

FCC Radio Test Report

FCC ID : 2AMJS-BTWB01
Equipment : Wireless Button
Brand Name : Robert Bosch LLC
Model Name : Wireless Button
Applicant : Robert Bosch LLC
15000 N Haggerty Rd, Plymouth, Michigan, USA, Zip - 48170
Manufacturer : Chicony Electronics Co., Ltd
36F., No. 69, Sec 2, Guangfu Rd., Sanchong Dist.,
New Taipei City 241, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 11, 2022, and testing was started from Sep. 21, 2022 and completed on Sep. 29, 2022. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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PHOTOGRAPHS OF EUT V01



History of this test report

Report No.	Version	Description	Issued Date
FR272002-01AL	01	Initial issue of report	Dec. 01, 2022



Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	Only employ battery power.
3.1	15.247(a)	DTS Bandwidth	PASS	-
3.2	15.247(b)	Maximum Conducted Output Power	PASS	-
3.3	15.247(e)	Power Spectral Density	PASS	-
3.4	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.5	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Ryan Hsiao

Report Producer: Amber Chiu



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX

Note:

- ♦ Bluetooth LE uses a GFSK (1Mbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	INPAQ	RFMTA190800NN AB003	Metal antenna	N/A	2.35

Note 1: The EUT has one antenna.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 1 was could transmit/receive.



1.1.3 EUT Information

Operational Condition	
EUT Power Type	From Battery
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint <input type="checkbox"/> Point-to-point
Type of EUT	
<input checked="" type="checkbox"/> Stand-alone	
<input type="checkbox"/> Combined (EUT where the radio part is fully integrated within another device)	
Combined Equipment - Brand Name / Model No.:	...
<input type="checkbox"/> Plug-in radio (EUT intended for a variety of host systems)	
Host System - Brand Name / Model No.:	...
<input type="checkbox"/> Other:	

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.633	1.99	395.938u	3k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- ♦ KDB 558074 D01 v05r02
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<input checked="" type="checkbox"/>	Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)		
		TEL: 886-3-327-3456	FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH07-HY	Alan Chien	20.1~26.9°C / 50~60%	21/Sep/2022
Radiated	03CH02-HY	Daniel Lin	23.2~23.4°C / 50~60%	29/Sep/2022
<input type="checkbox"/>	Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)		
		TEL: 886-3-318-0787	FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Power Spectral Density	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Receiver Radiated Unwanted Emissions	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%



2 Test Configuration of EUT




2.1 Test Channel Mode

Test Software Version	Direct Test Mode Tool V1.0.0
------------------------------	------------------------------

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	3
2440MHz	3
2480MHz	3

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	Battery Mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT			V



2.3 Accessories

Accessories				
Battery	Brand Name	Panasonic	Model Name	CR2032
	Power Rating	3 Vdc	Type	Li-ion, No

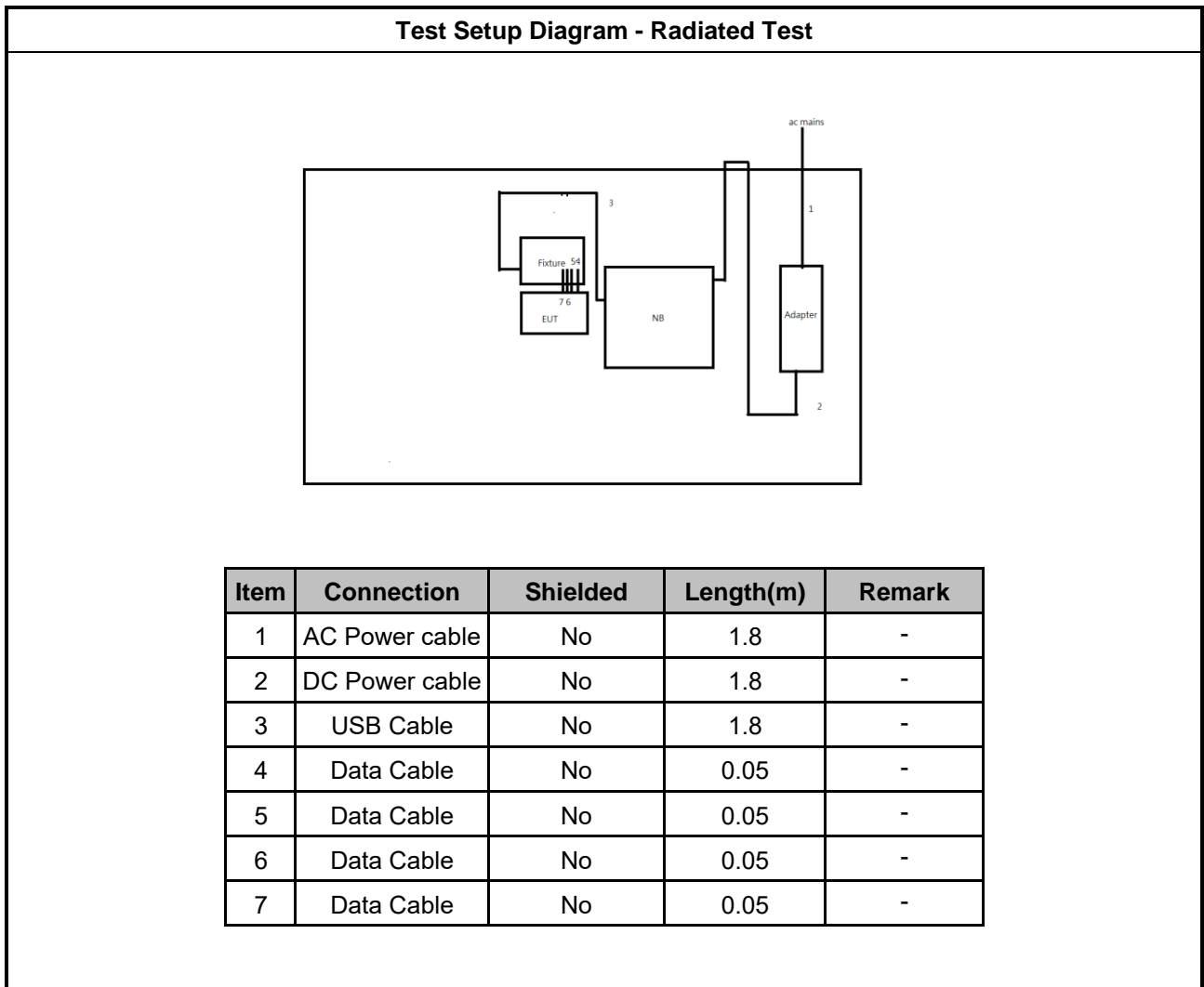
Reminder: Regarding to more detail and other information, please refer to user manual.

2.4 Support Equipment

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Fixture	NA	-	-	Provided by Customer
2	Notebook	HP	HSTNN-142C	-	-
3	Adapter For NB	HP	HSTNN-CA40	-	-
4	AC Power Cable	Power Sync	TPCMRN0018	-	-

2.5 Test Setup Diagram



3 Transmitter Test Result

3.1 DTS Bandwidth

3.1.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
<ul style="list-style-type: none"> ▪ 6 dB bandwidth \geq 500 kHz.

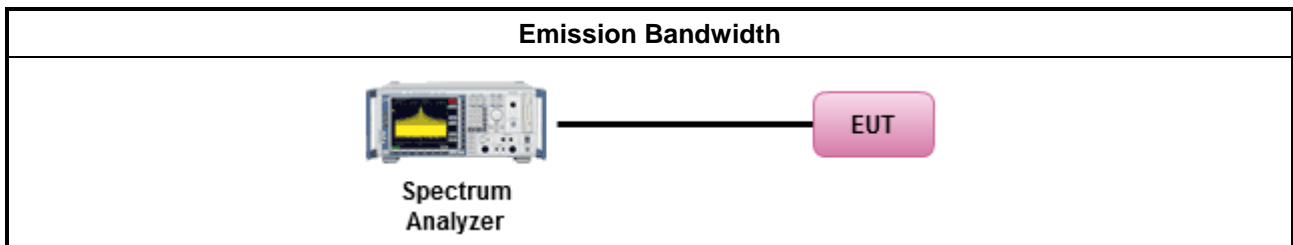
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
<input type="checkbox"/> Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	<ul style="list-style-type: none"> ▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none"> ▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> ▪ Smart antenna system (SAS):
	<ul style="list-style-type: none"> - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dBm
e.i.r.p. Power Limit:	
	<ul style="list-style-type: none"> ▪ 2400-2483.5 MHz Band
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	<ul style="list-style-type: none"> ▪ Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	<ul style="list-style-type: none"> ▪ Smart antenna system (SAS)
	<ul style="list-style-type: none"> - Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
<p>P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

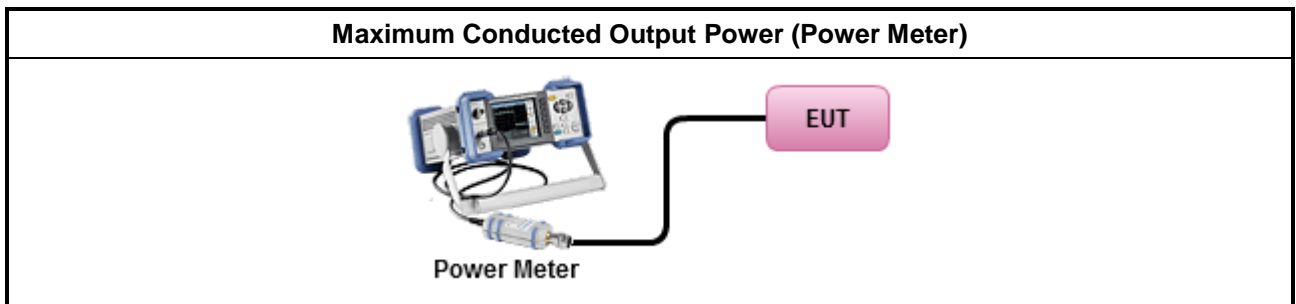
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Maximum Peak Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
<ul style="list-style-type: none"> ▪ Maximum Average Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. 	
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$ 	

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

3.3 Power Spectral Density

3.3.1 Power Spectral Density Limit

Power Spectral Density Limit
<ul style="list-style-type: none"> Power Spectral Density (PSD) ≤ 8 dBm/3kHz

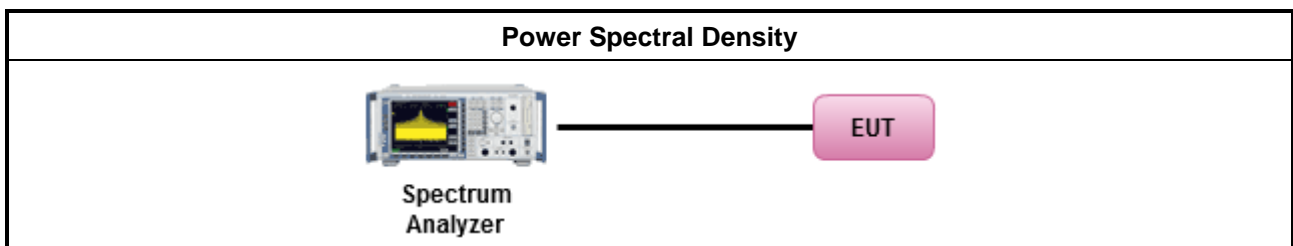
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option). 	
<input checked="" type="checkbox"/> Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.	
<ul style="list-style-type: none"> For conducted measurement. <ul style="list-style-type: none"> If The EUT supports multiple transmit chains using options given below: <ul style="list-style-type: none"> Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace. 	

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Refer as Appendix C

3.4 Emissions in Non-restricted Frequency Bands

3.4.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.

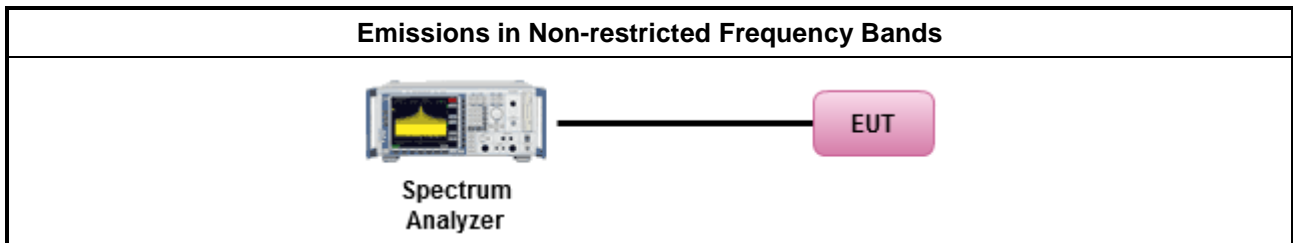
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.4.4 Test Setup



3.4.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix D

3.5 Emissions in Restricted Frequency Bands

3.5.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

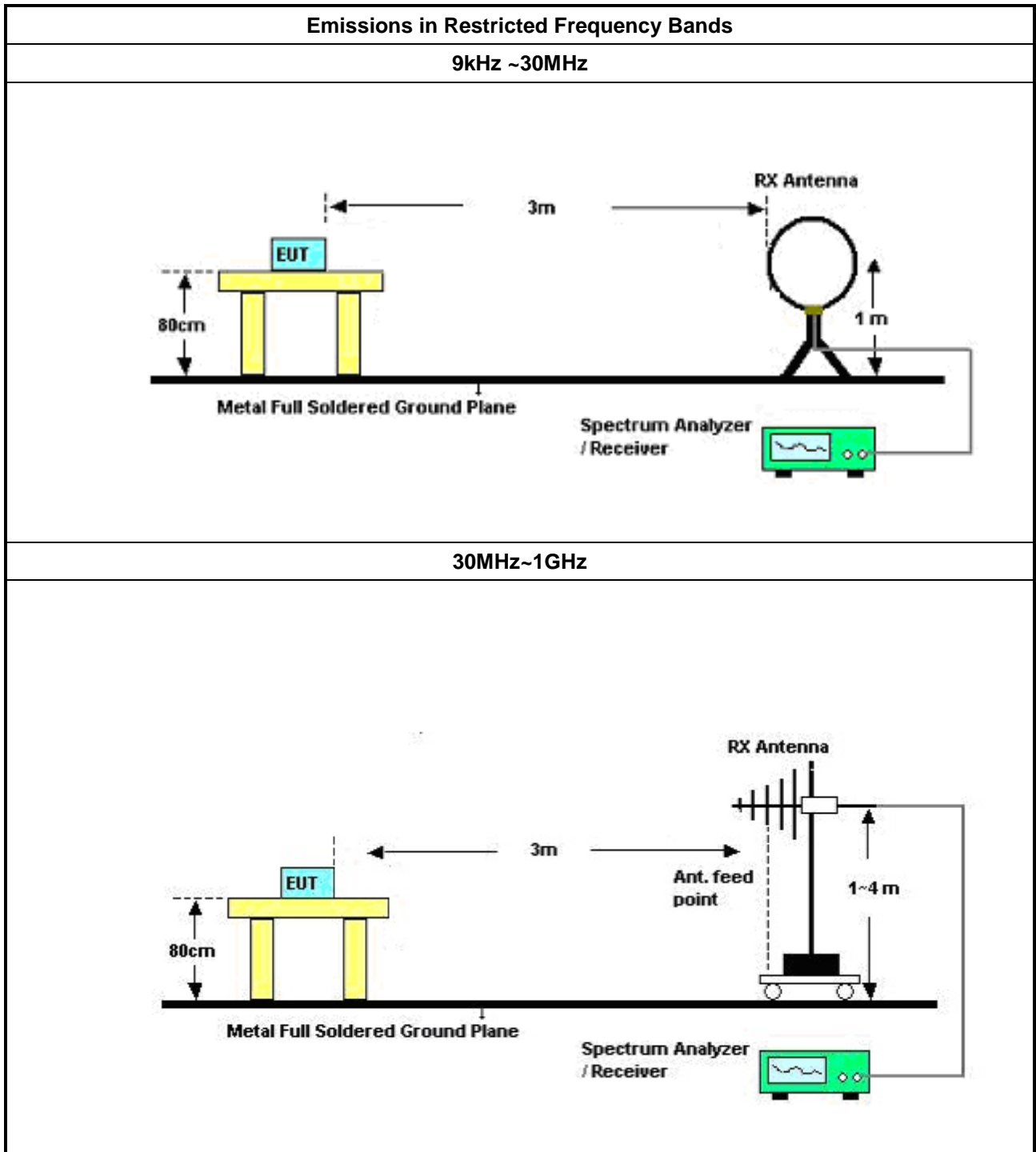
Test Method	
	<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
	<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
	<ul style="list-style-type: none"> ▪ For the transmitter band-edge emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> ▪ Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
	<ul style="list-style-type: none"> ▪ Use the following spectrum analyzer settings:
	<ul style="list-style-type: none"> ▪ Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	<ul style="list-style-type: none"> ▪ Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
	<ul style="list-style-type: none"> ▪ KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.
	<ul style="list-style-type: none"> ▪ Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	<ul style="list-style-type: none"> ▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

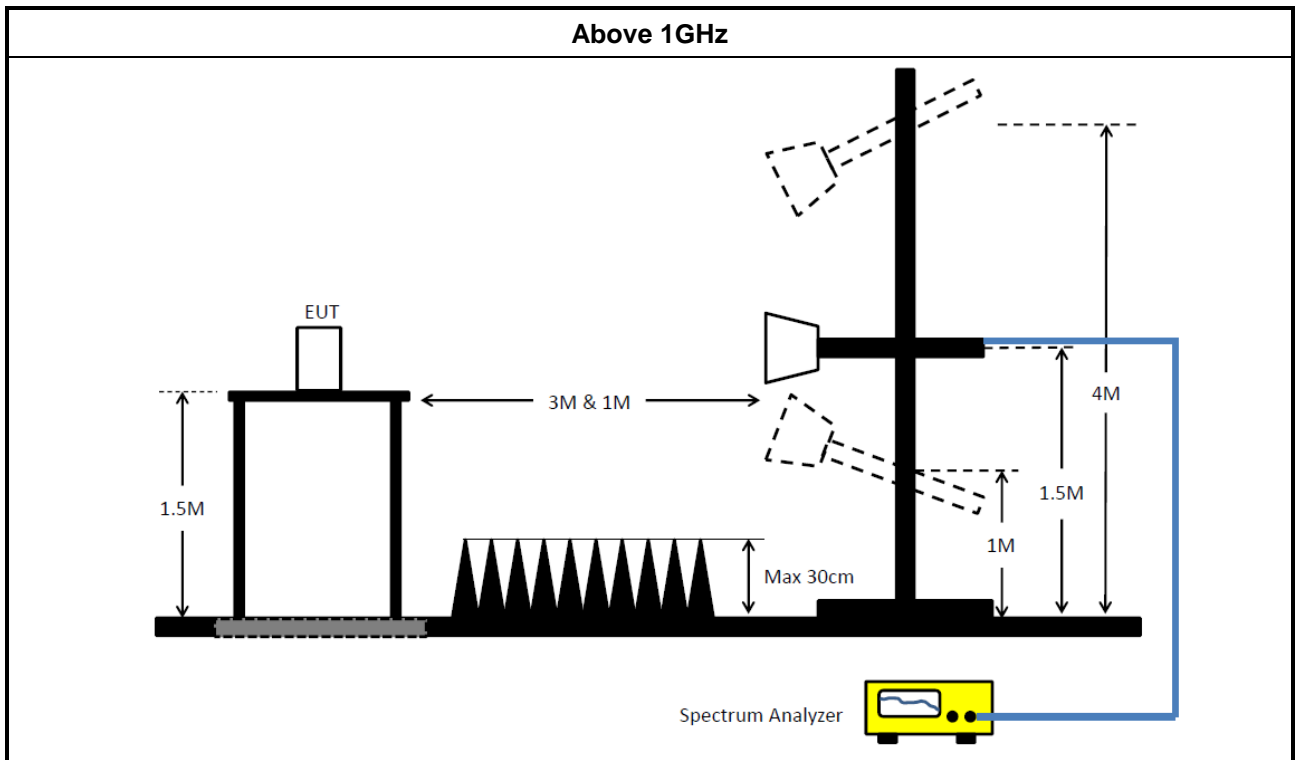
3.5.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

3.5.5 Test Setup





3.5.6 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.5.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E



4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	14/Feb/2022	13/Feb/2023
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	17/Dec/2021	16/Dec/2022
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	20/Dec/2021	19/Dec/2022
SENSE-15247_FS	Sporton	V5.10.7.16	N/A	N/A	N/A	N/A

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz~1GHz 3m	31/Jul/2022	30/Jul/2023
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	30/Jul/2022	29/Jul/2023
Signal Analyzer	R&S	FSP40	100593	9kHz~40GHz	08/Apr/2022	07/Apr/2023
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	28/Jun/2022	27/Jun/2023
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	03/Nov/2021	02/Nov/2022
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02744	1GHz ~18GHz	09/Aug/2022	08/Aug/2023
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	28/Aug/2022	27/Aug/2023
RF Cable	MVE	400LL	MVE-1-0802	9kHz~30MHz	04/May/2022	03/May/2023
RF Cable	MVE	400LL	MVE-1-0802	30MHz~1GHz	04/May/2022	03/May/2023
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	805193/4+ 805192/4	1GHz~40GHz	01/Apr/2022	31/Mar/2023
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Prempplier	EMC INSTRUMENTS	EM18G40G	060604	18GHz~40GHz	08/Mar/2022	07/Mar/2023
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	18/Mar/2022	17/Mar/2023
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	13/May/2022	12/May/2023
SENSE-15247_FS	Sporton	v5.10.7.14	NA	NA	NA	NA



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	703.75k	1.043M	1M04F1D	698.75k	1.039M

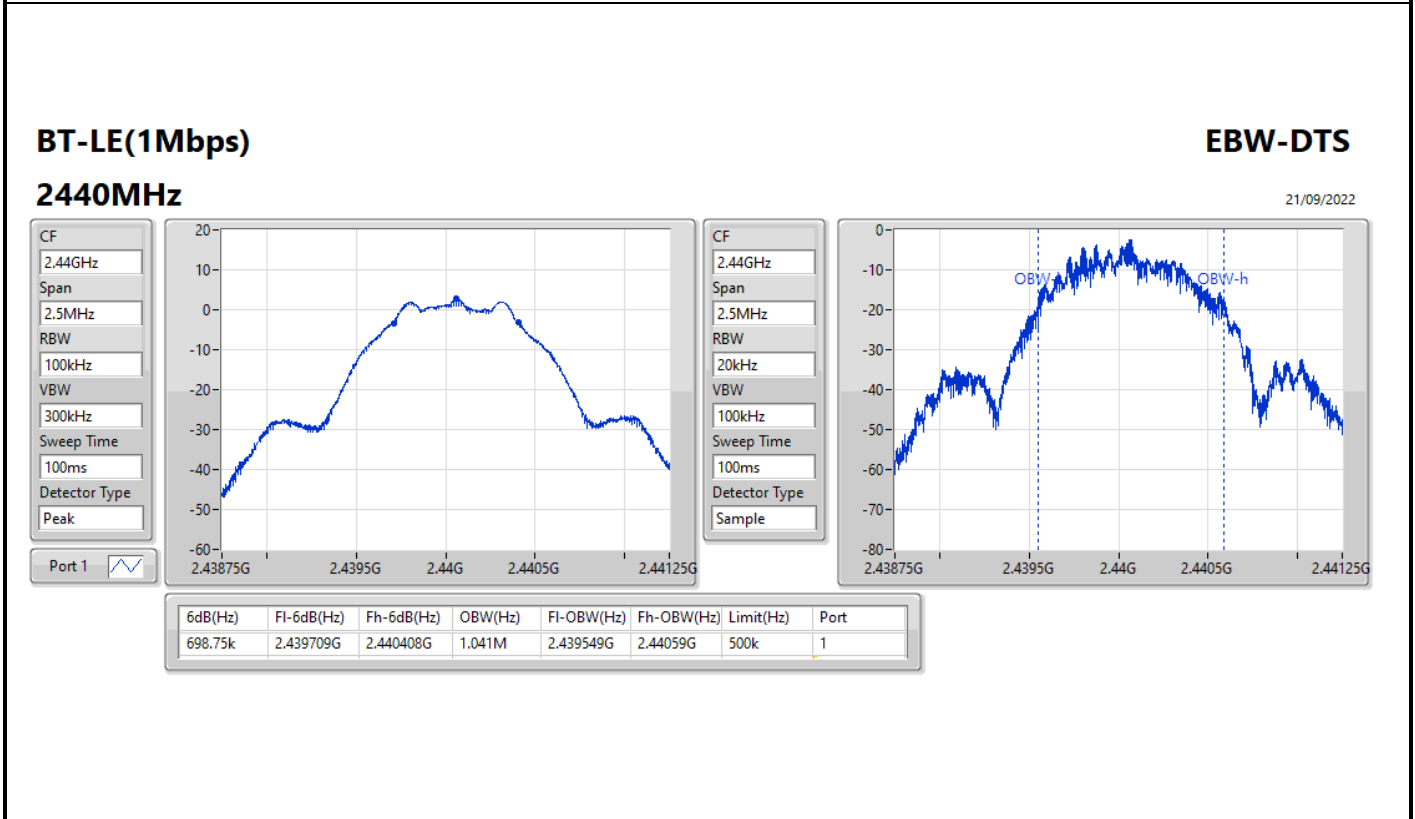
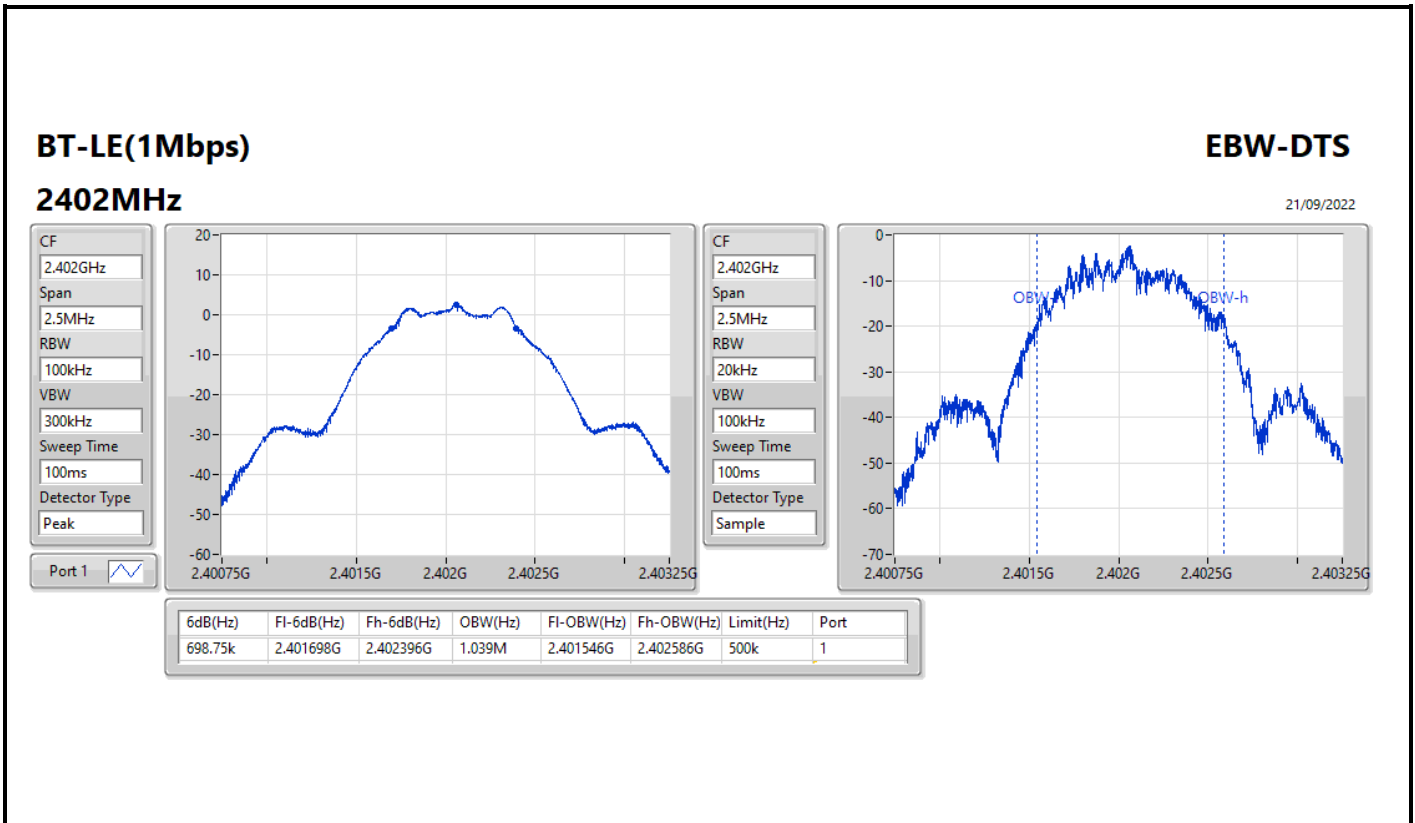
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

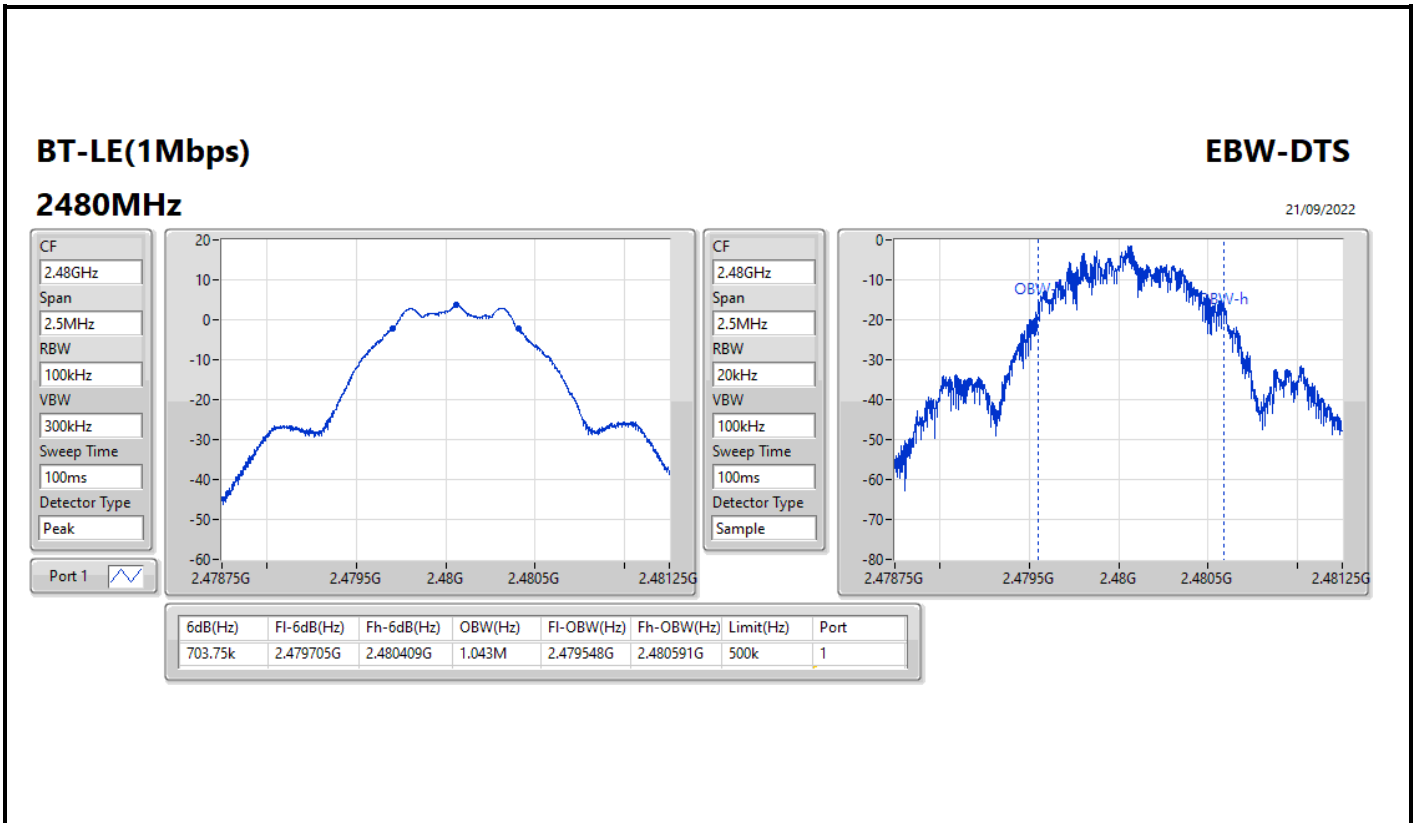


Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	698.75k	1.039M
2440MHz	Pass	500k	698.75k	1.041M
2480MHz	Pass	500k	703.75k	1.043M

Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth







Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.46	0.00222



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.35	2.33	30.00
2440MHz	Pass	2.35	2.54	30.00
2480MHz	Pass	2.35	3.46	30.00

DG = Directional Gain; Port X = Port X output power



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-11.84

RBW = 3kHz;



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.35	-13.15	8.00
2440MHz	Pass	2.35	-12.92	8.00
2480MHz	Pass	2.35	-11.84	8.00

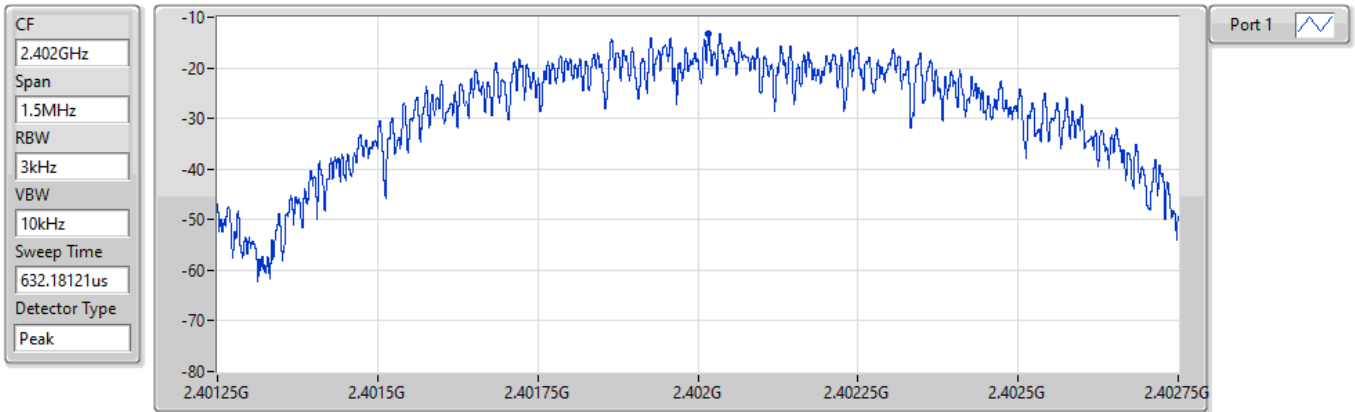
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

BT-LE(1Mbps)

PSD

2402MHz

21/09/2022



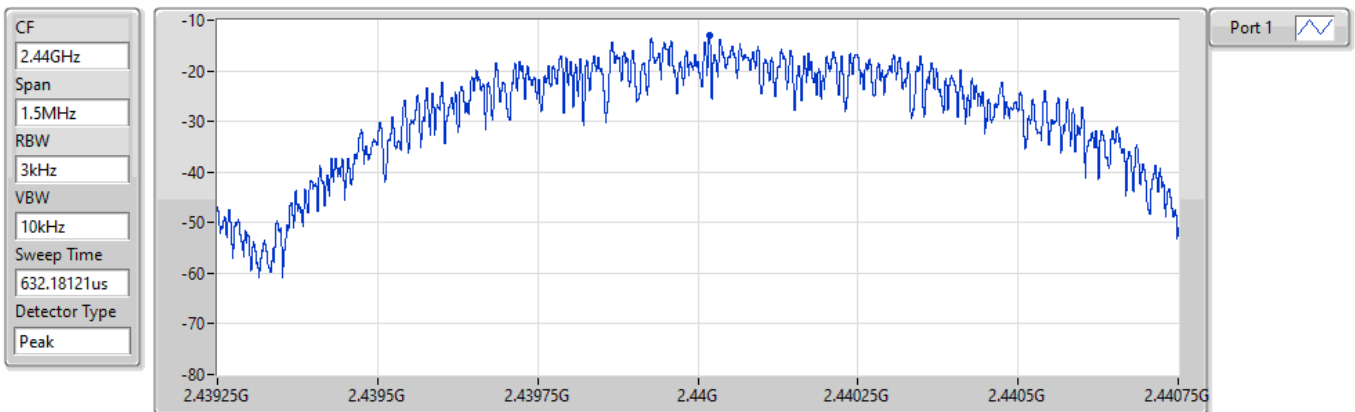
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.15	-13.15	-13.15

BT-LE(1Mbps)

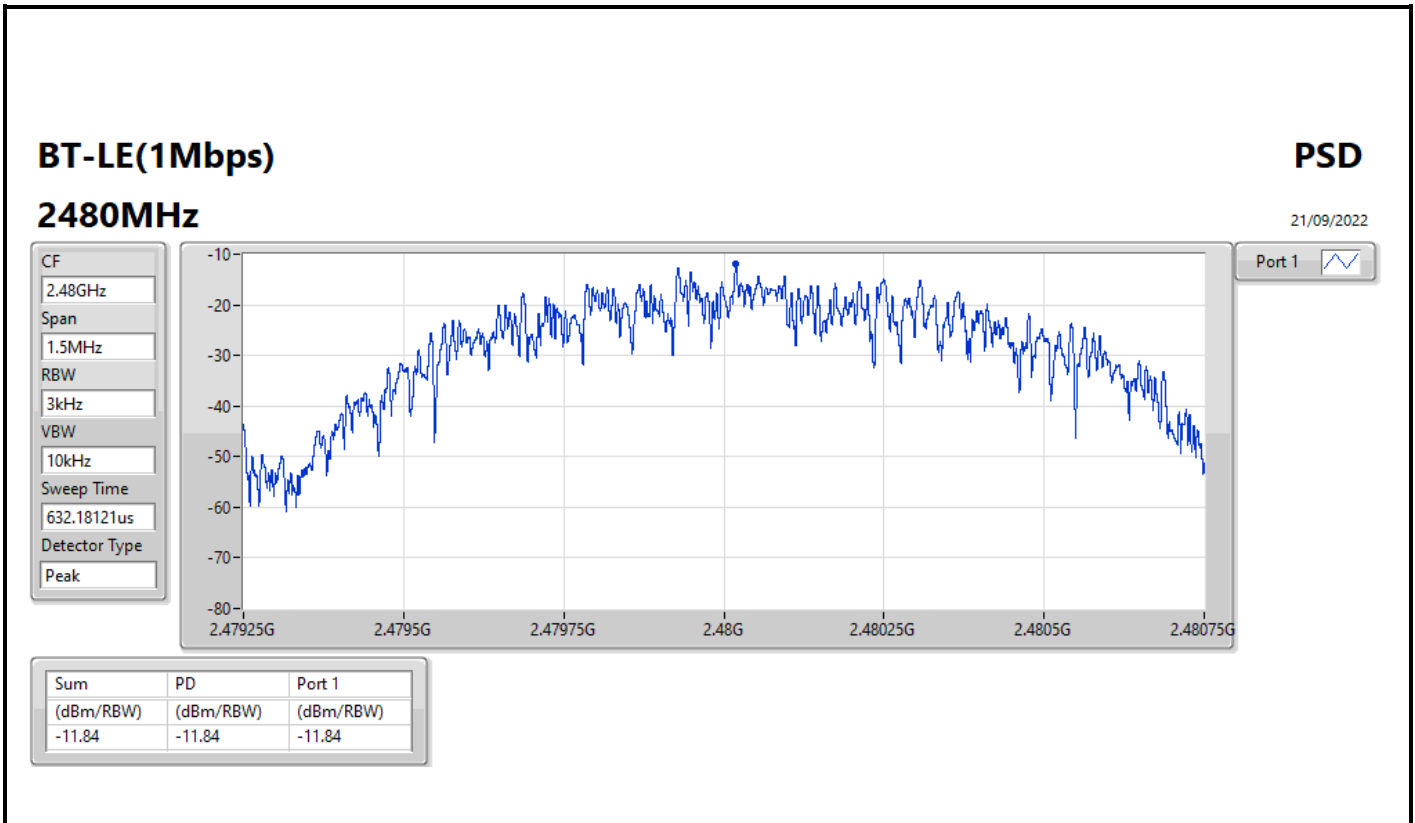
PSD

2440MHz

21/09/2022



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.92	-12.92	-12.92





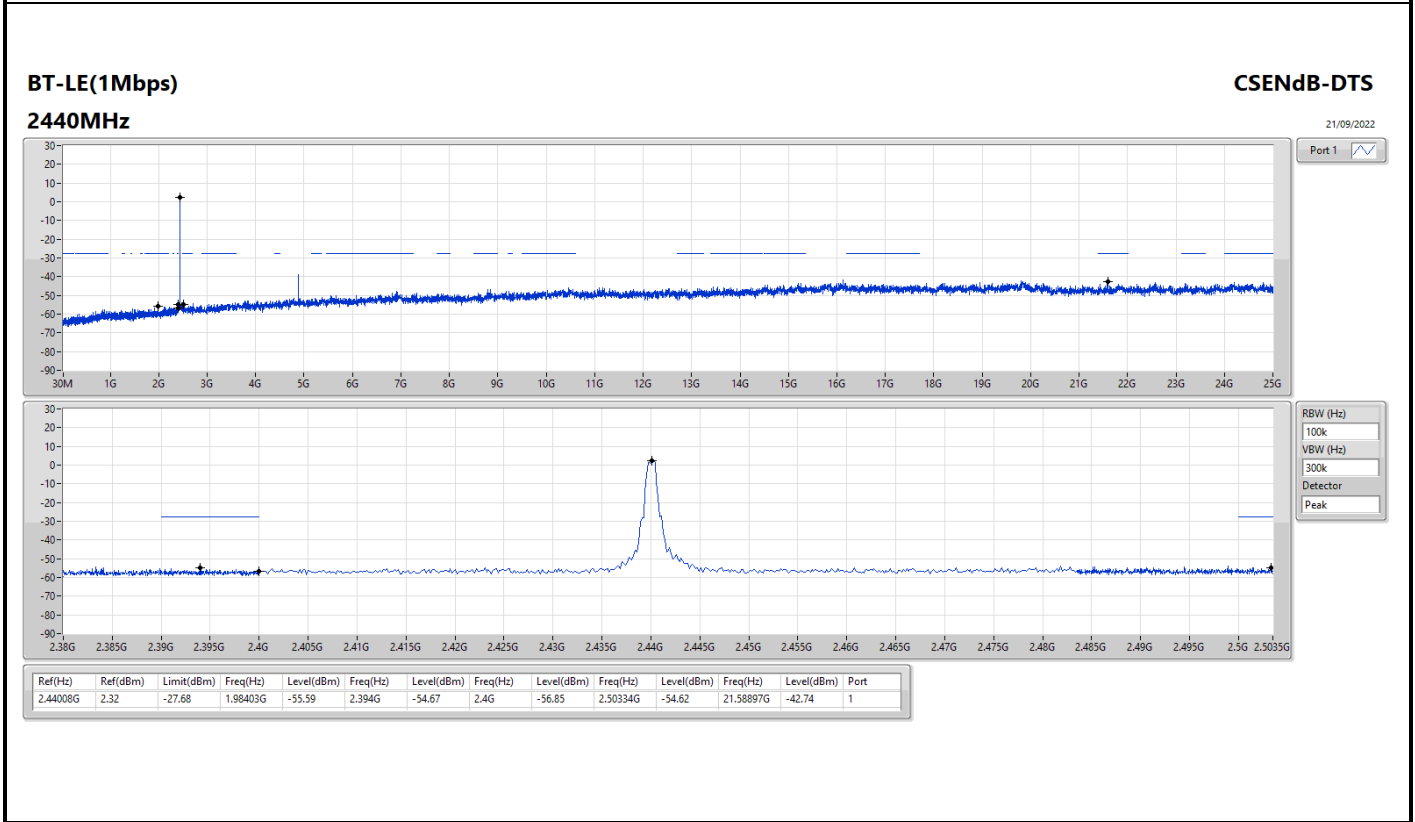
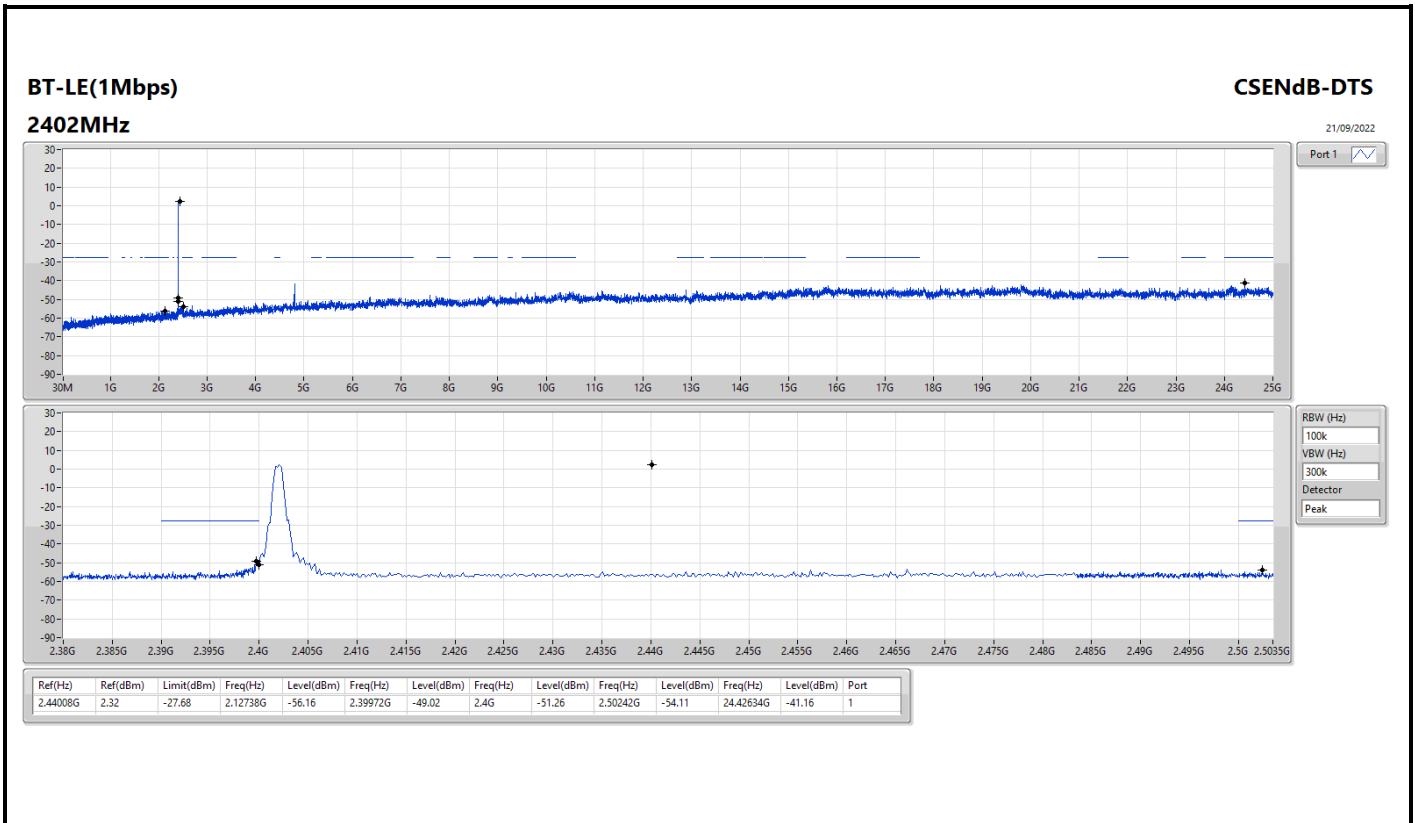
Summary

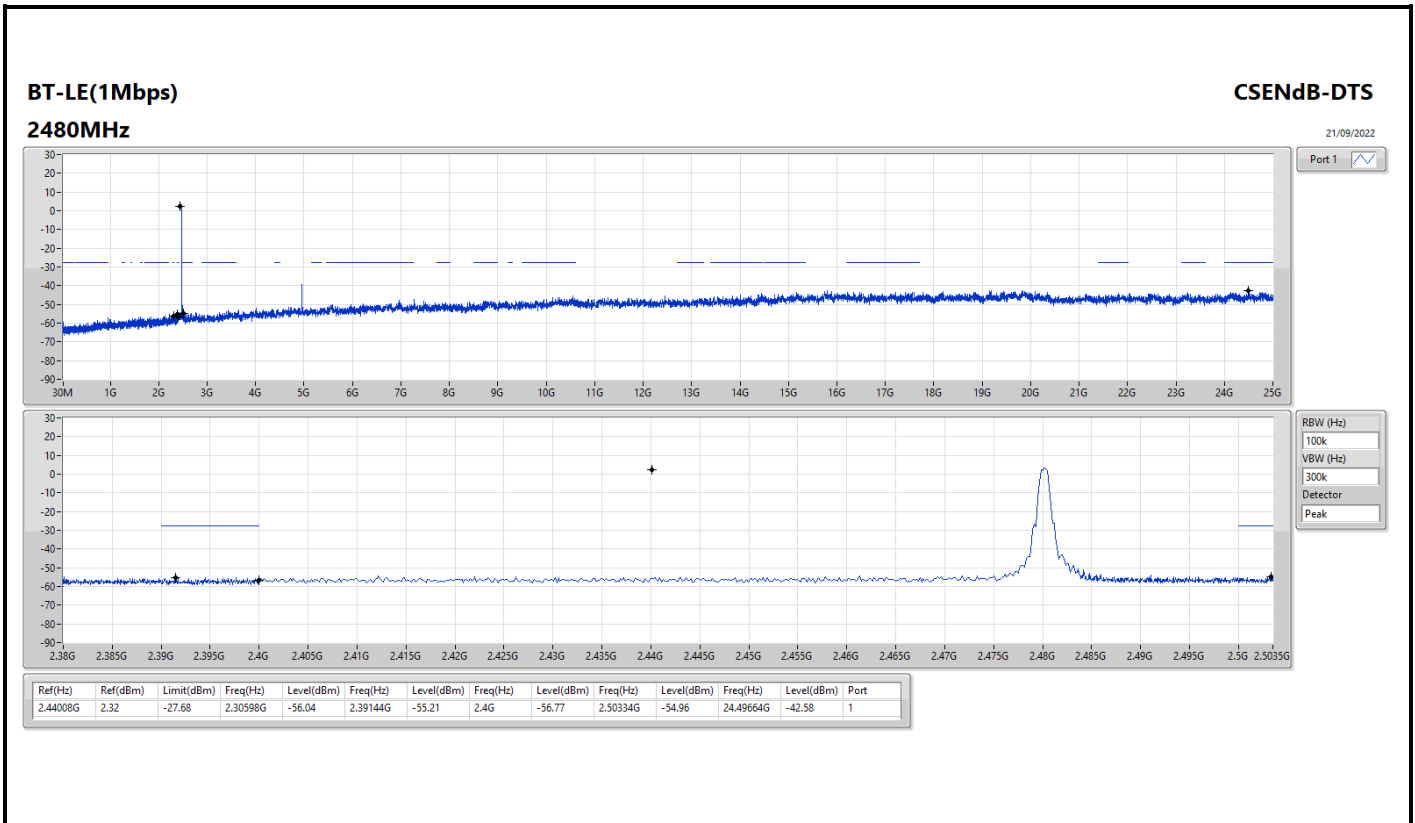
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44008G	2.32	-27.68	2.12738G	-56.16	2.39972G	-49.02	2.4G	-51.26	2.50242G	-54.11	24.42634G	-41.16	1



Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44008G	2.32	-27.68	2.12738G	-56.16	2.39972G	-49.02	2.4G	-51.26	2.50242G	-54.11	24.42634G	-41.16	1
2440MHz	Pass	2.44008G	2.32	-27.68	1.98403G	-55.59	2.394G	-54.67	2.4G	-56.85	2.50334G	-54.62	21.58897G	-42.74	1
2480MHz	Pass	2.44008G	2.32	-27.68	2.30598G	-56.04	2.39144G	-55.21	2.4G	-56.77	2.50334G	-54.96	24.49664G	-42.58	1







Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	480.08M	41.43	46.00	-4.57	3	Horizontal	360	1.00	-

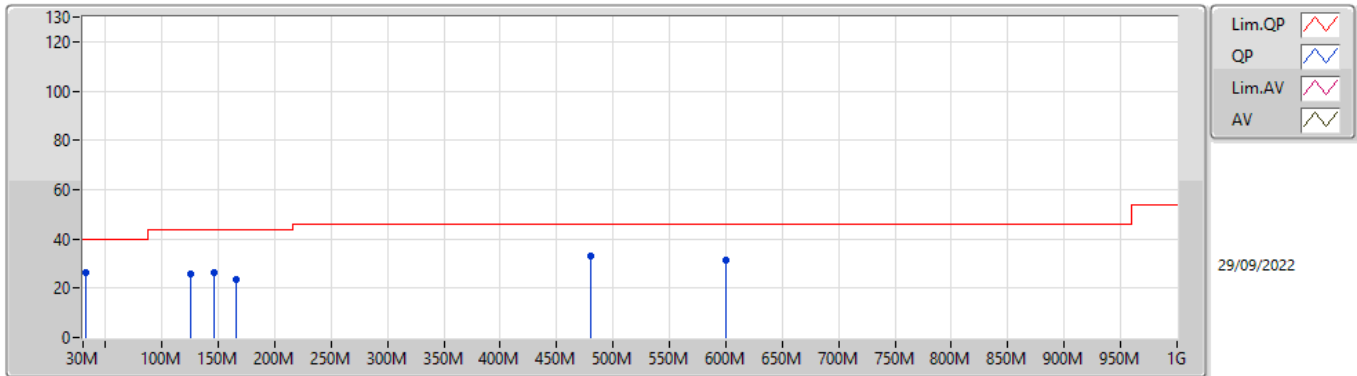


Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	31.94M	26.07	40.00	-13.93	3	Vertical	0	1.00	-
2440MHz	Pass	PK	125.06M	25.89	43.50	-17.61	3	Vertical	0	1.00	-
2440MHz	Pass	PK	146.4M	26.60	43.50	-16.90	3	Vertical	0	1.00	-
2440MHz	Pass	PK	165.8M	23.36	43.50	-20.14	3	Vertical	0	1.00	-
2440MHz	Pass	PK	480.08M	33.30	46.00	-12.70	3	Vertical	0	1.00	-
2440MHz	Pass	PK	600.36M	31.14	46.00	-14.86	3	Vertical	0	1.00	-
2440MHz	Pass	PK	123.12M	31.17	43.50	-12.33	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	132.82M	31.77	43.50	-11.73	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	183.26M	30.61	43.50	-12.89	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	309.36M	28.80	46.00	-17.20	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	359.8M	31.73	46.00	-14.27	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	480.08M	41.43	46.00	-4.57	3	Horizontal	360	1.00	-

BT-LE(1Mbps)

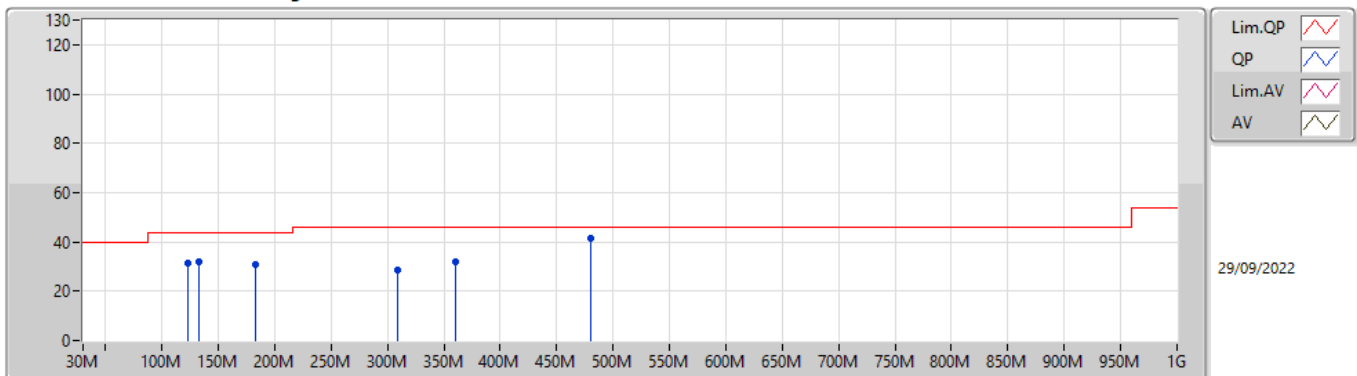
2440MHz_battery



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	26.07	40.00	-13.93	-3.75	3	Vertical	0	1.00	-	29.82	22.06	1.02	26.83
PK	125.06M	25.89	43.50	-17.61	-8.84	3	Vertical	0	1.00	-	34.73	17.35	1.57	27.76
PK	146.4M	26.60	43.50	-16.90	-10.17	3	Vertical	0	1.00	-	36.77	15.81	1.71	27.69
PK	165.8M	23.36	43.50	-20.14	-10.72	3	Vertical	0	1.00	-	34.08	15.05	1.82	27.59
PK	480.08M	33.30	46.00	-12.70	-2.38	3	Vertical	0	1.00	-	35.68	22.71	3.22	28.31
PK	600.36M	31.14	46.00	-14.86	-0.97	3	Vertical	0	1.00	-	32.11	23.88	3.59	28.44

BT-LE(1Mbps)

2440MHz_battery



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	123.12M	31.17	43.50	-12.33	-8.86	3	Horizontal	360	1.00	-	40.03	17.34	1.56	27.76
PK	132.82M	31.77	43.50	-11.73	-9.23	3	Horizontal	360	1.00	-	41.00	16.89	1.62	27.74
PK	183.26M	30.61	43.50	-12.89	-11.18	3	Horizontal	360	1.00	-	41.79	14.37	1.94	27.49
PK	309.36M	28.80	46.00	-17.20	-6.04	3	Horizontal	360	1.00	-	34.84	18.66	2.55	27.25
PK	359.8M	31.73	46.00	-14.27	-4.94	3	Horizontal	360	1.00	-	36.67	19.89	2.74	27.57
PK	480.08M	41.43	46.00	-4.57	-2.38	3	Horizontal	360	1.00	-	43.81	22.71	3.22	28.31



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.87984G	51.05	54.00	-2.95	3	Horizontal	41	1.03	-

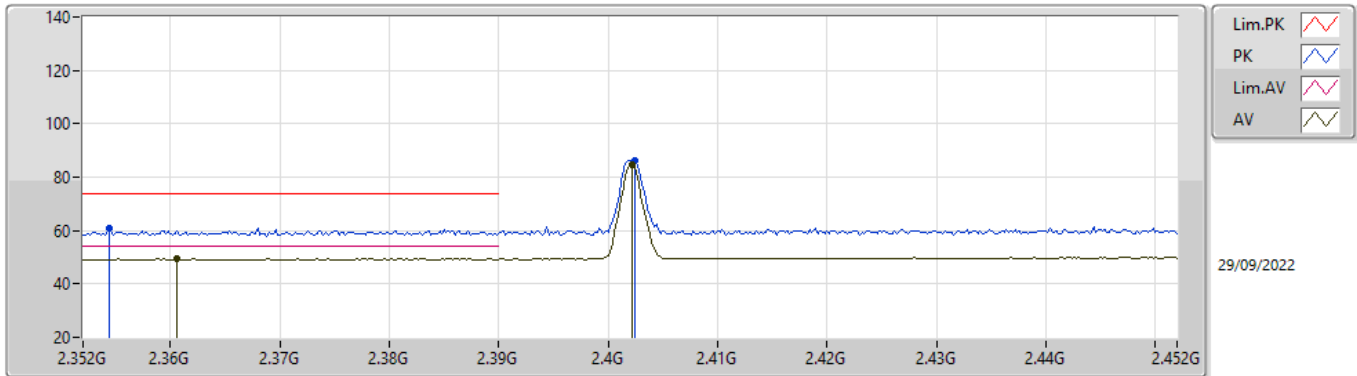


Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3606G	49.55	54.00	-4.45	3	Vertical	253	3.00	-
2402MHz	Pass	AV	2.4022G	84.73	Inf	-Inf	3	Vertical	253	3.00	-
2402MHz	Pass	PK	2.3544G	60.66	74.00	-13.34	3	Vertical	253	3.00	-
2402MHz	Pass	PK	2.4024G	86.32	Inf	-Inf	3	Vertical	253	3.00	-
2402MHz	Pass	AV	2.3768G	49.52	54.00	-4.48	3	Horizontal	15	2.86	-
2402MHz	Pass	AV	2.4022G	92.68	Inf	-Inf	3	Horizontal	15	2.86	-
2402MHz	Pass	PK	2.3748G	60.30	74.00	-13.70	3	Horizontal	15	2.86	-
2402MHz	Pass	PK	2.4018G	94.16	Inf	-Inf	3	Horizontal	15	2.86	-
2402MHz	Pass	AV	4.80414G	40.20	54.00	-13.80	3	Vertical	216	2.58	-
2402MHz	Pass	PK	4.80476G	49.37	74.00	-24.63	3	Vertical	216	2.58	-
2402MHz	Pass	AV	4.80417G	49.15	54.00	-4.85	3	Horizontal	281	1.00	-
2402MHz	Pass	PK	4.80409G	56.48	74.00	-17.52	3	Horizontal	281	1.00	-
2440MHz	Pass	AV	2.3484G	47.84	54.00	-6.16	3	Vertical	186	2.06	-
2440MHz	Pass	AV	2.44G	88.28	Inf	-Inf	3	Vertical	186	2.06	-
2440MHz	Pass	AV	2.4835G	48.32	54.00	-5.68	3	Vertical	186	2.06	-
2440MHz	Pass	PK	2.3832G	59.11	74.00	-14.89	3	Vertical	186	2.06	-
2440MHz	Pass	PK	2.4404G	89.27	Inf	-Inf	3	Vertical	186	2.06	-
2440MHz	Pass	PK	2.4972G	59.44	74.00	-14.56	3	Vertical	186	2.06	-
2440MHz	Pass	AV	2.344G	47.86	54.00	-6.14	3	Horizontal	342	1.07	-
2440MHz	Pass	AV	2.44G	95.83	Inf	-Inf	3	Horizontal	342	1.07	-
2440MHz	Pass	AV	2.4835G	48.55	54.00	-5.45	3	Horizontal	342	1.07	-
2440MHz	Pass	PK	2.3652G	58.57	74.00	-15.43	3	Horizontal	342	1.07	-
2440MHz	Pass	PK	2.4404G	96.80	Inf	-Inf	3	Horizontal	342	1.07	-
2440MHz	Pass	PK	2.4972G	59.51	74.00	-14.49	3	Horizontal	342	1.07	-
2440MHz	Pass	AV	4.87998G	45.19	54.00	-8.81	3	Vertical	350	1.22	-
2440MHz	Pass	AV	7.3201G	39.79	54.00	-14.21	3	Vertical	180	1.18	-
2440MHz	Pass	PK	4.88013G	51.73	74.00	-22.27	3	Vertical	350	1.22	-
2440MHz	Pass	PK	7.31618G	51.59	74.00	-22.41	3	Vertical	180	1.18	-
2440MHz	Pass	AV	4.87984G	51.05	54.00	-2.95	3	Horizontal	41	1.03	-
2440MHz	Pass	AV	7.31876G	39.56	54.00	-14.44	3	Horizontal	289	1.54	-
2440MHz	Pass	PK	4.88066G	56.17	74.00	-17.83	3	Horizontal	41	1.03	-
2440MHz	Pass	PK	7.31886G	50.02	74.00	-23.98	3	Horizontal	289	1.54	-
2480MHz	Pass	AV	2.48G	89.49	Inf	-Inf	3	Vertical	208	2.31	-
2480MHz	Pass	AV	2.4892G	48.55	54.00	-5.45	3	Vertical	208	2.31	-
2480MHz	Pass	PK	2.4802G	90.52	Inf	-Inf	3	Vertical	208	2.31	-
2480MHz	Pass	PK	2.4992G	59.64	74.00	-14.36	3	Vertical	208	2.31	-
2480MHz	Pass	AV	2.48G	95.98	Inf	-Inf	3	Horizontal	342	2.02	-
2480MHz	Pass	AV	2.4848G	48.55	54.00	-5.45	3	Horizontal	342	2.02	-
2480MHz	Pass	PK	2.4802G	96.91	Inf	-Inf	3	Horizontal	342	2.02	-
2480MHz	Pass	PK	2.4835G	60.03	74.00	-13.97	3	Horizontal	342	2.02	-
2480MHz	Pass	AV	4.95998G	44.26	54.00	-9.74	3	Vertical	333	1.00	-
2480MHz	Pass	AV	7.4393G	39.12	54.00	-14.88	3	Vertical	179	1.91	-
2480MHz	Pass	PK	4.96058G	51.09	74.00	-22.91	3	Vertical	333	1.00	-
2480MHz	Pass	PK	7.43945G	49.62	74.00	-24.38	3	Vertical	179	1.91	-
2480MHz	Pass	AV	4.95997G	50.81	54.00	-3.19	3	Horizontal	69	1.10	-
2480MHz	Pass	AV	7.43942G	40.43	54.00	-13.57	3	Horizontal	68	1.17	-
2480MHz	Pass	PK	4.95959G	56.17	74.00	-17.83	3	Horizontal	69	1.10	-
2480MHz	Pass	PK	7.44111G	51.42	74.00	-22.58	3	Horizontal	68	1.17	-

BT-LE(1Mbps)

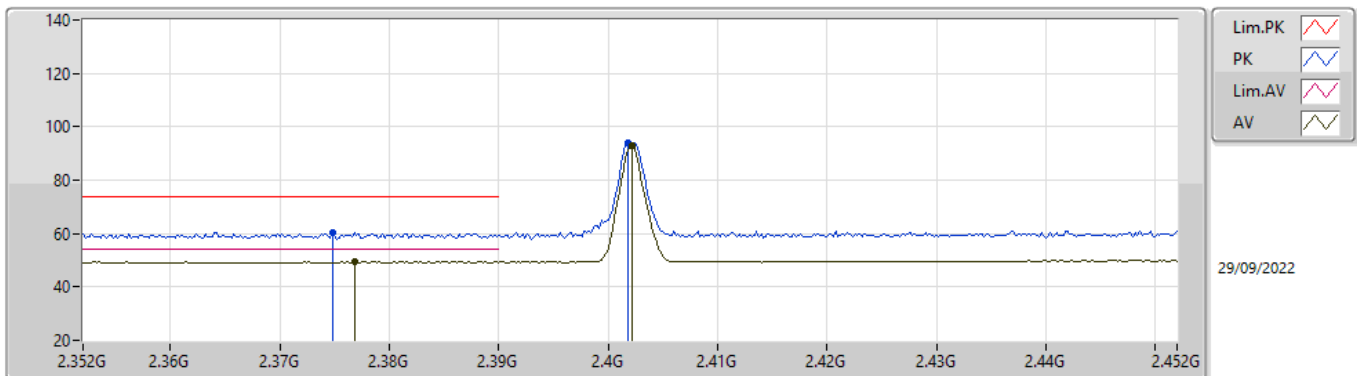
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3606G	49.55	54.00	-4.45	35.52	3	Vertical	253	3.00	-	14.03	27.26	8.26	-
AV	2.4022G	84.73	Inf	-Inf	35.80	3	Vertical	253	3.00	-	48.93	27.51	8.29	-
PK	2.3544G	60.66	74.00	-13.34	35.49	3	Vertical	253	3.00	-	25.17	27.23	8.26	-
PK	2.4024G	86.32	Inf	-Inf	35.80	3	Vertical	253	3.00	-	50.52	27.51	8.29	-

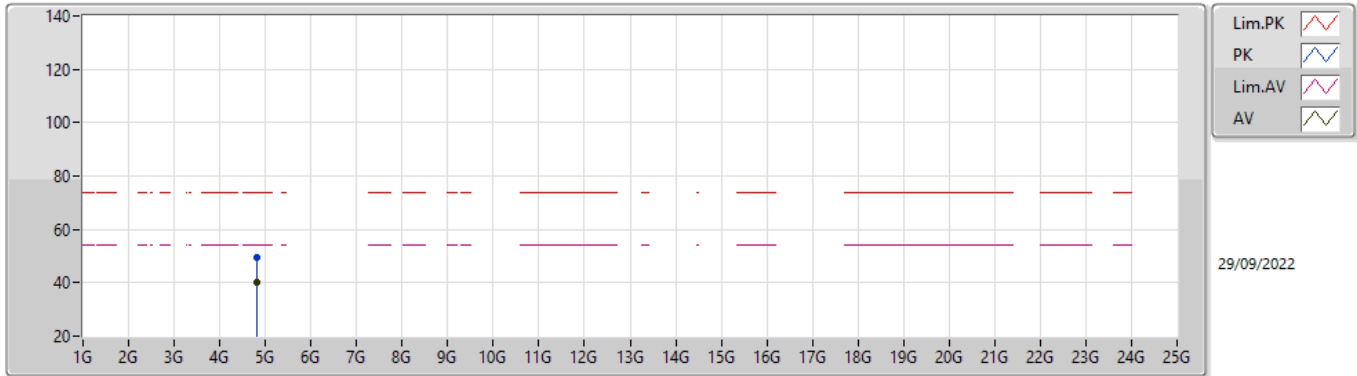
BT-LE(1Mbps)

2402MHz_TX



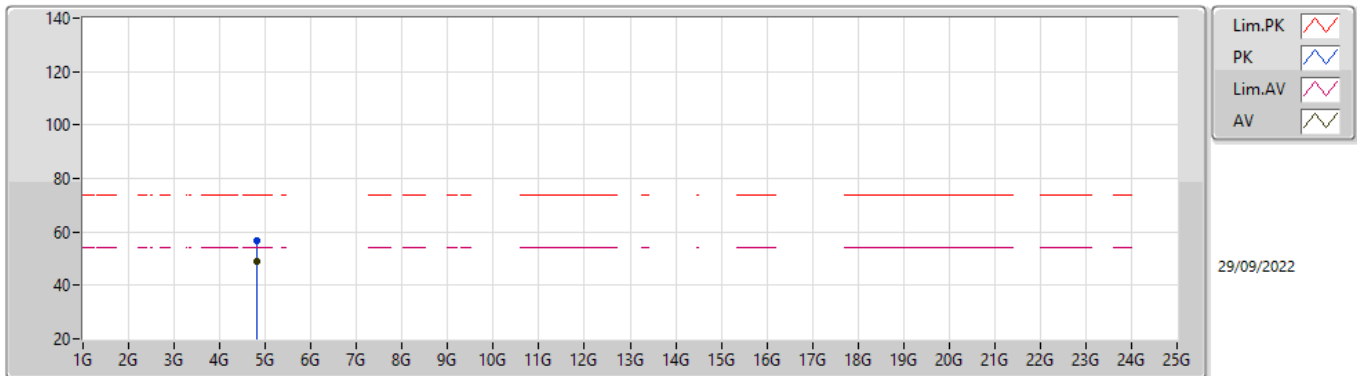
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3768G	49.52	54.00	-4.48	35.63	3	Horizontal	15	2.86	-	13.89	27.36	8.27	-
AV	2.4022G	92.68	Inf	-Inf	35.80	3	Horizontal	15	2.86	-	56.88	27.51	8.29	-
PK	2.3748G	60.30	74.00	-13.70	35.62	3	Horizontal	15	2.86	-	24.68	27.35	8.27	-
PK	2.4018G	94.16	Inf	-Inf	35.80	3	Horizontal	15	2.86	-	58.36	27.51	8.29	-

BT-LE(1Mbps)
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80414G	40.20	54.00	-13.80	7.90	3	Vertical	216	2.58	-	32.30	32.42	9.67	34.19
PK	4.80476G	49.37	74.00	-24.63	7.91	3	Vertical	216	2.58	-	41.46	32.43	9.67	34.19

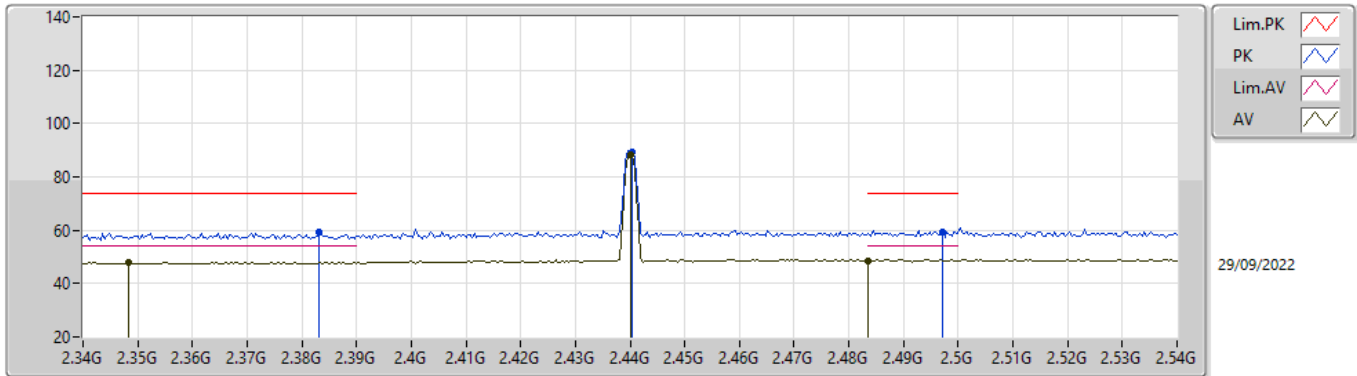
BT-LE(1Mbps)
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80417G	49.15	54.00	-4.85	7.91	3	Horizontal	281	1.00	-	41.24	32.43	9.67	34.19
PK	4.80409G	56.48	74.00	-17.52	7.90	3	Horizontal	281	1.00	-	48.58	32.42	9.67	34.19

BT-LE(1Mbps)

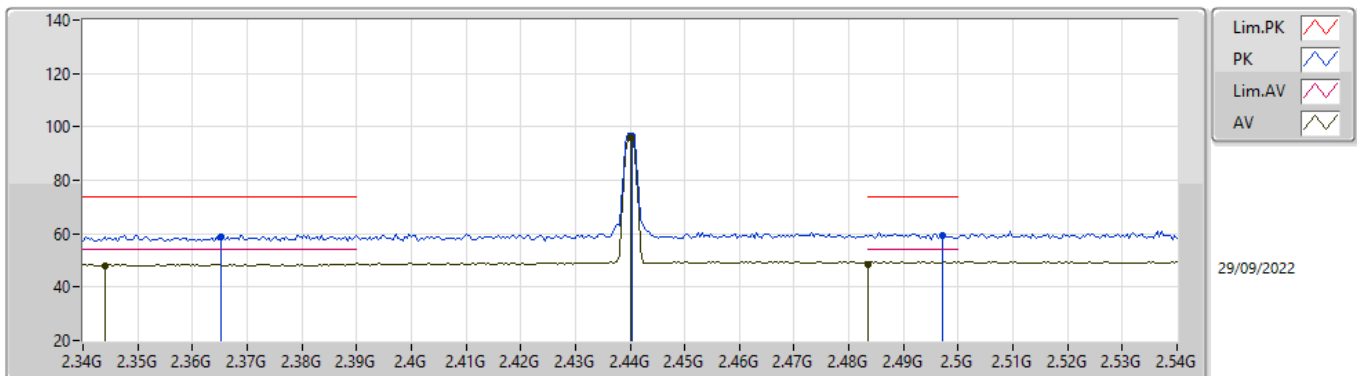
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3484G	47.84	54.00	-6.16	35.45	3	Vertical	186	2.06	-	12.39	27.20	8.25	-
AV	2.44G	88.28	Inf	-Inf	36.06	3	Vertical	186	2.06	-	52.22	27.74	8.32	-
AV	2.4835G	48.32	54.00	-5.68	36.21	3	Vertical	186	2.06	-	12.11	27.87	8.34	-
PK	2.3832G	59.11	74.00	-14.89	35.68	3	Vertical	186	2.06	-	23.43	27.40	8.28	-
PK	2.4404G	89.27	Inf	-Inf	36.06	3	Vertical	186	2.06	-	53.21	27.74	8.32	-
PK	2.4972G	59.44	74.00	-14.56	36.24	3	Vertical	186	2.06	-	23.20	27.89	8.35	-

BT-LE(1Mbps)

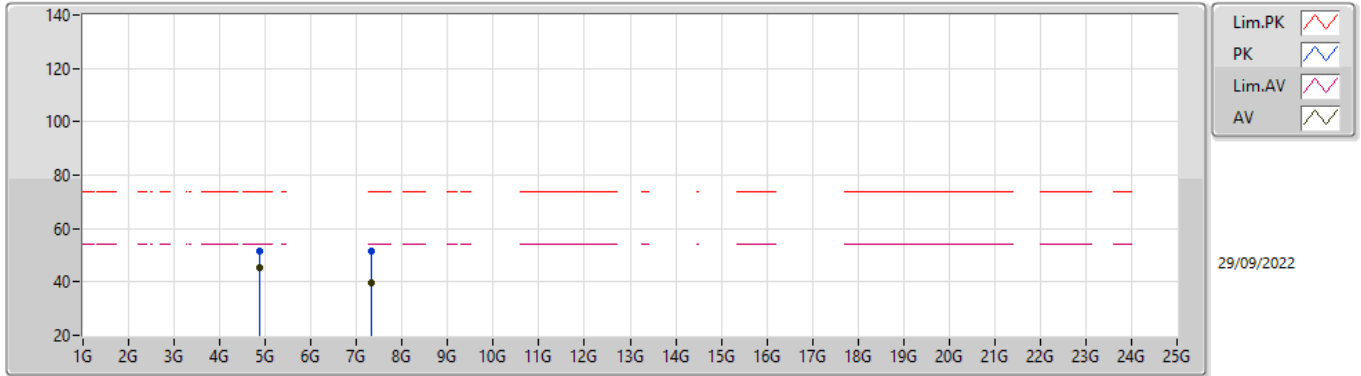
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.344G	47.86	54.00	-6.14	35.44	3	Horizontal	342	1.07	-	12.42	27.19	8.25	-
AV	2.44G	95.83	Inf	-Inf	36.06	3	Horizontal	342	1.07	-	59.77	27.74	8.32	-
AV	2.4835G	48.55	54.00	-5.45	36.21	3	Horizontal	342	1.07	-	12.34	27.87	8.34	-
PK	2.3652G	58.57	74.00	-15.43	35.55	3	Horizontal	342	1.07	-	23.02	27.29	8.26	-
PK	2.4404G	96.80	Inf	-Inf	36.06	3	Horizontal	342	1.07	-	60.74	27.74	8.32	-
PK	2.4972G	59.51	74.00	-14.49	36.24	3	Horizontal	342	1.07	-	23.27	27.89	8.35	-

BT-LE(1Mbps)

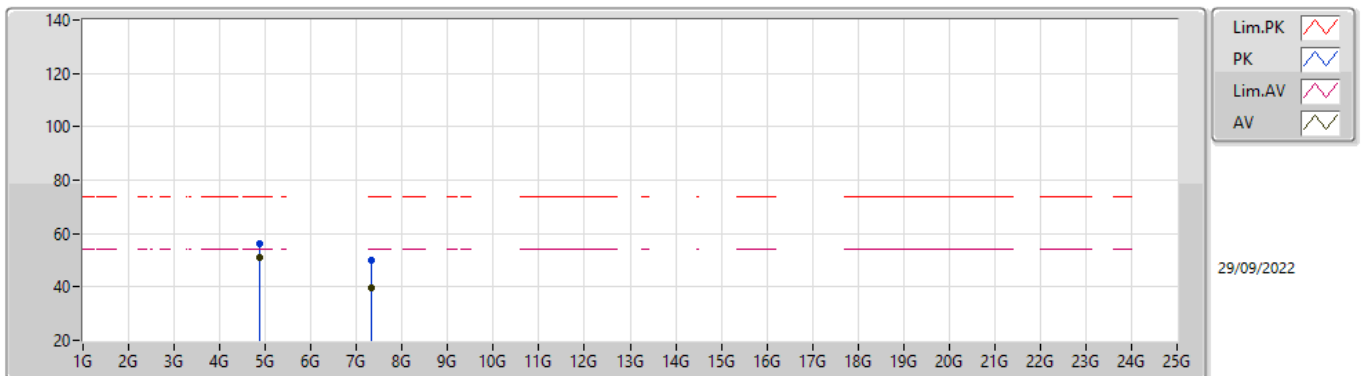
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87998G	45.19	54.00	-8.81	8.36	3	Vertical	350	1.22	-	36.83	32.82	9.70	34.16
AV	7.3201G	39.79	54.00	-14.21	13.94	3	Vertical	180	1.18	-	25.85	37.12	11.32	34.50
PK	4.88013G	51.73	74.00	-22.27	8.36	3	Vertical	350	1.22	-	43.37	32.82	9.70	34.16
PK	7.31618G	51.59	74.00	-22.41	13.96	3	Vertical	180	1.18	-	37.63	37.14	11.32	34.50

BT-LE(1Mbps)

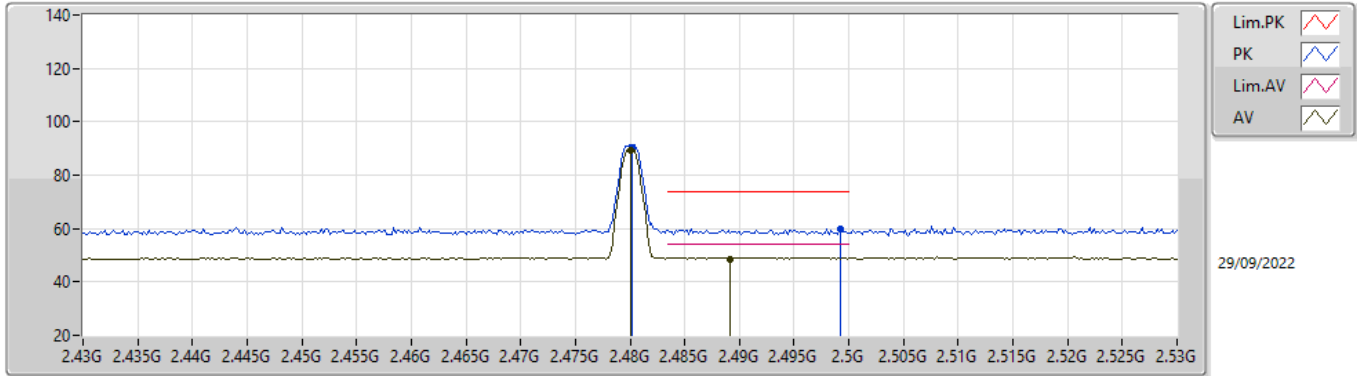
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87984G	51.05	54.00	-2.95	8.36	3	Horizontal	41	1.03	-	42.69	32.82	9.70	34.16
AV	7.31876G	39.56	54.00	-14.44	13.94	3	Horizontal	289	1.54	-	25.62	37.12	11.32	34.50
PK	4.88066G	56.17	74.00	-17.83	8.36	3	Horizontal	41	1.03	-	47.81	32.82	9.70	34.16
PK	7.31886G	50.02	74.00	-23.98	13.94	3	Horizontal	289	1.54	-	36.08	37.12	11.32	34.50

BT-LE(1Mbps)

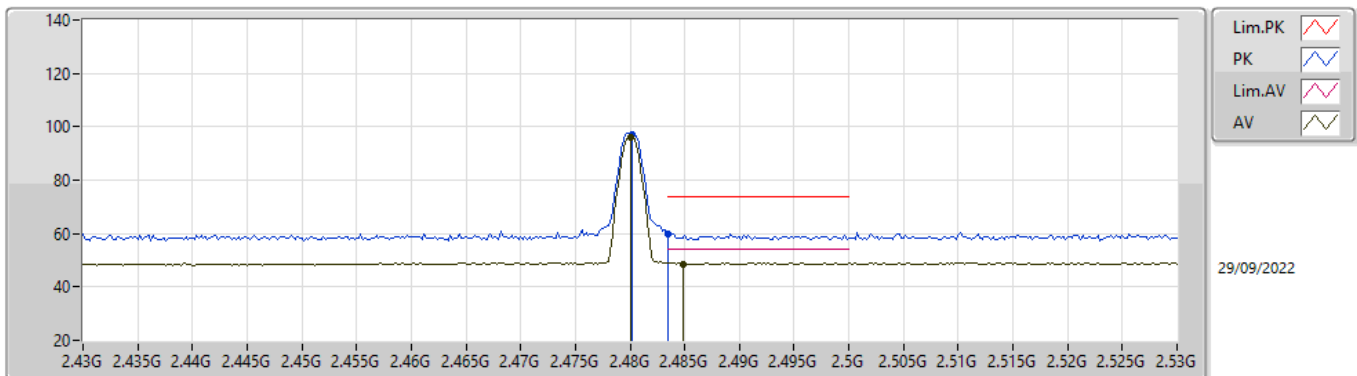
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	89.49	Inf	-Inf	36.20	3	Vertical	208	2.31	-	53.29	27.86	8.34	-
AV	2.4892G	48.55	54.00	-5.45	36.23	3	Vertical	208	2.31	-	12.32	27.88	8.35	-
PK	2.4802G	90.52	Inf	-Inf	36.20	3	Vertical	208	2.31	-	54.32	27.86	8.34	-
PK	2.4992G	59.64	74.00	-14.36	36.25	3	Vertical	208	2.31	-	23.39	27.90	8.35	-

BT-LE(1Mbps)

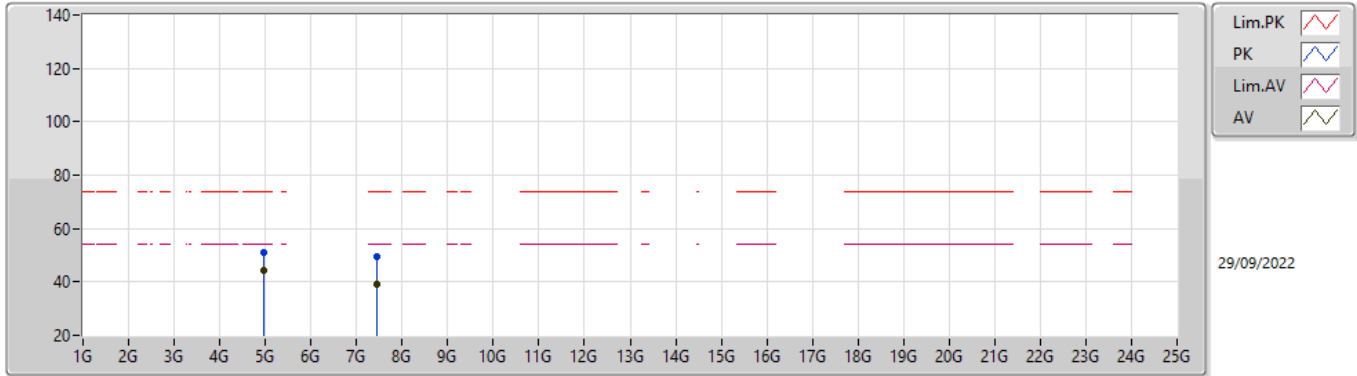
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	95.98	Inf	-Inf	36.20	3	Horizontal	342	2.02	-	59.78	27.86	8.34	-
AV	2.4848G	48.55	54.00	-5.45	36.22	3	Horizontal	342	2.02	-	12.33	27.87	8.35	-
PK	2.4802G	96.91	Inf	-Inf	36.20	3	Horizontal	342	2.02	-	60.71	27.86	8.34	-
PK	2.4835G	60.03	74.00	-13.97	36.21	3	Horizontal	342	2.02	-	23.82	27.87	8.34	-

BT-LE(1Mbps)

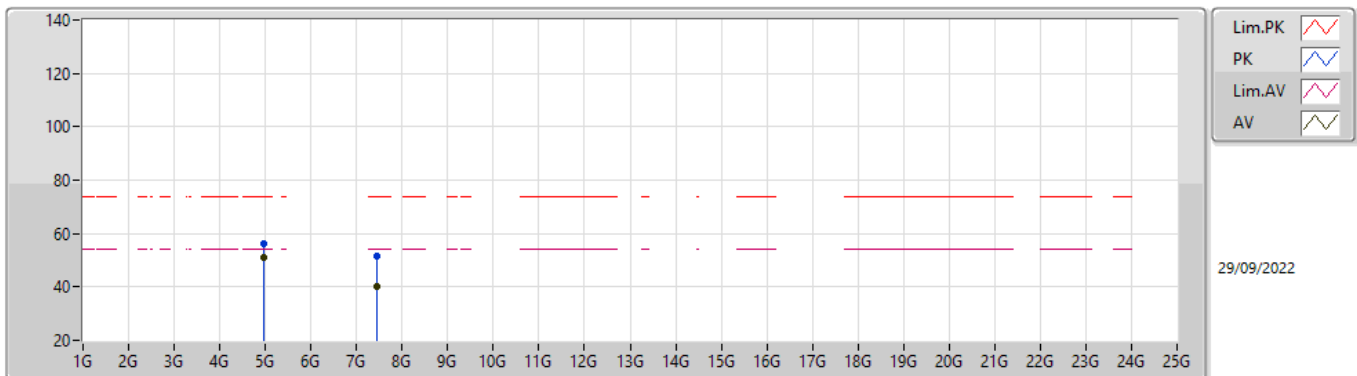
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95998G	44.26	54.00	-9.74	8.69	3	Vertical	333	1.00	-	35.57	33.08	9.73	34.12
AV	7.4393G	39.12	54.00	-14.88	13.45	3	Vertical	179	1.91	-	25.67	36.64	11.30	34.49
PK	4.96058G	51.09	74.00	-22.91	8.69	3	Vertical	333	1.00	-	42.40	33.08	9.73	34.12
PK	7.43945G	49.62	74.00	-24.38	13.45	3	Vertical	179	1.91	-	36.17	36.64	11.30	34.49

BT-LE(1Mbps)

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95997G	50.81	54.00	-3.19	8.69	3	Horizontal	69	1.10	-	42.12	33.08	9.73	34.12
AV	7.43942G	40.43	54.00	-13.57	13.45	3	Horizontal	68	1.17	-	26.98	36.64	11.30	34.49
PK	4.95959G	56.17	74.00	-17.83	8.69	3	Horizontal	69	1.10	-	47.48	33.08	9.73	34.12
PK	7.44111G	51.42	74.00	-22.58	13.45	3	Horizontal	68	1.17	-	37.97	36.64	11.30	34.49