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Class 2 Permissive Change
Test Report for Certification
For

HVIN: GMN-03000

2402-2480 and 2412-2462 MHz (DTS)
2402-2480 MHz (FHSS) and 5180-5240 MHz (U-NII)

FCC ID: IPH-04286

Garmin International, Inc.

1200 East 151st Street
Olathe, KS 66062

Test Report Number: 260203

Test Date: February 3, 2026 – March 20, 2026

Authorized Signatory: 

Patrick Powell

Rogers Labs, a division of The Compatibility Center LLC

FCC Designation: US5305

FCC Registration Number: 315994

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Revisions

Revision 1 Issued: April 20, 2026

Revision 2 Issued July 17, 2026 – incorporated review feedback.

Executive Summary

The following information is submitted for consideration in processing Class 2 Permissive Change (C2PC) of authorized equipment. The model GMN-03000 (FCC ID: IPH-04286) has been granted authorization operating under Code of Federal Regulations Title 47 (47CFR) Part 15C paragraph 15.247, operation in the 2400 – 2483.5 MHz band as both a Digital Transmission System and Frequency Hopping Spread Spectrum system and 47 CFR Paragraph 15E (15.407), U-NII-1 new rules, 5180-5240 MHz bands, LE-LAN transmitter.

The new model variations implement an 8” graphical display in both Portrait and Landscape orientations. This Test Report sets out to demonstrate that there has been no degradation of performance that would affect the existing grant in any way. As such, the EUT was tested for Radiated Spurious emissions with transmitters on and off, inside and outside of the operating band.

Name of Applicant: Garmin International, Inc.
 1200 East 151st Street
 Olathe, KS 66062

HVIN: GMN-03000

FCC ID: IPH-04286

Operating Frequency Range: 2402-2480 MHz and 5180-5240 MHz

Opinion / Interpretation of Results

Test Performed per 47CFR	Minimum Margin (dB)	Results
Radiated Emissions (General Out-of-Band)	-11.4	Complies
Radiated Emissions (harmonics)	-2.6	Complies

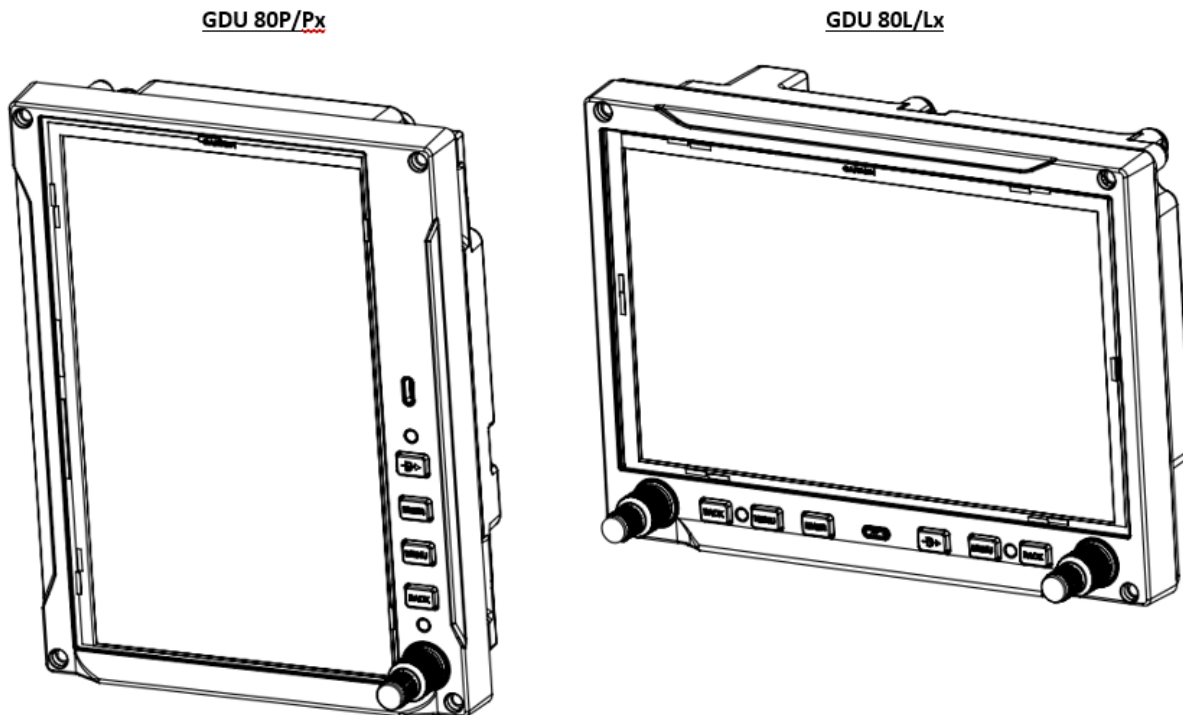
Summary of Results for Permissive Change

The EUT demonstrated compliance with the requirements of Class 2 Permissible Change.

Change to Equipment from Original Design

The information contained in this report address hardware modifications to add different graphical display options: an 8" portrait and an 8" landscape orientation. The transmitter design remains electrically identical and functionally equivalent to the original equipment authorization. This report documents operation to demonstrate continued compliance with regulations.

All models implement identical radios as the same PCB is implemented. Portrait and Landscape displays provide differing front panel designs as the landscape variant provides additional user interfaces. See drawing below. Difference between GDU 80P and GDU 80Px is software application only. Both units are identical from a hardware perspective. Same statement applies to the GDU 80L and GDU 80Lx.



Equipment Tested

Model: GMN-03000

Garmin International, Inc.

1200 East 151st Street

Olathe, KS 66062

Description	Part Number	Serial Number
GMN-03000 (8" Portrait EUT #1)	011-05800-05	8J3000008
GMN-03000 (8" Landscape EUT #2)	011-05800-15	8J5000003
X3 Main Harness	T00-00846-00	N/A
SMA RF 50Ω Load	N/A	N/A
BNC RF 50Ω Load	N/A	N/A
USB-C Drive	N/A	N/A
RS-232 to serial adapter	N/A	N/A
Laptop Computer	Latitude 74870	EFSPSN2

Test results in this report relate only to the items tested. Worst-case configuration data recorded in this report.

The design may operate one transmitter chain at a time on a given radio (#1 or #2) but is capable of simultaneous transmission of one radio #1 transmitter and one radio #2 transmitter.

Software (FVIN): 1.00b; Antennas: Bluetooth & 2.4 GHz WiFi - PIFA (8.0 dBi); 5.2 GHz PIFA (-4.4 dBi)

Equipment Operational Modes

Radio #	Mode #	Standard
1	1	BT BR (GFSK)
1	2	BT (2EDR $\pi/4$ DQPSK)
1	3	BT (3EDR 8DPSK)
1	4	BT BLE (GMSK)
1	5	2.4G 802.11b
1	6	2.4G 802.11g
1	7	2.4G 802.11n
1	8	U-NII-1 802.11a
1	9	U-NII-1 802.11n20
1	10	U-NII-1 802.11n40
1	11	U-NII-1 802.11ac20
1	12	U-NII-1 802.11ac40
1	13	U-NII-1 802.11ac80
2	14	2.4G 802.11b
2	15	2.4G 802.11g
2	16	2.4G 802.11n
2	17	U-NII-1 802.11a
2	18	U-NII-1 802.11n20
2	19	U-NII-1 802.11n40
2	20	U-NII-1 802.11ac20
2	21	U-NII-1 802.11ac40
2	22	U-NII-1 802.11ac80

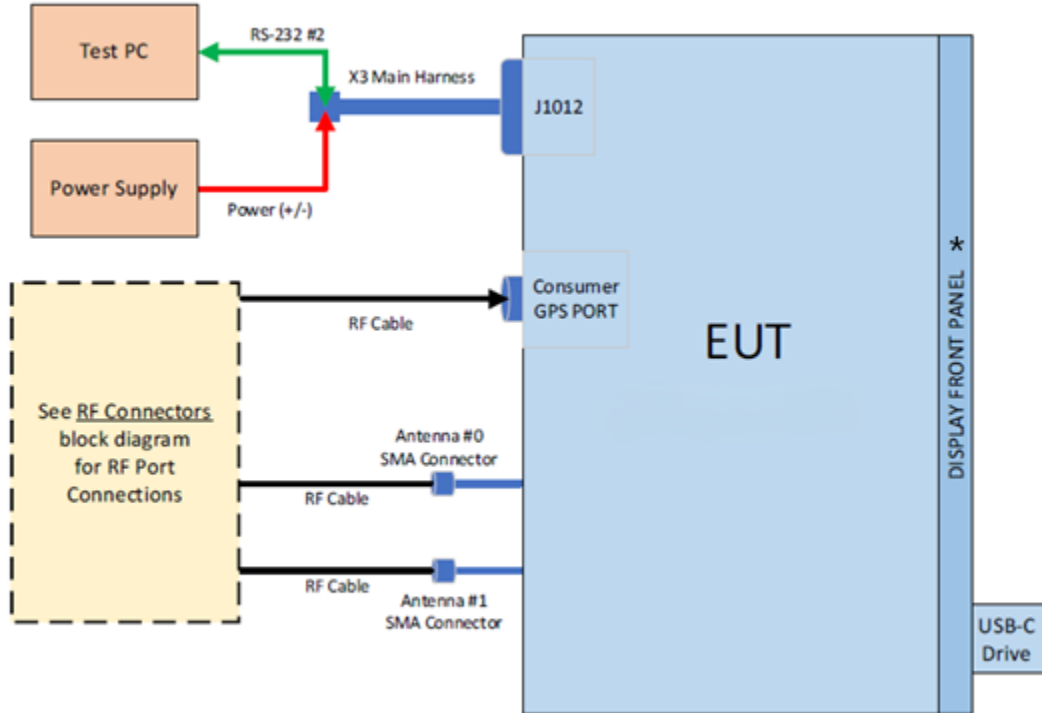
Equipment Function

The GMN-03000 is an aeronautical display providing 2.4 GHz and 5 GHz wireless communication. The device is marketed as Aircraft Panel Mounted Display Unit. This report documents the performed testing and results for applicable configuration and product operation. As requested by the manufacturer and required by regulations, the equipment was tested for emissions compliance using the available configurations with the worst-case data presented. Test results in this report relate only to the products described in this report.

Antenna Requirements

The EUT incorporates integral non-user accessible system. Production equipment offers no provision for connection to alternate antenna system. The antenna connection point complies with the unique antenna connection requirements. There are no deviations or exceptions to the specification.

Equipment Configuration



- * Two versions:
 - 8" Portrait LCD
 - 8" Landscape LCD

Applicable Standards

In accordance with the Federal Communications Code of Federal Regulations, dated February 17, 2026: Part 2, Subpart J, Paragraphs 2.1043, KDB 178919 D01 Permissive Change Policy v06, operation in the 2400.0-2483.5 MHz and 5180-5240 MHz Frequency bands. Test procedures used are the established Methods of Measurement of Radio-Noise Emissions as described in ANSI C63.10-2020.

Test Site Locations

Conducted EMI AC line conducted emissions testing performed in a shielded screen room located at Rogers Labs, a division of The Compatibility Center LLC, 7915 Nieman Rd., Lenexa, KS.

Antenna port Antenna port conducted emissions testing was performed in a shielded screen room located at Rogers Labs, a division of The Compatibility Center LLC, 7915 Nieman Rd., Lenexa, KS.

Radiated EMI The radiated emissions tests were performed at the 3 meters Semi-Anechoic Chamber (SAC) located at Rogers Labs, a division of The Compatibility Center LLC, 7915 Nieman Rd., Lenexa, KS

Registered Site information: FCC Site: US5305, ISED: 3041A, CAB Identifier: US0096

NVLAP Accreditation Lab code 200087-0

Environmental Conditions

Ambient Temperature 21.0° C

Relative Humidity 44.0 %

Atmospheric Pressure 1022.7 mb

Statement of Modifications and Deviations

No modifications to the EUT were required during investigation for the equipment to demonstrate compliance with the CFR47, Part 2.1043 or Part 15C or 47 CFR Part 15E requirements. There were no deviations to the specifications.

Test Software

Test Software List			
Description	Manufacturer	Model	Version
Automated EMC testing software system	ETS Lindgren	Tile!	7.9.1.1

Note: Above software is used to collect some of the data we report.

Units of Measurements

AC Line Conducted EMI	Data presented in dBμV; dB referenced to one microvolt
Antenna port Conducted	Data presented in dBm; dB referenced to one milliwatt
Radiated EMI	Data presented in dBμV/m; dB referenced to one microvolt per meter

Radiated Sample Calculations:

RFS = Radiated Field Strength, FSM = Field Strength Measured

A.F. = Receive antenna factor, *Losses* = misc. losses in system, *G_R* = amplification gains

RFS dBμV/m = FSM (dBμV) + A.F. (dB/m) + Losses (dB) - G_R (dB)

Note: measurement distance may vary depending on regulation or test standard.

Antenna Port Conducted Sample Calculations:

EIRP = equivalent isotropically radiated power (in same units as P_R)

P_{meas} = measured conducted power level (dBW or dBm)

P_R = Antenna Port Conducted power level (dBW or dBm)

L_C = cable losses (dB), *L_{atten}* = Attenuator losses (dB)

G_{ANT} = declared EUT antenna gain (dBi)

P_R = P_{meas} - L_C - L_{atten}

EIRP = P_R + G_{ANT}

AC Line Conducted Sample Calculations:

L_{LISN} = LISN loss (dB)

AC = AC Line Emission (dBuV)

P_{AC} = P_{meas} - L_{LISN} - L_C - L_{atten}

Note: These *correction factors* are already included in the measurements reported by our spectrum analyzer / receivers so above are only samples of how the results are calculated.

Frequency: 9 kHz-30 MHz	Frequency: 30 MHz- 1 GHZ	Frequency: Above 1 GHz
Loop Antenna	Broadband Biconilog	Horn
RBW = 9 kHz	RBW = 120 kHz	RBW = 1 MHz
VBW = 30 kHz	VBW = 500 kHz	VBW = 3 MHz
Sweep time = Auto	Sweep time = Auto	Sweep time = Auto
Detector = PK, QP	Detector = PK, QP	Detector = PK, AV
Antenna Height 1m	Antenna Height 1-4m	Antenna Height 1-4m

Test Procedures

AC Line Conducted Emission Test Procedure

Testing for the AC line-conducted emissions were performed as required in CFR47 15B, RSS-GEN, and directed in ANSI C63.4-2014. The test setup, including the EUT, was arranged in the test configurations as presented during testing. The test configuration was placed on a 1 x 1.5-meter bench, 0.8 meters high located in a screen room. The power lines of the system were isolated from the power source using a standard LISN with a 50- μ Hy choke. EMI was coupled to the spectrum analyzer through a 0.1 μ F capacitor internal to the LISN. The LISN was positioned on the floor beneath the wooden bench supporting the EUT. The power lines and cables were draped over the back edge of the table. Refer to diagram one showing typical test arrangement and photographs in the test setup exhibit for EUT placement used during testing.

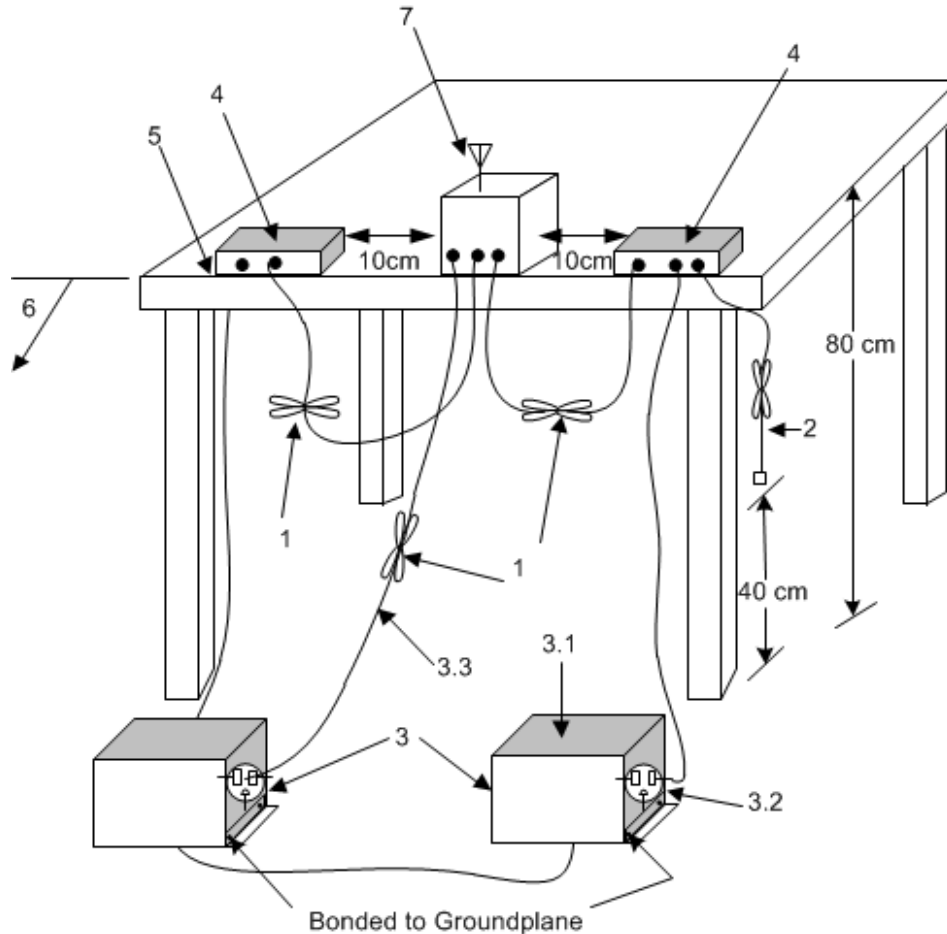
Radiated Emission Procedure

Radiated emissions testing was performed as required in 47CFR 15C, 47 CFR Part 15E, RSS-247 Issue 3, RSS-GEN and specified in ANSI C63.10-2020. The EUT was placed on a rotating 0.9 x 1.2-meter platform, elevated as required above the ground plane at a distance of 3 meters from the FSM antenna. EMI energy was maximized by equipment placement permitting orientation in three orthogonal axes, raising, and lowering the FSM antenna, changing the antenna polarization, and by rotating the turntable. Each emission was maximized before data was taken and recorded. Per above requirements, the frequency spectrum from 9 kHz to 25,000 MHz was searched for emissions and all significant results reported. All other unreported findings were at least 20 dB below limits. Refer to diagrams two and three showing typical test setup. Refer to photographs in the test setup exhibits for specific EUT placement during testing.

Antenna Port Conducted Emission Test Procedure

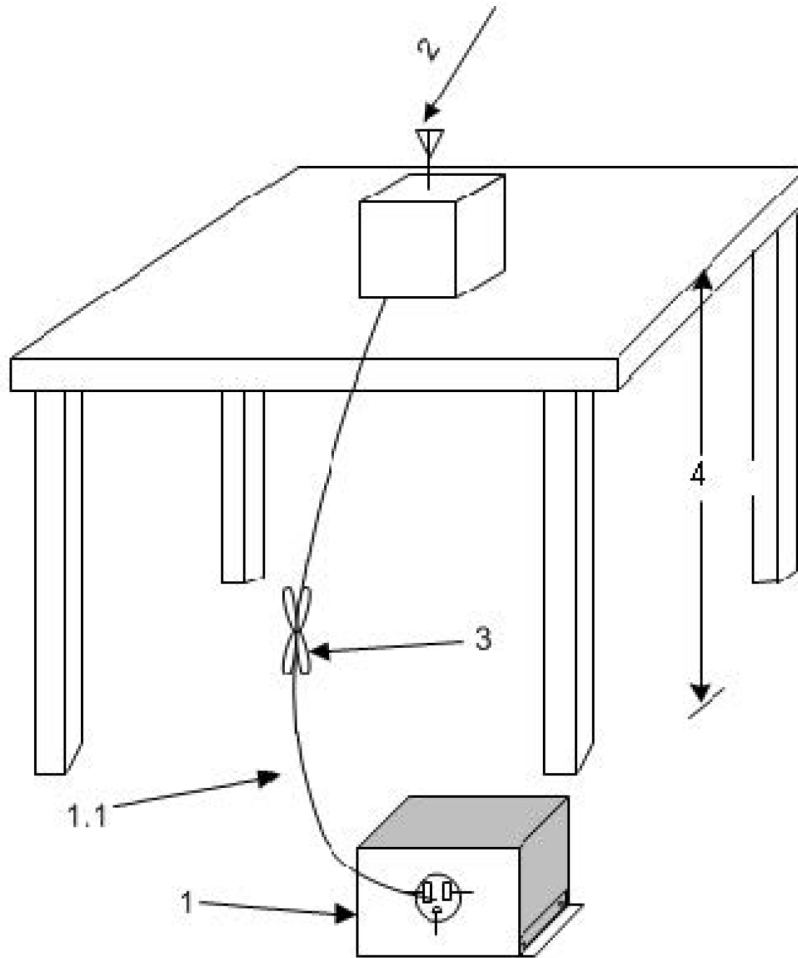
The EUT was assembled as required for operation placed on a benchtop. This configuration provided the ability to connect test equipment to the provided test antenna port. Antenna Port conducted emissions testing was performed presented in the regulations and specified in ANSI C63.10-2013. Testing was completed on a laboratory bench in a shielded room. The active antenna port of the device was connected to appropriate attenuation and the spectrum analyzer. Refer to diagram 4 showing typical test arrangement and photographs in the test setup exhibits for specific EUT placement during testing.

Diagram 1 Test arrangement for power-line conducted emissions



1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long see (see 6.2.3.1).
2. I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m (see 6.2.2).
3. EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN can be placed on top of, or immediately beneath, reference ground plane (see 6.2.2 and 6.2.3).
 - 3.1 All other equipment powered from additional LISN(s).
 - 3.2 Multiple-outlet strip can be used for multiple power cords of non-EUT equipment.
 - 3.3 LISN at least 80 cm from nearest part of EUT chassis.
4. Non-EUT components of EUT system being tested.
5. Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop (see 6.2.3.1).
6. Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane (see 6.2.2 for options).
7. Antenna may be integral or detachable. If detachable, the antenna shall be attached for this test

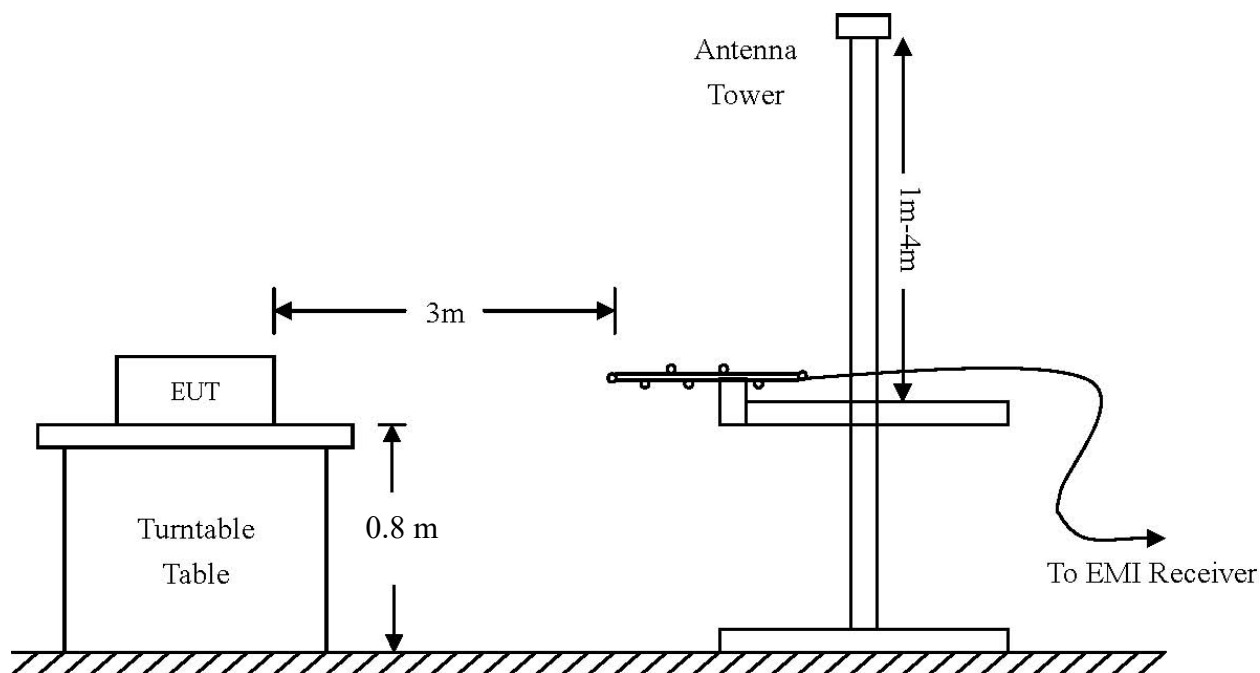
Diagram 2 Test arrangement for radiated emissions of tabletop equipment



1. A LISN is optional for radiated measurements between 30 MHz and 1000 MHz but not allowed for measurements below 30 MHz and above 1000 MHz (see 6.3.1). If used, then connect EUT to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. The LISN may be placed on top of, or immediately beneath, the reference ground plane (see 6.2.2 and 6.2.3.2).
 - 1.1. LISN spaced at least 80 cm from the nearest part of the EUT chassis.
2. Antenna can be integral or detachable, depending on the EUT (see 6.3.1).
3. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long (see 6.3.1).
4. For emission measurements at or below 1 GHz, the table height shall be 80 cm. For emission measurements above 1 GHz, the table height shall be 1.5 m for measurements, except as otherwise specified (see 6.3.1 and 6.6.3.1).

Diagram 3 Test arrangement for radiated emissions tested in Semi-Anechoic Chamber (SAC)

Below 1 GHz



Above 1 GHz:

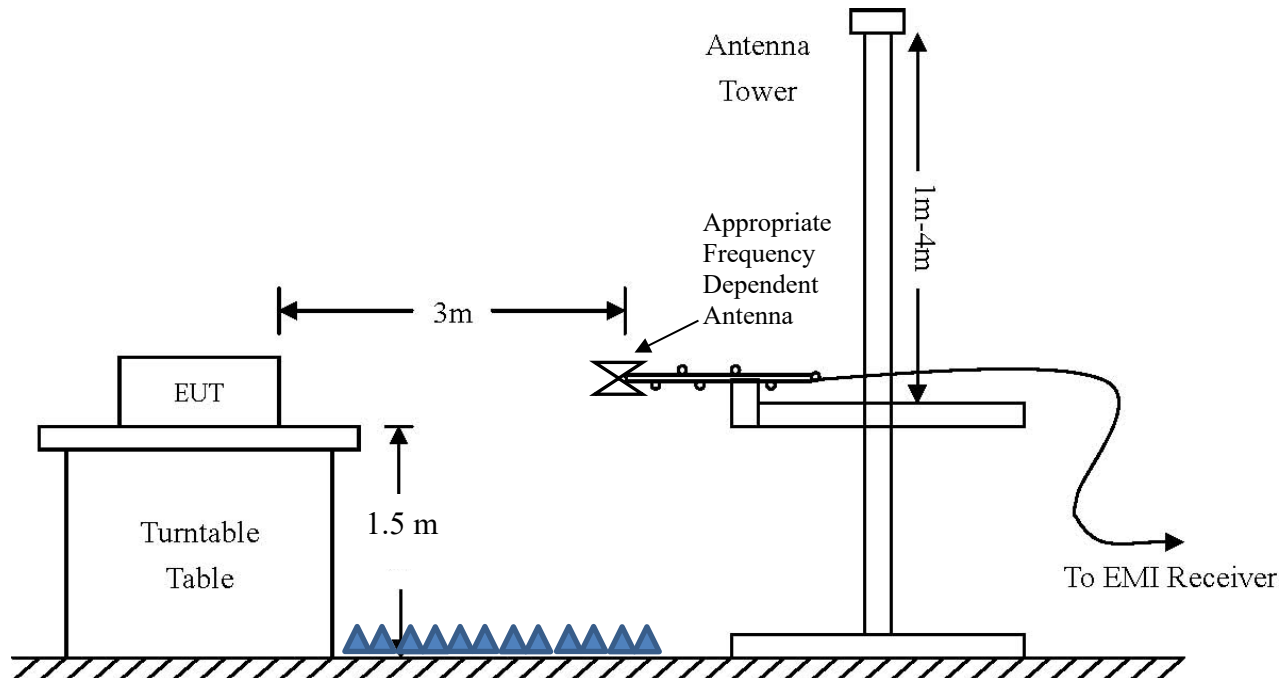
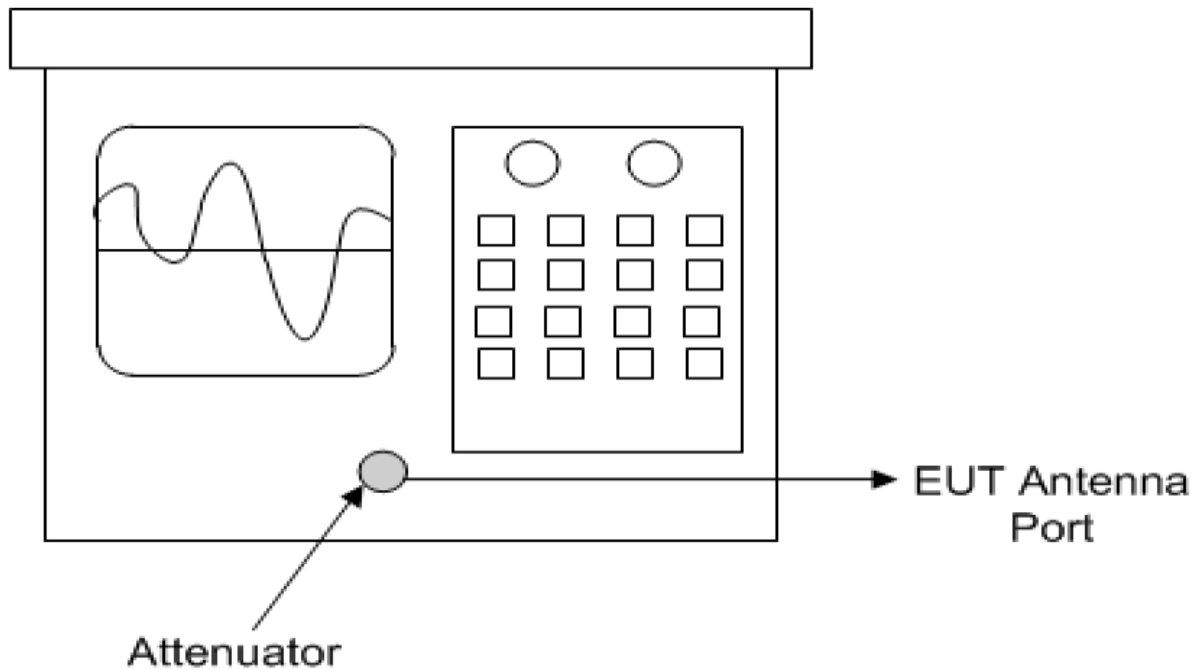


Diagram 4 Test arrangement for Antenna Port Conducted emissions
Spectrum Analyzer



Changes in certificated equipment

The following information is submitted in support of demonstration of compliance with the requirements of Class 2 permissive change as provided in 47CFR, Subpart J, Paragraphs 2.1043 and KDB 178919 D01 Permissive Change Policy v06.

Since the device change only affects unintentional emissions, the testing plan focused solely on spurious emissions inside and outside of the band with and without transmitters turned on. The original test reports for this device were examined for worst case emissions in the 2400 – 2483.5 MHz and 5180-5240 MHz bands and those were the focus of any transmitter spurious emissions measurements. In addition, we tested both the portrait and landscape version EUTs. Worst case results are presented.

Test Results

The following information is submitted supporting compliance with the requirements of 47CFR, Subpart J, Paragraphs 2.1043.

AC Line Conducted Emissions

The equipment operates solely from direct current power and offers no provision for connection to utility power systems. Therefore, no AC line conducted emissions testing was required or performed.

General Radiated Emissions

Test sample 8" Portrait EUT #1 and 8" Landscape EUT #2 were provided for testing radiated emissions. All testing was performed via radiated measurements.

A preliminary profile of the Spurious Radiated Emissions was obtained up to a minimum of the 10th harmonic of the highest internally generated frequency by operating the EUT in a screen room. Measurements of emissions from the EUT were taken with the Measurement Antenna in both Horizontal and Vertical Polarizations at a 3-meter distance in the Semi-Anechoic Chamber (SAC), finding maximized emissions over frequency, EUT orientation, antenna height and polarity. This data was then used to focus the final radiated emissions measurements on these maximized points. Antennas used were Loop, Biconical, Broadband Biconilog, Log Periodic, and Double Ridge or Pyramidal Horns and mixers above 1 GHz.

8" Portrait Model

Table 1 General Radiated Emissions Data (Horizontal Polarization)

Frequency (MHz)	Peak (dB μ V/m)	Quasi-Peak (dB μ V/m)	Limit @ 3m (dB μ V/m)	Margin (dBm)
109.9	32.4	27.9	40	-12.1
170.2	26.5	22.1	40	-17.9
194.3	29.4	24.6	40	-15.4
397.1	29.4	21.4	47	-25.6
998.9	32.8	23.6	47	-23.4

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency range below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Figure 1 Plot of General Radiated Emissions (Horizontal Polarization)

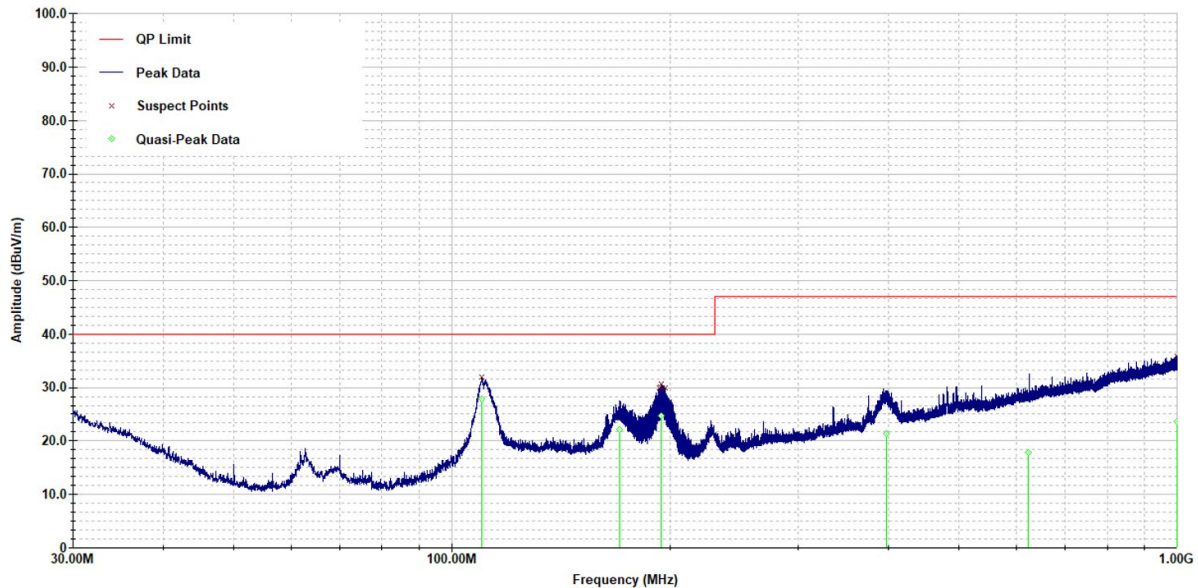


Table 2 General Radiated Emissions Data (Vertical Polarization)

Frequency (MHz)	Peak (dB μ V/m)	Quasi-Peak (dB μ V/m)	Limit @ 3m (dB μ V/m)	Margin (dBm)
111.0	31.1	27.1	40	-12.9
168.7	27.0	22.3	40	-17.7
195.1	29.4	27.0	40	-13.0
226.0	21.9	15.1	40	-24.9
992.7	32.7	24.6	47	-22.4

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency range below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Figure 2 Plot of General Radiated Emissions – Vertical Polarization

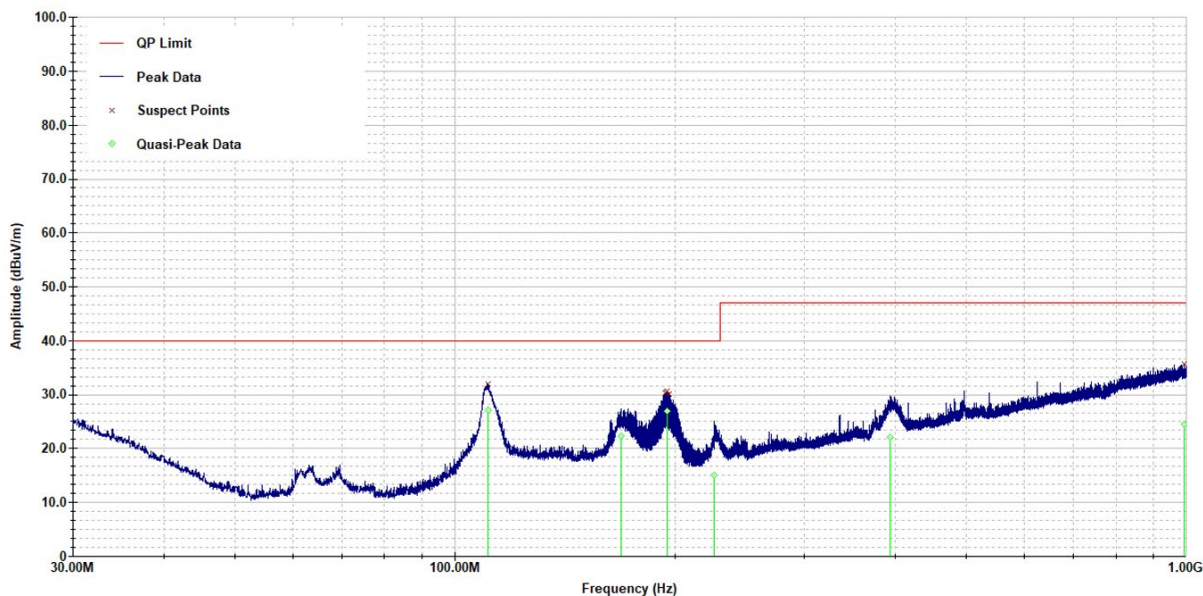


Figure 3 Plot of General Radiated Emissions (1-3 MHz)

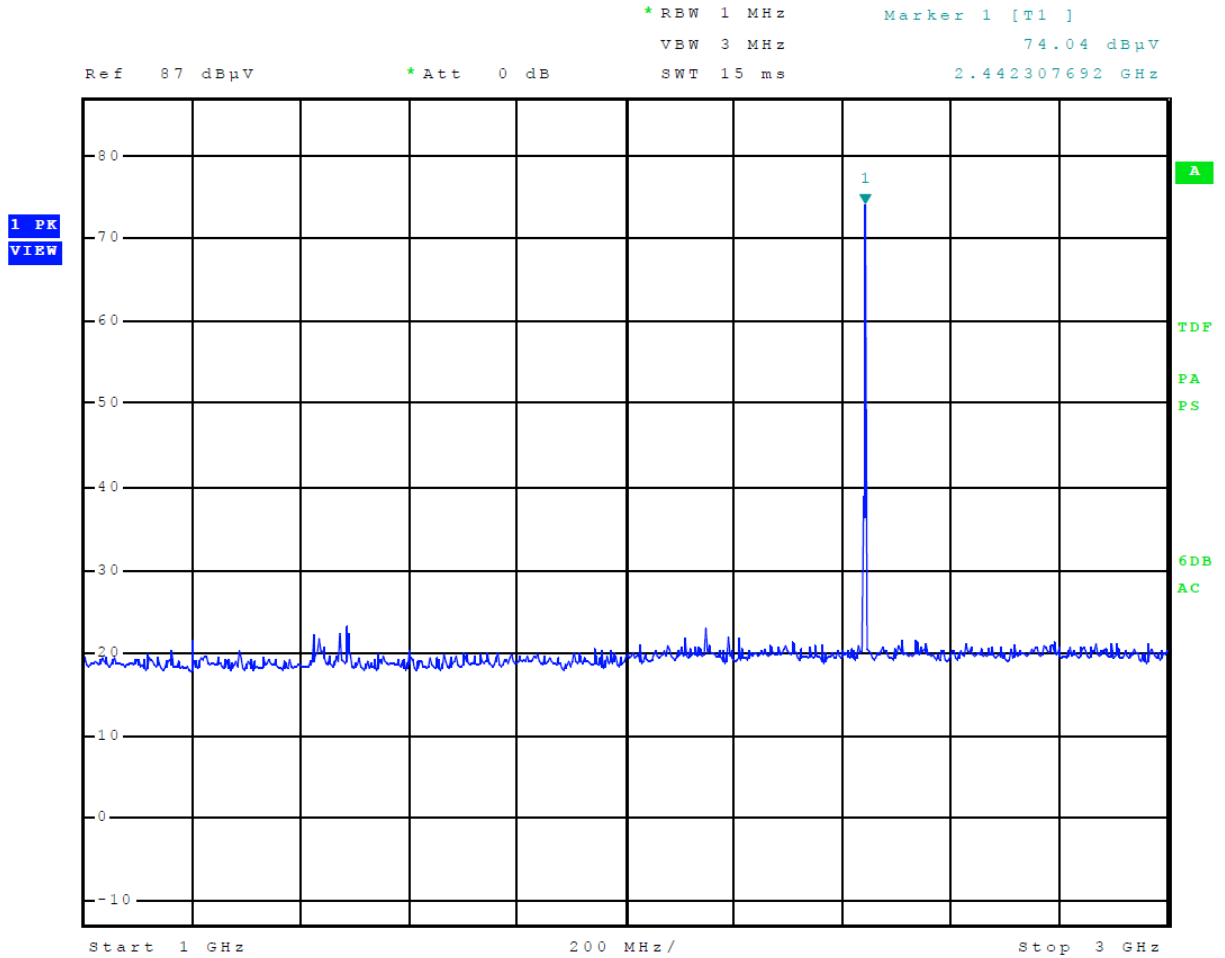


Figure 4 Plot of General Radiated Emissions (3-6 MHz)

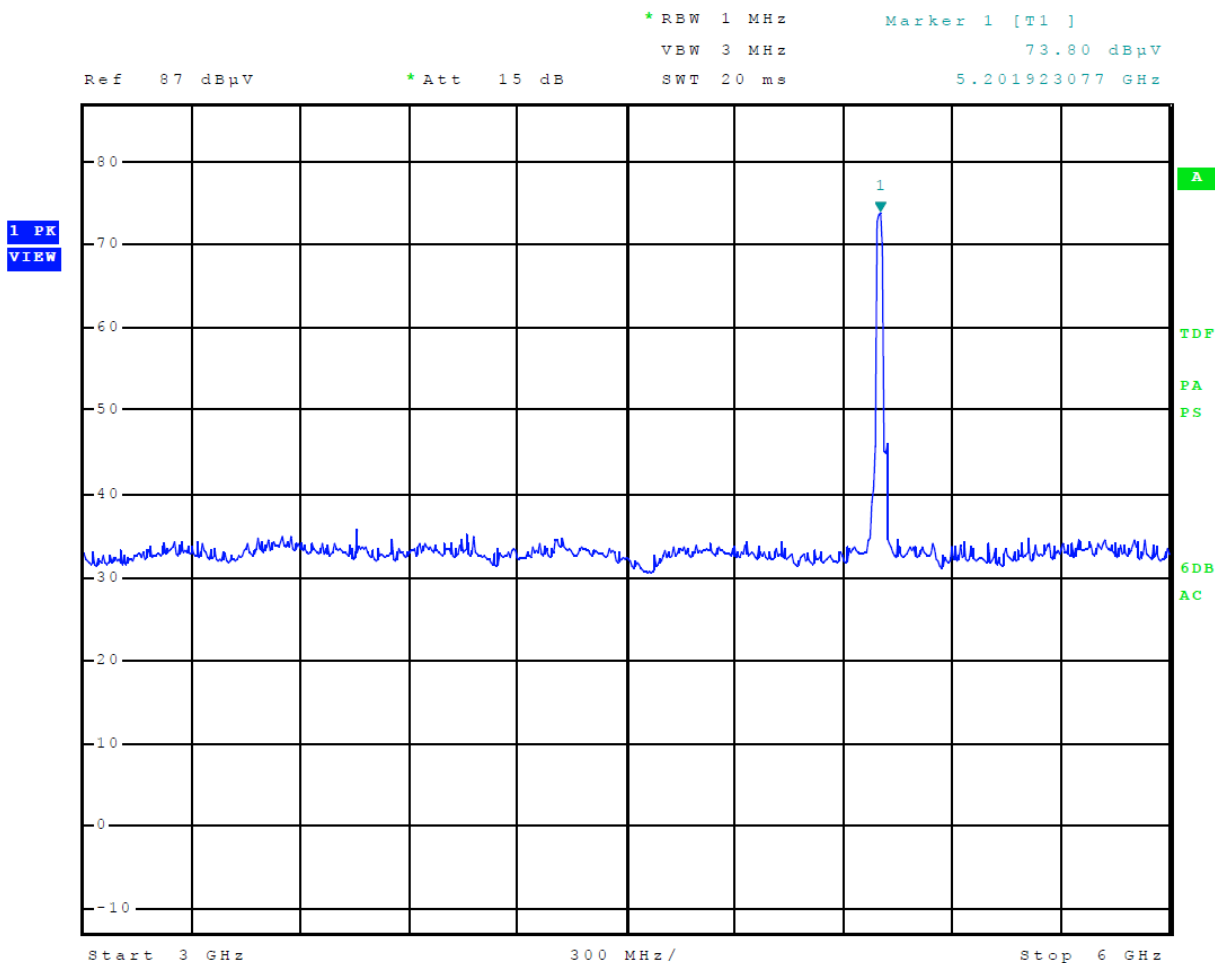


Figure 5 Plot of General Radiated Emissions (6-12 MHz)

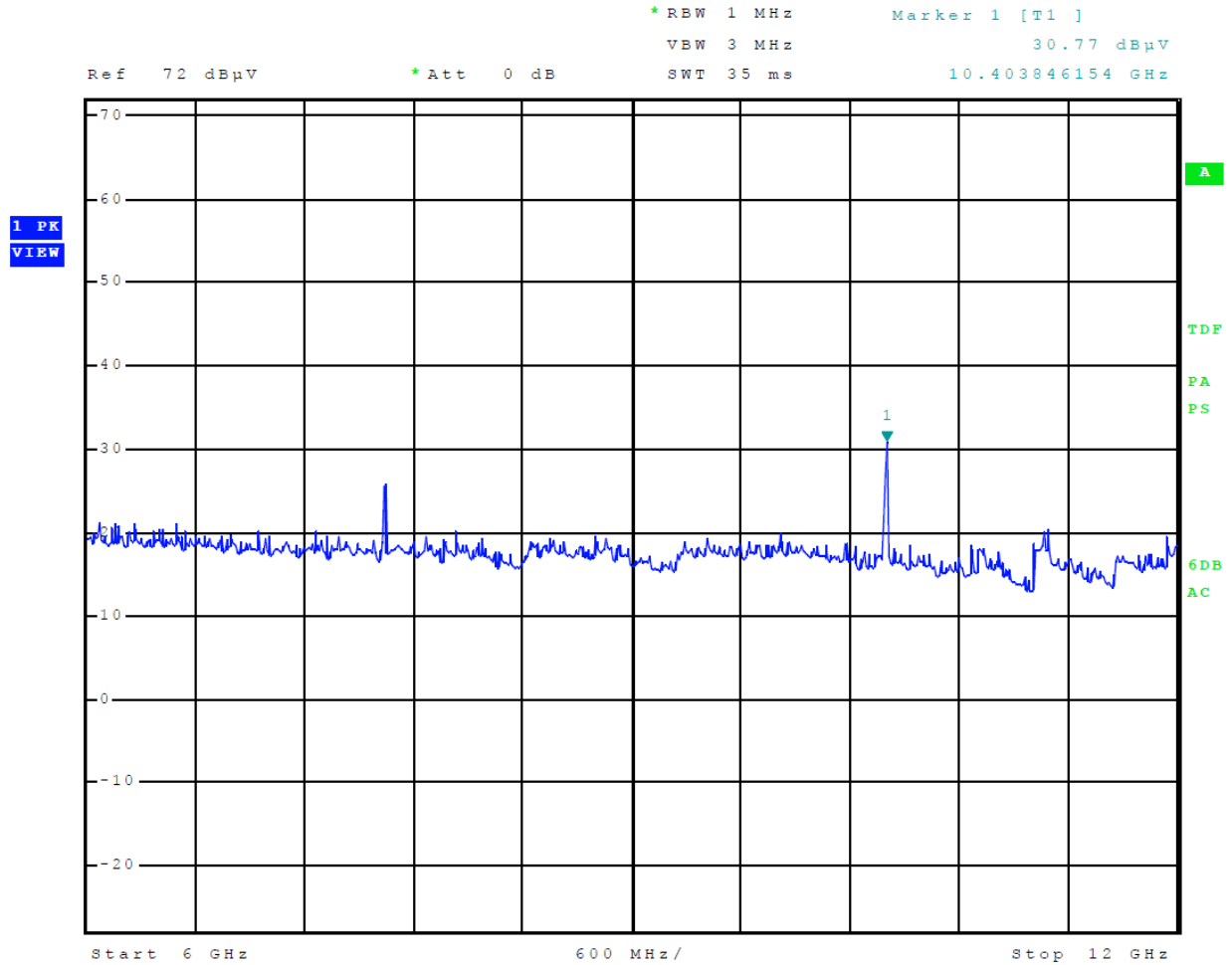


Figure 6 Plot of General Radiated Emissions (12-18 MHz)

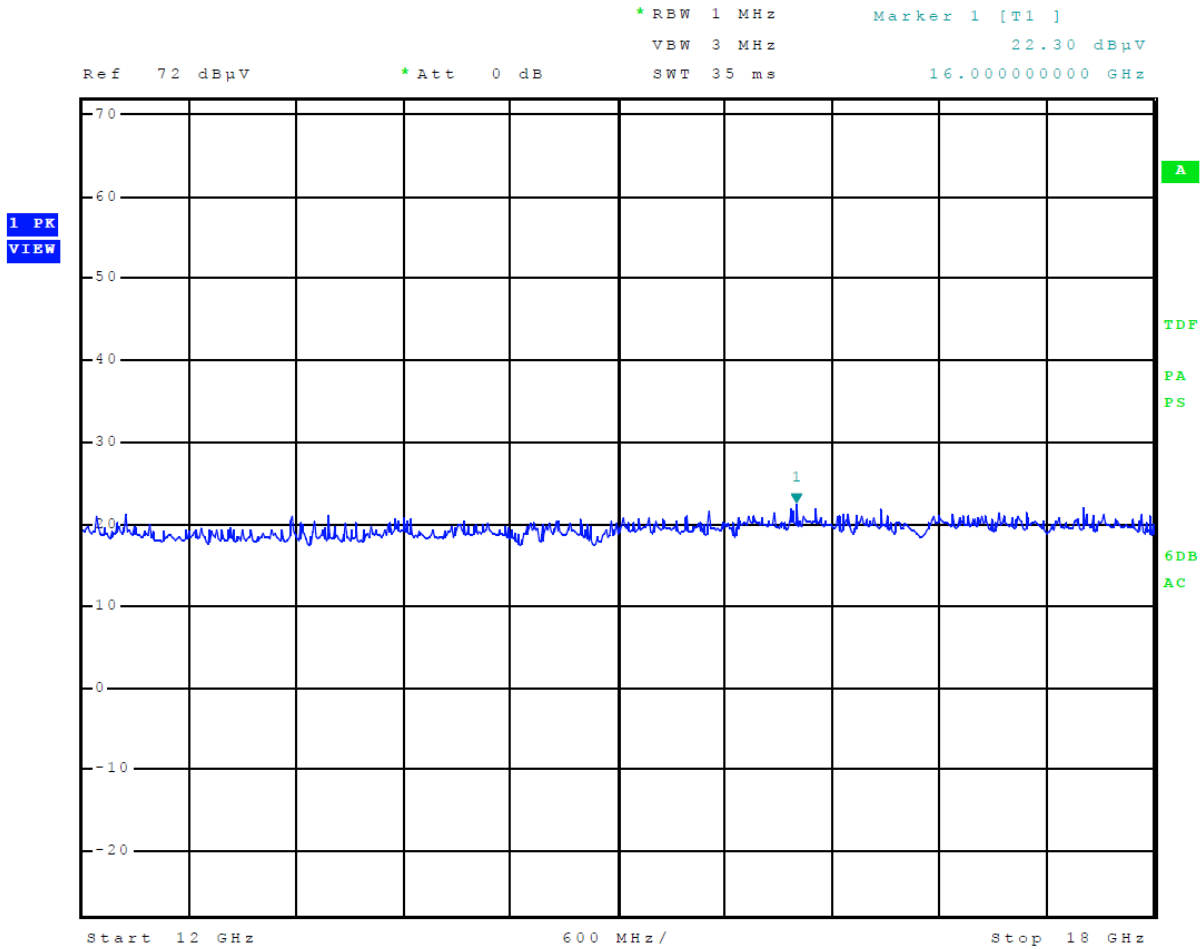


Figure 7 Plot of General Radiated Emissions (18-26.5 MHz)

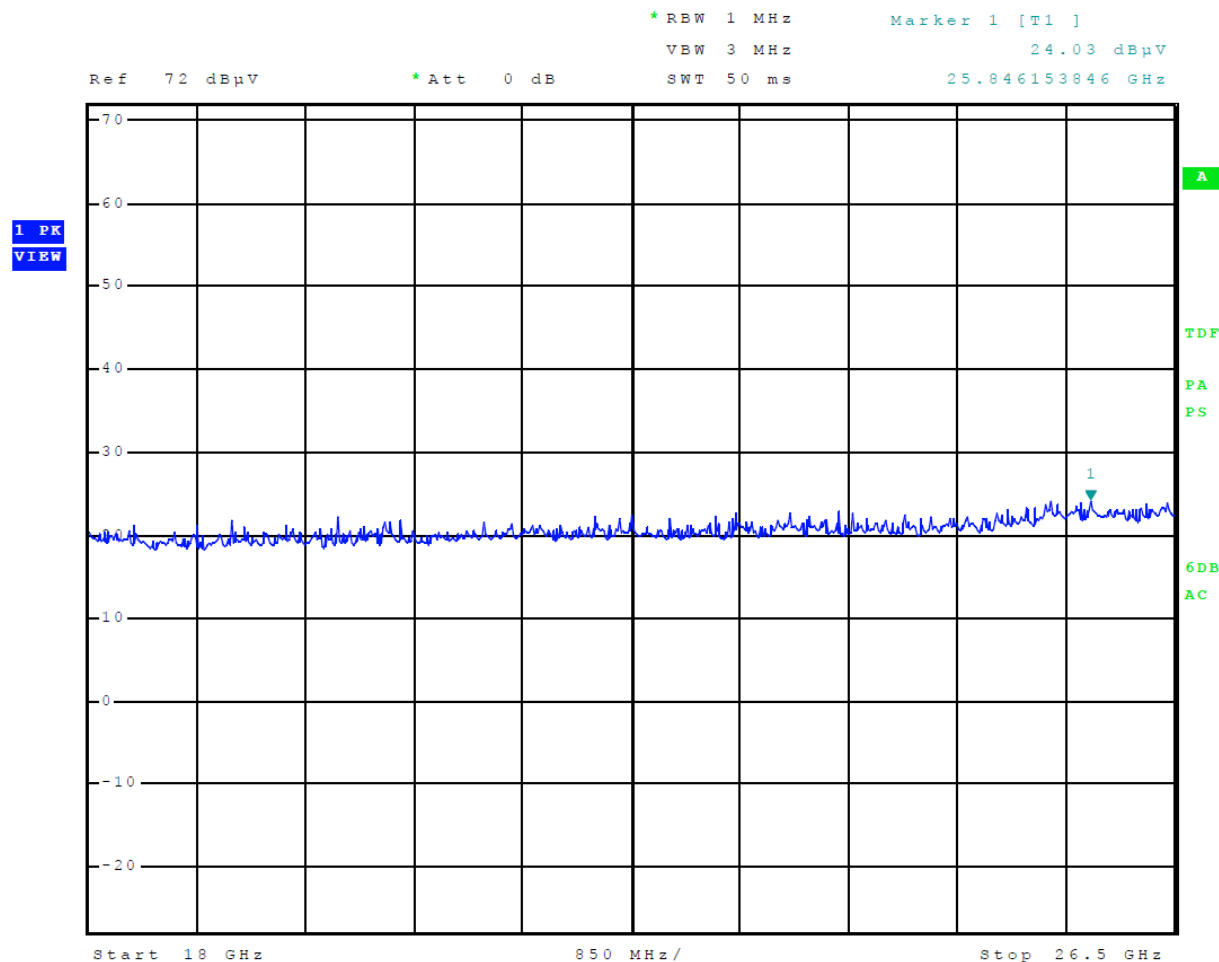
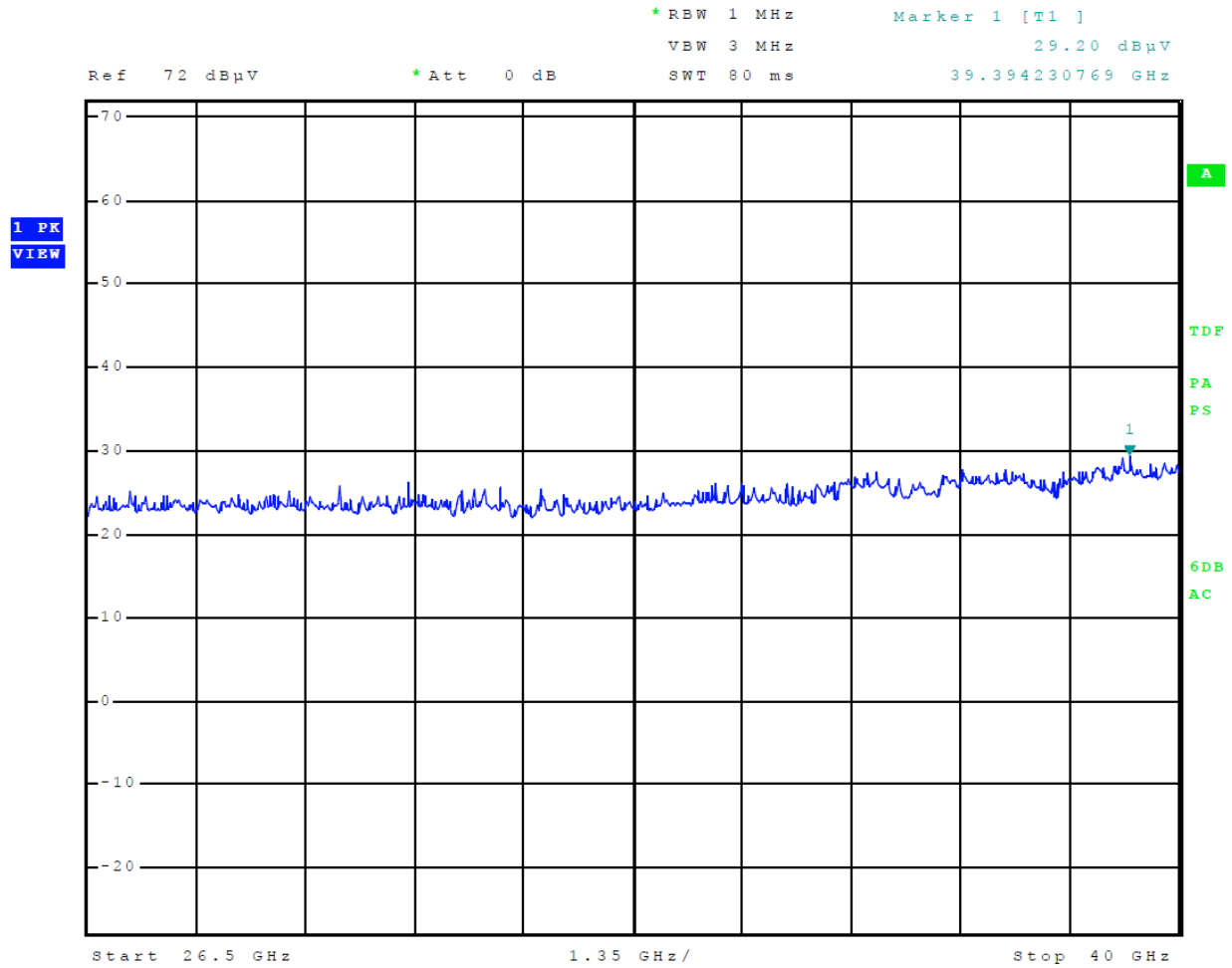


Figure 8 Plot of General Radiated Emissions (26.5-40 MHz)



8" Landscape Model

Table 3 General Radiated Emissions Data (Horizontal Polarization)

Frequency (MHz)		Peak (dB μ V/m)	Quasi-Peak (dB μ V/m)	Limit @ 3m (dB μ V/m)	Margin (dBm)
192.6		31.1	28.6	40	-11.4
483.9		32.3	25.9	47	-21.1
499.5		34.7	29.9	47	-17.1
624.9		34.7	31.1	47	-15.9
996.9		33.5	24.4	47	-22.6

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency range below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Figure 9 Plot of General Radiated Emissions (Horizontal Polarization)

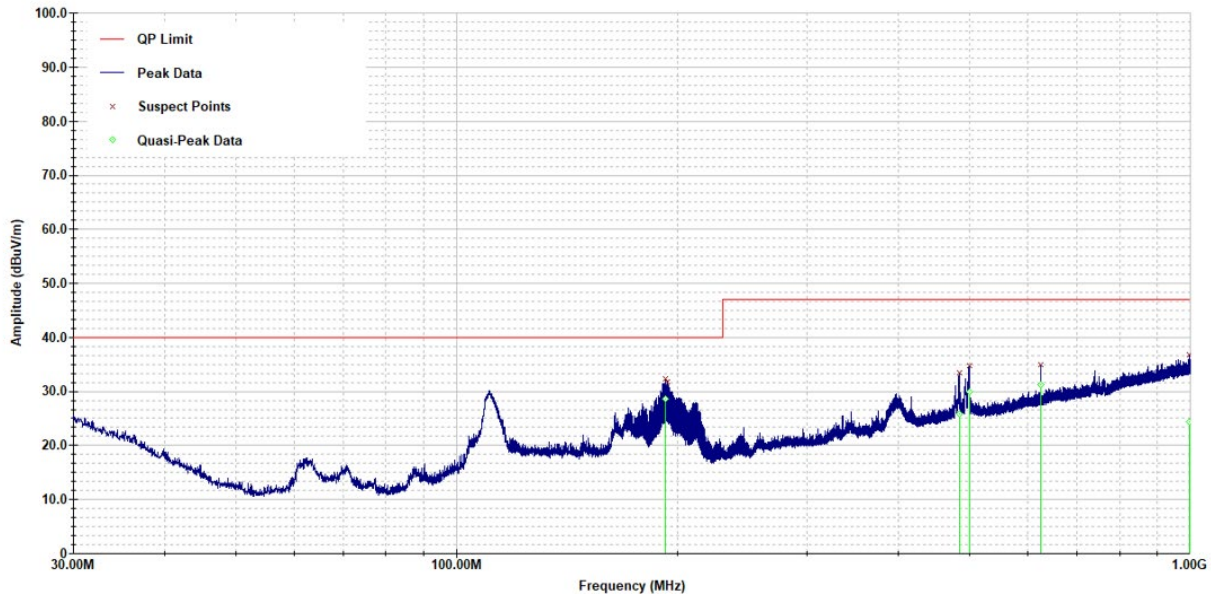


Table 4 General Radiated Emissions Data (Vertical Polarization)

Frequency (MHz)	Peak (dB μ V/m)	Quasi-Peak (dB μ V/m)	Limit @ 3m (dB μ V/m)	Margin (dBm)
192.6	30.9	28.5	40	-11.5
482.5	28.6	21.0	47	-26.0
499.2	31.3	25.8	47	-21.2
625.0	35.2	30.1	47	-16.9
998.5	32.9	25.0	47	-22.0

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency range below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Figure 10 Plot of General Radiated Emissions – Vertical Polarization

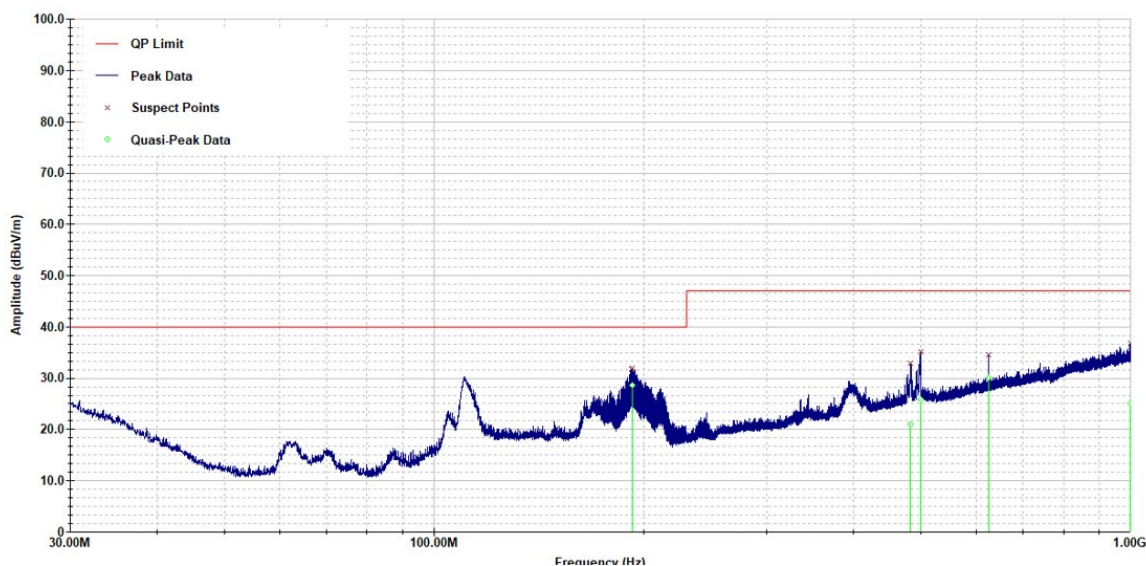


Figure 11 Plot of General Radiated Emissions (1-3 MHz)

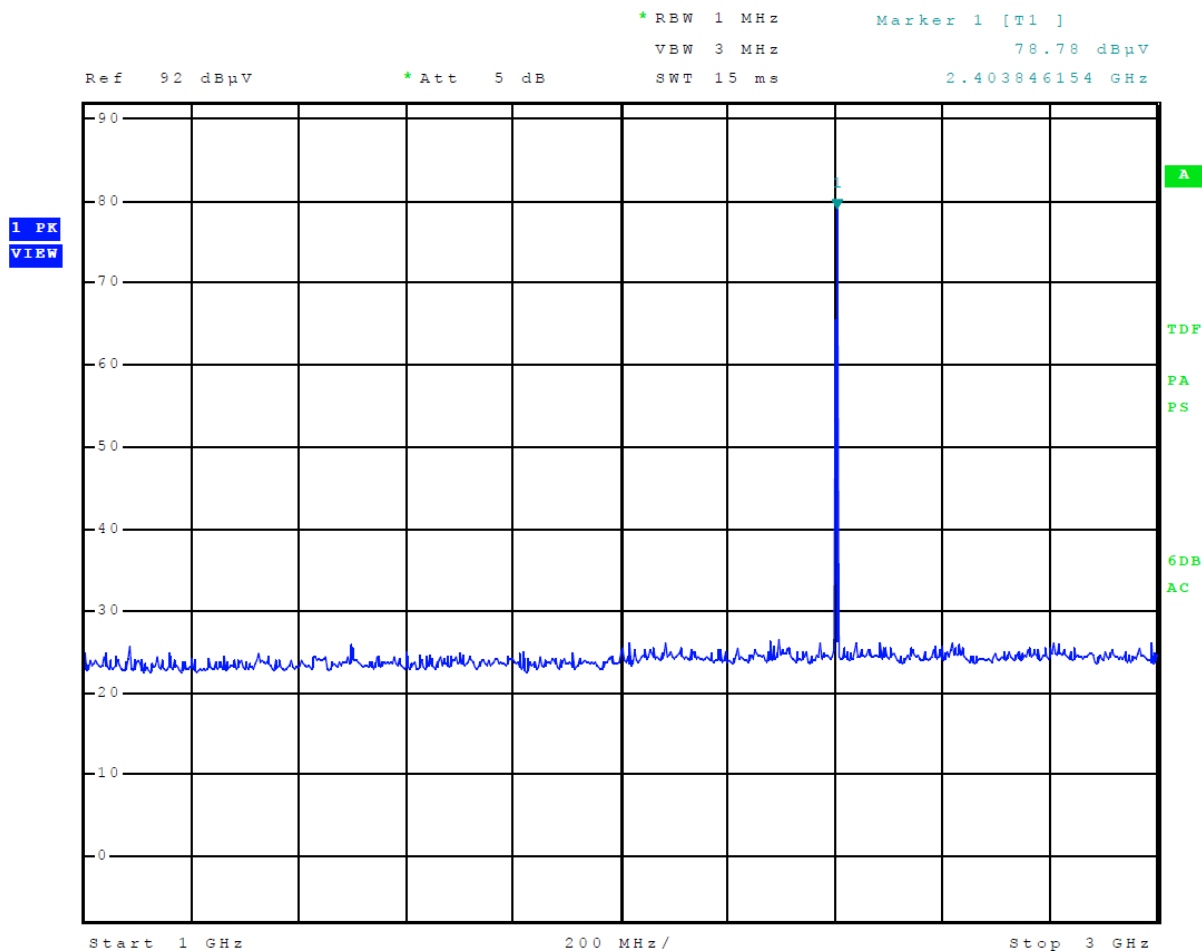


Figure 12 Plot of General Radiated Emissions (3-6 MHz)

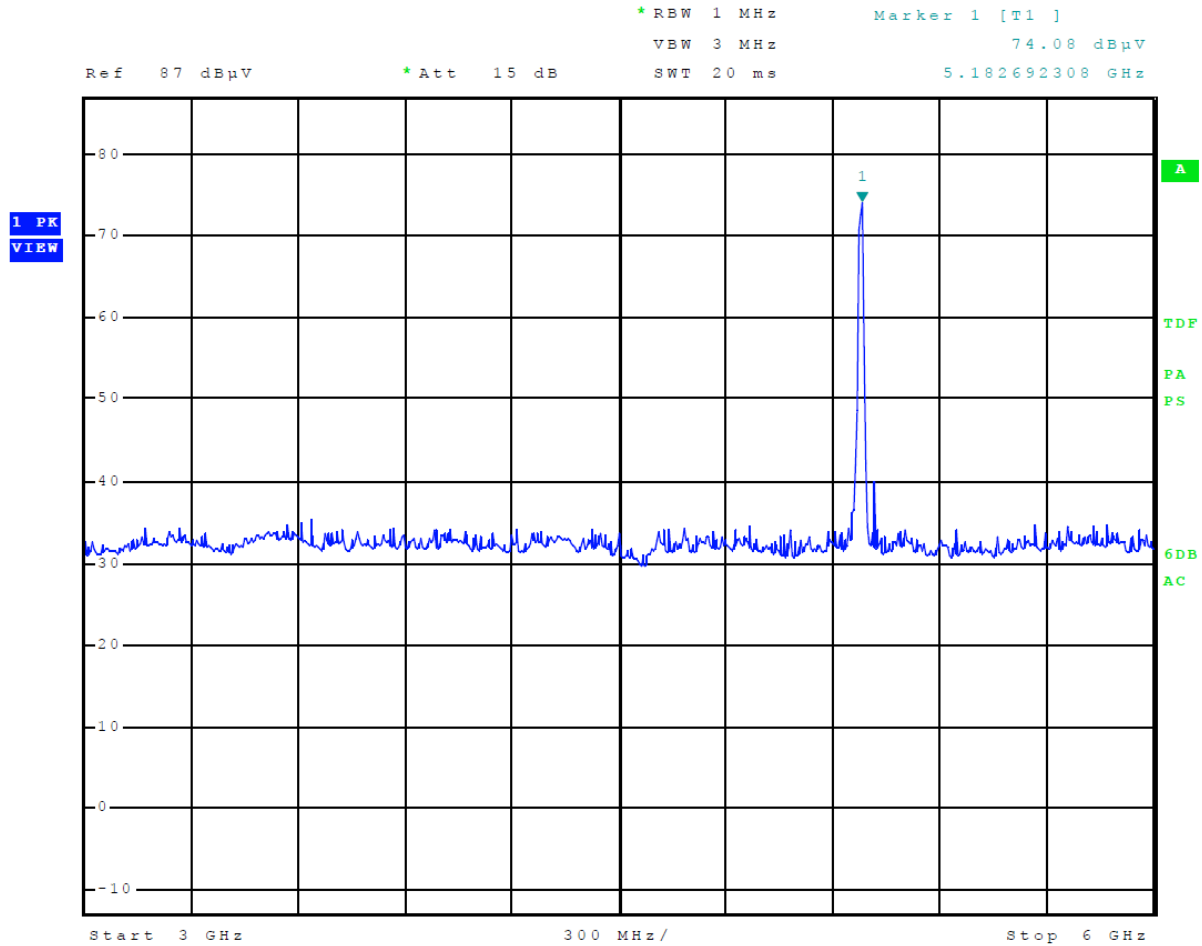


Figure 13 Plot of General Radiated Emissions (6-12 MHz)

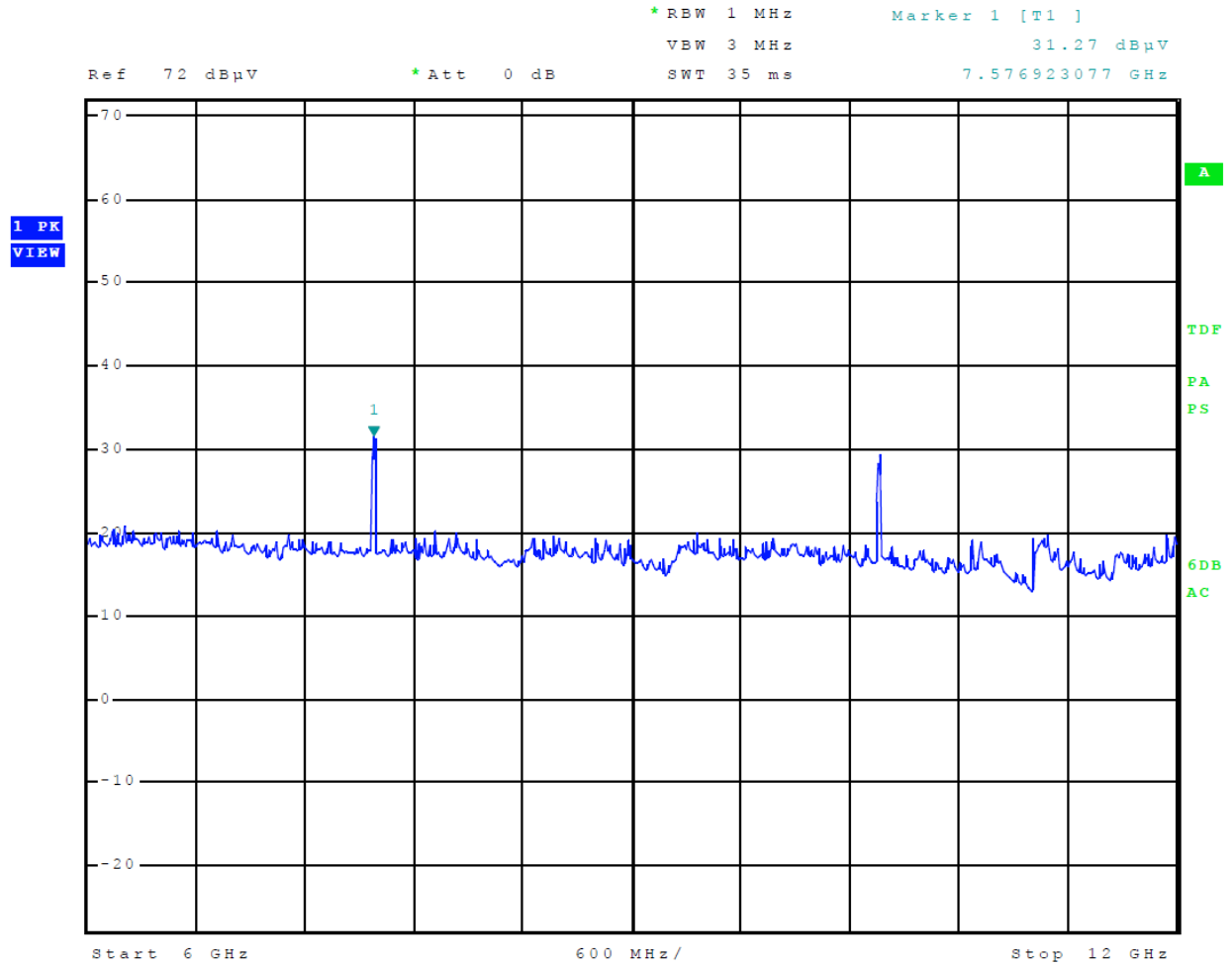


Figure 14 Plot of General Radiated Emissions (12-18 MHz)

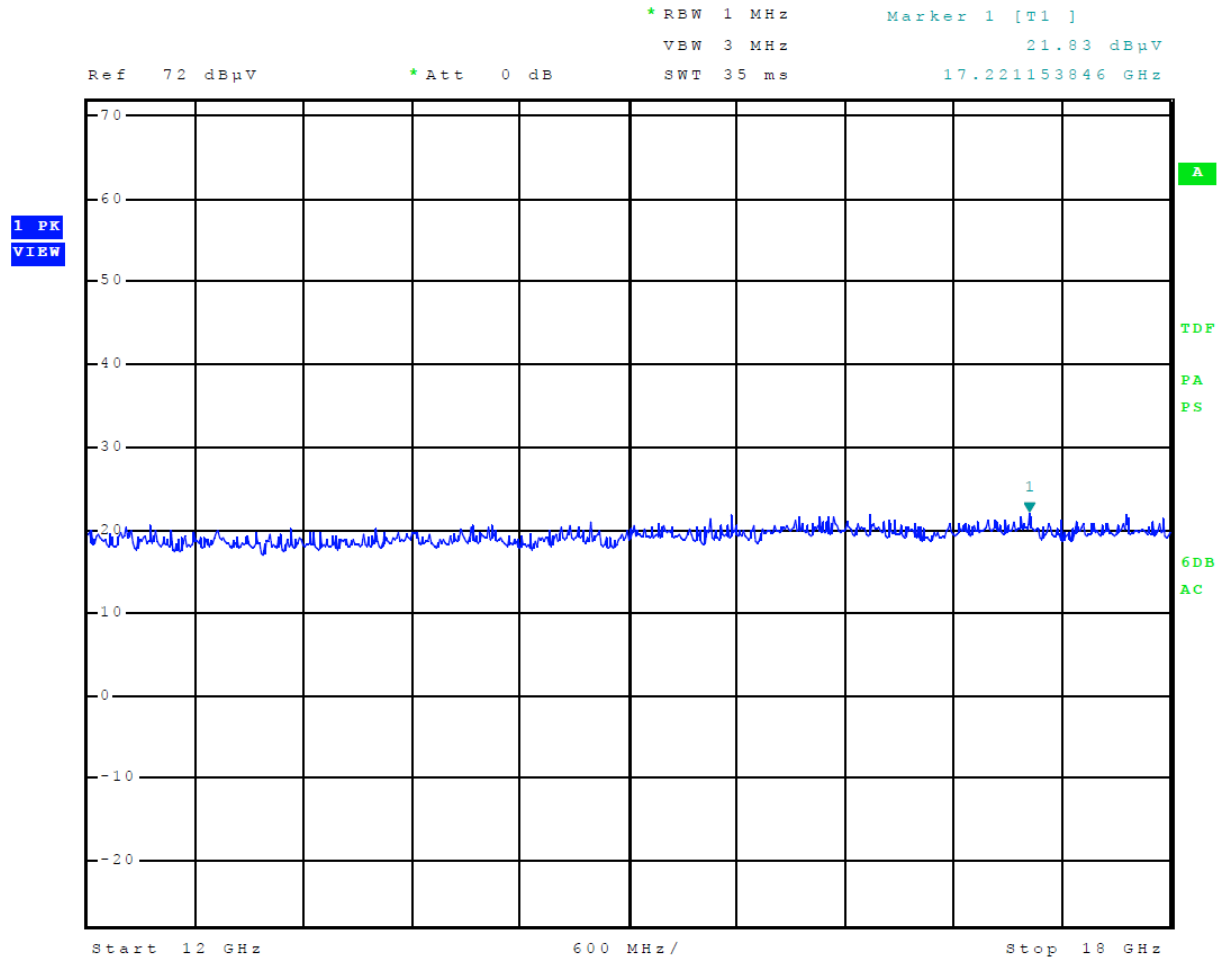


Figure 15 Plot of General Radiated Emissions (18-26.5 MHz)

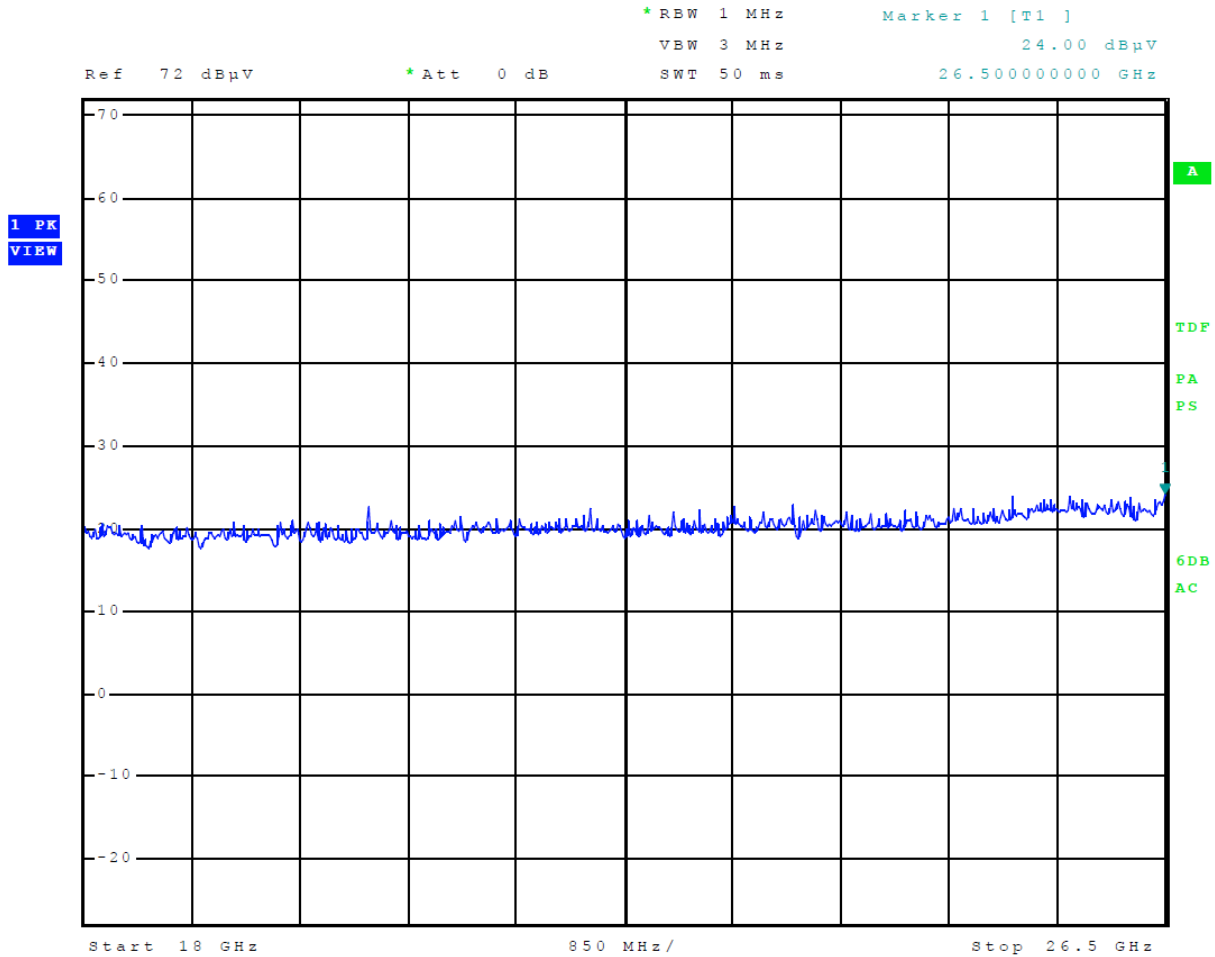
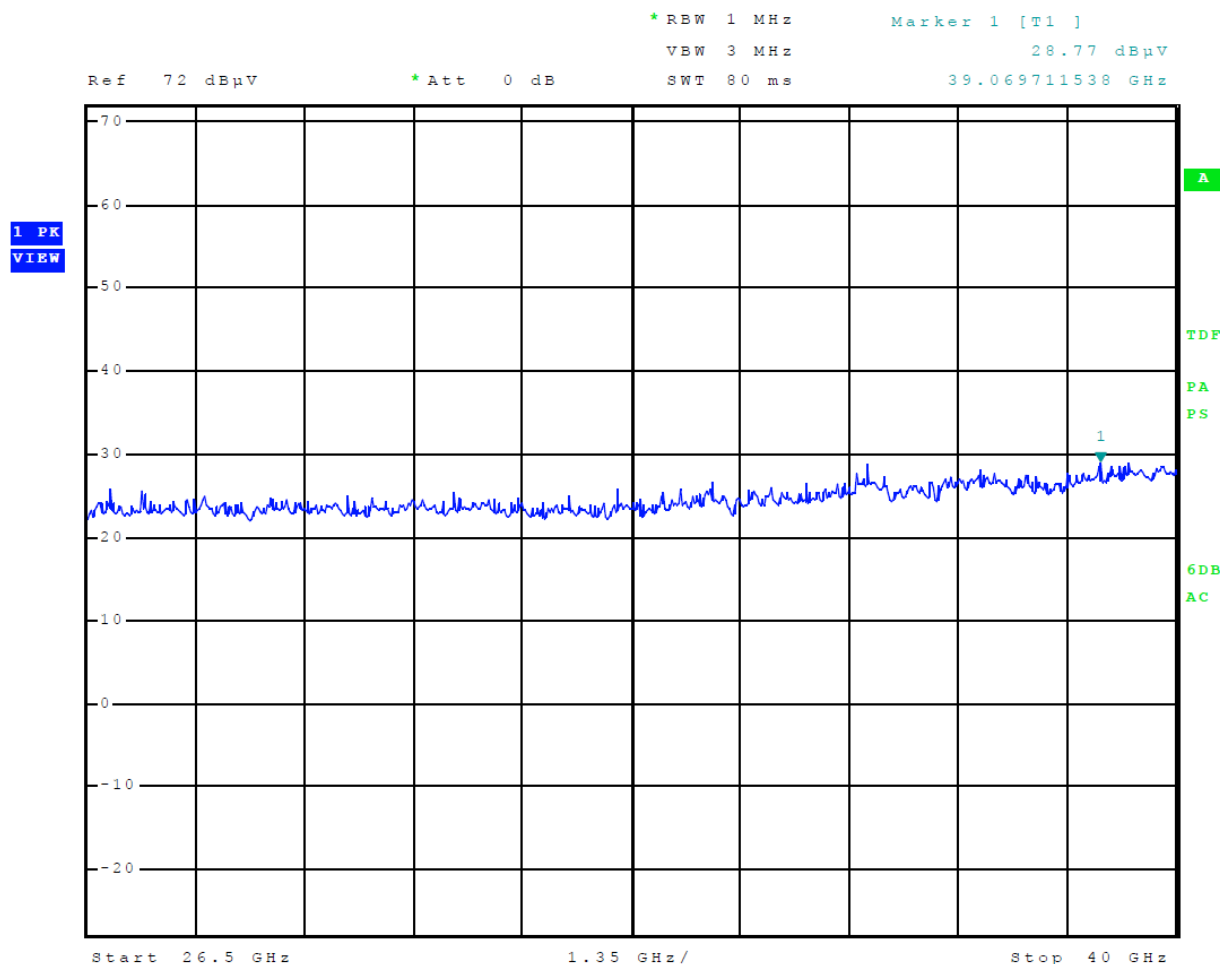


Figure 16 Plot of General Radiated Emissions (26.5-40 MHz)



Summary of Results for General Radiated Emissions

The EUT demonstrated compliance with the radiated emissions requirements of 47CFR Part 15C paragraph 15.209, Intentional Radiators. The EUT configuration demonstrated a minimum margin of -11.4 dB below the requirements. Other emissions were present with amplitudes at least 20 dB below the Limits.

Transmitter Emissions Data

The worst case transmitters for emissions in the original Test Report were selected for these measurements. The lowest and highest channels were measured out to their 10th harmonics and results shown below.

Operation in the Band 2400 – 2483.5 MHz

Test procedures of ANSI C63.10-2020 paragraph 6, and KDB 558074 were used during transmitter testing. Test sample 8” Portrait EUT #1 and 8” Landscape EUT #2 were provided for testing radiated emissions. All testing was performed via radiated measurements. Since the design modification did not affect the transmitters in any way, no conducted antenna port measurements were needed. The below data show the worst case results for Radios 1 and 2.

8" Portrait Model

Table 5 Transmitter Radiated Emissions Mode 6, Radio 1, 802.11g

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
2412.0	--	--	--	--	--	--	--
4824.0	45.2	31.3	45.4	31.3	54.0	-22.7	-22.7
7236.0	51.7	38.8	50.1	37.8	54.0	-15.2	-16.2
9648.0	53.7	41.1	53.4	41.1	54.0	-12.9	-12.9
12060.0	56.6	44.6	56.7	44.5	54.0	-9.4	-9.5
14472.0	58.3	46.4	59.2	46.3	54.0	-7.6	-7.7
16884.0	64.1	51.3	64.1	51.3	54.0	-2.7	-2.7
2462.0	--	--	--	--	--	--	--
4924.0	46.5	31.8	46.0	31.8	54.0	-22.2	-22.2
7386.0	50.4	37.7	50.1	37.7	54.0	-16.3	-16.3
9848.0	53.4	41.3	53.8	41.3	54.0	-12.7	-12.7
12310.0	56.8	44.9	57.1	45.0	54.0	-9.1	-9.0
14772.0	58.3	46.8	59.2	46.8	54.0	-7.2	-7.2
17234.0	62.6	50.2	62.2	50.2	54.0	-3.8	-3.8

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Table 6 Transmitter Radiated Emissions Mode 15, Radio 2, 802.11g

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
2412.0	--	--	--	--	--	--	--
4824.0	45.1	31.2	45.1	31.2	54.0	-22.8	-22.8
7236.0	50.2	37.7	50.2	37.7	54.0	-16.3	-16.3
9648.0	53.4	41.0	53.0	41.0	54.0	-13.0	-13.0
12060.0	56.7	44.6	57.2	44.6	54.0	-9.4	-9.4
14472.0	58.8	46.6	58.9	46.5	54.0	-7.4	-7.5
16884.0	63.0	51.1	63.7	51.2	54.0	-2.9	-2.8
2462.0	--	--	--	--	--	--	--
4924.0	45.8	31.7	45.4	31.7	54.0	-22.3	-22.3
7386.0	50.1	37.4	50.2	37.4	54.0	-16.6	-16.6
9848.0	53.7	41.3	53.0	41.3	54.0	-12.7	-12.7
12310.0	57.5	45.0	56.8	45.0	54.0	-9.0	-9.0
14772.0	58.9	46.8	58.5	46.8	54.0	-7.2	-7.2
17234.0	62.4	50.3	62.8	50.3	54.0	-3.7	-3.7

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

8" Landscape Model

Table 7 Transmitter Radiated Emissions Mode 6, Radio 1, 802.11g

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
2412.0	--	--	--	--	--	--	--
4824.0	45.3	31.3	45.4	31.3	54.0	-22.7	-22.7
7236.0	50.4	37.8	50.6	37.9	54.0	-16.2	-16.1
9648.0	53.7	41.2	54.1	41.2	54.0	-12.8	-12.8
12060.0	56.5	44.6	56.8	44.6	54.0	-9.4	-9.4
14472.0	59.3	44.6	56.8	46.5	54.0	-9.4	-7.5
16884.0	64.4	51.4	63.9	51.4	54.0	-2.6	-2.6
2462.0	--	--	--	--	--	--	--
4924.0	45.8	31.9	45.7	31.8	54.0	-22.1	-22.2
7386.0	50.6	37.5	50.8	37.6	54.0	-16.5	-16.4
9848.0	53.4	41.4	53.8	41.4	54.0	-12.6	-12.6
12310.0	57.6	45.1	57.4	45.2	54.0	-8.9	-8.8
14772.0	59.4	46.9	58.7	46.8	54.0	-7.1	-7.2
17234.0	62.9	50.4	62.2	50.4	54.0	-3.6	-3.6

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Table 8 Transmitter Radiated Emissions Mode 15, Radio 2, 802.11g

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
2412.0	--	--	--	--	--	--	--
4824.0	45.3	31.3	45.2	31.3	54.0	-22.7	-22.7
7236.0	50.5	37.8	50.3	37.7	54.0	-16.2	-16.3
9648.0	53.4	41.1	53.3	41.1	54.0	-12.9	-12.9
12060.0	57.2	44.7	57.7	44.6	54.0	-9.3	-9.4
14472.0	59.3	46.6	57.7	44.6	54.0	-7.4	-9.4
16884.0	63.4	51.3	63.6	51.3	54.0	-2.7	-2.7
2462.0	--	--	--	--	--	--	--
4924.0	45.5	31.9	45.6	31.8	54.0	-22.1	-22.2
7386.0	49.9	37.5	50.2	37.5	54.0	-16.5	-16.5
9848.0	53.1	41.4	53.4	41.4	54.0	-12.6	-12.6
12310.0	57.1	45.2	58.6	45.2	54.0	-8.8	-8.8
14772.0	58.8	46.8	60.0	46.8	54.0	-7.2	-7.2
17234.0	62.4	50.4	62.9	50.4	54.0	-3.6	-3.6

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Operation in the Band 5180 - 5240 MHz

Test procedures of ANSI C63.10-2020 paragraph 6, and KDB 558074 were used during transmitter testing. Test sample 8" Portrait EUT #1 and 8" Landscape EUT #2 were provided for testing radiated emissions. All testing was performed via radiated measurements. Since the design modification did not affect the transmitters in any way, no conducted antenna port measurements were needed.

8" Portrait Model

Table 9 Transmitter Radiated Emissions Mode 14, Radio 1, 802.11ac20

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
5180.0	--	--	--	--	--	--	--
10360.0	57.2	44.9	56.9	45.1	68.3	-23.4	-23.2
15540.0	62.5	49.3	62.5	49.7	68.3	-19.0	-18.6
20720.0	65.9	53.4	65.0	53.4	68.3	-14.9	-14.9
25900.0	66.5	53.7	68.4	54.1	68.3	-14.6	-14.2
5240.0	--	--	--	--	--	--	--
10480.0	56.5	46.1	57.0	44.2	68.3	-22.2	-24.1
15720.0	61.0	49.9	63.5	47.7	68.3	-18.4	-20.6
20960.0	66.7	54.0	65.5	54.9	68.3	-14.3	-13.4
26200.0	65.9	53.7	64.9	55.2	68.3	-14.6	-13.1
Band Edges							
5150.0	63.0	48.1	60.3	46.2	54.0	-5.9	-7.8
5350.0	58.6	46.0	59.4	45.4	54.0	-8.0	-8.6

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Table 10 Transmitter Radiated Emissions Mode 20, Radio 2, 802.11ac20

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
5180.0	--	--	--	--	--	--	--
10360.0	54.6	41.7	54.1	41.3	68.3	-26.6	-27.0
15540.0	59.0	46.2	59.1	46.2	68.3	-22.1	-22.1
20720.0	63.1	49.7	62.6	49.6	68.3	-18.6	-18.7
25900.0	62.8	49.6	62.6	49.5	68.3	-18.7	-18.8
5240.0	--	--	--	--	--	--	--
10480.0	54.2	41.1	54.3	40.8	68.3	-27.2	-27.5
15720.0	59.0	45.2	59.0	45.3	68.3	-23.1	-23.0
20960.0	62.6	49.6	62.8	49.6	68.3	-18.7	-18.7
26200.0	63.5	50.0	62.9	50.0	68.3	-18.3	-18.3
Band Edges							
5150.0	57.6	42.1	67.3	48.9	54.0	-11.9	-5.1
5350.0	58.6	43.9	58.2	43.9	54.0	-10.1	-10.1

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

8" Landscape Model

Table 11 Transmitter Radiated Emissions Mode 14, Radio 1, 802.11ac20

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
5180.0	--	--	--	--	--	--	--
10360.0	58.0	44.0	57.9	45.0	68.3	-24.3	-23.3
15540.0	60.5	49.0	61.2	48.1	68.3	-19.3	-20.2
20720.0	65.1	52.3	66.1	53.1	68.3	-16.0	-15.2
25900.0	67.2	53.1	67.5	53.2	68.3	-15.2	-15.1
5240.0	--	--	--	--	--	--	--
10480.0	56.8	44.7	57.9	44.2	68.3	-23.6	-24.1
15720.0	60.1	49.1	61.8	47.2	68.3	-19.2	-21.1
20960.0	65.0	53.1	66.1	53.1	68.3	-15.2	-15.2
26200.0	66.9	54.3	67.1	52.8	68.3	-14.0	-15.5
Band Edges							
5150.0	63.2	48.1	60.6	45.2	54.0	-5.9	-8.8
5350.0	58.3	45.3	59.9	46.2	54.0	-8.7	-7.8

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Table 12 Transmitter Radiated Emissions Mode 20, Radio 2, 802.11ac20

Frequency in MHz	Horizontal Peak (dBμV/m)	Horizontal Average (dBμV/m)	Vertical Peak (dBμV/m)	Vertical Average (dBμV/m)	Limit @ 3m (dBμV/m)	Horizontal Margin (dB)	Vertical Margin (dB)
5180.0	--	--	--	--	--	--	--
10360.0	54.1	41.2	54.3	41.2	68.3	-27.1	-27.1
15540.0	59.4	46.1	59.8	46.2	68.3	-22.2	-22.1
20720.0	62.6	49.6	62.5	49.6	68.3	-18.7	-18.7
25900.0	62.5	49.5	62.6	49.5	68.3	-18.8	-18.8
5240.0	--	--	--	--	--	--	--
10480.0	54.5	41.3	54.7	40.9	68.3	-27.0	-27.4
15720.0	58.7	45.2	58.2	45.2	68.3	-23.1	-23.1
20960.0	62.5	49.6	62.4	49.5	68.3	-18.7	-18.8
26200.0	63.0	50.0	63.0	50.0	68.3	-18.3	-18.3
Band Edges							
5150.0	64.0	47.0	60.8	44.7	54.0	-7.0	-9.3
5350.0	58.5	44.0	58.3	43.9	54.0	-10.0	-10.1

Other emissions present had amplitudes at least 20 dB below the limit. Peak and Quasi-Peak amplitude emissions are recorded for frequency below 1000 MHz. Peak and Average amplitude emissions are recorded for frequency range above 1000 MHz.

Summary of Results for Emissions of Intentional Radiator

The EUT demonstrated a minimum out of band radiated emission margin of at least 20 dB below requirements. The EUT demonstrated a minimum margin of -5.1 dB below general unintentional radiator equipment radiated emissions requirements. Other emissions were present with amplitudes at least 20 dB below the requirements. There were no other significantly measurable emissions observed other than those recorded in this report. There were no deviations or exceptions to the requirements.

The EUTs tested were observed in compliance with the radiated emissions requirements of 47CFR 2.1043 and KDB 178919 D01 Permissive Change Policy v06.

Annex

- Annex A Measurement Uncertainty Calculations
- Annex B Test Equipment
- Annex C Laboratory Certificate of Accreditation

Annex A Measurement Uncertainty Calculations

The measurement uncertainty was calculated for all measurements listed in this test report according To CISPR 16–4. Result of measurement uncertainty calculations are recorded below. Component and process variability of production devices similar to those tested may result in additional deviations. The manufacturer has the sole responsibility of continued compliance.

Measurement	Expanded Measurement Uncertainty $U_{(lab)}$
3 Meter Horizontal 0.009-1000 MHz Measurements	4.16
3 Meter Vertical 0.009-1000 MHz Measurements	4.33
3 Meter Measurements 1-18 GHz	5.46
3 Meter Measurements 18-40 GHz	5.16
10 Meter Horizontal Measurements 0.009-1000 MHz	4.15
10 Meter Vertical Measurements 0.009-1000 MHz	4.32
AC Line Conducted	1.75
Antenna Port Conducted power	1.17
Frequency Stability	1.00E-11
Temperature	1.6°C
Humidity	3%

Annex B Test Equipment

Equipment	Manufacturer	Model (SN)	Band	Cal Date(m/d/y)	Due
☒ LISN	FCC	FCC-LISN-50-25-10(1PA) (160611)	.15-30MHz	3/20/2025	3/20/2026
☐ Cable	Huber & Suhner Inc.	Sucoflex102ea(L10M)(303073)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(1.5M)(303069)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Belden	RG-58 (L1-CAT3-11509)	9kHz-30 MHz	9/9/2025	9/9/2026
☒ Antenna	Com Power	AL-130 (121055)	.001-30 MHz	9/2/2025	9/2/2026
☐ Antenna:	EMCO	6509	.001-30 MHz	9/16/2024	9/16/2026
☒ Antenna	ARA	BCD-235-B (169)	20-350MHz	9/2/2025	9/2/2026
☒ Antenna	Sunol	JB-6 (A100709)	30-1000 MHz	9/2/2025	9/2/2026
☐ Antenna	ETS-Lindgren	3147 (40582)	200-1000MHz	9/16/2024	9/16/2026
☒ Antenna	ETS-Lindgren	3117 (200389)	1-18 GHz	3/17/2025	3/17/2027
☒ Antenna	Com Power	AH-118 (10110)	1-18 GHz	9/16/2024	9/16/2026
☒ Antenna	Com Power	AH-1840 (101046)	18-40 GHz	3/17/2025	3/17/2027
☒ Analyzer	Rohde & Schwarz	ESU40 (100108)	20Hz-40GHz	7/9/2025	7/9/2026
☒ Analyzer	Rohde & Schwarz	ESW44 (101534)	20Hz-44GHz	1/21/2025	1/21/2026
☐ Analyzer	Rohde & Schwarz	FS-Z60, 90, 140, and 220	40GHz-220GHz	12/22/2017	12/22/2027
☐ Amplifier	Com-Power	PA-010 (171003)	100Hz-30MHz	9/9/2025	9/9/2026
☐ Amplifier	Com-Power	CPPA-102 (01254)	1-1000 MHz	9/9/2025	9/9/2026
☒ Amplifier	Com-Power	PAM-118A (551014)	0.5-18 GHz	9/9/2025	9/9/2026
☒ Amplifier	Com-Power	PAM-840A (461328)	18-40 GHz	9/9/2025	9/9/2026
☒ Pwr Sensor	Rohde & Schwarz	NRP33T	0.05-33 GHz	9/9/2025	9/9/2026
☒ Generator	Rohde & Schwarz	SMBV100A6 (260771)	20Hz-6 GHz	3/19/2025	3/19/2026
☐ RF Filter	Micro-Tronics	BRC50722 (009).9G notch	30-18000 MHz	3/21/2025	3/21/2026
☐ RF Filter	Micro-Tronics	HPM50117 (063) 3G HPF	30-18000 MHz	3/21/2025	3/21/2026
☒ RF Filter	Micro-Tronics	BRM50702 (172) 2G notch	30-18000 MHz	3/21/2025	3/21/2026
☒ RF Filter	Micro-Tronics	BRC50703 (G102) 5G notch	30-18000 MHz	3/21/2025	3/21/2026
☒ RF Filter	Micro-Tronics	BRC50705 (024) 5G notch	30-18000 MHz	3/21/2025	3/21/2026
☐ Attenuator	Fairview	SA6NFFNF100W-40 (1625)	30-18000 MHz	3/21/2025	3/21/2026
☒ Attenuator	Mini-Circuits	VAT-3W2+ (1445)	30-6000 MHz	3/21/2025	3/21/2026
☒ Attenuator	Mini-Circuits	VAT-3W2+ (1735)	30-6000 MHz	3/21/2025	3/21/2026
☒ Attenuator	Mini-Circuits	VAT-6W2+ (1438)	30-6000 MHz	3/21/2025	3/21/2026
☒ Weather station	Davis	6152 (A70927D44N)		11/4/2025	11/4/2026

<u>Equipment</u>	<u>Manufacturer</u>	<u>Model (SN)</u>	<u>Band</u>	<u>Cal Date(m/d/y)</u>	<u>Due</u>
☒ Frequency Counter: Leader		LDC-825 (8060153)		3/19/2025	3/19/2026
☐ ISN	Com-Power	Model ISN T-8 (600111)		3/19/2025	3/19/2026
☒ LISN:	Com-Power	Model LI-220A		9/16/2024	9/16/2026
☐ LISN:	Com-Power	Model LI-550C		9/16/2024	9/16/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(1.5M)(303072)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(L1M)(281183)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(4M)(281184)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Huber & Suhner Inc.	Sucoflex102ea(L10M)(317546)	9kHz-40 GHz	9/9/2025	9/9/2026
☒ Cable	Time Microwave	4M-750HF290-750 (L4M)	9kHz-24 GHz	9/9/2025	9/9/2026
☒ Cable	Mini-Circuits	KBL-2M-LOW+ (23090329)	9kHz-40 GHz	3/22/2025	3/22/2026
☒ Analyzer	HP	8562A (3051A05950)	9kHz-125GHz	3/20/2025	3/20/2026
☐ Antenna:	Solar	9229-1 & 9230-1		2/5/2025	2/5/2026
☐ CDN:	Com-Power	Model CDN M325E		9/16/2024	9/16/2026
☐ Oscilloscope Scope: Tektronix		MDO 4104		2/5/2025	2/5/2026
☐ EMC Transient Generator HVT		TR 3000		2/5/2025	2/5/2026
☐ AC Power Source (Ametech, California Instruments)				2/5/2025	2/5/2026
☒ Field Intensity Meter: EFM-018				2/5/2025	2/5/2026
☒ ESD Simulator: MZ-15				2/5/2025	2/5/2026
☐ Injection Clamp Luthi Model EM101				not required	
☐ R.F. Power Amp ACS 230-50W				not required	
☐ R.F. Power Amp EIN Model: A301				not required	
☐ R.F. Power Amp A.R. Model: 10W 1010M7				not required	
☐ R.F. Power Amp A.R. Model: 50U1000				not required	
☒ Temperature Chamber				not required	
☒ Shielded Room				not required	

Annex C Laboratory Certificate of Accreditation

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®] **ILAC-MRA**

Certificate of Accreditation to ISO/IEC 17025:2017

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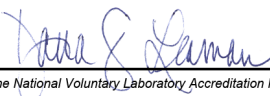
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Electromagnetic Compatibility & Telecommunications

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique on ISO/IEC 17025).*

2025-03-11 through 2026-03-31
Effective Dates

 
For the National Voluntary Laboratory Accreditation Program

United States Department of Commerce
National Institute of Standards and Technology

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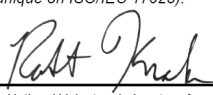
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management system (refer to joint ISO-ILAC-IAF Communique on ISO/IEC 17025).*

2026-03-17 through 2027-03-31
Effective Dates

 
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Revision 2

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