

FCC Radio Test Report

FCC ID : 2A8MT-AP6PRO
Equipment : 4x4 Dual-band Enterprise Access Point
Brand Name : ALTA LABS [^] ALTA LABS
Model Name : AP6-Pro
Applicant : SoundVision Technologies, dba Alta Labs
192 N Old Hwy 91, Unit 1 Hurricane,Utah,
United States 84737
Manufacturer : SoundVision Technologies, dba Alta Labs
192 N Old Hwy 91, Unit 1 Hurricane,Utah,
United States 84737
Standard : 47 CFR FCC Part 15.247

The product was received on Jan. 11, 2023, and testing was started from Feb. 07, 2023 and completed on Feb. 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: 2A8MT-AP6PRO

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	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	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: Ann Hou

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
2.4-2.4835GHz	BT-LE(125kbps)	1.0	1TX
2.4-2.4835GHz	BT-LE(500kbps)	1.0	1TX

Note:

- ♦ Bluetooth LE uses a GFSK (125kbps/500kbps/1Mbps/2Mbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Ramark
1	LITEON	3010001429GD	PIFA	I-PEX	Radio 2_5G
2	LITEON	3010001441GD	PIFA	I-PEX	Radio 1_2.4G+ Radio 2_5G
3	LITEON	3010001443GD	PIFA	I-PEX	Radio 1_2.4G+ Radio 2_5G
4	LITEON	3010001442GD	PIFA	I-PEX	Radio 2_5G
5	LITEON	3010001433GD	PIFA	I-PEX	Radio 1_BT

Ant.	Port	Gain (dBi)					
		2.4G	UNII-1	UNII-2A	UNII-2C	UNII-3	BT
1	1	-	3.4	3.3	3.3	3.5	-
2	2	2.7	3.8	4.0	4.3	4.2	-
3	3	3.2	3.5	3.8	4.1	3.8	-
4	4	-	4.2	4.3	4.1	4.3	-
5	5	-	-	-	-	-	2.7

Note 1: The EUT has five antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax mode (2TX/2RX)

Ant. 2 (port 2) and Ant. 3 (port 3) could transmit/receive simultaneously.

For BT function:

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

Ant. 5 (port 5) could transmit/receive.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (4TX/4RX)

Ant. 1 (port 1), Ant. 2 (port 2) and Ant. 3 (port 3) and Ant. 4 (port 4) could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From PoE
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)	0.648	1.88	405.313u	3k
BT-LE(2Mbps)	0.354	4.51	221.563u	10k
BT-LE(125kbps)	0.81	0.92	3.117m	1k
BT-LE(500kbps)	0.599	2.23	1.083m	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
AC Conduction	CO04-HY	Wayne	21.3~22.6°C / 53~57%	22/Feb/2023
RF Conducted	TH07-HY	Yuna	22.3~23.8°C / 48~55%	08/Feb/2023~14/Feb/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.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH09-HY	Lego	20.1~23.1°C / 54~60%	07/Feb/2023~08/Feb/2023
Radiated (Co-location)	03CH09-HY	Lego	20.4~20.5°C / 55~56%	08/Feb/2023

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	qdart_conn.win.1.0_installer_00086.1
Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	default
2440MHz	default
2480MHz	default
BT-LE(2Mbps)	-
2402MHz	default
2440MHz	default
2480MHz	default
BT-LE(125kbps)	-
2402MHz	default
2440MHz	default
2480MHz	default
BT-LE(500kbps)	-
2402MHz	default
2440MHz	default
2480MHz	default

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	PoE mode

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	PoE mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V		

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	2.4GHz WLAN+5GHz WLAN+Bluetooth
Refer to Sporton Test Report No.: FA310611 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.3 Accessories

Accessories				
Ceiling Bracket	Brand Name	N/A	Model Name	N/A
Wallmount	Brand Name	N/A	Model Name	N/A

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

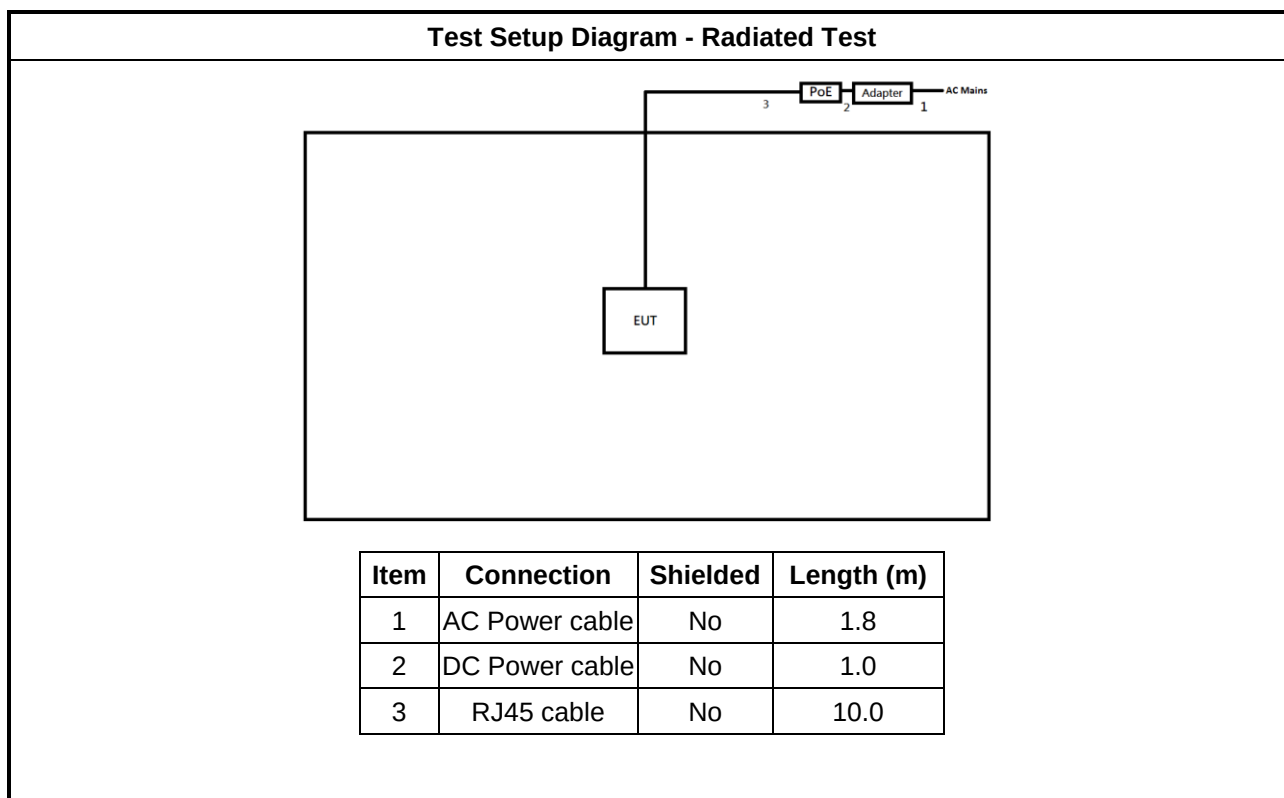
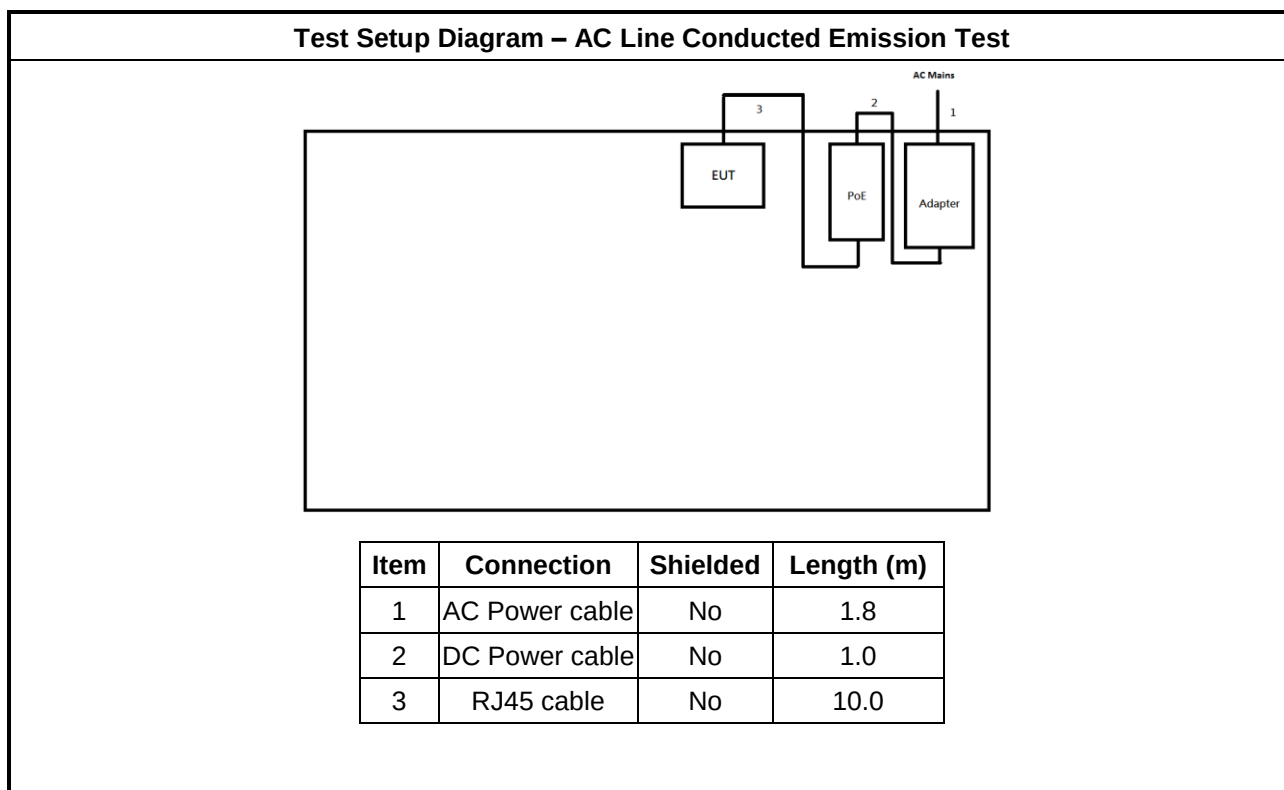
2.4 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	RJ45 Cable	Power Sync	CAT-6E-10	-	-
2	AC Power cable	Power Sync	PW-GPC180-3	-	-
3	Adapter	Asian	WB-24M12FU	-	Provided by Customer
4	PoE	Cambium	NET-P60-56IN	-	Provided by Customer

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	Adapter	Asian	WB-24M12FU	-	Provided by Customer
4	PoE	Cambium	NET-P60-56IN	-	Provided by Customer

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	RJ45 Cable	Power Sync	CAT-6E-10	-	-
2	AC Power cable	Power Sync	PW-GPC180-3	-	Remote
3	Adapter	Asian	WB-24M12FU	-	Remote Provided by Customer
4	PoE	Cambium	NET-P60-56IN	-	Remote Provided by Customer

2.5 Test Setup Diagram



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

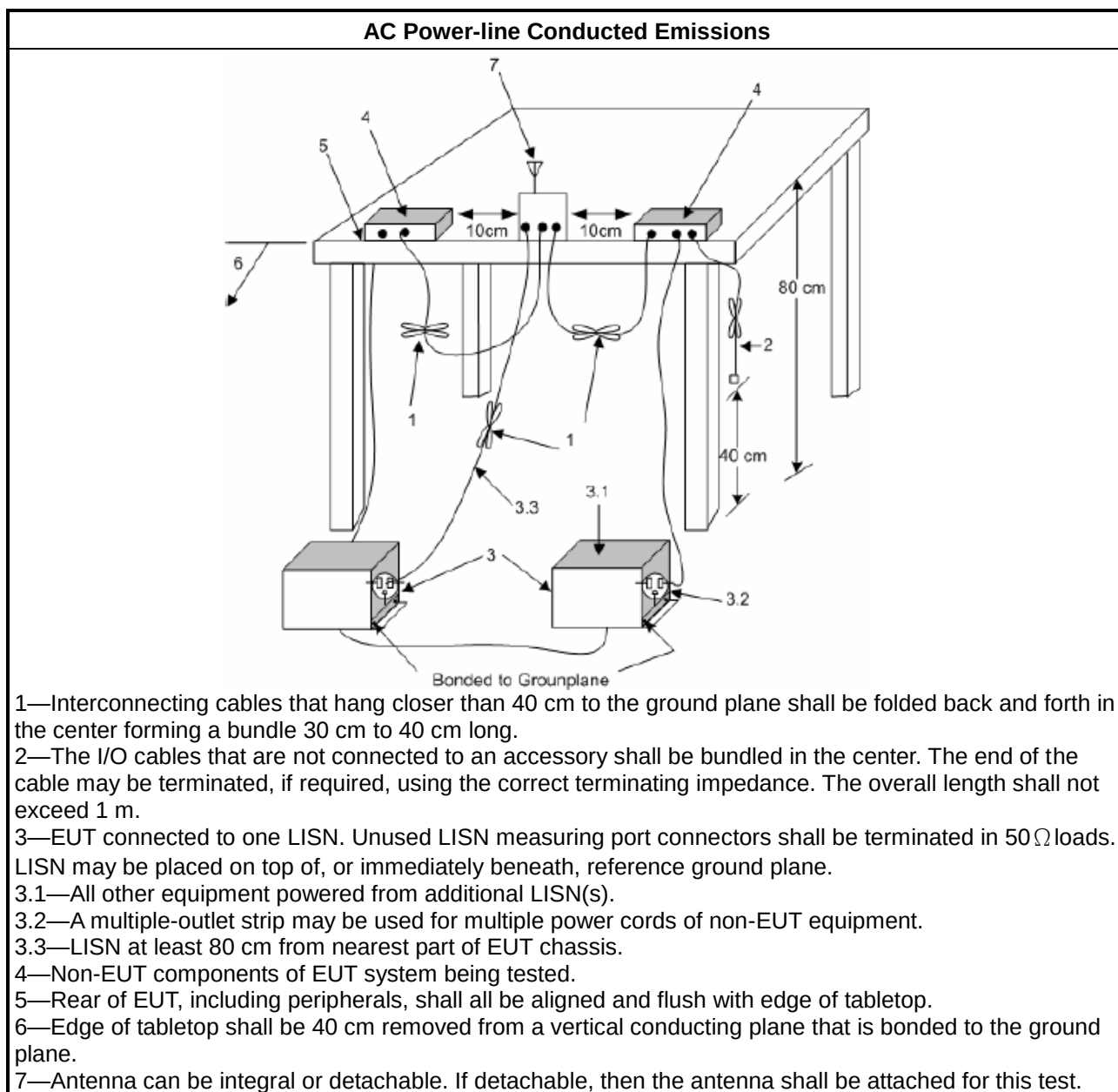
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

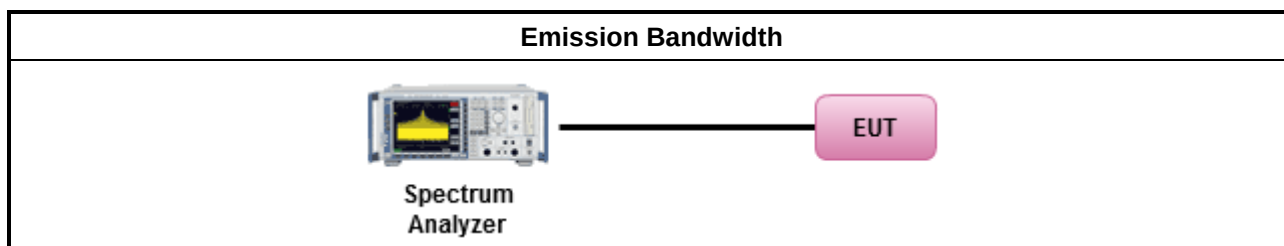
3.2.2 Measuring Instruments

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

3.2.3 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.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 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.	

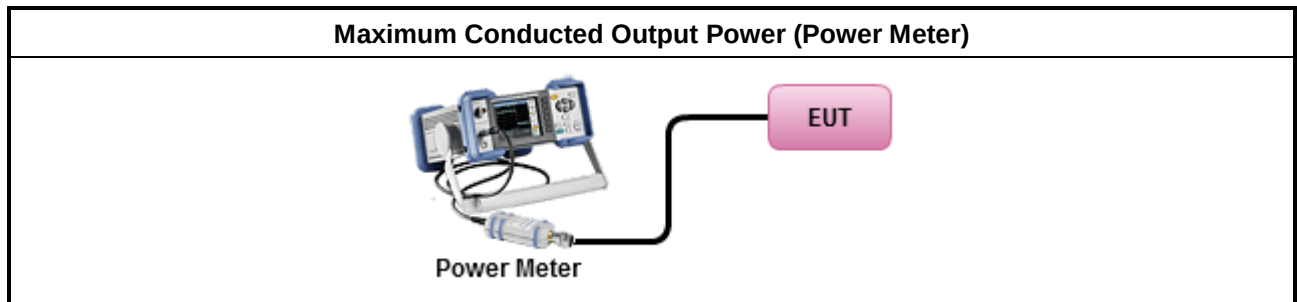
3.3.2 Measuring Instruments

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

3.3.3 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]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
Power Spectral Density (PSD) ≤ 8 dBm/3kHz

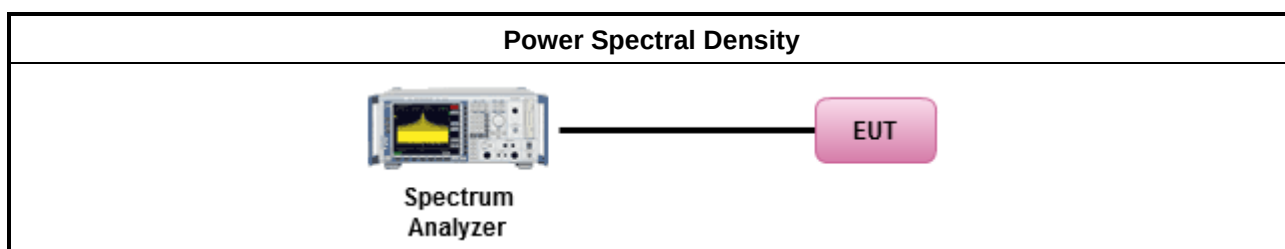
3.4.2 Measuring Instruments

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

3.4.3 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.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 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.	

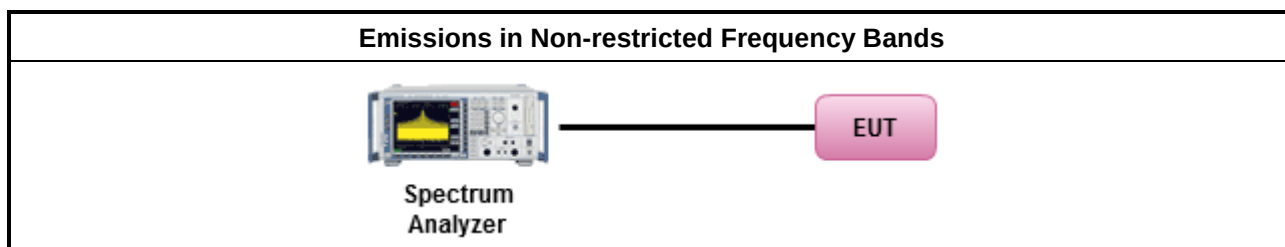
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 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.

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

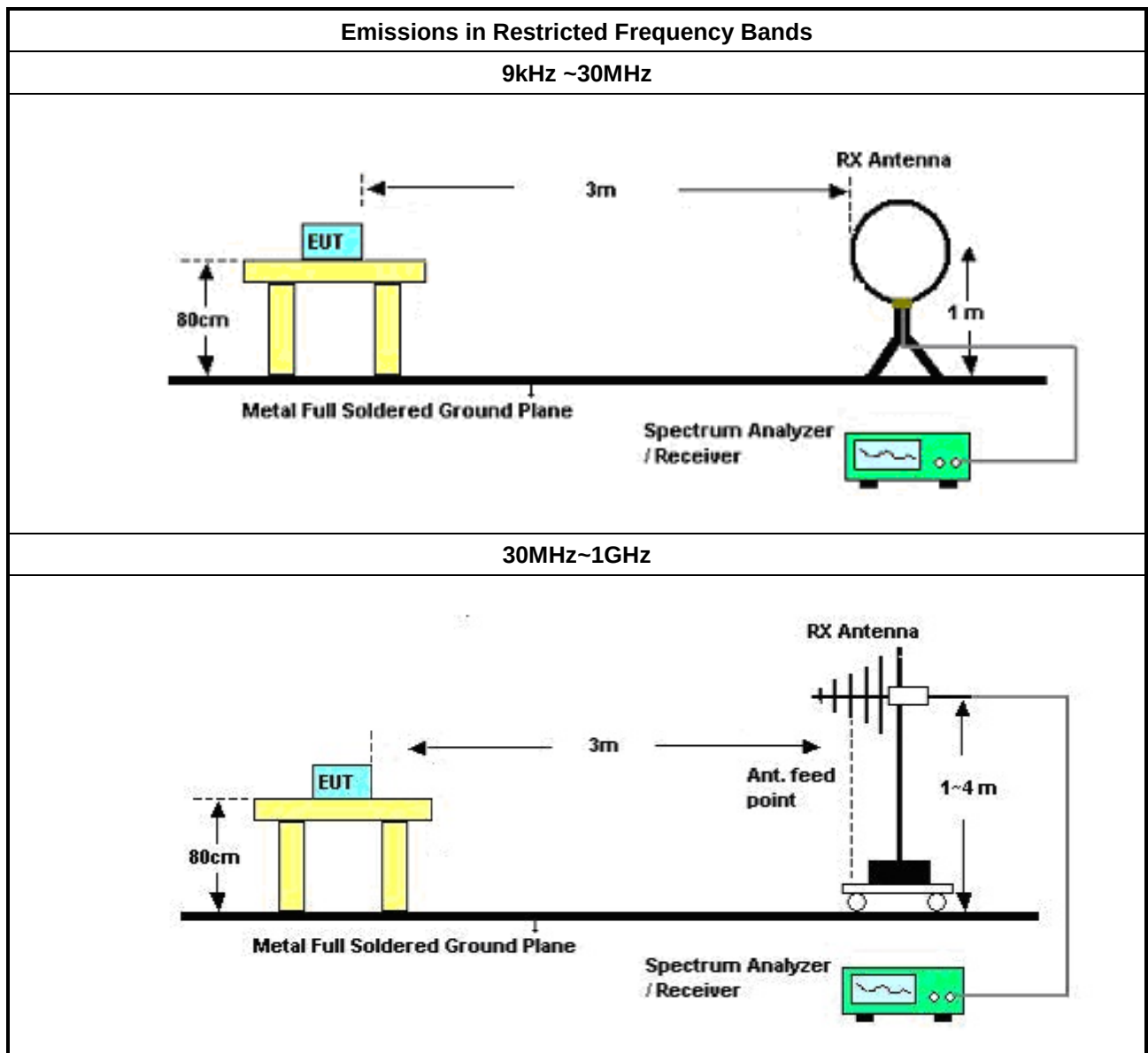
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted 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.

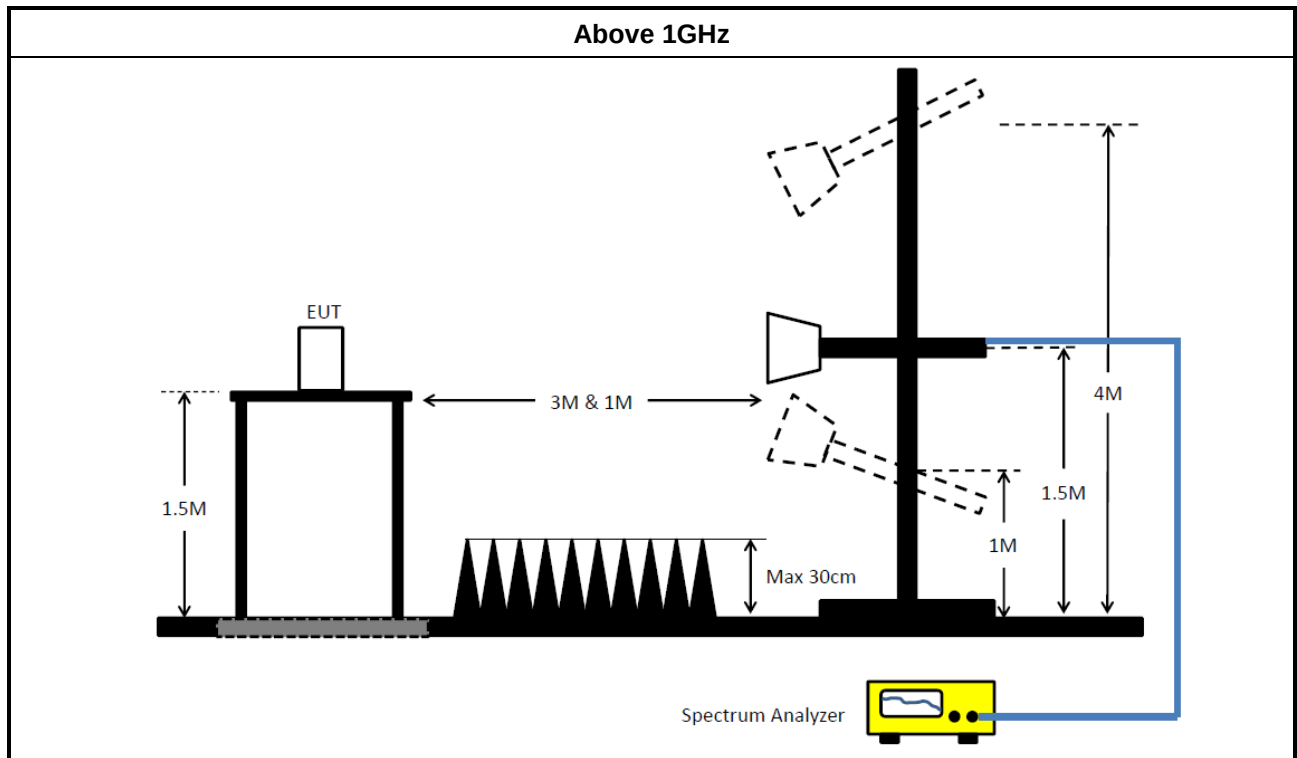
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.5 Test Setup





3.6.6 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.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	13/May/2022	12/May/2023
Two-Line V-Network	R&S	ENV 216	101295	9kHz ~ 30MHz	31/Jan/2023	30/Jan/2024
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	01/Mar/2022	28/Feb/2023
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	25/Oct/2022	24/Oct/2023
Software	Sporton	SENSE-EMI	V5.10.8.7	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101029	10Hz~40GHz	10/Nov/2022	09/Nov/2023
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2022	20/Oct/2023
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	14/Dec/2022	13/Dec/2023
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	14/Dec/2022	13/Dec/2023
SENSE-15247_FS	Sporton	V5.11.1	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	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	25/Mar/2022	24/Mar/2023
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	17/Mar/2022	16/Mar/2023
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	11/Aug/2022	10/Aug/2023
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	08/Apr/2022	07/Apr/2023
Microwave Preampifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	22/Jul/2022	21/Jul/2023
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MT J6102-05	35418 & 3	30MHz~1GHz	28/Aug/2022	27/Aug/2023
RF Cable-low	Jye Bao	RG142	03CH09-cable-01	9kHz~1GHz	09/Dec/2022	08/Dec/2023
RF CABLE 5m+3m+1m	HUBER+SUHNE R	SUCOFLEX104	03CH09-cable-02	1GHz~40GHz	17/Aug/2022	16/Aug/2023
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1534	1GHz ~ 18GHz	10/Mar/2022	09/Mar/2023
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Premplifier	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	30/May/2022	29/May/2023
SENSE_15247_FS	Sporton	Sporton	V5.11	NA	NA	NA

Instrument for Radiated Test (Co-location)

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	17/Mar/2022	16/Mar/2023
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	11/Aug/2022	10/Aug/2023
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1534	1GHz ~ 18GHz	10/Mar/2022	09/Mar/2023
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	22/Jul/2022	21/Jul/2023
RF CABLE 5m+3m+1m	HUBER+SUHNER	SUCOFLEX104	03CH09-cable-02	1GHz~40GHz	17/Aug/2022	16/Aug/2023
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	18/Mar/2022	17/Mar/2023
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	08/Mar/2022	07/Mar/2023
SENSE-15407	Sporton	NA	5.11	NA	NA	NA



Conducted Emissions at Powerline

Appendix A

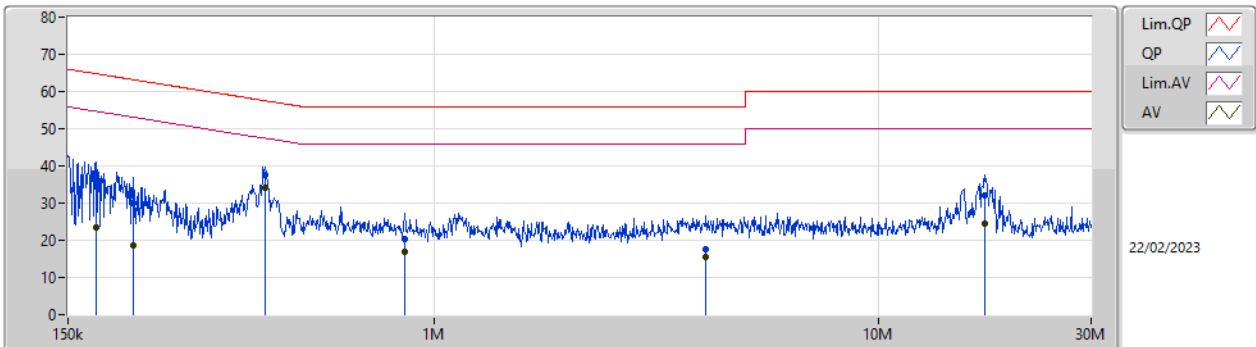
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	416.794k	34.12	47.51	-13.39	Line

Result

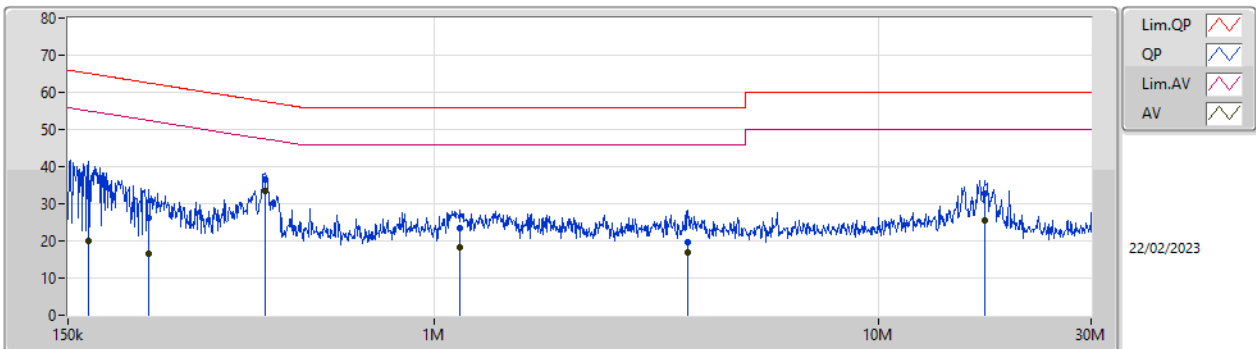
Mode	Result	Type	Freq (Hz)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	173.183k	37.30	64.80	-27.50	Line	-
Mode 1	Pass	AV	173.183k	23.49	54.80	-31.31	Line	-
Mode 1	Pass	QP	209.76k	30.10	63.21	-33.11	Line	-
Mode 1	Pass	AV	209.76k	18.69	53.21	-34.52	Line	-
Mode 1	Pass	QP	416.794k	37.47	57.51	-20.04	Line	-
Mode 1	Pass	AV	416.794k	34.12	47.51	-13.39	Line	-
Mode 1	Pass	QP	858.467k	20.43	56.00	-35.57	Line	-
Mode 1	Pass	AV	858.467k	16.79	46.00	-29.21	Line	-
Mode 1	Pass	QP	4.089M	17.42	56.00	-38.58	Line	-
Mode 1	Pass	AV	4.089M	15.65	46.00	-30.35	Line	-
Mode 1	Pass	QP	17.346M	32.15	60.00	-27.85	Line	-
Mode 1	Pass	AV	17.346M	24.40	50.00	-25.60	Line	-
Mode 1	Pass	QP	166.406k	34.77	65.14	-30.37	Neutral	-
Mode 1	Pass	AV	166.406k	19.98	55.14	-35.16	Neutral	-
Mode 1	Pass	QP	228.103k	26.16	62.52	-36.36	Neutral	-
Mode 1	Pass	AV	228.103k	16.63	52.52	-35.89	Neutral	-
Mode 1	Pass	QP	416.794k	36.67	57.51	-20.84	Neutral	-
Mode 1	Pass	AV	416.794k	33.39	47.51	-14.12	Neutral	-
Mode 1	Pass	QP	1.144M	23.51	56.00	-32.49	Neutral	-
Mode 1	Pass	AV	1.144M	18.15	46.00	-27.85	Neutral	-
Mode 1	Pass	QP	3.715M	19.66	56.00	-36.34	Neutral	-
Mode 1	Pass	AV	3.715M	16.90	46.00	-29.10	Neutral	-
Mode 1	Pass	QP	17.277M	32.92	60.00	-27.08	Neutral	-
Mode 1	Pass	AV	17.277M	25.36	50.00	-24.64	Neutral	-

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	173.183k	37.30	64.80	-27.50	19.55	Line	-	17.75	9.59	0.03	9.93			
AV	173.183k	23.49	54.80	-31.31	19.55	Line	-	3.94	9.59	0.03	9.93			
QP	209.76k	30.10	63.21	-33.11	19.55	Line	-	10.55	9.59	0.03	9.93			
AV	209.76k	18.69	53.21	-34.52	19.55	Line	-	-0.86	9.59	0.03	9.93			
QP	416.794k	37.47	57.51	-20.04	19.60	Line	-	17.87	9.60	0.04	9.96			
AV	416.794k	34.12	47.51	-13.39	19.60	Line	-	14.52	9.60	0.04	9.96			
QP	858.467k	20.43	56.00	-35.57	19.60	Line	-	0.83	9.61	0.05	9.94			
AV	858.467k	16.79	46.00	-29.21	19.60	Line	-	-2.81	9.61	0.05	9.94			
QP	4.089M	17.42	56.00	-38.58	19.73	Line	-	-2.31	9.67	0.13	9.93			
AV	4.089M	15.65	46.00	-30.35	19.73	Line	-	-4.08	9.67	0.13	9.93			
QP	17.346M	32.15	60.00	-27.85	19.92	Line	-	12.23	9.69	0.26	9.97			
AV	17.346M	24.40	50.00	-25.60	19.92	Line	-	4.48	9.69	0.26	9.97			

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	166.406k	34.77	65.14	-30.37	19.56	Neutral	-	15.21	9.60	0.03	9.93			
AV	166.406k	19.98	55.14	-35.16	19.56	Neutral	-	0.42	9.60	0.03	9.93			
QP	228.103k	26.16	62.52	-36.36	19.57	Neutral	-	6.59	9.60	0.03	9.94			
AV	228.103k	16.63	52.52	-35.89	19.57	Neutral	-	-2.94	9.60	0.03	9.94			
QP	416.794k	36.67	57.51	-20.84	19.60	Neutral	-	17.07	9.60	0.04	9.96			
AV	416.794k	33.39	47.51	-14.12	19.60	Neutral	-	13.79	9.60	0.04	9.96			
QP	1.144M	23.51	56.00	-32.49	19.61	Neutral	-	3.90	9.61	0.06	9.94			
AV	1.144M	18.15	46.00	-27.85	19.61	Neutral	-	-1.46	9.61	0.06	9.94			
QP	3.715M	19.66	56.00	-36.34	19.69	Neutral	-	-0.03	9.64	0.12	9.93			
AV	3.715M	16.90	46.00	-29.10	19.69	Neutral	-	-2.79	9.64	0.12	9.93			
QP	17.277M	32.92	60.00	-27.08	19.94	Neutral	-	12.98	9.72	0.25	9.97			
AV	17.277M	25.36	50.00	-24.64	19.94	Neutral	-	5.42	9.72	0.25	9.97			

**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)	683.75k	1.024M	1M02F1D	680k	1.022M
BT-LE(125kbps)	626.25k	1.053M	1M05F1D	625k	1.048M
BT-LE(500kbps)	662.5k	1.021M	1M02F1D	660k	1.013M
BT-LE(2Mbps)	1.158M	2.014M	2M01F1D	1.153M	2.009M

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

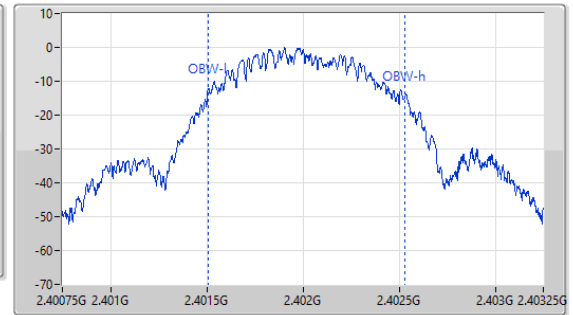
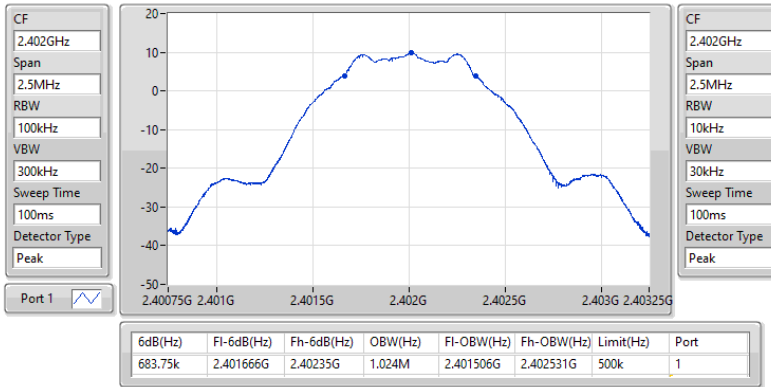
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	683.75k	1.024M
2440MHz	Pass	500k	680k	1.022M
2480MHz	Pass	500k	680k	1.022M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.155M	2.011M
2440MHz	Pass	500k	1.158M	2.014M
2480MHz	Pass	500k	1.153M	2.009M
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	500k	625k	1.048M
2440MHz	Pass	500k	626.25k	1.053M
2480MHz	Pass	500k	626.25k	1.053M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	660k	1.013M
2440MHz	Pass	500k	661.25k	1.017M
2480MHz	Pass	500k	662.5k	1.021M

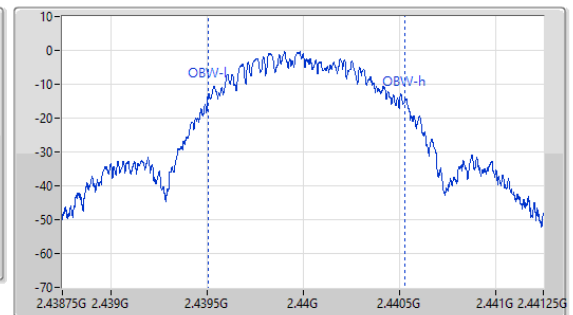
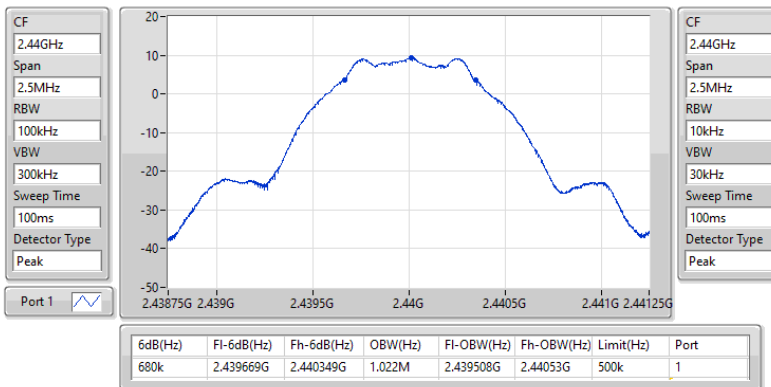
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

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

08/02/2023


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

08/02/2023

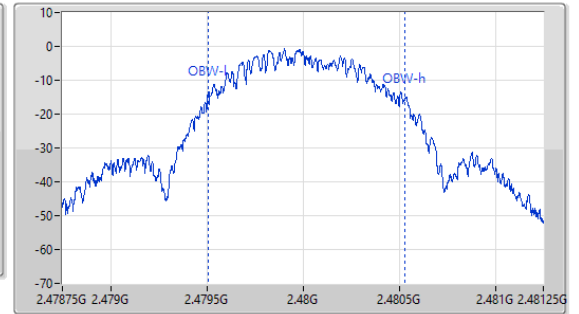
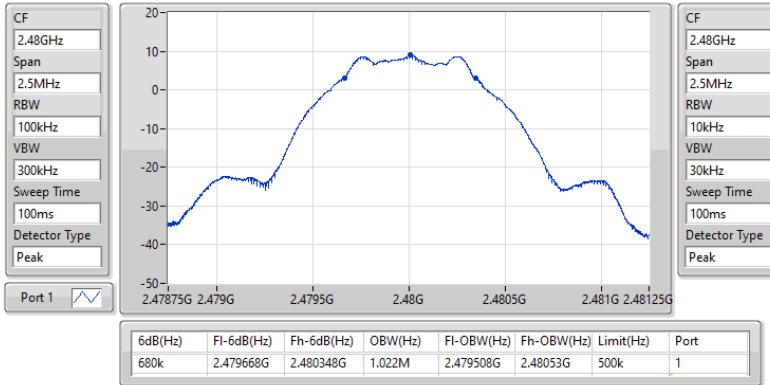


2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

2480MHz

08/02/2023

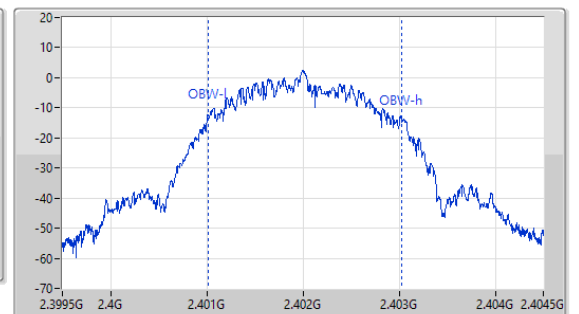
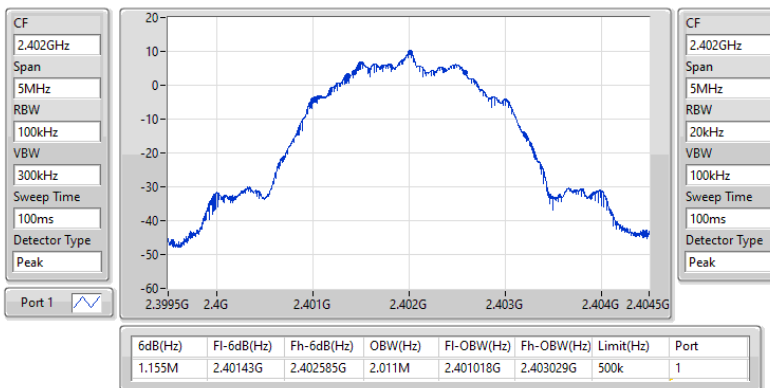


2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

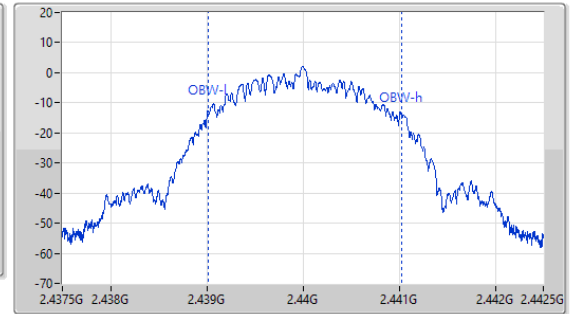
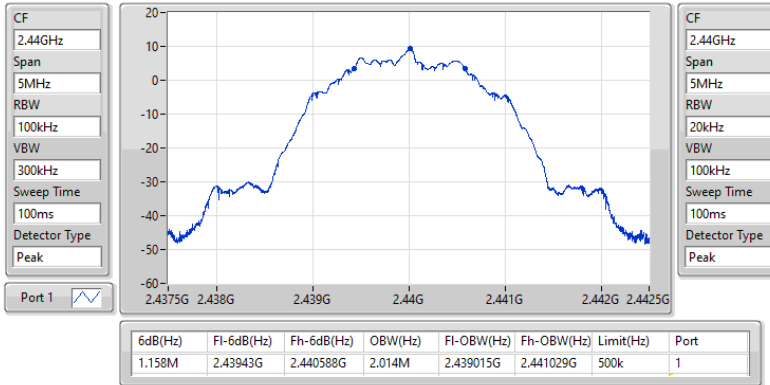
2402MHz

08/02/2023

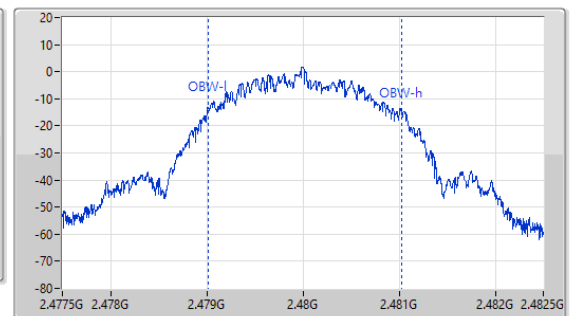
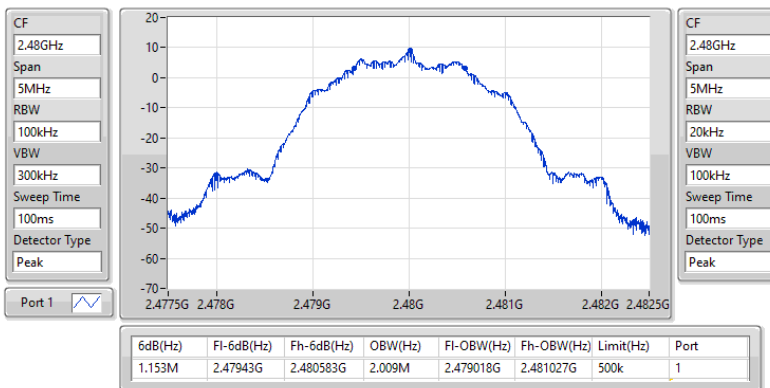


2.4-2.4835GHz_BT-LE(2Mbps)
EBW-DTS
2440MHz

08/02/2023


2.4-2.4835GHz_BT-LE(2Mbps)
EBW-DTS
2480MHz

08/02/2023

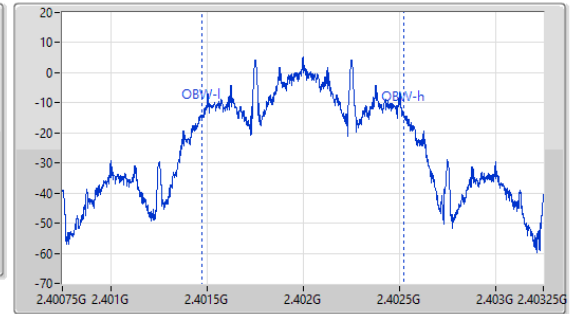
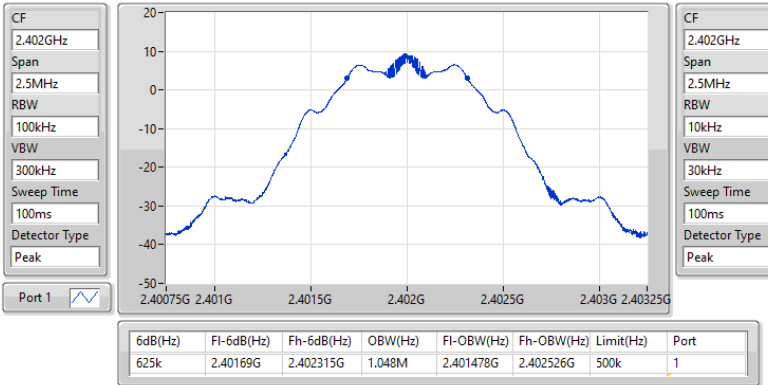


2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

2402MHz

08/02/2023

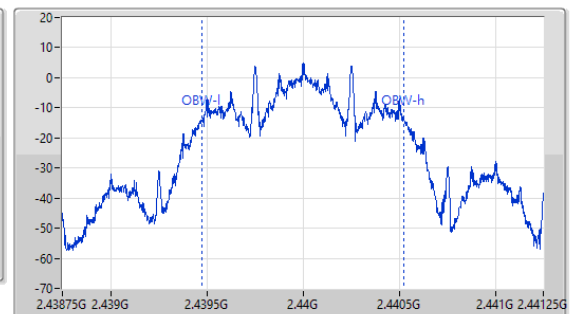
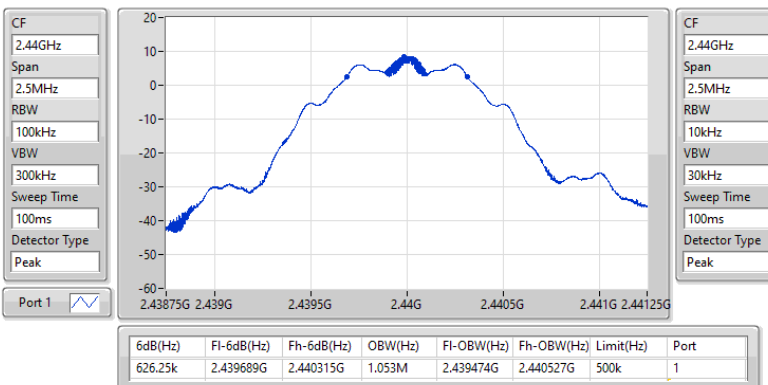


2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

2440MHz

08/02/2023

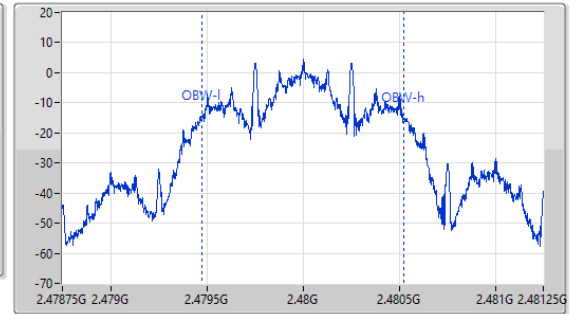
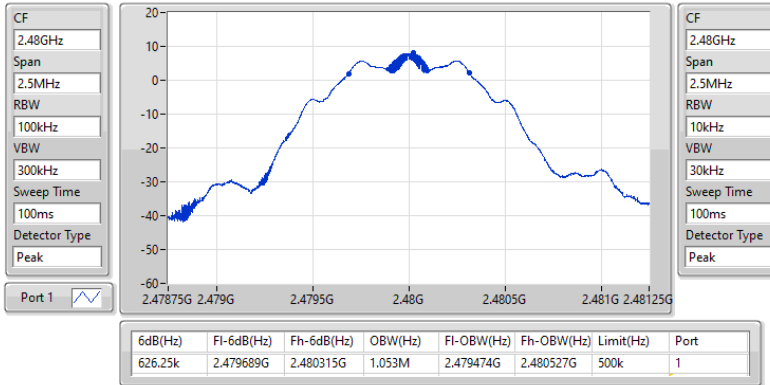


2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

2480MHz

08/02/2023

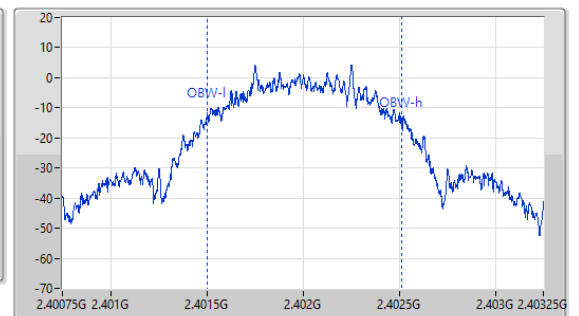
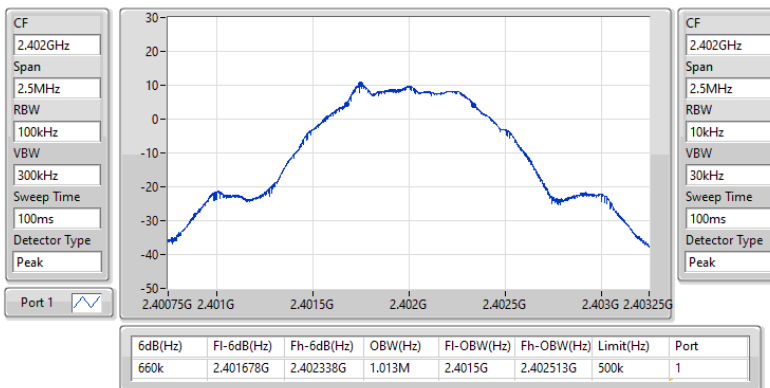


2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

2402MHz

08/02/2023

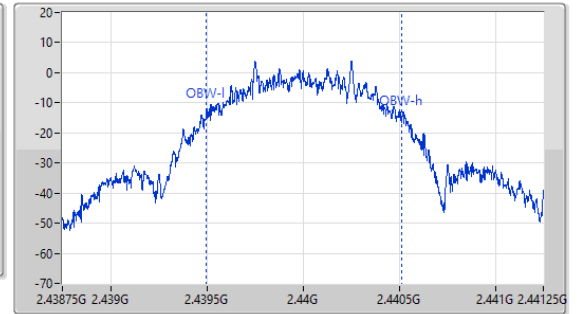
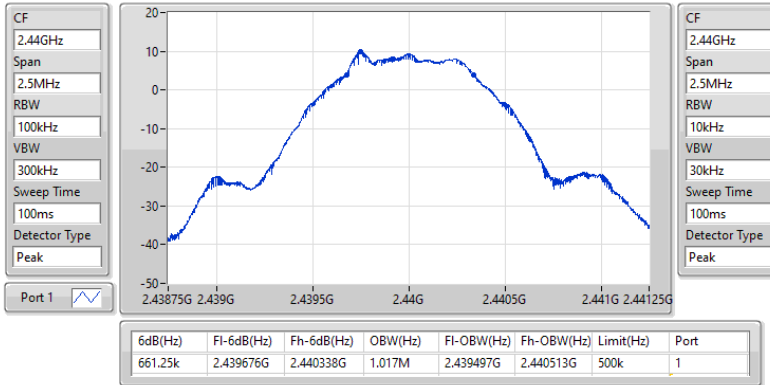


2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

2440MHz

08/02/2023

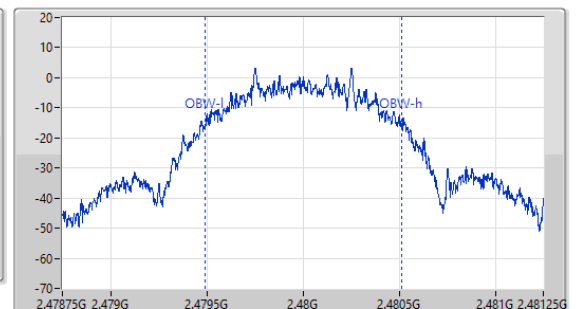
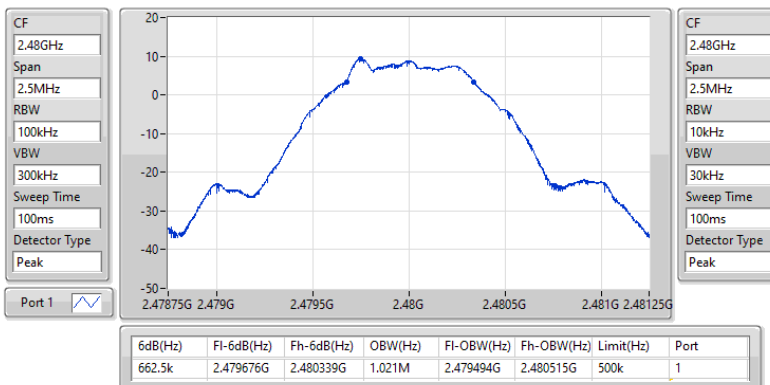


2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

2480MHz

08/02/2023





Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	10.69	0.01172
BT-LE(125kbps)	10.73	0.01183
BT-LE(500kbps)	10.69	0.01172
BT-LE(2Mbps)	10.57	0.01140

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.70	10.69	30.00
2440MHz	Pass	2.70	10.21	30.00
2480MHz	Pass	2.70	9.74	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.70	10.57	30.00
2440MHz	Pass	2.70	10.09	30.00
2480MHz	Pass	2.70	9.64	30.00
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	2.70	10.73	30.00
2440MHz	Pass	2.70	10.22	30.00
2480MHz	Pass	2.70	9.77	30.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	2.70	10.69	30.00
2440MHz	Pass	2.70	10.20	30.00
2480MHz	Pass	2.70	9.75	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-4.87
BT-LE(125kbps)	3.99
BT-LE(500kbps)	3.73
BT-LE(2Mbps)	-7.95

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.70	-4.87	8.00
2440MHz	Pass	2.70	-5.27	8.00
2480MHz	Pass	2.70	-5.46	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.70	-9.20	8.00
2440MHz	Pass	2.70	-7.95	8.00
2480MHz	Pass	2.70	-8.91	8.00
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	2.70	3.99	8.00
2440MHz	Pass	2.70	3.64	8.00
2480MHz	Pass	2.70	3.18	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	2.70	3.73	8.00
2440MHz	Pass	2.70	3.41	8.00
2480MHz	Pass	2.70	2.87	8.00

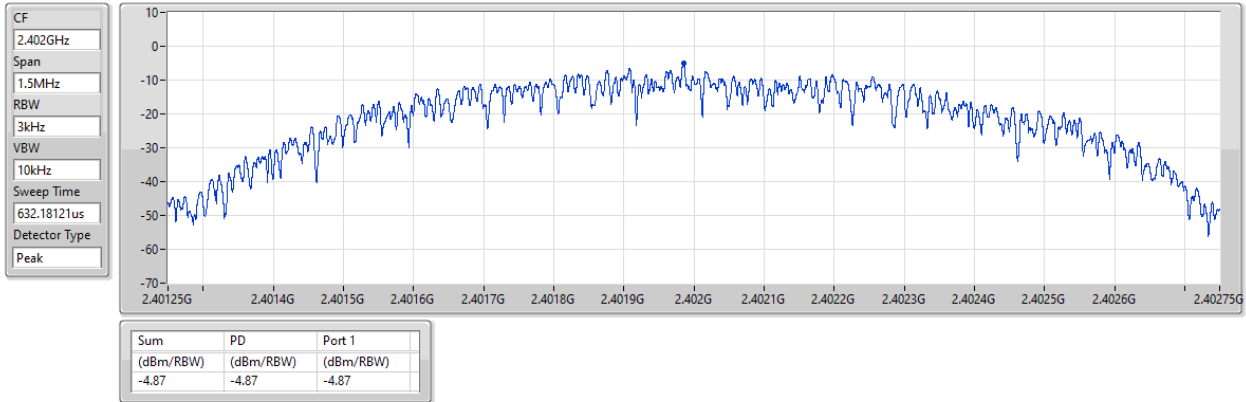
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2402MHz

08/02/2023

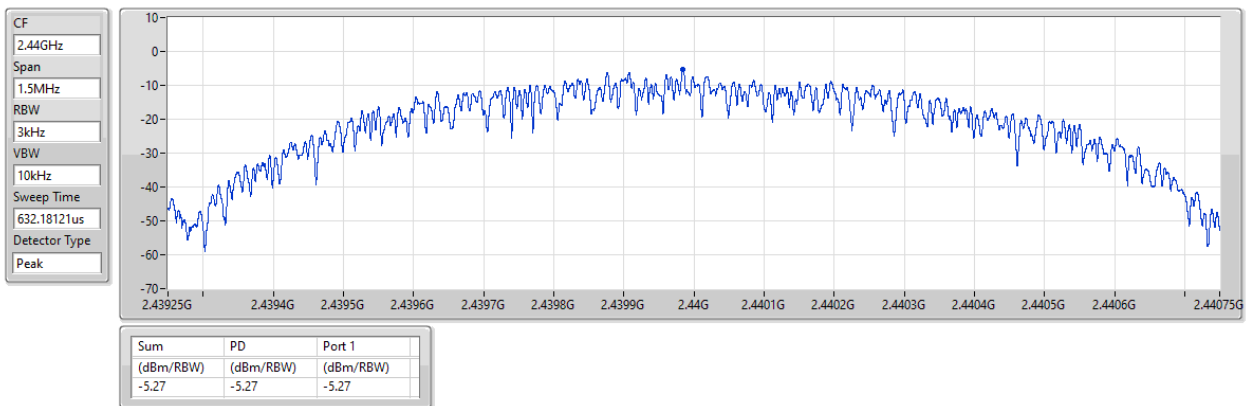


2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2440MHz

08/02/2023

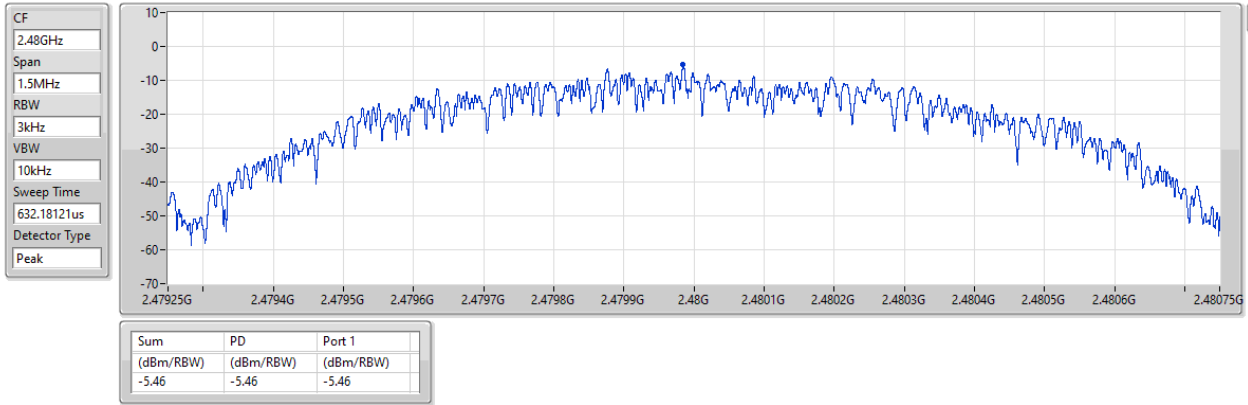


2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2480MHz

08/02/2023

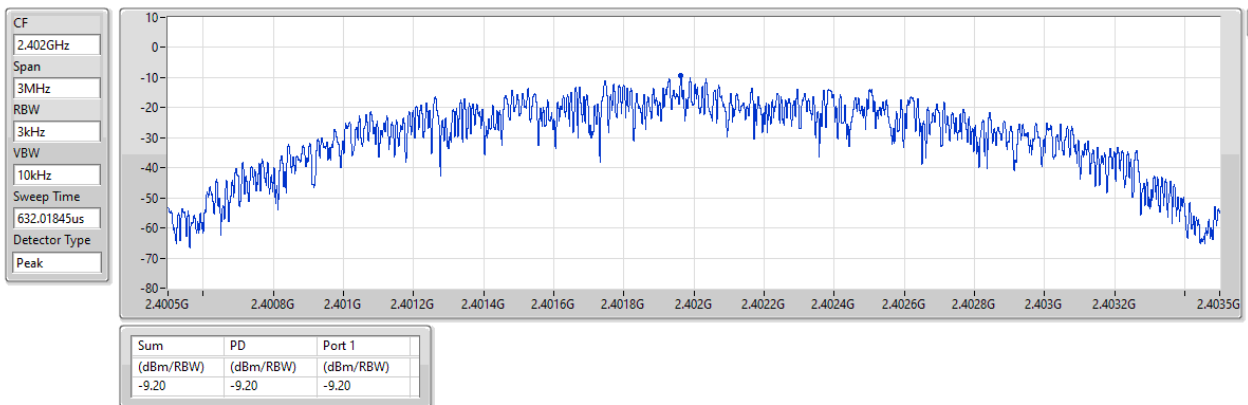


2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2402MHz

08/02/2023



2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2440MHz

08/02/2023

CF
2.44GHz

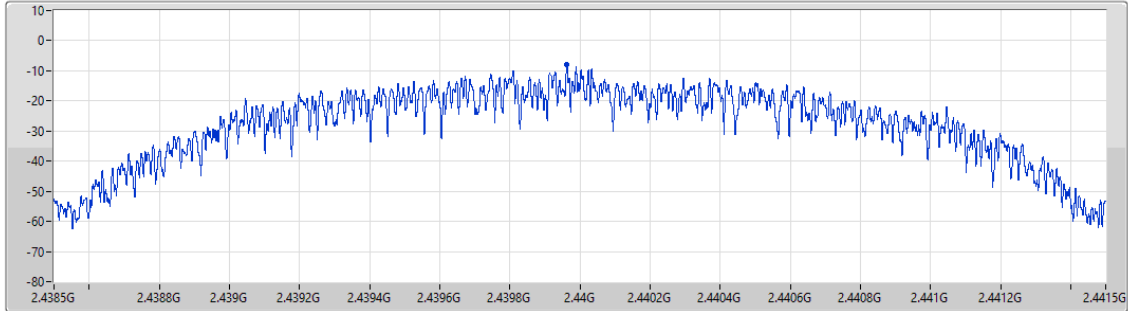
Span
3MHz

RBW
3kHz

VBW
10kHz

Sweep Time
632.01845us

Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-7.95	-7.95	-7.95

2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2480MHz

08/02/2023

CF
2.48GHz

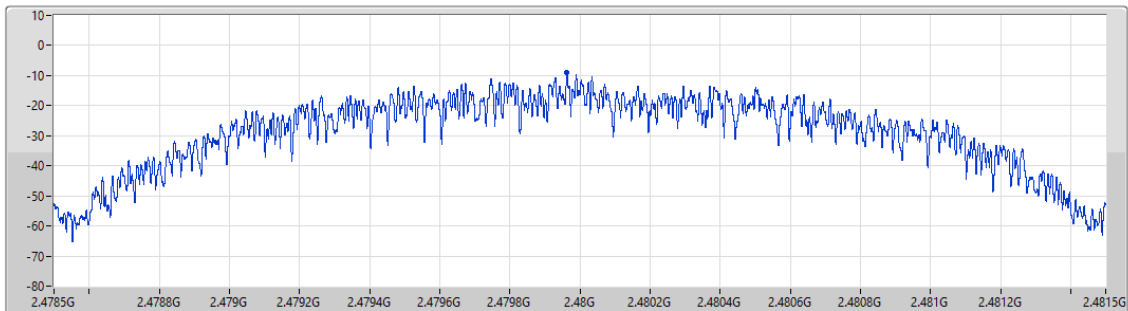
Span
3MHz

RBW
3kHz

VBW
10kHz

Sweep Time
632.01845us

Detector Type
Peak



Port 1

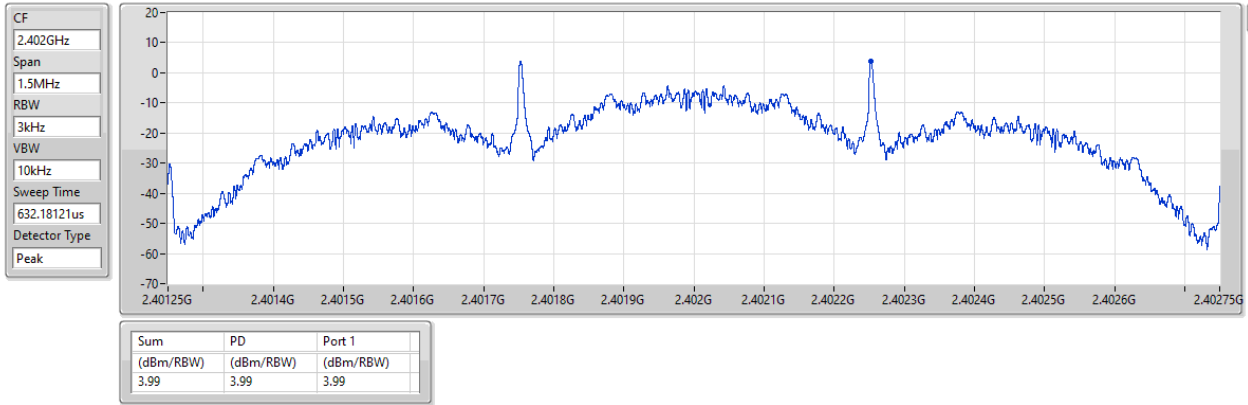
Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-8.91	-8.91	-8.91

2.4-2.4835GHz_BT-LE(125kbps)

PSD

2402MHz

08/02/2023

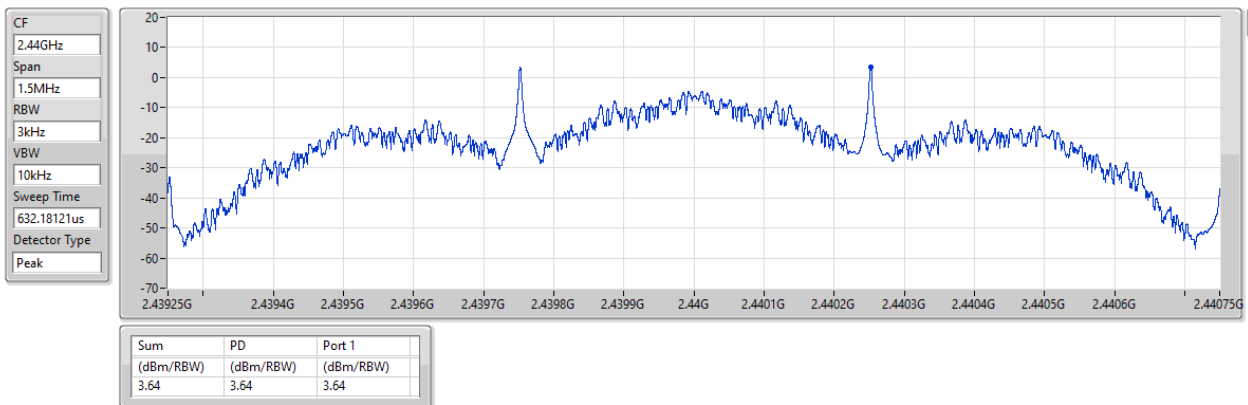


2.4-2.4835GHz_BT-LE(125kbps)

PSD

2440MHz

08/02/2023

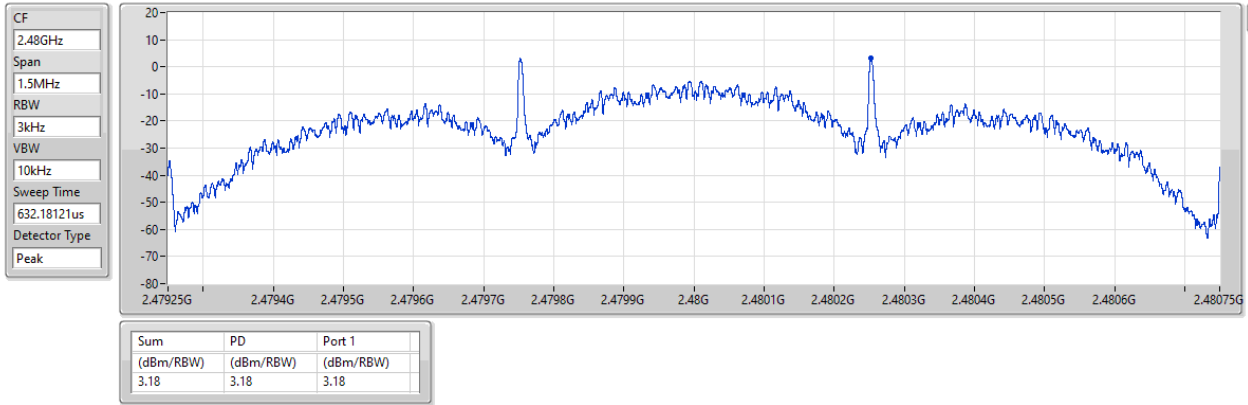


2.4-2.4835GHz_BT-LE(125kbps)

PSD

2480MHz

08/02/2023

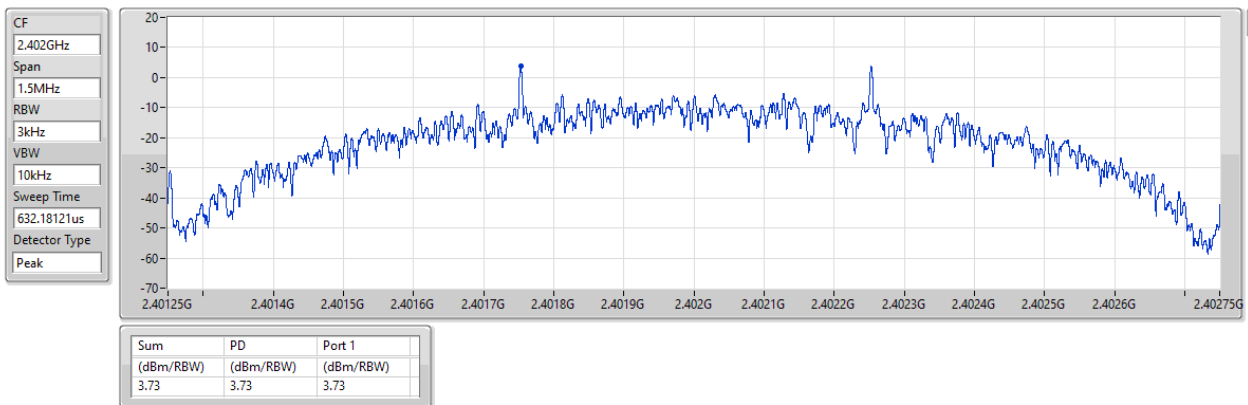


2.4-2.4835GHz_BT-LE(500kbps)

PSD

2402MHz

08/02/2023

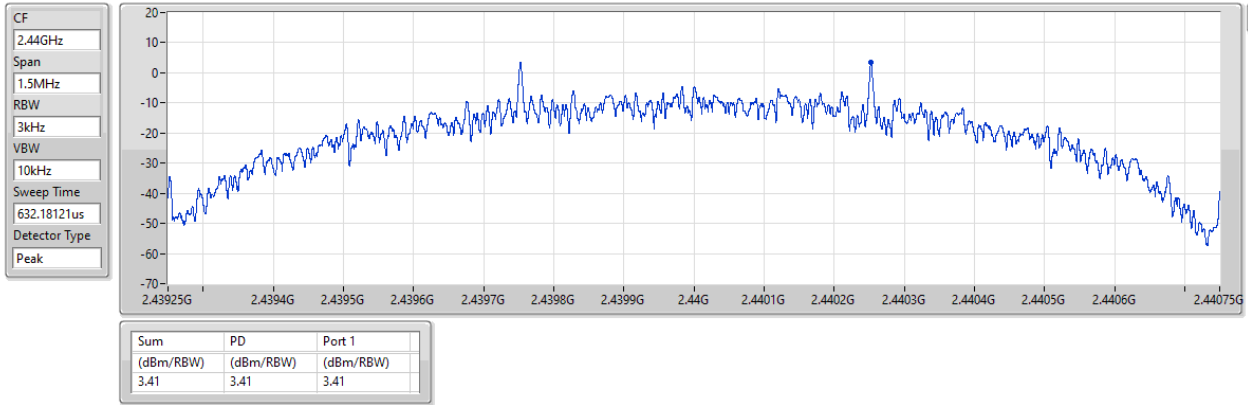


2.4-2.4835GHz_BT-LE(500kbps)

PSD

2440MHz

08/02/2023

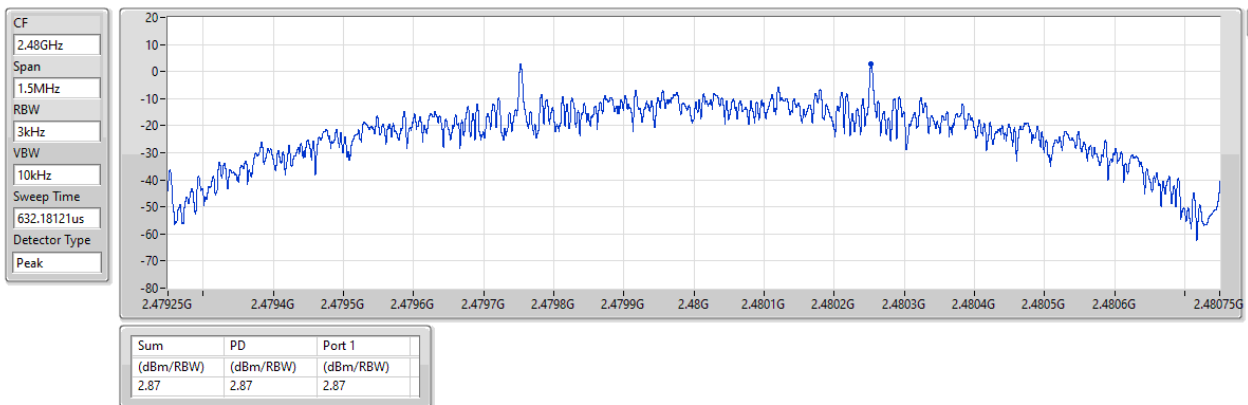


2.4-2.4835GHz_BT-LE(500kbps)

PSD

2480MHz

08/02/2023



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	2.402G	9.48	-20.52	2.16028G	-54.50	2.4G	-48.80	2.4G	-50.00	2.5029G	-52.80	15.21402G	-42.18	1
BT-LE(125kbps)	Pass	2.402G	8.13	-21.87	2.30715G	-54.02	2.39984G	-50.42	2.4G	-51.08	2.50126G	-52.79	24.78066G	-41.09	1
BT-LE(500kbps)	Pass	2.402G	9.52	-20.48	2.04043G	-54.34	2.3998G	-50.71	2.4G	-50.26	2.50098G	-52.76	24.82284G	-41.57	1
BT-LE(2Mbps)	Pass	2.402G	9.72	-20.28	2.30245G	-54.20	2.4G	-32.08	2.4G	-31.68	2.50314G	-52.23	14.8119G	-42.39	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	2.402G	9.48	-20.52	2.16028G	-54.50	2.4G	-48.80	2.4G	-50.00	2.5029G	-52.80	15.21402G	-42.18	1
2440MHz	Pass	2.402G	9.48	-20.52	2.30715G	-55.01	2.39232G	-52.39	2.4G	-55.88	2.5003G	-53.11	15.20559G	-41.79	1
2480MHz	Pass	2.402G	9.48	-20.52	932.4M	-54.18	2.39992G	-53.64	2.4G	-55.34	2.5033G	-51.74	15.2787G	-42.17	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	9.72	-20.28	2.30245G	-54.20	2.4G	-32.08	2.4G	-31.68	2.50314G	-52.23	14.8119G	-42.39	1
2440MHz	Pass	2.402G	9.72	-20.28	1.63623G	-54.84	2.39904G	-52.20	2.4G	-54.56	2.5025G	-52.13	23.32401G	-41.93	1
2480MHz	Pass	2.402G	9.72	-20.28	1.83598G	-54.48	2.3956G	-52.89	2.4G	-53.46	2.50274G	-52.70	24.03827G	-41.90	1
BT-LE(125kbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	8.13	-21.87	2.30715G	-54.02	2.39984G	-50.42	2.4G	-51.08	2.50126G	-52.79	24.78066G	-41.09	1
2440MHz	Pass	2.402G	8.13	-21.87	819.6M	-54.04	2.39864G	-53.41	2.4G	-56.03	2.50014G	-52.96	24.68786G	-42.44	1
2480MHz	Pass	2.402G	8.13	-21.87	2.0604G	-54.49	2.39284G	-53.52	2.4G	-55.24	2.50126G	-52.63	21.95454G	-42.15	1
BT-LE(500kbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	9.52	-20.48	2.04043G	-54.34	2.3998G	-50.71	2.4G	-50.26	2.50098G	-52.76	24.82284G	-41.57	1
2440MHz	Pass	2.402G	9.52	-20.48	1.71143G	-54.74	2.39816G	-52.98	2.4G	-55.58	2.50202G	-52.01	21.99391G	-41.98	1
2480MHz	Pass	2.402G	9.52	-20.48	2.192G	-55.03	2.39356G	-53.51	2.4G	-55.29	2.50046G	-52.26	14.93563G	-42.17	1

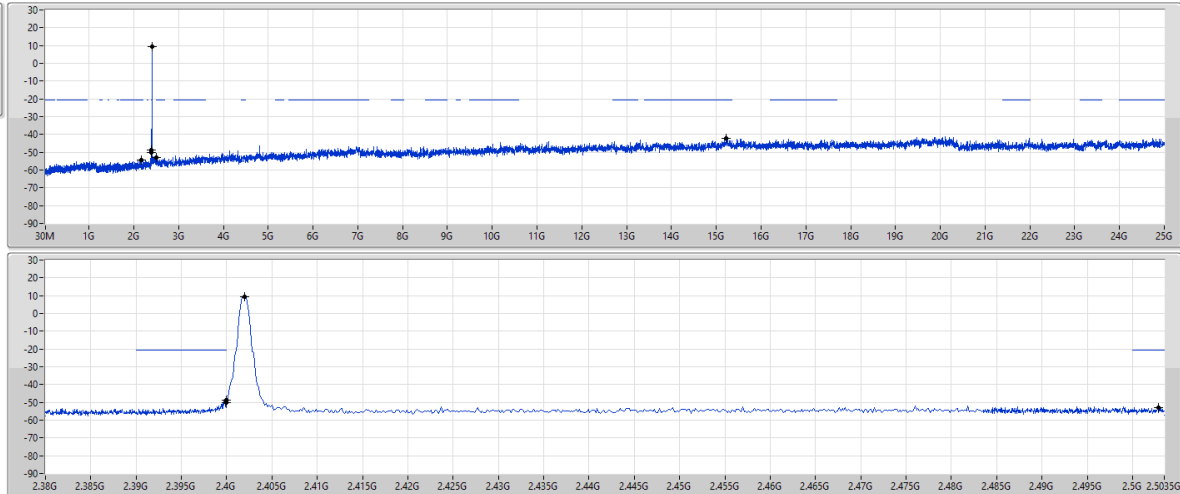
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2402MHz

08/02/2023

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
2.402G	9.48	-20.52	2.16028G	-54.50	2.4G	-48.80	2.4G	-50.00	2.5029G	-52.80	15.21402G	-42.18	1

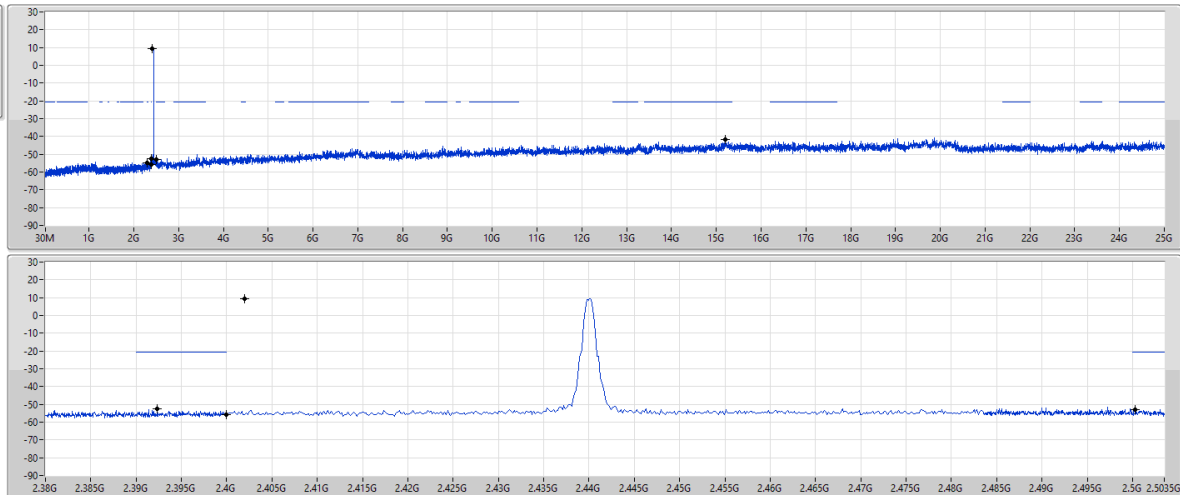
2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2440MHz

08/02/2023

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

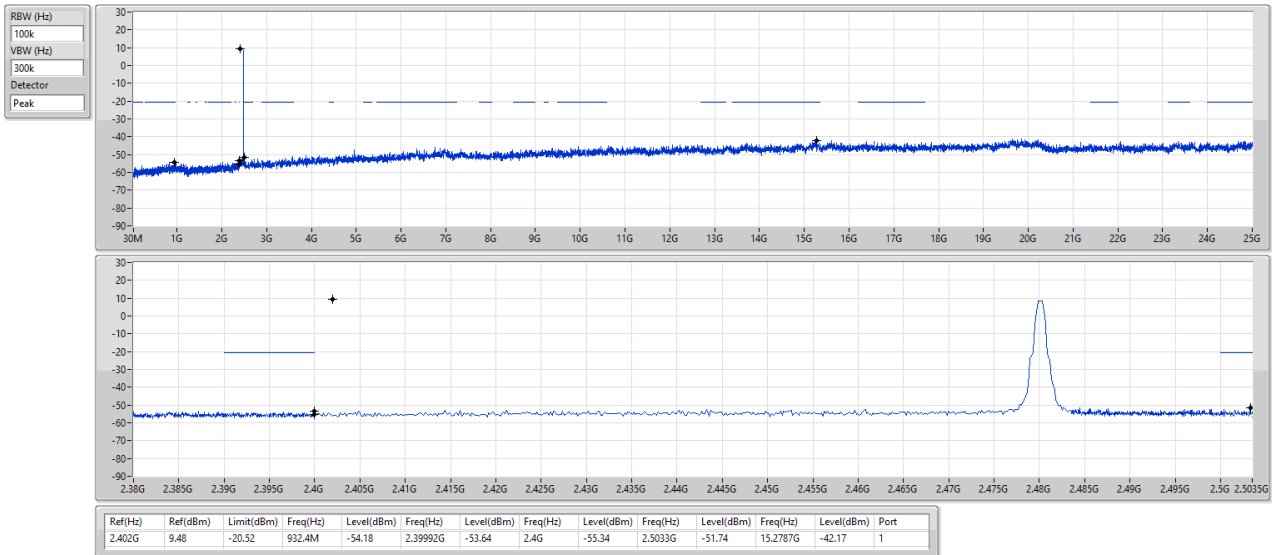


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	9.48	-20.52	2.30715G	-55.01	2.39232G	-52.39	2.4G	-55.88	2.5003G	-53.11	15.20559G	-41.79	1

2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

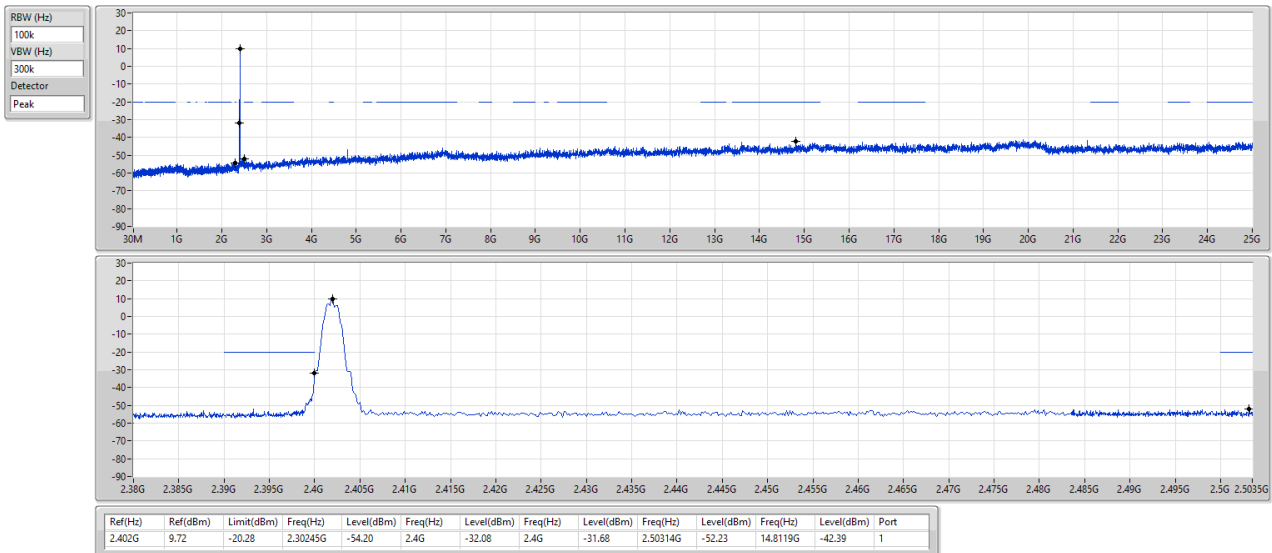
2480MHz



2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2402MHz

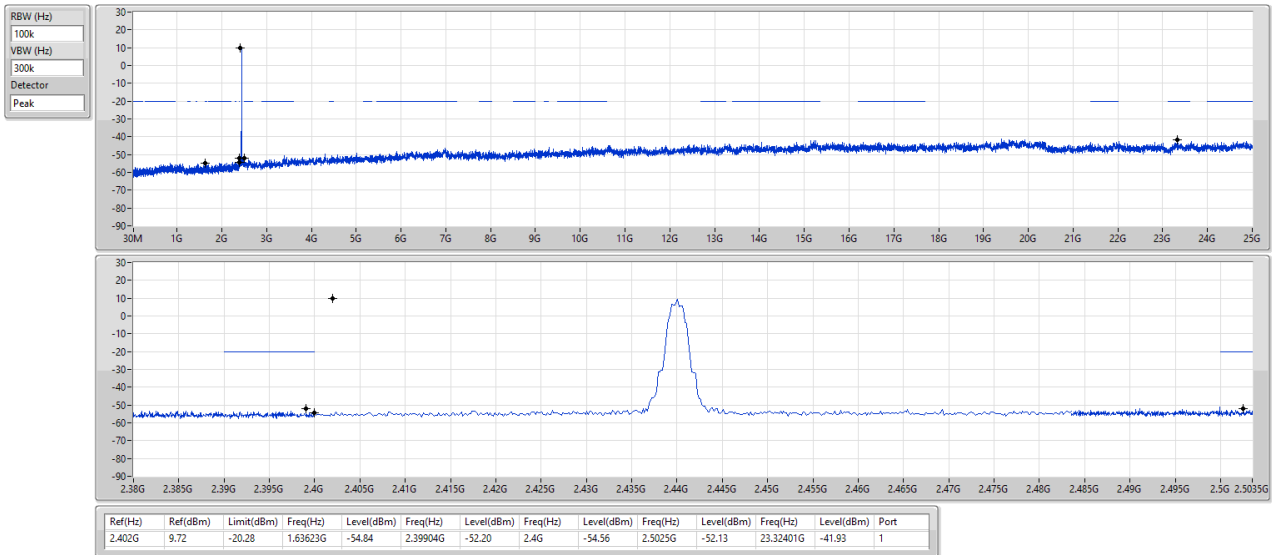


2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2440MHz

08/02/2023

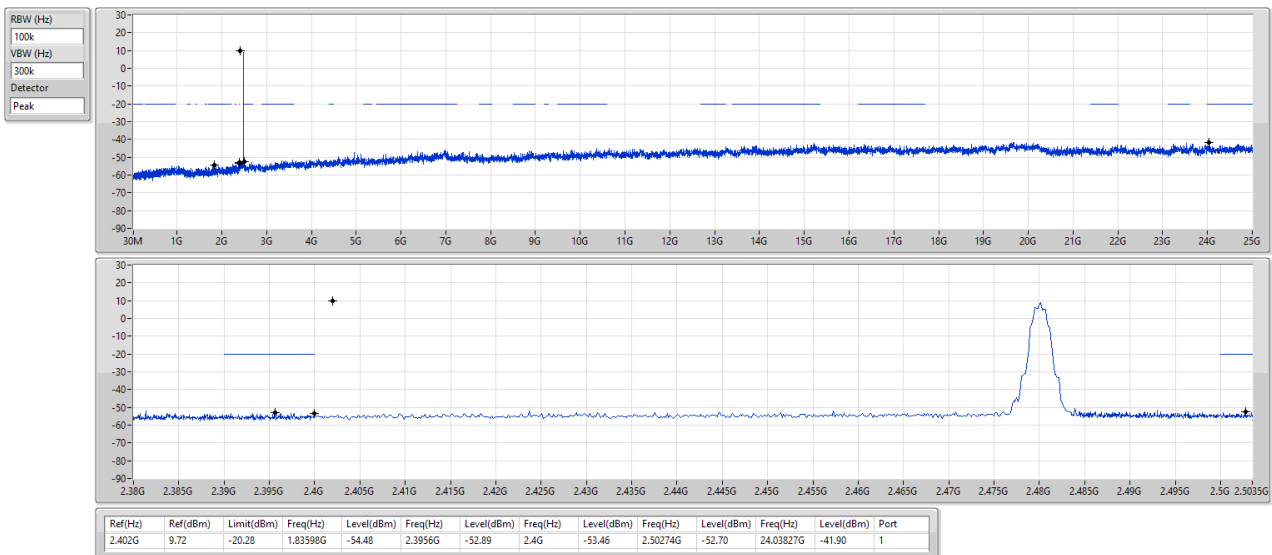


2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2480MHz

08/02/2023

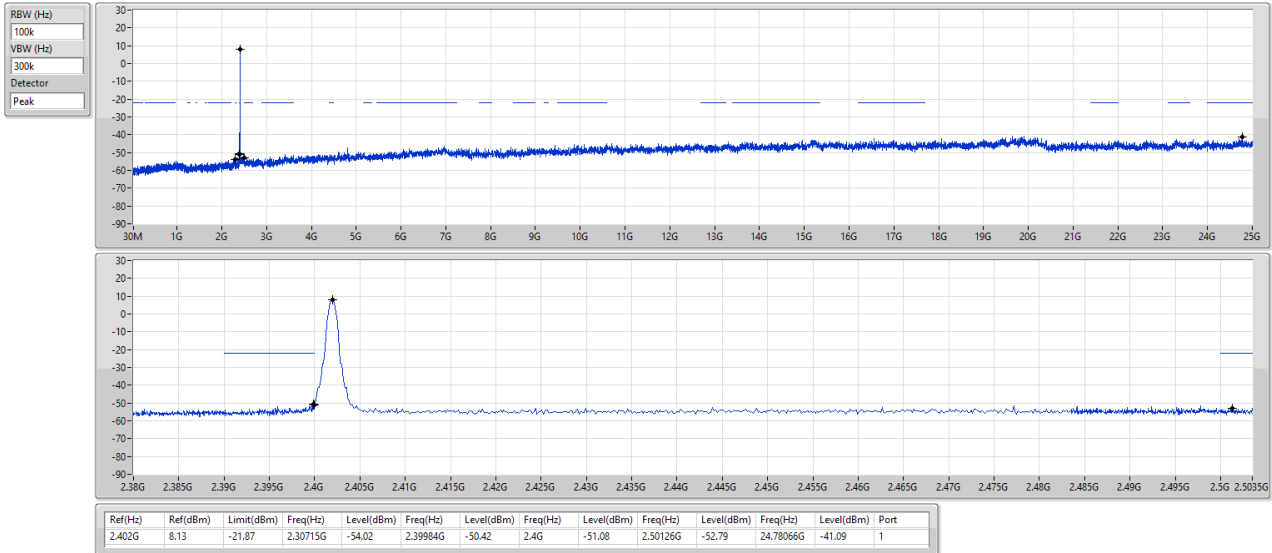


2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

2402MHz

08/02/2023

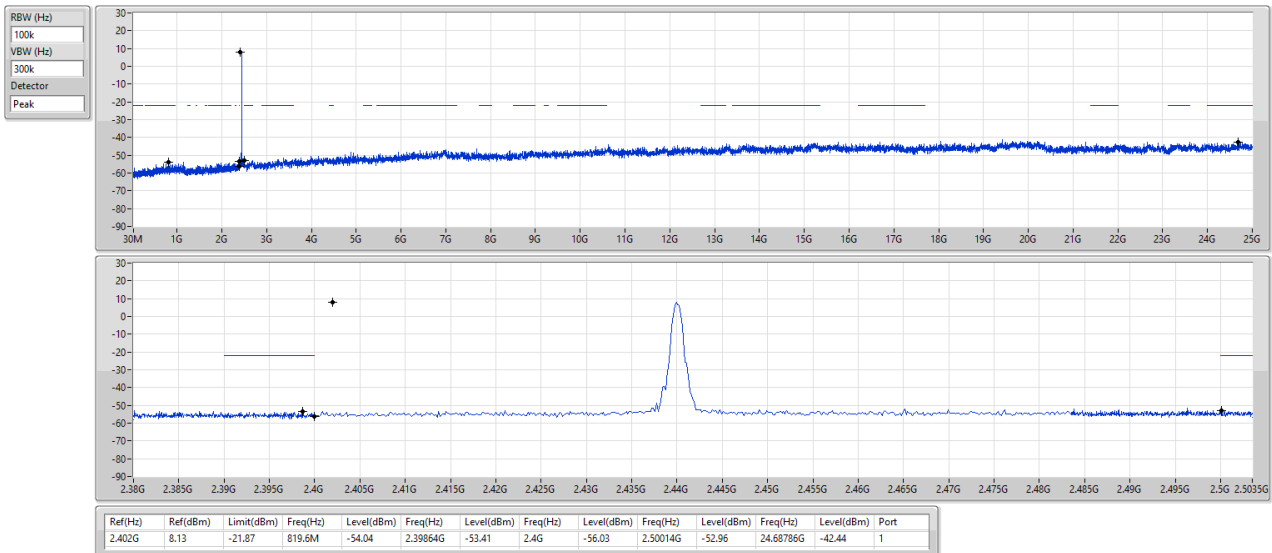


2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

2440MHz

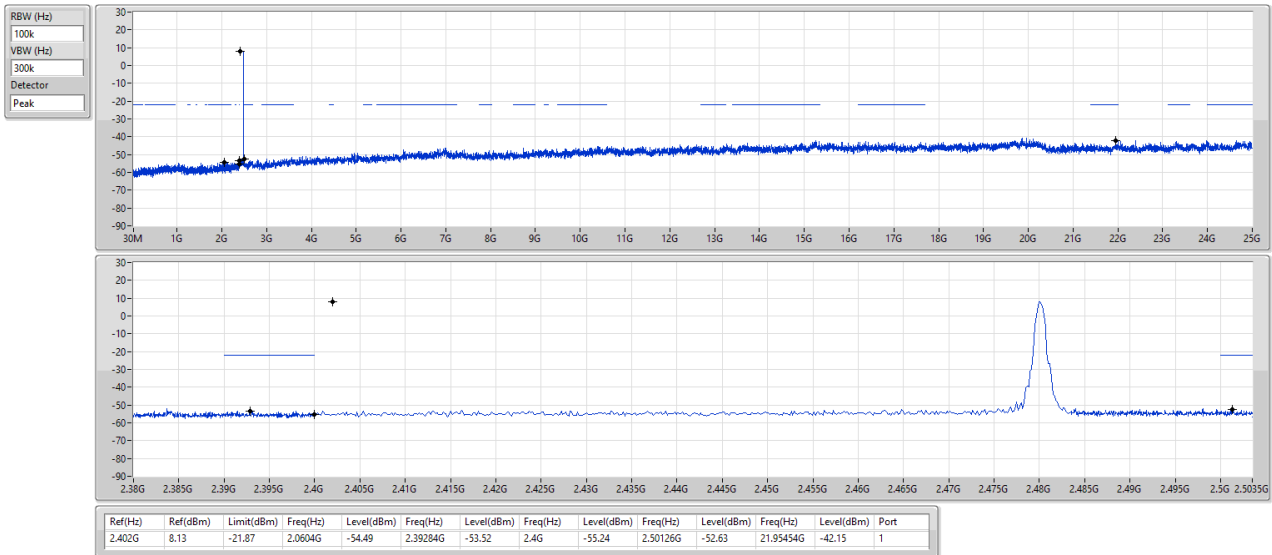
08/02/2023



2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

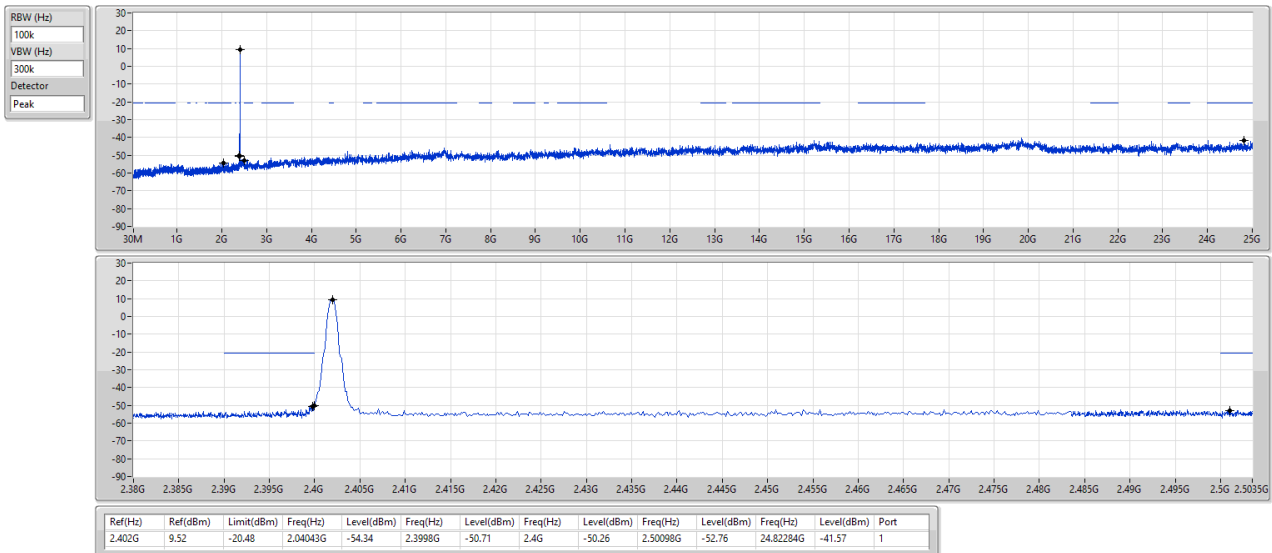
2480MHz



2.4-2.4835GHz_BT-LE(500kbps)

CSEndB-DTS

2402MHz



2.4-2.4835GHz_BT-LE(500kbps)

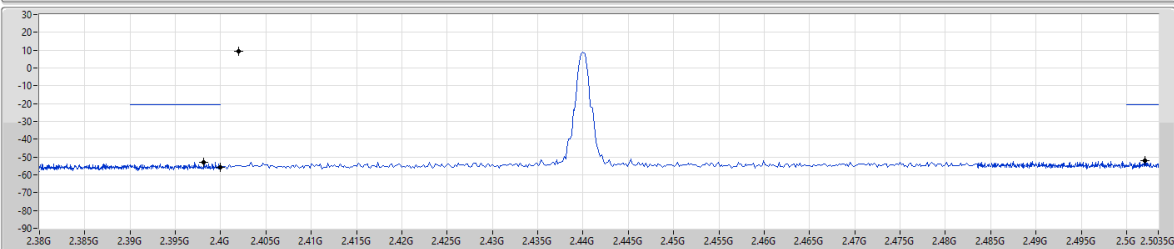
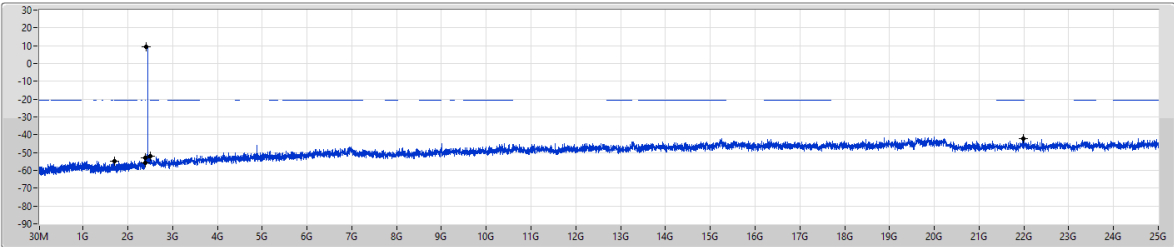
CSEndB-DTS

2440MHz

08/02/2023

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
2.402G	9.52	-20.48	1.71143G	-54.74	2.39816G	-52.98	2.4G	-55.58	2.50202G	-52.01	2.199391G	-41.98	1

2.4-2.4835GHz_BT-LE(500kbps)

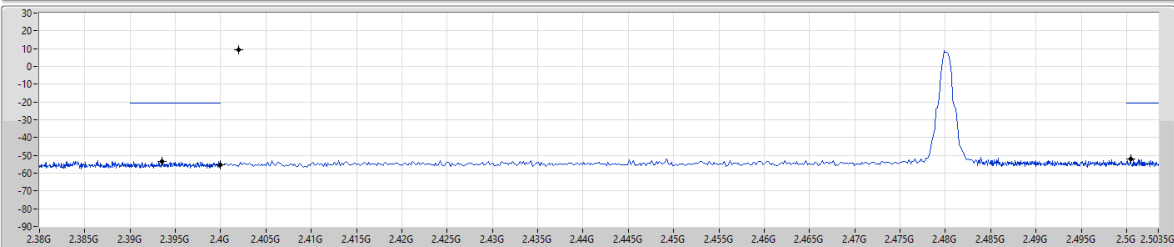
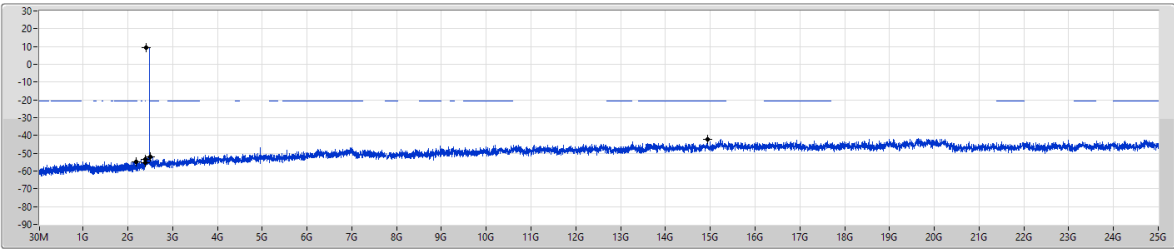
CSEndB-DTS

2480MHz

08/02/2023

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
2.402G	9.52	-20.48	2.192G	-55.03	2.39356G	-53.51	2.4G	-55.29	2.50046G	-52.26	14.93563G	-42.17	1



Summary

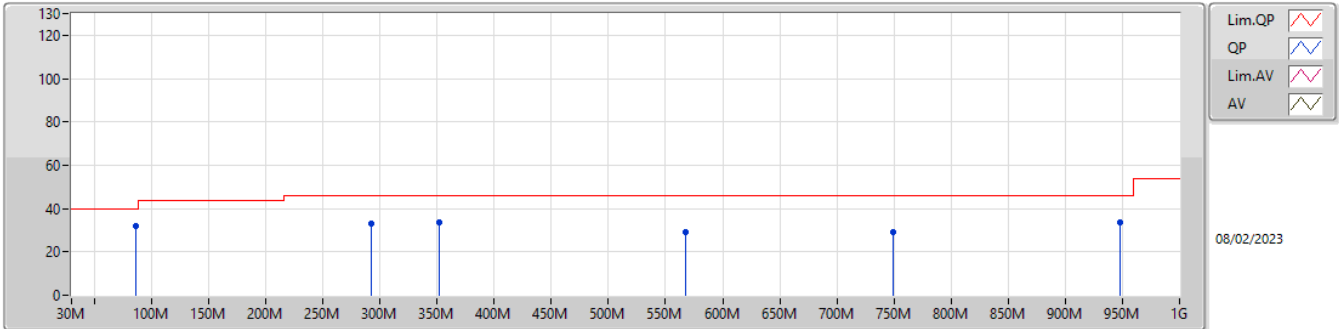
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	PK	86.26M	31.74	40.00	-8.26	3	Vertical	360	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	PK	86.26M	31.74	40.00	-8.26	3	Vertical	360	1.00
2480MHz	Pass	PK	291.9M	32.80	46.00	-13.20	3	Vertical	360	1.00
2480MHz	Pass	PK	352.04M	33.87	46.00	-12.13	3	Vertical	360	1.00
2480MHz	Pass	PK	567.38M	29.24	46.00	-16.76	3	Vertical	360	1.00
2480MHz	Pass	PK	749.74M	29.28	46.00	-16.72	3	Vertical	360	1.00
2480MHz	Pass	PK	947.62M	33.59	46.00	-12.41	3	Vertical	360	1.00
2480MHz	Pass	PK	109.54M	33.28	43.50	-10.22	3	Horizontal	0	1.00
2480MHz	Pass	PK	249.22M	26.07	46.00	-19.93	3	Horizontal	0	1.00
2480MHz	Pass	PK	515M	26.51	46.00	-19.49	3	Horizontal	0	1.00
2480MHz	Pass	PK	625.58M	30.22	46.00	-15.78	3	Horizontal	0	1.00
2480MHz	Pass	PK	749.74M	33.72	46.00	-12.28	3	Horizontal	0	1.00
2480MHz	Pass	PK	947.62M	32.70	46.00	-13.30	3	Horizontal	0	1.00

2.4-2.4835GHz_BT-LE(2Mbps)

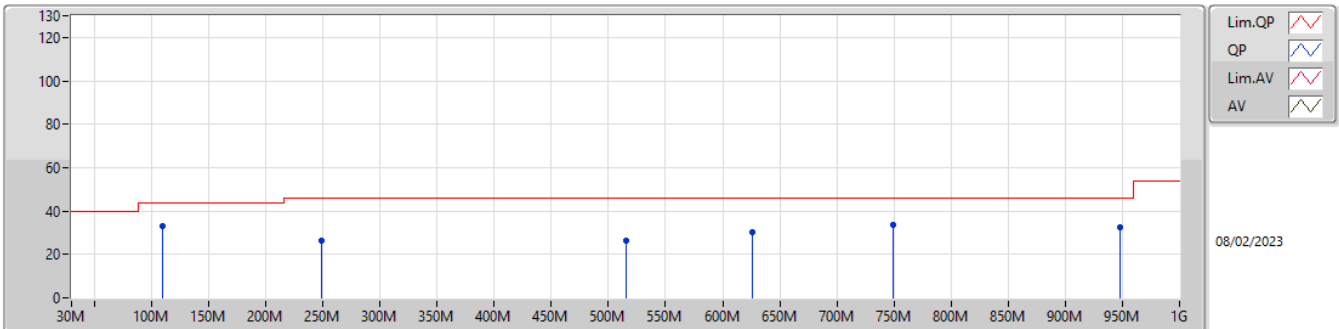
2480MHz_TX



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)
PK	86.26M	31.74	40.00	-8.26	-22.31	3	Vertical	360	1.00	54.05	13.45	0.99	36.75
PK	291.9M	32.80	46.00	-13.20	-16.14	3	Vertical	360	1.00	48.94	18.24	2.04	36.42
PK	352.04M	33.87	46.00	-12.13	-14.68	3	Vertical	360	1.00	48.55	19.57	2.28	36.53
PK	567.38M	29.24	46.00	-16.76	-9.25	3	Vertical	360	1.00	38.49	25.16	2.71	37.12
PK	749.74M	29.28	46.00	-16.72	-6.84	3	Vertical	360	1.00	36.12	27.28	3.31	37.43
PK	947.62M	33.59	46.00	-12.41	-3.80	3	Vertical	360	1.00	37.39	29.83	3.73	37.36

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)
PK	109.54M	33.28	43.50	-10.22	-19.45	3	Horizontal	0	1.00	52.73	16.06	1.12	36.63
PK	249.22M	26.07	46.00	-19.93	-16.99	3	Horizontal	0	1.00	43.06	17.59	1.90	36.48
PK	515M	26.51	46.00	-19.49	-11.30	3	Horizontal	0	1.00	37.81	23.14	2.58	37.02
PK	625.58M	30.22	46.00	-15.78	-8.75	3	Horizontal	0	1.00	38.97	25.44	2.94	37.13
PK	749.74M	33.72	46.00	-12.28	-6.84	3	Horizontal	0	1.00	40.56	27.28	3.31	37.43
PK	947.62M	32.70	46.00	-13.30	-3.80	3	Horizontal	0	1.00	36.50	29.83	3.73	37.36



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.80403G	48.71	54.00	-5.29	3	Horizontal	11	1.70
BT-LE(125kbps)	Pass	AV	4.80387G	47.43	54.00	-6.57	3	Horizontal	13	1.50
BT-LE(500kbps)	Pass	AV	4.80407G	48.28	54.00	-5.72	3	Horizontal	14	1.49
BT-LE(2Mbps)	Pass	AV	4.80305G	50.90	54.00	-3.10	3	Horizontal	11	1.50

Result

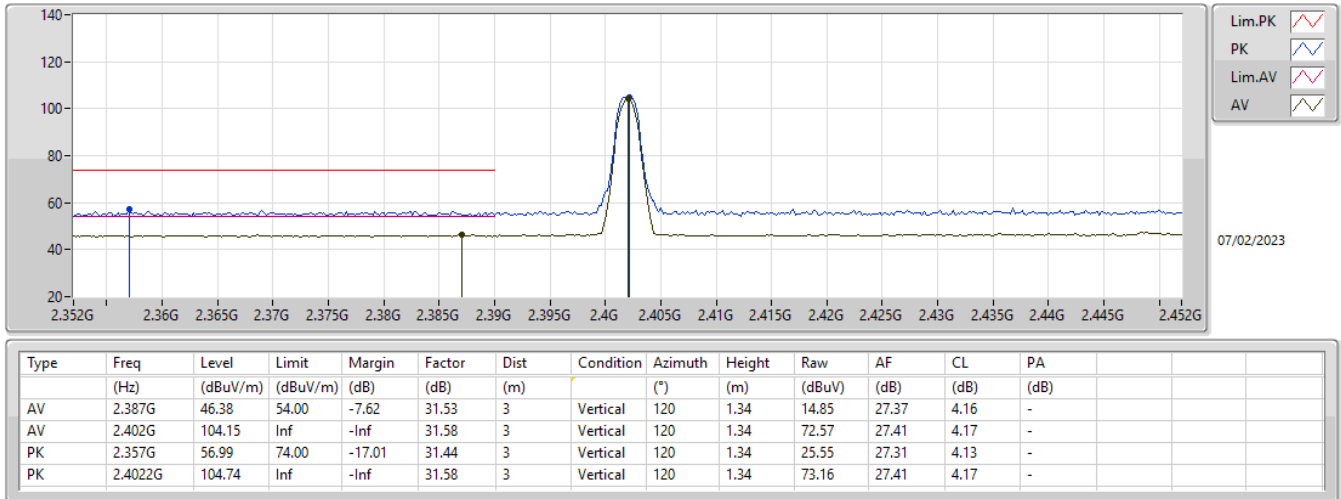
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.387G	46.38	54.00	-7.62	3	Vertical	120	1.34
2402MHz	Pass	AV	2.402G	104.15	Inf	-Inf	3	Vertical	120	1.34
2402MHz	Pass	PK	2.357G	56.99	74.00	-17.01	3	Vertical	120	1.34
2402MHz	Pass	PK	2.4022G	104.74	Inf	-Inf	3	Vertical	120	1.34
2402MHz	Pass	AV	2.3896G	46.26	54.00	-7.74	3	Horizontal	51	2.63
2402MHz	Pass	AV	2.402G	107.83	Inf	-Inf	3	Horizontal	51	2.63
2402MHz	Pass	PK	2.3698G	57.15	74.00	-16.85	3	Horizontal	51	2.63
2402MHz	Pass	PK	2.4022G	108.44	Inf	-Inf	3	Horizontal	51	2.63
2402MHz	Pass	AV	4.80375G	43.63	54.00	-10.37	3	Vertical	311	2.00
2402MHz	Pass	PK	4.80452G	51.54	74.00	-22.46	3	Vertical	311	2.00
2402MHz	Pass	AV	4.80403G	48.71	54.00	-5.29	3	Horizontal	11	1.70
2402MHz	Pass	PK	4.80447G	54.66	74.00	-19.34	3	Horizontal	11	1.70
2440MHz	Pass	AV	2.3724G	46.20	54.00	-7.80	3	Vertical	121	1.31
2440MHz	Pass	AV	2.44G	103.46	Inf	-Inf	3	Vertical	121	1.31
2440MHz	Pass	AV	2.4928G	47.05	54.00	-6.95	3	Vertical	121	1.31
2440MHz	Pass	PK	2.3832G	56.96	74.00	-17.04	3	Vertical	121	1.31
2440MHz	Pass	PK	2.4404G	104.12	Inf	-Inf	3	Vertical	121	1.31
2440MHz	Pass	PK	2.49G	57.06	74.00	-16.94	3	Vertical	121	1.31
2440MHz	Pass	AV	2.3864G	46.33	54.00	-7.67	3	Horizontal	56	2.51
2440MHz	Pass	AV	2.44G	108.20	Inf	-Inf	3	Horizontal	56	2.51
2440MHz	Pass	AV	2.4996G	47.17	54.00	-6.83	3	Horizontal	56	2.51
2440MHz	Pass	PK	2.3652G	56.45	74.00	-17.55	3	Horizontal	56	2.51
2440MHz	Pass	PK	2.4404G	108.80	Inf	-Inf	3	Horizontal	56	2.51
2440MHz	Pass	PK	2.4844G	57.16	74.00	-16.84	3	Horizontal	56	2.51
2440MHz	Pass	AV	4.88003G	40.52	54.00	-13.48	3	Vertical	300	2.22
2440MHz	Pass	PK	4.87978G	49.24	74.00	-24.76	3	Vertical	300	2.22
2440MHz	Pass	AV	4.87997G	45.42	54.00	-8.58	3	Horizontal	12	1.79
2440MHz	Pass	PK	4.87956G	52.14	74.00	-21.86	3	Horizontal	12	1.79
2480MHz	Pass	AV	2.48G	103.94	Inf	-Inf	3	Vertical	128	1.07
2480MHz	Pass	AV	2.4846G	47.01	54.00	-6.99	3	Vertical	128	1.07
2480MHz	Pass	PK	2.4798G	104.55	Inf	-Inf	3	Vertical	128	1.07
2480MHz	Pass	PK	2.4838G	57.50	74.00	-16.50	3	Vertical	128	1.07
2480MHz	Pass	AV	2.48G	108.02	Inf	-Inf	3	Horizontal	54	2.68
2480MHz	Pass	AV	2.4836G	47.62	54.00	-6.38	3	Horizontal	54	2.68
2480MHz	Pass	PK	2.4802G	108.59	Inf	-Inf	3	Horizontal	54	2.68
2480MHz	Pass	PK	2.49G	57.69	74.00	-16.31	3	Horizontal	54	2.68
2480MHz	Pass	AV	4.95987G	41.61	54.00	-12.39	3	Vertical	314	2.38
2480MHz	Pass	PK	4.95978G	49.60	74.00	-24.40	3	Vertical	314	2.38
2480MHz	Pass	AV	4.95989G	45.46	54.00	-8.54	3	Horizontal	15	1.87
2480MHz	Pass	PK	4.95995G	51.90	74.00	-22.10	3	Horizontal	15	1.87
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3584G	47.76	54.00	-6.24	3	Vertical	120	1.34
2402MHz	Pass	AV	2.402G	102.11	Inf	-Inf	3	Vertical	120	1.34
2402MHz	Pass	PK	2.364G	56.66	74.00	-17.34	3	Vertical	120	1.34
2402MHz	Pass	PK	2.4014G	103.89	Inf	-Inf	3	Vertical	120	1.34
2402MHz	Pass	AV	2.3642G	47.89	54.00	-6.11	3	Horizontal	51	2.63
2402MHz	Pass	AV	2.402G	105.72	Inf	-Inf	3	Horizontal	51	2.63
2402MHz	Pass	PK	2.3822G	56.77	74.00	-17.23	3	Horizontal	51	2.63
2402MHz	Pass	PK	2.4024G	107.63	Inf	-Inf	3	Horizontal	51	2.63
2402MHz	Pass	AV	4.80293G	45.36	54.00	-8.64	3	Vertical	302.9	2.00
2402MHz	Pass	PK	4.80304G	52.10	74.00	-21.90	3	Vertical	302.9	2.00
2402MHz	Pass	AV	4.80305G	50.90	54.00	-3.10	3	Horizontal	11	1.50
2402MHz	Pass	PK	4.8039G	56.30	74.00	-17.70	3	Horizontal	11	1.50
2440MHz	Pass	AV	2.3464G	47.91	54.00	-6.09	3	Vertical	120	1.30
2440MHz	Pass	AV	2.44G	101.20	Inf	-Inf	3	Vertical	120	1.30
2440MHz	Pass	AV	2.4948G	48.96	54.00	-5.04	3	Vertical	120	1.30
2440MHz	Pass	PK	2.36G	57.87	74.00	-16.13	3	Vertical	120	1.30
2440MHz	Pass	PK	2.4404G	103.16	Inf	-Inf	3	Vertical	120	1.30
2440MHz	Pass	PK	2.4996G	56.86	74.00	-17.14	3	Vertical	120	1.30
2440MHz	Pass	AV	2.3464G	48.12	54.00	-5.88	3	Horizontal	56	2.52

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2440MHz	Pass	AV	2.44G	105.93	Inf	-Inf	3	Horizontal	56	2.52
2440MHz	Pass	AV	2.494G	48.54	54.00	-5.46	3	Horizontal	56	2.52
2440MHz	Pass	PK	2.3872G	56.82	74.00	-17.18	3	Horizontal	56	2.52
2440MHz	Pass	PK	2.44G	107.84	Inf	-Inf	3	Horizontal	56	2.52
2440MHz	Pass	PK	2.4892G	56.84	74.00	-17.16	3	Horizontal	56	2.52
2440MHz	Pass	AV	4.87908G	43.07	54.00	-10.93	3	Vertical	295	2.15
2440MHz	Pass	PK	4.88095G	49.95	74.00	-24.05	3	Vertical	295	2.15
2440MHz	Pass	AV	4.87902G	47.74	54.00	-6.26	3	Horizontal	14	1.81
2440MHz	Pass	PK	4.87904G	54.38	74.00	-19.62	3	Horizontal	14	1.81
2480MHz	Pass	AV	2.48G	101.74	Inf	-Inf	3	Vertical	128	1.07
2480MHz	Pass	AV	2.4835G	48.68	54.00	-5.32	3	Vertical	128	1.07
2480MHz	Pass	PK	2.4796G	103.58	Inf	-Inf	3	Vertical	128	1.07
2480MHz	Pass	PK	2.4856G	57.68	74.00	-16.32	3	Vertical	128	1.07
2480MHz	Pass	AV	2.48G	105.66	Inf	-Inf	3	Horizontal	54	2.68
2480MHz	Pass	AV	2.4835G	48.83	54.00	-5.17	3	Horizontal	54	2.68
2480MHz	Pass	PK	2.4794G	107.55	Inf	-Inf	3	Horizontal	54	2.68
2480MHz	Pass	PK	2.4976G	58.07	74.00	-15.93	3	Horizontal	54	2.68
2480MHz	Pass	AV	4.95912G	43.95	54.00	-10.05	3	Vertical	301	2.11
2480MHz	Pass	PK	4.96083G	51.15	74.00	-22.85	3	Vertical	301	2.11
2480MHz	Pass	AV	4.95906G	47.50	54.00	-6.50	3	Horizontal	13	1.86
2480MHz	Pass	PK	4.961G	54.07	74.00	-19.93	3	Horizontal	13	1.86
BT-LE(125kbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3882G	45.66	54.00	-8.34	3	Vertical	126	1.12
2402MHz	Pass	AV	2.402G	103.80	Inf	-Inf	3	Vertical	126	1.12
2402MHz	Pass	PK	2.3872G	56.91	74.00	-17.09	3	Vertical	126	1.12
2402MHz	Pass	PK	2.4022G	104.70	Inf	-Inf	3	Vertical	126	1.12
2402MHz	Pass	AV	2.386G	45.50	54.00	-8.50	3	Horizontal	52	2.62
2402MHz	Pass	AV	2.402G	107.66	Inf	-Inf	3	Horizontal	52	2.62
2402MHz	Pass	PK	2.352G	57.78	74.00	-16.22	3	Horizontal	52	2.62
2402MHz	Pass	PK	2.4022G	108.58	Inf	-Inf	3	Horizontal	52	2.62
2402MHz	Pass	AV	4.80418G	43.49	54.00	-10.51	3	Vertical	352	2.82
2402MHz	Pass	PK	4.80436G	51.50	74.00	-22.50	3	Vertical	352	2.82
2402MHz	Pass	AV	4.80387G	47.43	54.00	-6.57	3	Horizontal	13	1.50
2402MHz	Pass	PK	4.80447G	54.19	74.00	-19.81	3	Horizontal	13	1.50
2440MHz	Pass	AV	2.3684G	45.39	54.00	-8.61	3	Vertical	123	1.30
2440MHz	Pass	AV	2.44G	103.00	Inf	-Inf	3	Vertical	123	1.30
2440MHz	Pass	AV	2.4976G	46.25	54.00	-7.75	3	Vertical	123	1.30
2440MHz	Pass	PK	2.37G	56.90	74.00	-17.10	3	Vertical	123	1.30
2440MHz	Pass	PK	2.4404G	103.94	Inf	-Inf	3	Vertical	123	1.30
2440MHz	Pass	PK	2.494G	57.12	74.00	-16.88	3	Vertical	123	1.30
2440MHz	Pass	AV	2.3848G	45.48	54.00	-8.52	3	Horizontal	56	2.52
2440MHz	Pass	AV	2.44G	107.78	Inf	-Inf	3	Horizontal	56	2.52
2440MHz	Pass	AV	2.4944G	46.16	54.00	-7.84	3	Horizontal	56	2.52
2440MHz	Pass	PK	2.3788G	56.91	74.00	-17.09	3	Horizontal	56	2.52
2440MHz	Pass	PK	2.4404G	108.74	Inf	-Inf	3	Horizontal	56	2.52
2440MHz	Pass	PK	2.4916G	57.40	74.00	-16.60	3	Horizontal	56	2.52
2440MHz	Pass	AV	4.88031G	40.35	54.00	-13.65	3	Vertical	0	2.77
2440MHz	Pass	PK	4.87959G	49.62	74.00	-24.38	3	Vertical	0	2.77
2440MHz	Pass	AV	4.88009G	43.90	54.00	-10.10	3	Horizontal	14	1.80
2440MHz	Pass	PK	4.88036G	51.45	74.00	-22.55	3	Horizontal	14	1.80
2480MHz	Pass	AV	2.48G	103.60	Inf	-Inf	3	Vertical	128	1.32
2480MHz	Pass	AV	2.4854G	46.23	54.00	-7.77	3	Vertical	128	1.32
2480MHz	Pass	PK	2.4802G	104.50	Inf	-Inf	3	Vertical	128	1.32
2480MHz	Pass	PK	2.4866G	57.03	74.00	-16.97	3	Vertical	128	1.32
2480MHz	Pass	AV	2.48G	107.58	Inf	-Inf	3	Horizontal	55	2.68
2480MHz	Pass	AV	2.4842G	46.60	54.00	-7.40	3	Horizontal	55	2.68
2480MHz	Pass	PK	2.4798G	108.45	Inf	-Inf	3	Horizontal	55	2.68
2480MHz	Pass	PK	2.4922G	56.82	74.00	-17.18	3	Horizontal	55	2.68
2480MHz	Pass	AV	4.96024G	41.36	54.00	-12.64	3	Vertical	353	2.79
2480MHz	Pass	PK	4.95944G	50.49	74.00	-23.51	3	Vertical	353	2.79
2480MHz	Pass	AV	4.96025G	43.36	54.00	-10.64	3	Horizontal	21	1.88
2480MHz	Pass	PK	4.96061G	51.37	74.00	-22.63	3	Horizontal	21	1.88

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(500kbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3838G	45.51	54.00	-8.49	3	Vertical	124	1.12
2402MHz	Pass	AV	2.402G	103.91	Inf	-Inf	3	Vertical	124	1.12
2402MHz	Pass	PK	2.3866G	57.90	74.00	-16.10	3	Vertical	124	1.12
2402MHz	Pass	PK	2.4022G	104.59	Inf	-Inf	3	Vertical	124	1.12
2402MHz	Pass	AV	2.384G	45.47	54.00	-8.53	3	Horizontal	61	2.81
2402MHz	Pass	AV	2.402G	107.74	Inf	-Inf	3	Horizontal	61	2.81
2402MHz	Pass	PK	2.3626G	56.71	74.00	-17.29	3	Horizontal	61	2.81
2402MHz	Pass	PK	2.4022G	108.49	Inf	-Inf	3	Horizontal	61	2.81
2402MHz	Pass	AV	4.80397G	43.56	54.00	-10.44	3	Vertical	322	2.10
2402MHz	Pass	PK	4.80426G	51.11	74.00	-22.89	3	Vertical	322	2.10
2402MHz	Pass	AV	4.80407G	48.28	54.00	-5.72	3	Horizontal	14	1.49
2402MHz	Pass	PK	4.80344G	54.61	74.00	-19.39	3	Horizontal	14	1.49
2440MHz	Pass	AV	2.372G	45.48	54.00	-8.52	3	Vertical	124	1.31
2440MHz	Pass	AV	2.44G	103.08	Inf	-Inf	3	Vertical	124	1.31
2440MHz	Pass	AV	2.498G	46.19	54.00	-7.81	3	Vertical	124	1.31
2440MHz	Pass	PK	2.3852G	57.14	74.00	-16.86	3	Vertical	124	1.31
2440MHz	Pass	PK	2.4404G	103.87	Inf	-Inf	3	Vertical	124	1.31
2440MHz	Pass	PK	2.4968G	57.69	74.00	-16.31	3	Vertical	124	1.31
2440MHz	Pass	AV	2.3436G	45.50	54.00	-8.50	3	Horizontal	56	2.51
2440MHz	Pass	AV	2.44G	107.83	Inf	-Inf	3	Horizontal	56	2.51
2440MHz	Pass	AV	2.4924G	46.36	54.00	-7.64	3	Horizontal	56	2.51
2440MHz	Pass	PK	2.3824G	56.68	74.00	-17.32	3	Horizontal	56	2.51
2440MHz	Pass	PK	2.4404G	108.56	Inf	-Inf	3	Horizontal	56	2.51
2440MHz	Pass	PK	2.4924G	57.06	74.00	-16.94	3	Horizontal	56	2.51
2440MHz	Pass	AV	4.88008G	40.86	54.00	-13.14	3	Vertical	353	2.92
2440MHz	Pass	PK	4.87965G	49.34	74.00	-24.66	3	Vertical	353	2.92
2440MHz	Pass	AV	4.88004G	44.47	54.00	-9.53	3	Horizontal	14	1.80
2440MHz	Pass	PK	4.87998G	52.18	74.00	-21.82	3	Horizontal	14	1.80
2480MHz	Pass	AV	2.48G	103.69	Inf	-Inf	3	Vertical	129	1.32
2480MHz	Pass	AV	2.4902G	46.48	54.00	-7.52	3	Vertical	129	1.32
2480MHz	Pass	PK	2.4802G	104.40	Inf	-Inf	3	Vertical	129	1.32
2480MHz	Pass	PK	2.4934G	57.35	74.00	-16.65	3	Vertical	129	1.32
2480MHz	Pass	AV	2.48G	107.79	Inf	-Inf	3	Horizontal	53	2.68
2480MHz	Pass	AV	2.4838G	46.63	54.00	-7.37	3	Horizontal	53	2.68
2480MHz	Pass	PK	2.4798G	108.44	Inf	-Inf	3	Horizontal	53	2.68
2480MHz	Pass	PK	2.4835G	57.01	74.00	-16.99	3	Horizontal	53	2.68
2480MHz	Pass	AV	4.96015G	41.71	54.00	-12.29	3	Vertical	352	2.79
2480MHz	Pass	PK	4.96066G	50.21	74.00	-23.79	3	Vertical	352	2.79
2480MHz	Pass	AV	4.95999G	43.87	54.00	-10.13	3	Horizontal	16	1.87
2480MHz	Pass	PK	4.95951G	51.25	74.00	-22.75	3	Horizontal	16	1.87

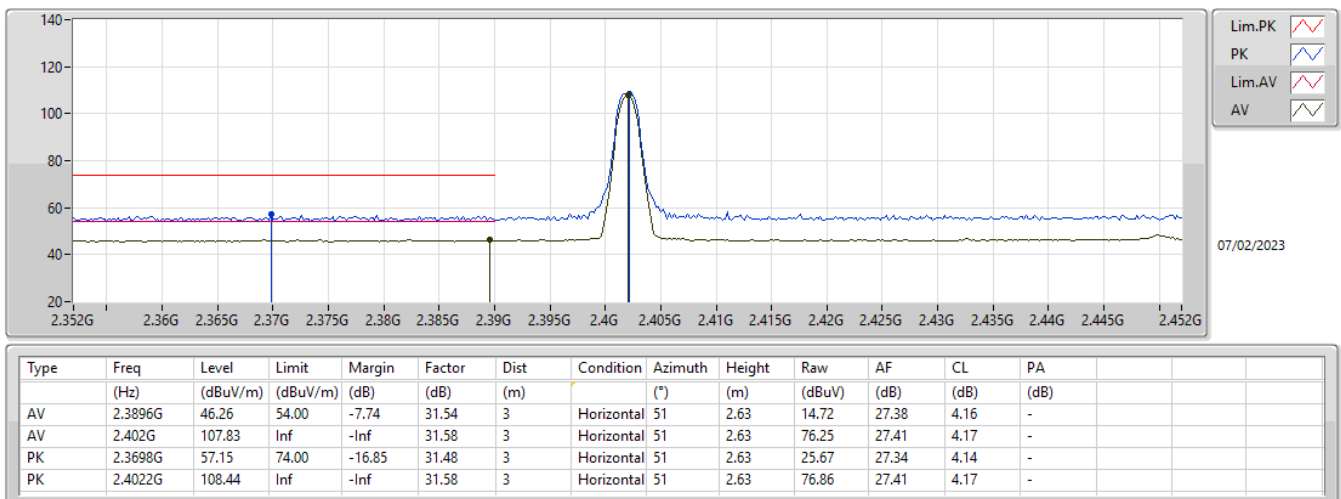
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2402MHz_TX



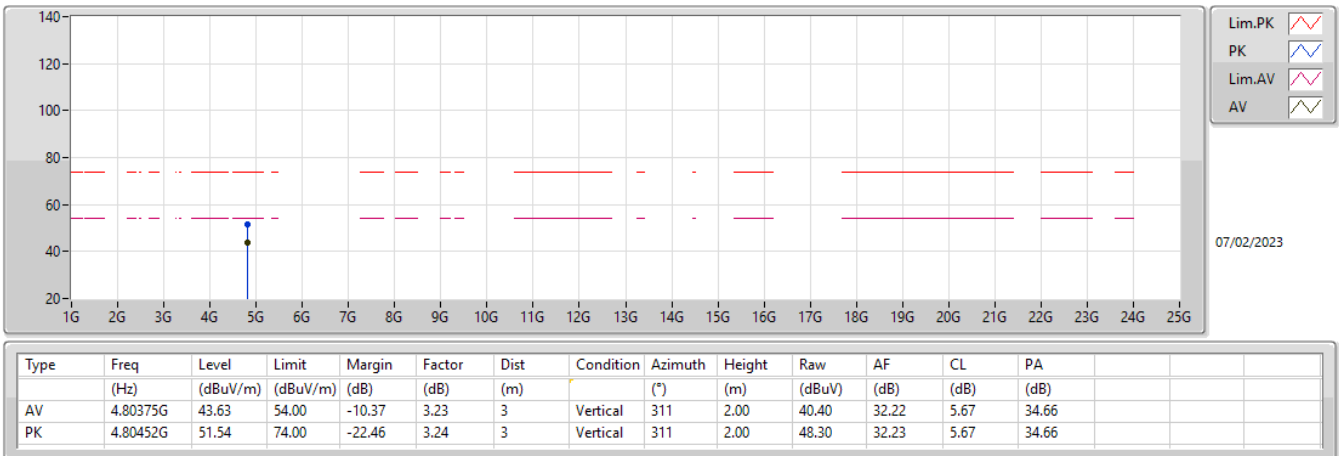
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2402MHz_TX



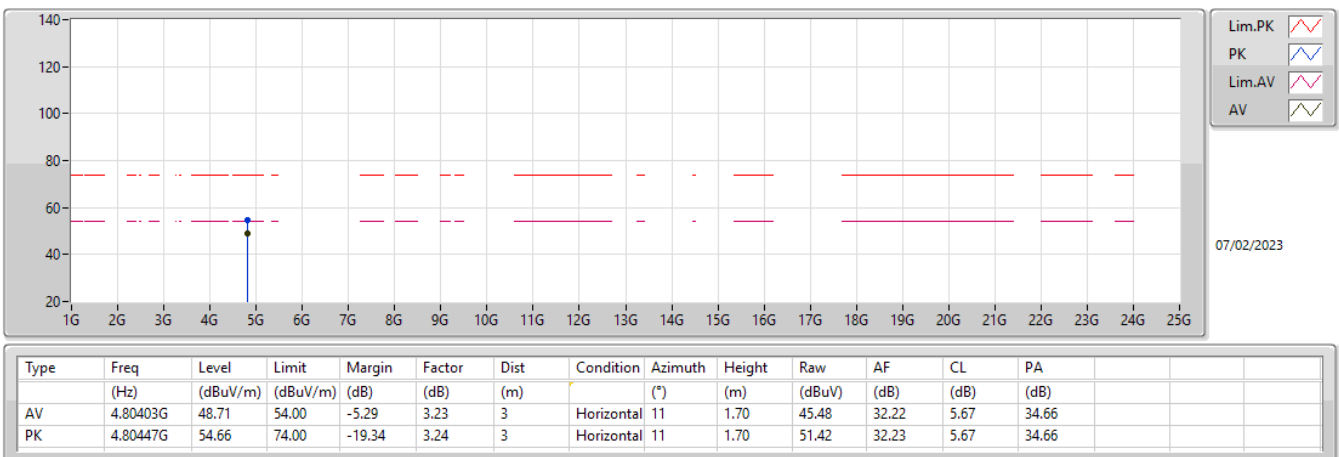
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2402MHz_TX



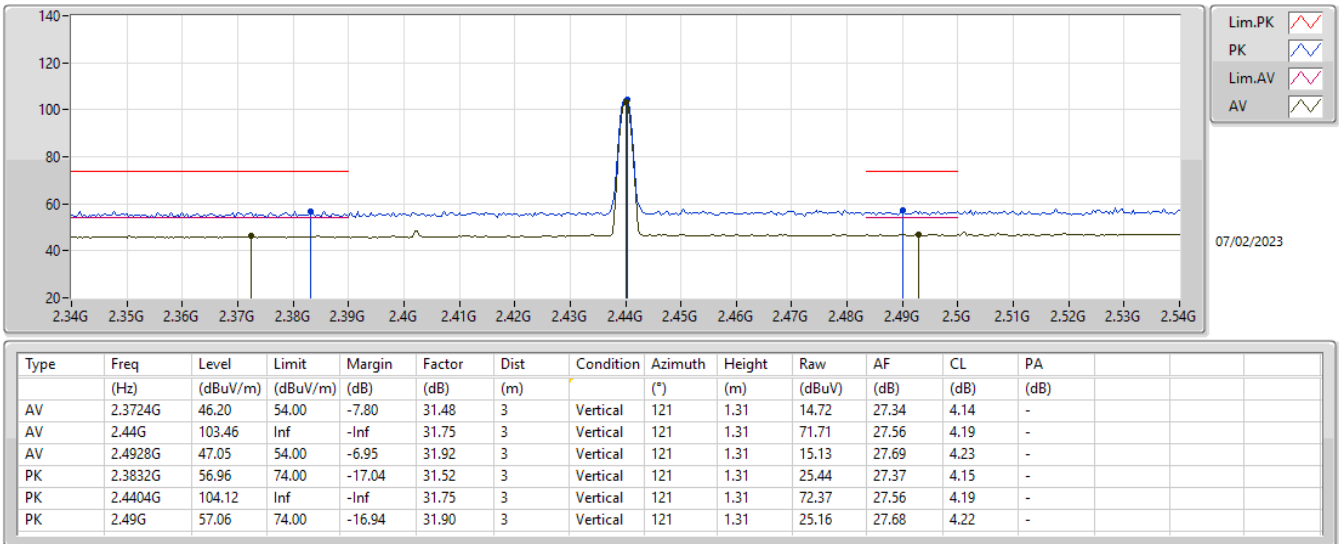
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2402MHz_TX



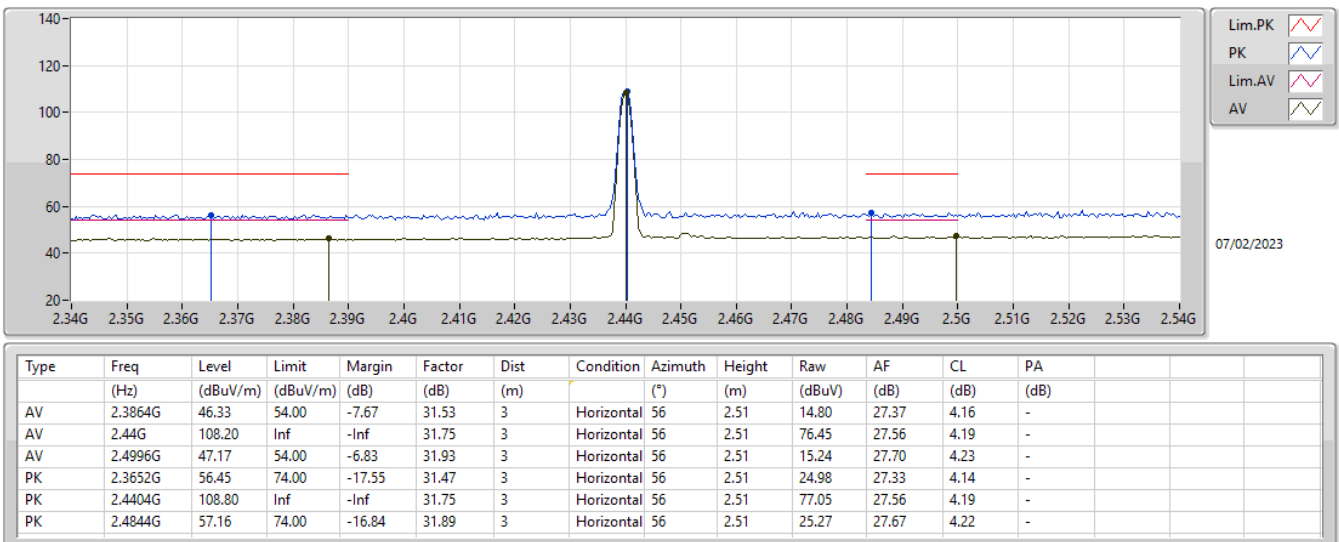
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2440MHz_TX



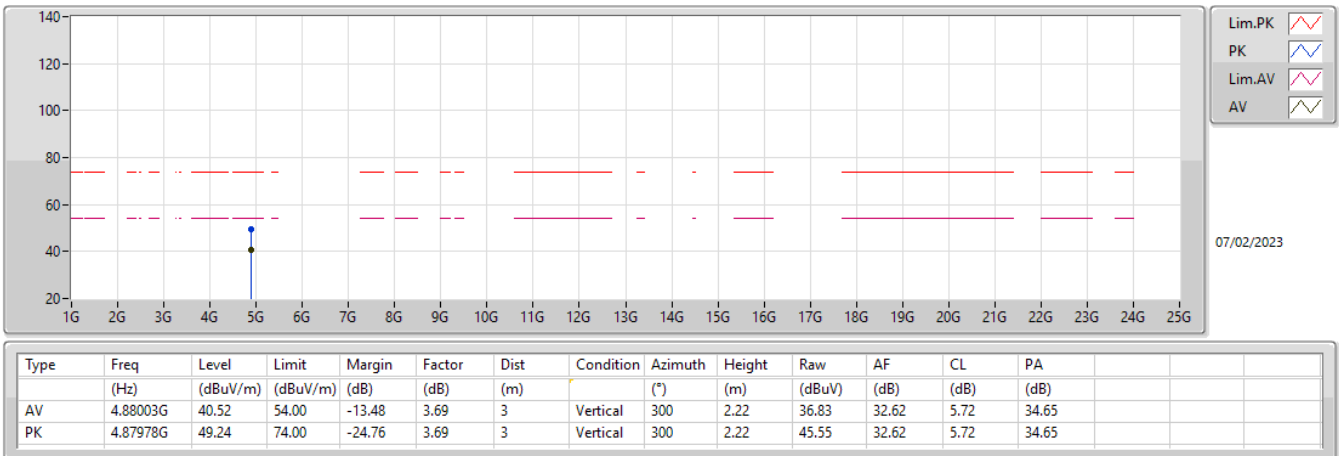
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2440MHz_TX



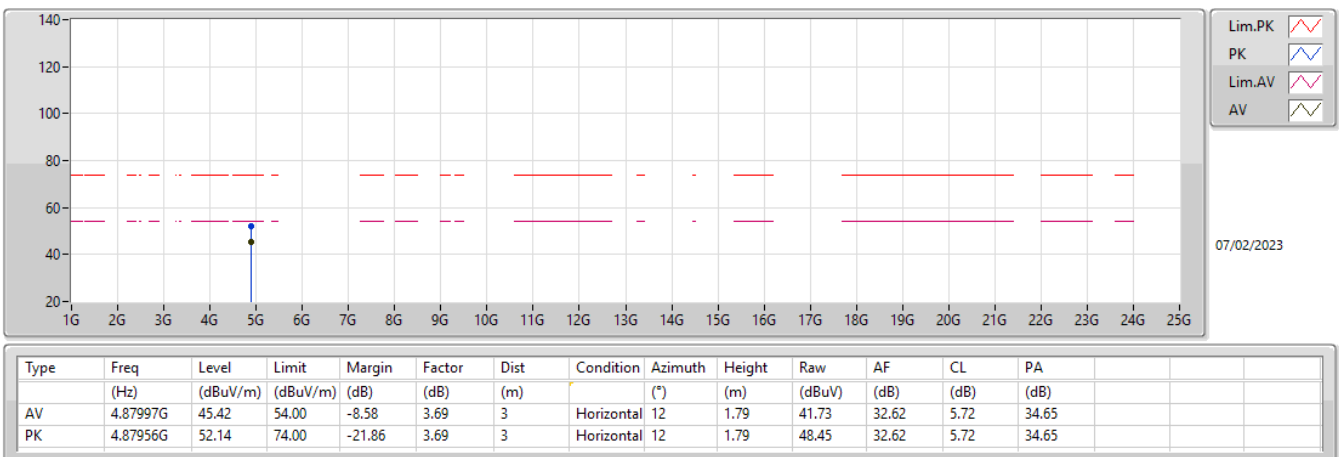
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2440MHz_TX



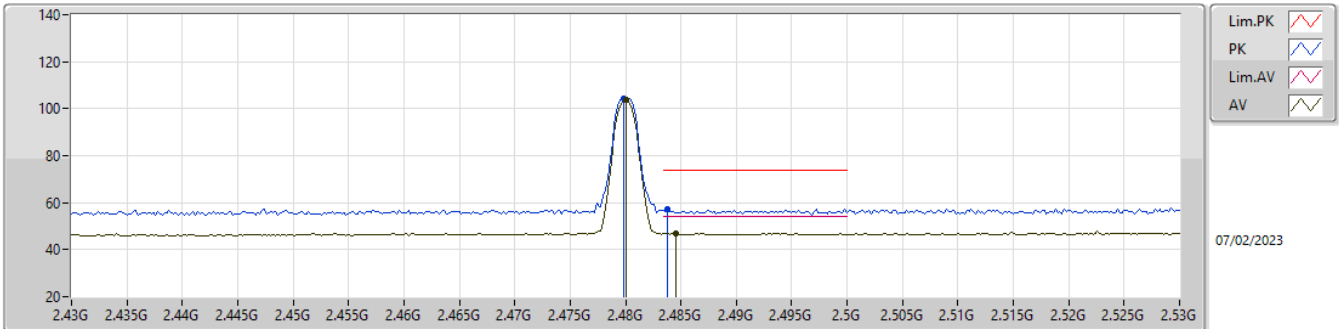
2.4-2.4835GHz_BT-LE(1Mbps)

2440MHz_TX



2.4-2.4835GHz_BT-LE(1Mbps)

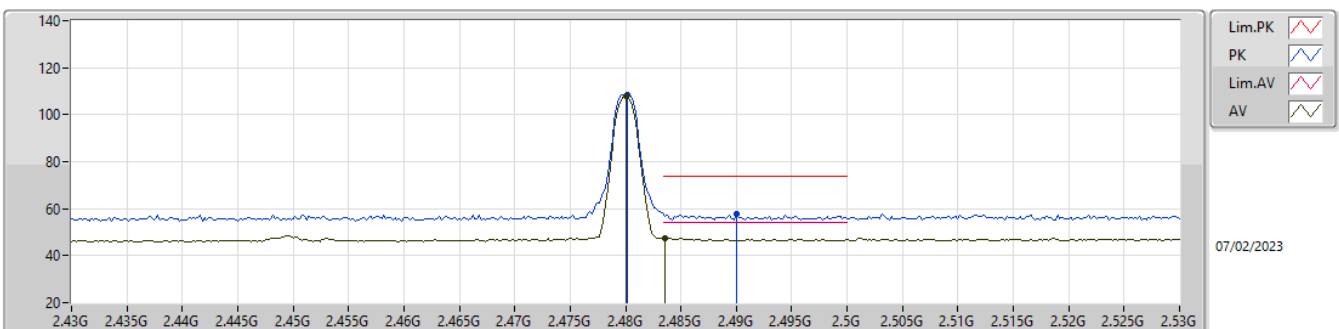
2480MHz_TX



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	2.48G	103.94	Inf	-Inf	31.88	3	Vertical	128	1.07	72.06	27.66	4.22	-
AV	2.4846G	47.01	54.00	-6.99	31.89	3	Vertical	128	1.07	15.12	27.67	4.22	-
PK	2.4798G	104.55	Inf	-Inf	31.88	3	Vertical	128	1.07	72.67	27.66	4.22	-
PK	2.4838G	57.50	74.00	-16.50	31.89	3	Vertical	128	1.07	25.61	27.67	4.22	-

2.4-2.4835GHz_BT-LE(1Mbps)

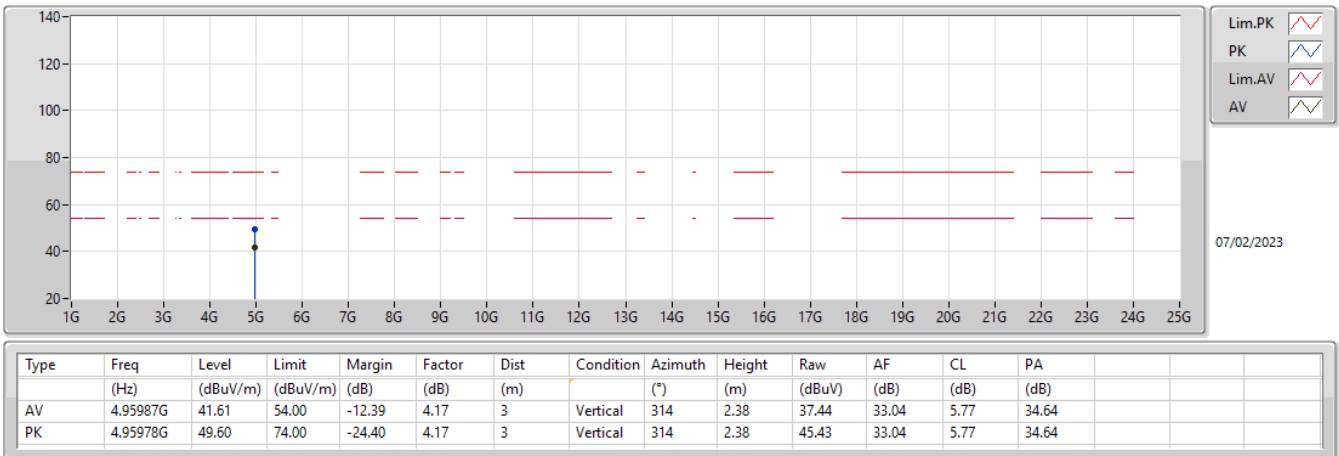
2480MHz_TX



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	2.48G	108.02	Inf	-Inf	31.88	3	Horizontal	54	2.68	76.14	27.66	4.22	-
AV	2.4836G	47.62	54.00	-6.38	31.89	3	Horizontal	54	2.68	15.73	27.67	4.22	-
PK	2.4802G	108.59	Inf	-Inf	31.88	3	Horizontal	54	2.68	76.71	27.66	4.22	-
PK	2.49G	57.69	74.00	-16.31	31.90	3	Horizontal	54	2.68	25.79	27.68	4.22	-

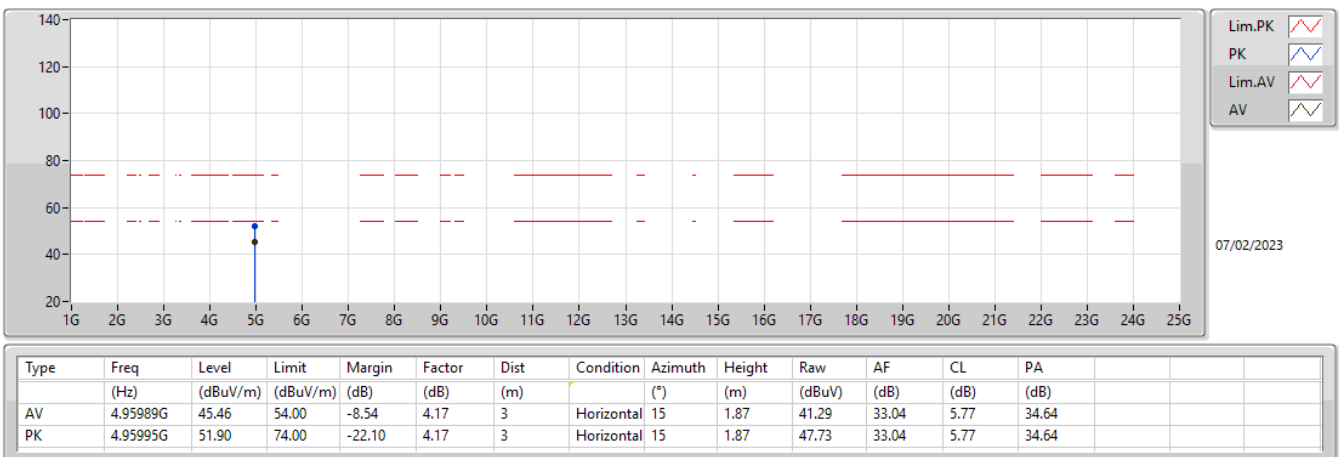
2.4-2.4835GHz_BT-LE(1Mbps)

2480MHz_TX



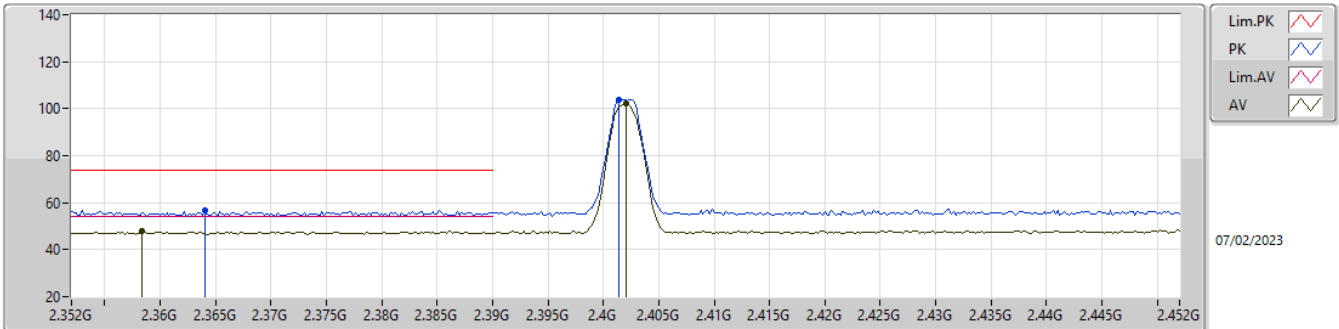
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2480MHz_TX



2.4-2.4835GHz_BT-LE(2Mbps)

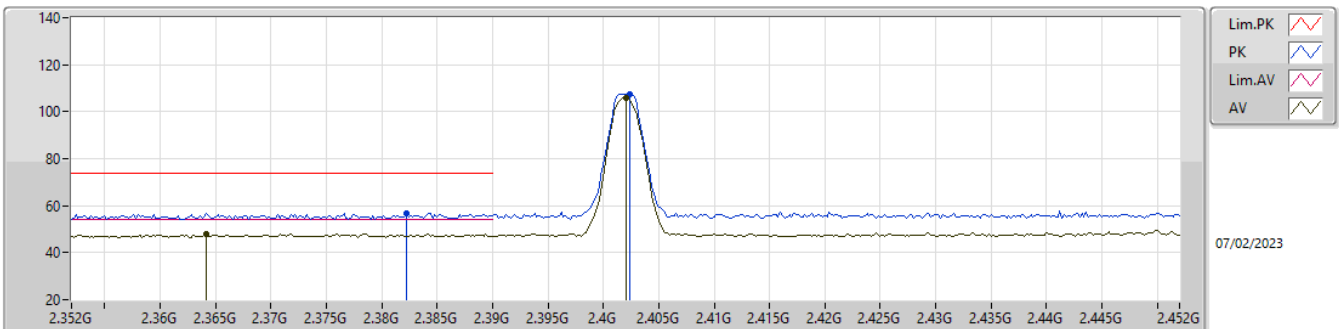
2402MHz_TX



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	2.3584G	47.76	54.00	-6.24	31.45	3	Vertical	120	1.34	16.31	27.32	4.13	-
AV	2.402G	102.11	Inf	-Inf	31.58	3	Vertical	120	1.34	70.53	27.41	4.17	-
PK	2.364G	56.66	74.00	-17.34	31.47	3	Vertical	120	1.34	25.19	27.33	4.14	-
PK	2.4014G	103.89	Inf	-Inf	31.58	3	Vertical	120	1.34	72.31	27.41	4.17	-

2.4-2.4835GHz_BT-LE(2Mbps)

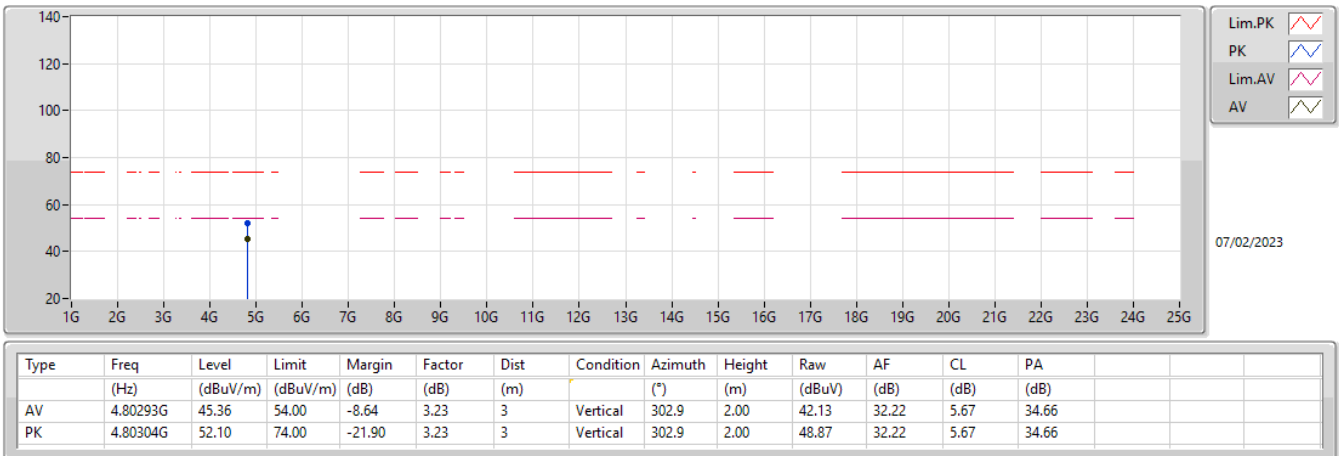
2402MHz_TX



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	2.3642G	47.89	54.00	-6.11	31.47	3	Horizontal	51	2.63	16.42	27.33	4.14	-
AV	2.402G	105.72	Inf	-Inf	31.58	3	Horizontal	51	2.63	74.14	27.41	4.17	-
PK	2.3822G	56.77	74.00	-17.23	31.51	3	Horizontal	51	2.63	25.26	27.36	4.15	-
PK	2.4024G	107.63	Inf	-Inf	31.58	3	Horizontal	51	2.63	76.05	27.41	4.17	-

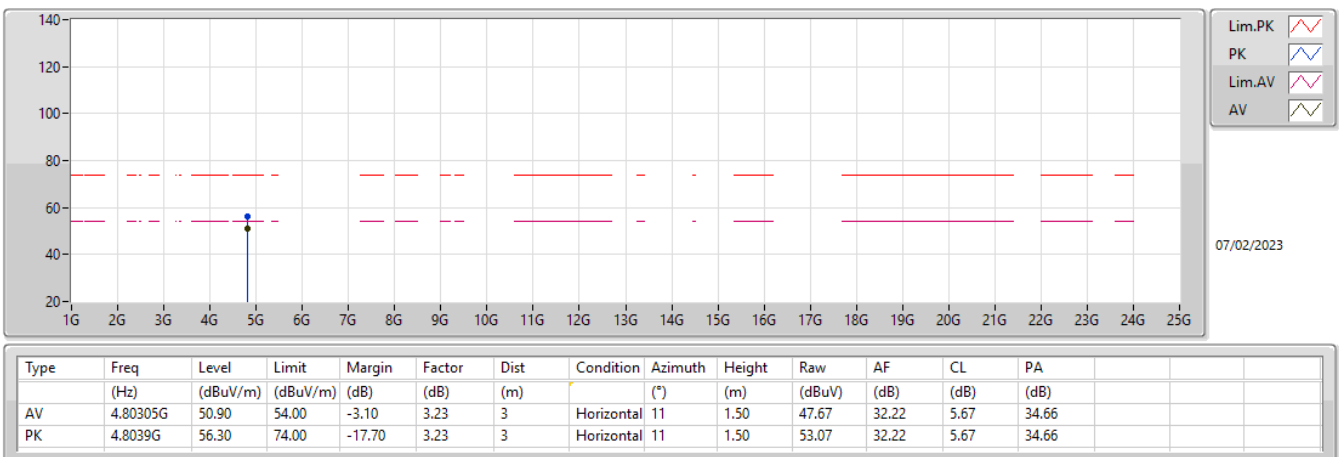
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2402MHz_TX



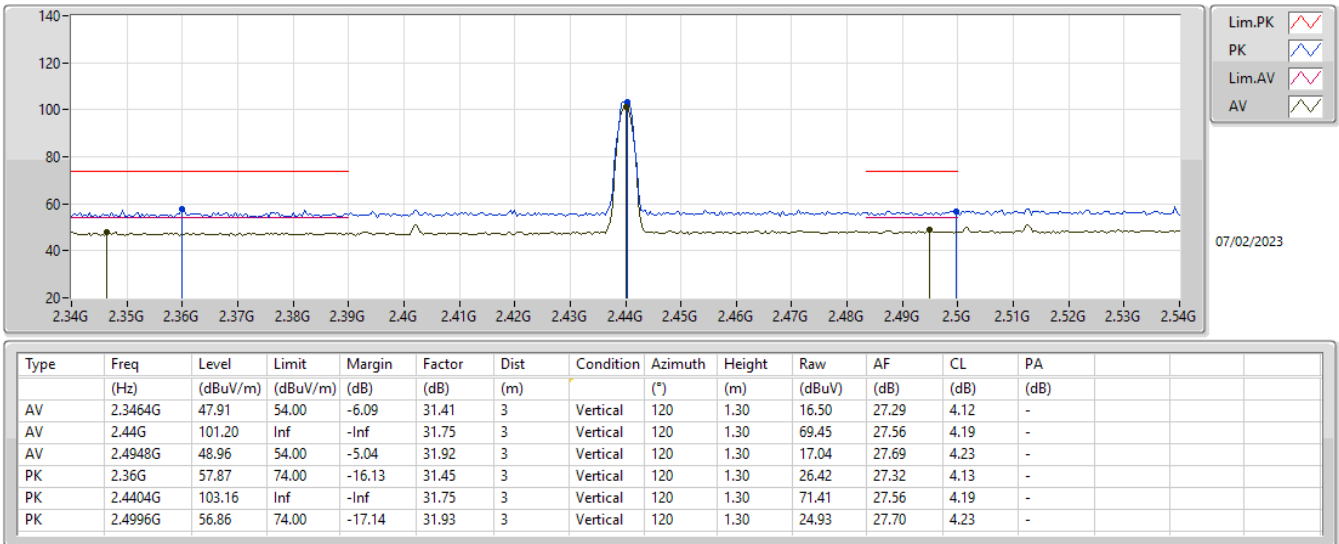
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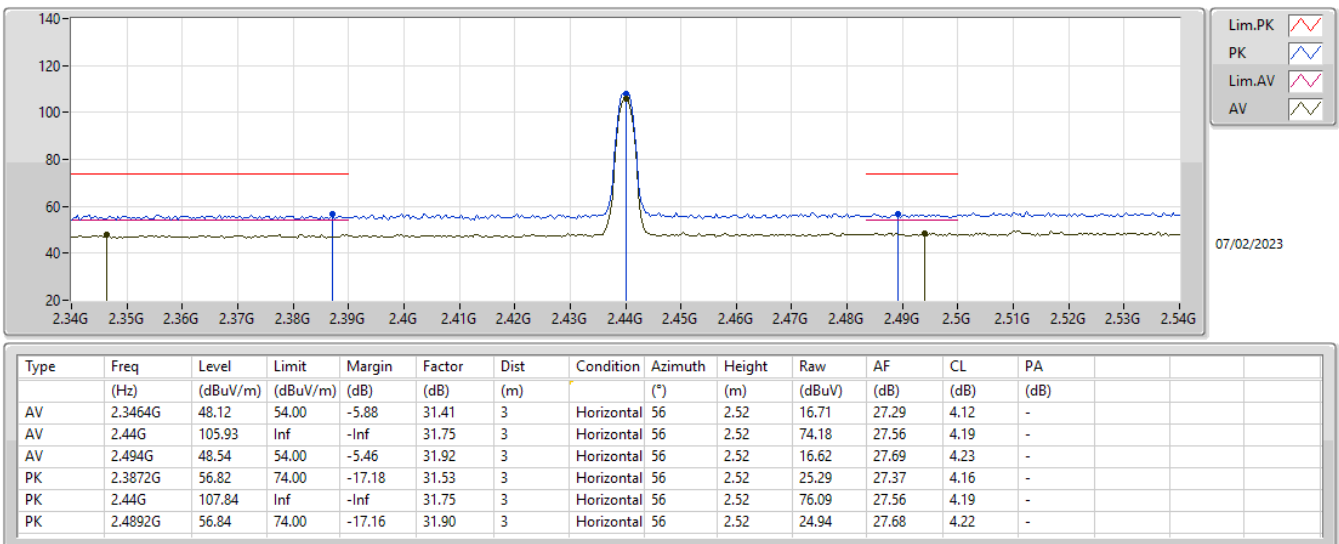
2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX



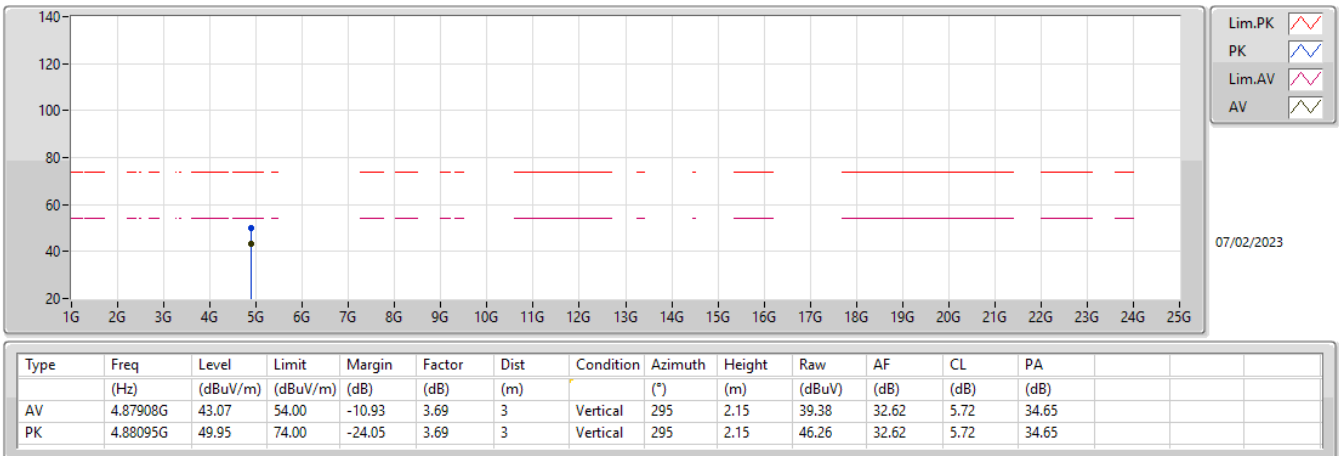
2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX



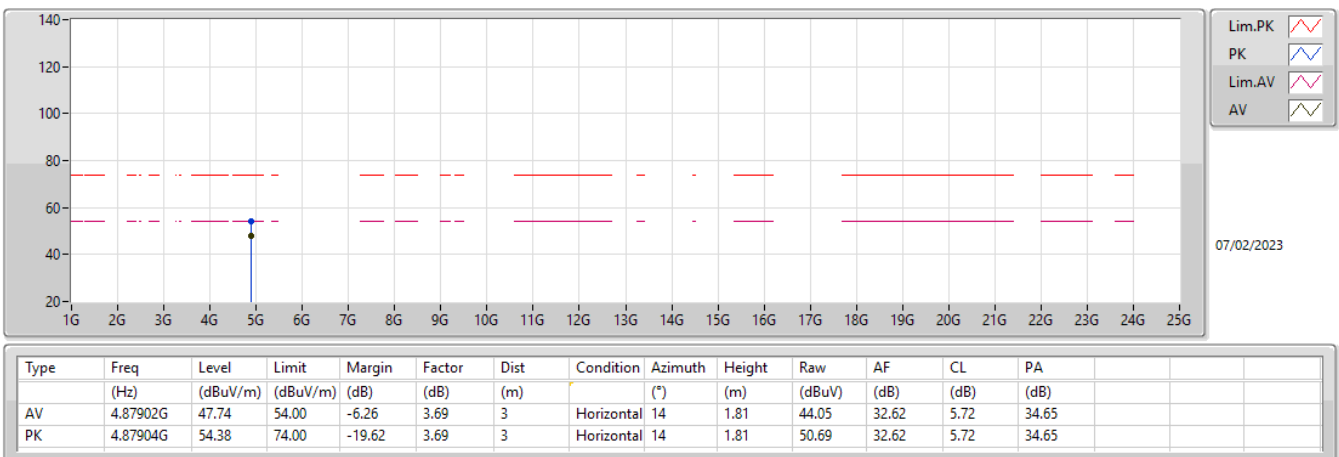
2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX



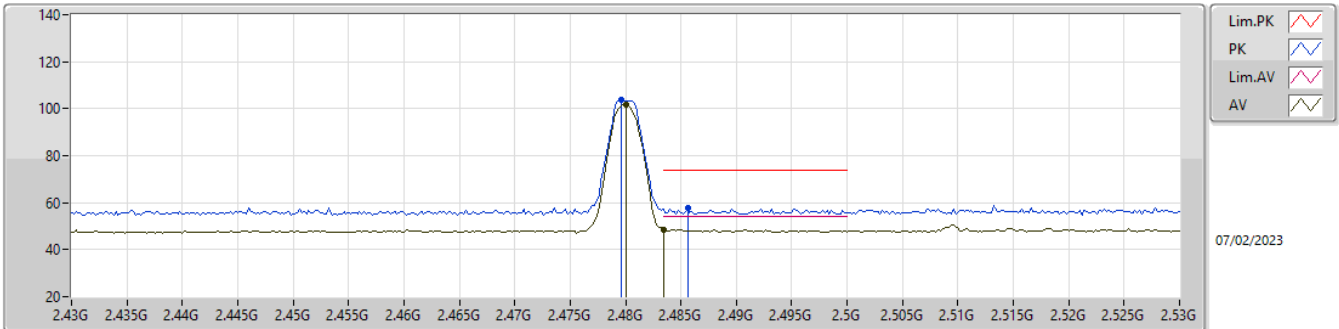
2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX



2.4-2.4835GHz_BT-LE(2Mbps)

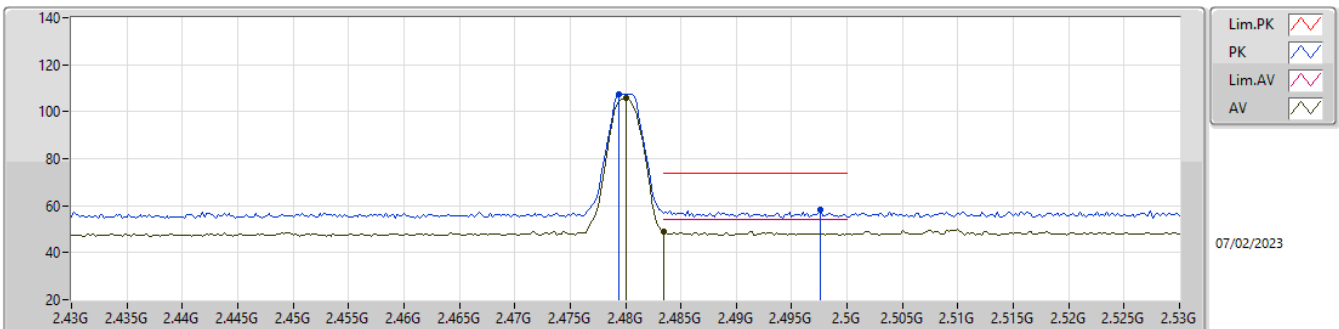
2480MHz_TX



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	2.48G	101.74	Inf	-Inf	31.88	3	Vertical	128	1.07	69.86	27.66	4.22	-
AV	2.4835G	48.68	54.00	-5.32	31.89	3	Vertical	128	1.07	16.79	27.67	4.22	-
PK	2.4796G	103.58	Inf	-Inf	31.88	3	Vertical	128	1.07	71.70	27.66	4.22	-
PK	2.4856G	57.68	74.00	-16.32	31.89	3	Vertical	128	1.07	25.79	27.67	4.22	-

2.4-2.4835GHz_BT-LE(2Mbps)

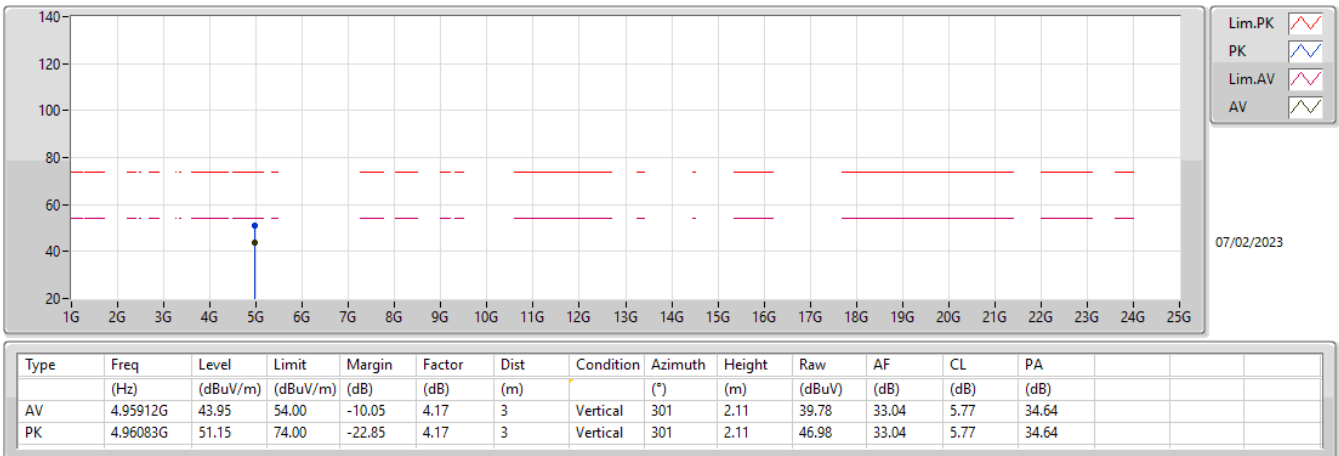
2480MHz_TX



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	2.48G	105.66	Inf	-Inf	31.88	3	Horizontal	54	2.68	73.78	27.66	4.22	-
AV	2.4835G	48.83	54.00	-5.17	31.89	3	Horizontal	54	2.68	16.94	27.67	4.22	-
PK	2.4794G	107.55	Inf	-Inf	31.88	3	Horizontal	54	2.68	75.67	27.66	4.22	-
PK	2.4976G	58.07	74.00	-15.93	31.93	3	Horizontal	54	2.68	26.14	27.70	4.23	-

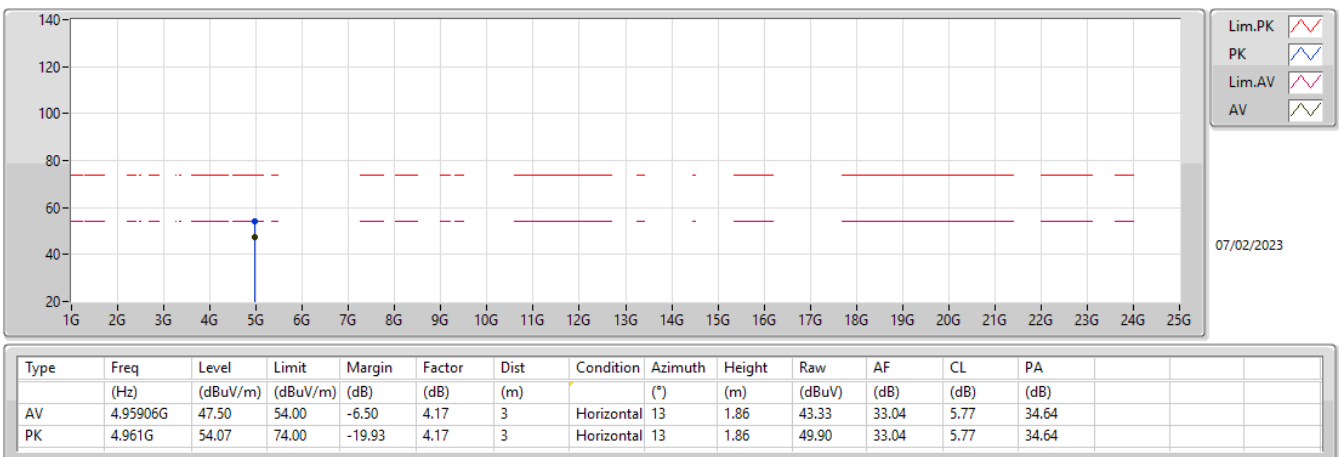
2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX



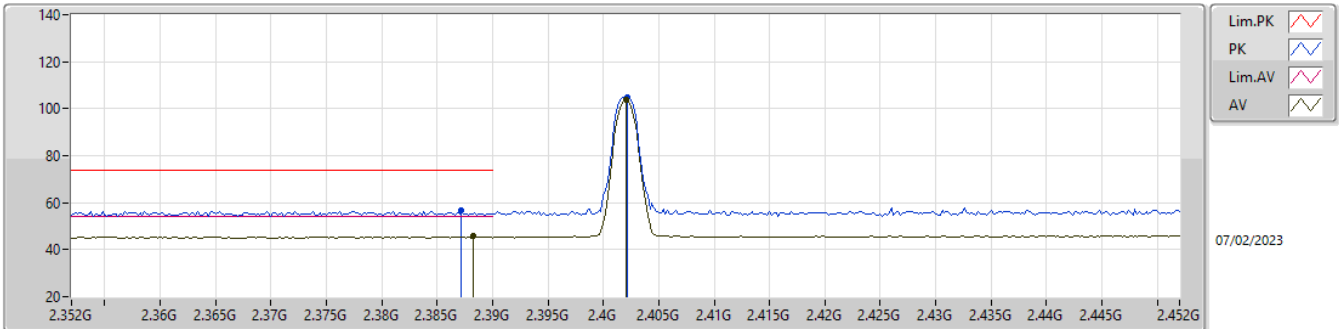
2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX



2.4-2.4835GHz_BT-LE(125kbps)

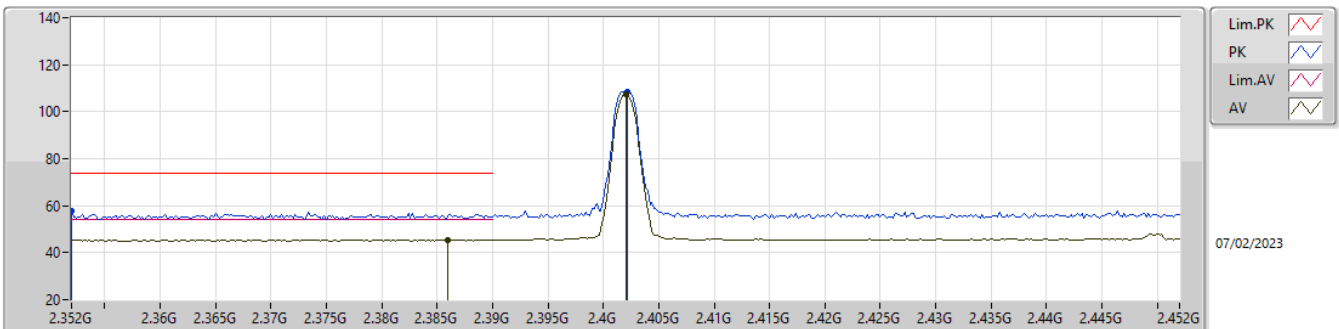
2402MHz_TX



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	2.3882G	45.66	54.00	-8.34	31.54	3	Vertical	126	1.12	14.12	27.38	4.16	-
AV	2.402G	103.80	Inf	-Inf	31.58	3	Vertical	126	1.12	72.22	27.41	4.17	-
PK	2.3872G	56.91	74.00	-17.09	31.53	3	Vertical	126	1.12	25.38	27.37	4.16	-
PK	2.4022G	104.70	Inf	-Inf	31.58	3	Vertical	126	1.12	73.12	27.41	4.17	-

2.4-2.4835GHz_BT-LE(125kbps)

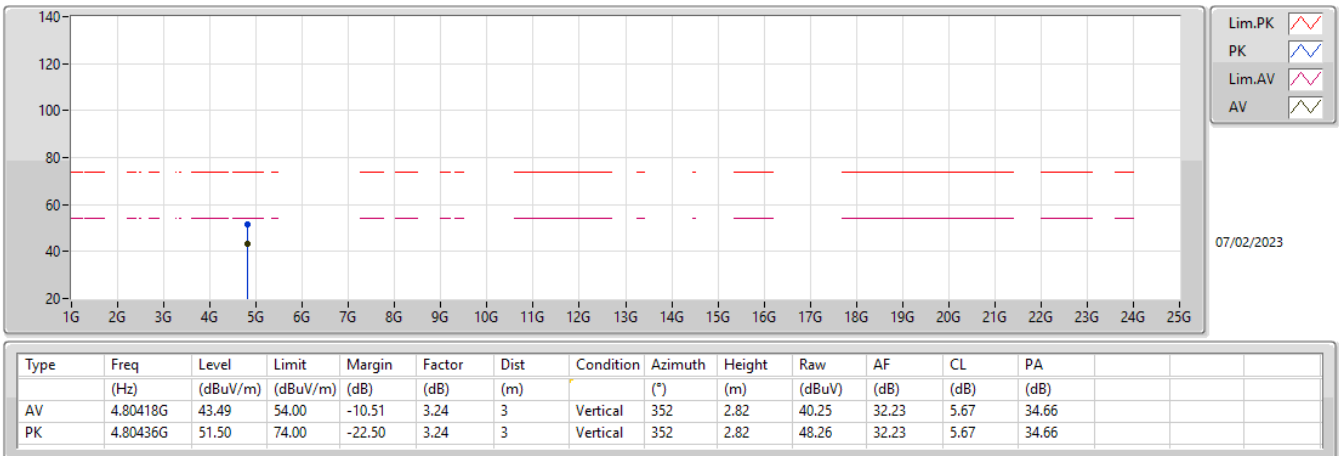
2402MHz_TX



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	2.386G	45.50	54.00	-8.50	31.53	3	Horizontal	52	2.62	13.97	27.37	4.16	-
AV	2.402G	107.66	Inf	-Inf	31.58	3	Horizontal	52	2.62	76.08	27.41	4.17	-
PK	2.352G	57.78	74.00	-16.22	31.42	3	Horizontal	52	2.62	26.36	27.30	4.12	-
PK	2.4022G	108.58	Inf	-Inf	31.58	3	Horizontal	52	2.62	77.00	27.41	4.17	-

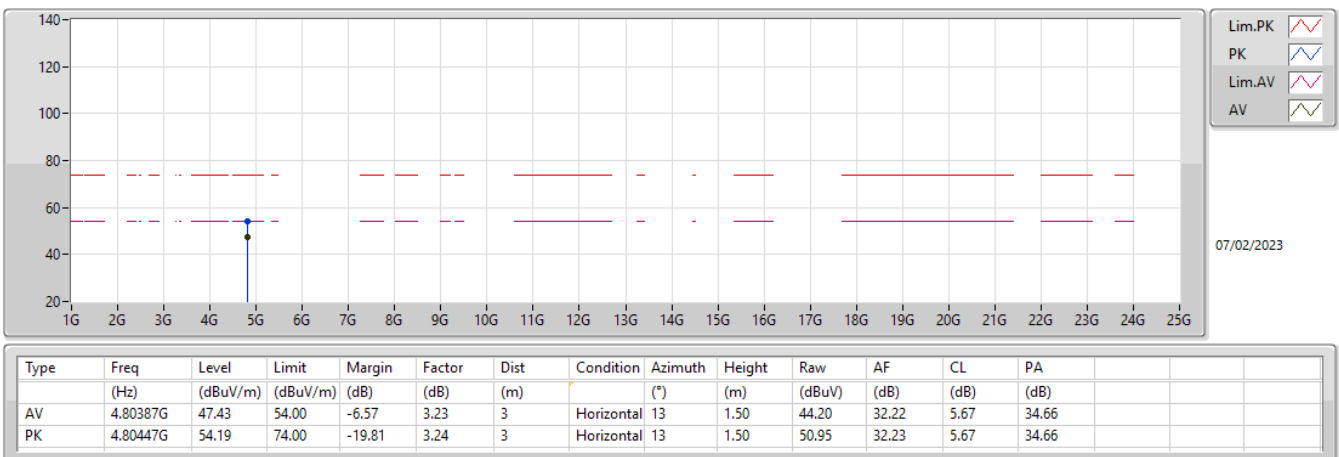
2.4-2.4835GHz_BT-LE(125kbps)

2402MHz_TX



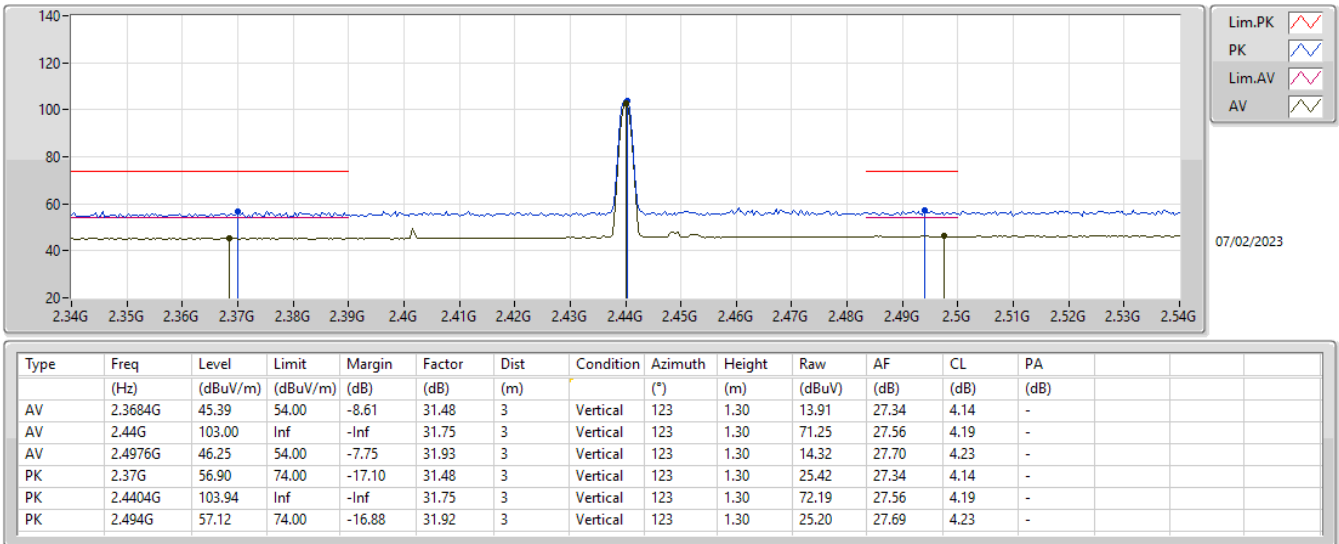
2.4-2.4835GHz_BT-LE(125kbps)

2402MHz_TX



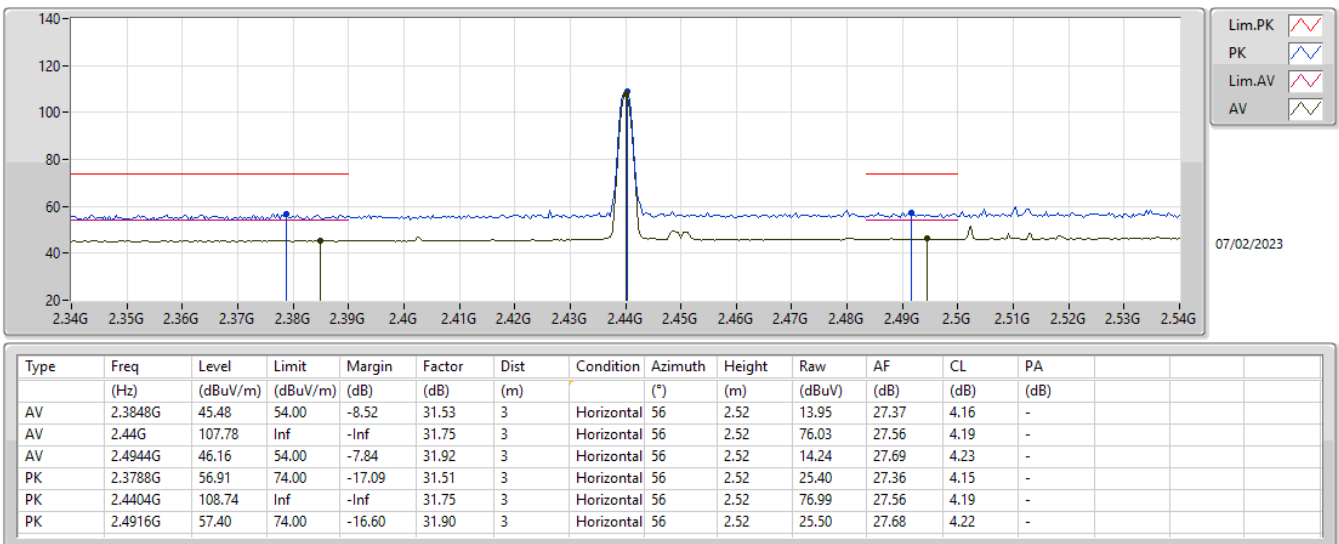
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2440MHz_TX



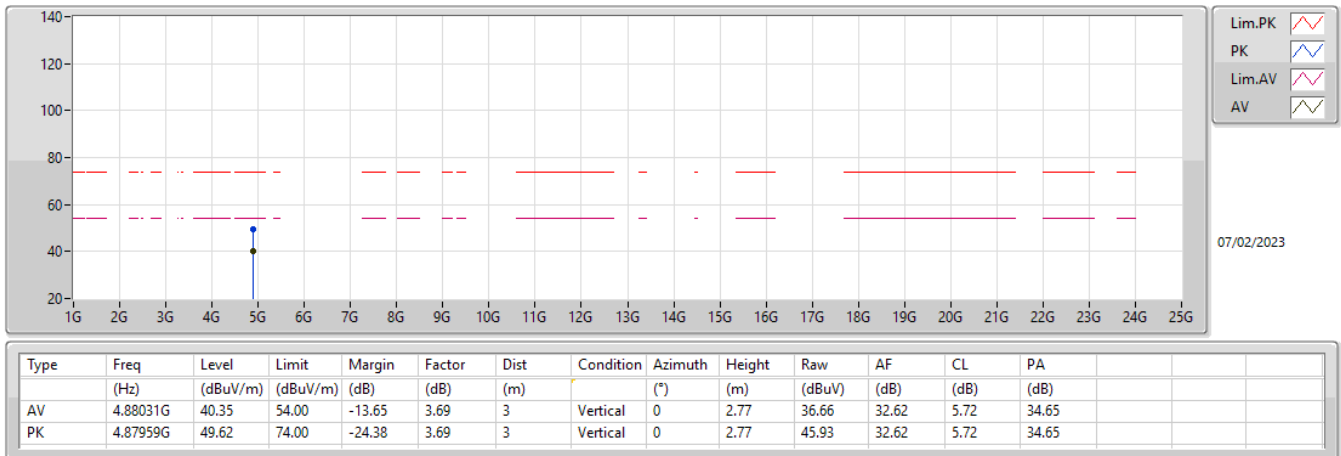
2.4-2.4835GHz_BT-LE(125kbps)

2440MHz_TX



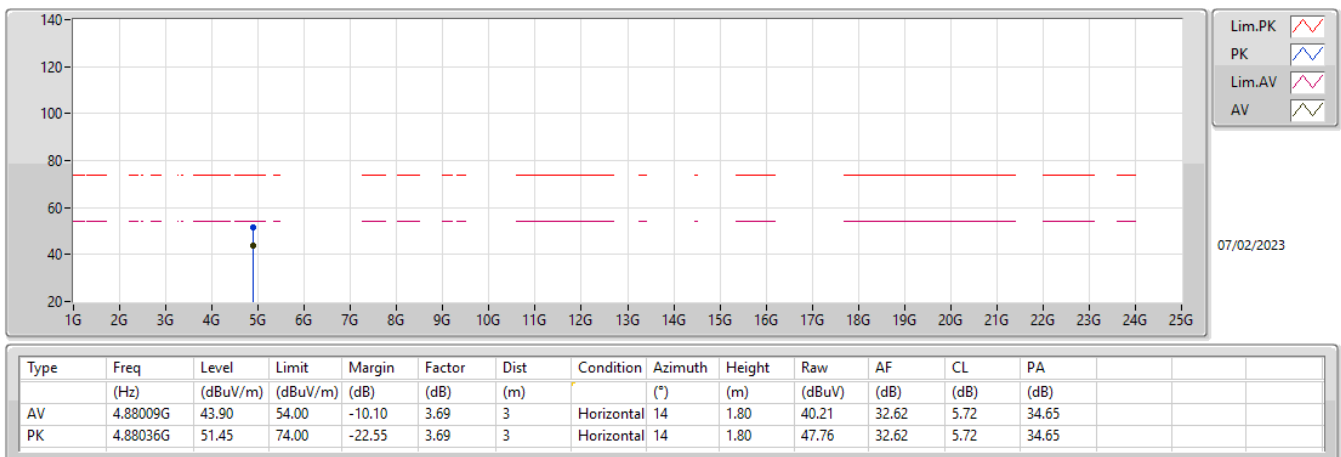
2.4-2.4835GHz_BT-LE(125kbps)

2440MHz_TX



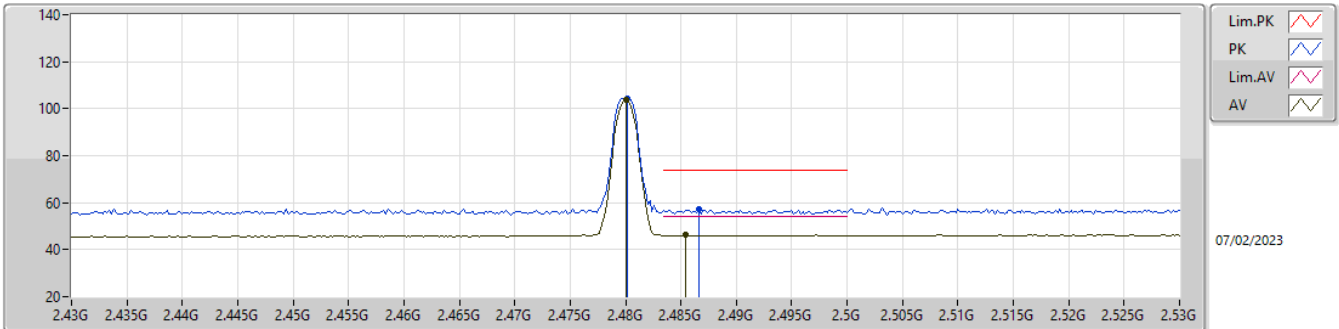
2.4-2.4835GHz_BT-LE(125kbps)

2440MHz_TX



2.4-2.4835GHz_BT-LE(125kbps)

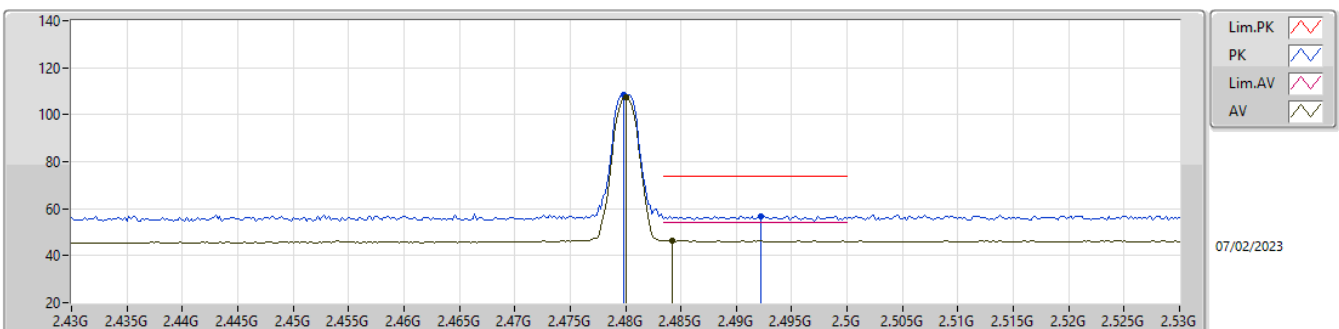
2480MHz_TX



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	2.48G	103.60	Inf	-Inf	31.88	3	Vertical	128	1.32	71.72	27.66	4.22	-
AV	2.4854G	46.23	54.00	-7.77	31.89	3	Vertical	128	1.32	14.34	27.67	4.22	-
PK	2.4802G	104.50	Inf	-Inf	31.88	3	Vertical	128	1.32	72.62	27.66	4.22	-
PK	2.4866G	57.03	74.00	-16.97	31.89	3	Vertical	128	1.32	25.14	27.67	4.22	-

2.4-2.4835GHz_BT-LE(125kbps)

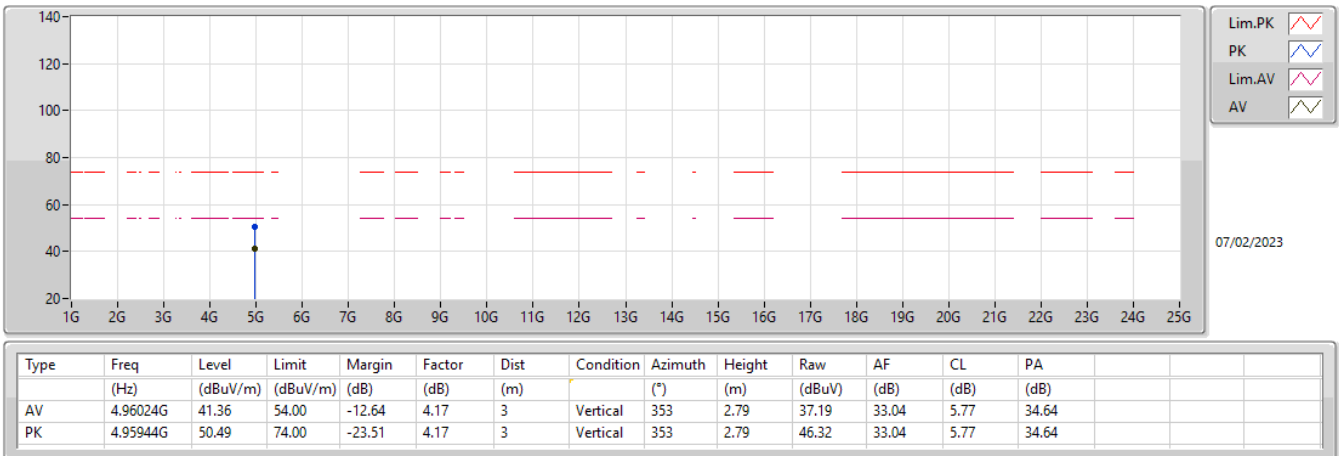
2480MHz_TX



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	2.48G	107.58	Inf	-Inf	31.88	3	Horizontal	55	2.68	75.70	27.66	4.22	-
AV	2.4842G	46.60	54.00	-7.40	31.89	3	Horizontal	55	2.68	14.71	27.67	4.22	-
PK	2.4798G	108.45	Inf	-Inf	31.88	3	Horizontal	55	2.68	76.57	27.66	4.22	-
PK	2.4922G	56.82	74.00	-17.18	31.91	3	Horizontal	55	2.68	24.91	27.68	4.23	-

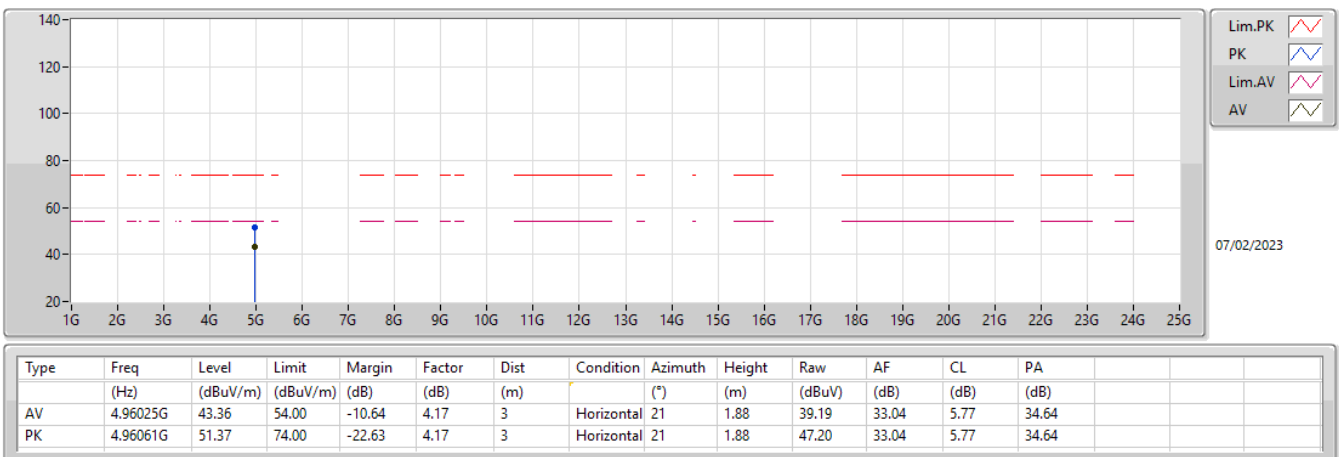
2.4-2.4835GHz_BT-LE(125kbps)

2480MHz_TX



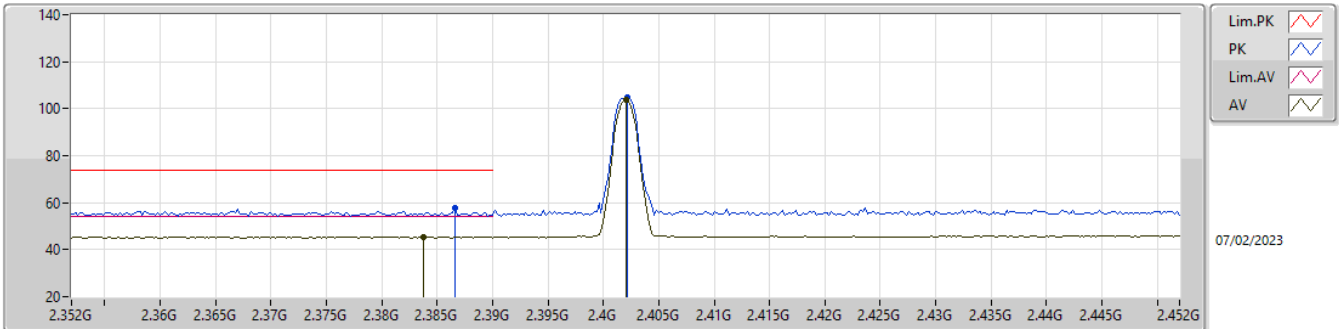
2.4-2.4835GHz_BT-LE(125kbps)

2480MHz_TX



2.4-2.4835GHz_BT-LE(500kbps)

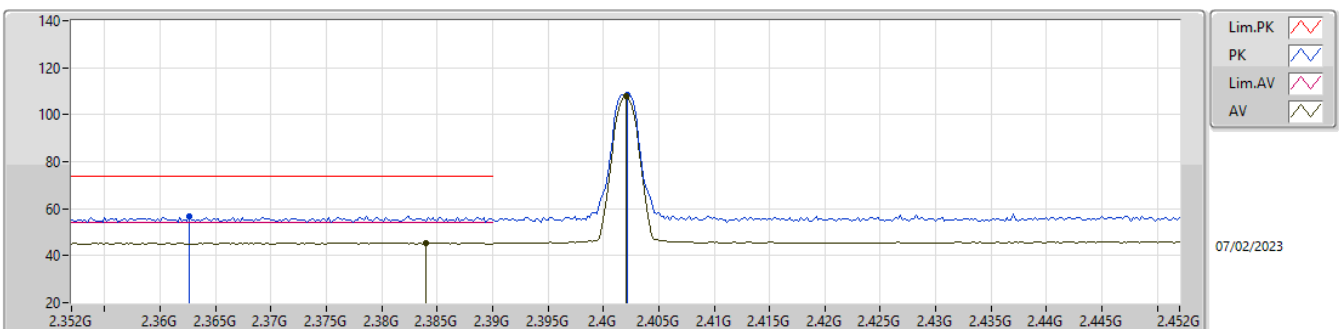
2402MHz_TX



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	2.3838G	45.51	54.00	-8.49	31.52	3	Vertical	124	1.12	13.99	27.37	4.15	-
AV	2.402G	103.91	Inf	-Inf	31.58	3	Vertical	124	1.12	72.33	27.41	4.17	-
PK	2.3866G	57.90	74.00	-16.10	31.53	3	Vertical	124	1.12	26.37	27.37	4.16	-
PK	2.4022G	104.59	Inf	-Inf	31.58	3	Vertical	124	1.12	73.01	27.41	4.17	-

2.4-2.4835GHz_BT-LE(500kbps)

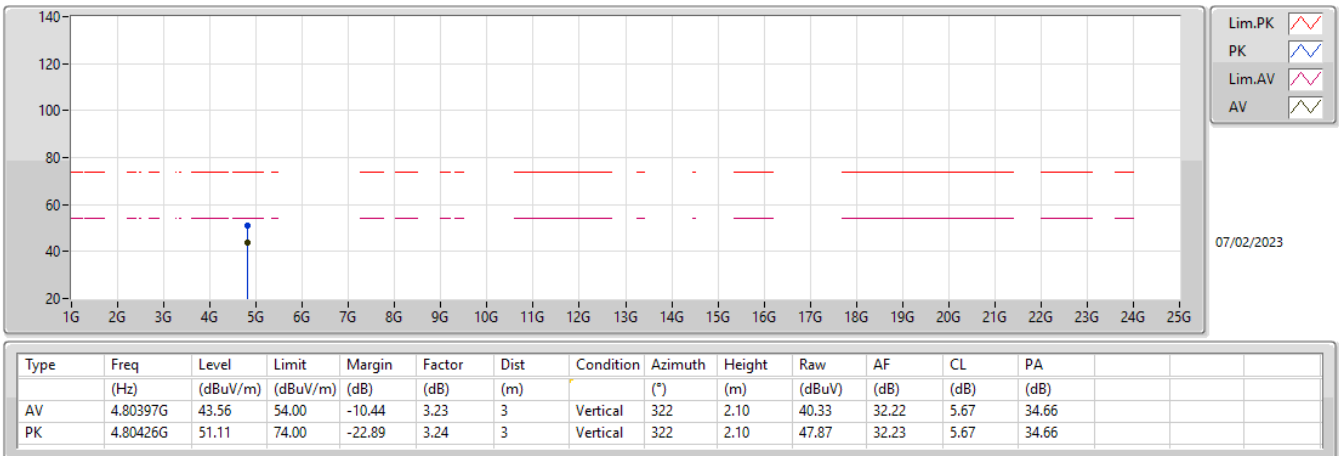
2402MHz_TX



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	2.384G	45.47	54.00	-8.53	31.52	3	Horizontal	61	2.81	13.95	27.37	4.15	-
AV	2.402G	107.74	Inf	-Inf	31.58	3	Horizontal	61	2.81	76.16	27.41	4.17	-
PK	2.3626G	56.71	74.00	-17.29	31.46	3	Horizontal	61	2.81	25.25	27.33	4.13	-
PK	2.4022G	108.49	Inf	-Inf	31.58	3	Horizontal	61	2.81	76.91	27.41	4.17	-

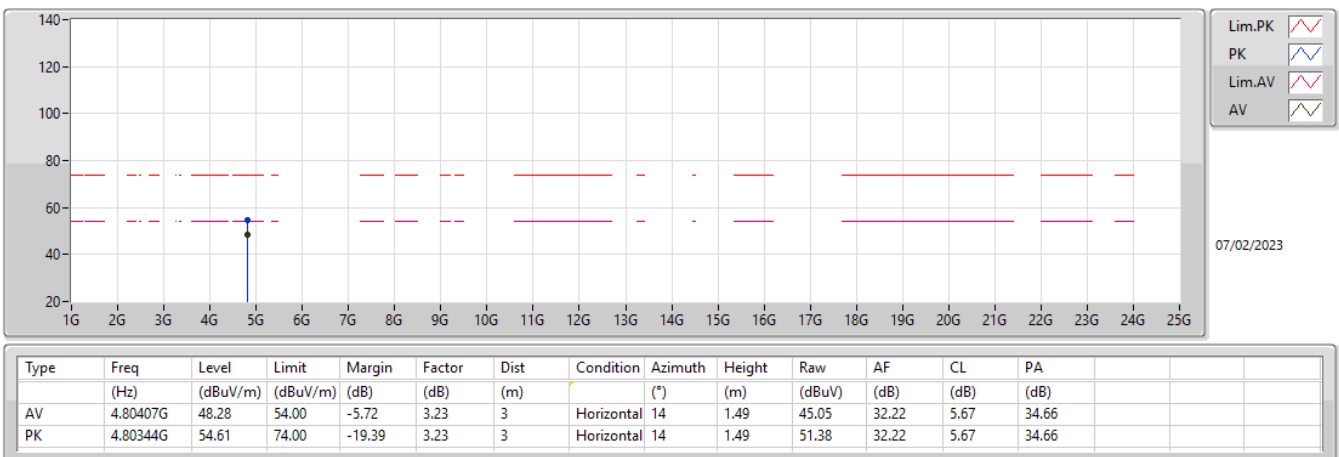
2.4-2.4835GHz_BT-LE(500kbps)

2402MHz_TX



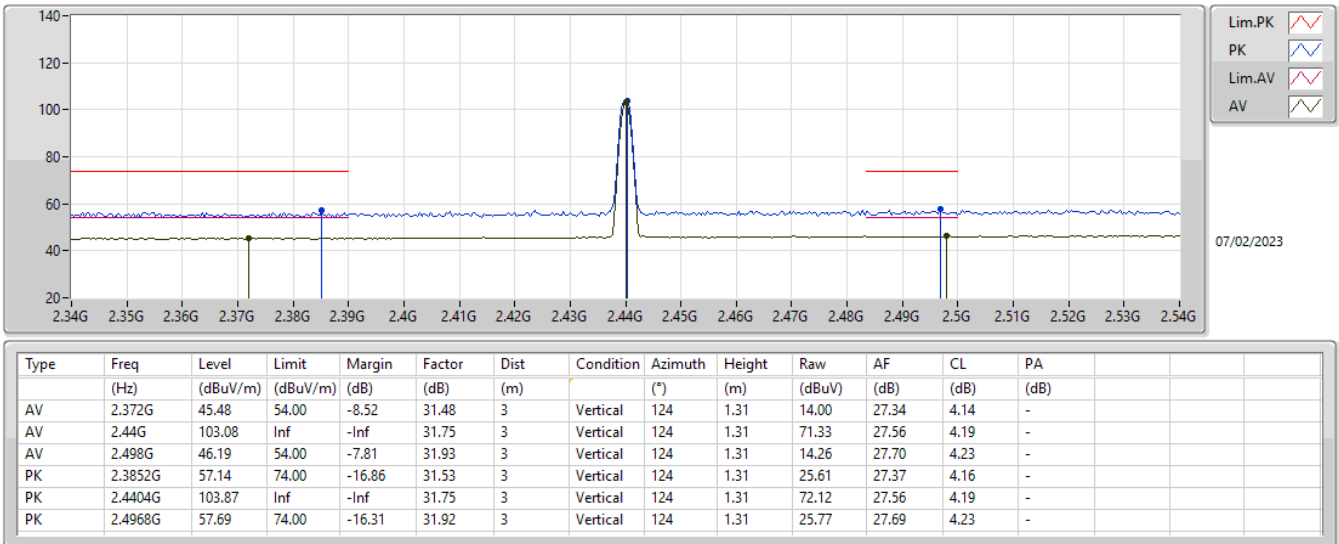
2.4-2.4835GHz_BT-LE(500kbps)

2402MHz_TX



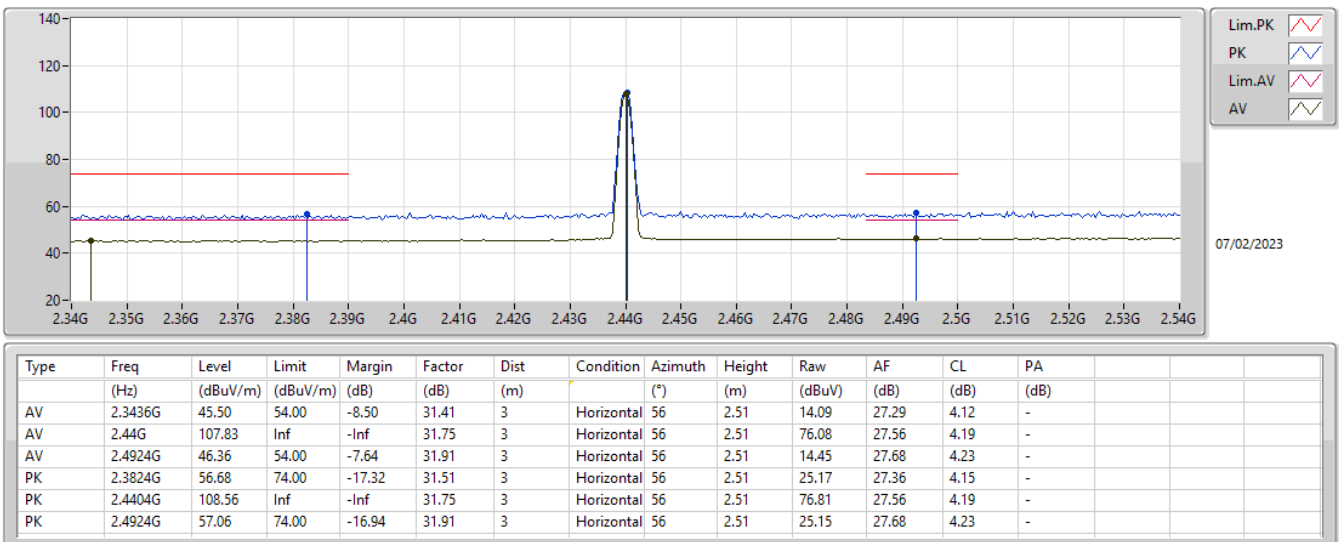
2.4-2.4835GHz_BT-LE(500kbps)

2440MHz_TX



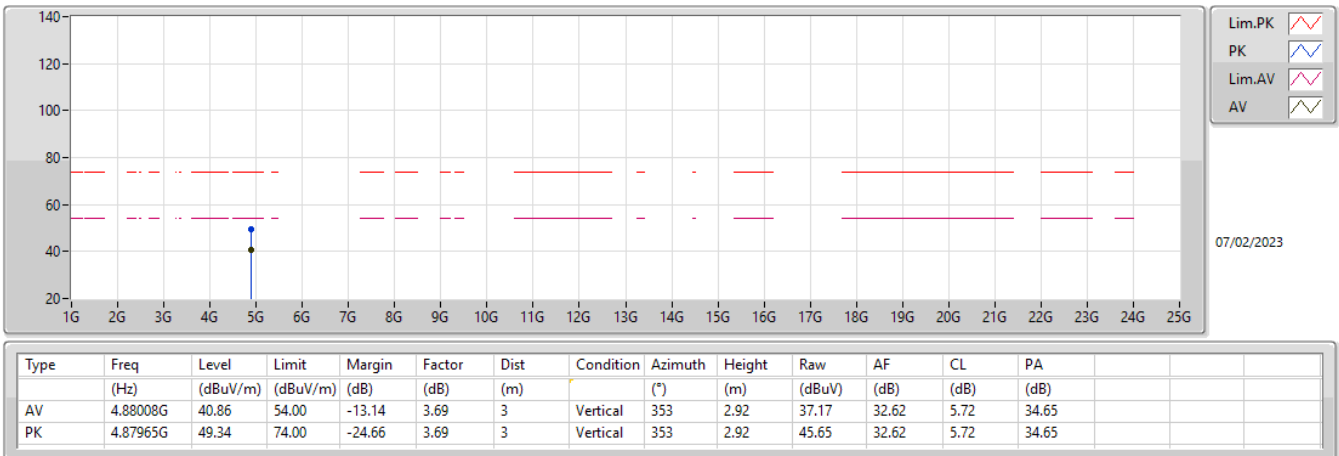
2.4-2.4835GHz_BT-LE(500kbps)

2440MHz_TX



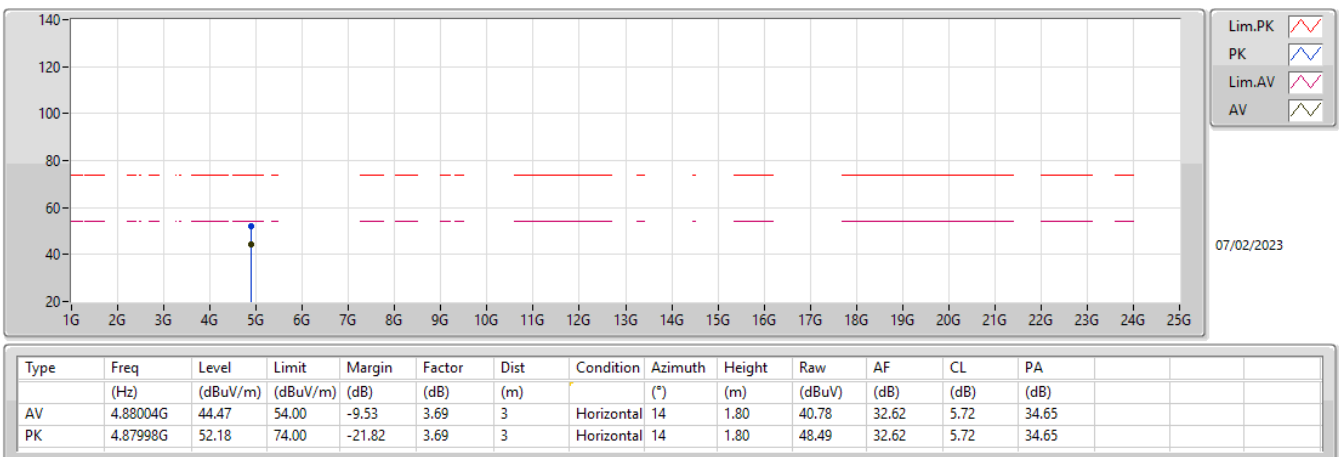
2.4-2.4835GHz_BT-LE(500kbps)

2440MHz_TX



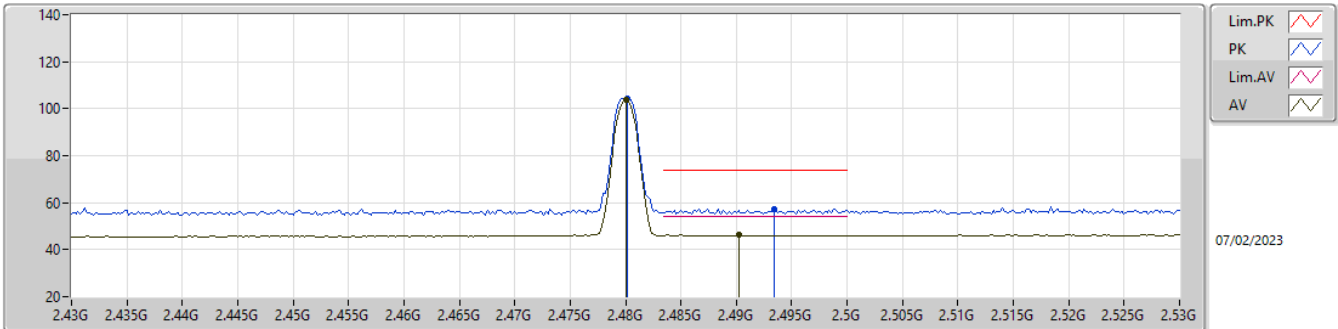
2.4-2.4835GHz_BT-LE(500kbps)

2440MHz_TX



2.4-2.4835GHz_BT-LE(500kbps)

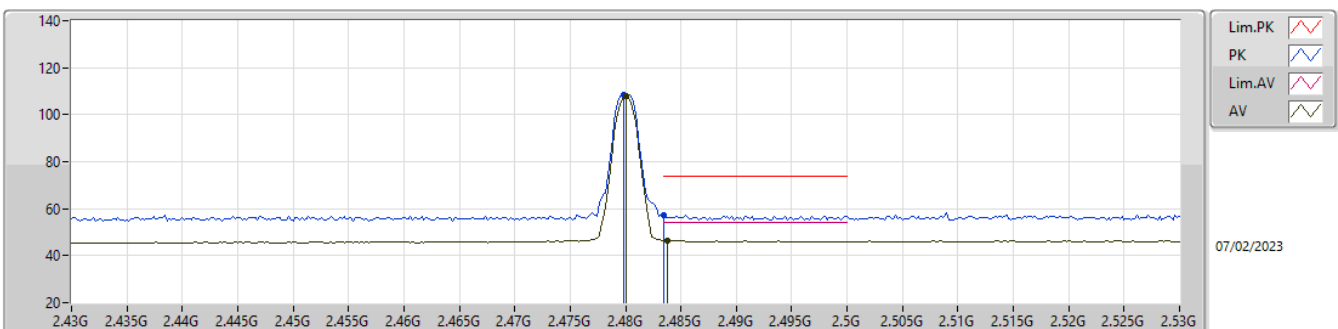
2480MHz_TX



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	103.69	Inf	-Inf	31.88	3	Vertical	129	1.32	71.81	27.66	4.22	-
AV	2.4902G	46.48	54.00	-7.52	31.90	3	Vertical	129	1.32	14.58	27.68	4.22	-
PK	2.4802G	104.40	Inf	-Inf	31.88	3	Vertical	129	1.32	72.52	27.66	4.22	-
PK	2.4934G	57.35	74.00	-16.65	31.92	3	Vertical	129	1.32	25.43	27.69	4.23	-

2.4-2.4835GHz_BT-LE(500kbps)

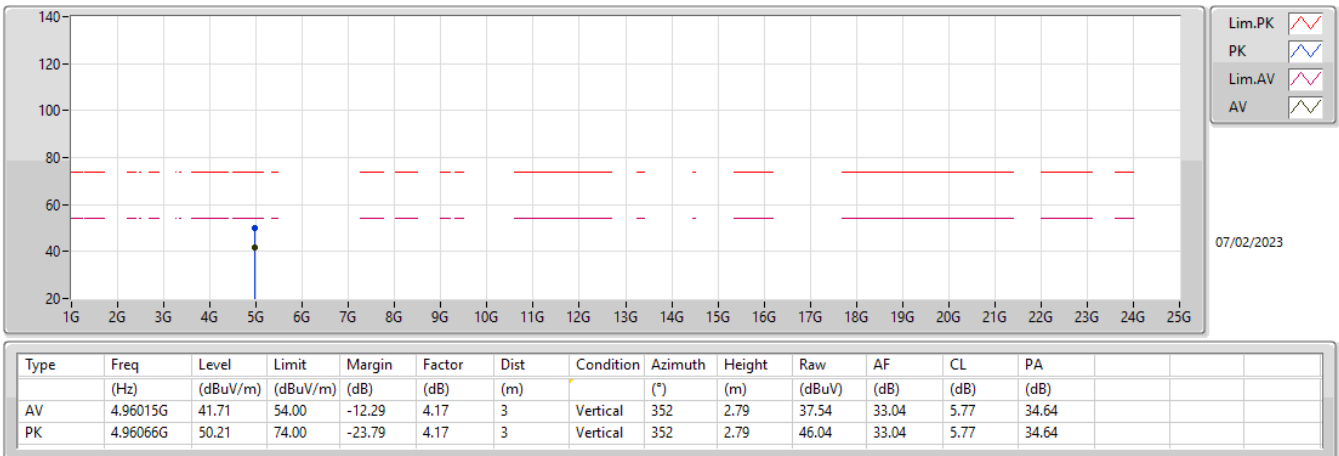
2480MHz_TX



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	107.79	Inf	-Inf	31.88	3	Horizontal	53	2.68	75.91	27.66	4.22	-
AV	2.4838G	46.63	54.00	-7.37	31.89	3	Horizontal	53	2.68	14.74	27.67	4.22	-
PK	2.4798G	108.44	Inf	-Inf	31.88	3	Horizontal	53	2.68	76.56	27.66	4.22	-
PK	2.4835G	57.01	74.00	-16.99	31.89	3	Horizontal	53	2.68	25.12	27.67	4.22	-

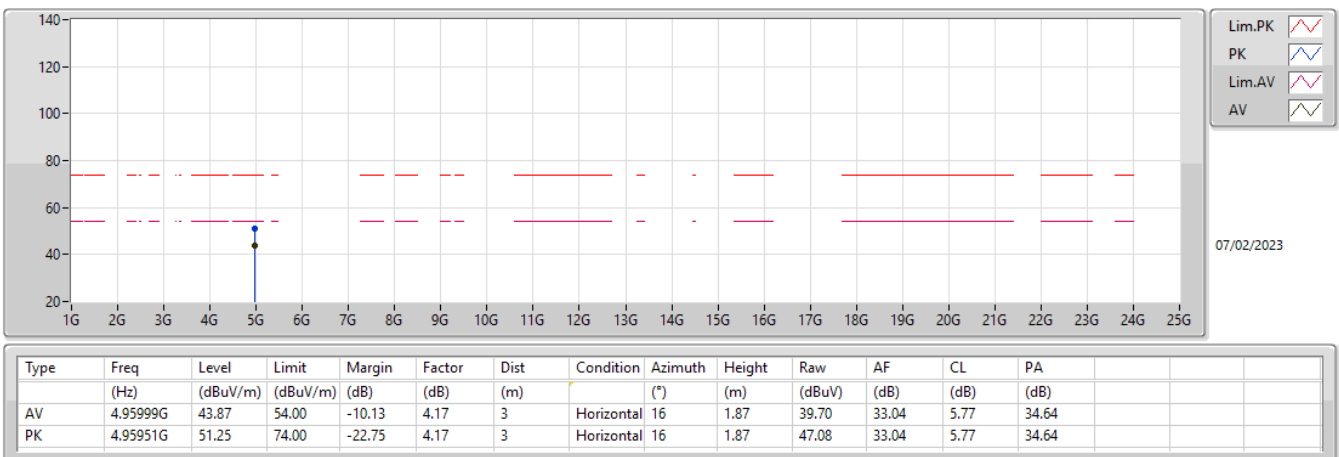
2.4-2.4835GHz_BT-LE(500kbps)

2480MHz_TX



2.4-2.4835GHz_BT-LE(500kbps)

2480MHz_TX





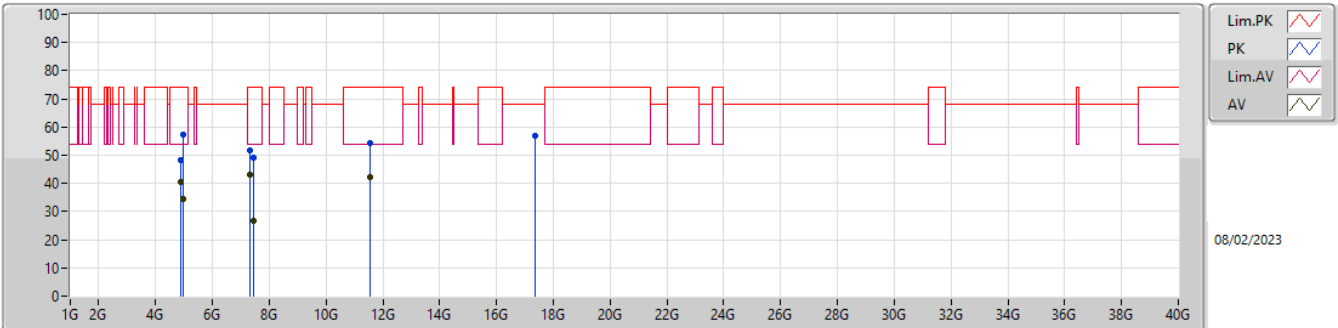
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	17.35912G	59.20	68.20	-9.00	Horizontal

Result

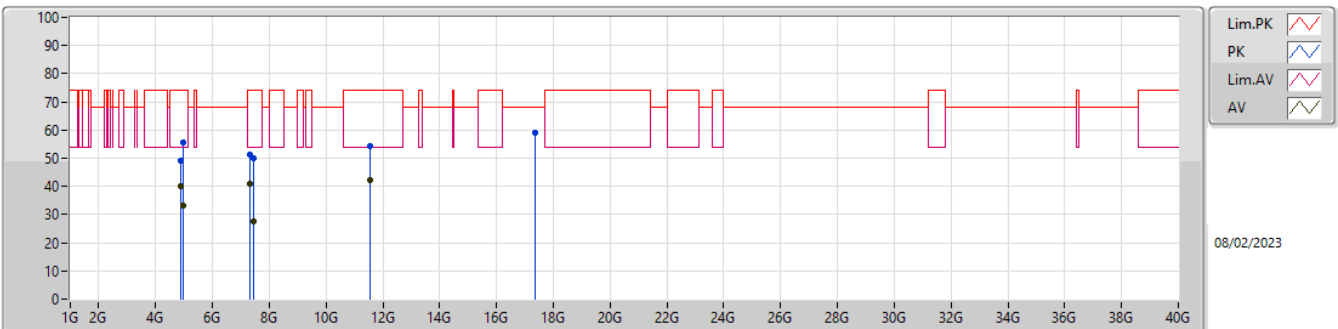
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.87404G	40.60	54.00	-13.40	3	Vertical	197	1.69	-
Mode 1	Pass	AV	4.95963G	34.69	54.00	-19.31	3	Vertical	360	2.64	-
Mode 1	Pass	AV	7.31168G	42.98	54.00	-11.02	3	Vertical	360	1.85	-
Mode 1	Pass	AV	7.44232G	26.63	54.00	-27.37	3	Vertical	359	1.50	-
Mode 1	Pass	AV	11.56816G	42.28	54.00	-11.72	3	Vertical	23	1.48	-
Mode 1	Pass	PK	4.87392G	48.18	74.00	-25.82	3	Vertical	197	1.69	-
Mode 1	Pass	PK	4.95963G	57.19	74.00	-16.81	3	Vertical	360	2.64	-
Mode 1	Pass	PK	7.31124G	51.89	74.00	-22.11	3	Vertical	360	1.85	-
Mode 1	Pass	PK	7.44232G	49.13	74.00	-24.87	3	Vertical	359	1.50	-
Mode 1	Pass	PK	11.56748G	54.45	74.00	-19.55	3	Vertical	23	1.48	-
Mode 1	Pass	PK	17.35172G	56.77	68.20	-11.43	3	Vertical	346	1.50	-
Mode 1	Pass	AV	4.874G	40.15	54.00	-13.85	3	Horizontal	331	1.20	-
Mode 1	Pass	AV	4.95963G	33.19	54.00	-20.81	3	Horizontal	273	1.06	-
Mode 1	Pass	AV	7.31196G	40.82	54.00	-13.18	3	Horizontal	73	2.97	-
Mode 1	Pass	AV	7.43524G	27.58	54.00	-26.42	3	Horizontal	2	1.50	-
Mode 1	Pass	AV	11.5694G	42.03	54.00	-11.97	3	Horizontal	352	1.37	-
Mode 1	Pass	PK	4.87421G	49.14	74.00	-24.86	3	Horizontal	331	1.20	-
Mode 1	Pass	PK	4.95963G	55.69	74.00	-18.31	3	Horizontal	273	1.06	-
Mode 1	Pass	PK	7.31184G	51.13	74.00	-22.87	3	Horizontal	73	2.97	-
Mode 1	Pass	PK	7.43524G	50.08	74.00	-23.92	3	Horizontal	2	1.50	-
Mode 1	Pass	PK	11.56636G	54.10	74.00	-19.90	3	Horizontal	352	1.37	-
Mode 1	Pass	PK	17.35912G	59.20	68.20	-9.00	3	Horizontal	0	1.91	-

Radiated Emissions above 1GHz_Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
AV	4.87404G	40.60	54.00	-13.40	3.76	3	Vertical	197	1.69	-	36.84	32.70	5.71	34.65
AV	4.95963G	34.69	54.00	-19.31	4.15	3	Vertical	360	2.64	-	30.54	33.02	5.77	34.64
AV	7.31168G	42.98	54.00	-11.02	8.77	3	Vertical	360	1.85	-	34.21	36.73	6.82	34.78
AV	7.44232G	26.63	54.00	-27.37	8.40	3	Vertical	359	1.50	-	18.23	36.30	6.89	34.79
AV	11.56816G	42.28	54.00	-11.72	12.50	3	Vertical	23	1.48	-	29.78	38.56	8.53	34.59
PK	4.87392G	48.18	74.00	-25.82	3.76	3	Vertical	197	1.69	-	44.42	32.70	5.71	34.65
PK	4.95963G	57.19	74.00	-16.81	4.15	3	Vertical	360	2.64	-	53.04	33.02	5.77	34.64
PK	7.31124G	51.89	74.00	-22.11	8.77	3	Vertical	360	1.85	-	43.12	36.73	6.82	34.78
PK	7.44232G	49.13	74.00	-24.87	8.40	3	Vertical	359	1.50	-	40.73	36.30	6.89	34.79
PK	11.56748G	54.45	74.00	-19.55	12.51	3	Vertical	23	1.48	-	41.94	38.57	8.53	34.59
PK	17.35172G	56.77	68.20	-11.43	14.23	3	Vertical	346	1.50	-	42.54	38.30	10.26	34.33

Radiated Emissions above 1GHz_Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
AV	4.874G	40.15	54.00	-13.85	3.76	3	Horizontal	331	1.20	-	36.39	32.70	5.71	34.65
AV	4.95963G	33.19	54.00	-20.81	4.15	3	Horizontal	273	1.06	-	29.04	33.02	5.77	34.64
AV	7.31196G	40.82	54.00	-13.18	8.77	3	Horizontal	73	2.97	-	32.05	36.73	6.82	34.78
AV	7.43524G	27.58	54.00	-26.42	8.40	3	Horizontal	2	1.50	-	19.18	36.30	6.89	34.79
AV	11.5694G	42.03	54.00	-11.97	12.50	3	Horizontal	352	1.37	-	29.53	38.56	8.53	34.59
PK	4.87421G	49.14	74.00	-24.86	3.76	3	Horizontal	331	1.20	-	45.38	32.70	5.71	34.65
PK	4.95963G	55.69	74.00	-18.31	4.15	3	Horizontal	273	1.06	-	51.54	33.02	5.77	34.64
PK	7.31184G	51.13	74.00	-22.87	8.77	3	Horizontal	73	2.97	-	42.36	36.73	6.82	34.78
PK	7.43524G	50.08	74.00	-23.92	8.40	3	Horizontal	2	1.50	-	41.68	36.30	6.89	34.79
PK	11.56636G	54.10	74.00	-19.90	12.51	3	Horizontal	352	1.37	-	41.59	38.57	8.53	34.59
PK	17.35912G	59.20	68.20	-9.00	14.24	3	Horizontal	0	1.91	-	44.96	38.32	10.26	34.34