Sargent Manufacturing Company

TEST REPORT

SCOPE OF WORK
Emissions Testing – Electronic access control system with RF Module, Model PC428D0089SA00CX

REPORT NUMBER
105838170BOX-001.BLE

ISSUE DATE
December 12, 2024

[REVISED DATE]
Original issue

DOCUMENT CONTROL NUMBER
Non-Specific Radio Report Shell Rev. October 2022

EMISSIONS TEST REPORT

(FULL COMPLIANCE)

Report Number: 105838170BOX-001.BLE
Project Number: G105838170

Report Issue Date: December 12, 2024

Model(s) Tested: PC428D0089SA00CX
Model(s) Partially Tested: None
Model(s) Not Tested but declared equivalent by the client: None

Standards: CFR47 FCC Part 15 Subpart C, Section 15.247: 10/2024
RSS-247 Issue 3 August 2023,
RSS-210 Issue 10 December 2019
KDB 558074 D01 15.247 Meas Guidance v05r02: 04/2019
RSS-Gen Issue 5 April 2018 +Amendment 1 March 2019

Host ID: FCC: U4A-MODBLE9163K
IC:6982A-MODBLE9163K

The product contains the following radio modules:
The Limited Module FCC ID containing all 4 radios:
OMNIKEY SE Reader Core Mini
FCC ID: JQ6-RCS5510
IC: 2236B- RCS5510

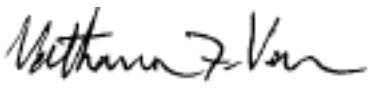
Tested by:
Intertek Testing Services NA, Inc.
70 Codman Hill Road
Boxborough, MA 01719
USA

Client:
Sargent Manufacturing Company
100 Sargent Drive
New Haven, CT 6511
USA

Report prepared by

Kouma Sinn / Senior Staff Engineer

Report reviewed by



Vathana Ven / Senior Staff Engineer

Table of Contents

1 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 4.0. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
3	Client Information	--
4	Description of Equipment Under Test and Variant Models	--
5	System Setup and Method	--
6	Maximum Peak Output CFR47 FCC Part 15 Subpart C, Section 15.247 (b)(3): 10/2024 RSS-247 Issue 3 August 2023	Pass
7	6 dB Bandwidth (DTS Bandwidth) and Occupied Bandwidth CFR47 FCC Part 15 Subpart C, Section 15.247 (a)(2): 10/2024 RSS-247 Issue 3 August 2023	Pass
8	Maximum Power Spectral Density CFR47 FCC Part 15 Subpart C, Section 15.247 (e): 10/2024 RSS-247 Issue 3 August 2023	Pass
9	Band Edge Compliance CFR47 FCC Part 15 Subpart C, Section 15.247 (d): 10/2024 RSS-247 Issue 3 August 2023	Pass
10	Transmitter spurious emissions CFR47 FCC Part 15 Subpart C, Section 15.247 (d): 10/2024 RSS-247 Issue 3 August 2023	Pass
11	Digital Device Radiated Spurious Emissions CFR47 FCC Part 15 Subpart B 15.109: 10/2024 ISED ICES-003 Issue 7 October 2020	Pass
12	AC Mains Line Conducted Emissions FCC 47CFR Part 15.107: 10/2024 ISED ICES-003 Issue 7 October 2020	Pass
13	Revision History	--

Notes: The EUT is battery powered. The radio does not transmit simultaneously with other radio within the electronic access control system in normal operation.

3 Client Information

This EUT was tested at the request of:

Client: Sargent Manufacturing Company
100 Sargent Drive
New Haven, CT 6511
USA

Contact: Manuel Medeiros
Telephone: 1 862 221-6491
Email: manny.medeiros@assaabloy.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Sargent Manufacturing Company
100 Sargent Drive
New Haven, CT 6511
USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Electronic access control system with RF Module BLE (Metal Enclosure With Keypad)	Sargent Manufacturing Company	IN-BIKP	PC428D0089SA00CX
Electronic access control system with RF Module BLE (Plastic Enclosure With Keypad)	Sargent Manufacturing Company	IN-BIKP	PC428D0089SA00CX
Electronic access control system with RF Module BLE (Metal Enclosure Without Keypad)	Sargent Manufacturing Company	IN-BIKP	PC428D0089SA00CX
Electronic access control system with RF Module BLE (Plastic Enclosure Without Keypad)	Sargent Manufacturing Company	IN-BIKP	PC428D0089SA00CX

Receive Date:	10/24/2024
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
Electronic access control system. It contains the radio modules as below. Host ID: FCC: U4A-MODBLE9163K IC:6982A-MODBLE9163K The product contains the following radio modules: The Limited Module FCC ID containing all 4 radios: OMNIKEY SE Reader Core Mini FCC ID: JQ6-RCS5510 IC: 2236B- RCS5510

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
9 V (6 x 1.5 V Batteries)	1.5 A	DC	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	BLE – Programmed to transmit continuously with modulation at Low, Mid, and High channels

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	None – Preprogrammed to transmit continuously with modulation

Bluetooth Low Energy Radio/Receiver Characteristics	
Frequency Band(s)	2402-2480 MHz
Modulation Type(s)	GFSK
Maximum EIRP Power	6.74 dBm
Test Channels	Low (2402 MHz), Mid (2240 MHz), High (2480 MHz)
Occupied Bandwidth	2101 kHz
Frequency Hopper: Number of Hopping Channels	N/A
Frequency Hopper: Channel Dwell Time	N/A
Frequency Hopper: Max interval between two instances of use of the same channel	N/A
MIMO Information (# of Transmit and Receive antenna ports)	N/A
Equipment Type	Limited Module
Antenna Type and Gain	PCB Trace Antenna 1 dBi

Variant Models:

The following variant models were not tested as part of this evaluation, but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

None

5 System Setup and Method

Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
--	None	N/A	N/A	N/A	N/A

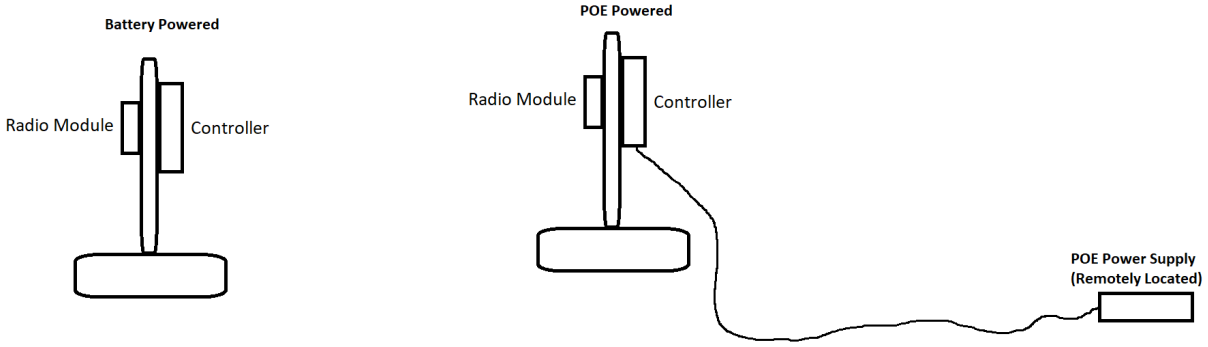
Support Equipment			
Description	Manufacturer	Model Number	Serial Number
Power Supply*	None	None	None
POE Power Supply	None	None	None

*Power supply used for AC mains line conducted emissions.

5.1 Method:

Configuration as required by ANSI C63.10-2013, RSS-Gen Issue 5 April 2018, ANSI C63.4:2014, and KDB 558074 D01 15.247 Meas Guidance v05r02: 04/2019.

5.2 EUT Block Diagram:



6 Maximum Peak Output Power

6.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, ANSI C63.10, and KDB 558074 D0115.247 Meas Guidancev05r02.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

6.2 Limits:

Limits – FCC Part §15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt or 30 dBm.

Notes: The limits for RSS-247 is the same as the FCC limits above.

6.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/15/2024	07/15/2025
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	03/26/2024	03/26/2025
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	01/17/2024	01/17/2025
ETS002	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/04/2024	09/04/2025

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2023.0.9.0

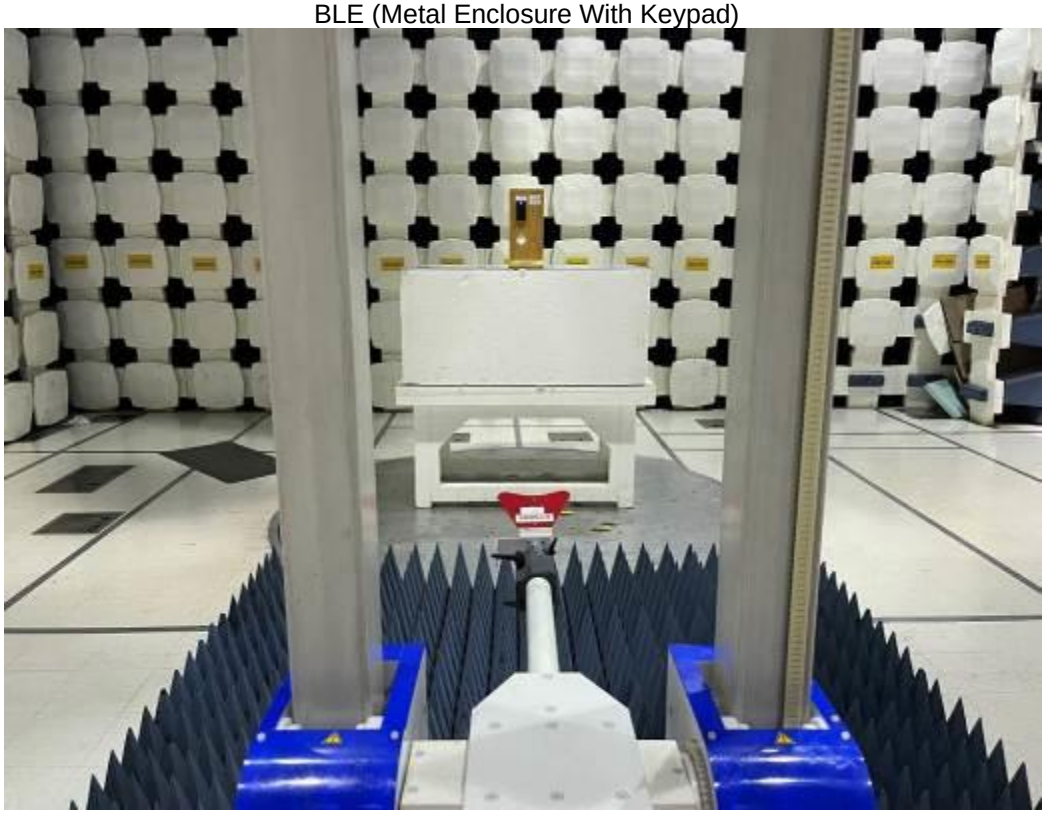
6.4 Results:

The sample tested was found to Comply.

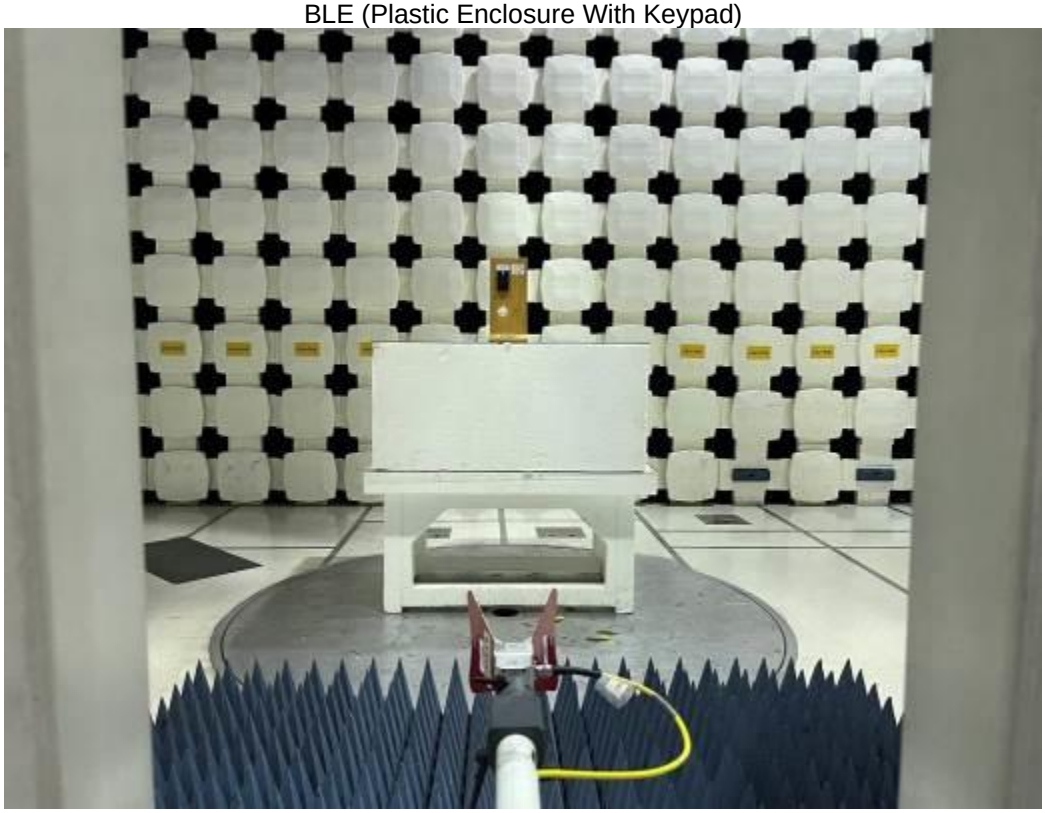
6.5 Setup Photographs:

===Battery Powered===

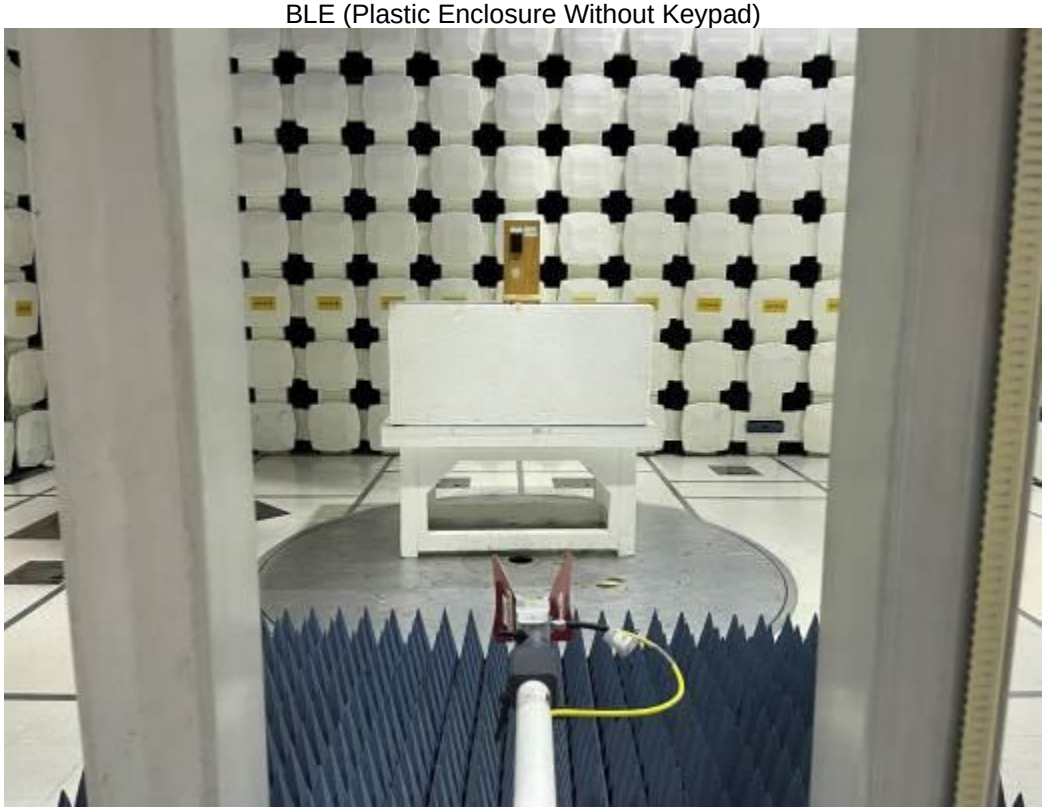
BLE (Metal Enclosure With Keypad)



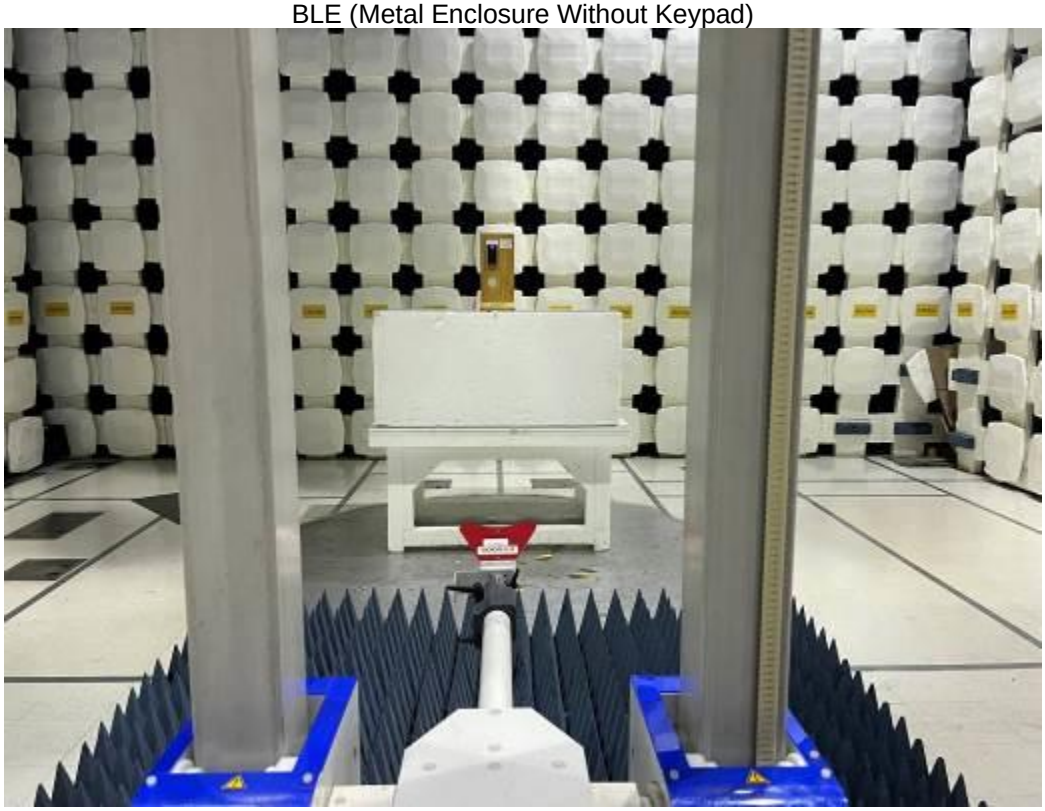
BLE (Plastic Enclosure With Keypad)



BLE (Plastic Enclosure Without Keypad)

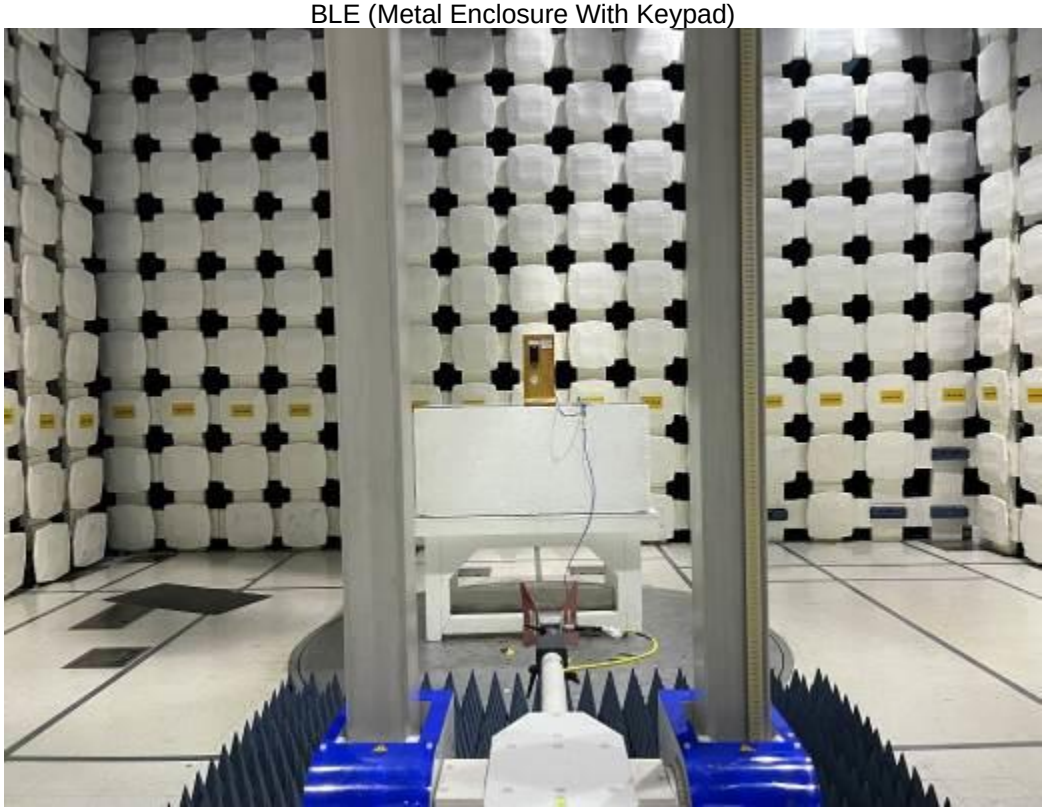


BLE (Metal Enclosure Without Keypad)

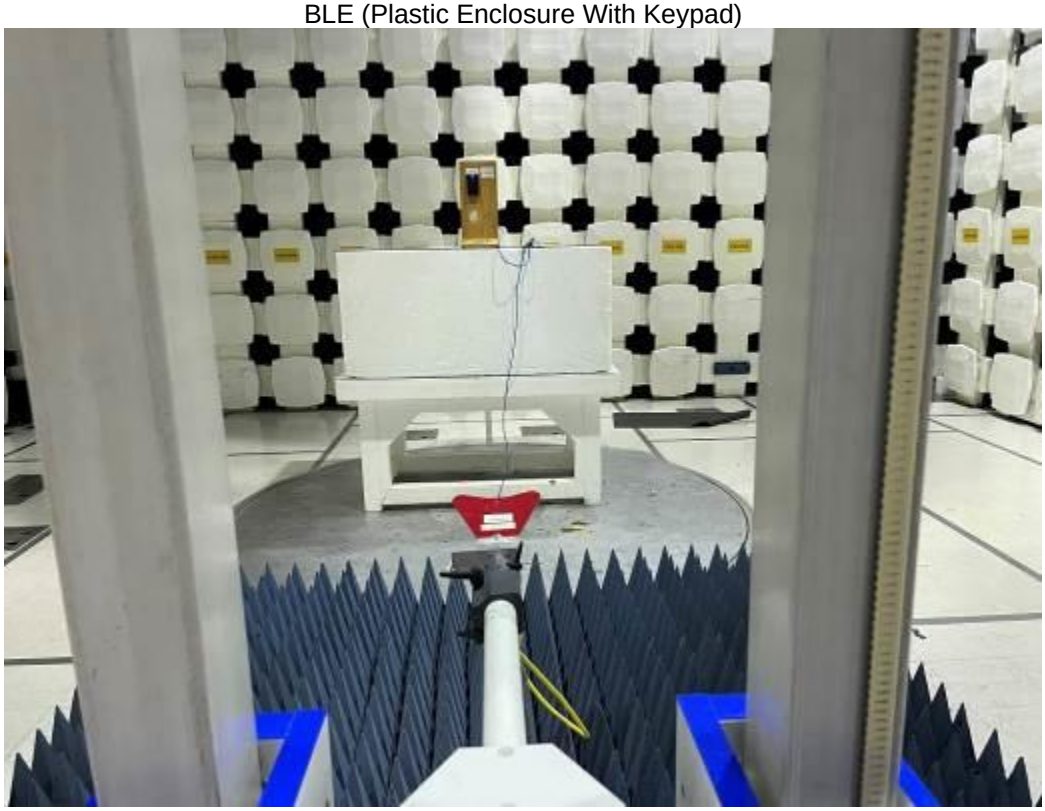


===POE Powered===

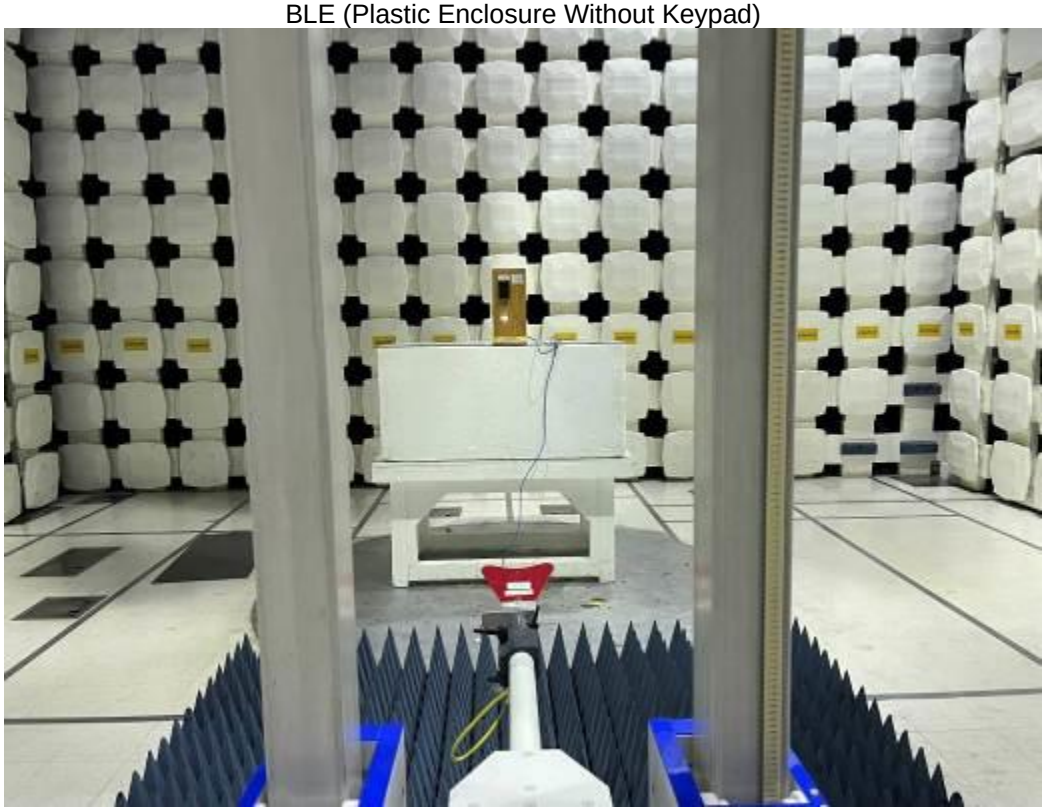
BLE (Metal Enclosure With Keypad)



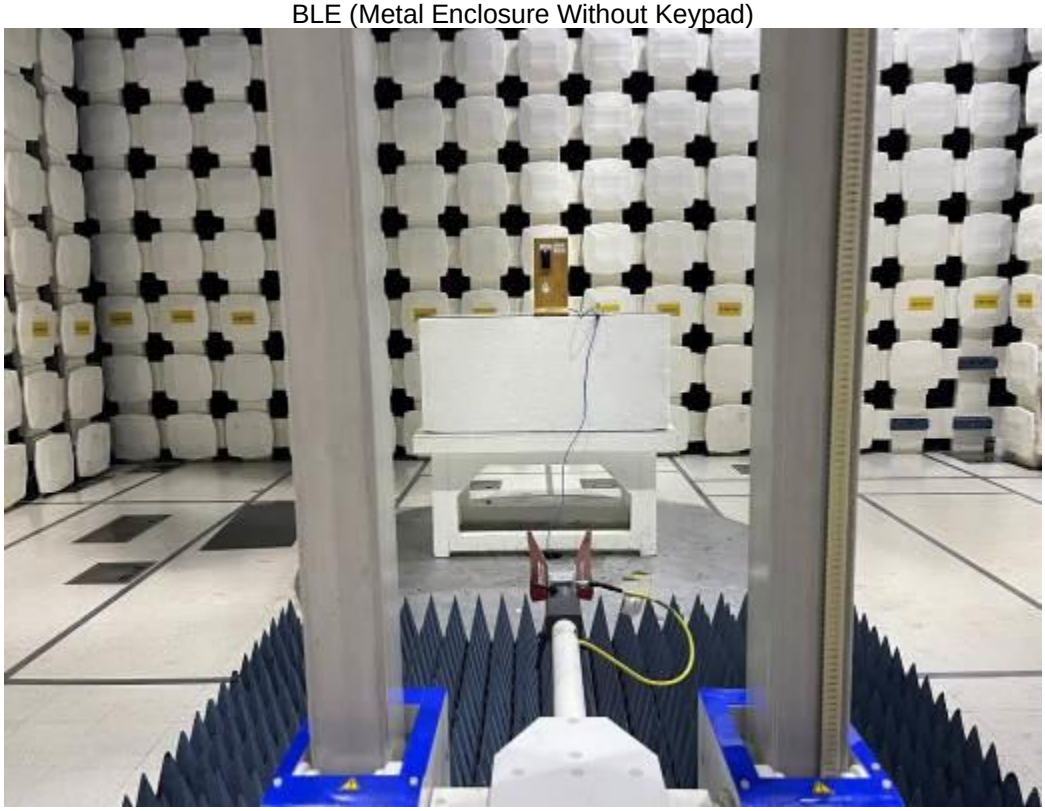
BLE (Plastic Enclosure With Keypad)



BLE (Plastic Enclosure Without Keypad)



BLE (Metal Enclosure Without Keypad)



6.6 Test Data:

Bluetooth Low Energy EIRP Power (Battery Powered)

EUT Configurations	Frequency (MHz)	Field Strength (dBuV/m)	EIRP (dBm)	Conducted Power Limit (dBm)	Results
Plastic Enclosure With Keypad	2402	99.60	4.40	30	Compliance
	2440	101.49	6.29	30	Compliance
	2480	101.06	5.86	30	Compliance
Metal Enclosure With Keypad	2402	93.49	-1.71	30	Compliance
	2440	98.41	3.21	30	Compliance
	2480	95.34	0.14	30	Compliance
Plastic Enclosure Without Keypad	2402	91.84	-3.36	30	Compliance
	2440	92.54	-2.66	30	Compliance
	2480	95.80	0.60	30	Compliance
Metal Enclosure Without Keypad	2402	97.50	2.30	30	Compliance
	2440	99.03	3.83	30	Compliance
	2480	97.77	2.57	30	Compliance

Bluetooth Low Energy EIRP Power (POE Powered)

EUT Configurations	Frequency (MHz)	Field Strength (dBuV/m)	EIRP (dBm)	Conducted Power Limit (dBm)	Results
Plastic Enclosure With Keypad	2402	96.91	1.71	30	Compliance
	2440	101.94	6.74	30	Compliance
	2480	100.92	5.72	30	Compliance
Metal Enclosure With Keypad	2402	92.36	-2.84	30	Compliance
	2440	95.40	0.20	30	Compliance
	2480	99.13	3.93	30	Compliance
Plastic Enclosure Without Keypad	2402	95.52	-2.68	30	Compliance
	2440	93.50	-1.7	30	Compliance
	2480	93.18	-2.02	30	Compliance
Metal Enclosure Without Keypad	2402	93.29	-1.91	30	Compliance
	2440	99.10	3.9	30	Compliance
	2480	100.78	5.58	30	Compliance

Notes: The EIRP was calculated from field strength with the formula below:

$EIRP = E_{Meas} + 20\log(d_{Meas})-104.7$, where d = 3 m

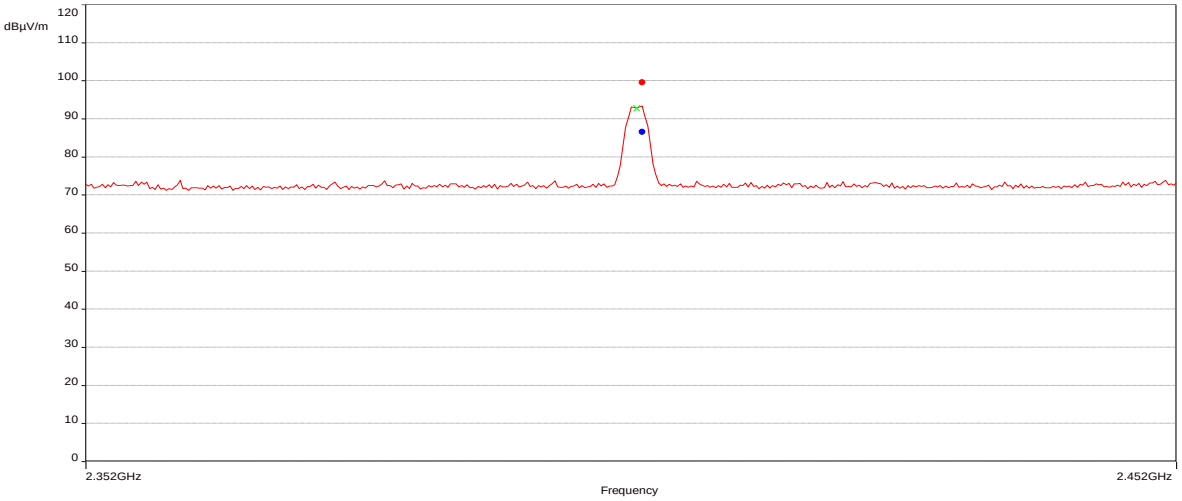
===Battery Powered===

BLE (Plastic Enclosure With Keypad), Low Channel EIRP Power

Test Information:

Date and Time	10/9/2024 1:47:10 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	42 %
Atmospheric Pressure	1003 mbars
Comments	Scan 51 BLE Tx Low (Plastic Enclosure - With Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2402.499	99.60	--	353.80	4.00	Horizontal	1M	1.00	39.40

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2402.499	86.61	--	353.80	4.00	Horizontal	1M	1.00	39.40

Notes: The EIRP was calculated from peak field strength from above using the formula below:

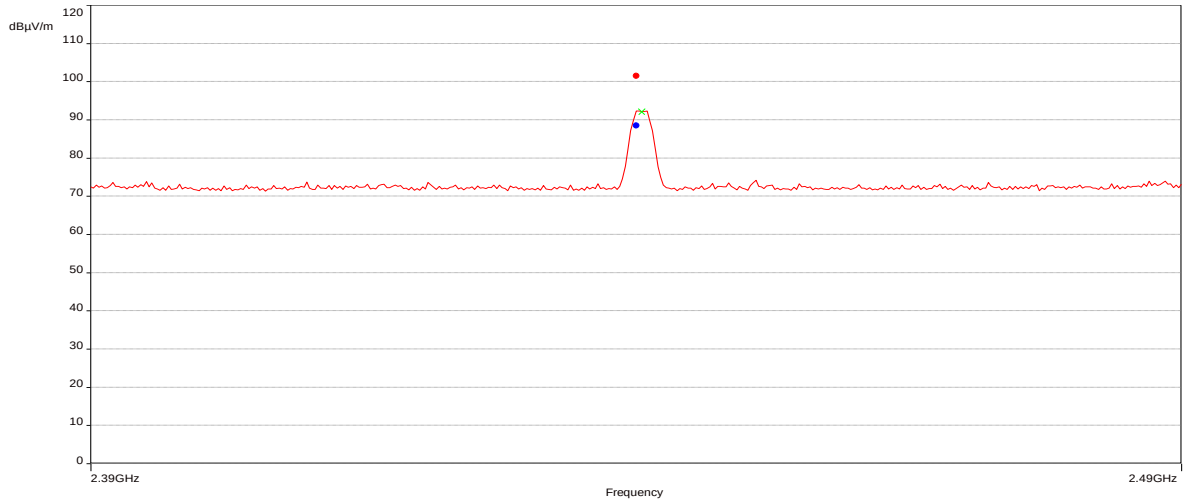
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 4.40 dBm

BLE (Plastic Enclosure With Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	10/9/2024 2:18:09 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	42 %
Atmospheric Pressure	1003 mbars
Comments	Scan 52 BLE Tx Mid (Plastic Enclosure - With Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2439.502	101.49	--	0.00	3.87	Horizontal	1M	0.00	39.29

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2439.502	88.52	--	0.00	3.87	Horizontal	1M	0.00	39.29

Notes: The EIRP was calculated from peak field strength from above using the formula below:

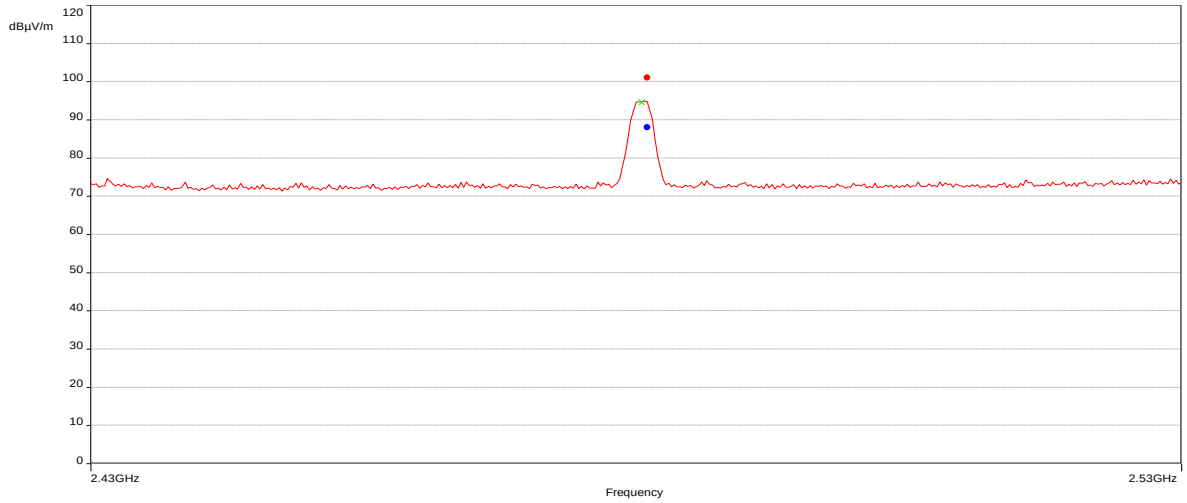
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 6.29 dBm

BLE (Plastic Enclosure With Keypad), High Channel EIRP Power

Test Information:

Date and Time	10/9/2024 2:40:42 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	42 %
Atmospheric Pressure	1003 mbars
Comments	Scan 53 BLE Tx High (Plastic Enclosure - With Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2480.499	101.06	--	1.40	3.75	Horizontal	1M	1.00	39.32

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2480.499	88.12	--	1.40	3.75	Horizontal	1M	1.00	39.32

Notes: The EIRP was calculated from peak field strength from above using the formula below:

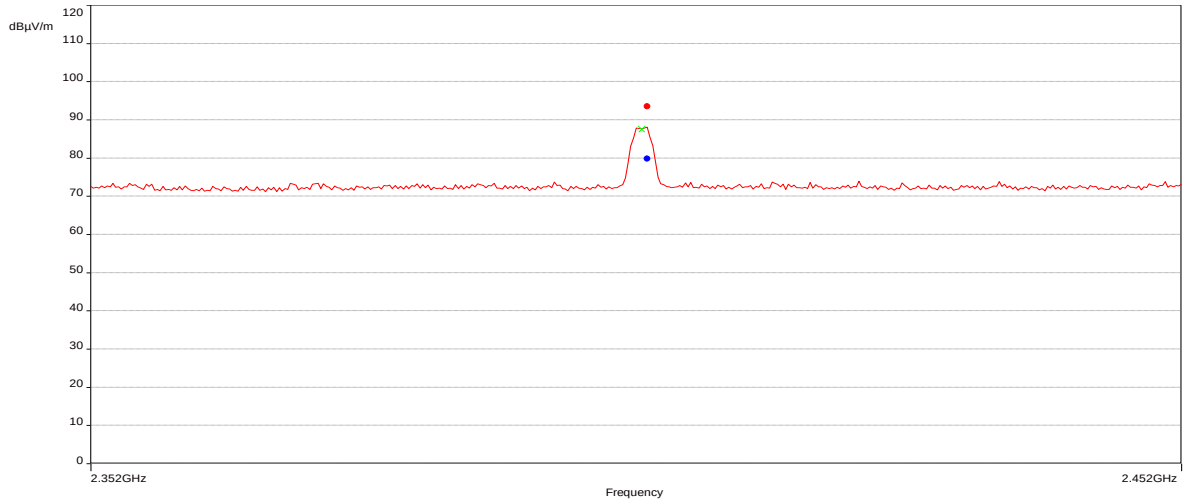
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 5.86 dBm

BLE (Metal Enclosure With Keypad), Low Channel EIRP Power

Test Information:

Date and Time	10/9/2024 8:26:23 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	42 %
Atmospheric Pressure	1003 mbars
Comments	Scan 42 BLE Tx Low (Metal Enclosure - With Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2402.549	93.49	--	44.80	3.51	Vertical	1M	1.00	39.40

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2402.549	79.82	--	44.80	3.51	Vertical	1M	1.00	39.40

Notes: The EIRP was calculated from peak field strength from above using the formula below:

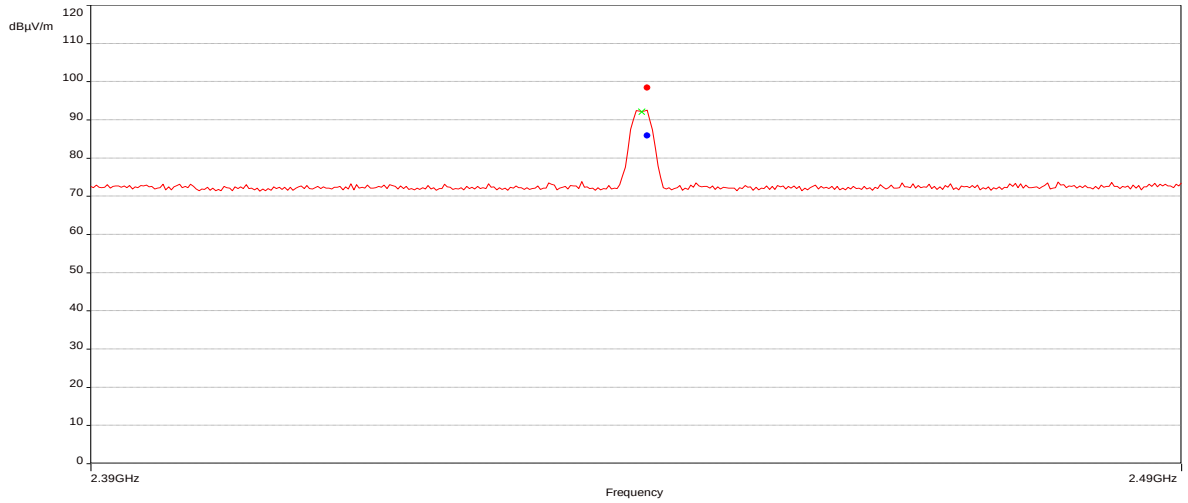
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -1.71 dBm

BLE (Metal Enclosure With Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	10/9/2024 9:25:49 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	42 %
Atmospheric Pressure	1003 mbars
Comments	Scan 43 BLE Tx Mid (Metal Enclosure - With Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2440.461	98.41	--	358.70	3.87	Horizontal	1M	1.00	39.28

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2440.461	85.85	--	358.70	3.87	Horizontal	1M	1.00	39.28

Notes: The EIRP was calculated from peak field strength from above using the formula below:

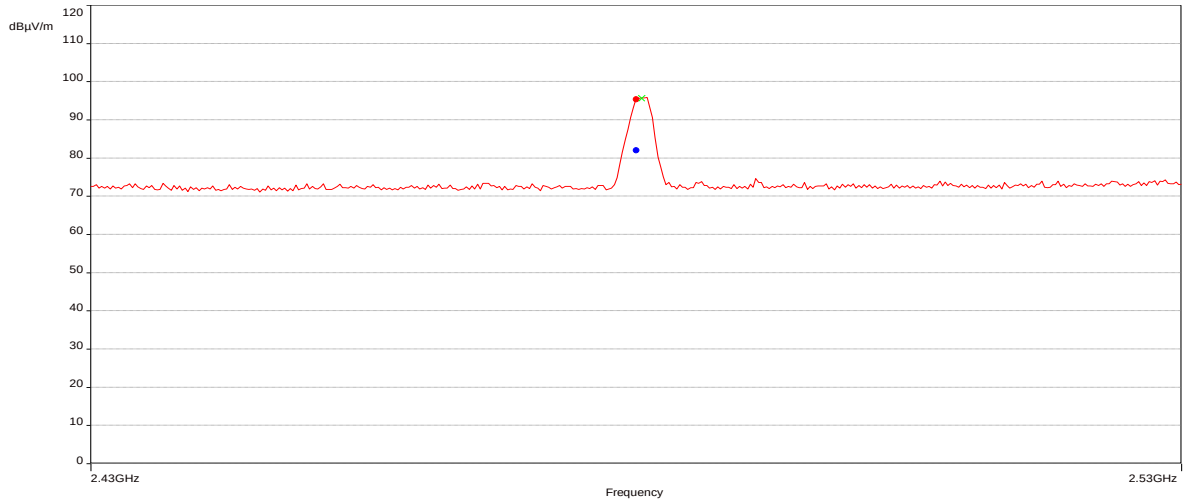
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 3.21 dBm

BLE (Metal Enclosure With Keypad), high Channel EIRP Power

Test Information:

Date and Time	10/9/2024 9:55:45 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	42 %
Atmospheric Pressure	1003 mbars
Comments	Scan 44 BLE Tx High (Metal Enclosure - With Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2479.476	95.34	--	0.00	3.81	Horizontal	1M	1.00	39.31

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2479.476	82.05	--	0.00	3.81	Horizontal	1M	1.00	39.31

Notes: The EIRP was calculated from peak field strength from above using the formula below:

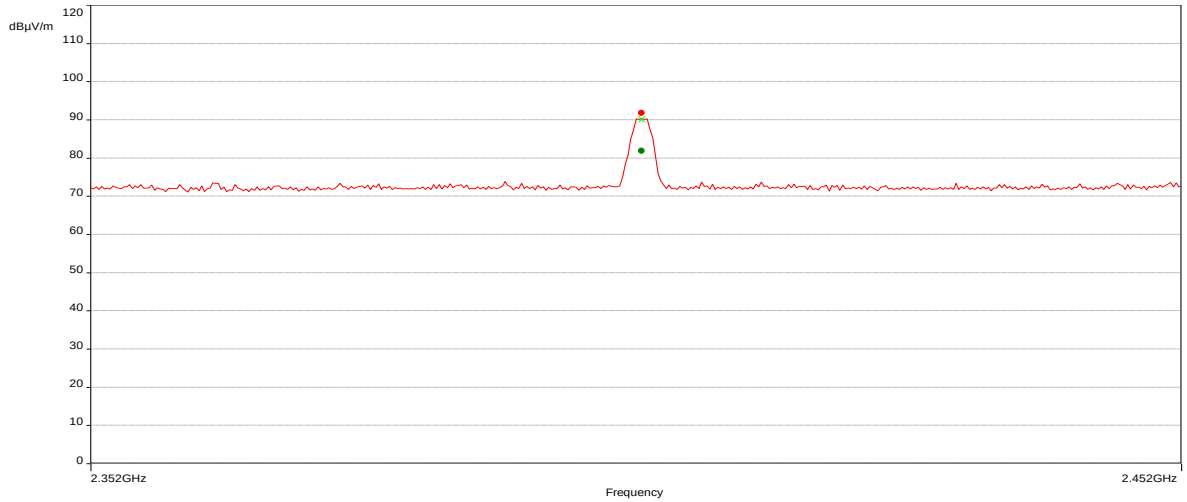
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 0.14 dBm

BLE (Plastic Enclosure Without Keypad), Low Channel EIRP Power

Test Information:

Date and Time	10/10/2024 10:45:29 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	39 %
Atmospheric Pressure	1005 mbars
Comments	Scan 60 BLE Tx Low (Plastic Enclosure - Without Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2401.987	91.84	--	50.20	2.66	Vertical	1M	1.00	39.40

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2401.987	81.87	--	50.20	2.66	Vertical	1M	1.00	39.40

Notes: The EIRP was calculated from peak field strength from above using the formula below:

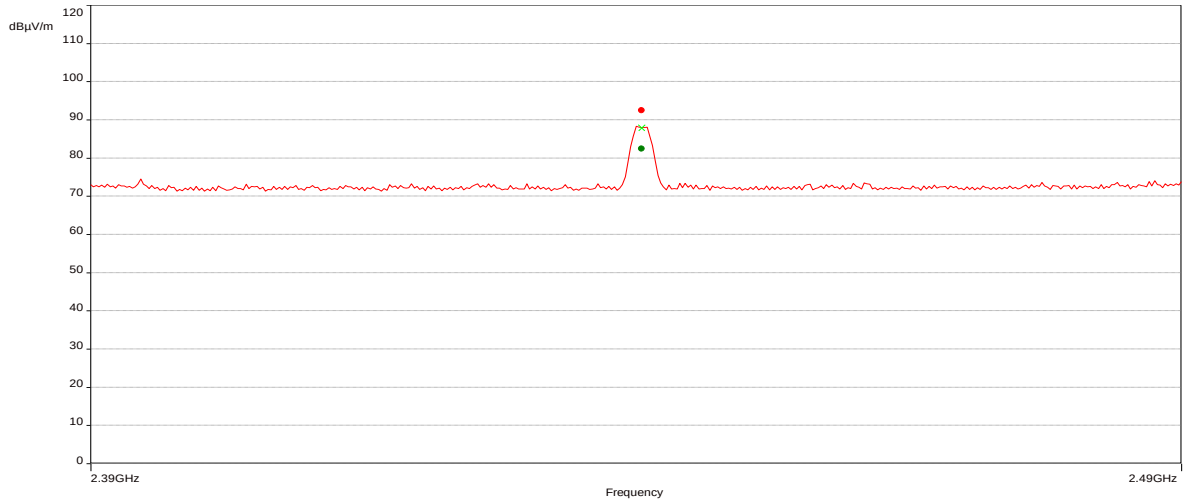
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -3.36 dBm

BLE (Plastic Enclosure Without Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	10/10/2024 11:20:17 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	39 %
Atmospheric Pressure	1005 mbars
Comments	Scan 61 BLE Tx Mid (Plastic Enclosure - Without Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.975	92.54	--	223.60	3.09	Horizontal	1M	1.00	39.28

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.975	82.53	--	223.60	3.09	Horizontal	1M	1.00	39.28

Notes: The EIRP was calculated from peak field strength from above using the formula below:

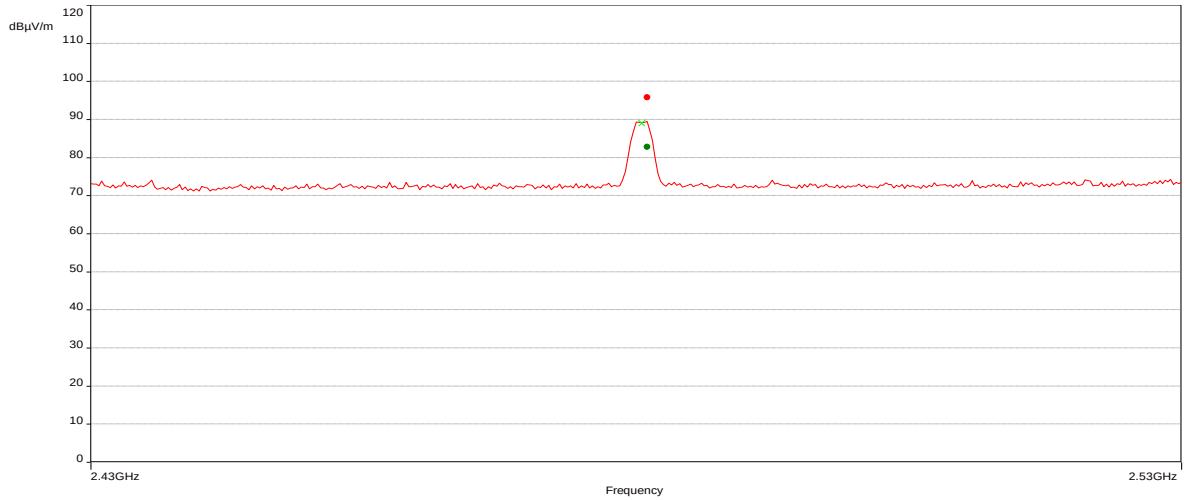
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -2.66 dBm

BLE (Plastic Enclosure Without Keypad), High Channel EIRP Power

Test Information:

Date and Time	10/10/2024 11:39:15 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	39 %
Atmospheric Pressure	1005 mbars
Comments	Scan 62 BLE Tx High (Plastic Enclosure - Without Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.486	95.80	--	6.70	3.69	Vertical	1M	1.00	39.32

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.486	82.80	--	6.70	3.69	Vertical	1M	1.00	39.32

Notes: The EIRP was calculated from peak field strength from above using the formula below:

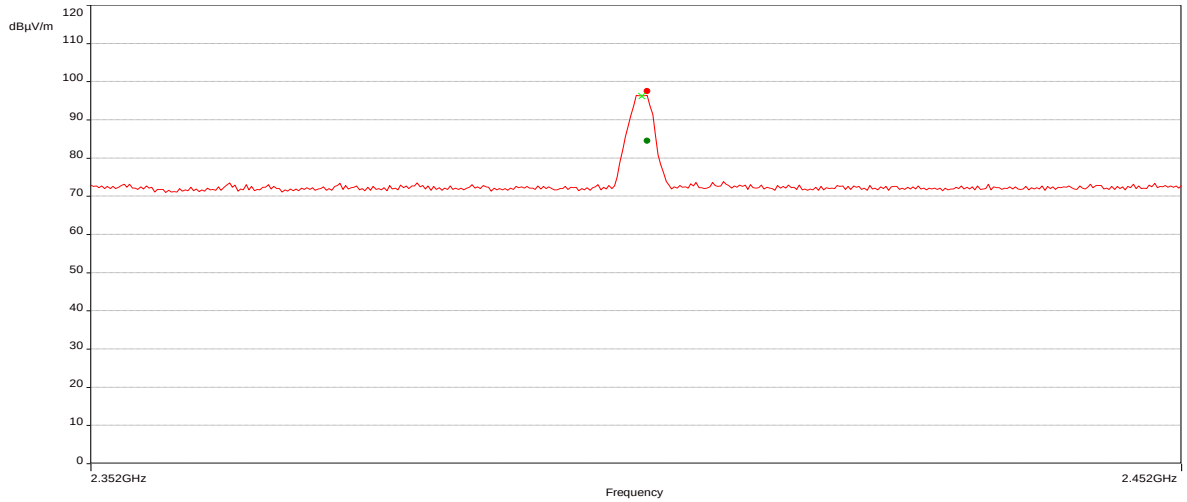
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 0.60 dBm

BLE (Metal Enclosure Without Keypad), Low Channel EIRP Power

Test Information:

Date and Time	10/10/2024 3:09:58 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	39 %
Atmospheric Pressure	1005 mbars
Comments	Scan 69 BLE Tx Low (Metal Enclosure - Without Keypad), RE Fundamental

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2402.499	97.50	--	360.00	4.00	Horizontal	1M	1.00	39.40

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2402.499	84.49	--	360.00	4.00	Horizontal	1M	1.00	39.40

Notes: The EIRP was calculated from peak field strength from above using the formula below:

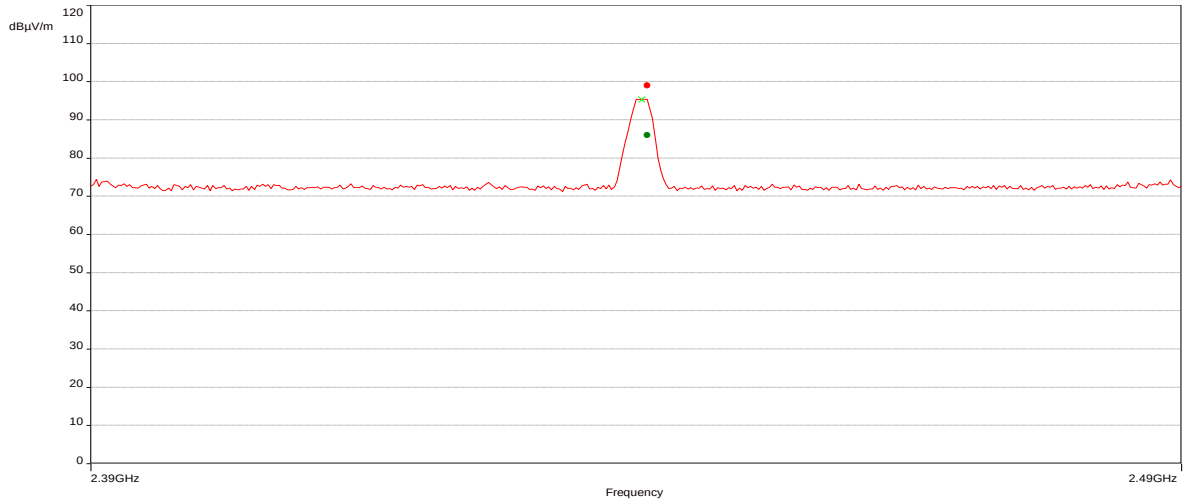
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 2.30 dBm

BLE (Metal Enclosure Without Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	10/14/2024 8:51:04 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	995 mbars
Comments	Scan 70 BLE Tx Mid (Metal Enclosure - Without Keypad), RE Fundamental 76

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2440.499	99.03	--	358.90	3.94	Horizontal	1M	1.00	39.28

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2440.499	86.07	--	358.90	3.94	Horizontal	1M	1.00	39.28

Notes: The EIRP was calculated from peak field strength from above using the formula below:

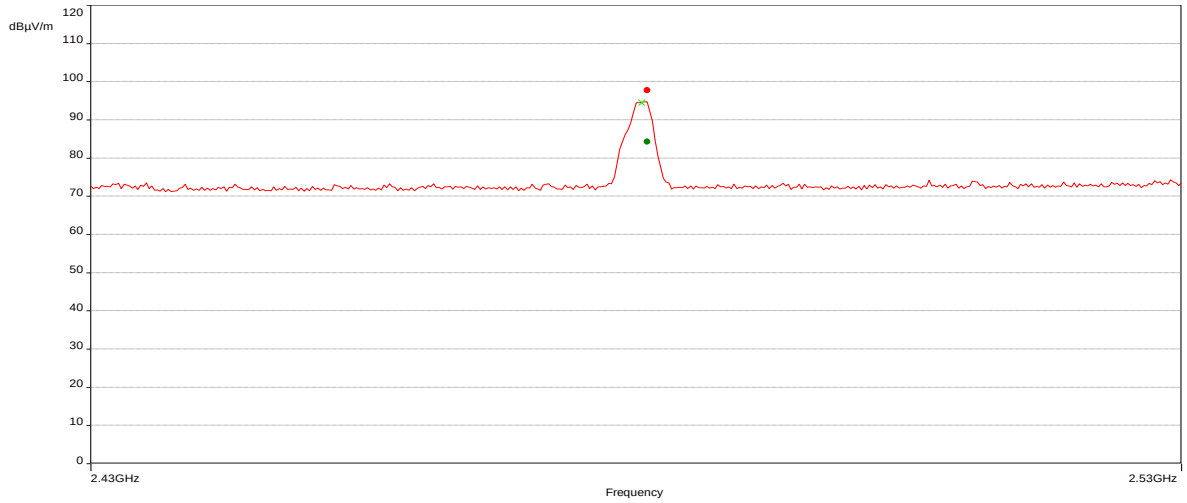
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 3.83 dBm

BLE (Metal Enclosure Without Keypad), High Channel EIRP Power

Test Information:

Date and Time	10/14/2024 9:19:46 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	995 mbars
Comments	Scan 71 BLE Tx High (Metal Enclosure - Without Keypad), RE Fundamental 76

Graph:



Results:

Peak Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2480.536	97.77	--	360.00	3.87	Horizontal	1M	1.00	39.32

AVG Field Strength

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2480.536	84.34	--	360.00	3.87	Horizontal	1M	1.00	39.32

Notes: The EIRP was calculated from peak field strength from above using the formula below:

EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 2.57 dBm

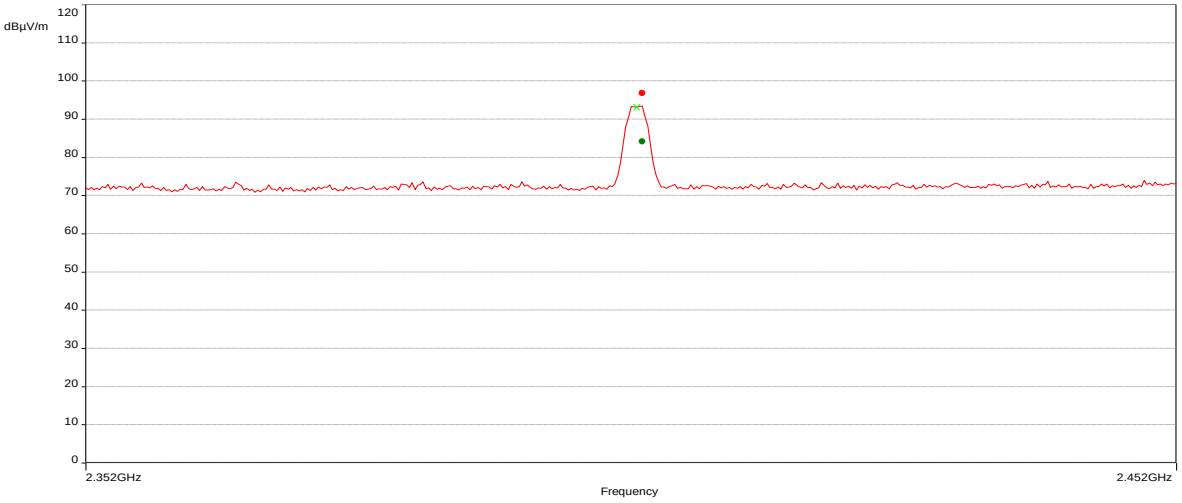
===POE Powered===

BLE (Plastic Enclosure With Keypad), Low Channel EIRP Power

Test Information:

Date and Time	11/8/2024 11:34:56 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 30 BLE Tx Low (Plastic- Keypad), POE Powered, Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.461	96.91	--	347.00	3.51	Horizontal	1M	1.00	39.11

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.461	84.20	--	347.00	3.51	Horizontal	1M	1.00	39.11

Notes: The EIRP was calculated from peak field strength from above using the formula below:

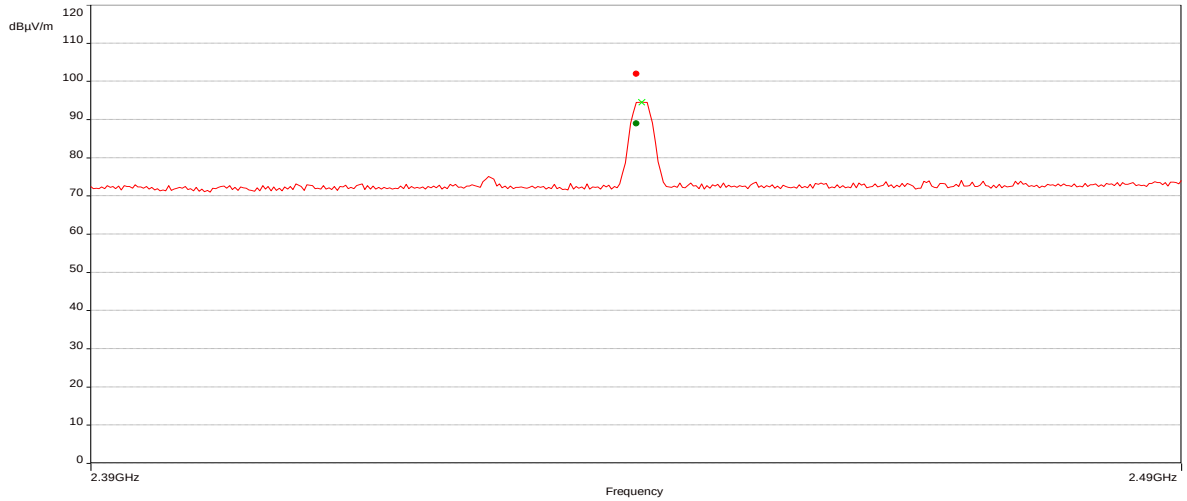
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 1.71 dBm

BLE (Plastic Enclosure With Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	11/8/2024 12:06:40 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 31_BLE Tx Mid (Plastic- Keypad), POE Powered, Fundamental 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.501	101.94	--	353.20	3.87	Horizontal	1M	1.00	39.44

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.501	88.98	--	353.20	3.87	Horizontal	1M	1.00	39.44

Notes: The EIRP was calculated from peak field strength from above using the formula below:

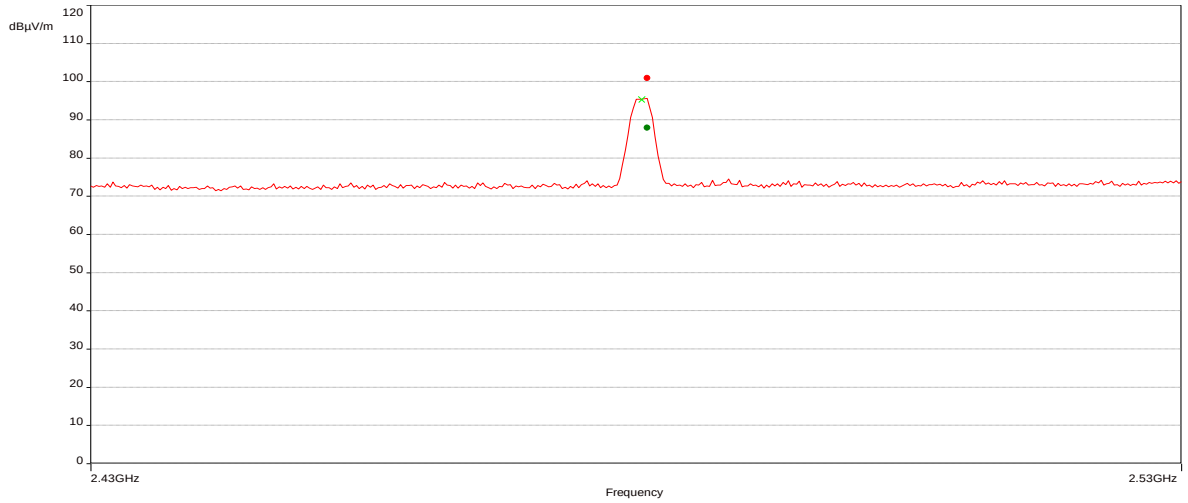
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 6.74 dBm

BLE (Plastic Enclosure With Keypad), High Channel EIRP Power

Test Information:

Date and Time	11/8/2024 2:19:48 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 34 BLE Tx High (Plastic- Keypad), POE Powered, Fundamental 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.499	100.92	--	360.00	3.81	Horizontal	1M	0.00	39.62

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.499	87.93	--	360.00	3.81	Horizontal	1M	0.00	39.62

Notes: The EIRP was calculated from peak field strength from above using the formula below:

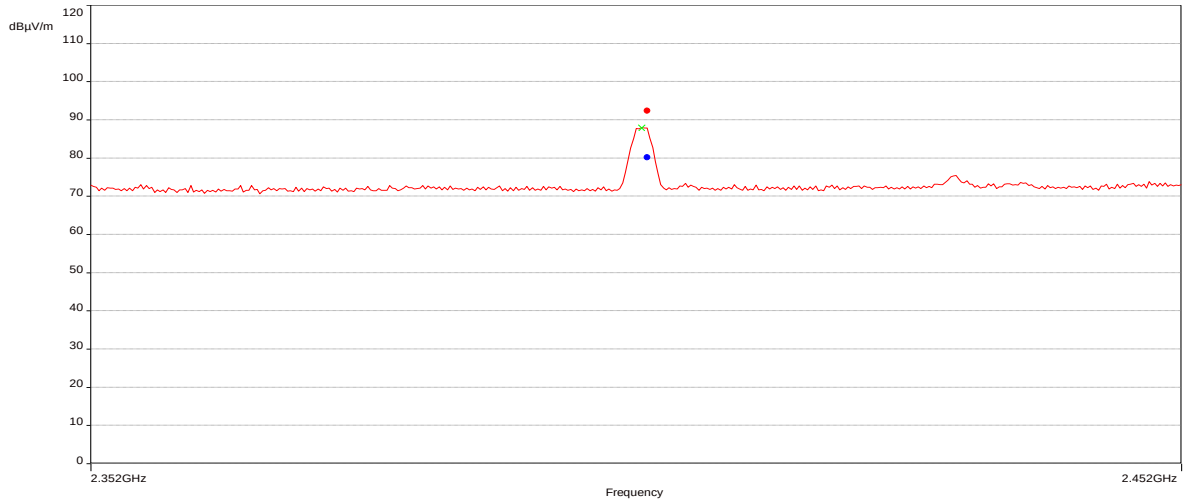
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 5.72 dBm

BLE (Metal Enclosure With Keypad), Low Channel EIRP Power

Test Information:

Date and Time	11/1/2024 12:43:15 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 24 BLE Tx Low (Metal- Keypad), POE Powered, RE Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.411	92.36	--	55.40	2.85	Vertical	1M	1.00	39.11

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.411	80.18	--	55.40	2.85	Vertical	1M	1.00	39.11

Notes: The EIRP was calculated from peak field strength from above using the formula below:

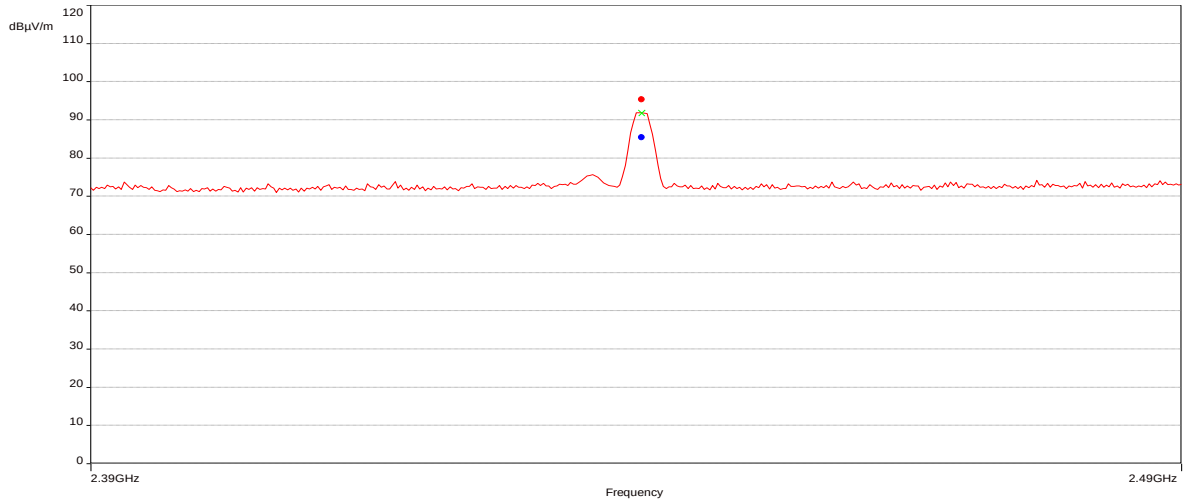
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -2.84 dBm

BLE (Metal Enclosure With Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	11/1/2024 1:32:14 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 25 BLE Tx Mid (Metal- Keypad), POE Powered, RE Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2440.062	95.40	--	55.10	2.78	Vertical	1M	0.00	39.44

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2440.062	85.43	--	55.10	2.78	Vertical	1M	0.00	39.44

Notes: The EIRP was calculated from peak field strength from above using the formula below:

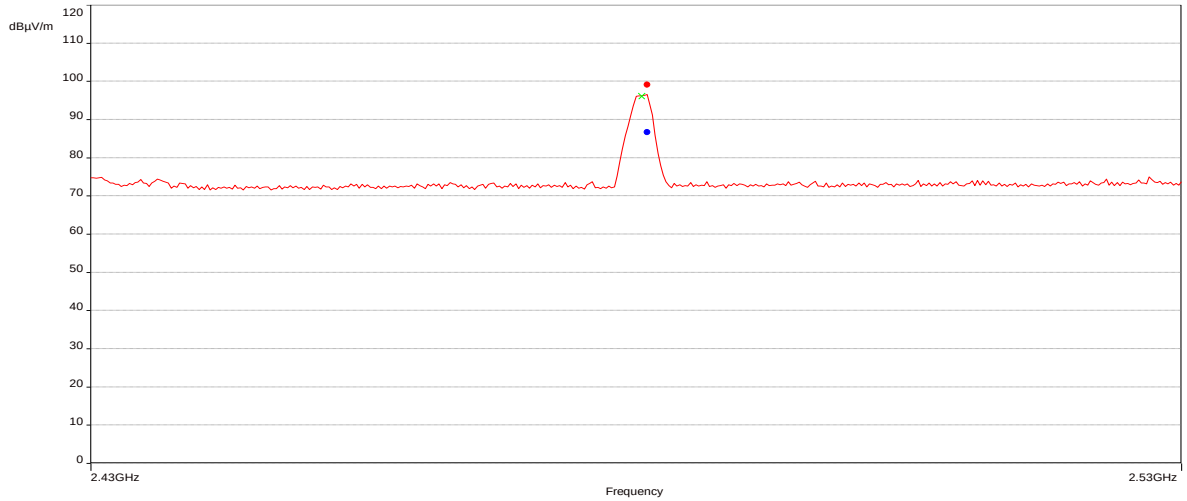
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 0.20 dBm

BLE (Metal Enclosure With Keypad), High Channel EIRP Power

Test Information:

Date and Time	11/1/2024 1:57:15 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 25_BLE Tx High (Metal- Keypad), POE Powered, RE Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.449	99.13	--	360.00	3.75	Horizontal	1M	1.00	39.62

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.449	86.67	--	360.00	3.75	Horizontal	1M	1.00	39.62

Notes: The EIRP was calculated from peak field strength from above using the formula below:

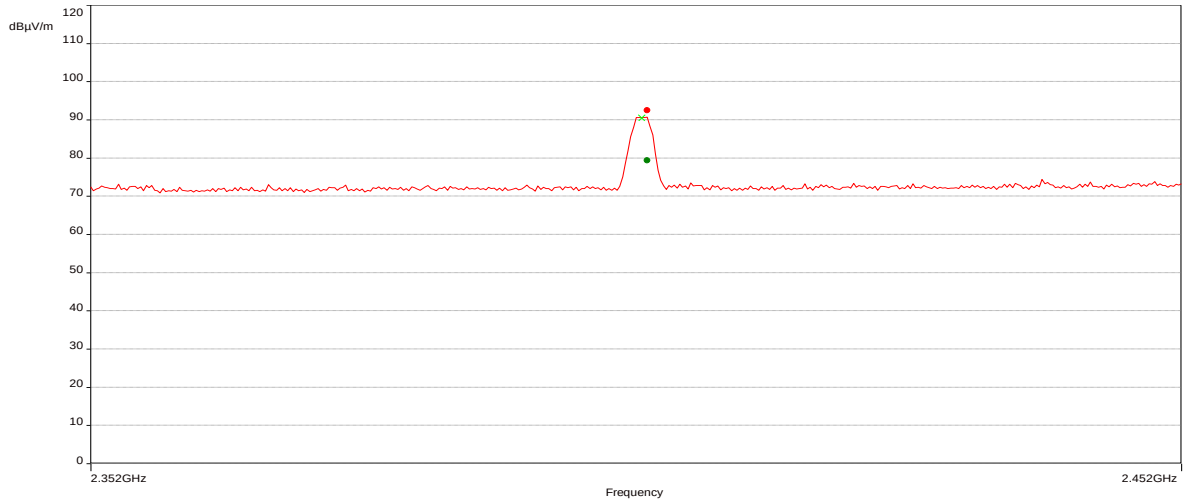
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 3.93 dBm

BLE (Plastic Enclosure Without Keypad), Low Channel EIRP Power

Test Information:

Date and Time	11/12/2024 9:02:41 AM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 36 BLE Tx Low (Plastic- No Keypad), POE Powered, Fundamental 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.499	92.52	--	44.70	3.03	Horizontal	1M	1.00	39.11

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.499	79.37	--	44.70	3.03	Horizontal	1M	1.00	39.11

Notes: The EIRP was calculated from peak field strength from above using the formula below:

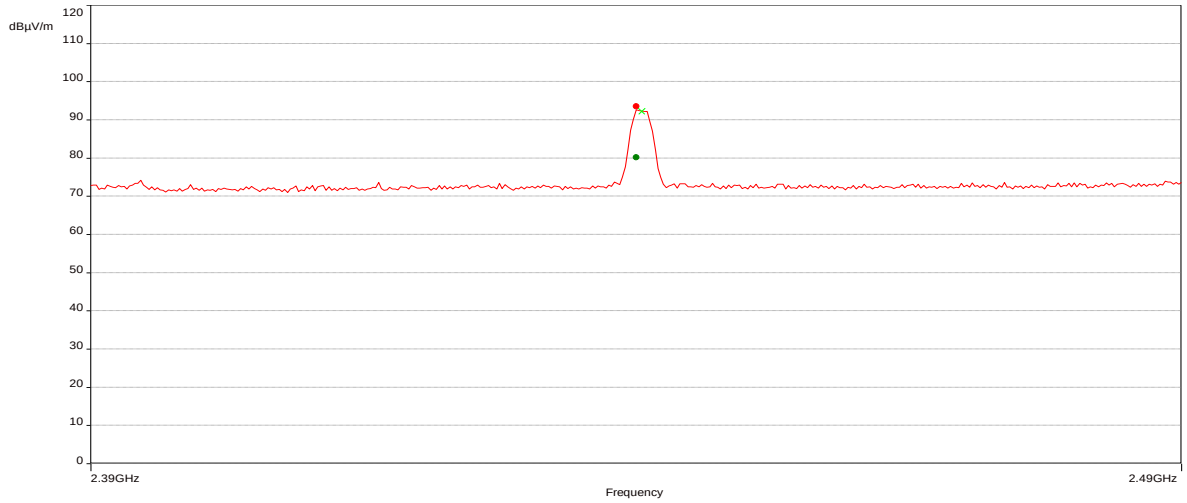
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -2.68 dBm

BLE (Plastic Enclosure Without Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	11/12/2024 9:38:23 AM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 37 BLE Tx Mid (Plastic- No Keypad), POE Powered, Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.489	93.50	--	39.00	2.48	Vertical	1M	1.00	39.44

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.489	80.16	--	39.00	2.48	Vertical	1M	1.00	39.44

Notes: The EIRP was calculated from peak field strength from above using the formula below:

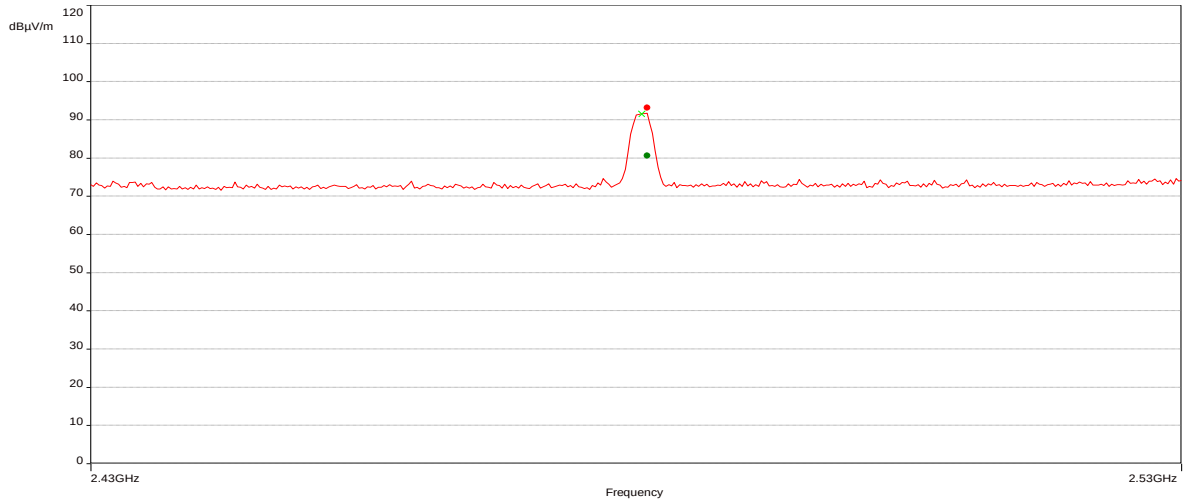
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -1.7 dBm

BLE (Plastic Enclosure Without Keypad), High Channel EIRP Power

Test Information:

Date and Time	11/12/2024 11:41:04 AM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 40 BLE Tx High (Plastic- No Keypad), POE Powered, Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.437	93.18		142.70	3.81	Horizontal	1M	0.00	39.62

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2480.437	80.66		142.70	3.81	Horizontal	1M	0.00	39.62

Notes: The EIRP was calculated from peak field strength from above using the formula below:

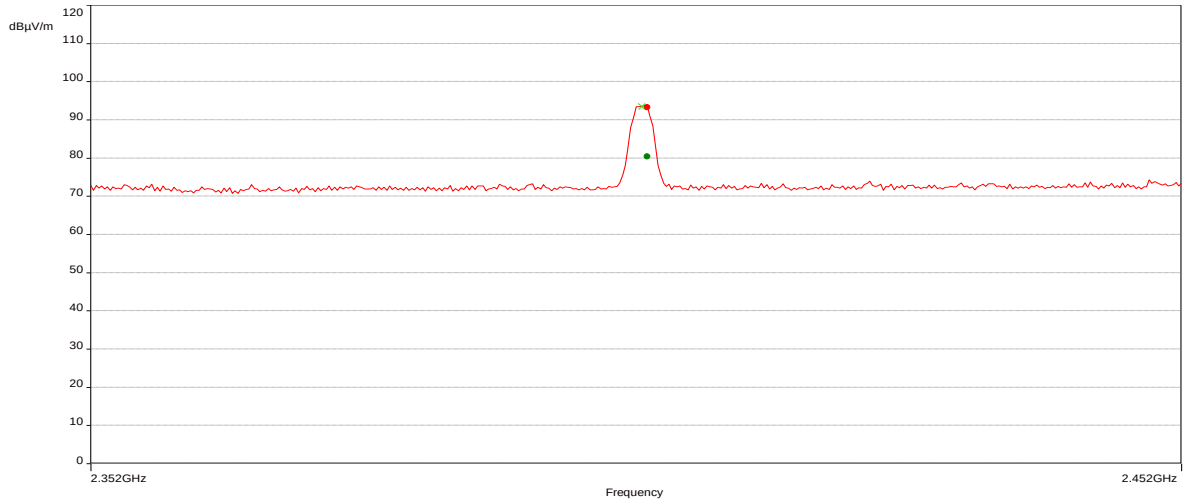
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -2.02 dBm

BLE (Metal Enclosure Without Keypad), Low Channel EIRP Power

Test Information:

Date and Time	11/12/2024 12:27:33 PM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 41 BLE Tx Low (Metal- No Keypad), POE Powered, Fundamental, 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.473	93.29		55.90	1.00	Vertical	1M	1.00	39.11

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2402.473	80.44		55.90	1.00	Vertical	1M	1.00	39.11

Notes: The EIRP was calculated from peak field strength from above using the formula below:

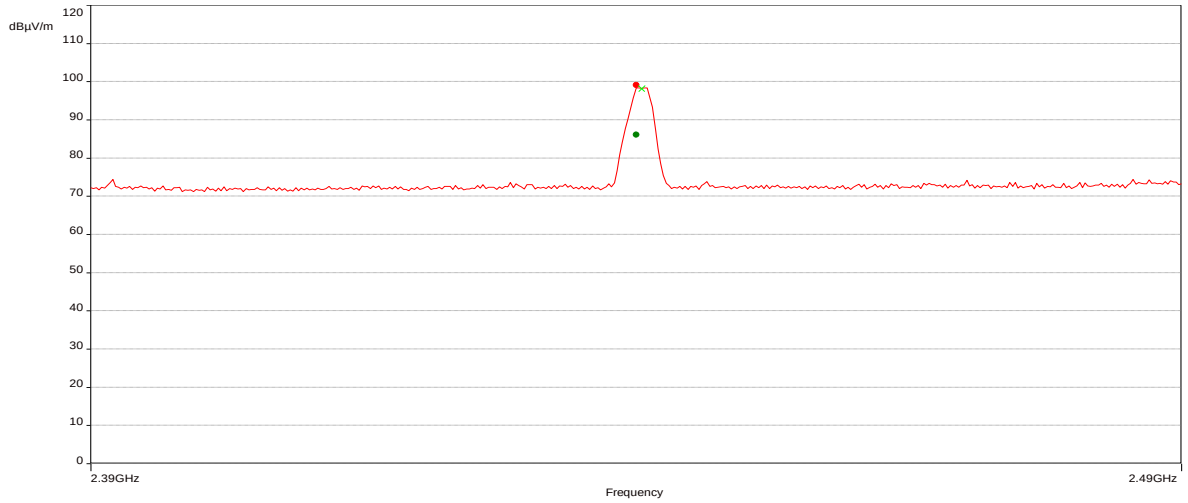
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = -1.91 dBm

BLE (Metal Enclosure Without Keypad), Mid Channel EIRP Power

Test Information:

Date and Time	11/12/2024 12:56:10 PM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 42 BLE Tx Mid (Metal- No Keypad), POE Powered, Fundamental 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.514	99.10	--	353.50	3.89	Horizontal	1M	0.00	39.44

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2439.514	86.11	--	353.50	3.89	Horizontal	1M	0.00	39.44

Notes: The EIRP was calculated from peak field strength from above using the formula below:

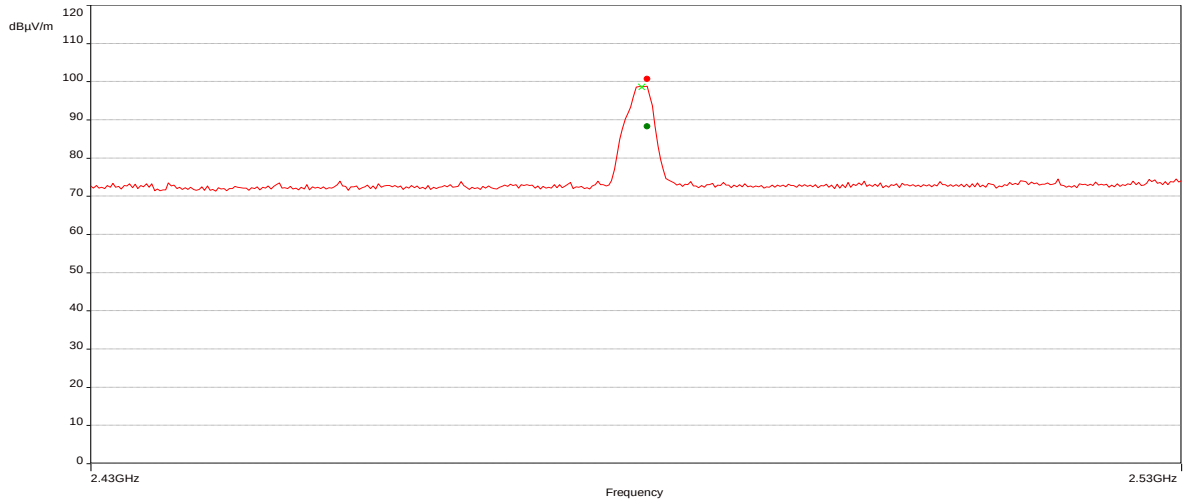
EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 3.9 dBm

BLE (Metal Enclosure Without Keypad), High Channel EIRP Power

Test Information:

Date and Time	11/22/2024 12:35:30 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 75 BLE Tx High (Metal Without Keypad), RE Fundamental at 3m

Graph:



Results:

Peak (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2480.461	100.78	--	1.40	3.69	Horizontal	1M	0.00	39.62

AVG (PASS) (1)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
2480.461	88.32	--	1.40	3.69	Horizontal	1M	0.00	39.62

Notes: The EIRP was calculated from peak field strength from above using the formula below:

EIRP = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.
EIRP = 5.58 dBm

Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 6.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
10/09/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	22	42	1003
10/10/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	22	39	1005
10/14/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	24	35	995
11/01/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	21	41	1000
11/08/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	35	1003
11/12/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	34	999
11/22/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	35	986

Deviations, Additions, or Exclusions: None

7 6 dB Bandwidth (DTS Bandwidth) and Occupied Bandwidth

7.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, and ANSI C63.10.

TEST SITE: EMC Lab

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

7.2 Limit

DTS Bandwidth Limit:
FCC Part §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.

Occupied Bandwidth:
Upper and Lower Edges of OBW within 2400-2483.5 MHz

Notes: The limits for RSS-247 are the same as the FCC limits above.

7.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/15/2024	07/15/2025
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	03/26/2024	03/26/2025
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	01/17/2024	01/17/2025
ETS002	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/04/2024	09/04/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

7.4 Results:

The sample tested was found to Comply.

7.5 Setup Photographs:

See Section 6.5

7.6 Test Data:

BLE DTS Bandwidth (Battery Powered)

EUT Configurations	Frequency (MHz)	DTS Bandwidth (kHz)	DTS Bandwidth Limit (kHz)	Results
Plastic Enclosure With Keypad	2402	1360	≥ 500	Compliance
	2440	1370	≥ 500	Compliance
	2480	1400	≥ 500	Compliance
Metal Enclosure With Keypad	2402	1360	≥ 500	Compliance
	2440	1380	≥ 500	Compliance
	2480	1330	≥ 500	Compliance
Plastic Enclosure Without Keypad	2402	1300	≥ 500	Compliance
	2440	1330	≥ 500	Compliance
	2480	1370	≥ 500	Compliance
Metal Enclosure Without Keypad	2402	1370	≥ 500	Compliance
	2440	1380	≥ 500	Compliance
	2480	1380	≥ 500	Compliance

BLE Occupied Bandwidth (Battery Powered)

EUT Configurations	Frequency (MHz)	Occupied Bandwidth (kHz)	Occupied Bandwidth Limit (kHz)	Results
Plastic Enclosure With Keypad	2402	2035	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2042	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2095	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
Metal Enclosure With Keypad	2402	2077	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2101	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2078	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
Plastic Enclosure Without Keypad	2402	2059	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2068	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2071	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
Metal Enclosure Without Keypad	2402	2055	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2039	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2096	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance

BLE DTS Bandwidth (POE Powered)

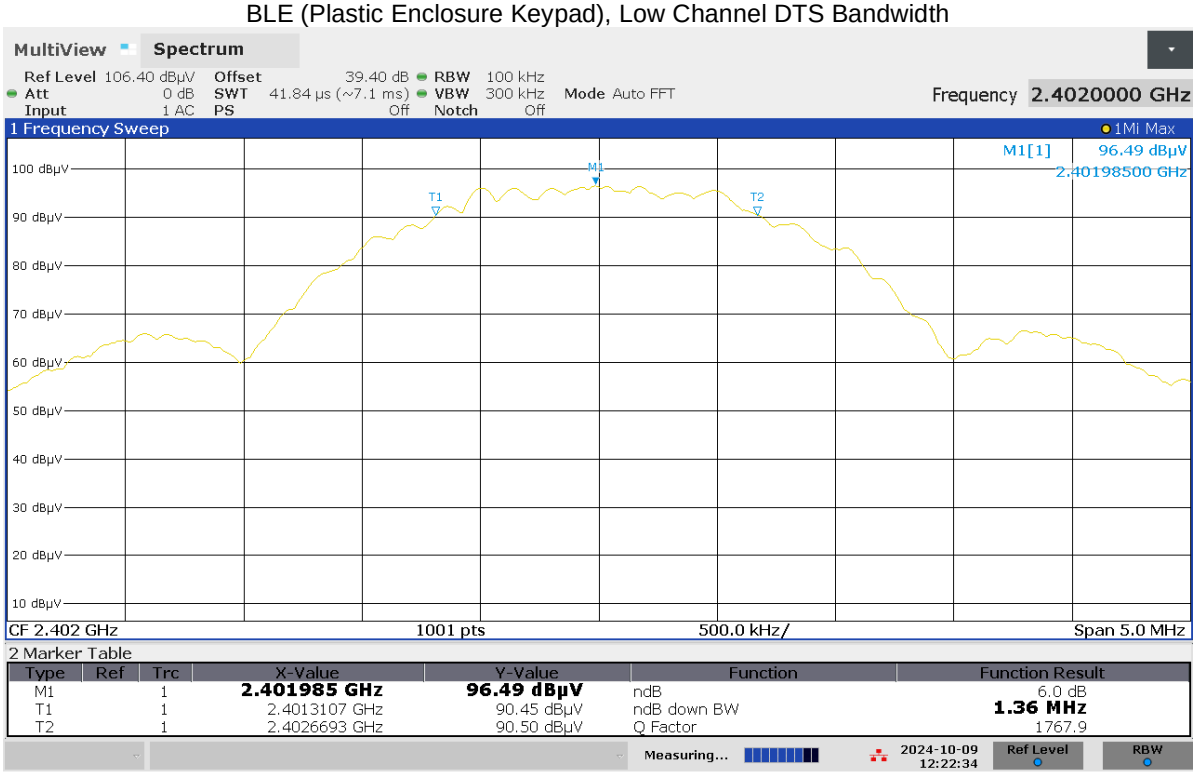
EUT Configurations	Frequency (MHz)	DTS Bandwidth (kHz)	DTS Bandwidth Limit (kHz)	Results
Plastic Enclosure With Keypad	2402	1360.00	≥ 500	Compliance
	2440	1360.00	≥ 500	Compliance
	2480	1400.00	≥ 500	Compliance
Metal Enclosure With Keypad	2402	1360.00	≥ 500	Compliance
	2440	1360.00	≥ 500	Compliance
	2480	1400.00	≥ 500	Compliance
Plastic Enclosure Without Keypad	2402	1350.00	≥ 500	Compliance
	2440	1330.00	≥ 500	Compliance
	2480	1380.00	≥ 500	Compliance
Metal Enclosure Without Keypad	2402	1330.00	≥ 500	Compliance
	2440	1360.00	≥ 500	Compliance
	2480	1340.00	≥ 500	Compliance

BLE Occupied Bandwidth (POE Powered)

EUT Configurations	Frequency (MHz)	Occupied Bandwidth (kHz)	Occupied Bandwidth Limit (kHz)	Results
Plastic Enclosure With Keypad	2402	2023.87	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2040.92	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2100.31	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
Metal Enclosure With Keypad	2402	2077.15	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2069.88	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2075.39	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
Plastic Enclosure Without Keypad	2402	2040.40	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2059.25	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2086.65	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
Metal Enclosure Without Keypad	2402	2069.69	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2440	2062.31	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance
	2480	2067.00	Upper and Lower Edges of OBW within 2400-2483.5 MHz	Compliance

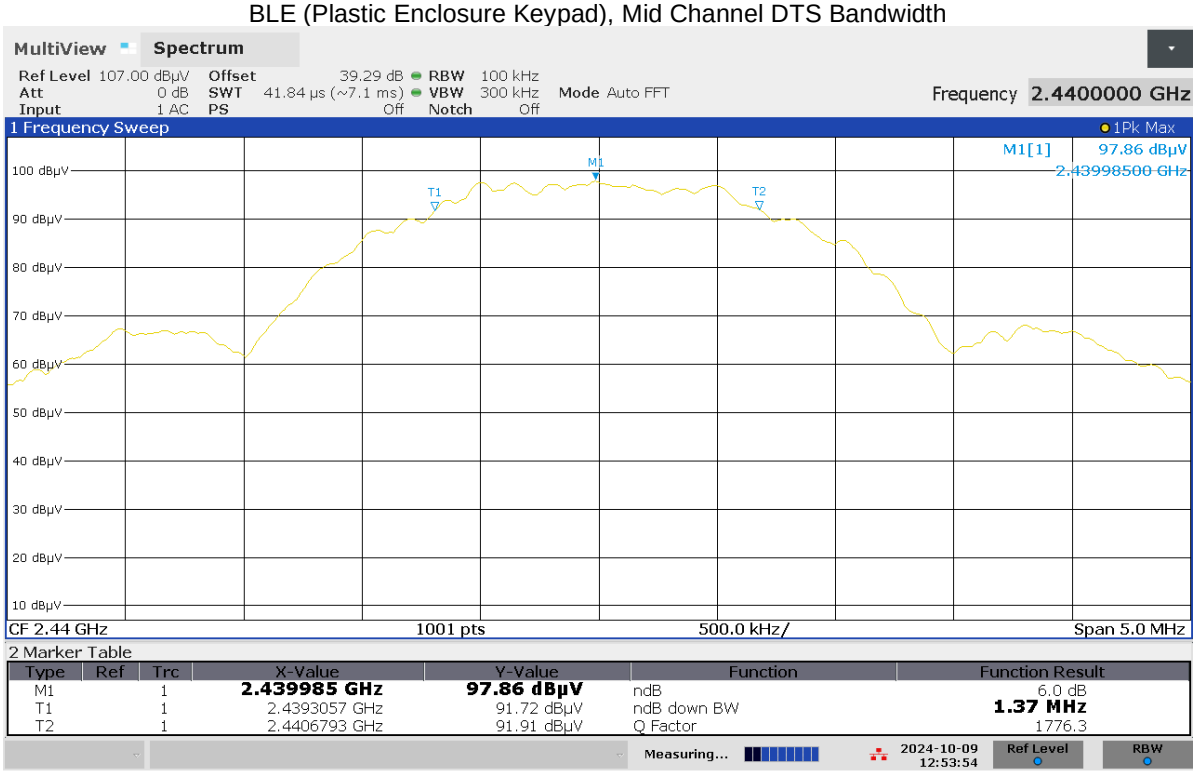
===Battery Powered===

BLE (Plastic Enclosure Keypad), Low Channel DTS Bandwidth



12:22:34 PM 10/09/2024

BLE (Plastic Enclosure Keypad), Mid Channel DTS Bandwidth



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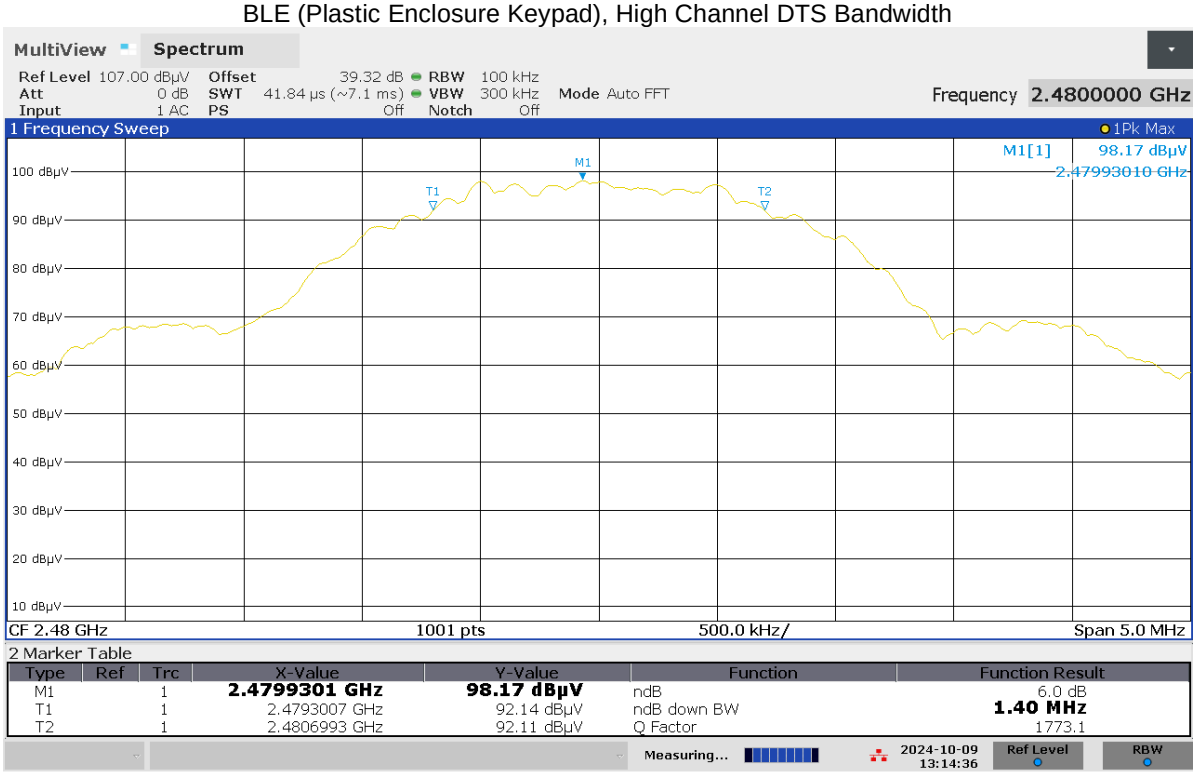
BLE (Plastic Enclosure Keypad), High Channel DTS Bandwidth



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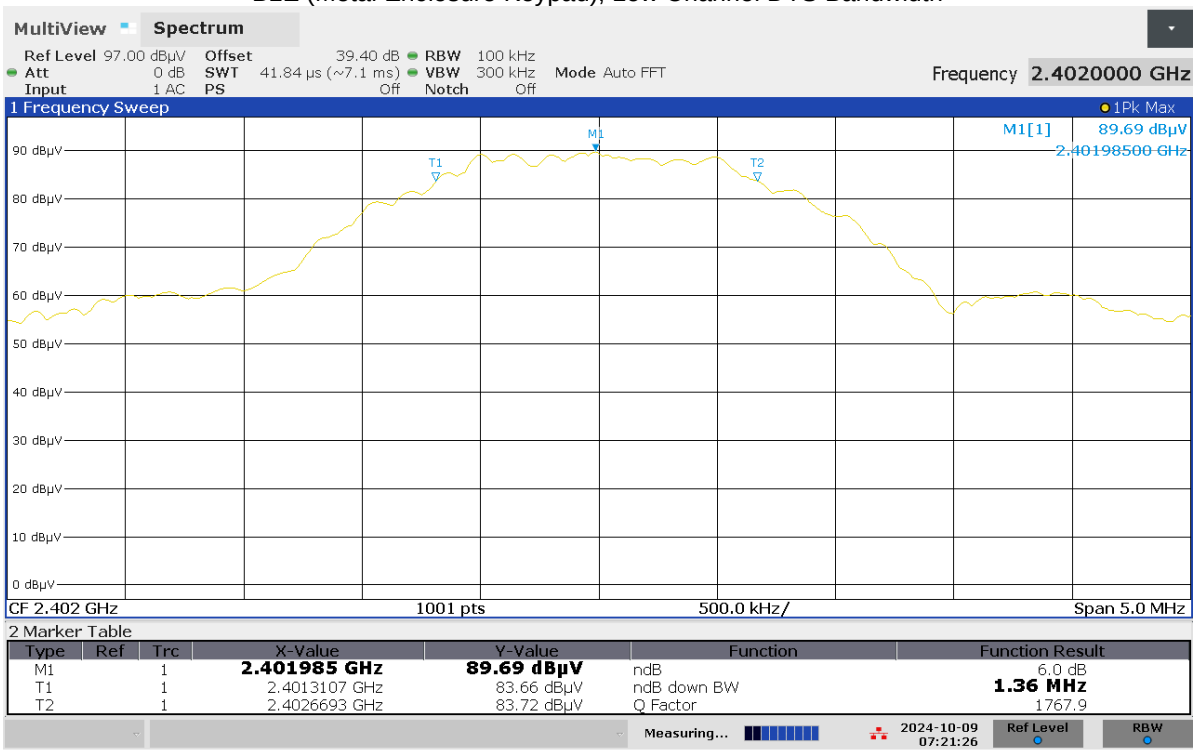
BLE (Metal Enclosure Keypad), Low Channel DTS Bandwidth



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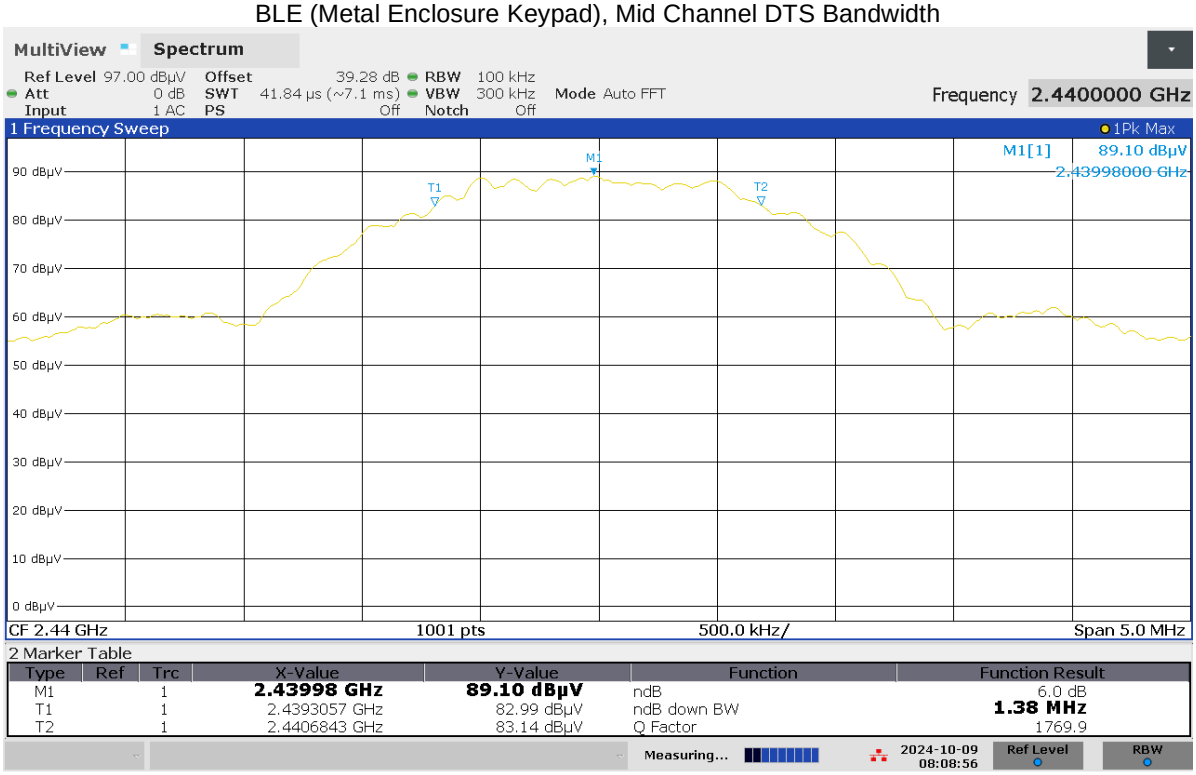
BLE (Metal Enclosure Keypad), Mid Channel DTS Bandwidth



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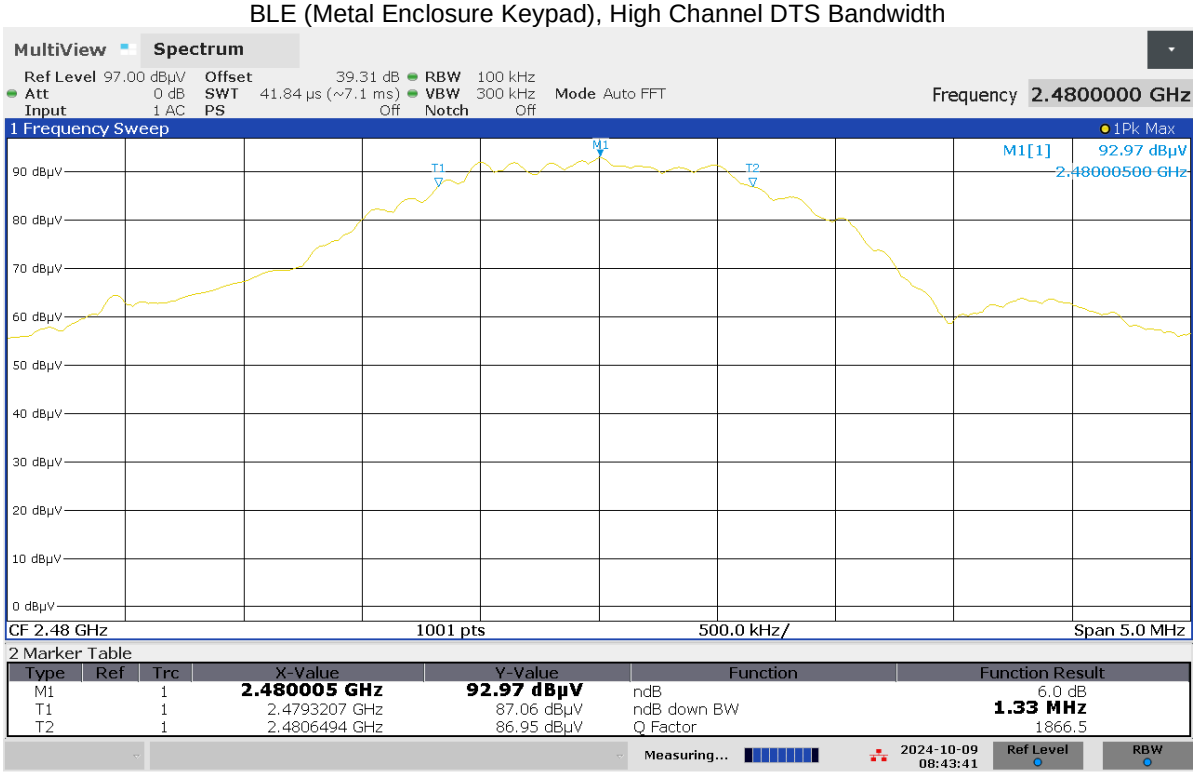
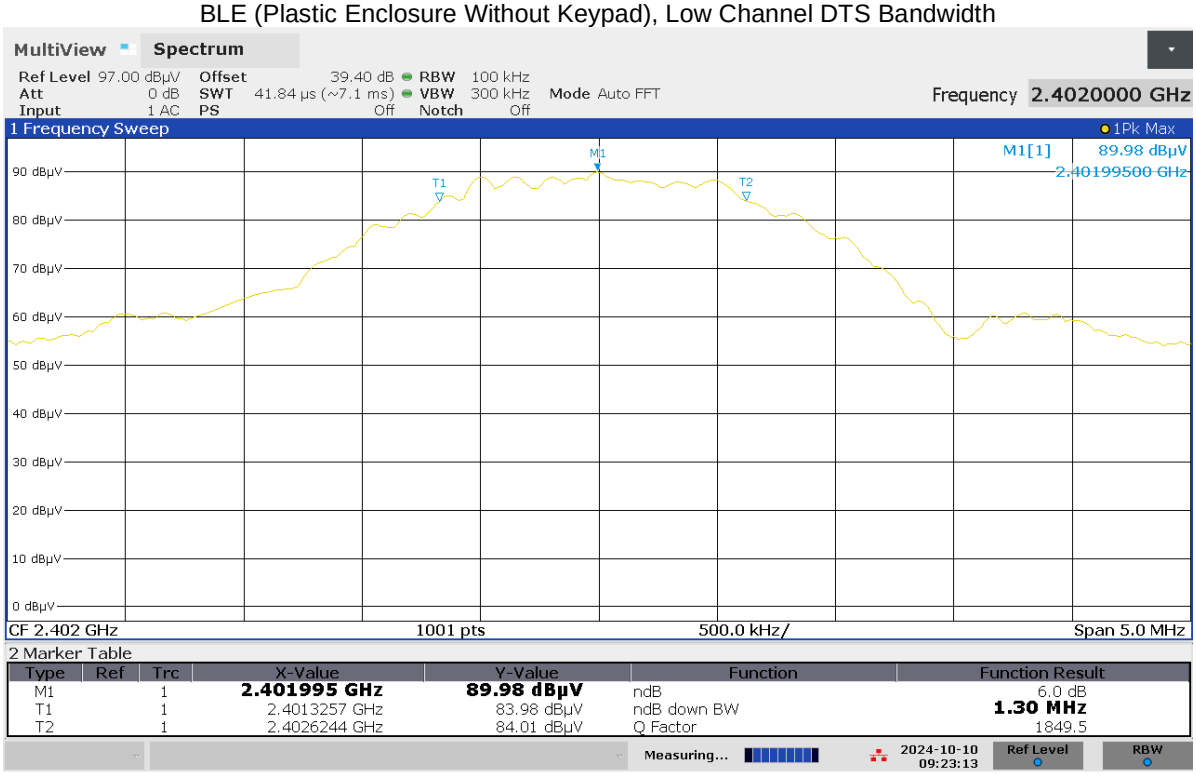
BLE (Metal Enclosure Keypad), High Channel DTS Bandwidth



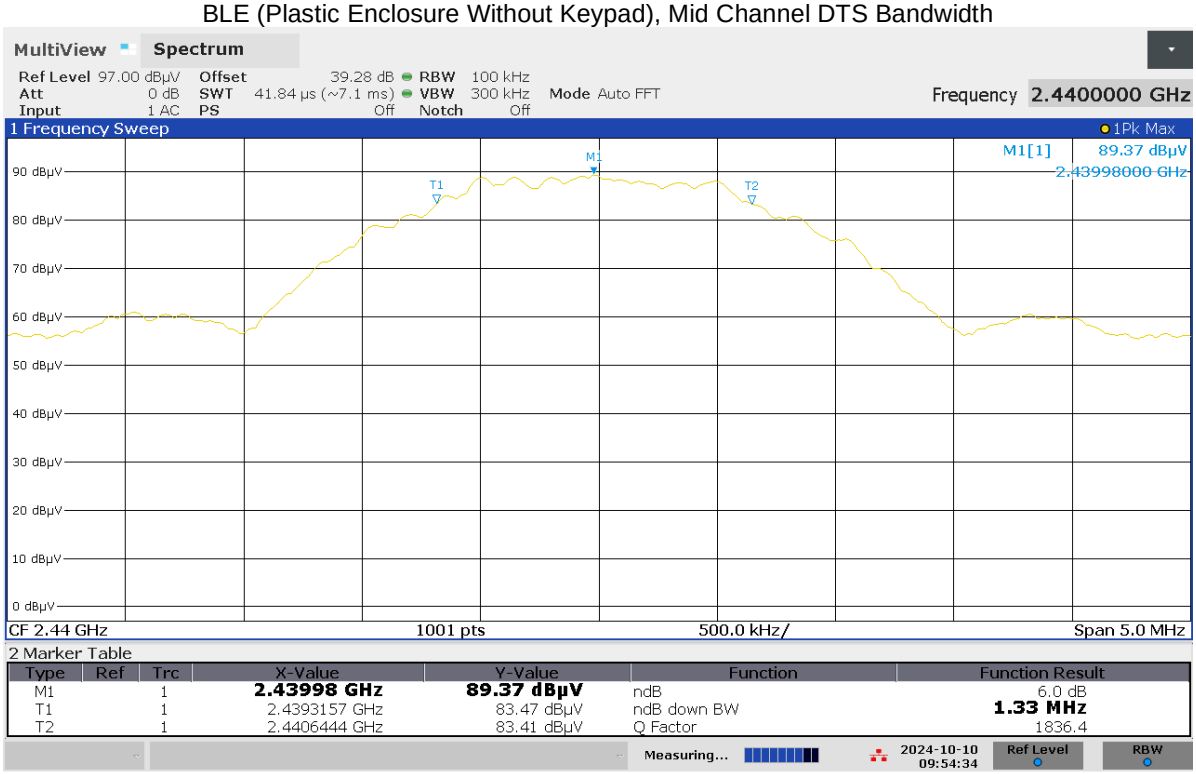
08:43:41 AM 10/09/2024

BLE (Plastic Enclosure Without Keypad), Low Channel DTS Bandwidth



09:23:13 AM 10/10/2024

BLE (Plastic Enclosure Without Keypad), Mid Channel DTS Bandwidth



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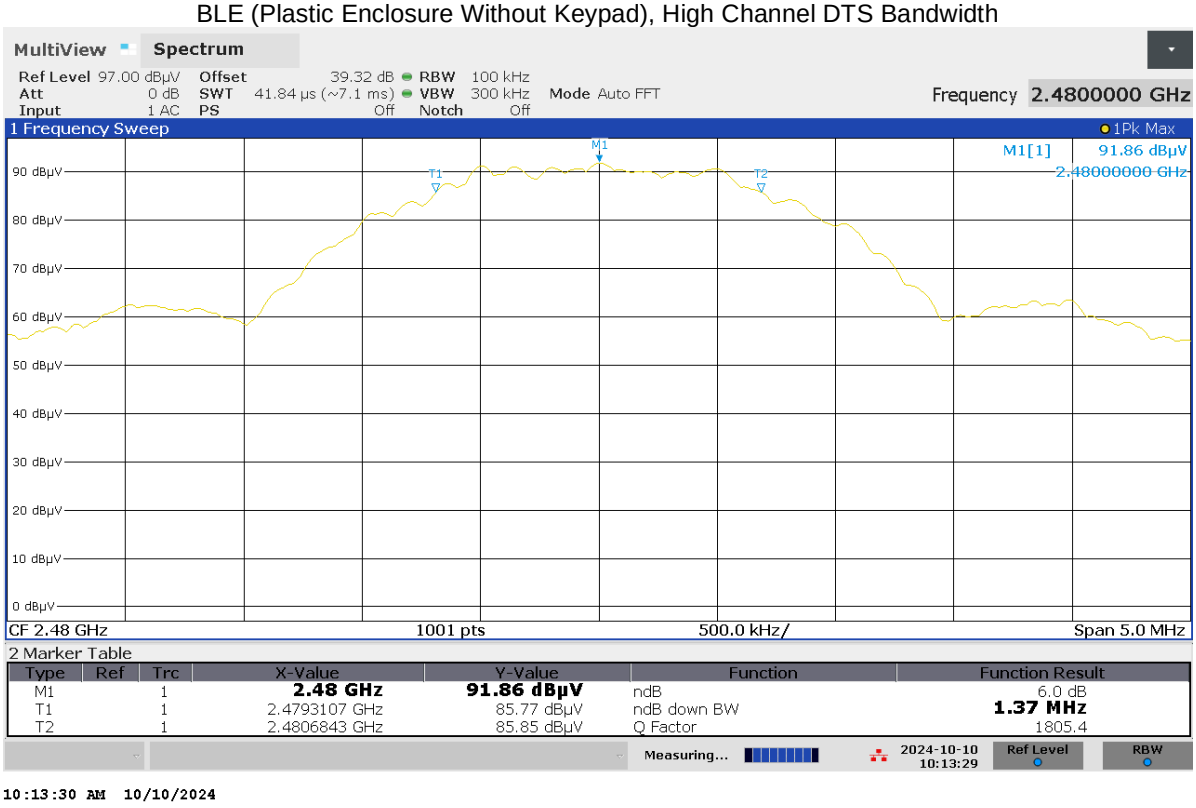
BLE (Plastic Enclosure Without Keypad), High Channel DTS Bandwidth



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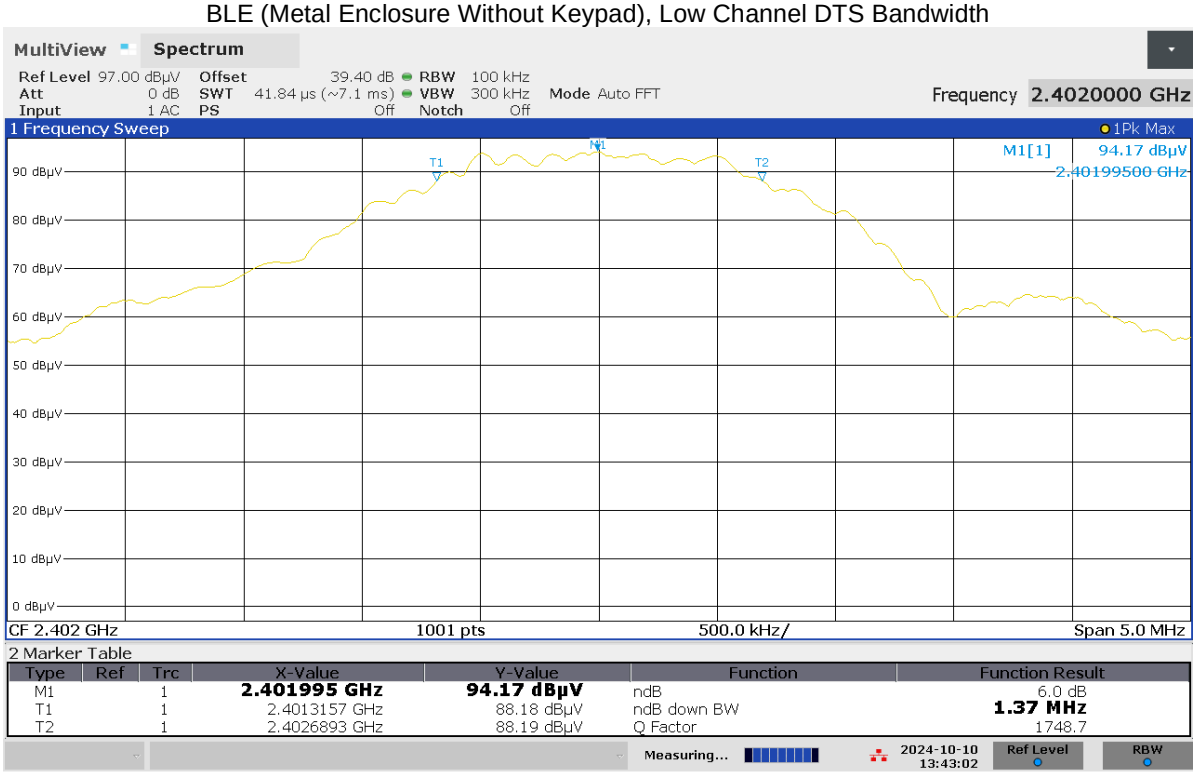
BLE (Metal Enclosure Without Keypad), Low Channel DTS Bandwidth



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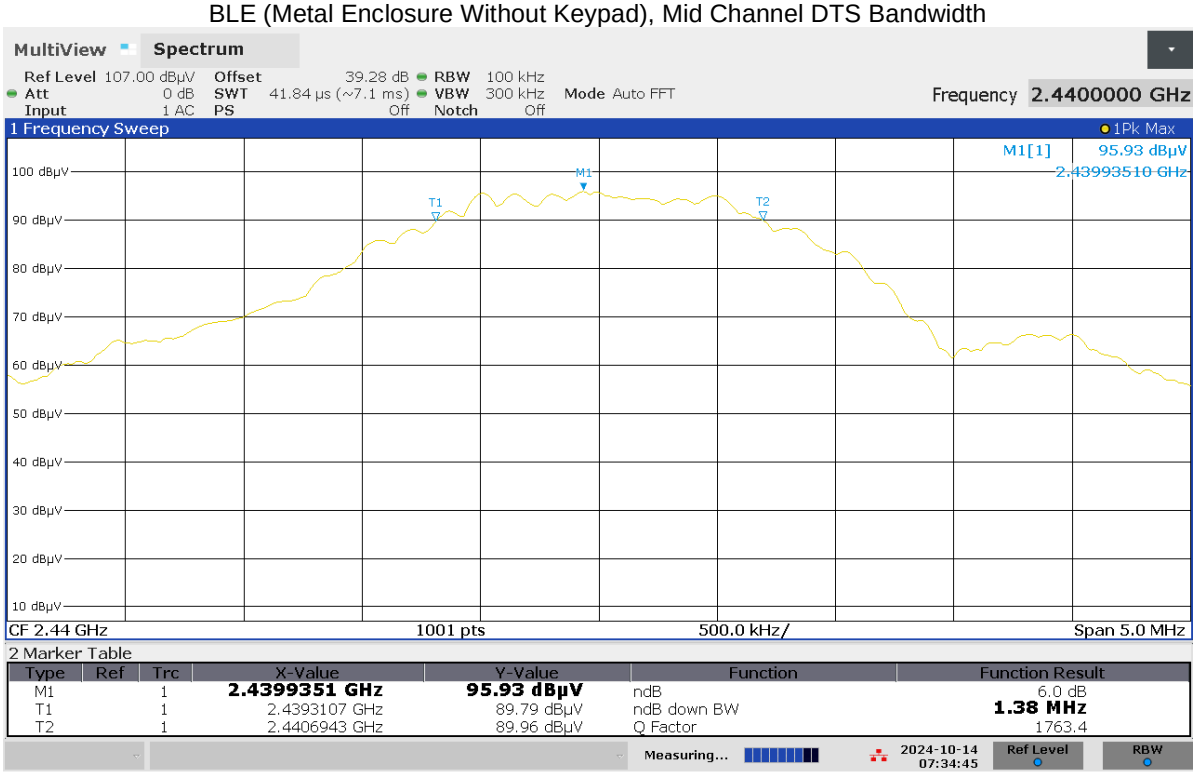
BLE (Metal Enclosure Without Keypad), Mid Channel DTS Bandwidth



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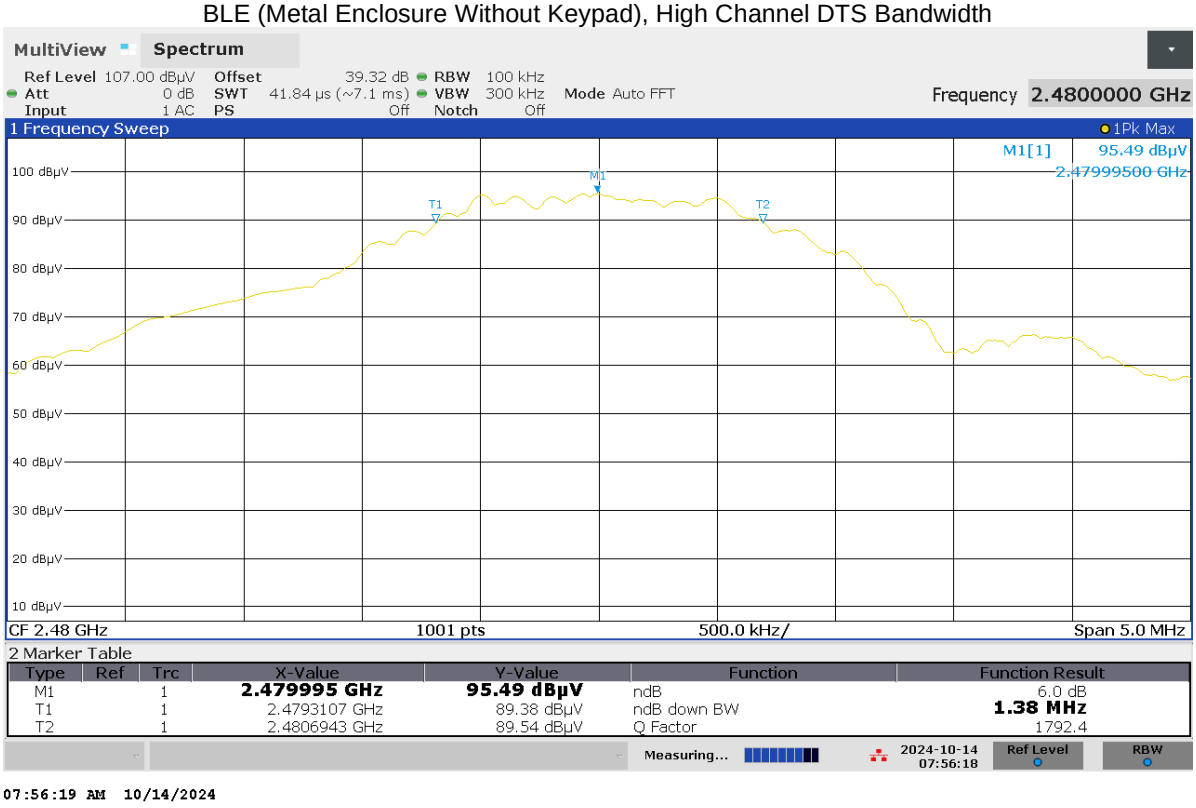
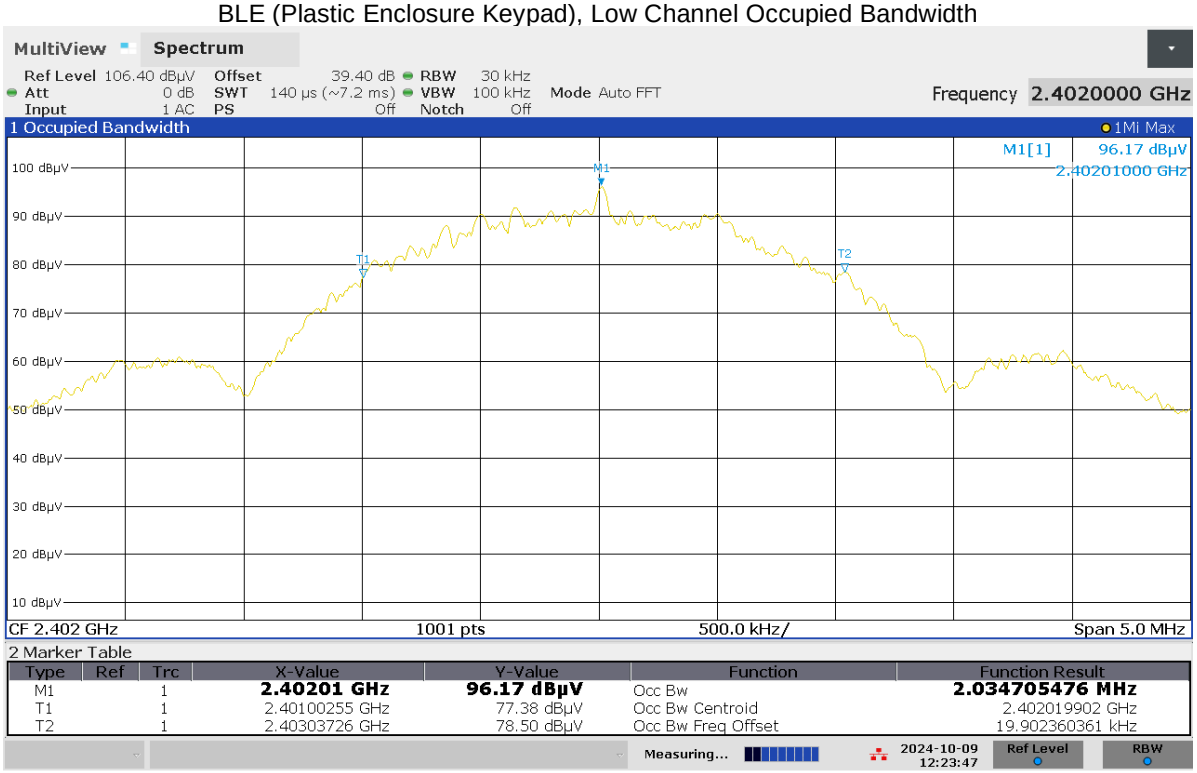
BLE (Metal Enclosure Without Keypad), High Channel DTS Bandwidth



BLE (Plastic Enclosure Keypad), Low Channel Occupied Bandwidth



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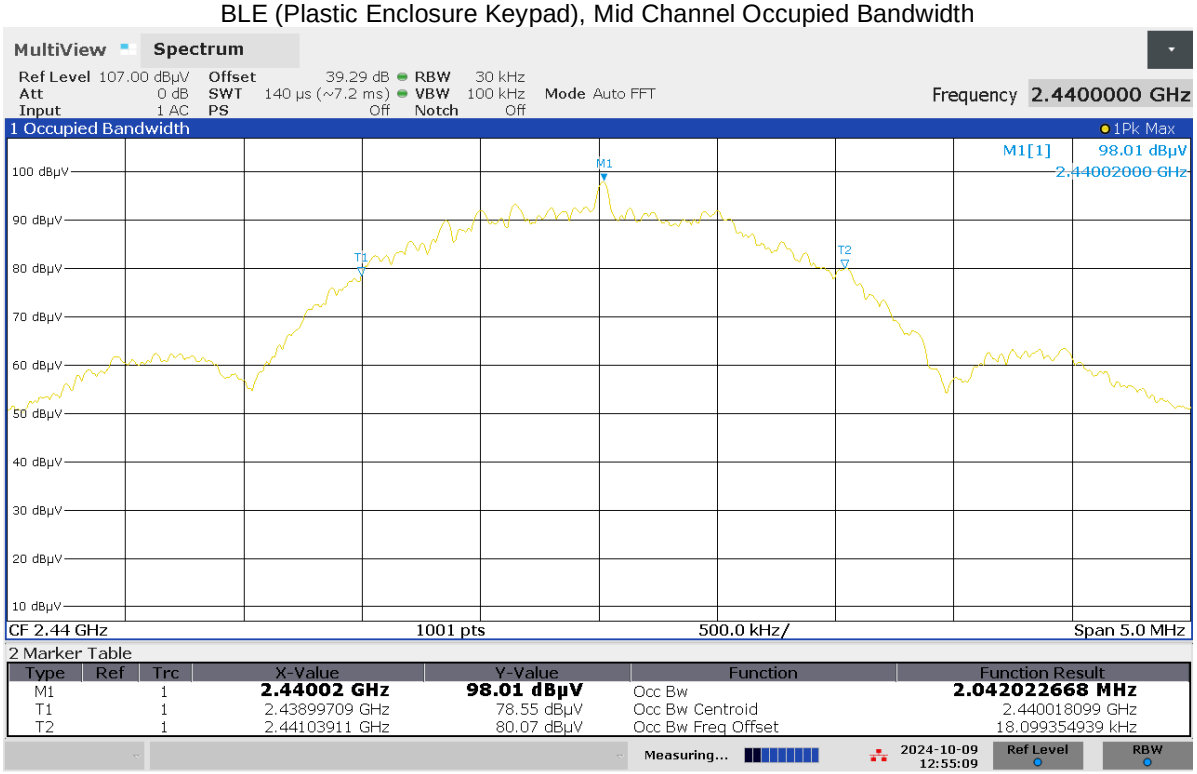
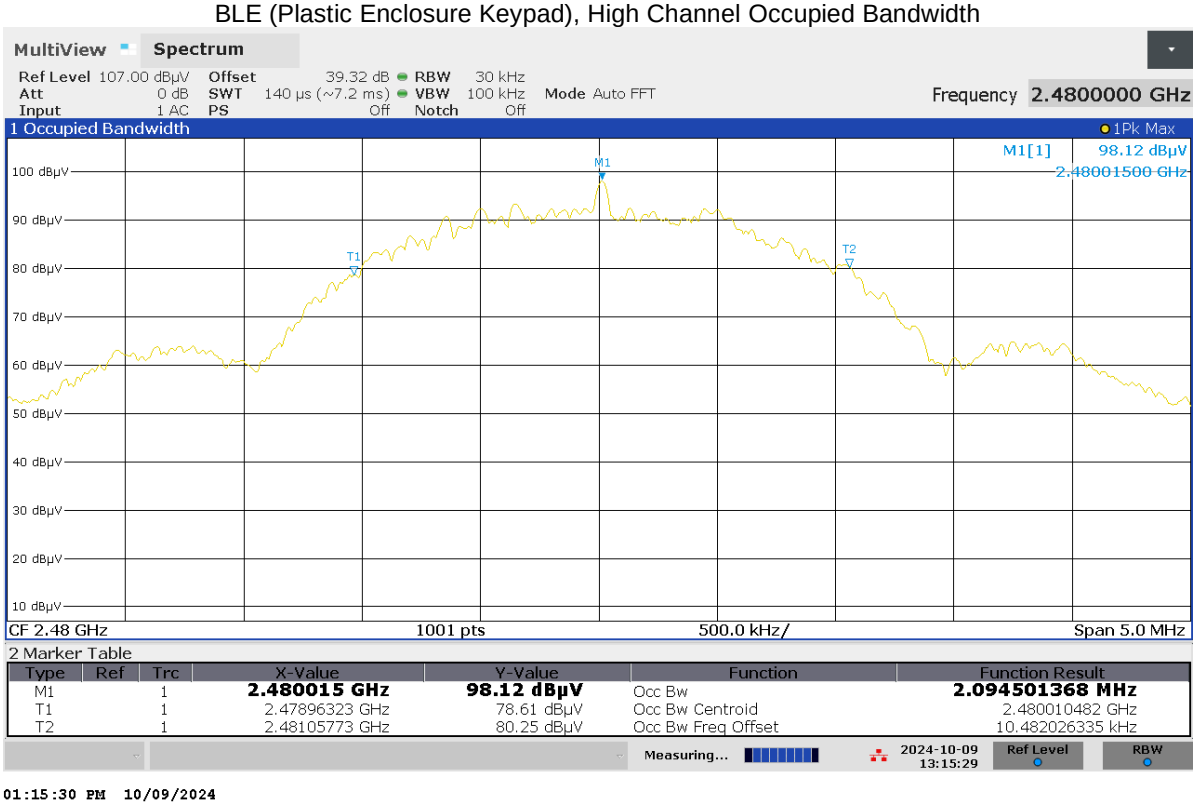
BLE (Plastic Enclosure Keypad), Mid Channel Occupied Bandwidth



12:55:10 PM 10/09/2024

BLE (Plastic Enclosure Keypad), High Channel Occupied Bandwidth



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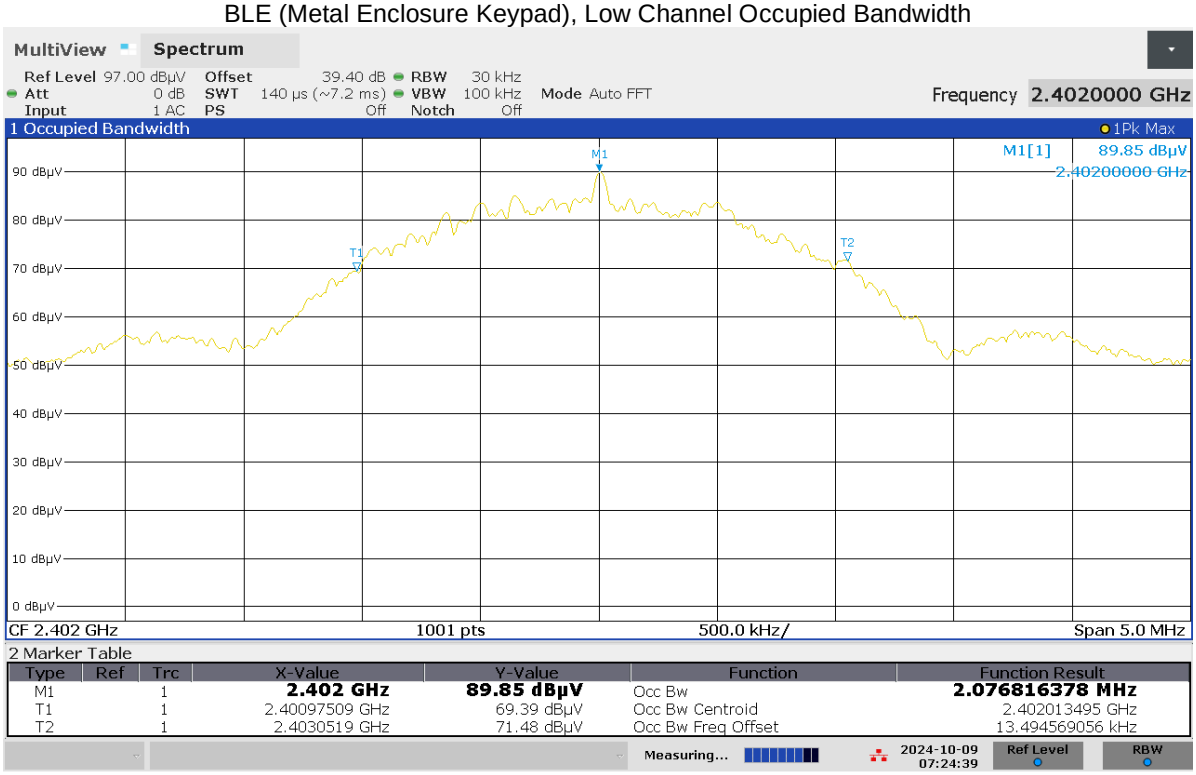
BLE (Metal Enclosure Keypad), Low Channel Occupied Bandwidth



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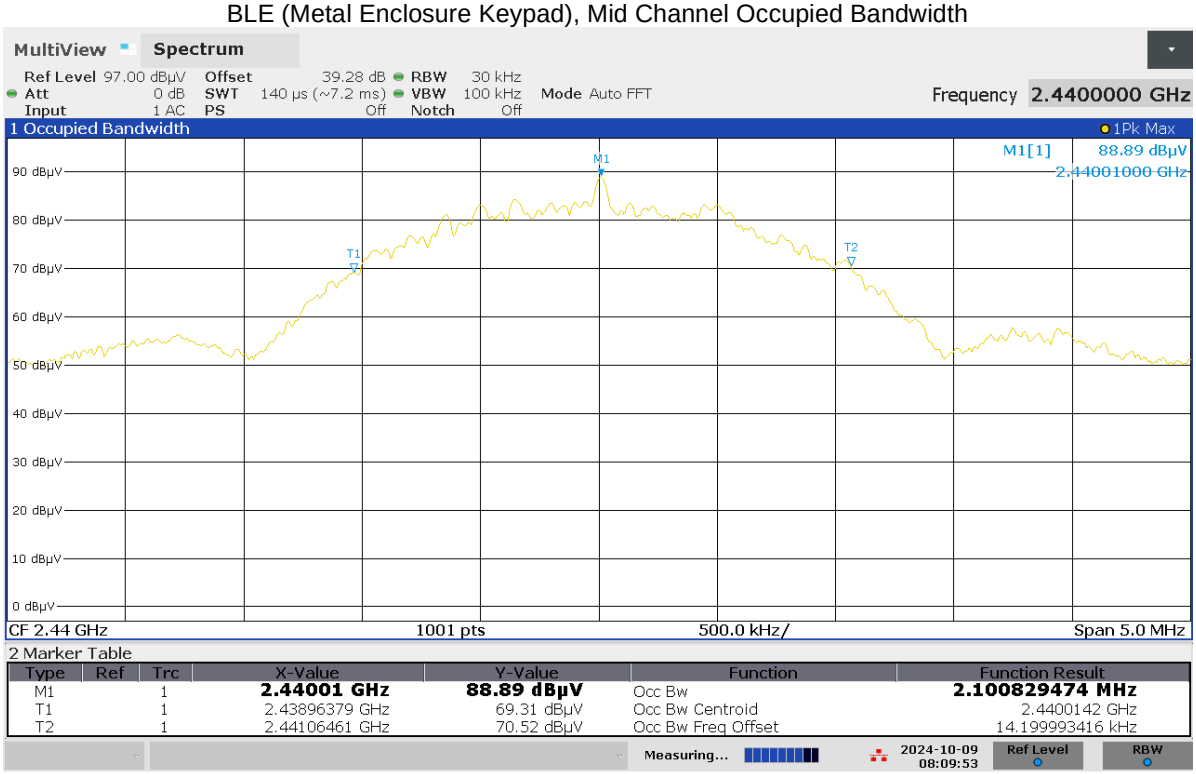
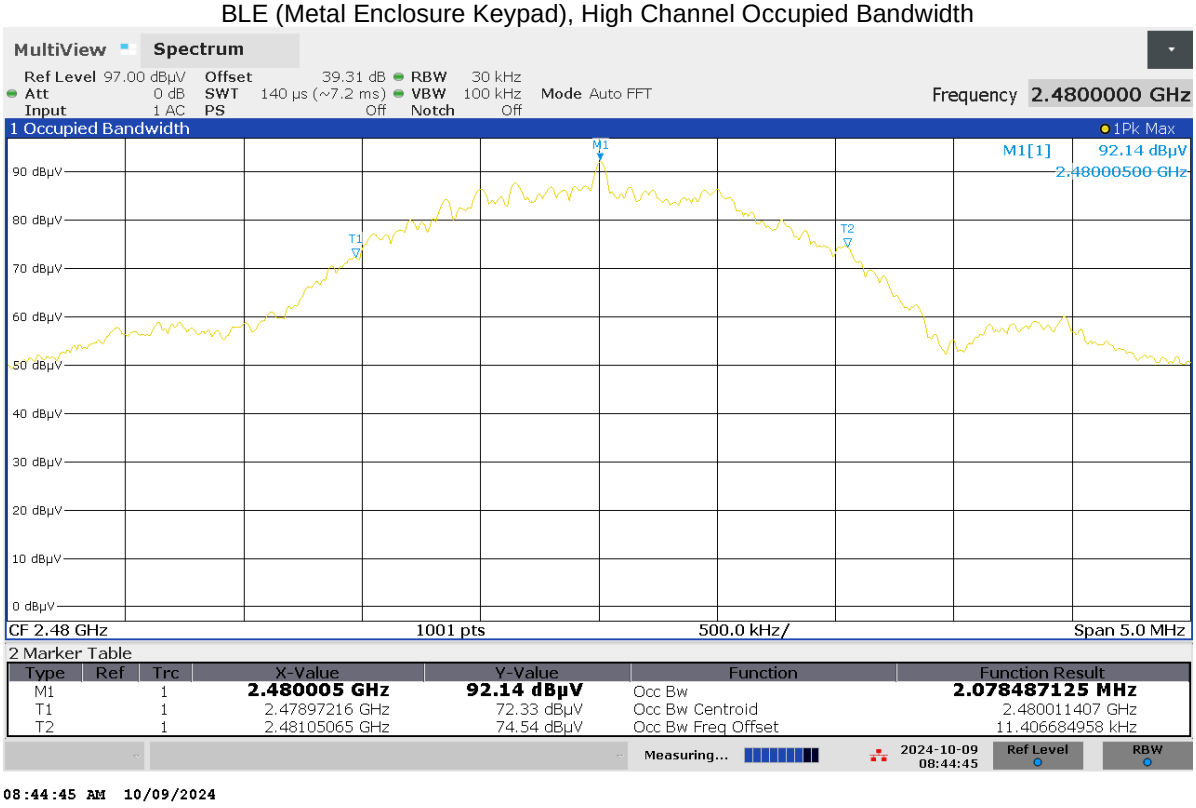
BLE (Metal Enclosure Keypad), Mid Channel Occupied Bandwidth



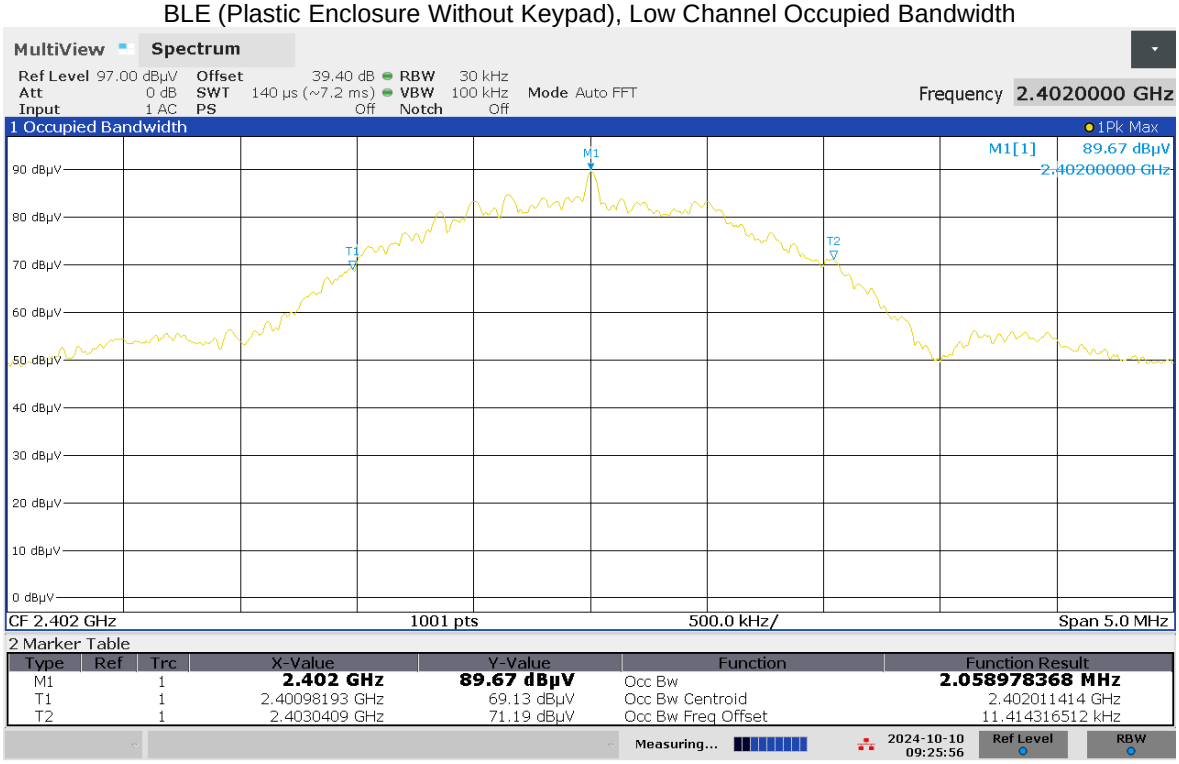
08:09:54 AM 10/09/2024

BLE (Metal Enclosure Keypad), High Channel Occupied Bandwidth



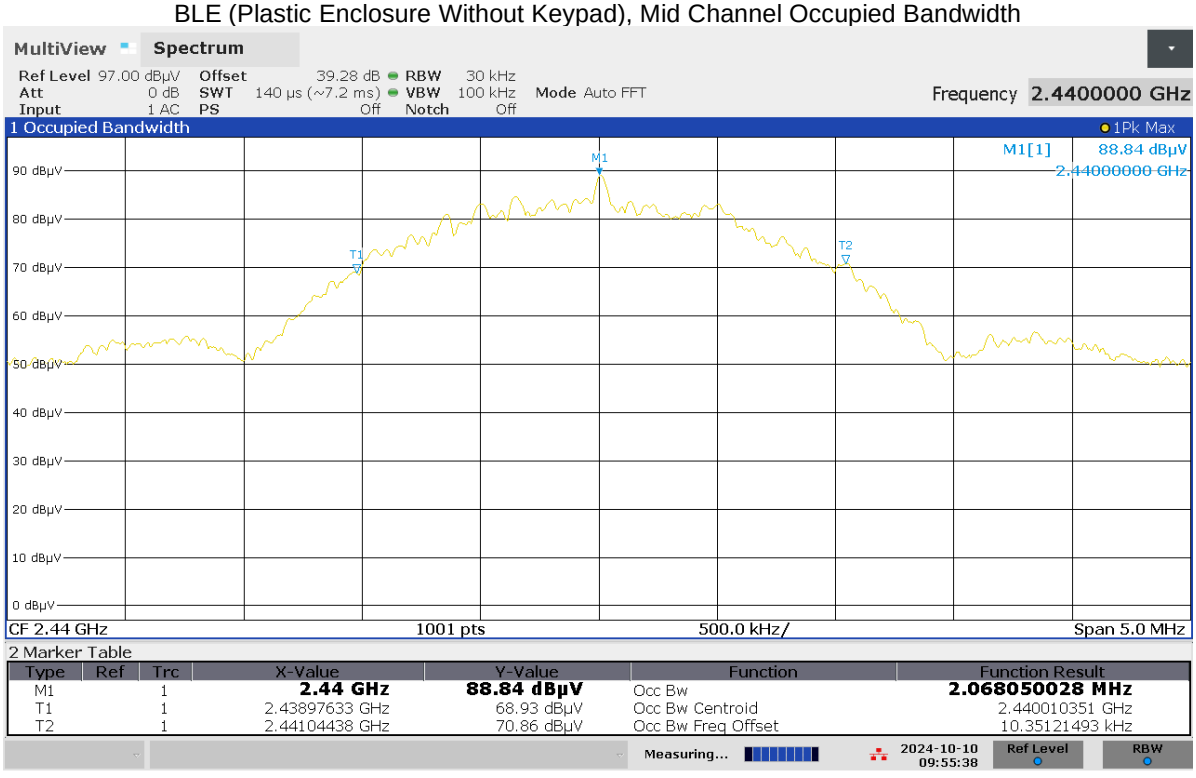
08:44:45 AM 10/09/2024

BLE (Plastic Enclosure Without Keypad), Low Channel Occupied Bandwidth



09:25:57 AM 10/10/2024

BLE (Plastic Enclosure Without Keypad), Mid Channel Occupied Bandwidth



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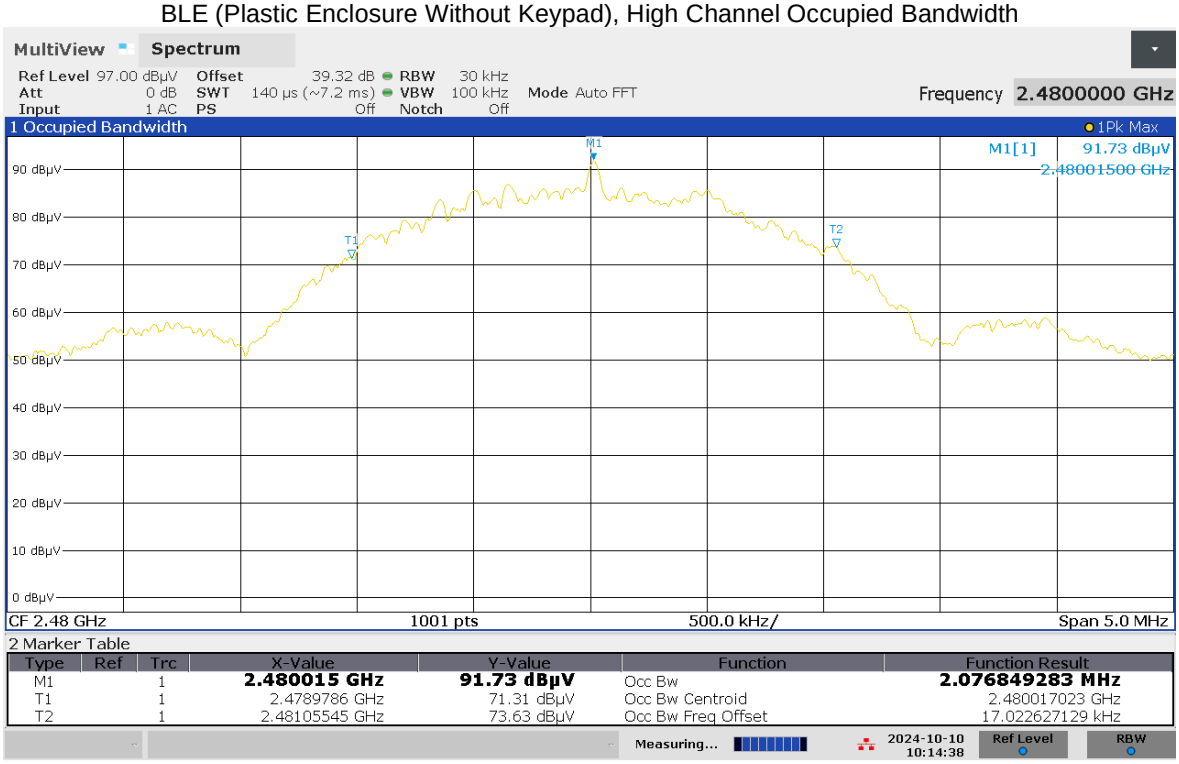
BLE (Plastic Enclosure Without Keypad), High Channel Occupied Bandwidth



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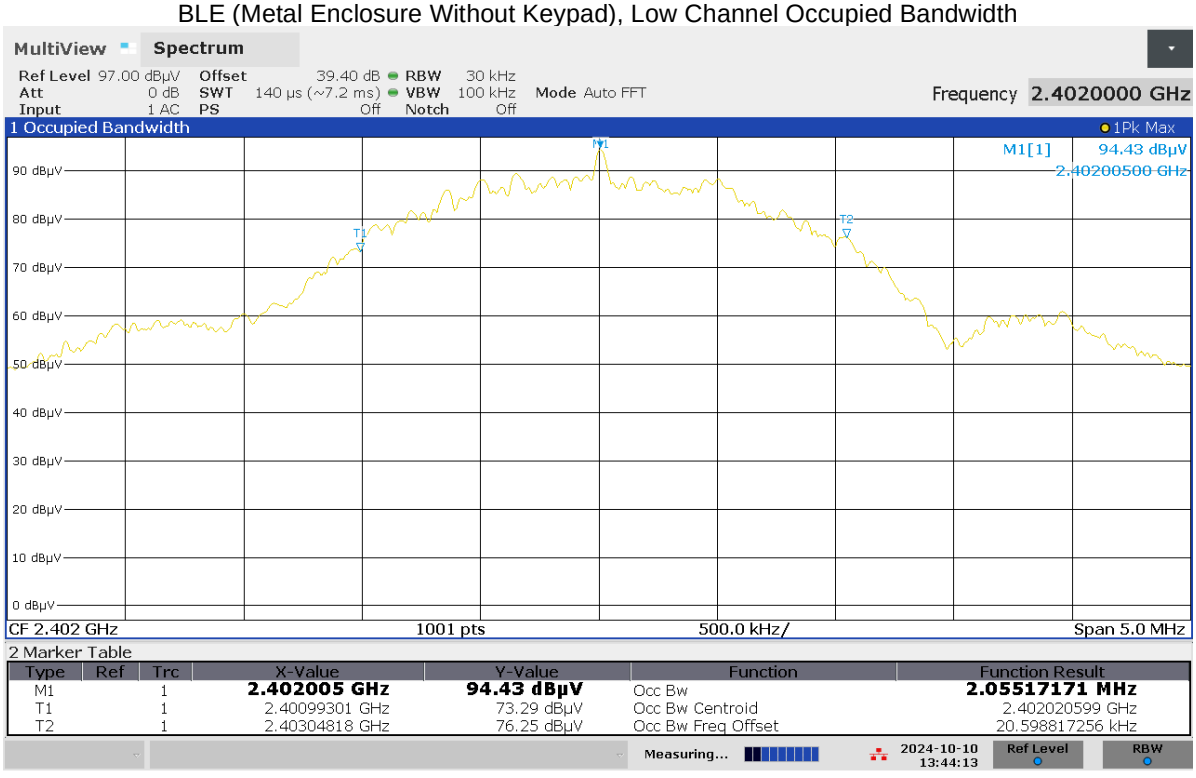
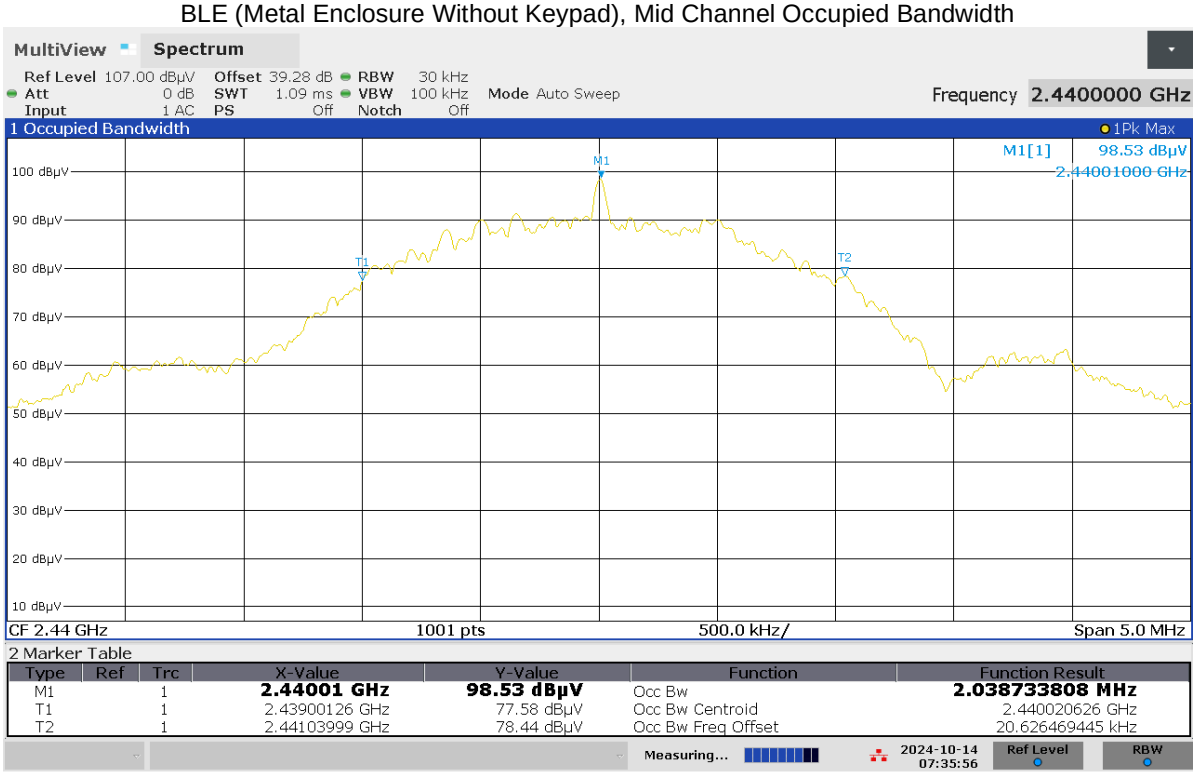
BLE (Metal Enclosure Without Keypad), Low Channel Occupied Bandwidth



01:44:13 PM 10/10/2024

BLE (Metal Enclosure Without Keypad), Mid Channel Occupied Bandwidth



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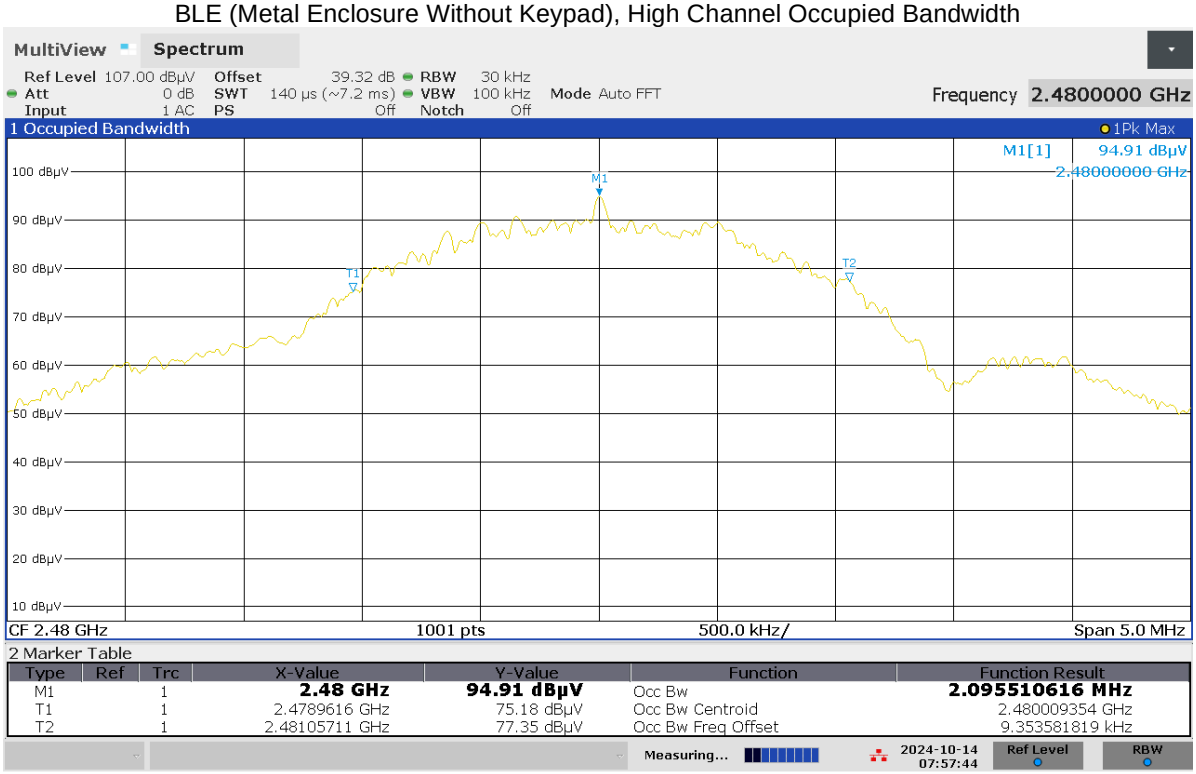
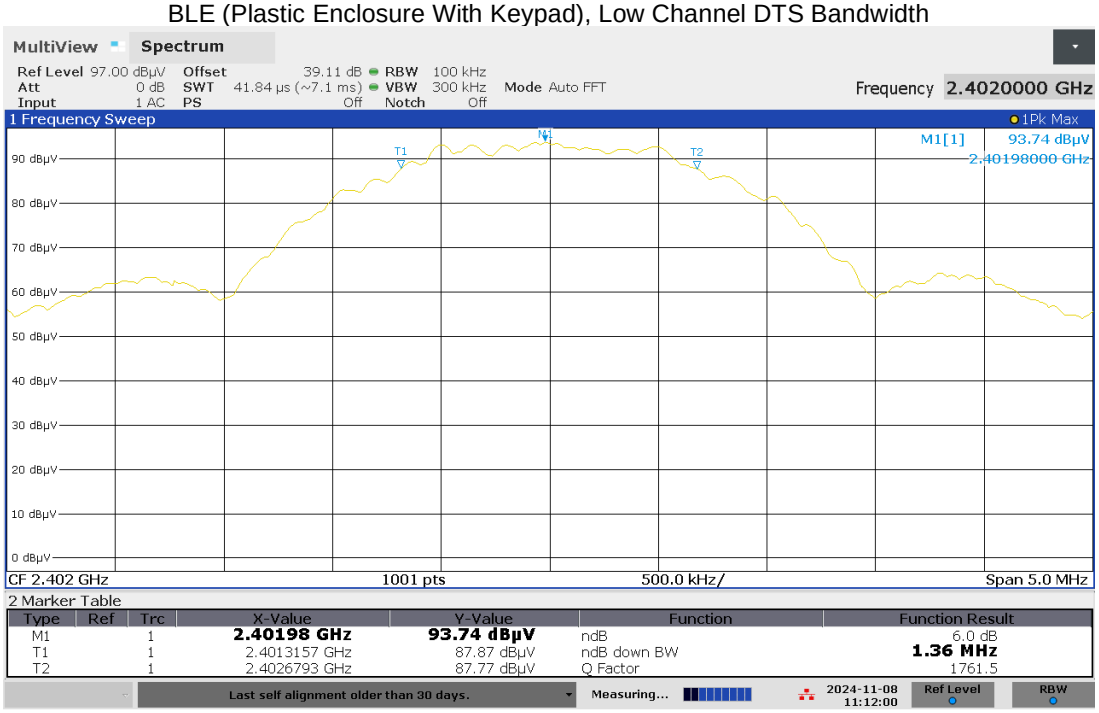
BLE (Metal Enclosure Without Keypad), High Channel Occupied Bandwidth



07:57:45 AM 10/14/2024

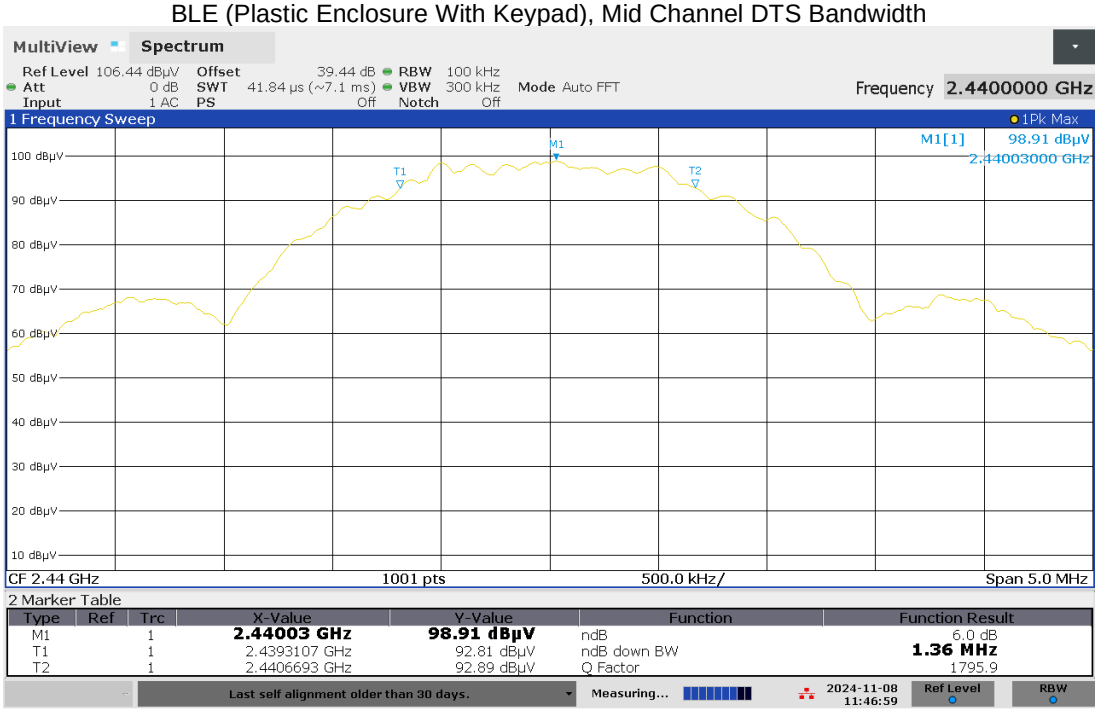
===POE Powered===

BLE (Plastic Enclosure With Keypad), Low Channel DTS Bandwidth



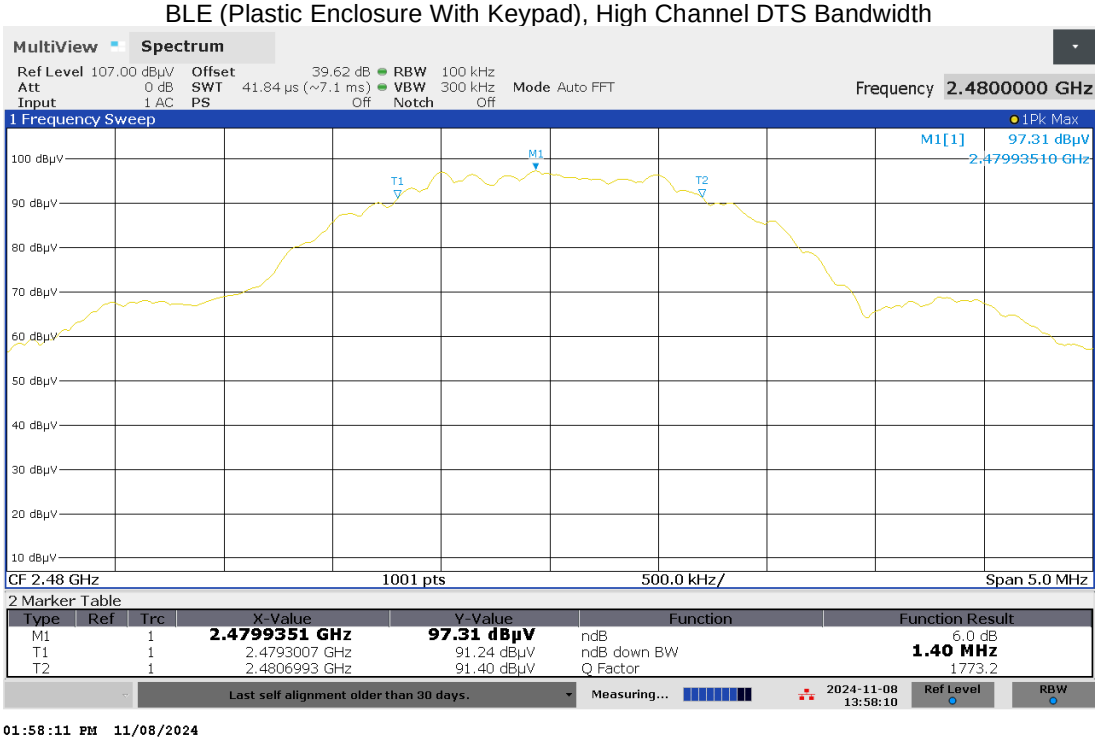
11:12:00 AM 11/08/2024

BLE (Plastic Enclosure With Keypad), Mid Channel DTS Bandwidth

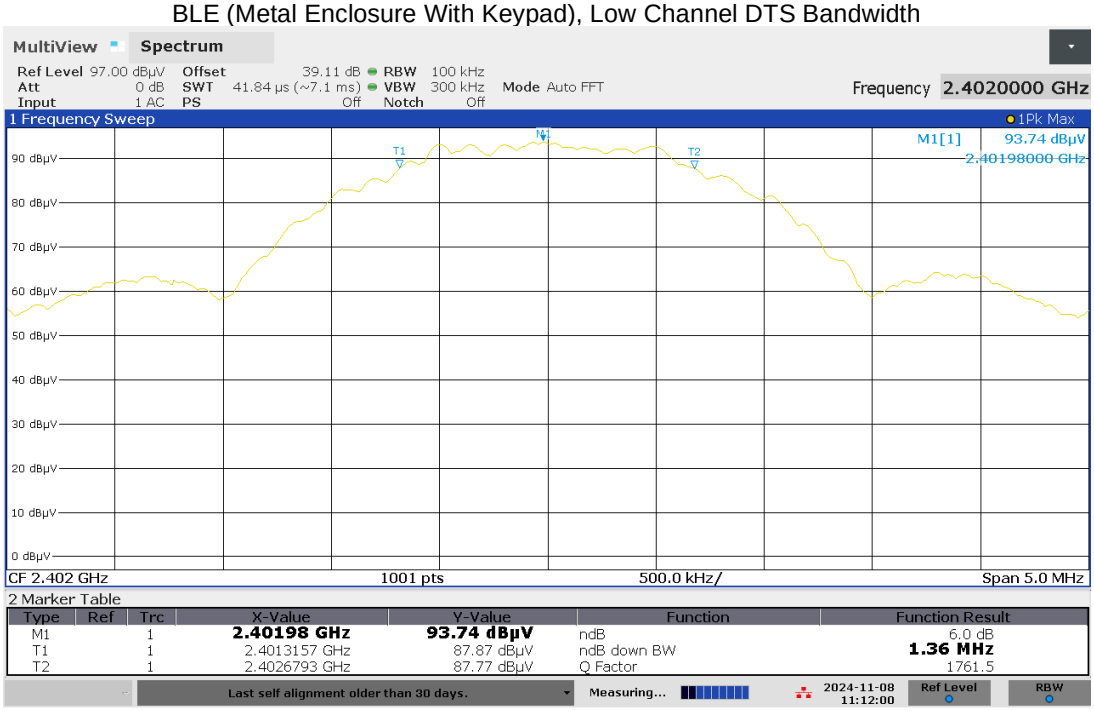


11:46:59 AM 11/08/2024

BLE (Plastic Enclosure With Keypad), High Channel DTS Bandwidth

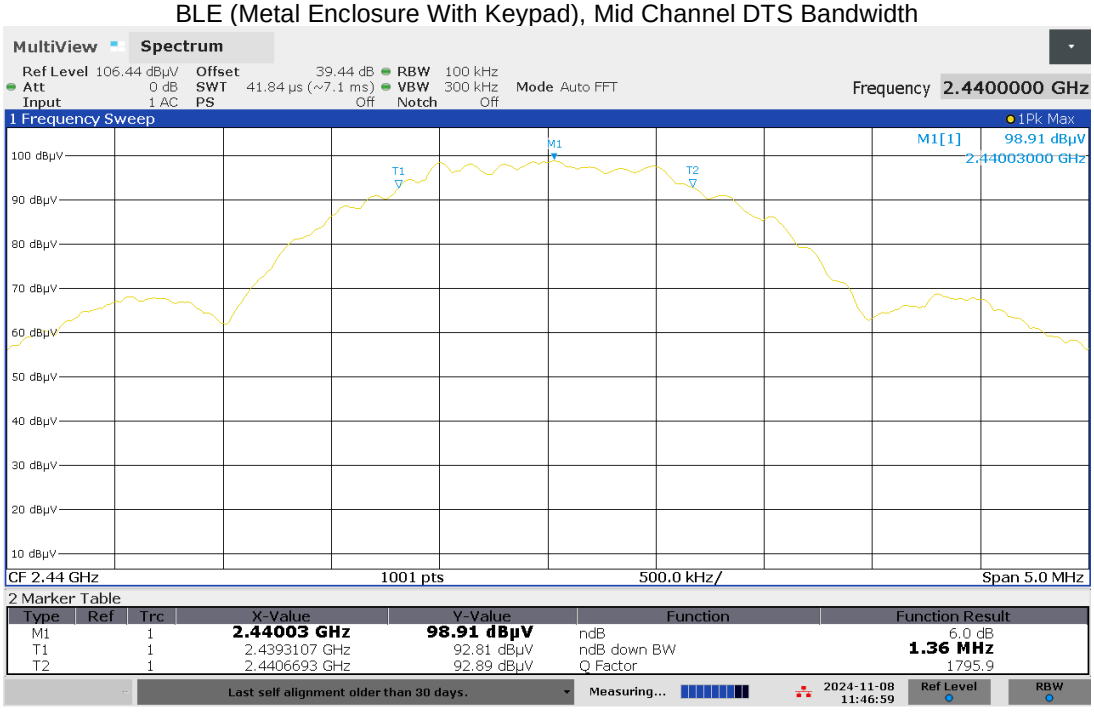


BLE (Metal Enclosure With Keypad), Low Channel DTS Bandwidth



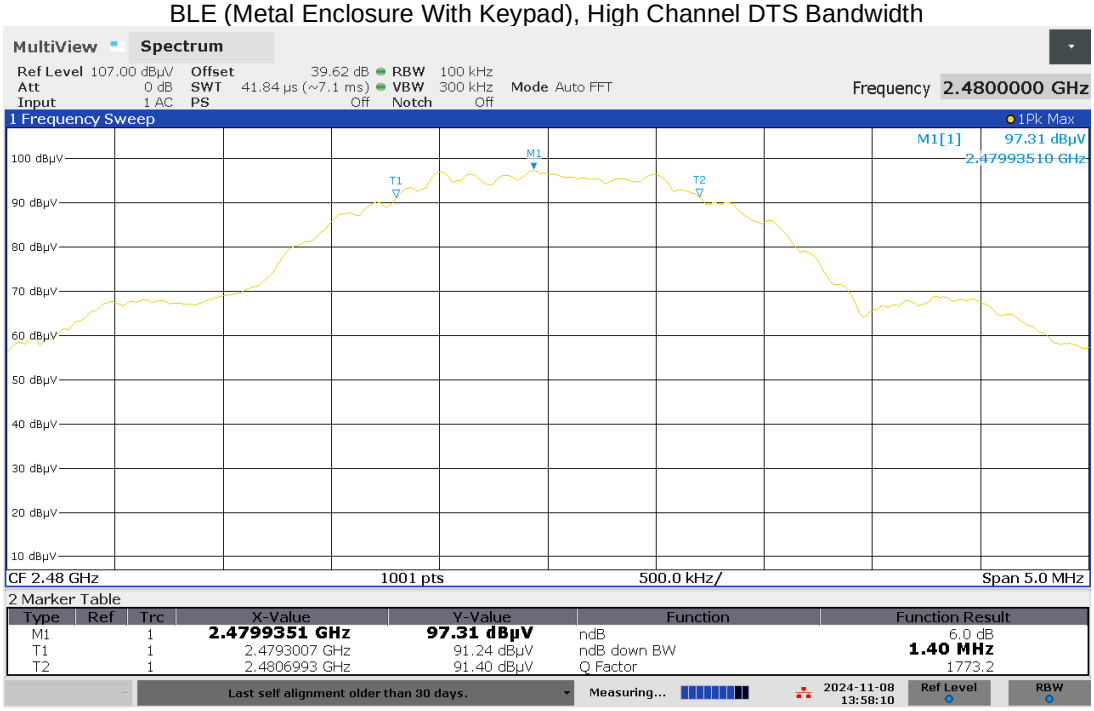
11:12:00 AM 11/08/2024

BLE (Metal Enclosure With Keypad), Mid Channel DTS Bandwidth

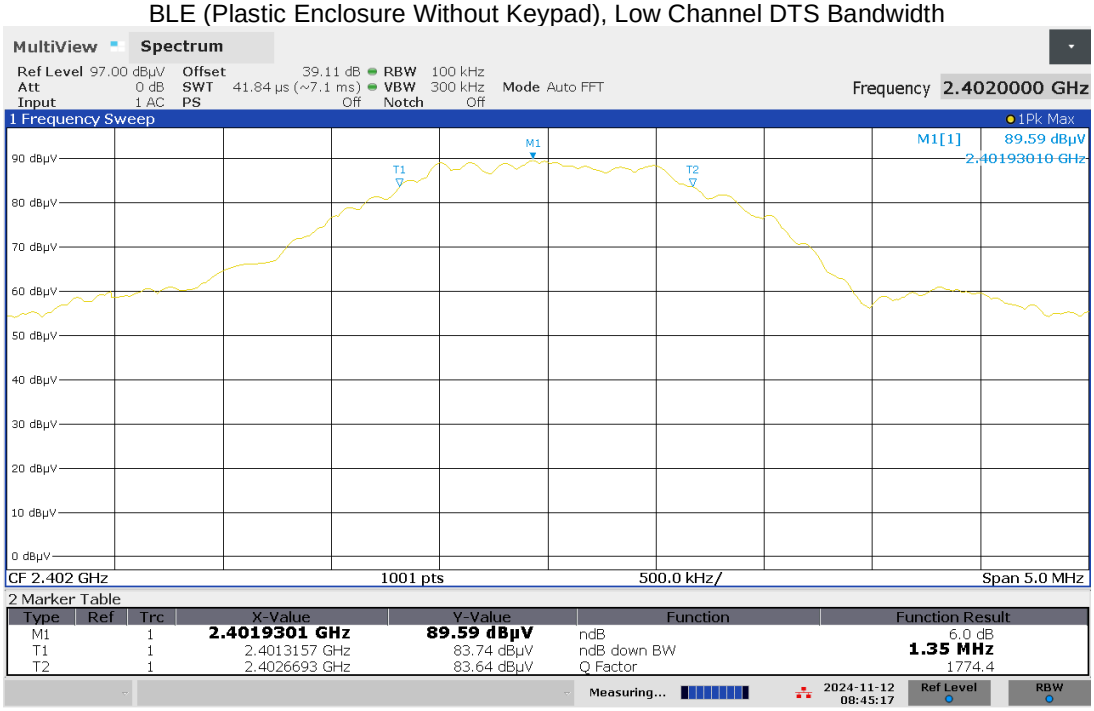


11:46:59 AM 11/08/2024

BLE (Metal Enclosure With Keypad), High Channel DTS Bandwidth

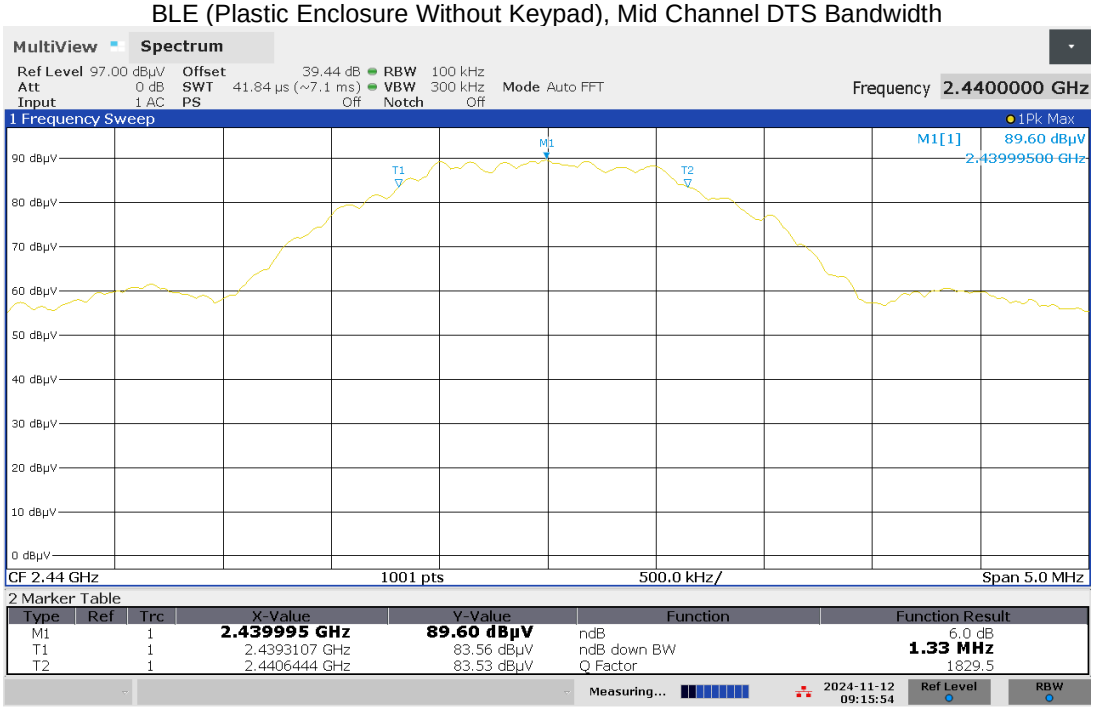


BLE (Plastic Enclosure Without Keypad), Low Channel DTS Bandwidth



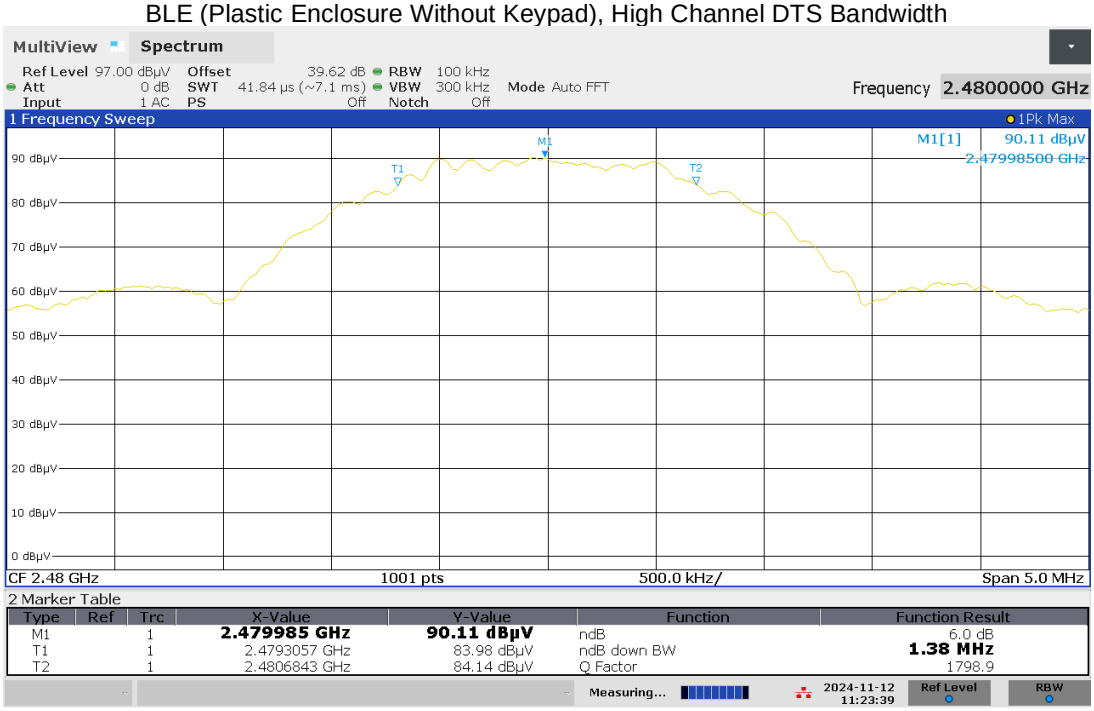
08:45:18 AM 11/12/2024

BLE (Plastic Enclosure Without Keypad), Mid Channel DTS Bandwidth

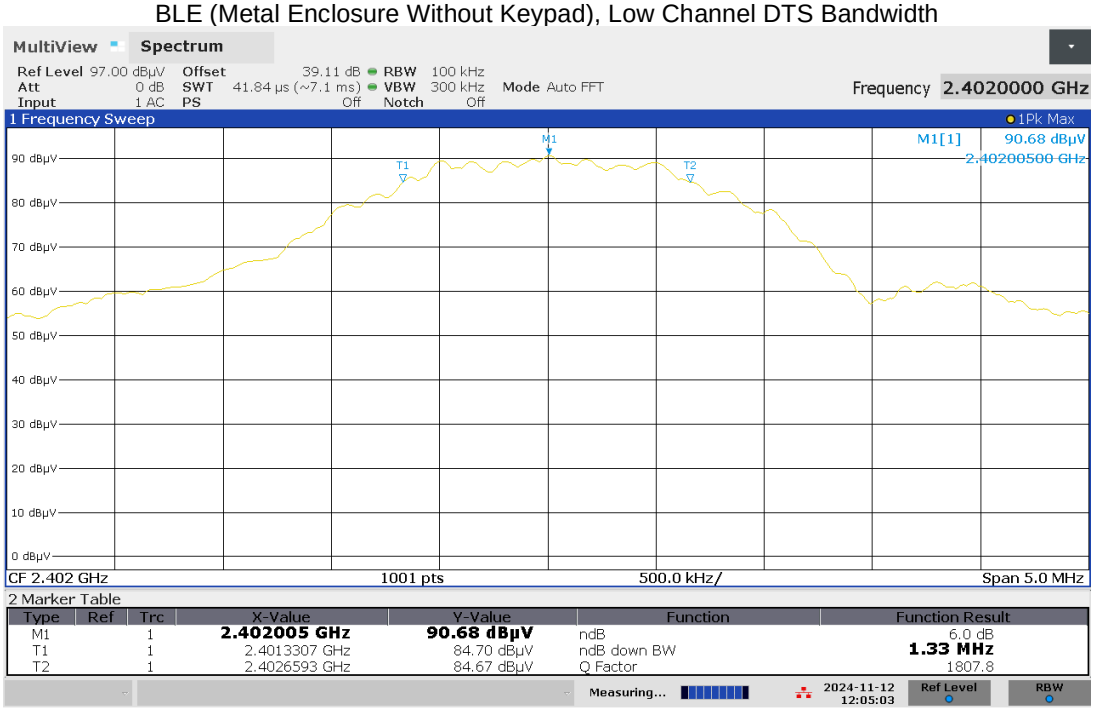


09:15:54 AM 11/12/2024

BLE (Plastic Enclosure Without Keypad), High Channel DTS Bandwidth

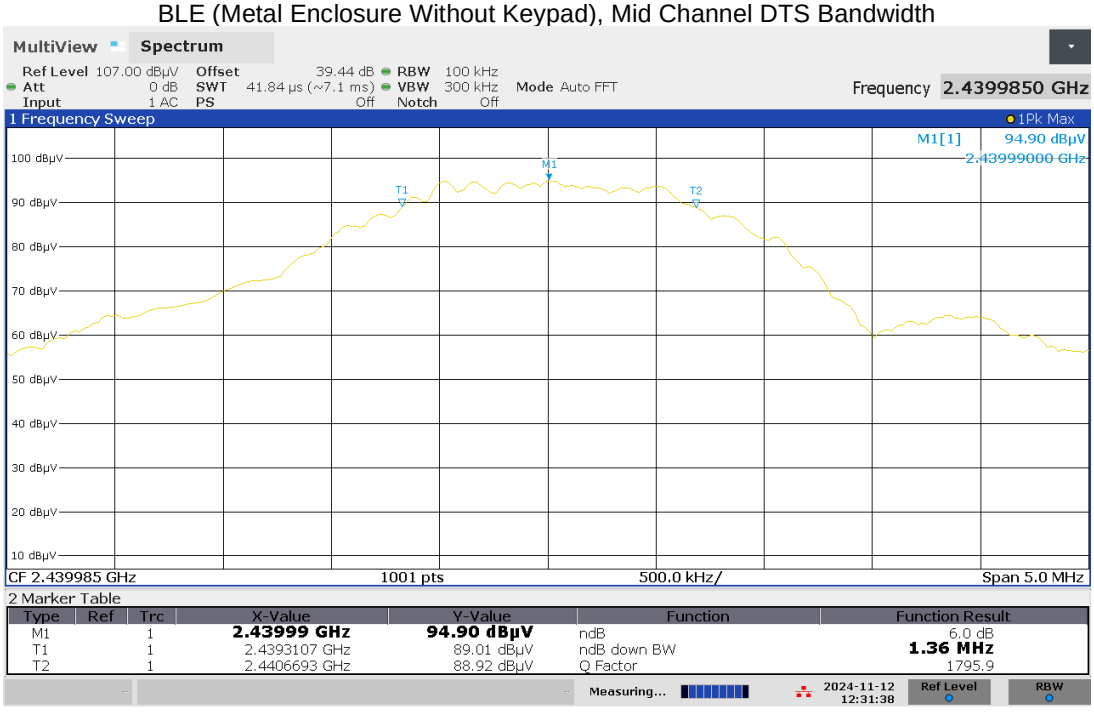


BLE (Metal Enclosure Without Keypad), Low Channel DTS Bandwidth



12:05:03 PM 11/12/2024

BLE (Metal Enclosure Without Keypad), Mid Channel DTS Bandwidth



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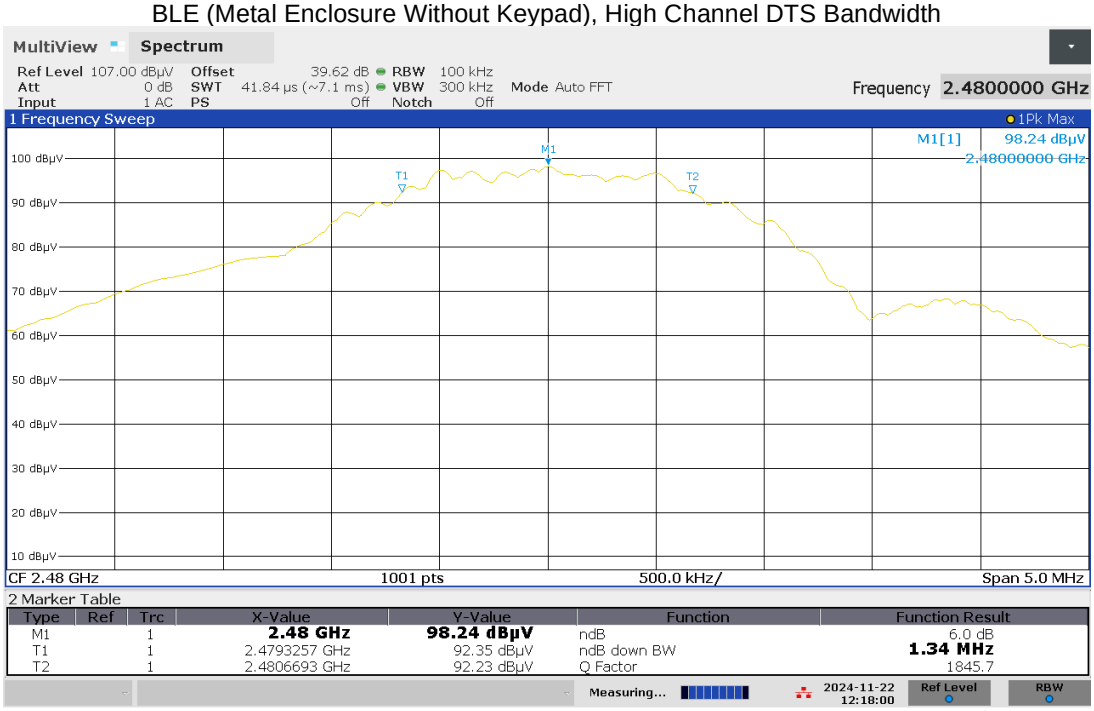
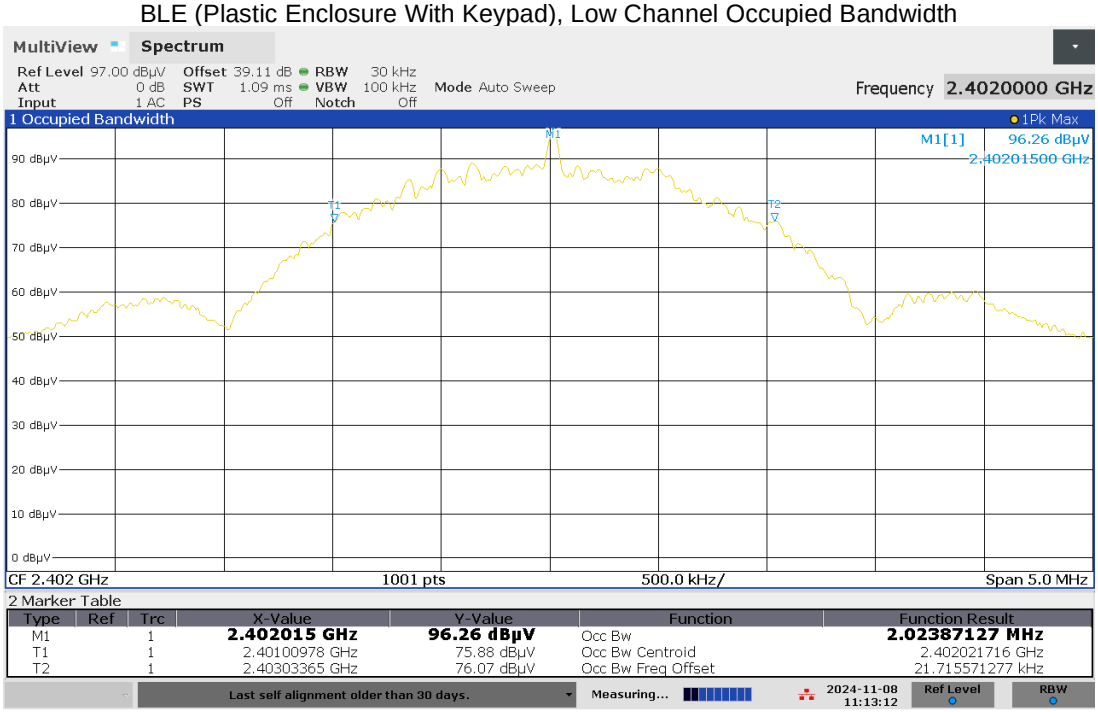
BLE (Metal Enclosure Without Keypad), High Channel DTS Bandwidth

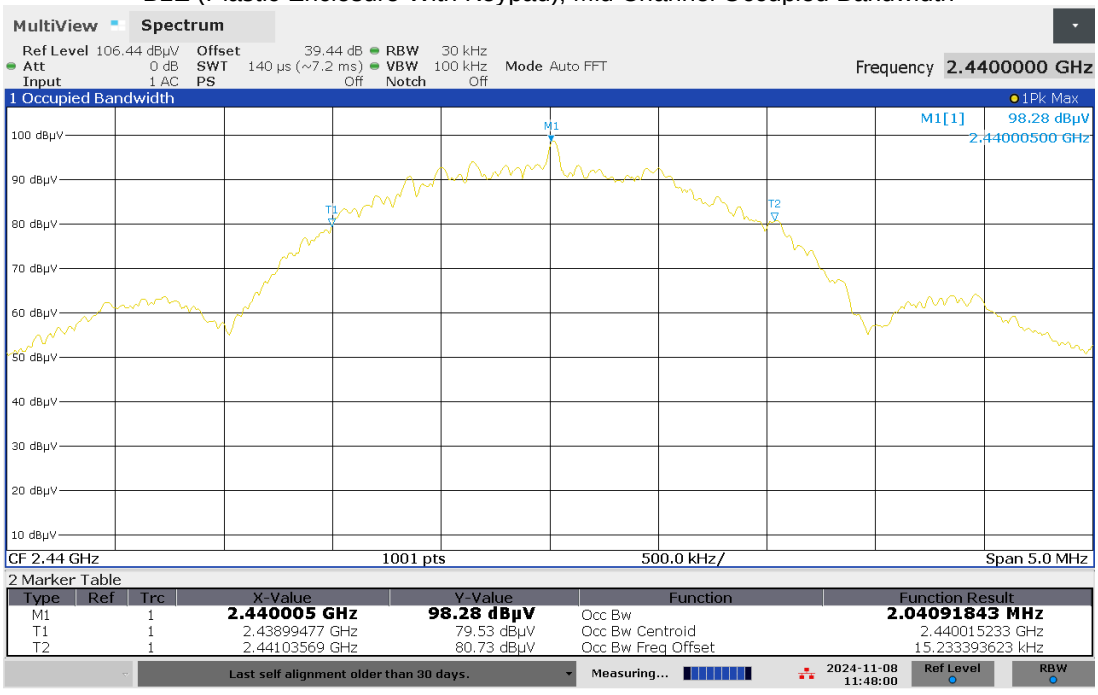


BLE (Plastic Enclosure With Keypad), Low Channel Occupied Bandwidth



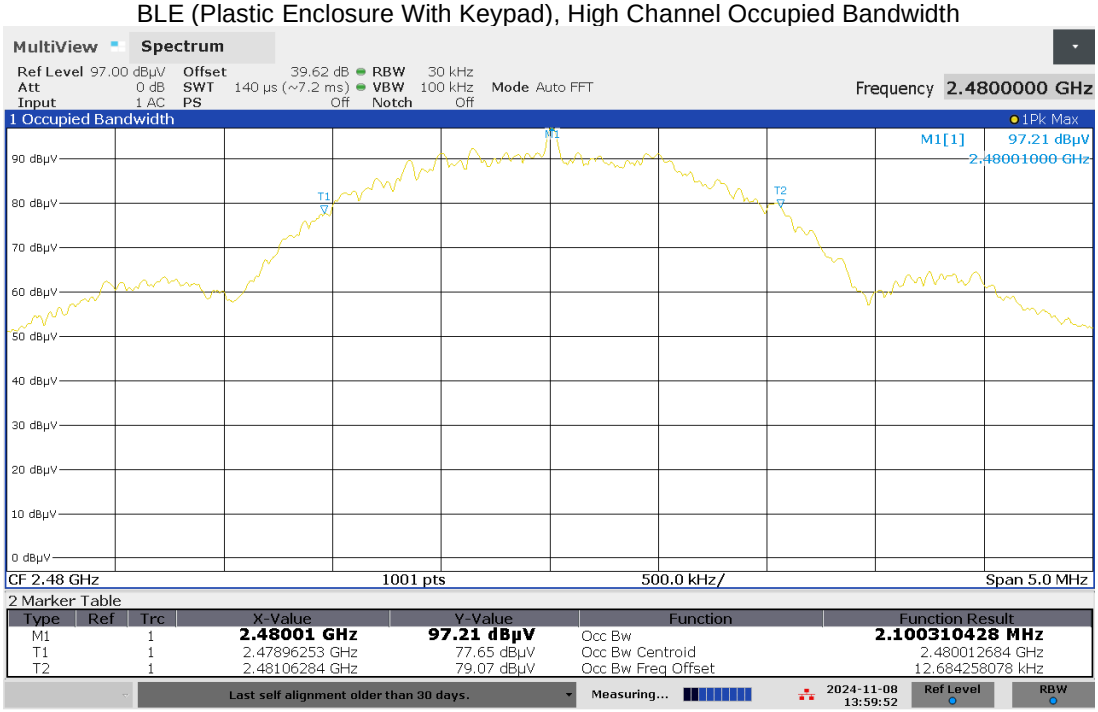
11:13:12 AM 11/08/2024

BLE (Plastic Enclosure With Keypad), Mid Channel Occupied Bandwidth



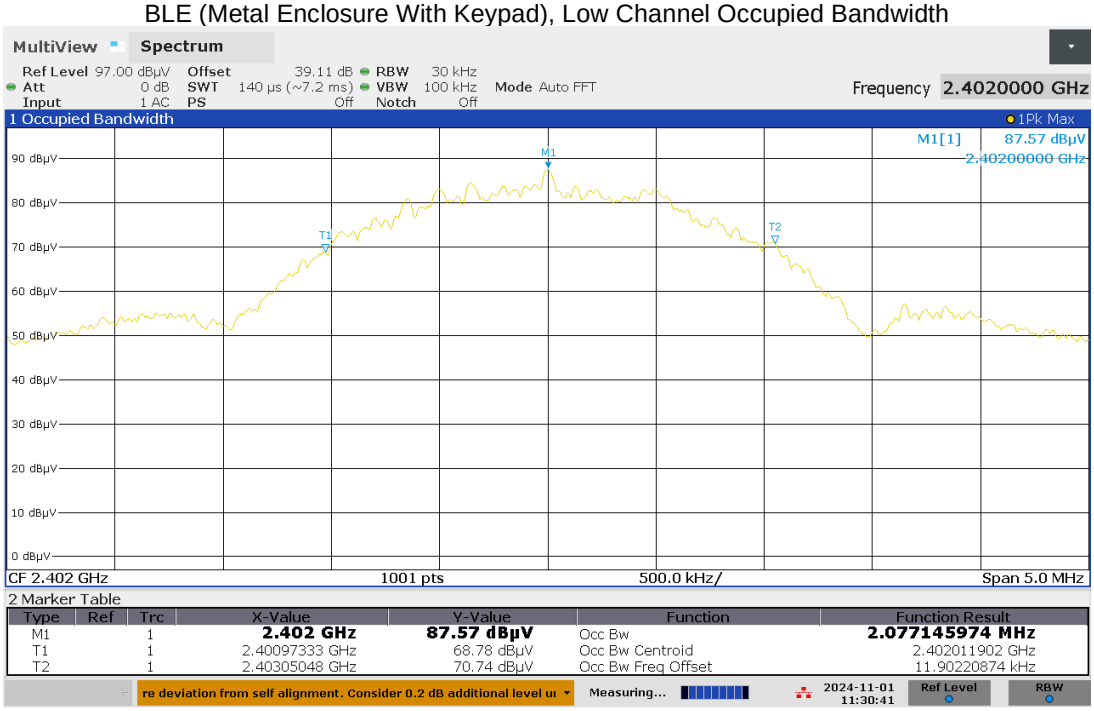
11:48:00 AM 11/08/2024

BLE (Plastic Enclosure With Keypad), High Channel Occupied Bandwidth



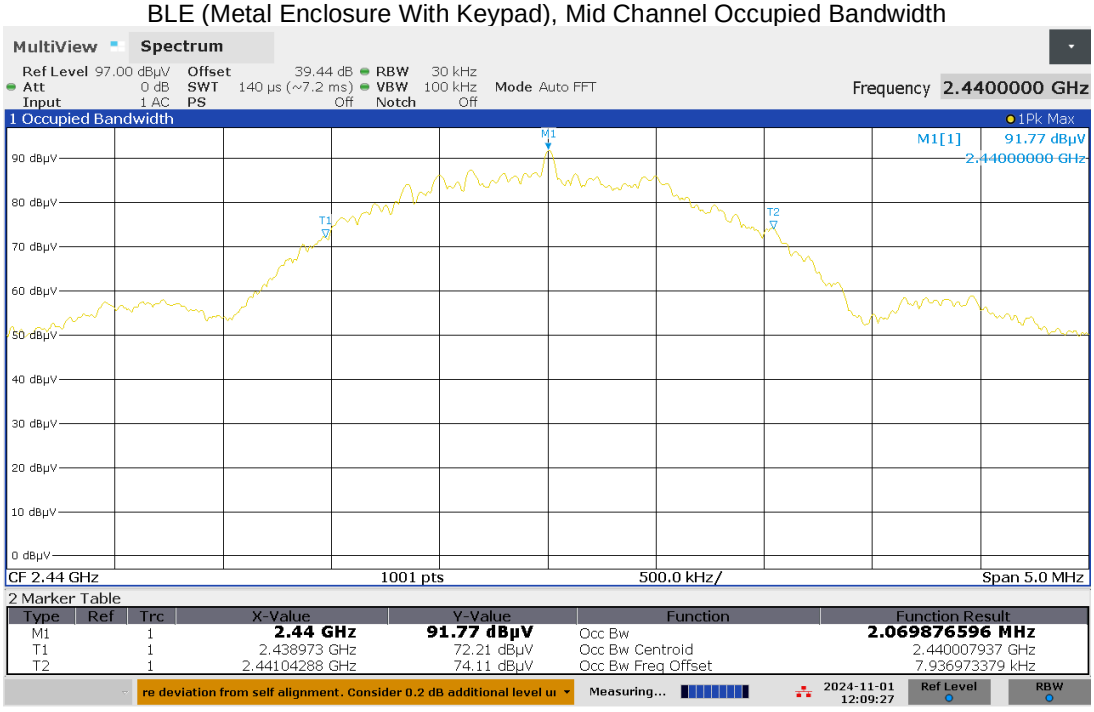
01:59:53 PM 11/08/2024

BLE (Metal Enclosure With Keypad), Low Channel Occupied Bandwidth



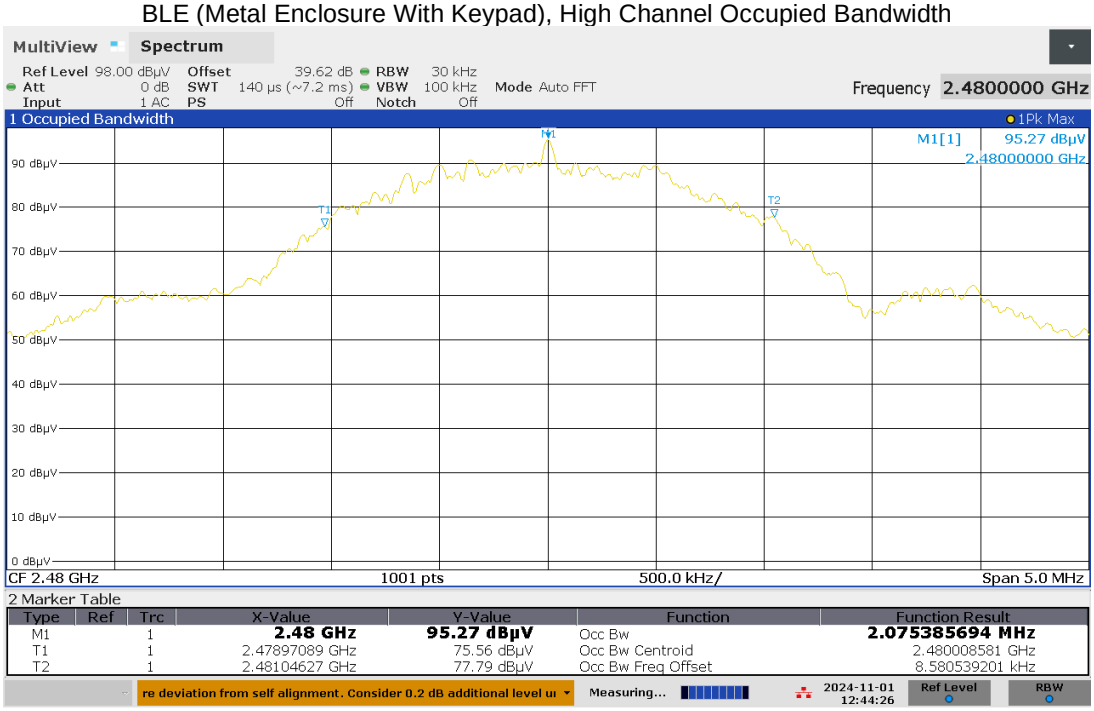
11:30:41 AM 11/01/2024

BLE (Metal Enclosure With Keypad), Mid Channel Occupied Bandwidth

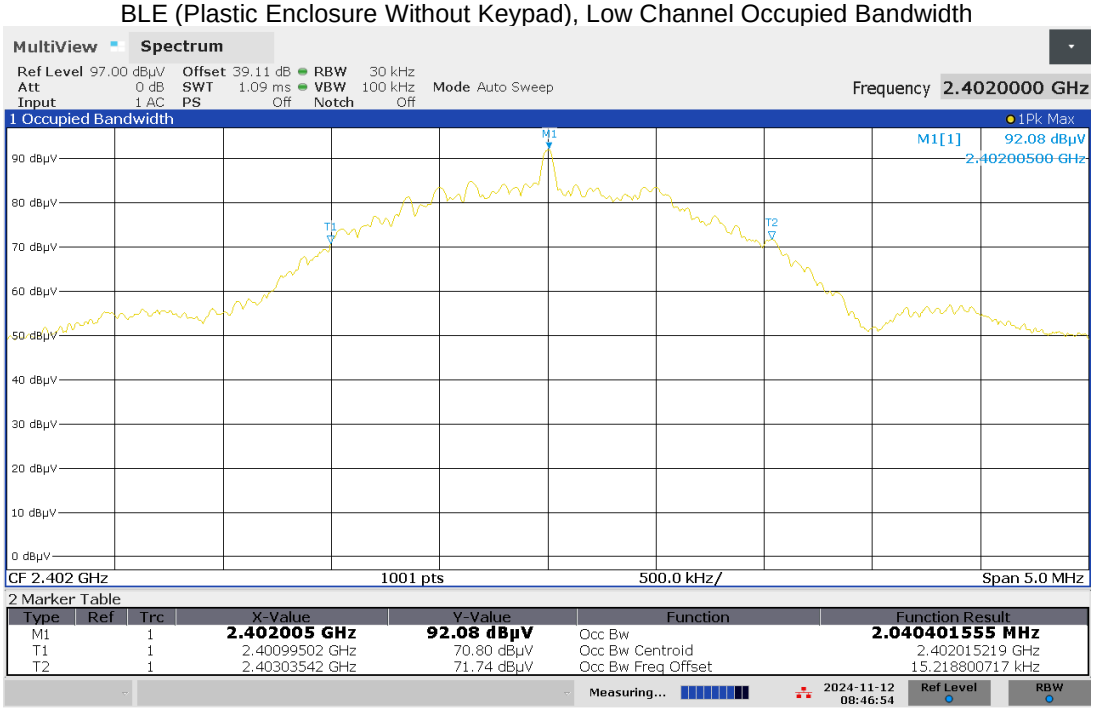


12:09:28 PM 11/01/2024

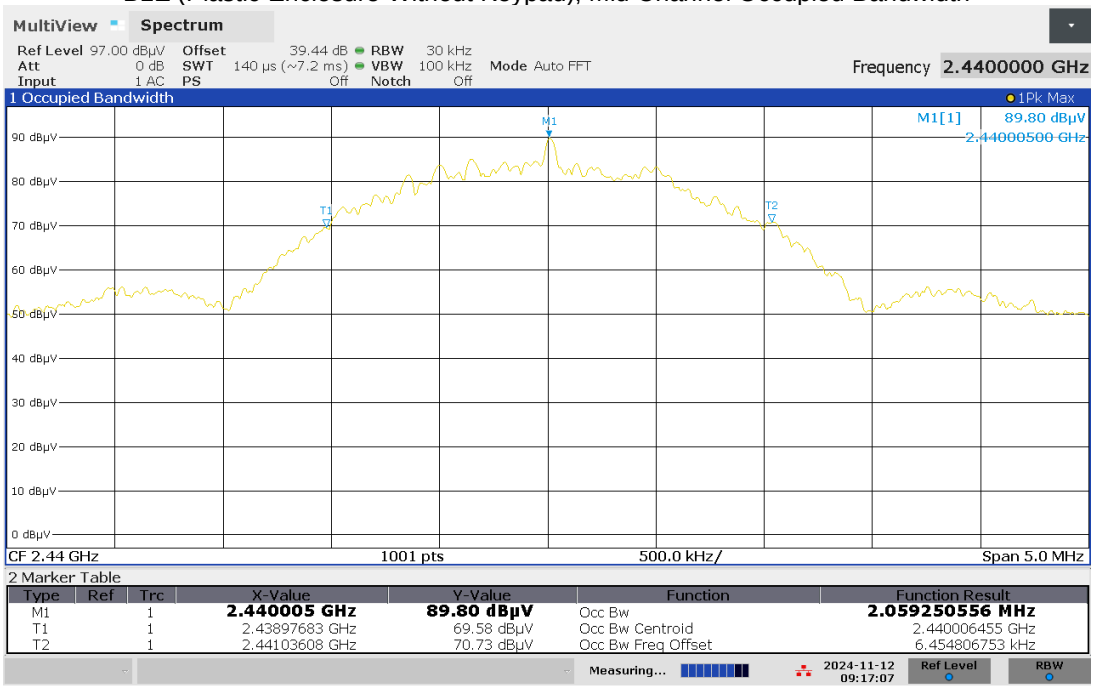
BLE (Metal Enclosure With Keypad), High Channel Occupied Bandwidth



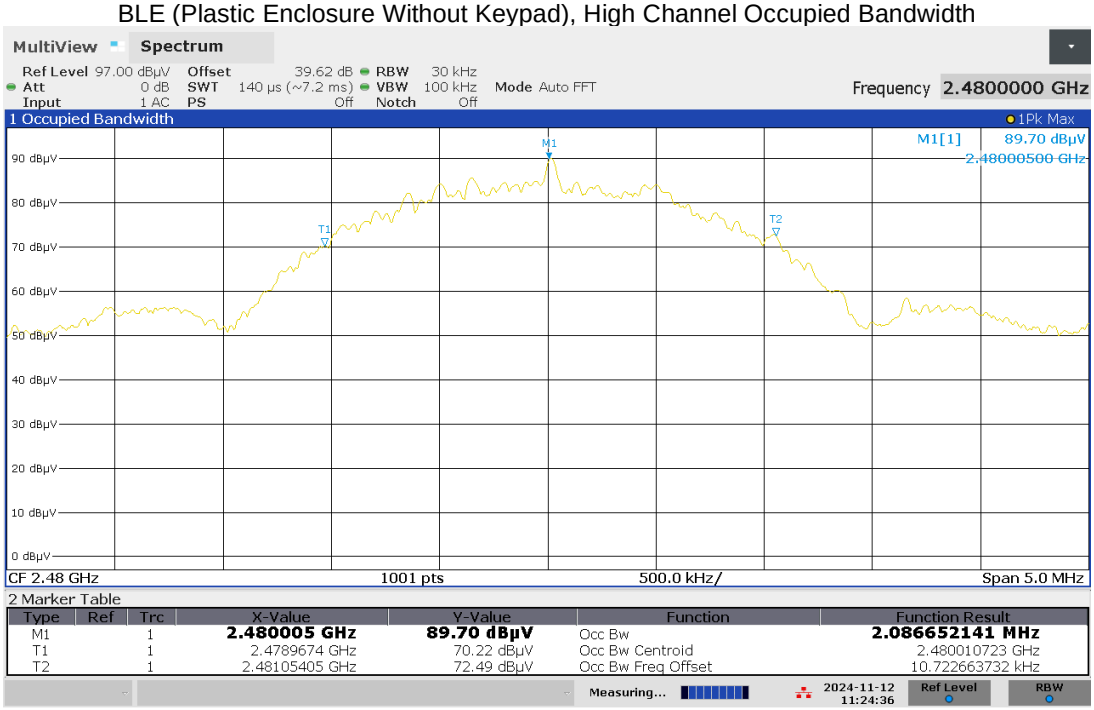
BLE (Plastic Enclosure Without Keypad), Low Channel Occupied Bandwidth



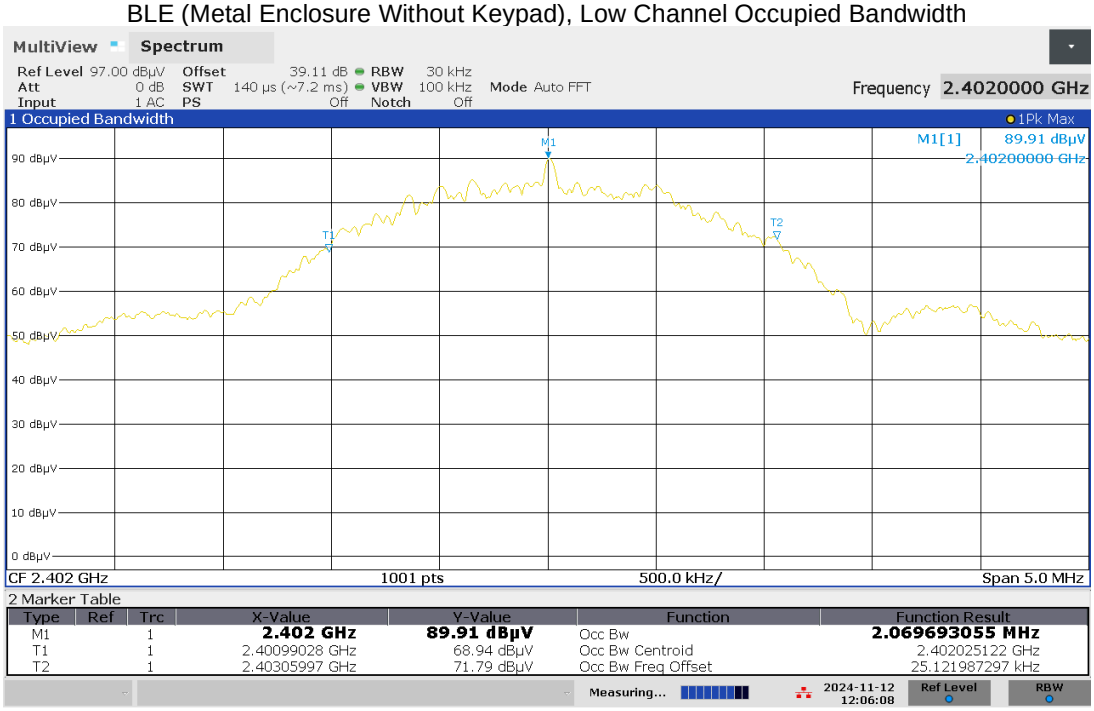
BLE (Plastic Enclosure Without Keypad), Mid Channel Occupied Bandwidth



BLE (Plastic Enclosure Without Keypad), High Channel Occupied Bandwidth

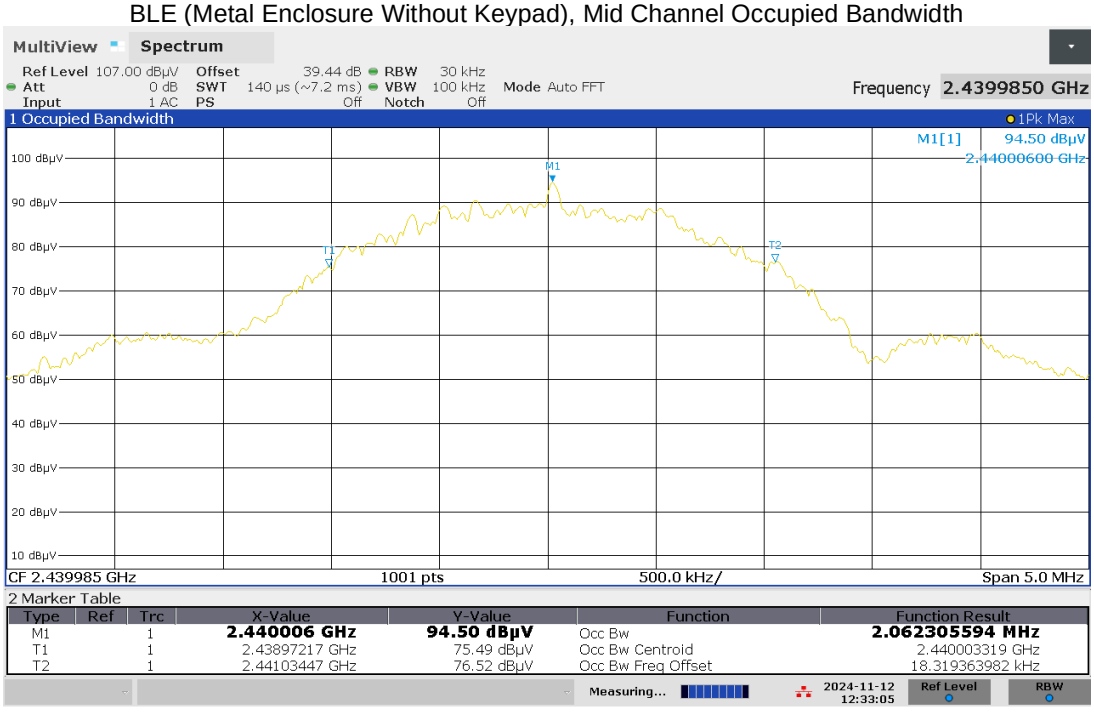


BLE (Metal Enclosure Without Keypad), Low Channel Occupied Bandwidth



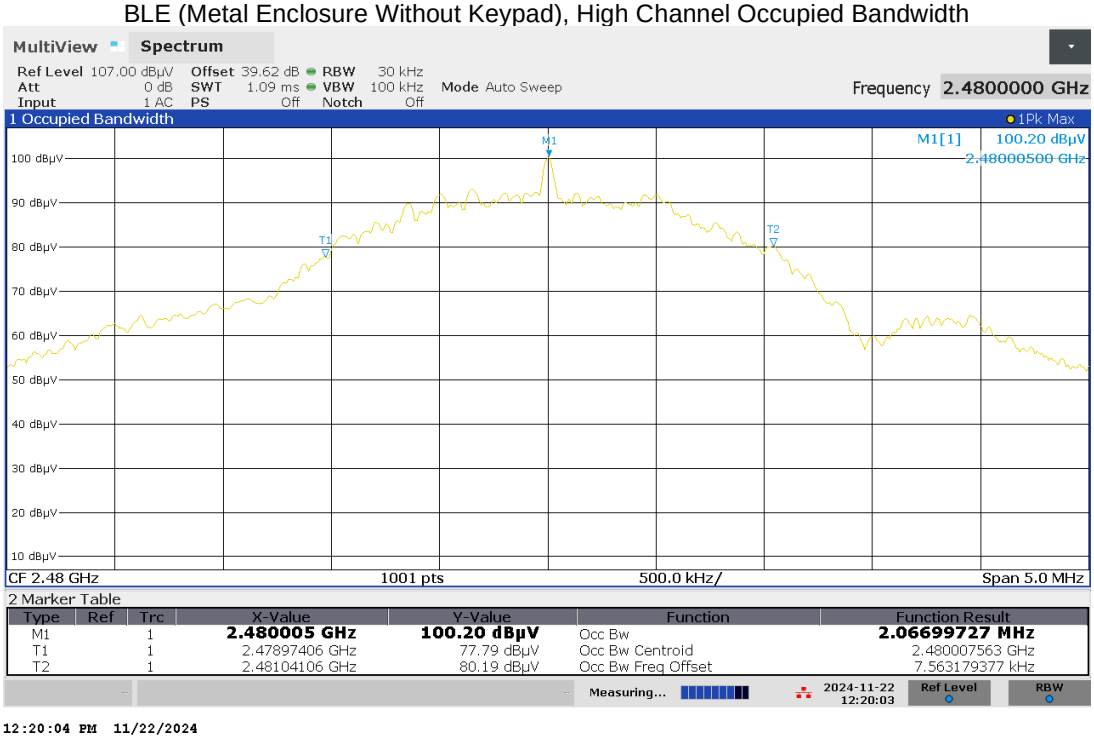
12:06:09 PM 11/12/2024

BLE (Metal Enclosure Without Keypad), Mid Channel Occupied Bandwidth



12:33:05 PM 11/12/2024

BLE (Metal Enclosure Without Keypad), High Channel Occupied Bandwidth



Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 7.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
10/09/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	22	42	1003
10/10/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	22	39	1005
10/14/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	24	35	995
11/01/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	21	41	1000
11/08/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	35	1003
11/12/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	34	999
11/22/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	35	986

Deviations, Additions, or Exclusions: None

8 Maximum Power Spectral Density

8.1 Method

Tests are performed in accordance with CFR47 FCC Part 15.247, RSS-247, and ANSI C63.10, and KDB 558074 D0115.247Meas Guidancev05r02.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

8.2 Limit

§15.247 (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.

Notes: The limits for RSS-247 are the same as the FCC limits above.

8.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/15/2024	07/15/2025
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	03/26/2024	03/26/2025
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	01/17/2024	01/17/2025
ETS002	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/04/2024	09/04/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

8.4 Results:

The sample tested was found to Comply.

8.5 Setup Photographs:

See Section 6.5

8.6 Test Data:

Peak Power Spectral Density (Battery Powered)

EUT Configurations	Frequency (MHz)	Peak Power Spectral Density (dBuV/m)	Peak Power Spectral Density EIRP (dBm)	Limit (dBm)	Results
Plastic Enclosure With Keypad	2402	83.49	-11.71	8.00	Compliance
	2440	86.42	-8.78	8.00	Compliance
	2480	86.25	-8.95	8.00	Compliance
Metal Enclosure With Keypad	2402	78.37	-16.83	8.00	Compliance
	2440	76.87	-18.33	8.00	Compliance
	2480	80.60	-14.6	8.00	Compliance
Plastic Enclosure Without Keypad	2402	78.12	-17.08	8.00	Compliance
	2440	77.49	-17.71	8.00	Compliance
	2480	79.81	-15.39	8.00	Compliance
Metal Enclosure Without Keypad	2402	82.82	-12.38	8.00	Compliance
	2440	84.55	-10.65	8.00	Compliance
	2480	83.99	-11.21	8.00	Compliance

Notes: The EIRP was calculated from peak field strength from above using the formula below:

Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

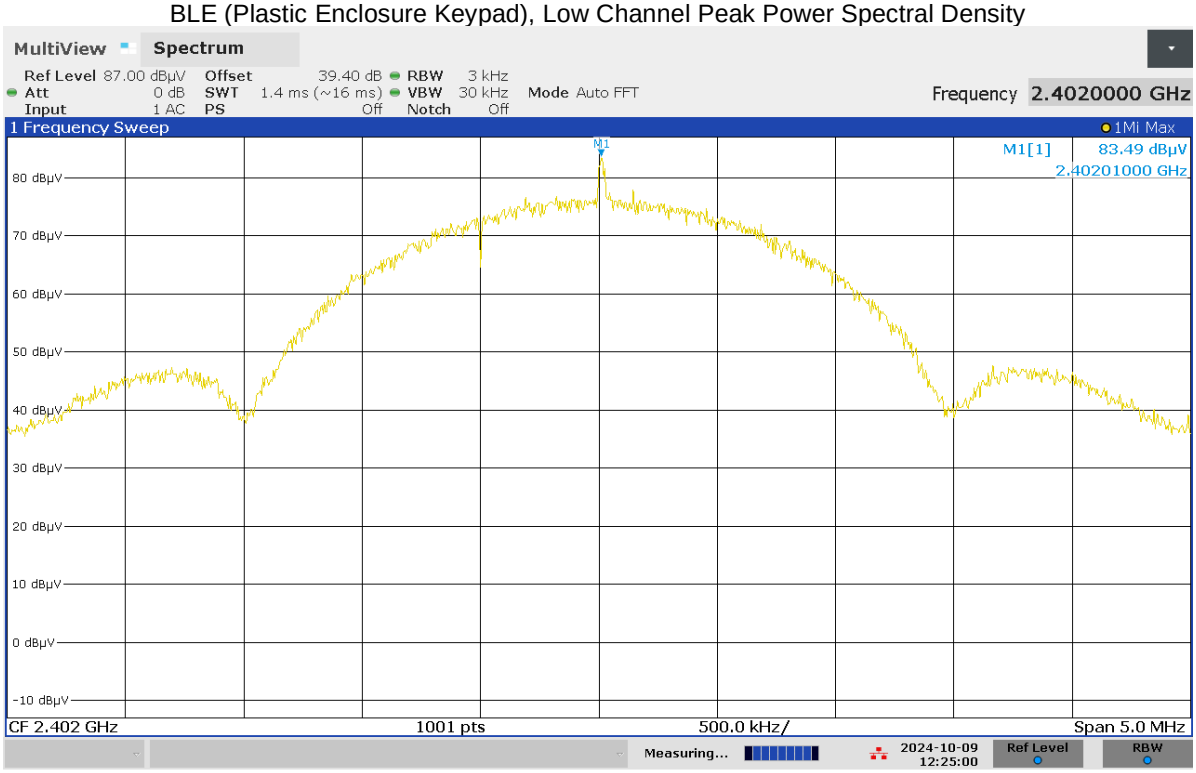
Peak Power Spectral Density (POE Powered)

EUT Configurations	Frequency (MHz)	Peak Power Spectral Density (dBuV/m)	Peak Power Spectral Density EIRP (dBm)	Limit (dBm)	Results
Plastic Enclosure With Keypad	2402	82.09	-8.16	8.00	Compliance
	2440	87.04	-10.12	8.00	Compliance
	2480	85.08	-17.46	8.00	Compliance
Metal Enclosure With Keypad	2402	77.74	-15.23	8.00	Compliance
	2440	79.97	-11.27	8.00	Compliance
	2480	83.93	-17.04	8.00	Compliance
Plastic Enclosure Without Keypad	2402	78.16	-17.68	8.00	Compliance
	2440	77.52	-16.69	8.00	Compliance
	2480	78.51	-16.80	8.00	Compliance
Metal Enclosure Without Keypad	2402	78.40	-12.07	8.00	Compliance
	2440	83.13	-9.07	8.00	Compliance
	2480	86.13	-8.16	8.00	Compliance

Notes: The EIRP was calculated from peak field strength from above using the formula below:

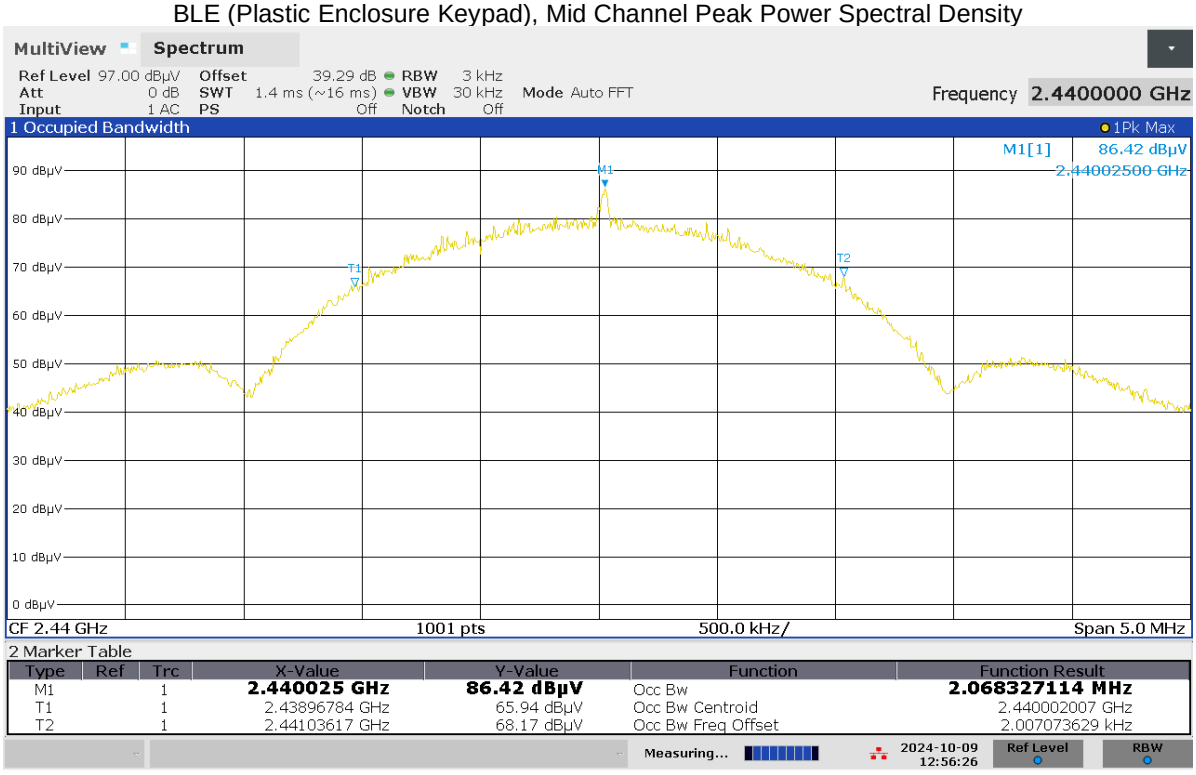
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure Keypad), Low Channel Peak Power Spectral Density



12:25:00 PM 10/09/2024

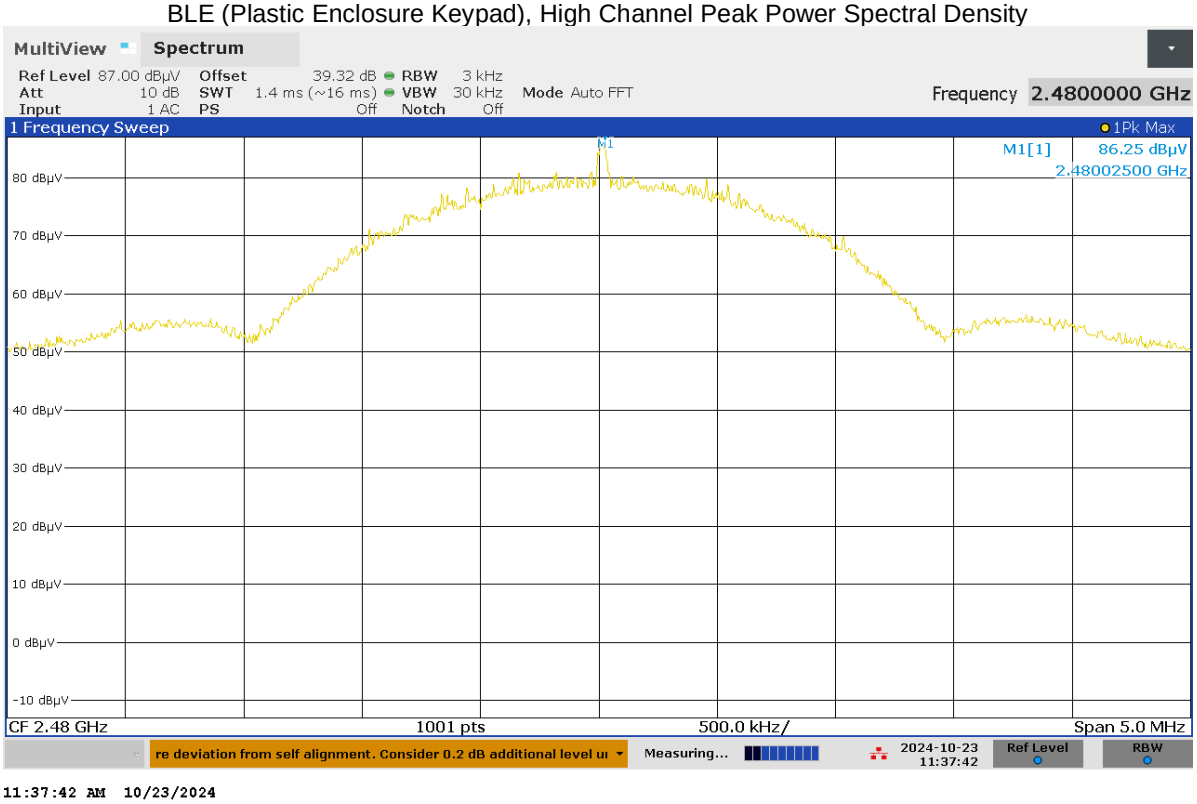
BLE (Plastic Enclosure Keypad), Mid Channel Peak Power Spectral Density



12:56:27 PM 10/09/2024

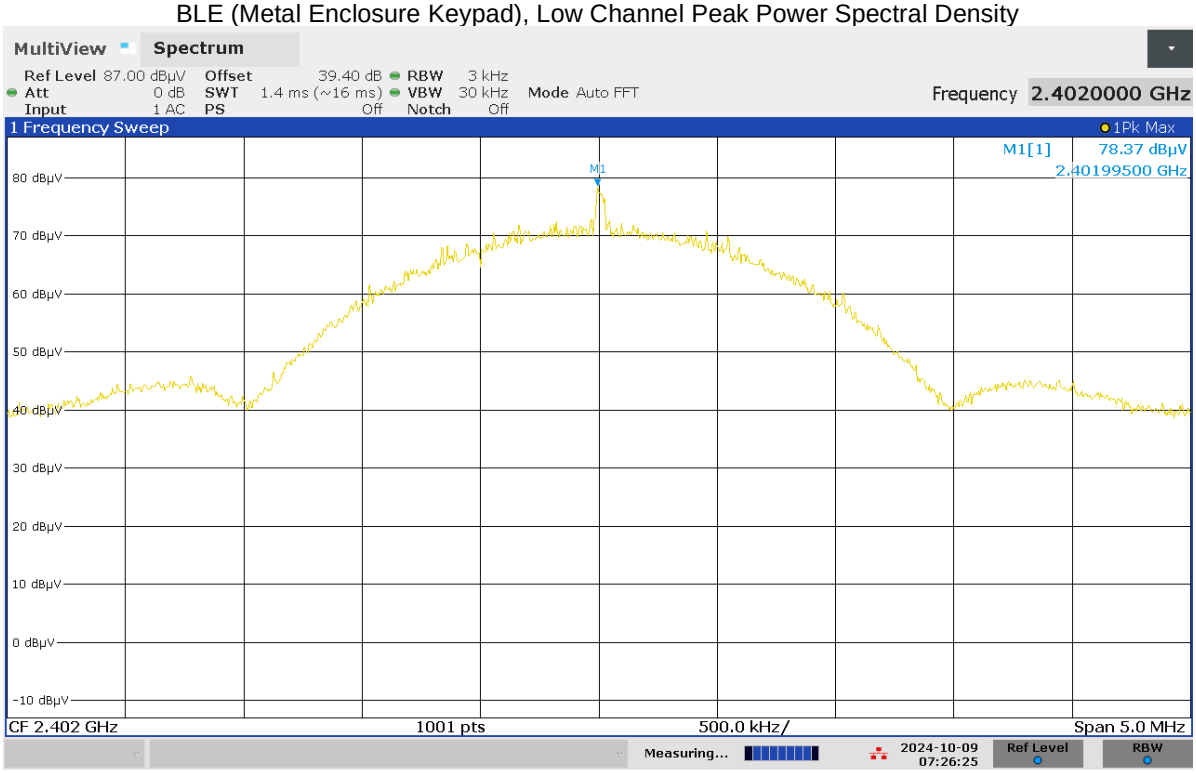
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure Keypad), High Channel Peak Power Spectral Density



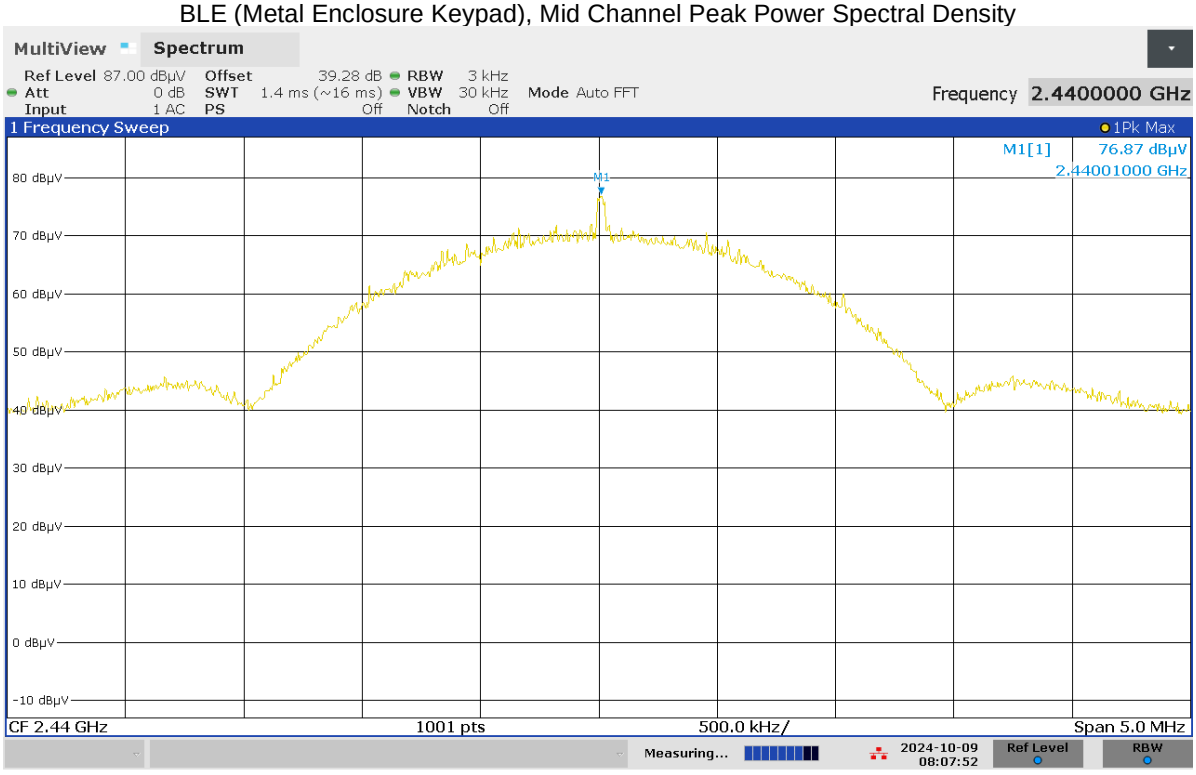
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Metal Enclosure Keypad), Low Channel Peak Power Spectral Density



07:26:25 AM 10/09/2024

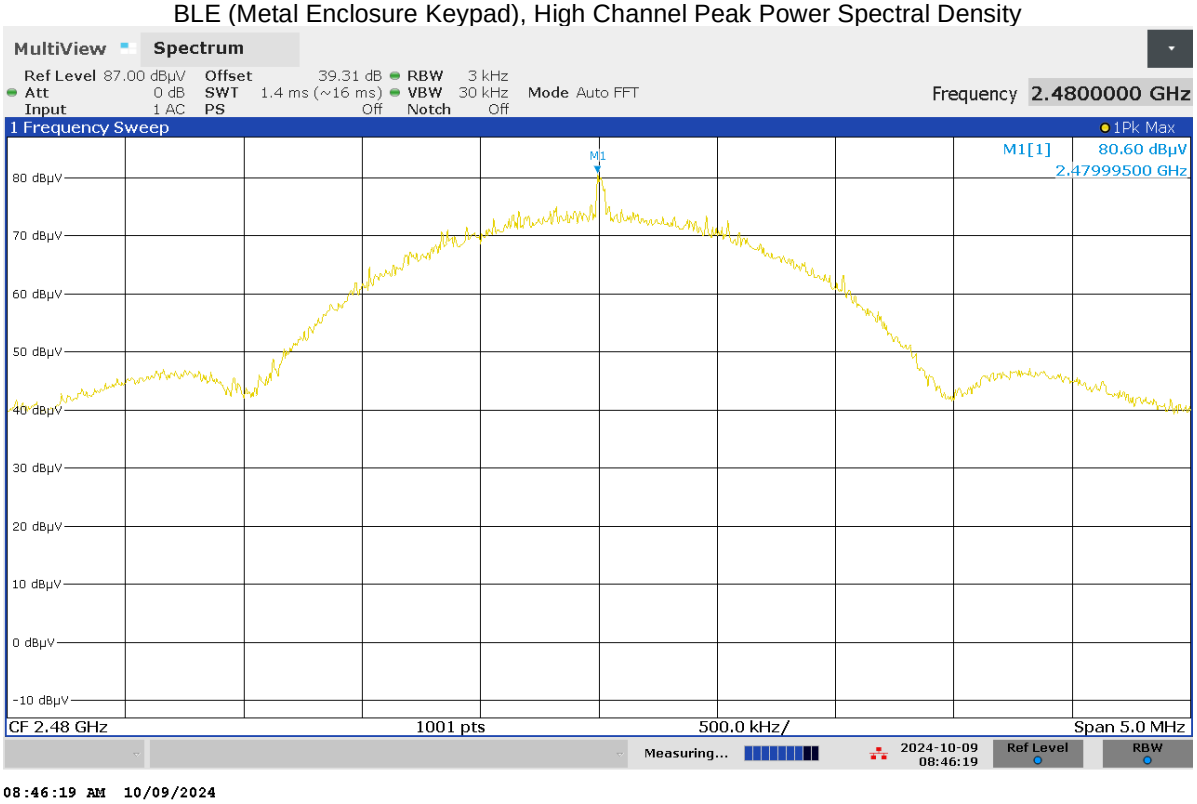
BLE (Metal Enclosure Keypad), Mid Channel Peak Power Spectral Density



08:07:53 AM 10/09/2024

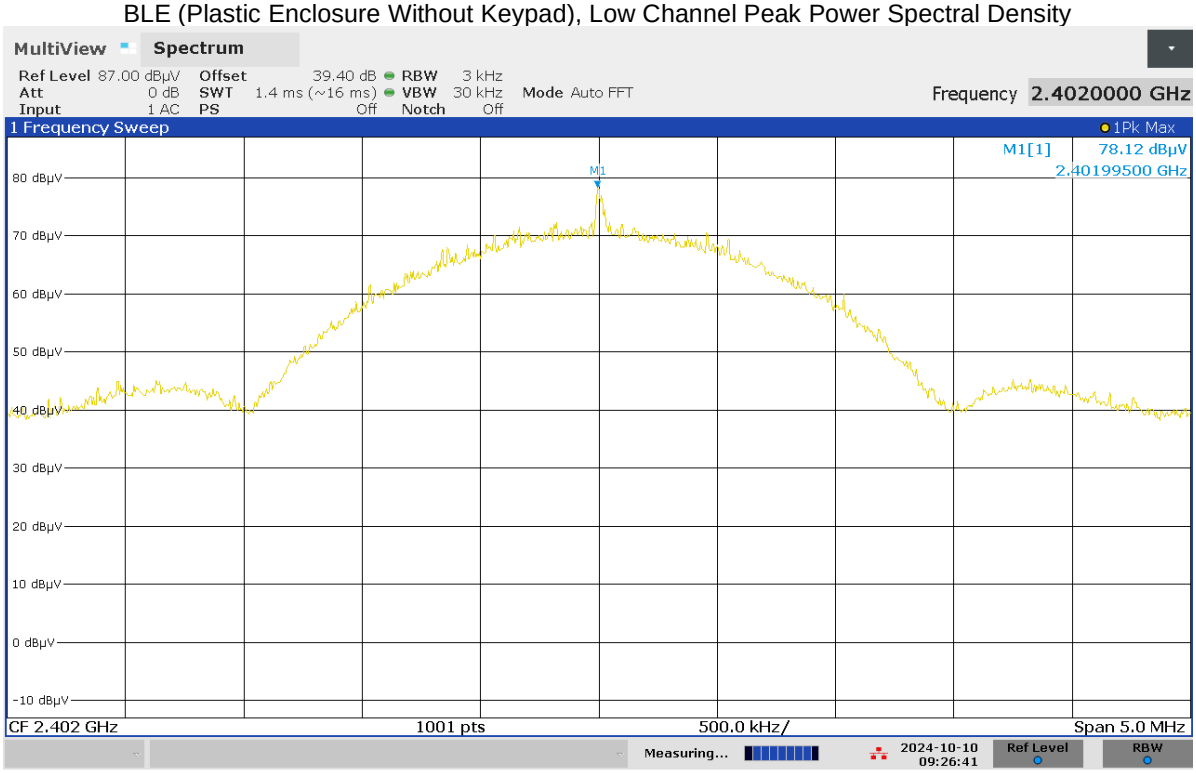
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Metal Enclosure Keypad), High Channel Peak Power Spectral Density



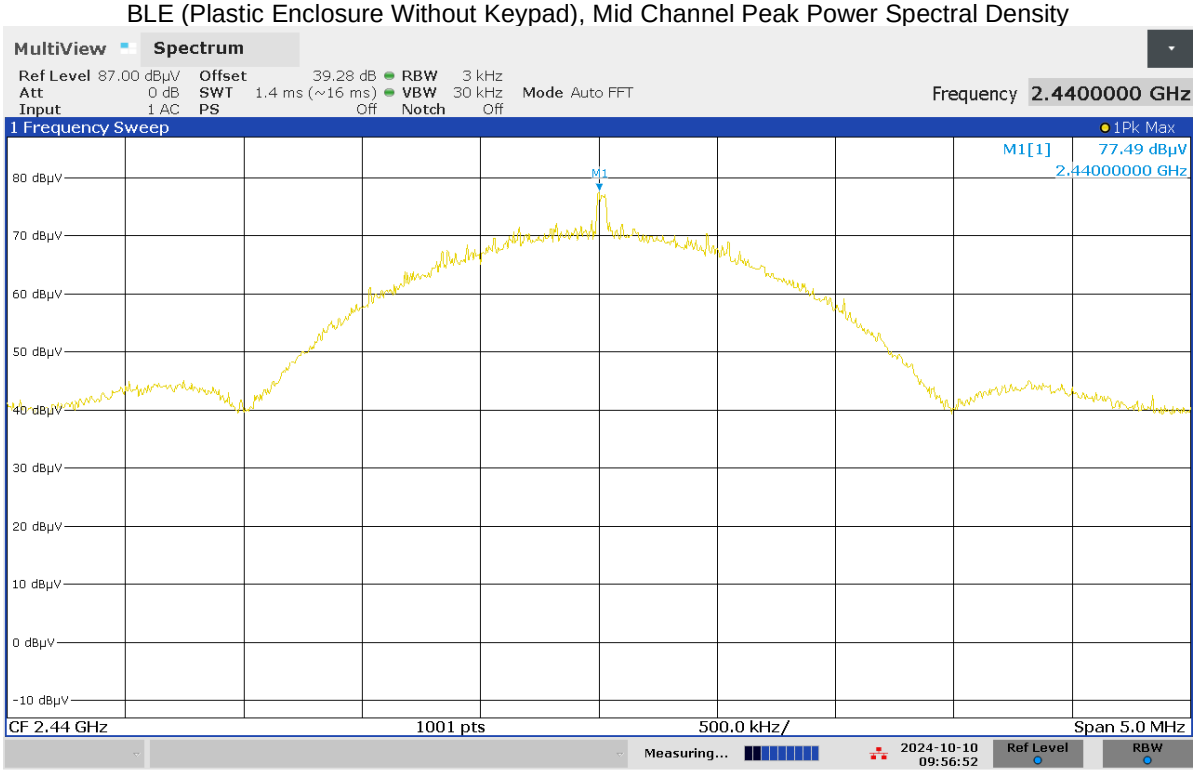
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure Without Keypad), Low Channel Peak Power Spectral Density



09:26:42 AM 10/10/2024

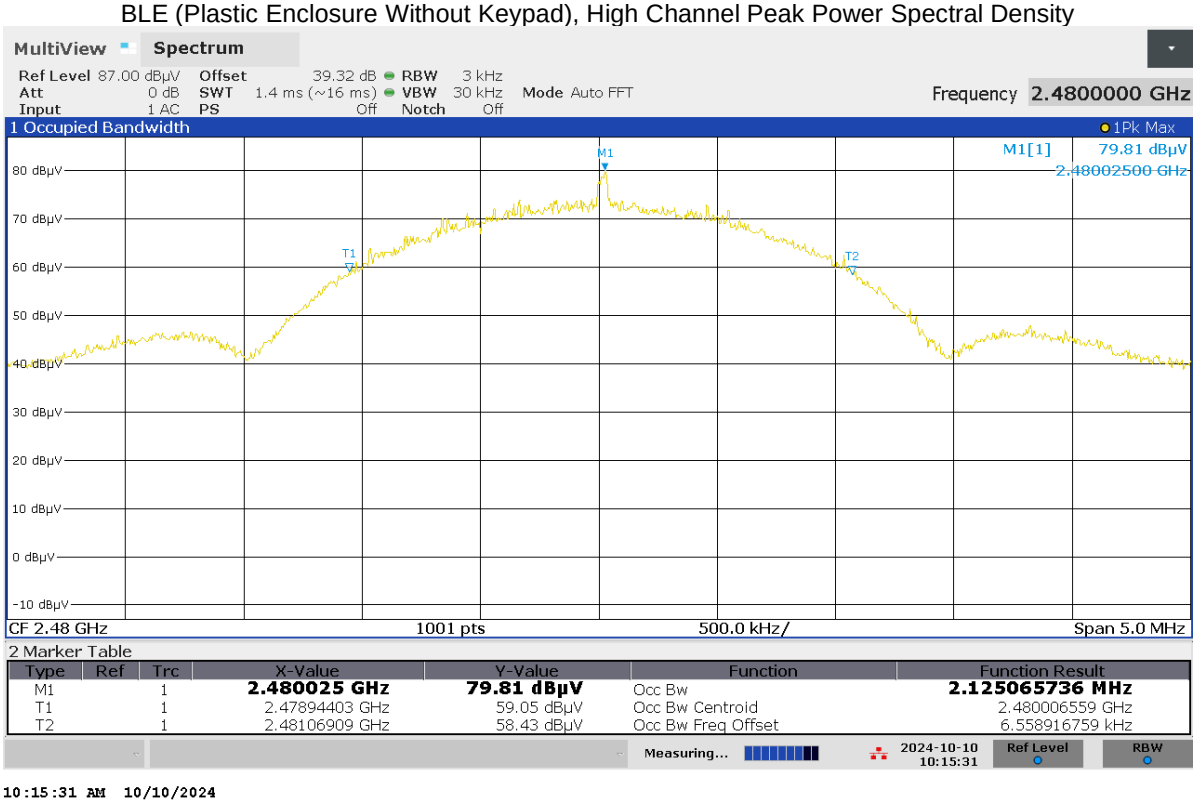
BLE (Plastic Enclosure Without Keypad), Mid Channel Peak Power Spectral Density



09:56:52 AM 10/10/2024

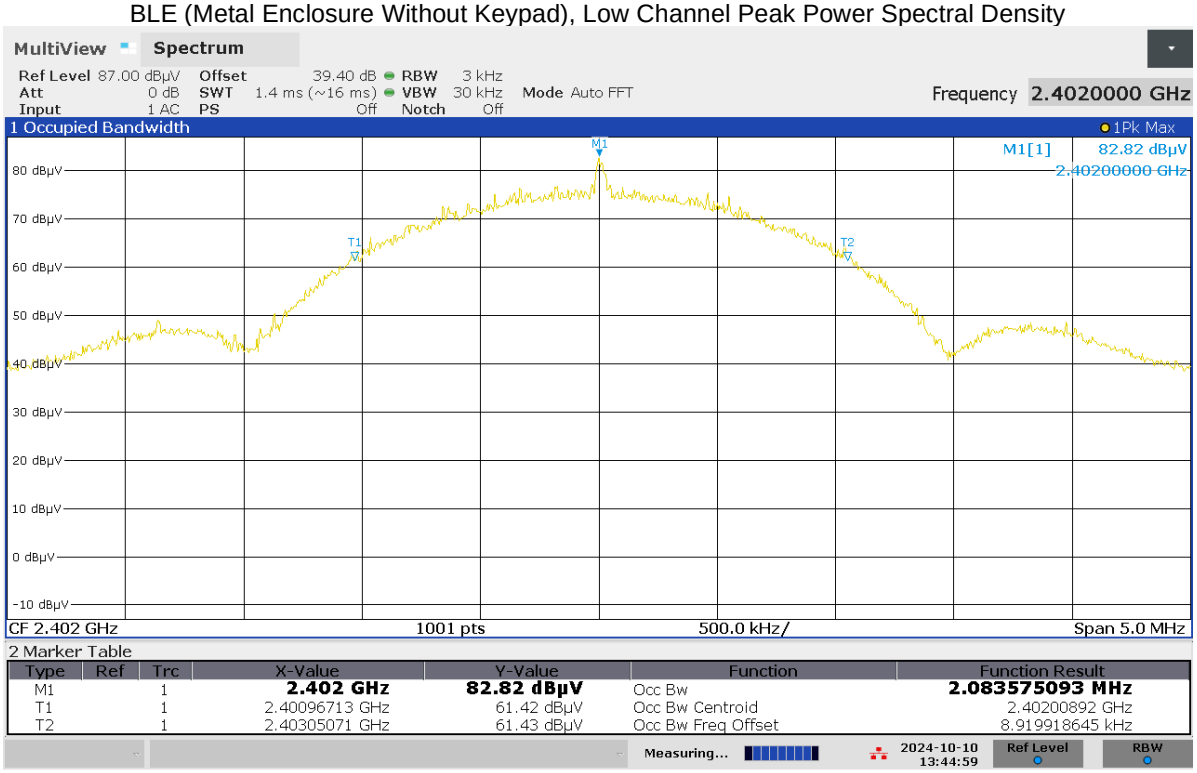
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure Without Keypad), High Channel Peak Power Spectral Density



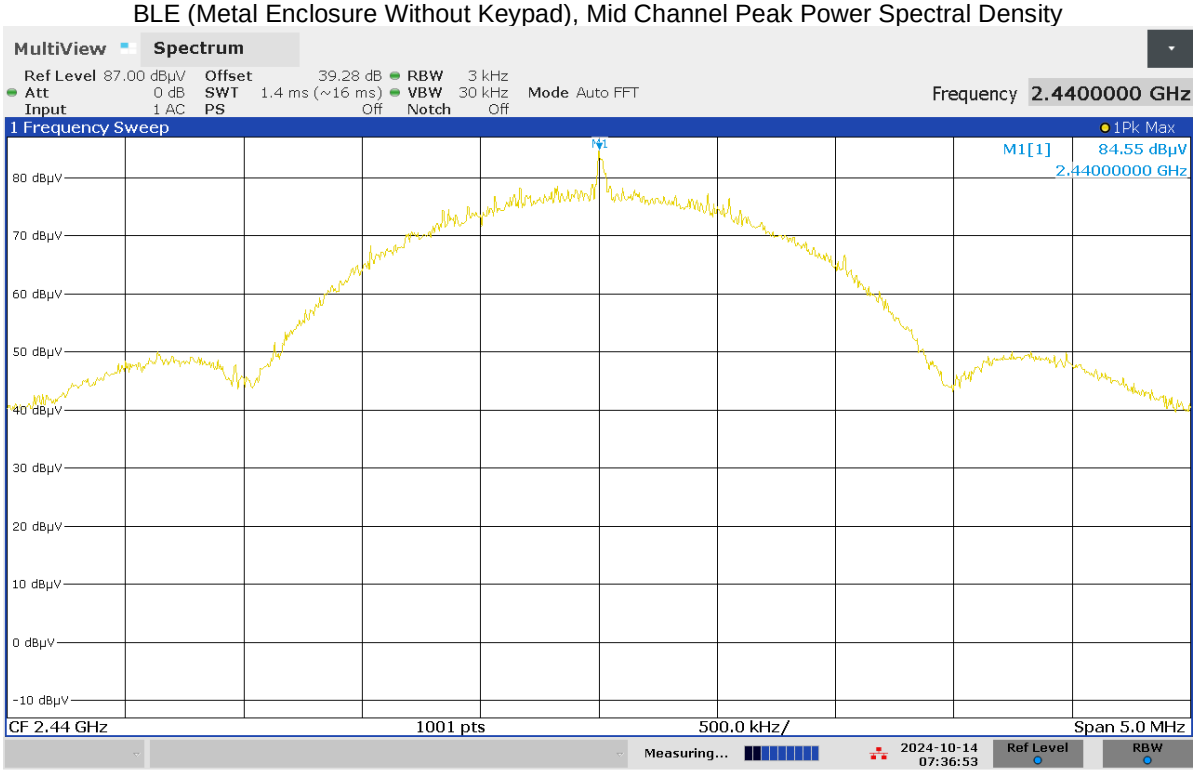
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Metal Enclosure Without Keypad), Low Channel Peak Power Spectral Density



01:45:00 PM 10/10/2024

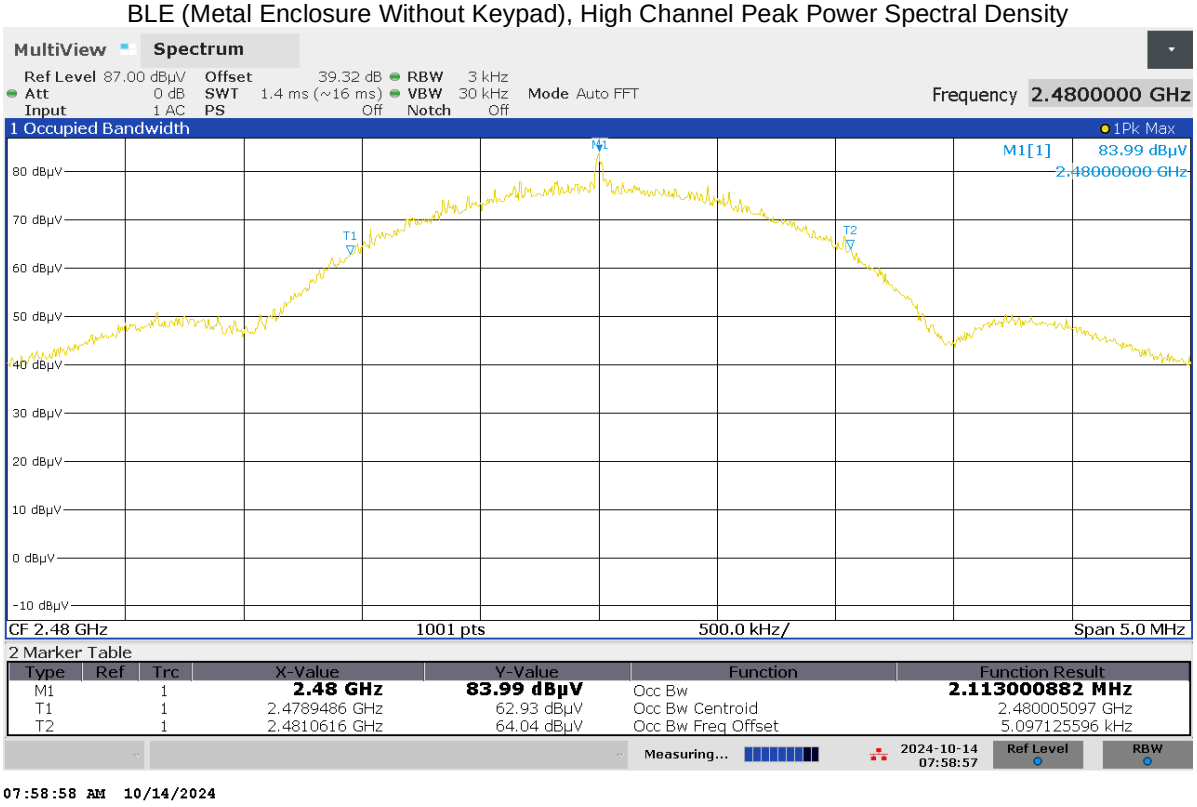
BLE (Metal Enclosure Without Keypad), Mid Channel Peak Power Spectral Density



07:36:54 AM 10/14/2024

Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

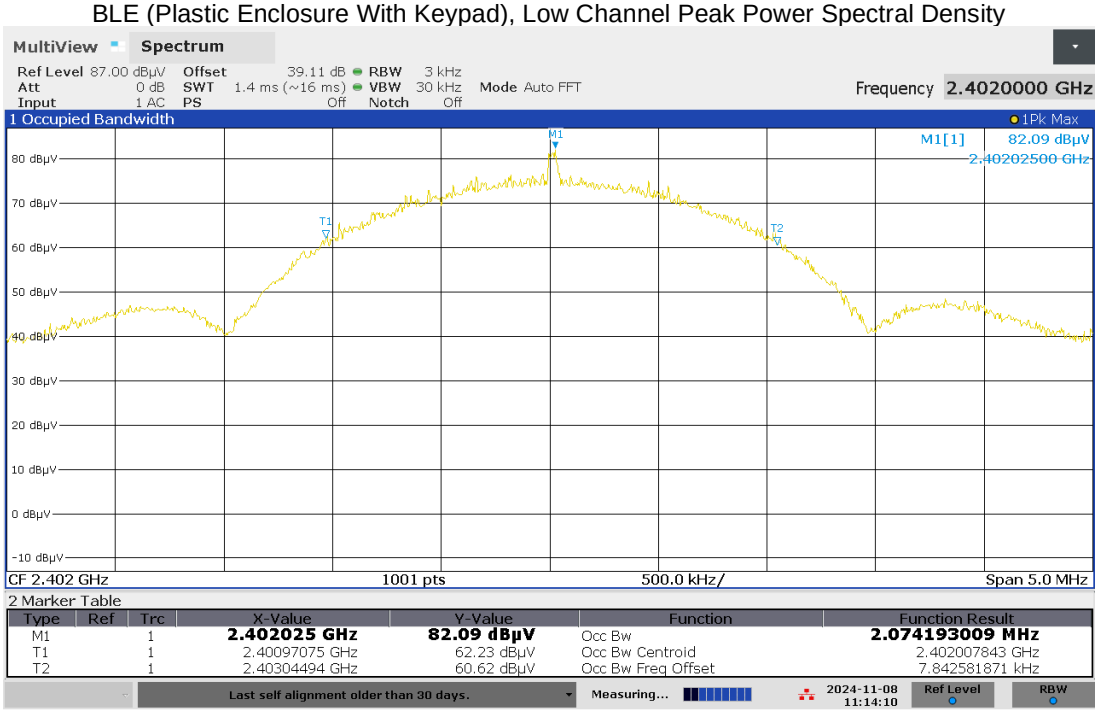
BLE (Metal Enclosure Without Keypad), High Channel Peak Power Spectral Density



Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

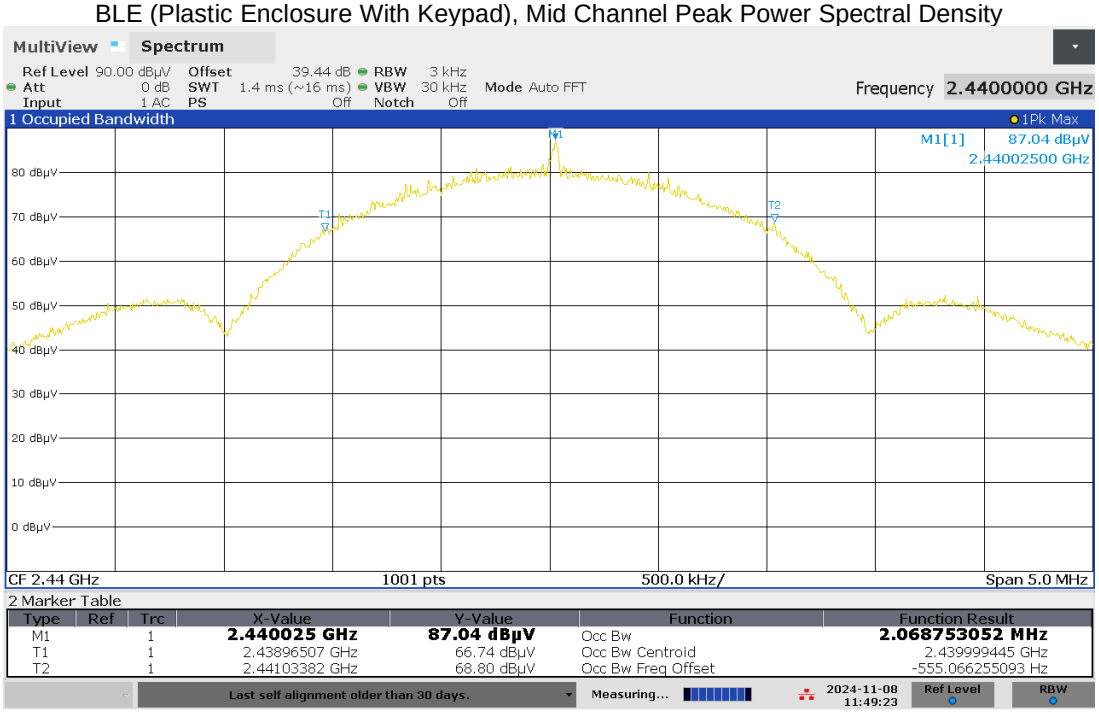
===POE Powered===

BLE (Plastic Enclosure With Keypad), Low Channel Peak Power Spectral Density



11:14:10 AM 11/08/2024

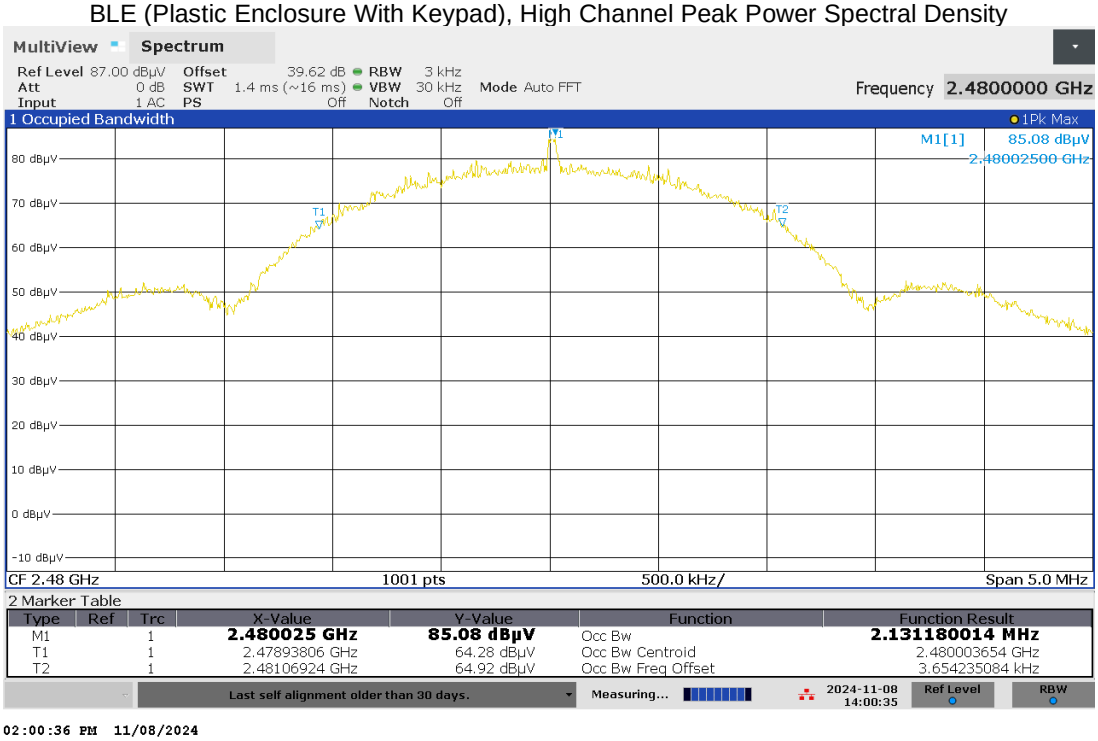
BLE (Plastic Enclosure With Keypad), Mid Channel Peak Power Spectral Density



11:49:23 AM 11/08/2024

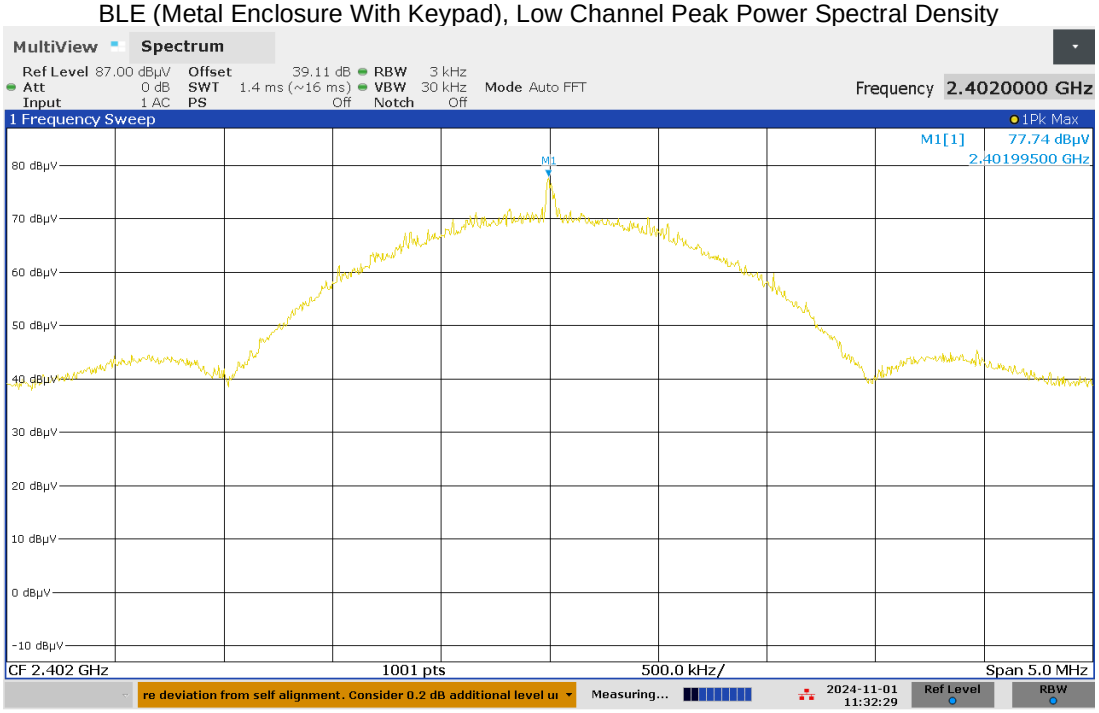
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure With Keypad), High Channel Peak Power Spectral Density



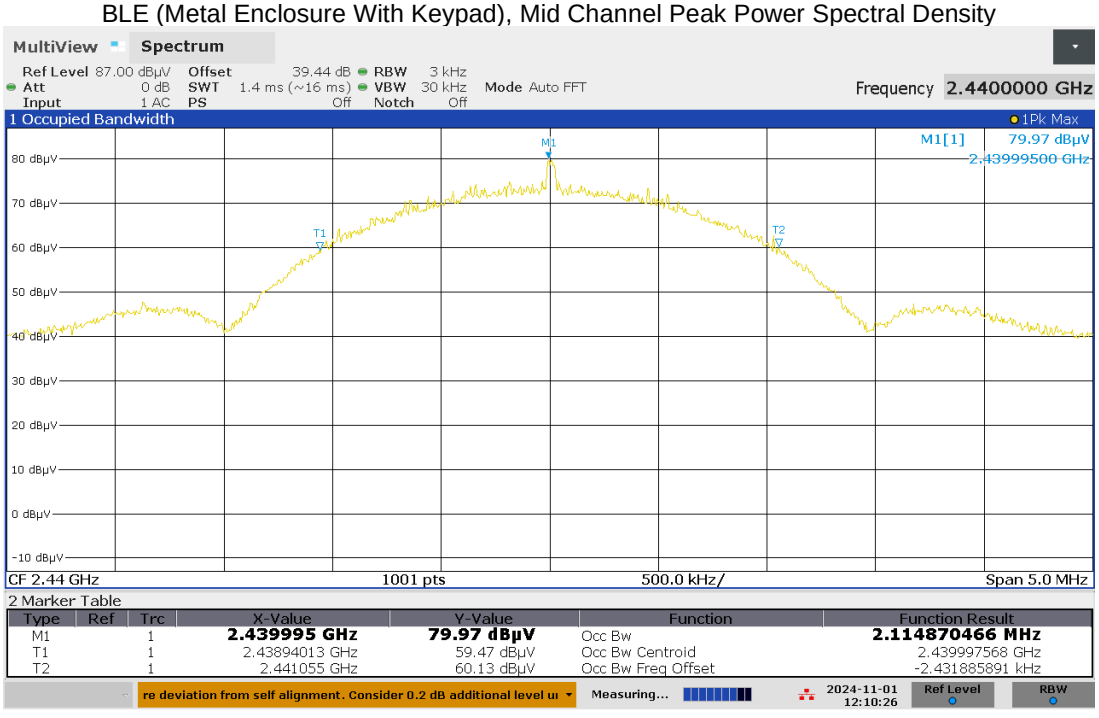
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Metal Enclosure With Keypad), Low Channel Peak Power Spectral Density



11:32:30 AM 11/01/2024

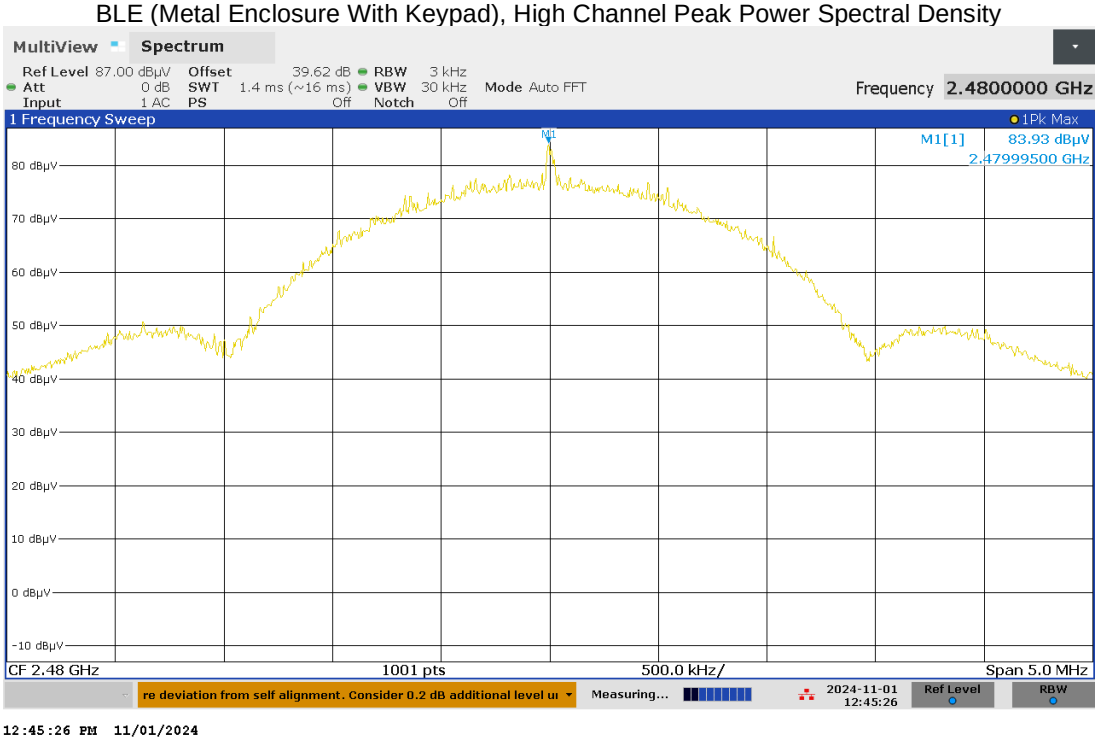
BLE (Metal Enclosure With Keypad), Mid Channel Peak Power Spectral Density



12:10:26 PM 11/01/2024

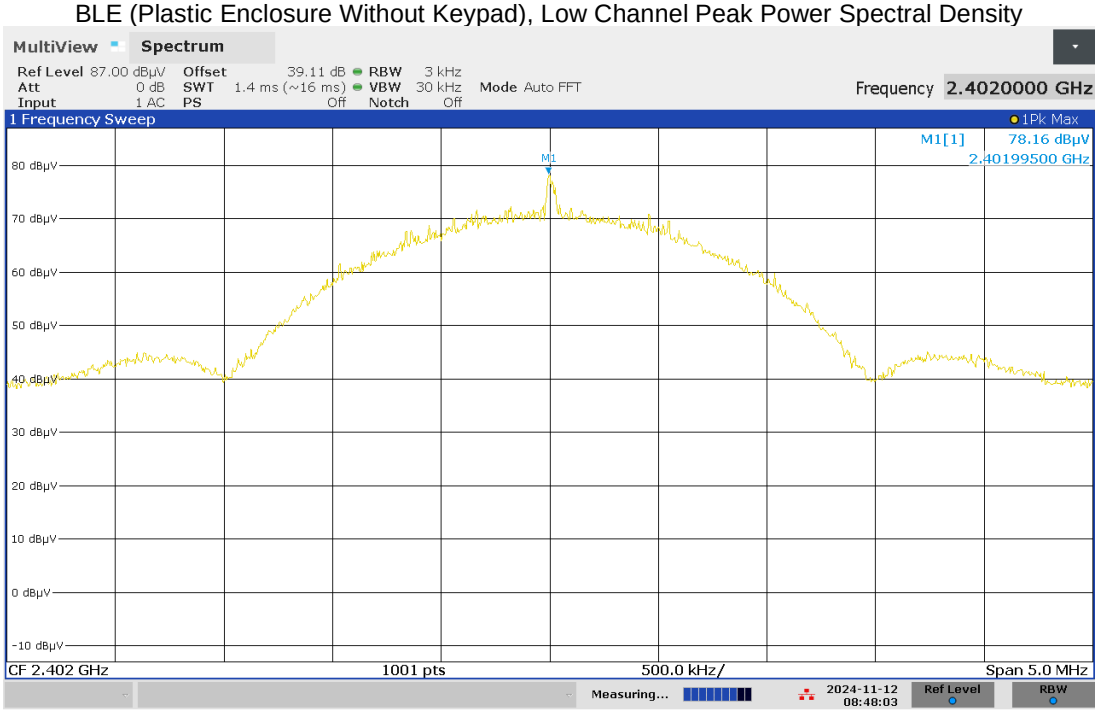
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Metal Enclosure With Keypad), High Channel Peak Power Spectral Density



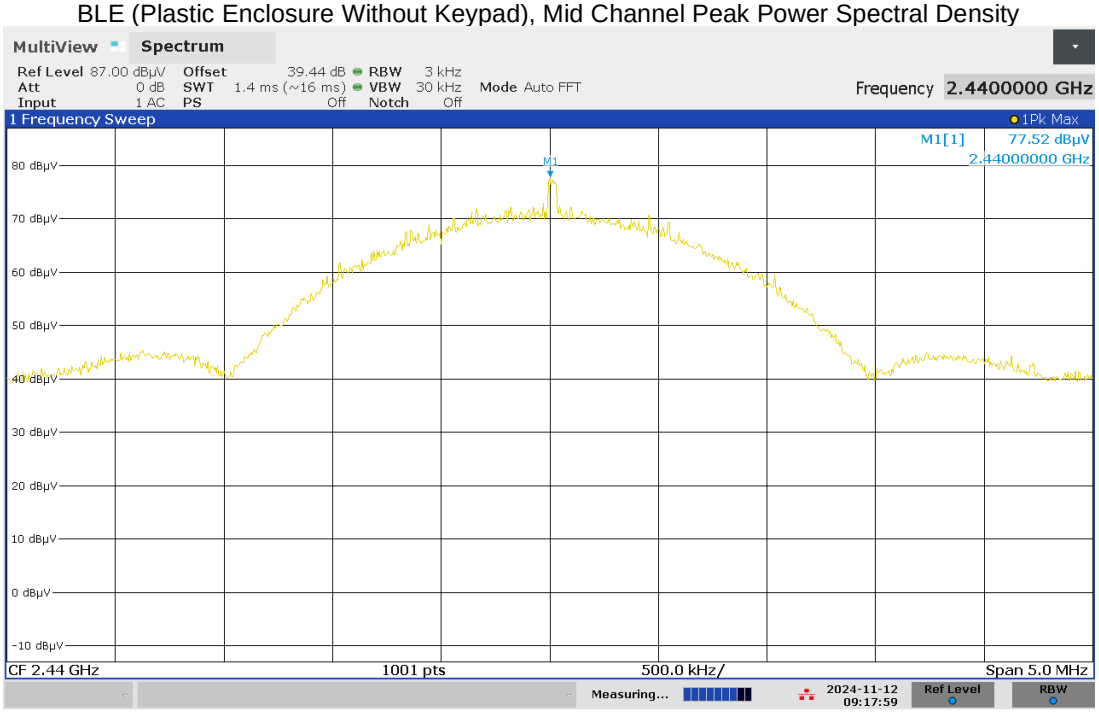
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure Without Keypad), Low Channel Peak Power Spectral Density



08:48:03 AM 11/12/2024

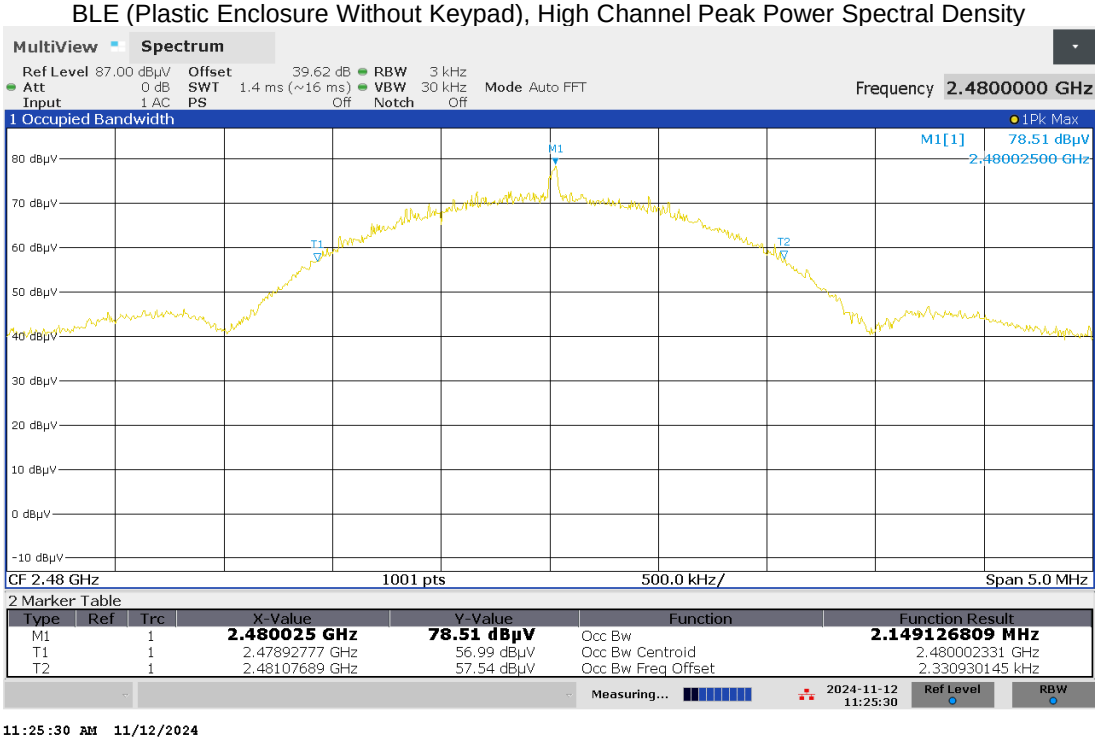
BLE (Plastic Enclosure Without Keypad), Mid Channel Peak Power Spectral Density



09:17:59 AM 11/12/2024

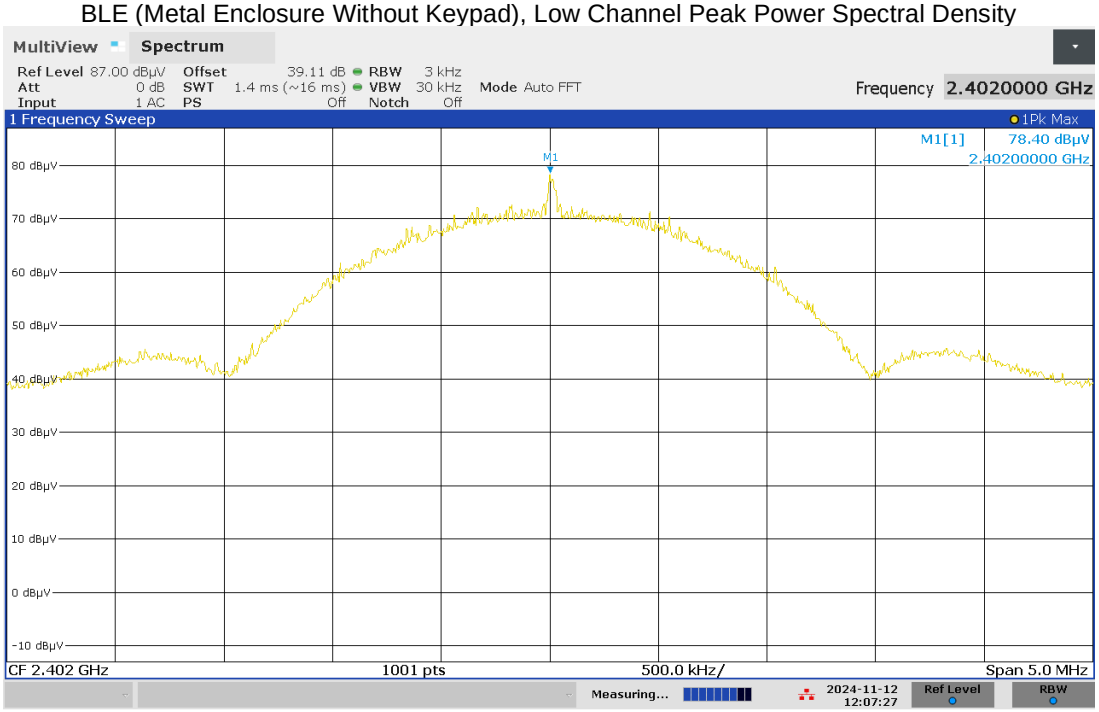
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Plastic Enclosure Without Keypad), High Channel Peak Power Spectral Density



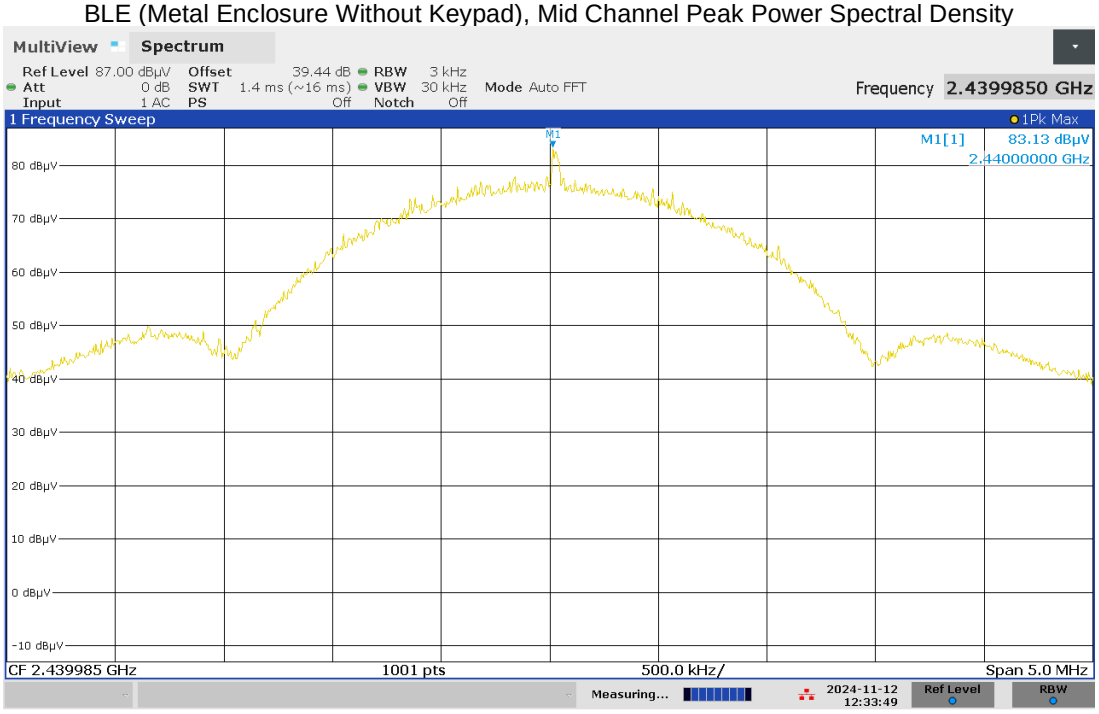
Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above. Note the OBW measurement was left on during the Peak Power Spectral Density. This does not affect the measurement.

BLE (Metal Enclosure Without Keypad), Low Channel Peak Power Spectral Density



12:07:27 PM 11/12/2024

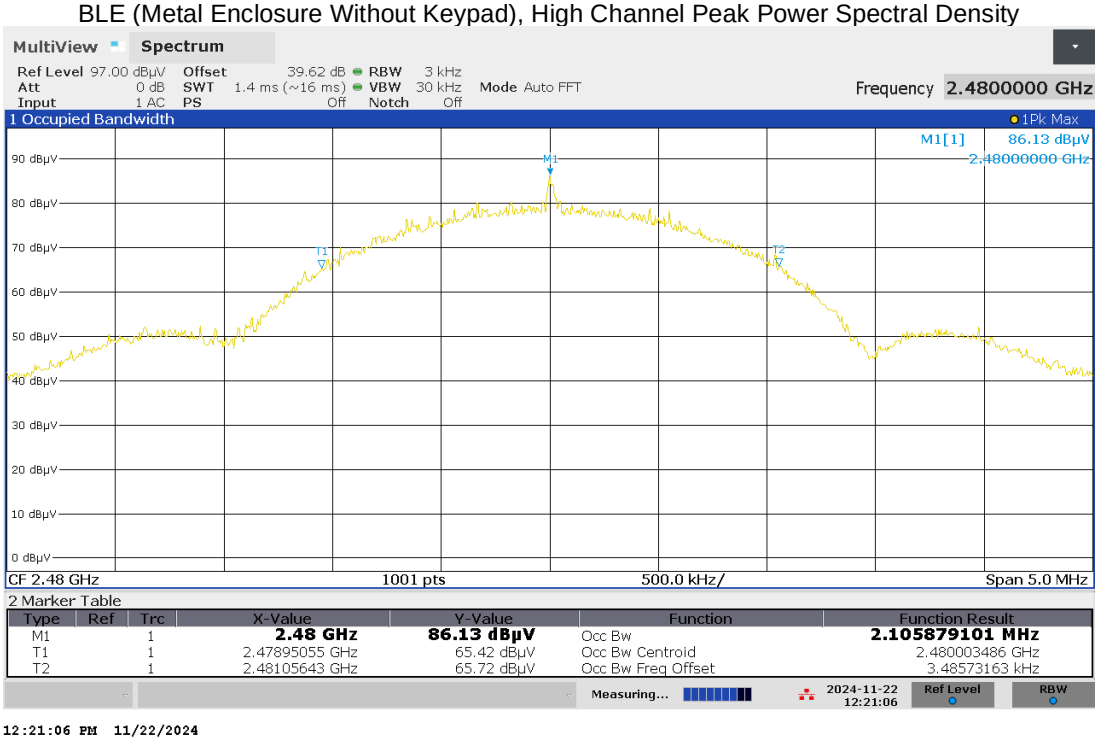
BLE (Metal Enclosure Without Keypad), Mid Channel Peak Power Spectral Density



12:33:49 PM 11/12/2024

Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

BLE (Metal Enclosure Without Keypad), High Channel Peak Power Spectral Density



Notes: Cable loss and antenna factor were compensated internally as Reference Offset.
Peak Power Spectral Density (EIRP) = E_{Meas} + 20log(d_{Meas})-104.7, where d = 3 m, E_{Meas} = Peak Reading From Above.

Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 8.2			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
10/09/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	22	42	1003
10/10/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	22	39	1005
10/14/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	24	35	995
10/23/2024	Kouma Sinn	N/A	Battery Powered	Continuous Transmitting	26	36	1007
11/01/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	21	41	1000
11/08/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	35	1003
11/12/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	34	999
11/22/2024	Kouma Sinn	N/A	POE Powered	Continuous Transmitting	23	35	986

Deviations, Additions, or Exclusions: None

9 Band Edge Compliance

9.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C 15.247, RSS 247, and ANSI C 63.10.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

9.2 Limit

15.247 (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))

Notes: The limits for RSS-247 are the same as the FCC limits above.

9.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/15/2024	07/15/2025
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	03/26/2024	03/26/2025
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	01/17/2024	01/17/2025
ETS002	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/04/2024	09/04/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

9.4 Results:

The sample tested was found to Comply.

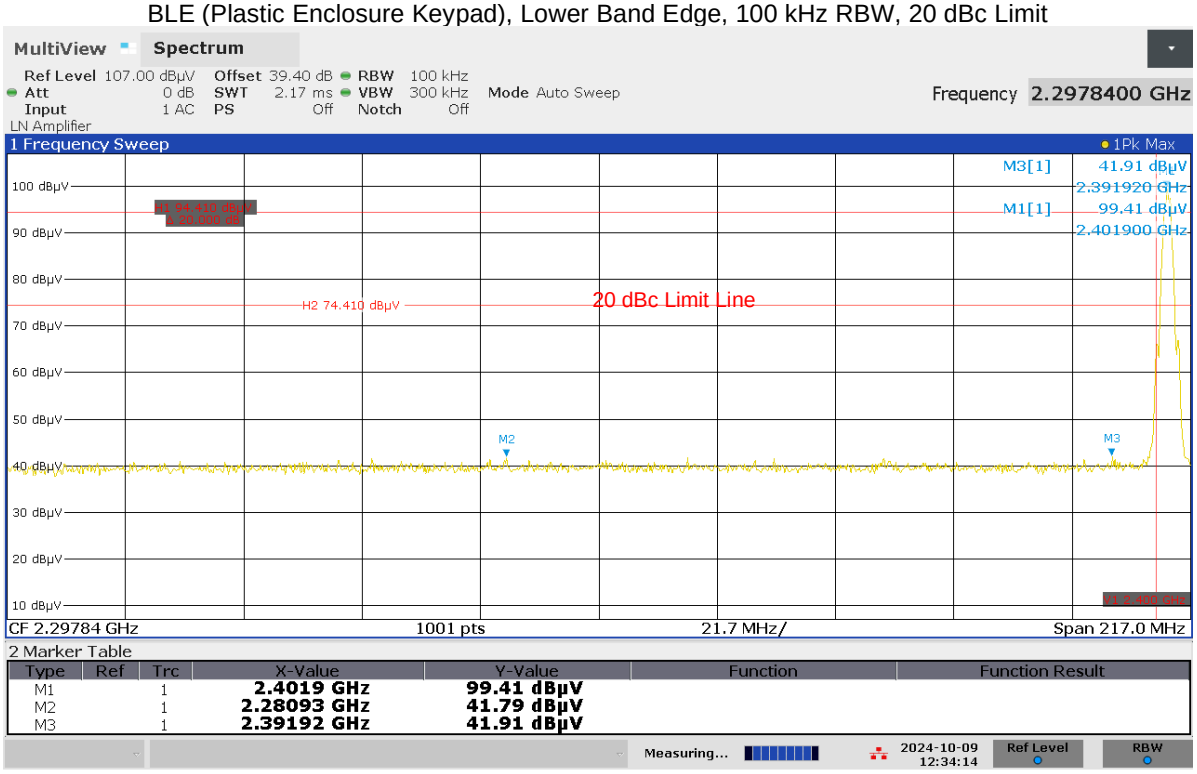
9.5 Setup Photographs:

See Section 6.5

9.6 Test Data:

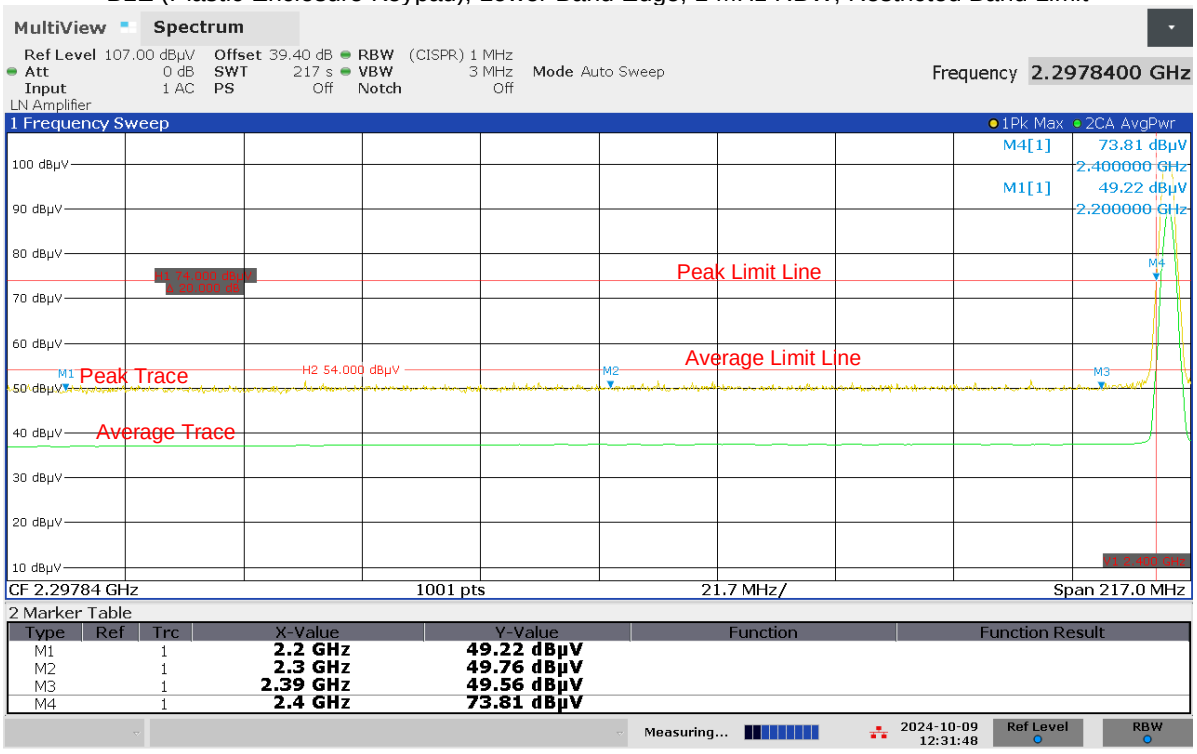
===Battery Powered===

BLE (Plastic Enclosure Keypad), Lower Band Edge, 100 kHz RBW, 20 dBc Limit



12:34:14 PM 10/09/2024

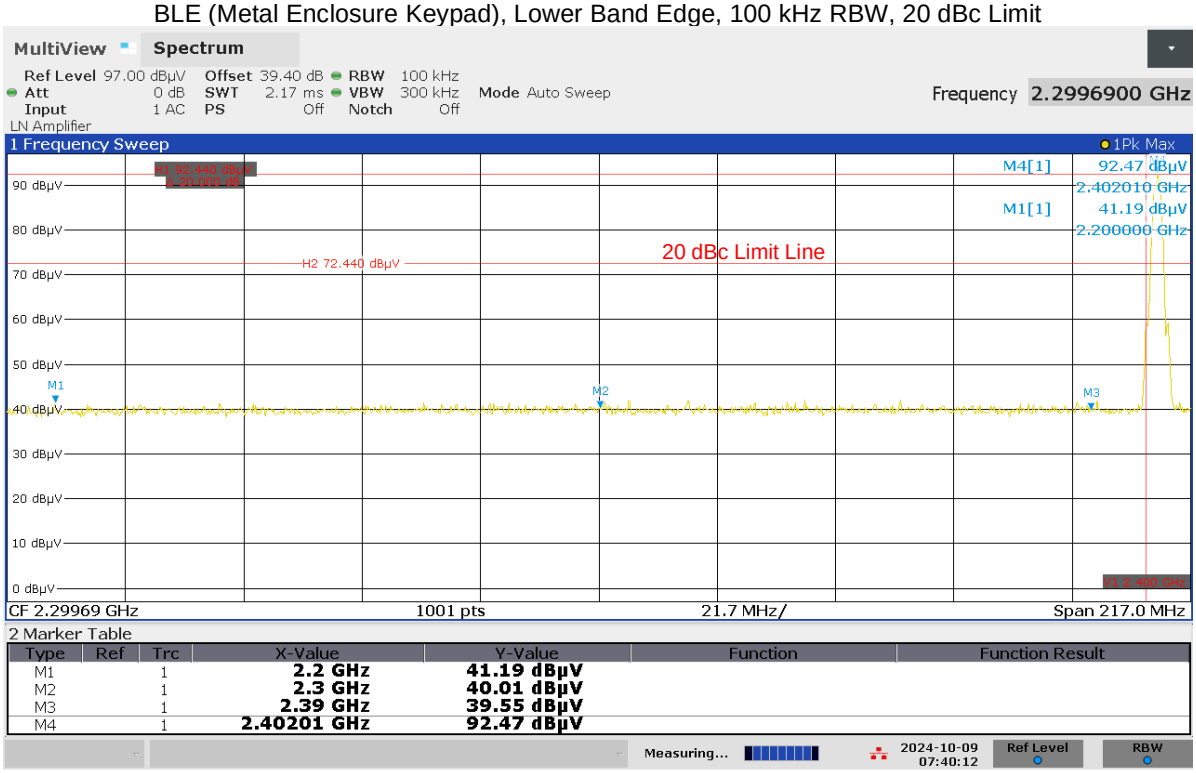
BLE (Plastic Enclosure Keypad), Lower Band Edge, 1 MHz RBW, Restricted Band Limit



12:31:48 PM 10/09/2024

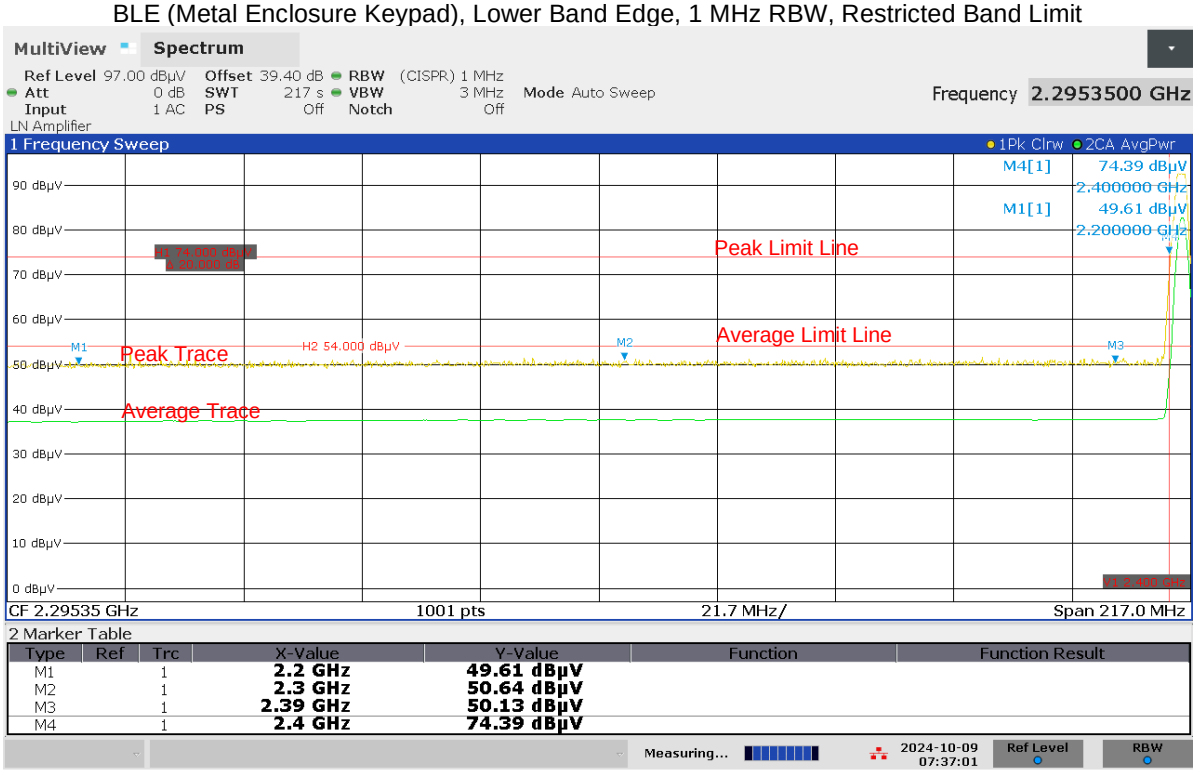
Notes: Offset includes cable loss and antenna factor.

BLE (Metal Enclosure Keypad), Lower Band Edge, 100 kHz RBW, 20 dBc Limit



07:40:12 AM 10/09/2024

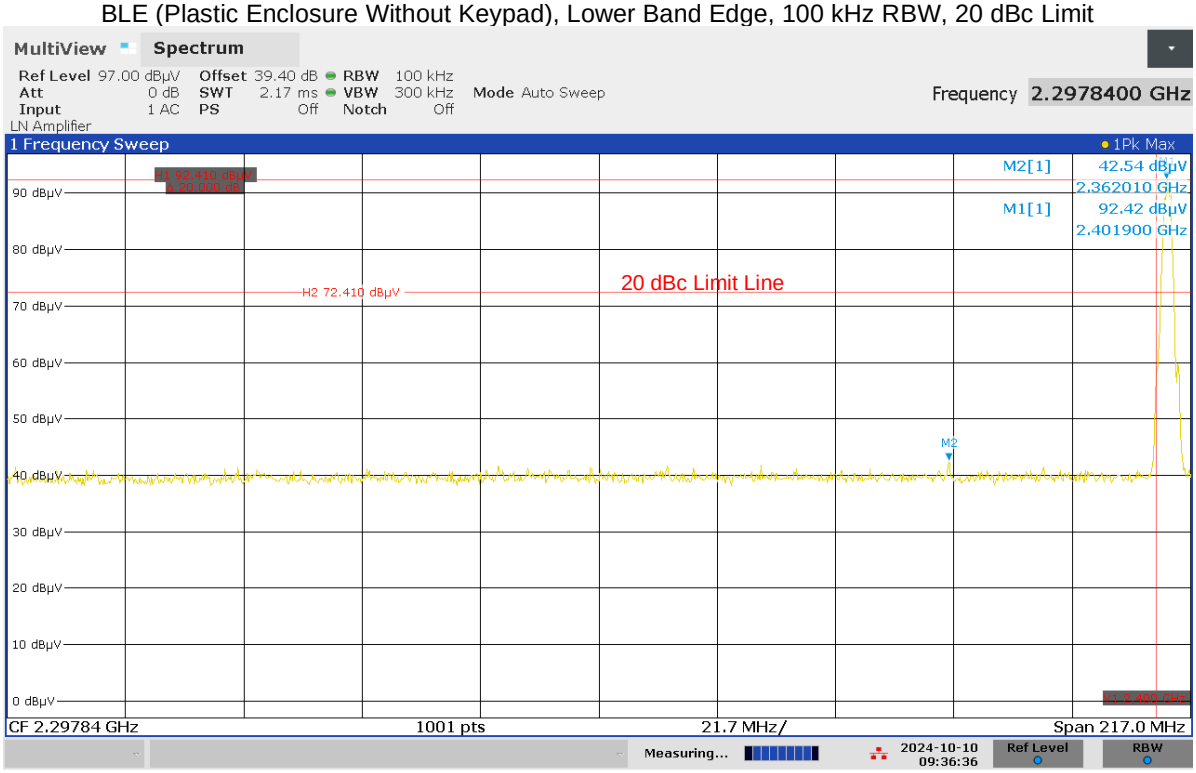
BLE (Metal Enclosure Keypad), Lower Band Edge, 1 MHz RBW, Restricted Band Limit



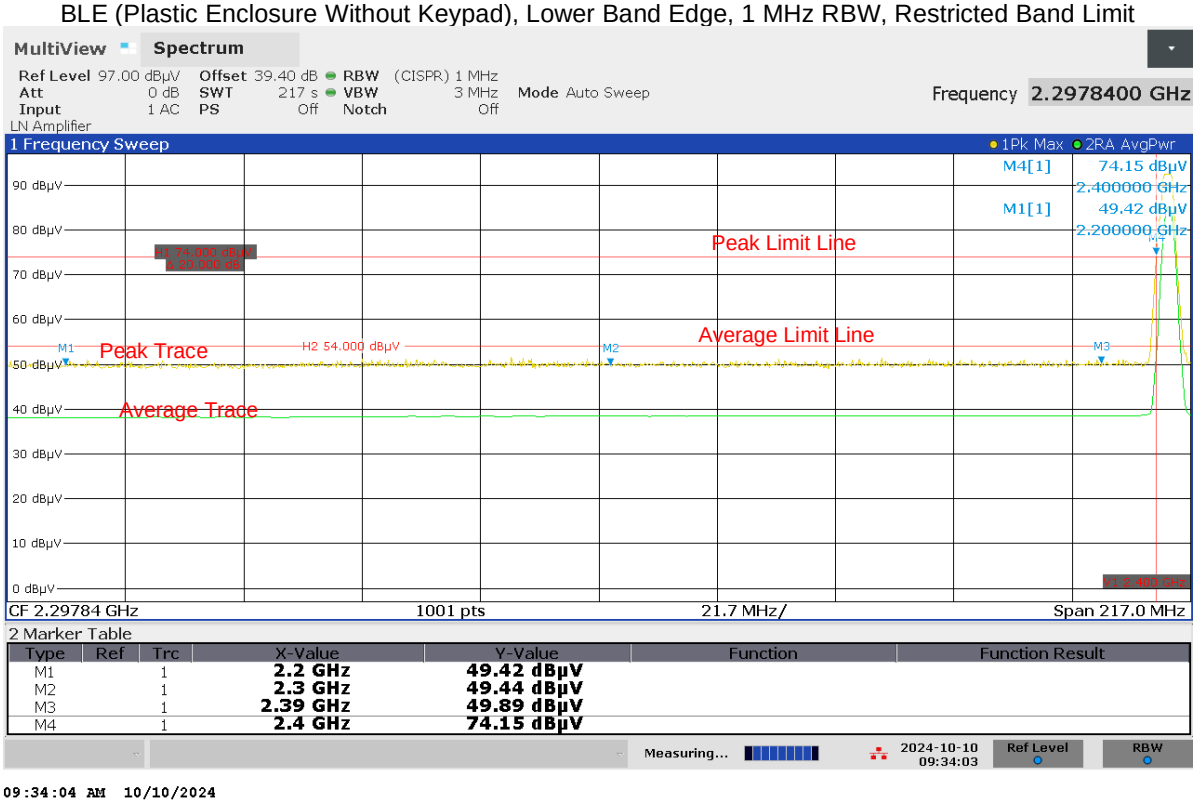
07:37:02 AM 10/09/2024

Notes: Offset includes cable loss and antenna factor.

BLE (Plastic Enclosure Without Keypad), Lower Band Edge, 100 kHz RBW, 20 dBc Limit

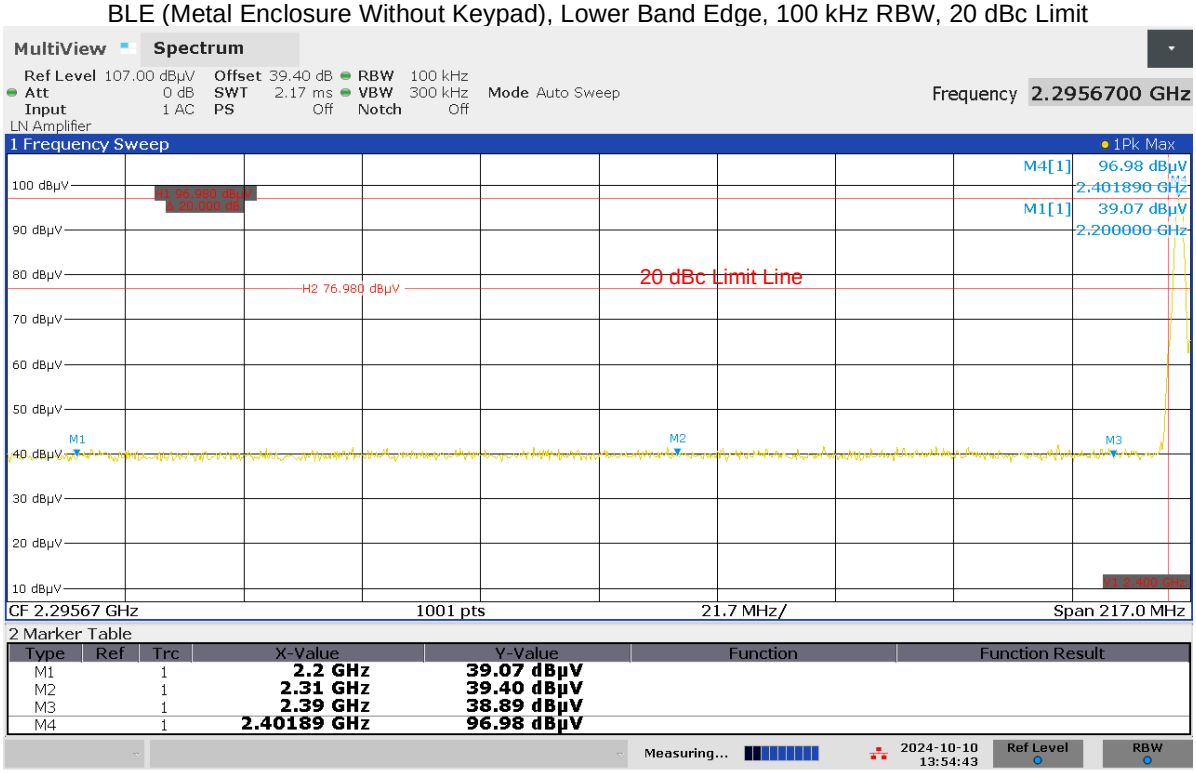


BLE (Plastic Enclosure Without Keypad), Lower Band Edge, 1 MHz RBW, Restricted Band Limit



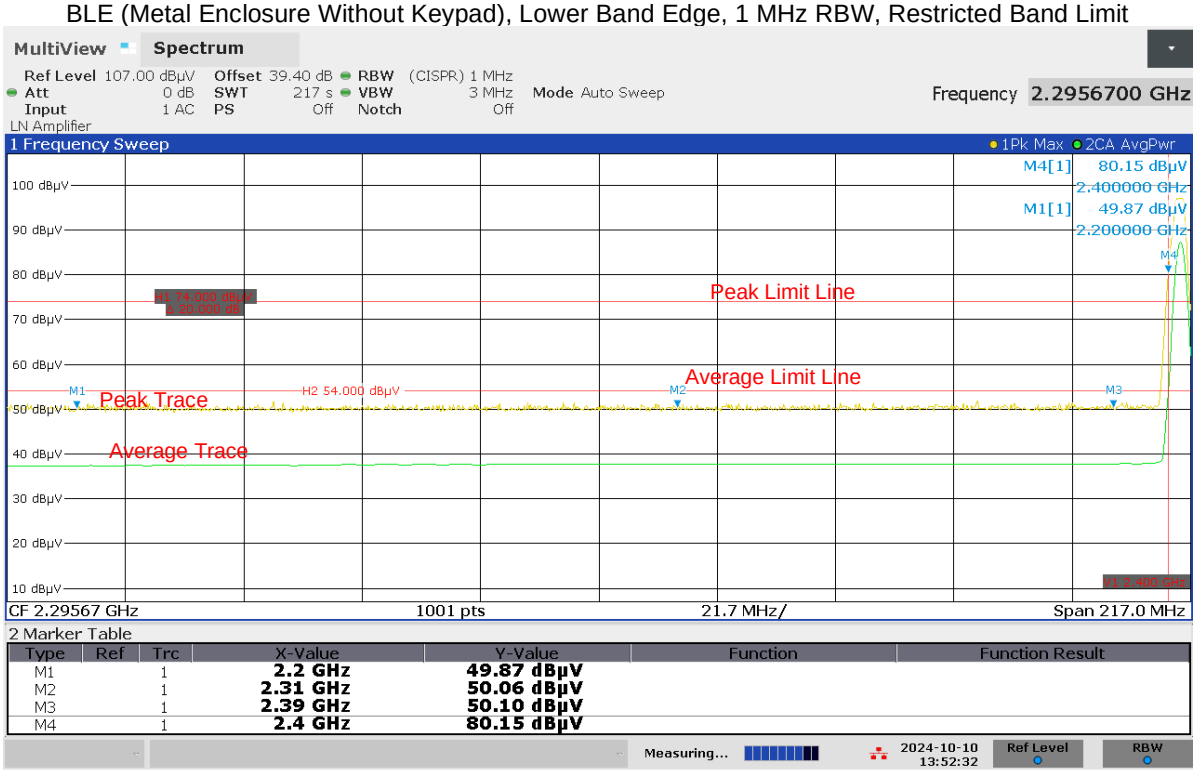
Notes: Offset includes cable loss and antenna factor.

BLE (Metal Enclosure Without Keypad), Lower Band Edge, 100 kHz RBW, 20 dBc Limit



01:54:44 PM 10/10/2024

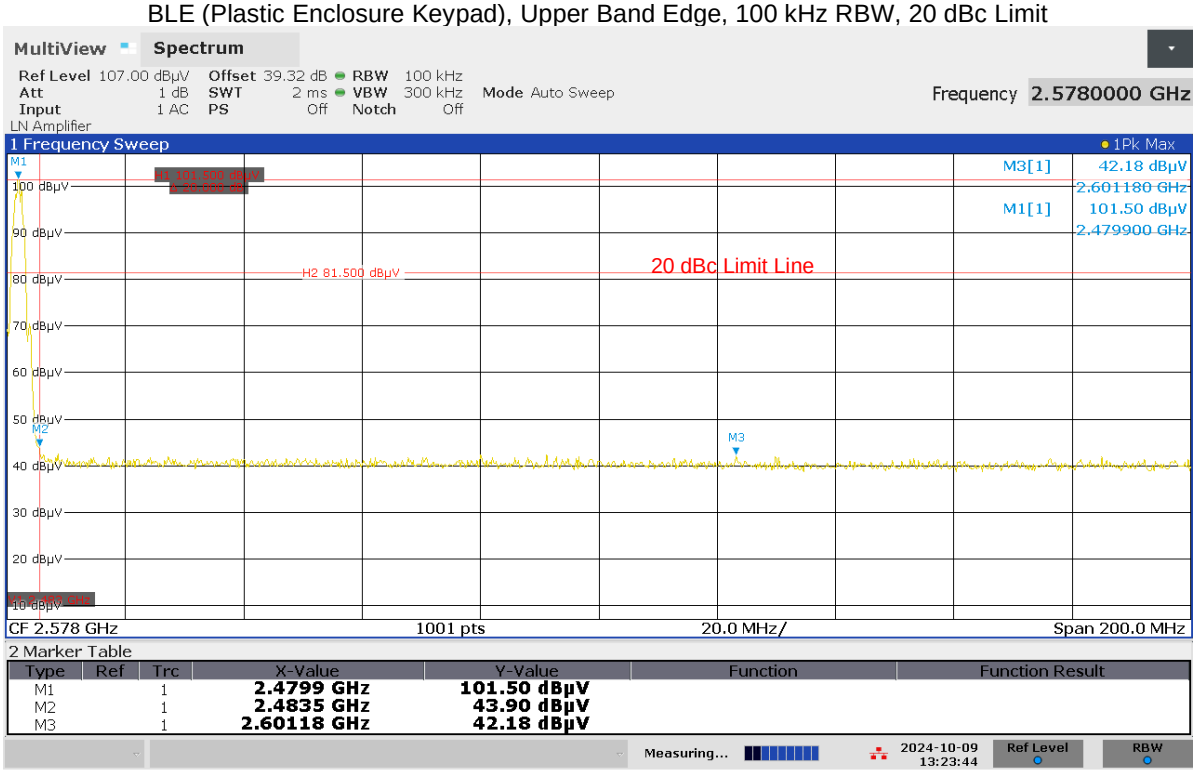
BLE (Metal Enclosure Without Keypad), Lower Band Edge, 1 MHz RBW, Restricted Band Limit



01:52:33 PM 10/10/2024

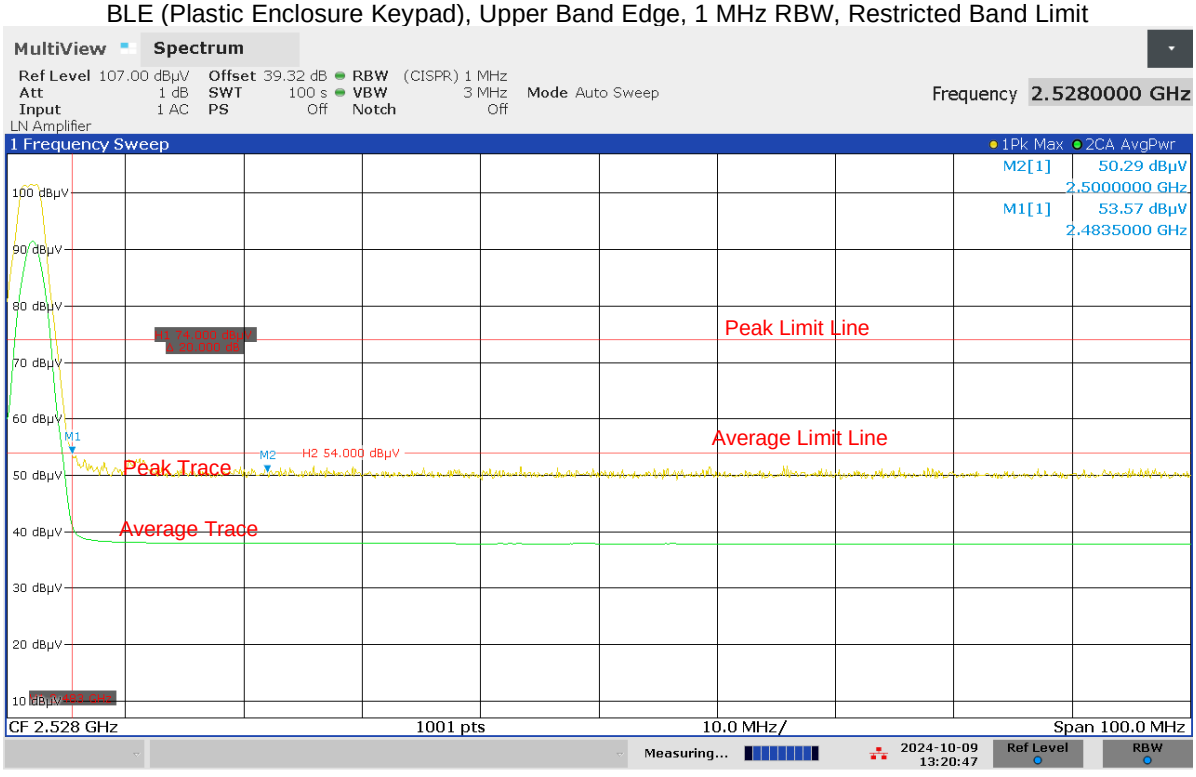
Notes: Offset includes cable loss and antenna factor.

BLE (Plastic Enclosure Keypad), Upper Band Edge, 100 kHz RBW, 20 dBc Limit



01:23:45 PM 10/09/2024

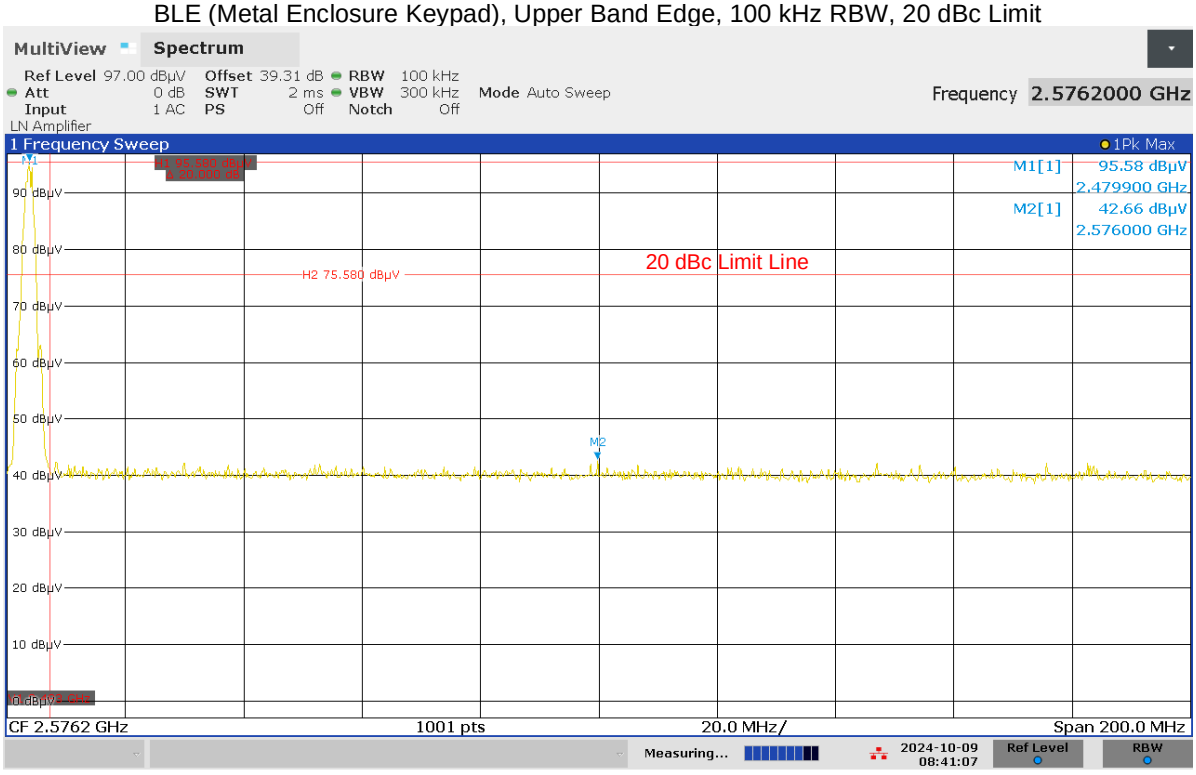
BLE (Plastic Enclosure Keypad), Upper Band Edge, 1 MHz RBW, Restricted Band Limit



01:20:47 PM 10/09/2024

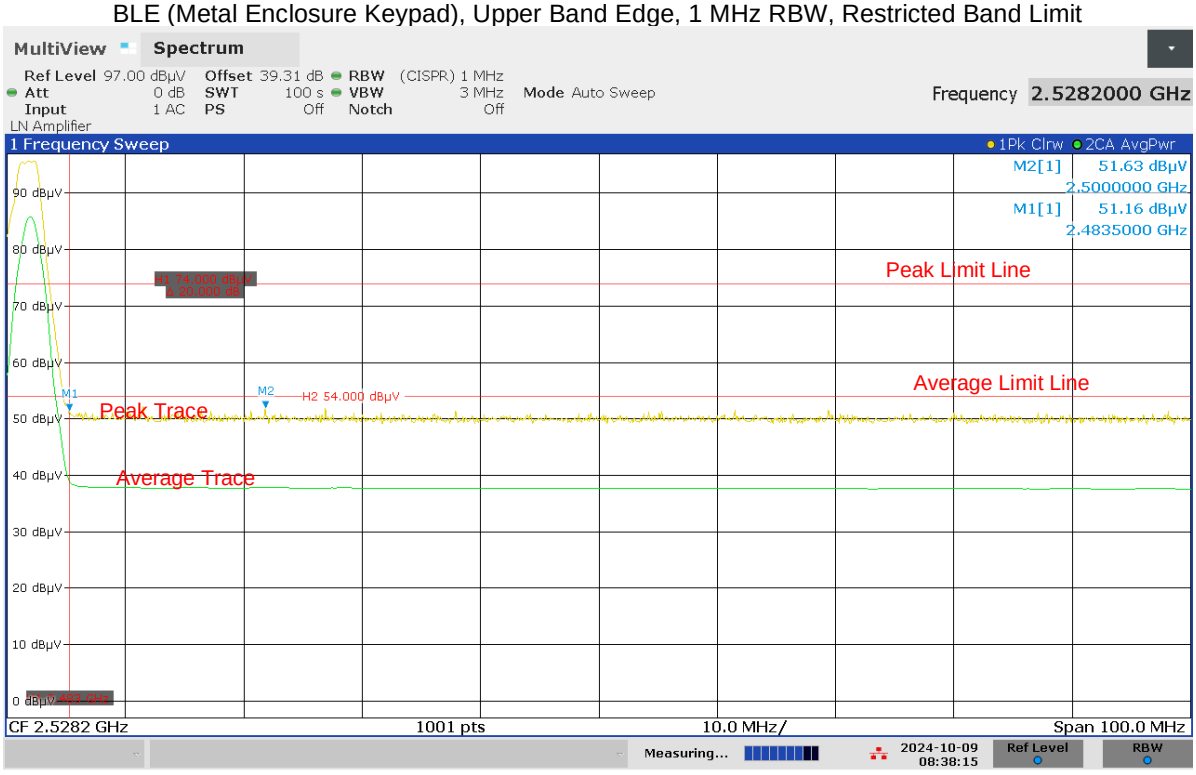
Notes: Offset includes cable loss and antenna factor.

BLE (Metal Enclosure Keypad), Upper Band Edge, 100 kHz RBW, 20 dBc Limit



08:41:07 AM 10/09/2024

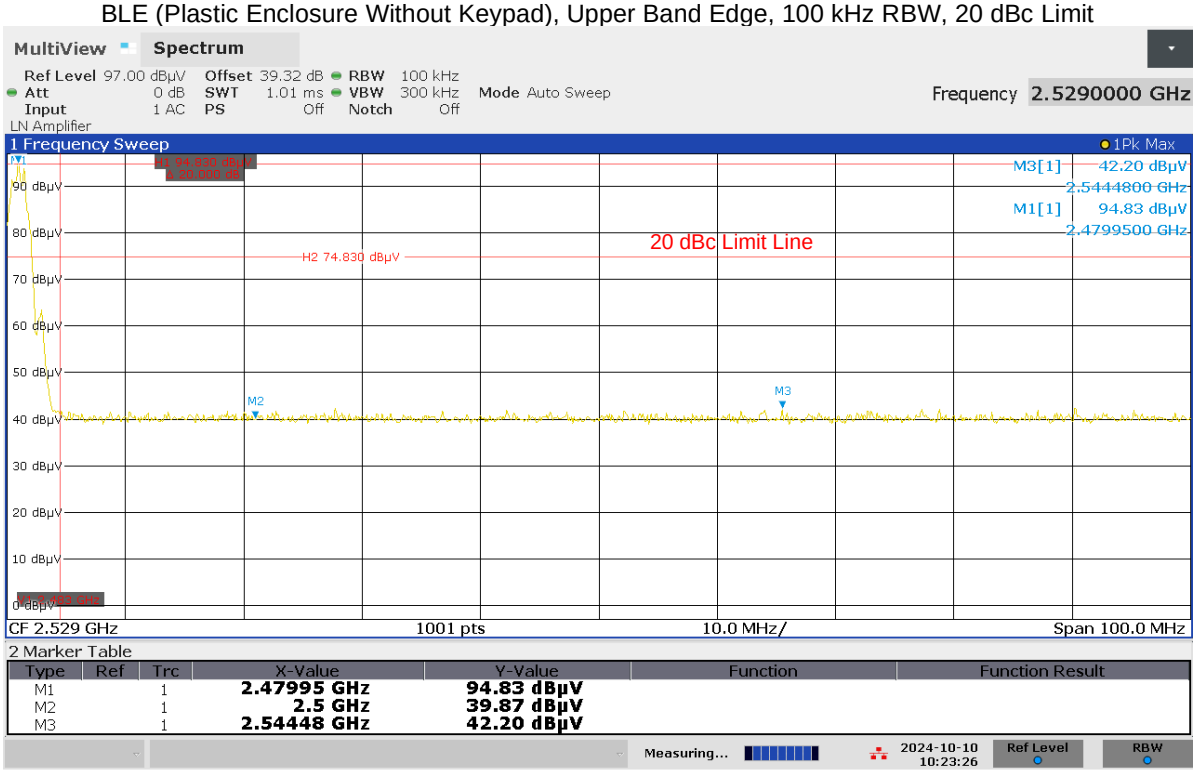
BLE (Metal Enclosure Keypad), Upper Band Edge, 1 MHz RBW, Restricted Band Limit



08:38:15 AM 10/09/2024

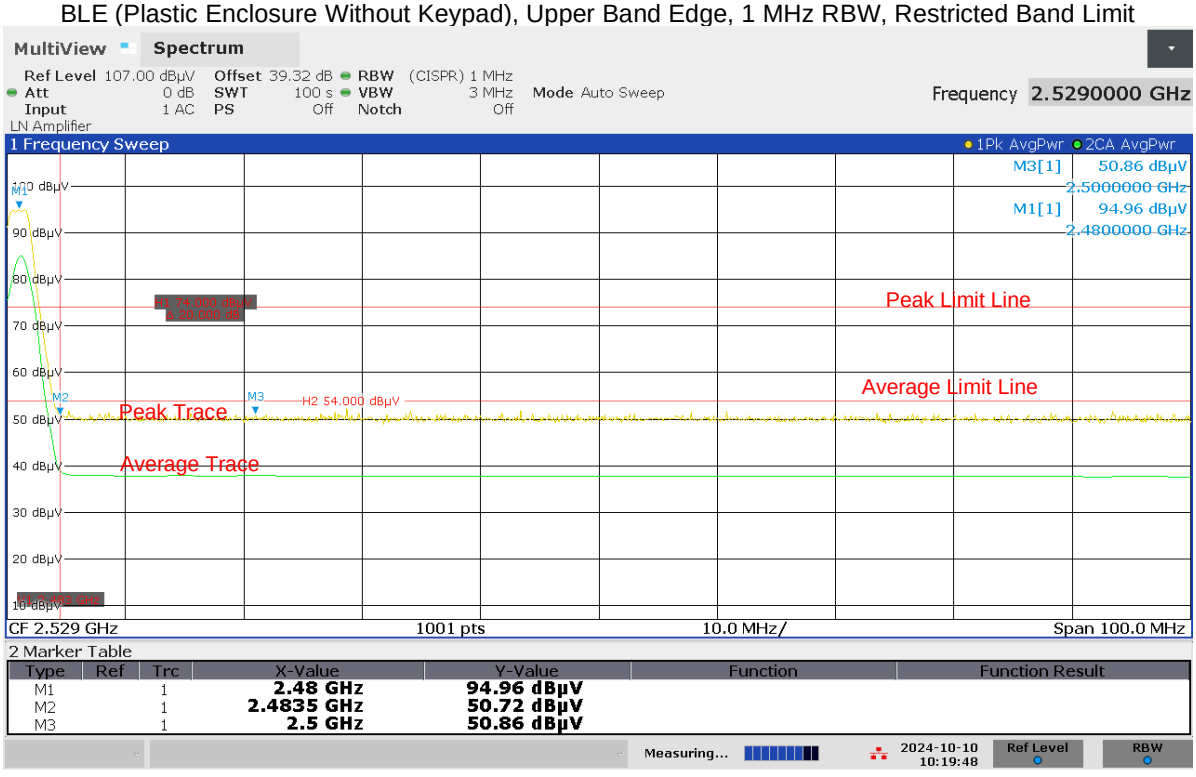
Notes: Offset includes cable loss and antenna factor.

BLE (Plastic Enclosure Without Keypad), Upper Band Edge, 100 kHz RBW, 20 dBc Limit



10:23:26 AM 10/10/2024

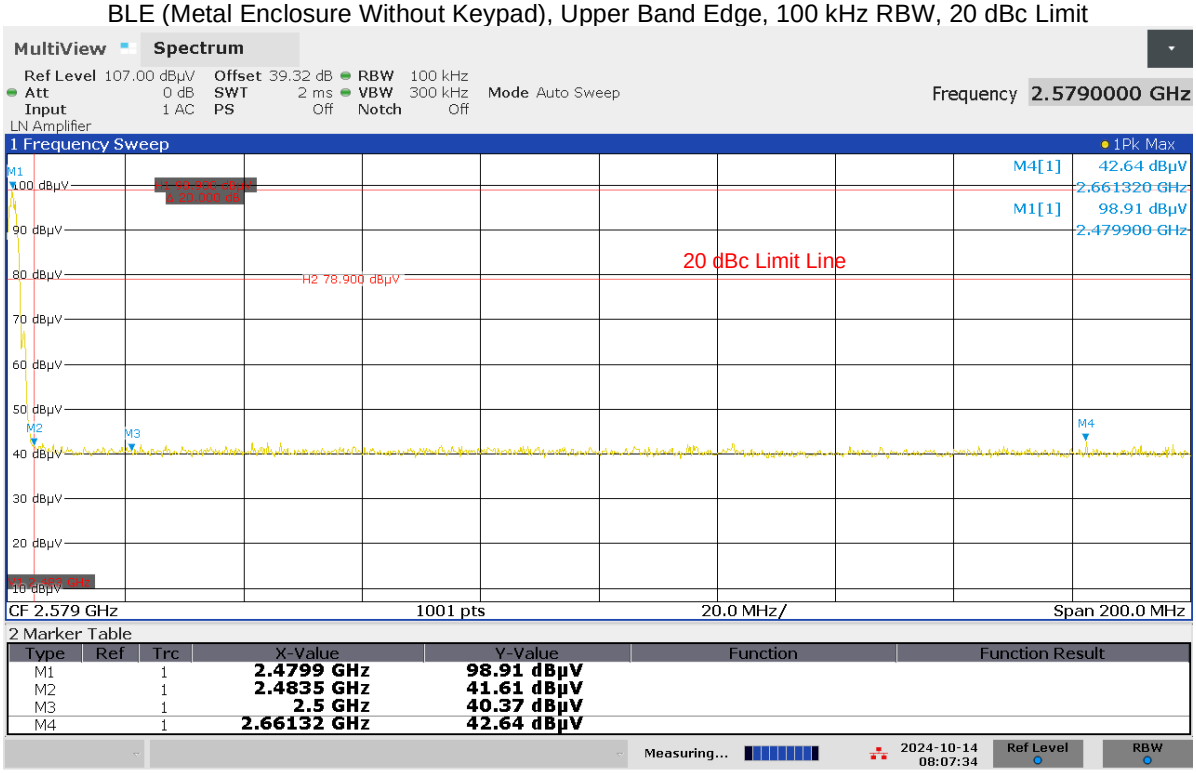
BLE (Plastic Enclosure Without Keypad), Upper Band Edge, 1 MHz RBW, Restricted Band Limit



10:19:48 AM 10/10/2024

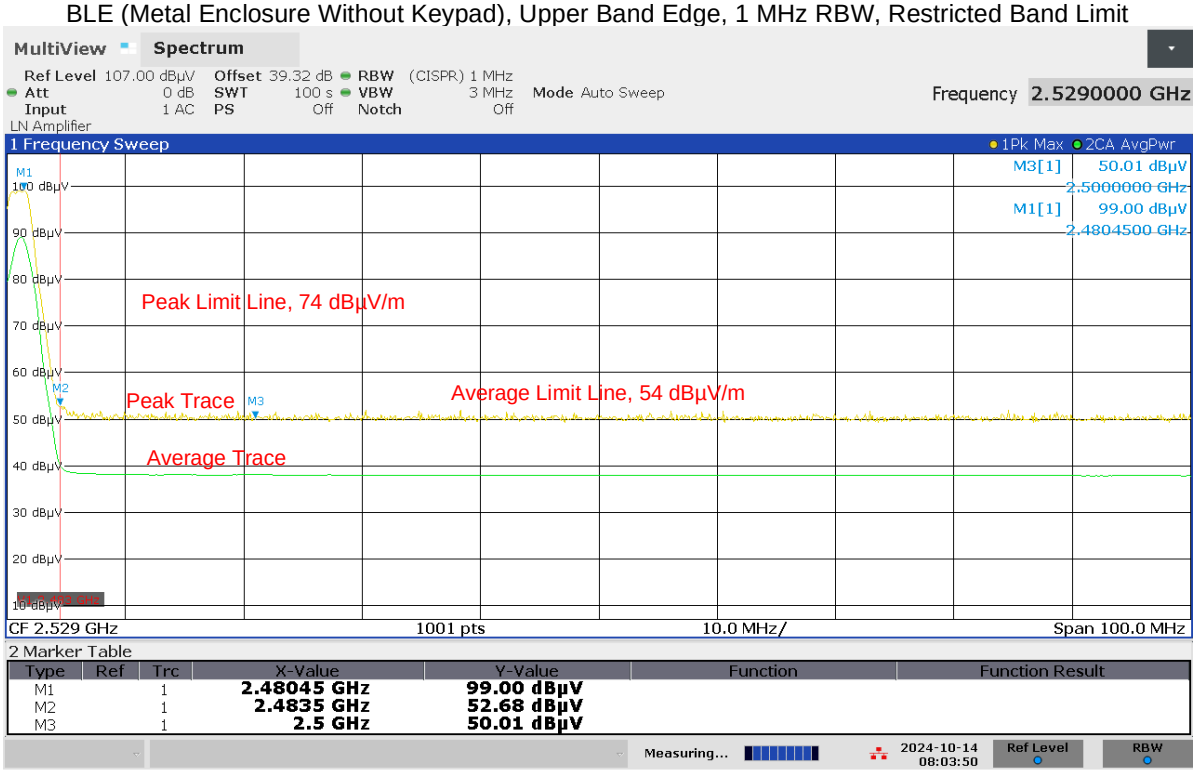
Notes: Offset includes cable loss and antenna factor.

BLE (Metal Enclosure Without Keypad), Upper Band Edge, 100 kHz RBW, 20 dBc Limit



08:07:34 AM 10/14/2024

BLE (Metal Enclosure Without Keypad), Upper Band Edge, 1 MHz RBW, Restricted Band Limit



08:03:51 AM 10/14/2024

Notes: Offset includes cable loss and antenna factor.