FCC Radio Test Report

FCC ID	:	**TVE-41417T07866**
Equipment	:	**Secured Wireless Access Point**
Brand Name	:	**FORTINET**
Model Name	:	**FortiAP 831Fxxxxxx, FAP-831Fxxxxxx, FORTIAP-831Fxxxxxx (where "x" can be "A-Z", or "0-9", or "-", or blank for software purposes or marketing purposes only)**
Applicant	:	**Fortinet, Inc. 899 Kifer Road, Sunnyvale, CA 94086, USA**
Manufacturer	:	**Fortinet, Inc. 899 Kifer Road, Sunnyvale, CA 94086, USA**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Jan. 26, 2021, and testing was started from Feb. 05, 2021 and completed on Apr. 14, 2021. 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: Allen Lin

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

Report No.	Version	Description	Issued Date
FR111206AL	01	Initial issue of report	May 05, 2021

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: Sam Tsai

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
1	Senao	5718A0607300	PIFA	I-Pex
2	Senao	5718A0608300	PIFA	I-Pex
3	Senao	5718A0609300	PIFA	I-Pex
4	Senao	5718A0610300	PIFA	I-Pex
5	Senao	5718A0611300	PIFA	I-Pex
6	Senao	5718A0612300	PIFA	I-Pex
7	Senao	5718A0613300	PIFA	I-Pex
8	Senao	5718A0614300	PIFA	I-Pex
9	Senao	5718A0611300	PIFA	I-Pex
10	Senao	5718A0612300	PIFA	I-Pex
11	Senao	5718A0613300	PIFA	I-Pex
12	Senao	5718A0614300	PIFA	I-Pex
13	Senao	5718A0615300	PIFA	I-Pex
14	Senao	5718A0616300	Dipole	I-Pex

Ant.	2.4GHz		5GHz			BT LE	Remark	
	Max Peak Gain(dBi)	Correlated Gain(dBi)	Max Peak Gain(dBi)	Correlated Gain(dBi)		Antenna Gain(dBi)		
1	4.44	6.7	-	-		-	Radio 2, 4*4	
2	4.49	6.7					Radio 2, 4*4	
3	4.32	6.7					Radio 2, 4*4	
4	4.14	6.7					Radio 2, 4*4	
5	-	-	6.10	Band1:9.52 Band2:9.01 Band3:7.95 Band4:7.84	Band1:7.23 Band2:7.18	-	Radio 1 8*8 mode	Radio 1 4*4 mode Low Band mode
6			6.21					
7			6.11					
8			6.12					
9			6.24		Band3:6.09 Band4:7.44			Radio 1 4*4 mode Hi Band mode
10			6.20					
11			6.27					
12			6.13					
13	4.69	-	4.60	-		-	Radio 3	
14	-	-	-			5.20	BT	

For 2.4 GHz function:
Radio 2
For IEEE 802.11b/g/n/VHT/ax mode (4TX/4RX)
Ant.1, Ant.2, Ant.3, and Ant.4 could transmit/receive simultaneously.
Radio 3(Scan radio)
For IEEE 802.11b/g/n mode (1TX/1RX)
Only Ant.13 can be used as transmitting/receiving.
For 5 GHz function:
Radio 1
For IEEE 802.11a/n/ac/ax mode (8TX/8RX)
Ant.5, Ant.6, Ant.7, Ant.8, Ant.9, Ant.10, Ant.11 and Ant.12 could transmit/receive simultaneously.
For IEEE 802.11a/n/ac/ax mode (4TX/4RX) (Low Band mode)
Ant.5, Ant.6, Ant.7, and Ant.8 could transmit/receive simultaneously.
For IEEE 802.11a/n/ac/ax mode (4TX/4RX) (Hi Band mode)
Ant.9, Ant.10, Ant.11 and Ant.12 could transmit/receive simultaneously.
Radio 3(Scan radio)
For IEEE 802.11a/n/ac mode (1TX/1RX)
Only Ant.13 can be used as transmitting/receiving.
For Bluetooth function:
For Bluetooth mode (1TX/1RX)
Only Ant.14 can be used as transmitting/receiving.

1.1.3 EUT Information

Operational Condition					
EUT Power Type	From AC Adapter / 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) ≥ 1/T
BT-LE(1Mbps)	1	0	10m	10
BT-LE(2Mbps)	1	0	10m	10

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

1.1.5 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Brand Name	Model Name	Description
FORTINET	FortiAP 831Fxxxxxx, FAP-831Fxxxxxx, FORTIAP-831Fxxxxxx (where “x” can be “A-Z”, or “0-9”, or “-“, or blank for software purposes or marketing purposes only)	All the models are identical, the difference model for difference brand served as marketing strategy.

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	Edward Wang	20.8~22.7°C / 54~68%	06/Mar/2021
RF Conduction	TH06-HY	Vivi Jiang	20.1~26.9°C / 50~65%	05/Feb/2021~14/Apr/2021
Radiated	03CH02-HY	Frank Hsieh	20.5~25.9°C / 52~60%	05/Feb/2021~12/Mar/2021
☐ 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**
Conducted Emission (150kHz ~ 30MHz)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 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 Condition

RF Conducted	Abbreviation	Remark
TnomVnom-DTS	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software Version	Setup_SmartRF_Studio_7-2.17.0

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10
BT-LE(2Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	9

2.3 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
Operating Mode	CTX
1	Adapter mode ;BT LE TX
2	PoE mode ;BT LE TX

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	Adapter mode ;BT LE TX		
2	PoE mode ;BT LE TX		
Operating Mode > 1GHz	CTX		
1	Adapter mode ;BT LE TX		
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	Radio1: WLAN 5G(8*8)+Radio2: WLAN 2.4G+Radio3: WLAN 2.4G+BT
2	Radio1: WLAN 5G(8*8)+Radio2: WLAN 2.4G+Radio3: WLAN 5G+BT
3	Radio1: WLAN 5G(4*4 Hi+4*4 Low)+Radio2: WLAN 2.4G+Radio3: WLAN 2.4G+BT
4	Radio1: WLAN 5G(4*4 Hi+4*4 Low)+Radio2: WLAN 2.4G+Radio3: WLAN 5G+BT
Refer to Sporton Test Report No.: FA111206 for Co-location RF Exposure Evaluation.	

2.4 Accessories

Accessories				
Bracket ceiling mount 1	Brand Name	Senao Networks, Inc.	Model Name	CLIP CEILING 9/16 LFP
Bracket ceiling mount 2	Brand Name	Senao Networks, Inc.	Model Name	CLIP CEILING 15/16 LFP

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

2.5 Support Equipment

Support Equipment – AC Conduction					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	PoE	SENAO	EPA5006GPR	-	Note 1
2	AC Power Cable	-	-	-	Note 1
3	Adapter	ASIAN POWER DEVICES INC.	WA-48A12R	-	-
4	RJ45 Cable	Power Sync	CAT-6E-10	-	-

Note 1: 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	Notebook	DELL	PP13S	-	-
4	Adapter for NB	DELL	AA90PM111	-	-
5	Fixture	-	-	-	Note 1

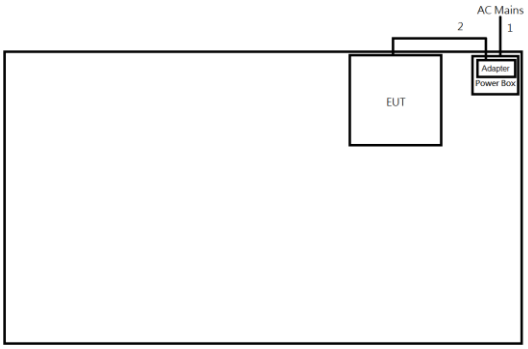
Note 1: Provided by customer.

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Adapter	ASIAN POWER DEVICES INC.	WA-48A12R	-	Note 1
2	RJ45 Cable	Power Sync	CAT-6E-10	-	-
3	PoE (Remote)	SENAO	EPA5006GPR	-	Note 1
4	AC Power Cable (Remote)	-	-	-	Note 1

Note 1: Provided by customer.

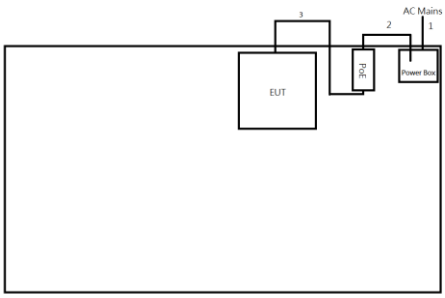
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test - Adapter mode



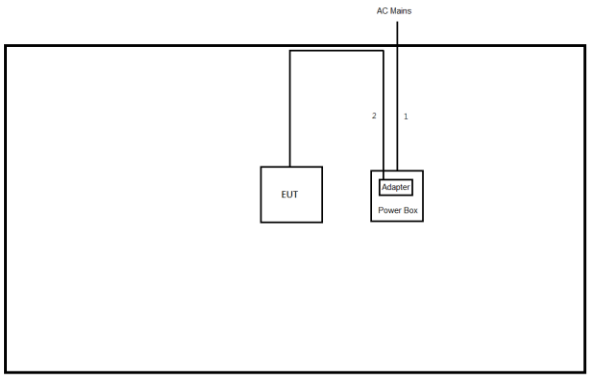
Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	1.5	-

Test Setup Diagram – AC Line Conducted Emission Test - PoE mode



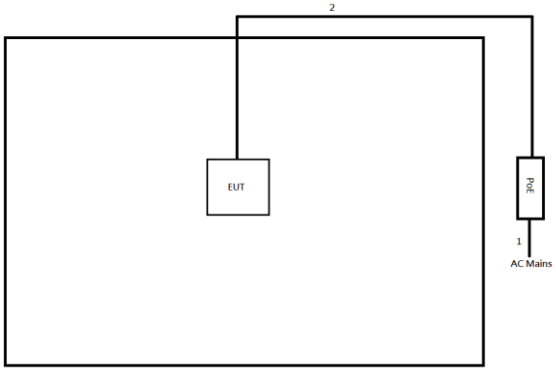
Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	AC Power cable	No	0.5	-
3	RJ45 cable	No	10.0	-

Test Setup Diagram - Radiated Test - Adapter mode



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	1.5	-

Test Setup Diagram - Radiated Test - PoE mode



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	0.5	-
2	RJ45 cable	No	10.0	-

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

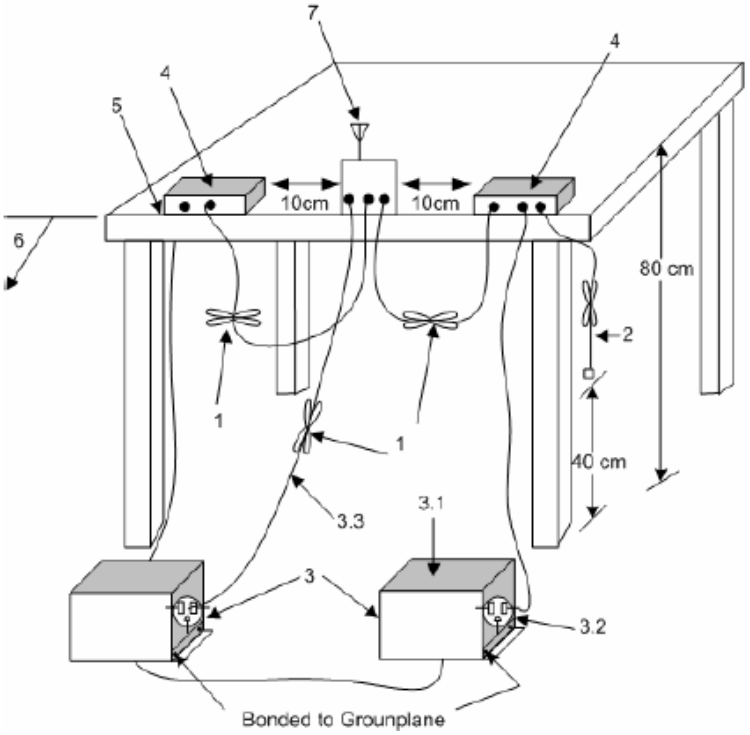
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

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 ≥ 500 kHz.

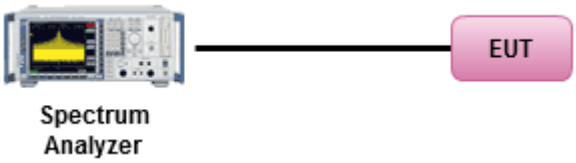
3.2.2 Measuring Instruments

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 for occupied bandwidth testing.
	☐ Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth


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} ≤ 6 dBi, then P_{Out} ≤ 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 + 8dB dBm
e.i.r.p. Power Limit:		
▪ 2400-2483.5 MHz Band		
	▪ Point-to-multipoint systems (P2M): P_{eirp} ≤ 36 dBm (4 W)	
	▪ Point-to-point systems (P2P): P_{eirp} ≤ MAX(36, [P_{Out} + G_{TX}]) dBm	
	▪ Smart antenna system (SAS)	
		- Single beam: P_{eirp} ≤ MAX(36, P_{Out} + G_{TX}) dBm
		- Overlap beam: P_{eirp} ≤ MAX(36, P_{Out} + G_{TX}) dBm
		- Aggregate power on all beams: P_{eirp} ≤ 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: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


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

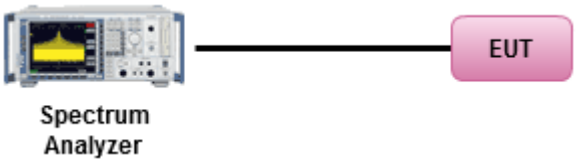
3.4.2 Measuring Instruments

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

Power Spectral Density


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.	

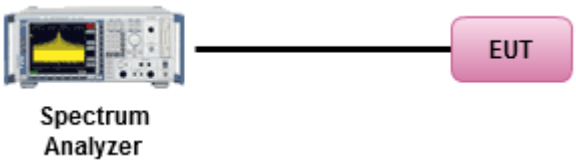
3.5.2 Measuring Instruments

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

Emissions in Non-restricted Frequency Bands


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 below30 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.

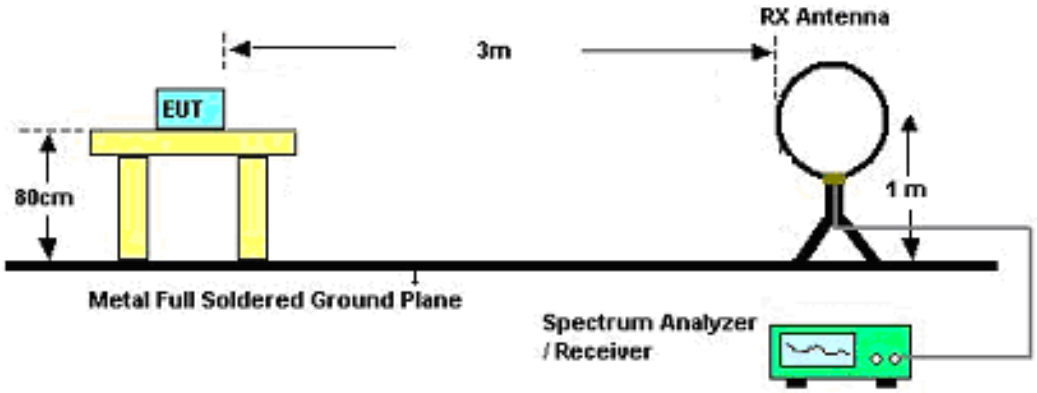
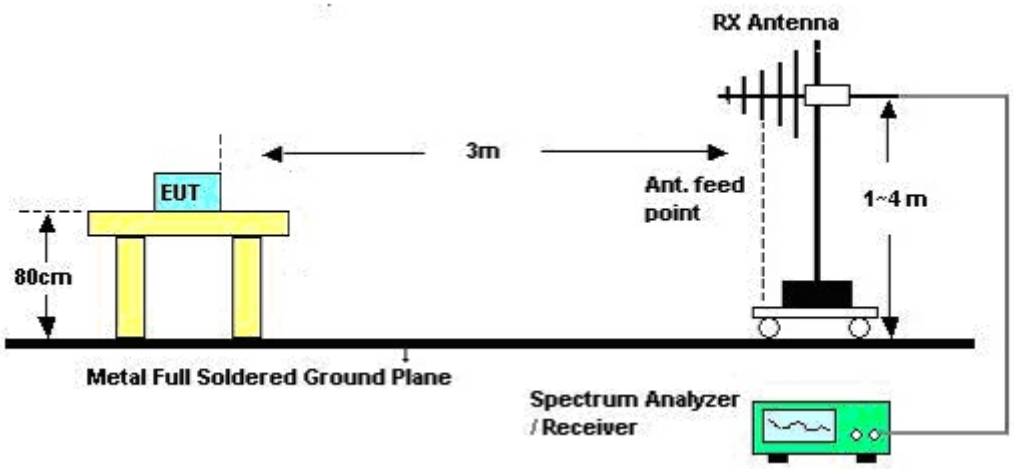
3.6.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 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 ≥ 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.

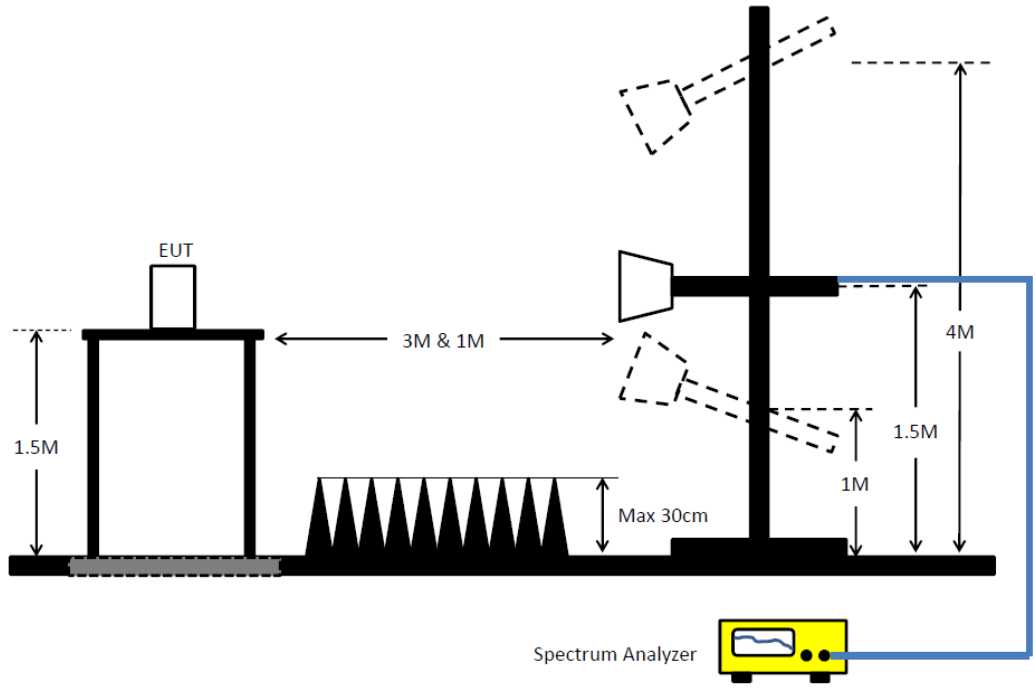
3.6.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

3.6.5 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



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	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	11/Nov/2020	10/Nov/2021
RF Cable 5m	TITAN	TITAN	CO04-cable-01	0.1MHz~200MHz	03/Mar/2021	02/Mar/2022
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	21/Sep/2020	20/Sep/2021

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	19/Oct/2020	18/Oct/2021
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	20/Oct/2020	19/Oct/2021
Pulse Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	18/Mar/2020	17/Mar/2021
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	18/Mar/2020	17/Mar/2021
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	23/Feb/2021	22/Feb/2022
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	23/Feb/2021	22/Feb/2022

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	04/Aug/2020	03/Aug/2021
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	02/Aug/2020	01/Aug/2021
Signal Analyzer	R&S	FSP40	100593	9kHz~40GHz	27/Feb/2020	26/Feb/2021
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	19/Aug/2020	18/Aug/2021
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	30/Jun/2020	29/Jun/2021
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~18GHz	23/Oct/2020	22/Oct/2021
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	06/Sep/2020	05/Sep/2021
Double Ridged Guide Horn Antenna	SCHWARZBEC	BBHA 9120 D	BBHA 9120 D 01543	1GHz~18GHz	09/Jun/2020	08/Jun/2021
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz~30MHz	20/Jun/2020	19/Jun/2021
RF Cable-R03m	Jye Bao	RG142	CB017	30MHz~1GHz	25/Mar/2020	24/Mar/2021
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	805193/4+80 5192/4	1GHz~40GHz	08/Apr/2020	07/Apr/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	13/Mar/2020	12/Mar/2021
Microwave Premplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	09/Mar/2021	08/Mar/2022
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz~40GHz	10/Mar/2020	09/Mar/2021
Loop Antenna	Teseq	HLA 6120	24155	9kHz~30MHz	13/Apr/2020	12/Apr/2021
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	29/May/2020	28/May/2021

Summary

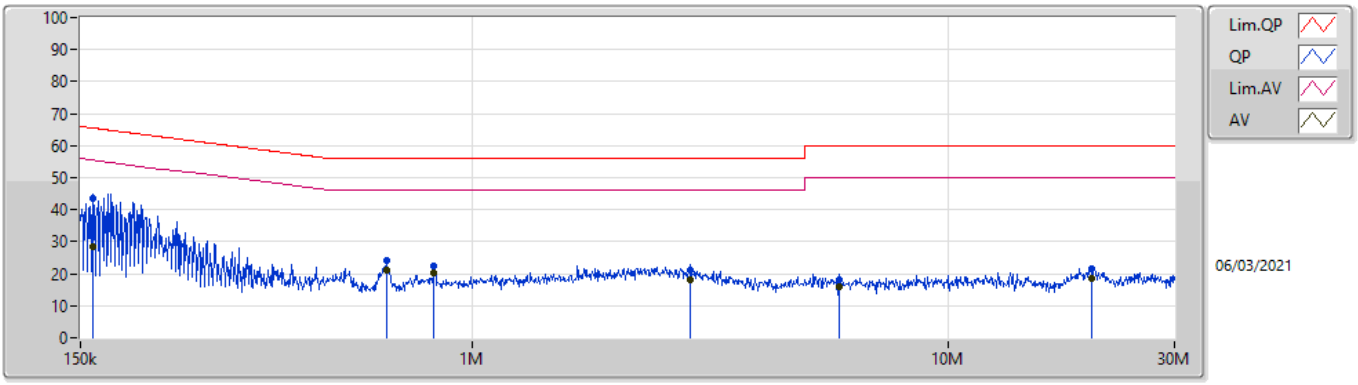
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150k	46.53	66.00	-19.47	Neutral
Mode 2	Pass	AV	475.482k	39.80	46.42	-6.62	Neutral

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	159.256k	43.59	65.50	-21.91	Line	-
Mode 1	Pass	AV	159.256k	28.30	55.50	-27.20	Line	-
Mode 1	Pass	QP	659.627k	24.29	56.00	-31.71	Line	-
Mode 1	Pass	AV	659.627k	21.22	46.00	-24.78	Line	-
Mode 1	Pass	QP	831.484k	22.62	56.00	-33.38	Line	-
Mode 1	Pass	AV	831.484k	20.12	46.00	-25.88	Line	-
Mode 1	Pass	QP	2.878M	20.94	56.00	-35.06	Line	-
Mode 1	Pass	AV	2.878M	17.89	46.00	-28.11	Line	-
Mode 1	Pass	QP	5.903M	18.31	60.00	-41.69	Line	-
Mode 1	Pass	AV	5.903M	15.89	50.00	-34.11	Line	-
Mode 1	Pass	QP	20.027M	21.70	60.00	-38.30	Line	-
Mode 1	Pass	AV	20.027M	18.47	50.00	-31.53	Line	-
Mode 1	Pass	QP	150k	46.53	66.00	-19.47	Neutral	-
Mode 1	Pass	AV	150k	29.91	56.00	-26.09	Neutral	-
Mode 1	Pass	QP	654.382k	22.83	56.00	-33.17	Neutral	-
Mode 1	Pass	AV	654.382k	19.22	46.00	-26.78	Neutral	-
Mode 1	Pass	QP	834.81k	21.49	56.00	-34.51	Neutral	-
Mode 1	Pass	AV	834.81k	19.69	46.00	-26.31	Neutral	-
Mode 1	Pass	QP	2.211M	20.99	56.00	-35.01	Neutral	-
Mode 1	Pass	AV	2.211M	17.56	46.00	-28.44	Neutral	-
Mode 1	Pass	QP	5.998M	18.26	60.00	-41.74	Neutral	-
Mode 1	Pass	AV	5.998M	15.78	50.00	-34.22	Neutral	-
Mode 1	Pass	QP	19.321M	24.41	60.00	-35.59	Neutral	-
Mode 1	Pass	AV	19.321M	20.92	50.00	-29.08	Neutral	-
Mode 2	Pass	QP	153.024k	53.28	65.83	-12.55	Line	-
Mode 2	Pass	AV	153.024k	37.39	55.83	-18.44	Line	-
Mode 2	Pass	QP	481.211k	44.26	56.33	-12.07	Line	-
Mode 2	Pass	AV	481.211k	39.45	46.33	-6.88	Line	-
Mode 2	Pass	QP	580.524k	36.21	56.00	-19.79	Line	-
Mode 2	Pass	AV	580.524k	32.76	46.00	-13.24	Line	-
Mode 2	Pass	QP	1.733M	35.33	56.00	-20.67	Line	-
Mode 2	Pass	AV	1.733M	31.85	46.00	-14.15	Line	-
Mode 2	Pass	QP	4.683M	32.29	56.00	-23.71	Line	-
Mode 2	Pass	AV	4.683M	27.21	46.00	-18.79	Line	-
Mode 2	Pass	QP	11.498M	31.31	60.00	-28.69	Line	-
Mode 2	Pass	AV	11.498M	26.60	50.00	-23.40	Line	-
Mode 2	Pass	QP	153.024k	53.02	65.83	-12.81	Neutral	-
Mode 2	Pass	AV	153.024k	36.94	55.83	-18.89	Neutral	-
Mode 2	Pass	QP	475.482k	45.13	56.42	-11.29	Neutral	-
Mode 2	Pass	AV	475.482k	39.80	46.42	-6.62	Neutral	-
Mode 2	Pass	QP	560.037k	33.61	56.00	-22.39	Neutral	-
Mode 2	Pass	AV	560.037k	29.48	46.00	-16.52	Neutral	-
Mode 2	Pass	QP	1.489M	31.40	56.00	-24.60	Neutral	-

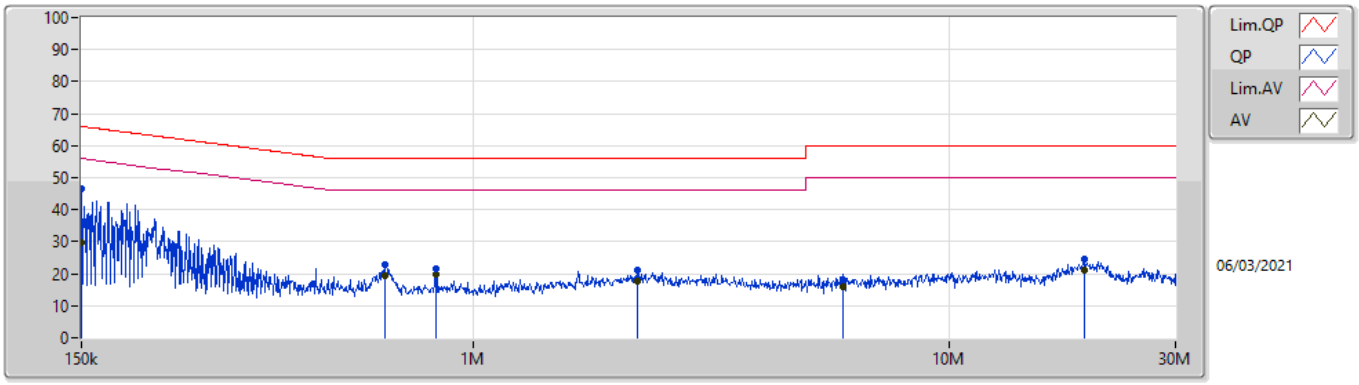
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 2	Pass	AV	1.489M	27.69	46.00	-18.31	Neutral	-
Mode 2	Pass	QP	4.74M	28.76	56.00	-27.24	Neutral	-
Mode 2	Pass	AV	4.74M	23.27	46.00	-22.73	Neutral	-
Mode 2	Pass	QP	12.604M	29.14	60.00	-30.86	Neutral	-
Mode 2	Pass	AV	12.604M	24.60	50.00	-25.40	Neutral	-

Conducted Emissions at Powerline_Mode 1



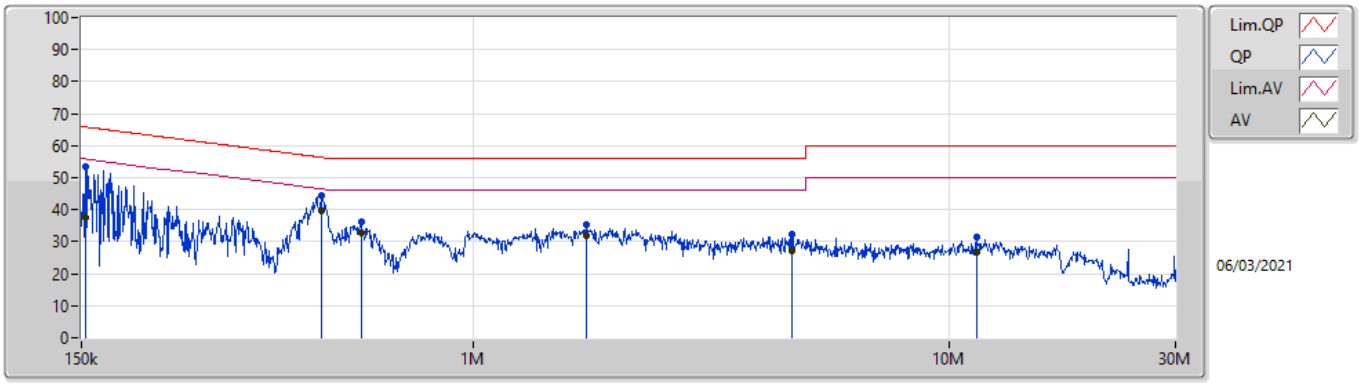
Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	159.256k	43.59	65.50	-21.91	19.63	Line	-	23.96	9.69	0.04	9.90
AV	159.256k	28.30	55.50	-27.20	19.63	Line	-	8.67	9.69	0.04	9.90
QP	659.627k	24.29	56.00	-31.71	19.59	Line	-	4.70	9.67	0.07	9.85
AV	659.627k	21.22	46.00	-24.78	19.59	Line	-	1.63	9.67	0.07	9.85
QP	831.484k	22.62	56.00	-33.38	19.57	Line	-	3.05	9.67	0.08	9.82
AV	831.484k	20.12	46.00	-25.88	19.57	Line	-	0.55	9.67	0.08	9.82
QP	2.878M	20.94	56.00	-35.06	19.66	Line	-	1.28	9.69	0.12	9.85
AV	2.878M	17.89	46.00	-28.11	19.66	Line	-	-1.77	9.69	0.12	9.85
QP	5.903M	18.31	60.00	-41.69	19.77	Line	-	-1.46	9.70	0.17	9.90
AV	5.903M	15.89	50.00	-34.11	19.77	Line	-	-3.88	9.70	0.17	9.90
QP	20.027M	21.70	60.00	-38.30	19.87	Line	-	1.83	9.67	0.30	9.90
AV	20.027M	18.47	50.00	-31.53	19.87	Line	-	-1.40	9.67	0.30	9.90

Conducted Emissions at Powerline_Mode 1



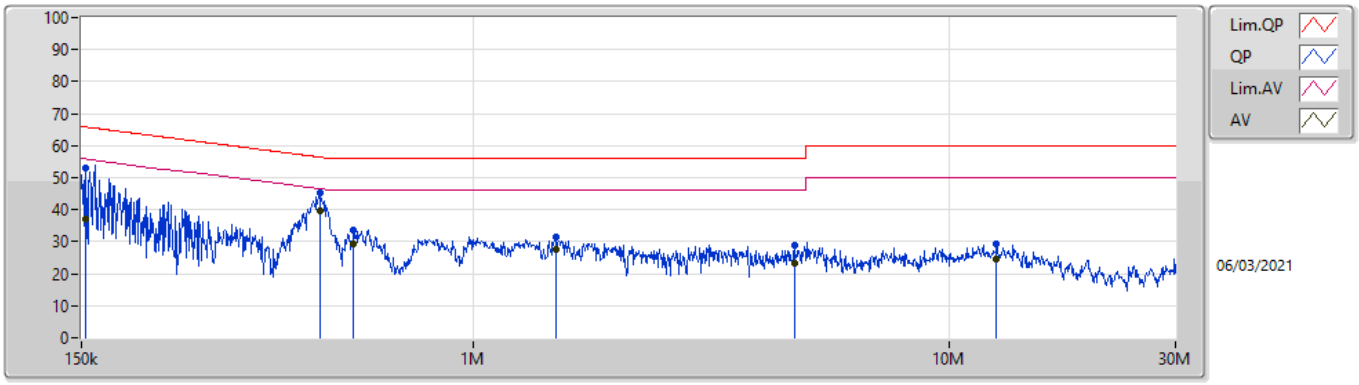
Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	46.53	66.00	-19.47	19.63	Neutral	-	26.90	9.69	0.04	9.90
AV	150k	29.91	56.00	-26.09	19.63	Neutral	-	10.28	9.69	0.04	9.90
QP	654.382k	22.83	56.00	-33.17	19.59	Neutral	-	3.24	9.67	0.07	9.85
AV	654.382k	19.22	46.00	-26.78	19.59	Neutral	-	-0.37	9.67	0.07	9.85
QP	834.81k	21.49	56.00	-34.51	19.57	Neutral	-	1.92	9.67	0.08	9.82
AV	834.81k	19.69	46.00	-26.31	19.57	Neutral	-	0.12	9.67	0.08	9.82
QP	2.211M	20.99	56.00	-35.01	19.60	Neutral	-	1.39	9.68	0.11	9.81
AV	2.211M	17.56	46.00	-28.44	19.60	Neutral	-	-2.04	9.68	0.11	9.81
QP	5.998M	18.26	60.00	-41.74	19.78	Neutral	-	-1.52	9.71	0.17	9.90
AV	5.998M	15.78	50.00	-34.22	19.78	Neutral	-	-4.00	9.71	0.17	9.90
QP	19.321M	24.41	60.00	-35.59	19.94	Neutral	-	4.47	9.75	0.29	9.90
AV	19.321M	20.92	50.00	-29.08	19.94	Neutral	-	0.98	9.75	0.29	9.90

Conducted Emissions at Powerline_Mode 2



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	153.024k	53.28	65.83	-12.55	19.63	Line	-	33.65	9.69	0.04	9.90
AV	153.024k	37.39	55.83	-18.44	19.63	Line	-	17.76	9.69	0.04	9.90
QP	481.211k	44.26	56.33	-12.07	19.61	Line	-	24.65	9.67	0.06	9.88
AV	481.211k	39.45	46.33	-6.88	19.61	Line	-	19.84	9.67	0.06	9.88
QP	580.524k	36.21	56.00	-19.79	19.60	Line	-	16.61	9.67	0.07	9.86
AV	580.524k	32.76	46.00	-13.24	19.60	Line	-	13.16	9.67	0.07	9.86
QP	1.733M	35.33	56.00	-20.67	19.58	Line	-	15.75	9.68	0.10	9.80
AV	1.733M	31.85	46.00	-14.15	19.58	Line	-	12.27	9.68	0.10	9.80
QP	4.683M	32.29	56.00	-23.71	19.75	Line	-	12.54	9.70	0.15	9.90
AV	4.683M	27.21	46.00	-18.79	19.75	Line	-	7.46	9.70	0.15	9.90
QP	11.498M	31.31	60.00	-28.69	19.83	Line	-	11.48	9.71	0.22	9.90
AV	11.498M	26.60	50.00	-23.40	19.83	Line	-	6.77	9.71	0.22	9.90

Conducted Emissions at Powerline_Mode 2



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	153.024k	53.02	65.83	-12.81	19.63	Neutral	-	33.39	9.69	0.04	9.90
AV	153.024k	36.94	55.83	-18.89	19.63	Neutral	-	17.31	9.69	0.04	9.90
QP	475.482k	45.13	56.42	-11.29	19.61	Neutral	-	25.52	9.67	0.06	9.88
AV	475.482k	39.80	46.42	-6.62	19.61	Neutral	-	20.19	9.67	0.06	9.88
QP	560.037k	33.61	56.00	-22.39	19.60	Neutral	-	14.01	9.67	0.07	9.86
AV	560.037k	29.48	46.00	-16.52	19.60	Neutral	-	9.88	9.67	0.07	9.86
QP	1.489M	31.40	56.00	-24.60	19.57	Neutral	-	11.83	9.68	0.09	9.80
AV	1.489M	27.69	46.00	-18.31	19.57	Neutral	-	8.12	9.68	0.09	9.80
QP	4.74M	28.76	56.00	-27.24	19.75	Neutral	-	9.01	9.70	0.15	9.90
AV	4.74M	23.27	46.00	-22.73	19.75	Neutral	-	3.52	9.70	0.15	9.90
QP	12.604M	29.14	60.00	-30.86	19.87	Neutral	-	9.27	9.74	0.23	9.90
AV	12.604M	24.60	50.00	-25.40	19.87	Neutral	-	4.73	9.74	0.23	9.90

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)	690k	1.054M	1M05F1D	678.75k	1.043M
BT-LE(2Mbps)	1.36M	2.076M	2M08F1D	1.338M	2.051M

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

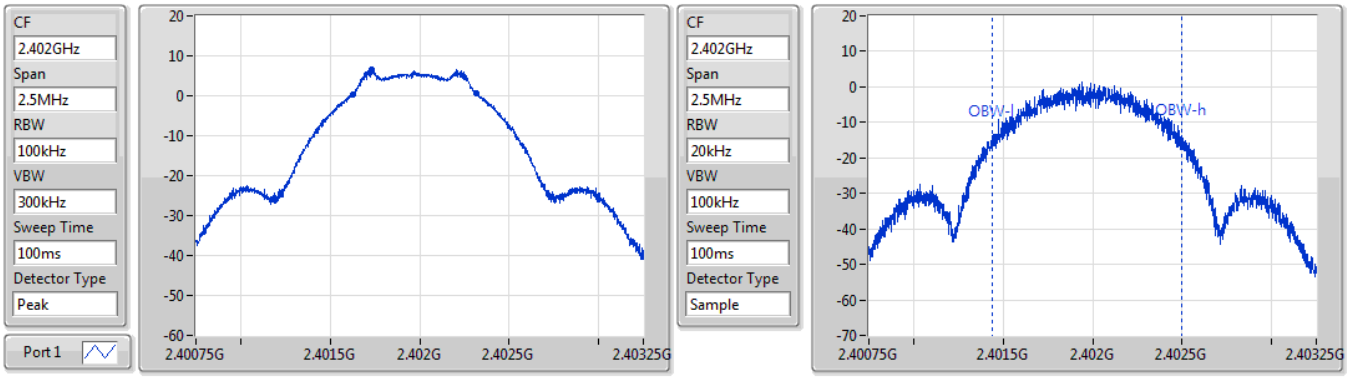
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	690k	1.054M
2440MHz	Pass	500k	682.5k	1.052M
2480MHz	Pass	500k	678.75k	1.043M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.338M	2.076M
2440MHz	Pass	500k	1.36M	2.059M
2480MHz	Pass	500k	1.345M	2.051M

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

BT-LE(1Mbps) **EBW-DTS**

2402MHz

08/03/2021

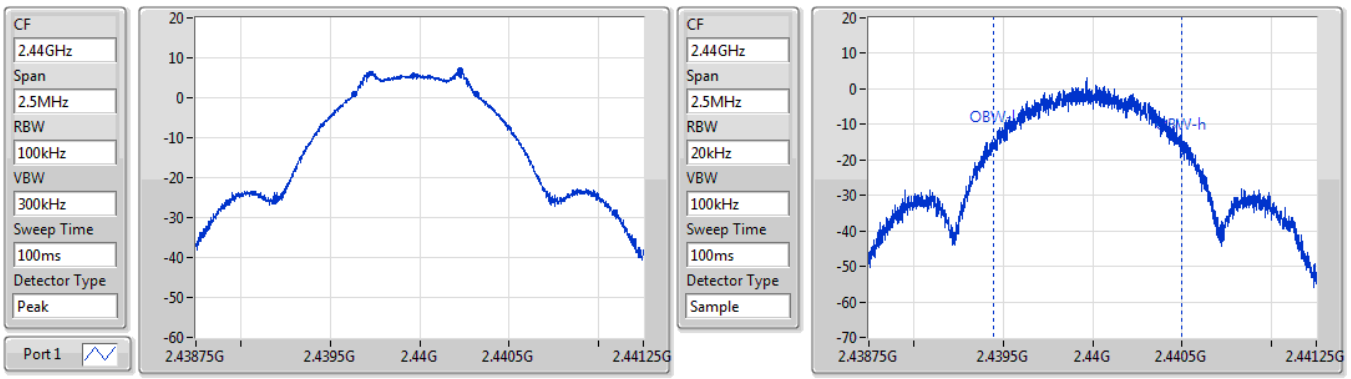


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
690k	2.401625G	2.402315G	1.054M	2.401442G	2.402496G	500k	1

BT-LE(1Mbps) **EBW-DTS**

2440MHz

08/03/2021

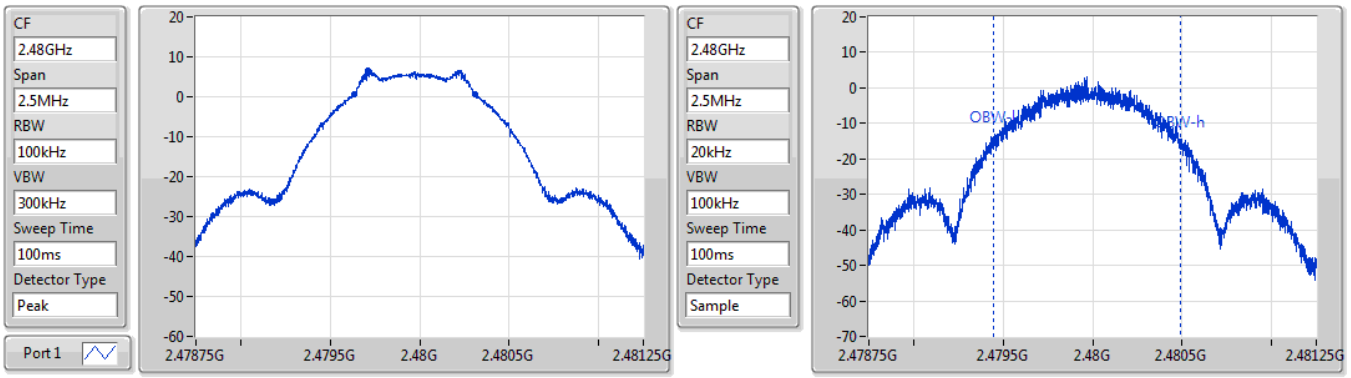


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
682.5k	2.439635G	2.440318G	1.052M	2.439447G	2.440499G	500k	1

BT-LE(1Mbps) EBW-DTS

2480MHz

08/03/2021

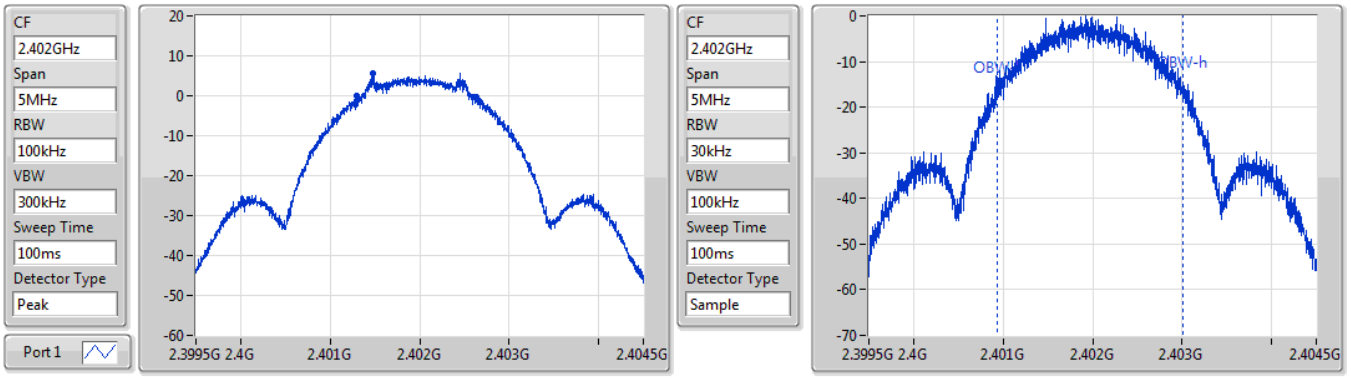


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
678.75k	2.479633G	2.480311G	1.043M	2.479448G	2.480491G	500k	1

BT-LE(2Mbps) EBW-DTS

2402MHz

08/03/2021

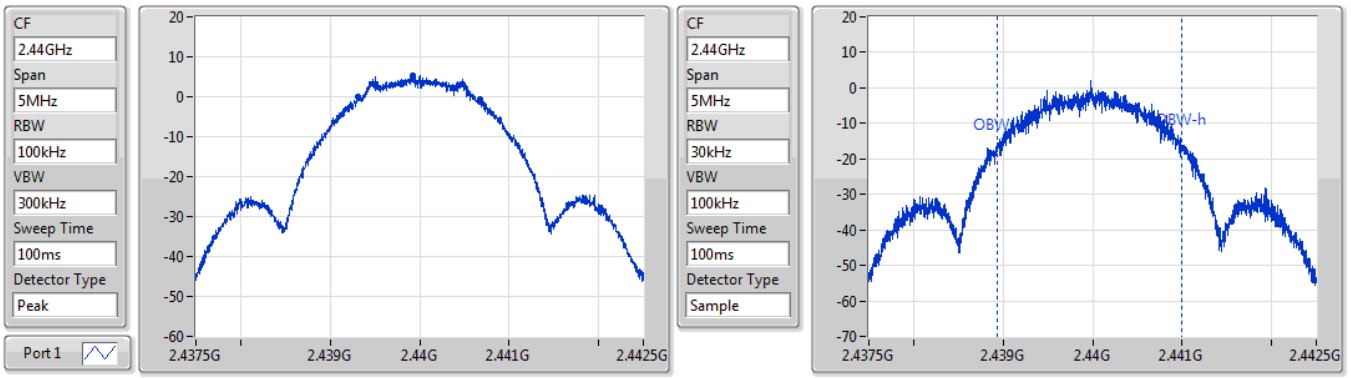


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.338M	2.401303G	2.40264G	2.076M	2.400933G	2.403009G	500k	1

BT-LE(2Mbps) EBW-DTS

2440MHz

08/03/2021

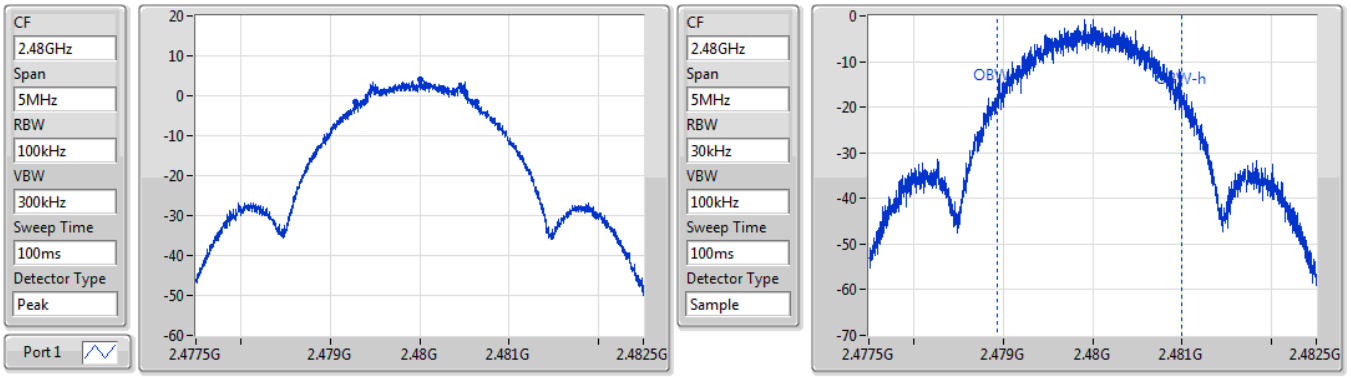


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.36M	2.43931G	2.44067G	2.059M	2.438941G	2.441G	500k	1

BT-LE(2Mbps) EBW-DTS

2480MHz

08/03/2021



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.345M	2.479288G	2.480633G	2.051M	2.478941G	2.480992G	500k	1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.10	0.00513
BT-LE(2Mbps)	6.98	0.00499

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	5.20	6.90	30.00
2440MHz	Pass	5.20	6.98	30.00
2480MHz	Pass	5.20	7.10	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	5.20	6.89	30.00
2440MHz	Pass	5.20	6.98	30.00
2480MHz	Pass	5.20	5.57	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-4.61
BT-LE(2Mbps)	-9.64

RBW = 3kHz;

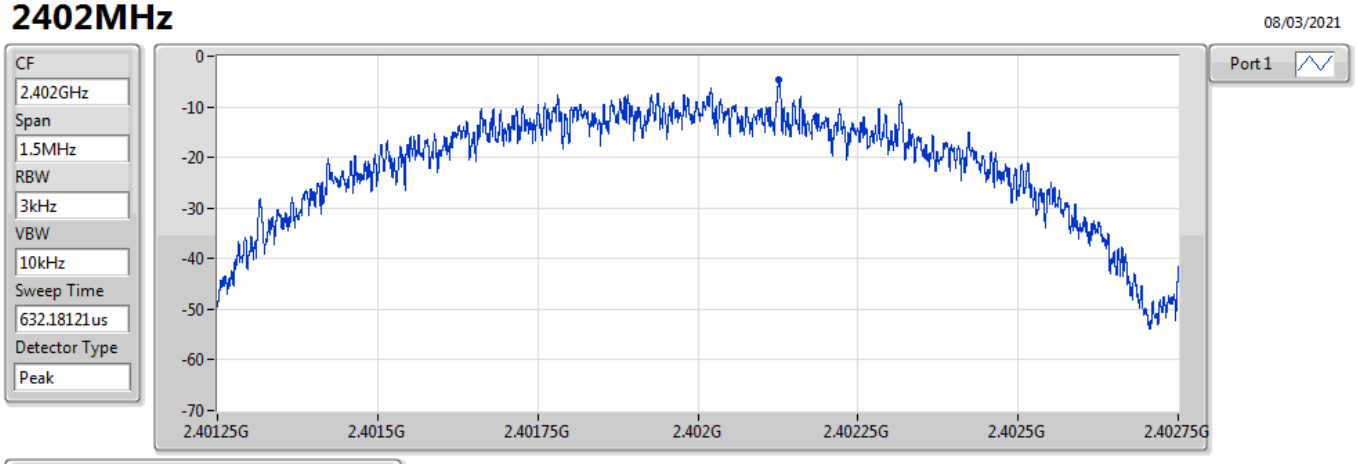
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	5.20	-4.61	8.00
2440MHz	Pass	5.20	-7.03	8.00
2480MHz	Pass	5.20	-7.73	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	5.20	-9.64	8.00
2440MHz	Pass	5.20	-10.04	8.00
2480MHz	Pass	5.20	-10.44	8.00

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

BT-LE(1Mbps) PSD

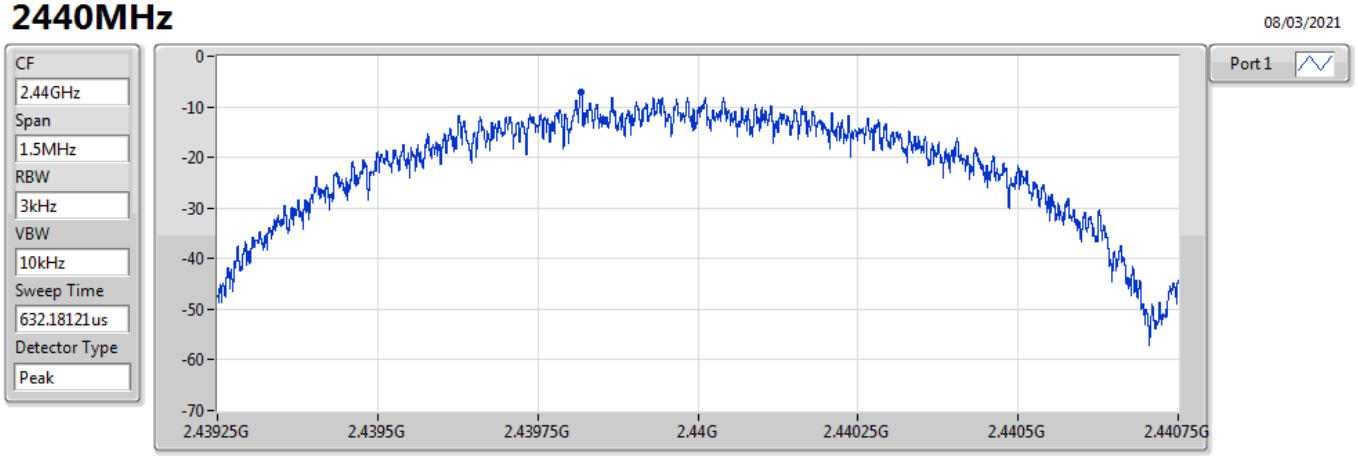
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.61	-4.61	-4.61

BT-LE(1Mbps) PSD

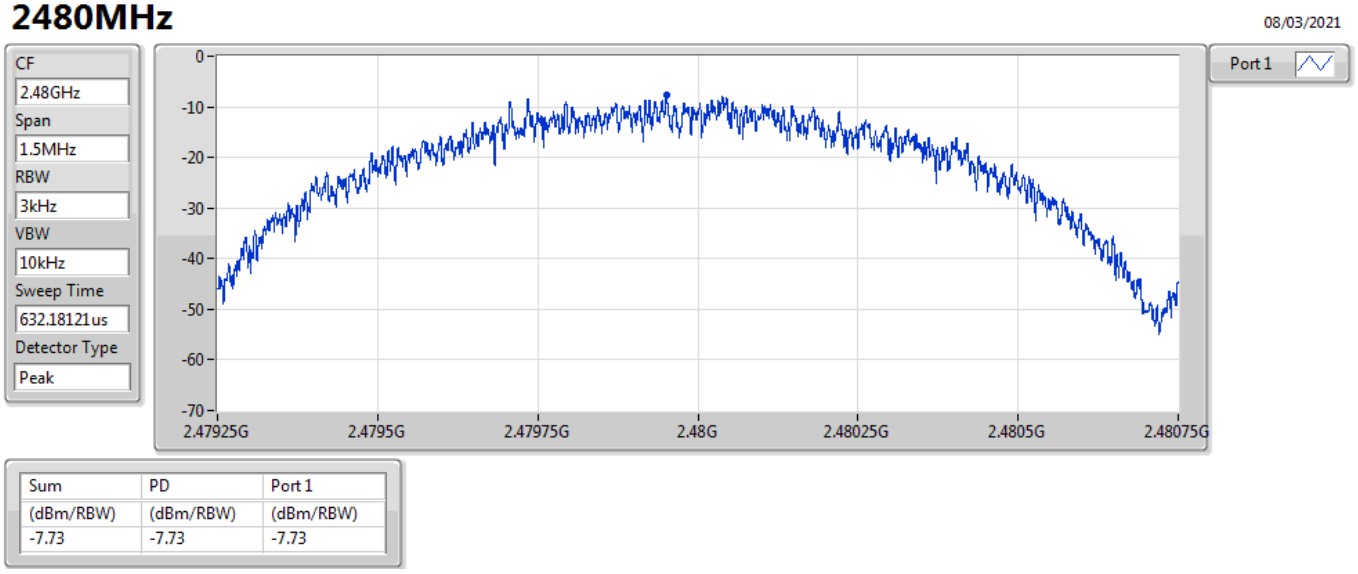
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.03	-7.03	-7.03

BT-LE(1Mbps) PSD

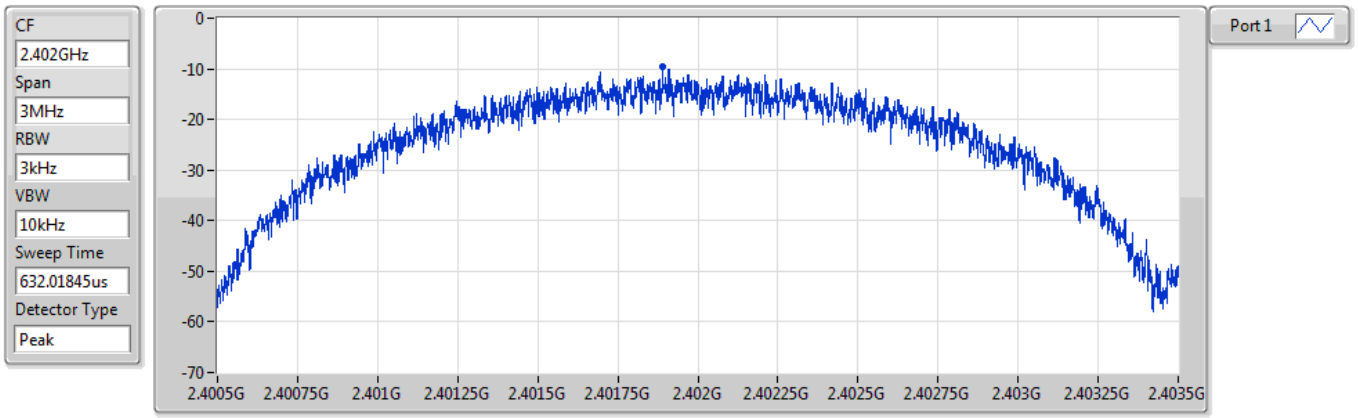
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.73	-7.73	-7.73

BT-LE(2Mbps) PSD

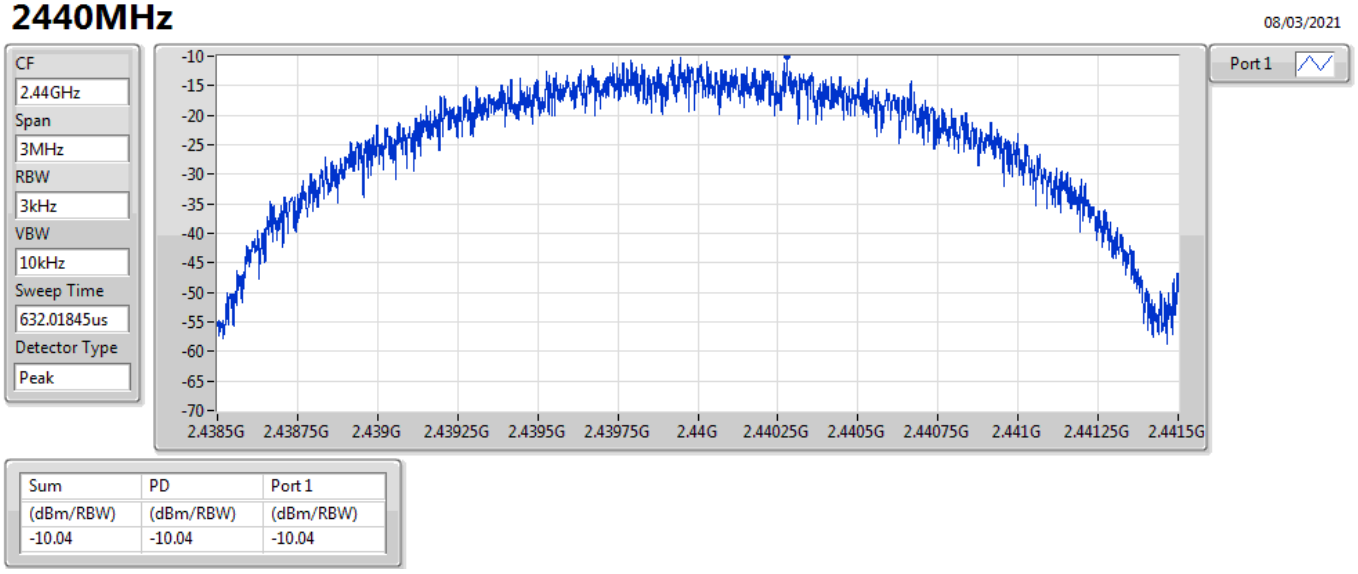
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.64	-9.64	-9.64

BT-LE(2Mbps) PSD

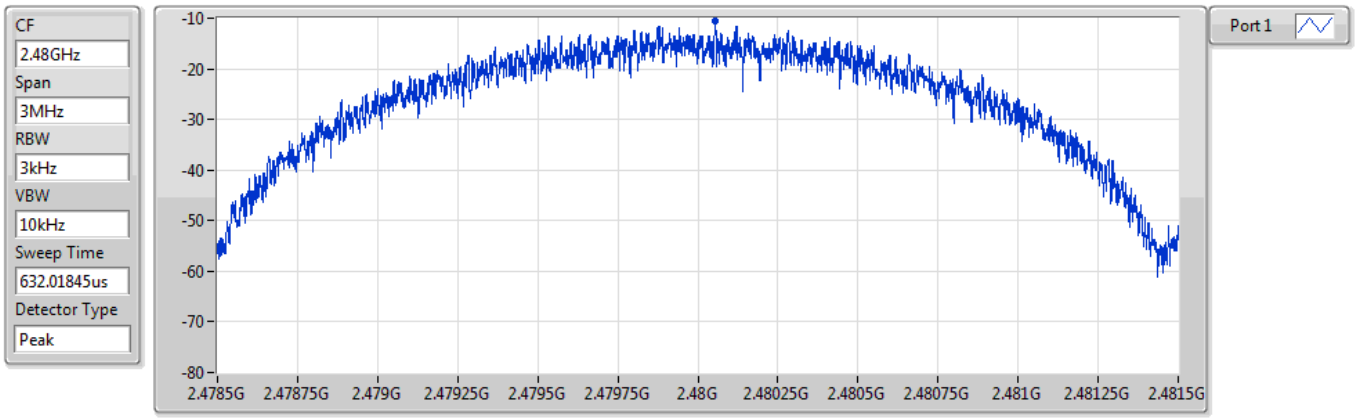
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.04	-10.04	-10.04

BT-LE(2Mbps) PSD

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.44	-10.44	-10.44

Summary

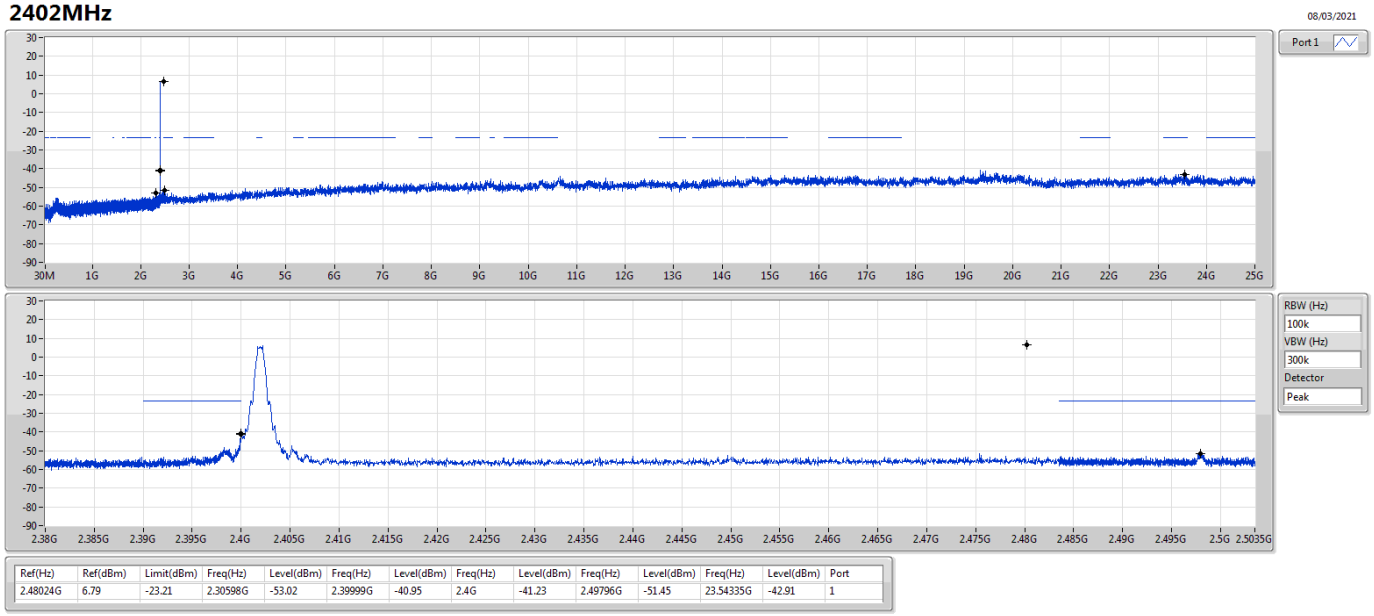
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.48024G	6.79	-23.21	2.30598G	-53.02	2.39999G	-40.95	2.4G	-41.23	2.49796G	-51.45	23.54335G	-42.91	1
BT-LE(2Mbps)	Pass	2.44046G	5.31	-24.69	2.1309G	-54.88	2.4G	-27.71	2.4G	-27.05	2.49762G	-51.33	23.56866G	-42.55	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	2.48024G	6.79	-23.21	2.30598G	-53.02	2.39999G	-40.95	2.4G	-41.23	2.49796G	-51.45	23.54335G	-42.91	1
2440MHz	Pass	2.48024G	6.79	-23.21	2.11856G	-54.83	2.39209G	-50.14	2.4G	-56.23	2.48785G	-52.14	23.40275G	-42.79	1
2480MHz	Pass	2.48024G	6.79	-23.21	239.74M	-53.60	2.39994G	-53.47	2.4835G	-52.74	2.48684G	-50.30	23.48992G	-42.75	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44046G	5.31	-24.69	2.1309G	-54.88	2.4G	-27.71	2.4G	-27.05	2.49762G	-51.33	23.56866G	-42.55	1
2440MHz	Pass	2.44046G	5.31	-24.69	1.84626G	-53.67	2.39613G	-52.36	2.4G	-54.54	2.48808G	-52.28	17.6577G	-43.20	1
2480MHz	Pass	2.44046G	5.31	-24.69	239.74M	-53.23	2.39378G	-52.79	2.4835G	-53.25	2.48375G	-50.06	23.41118G	-42.47	1

BT-LE(1Mbps) **CSENdB-DTS**

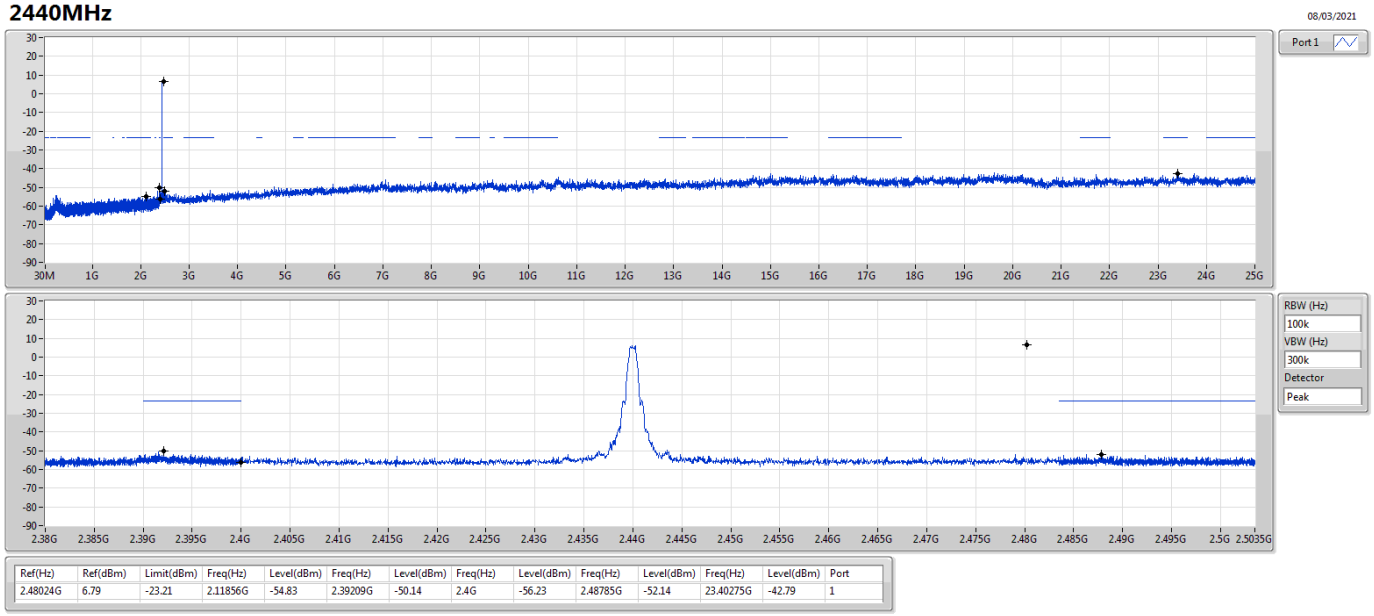
2402MHz



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
2.48024G	6.79	-23.21	2.30598G	-53.02	2.39999G	-40.95	2.4G	-41.23	2.49796G	-51.45	23.54335G	-42.91	1

BT-LE(1Mbps) **CSENdB-DTS**

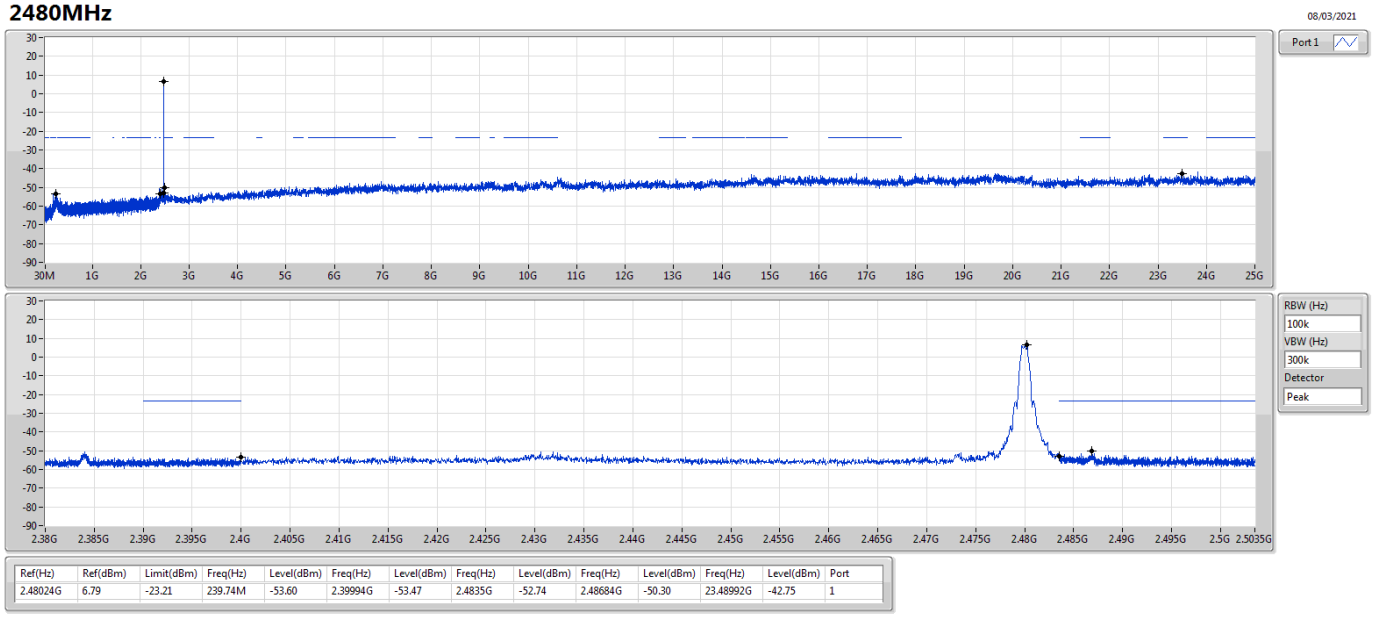
2440MHz



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
2.48024G	6.79	-23.21	2.11856G	-54.83	2.39209G	-50.14	2.4G	-56.23	2.48785G	-52.14	23.40275G	-42.79	1

BT-LE(1Mbps) **CSENdB-DTS**

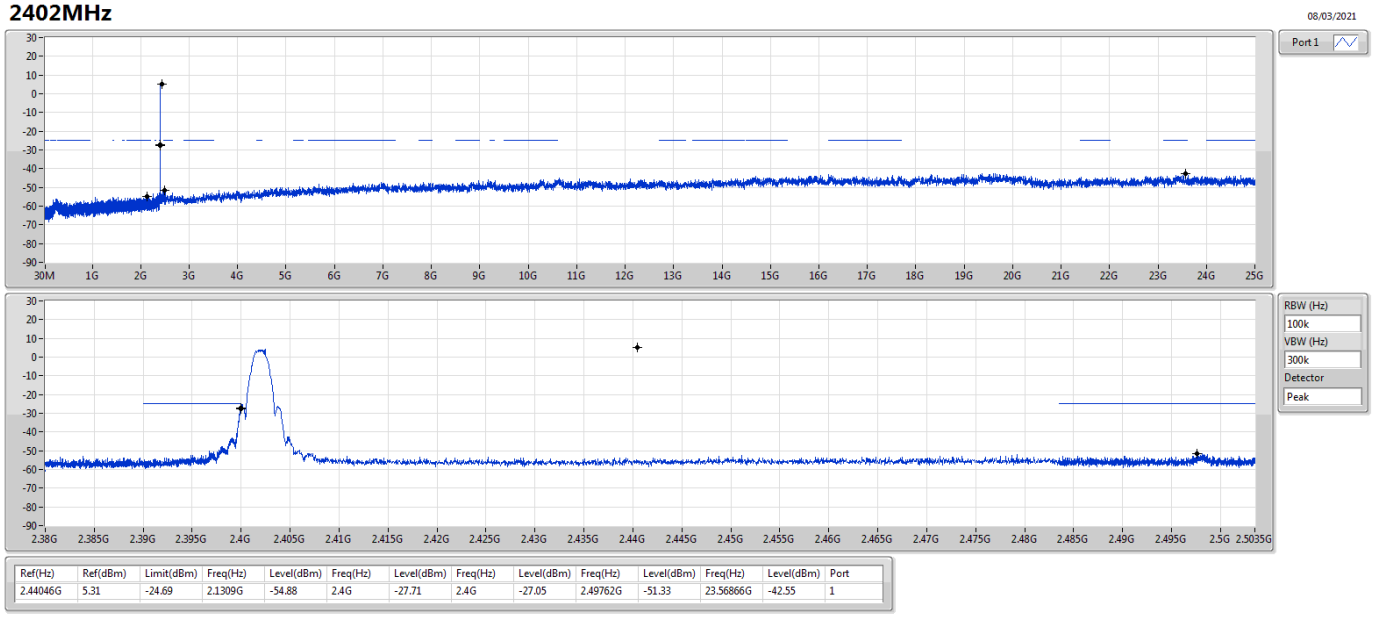
2480MHz



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
2.48024G	6.79	-23.21	239.74M	-53.60	2.39994G	-53.47	2.4835G	-52.74	2.48684G	-50.30	23.48992G	-42.75	1

BT-LE(2Mbps) **CSENdB-DTS**

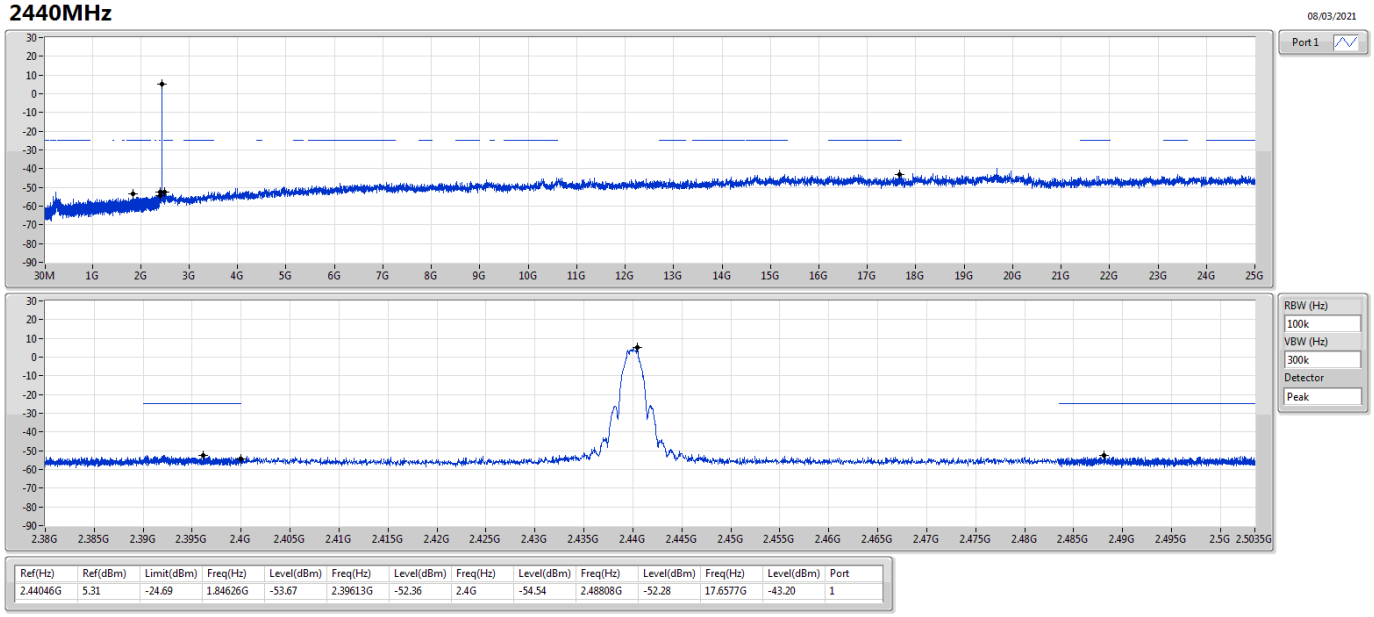
2402MHz



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
2.44046G	5.31	-24.69	2.1309G	-54.88	2.4G	-27.71	2.4G	-27.05	2.49762G	-51.33	23.56866G	-42.55	1

BT-LE(2Mbps) **CSENdB-DTS**

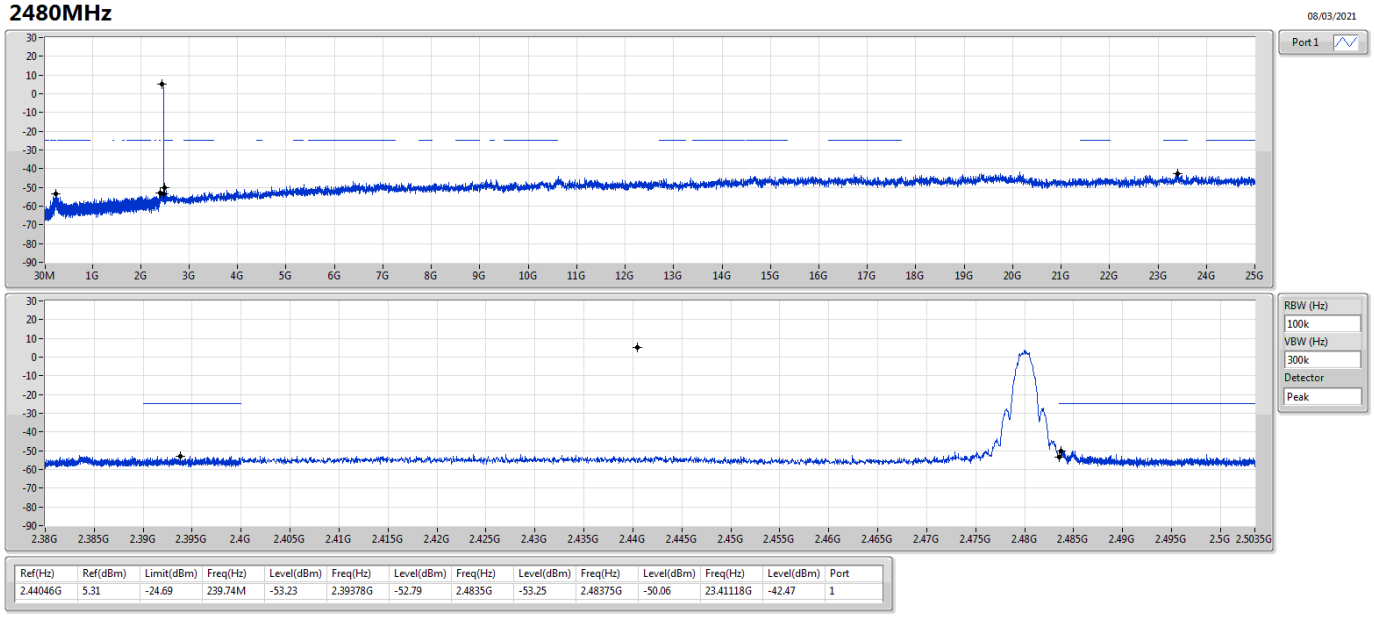
2440MHz



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
2.44046G	5.31	-24.69	1.84626G	-53.67	2.39613G	-52.36	2.4G	-54.54	2.48808G	-52.28	17.6577G	-43.20	1

BT-LE(2Mbps) **CSENdB-DTS**

2480MHz



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
2.44046G	5.31	-24.69	239.74M	-53.23	2.39378G	-52.79	2.4835G	-53.25	2.48375G	-50.06	23.41118G	-42.47	1

Summary

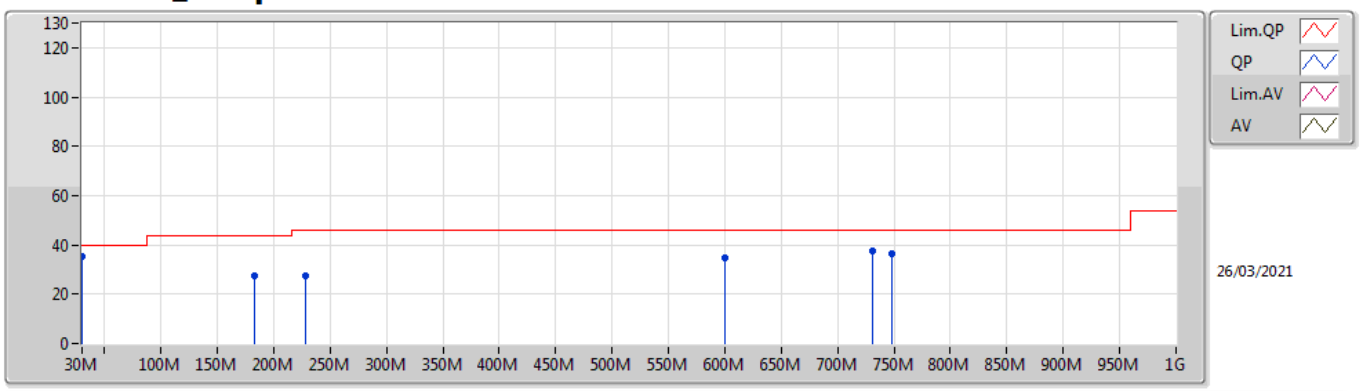
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	PK	30M	36.17	40.00	-3.83	3	Vertical	0	1.00	-

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	30M	35.58	40.00	-4.42	3	Vertical	0	1.00	-
2440MHz	Pass	PK	183.26M	27.71	43.50	-15.79	3	Vertical	0	1.00	-
2440MHz	Pass	PK	227.88M	27.39	46.00	-18.61	3	Vertical	0	1.00	-
2440MHz	Pass	PK	600.36M	34.84	46.00	-11.16	3	Vertical	0	1.00	-
2440MHz	Pass	PK	730.34M	37.69	46.00	-8.31	3	Vertical	0	1.00	-
2440MHz	Pass	PK	747.8M	36.37	46.00	-9.63	3	Vertical	0	1.00	-
2440MHz	Pass	PK	47.46M	28.50	40.00	-11.50	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	185.2M	29.94	43.50	-13.56	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	231.76M	28.92	46.00	-17.08	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	600.36M	32.54	46.00	-13.46	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	732.28M	35.82	46.00	-10.18	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	747.8M	39.93	46.00	-6.07	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	30M	36.17	40.00	-3.83	3	Vertical	0	1.00	-
2440MHz	Pass	PK	171.62M	32.13	43.50	-11.37	3	Vertical	0	1.00	-
2440MHz	Pass	PK	305.48M	32.31	46.00	-13.69	3	Vertical	0	1.00	-
2440MHz	Pass	PK	600.36M	33.28	46.00	-12.72	3	Vertical	0	1.00	-
2440MHz	Pass	PK	730.34M	34.53	46.00	-11.47	3	Vertical	0	1.00	-
2440MHz	Pass	PK	736.16M	35.56	46.00	-10.44	3	Vertical	0	1.00	-
2440MHz	Pass	PK	31.94M	30.98	40.00	-9.02	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	171.62M	29.45	43.50	-14.05	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	305.48M	31.77	46.00	-14.23	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	600.36M	32.64	46.00	-13.36	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	745.86M	33.75	46.00	-12.25	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	827.34M	34.30	46.00	-11.70	3	Horizontal	360	1.00	-

BT-LE(2Mbps)

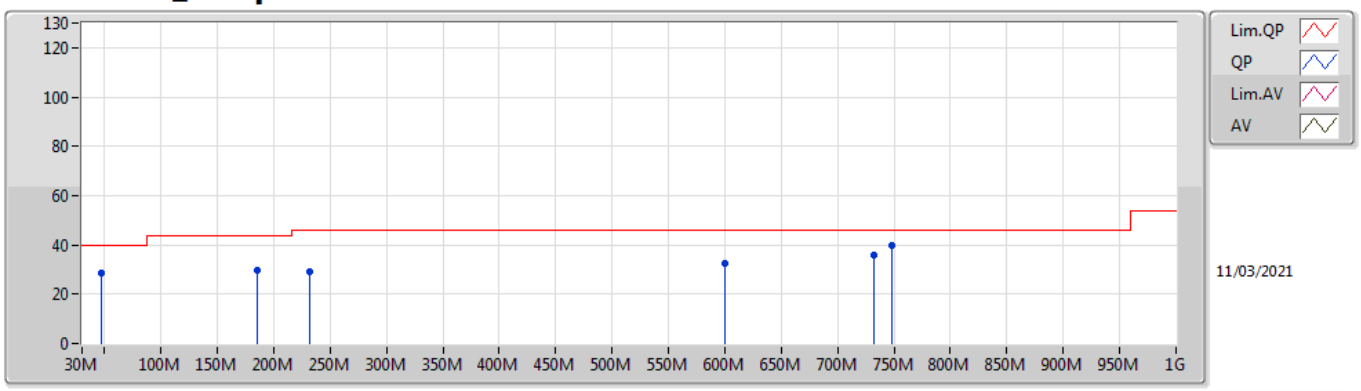
2440MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	30M	35.58	40.00	-4.42	-3.19	3	Vertical	0	1.00	-	38.77	23.32	0.70	27.21
PK	183.26M	27.71	43.50	-15.79	-11.10	3	Vertical	0	1.00	-	38.81	14.30	2.02	27.42
PK	227.88M	27.39	46.00	-18.61	-9.80	3	Vertical	0	1.00	-	37.19	15.09	2.27	27.16
PK	600.36M	34.84	46.00	-11.16	-0.55	3	Vertical	0	1.00	-	35.39	23.97	3.80	28.32
PK	730.34M	37.69	46.00	-8.31	0.88	3	Vertical	0	1.00	-	36.81	24.66	4.26	28.04
PK	747.8M	36.37	46.00	-9.63	1.19	3	Vertical	0	1.00	-	35.18	24.89	4.30	28.00

BT-LE(2Mbps)

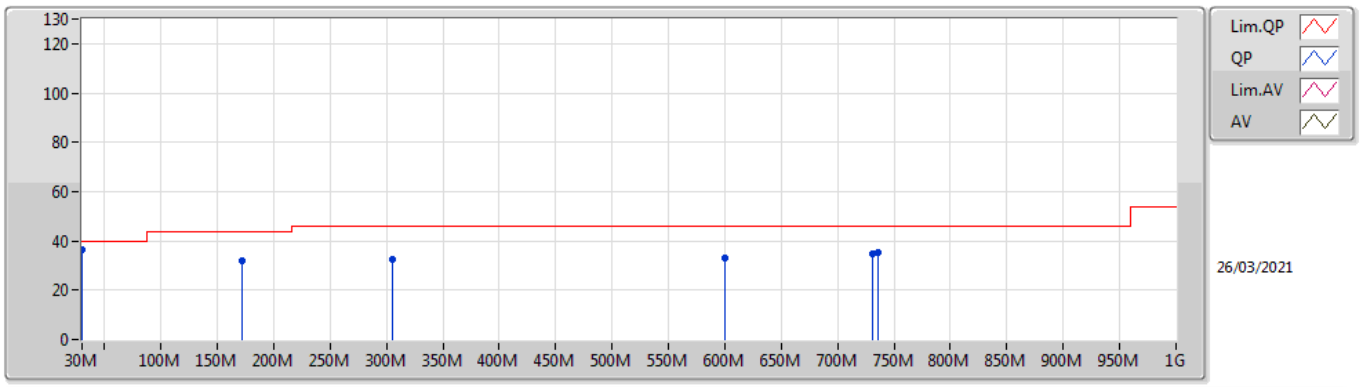
2440MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	47.46M	28.50	40.00	-11.50	-12.65	3	Horizontal	360	1.00	-	41.15	14.05	0.95	27.65
PK	185.2M	29.94	43.50	-13.56	-11.14	3	Horizontal	360	1.00	-	41.08	14.23	2.03	27.40
PK	231.76M	28.92	46.00	-17.08	-9.35	3	Horizontal	360	1.00	-	38.27	15.50	2.29	27.14
PK	600.36M	32.54	46.00	-13.46	-0.55	3	Horizontal	360	1.00	-	33.09	23.97	3.80	28.32
PK	732.28M	35.82	46.00	-10.18	0.92	3	Horizontal	360	1.00	-	34.90	24.70	4.26	28.04
PK	747.8M	39.93	46.00	-6.07	1.19	3	Horizontal	360	1.00	-	38.74	24.89	4.30	28.00

BT-LE(2Mbps)

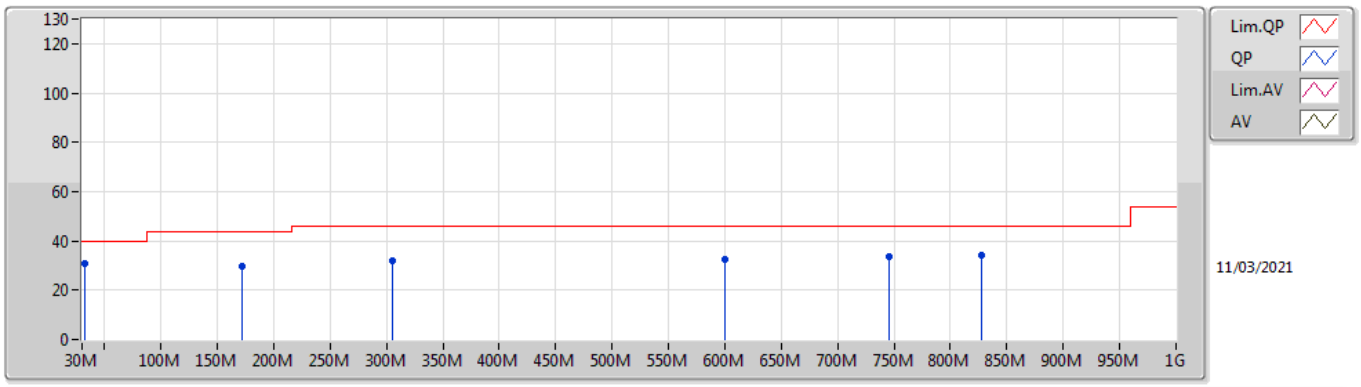
2440MHz_PoE



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	30M	36.17	40.00	-3.83	-3.19	3	Vertical	0	1.00	-	39.36	23.32	0.70	27.21
PK	171.62M	32.13	43.50	-11.37	-10.73	3	Vertical	0	1.00	-	42.86	14.83	1.92	27.48
PK	305.48M	32.31	46.00	-13.69	-5.84	3	Vertical	0	1.00	-	38.15	18.61	2.62	27.07
PK	600.36M	33.28	46.00	-12.72	-0.55	3	Vertical	0	1.00	-	33.83	23.97	3.80	28.32
PK	730.34M	34.53	46.00	-11.47	0.88	3	Vertical	0	1.00	-	33.65	24.66	4.26	28.04
PK	736.16M	35.56	46.00	-10.44	1.02	3	Vertical	0	1.00	-	34.54	24.78	4.27	28.03

BT-LE(2Mbps)

2440MHz_PoE



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	31.94M	30.98	40.00	-9.02	-4.32	3	Horizontal	360	1.00	-	35.30	22.03	0.74	27.09
PK	171.62M	29.45	43.50	-14.05	-10.73	3	Horizontal	360	1.00	-	40.18	14.83	1.92	27.48
PK	305.48M	31.77	46.00	-14.23	-5.84	3	Horizontal	360	1.00	-	37.61	18.61	2.62	27.07
PK	600.36M	32.64	46.00	-13.36	-0.55	3	Horizontal	360	1.00	-	33.19	23.97	3.80	28.32
PK	745.86M	33.75	46.00	-12.25	1.18	3	Horizontal	360	1.00	-	32.57	24.90	4.29	28.01
PK	827.34M	34.30	46.00	-11.70	2.14	3	Horizontal	360	1.00	-	32.16	25.28	4.55	27.69

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	2.4835G	52.15	54.00	-1.85	3	Vertical	1	2.23	-
BT-LE(2Mbps)	Pass	AV	2.4835G	53.15	54.00	-0.85	3	Vertical	0	1.50	-

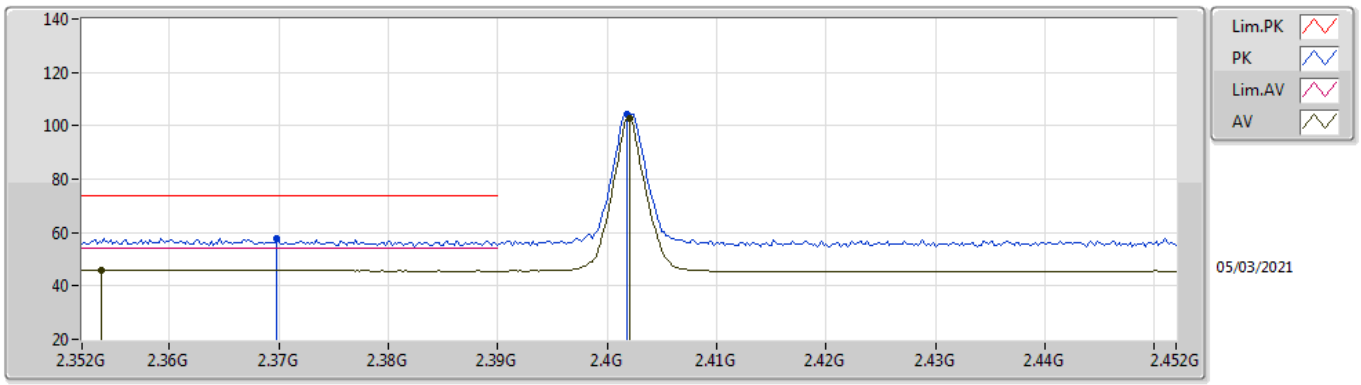
Result

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	2.3538G	45.99	54.00	-8.01	3	Vertical	7	1.50	-
2402MHz	Pass	AV	2.402G	102.72	Inf	-Inf	3	Vertical	7	1.50	-
2402MHz	Pass	PK	2.3698G	57.75	74.00	-16.25	3	Vertical	7	1.50	-
2402MHz	Pass	PK	2.4018G	104.35	Inf	-Inf	3	Vertical	7	1.50	-
2402MHz	Pass	AV	2.3532G	45.74	54.00	-8.26	3	Horizontal	313	1.06	-
2402MHz	Pass	AV	2.402G	90.64	Inf	-Inf	3	Horizontal	313	1.06	-
2402MHz	Pass	PK	2.3532G	58.23	74.00	-15.77	3	Horizontal	313	1.06	-
2402MHz	Pass	PK	2.4022G	92.40	Inf	-Inf	3	Horizontal	313	1.06	-
2402MHz	Pass	AV	4.80397G	41.81	54.00	-12.19	3	Vertical	301	1.00	-
2402MHz	Pass	PK	4.80352G	49.61	74.00	-24.39	3	Vertical	301	1.00	-
2402MHz	Pass	AV	4.80404G	42.33	54.00	-11.67	3	Horizontal	357	3.00	-
2402MHz	Pass	PK	4.8036G	49.72	74.00	-24.28	3	Horizontal	357	3.00	-
2440MHz	Pass	AV	2.3436G	46.39	54.00	-7.61	3	Vertical	7	1.50	-
2440MHz	Pass	AV	2.44G	103.00	Inf	-Inf	3	Vertical	7	1.50	-
2440MHz	Pass	AV	2.536G	48.16	54.00	-5.84	3	Vertical	7	1.50	-
2440MHz	Pass	PK	2.3808G	57.94	74.00	-16.06	3	Vertical	7	1.50	-
2440MHz	Pass	PK	2.4396G	104.63	Inf	-Inf	3	Vertical	7	1.50	-
2440MHz	Pass	PK	2.536G	58.28	74.00	-15.72	3	Vertical	7	1.50	-
2440MHz	Pass	AV	2.3432G	45.79	54.00	-8.21	3	Horizontal	304	1.03	-
2440MHz	Pass	AV	2.44G	90.96	Inf	-Inf	3	Horizontal	304	1.03	-
2440MHz	Pass	AV	2.5364G	45.51	54.00	-8.49	3	Horizontal	304	1.03	-
2440MHz	Pass	PK	2.3584G	57.15	74.00	-16.85	3	Horizontal	304	1.03	-
2440MHz	Pass	PK	2.4404G	92.52	Inf	-Inf	3	Horizontal	304	1.03	-
2440MHz	Pass	PK	2.4896G	56.90	74.00	-17.10	3	Horizontal	304	1.03	-
2440MHz	Pass	AV	4.87994G	40.68	54.00	-13.32	3	Vertical	313	1.23	-
2440MHz	Pass	PK	4.87936G	48.74	74.00	-25.26	3	Vertical	313	1.23	-
2440MHz	Pass	AV	4.88003G	40.47	54.00	-13.53	3	Horizontal	60	1.42	-
2440MHz	Pass	PK	4.88036G	48.79	74.00	-25.21	3	Horizontal	60	1.42	-
2480MHz	Pass	AV	2.48G	105.72	Inf	-Inf	3	Vertical	1	2.23	-
2480MHz	Pass	AV	2.4835G	52.15	54.00	-1.85	3	Vertical	1	2.23	-
2480MHz	Pass	PK	2.4802G	107.37	Inf	-Inf	3	Vertical	1	2.23	-
2480MHz	Pass	PK	2.4835G	61.34	74.00	-12.66	3	Vertical	1	2.23	-
2480MHz	Pass	AV	2.48G	94.19	Inf	-Inf	3	Horizontal	300	2.26	-
2480MHz	Pass	AV	2.5188G	46.38	54.00	-7.62	3	Horizontal	300	2.26	-
2480MHz	Pass	PK	2.4802G	95.87	Inf	-Inf	3	Horizontal	300	2.26	-
2480MHz	Pass	PK	2.4844G	58.24	74.00	-15.76	3	Horizontal	300	2.26	-
2480MHz	Pass	AV	4.9599G	39.65	54.00	-14.35	3	Vertical	352	1.52	-
2480MHz	Pass	PK	4.95955G	48.33	74.00	-25.67	3	Vertical	352	1.52	-
2480MHz	Pass	AV	4.95989G	41.14	54.00	-12.86	3	Horizontal	29	1.50	-
2480MHz	Pass	PK	4.9604G	49.36	74.00	-24.64	3	Horizontal	29	1.50	-
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3544G	45.94	54.00	-8.06	3	Vertical	0	1.87	-
2402MHz	Pass	AV	2.402G	100.57	Inf	-Inf	3	Vertical	0	1.87	-
2402MHz	Pass	PK	2.358G	57.61	74.00	-16.39	3	Vertical	0	1.87	-
2402MHz	Pass	PK	2.4024G	104.12	Inf	-Inf	3	Vertical	0	1.87	-
2402MHz	Pass	AV	2.3538G	45.78	54.00	-8.22	3	Horizontal	358	1.99	-
2402MHz	Pass	AV	2.402G	90.32	Inf	-Inf	3	Horizontal	358	1.99	-
2402MHz	Pass	PK	2.3684G	57.46	74.00	-16.54	3	Horizontal	358	1.99	-
2402MHz	Pass	PK	2.4014G	93.92	Inf	-Inf	3	Horizontal	358	1.99	-
2402MHz	Pass	AV	4.80484G	37.25	54.00	-16.75	3	Vertical	311	1.34	-
2402MHz	Pass	PK	4.80477G	48.20	74.00	-25.80	3	Vertical	311	1.34	-
2402MHz	Pass	AV	4.80487G	38.59	54.00	-15.41	3	Horizontal	0	2.98	-
2402MHz	Pass	PK	4.80293G	49.27	74.00	-24.73	3	Horizontal	0	2.98	-
2440MHz	Pass	AV	2.3436G	46.21	54.00	-7.79	3	Vertical	7	1.54	-
2440MHz	Pass	AV	2.44G	103.32	Inf	-Inf	3	Vertical	7	1.54	-
2440MHz	Pass	AV	2.536G	48.10	54.00	-5.90	3	Vertical	7	1.54	-
2440MHz	Pass	PK	2.378G	58.22	74.00	-15.78	3	Vertical	7	1.54	-
2440MHz	Pass	PK	2.4396G	106.94	Inf	-Inf	3	Vertical	7	1.54	-
2440MHz	Pass	PK	2.5356G	58.42	74.00	-15.58	3	Vertical	7	1.54	-
2440MHz	Pass	AV	2.3404G	45.84	54.00	-8.16	3	Horizontal	318	1.00	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2440MHz	Pass	AV	2.44G	93.57	Inf	-Inf	3	Horizontal	318	1.00	-
2440MHz	Pass	AV	2.508G	45.51	54.00	-8.49	3	Horizontal	318	1.00	-
2440MHz	Pass	PK	2.39G	57.77	74.00	-16.23	3	Horizontal	318	1.00	-
2440MHz	Pass	PK	2.4404G	97.00	Inf	-Inf	3	Horizontal	318	1.00	-
2440MHz	Pass	PK	2.5068G	57.52	74.00	-16.48	3	Horizontal	318	1.00	-
2440MHz	Pass	AV	4.87894G	40.07	54.00	-13.93	3	Vertical	308	1.04	-
2440MHz	Pass	PK	4.88105G	50.63	74.00	-23.37	3	Vertical	308	1.04	-
2440MHz	Pass	AV	4.88088G	36.25	54.00	-17.75	3	Horizontal	2	3.00	-
2440MHz	Pass	PK	4.8808G	47.93	74.00	-26.07	3	Horizontal	2	3.00	-
2480MHz	Pass	AV	2.48G	102.06	Inf	-Inf	3	Vertical	0	1.50	-
2480MHz	Pass	AV	2.4835G	53.15	54.00	-0.85	3	Vertical	0	1.50	-
2480MHz	Pass	PK	2.4804G	105.59	Inf	-Inf	3	Vertical	0	1.50	-
2480MHz	Pass	PK	2.4835G	62.83	74.00	-11.17	3	Vertical	0	1.50	-
2480MHz	Pass	AV	2.48G	92.94	Inf	-Inf	3	Horizontal	315	1.07	-
2480MHz	Pass	AV	2.4835G	47.36	54.00	-6.64	3	Horizontal	315	1.07	-
2480MHz	Pass	PK	2.4794G	96.33	Inf	-Inf	3	Horizontal	315	1.07	-
2480MHz	Pass	PK	2.5206G	57.19	74.00	-16.81	3	Horizontal	315	1.07	-
2480MHz	Pass	AV	4.95895G	37.75	54.00	-16.25	3	Vertical	310	1.01	-
2480MHz	Pass	PK	4.95877G	48.68	74.00	-25.32	3	Vertical	310	1.01	-
2480MHz	Pass	AV	4.96085G	38.27	54.00	-15.73	3	Horizontal	356	2.65	-
2480MHz	Pass	PK	4.9608G	49.67	74.00	-24.33	3	Horizontal	356	2.65	-

BT-LE(1Mbps)

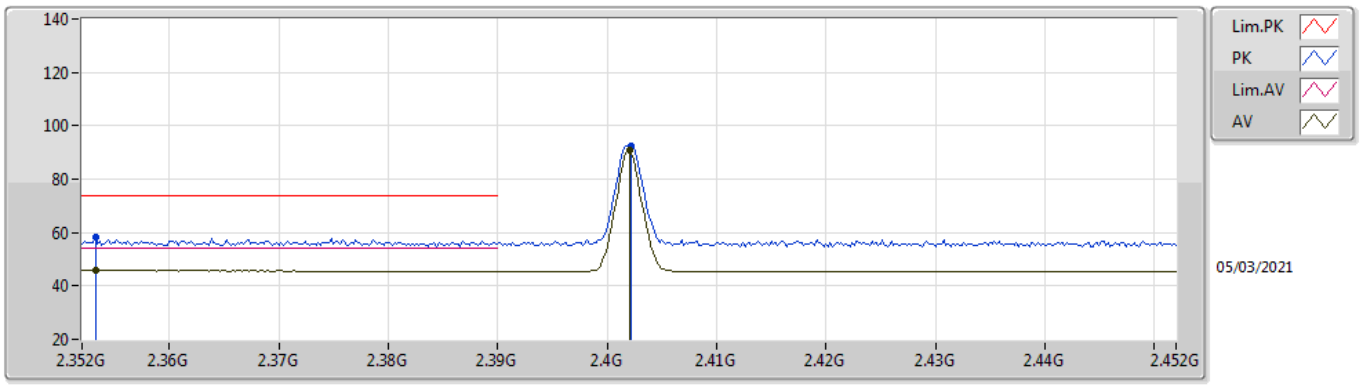
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3538G	45.99	54.00	-8.01	33.62	3	Vertical	7	1.50	-	12.37	27.69	5.93	-
AV	2.402G	102.72	Inf	-Inf	33.55	3	Vertical	7	1.50	-	69.17	27.59	5.96	-
PK	2.3698G	57.75	74.00	-16.25	33.60	3	Vertical	7	1.50	-	24.15	27.66	5.94	-
PK	2.4018G	104.35	Inf	-Inf	33.55	3	Vertical	7	1.50	-	70.80	27.59	5.96	-

BT-LE(1Mbps)

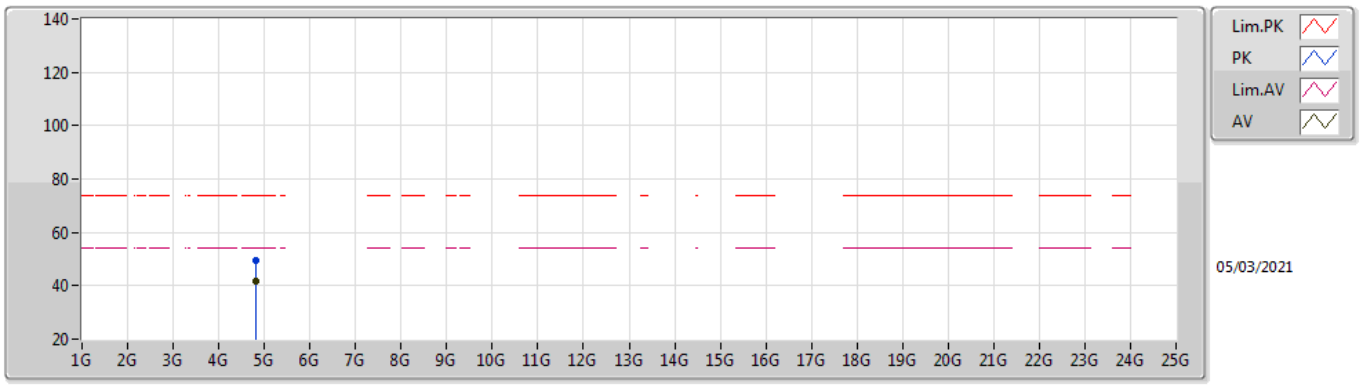
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3532G	45.74	54.00	-8.26	33.61	3	Horizontal	313	1.06	-	12.13	27.69	5.92	-
AV	2.402G	90.64	Inf	-Inf	33.55	3	Horizontal	313	1.06	-	57.09	27.59	5.96	-
PK	2.3532G	58.23	74.00	-15.77	33.61	3	Horizontal	313	1.06	-	24.62	27.69	5.92	-
PK	2.4022G	92.40	Inf	-Inf	33.55	3	Horizontal	313	1.06	-	58.85	27.59	5.96	-

BT-LE(1Mbps)

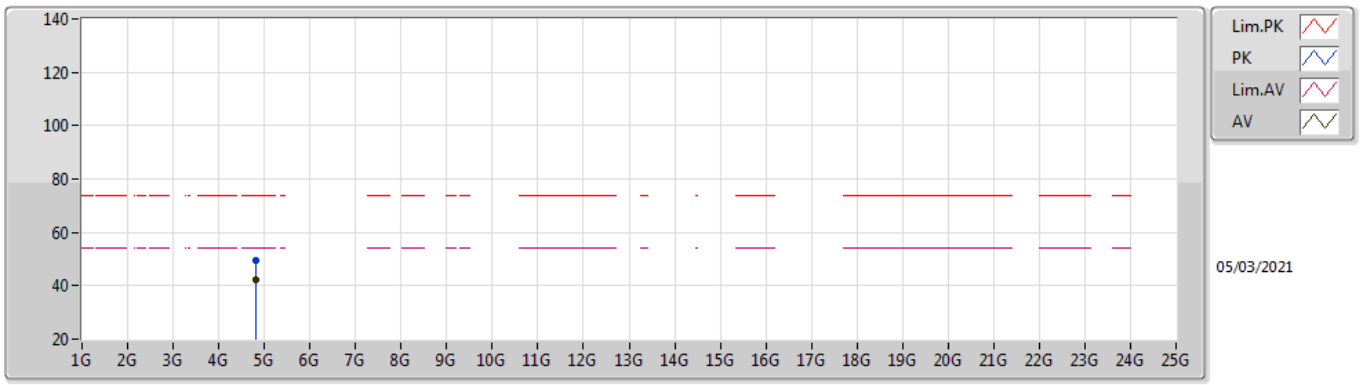
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80397G	41.81	54.00	-12.19	4.88	3	Vertical	301	1.00	-	36.93	30.92	8.25	34.29
PK	4.80352G	49.61	74.00	-24.39	4.87	3	Vertical	301	1.00	-	44.74	30.91	8.25	34.29

BT-LE(1Mbps)

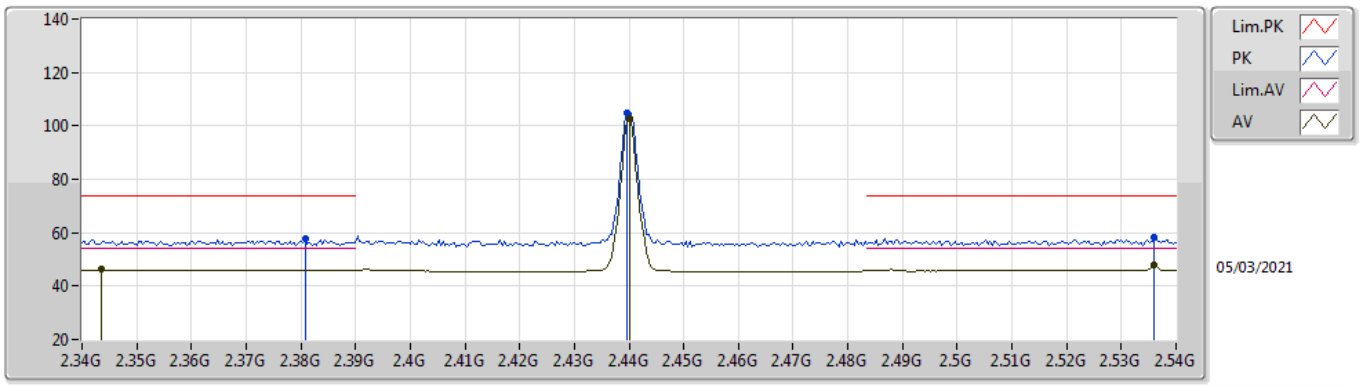
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80404G	42.33	54.00	-11.67	4.88	3	Horizontal	357	3.00	-	37.45	30.92	8.25	34.29
PK	4.8036G	49.72	74.00	-24.28	4.87	3	Horizontal	357	3.00	-	44.85	30.91	8.25	34.29

BT-LE(1Mbps)

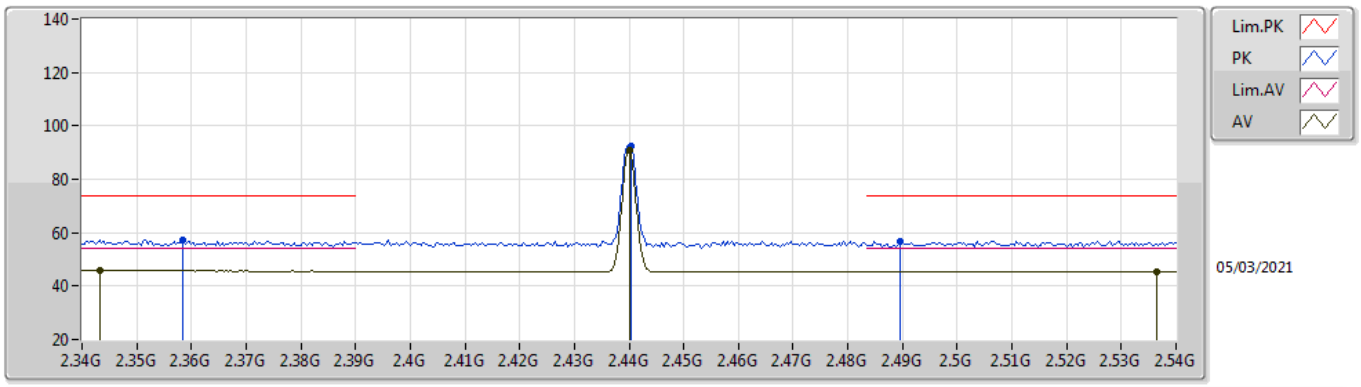
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3436G	46.39	54.00	-7.61	33.65	3	Vertical	7	1.50	-	12.74	27.73	5.92	-
AV	2.44G	103.00	Inf	-Inf	33.45	3	Vertical	7	1.50	-	69.55	27.44	6.01	-
AV	2.536G	48.16	54.00	-5.84	33.52	3	Vertical	7	1.50	-	14.64	27.40	6.12	-
PK	2.3808G	57.94	74.00	-16.06	33.59	3	Vertical	7	1.50	-	24.35	27.64	5.95	-
PK	2.4396G	104.63	Inf	-Inf	33.45	3	Vertical	7	1.50	-	71.18	27.44	6.01	-
PK	2.536G	58.28	74.00	-15.72	33.52	3	Vertical	7	1.50	-	24.76	27.40	6.12	-

BT-LE(1Mbps)

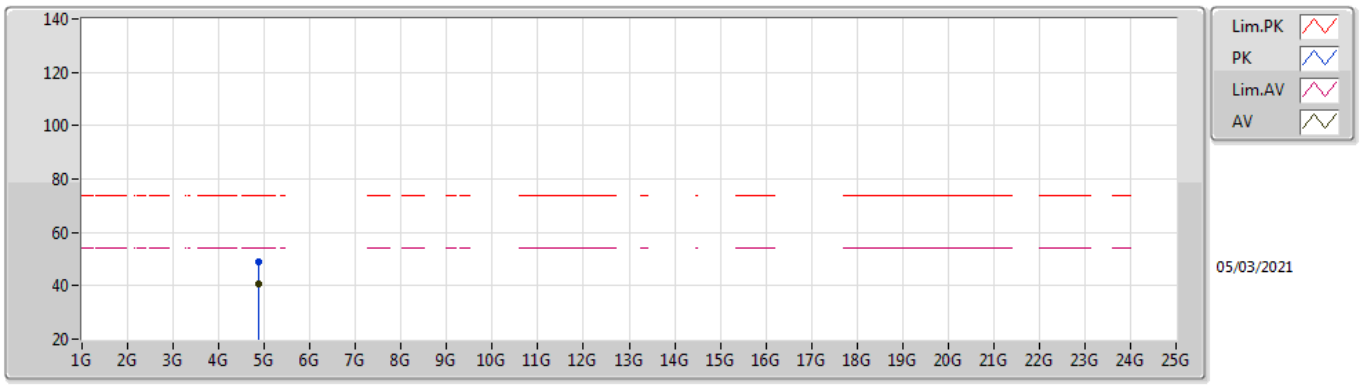
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3432G	45.79	54.00	-8.21	33.65	3	Horizontal	304	1.03	-	12.14	27.73	5.92	-
AV	2.44G	90.96	Inf	-Inf	33.45	3	Horizontal	304	1.03	-	57.51	27.44	6.01	-
AV	2.5364G	45.51	54.00	-8.49	33.52	3	Horizontal	304	1.03	-	11.99	27.40	6.12	-
PK	2.3584G	57.15	74.00	-16.85	33.61	3	Horizontal	304	1.03	-	23.54	27.68	5.93	-
PK	2.4404G	92.52	Inf	-Inf	33.45	3	Horizontal	304	1.03	-	59.07	27.44	6.01	-
PK	2.4896G	56.90	74.00	-17.10	33.47	3	Horizontal	304	1.03	-	23.43	27.40	6.07	-

BT-LE(1Mbps)

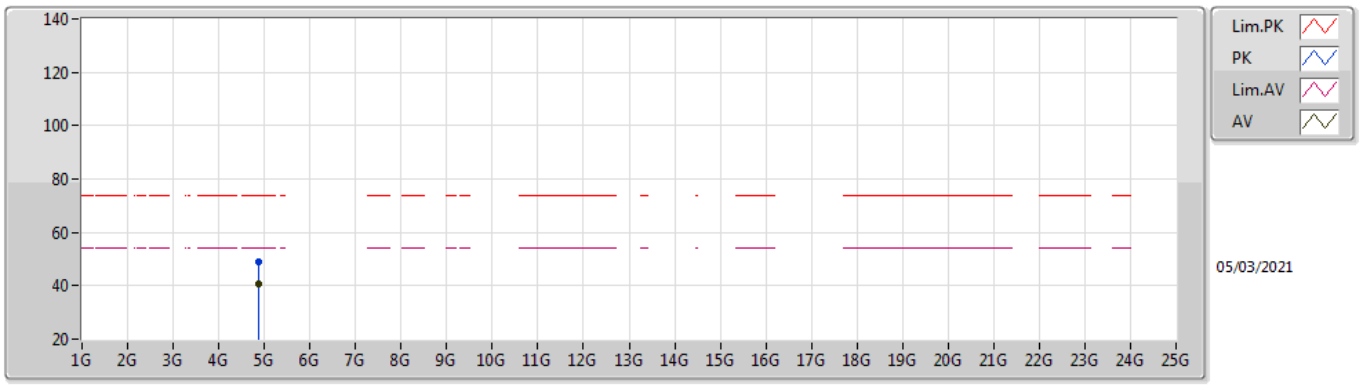
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87994G	40.68	54.00	-13.32	5.08	3	Vertical	313	1.23	-	35.60	31.04	8.30	34.26
PK	4.87936G	48.74	74.00	-25.26	5.08	3	Vertical	313	1.23	-	43.66	31.04	8.30	34.26

BT-LE(1Mbps)

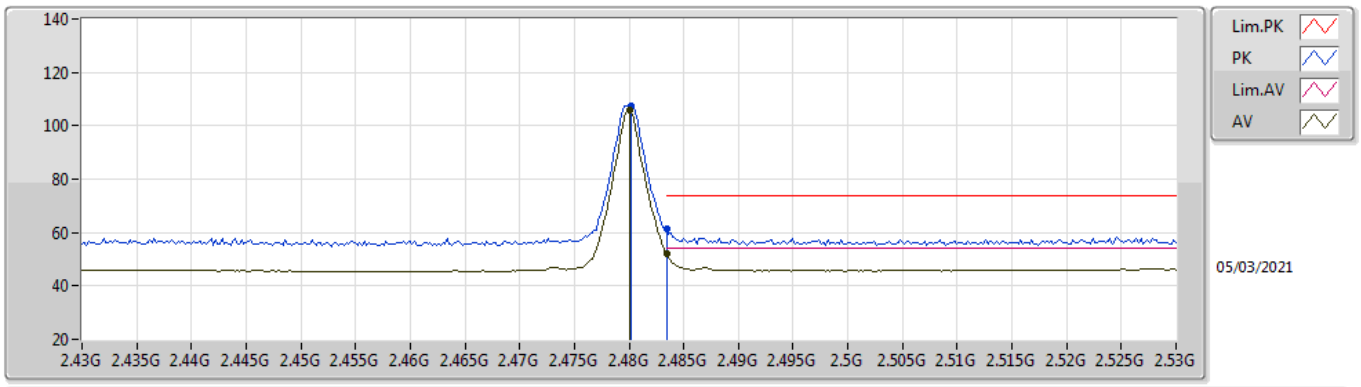
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88003G	40.47	54.00	-13.53	5.08	3	Horizontal	60	1.42	-	35.39	31.04	8.30	34.26
PK	4.88036G	48.79	74.00	-25.21	5.08	3	Horizontal	60	1.42	-	43.71	31.04	8.30	34.26

BT-LE(1Mbps)

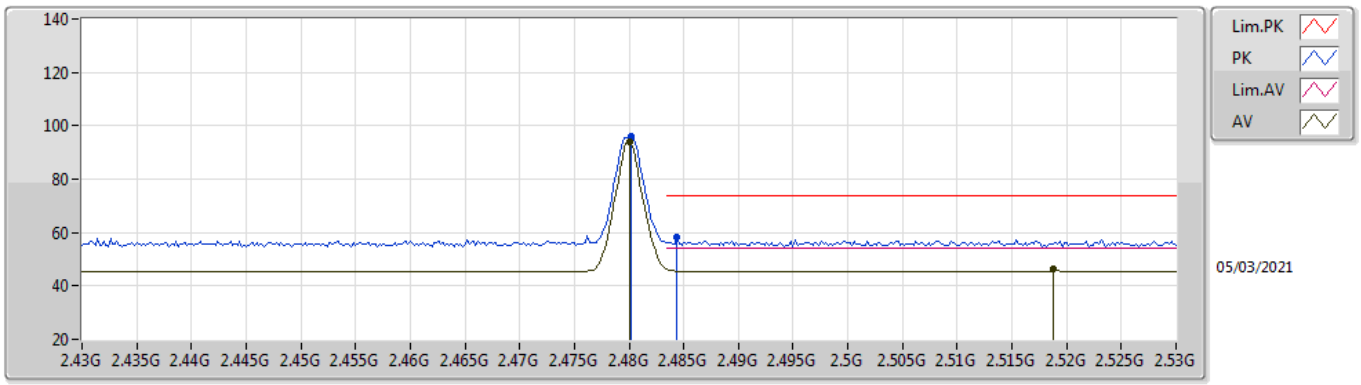
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	105.72	Inf	-Inf	33.46	3	Vertical	1	2.23	-	72.26	27.40	6.06	-
AV	2.4835G	52.15	54.00	-1.85	33.46	3	Vertical	1	2.23	-	18.69	27.40	6.06	-
PK	2.4802G	107.37	Inf	-Inf	33.46	3	Vertical	1	2.23	-	73.91	27.40	6.06	-
PK	2.4835G	61.34	74.00	-12.66	33.46	3	Vertical	1	2.23	-	27.88	27.40	6.06	-

BT-LE(1Mbps)

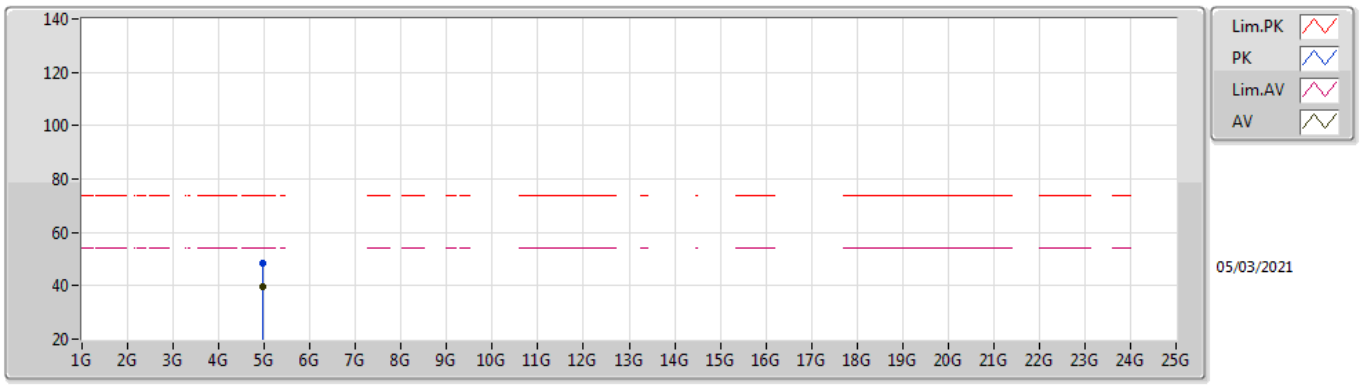
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	94.19	Inf	-Inf	33.46	3	Horizontal	300	2.26	-	60.73	27.40	6.06	-
AV	2.5188G	46.38	54.00	-7.62	33.50	3	Horizontal	300	2.26	-	12.88	27.40	6.10	-
PK	2.4802G	95.87	Inf	-Inf	33.46	3	Horizontal	300	2.26	-	62.41	27.40	6.06	-
PK	2.4844G	58.24	74.00	-15.76	33.46	3	Horizontal	300	2.26	-	24.78	27.40	6.06	-

BT-LE(1Mbps)

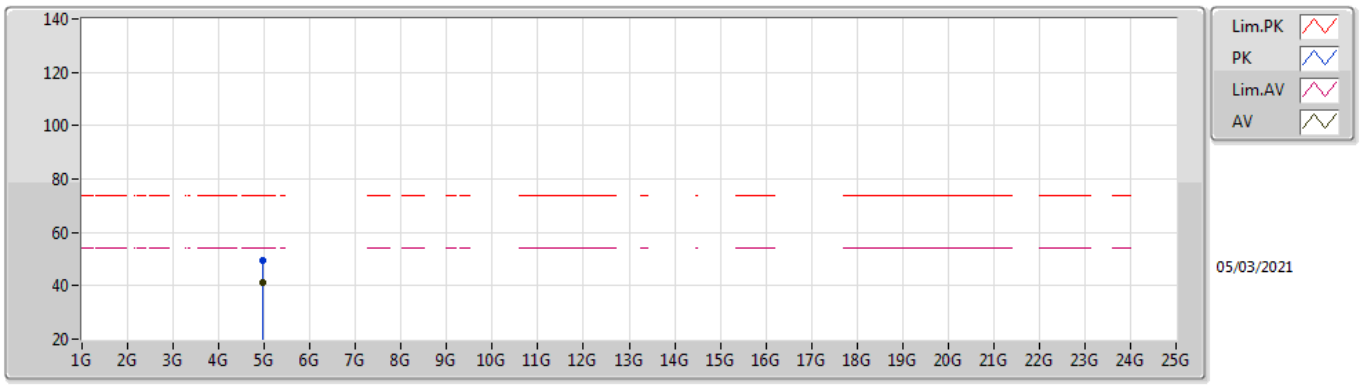
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.9599G	39.65	54.00	-14.35	5.34	3	Vertical	352	1.52	-	34.31	31.22	8.35	34.23
PK	4.95955G	48.33	74.00	-25.67	5.34	3	Vertical	352	1.52	-	42.99	31.22	8.35	34.23

BT-LE(1Mbps)

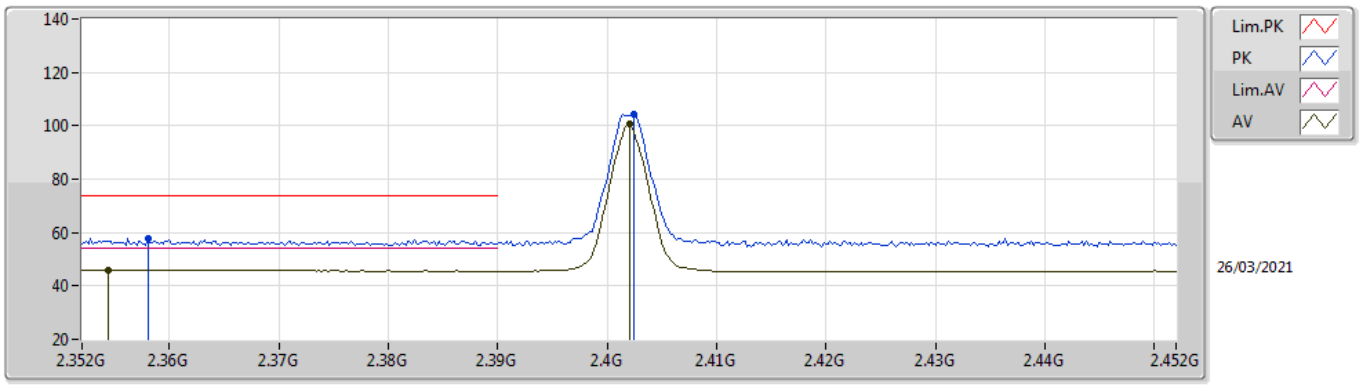
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95989G	41.14	54.00	-12.86	5.34	3	Horizontal	29	1.50	-	35.80	31.22	8.35	34.23
PK	4.9604G	49.36	74.00	-24.64	5.34	3	Horizontal	29	1.50	-	44.02	31.22	8.35	34.23

BT-LE(2Mbps)

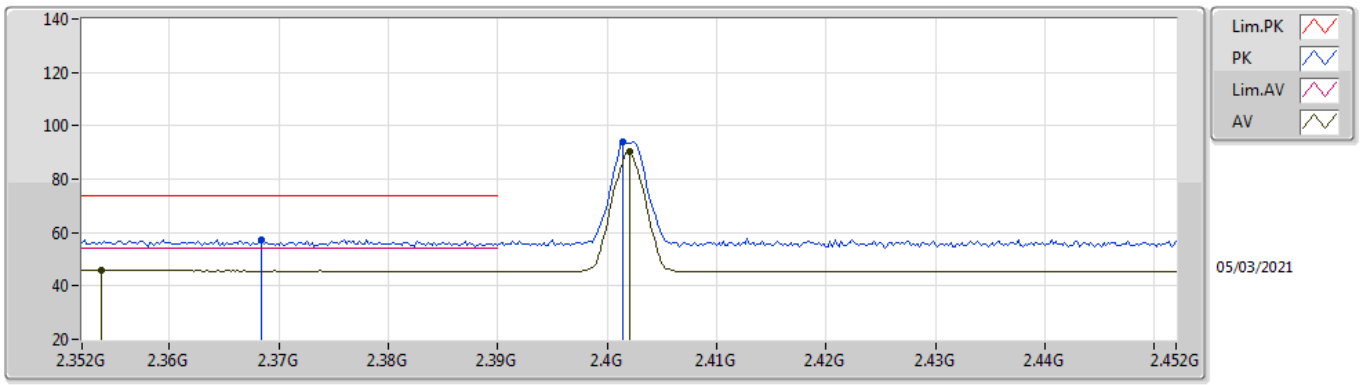
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3544G	45.94	54.00	-8.06	33.62	3	Vertical	0	1.87	-	12.32	27.69	5.93	-
AV	2.402G	100.57	Inf	-Inf	33.55	3	Vertical	0	1.87	-	67.02	27.59	5.96	-
PK	2.358G	57.61	74.00	-16.39	33.61	3	Vertical	0	1.87	-	24.00	27.68	5.93	-
PK	2.4024G	104.12	Inf	-Inf	33.55	3	Vertical	0	1.87	-	70.57	27.59	5.96	-

BT-LE(2Mbps)

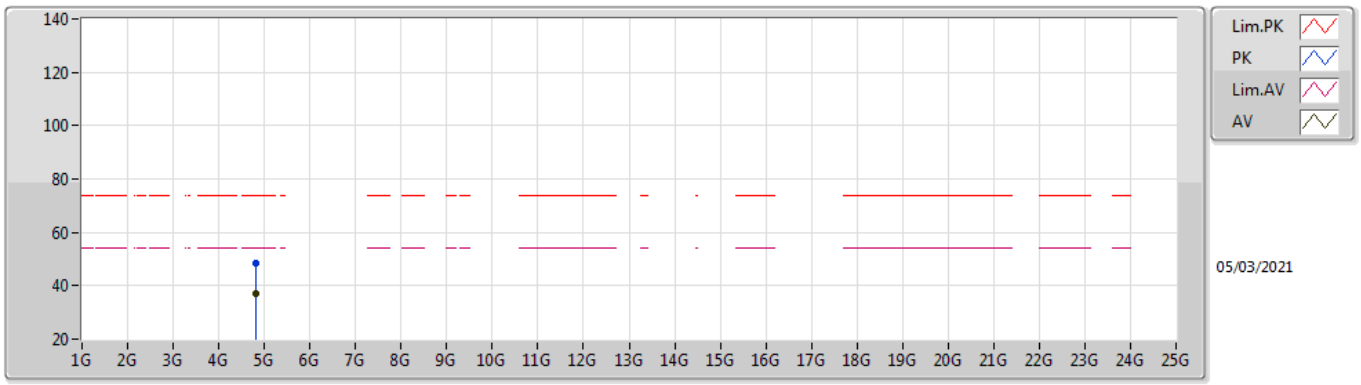
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3538G	45.78	54.00	-8.22	33.62	3	Horizontal	358	1.99	-	12.16	27.69	5.93	-
AV	2.402G	90.32	Inf	-Inf	33.55	3	Horizontal	358	1.99	-	56.77	27.59	5.96	-
PK	2.3684G	57.46	74.00	-16.54	33.60	3	Horizontal	358	1.99	-	23.86	27.66	5.94	-
PK	2.4014G	93.92	Inf	-Inf	33.55	3	Horizontal	358	1.99	-	60.37	27.59	5.96	-

BT-LE(2Mbps)

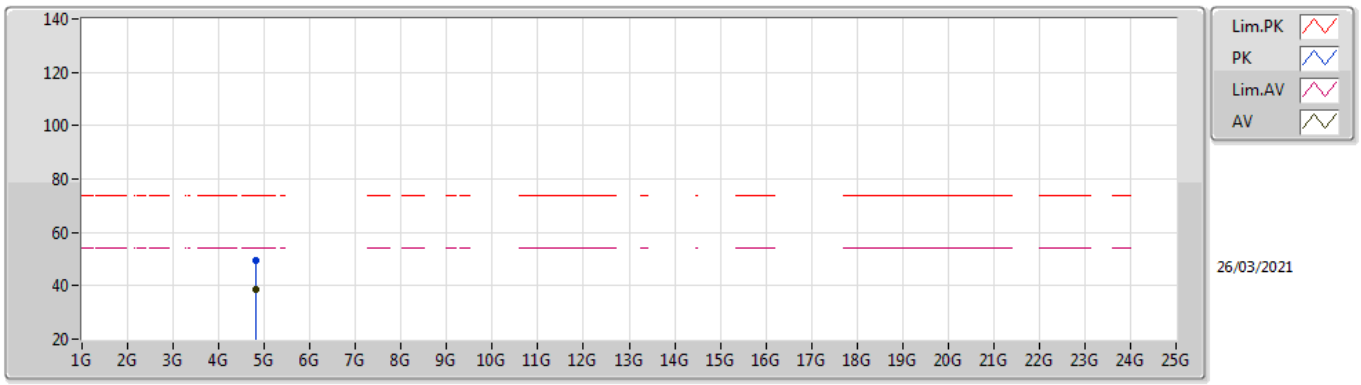
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80484G	37.25	54.00	-16.75	4.88	3	Vertical	311	1.34	-	32.37	30.92	8.25	34.29
PK	4.80477G	48.20	74.00	-25.80	4.88	3	Vertical	311	1.34	-	43.32	30.92	8.25	34.29

BT-LE(2Mbps)

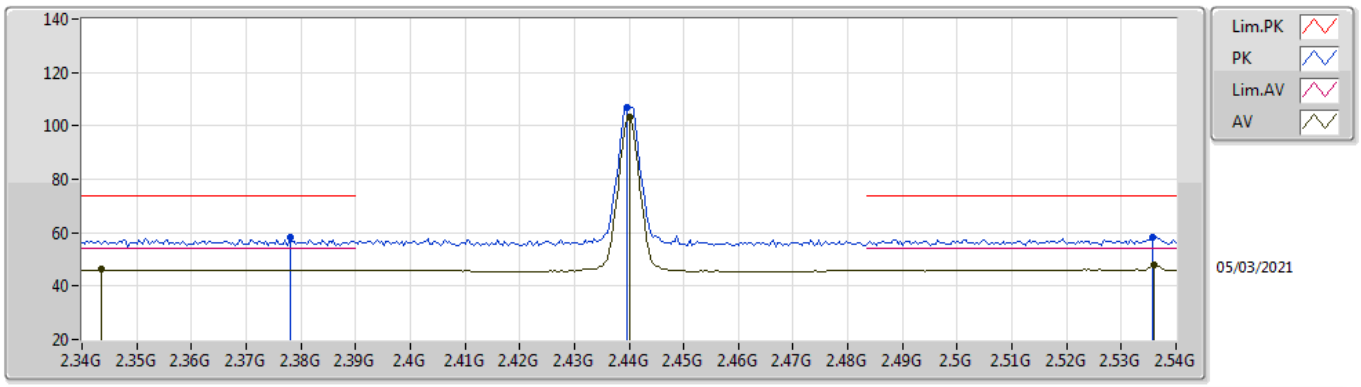
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80487G	38.59	54.00	-15.41	4.88	3	Horizontal	0	2.98	-	33.71	30.92	8.25	34.29
PK	4.80293G	49.27	74.00	-24.73	4.87	3	Horizontal	0	2.98	-	44.40	30.91	8.25	34.29

BT-LE(2Mbps)

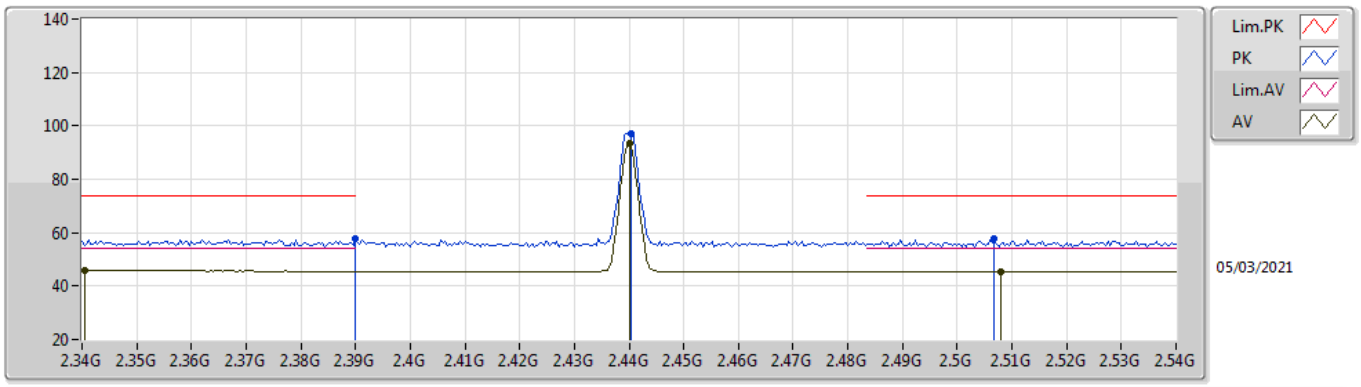
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3436G	46.21	54.00	-7.79	33.65	3	Vertical	7	1.54	-	12.56	27.73	5.92	-
AV	2.44G	103.32	Inf	-Inf	33.45	3	Vertical	7	1.54	-	69.87	27.44	6.01	-
AV	2.536G	48.10	54.00	-5.90	33.52	3	Vertical	7	1.54	-	14.58	27.40	6.12	-
PK	2.378G	58.22	74.00	-15.78	33.58	3	Vertical	7	1.54	-	24.64	27.64	5.94	-
PK	2.4396G	106.94	Inf	-Inf	33.45	3	Vertical	7	1.54	-	73.49	27.44	6.01	-
PK	2.5356G	58.42	74.00	-15.58	33.52	3	Vertical	7	1.54	-	24.90	27.40	6.12	-

BT-LE(2Mbps)

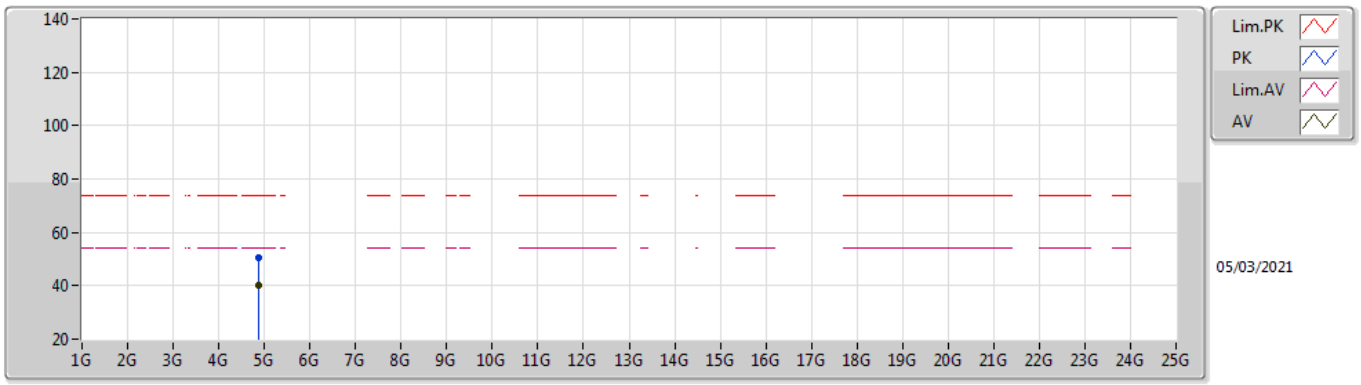
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3404G	45.84	54.00	-8.16	33.66	3	Horizontal	318	1.00	-	12.18	27.74	5.92	-
AV	2.44G	93.57	Inf	-Inf	33.45	3	Horizontal	318	1.00	-	60.12	27.44	6.01	-
AV	2.508G	45.51	54.00	-8.49	33.49	3	Horizontal	318	1.00	-	12.02	27.40	6.09	-
PK	2.39G	57.77	74.00	-16.23	33.57	3	Horizontal	318	1.00	-	24.20	27.62	5.95	-
PK	2.4404G	97.00	Inf	-Inf	33.45	3	Horizontal	318	1.00	-	63.55	27.44	6.01	-
PK	2.5068G	57.52	74.00	-16.48	33.49	3	Horizontal	318	1.00	-	24.03	27.40	6.09	-

BT-LE(2Mbps)

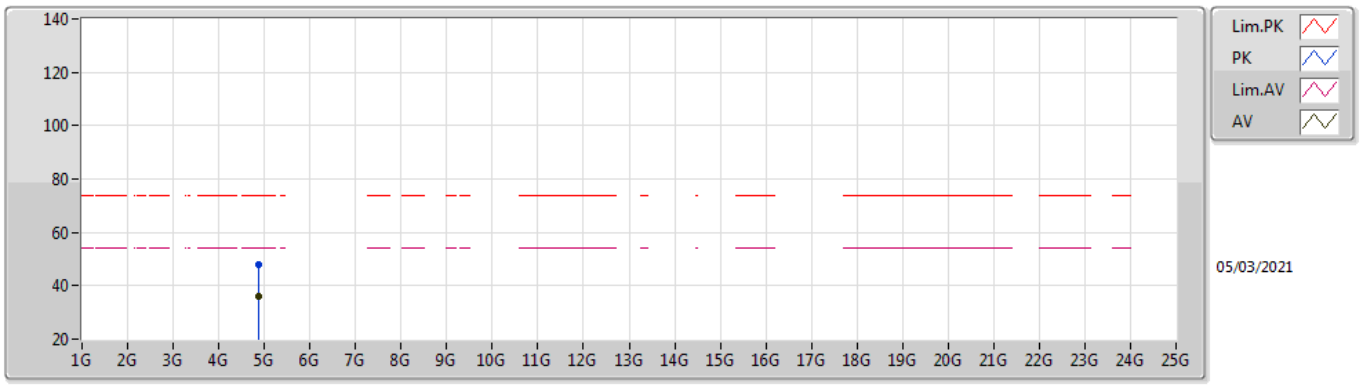
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87894G	40.07	54.00	-13.93	5.08	3	Vertical	308	1.04	-	34.99	31.04	8.30	34.26
PK	4.88105G	50.63	74.00	-23.37	5.08	3	Vertical	308	1.04	-	45.55	31.04	8.30	34.26

BT-LE(2Mbps)

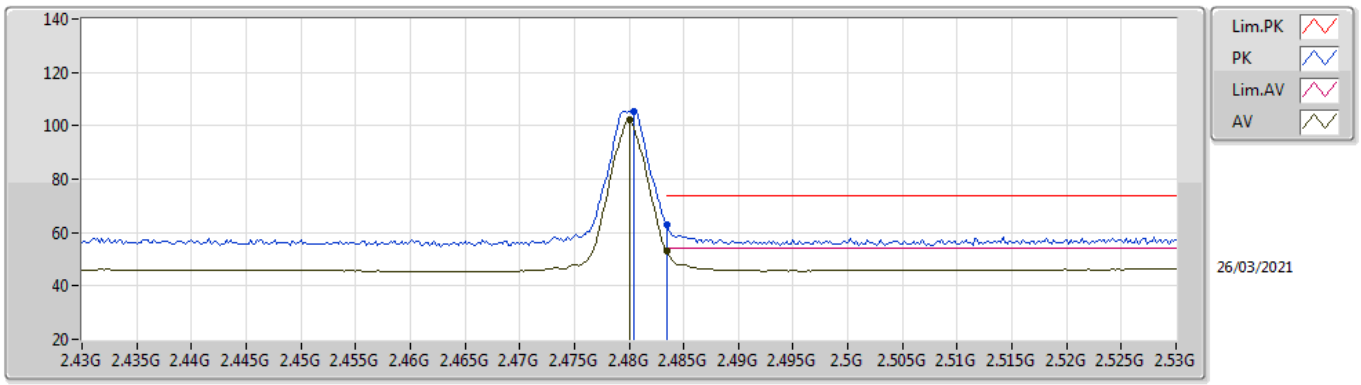
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88088G	36.25	54.00	-17.75	5.08	3	Horizontal	2	3.00	-	31.17	31.04	8.30	34.26
PK	4.8808G	47.93	74.00	-26.07	5.08	3	Horizontal	2	3.00	-	42.85	31.04	8.30	34.26

BT-LE(2Mbps)

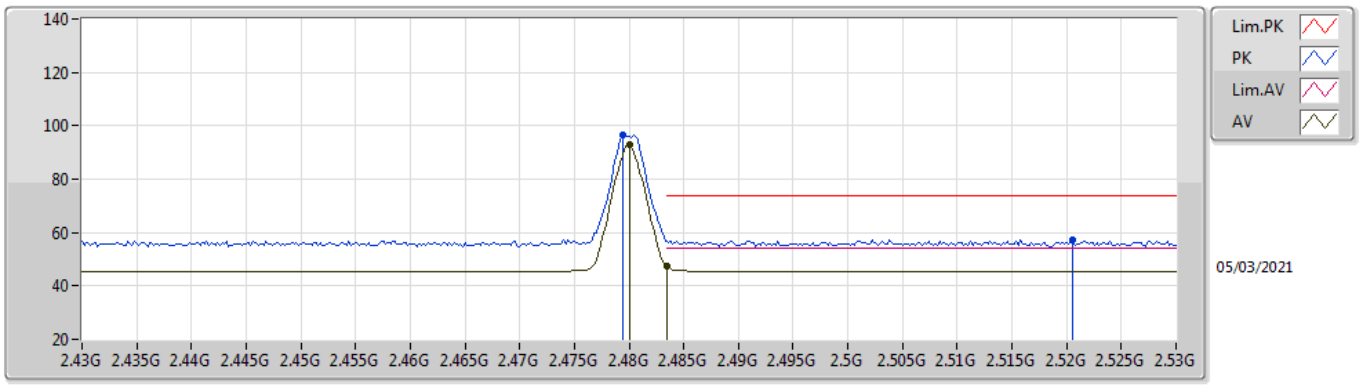
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	102.06	Inf	-Inf	33.46	3	Vertical	0	1.50	-	68.60	27.40	6.06	-
AV	2.4835G	53.15	54.00	-0.85	33.46	3	Vertical	0	1.50	-	19.69	27.40	6.06	-
PK	2.4804G	105.59	Inf	-Inf	33.46	3	Vertical	0	1.50	-	72.13	27.40	6.06	-
PK	2.4835G	62.83	74.00	-11.17	33.46	3	Vertical	0	1.50	-	29.37	27.40	6.06	-

BT-LE(2Mbps)

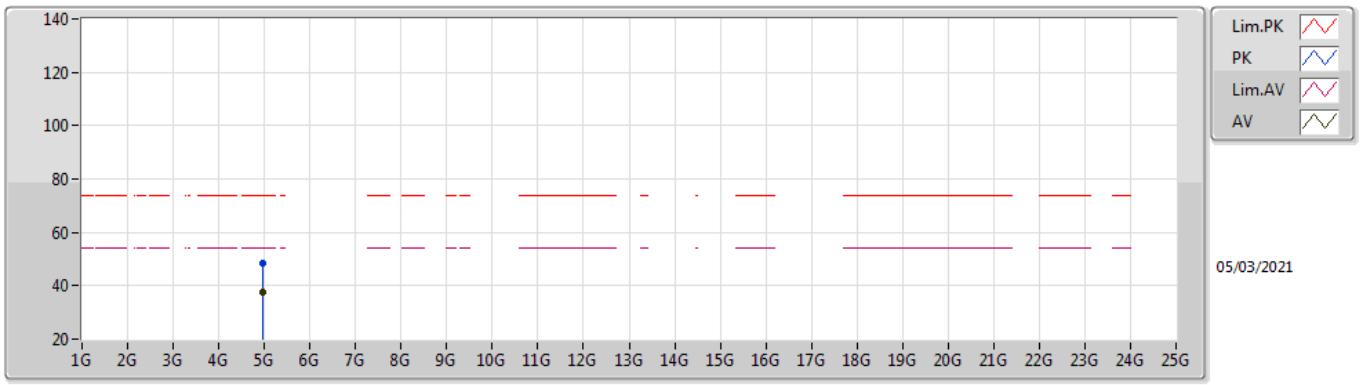
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	92.94	Inf	-Inf	33.46	3	Horizontal	315	1.07	-	59.48	27.40	6.06	-
AV	2.4835G	47.36	54.00	-6.64	33.46	3	Horizontal	315	1.07	-	13.90	27.40	6.06	-
PK	2.4794G	96.33	Inf	-Inf	33.46	3	Horizontal	315	1.07	-	62.87	27.40	6.06	-
PK	2.5206G	57.19	74.00	-16.81	33.50	3	Horizontal	315	1.07	-	23.69	27.40	6.10	-

BT-LE(2Mbps)

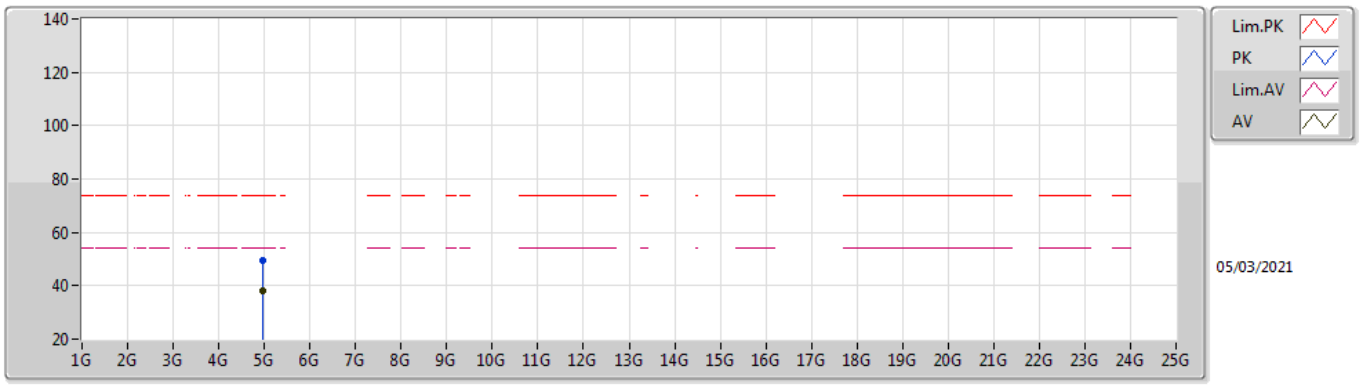
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95895G	37.75	54.00	-16.25	5.34	3	Vertical	310	1.01	-	32.41	31.22	8.35	34.23
PK	4.95877G	48.68	74.00	-25.32	5.34	3	Vertical	310	1.01	-	43.34	31.22	8.35	34.23

BT-LE(2Mbps)

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96085G	38.27	54.00	-15.73	5.34	3	Horizontal	356	2.65	-	32.93	31.22	8.35	34.23
PK	4.9608G	49.67	74.00	-24.33	5.34	3	Horizontal	356	2.65	-	44.33	31.22	8.35	34.23