NVLAP TESTING
NVLAP Lab Code 200087-0

Rogers Labs, a division of The Compatibility Center LLC

7915 Nieman Rd.
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47CFR, PART 15C - Intentional Radiators
47CFR Paragraph 15.247 and
Industry Canada RSS-247 Issue 4 and RSS-GEN Issue 5

Application For Grant of Certification
Model: SmartPass Signal Beacon

2402-2480 MHz Digital Transmission System (DTS)

FCC ID: FIHSPSBPT15V1
IC: 1584A-SPSBRSS247

Transcore

Amtech Technology Center
8600 Jefferson Street, NE
Albuquerque, NM 87113

Test Report Number: 260415A
Test Date: April 15, 2026 – May 27, 2026

Authorized Signatory:

Patrick Powell
Rogers Labs, a division of The Compatibility Center LLC
FCC Designation Number: US5305
FCC Registration Number: 315994
ISED Company Number: 32275
ISED CAB Identifier: US0096

Revisions

Revision 1 Issued July 20, 2026 – Initial Release.
Revision 2 Issued July 22, 2026 – incorporated review findings.
Revision 3 Issued August 14, 2026 – updated the IC ID#.

Executive Summary

The following information is submitted for consideration in obtaining Grant of Certification for License Exempt Digital Transmission System Intentional Radiator operating under Code of Federal Regulations Title 47 (47CFR) Part 15C paragraph 15.247, Industry Canada RSS-247 Issue 4, and RSS-GEN Issue 5, operation in the 2400 – 2483.5 MHz band.

Name of Applicant: Transcore
Amtech Technology Center
8600 Jefferson Street, NE
Albuquerque, NM 87113

HVIN: SPSBV1
PMN: SmartPass Signal Beacon
FCC ID: FIHSPSBPT15V1 IC: 1584A-SPSBRSS247
Operating Frequency Range: 2402-2480 MHz

SmartPass Signal Beacon was chosen for transmitter configuration testing and used for final measurements.

Operational communication modes 1 through 2:

Mode #	Standard	Power (dBm)	Power (Watts)	99% OBW (kHz)	6-dB OBW (kHz)
1A	BT BLE (GMSK)	11.7	0.015	1087.6	800.3
2A	BT BLE (GMSK)	12.1	0.016	1097.5	804.0

This report addresses EUT Operations as Digital Transmission System using transmitter modulations in modes 1 through 2. Note, the production device utilizes a non-user accessible integral 4x4 Circularly Polarized Patch Array antenna system with max 6.08 dBi gain.

Opinion / Interpretation of Results

Tests Performed	Margin (dB)	Results
Restricted Band Emissions 15.205, RSS-GEN, RSS-247	-2.6	Complies
AC Line Emissions as per 47CFR 15.207, RSS-GEN 8.8	-23.2	Complies
Radiated Emissions 47 CFR 15.209, RSS-GEN 8.9	-9.1	Complies
Harmonic Emissions per 47CFR 15.247, RSS-247	-2.6	Complies
Power Spectral Density per 47CFR 15.247, RSS-247	-5.3	Complies

Tests performed include:

47CFR 15.247

(a) (2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one-Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the *maximum conducted output power* is the highest total transmit power occurring in any mode.

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

6. Requirements for frequency hopping systems, digital transmission systems and hybrid systems operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850MHz

This section sets out the requirements for frequency hopping systems (FHS),digital transmission systems (DTS) and hybrid systems.

6.3 Digital transmission systems (DTS)

DTS include systems that employ digital modulation techniques resulting in spectral characteristics similar to direct sequence systems.

DTS operating in the band 5725-5850 MHz shall meet the requirements of section7 of this document.

6.3.1 Bandwidth and conducted power spectral density

The following applies to the bands 902-928 MHz and 2400-2483.5 MHz:

a) the minimum 6 dB bandwidth shall be 500 kHz.
b) the transmitter power spectral density conducted from the transmitter to the antenna(s) shall not be greater than 8 dBm/3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 6.3.2 The power spectral density shall be determined using the same method as is used to determine the maximum conducted output power.

6.3.2 Transmitter output power and e.i.r.p. requirements

For DTS operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W.

For DTS operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W, except as provided in section 6.5 a) and b).

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power.

6.6 Unwanted Emissions

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement – provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

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Equipment Tested

HVIN: SPSB1

Model: **SmartPass Signal Beacon**

Transcore
Amtech Technology Center
8600 Jefferson Street, NE
Albuquerque, NM 87113

Equipment Under Test	**Model ~ P/N**	**S/N**
Radiated & Antenna Port EUT	SmartPass Signal Beacon	051205-01
Support Equipment		
Power Over Ethernet Injector	HMS07021	224002673D
Ethernet cable 1	N/A	N/A
Ethernet cable 2	N/A	N/A
Ethernet cable 3	N/A	N/A

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

Software (FVIN): FccCwModTest_1.04b;
Antenna: 2.4GHz 4x4 Circularly Polarized Patch Array (max 6.08 dBi gain)

Equipment Operational Modes

DTS Modes:

Mode #	Standard
1A	BT BLE (GMSK)
2A	BT BLE (GMSK)

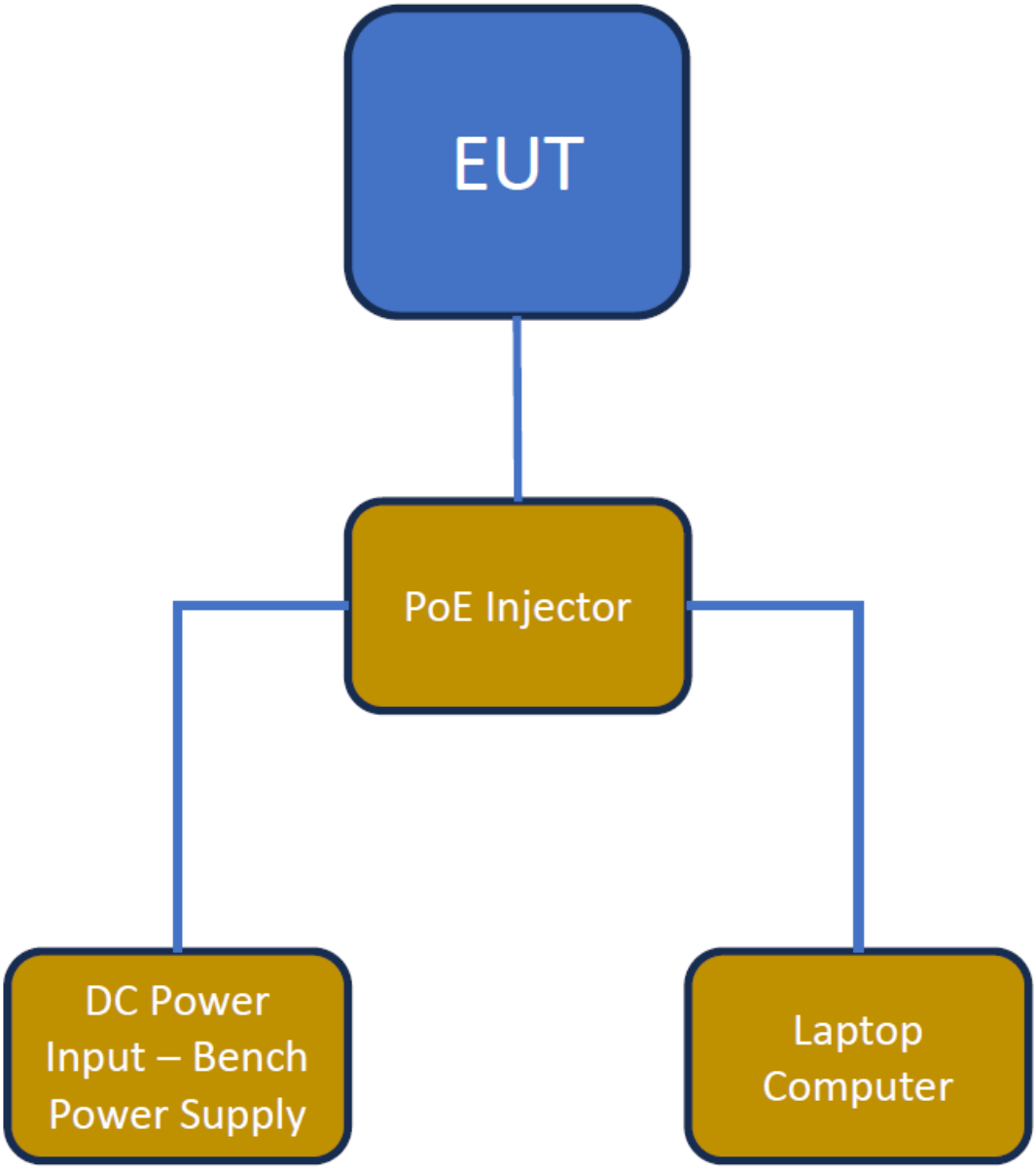
Equipment Function

The EUT is engineered to operate as part of an integrated tolling ecosystem, working in coordination with both the SmartPass Lane Beacon and the SmartPass mobile application. Its primary function is to wake up and keep awake the mobile app as vehicles enter and pass through the toll zone, enabling reliable user and vehicle identification.

The transmitter documented in this report provides operation in the 2400-2483.5 MHz band. The transmitter is a Bluetooth Low Energy beacon advertising over three Bluetooth channels, 37 (2402 MHz), 38 (2426 MHz) and 39 (2480 MHz).

The unit operates from externally supplied power over ethernet (POE). There are no provision for alternative power source. The design utilizes internal fixed antenna and offers no provision for antenna replacement or modification. Operation of the design utilizes standardized Bluetooth Low Energy advertising protocol, modulation and packet structure. The test sample was modified from production equipment for testing purposes. The modification involved a special firmware load to allow full control of the EUT's radio behavior. Two different test samples **Radiated** and **Antenna Port EUT** were provided for testing radiated and antenna port conducted emissions, respectively. The **Antenna Port EUT** sample was modified by replacing the internal antenna with a 50-ohm antenna port connector and attenuator for testing purposes. Test results in this report relate only to the products described in this report.

Equipment Configuration



Application for Certification

(1) Manufacturer: Transcore
Amtech Technology Center
8600 Jefferson Street, NE
Albuquerque, NM 87113

(2) Identification: HVIN: SPSBV1
FCC ID: FIHSPSBPT15V1 IC: 1584A-SPSBRSS247

(3) Instruction Book:
Refer to Exhibit for Instruction Manual.

(4) Description of Circuit Functions:
Refer to Exhibit of Operational Description.

(5) Block Diagram with Frequencies:
Refer to Exhibit of Operational Description.

(6) Report of Measurements:
Report of measurements follows in this Report.

(7) Photographs: Construction, Component Placement, etc.:
Refer to Exhibit for photographs of equipment.

(8) List of Peripheral Equipment Necessary for operation. The equipment operates from external direct current power provided from installation vehicle. The EUT provides interface ports for power, loads and communications as presented in this filing.

(9) Transition Provisions of 47CFR 15.37 are not requested.

(10) Not Applicable. The unit is not a scanning receiver.

(11) Not Applicable. The EUT does not operate in the 59 – 64 GHz frequency band.

(12) The equipment is not software defined and this section is not applicable.

(13) Applications for certification of U-NII devices in the 5.15-5.35 GHz and the 5.47-5.85 GHz bands must include a high-level operational description of the security procedures that control the radio frequency operating parameters and ensure that unauthorized modifications cannot be made. This requirement is not applicable to this DTS device.

(14) Contain at least one drawing or photograph showing the test set-up for each of the required types of tests applicable to the device for which certification is requested. These drawings or photographs must show enough detail to confirm other information contained in the test report. Any photographs used must be focused originals without glare or dark spots and must clearly show the test configuration used. This information is provided in this report and Test Setup Exhibits provided with the application filing.

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Environmental Conditions

Ambient Temperature	24.0° C
Relative Humidity	40%
Atmospheric Pressure	1017.9 mb

Test Site Location

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: 32275, FCC Registration Number: 315994, CAB Identifier: US0096, ISED Company Number: 32275

NVLAP Accreditation Lab code 200087-0

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

Statement of Modifications and Deviations

No modifications to the EUT were required for the equipment to demonstrate compliance with the 47CFR Part 15C, RSS-247, Issue 4 (July 2025), and RSS-Gen, Issue 5 + Amendment 2 (February 2021) emission requirements. There were no deviations to the specifications.

Applicable Standards

The following information is submitted in accordance with the eCFR (electronic Title 47 Code of Federal Regulations) (47CFR), dated May 5, 2025: Part 2, Subpart J, Part 15C Paragraph 15.247, RSS-247, Issue 4 (July 2025), and RSS-Gen, Issue 5 + Amendment 2 (February 2021). Test procedures used are the established Methods of Measurement of Radio-Noise Emissions as described in ANSI C63.10-2020. This report documents compliance for the EUT operations as Digital Transmission Systems operation.

Intentional Radiators

The following information is submitted supporting compliance with the requirements of 47CFR, Subpart C, paragraph 15.247, Industry Canada RSS-247 Issue 4, and RSS-GEN Issue 5.

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.

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-µHy choke. EMI was coupled to the spectrum analyzer through a 0.1 µF 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.

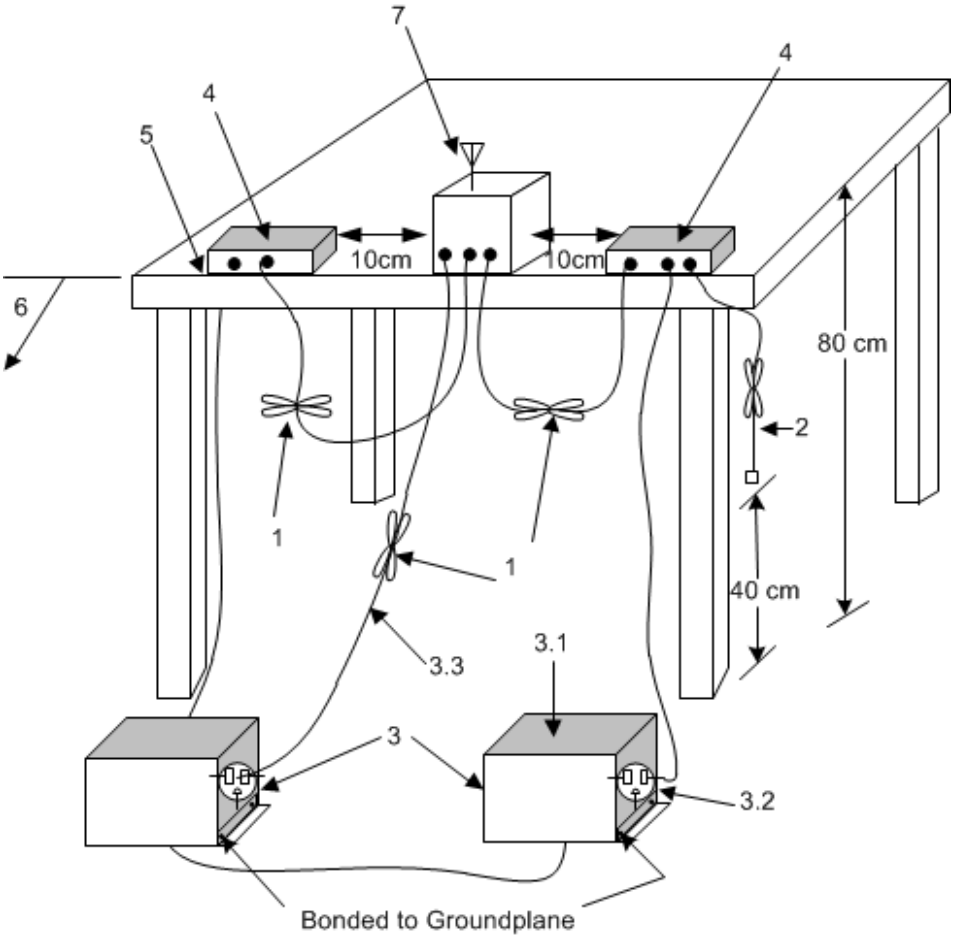
Radiated Emission Procedure

Radiated emissions testing was performed as required in 47CFR 15C, RSS-247 Issue 4, 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. The frequency spectrum from 9 kHz to 25,000 MHz was searched for emissions during preliminary investigation. 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

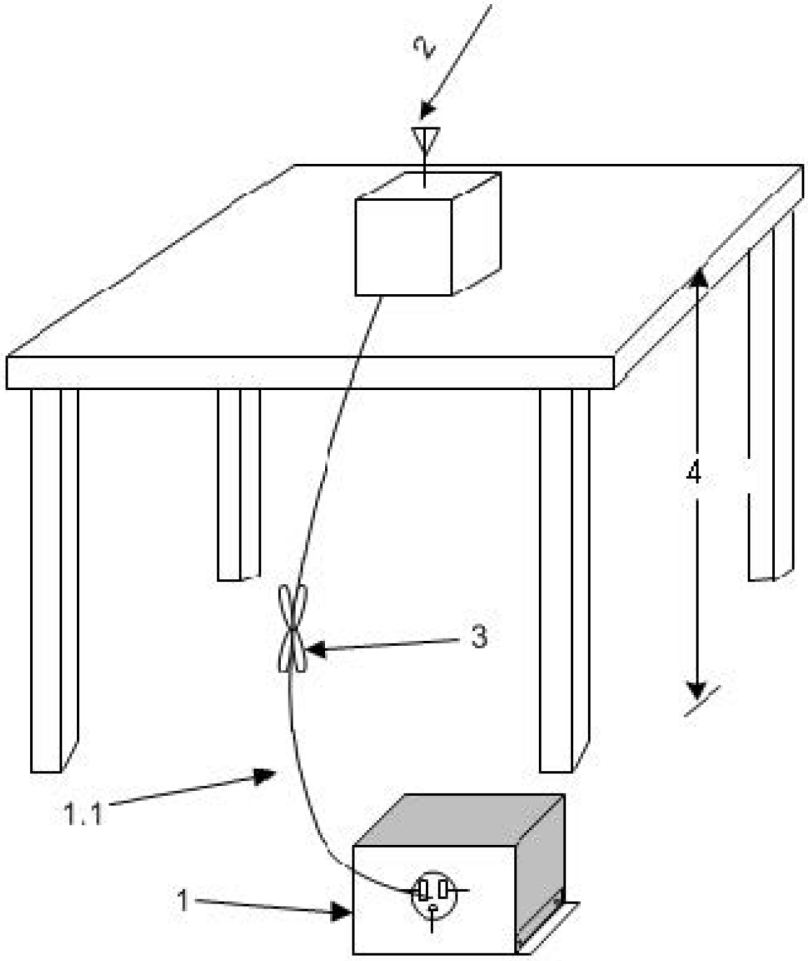
The EUT was assembled as required for operation placed on a benchtop. This configuration provided the ability to connect test equipment to the provided test antenna port Antenna Port conducted emissions testing was performed presented in the regulations and specified in ANSI C63.10-2020. Testing was 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

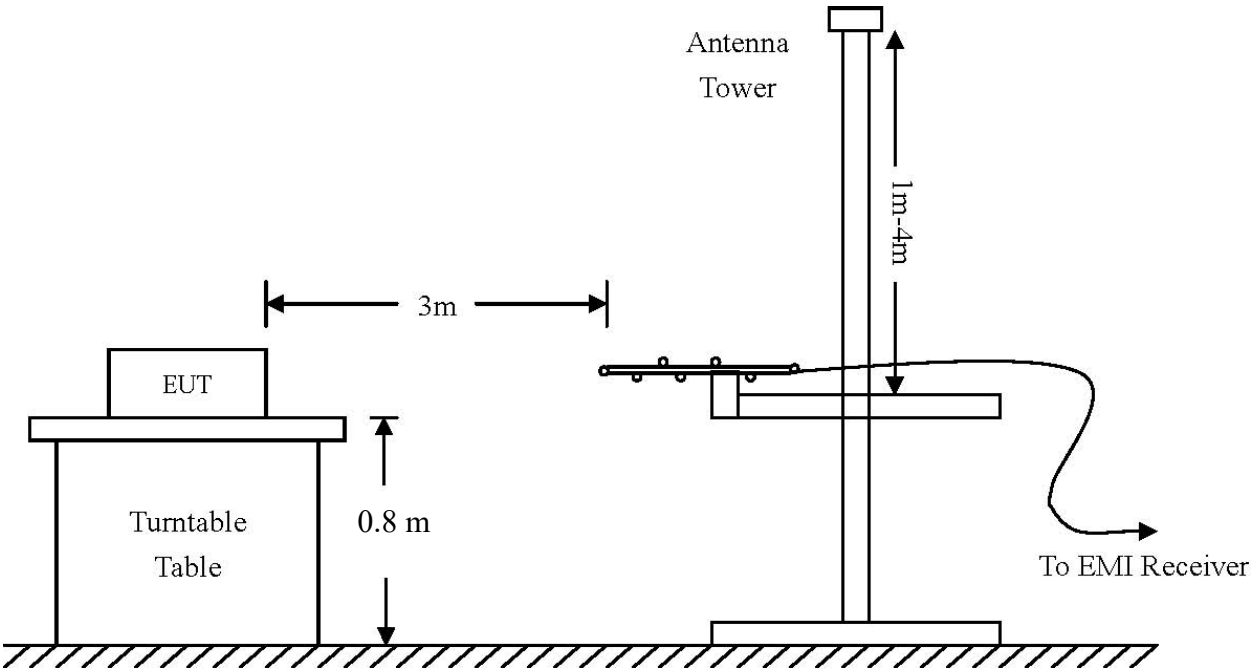
Diagram 2 Test arrangement for radiated emissions of tabletop equipment



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:

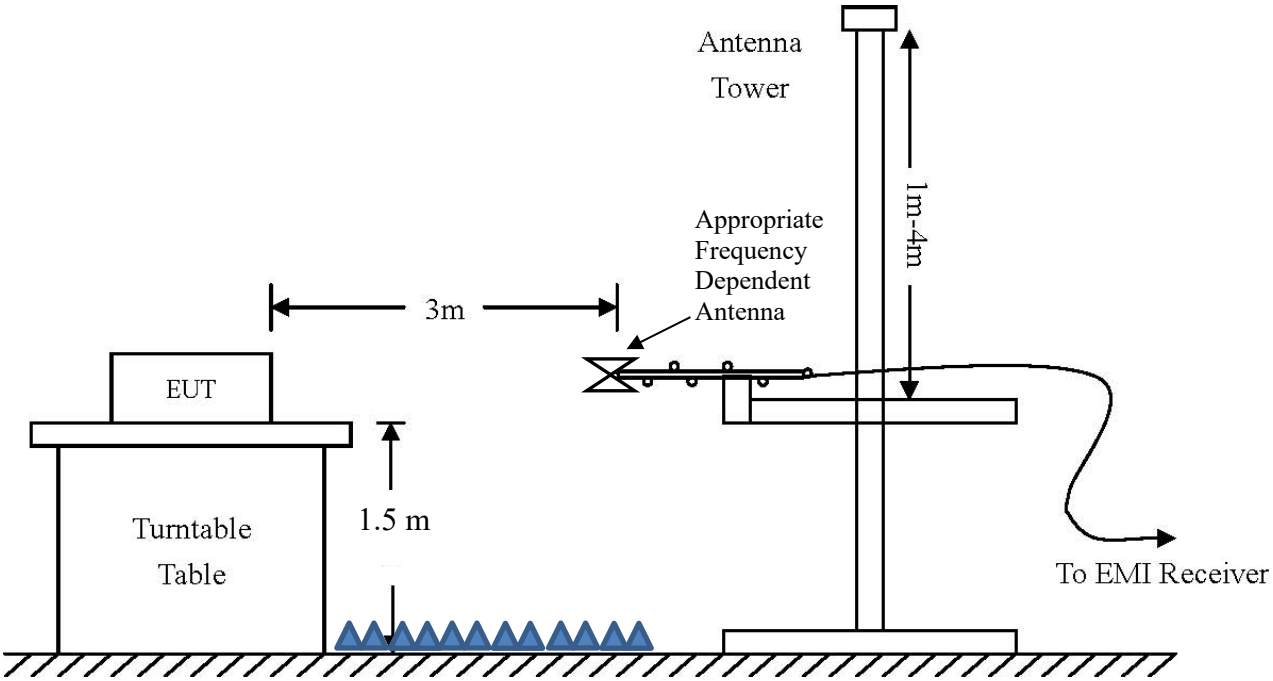
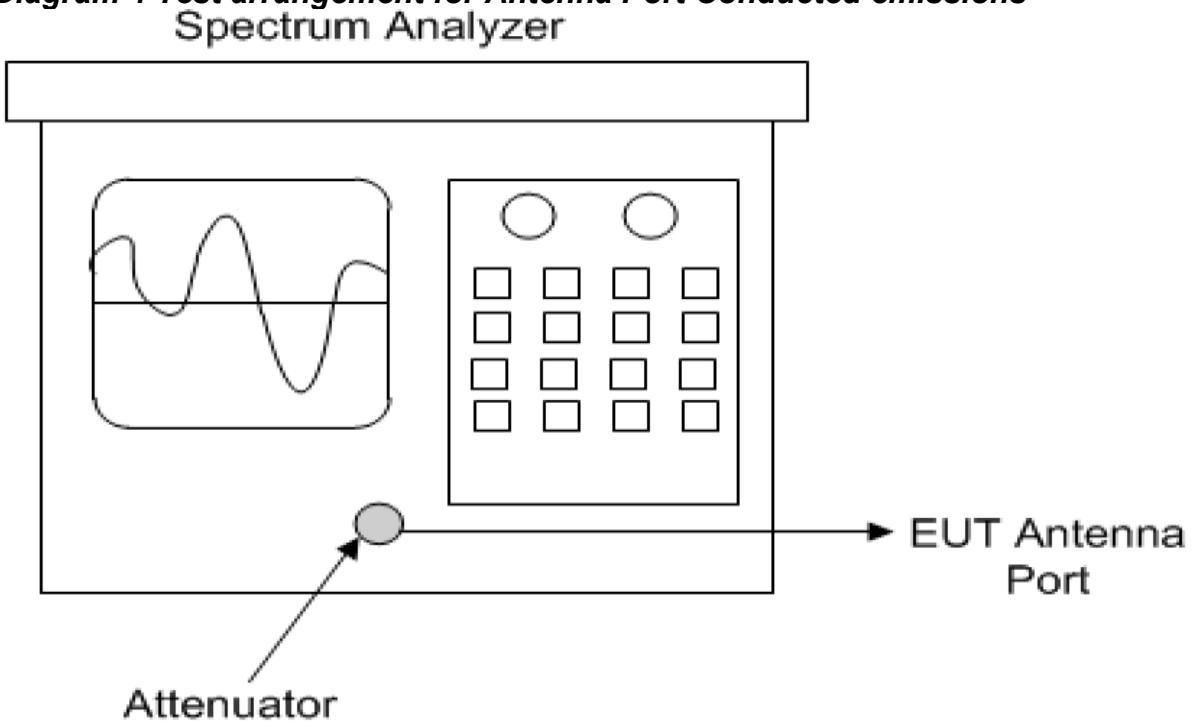


Diagram 4 Test arrangement for Antenna Port Conducted emissions



Restricted Bands of Operation

Spurious emissions falling in the restricted frequency bands of operation were measured at the SAC. The EUT utilizes frequency, determining circuitry, which generates harmonics falling in the restricted bands. Emissions were investigated at the SAC, using appropriate antennas or pyramidal horns, amplification stages, and a spectrum analyzer. Peak and average amplitudes of frequencies above 1000 MHz were compared to the required limits with worst-case data presented below. Test procedures of ANSI C63.10-2020 were used during testing. No other significant emission was observed which fell into the restricted bands of operation. Computed emission values consider the received radiated field strength, receive antenna correction factor, amplifier gain stage, and test system cable losses.

Table: Radiated Emissions in Restricted Frequency Bands Data Modes 1A & 2A, BT BLE (GMSK): Both chips transmitting simultaneously

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)
2390.0	53.0	38.0	57.2	41.4	54.0	-16.0	-12.6
2483.5	45.3	32.9	45.2	31.9	54.0	-21.1	-22.1
4804.0	56.2	45.3	59.3	49.1	54.0	-8.7	-4.9
4852.0	61.5	51.4	59.3	49.3	54.0	**-2.6**	-4.7
4960.0	55.1	44.3	59.1	48.9	54.0	-9.7	-5.1
7206.0	57.3	44.9	54.3	41.9	54.0	-9.1	-12.1
7278.0	54.2	41.1	56.3	43.5	54.0	-12.9	-10.5
7440.0	54.2	41.7	56.9	44.8	54.0	-12.3	-9.2
12010.0	57.2	44.3	58.9	46.0	54.0	-9.7	-8.0
12130.0	60.7	47.5	59.3	46.4	54.0	-6.5	-7.6
12400.0	59.5	46.1	59.9	46.1	54.0	-7.9	-7.9

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 Radiated Emissions in Restricted Bands

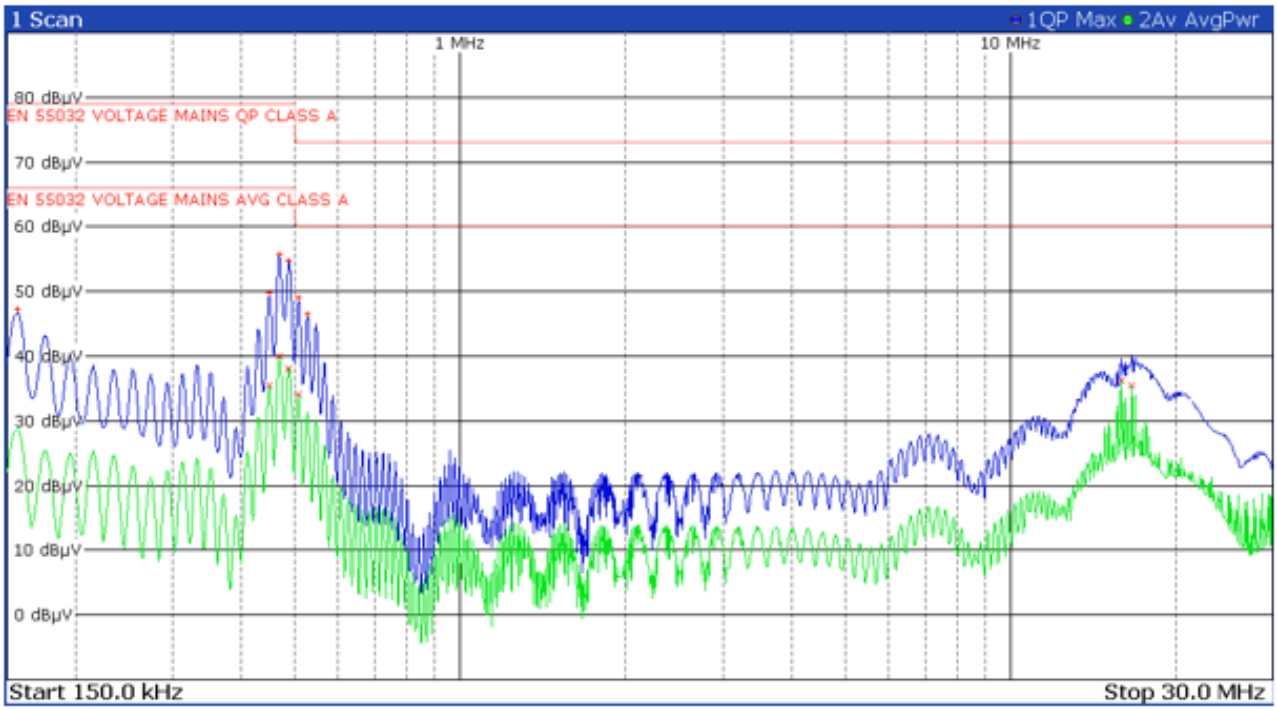
The EUT demonstrated compliance with the radiated emissions requirements of 47CFR Part 15C and RSS-247 Issue 4 Intentional Radiator requirements. The EUT demonstrated a worst-case minimum margin of -2.6 dB below the emissions requirements in restricted frequency bands. Peak, Quasi-peak, and average amplitudes were checked for compliance with the regulations. Worst-case emissions are reported with other emissions found in the restricted frequency bands at least 20 dB below the requirements.

AC Line Conducted EMI Procedure

The EUT was arranged in typical equipment configurations as offered by manufacturer and presented above in equipment configuration. AC Line Conducted emission testing was performed with the EUT placed on a 1 x 1.5-meter bench 80 cm above the conducting ground plane, floor of a screen room. The bench was positioned 40 cm away from the wall of the screen room. The LISN was positioned on the floor of the screen room 80-cm from the rear of the EUT. Testing for the AC line-conducted emissions followed the procedures of ANSI C63.10-2020. The EUT was configured as presented in the AC Line conducted configurations as directed by the manufacturer and presented above in equipment configuration. The AC adapter for the EUT was connected to the LISN for AC line-conducted emissions testing. A second LISN was positioned on the floor of the screen room 80-cm from the rear of the supporting equipment of the test configuration. All power cords except the EUT were then powered from the second LISN. EMI was coupled to the spectrum analyzer through a 0.1 μF capacitor, internal to the LISN. Power line conducted emissions testing was carried out individually for each current carrying conductor of the EUT. The excess length of lead between the system and the LISN receptacle was folded back and forth to form a bundle not exceeding 40 cm in length. The screen room, conducting ground plane, analyzer, and LISN were bonded together to the protective earth ground. Preliminary testing was performed to identify the frequencies of each of the emissions, which demonstrated the highest amplitudes. The cables were repositioned to obtain maximum amplitude of measured EMI level. Once the worst-case configuration was identified, plots were made of the EMI from 0.15 MHz to 30 MHz and data recorded.

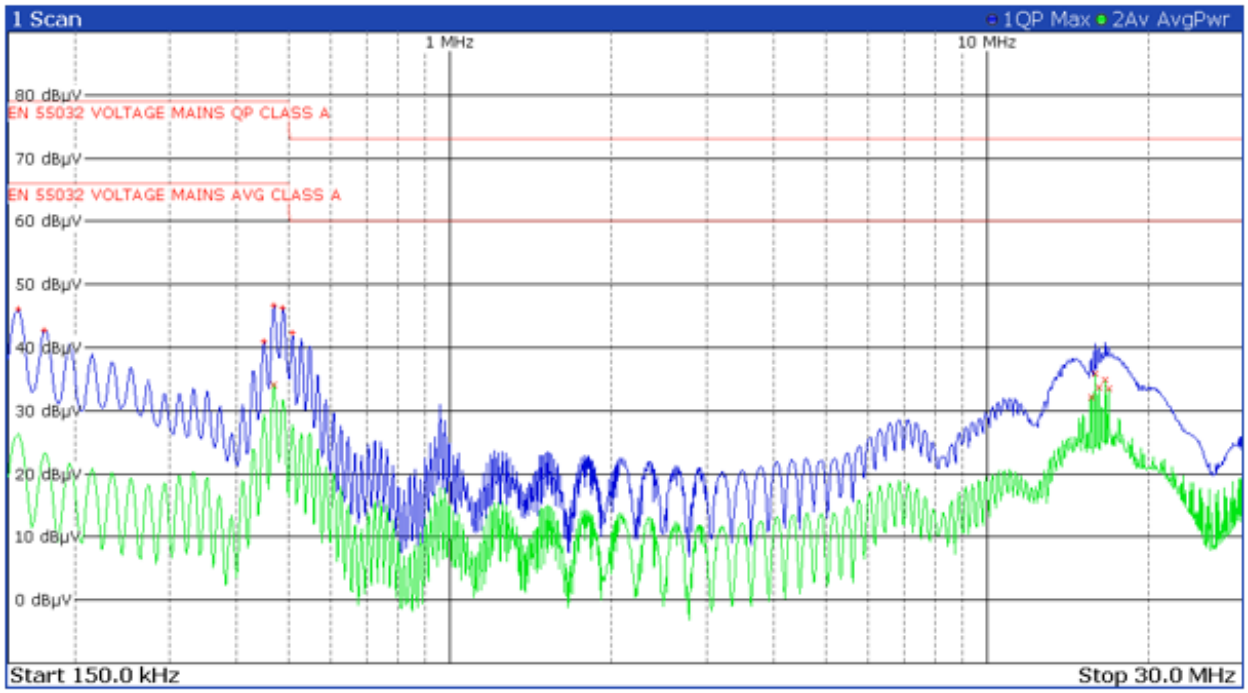
Refer to data and for plots below of Configuration #1 for AC Line conducted emissions.

Figure: AC Line Conducted Emissions Data L1 (Config. #1)



Other emissions present had amplitudes at least 20 dB below the limit.

Figure: AC Line Conducted Emissions Data L2 (Config. #1)



Other emissions present had amplitudes at least 20 dB below the limit.

Table: AC Line Conducted Emissions Data L1 (Config. #1)

Trace 1 Final:	Trace 2 Final:
MAX HOLD	AVERAGE
QUASI PEAK	AVERAGE

Trace	Frequency	Level	Delta Limit
1	156.8 kHz	47.19 dBµV	-31.81 dBµV
1	449.3 kHz	49.88 dBµV	-29.12 dBµV
2	449.3 kHz	35.49 dBµV	-30.51 dBµV
1	469.5 kHz	55.8 dBµV	-23.2 dBµV
2	469.5 kHz	39.94 dBµV	-26.06 dBµV
1	487.5 kHz	54.7 dBµV	-24.3 dBµV
2	487.5 kHz	38.09 dBµV	-27.91 dBµV
1	507.8 kHz	49.14 dBµV	-23.86 dBµV
2	507.8 kHz	34.09 dBµV	-25.91 dBµV
1	528 kHz	46.52 dBµV	-26.48 dBµV
2	15.89 MHz	36.28 dBµV	-23.72 dBµV
2	16.64 MHz	35.51 dBµV	-24.49 dBµV

Other emissions present had amplitudes at least 20 dB below the limit.

Table: AC Line Conducted Emissions Data L2 (Config. #1)

Trace 1 Final:	Trace 2 Final:
MAX HOLD	AVERAGE
QUASI PEAK	AVERAGE

Trace	Frequency	Level	Delta Limit
1	156.8 kHz	46.14 dBµV	-32.86 dBµV
1	174.8 kHz	42.75 dBµV	-36.25 dBµV
1	449.3 kHz	40.97 dBµV	-38.03 dBµV
1	469.5 kHz	46.79 dBµV	-32.21 dBµV
2	469.5 kHz	34.19 dBµV	-31.81 dBµV
1	487.5 kHz	46.29 dBµV	-32.71 dBµV
1	507.8 kHz	42.38 dBµV	-30.62 dBµV
2	15.63 MHz	32.15 dBµV	-27.85 dBµV
2	15.89 MHz	35.91 dBµV	-24.09 dBµV
2	16.14 MHz	33.74 dBµV	-26.26 dBµV
2	16.64 MHz	34.93 dBµV	-25.07 dBµV
2	16.9 MHz	33.41 dBµV	-26.59 dBµV

Other emissions present had amplitudes at least 20 dB below the limit.

Summary of Results for AC Line Conducted Emissions

The EUT demonstrated compliance with the AC Line Conducted Emissions requirements of 47CFR Part 15C, RSS-247 and RSS-Gen. The EUT configuration #1 demonstrated a minimum margin of -23.20 dB below the requirement. Other emissions were present with amplitudes at least 20 dB below the limit and worst-case amplitudes recorded.

General Radiated Emissions Procedure

Testing for the radiated emissions were performed as specified in CFR47 15B, RSS-GEN, and directed in ANSI C63.10-2020. For testing purposes, the EUT was arranged as presented in the applicable configuration diagrams above and operated through all modes as presented.

Exploratory radiated emissions measurements were performed in the SAC chamber or screen room, finding maximized emissions over frequency, EUT orientation, antenna height and polarity. This data is then used to focus the final radiated emissions measurements on these maximized points.

Final radiated emissions data were taken with the EUT located in the SAC at distance of 3 meters between the EUT and the receiving antenna. The frequency spectrum from 9 kHz to 6,000 MHz was searched for radiated emissions. Measured emission levels were maximized by EUT placement on the table, changing cable location, rotating the turntable through 360 degrees, varying the antenna height between 1 and 4 meters above the ground plane and changing antenna position between horizontal and vertical polarization. Antennas used were Loop, Biconical, Broadband Biconilog, Log Periodic, and Double Ridge or Pyramidal Horns and mixers above 1 GHz.

Refer to tables and plots below for general radiated emissions with all Tx-on and in worst case configuration #1. The spectrum from 30 MHz to 25 GHz was checked for emissions and these are the maximum found.

Table: General Radiated Emissions Data All Tx on – Worst Case (Horizontal Polarization)

Frequency (MHz)	Peak (dBµV/m)	Quasi-Peak (dBµV/m)	Limit @ 3m (dBµV/m)	Margin (dBm)
143.1	19.7	15.1	50.0	-34.9
191.4	35.2	34.3	50.0	-15.7
203.3	33.4	29.0	50.0	-21.0
287.1	39.2	37.5	57.0	-19.5
335.0	45.3	43.9	57.0	-13.1
401.2	25.4	17.4	57.0	-39.6

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: Plot of General Radiated Emissions All Tx on – Horizontal Polarization

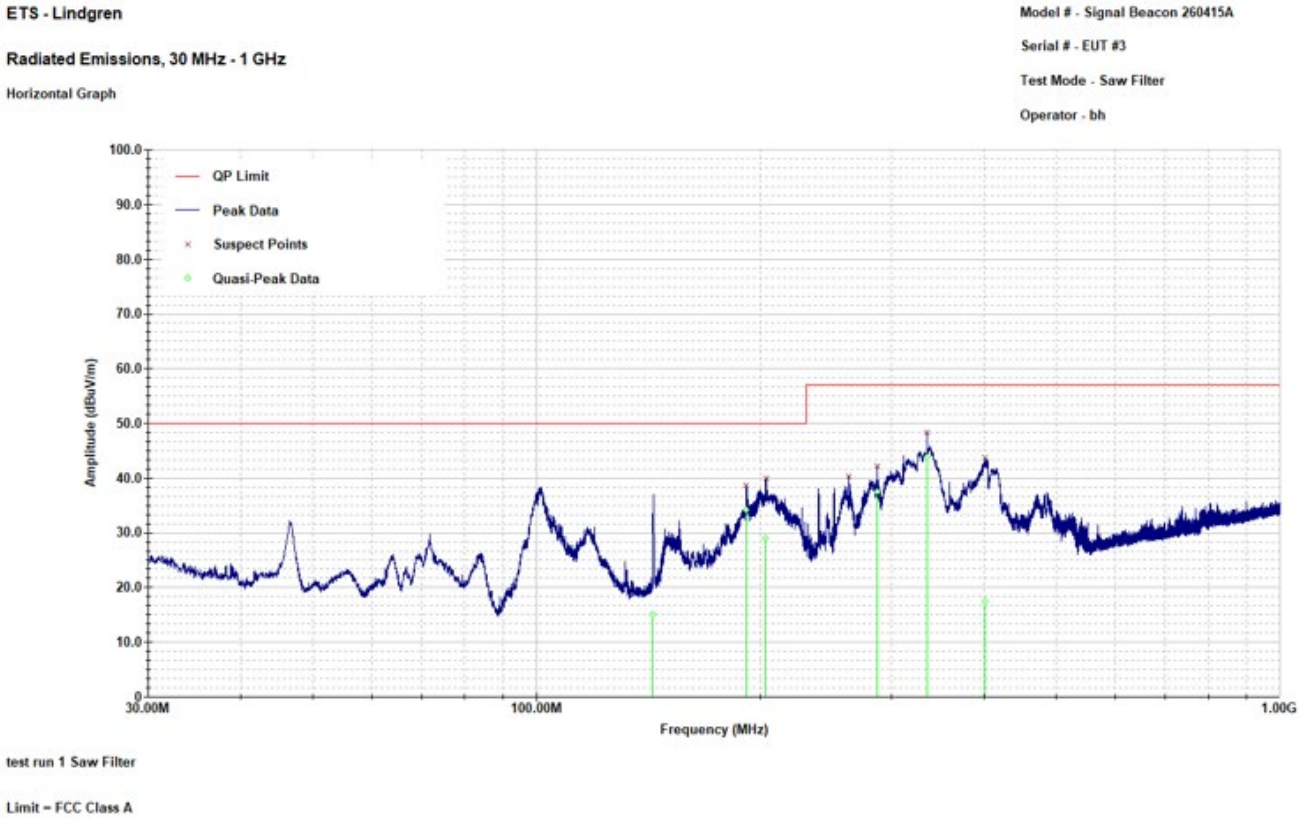


Table: General Radiated Emissions Data All Tx on – Worst Case (Vertical Polarization)

Frequency (MHz)	Peak (dBµV/m)	Quasi-Peak (dBµV/m)	Limit @ 3m (dBµV/m)	Margin (dBm)
32.9	39.6	34.4	50.0	-15.6
46.5	45.7	40.9	50.0	**-9.1**
99.7	34.5	29.9	50.0	-20.1
299.1	23.4	18.5	57.0	-38.5
311.1	31.6	29.1	57.0	-27.9
335.0	31.9	29.1	57.0	-27.9

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: Plot of General Radiated Emissions, All Tx on – Vertical Polarization

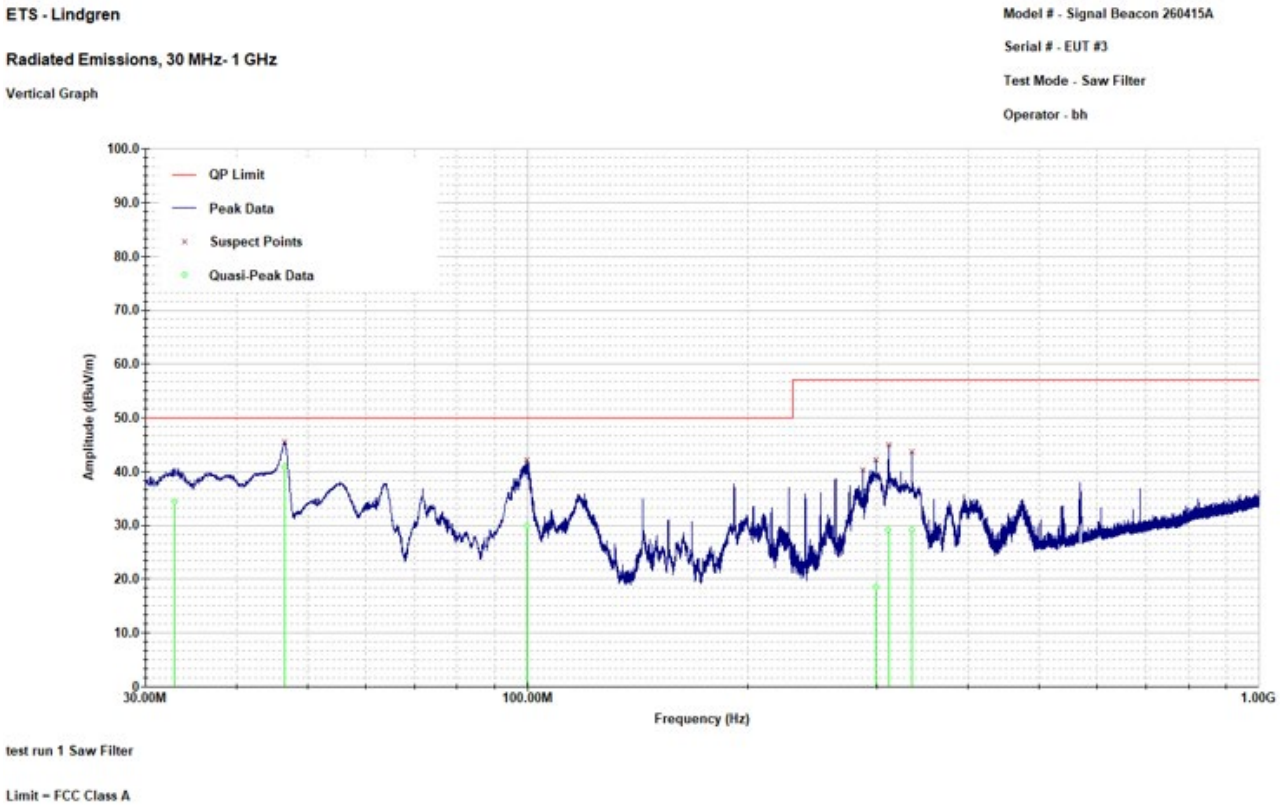


Figure: Plot of General Radiated Emissions (1 GHz – 3 GHz) All Tx On

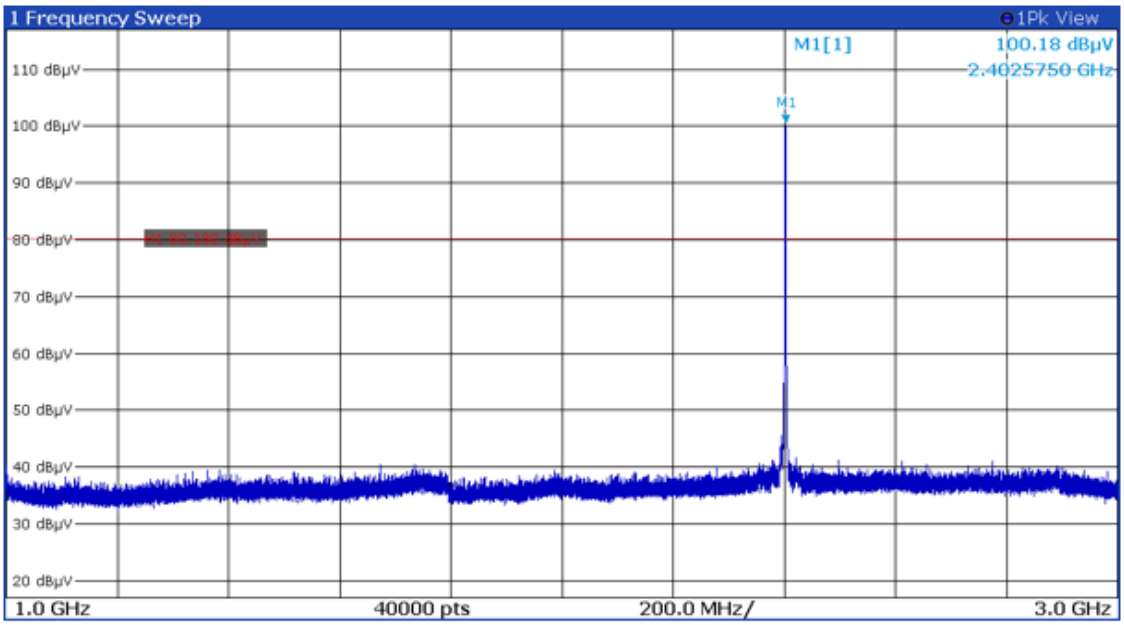


Figure: Plot of General Radiated Emissions (3 - 6 GHz) All Tx On

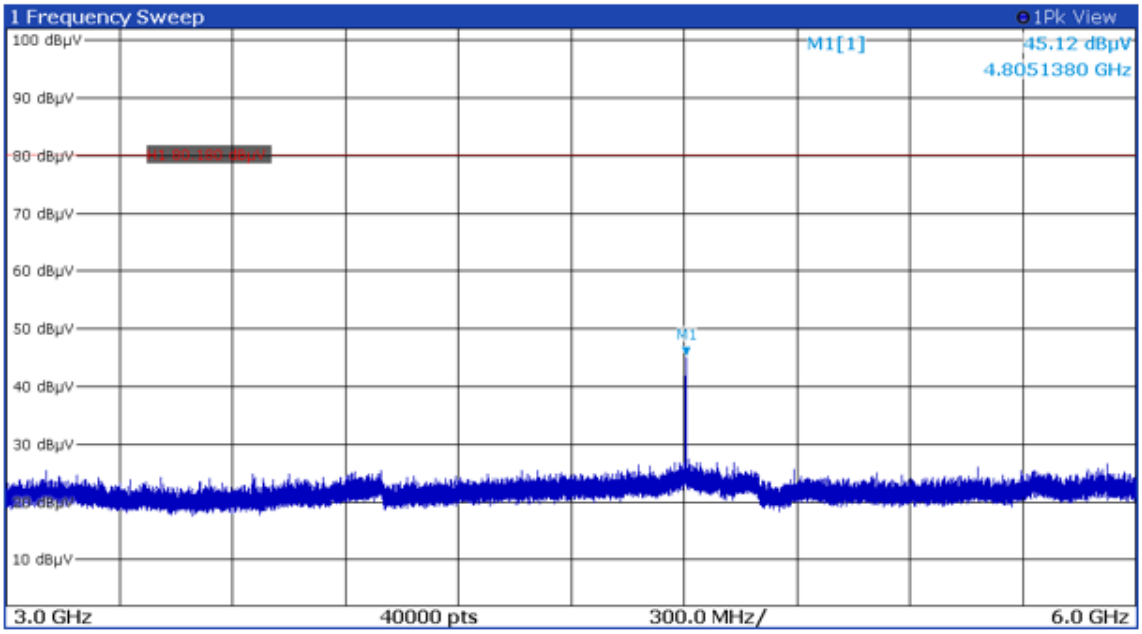


Figure: Plot of General Radiated Emissions (6 - 18 GHz) All Tx On

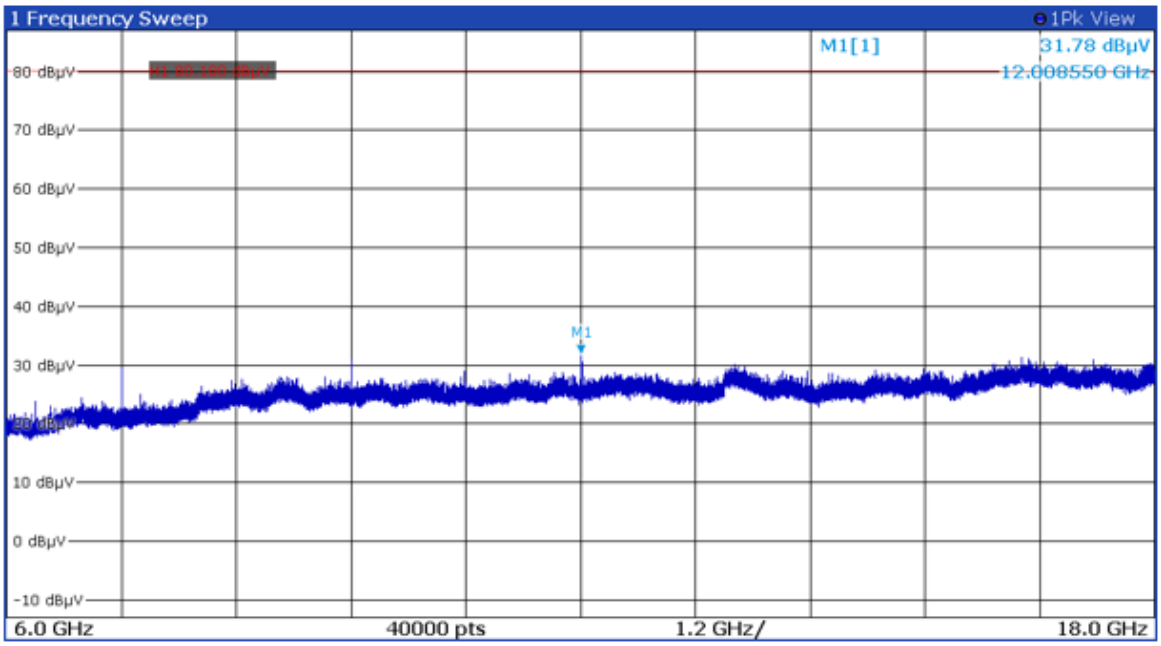
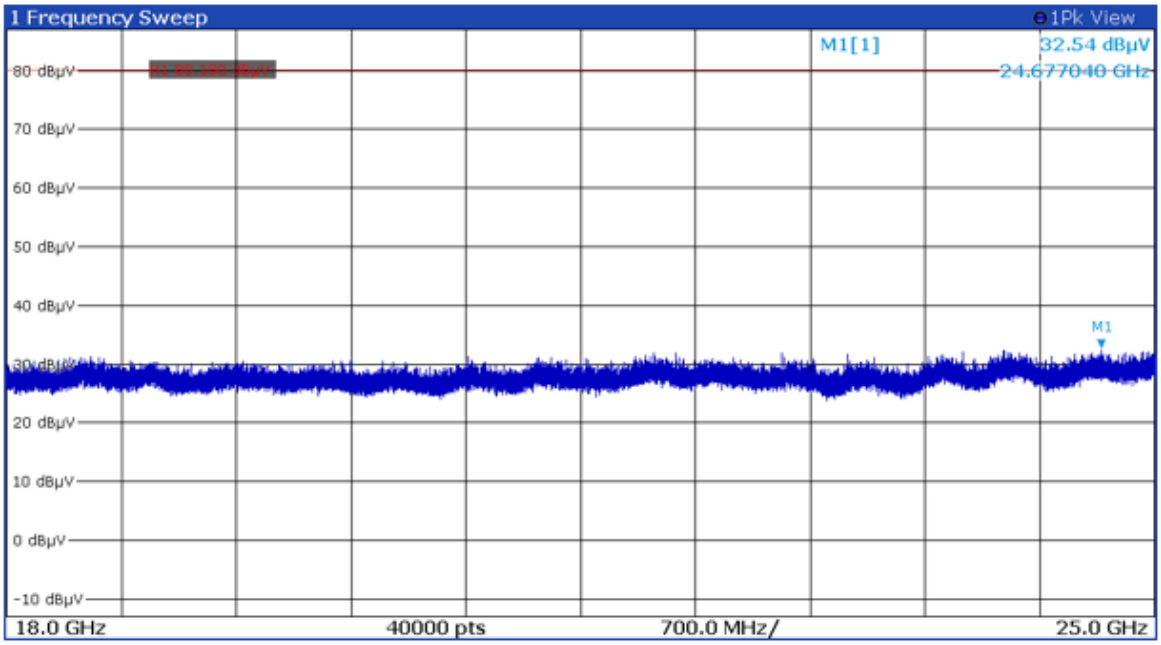


Figure: Plot of General Radiated Emissions (18 - 25 GHz) All Tx On



Summary of Results for General Radiated Emissions

The EUT demonstrated compliance with the radiated emissions requirements of 47CFR Part 15C paragraph 15.209, RSS-247 Issue 4, and RSS-GEN Issue 5 Intentional Radiators. The EUT configuration demonstrated a minimum margin of -9.1 dB below the requirements. Other emissions were present with amplitudes at least 20 dB below the Limits.

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 Radiated and Antenna Port EUT was provided for testing antenna port conducted emissions. This sample was modified by replacing the internal antenna with a 50-ohm antenna port connector and attenuator for testing purposes. The transmitter peak and average power was measured at the antenna port using a wideband RF power meter as described in KDB 558074 and ANSI C63.10-2020. Average power measured did not include any time intervals during which the transmitter was off or transmitting at a reduced power level. The peak Power Spectral Density (PKPSD) was measured as defined in KDB 558074 and ANSI C63.10-2020. DTS Emission bandwidth was measured as described in KDB 558074 and ANSI C63.10-2020. The amplitude of each harmonic and general radiated emission was measured on the SAC at distance of 3 meters from the FSM antenna (radiated emission testing was performed on Radiated EUT representative of production equipment with integral antenna). The EUT was positioned on supporting turntable elevated as required above the ground plane, at a distance of 3 meters from the FSM antenna. Radiated emission investigations were performed from 9 kHz to 25,000 MHz. Each radiated emission was maximized by varying the FSM antenna height and polarization, and by rotating the turntable. The worst-case amplitude of each emission was then recorded from the analyzer display. The peak and quasi-peak amplitude of frequencies below 1000 MHz were measured using a spectrum analyzer. The peak and average amplitude of frequencies above 1000 MHZ were measured using a spectrum analyzer. A Loop antenna was used for measuring emissions from 0.009 to 30 MHz, Biconilog Antenna for 30 to 1000 MHz, Double-Ridge, and/or Pyramidal Horn Antennas from 1 GHz to 25 GHz. Radiated Emissions were measured in dBµV/m @ 3 meters. Plots were taken of transmitter performance (using Antenna Port Conducted EUT) for reference in this and other documentation. These are shown in the figures below.

Figure: Plot of Transmitter Operation in 2402-2480 MHz Mode 1A, BT BLE (GMSK)

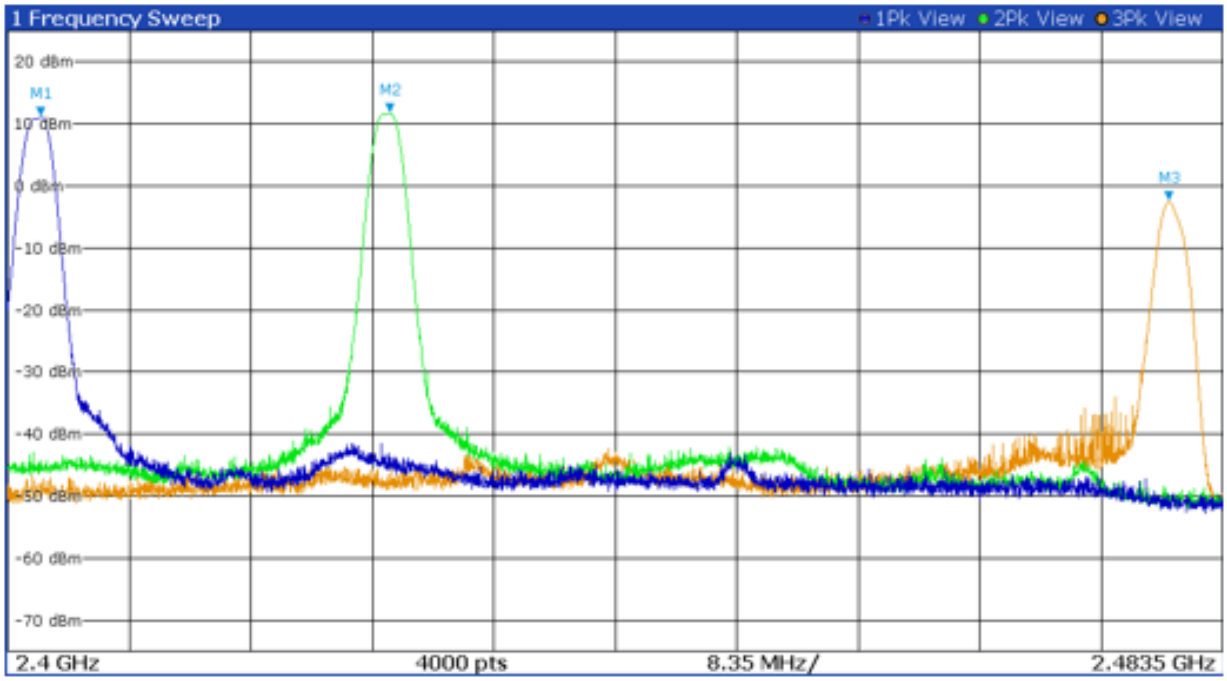


Figure: Plot of Transmitter Operation in 2402-2480 MHz Mode 2A, BT BLE (GMSK)

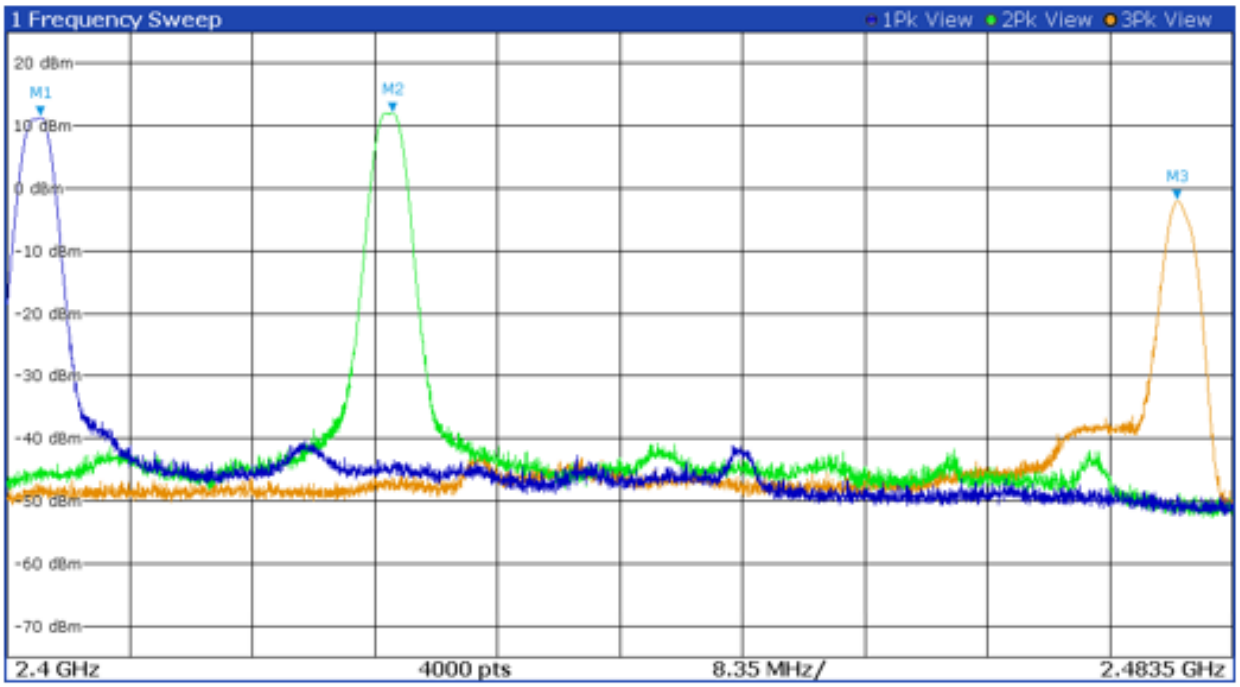


Figure: Plot of Emissions Low Band Edge Mode 1A, BT BLE (GMSK)

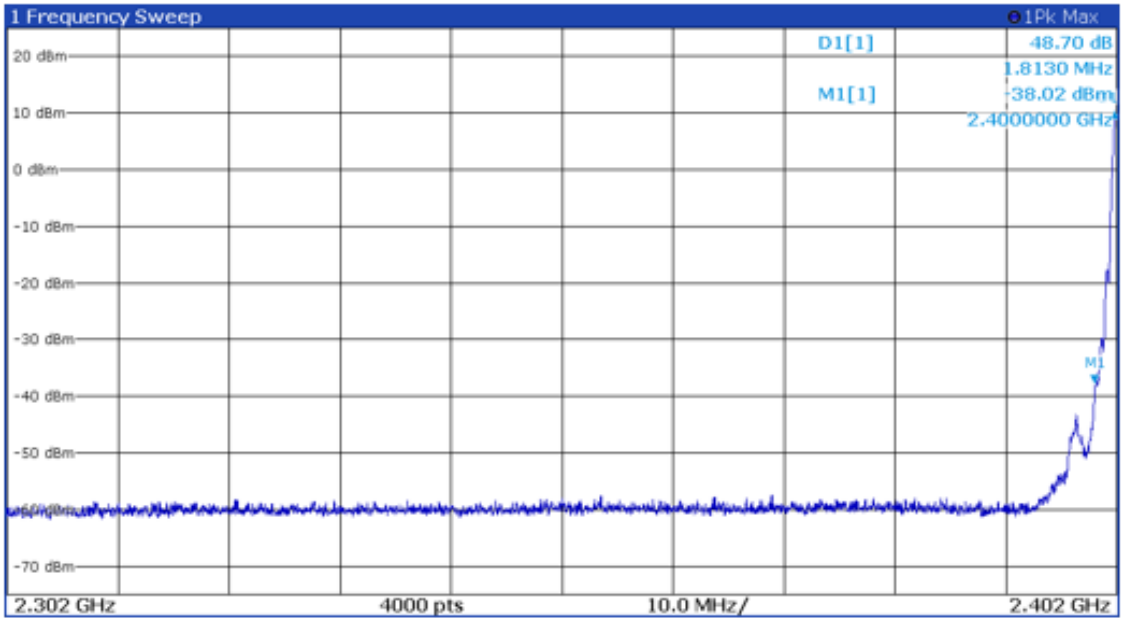


Figure: Plot of Emissions Low Band Edge Mode 2A, BT BLE (GMSK)

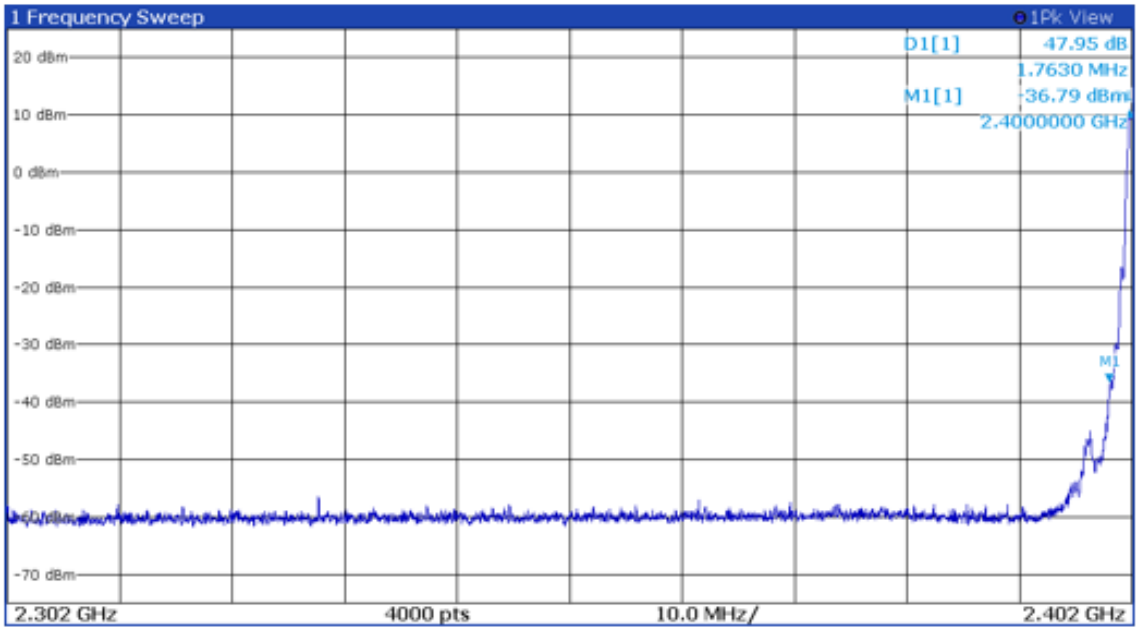


Figure: Plot of Transmitter Emissions High Band Edge Mode 1A, BT BLE (GMSK)

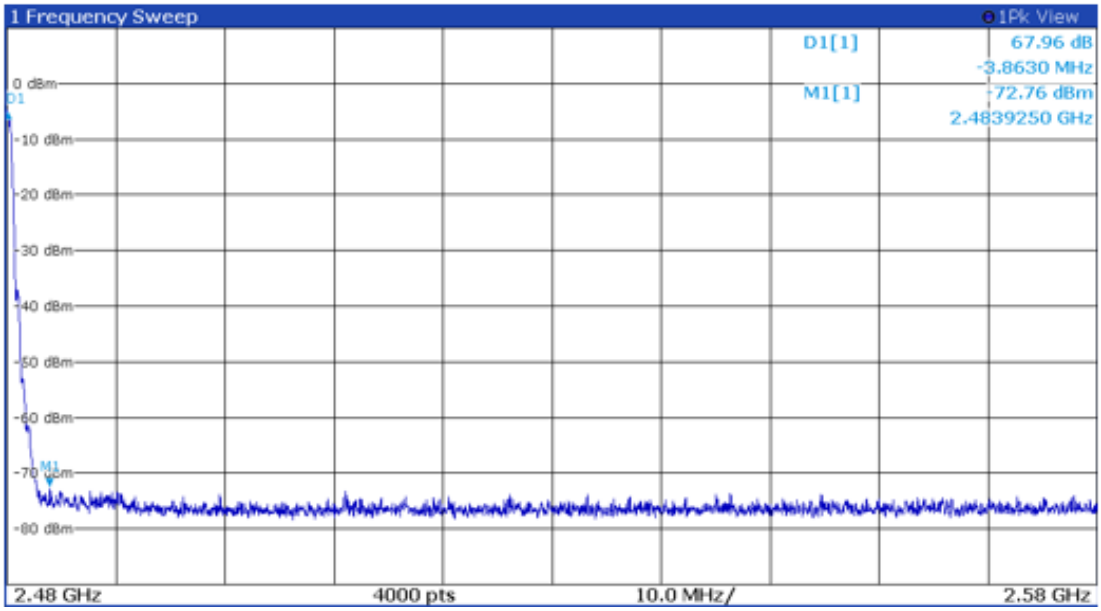


Figure: Plot of Transmitter Emissions High Band Edge Mode 2A, BT BLE (GMSK)

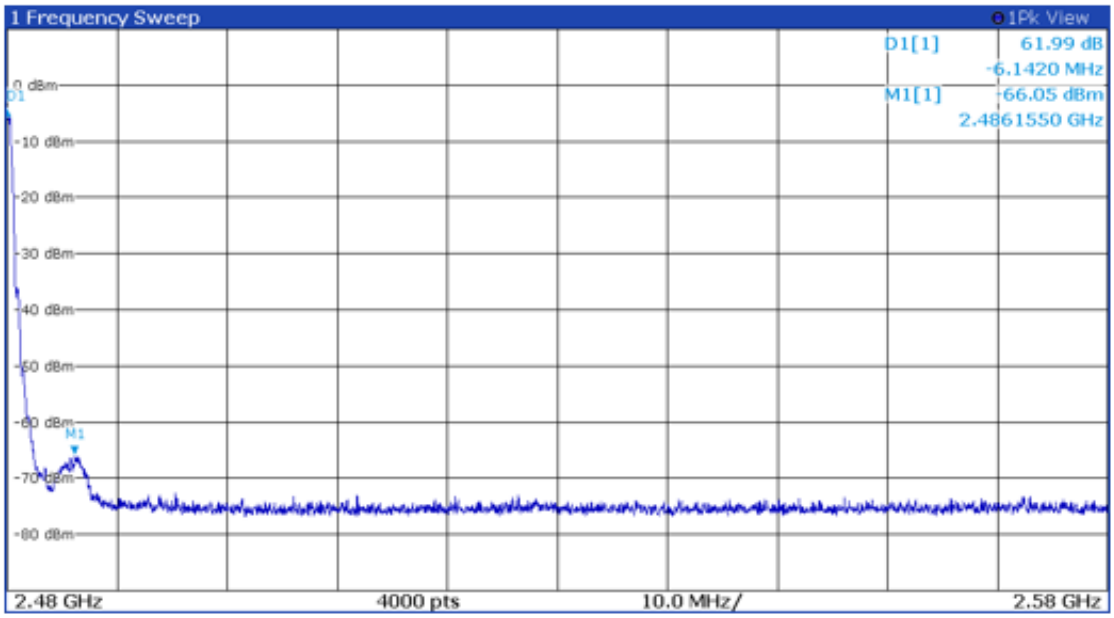
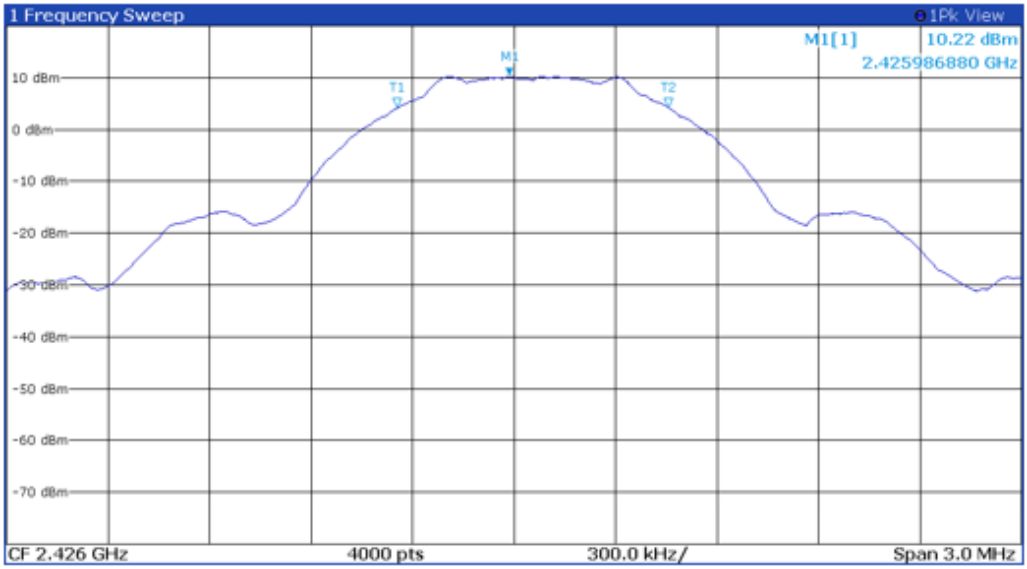
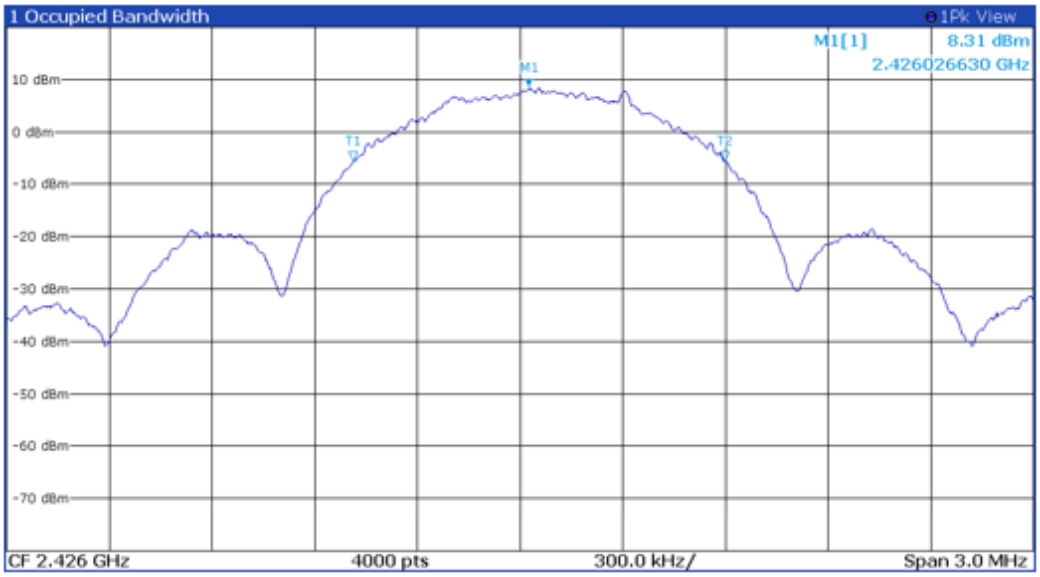


Figure: Plot of 6-dB Occupied Bandwidth Mode 1A, BT BLE (GMSK)



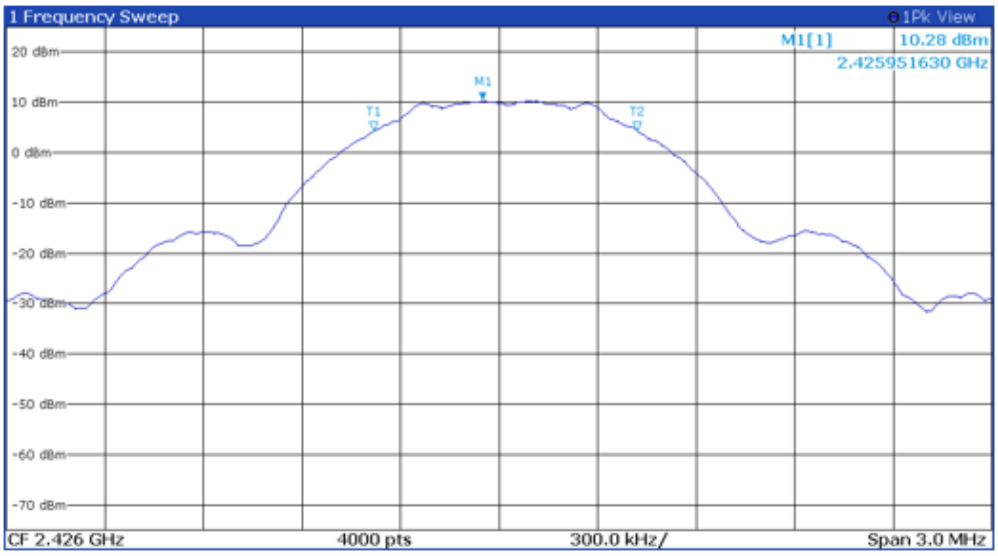
Type	Ref	Trace	X-Value	Y-Value	Function	Func Result
M1		1	2.426 GHz	10.2 dBm	ndB	6 dB
T1		1	2.426 GHz	4.2 dBm	ndB down BW	800.3 kHz
T2		1	2.426 GHz	4.2 dBm	Q Factor	3032

Figure: Plot of 99% Occupied Bandwidth Mode 1A, BT BLE (GMSK)



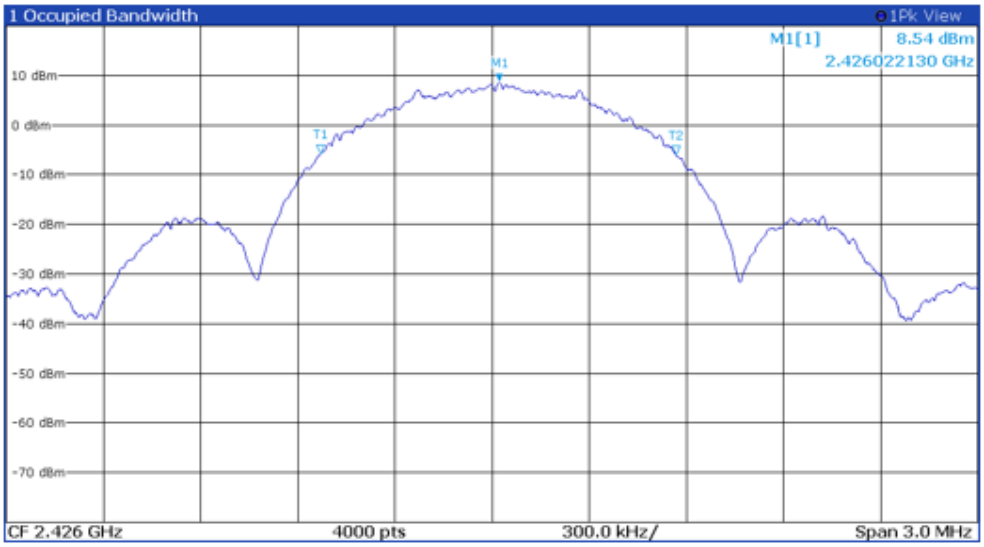
Type	Ref	Trace	X-Value	Y-Value	Function	Func Result
M1		1	2.426 GHz	8.3 dBm	Occ Bw	1.088 MHz
T1		1	2.426 GHz	-5.7 dBm	Occ Bw Centroid	2.426 GHz
T2		1	2.427 GHz	-5.6 dBm	Occ Bw Freq Offset	55.55 kHz

Figure: Plot of 6-dB Occupied Bandwidth Mode 2A, BT BLE (GMSK)



Type	Ref	Trace	X-Value	Y-Value	Function	Func Result
M1		1	2.426 GHz	10.3 dBm	ndB	6 dB
T1		1	2.426 GHz	4.3 dBm	ndB down BW	804 kHz
T2		1	2.426 GHz	4.3 dBm	Q Factor	3017

Figure: Plot of 99% Occupied Bandwidth Mode 2A, BT BLE (GMSK)



Type	Ref	Trace	X-Value	Y-Value	Function	Func Result
M1		1	2.426 GHz	8.5 dBm	Occ Bw	1.097 MHz
T1		1	2.425 GHz	-5.7 dBm	Occ Bw Centroid	2.426 GHz
T2		1	2.427 GHz	-6 dBm	Occ Bw Freq Offset	19.26 kHz

Figure: Plot of Transmitter Power Spectral Density Mode 1A, BT BLE (GMSK)

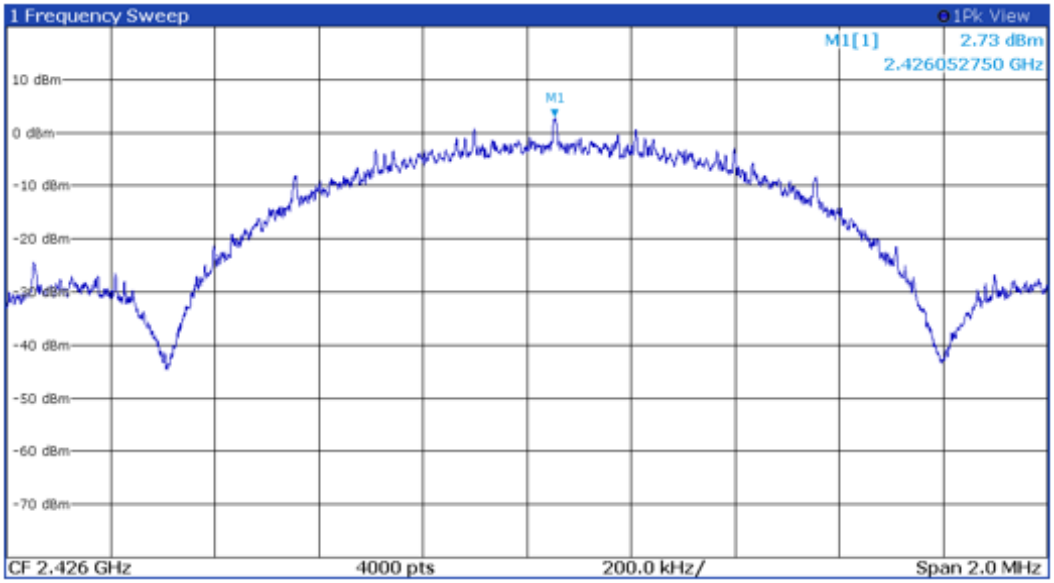
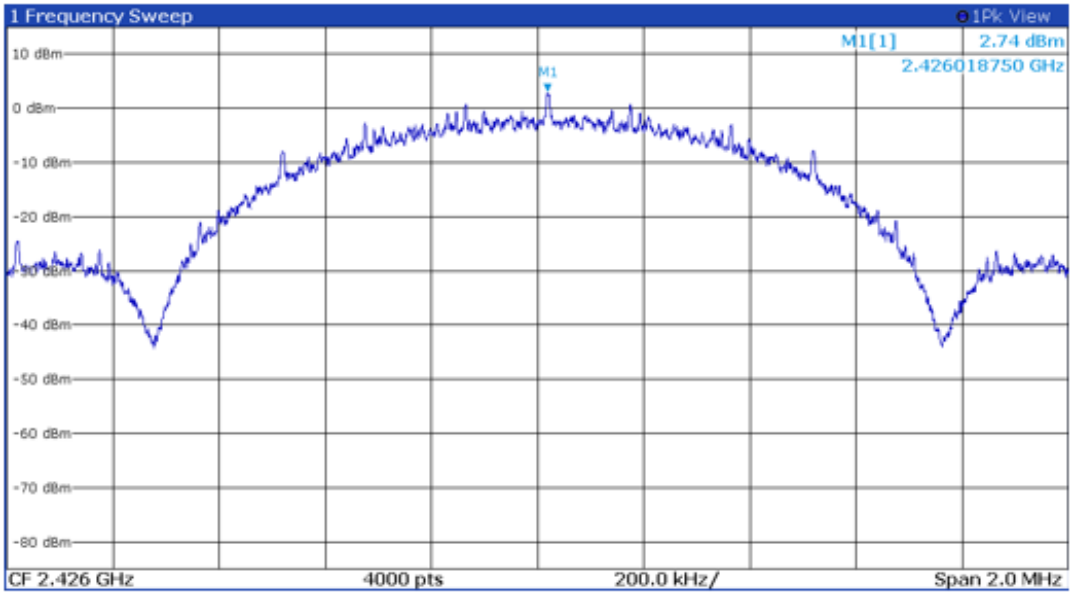


Figure: Plot of Transmitter Power Spectral Density Mode 2A, BT BLE (GMSK)



Transmitter Emissions Data

Table: Transmitter Radiated Emissions Mode 1A & 2A, BT BLE (GMSK)- both chips operating simultaneously

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)
2402.0	--	--	--	--	--	--	--
4804.0	56.2	45.3	59.3	49.1	54.0	-8.7	-4.9
7206.0	57.3	44.9	54.3	41.9	54.0	-9.1	-12.1
9608.0	61.4	49.2	59.9	47.5	54.0	-4.8	-6.5
12010.0	57.2	44.3	58.9	46.0	54.0	-9.7	-8.0
14412.0	58.4	45.6	58.7	45.6	54.0	-8.4	-8.4
16814.0	63.7	50.5	63.3	50.4	54.0	-3.5	-3.6
2426.0	--	--	--	--	--	--	--
4852.0	61.5	51.4	59.3	49.3	54.0	**-2.6**	-4.7
7278.0	54.2	41.1	56.3	43.5	54.0	-12.9	-10.5
9704.0	57.6	44.4	58.4	45.8	54.0	-9.6	-8.2
12130.0	60.7	47.5	59.3	46.4	54.0	-6.5	-7.6
14556.0	60.8	46.3	59.8	46.5	54.0	-7.7	-7.5
16982.0	63.3	49.9	62.7	49.9	54.0	-4.1	-4.1
2480.0	--	--	--	--	--	--	--
4960.0	55.1	44.3	59.1	48.9	54.0	-9.7	-5.1
7440.0	54.2	41.7	56.9	44.8	54.0	-12.3	-9.2
9920.0	57.2	44.1	57.1	43.4	54.0	-9.9	-10.6
12400.0	59.5	46.1	59.9	46.1	54.0	-7.9	-7.9
14880.0	59.3	46.5	60.0	46.5	54.0	-7.5	-7.5
17360.0	61.7	48.9	61.5	48.7	54.0	-5.1	-5.3

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: Transmitter Antenna Port Conducted Data mode 1A-2A, BLE (GMSK)

Frequency MHz	Antenna Port Average Output Power (dBm)	Antenna Port Average Output Power (Watts)	99% Occupied Bandwidth (kHz)	6-dB Occupied Bandwidth (kHz)	Peak Power Spectral Density (dBm)
Mode 1A, BT BLE (GMSK)					
2402	11.1	0.013	1,078.0	783.8	1.8
2426	11.7	0.015	1,087.6	800.3	2.7
2480	-2.5	0.001	1,105.1	759.8	-12.5
Mode 2A, BT BLE (GMSK)					
2402	11.4	0.014	1,094.5	795.8	1.6
2426	12.1	0.016	1,097.5	804.0	2.7
2480	-2.0	0.001	1,093.7	778.5	-12.5

Table: Transmitter Antenna Port Conducted Combined Output Power*

Frequency MHz	Antenna Port Conducted Output Power (dBm)			Limit (dBm)
	Chip 1/ Mode 1A	Chip 2/ Mode 2A	MIMO calculated	
BLE (GMSK)				
2412	11.1	11.4	14.2	29.92
2426	11.7	12.1	**14.9**	29.92
2462	-2.5	-2.0	0.8	29.92

*For two simultaneous transmitters operating in the same band, combined conducted output power was determined by linear summation of the individual transmitter powers in accordance with FCC KDB 662911. The maximum permitted combined conducted output power is 29.92 dBm after application of the antenna gain correction of §15.247(b)(4).
FCC conducted Output Power Limit 29.92 (30dBm - 0.08dBi, since gain = 6.08)
ISED conducted Output Power Limit 29.92 (30dBm - 0.08dBi, since gain = 6.08)

Table: Transmitter Antenna Port Conducted Combined PSD*

Frequency MHz	Peak PSD (dBm/3 kHz)		Combined PSD (dBm/3 kHz)	Limit (dBm/3 kHz)
	Chip 1/ Mode 1A	Chip 2/ Mode 2A	Total	
BLE (GMSK)				
2412	1.8	1.6	4.7	8
2426	2.7	2.7	**5.7**	8
2462	-12.5	-12.5	-9.5	8

*Combined PSD was calculated by linear summation of the simultaneous transmitter outputs in accordance with FCC KDB 662911. The combined PSD is compared to the FCC §15.247(e) limit of 8 dBm/3 kHz.
FCC PSD Limit is 8dBm (conducted)
ISED PSD Limit is 8dBm (conducted)

Summary of Results for Transmitter Radiated Emissions of Intentional Radiator

The EUT demonstrated compliance with the radiated and conducted emission requirements of 47CFR Subpart 15C Paragraph 15.247, RSS-247 Issue 4 and RSS-GEN Issue 5 emission requirements for Digital Transmission Systems. The highest average output power measured at the antenna port for modes 1 through 2 was 12.1 dBm / 0.016 Watts. The highest peak power spectral density measured at the antenna port for modes 1 through 2 presented a minimum margin of -5.3 dB below the requirements. The EUT demonstrated a minimum margin of -2.6 dB below the harmonic emissions requirements. There were no other significantly measurable emissions in the restricted bands other than those recorded in this report. Other emissions were present with amplitudes at least 20 dB below the requirements. There were no other deviations or exceptions to the requirements.

Per KDB 662911 D01 v02r01 regarding emissions testing of transmitters with multiple outputs in the same band, combined output power and PSD numbers were calculated for the appropriate modes. Results are in Combined Output Power and Combined PSD Tables above, all passing.

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	3/20/2026	3/20/2027
☐ 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	1/20/2026	1/20/2027
☐ 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	3/20/2026	3/20/2027
☐ RF Filter	Micro-Tronics	BRC50722 (009).9G notch	30-18000 MHz	3/20/2026	3/20/2027
☐ RF Filter	Micro-Tronics	HPM50117 (063) 3G HPF	30-18000 MHz	3/20/2026	3/20/2027
☒ RF Filter	Micro-Tronics	BRM50702 (172) 2G notch	30-18000 MHz	3/20/2026	3/20/2027
☒ RF Filter	Micro-Tronics	BRC50703 (G102) 5G notch	30-18000 MHz	3/20/2026	3/20/2027
☒ RF Filter	Micro-Tronics	BRC50705 (024) 5G notch	30-18000 MHz	3/20/2026	3/20/2027
☐ Attenuator	Fairview	SA6NFNF100W-40 (1625)	30-18000 MHz	3/20/2026	3/20/2027
☒ Attenuator	Mini-Circuits	VAT-3W2+ (1445)	30-6000 MHz	3/20/2026	3/20/2027
☒ Attenuator	Mini-Circuits	VAT-3W2+ (1735)	30-6000 MHz	3/20/2026	3/20/2027
☒ Attenuator	Mini-Circuits	VAT-6W2+ (1438)	30-6000 MHz	3/20/2026	3/20/2027
☒ Weather station	Davis	6152 (A70927D44N)		1/23/2026	1/23/2027

Equipment	Manufacturer	Model (SN)	Band	Cal Date(m/d/y)	Due
☒ Frequency Counter: Leader		LDC-825 (8060153)		3/20/2026	3/20/2027
☐ ISN	Com-Power	Model ISN T-8 (600111)		3/20/2026	3/20/2027
☒ 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	3/20/2026	3/20/2027
☒ Analyzer	HP	8562A (3051A05950)	9kHz-125GHz	3/20/2026	3/20/2027
☐ Antenna:	Solar	9229-1 & 9230-1		2/5/2026	2/5/2028
☐ CDN:	Com-Power	Model CDN M325E		9/16/2024	9/16/2026
☐ EMC Transient Generator HVT		TR 3000		2/5/2026	2/5/2027
☐ AC Power Source (Ametech, California Instruments)				2/5/2026	2/5/2027
☒ Field Intensity Meter: EFM-018				2/5/2026	2/5/2027
☒ ESD Simulator: MZ-15				3/20/2026	3/20/2027
☐ 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

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200087-0

Rogers Labs, a division of The Compatibility Center LLC
Lenexa, KS

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

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).

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

For the National Voluntary Laboratory Accreditation Program