

FCC Radio Test Report

FCC ID : S7Q-C03
Equipment : Bluetooth 5.3 module
Brand Name : TECHMAN
Model Name : BT5XLCANI01
Applicant : Quanta Storage Inc.
6F., No. 58-2, Huaya 2nd Rd., Guishan Dist., Taoyuan
City 333411, Taiwan
Manufacturer : TECHMAN ELECTRONICS(THAILAND) CO.,LTD.
236 MOO.2, TAMBOL NONGCHARK, AMPHUR
BANBUNG, CHONBURI 20170 THAILAND
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 14, 2023, and testing was started from Aug. 19, 2023 and completed on Aug. 22, 2023. 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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History of this test report

TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-C10 Ver4.3
FCC ID: S7Q-C03

Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
-	15.207	AC Power-line Conducted Emissions	Not Required	Only employ DC 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
2.4-2.4835GHz	BT-LE(2Mbps)	2.0	1TX

Note:

- ♦ Bluetooth LE uses a GFSK (1Mbps/2Mbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Pulse	ANT5010LL04R2400A	Chip Antenna	N/A	2.5

Note 1: The EUT has one antenna.

For BT function:

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

Ant. 1 could transmit/receive.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From DC Power supply		
EUT Function	☒ Point-to-multipoint	☐ Point-to-point	
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.:		...
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.:		...
☐	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-LE(1Mbps)	0.856	0.68	2.139m	1k
BT-LE(2Mbps)	0.567	2.46	1.081m	1k

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				
☒ 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	TH01-HY	Peng Huang	23.4~23.9°C / 52~59%	19/Aug/2023
Radiated	03CH02-HY	Daniel Lin	21.7~24.6°C / 54~61%	21/Aug/2023~22/Aug/2023
☐ 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
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
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%
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	nRF_DTM_x86
------------------------------	-------------

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-LE(2Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4

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

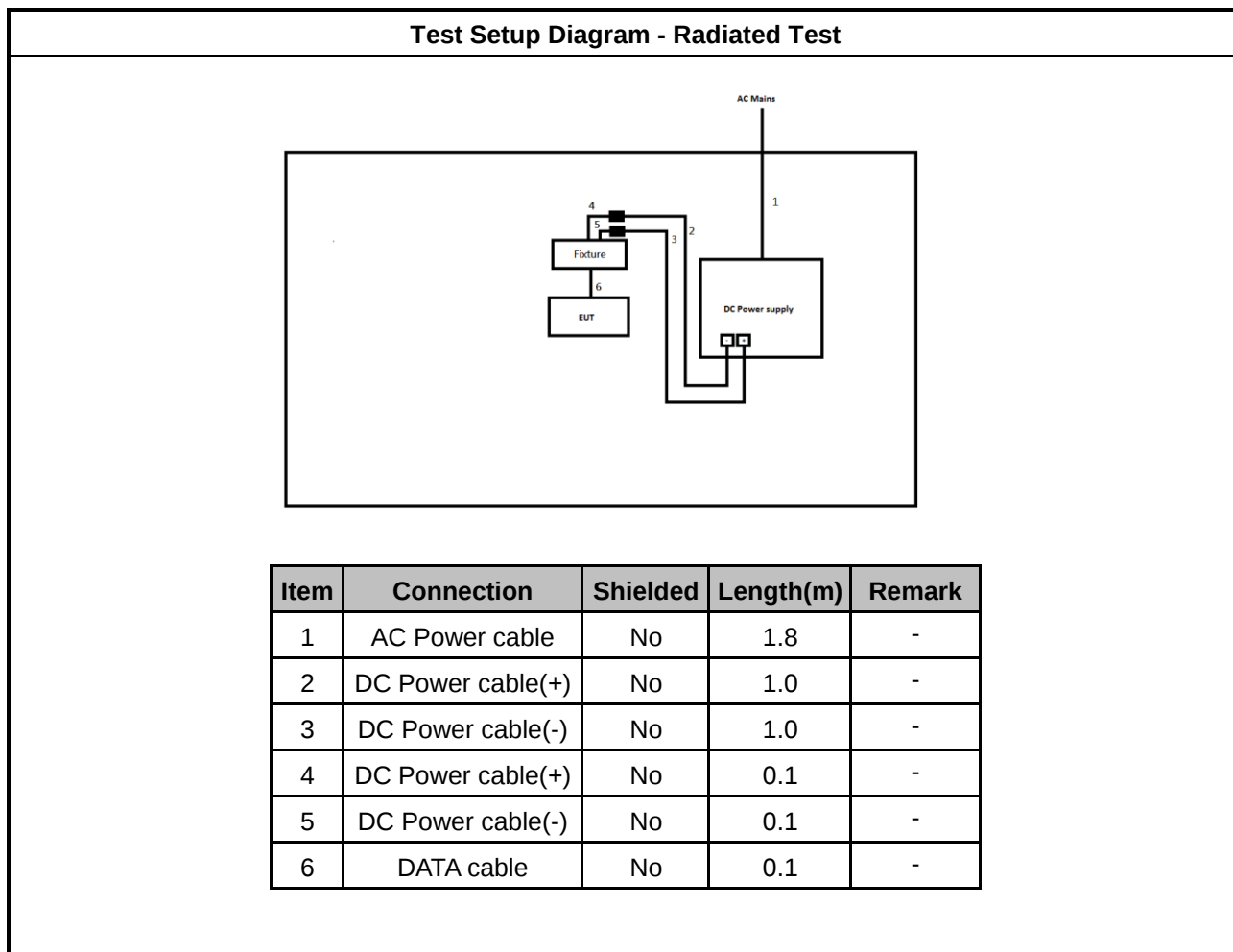
The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should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

2.3 Support Equipment

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	USB to Pin Cable	NA	NA	-	Customer provided
4	DC Power Supply	GW	GPS-3030DD	-	-
5	Fixture	NA	NA	-	Customer provided

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	DC Power Supply	GW	GPS-3030DD	-	-
2	Fixture	N/A	N/A	-	-
3	DC Power cable(+)	MiSUMi	WTN1229-RED	-	-
4	DC Power cable(-)	MiSUMi	WTN1229-BLACK	-	-
5	DC Power cable(+)	N/A	N/A	-	-
6	DC Power cable(-)	N/A	N/A	-	-

2.4 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:	
▪	6 dB bandwidth $\geq$ 500 kHz.

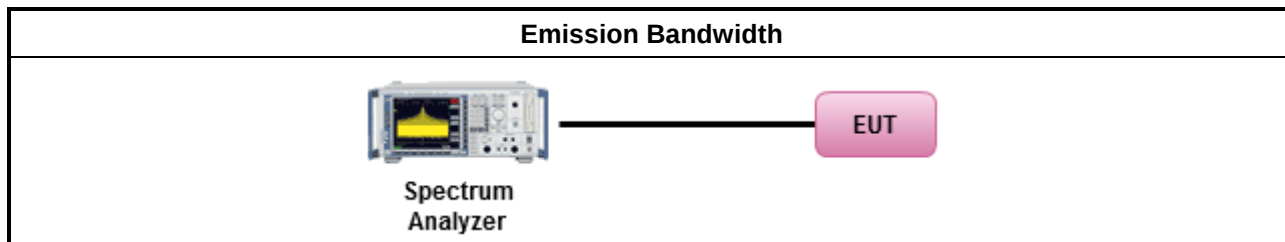
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	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	
	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

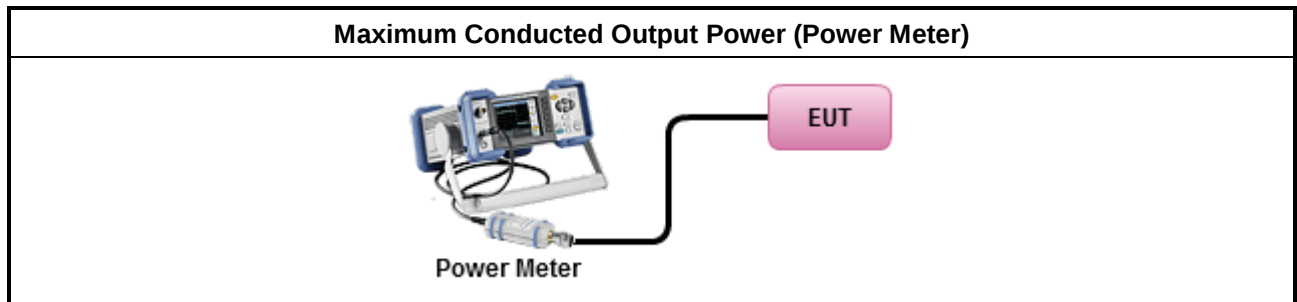
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
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.	
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
Power Spectral Density (PSD) ≤ 8 dBm/3kHz

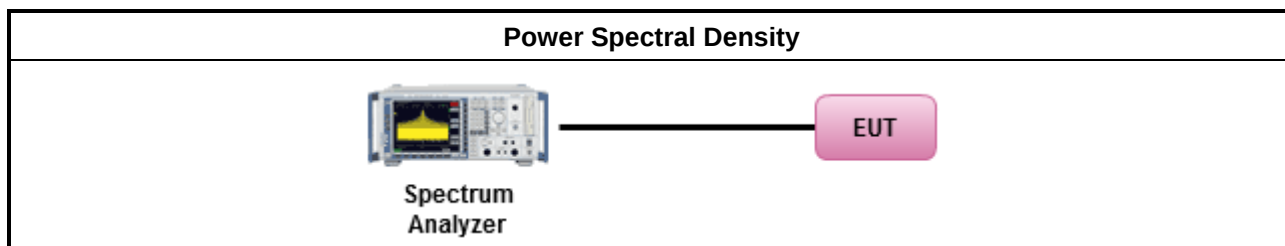
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
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).
☒ Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
- For conducted measurement. - If The EUT supports multiple transmit chains using options given below: - 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.	

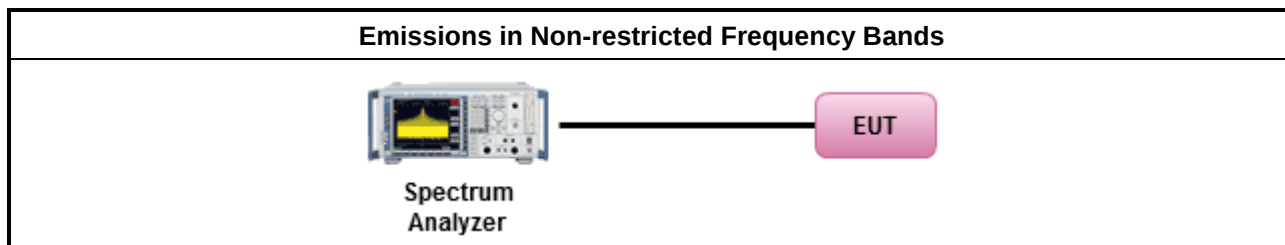
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
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

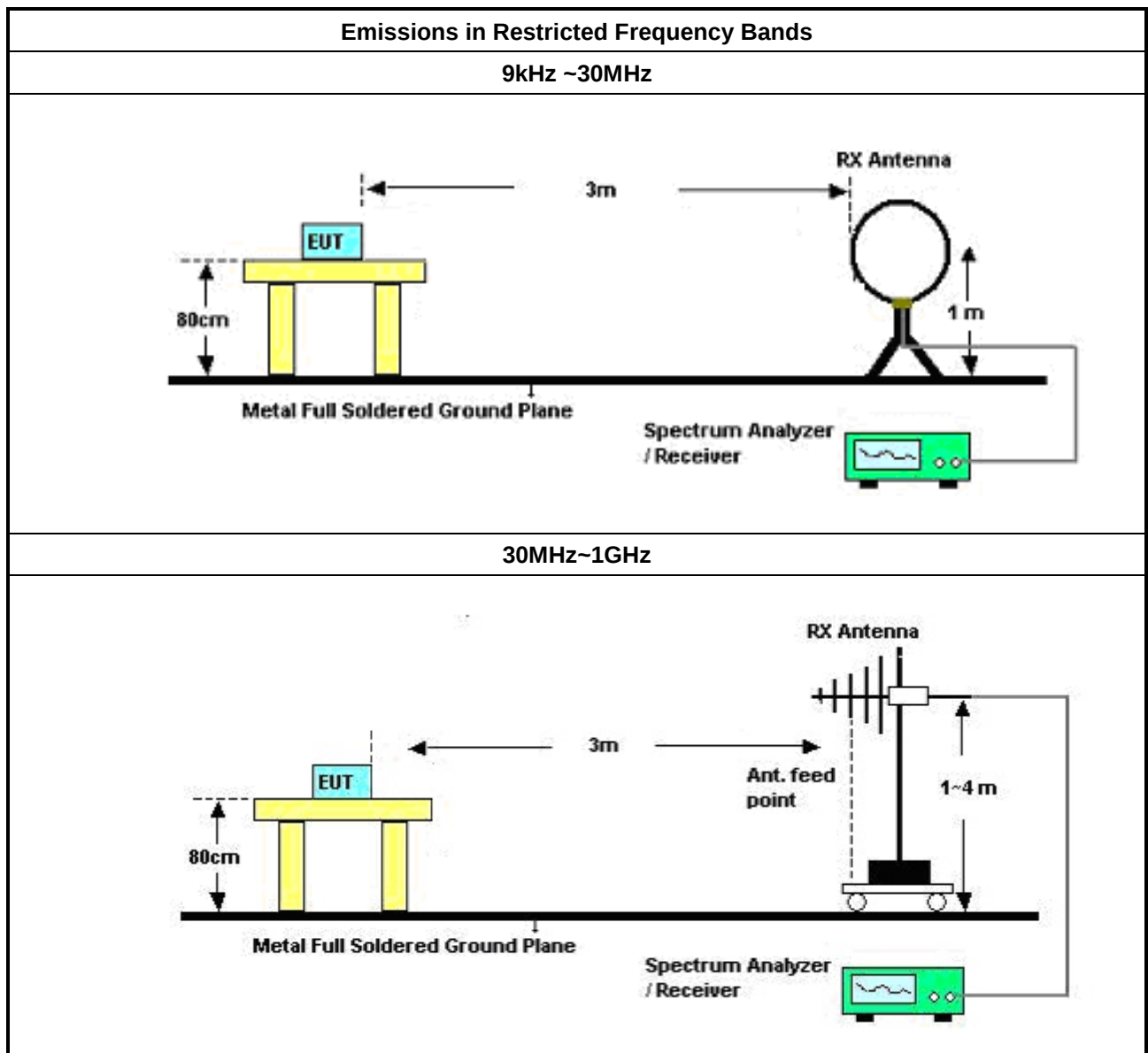
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	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.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	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.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

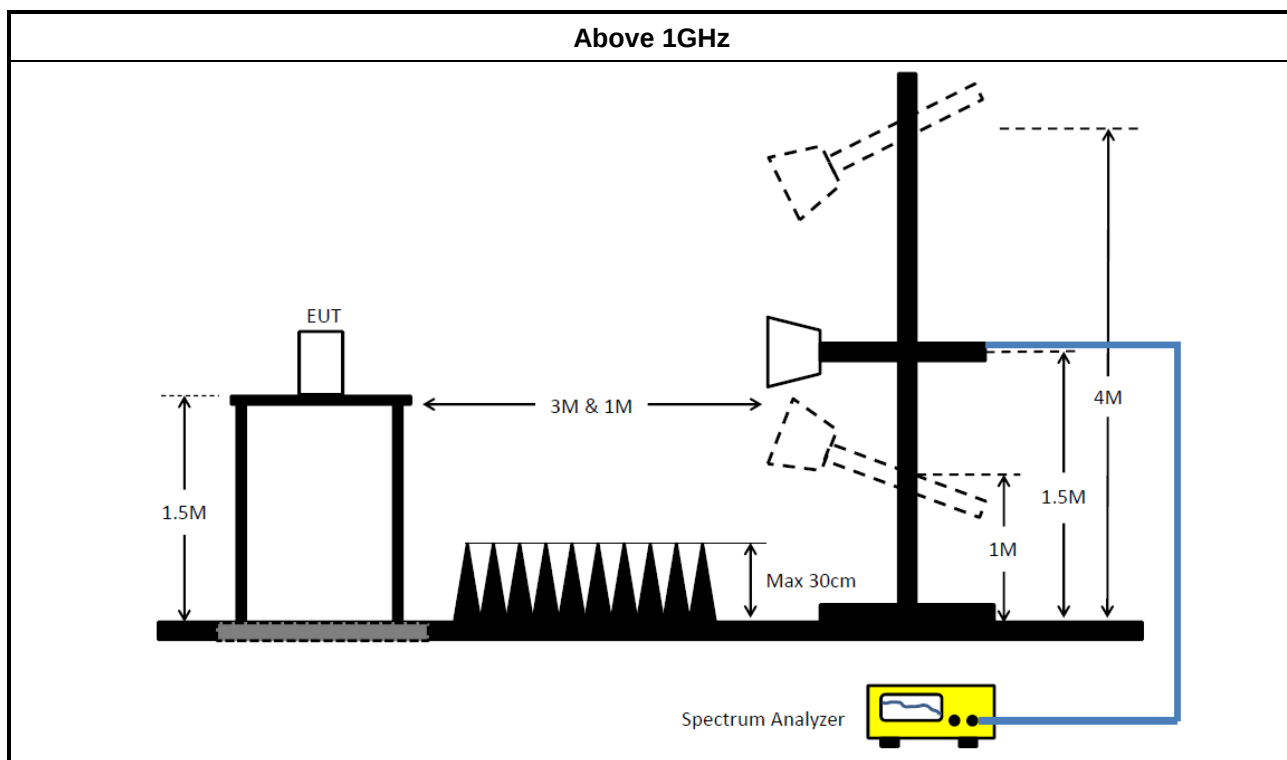
3.5.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier 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	101013	10Hz~40GHz	10/Apr/2023	09/Apr/2024
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2022	20/Oct/2023
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	15/Feb/2023	14/Feb/2024
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	15/Feb/2023	14/Feb/2024
SENSE-15247_FS	Sporton	V5.11.2	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	29/Jul/2023	28/Jul/2024
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
Signal Analyzer	R&S	FSP 40	100305	9kHz~40GHz	25/Mar/2023	24/Oct/2024
Amplifier	Aglient	8447D	2944A11149	100kHz~1.3GHz	27/Jun/2023	26/Jun/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	27/Sep/2022	26/Sep/2023
Bilog Antenna & 6dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	28/Aug/2022	27/Aug/2023
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	9kHz~30MHz	20/Dec/2022	19/Dec/2023
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	30MHz~1GHz	20/Dec/2022	19/Dec/2023
RF Cable-R03m	HUBER+SUHNE R	SUCOFLEX104	03CH02-cable-01	1GHz~40GHz	10/Feb/2023	09/Feb/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	25/Mar/2023	24/Mar/2024
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	02/Nov/2022	01/Nov/2023
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	16/Mar/2023	15/Mar/2024
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	23/Mar/2023	22/Mar/2024
EMI Test Receiver	R&S	ESR	102052	9kHz~3.6GHz	26/May/2023	25/May/2024
SENSE_15247_FS	Sporton	V5.11.7	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)	708.75k	1.058M	1M06F1D	696.25k	1.056M
BT-LE(2Mbps)	1.15M	2.086M	2M09F1D	1.138M	2.076M

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

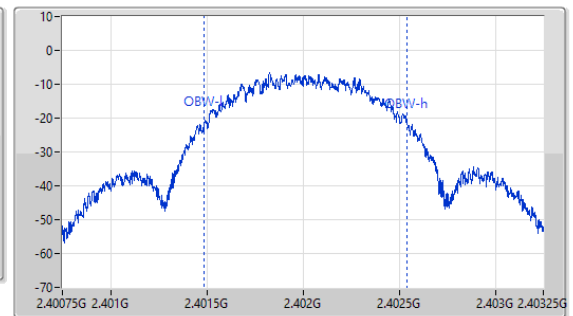
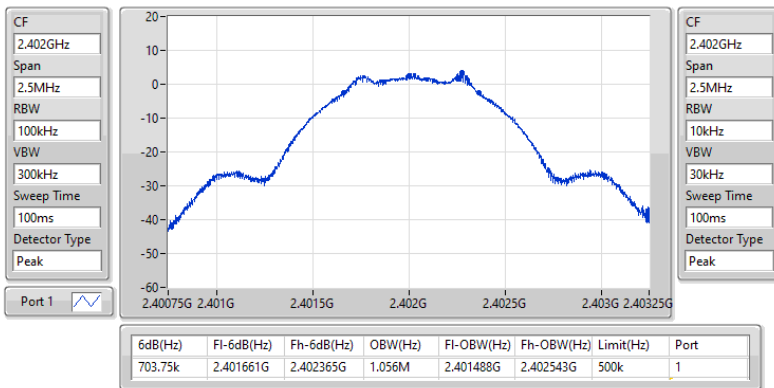
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	703.75k	1.056M
2440MHz	Pass	500k	696.25k	1.058M
2480MHz	Pass	500k	708.75k	1.058M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.15M	2.076M
2440MHz	Pass	500k	1.138M	2.076M
2480MHz	Pass	500k	1.14M	2.086M

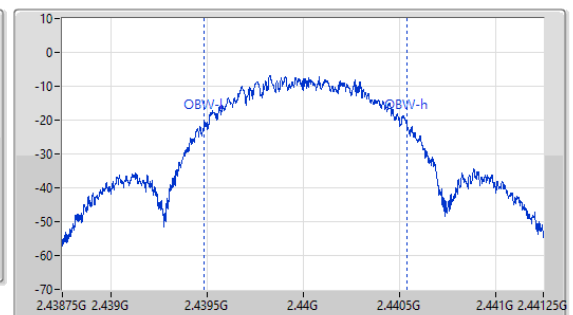
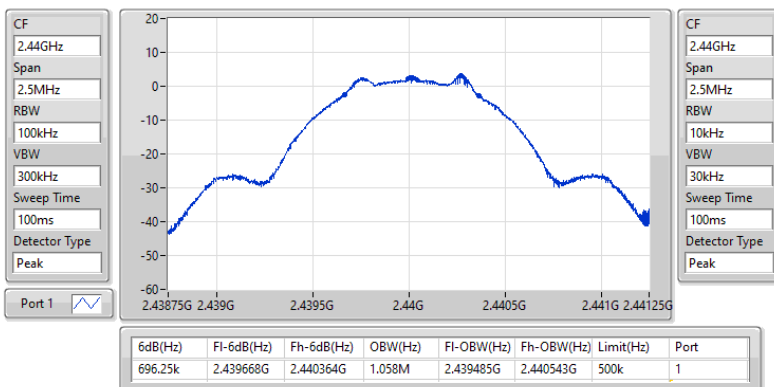
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_BT-LE(1Mbps)
EBW-DTS
2402MHz

19/08/2023


2.4-2.4835GHz_BT-LE(1Mbps)
EBW-DTS
2440MHz

19/08/2023

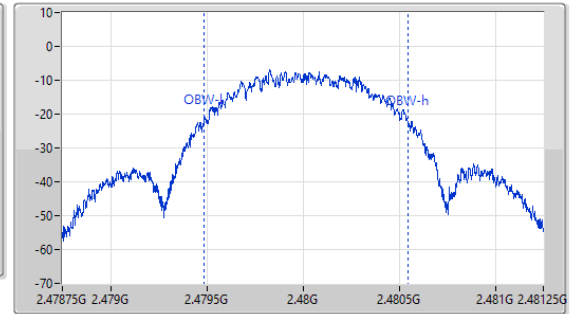
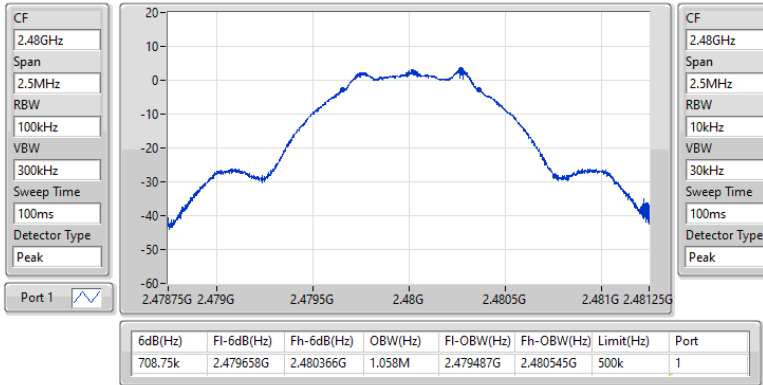


2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

2480MHz

19/08/2023

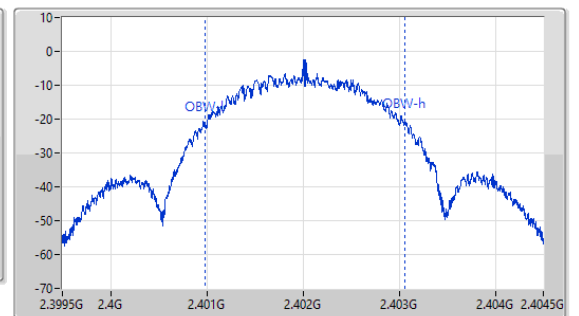
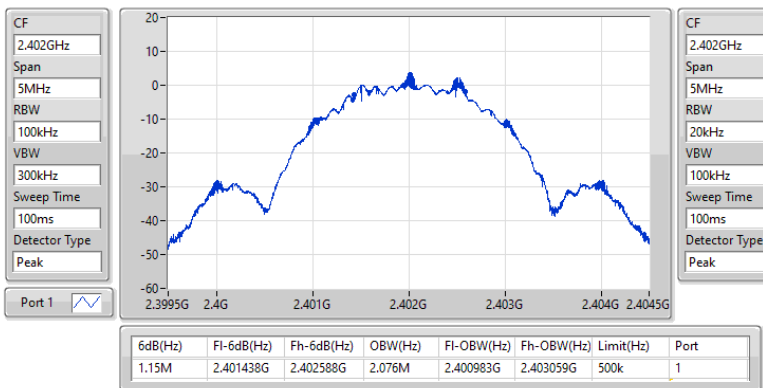


2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2402MHz

19/08/2023

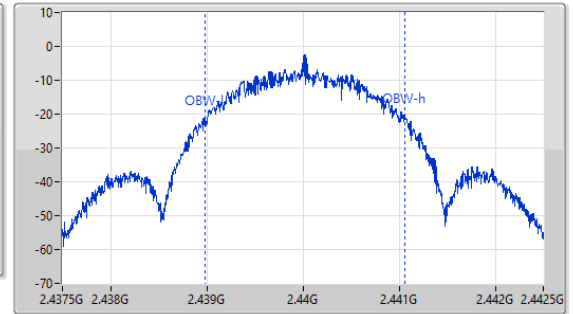
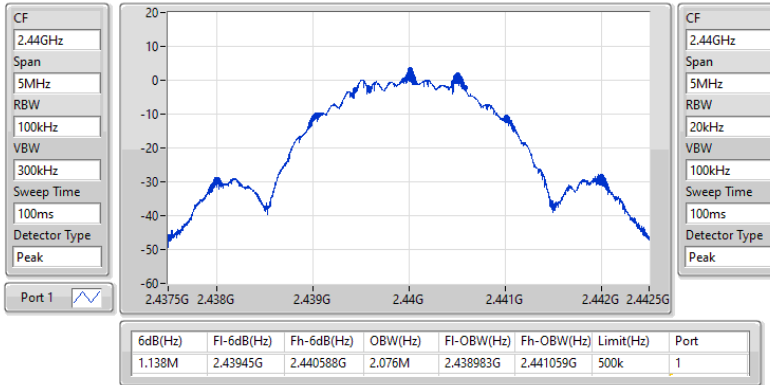


2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2440MHz

19/08/2023

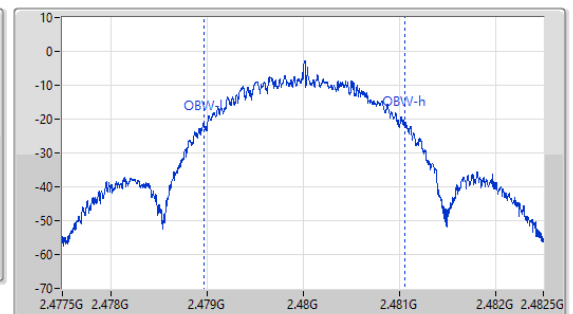
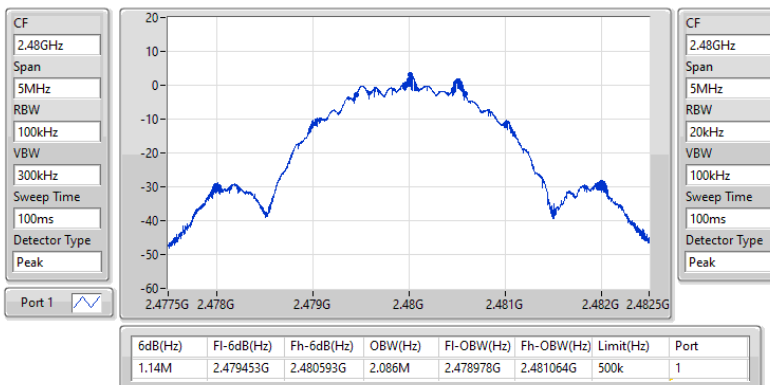


2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2480MHz

19/08/2023





Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.88	0.00244
BT-LE(2Mbps)	3.83	0.00242



Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.50	3.88	30.00
2440MHz	Pass	2.50	3.87	30.00
2480MHz	Pass	2.50	3.67	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.50	3.83	30.00
2440MHz	Pass	2.50	3.82	30.00
2480MHz	Pass	2.50	3.59	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-12.75
BT-LE(2Mbps)	-14.84

RBW = 3kHz;



Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.50	-12.75	8.00
2440MHz	Pass	2.50	-13.04	8.00
2480MHz	Pass	2.50	-13.30	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.50	-14.90	8.00
2440MHz	Pass	2.50	-14.84	8.00
2480MHz	Pass	2.50	-14.88	8.00

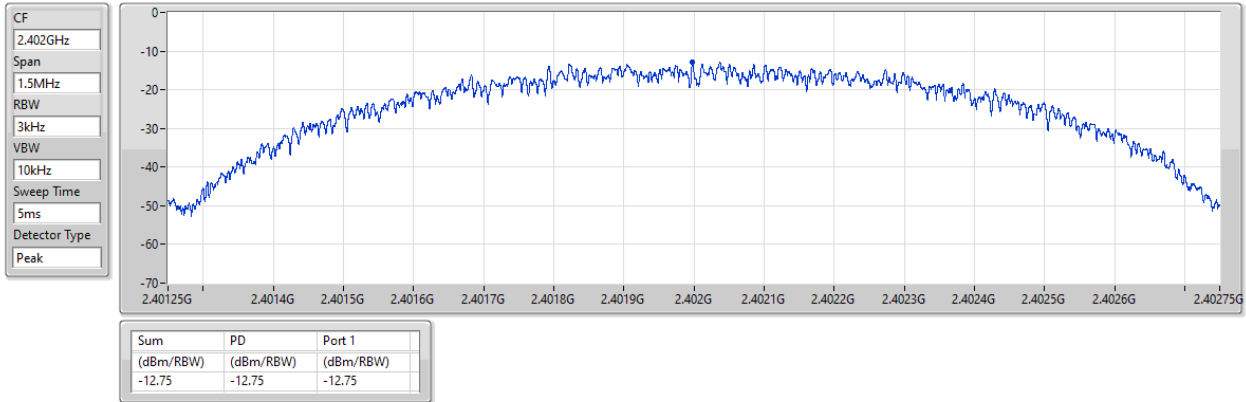
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2402MHz

19/08/2023

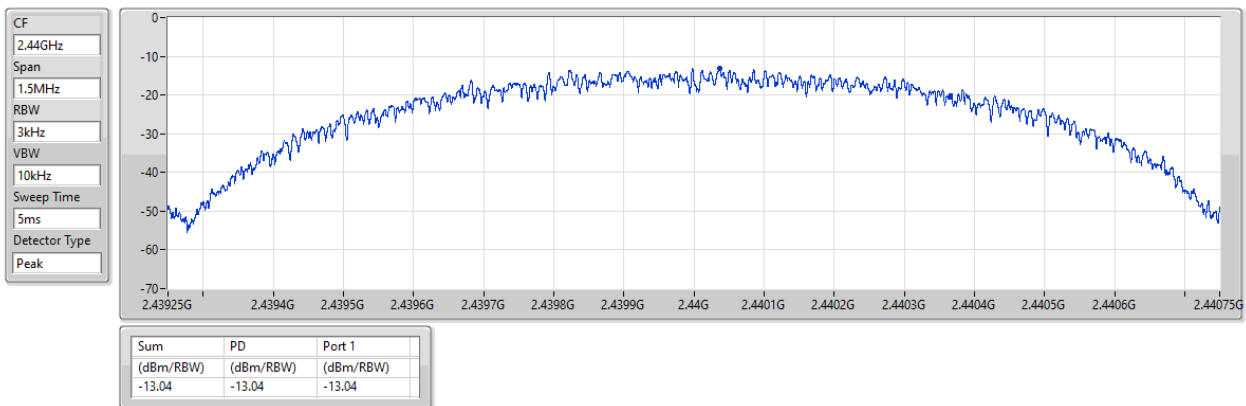


2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2440MHz

19/08/2023

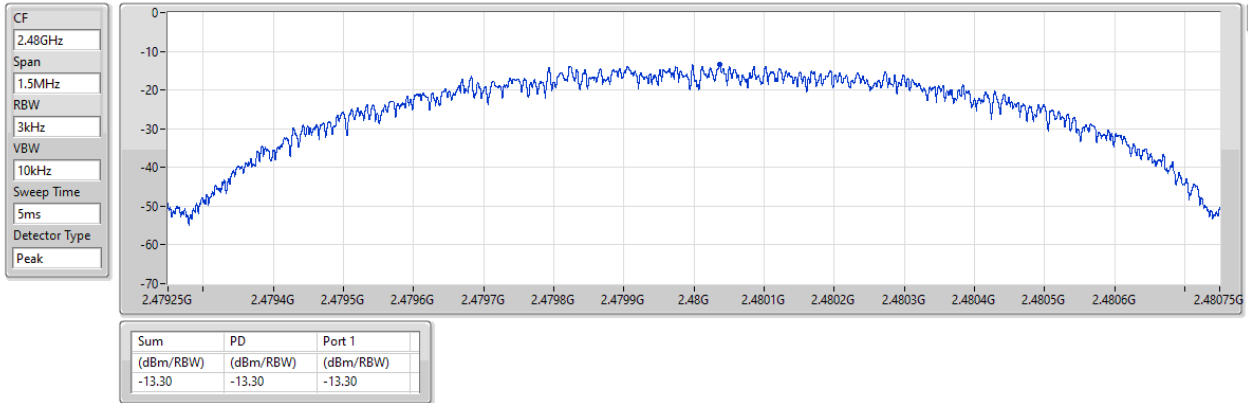


2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2480MHz

19/08/2023

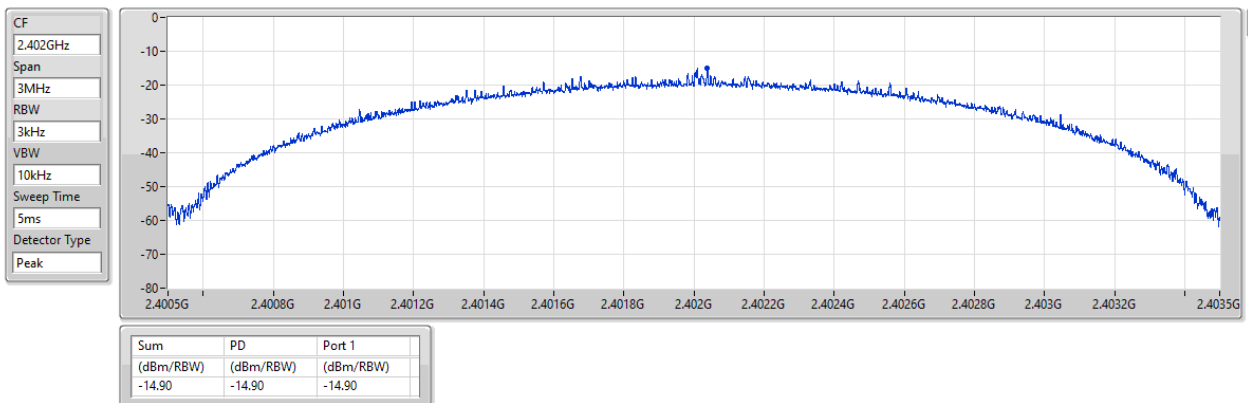


2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2402MHz

19/08/2023



2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2440MHz

19/08/2023

CF
2.44GHz

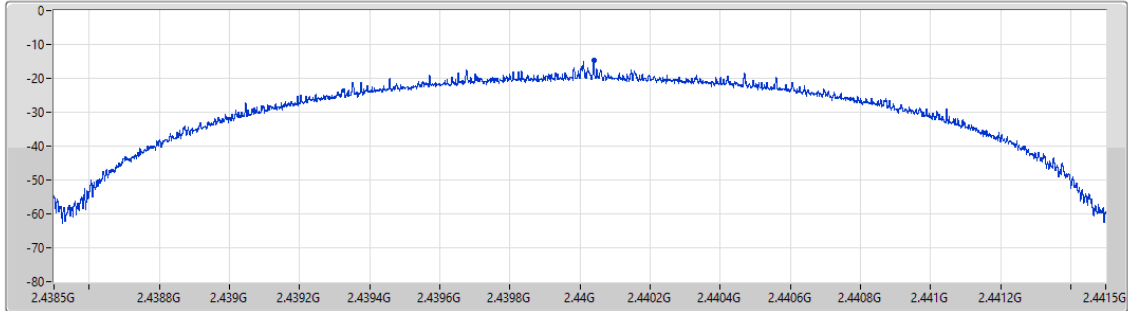
Span
3MHz

RBW
3kHz

VBW
10kHz

Sweep Time
5ms

Detector Type
Peak



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-14.84	-14.84	-14.84

2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2480MHz

19/08/2023

CF
2.48GHz

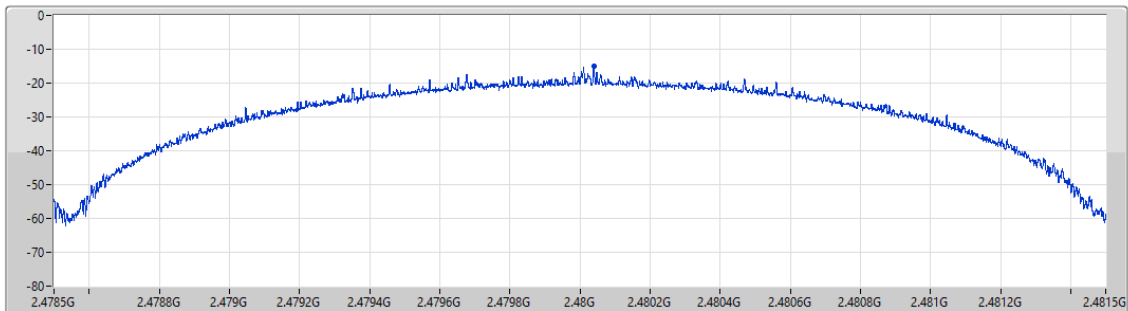
Span
3MHz

RBW
3kHz

VBW
10kHz

Sweep Time
5ms

Detector Type
Peak



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-14.88	-14.88	-14.88

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	2.40217G	2.50	-27.50	2.30245G	-54.76	2.4G	-47.67	2.4G	-47.94	2.5023G	-52.44	16.22355G	-42.22	1
BT-LE(2Mbps)	Pass	2.40251G	2.17	-27.83	2.1262G	-55.07	2.4G	-29.36	2.4G	-28.12	2.5019G	-53.46	24.93813G	-41.74	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	2.40217G	2.50	-27.50	2.30245G	-54.76	2.4G	-47.67	2.4G	-47.94	2.5023G	-52.44	16.22355G	-42.22	1
2440MHz	Pass	2.40217G	2.50	-27.50	2.30833G	-51.78	2.39632G	-52.01	2.4G	-55.44	2.50006G	-53.05	24.55851G	-42.15	1
2480MHz	Pass	2.40217G	2.50	-27.50	2.30833G	-55.56	2.39224G	-51.00	2.4G	-53.68	2.50014G	-53.62	24.24356G	-42.53	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40251G	2.17	-27.83	2.1262G	-55.07	2.4G	-29.36	2.4G	-28.12	2.5019G	-53.46	24.93813G	-41.74	1
2440MHz	Pass	2.40251G	2.17	-27.83	2.30833G	-53.85	2.392G	-53.22	2.4G	-55.15	2.5035G	-51.88	24.4882G	-41.66	1
2480MHz	Pass	2.40251G	2.17	-27.83	2.15793G	-56.32	2.39204G	-50.62	2.4G	-54.49	2.50306G	-54.09	24.17044G	-42.47	1

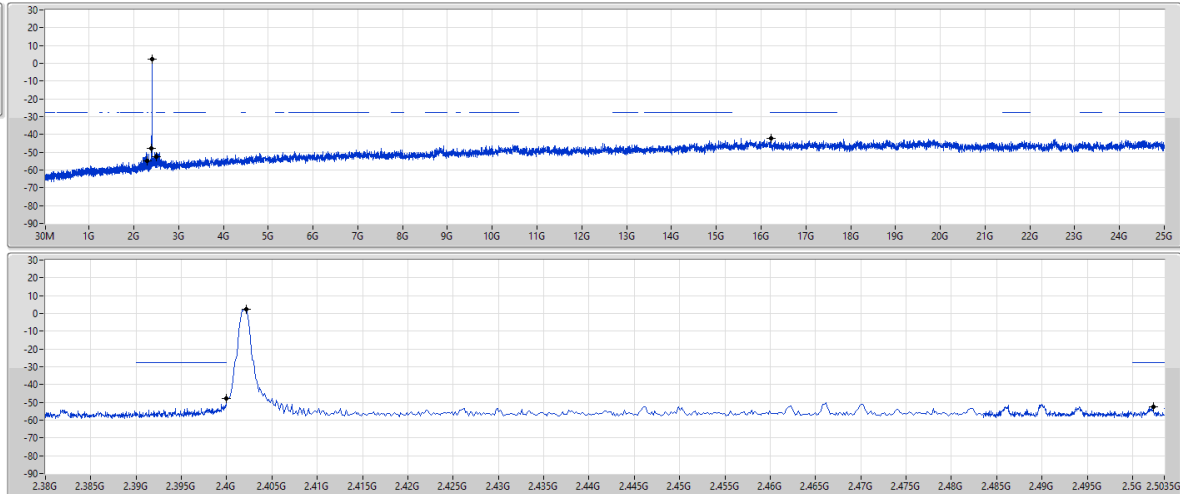
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2402MHz

19/08/2023

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak



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
2.40217G	2.50	-27.50	2.30243G	-54.76	2.4G	-47.67	2.4G	-47.94	2.5023G	-52.44	16.22355G	-42.22	1

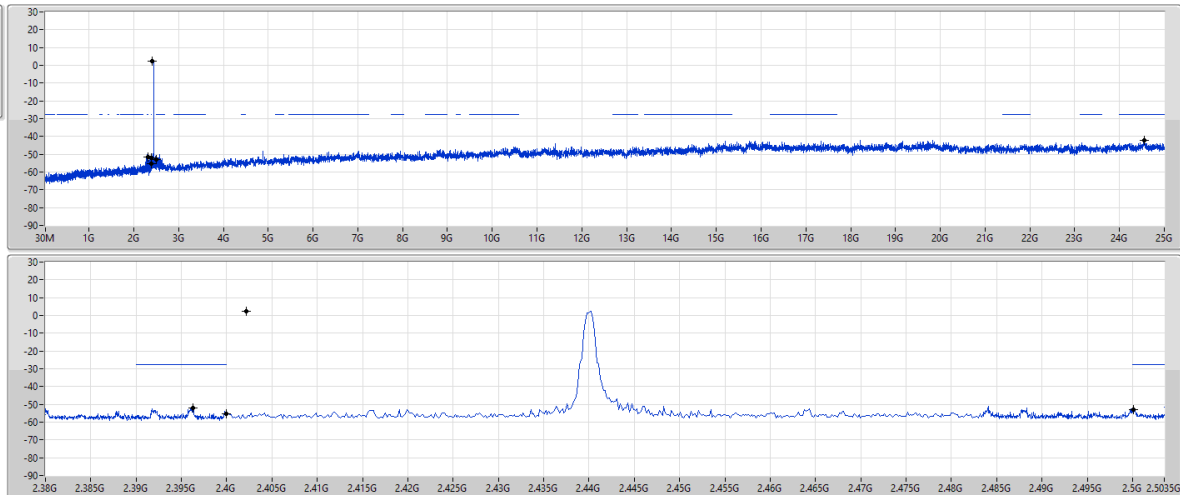
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2440MHz

19/08/2023

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak



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
2.40217G	2.50	-27.50	2.30833G	-51.78	2.39632G	-52.01	2.4G	-55.44	2.50006G	-53.05	24.55851G	-42.15	1

2.4-2.4835GHz_BT-LE(1Mbps)

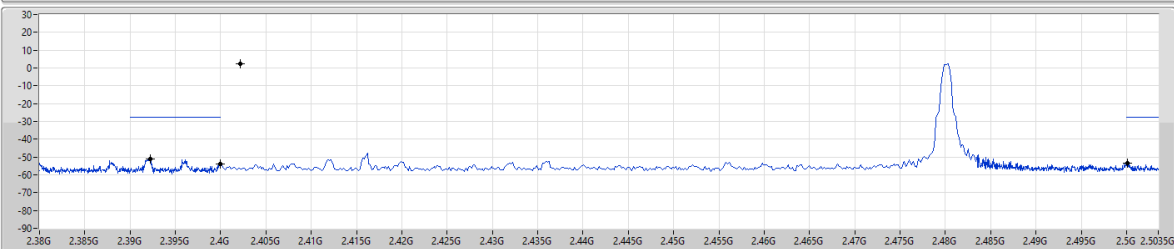
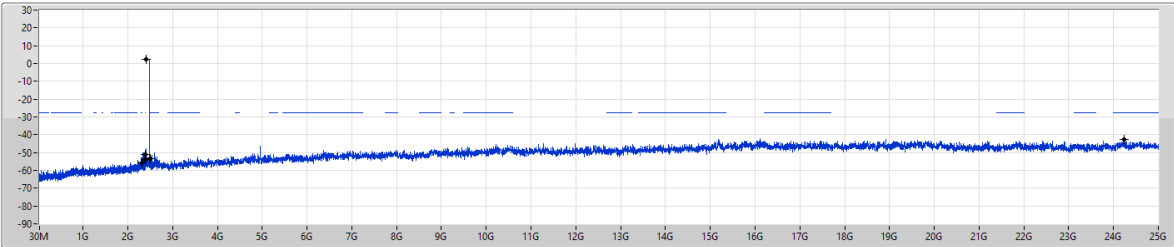
CSEndB-DTS

2480MHz

19/08/2023

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



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
2.40217G	2.50	-27.50	2.30833G	-55.56	2.39224G	-51.00	2.4G	-53.68	2.50014G	-53.62	2.42435G	-42.53	1

2.4-2.4835GHz_BT-LE(2Mbps)

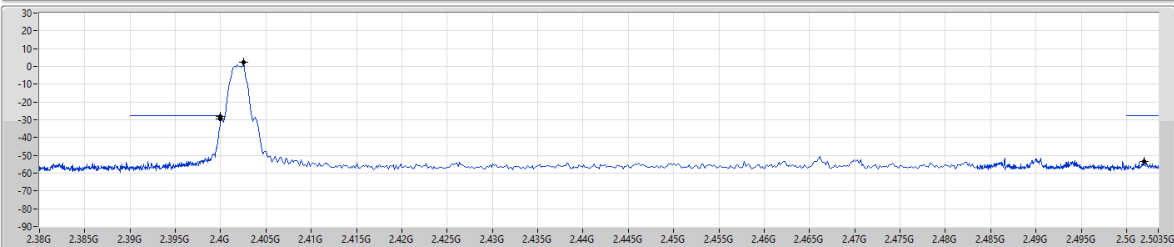
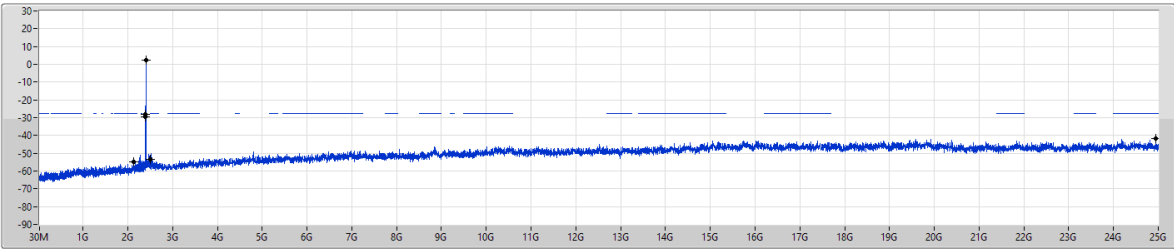
CSEndB-DTS

2402MHz

19/08/2023

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



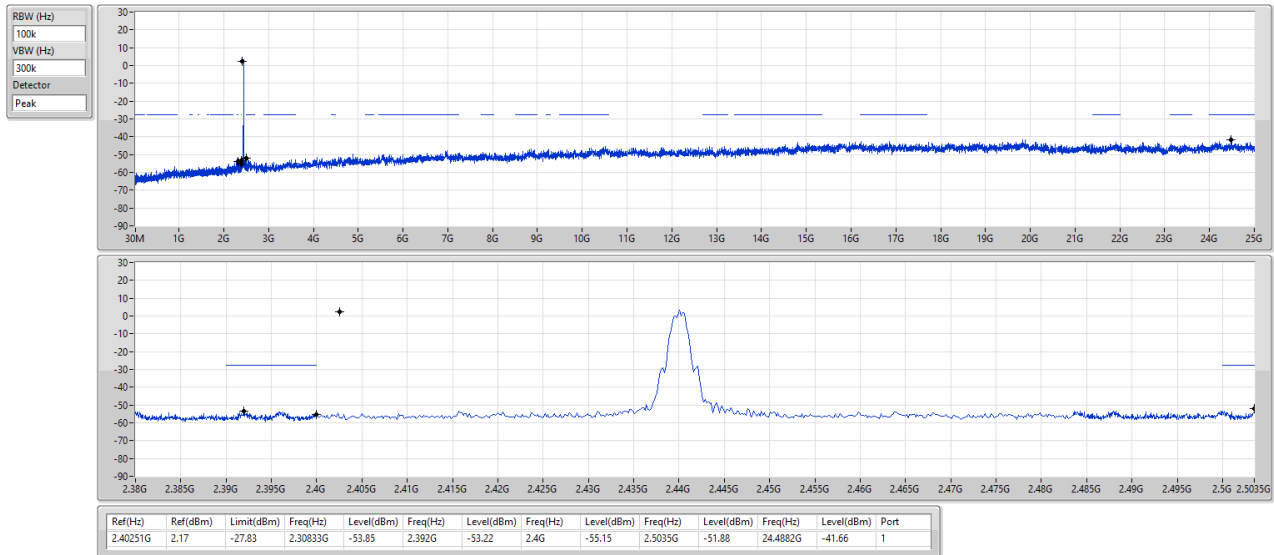
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40251G	2.17	-27.83	2.1262G	-55.07	2.4G	-29.36	2.4G	-28.12	2.5019G	-53.46	2.493813G	-41.74	1

2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2440MHz

19/08/2023

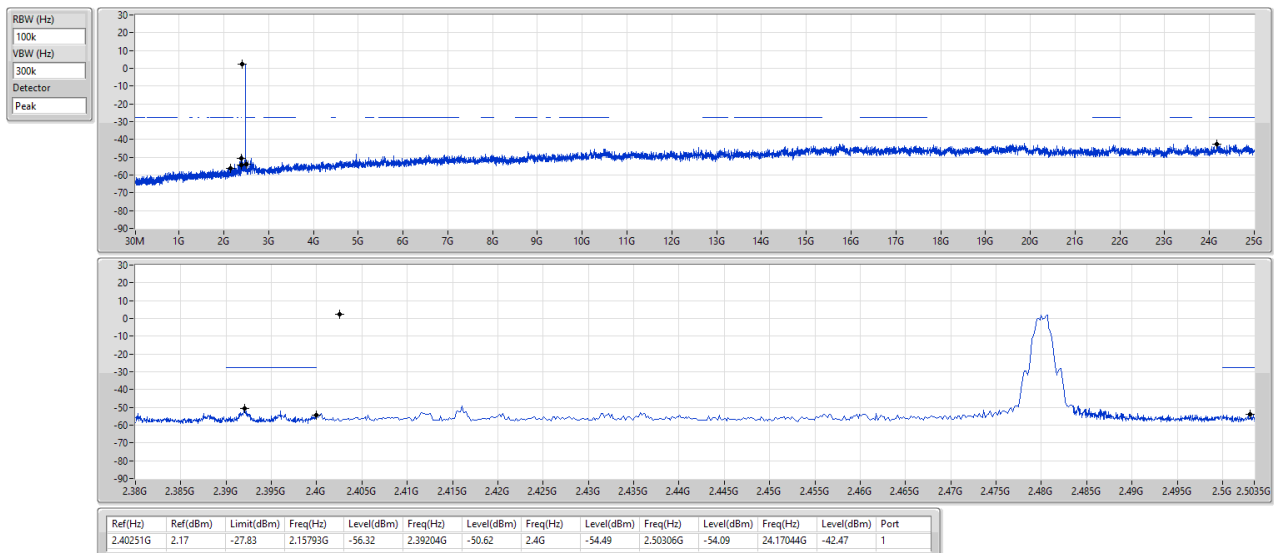


2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2480MHz

19/08/2023





Summary

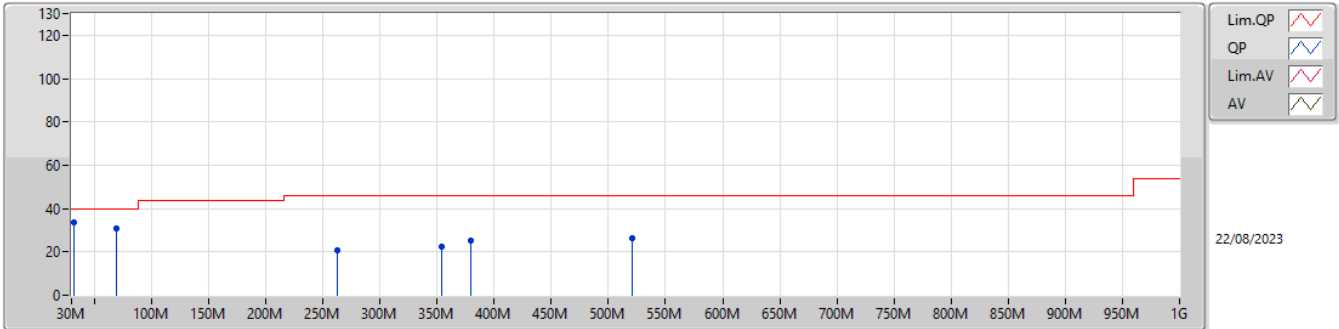
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	PK	35.82M	36.98	40.00	-3.02	3	Horizontal	0	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	31.94M	33.45	40.00	-6.55	3	Vertical	360	1.00	-
2440MHz	Pass	PK	68.8M	31.04	40.00	-8.96	3	Vertical	360	1.00	-
2440MHz	Pass	PK	262.8M	20.57	46.00	-25.43	3	Vertical	360	1.00	-
2440MHz	Pass	PK	353.98M	22.19	46.00	-23.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	379.2M	25.18	46.00	-20.82	3	Vertical	360	1.00	-
2440MHz	Pass	PK	520.82M	26.43	46.00	-19.57	3	Vertical	360	1.00	-
2440MHz	Pass	PK	35.82M	36.98	40.00	-3.02	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	49.4M	36.10	40.00	-3.90	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	222.06M	24.55	46.00	-21.45	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	423.82M	27.83	46.00	-18.17	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	516.94M	36.41	46.00	-9.59	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	724.52M	37.91	46.00	-8.09	3	Horizontal	0	1.00	-

2.4-2.4835GHz_BT-LE(2Mbps)

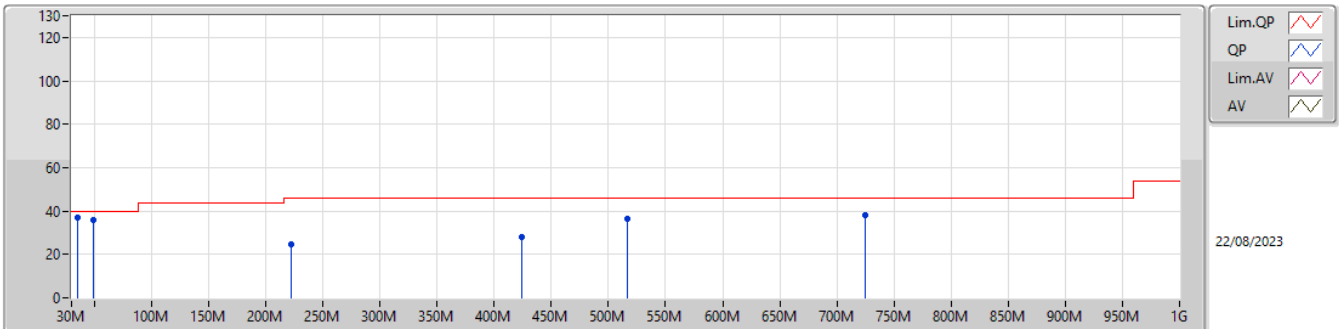
2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	33.45	40.00	-6.55	-3.92	3	Vertical	360	1.00	37.37	22.06	1.26	27.24
PK	68.8M	31.04	40.00	-8.96	-14.35	3	Vertical	360	1.00	45.39	11.59	1.68	27.62
PK	262.8M	20.57	46.00	-25.43	-5.42	3	Vertical	360	1.00	25.99	18.72	3.10	27.24
PK	353.98M	22.19	46.00	-23.81	-4.22	3	Vertical	360	1.00	26.41	19.72	3.68	27.62
PK	379.2M	25.18	46.00	-20.82	-3.90	3	Vertical	360	1.00	29.08	20.08	3.80	27.78
PK	520.82M	26.43	46.00	-19.57	-1.38	3	Vertical	360	1.00	27.81	22.69	4.46	28.53

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	35.82M	36.98	40.00	-3.02	-5.58	3	Horizontal	0	1.00	42.56	20.01	1.35	26.94
PK	49.4M	36.10	40.00	-3.90	-11.70	3	Horizontal	0	1.00	47.80	13.76	1.42	26.88
PK	222.06M	24.55	46.00	-21.45	-9.95	3	Horizontal	0	1.00	34.50	14.51	2.91	27.37
PK	423.82M	27.83	46.00	-18.17	-2.27	3	Horizontal	0	1.00	30.10	21.77	4.08	28.12
PK	516.94M	36.41	46.00	-9.59	-1.39	3	Horizontal	0	1.00	37.80	22.67	4.45	28.51
PK	724.52M	37.91	46.00	-8.09	1.55	3	Horizontal	0	1.00	36.36	24.47	5.44	28.36



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	4.88003G	49.77	54.00	-4.23	3	Horizontal	242	2.07	-
BT-LE(2Mbps)	Pass	AV	7.32115G	48.61	54.00	-5.39	3	Vertical	239	2.10	-

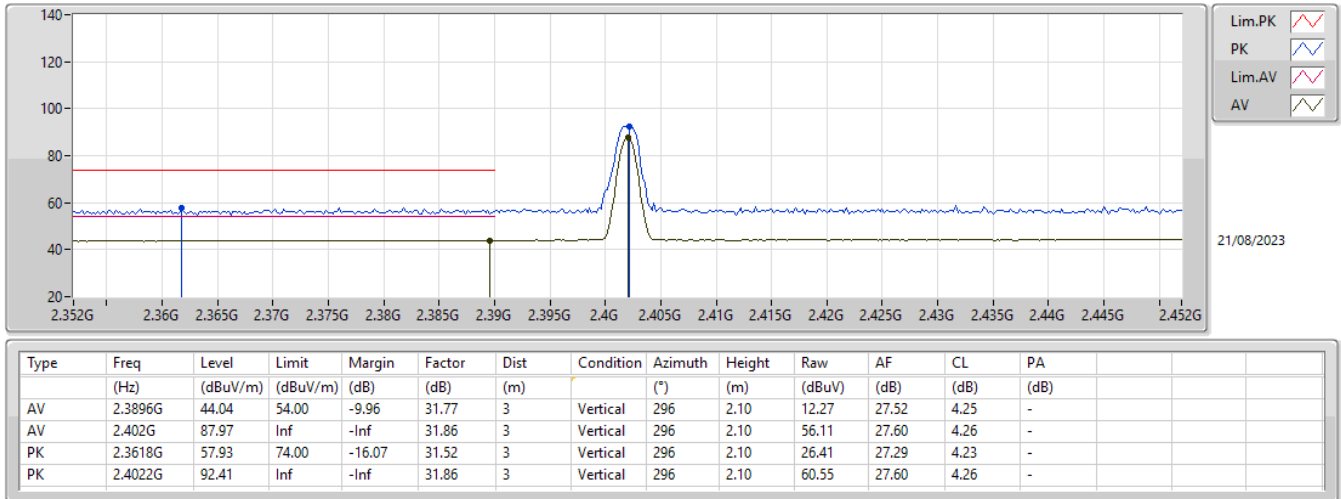
Result

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	2.3896G	44.04	54.00	-9.96	3	Vertical	296	2.10	-
2402MHz	Pass	AV	2.402G	87.97	Inf	-Inf	3	Vertical	296	2.10	-
2402MHz	Pass	PK	2.3618G	57.93	74.00	-16.07	3	Vertical	296	2.10	-
2402MHz	Pass	PK	2.4022G	92.41	Inf	-Inf	3	Vertical	296	2.10	-
2402MHz	Pass	AV	2.3778G	44.03	54.00	-9.97	3	Horizontal	260	1.05	-
2402MHz	Pass	AV	2.402G	92.09	Inf	-Inf	3	Horizontal	260	1.05	-
2402MHz	Pass	PK	2.3618G	57.42	74.00	-16.58	3	Horizontal	260	1.05	-
2402MHz	Pass	PK	2.4018G	96.74	Inf	-Inf	3	Horizontal	260	1.05	-
2402MHz	Pass	AV	4.80404G	46.64	54.00	-7.36	3	Vertical	77	2.35	-
2402MHz	Pass	PK	4.80456G	53.33	74.00	-20.67	3	Vertical	77	2.35	-
2402MHz	Pass	AV	4.80403G	49.61	54.00	-4.39	3	Horizontal	242	2.01	-
2402MHz	Pass	PK	4.80355G	56.25	74.00	-17.75	3	Horizontal	242	2.01	-
2440MHz	Pass	AV	2.3872G	44.01	54.00	-9.99	3	Vertical	232	1.50	-
2440MHz	Pass	AV	2.44G	86.47	Inf	-Inf	3	Vertical	232	1.50	-
2440MHz	Pass	AV	2.4896G	44.57	54.00	-9.43	3	Vertical	232	1.50	-
2440MHz	Pass	PK	2.3812G	58.23	74.00	-15.77	3	Vertical	232	1.50	-
2440MHz	Pass	PK	2.4404G	90.84	Inf	-Inf	3	Vertical	232	1.50	-
2440MHz	Pass	PK	2.4876G	58.00	74.00	-16.00	3	Vertical	232	1.50	-
2440MHz	Pass	AV	2.3756G	44.17	54.00	-9.83	3	Horizontal	259	1.01	-
2440MHz	Pass	AV	2.44G	93.18	Inf	-Inf	3	Horizontal	259	1.01	-
2440MHz	Pass	AV	2.4996G	44.62	54.00	-9.38	3	Horizontal	259	1.01	-
2440MHz	Pass	PK	2.3584G	57.59	74.00	-16.41	3	Horizontal	259	1.01	-
2440MHz	Pass	PK	2.4396G	97.91	Inf	-Inf	3	Horizontal	259	1.01	-
2440MHz	Pass	PK	2.4892G	57.75	74.00	-16.25	3	Horizontal	259	1.01	-
2440MHz	Pass	AV	4.88002G	45.84	54.00	-8.16	3	Vertical	79	2.44	-
2440MHz	Pass	AV	7.32001G	47.06	54.00	-6.94	3	Vertical	234	2.52	-
2440MHz	Pass	PK	4.87945G	52.89	74.00	-21.11	3	Vertical	79	2.44	-
2440MHz	Pass	PK	7.32081G	58.99	74.00	-15.01	3	Vertical	234	2.52	-
2440MHz	Pass	AV	4.88003G	49.77	54.00	-4.23	3	Horizontal	242	2.07	-
2440MHz	Pass	AV	7.31951G	46.08	54.00	-7.92	3	Horizontal	322	2.15	-
2440MHz	Pass	PK	4.87948G	56.46	74.00	-17.54	3	Horizontal	242	2.07	-
2440MHz	Pass	PK	7.32081G	58.13	74.00	-15.87	3	Horizontal	322	2.15	-
2480MHz	Pass	AV	2.48G	87.88	Inf	-Inf	3	Vertical	234	1.36	-
2480MHz	Pass	AV	2.4968G	44.63	54.00	-9.37	3	Vertical	234	1.36	-
2480MHz	Pass	PK	2.4798G	92.25	Inf	-Inf	3	Vertical	234	1.36	-
2480MHz	Pass	PK	2.4994G	57.90	74.00	-16.10	3	Vertical	234	1.36	-
2480MHz	Pass	AV	2.48G	92.43	Inf	-Inf	3	Horizontal	258	1.26	-
2480MHz	Pass	AV	2.4836G	44.72	54.00	-9.28	3	Horizontal	258	1.26	-
2480MHz	Pass	PK	2.4798G	97.09	Inf	-Inf	3	Horizontal	258	1.26	-
2480MHz	Pass	PK	2.4892G	58.35	74.00	-15.65	3	Horizontal	258	1.26	-
2480MHz	Pass	AV	4.96003G	46.26	54.00	-7.74	3	Vertical	315	1.22	-
2480MHz	Pass	AV	7.44004G	47.66	54.00	-6.34	3	Vertical	233	2.46	-
2480MHz	Pass	PK	4.95989G	53.68	74.00	-20.32	3	Vertical	315	1.22	-
2480MHz	Pass	PK	7.43934G	59.59	74.00	-14.41	3	Vertical	233	2.46	-
2480MHz	Pass	AV	4.96001G	46.83	54.00	-7.17	3	Horizontal	231	2.27	-
2480MHz	Pass	AV	7.44005G	46.76	54.00	-7.24	3	Horizontal	328	1.00	-
2480MHz	Pass	PK	4.96004G	54.26	74.00	-19.74	3	Horizontal	231	2.27	-
2480MHz	Pass	PK	7.44082G	58.73	74.00	-15.27	3	Horizontal	328	1.00	-
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3846G	44.84	54.00	-9.16	3	Vertical	295	2.10	-
2402MHz	Pass	AV	2.402G	89.26	Inf	-Inf	3	Vertical	295	2.10	-
2402MHz	Pass	PK	2.3664G	58.03	74.00	-15.97	3	Vertical	295	2.10	-
2402MHz	Pass	PK	2.4026G	92.38	Inf	-Inf	3	Vertical	295	2.10	-
2402MHz	Pass	AV	2.3892G	44.90	54.00	-9.10	3	Horizontal	260	1.04	-
2402MHz	Pass	AV	2.402G	93.92	Inf	-Inf	3	Horizontal	260	1.04	-
2402MHz	Pass	PK	2.3842G	57.85	74.00	-16.15	3	Horizontal	260	1.04	-
2402MHz	Pass	PK	2.4014G	96.80	Inf	-Inf	3	Horizontal	260	1.04	-
2402MHz	Pass	AV	4.80501G	42.75	54.00	-11.25	3	Vertical	78	2.36	-
2402MHz	Pass	PK	4.80411G	52.85	74.00	-21.15	3	Vertical	78	2.36	-
2402MHz	Pass	AV	4.80355G	45.06	54.00	-8.94	3	Horizontal	240	1.03	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz	Pass	PK	4.80504G	55.03	74.00	-18.97	3	Horizontal	240	1.03	-
2440MHz	Pass	AV	2.3848G	44.94	54.00	-9.06	3	Vertical	233	1.53	-
2440MHz	Pass	AV	2.44G	88.02	Inf	-Inf	3	Vertical	233	1.53	-
2440MHz	Pass	AV	2.4992G	45.27	54.00	-8.73	3	Vertical	233	1.53	-
2440MHz	Pass	PK	2.3476G	57.92	74.00	-16.08	3	Vertical	233	1.53	-
2440MHz	Pass	PK	2.4404G	91.07	Inf	-Inf	3	Vertical	233	1.53	-
2440MHz	Pass	PK	2.4876G	58.10	74.00	-15.90	3	Vertical	233	1.53	-
2440MHz	Pass	AV	2.3884G	44.82	54.00	-9.18	3	Horizontal	259	1.01	-
2440MHz	Pass	AV	2.44G	94.91	Inf	-Inf	3	Horizontal	259	1.01	-
2440MHz	Pass	AV	2.484G	45.27	54.00	-8.73	3	Horizontal	259	1.01	-
2440MHz	Pass	PK	2.3736G	57.80	74.00	-16.20	3	Horizontal	259	1.01	-
2440MHz	Pass	PK	2.4396G	97.89	Inf	-Inf	3	Horizontal	259	1.01	-
2440MHz	Pass	PK	2.4852G	58.39	74.00	-15.61	3	Horizontal	259	1.01	-
2440MHz	Pass	AV	4.87912G	42.55	54.00	-11.45	3	Vertical	78	2.44	-
2440MHz	Pass	AV	7.32115G	48.61	54.00	-5.39	3	Vertical	239	2.10	-
2440MHz	Pass	PK	4.87908G	52.59	74.00	-21.41	3	Vertical	78	2.44	-
2440MHz	Pass	PK	7.32143G	58.30	74.00	-15.70	3	Vertical	239	2.10	-
2440MHz	Pass	AV	4.87909G	46.20	54.00	-7.80	3	Horizontal	242	2.06	-
2440MHz	Pass	AV	7.31888G	47.82	54.00	-6.18	3	Horizontal	322	2.15	-
2440MHz	Pass	PK	4.87904G	56.12	74.00	-17.88	3	Horizontal	242	2.06	-
2440MHz	Pass	PK	7.32152G	57.63	74.00	-16.37	3	Horizontal	322	2.15	-
2480MHz	Pass	AV	2.48G	89.04	Inf	-Inf	3	Vertical	233	1.36	-
2480MHz	Pass	AV	2.4894G	45.39	54.00	-8.61	3	Vertical	233	1.36	-
2480MHz	Pass	PK	2.4796G	92.09	Inf	-Inf	3	Vertical	233	1.36	-
2480MHz	Pass	PK	2.4932G	58.04	74.00	-15.96	3	Vertical	233	1.36	-
2480MHz	Pass	AV	2.48G	94.10	Inf	-Inf	3	Horizontal	259	1.40	-
2480MHz	Pass	AV	2.4835G	45.91	54.00	-8.09	3	Horizontal	259	1.40	-
2480MHz	Pass	PK	2.4794G	97.18	Inf	-Inf	3	Horizontal	259	1.40	-
2480MHz	Pass	PK	2.4886G	58.53	74.00	-15.47	3	Horizontal	259	1.40	-
2480MHz	Pass	AV	4.96092G	42.14	54.00	-11.86	3	Vertical	315	1.22	-
2480MHz	Pass	AV	7.44118G	48.57	54.00	-5.43	3	Vertical	234	2.66	-
2480MHz	Pass	PK	4.95973G	52.83	74.00	-21.17	3	Vertical	315	1.22	-
2480MHz	Pass	PK	7.44156G	58.70	74.00	-15.30	3	Vertical	234	2.66	-
2480MHz	Pass	AV	4.95903G	44.28	54.00	-9.72	3	Horizontal	231	2.25	-
2480MHz	Pass	AV	7.43892G	48.56	54.00	-5.44	3	Horizontal	325	1.03	-
2480MHz	Pass	PK	4.96023G	54.77	74.00	-19.23	3	Horizontal	231	2.25	-
2480MHz	Pass	PK	7.44159G	58.58	74.00	-15.42	3	Horizontal	325	1.03	-

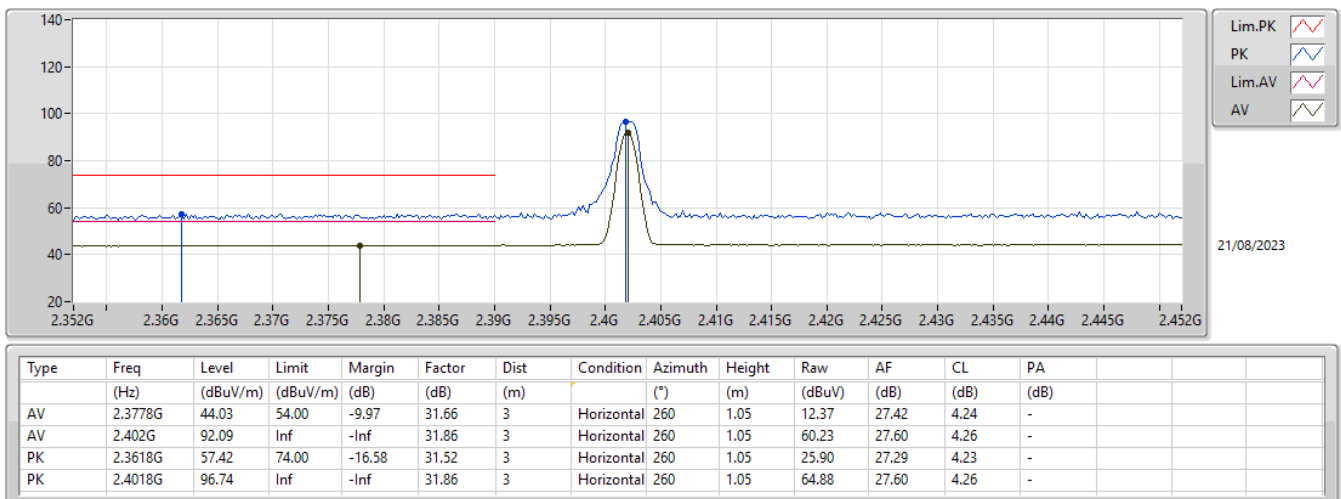
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2402MHz_TX



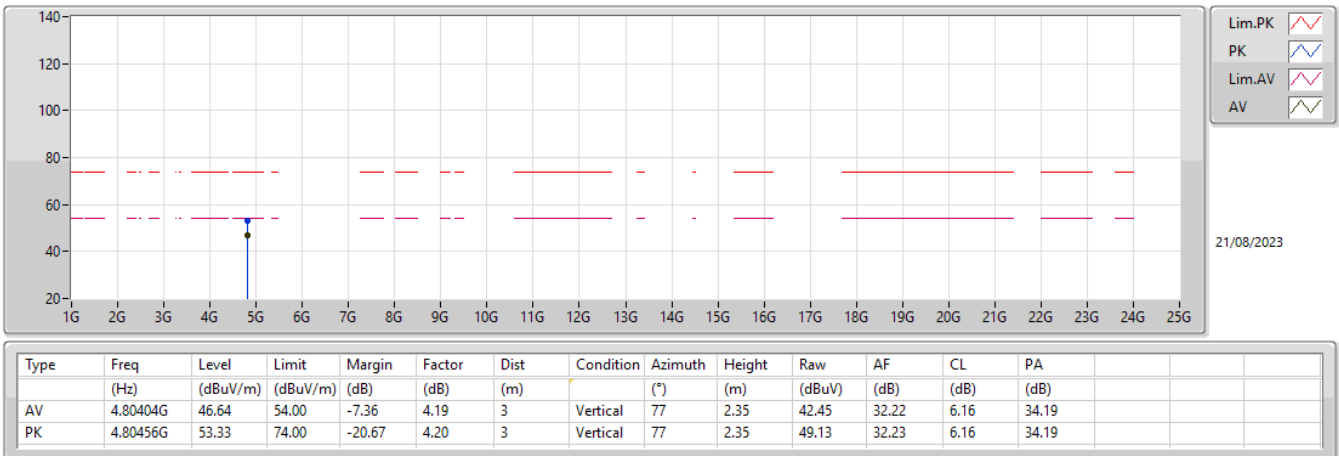
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2402MHz_TX



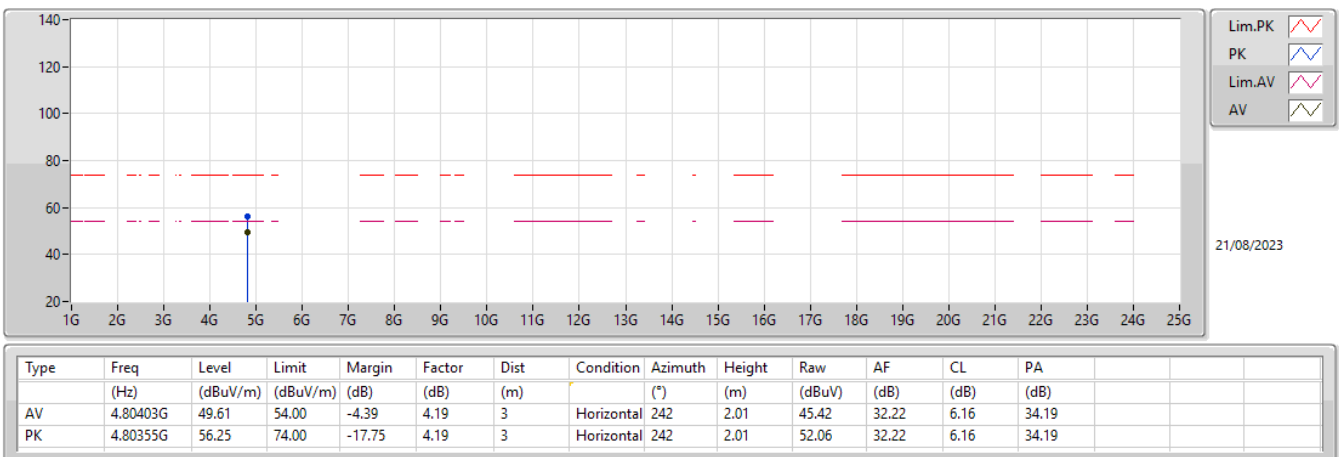
2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX



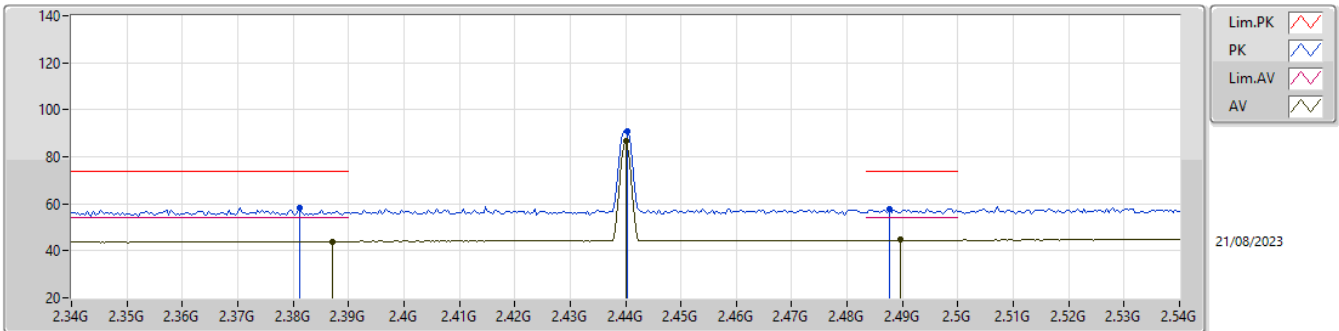
2.4-2.4835GHz_BT-LE(1Mbps)

2402MHz_TX



2.4-2.4835GHz_BT-LE(1Mbps)

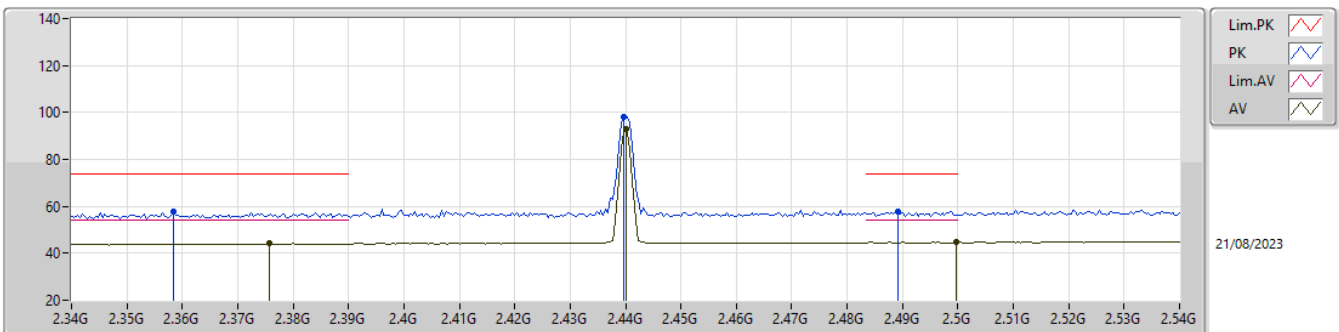
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)				
AV	2.3872G	44.01	54.00	-9.99	31.75	3	Vertical	232	1.50	12.26	27.50	4.25	-				
AV	2.44G	86.47	Inf	-Inf	31.96	3	Vertical	232	1.50	54.51	27.68	4.28	-				
AV	2.4896G	44.57	54.00	-9.43	32.17	3	Vertical	232	1.50	12.40	27.86	4.31	-				
PK	2.3812G	58.23	74.00	-15.77	31.69	3	Vertical	232	1.50	26.54	27.45	4.24	-				
PK	2.4404G	90.84	Inf	-Inf	31.96	3	Vertical	232	1.50	58.88	27.68	4.28	-				
PK	2.4876G	58.00	74.00	-16.00	32.16	3	Vertical	232	1.50	25.84	27.85	4.31	-				

2.4-2.4835GHz_BT-LE(1Mbps)

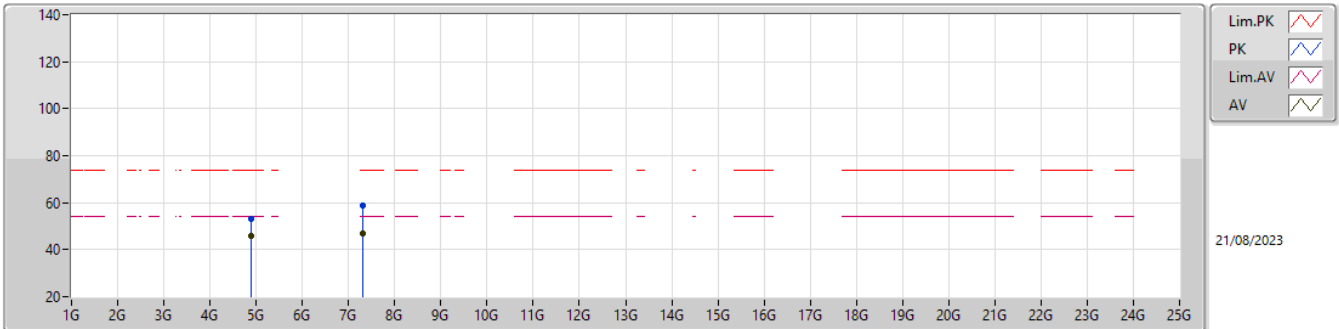
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)				
AV	2.3756G	44.17	54.00	-9.83	31.64	3	Horizontal	259	1.01	12.53	27.40	4.24	-				
AV	2.44G	93.18	Inf	-Inf	31.96	3	Horizontal	259	1.01	61.22	27.68	4.28	-				
AV	2.4996G	44.62	54.00	-9.38	32.22	3	Horizontal	259	1.01	12.40	27.90	4.32	-				
PK	2.3584G	57.59	74.00	-16.41	31.49	3	Horizontal	259	1.01	26.10	27.27	4.22	-				
PK	2.4396G	97.91	Inf	-Inf	31.96	3	Horizontal	259	1.01	65.95	27.68	4.28	-				
PK	2.4892G	57.75	74.00	-16.25	32.17	3	Horizontal	259	1.01	25.58	27.86	4.31	-				

2.4-2.4835GHz_BT-LE(1Mbps)

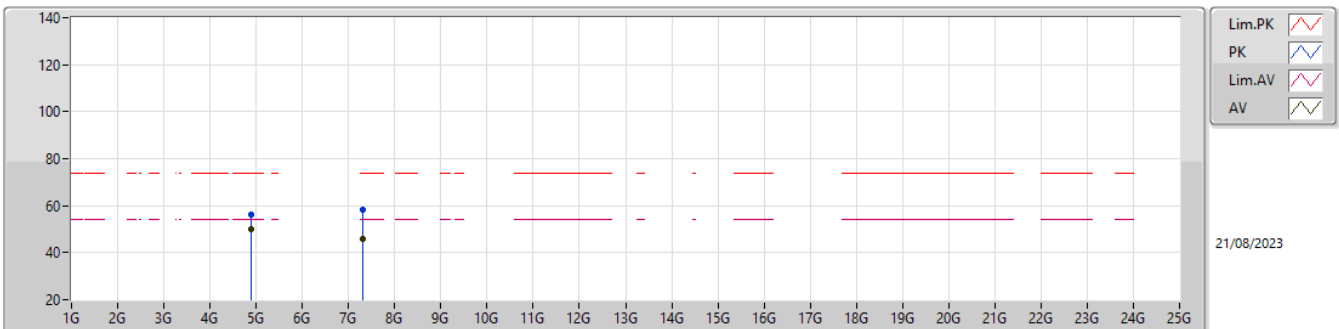
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88002G	45.84	54.00	-8.16	4.68	3	Vertical	79	2.44	41.16	32.62	6.22	34.16
AV	7.32001G	47.06	54.00	-6.94	10.02	3	Vertical	234	2.52	37.04	36.72	7.80	34.50
PK	4.87945G	52.89	74.00	-21.11	4.68	3	Vertical	79	2.44	48.21	32.62	6.22	34.16
PK	7.32081G	58.99	74.00	-15.01	10.02	3	Vertical	234	2.52	48.97	36.72	7.80	34.50

2.4-2.4835GHz_BT-LE(1Mbps)

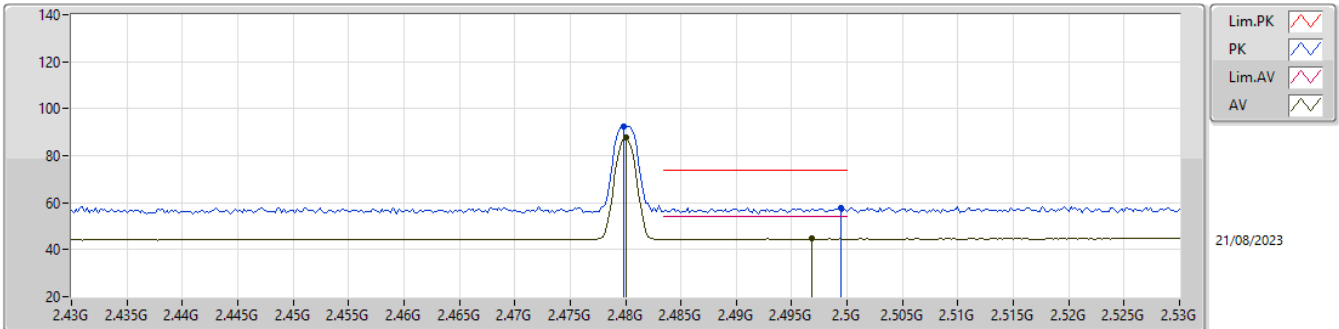
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88003G	49.77	54.00	-4.23	4.68	3	Horizontal	242	2.07	45.09	32.62	6.22	34.16
AV	7.31951G	46.08	54.00	-7.92	10.02	3	Horizontal	322	2.15	36.06	36.72	7.80	34.50
PK	4.87948G	56.46	74.00	-17.54	4.68	3	Horizontal	242	2.07	51.78	32.62	6.22	34.16
PK	7.32081G	58.13	74.00	-15.87	10.02	3	Horizontal	322	2.15	48.11	36.72	7.80	34.50

2.4-2.4835GHz_BT-LE(1Mbps)

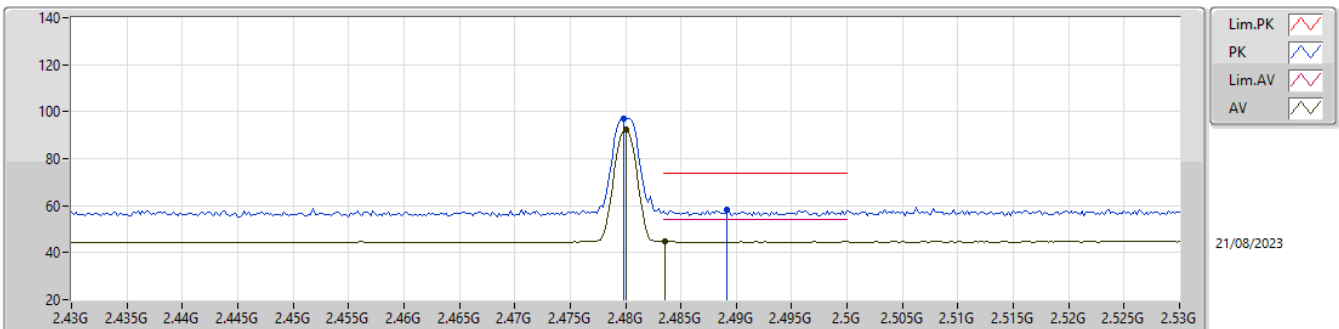
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	87.88	Inf	-Inf	32.13	3	Vertical	234	1.36	55.75	27.82	4.31	-
AV	2.4968G	44.63	54.00	-9.37	32.21	3	Vertical	234	1.36	12.42	27.89	4.32	-
PK	2.4798G	92.25	Inf	-Inf	32.13	3	Vertical	234	1.36	60.12	27.82	4.31	-
PK	2.4994G	57.90	74.00	-16.10	32.22	3	Vertical	234	1.36	25.68	27.90	4.32	-

2.4-2.4835GHz_BT-LE(1Mbps)

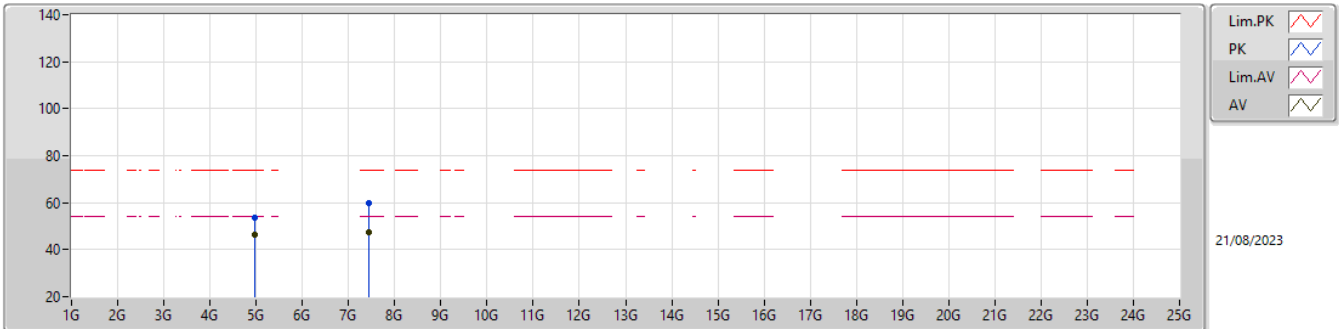
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	92.43	Inf	-Inf	32.13	3	Horizontal	258	1.26	60.30	27.82	4.31	-
AV	2.4836G	44.72	54.00	-9.28	32.14	3	Horizontal	258	1.26	12.58	27.83	4.31	-
PK	2.4798G	97.09	Inf	-Inf	32.13	3	Horizontal	258	1.26	64.96	27.82	4.31	-
PK	2.4892G	58.35	74.00	-15.65	32.17	3	Horizontal	258	1.26	26.18	27.86	4.31	-

2.4-2.4835GHz_BT-LE(1Mbps)

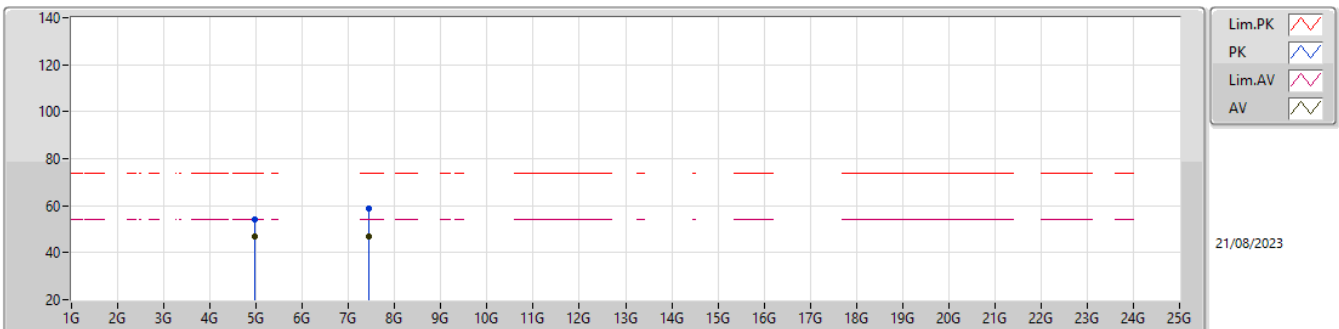
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96003G	46.26	54.00	-7.74	5.18	3	Vertical	315	1.22	41.08	33.04	6.27	34.13
AV	7.44004G	47.66	54.00	-6.34	9.78	3	Vertical	233	2.46	37.88	36.40	7.89	34.51
PK	4.95989G	53.68	74.00	-20.32	5.18	3	Vertical	315	1.22	48.50	33.04	6.27	34.13
PK	7.43934G	59.59	74.00	-14.41	9.78	3	Vertical	233	2.46	49.81	36.40	7.89	34.51

2.4-2.4835GHz_BT-LE(1Mbps)

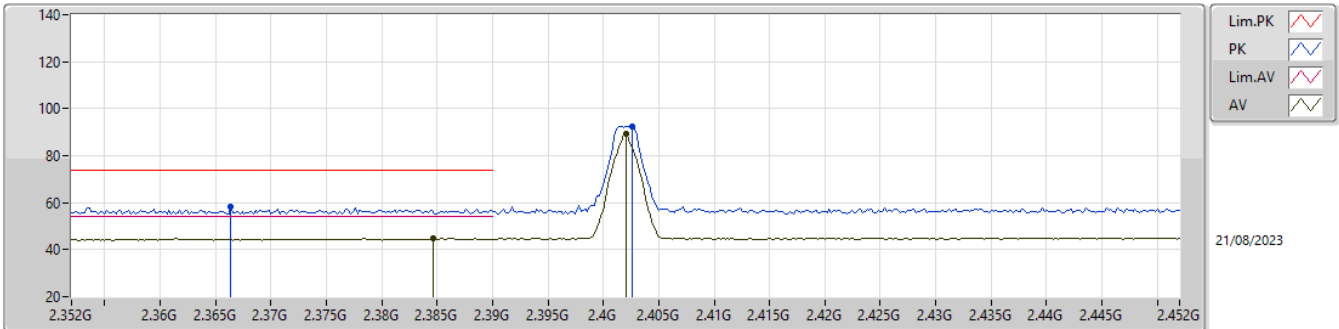
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96001G	46.83	54.00	-7.17	5.18	3	Horizontal	231	2.27	41.65	33.04	6.27	34.13
AV	7.44005G	46.76	54.00	-7.24	9.78	3	Horizontal	328	1.00	36.98	36.40	7.89	34.51
PK	4.96004G	54.26	74.00	-19.74	5.18	3	Horizontal	231	2.27	49.08	33.04	6.27	34.13
PK	7.44082G	58.73	74.00	-15.27	9.78	3	Horizontal	328	1.00	48.95	36.40	7.89	34.51

2.4-2.4835GHz_BT-LE(2Mbps)

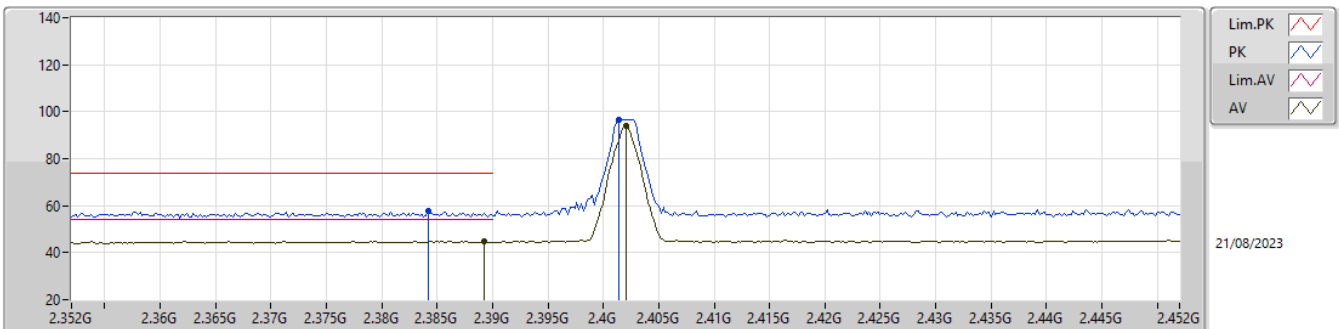
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3846G	44.84	54.00	-9.16	31.73	3	Vertical	295	2.10	13.11	27.48	4.25	-
AV	2.402G	89.26	Inf	-Inf	31.86	3	Vertical	295	2.10	57.40	27.60	4.26	-
PK	2.3664G	58.03	74.00	-15.97	31.56	3	Vertical	295	2.10	26.47	27.33	4.23	-
PK	2.4026G	92.38	Inf	-Inf	31.87	3	Vertical	295	2.10	60.51	27.61	4.26	-

2.4-2.4835GHz_BT-LE(2Mbps)

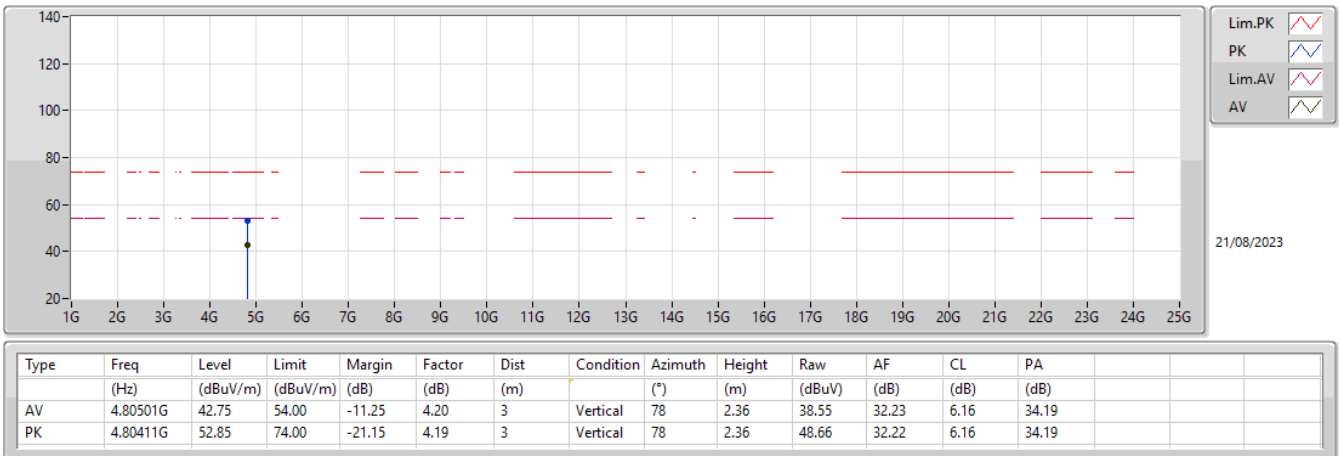
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3892G	44.90	54.00	-9.10	31.76	3	Horizontal	260	1.04	13.14	27.51	4.25	-
AV	2.402G	93.92	Inf	-Inf	31.86	3	Horizontal	260	1.04	62.06	27.60	4.26	-
PK	2.3842G	57.85	74.00	-16.15	31.72	3	Horizontal	260	1.04	26.13	27.47	4.25	-
PK	2.4014G	96.80	Inf	-Inf	31.86	3	Horizontal	260	1.04	64.94	27.60	4.26	-

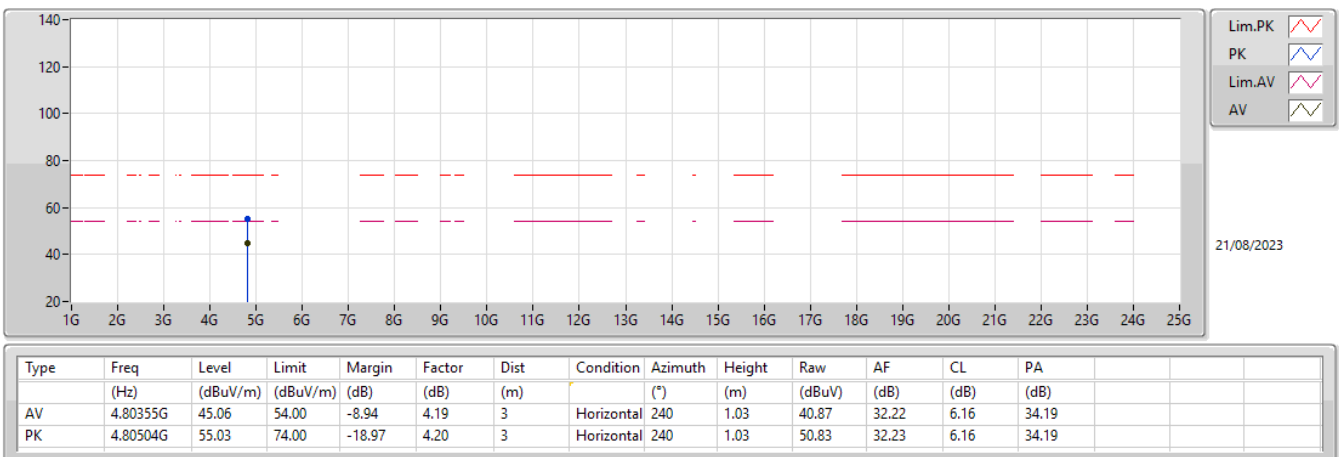
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2402MHz_TX



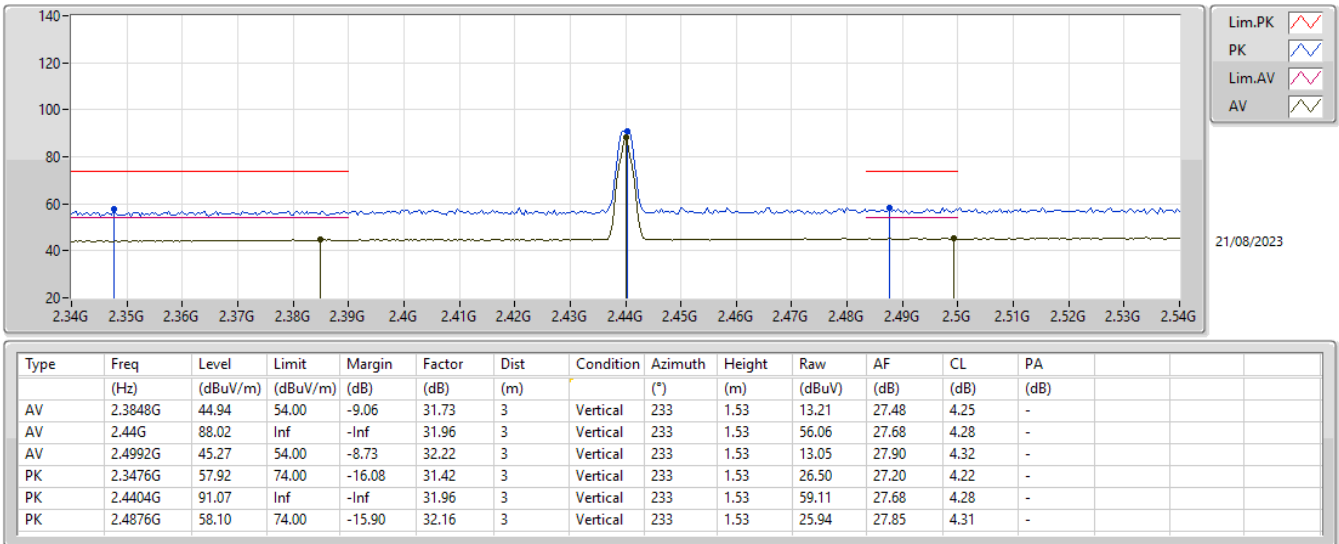
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2402MHz_TX



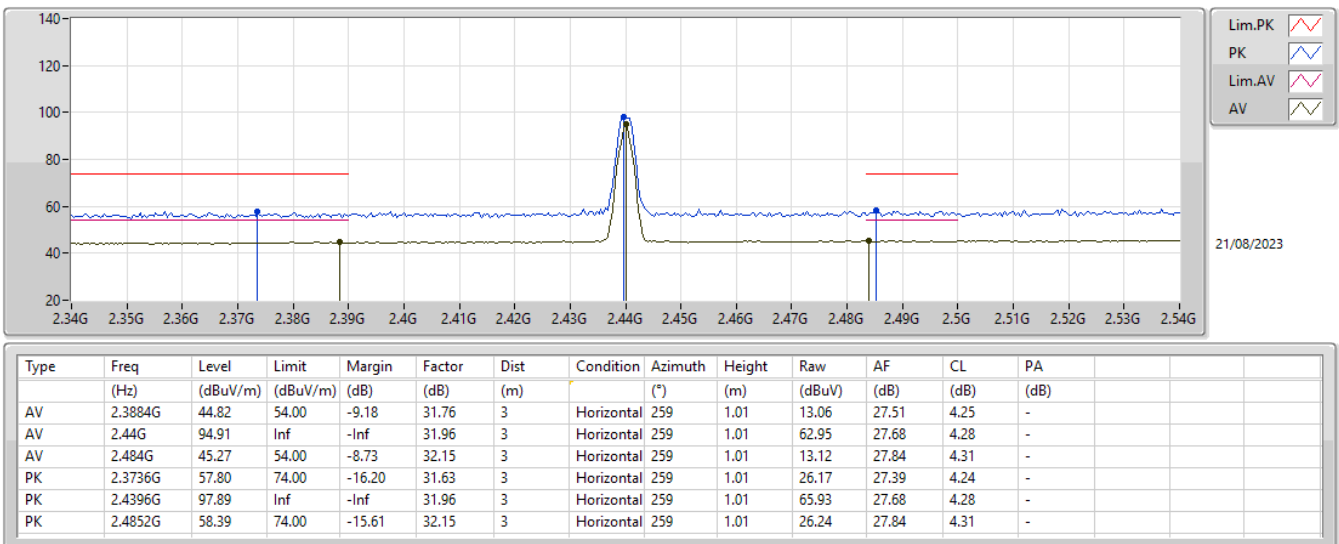
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2440MHz_TX



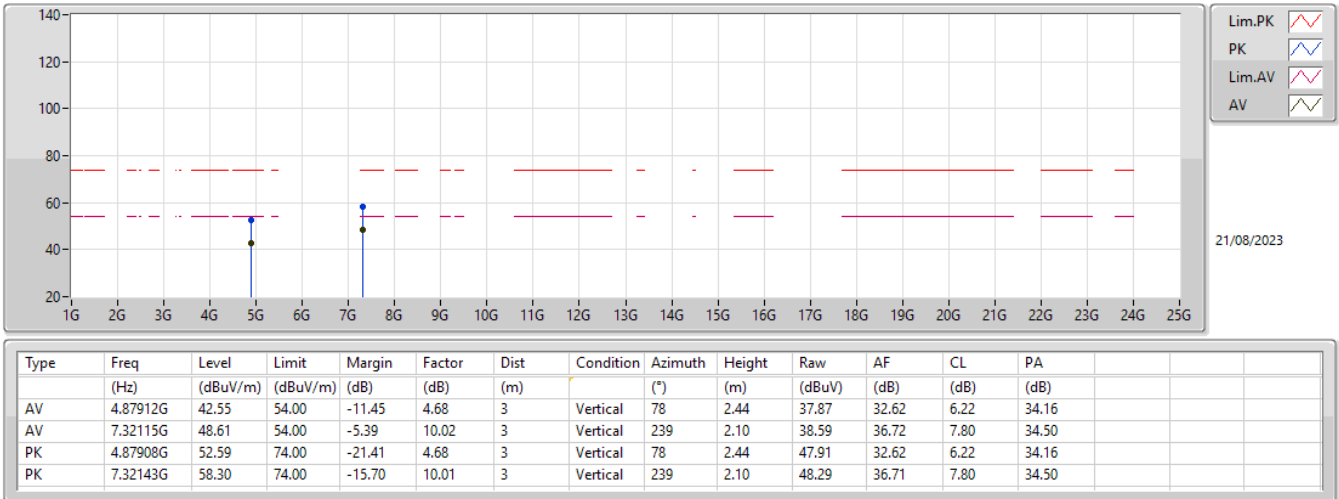
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2440MHz_TX



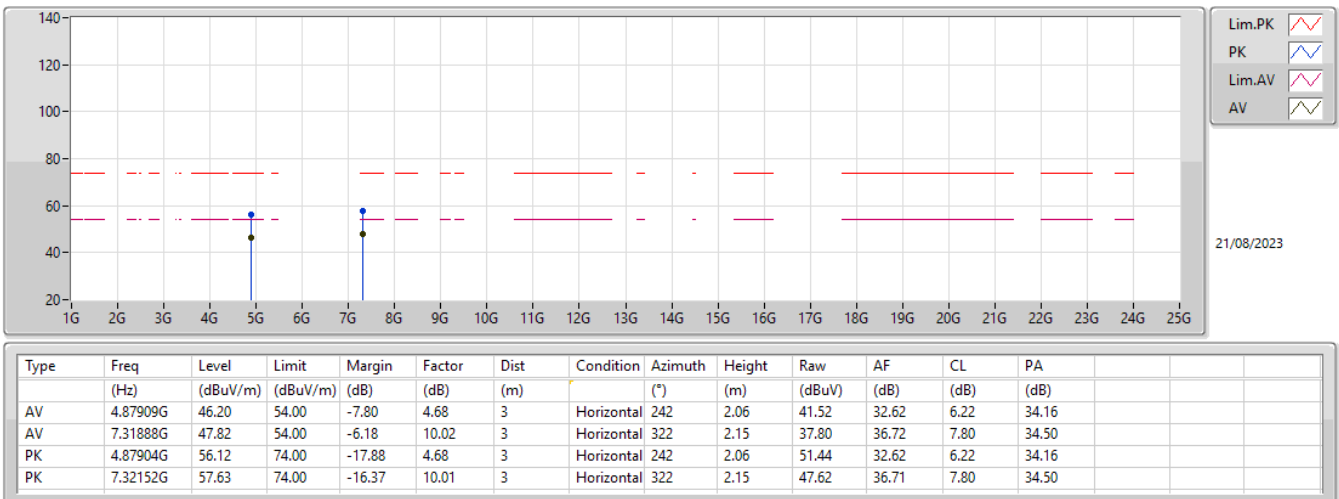
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2440MHz_TX



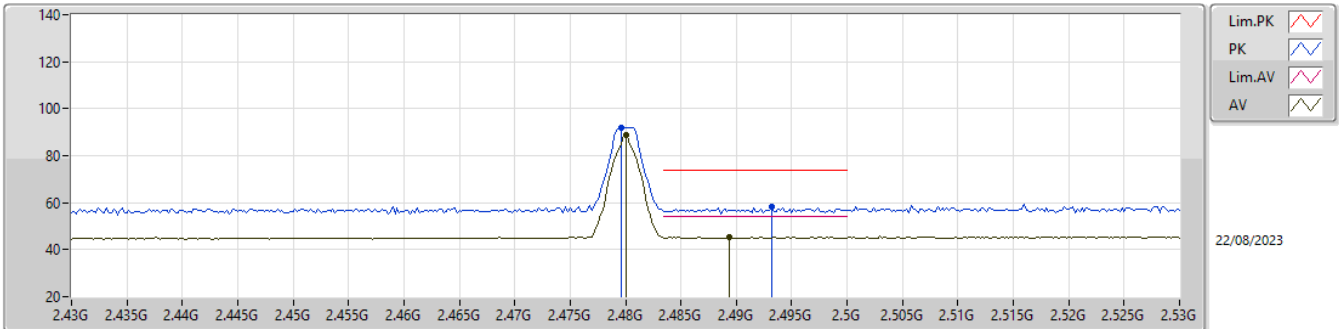
2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX



2.4-2.4835GHz_BT-LE(2Mbps)

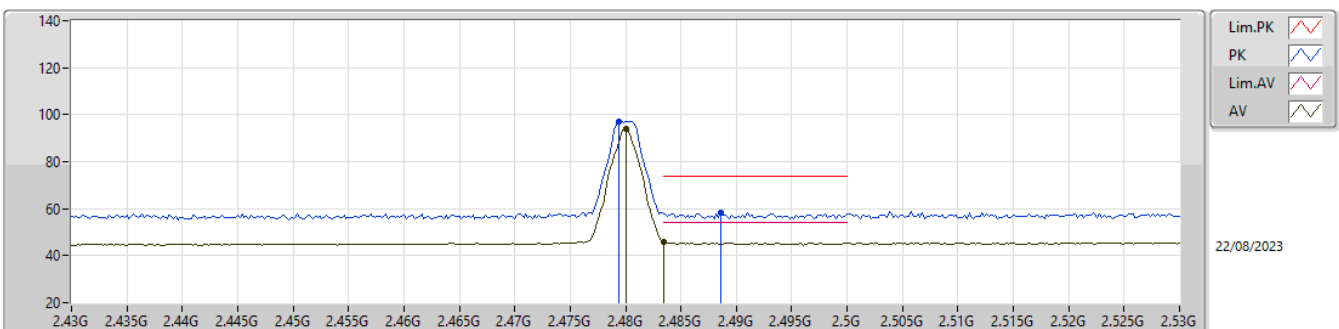
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	89.04	Inf	-Inf	32.13	3	Vertical	233	1.36	56.91	27.82	4.31	-
AV	2.4894G	45.39	54.00	-8.61	32.17	3	Vertical	233	1.36	13.22	27.86	4.31	-
PK	2.4796G	92.09	Inf	-Inf	32.13	3	Vertical	233	1.36	59.96	27.82	4.31	-
PK	2.4932G	58.04	74.00	-15.96	32.19	3	Vertical	233	1.36	25.85	27.87	4.32	-

2.4-2.4835GHz_BT-LE(2Mbps)

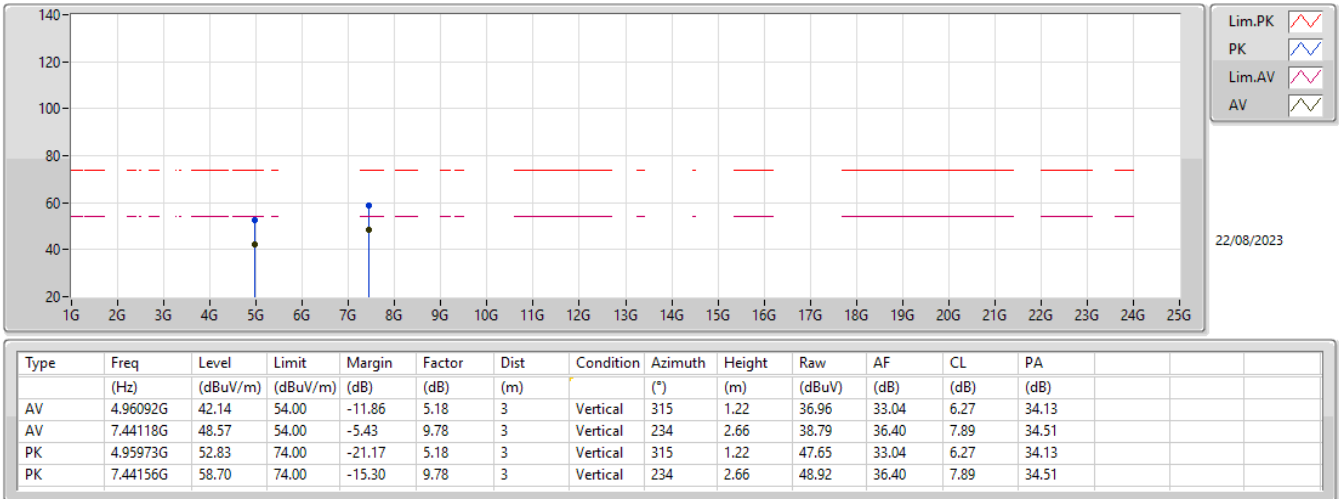
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	94.10	Inf	-Inf	32.13	3	Horizontal	259	1.40	61.97	27.82	4.31	-
AV	2.4835G	45.91	54.00	-8.09	32.14	3	Horizontal	259	1.40	13.77	27.83	4.31	-
PK	2.4794G	97.18	Inf	-Inf	32.13	3	Horizontal	259	1.40	65.05	27.82	4.31	-
PK	2.4886G	58.53	74.00	-15.47	32.16	3	Horizontal	259	1.40	26.37	27.85	4.31	-

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX



2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX

