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Date: 14 September 2022

I.T.L. Product Testing Ltd.

FCC Radio Test Report

for

NeuroTrigger Ltd

Equipment under test:

NT Basic Device

NT Basic

Tested by: _____
M. Zohar

Approved by: I. Mansky

pp. I. Cohen _____

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Measurement/Technical Report for

NeuroTrigger Ltd

NT Basic Device

NT Basic

FCC ID: 2A565NEUROTBASIC

This report concerns: Original Grant

Equipment type: FCC: (DTS) Digital Transmission System

Limits used: 47CFR15 Section 15.247

Measurement procedures used: KDB 558074 D01 v03r05, ANSI C63.10:2013

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Table of Contents

1. General Information

1.1 Administrative Information

Manufacturer:	SensoMedical Ltd.
Manufacturer's Address:	Industrial Park Building, Mount Precipice, P.O. Box 2653 Nazareth, Galilee, 1612102 ISRAEL
Manufacturer's Representative:	Luai Asfour
Equipment Under Test (E.U.T):	NT Basic Device
Model:	NT Basic
Equipment Serial No.:	NTB-KT-0003
Date of Receipt of E.U.T:	July 18, 2022
Start of Test:	July 18, 2022
End of Test:	July 25, 2022
Test Laboratory Location:	I.T.L (Product Testing) Ltd. 1 Bat Sheva St., Lod 7120101 ISRAEL
Test Specifications:	FCC Part 15, Subpart C

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), FCC Designation No. IL1005.
3. Department of Innovation, Science and Economic Development (ISED) Canada, CAB identifier: IL1002

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

The NTB device is a powered muscle stimulator, intended for medical purposes that repeatedly contracts muscles, by passing electrical currents through electrodes contacting the affected body area.

The device is used in a home environment and is operated by the patient

The device is composed of:

a. Disposable electrode sticker for stimulation

b. Rechargeable battery

c. Signal Generator

d. Non-approved BLE 5.0 radio transceiver for communicating with an external device application for the purpose of User Interface and Hardware remote control

Charging is made through a dedicated cradle that receives power form an AC/DC approved power supply. The unit cannot operate while being charged.

Type of Equipment							
☒	Stand Alone (Equipment with/without its own control provisions)						
☐	Combined (Equipment where radio part is fully integrated with another type of equipment)						
☐	Plug in card (Equipment intended for a variety of host systems)						
Intended Use		Condition of use					
☐	Fixed	Always of distance >2m from the people					
☐	Mobile	Always of distance >20cm from the people					
☒	Portable	Always of distance <20cm to human body(4mm)					
Assigned frequency band		2400-2483.5 MHz					
Operational frequencies		2402-2480 MHz					
Maximum rated output power		At transmitter 50Ω RF output connector [dBm]	N/A				
		Effective Radiated Power (for equipment without RF connector)	~-6dBm				
Antenna Connection							
☐	Unique Coupling	☐	Standard Connection	☒	Integral	☐	With temporary RF connector
						☒	Without temporary RF connector
Antenna Gain(peak)		1.5dBi typ. (XZ-total)					
Operating channel bandwidth		1,2MHz					
Type of modulation		GFSK					
Bit rate		200Kbit/Sec					
Maximum transmitter duty cycle		98%					
Transmitter power source							
☐	AC	Nominal rated voltage					
☐	DC	Nominal rated voltage					
☒	Battery	Nominal rated voltage	3.7V				

1.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in KDB 558074 D01 v03r05 and ANSI C63.10: 2013. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

Emissions tests were performed at I.T.L.'s testing facility in Lod, Israel. I.T.L.'s EMC Laboratory is accredited by A2LA, certificate No. 1152.01 and its FCC Designation Number is IL1005.

1.6 Measurement Uncertainty

Conducted Emission
Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4)

0.15 – 30 MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 3.44 dB

Radiated Emission
Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site:

30-1000MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 4.96 dB

1 GHz to 6 GHz
Expanded Uncertainty (95% Confidence, K=2):
±5.19 dB

>6 GHz
Expanded Uncertainty (95% Confidence, K=2):
±5.51 dB

2. System Test Configuration

2.1 Justification

1. The E.U.T contains an IEEE 802.15.1 standard (BLE) transceiver
2. The E.U.T was evaluated while transmitting at the low channel (2402MHz), the mid channel (2440MHz) and the high channel (2480MHz).
3. Final radiated emission tests were performed after exploratory emission testing that was performed in 3 orthogonal polarities to determine the "worst case" radiation.
4. According to screening results below, the "worst case" was the X axis.

Orientation	Frequency	Field Strength	2nd Harmonic	3rd Harmonic	Band Edge
	(MHz)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)
X axis	2402.0	88.5	53.5 (N.L.[1])	56.7	55.2
	2440.0	88.5	53.9 (N.L.)	58.2	-
	2480.0	87.5	52.9 (N.L.)	57.7	57.6
Y axis	2402.0	88.1	53.1 (N.L.)	56.1	54.8
	2440.0	88.3	53.7 (N.L.)	57.8	-
	2480.0	87.4	53.4 (N.L.)	57.0	57.0
Z axis	2402.0	86.8	52.9 (N.L.)	54.6	51.2 (N.L.)
	2440.0	87.0	53.0 (N.L.)	55.4	-
	2480.0	86.8	52.8 (N.L.)	55.8	52.3 (N.L.)

Figure 1. Screening Results BLE mode

2.2 EUT Exercise Software

No special exercise software was used.

2.3 Special Accessories

No special accessories was used.

[1] Noise level

2.4 Equipment Modifications

Initially, the E.U.T failed in radiated spurious emission in restricted bands test. The customer took a corrective action, by reducing the power level from 5dBm to 1dBm.

2.5 Configuration of Tested System

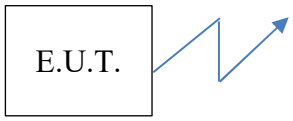


Figure 2. Configuration of Tested System

3. Conducted and Radiated Measurement Test Setup Photographs

See a separate document.

4. 6 dB Minimum Bandwidth

4.1 Test Specification

FCC Part 15, Subpart C, Section 247(a)(2)

4.2 Test Procedure

(Temperature (22°C)/ Humidity (61%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report.

The E.U.T was tested in the chamber and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 1.5 meters above the ground. The emissions were measured at a distance of 3 meters.

The spectrum bandwidth of the E.U.T. at the point of 6 dB below maximum peak power was measured and recorded. The RBW was set to 100 kHz.

4.3 Test Limit

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.

4.4 Test Results

Protocol Type	Operation Frequency (MHz)	Reading (kHz)	Limit (kHz)
BLE	2402.0	750.0	>500.0
	2440.0	715.0	>500.0
	2480.0	724.0	>500.0

Figure 3 6 dB Minimum Bandwidth

JUDGEMENT: Passed

For additional information see *Figure 4* to *Figure 6.*

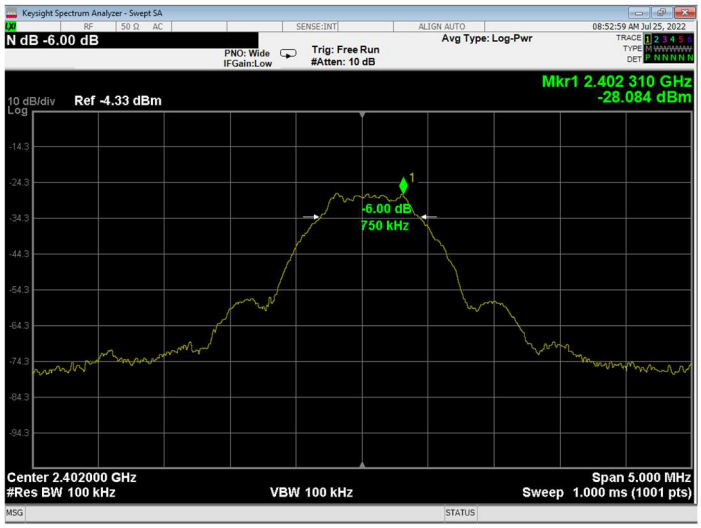


Figure 4. 2402.0 MHz, BLE

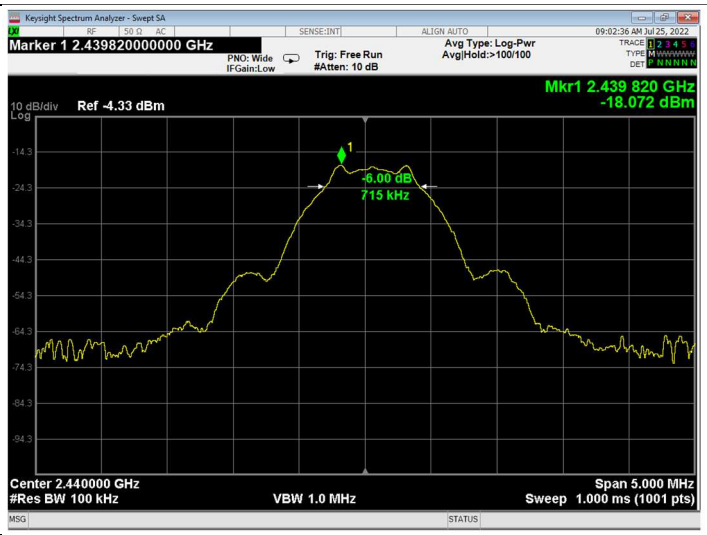


Figure 5. 2440.0 MHz, BLE

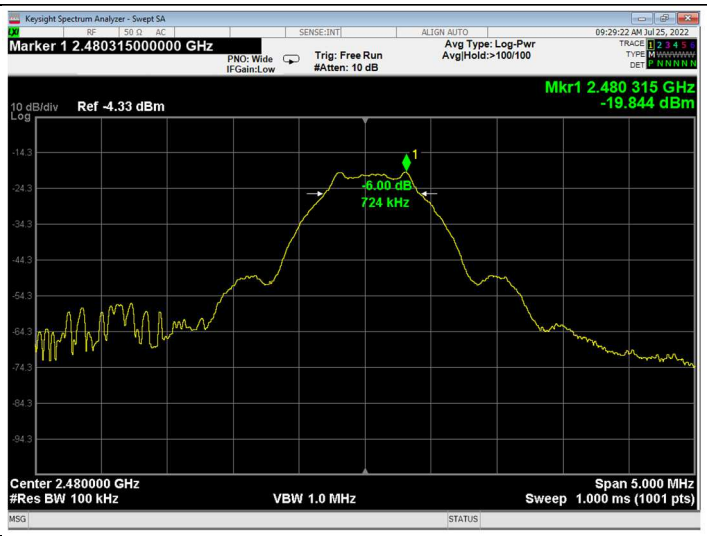


Figure 6. 2480.0 MHz, BLE

4.5 Test Equipment Used; 6dB Bandwidth

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
Signal analyzer	Keysight	EXA signal analyzer N9010A	my51170071	13-Feb-22	13-Feb-24
Horn Antenna	ETS	3115	6142	25-May-21	25-May-24
RF Cable	Commscope ORS	0623 WBC-400	G020132	16-May-22	16-May-23
Full Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 7 Test Equipment Used

5. Maximum Conducted Output Power

5.1 Test Specification

FCC, Part 15, Subpart C, Section 247(b)(3)

5.2 Test Procedure

(Temperature (22°C)/ Humidity (70%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report.

The E.U.T was tested in the chamber and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 1.5 meters above the ground. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization. The emissions were measured at a distance of 3 meters.

Radiated output power levels were measured at selected operation frequencies and the results were converted to power level according to the formula as shown below:

$$P = \frac{(E_{V/m} \times d)^2}{(30 \times G)} \text{ [W]}$$

E - Field Strength (V/m)
d – Distance from transmitter (m)
G – Antenna gain
P – Peak power (W)

5.3 Test Limit

The maximum peak conducted output power of the intentional radiator for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

5.4 Test Results

Protocol Type	Operation Frequency (MHz)	Pol. (V/H)	Field Strength (dBuV/m)	EIRP (dBm)	Ant. Gain (dBi)	Power (dBm)	Power (mW)	Limit (mW)	Margin (mW)
BLE	2402.0	V	88.5	-6.7	1.5	-8.2	0.1	1000.0	-999.90
		H	84.2	-11.0	1.5	-12.5	0.05	1000.0	-999.95
	2440.0	V	88.5	-6.7	1.5	-8.2	0.1	1000.0	-999.90
		H	84.4	-10.8	1.5	-12.3	0.05	1000.0	-999.95
	2480.0	V	87.5	-7.7	1.5	-9.2	0.1	1000.0	-999.90
		H	83.6	-11.6	1.5	-13.1	0.05	1000.0	-999.95

Figure 8 Maximum Peak Power Output

JUDGEMENT: Passed by ___-999.90 mW

For additional information see *Figure 9* to *Figure 14.*

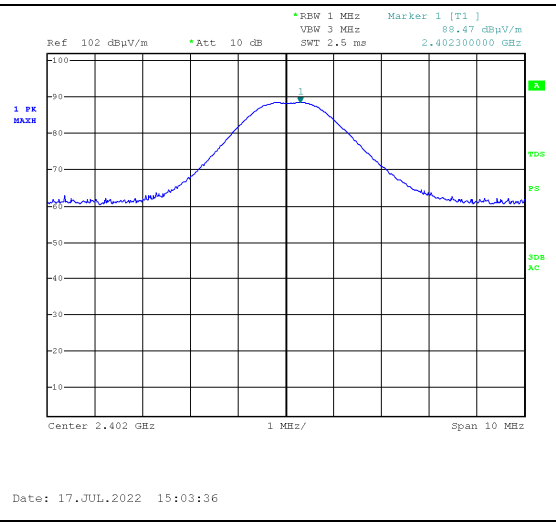


Figure 9. 2402.0 MHz, BLE, Vertical

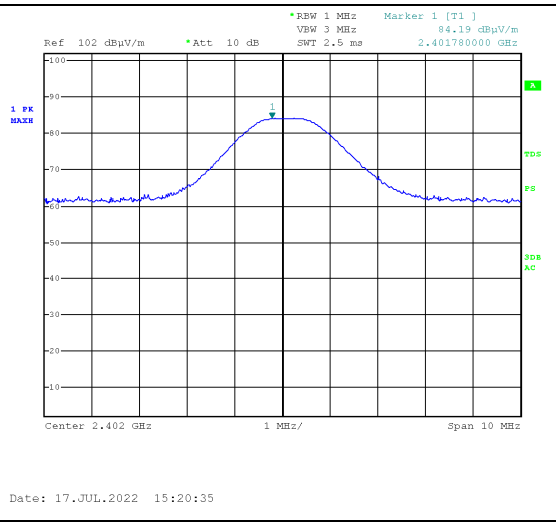


Figure 10. 2402.0 MHz, BLE, Horizontal

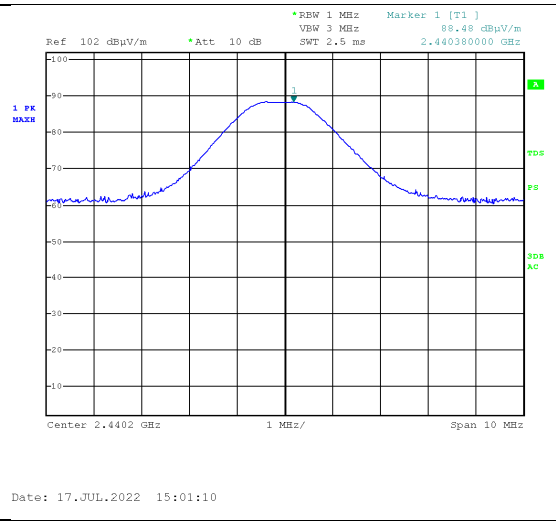


Figure 11. 2440.0 MHz, BLE, Vertical

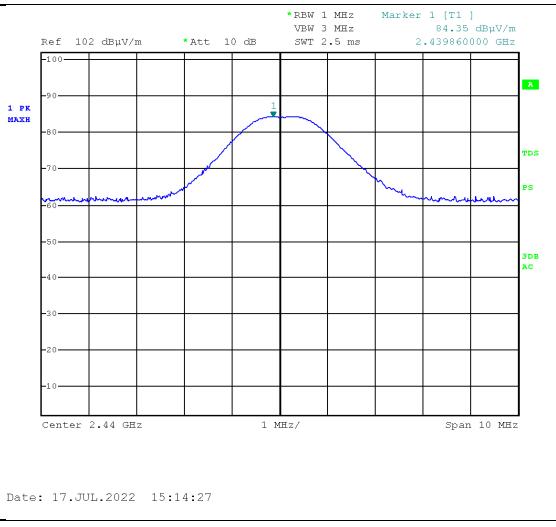


Figure 12. 2440.0 MHz, BLE, Horizontal

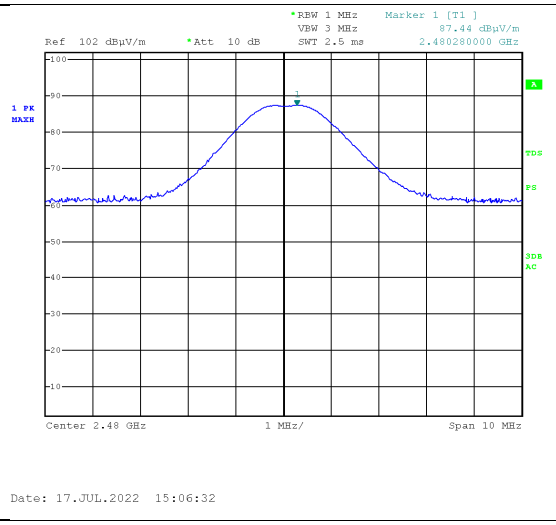


Figure 13. 2480.0 MHz, BLE, Vertical

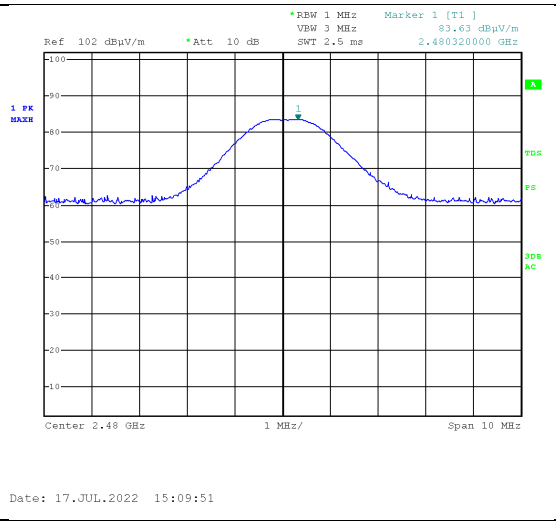


Figure 14. 2480.0 MHz, BLE, Horizontal

5.5 Test Equipment Used; Maximum Conducted Output Power

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESCI7	100724	20-Feb-22	20-Feb-23
Horn Antenna	ETS	3115	6142	25-May-21	25-May-24
RF Cable	Commscope ORS	0623 WBC-400	G020132	16-May-22	16-May-23
Full Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 15 Test Equipment Used

6. Band Edge Spectrum

6.1 Test Specification

FCC, Part 15, Subpart C, Section 247(d)

6.2 Test Procedure

(Temperature (20°C)/ Humidity (59%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report.

The E.U.T was tested in the chamber and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 1.5 meters above the ground. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The emissions were measured at a distance of 3 meters.

The RBW was set to 100 kHz.

6.3 Test Limit

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.

6.4 Test Results

Protocol Type	Operation Frequency	Band Edge Frequency	Spectrum Level	Limit	Margin
	(MHz)	(MHz)	(dBuV/m)	(dBuV/m)	(dB)
BLE	2402.0	2400.0	36.0	61.0	-25.0
	2480.0	2483.5	31.0	60.0	-29.0

Figure 16 Band Edge Spectrum

JUDGEMENT: Passed by ____-25.0 dB

For additional information see *Figure 17* to *Figure 18.*

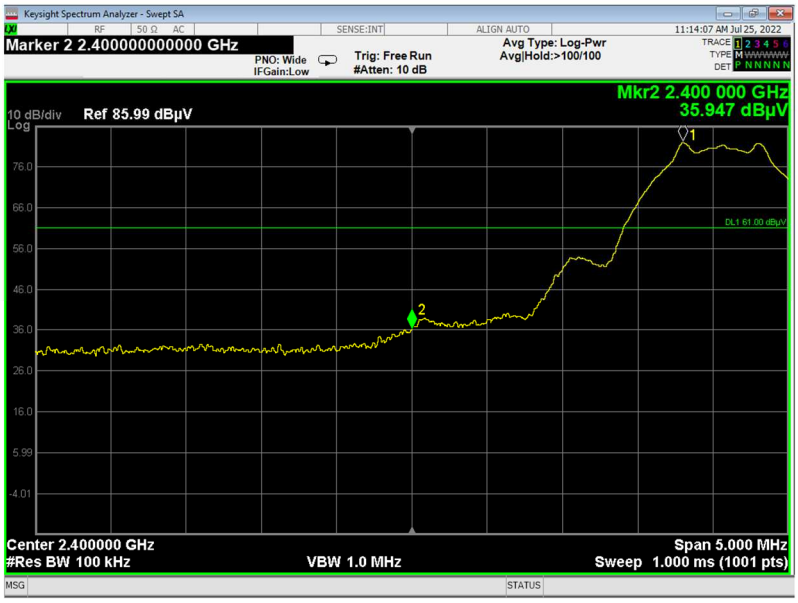


Figure 17 Band Edge Low, BLE

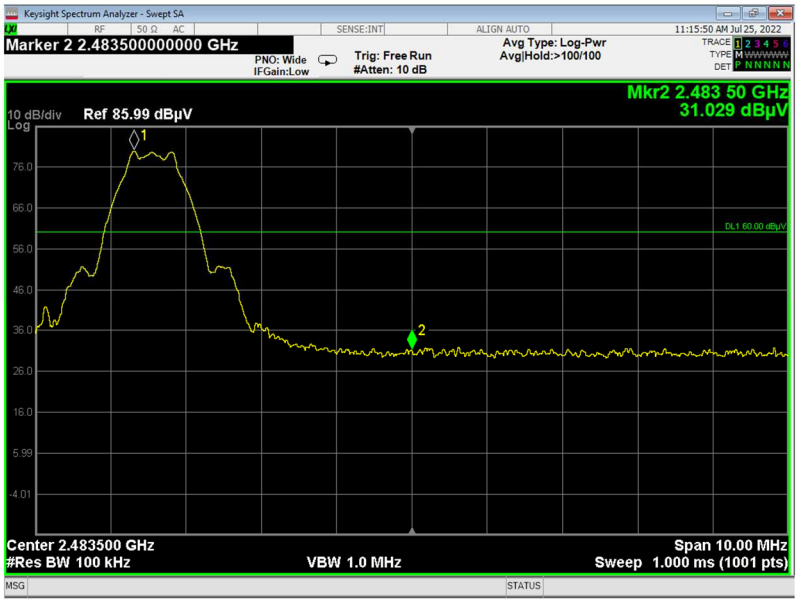


Figure 18 Band Edge High, BLE

6.5 Test Equipment Used; Band Edge

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESCI7	100724	20-Feb-22	20-Feb-23
Horn Antenna	ETS	3115	6142	25-May-21	25-May-24
RF Cable	Commscope ORS	0623 WBC-400	G020132	16-May-22	16-May-23
Full Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 19 Test Equipment Used

7. Transmitted Power Density

7.1 Test Specification

FCC, Part 15, Subpart C, Section 247(e)

7.2 Test Procedure

(Temperature (22°C)/ Humidity (70%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report.

The E.U.T was tested in the chamber and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 1.5 meters above the ground.

The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The emissions were measured at a distance of 3 meters and with measured antenna at vertical orientation

The spectrum analyzer was set to 3 kHz RBW and VBW to 10 kHz.

Radiated output power levels were measured at selected operation frequencies and the results were converted to power level according to the formula as shown below:

$$P = \frac{(E_{V/m} \times d)^2}{(30 \times G)} \text{ [W]}$$

E - Field Strength (V/m)
d – Distance from transmitter (m)
G – Antenna gain
P – Peak power (W)

7.3 Test Limit

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.

7.4 Test Results

Protocol Type	Operation Frequency	Reading Spectrum Analyzer	Reading Spectrum Analyzer	Ant. Gain	PSD	Limit	Margin
	(MHz)	(dBµV/m)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
BLE	2402.0	81.9	-13.3	1.5	-14.8	8.0	-22.8
	2440.0	80.2	-15.0	1.5	-16.5	8.0	-24.5
	2480.0	81.1	-14.1	1.5	-15.6	8.0	-23.6

Figure 20 Test Results

JUDGEMENT: Passed by __-22.8 dB

For additional information see *Figure 21* to *Figure 23*.

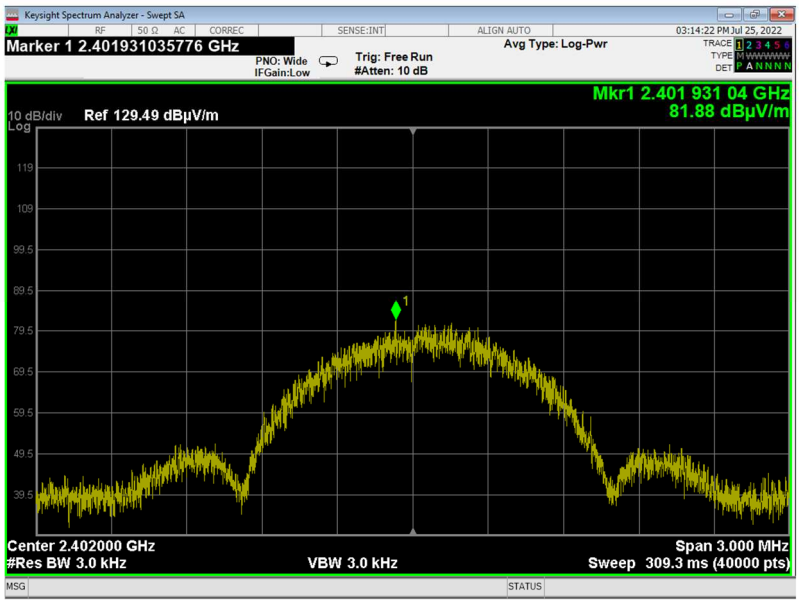


Figure 21. 2402.0 MHz, BLE

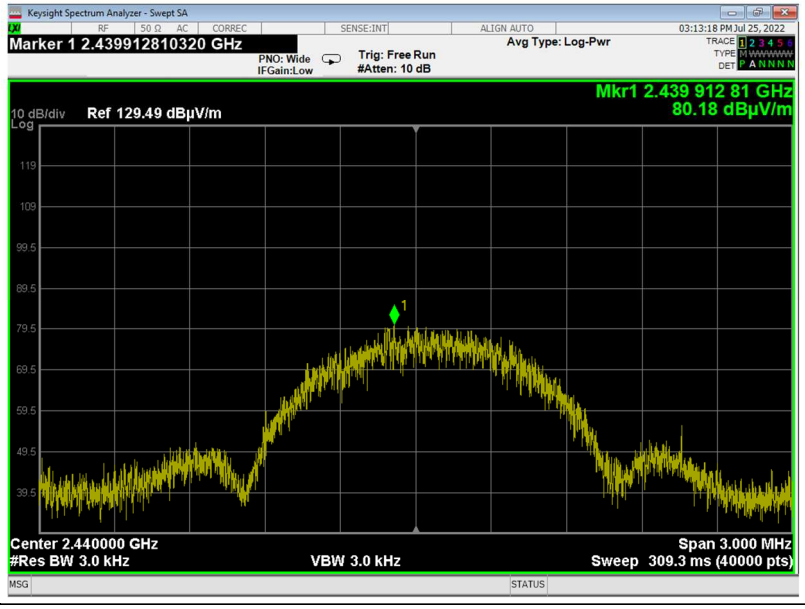


Figure 22. 2440.0 MHz, BLE

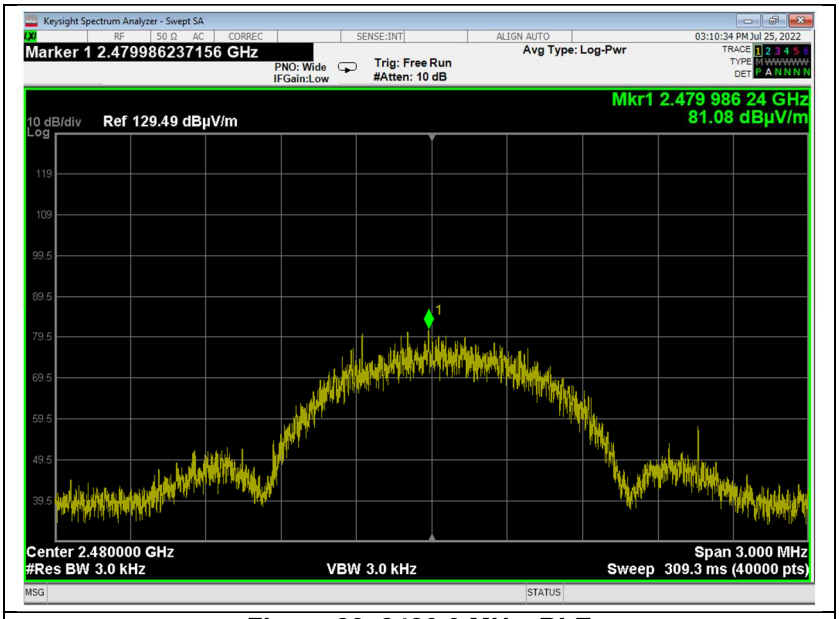


Figure 23. 2480.0 MHz, BLE

7.5 Test Equipment Used; Transmitted Power Density

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESCI7	100724	20-Feb-22	20-Feb-23
Horn Antenna	ETS	3115	6142	25-May-21	25-May-24
RF Cable	Commscope ORS	0623 WBC-400	G020132	16-May-22	16-May-23
Full Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 24 Test Equipment Used

8. Occupied Bandwidth

8.1 Test Specification

FCC, Part 2, Sub part J, Section 2.1049

8.2 Test Procedure

(Temperature (22°C)/ Humidity (56%RH))

The E.U.T. operation mode and test set-up are as described in Section 2 of this report. The E.U.T. was placed in the chamber on a non-conductive table, 0.8 meters above the ground.

The distance between the E.U.T. and test antenna was 3 meters.
The transmitter unit was operated with normal modulation. The RBW set to the range of 1% to 5% of the OBW.
The span was set between 1.5 to 5 times of the OBW.
99% occupied bandwidth function was set on.

8.3 Test Limit

N/A

8.4 Test Results

Protocol Type	Operation Frequency (MHz)	Reading (MHz)
BLE	2402.0	1.05
	2440.0	1.04
	2480.0	1.06

Figure 25. Bandwidth Test Results

JUDGEMENT: N/A

See additional information in *Figure 26* to *Figure 28.*

Occupied Bandwidth

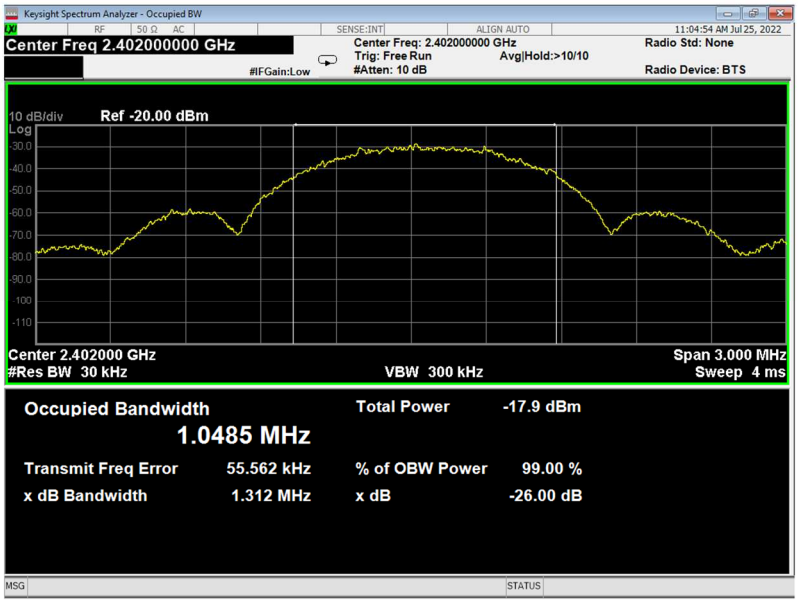


Figure 26. 2402.0 MHz, BLE

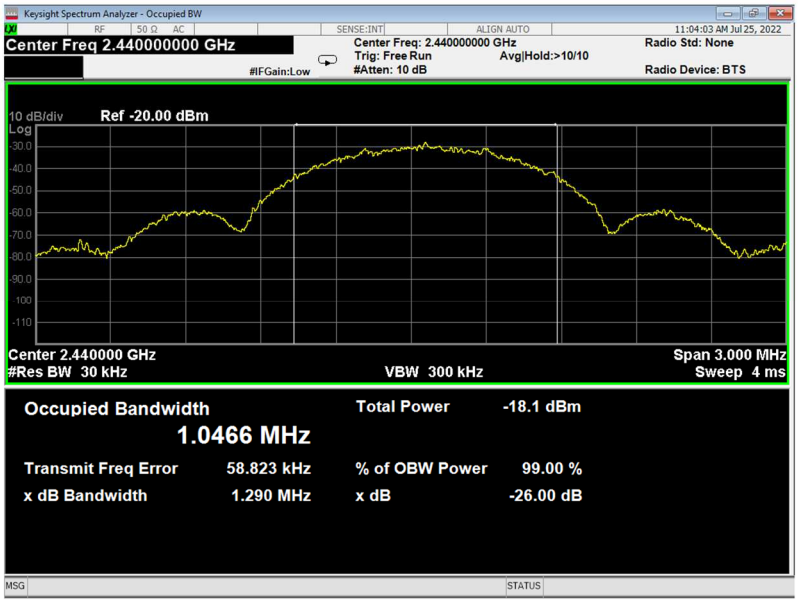


Figure 27. 2440.0 MHz, BLE

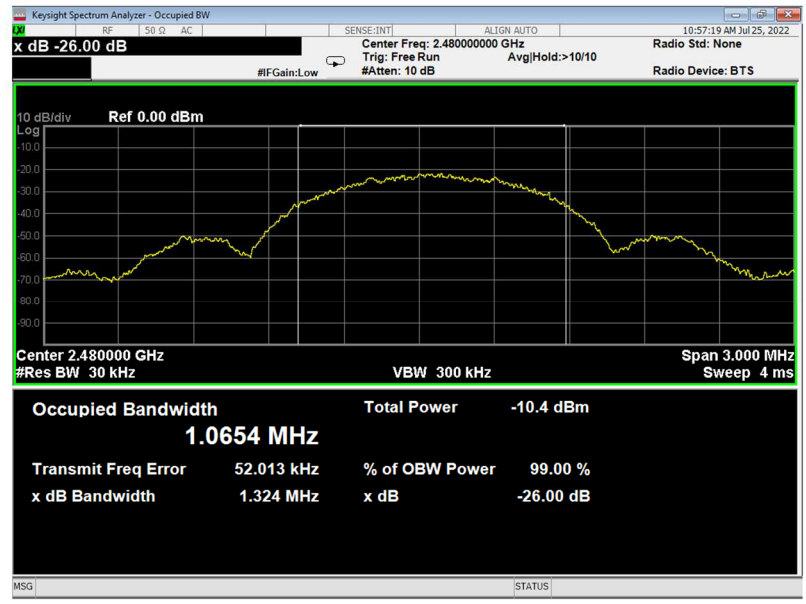


Figure 28. 2480.0 MHz, BLE

8.5 Test Equipment Used; Occupied Bandwidth

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESCI7	100724	20-Feb-22	20-Feb-23
Horn Antenna	ETS	3115	6142	25-May-21	25-May-24
RF Cable	Commscope ORS	0623 WBC-400	G020132	16-May-22	16-May-23
Full Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 29 Test Equipment Used

9. Emissions in Non-Restricted Frequency Bands

9.1 Test Specification

FCC, Part 15, Subpart C, Section 247(d)

9.2 Test Procedure

(Temperature (°C)/ Humidity (%RH))
The E.U.T. operation mode and test set-up are as described in Section 2 of this report.

For measurements between 0.009MHz-30MHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The frequency range 0.009MHz-30MHz was scanned.

For measurements between 30MHz-1GHz:
A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization. The frequency range 30.0MHz -1.0GHz was scanned and the list of the highest emissions was verified and updated accordingly.

For measurements between 1GHz-25GHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 1.5 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The frequency range 1.0GHz -25.0GHz was scanned.

RBW was set to 100 kHz, detector set to max peak and trace to “max hold”.

9.3 Test Limit

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.

9.4 Test Results

JUDGEMENT: Passed

All detected emissions were greater than 20dBc below the fundamental level. The EUT met the requirements of the F.C.C. Part 15, Subpart C, Section 247(d) specification.

9.5 Test Instrumentation Used, Emission in Non-Restricted Frequency Bands

Instrument	Manufac.	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	20-Feb-23	20-Feb-23
EMI Receiver	HP	8542E	3906A00276	22-Feb-22	22-Feb-23
RF Filter Section	HP	85420E	3705A00248	22-Feb-22	22-Feb-23
EMC Analyzer	HP Agilent/ Keysight	8593EM	3826A00265	20-Feb-22	20-Feb-23
Active Loop Antenna	EMCO	6502	2950	5-Jul-22	5-Jul-23
Biconical Antenna	EMCO	3110B	9912-3337	18-Jan-22	18-Jan-24
Log Periodic Antenna	EMCO	3146	9505-4081	27-Apr-21	27-Apr-24
Horn Antenna	ETS	3115	29845	25-May-21	25-May-24
Horn Antenna	ARA	SWH-28	1007	2-Nov-21	2-Nov-24
MicroWave System Amplifier	HP	83006A	3104A00589	23-Aug-20	23-Aug-21
RF Cable Chamber	Commscope ORS	0623 WBC-400	G020132	25-May-21	25-May-22
RF Cable Oats	EIM	RG214-11N(X2)		22-Jun-22	22-Jun-23
Filter Band Pass 4-20 GHz	Meuro	MFL040120H50	902252	16-May-22	16-May-23
Semi Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR
Antenna Mast	ETS	2070-2	9608-1497	NCR	NCR
Turntable	ETS	2087	-	NCR	NCR

Instrument	Manufac.	Model	Serial No.	Last Calibration Date	Next Calibration Due
Mast & Table Controller	ETS/EMCO	2090	9608-1456	NCR	NCR

Figure 30 Test Equipment Used

9.6 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors", using the following equation:

FS = RA + AF + CF

FS: Field Strength [dBµv/m]

RA: Receiver Amplitude [dBµv]

AF: Receiving Antenna Correction Factor [dB/m]

CF: Cable Attenuation Factor [dB]

Example: FS = 30.7 dBµV (RA) + 14.0 dB (AF) + 0.9 dB (CF) = 45.6 dBµV

No external pre-amplifiers are used.

10. Emissions in Restricted Frequency Bands

10.1 Test Specification

FCC Part 15, Subpart C, Sections 15.209, 15.205, 15.247(d)

10.2 Test Procedure

(Temperature (23°C)/ Humidity (65%RH))
The E.U.T. operation mode and test set-up are as described in Section 2 of this report.

For measurements between 0.009-30MHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The frequency range 0.009MHz-30MHz was scanned.

For measurements between 30-1000MHz:
A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization. The frequency range 30MHz -1000MHz was scanned and the list of the highest emissions was verified and updated accordingly.

For measurements between 1GHz-25GHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 1.5 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The frequency range 1GHz -25GHz was scanned.

Tests done for all “worst case”, each protocol type. The highest radiations are described in the tables below.

The levels of the emissions within the frequency ranges of the restricted bands (Section 15.205 of FCC Part 15) were compared to the limits of the table in Section 15.209 (a), General Requirements.

10.3 Test Limit

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)).

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field strength* (dBµV/m)	Field strength* (dBµV/m)@3m
0.009-0.490	2400/F(kHz)	300	48.5-13.8	128.5-73.8
0.490-1.705	24000/F(kHz)	30	33.8-23.0	73.8-63.0
1.705-30.0	30	30	29.5	69.5
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

Figure 31 Table of Limits

10.4 Test Results

JUDGEMENT: Passed by __-3.4 dB

The EUT met the requirements of the F.C.C. Part 15, Subpart C Sections 15.209, 15.205, 15.247(d) specifications.

The details of the highest emissions are given in *Figure 32*.

Radiated Emission

E.U.T Description NT Basic Device
Type NT Basic
Serial Number: NTB-KT-0003

Specifications: FCC, Part 15, Subpart C, Sections 15.209, 15.205, 15.247(d)
RSS 247, Issue 2, Section 3.3; RSS Gen, Issue 5, Section 8.10

Antenna Polarization: Horizontal/Vertical
Frequency Range: 9kHz to 25.0 GHz
Protocol Type: BLE
Detector: Peak, Average

Operation Frequency	Freq.	Pol	Peak Reading	Peak Limit	Peak Margin	Average Reading	Average Limit	Average Margin
(MHz)	(MHz)	(H/V)	(dBµV/m)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
2402.0	2390.0	V	50.8 (N.L.)	74.0	-23.2	40.6 (N.L.)	54.0	-13.4
	2390.0	H	55.2	74.0	-18.8	47.6	54.0	-6.4
	7206.0	V	54.4	74.0	-19.6	45.4	54.0	-8.6
	7206.0	H	56.7	74.0	-17.3	48.2	54.0	-5.8
2440.0	7320.0	V	56.6	74.0	-17.4	46.9	54.0	-7.1
	7320.0	H	58.2	74.0	-15.8	49.9	54.0	-4.1
2480.0	7440.0	V	56.1	74.0	-17.9	46.0	54.0	-8
	7440.0	H	57.5	74.0	-16.5	49.7	54.0	-4.3
	2483.5	V	53.1	74.0	-20.9	45.7	54.0	-8.3
	2483.5	H	57.6	74.0	-16.4	50.6	54.0	-3.4

Figure 32. Radiated Emission Results

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

"Peak Amp" includes correction factor.

* "Correction Factor" = Antenna Factor + Cable Loss- Low Noise Amplifier Gain

10.5 Test Instrumentation Used; Emissions in Restricted Frequency Bands

Instrument	Manufac.	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	20-Feb-23	20-Feb-23
EMI Receiver	HP	8542E	3906A00276	22-Feb-22	22-Feb-23
RF Filter Section	HP	85420E	3705A00248	22-Feb-22	22-Feb-23
EMC Analyzer	HP Agilent/ Keysight	8593EM	3826A00265	20-Feb-22	20-Feb-23
Active Loop Antenna	EMCO	6502	2950	5-Jul-22	5-Jul-23
Biconical Antenna	EMCO	3110B	9912-3337	18-Jan-22	18-Jan-24
Log Periodic Antenna	EMCO	3146	9505-4081	27-Apr-21	27-Apr-24
Horn Antenna	ETS	3115	29845	25-May-21	25-May-24
Horn Antenna	ARA	SWH-28	1007	2-Nov-21	2-Nov-24
MicroWave System Amplifier	HP	83006A	3104A00589	23-Aug-20	23-Aug-21
RF Cable Chamber	Commscope ORS	0623 WBC-400	G020132	25-May-21	25-May-22
RF Cable Oats	EIM	RG214-11N(X2)		22-Jun-22	22-Jun-23
Filter Band Pass 4-20 GHz	Meuro	MFL040120H50	902252	16-May-22	16-May-23
Semi Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR
Antenna Mast	ETS	2070-2	9608-1497	NCR	NCR
Turntable	ETS	2087	-	NCR	NCR
Mast & Table Controller	ETS/EMCO	2090	9608-1456	NCR	NCR

Figure 33 Test Equipment Used

11. Antenna Gain/Information

The antenna gain is 1.5 dBi, type: integral.

12. RF Exposure/Safety

See a separate report.

13. Appendix A - Correction Factors

13.1 ITL #1911: OATS RF Cable

Frequency (MHz)	Cable Loss (dB)		Frequency (MHz)	Cable Loss (dB)
1.00	0.50		450.00	5.83
10.00	1.00		500.00	6.33
20.00	1.34		550.00	6.67
30.00	1.50		600.00	6.83
50.00	1.83		650.00	7.17
100.00	2.67		700.00	7.66
150.00	3.17		750.00	7.83
200.00	3.83		800.00	8.16
250.00	4.17		850.00	8.50
300.00	4.50		900.00	8.83
350.00	5.17		950.00	8.84
400.00	5.50		1000.00	9.00

13.2 ITL #1840: Semi-Anechoic Chamber RF Cable

Frequency (MHz)	Cable Loss (dB)		Frequency (MHz)	Cable Loss (dB)
1,000.0	-1.40		10,000.0	-6.00
1,500.0	-1.70		10,500.0	-6.20
2,000.0	-2.00		11,000.0	-6.20
2,500.0	-2.30		11,500.0	-6.00
3,000.0	-2.60		12,000.0	-6.00
3,500.0	-2.80		12,500.0	-6.10
4,000.0	-3.10		13,000.0	-6.30
4,500.0	-3.30		13,500.0	-6.50
5,000.0	-3.60		14,000.0	-6.70
5,500.0	-3.70		14,500.0	-7.00
6,000.0	-4.00		15,000.0	-7.30
6,500.0	-4.40		15,500.0	-7.50
7,000.0	-4.7		16,000.0	-7.60
7,500.0	-4.80		16,500.0	-8.00
8,000.0	-5.00		17,000.0	-8.00
8,500.0	-5.10		17,500.0	-8.10
9,000.0	-5.60		18,000.0	-8.20
9,500.0	-5.80			

13.3 ITL # 1075: Active Loop Antenna

Frequency (MHz)	MAF (dBs/m)	AF (dB/m)	Frequency (MHz)	MAF (dBs/m)	AF (dB/m)
0.01	-33.10	18.40	3.00	-40.00	11.50
0.02	-37.20	14.30	4.00	-40.10	11.40
0.03	-38.20	13.30	5.00	-40.20	11.30
0.05	-39.80	11.70	6.00	-40.40	11.10
0.10	-40.10	11.40	7.00	-40.40	11.10
0.20	-40.30	11.20	8.00	-40.40	11.10
0.30	-40.30	11.20	9.00	-40.50	11.00
0.50	-40.30	11.20	10.00	-40.50	11.00
0.70	-40.30	11.20	20.00	-41.50	10.00
1.00	-40.10	11.40	30.00	-43.50	8.00
2.00	-40.00	11.50			

13.4 ITL #1356: Biconical Antenna

Frequency (MHz)	AF (dB/m)	Frequency (MHz)	AF (dB/m)
30.00	13.00	90.00	8.23
35.00	10.89	100.00	11.12
40.00	10.59	120.00	13.16
45.00	10.63	140.00	13.07
50.00	10.12	160.00	14.80
60.00	9.26	180.00	16.95
70.00	7.74	200.00	17.17
80.00	6.63		

13.5 ITL # 1349: Log Periodic Antenna

Frequency (MHz)	AF (dB/m)
200.00	11.58
250.00	12.04
300.00	14.76
400.00	15.55
500.00	17.85
600.00	18.66
700.00	20.87
800.00	21.15
900.00	22.32
1000.00	24.22

13.6 ITL # 1352: 1-18 GHz Horn Antenna

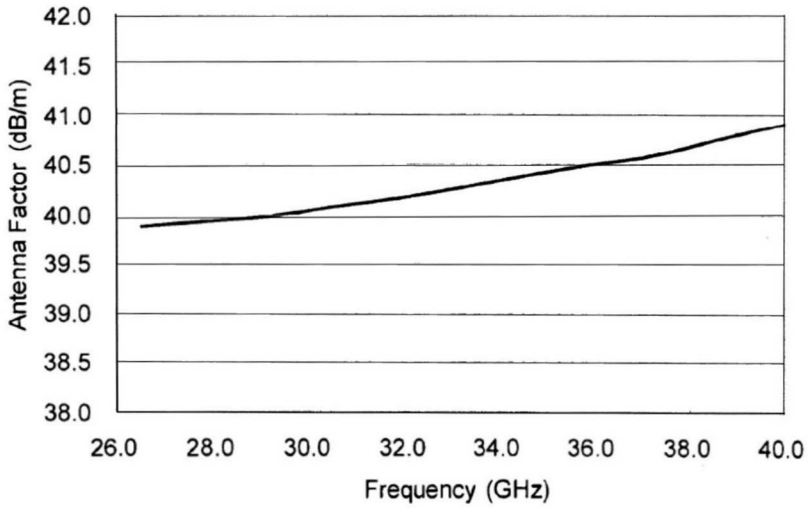
Frequency (GHz)	AF (dB/m)		Frequency (GHz)	AF (dB/m)
0.75	25.00		9.50	38.00
1.00	23.50		10.00	38.50
1.50	26.00		10.50	38.50
2.00	29.00		11.00	38.50
2.50	27.50		11.50	38.50
3.00	30.00		12.00	38.00
3.50	31.50		12.50	38.50
4.00	32.50		13.00	40.00
4.50	32.50		13.50	41.00
5.00	33.00		14.00	40.00
5.50	35.00		14.50	39.00
6.00	36.50		15.00	38.00
6.50	36.50		15.50	37.50
7.00	37.50		16.00	37.50
7.50	37.50		16.50	39.00
8.00	37.50		17.00	40.00
8.50	38.00		17.50	42.00
9.00	37.50		18.00	42.50

13.7 ITL # 1353: 18-26.5 GHz Horn Antenna

Frequency (MHz)	Measured antenna factor (dB/m)[2]		Frequency (MHz)	Measured antenna factor (dB/m)[2]
18,000.00	32.40		22,500.00	33.00
18,500.00	32.00		23,000.00	33.10
19,000.00	32.30		23,500.00	33.80
19,500.00	32.40		24,000.00	33.50
20,000.00	32.30		24,500.00	33.50
20,500.00	32.80		25,000.00	33.80
21,000.00	32.80		25,500.00	33.90
21,500.00	32.70		26,000.00	34.20
22,000.00	33.10		26,500.00	34.70

[2] The antenna factor shall be added to the receiver's reading in dBµV, to obtain field strength in dBµ V/m

13.8 ITL # 1777: 26.5-40 GHz Horn Antenna



End of Test Report