission Bandwidth



Graph 127: 26 dB Emission Bandwidth Transmitting at 5745 MHz



Graph 128: 26 dB Emission Bandwidth Transmitting at 5785 MHz



Graph 129: 26 dB Emission Bandwidth Transmitting at 5825 MHz

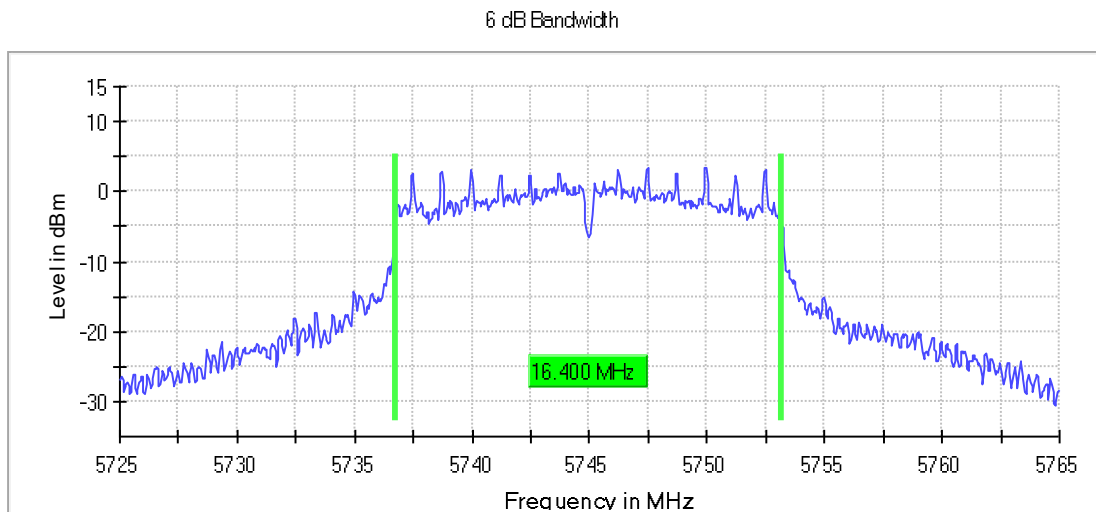
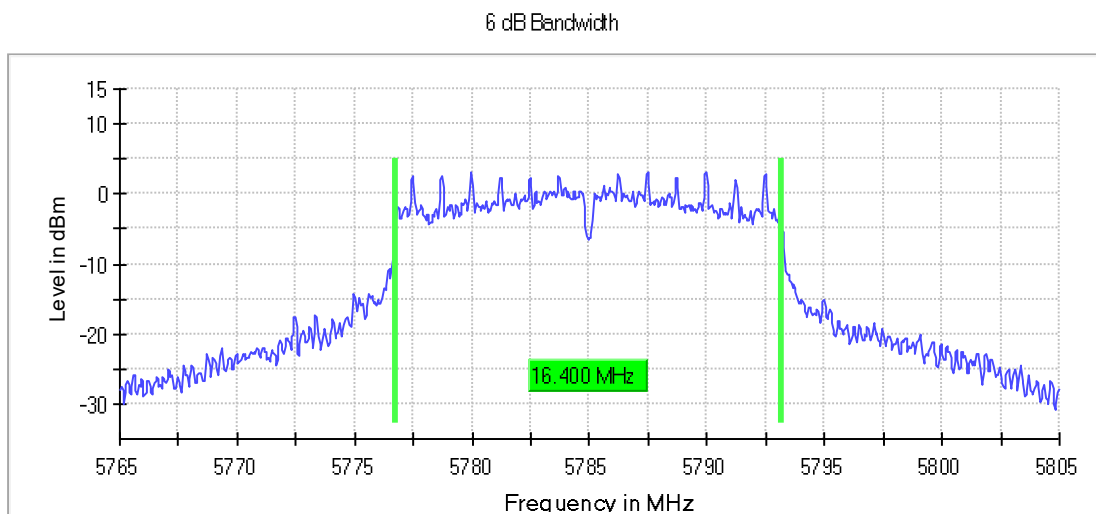
6.4.1.2 §15.407(e) Minimum 6dB Emission Bandwidth (UNII 3)

The UNII-3 minimum 6 dB emissions bandwidth for the channel is shown in the table and plots below.

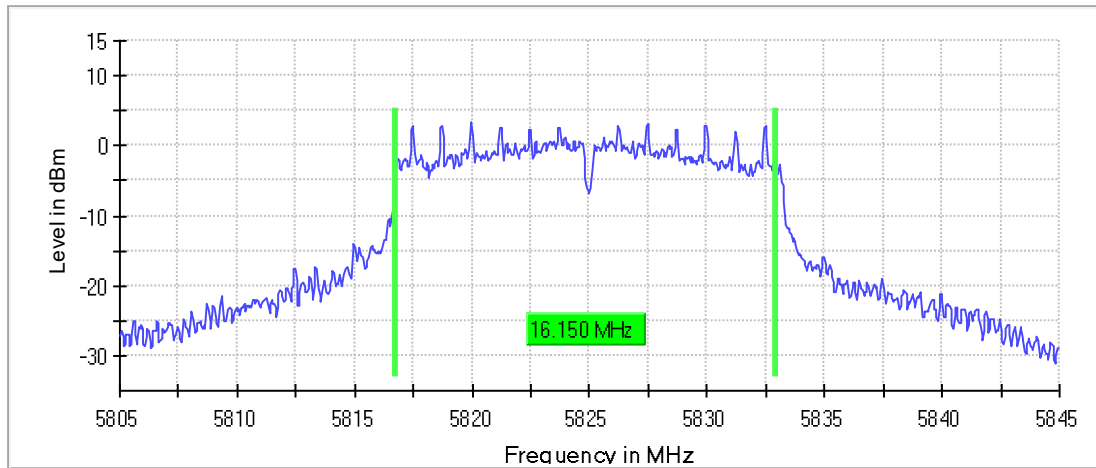
Frequency (MHz)	Emissions 6 dB bandwidth (MHz)
5745	16.4
5785	16.4
5825	16.2

Table 45: 6 dB Emission Bandwidth
Result

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


Graph 130: UNII-3 Lowest Channel Minimum 6 dB Bandwidth

Graph 131: UNII-3 Middle Channel Minimum 6 dB Bandwidth

6 dB Bandwidth



Graph 132: UNII-3 Highest Channel Minimum 6 dB Bandwidth

6.4.1.3 §15.407(a) Power Limits: Maximum Conducted Output Power (UNII 3)

The following tables show the adjusted conducted power limits.

UNII-3 Conducted Power Limits

Maximum conducted power limits for the UNII-3 band are adjusted based on the isotropic antenna gain and wireless architecture.

Wireless Architecture	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	4.0	6	0	30	30

Table 46: UNII-3 maximum conducted power limits based upon antenna gain and Wireless Architecture.

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.

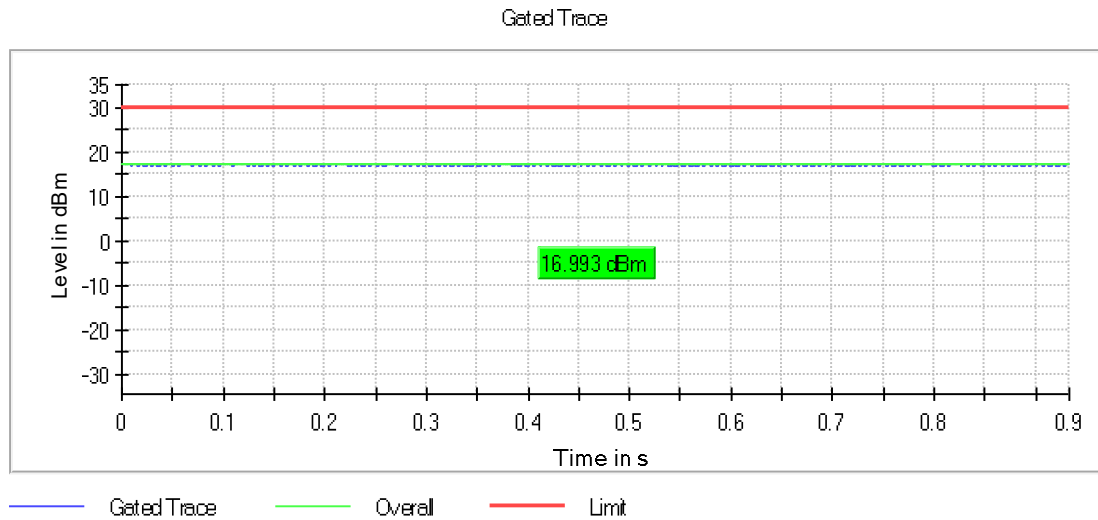
UNII-3 Conducted Power Measurements – AP Architecture

Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)
5745	17.0	30	-13.0
5785	16.8	30	-13.2
5825	16.9	30	-13.1

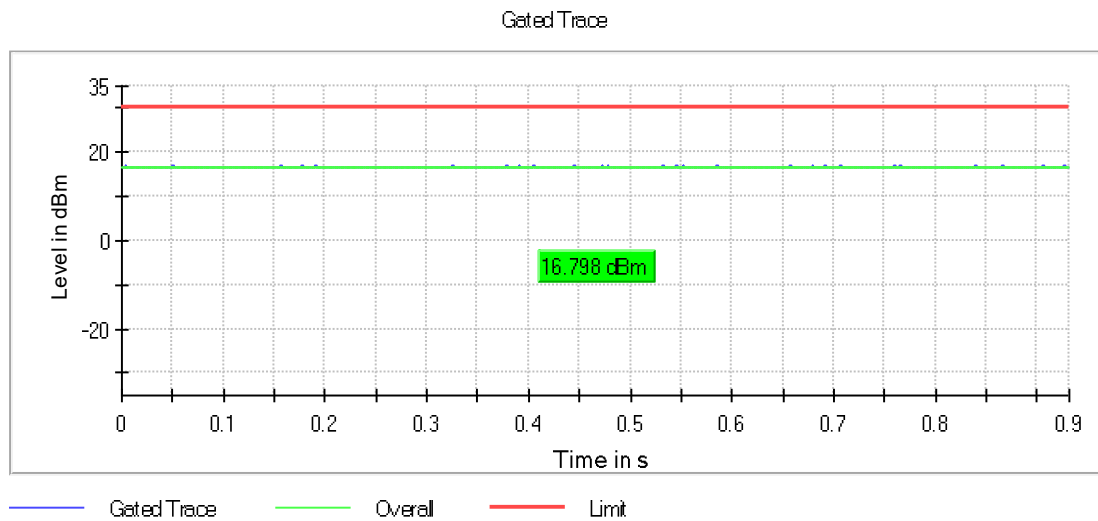
Table 47: PM-G Conducted Output Power Measurements

Result

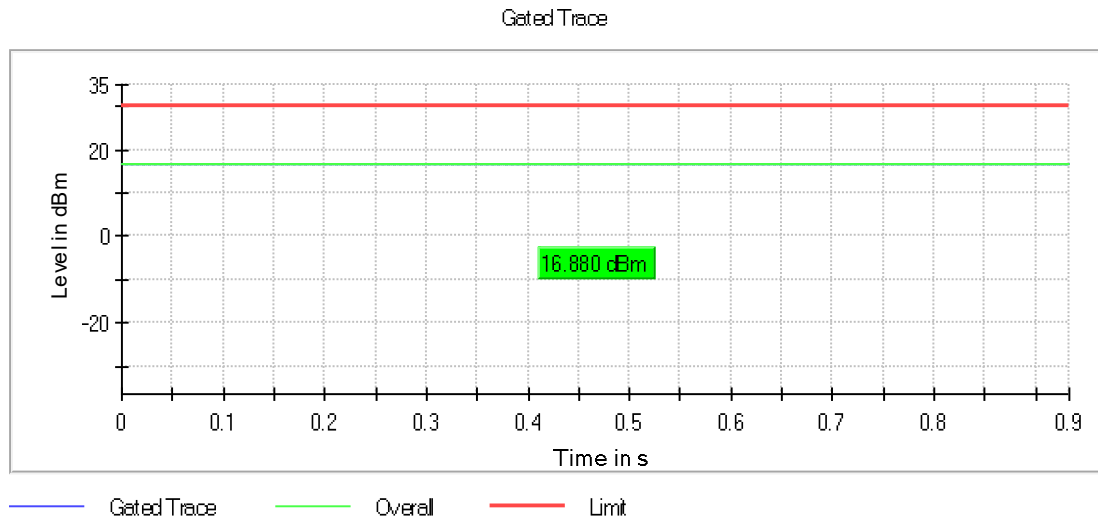
In the configurations tested the EUT complied with the limit with a margin of 13.0 dB.



Graph 133: Gated Trace Power Transmitting at 5745 MHz (Power Level 20)



Graph 134: Gated Trace Power Transmitting at 5785 MHz (Power Level 20)



Graph 135: Gated Trace Power Transmitting at 5825 MHz (Power Level 20)

6.4.1.4 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 3)

The following tables show the adjusted power spectral density limits.

UNII-3 Power Spectral Density Limits

Power spectral density limits for the UNII-3 band are adjusted based on isotropic antenna gain.

Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm/500kHz)	Adjusted Limit (dBm/500kHz)
4.0	6	0	30	30

Table 48: UNII-3 PSD limits based upon antenna gain

PSD was measured for the low, middle, and high channel at the maximum power level possible (20) using method SA-1 to create the power spectrum over a 500kHz measurement bandwidth. See Section 6.2.3 for measurement graphics.

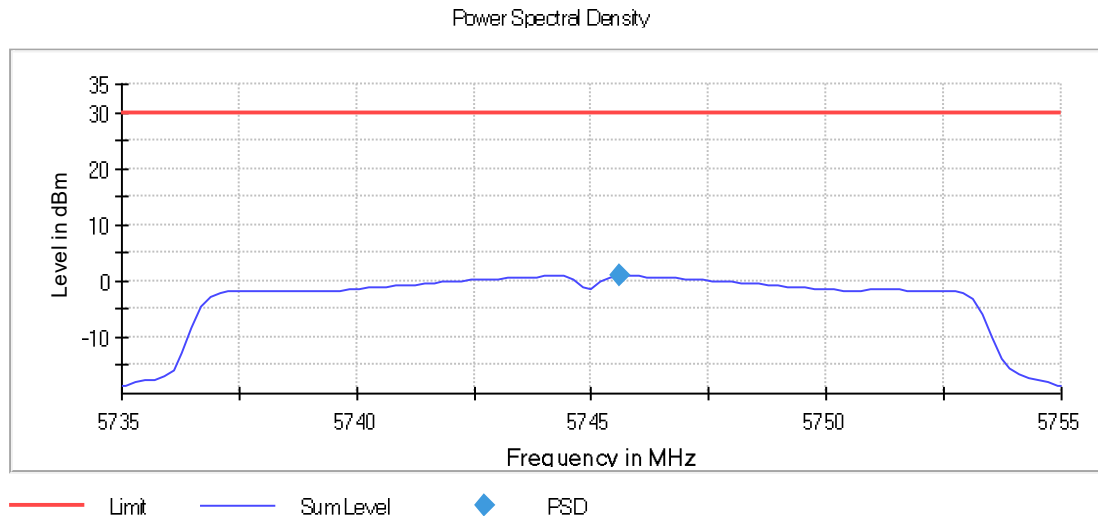
UNII-3 Power Spectral Density Measurements

Frequency (MHz)	Spectral Density (dBm/500kHz)	Spectral Density Limit (dBm/500kHz)	Margin (dB)
5745	1.0	30	-29.0
5785	0.7	30	-29.3
5825	0.9	30	-29.1

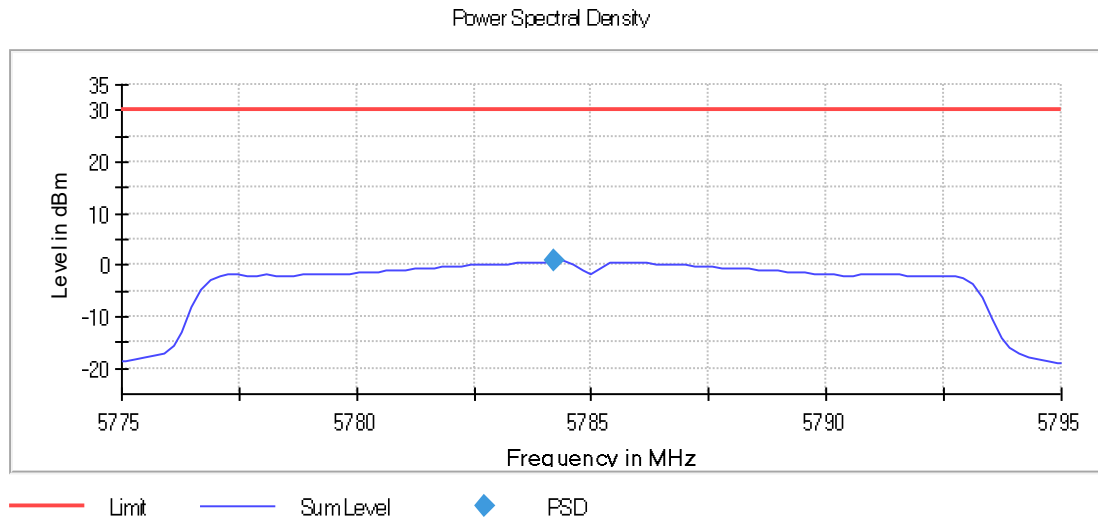
Table 49: SA-1 PSD Measurements

Result

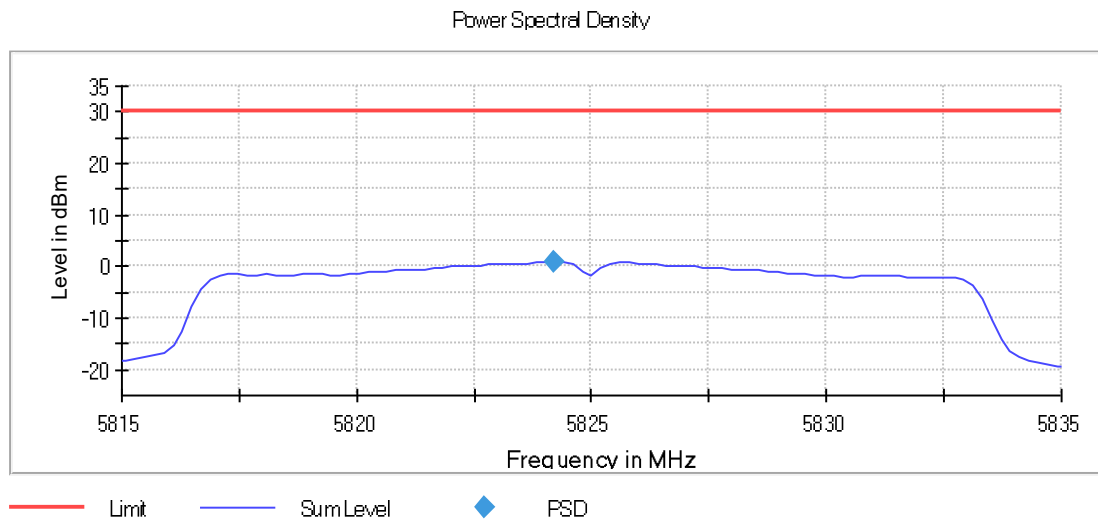
In the configurations tested the EUT complied with the limit with a margin of 29.0 dB.



Graph 136: PSD at 5745 MHz (Power Level 20)



Graph 137: PSD at 5785 MHz (Power Level 20)



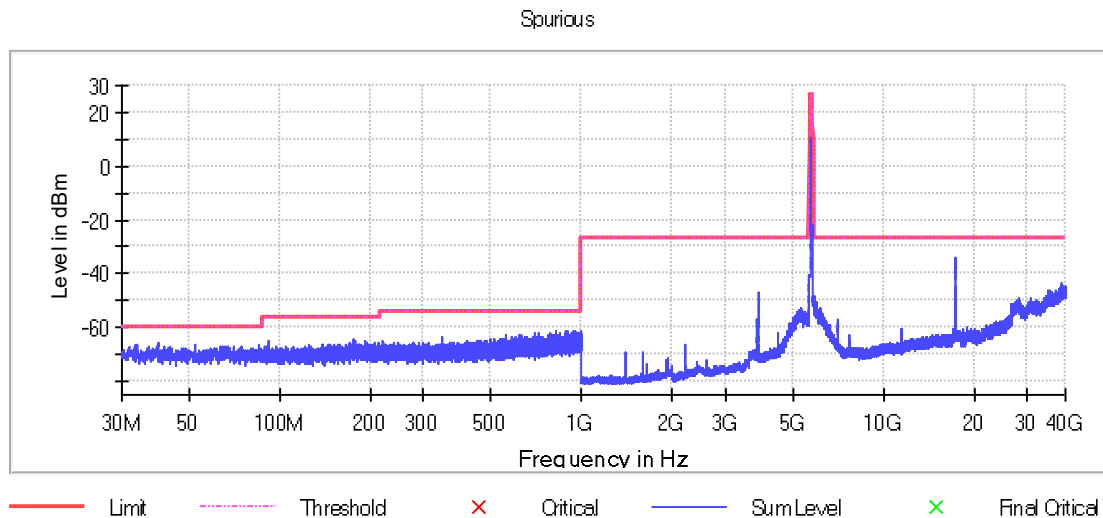
Graph 138: PSD at 5825 MHz (Power Level 20)

6.4.1.5 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 3)

Undesirable Emissions were measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest gain antenna (4.0 dBi) 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.

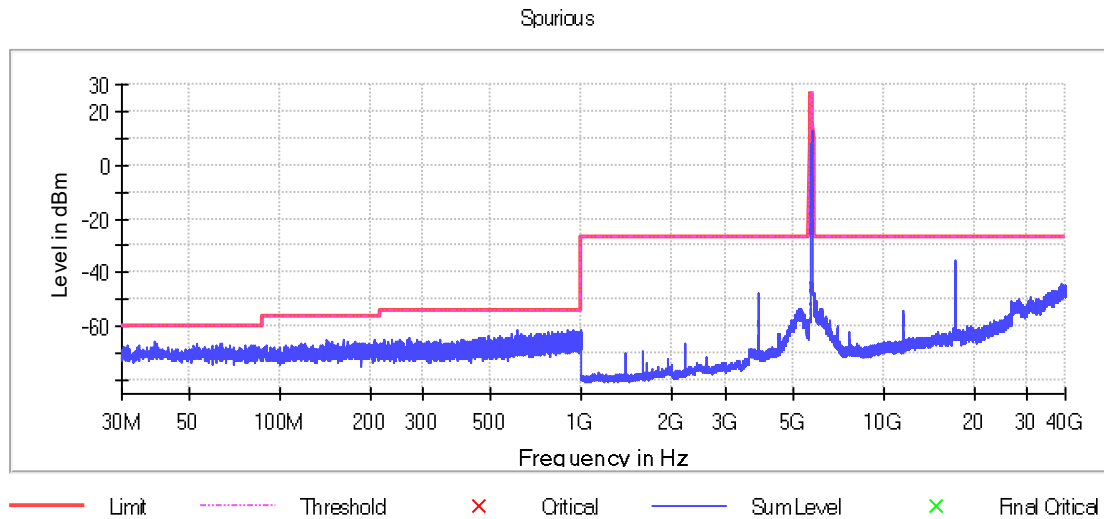
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20).

Antenna Port Conducted Emissions Transmitting 5745 MHz at Power Level 20:



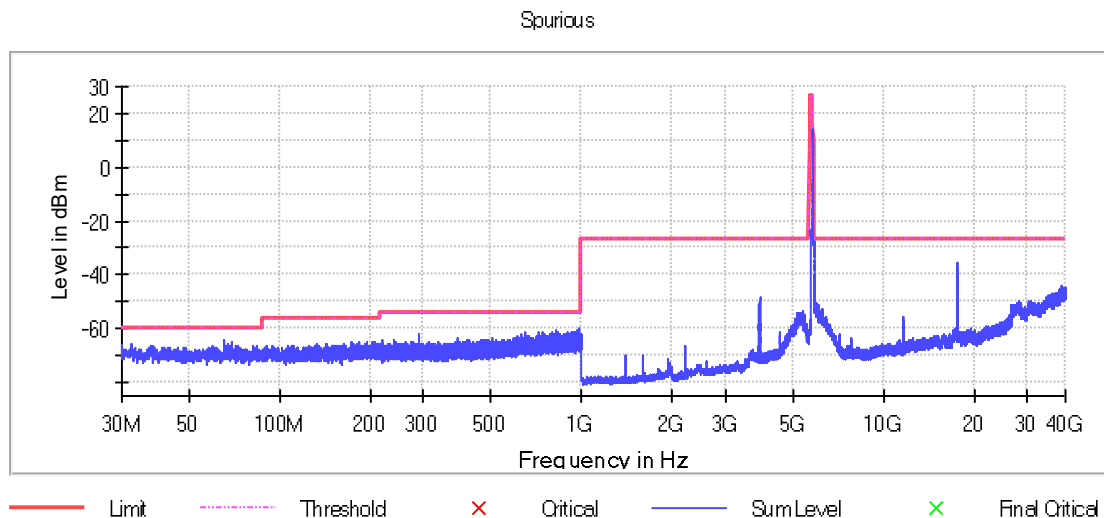
Graph 139: Antenna Port Conducted Spurious Emissions, UNII-3 Low Channel

Antenna Port Conducted Emissions Transmitting 5785 MHz at Power Level 20:



Graph 140: Antenna Port Conducted Spurious Emissions, UNII-3 Middle Channel

Antenna Port Conducted Emissions Transmitting 5825 MHz at Power Level 20:



Graph 141: Antenna Port Conducted Spurious Emissions, UNII-3 High Channel

Radiated Emissions Above 1000MHz Transmitting 5745 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)
11490.8	Peak	Vertical	36.0	14.2	50.2	74.0	-23.8
11492.4	Average	Vertical	23.5	14.2	37.7	54.0	-16.3
11489.2	Peak	Horizontal	36.3	14.2	50.5	74.0	-23.5
11492.0	Average	Horizontal	23.5	14.2	37.7	54.0	-16.3
17208.9	Peak	Vertical	33.9	21.3	55.1	74.0	-18.9
17235.3	Average	Vertical	21.0	21.2	42.2	54.0	-11.8
17232.5	Peak	Horizontal	37.7	21.2	58.9	74.0	-15.1
17235.2	Average	Horizontal	23.8	21.2	45.0	54.0	-9.1
23033.2	Peak	Vertical	38.6	21.2	59.8	74.0	-14.2
23025.2	Average	Vertical	24.8	21.2	45.9	54.0	-8.1
22982.0	Peak	Horizontal	38.0	21.0	59.0	74.0	-15.0
23033.8	Average	Horizontal	24.8	21.2	46.0	54.0	-8.0
28756.8	Peak	Vertical	33.2	22.6	55.8	74.0	-18.2
28773.6	Average	Vertical	20.1	22.7	42.8	54.0	-11.2
28741.1	Peak	Horizontal	33.4	22.6	56.0	74.0	-18.0
28789.4	Average	Horizontal	19.9	22.7	42.6	54.0	-11.4
34384.5	Peak	Vertical	29.5	28.5	57.9	74.0	-16.1
34496.1	Average	Vertical	16.2	28.2	44.5	54.0	-9.5
34473.2	Peak	Horizontal	29.2	28.3	57.5	74.0	-16.6
34499.9	Average	Horizontal	15.9	28.2	44.1	54.0	-9.9

Table 50: Radiated Spurious Emissions, UNII-3 Low Channel
Radiated Emissions Above 1000MHz Transmitting 5785 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)
11569.6	Peak	Vertical	35.6	14.5	50.1	74.0	-23.9
11571.3	Average	Vertical	22.7	14.5	37.3	54.0	-16.7
11565.7	Peak	Horizontal	35.2	14.5	49.8	74.0	-24.2
11571.9	Average	Horizontal	22.3	14.5	36.8	54.0	-17.2
17368.7	Peak	Vertical	33.5	21.3	54.8	74.0	-19.2

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
17357.7	Average	Vertical	21.0	21.2	42.2	54.0	-11.8
17352.9	Peak	Horizontal	34.1	21.2	55.3	74.0	-18.7
17352.0	Average	Horizontal	22.0	21.2	43.2	54.0	-10.8
23119.1	Peak	Vertical	38.5	21.5	60.0	74.0	-14.1
23100.3	Average	Vertical	25.3	21.4	46.7	54.0	-7.3
23093.4	Peak	Horizontal	38.7	21.4	60.2	74.0	-13.8
23103.8	Average	Horizontal	25.3	21.4	46.8	54.0	-7.2
28910.2	Peak	Vertical	32.7	22.9	55.6	74.0	-18.4
28856.8	Average	Vertical	19.4	22.8	42.2	54.0	-11.8
28892.8	Peak	Horizontal	32.4	22.9	55.3	74.0	-18.7
28857.2	Average	Horizontal	19.2	22.8	42.0	54.0	-12.0
34643.0	Peak	Vertical	28.8	27.9	56.7	74.0	-17.3
34788.3	Average	Vertical	14.7	28.2	42.9	54.0	-11.1
34661.4	Peak	Horizontal	28.1	27.9	56.0	74.0	-18.0
34645.9	Average	Horizontal	14.7	27.9	42.6	54.0	-11.4

Table 51: Radiated Spurious Emissions, UNII-3 Middle Channel

Radiated Emissions Above 1000MHz Transmitting 5825 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)
11659.7	Peak	Vertical	34.9	14.8	49.6	74.0	-24.4
11652.7	Average	Vertical	21.9	14.8	36.6	54.0	-17.4
11651.9	Peak	Horizontal	35.6	14.7	50.4	74.0	-23.6
11650.2	Average	Horizontal	22.5	14.7	37.2	54.0	-16.8
17493.9	Peak	Vertical	33.4	21.5	54.9	74.0	-19.1
17474.5	Average	Vertical	20.4	21.5	41.9	54.0	-12.1
17477.7	Peak	Horizontal	36.8	21.5	58.2	74.0	-15.8
17474.1	Average	Horizontal	22.2	21.5	43.7	54.0	-10.3
23348.6	Peak	Vertical	38.9	21.7	60.6	74.0	-13.4
23359.3	Average	Vertical	25.9	21.6	47.5	54.0	-6.5
23323.8	Peak	Horizontal	38.6	21.9	60.5	74.0	-13.5

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)
23357.0	Average	Horizontal	25.9	21.7	47.5	54.0	-6.5
29159.8	Peak	Vertical	32.8	23.0	55.8	74.0	-18.2
29146.8	Average	Vertical	19.7	23.0	42.7	54.0	-11.3
29166.0	Peak	Horizontal	33.1	23.0	56.1	74.0	-18.0
29145.9	Average	Horizontal	19.4	23.0	42.4	54.0	-11.6
35008.5	Peak	Vertical	28.5	29.3	57.8	74.0	-16.2
35010.5	Average	Vertical	15.3	29.3	44.6	54.0	-9.4
35024.7	Peak	Horizontal	27.9	29.4	57.3	74.0	-16.7
35020.6	Average	Horizontal	15.1	29.4	44.5	54.0	-9.5

Table 52: Radiated Spurious Emissions, UNII-3 High Channel

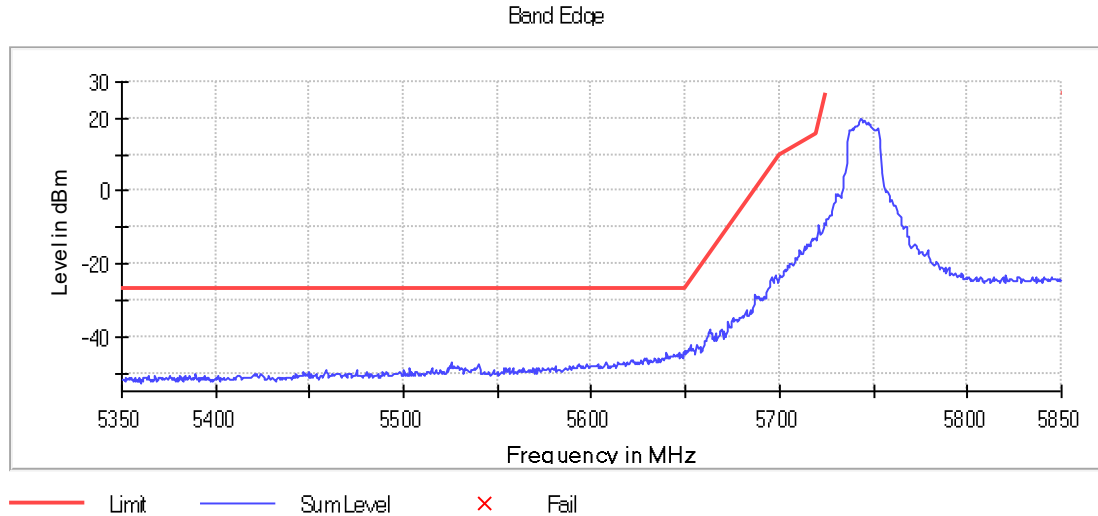
Result

The EUT complied with the specification limit by a margin of 6.5 dB.

6.4.1.6 §15.407(b) Undesirable Emissions – Band Mask (UNII 3)

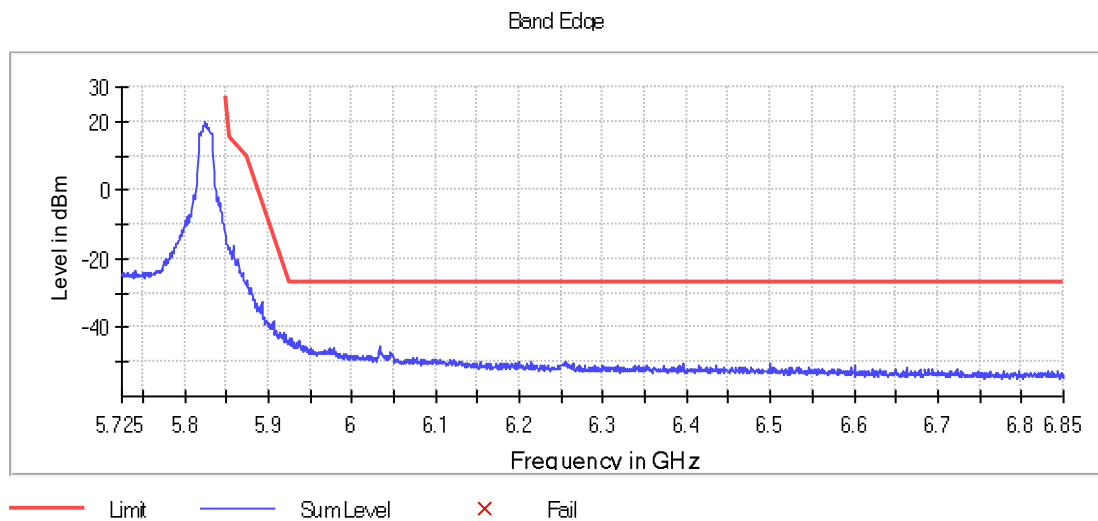
Radiated and antenna port conducted measurements of the UNII-3 band mask are shown below.

Antenna Port Conducted Emissions Transmitting on 5745 MHz (Power Level 20):



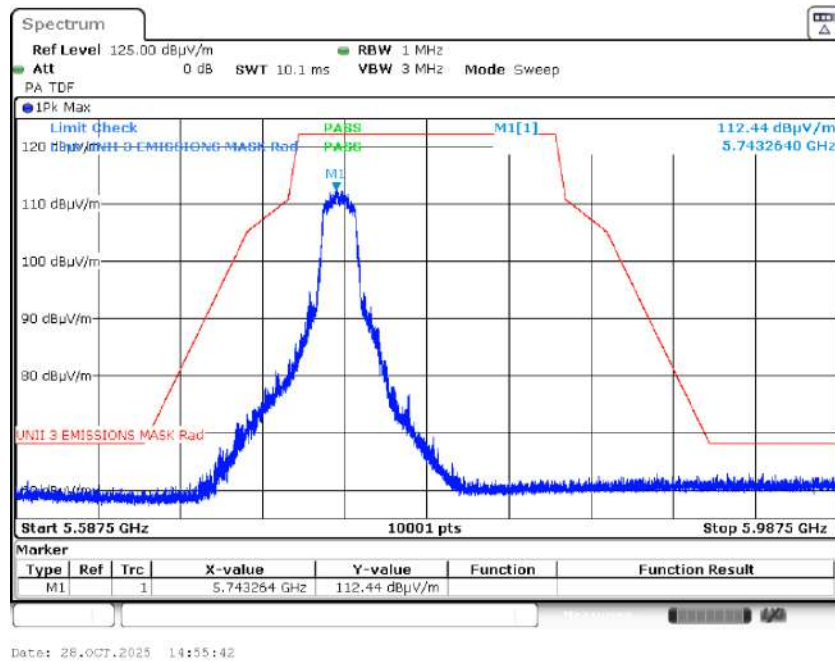
Graph 142: Antenna Port Conducted Band Mask, UNII-3 Low Channel

Antenna Port Conducted Emissions Transmitting on 5825 MHz (Power Level 20):



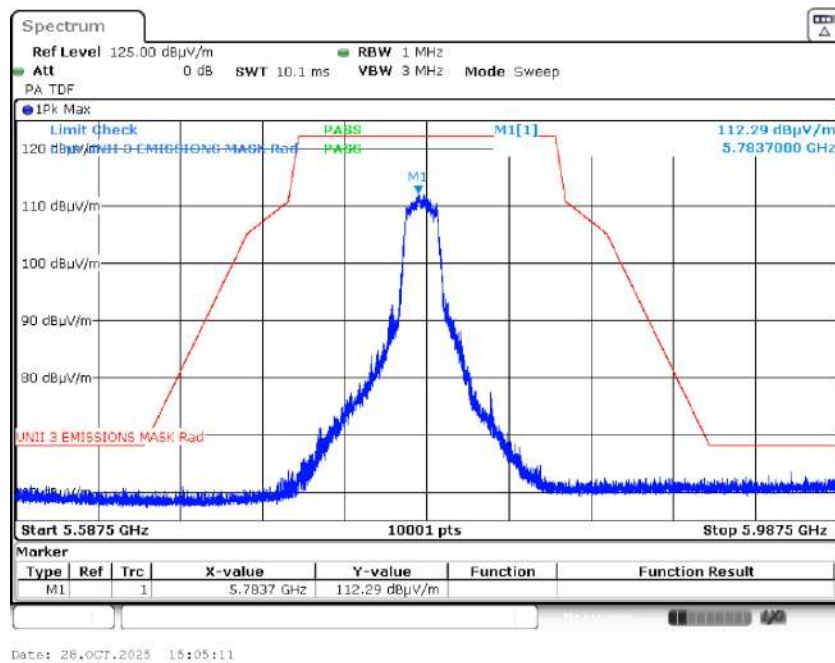
Graph 143: Antenna Port Conducted Band Mask, UNII-3 High Channel

Radiated Emissions Transmitting on 5745 MHz (Power Level 20):



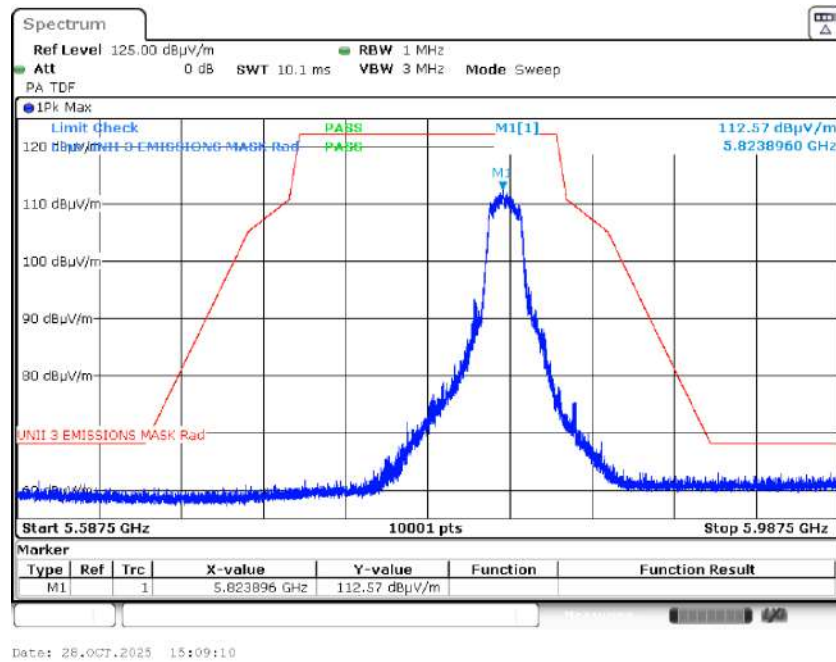
Graph 144: Radiated Band Mask, UNII-3 Low Channel

Radiated Emissions Transmitting on 5785 MHz (Power Level 20):



Graph 145: Radiated Band Mask, UNII-3 Middle Channel

Radiated Emissions Transmitting on 5825 MHz (Power Level 20):



Graph 146: Radiated Band Mask, UNII-3 High Channel

Result

The EUT complied with the specification.

6.4.2 802.11n Mode

6.4.2.1 §15.403 26dB Bandwidth (UNII 3)

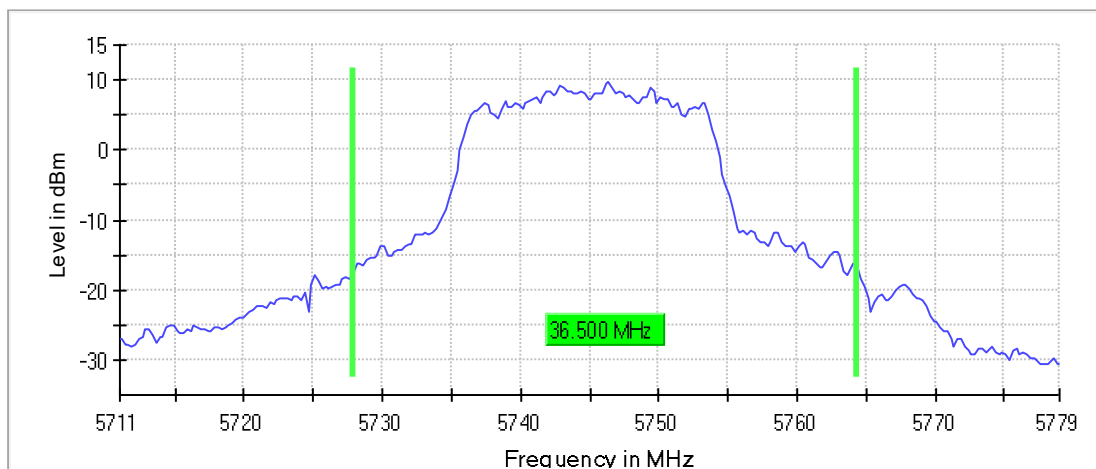
Bandwidths were measured at the intended power set level per channel.

The 26dB emission bandwidths are shown below with RBW of 400 kHz and VBW of 1 MHz

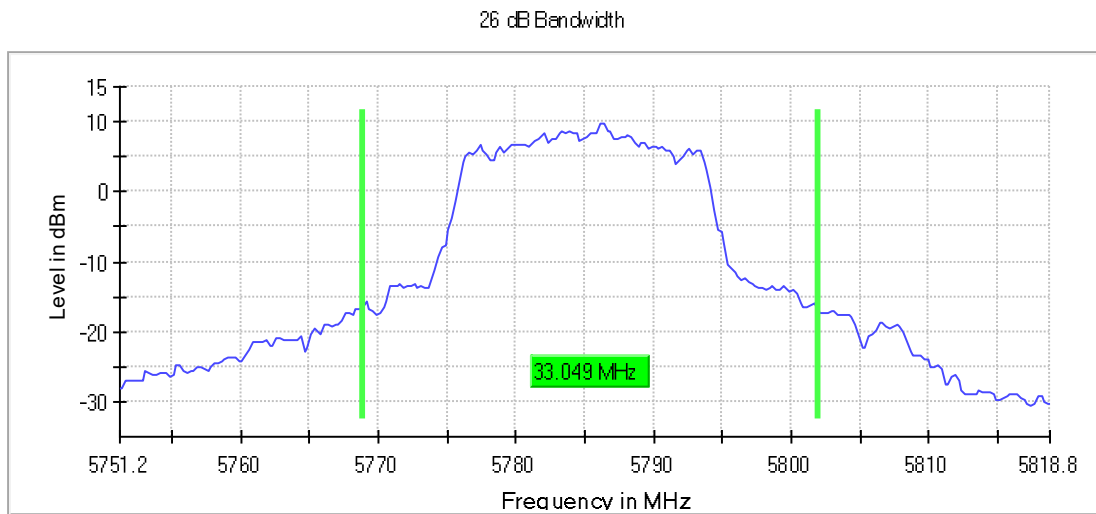
Frequency (MHz)	Emissions 26 dB Bandwidth (MHz)
5745	36.5
5785	33.0
5825	34.6

Table 53: 26 dB Emission Bandwidth

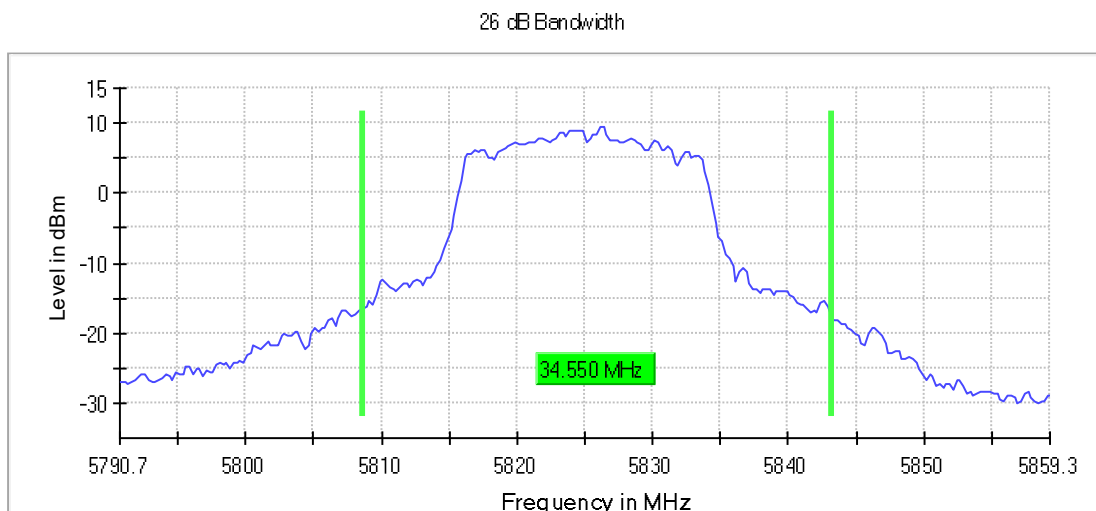
26 dB Bandwidth



Graph 147: 26 dB Emission Bandwidth Transmitting at 5745 MHz



Graph 148: 26 dB Emission Bandwidth Transmitting at 5785 MHz



Graph 149: 26 dB Emission Bandwidth Transmitting at 5825 MHz

6.4.2.2 §15.407(e) Minimum 6dB Emission Bandwidth (UNII 3)

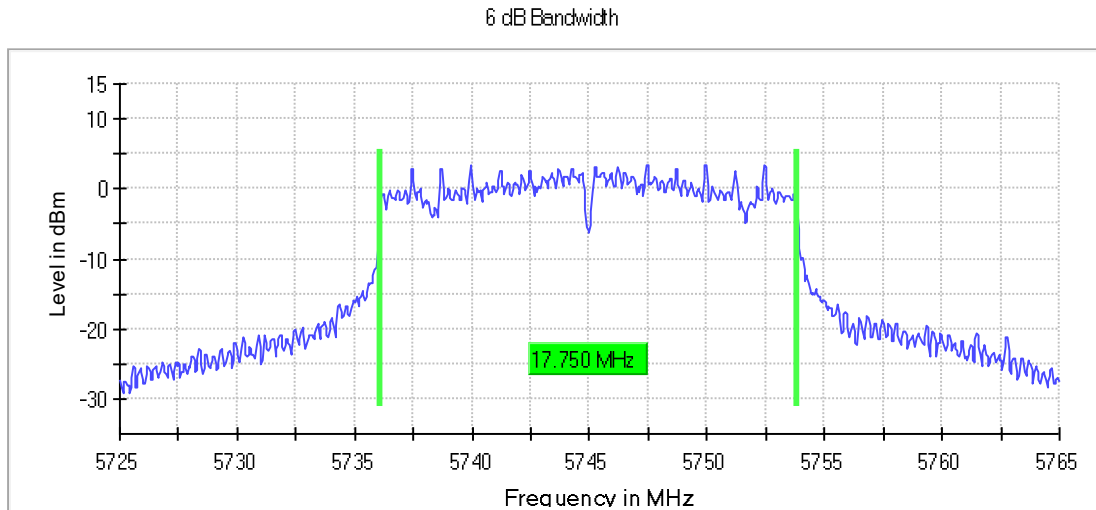
The UNII-3 minimum 6 dB emissions bandwidth for the channel is shown in the table and plots below.

Frequency (MHz)	Emissions 6 dB bandwidth (MHz)
5745	17.8
5785	17.8
5825	17.8

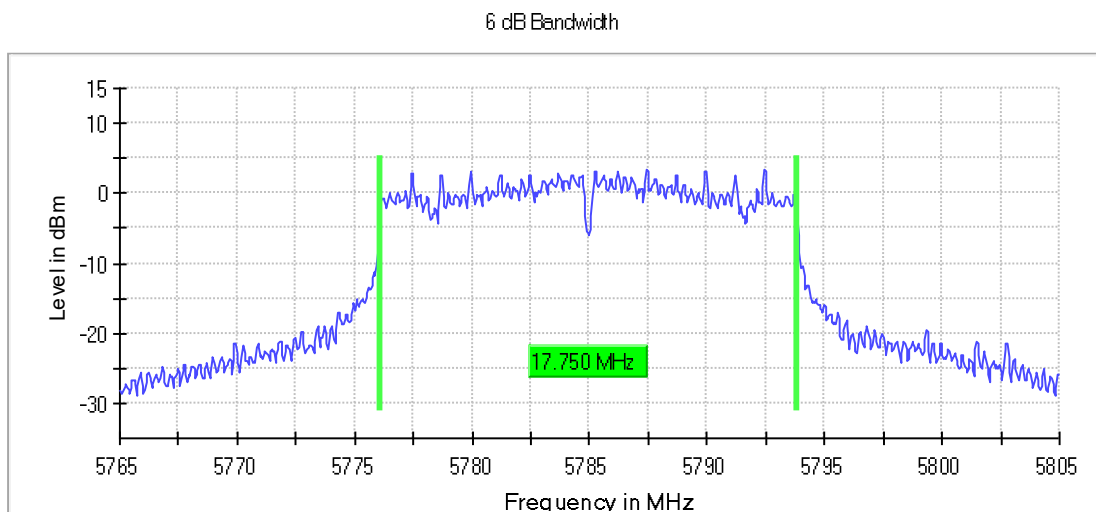
Table 54: 6 dB Emission Bandwidth

Result

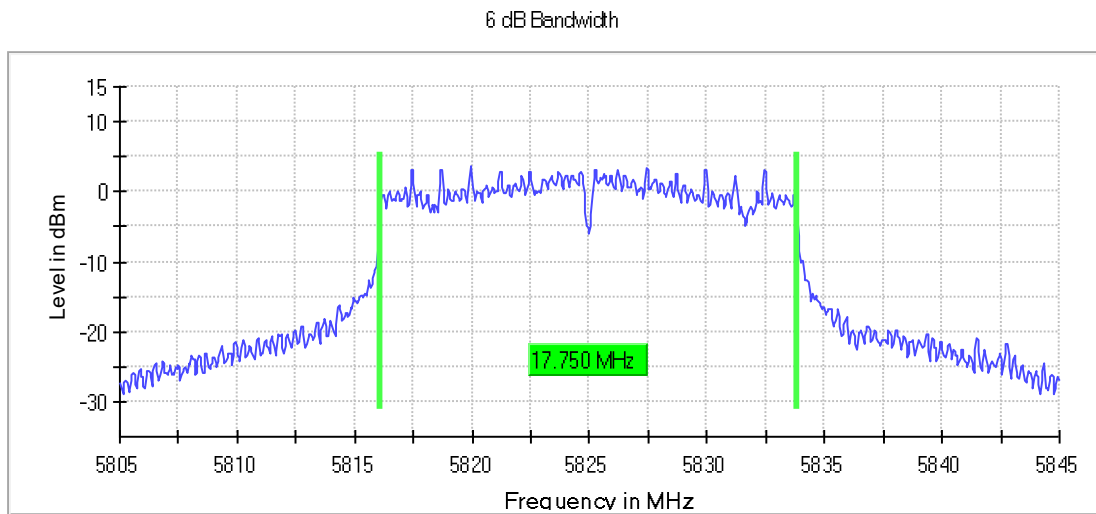
In the configurations tested the EUT complied with the requirements of the specification.



Graph 150: UNII-3 Lowest Channel Minimum 6 dB Bandwidth



Graph 151: UNII-3 Middle Channel Minimum 6 dB Bandwidth



Graph 152: UNII-3 Highest Channel Minimum 6 dB Bandwidth

6.4.2.3 §15.407(a) Power Limits: Maximum Conducted Output Power (UNII 3)

The following tables show the adjusted conducted power limits.

UNII-3 Conducted Power Limits

Maximum conducted power limits for the UNII-3 band are adjusted based on the isotropic antenna gain and wireless architecture.

Wireless Architecture	Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
AP	4.0	6	0	30	30

Table 55: UNII-3 maximum conducted power limits based upon antenna gain and Wireless Architecture.

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.

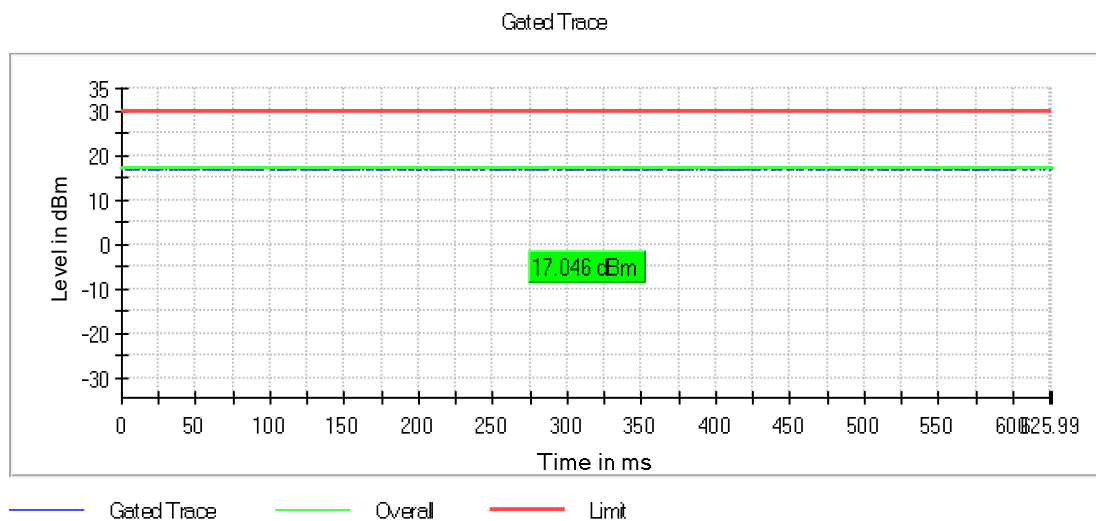
UNII-3 Conducted Power Measurements – AP Architecture

Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)
5745	17.0	30	-13.0
5785	17.0	30	-13.0
5825	17.0	30	-13.0

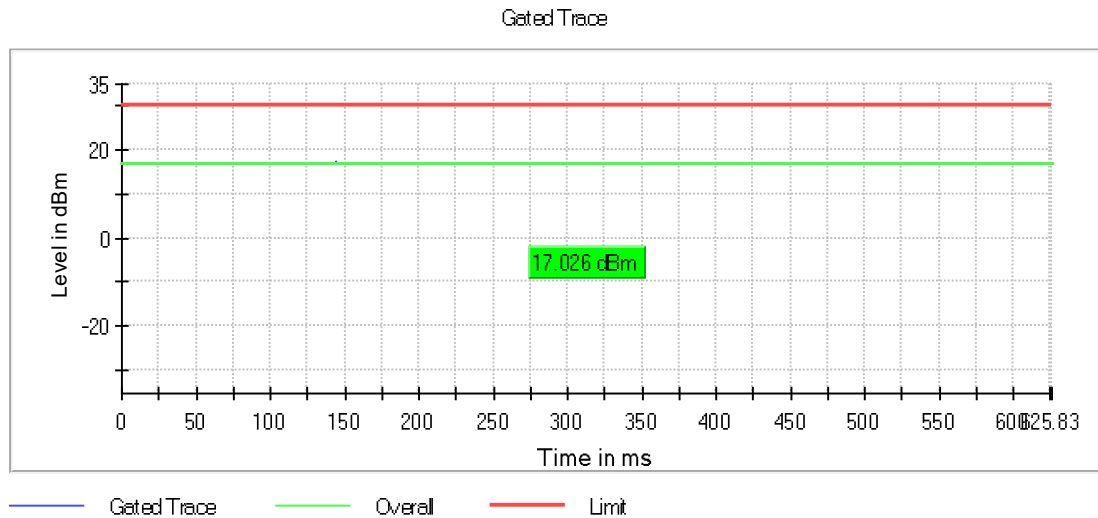
Table 56: PM-G Conducted Output Power Measurements

Result

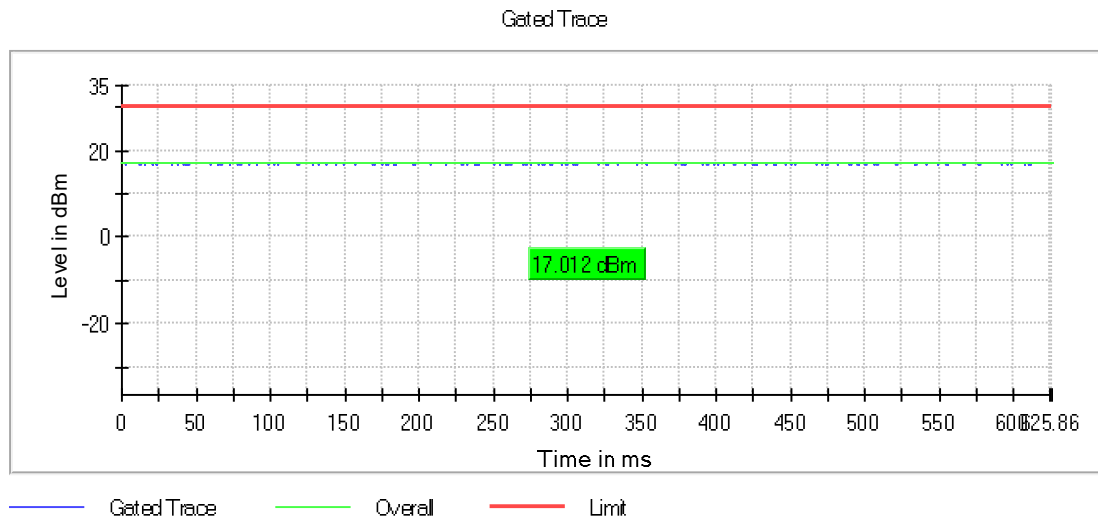
In the configurations tested the EUT complied with the limit with a margin of 13.0 dB.



Graph 153: Gated Trace Power Transmitting at 5745 MHz (Power Level 20)



Graph 154: Gated Trace Power Transmitting at 5785 MHz (Power Level 20)



Graph 155: Gated Trace Power Transmitting at 5825 MHz (Power Level 20)

6.4.2.4 §15.407(a) Power Limits: Maximum Power Spectral Density (UNII 3)

The following tables show the adjusted power spectral density limits.

UNII-3 Power Spectral Density Limits

Power spectral density limits for the UNII-3 band are adjusted based on isotropic antenna gain.

Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm/500kHz)	Adjusted Limit (dBm/500kHz)
4.0	6	0	30	30

Table 57: UNII-3 PSD limits based upon antenna gain

PSD was measured for the low, middle, and high channel at the maximum power level possible (20) using method SA-1 to create the power spectrum over a 500kHz measurement bandwidth. See Section 6.2.3 for measurement graphics.

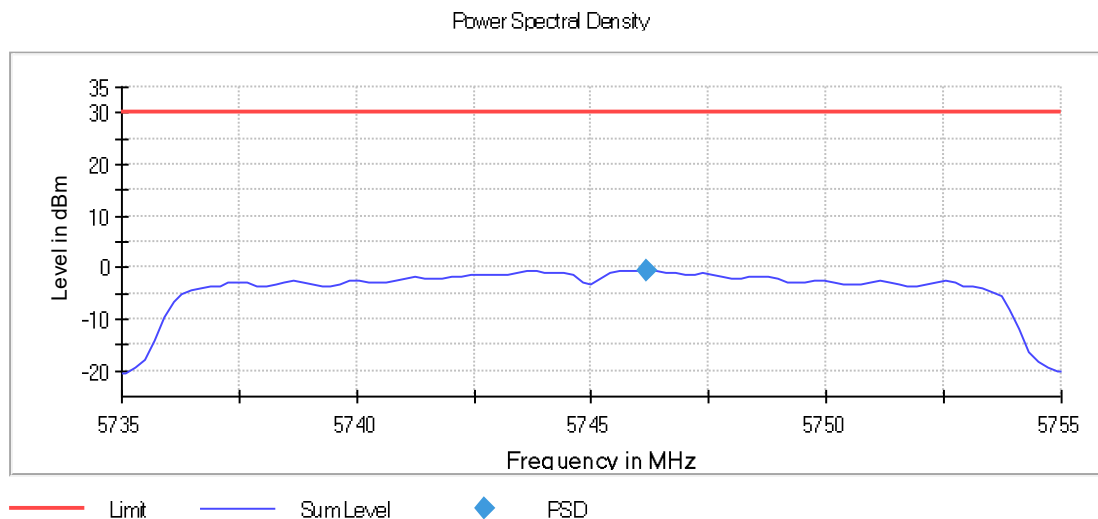
UNII-3 Power Spectral Density Measurements

Frequency (MHz)	Spectral Density (dBm/500kHz)	Spectral Density Limit (dBm/500kHz)	Margin (dB)
5745	-0.6	30	-30.6
5785	-0.6	30	-30.6
5825	-0.4	30	-30.4

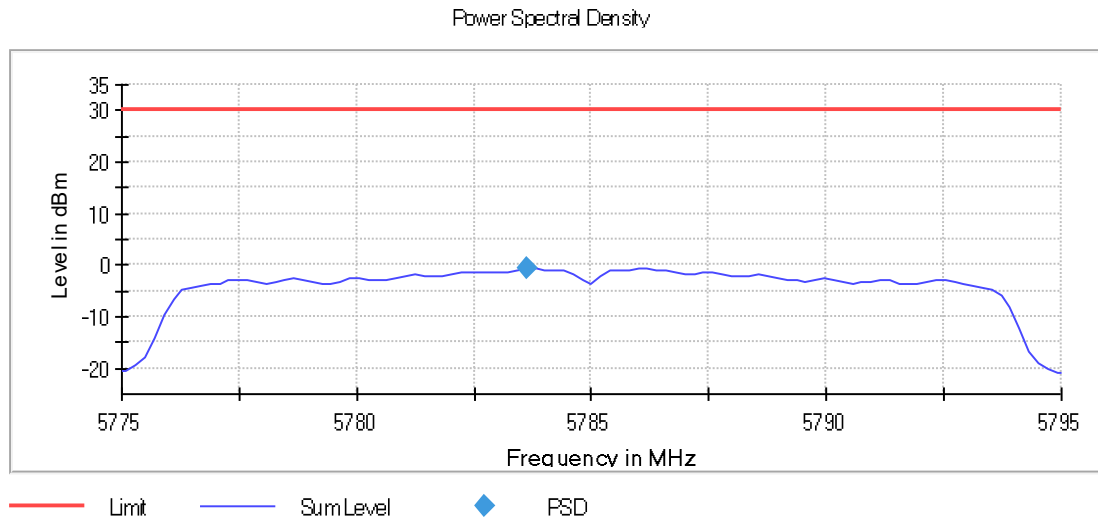
Table 58: SA-1 Alternative PSD Measurements

Result

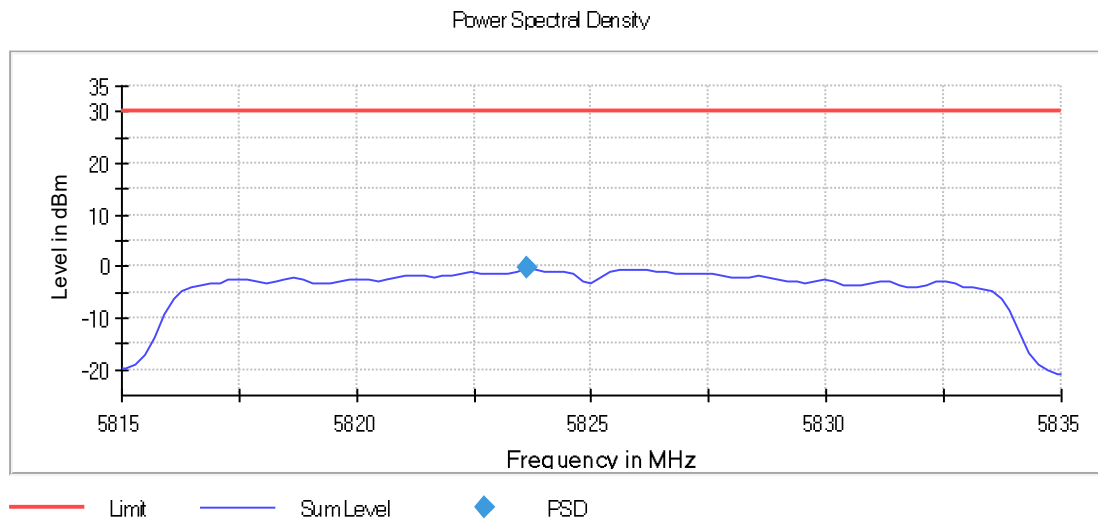
In the configurations tested the EUT complied with the limit with a margin of 30.4 dB.



Graph 156: PSD at 5745 MHz (Power Level 20)



Graph 157: PSD at 5785 MHz (Power Level 20)



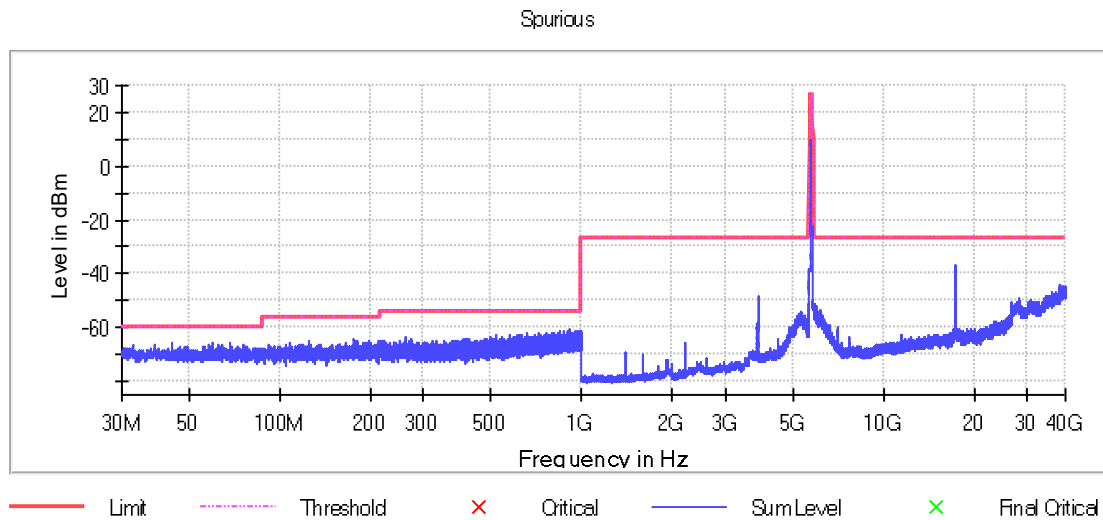
Graph 158: PSD at 5825 MHz (Power Level 20)

6.4.2.5 §15.407(b) and §15.207 Undesirable Emissions – Restricted Bands (UNII 3)

Undesirable Emissions were measured as conducted at the Antenna Port for each channel with stepped powers and corrected using the highest gain antenna (4.0 dBi) 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.

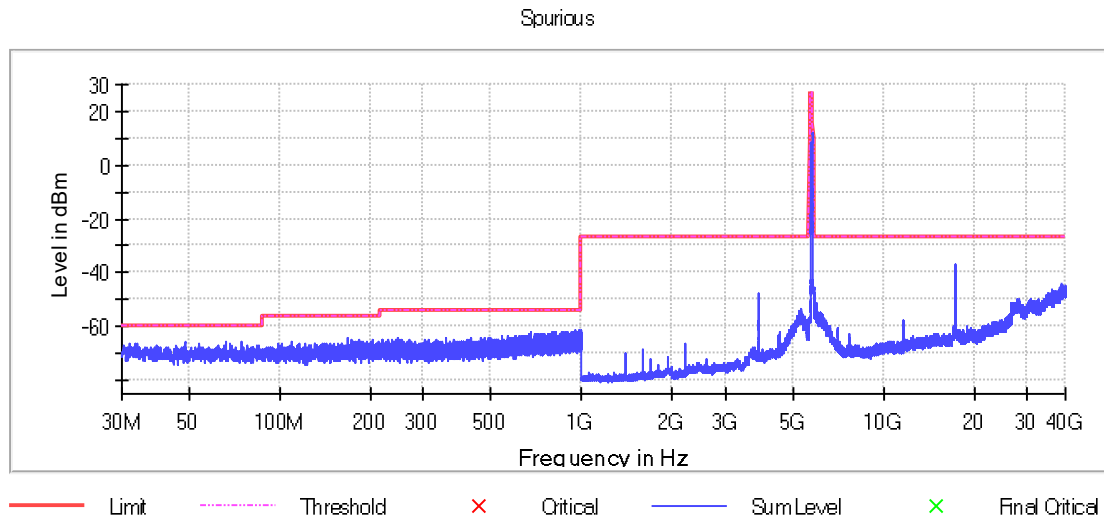
Undesirable radiated emissions in the restricted bands above 1GHz were tested radiated at the low, middle, and high channels at the maximum possible power setting (20).

Antenna Port Conducted Emissions Transmitting 5745 MHz at Power Level 20:



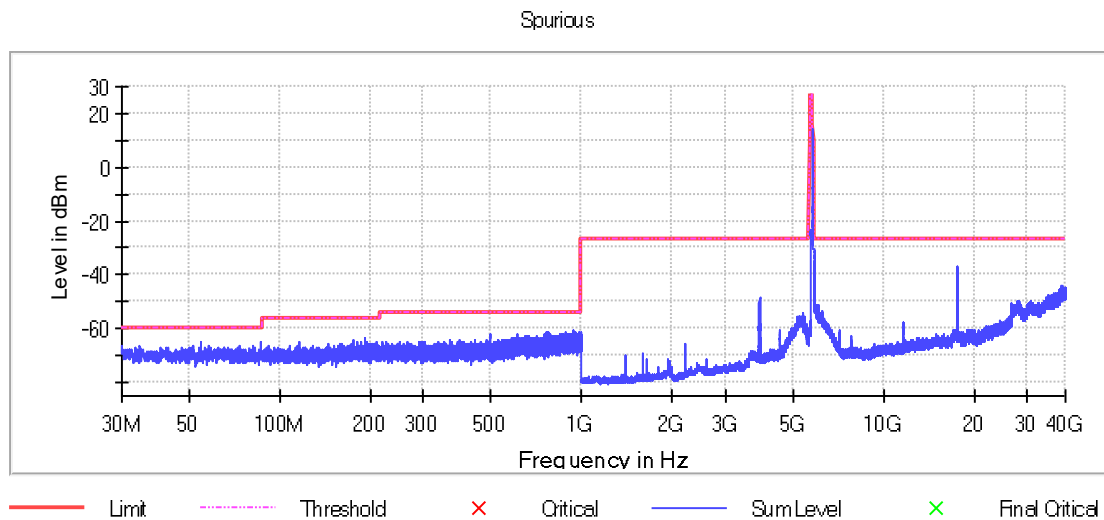
Graph 159: Antenna Port Conducted Spurious Emissions, UNII-3 Low Channel

Antenna Port Conducted Emissions Transmitting 5785 MHz at Power Level 20:



Graph 160: Antenna Port Conducted Spurious Emissions, UNII-3 Middle Channel

Antenna Port Conducted Emissions Transmitting 5825 MHz at Power Level 20:



Graph 161: Antenna Port Conducted Spurious Emissions, UNII-3 High Channel

Radiated Emissions Above 1000MHz Transmitting 5745 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)
11473.8	Peak	Vertical	35.2	14.1	49.3	74.0	-24.7
11488.4	Average	Vertical	22.6	14.2	36.8	54.0	-17.2
11489.0	Peak	Horizontal	36.7	14.2	50.9	74.0	-23.1
11488.2	Average	Horizontal	23.1	14.2	37.3	54.0	-16.8
17232.6	Peak	Vertical	33.8	21.2	55.0	74.0	-19.0
17238.1	Average	Vertical	20.7	21.2	41.9	54.0	-12.1
17233.8	Peak	Horizontal	36.3	21.2	57.5	74.0	-16.5
17234.8	Average	Horizontal	22.8	21.2	43.9	54.0	-10.1
23016.8	Peak	Vertical	38.1	21.1	59.2	74.0	-14.8
23034.1	Average	Vertical	24.8	21.2	46.0	54.0	-8.0
23011.2	Peak	Horizontal	38.4	21.1	59.5	74.0	-14.5
23037.7	Average	Horizontal	24.6	21.2	45.9	54.0	-8.2
28751.6	Peak	Vertical	33.4	22.6	56.0	74.0	-18.0
28774.8	Average	Vertical	20.1	22.7	42.8	54.0	-11.3
28784.7	Peak	Horizontal	33.2	22.7	55.8	74.0	-18.2
28782.3	Average	Horizontal	20.0	22.7	42.6	54.0	-11.4
34431.5	Peak	Vertical	29.6	28.4	57.9	74.0	-16.1
34496.3	Average	Vertical	16.2	28.2	44.5	54.0	-9.5
34504.4	Peak	Horizontal	29.3	28.2	57.5	74.0	-16.5
34500.2	Average	Horizontal	16.0	28.2	44.2	54.0	-9.8

Table 59: Radiated Spurious Emissions, UNII-3 Low Channel
Radiated Emissions Above 1000MHz Transmitting 5785 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)
11571.7	Peak	Vertical	35.0	14.5	49.6	74.0	-24.4
11568.3	Average	Vertical	22.3	14.5	36.8	54.0	-17.2
11568.6	Peak	Horizontal	35.3	14.5	49.8	74.0	-24.2
11568.1	Average	Horizontal	21.9	14.5	36.4	54.0	-17.6
17340.5	Peak	Vertical	33.3	21.1	54.4	74.0	-19.6

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
17358.6	Average	Vertical	20.6	21.2	41.8	54.0	-12.2
17349.4	Peak	Horizontal	34.5	21.2	55.7	74.0	-18.3
17357.4	Average	Horizontal	21.1	21.2	42.3	54.0	-11.7
23105.8	Peak	Vertical	39.0	21.5	60.5	74.0	-13.5
23099.8	Average	Vertical	25.3	21.4	46.8	54.0	-7.3
23099.9	Peak	Horizontal	38.8	21.4	60.2	74.0	-13.8
23108.7	Average	Horizontal	25.2	21.5	46.7	54.0	-7.3
28864.7	Peak	Vertical	33.5	22.8	56.4	74.0	-17.7
28861.6	Average	Vertical	19.4	22.8	42.2	54.0	-11.8
28861.7	Peak	Horizontal	32.8	22.8	55.6	74.0	-18.4
28862.5	Average	Horizontal	19.2	22.8	42.0	54.0	-12.0
34745.3	Peak	Vertical	28.6	28.0	56.6	74.0	-17.4
34647.0	Average	Vertical	14.9	27.9	42.8	54.0	-11.2
34644.8	Peak	Horizontal	28.5	27.9	56.4	74.0	-17.6
34651.0	Average	Horizontal	14.7	27.9	42.6	54.0	-11.4

Table 60: Radiated Spurious Emissions, UNII-3 Middle Channel

Radiated Emissions Above 1000MHz Transmitting 5825 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)
11655.0	Peak	Vertical	34.9	14.8	49.7	74.0	-24.3
11649.5	Average	Vertical	21.5	14.7	36.2	54.0	-17.8
11648.2	Peak	Horizontal	35.1	14.7	49.8	74.0	-24.2
11648.2	Average	Horizontal	21.8	14.7	36.6	54.0	-17.4
17482.5	Peak	Vertical	33.1	21.5	54.6	74.0	-19.5
17470.8	Average	Vertical	20.0	21.5	41.5	54.0	-12.5
17476.4	Peak	Horizontal	34.6	21.5	56.1	74.0	-17.9
17471.6	Average	Horizontal	21.3	21.5	42.8	54.0	-11.2
23297.8	Peak	Vertical	38.7	21.9	60.5	74.0	-13.5
23357.6	Average	Vertical	25.8	21.6	47.5	54.0	-6.5
23358.0	Peak	Horizontal	39.3	21.6	61.0	74.0	-13.0

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)
23357.5	Average	Horizontal	25.8	21.6	47.5	54.0	-6.5
29146.3	Peak	Vertical	33.0	23.0	56.0	74.0	-18.0
29148.6	Average	Vertical	19.6	23.0	42.6	54.0	-11.4
29143.6	Peak	Horizontal	32.7	23.0	55.7	74.0	-18.3
29145.3	Average	Horizontal	19.4	23.0	42.4	54.0	-11.6
35025.1	Peak	Vertical	28.4	29.4	57.8	74.0	-16.2
35007.6	Average	Vertical	15.3	29.3	44.6	54.0	-9.4
35036.4	Peak	Horizontal	28.7	29.5	58.2	74.0	-15.8
35020.7	Average	Horizontal	15.1	29.4	44.5	54.0	-9.5

Table 61: Radiated Spurious Emissions, UNII-3 High Channel

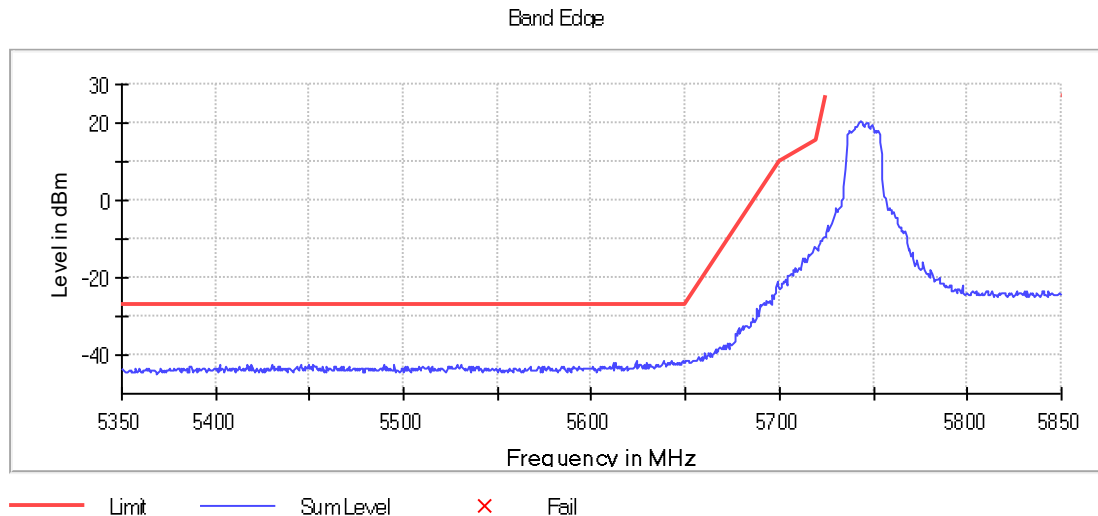
Result

The EUT complied with the specification limit by a margin of 6.5 dB.

6.4.2.6 §15.407(b) Undesirable Emissions – Band Mask (UNII 3)

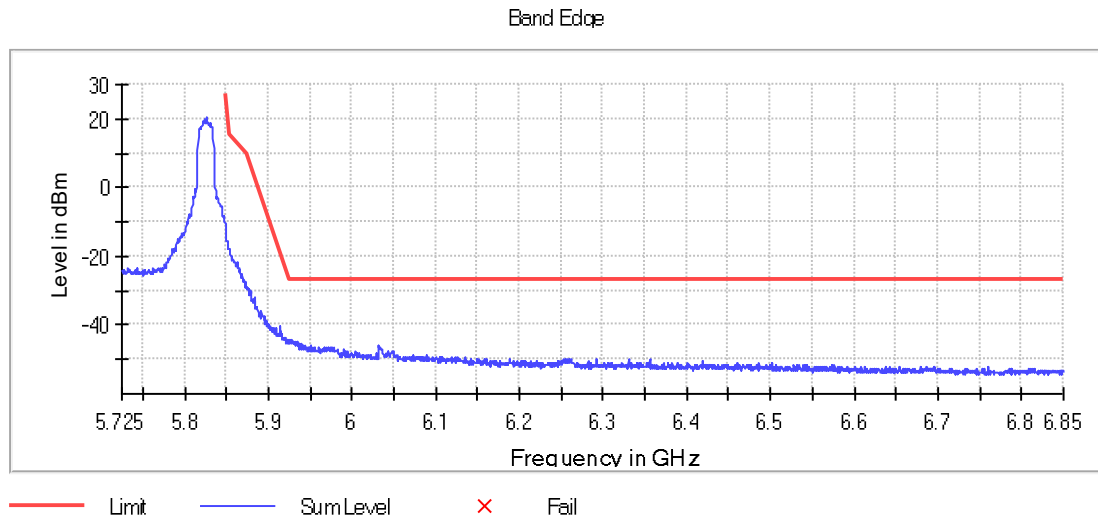
Radiated and antenna port conducted measurements of the UNII-3 band mask are shown below.

Antenna Port Conducted Emissions Transmitting on 5745 MHz (Power Level 20):



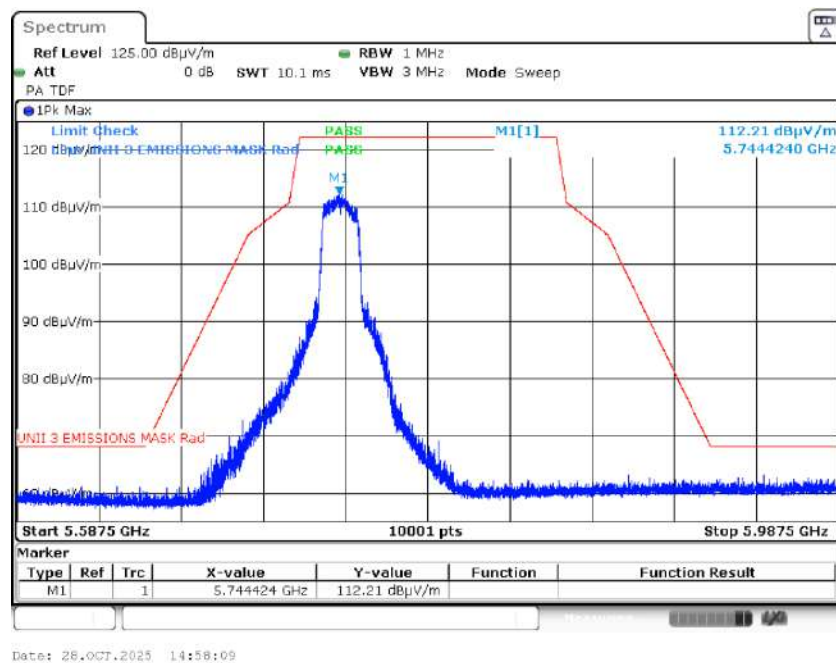
Graph 162: Antenna Port Conducted Band Mask, UNII-3 Low Channel

Antenna Port Conducted Emission Transmitting on 5825 MHz (Power Level 20):



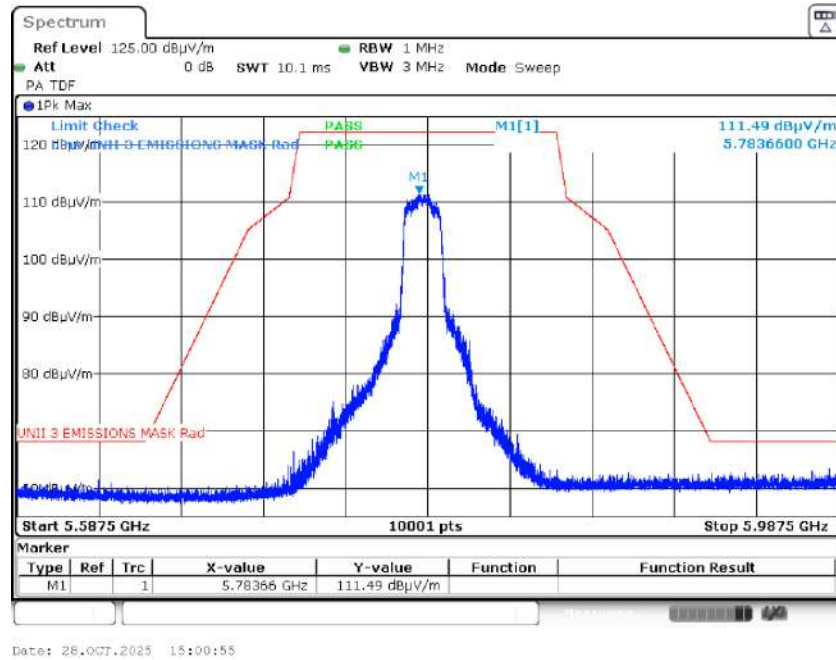
Graph 163: Antenna Port Conducted Band Mask, UNII-3 High Channel

Radiated Emissions Transmitting on 5745 MHz (Power Level 20):



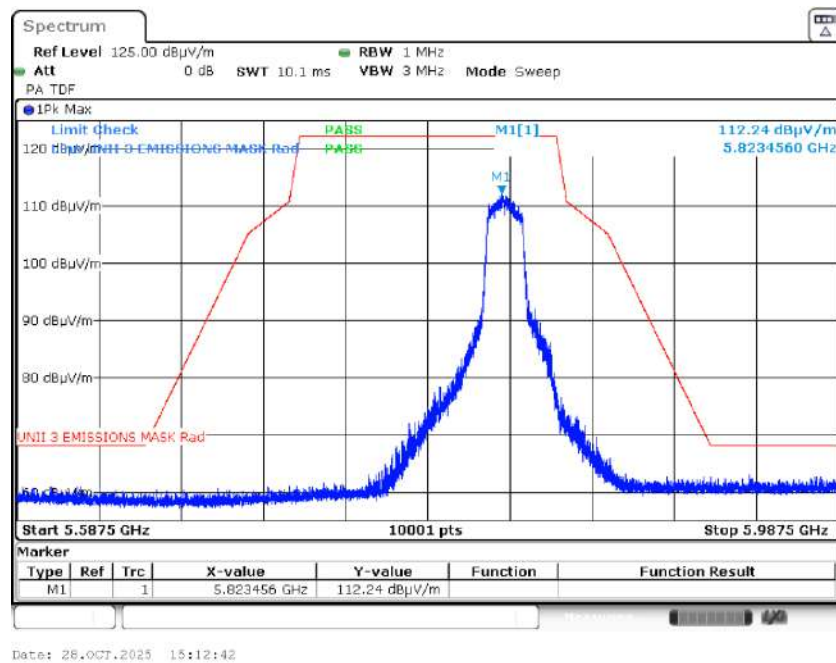
Graph 164: Radiated Band Mask, UNII-3 Low Channel

Radiated Emissions Transmitting on 5785 MHz (Power Level 20):



Graph 165: Radiated Band Mask, UNII-3 Middle Channel

Radiated Emission Transmitting on 5825 MHz (Power Level 20):



Graph 166: Radiated Band Mask, UNII-3 High Channel

Result

The EUT complied with the specification.

7 Test Procedures and Test Equipment

7.1 Conducted Emissions at Mains Ports

The conducted emissions at mains and telecommunications ports from the EUT were measured using a spectrum analyzer with a quasi-peak adapter for peak, quasi-peak and average readings. The quasi-peak adapter uses a bandwidth of 9 kHz, with the spectrum analyzer's resolution bandwidth set at 100 kHz, for readings in the 150 kHz to 30 MHz frequency ranges.

The conducted emissions at mains ports measurements are performed in a screen room using a (50 Ω /50 μ H) Line Impedance Stabilization Network (LISN).

Where mains flexible power cords are longer than 1 m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

Where the EUT is a collection of devices with each device having its own power cord, the point of connection for the LISN is determined from the following rules:

- Each power cord, which is terminated in a mains supply plug, shall be tested separately.
- Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.
- Power cords which are specified by the manufacturer to be connected via a host unit or other power supplying equipment shall be connected to that host unit and the power cords of that host unit connected to the LISN and tested.
- Where a special connection is specified, the necessary hardware to effect the connection is supplied by the manufacturer for the testing purpose.
- When testing equipment with multiple mains cords, those cords not under test are connected to an artificial mains network (AMN) different than the AMN used for the mains cord under test.

For testing, desktop EUT are placed on a non-conducting table at least 0.8 meters from the metallic floor and placed 40 cm from the vertical coupling plane (copper plating in the wall behind EUT table). Floor standing equipment is placed directly on the earth grounded floor.

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer/Receiver	Rohde & Schwarz	ESU40	V033119	12/02/2024	12/02/2025
LISN	Teseq	NNB 51	V045406	12/19/2024	12/19/2025
Conductance Cable Wanship Upper Site	VPI Labs	Cable J	V034832	12/19/2024	12/19/2025
EMC32 Measurement Software	Rohde & Schwarz	10.60.20	N/A	N/A	N/A

Table 62: List of equipment used for conducted emissions testing at mains ports.

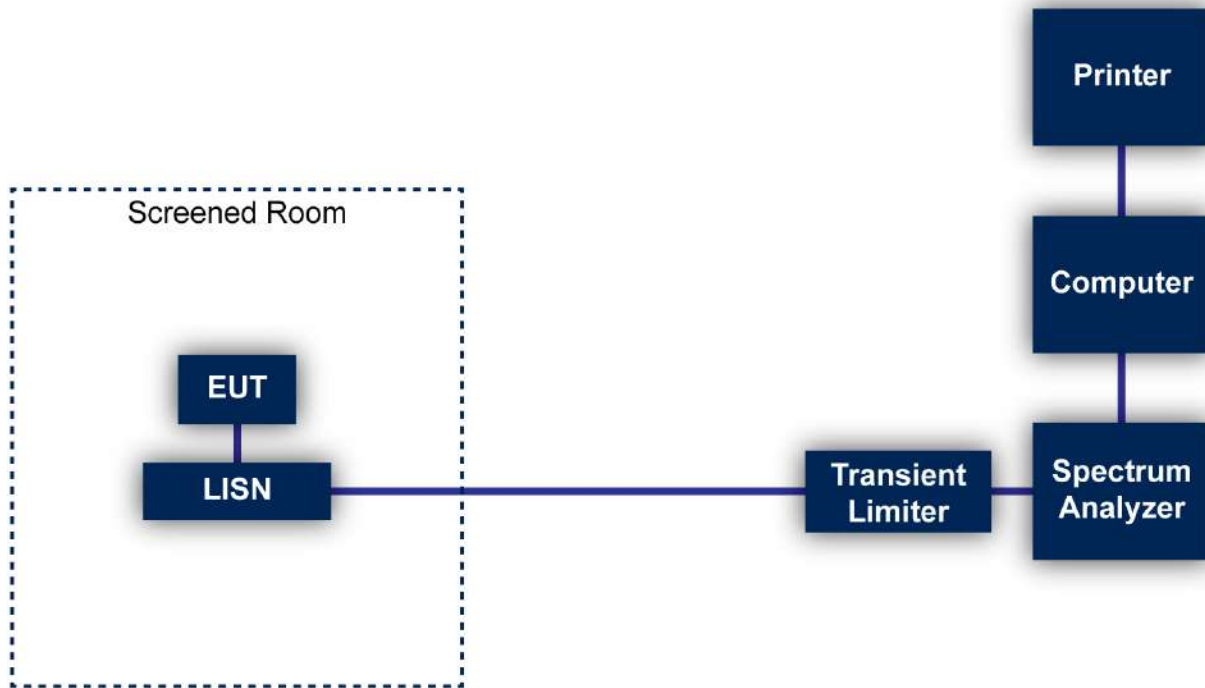


Figure 1: Mains Conducted Emissions Test

7.2 Direct Connection at the Antenna Port Test

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
40GHz Switch Extension	Rohde & Schwarz	OSP-150	V044486	09/25/2023	09/25/2026
40GHz Switch Base Unit	Rohde & Schwarz	OSP-120	V044487	03/23/2022	12/31/2025
Spectrum Analyzer/ Signal Analyzer	Rohde & Schwarz	FSV40	V044352	03/05/2024	03/05/2026
Signal Generator	Rohde & Schwarz	SMB100A	V044485	04/03/2023	12/31/2025
Vector Signal Generator	Rohde & Schwarz	SMBV100A	V044217	03/08/2022	12/31/2025
6' High Frequency Cable	Microcoax	UFB197C-0-0720-000000	V033638	12/19/2024	12/19/2025

Table 63: List of equipment used for conducted emissions testing at antenna ports.

7.2.1 Test Configuration Block Diagram

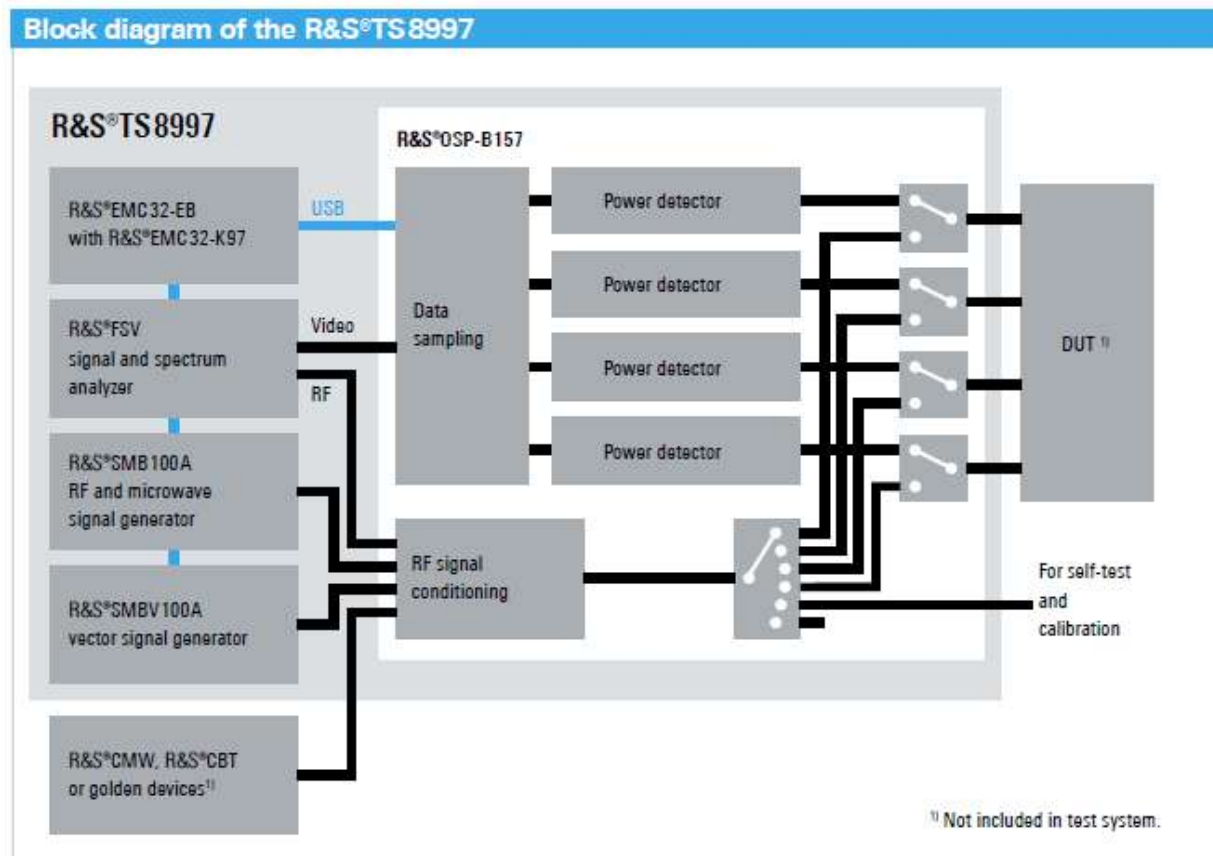


Figure 2: Direct Connection at the Antenna Port Test

7.3 Radiated Emissions

The radiated emissions from the EUT were measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings.

A preamplifier with a fixed gain was used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges. For frequencies below 30 MHz, a 9 kHz resolution Bandwidth was used.

A loop antenna was used to measure frequencies below 30 MHz. A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz, at a distance of 3 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors. A double-ridged guide antenna was used to measure the emissions at frequencies above 1000 MHz at a 3 meter or 1 meter distance from the EUT.

The configuration of the EUT was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.3 via the interconnecting cables listed in Section 2.4. A technician manually manipulated these interconnecting cables to obtain worst-case radiated emissions. The EUT was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there were multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

Desktop EUT are measured on a non-conducting table 0.8 meters above the ground plane. For frequencies above 1000 MHz, the EUT is placed on a table 1.5 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

For radiated emissions testing that is performed at distances closer than the specified distance; an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer/Receiver	Rohde & Schwarz	ESU40	V033119	12/02/2024	12/02/2025
Spectrum Analyzer/Signal Analyzer	Rohde & Schwarz	FSV40	V044352	03/05/2024	03/05/2026
Biconilog Antenna	EMCO	3142E	V035736	07/08/2025	07/08/2027
Power Amplifier	HP	8447E	V034189	12/19/2024	12/19/2025
Double Ridged Guide Antenna	EMCO	3115	V034194	06/25/2025	06/25/2027
Standard Gain Horn	ETS-Lindgren	3160-09	V034223	ICO	ICO
High Frequency Amplifier	Miteq	AFS4-001018000-35-10P-4	V033997	12/19/2024	12/19/2025
900 MHz High Pass Filter	Micro-Tronics	HPM50108-03	V034185	12/19/2024	12/19/2025
2.4 GHz High Pass Filter	Micro-Tronics	HPM50111-03	V034183	12/19/2024	12/19/2025
2.4 GHz Notch Filter	Micro-Tronics	BRM50702-03	V034213	12/19/2024	12/19/2025
6' High Frequency Cable	Microcoax	UFB197C-0-0720-000000	V033638	12/19/2024	12/19/2025
20' High Frequency Cable	Microcoax	UFB197C-1-3120-000000	V033979	12/19/2024	12/19/2025
3 Meter Radiated Emissions Cable Wanship Upper Site	Microcoax	UFB205A-0-4700-000000	V033639	12/19/2024	12/19/2025
EMC32 Test Software	Rohde & Schwarz	10.60.20	N/A	N/A	N/A

Table 64: List of equipment used for radiated emissions testing.

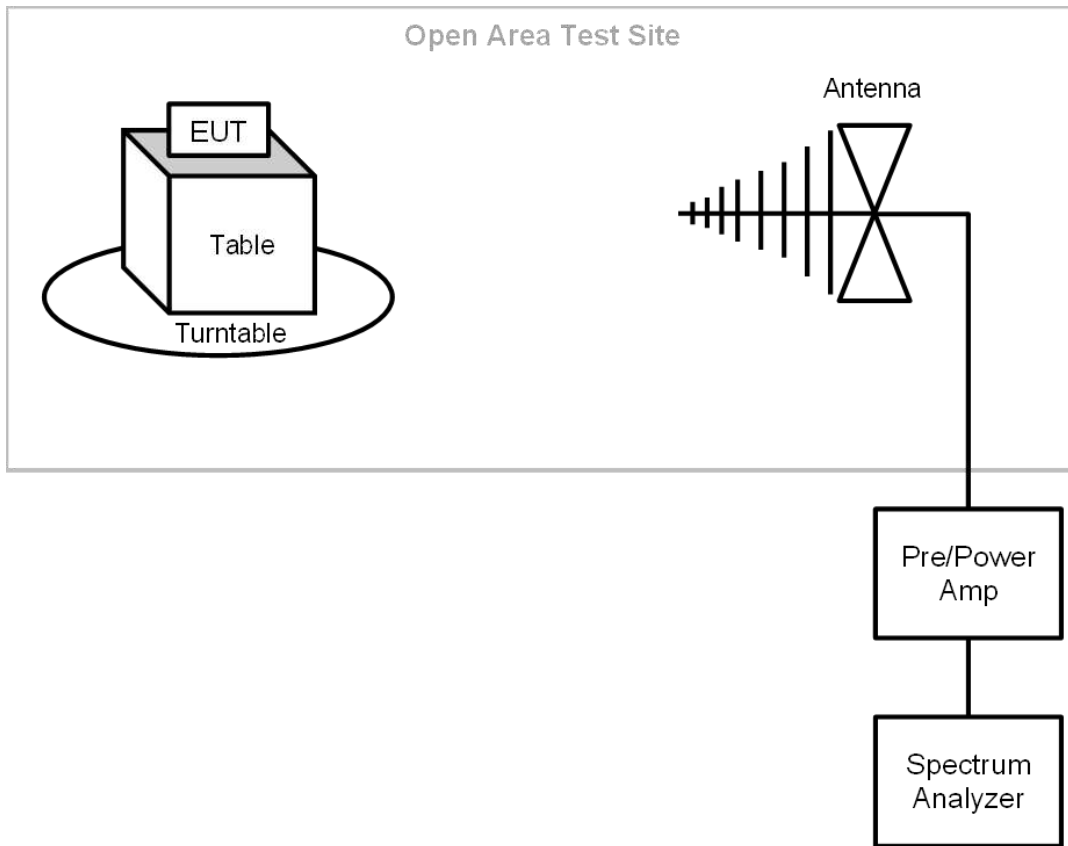


Figure 3: Radiated Emissions Below 1GHz Test

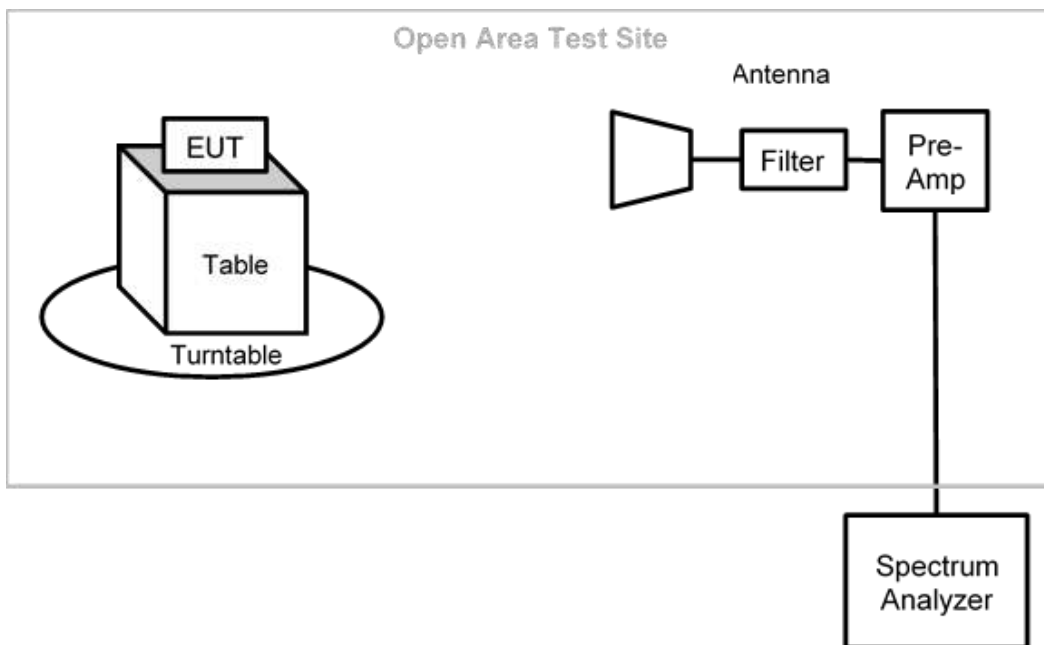


Figure 4: Radiated Emissions Above 1GHz Test

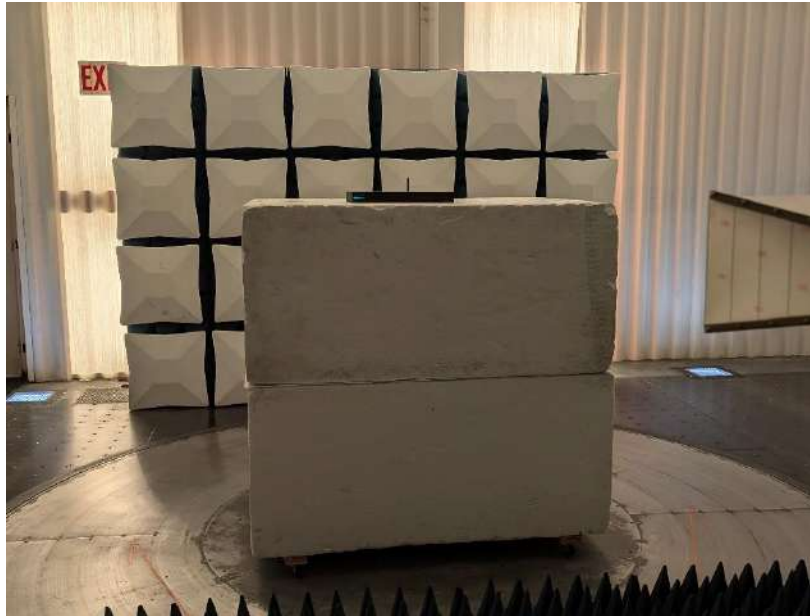
7.4 Equipment Calibration

All applicable equipment is calibrated using either an independent calibration laboratory or VPI Laboratories, Inc. personnel at intervals defined in ANSI C63.4:2014 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

7.5 Measurement Uncertainty

Test	Uncertainty ($\pm$ dB)	Confidence (%)
Conducted Emissions	2.8	95
Radiated Emission (9 kHz to 30 MHz)	3.3	95
Radiated Emissions (30 MHz to 1 GHz)	3.4	95
Radiated Emissions (1 GHz to 18 GHz)	5.0	95
Radiated Emissions (18 GHz to 40 GHz)	4.1	95

8 Photographs



Photograph 1: Front View Radiated Emissions Worst-Case Configuration



Photograph 2: Back View Radiated Emissions Worst-Case Configuration



Photograph 3: Maximum Coupling Antenna Position for Vertical Measurements



Photograph 4: Maximum Coupling Antenna Position for Horizontal Measurements



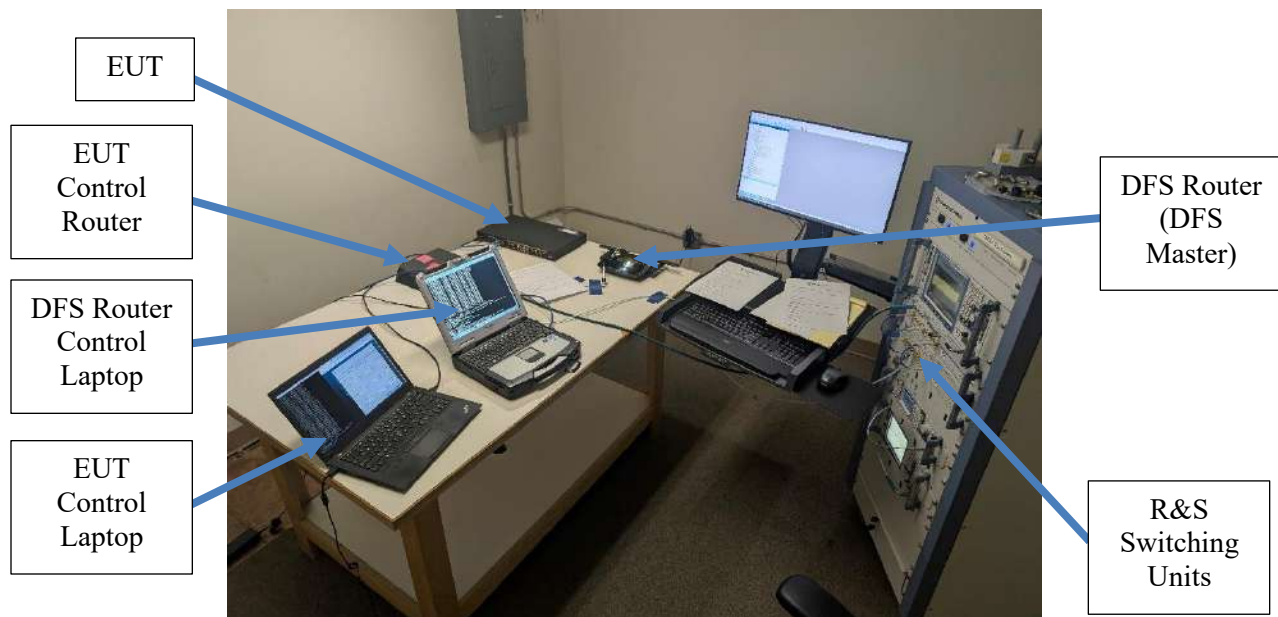
Photograph 5: Front View AC Mains Conducted Emissions Worst-Case Configuration



Photograph 6: Back View AC Mains Conducted Emissions Worst-Case Configuration



Photograph 7: Antenna Port Conducted Emissions Configuration



Photograph 8: Antenna Port Conducted DFS Test Configuration



Photograph 9: Front View of the EUT



Photograph 10: Back View of the EUT



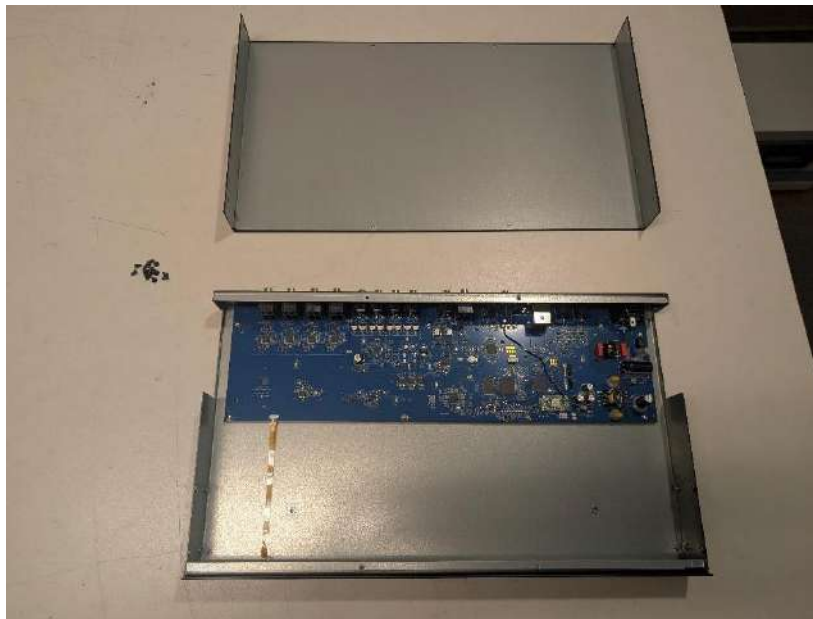
Photograph 11: Side 1 View of the EUT



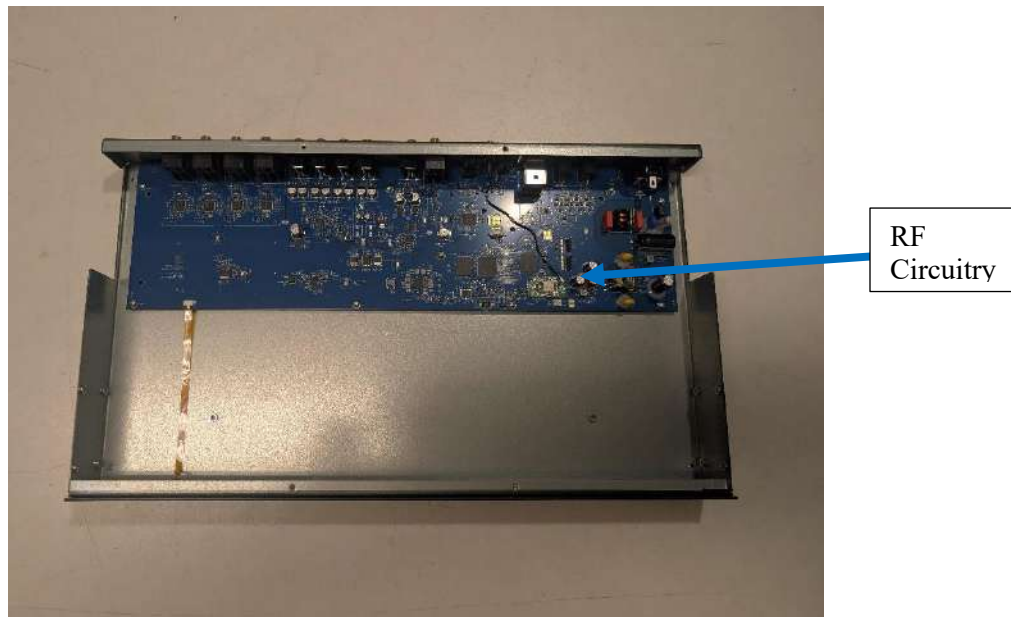
Photograph 12: Side 2 View of the EUT



Photograph 13: Bottom View of the EUT



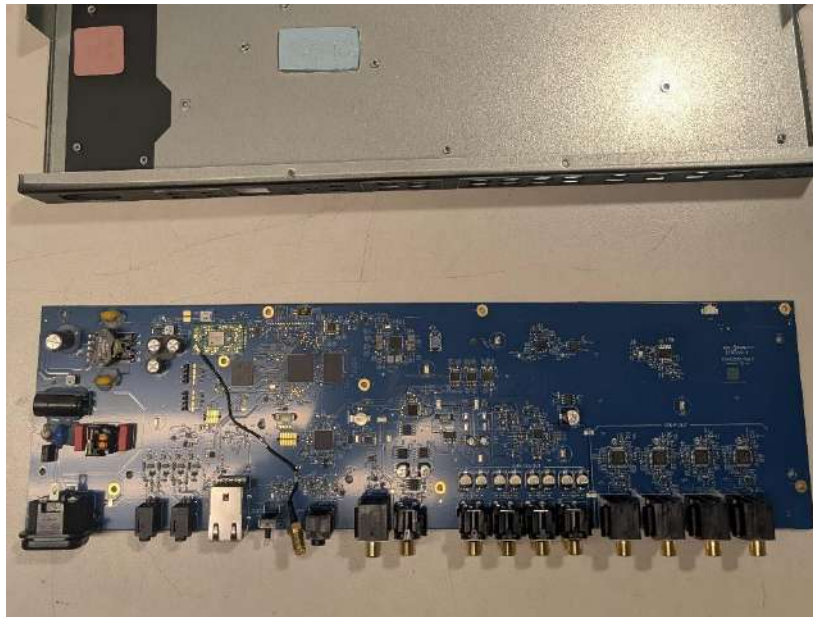
Photograph 14: View of the PCB Placement in the Enclosure



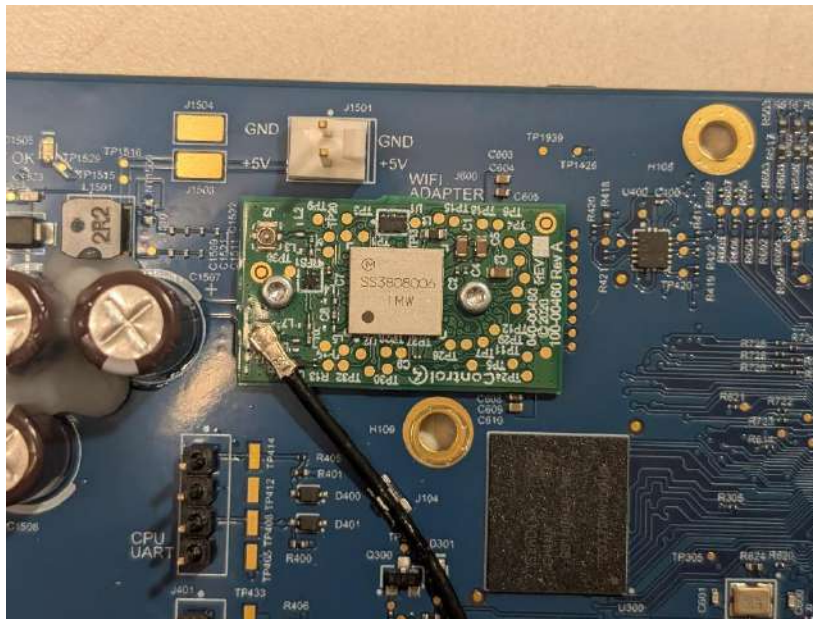
Photograph 15: Closer View of the PCB Placement in the Enclosure



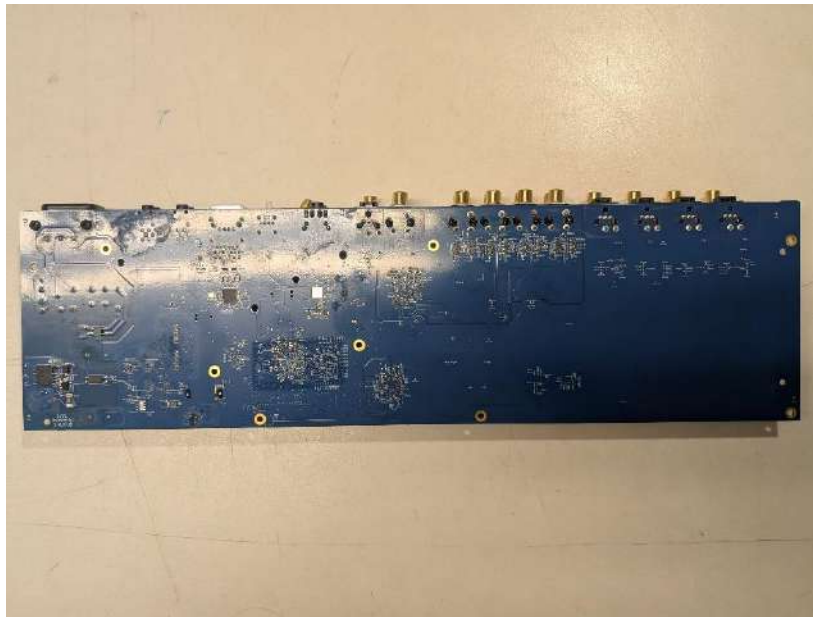
Photograph 16: Close-up View of the RF Circuitry in the Enclosure Showing Antenna Cable Routing



Photograph 17: Top View of the PCB Removed from Enclosure



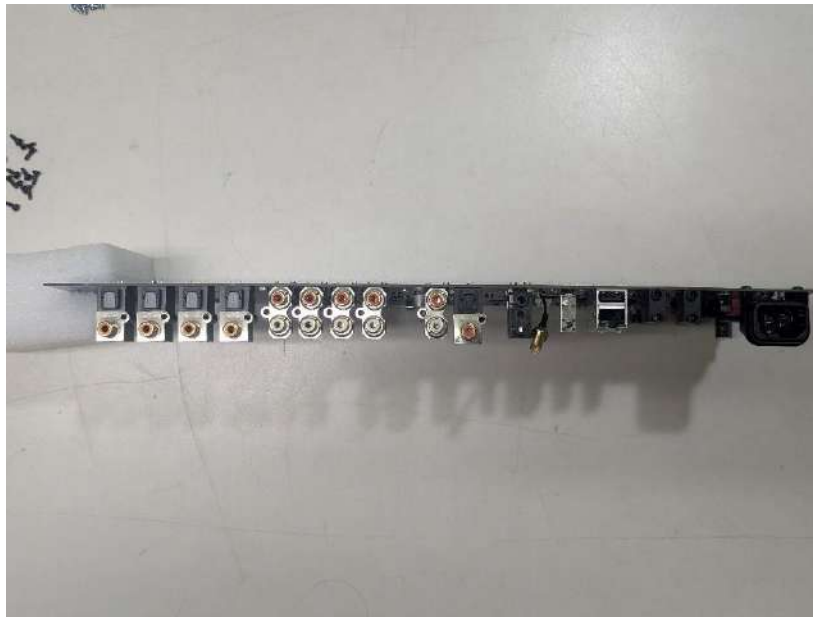
Photograph 18: Closeup View of the RF Section of the PCB Removed from Enclosure



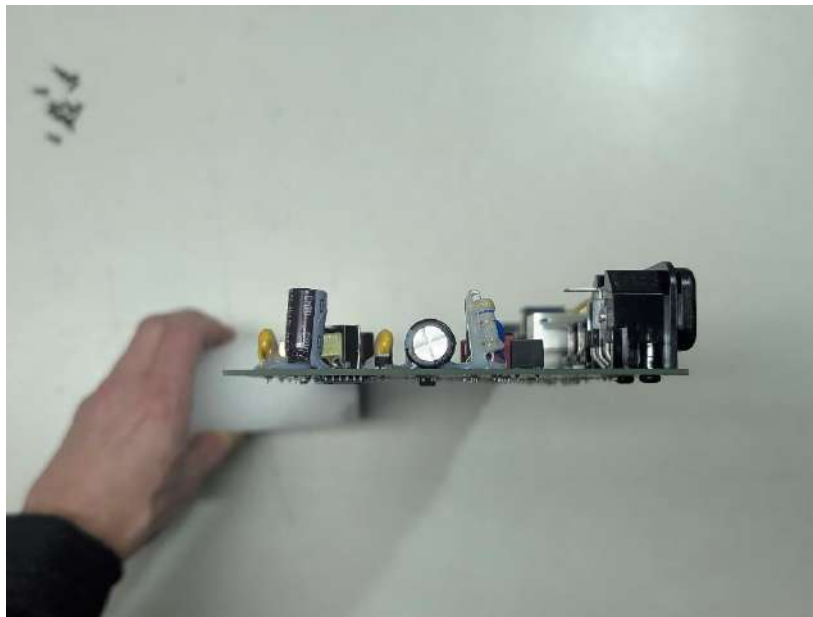
Photograph 19: Bottom View of the PCB Removed from Enclosure



Photograph 20: Side 1 View of the PCB Removed from Enclosure



Photograph 21: Side 2 View of the PCB Removed from Enclosure



Photograph 22: Side 3 View of the PCB Removed from Enclosure



Photograph 23: Side 4 View of the PCB Removed from Enclosure

--- End of Report ---