Testing Laboratory 3785

FCC Radio Test Report

FCC ID	:	**XNI-ID214162**
Contains FCC ID	:	**XMR201807EG95NA**
Equipment	:	**Router Gen2 Hotspot with Telematics**
Brand Name	:	**LCI**
Model Name	:	**2021015320**
Applicant	:	**Lippert Components 6801 15 Mile Road Sterling Heights Michigan United States 48312**
Manufacturer	:	**Lippert Components 6801 15 Mile Road Sterling Heights Michigan United States 48312**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Apr. 27, 2021, and testing was started from May 05, 2021 and completed on Jul. 06, 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 variant 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.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR071337-02AL	01	Initial issue of report	May 12, 2022

Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
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: 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

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	Lynwave	ALX20P-222AA1-00	PCB antenna	I-PEX
2	Lynwave	ALX20P-222AA1-00	PCB antenna	I-PEX
3	-	-	PCB monopole antenna	I-PEX

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	3.7	5	-
2	2	3.7	5	-
3	1	-	-	1.85

Note 1: The EUT has three antennas.

For 2.4GHz function:

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

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

For 5GHz function:

For IEEE 802.11 a/n/ac mode (2TX/2RX)

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

For BT function:

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

Ant. 3 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From AC Adapter			
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)	0.172	7.64	107.5u	10k

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

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR071337-01AL

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Extender function was enable by software.	The verification was performed by EMC.

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	**ADD:** No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
(TAF: 3785**)**	**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	CO01-HY	Billy Wang	20.1~21.6°C / 60~63%	05/May/2021
RF Conducted	TH06-HY	Johnny Yu	20.1~26.9°C / 50~60%	19/May/2021
Radiated	03CH02-HY	Lego Lin	22.3~23.7°C / 53~61%	18/May/2021~06/Jul/2021
☐ Wen 33rd.St.	**ADD:** No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
(TAF: 3785**)**	**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 Channel Mode

Test Software Version	nRF Connect v3.6.1

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	8
2440MHz	8
2480MHz	8

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	Adapter 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	Adapter mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	**Z Plane**
	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WLAN 2.4GHz+WLAN 5GHz+LTE
2	Bluetooth+LTE
Refer to Sporton Test Report No.: FA071337-02 for Co-location RF Exposure Evaluation.	

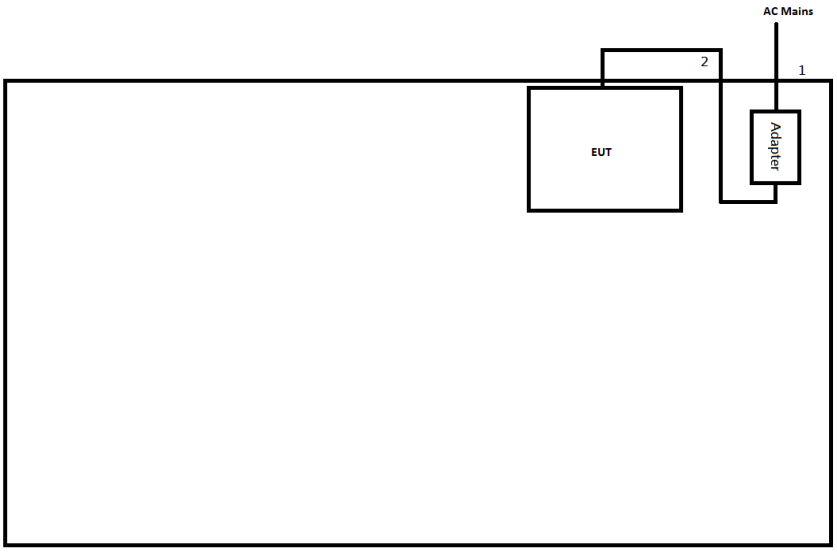
2.3 Support Equipment

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	AC Adapter	Asian Power Devices inc.	DA-48T12	-	Provided by Customer

Support Equipment – AC Conduction and Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	AC Adapter	Asian Power Devices inc.	DA-48T12	-	Provided by Customer

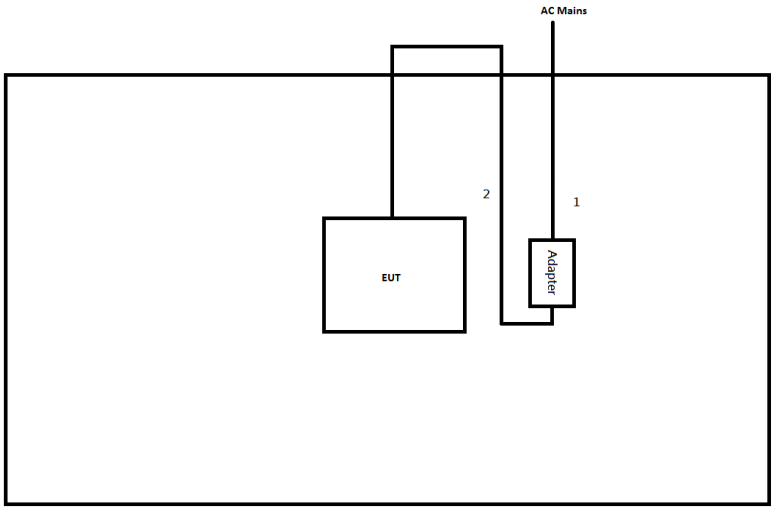
2.4 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



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



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

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

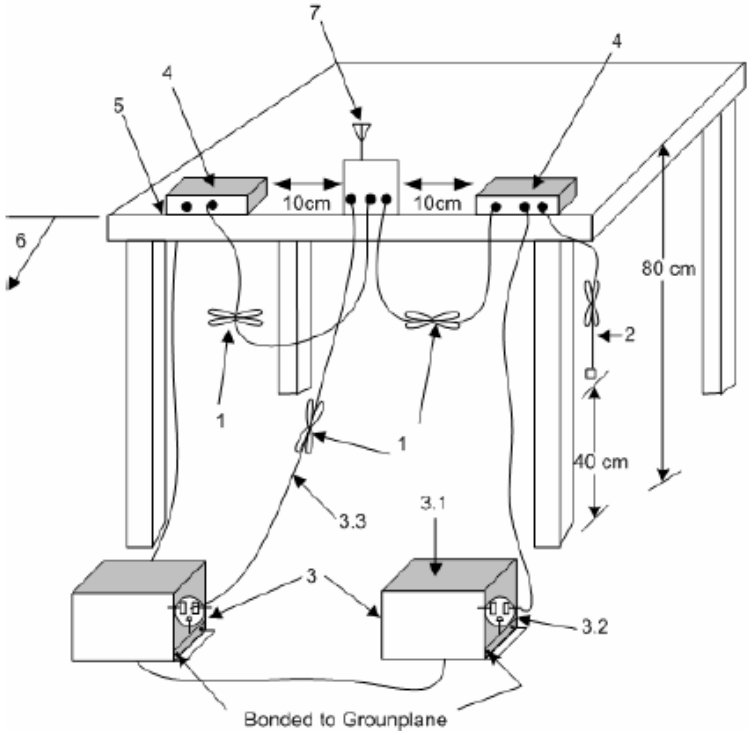
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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.

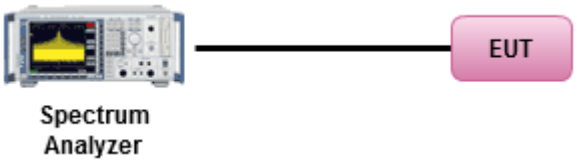
3.2.2 Measuring Instruments

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 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 $G_{TX} \leq 6$ 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): $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX}])$ dBm		
	▪ Smart antenna system (SAS)		
		- Single beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm	
		- Overlap beam: $P_{eirp} \leq MAX(36, P_{Out} + G_{TX})$ dBm	
		- Aggregate power on all beams: $P_{eirp} \leq MAX(36, [P_{Out} + G_{TX} + 8])$ 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

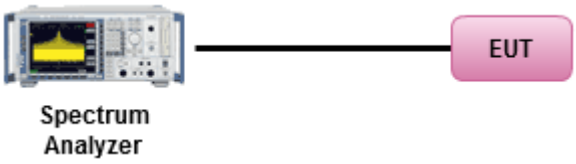
3.4.2 Measuring Instruments

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.	

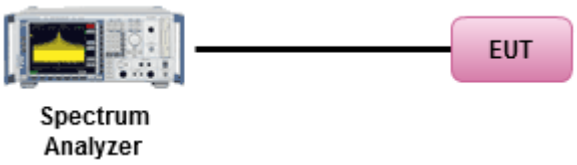
3.5.2 Measuring Instruments

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.

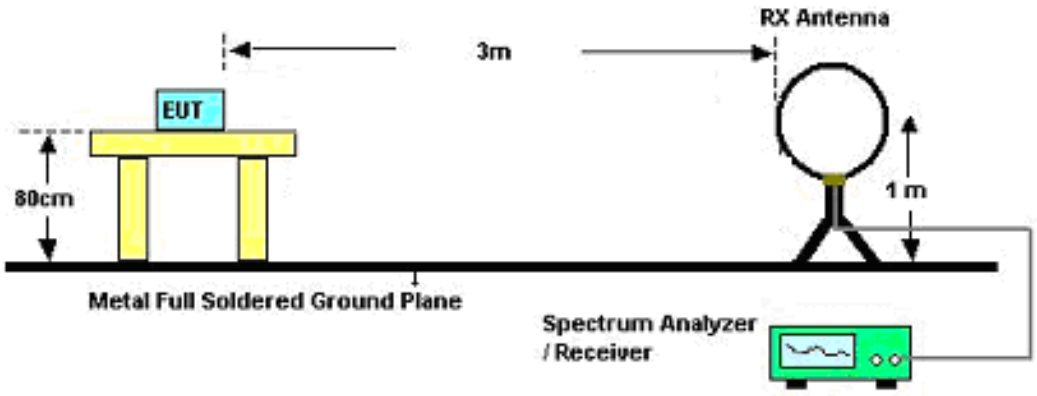
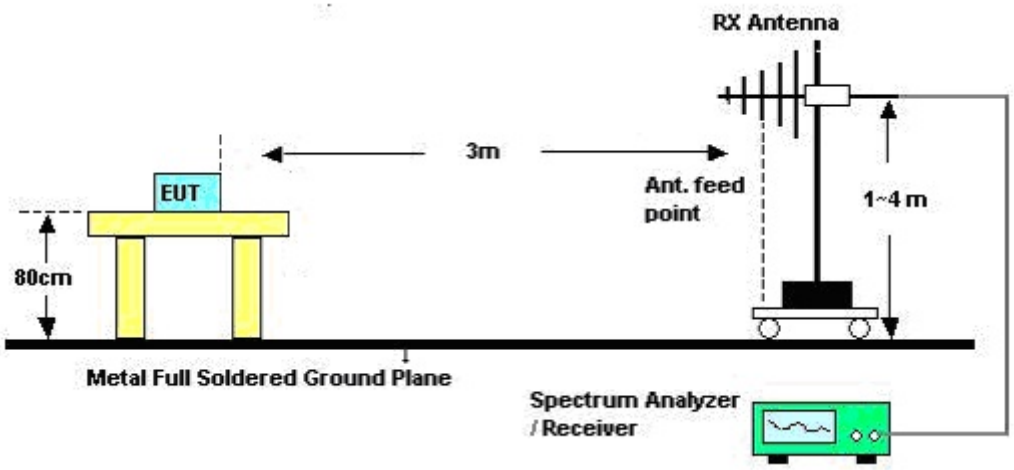
3.6.3 Test Procedures

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.

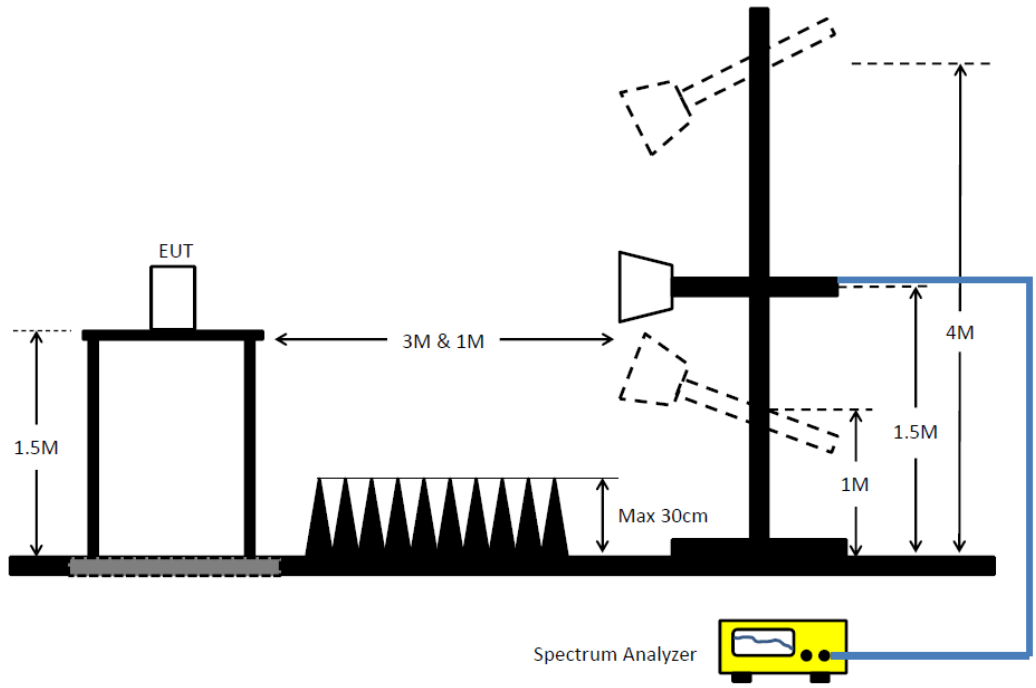
3.6.4 Measurement Results Calculation

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	FSP 40	100305	10Hz~40GHz	16/Mar/2021	15/Mar/2022
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	20/Oct/2020	19/Oct/2021
Pulse Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	25/Mar/2021	24/Mar/2022
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	25/Mar/2021	24/Mar/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	FSV40	101500	10Hz~40GHz	19/Aug/2020	18/Aug/2021
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	29/Jun/2021	28/Jun/2022
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	MVE	400LL	MVE-1-0802	9kHz~30MHz	05/May/2021	04/May/2022
RF Cable	MVE	400LL	MVE-1-0802	30MHz~1GHz	05/May/2021	04/May/2022
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	805193/4+805192/4	1GHz~40GHz	06/Apr/2021	05/Apr/2022
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	11/Mar/2021	10/Mar/2022
Microwave Premplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz~40GHz	09/Mar/2021	08/Mar/2022
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz~40GHz	18/Mar/2021	17/Mar/2022
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	16/Mar/2021	15/Mar/2022
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	21/May/2021	20/May/2022

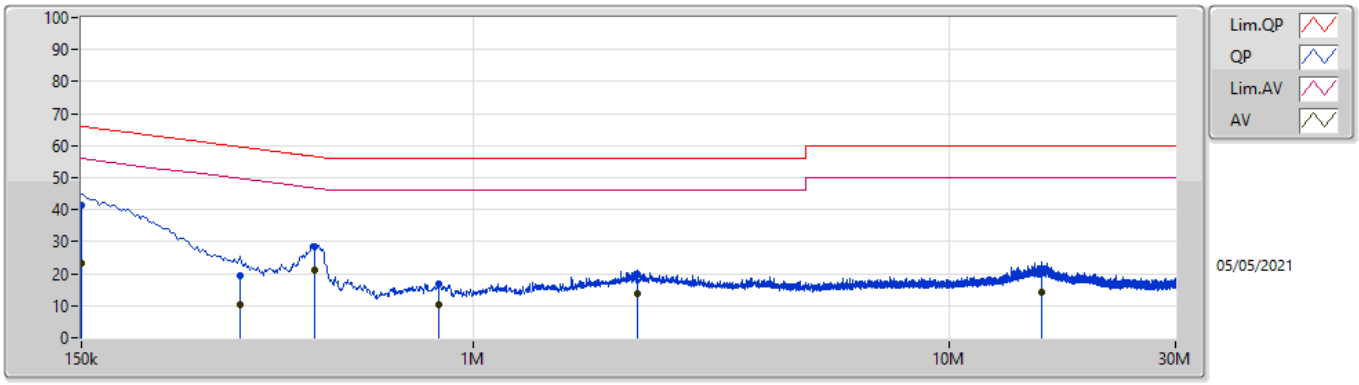
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150k	41.62	66.00	-24.38	Neutral

Result

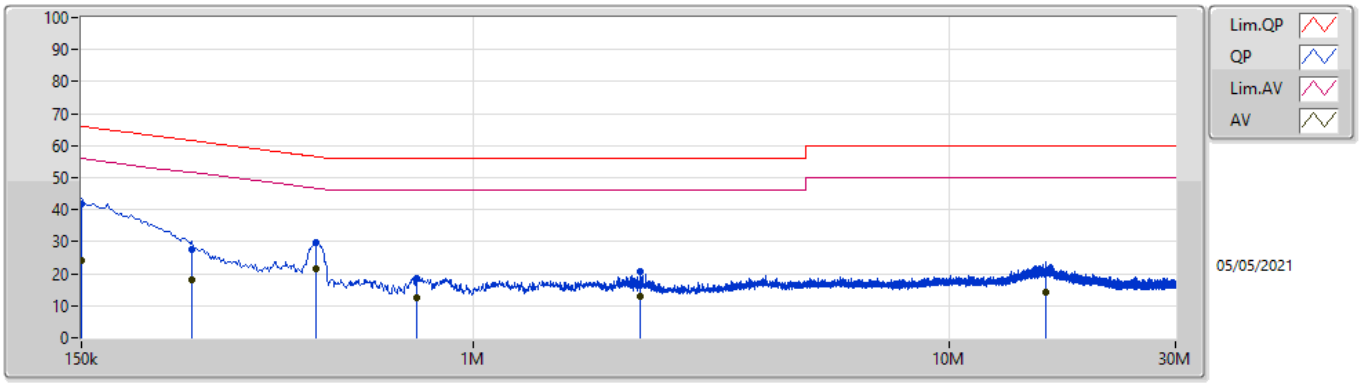
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	150k	41.49	66.00	-24.51	Line	-
Mode 1	Pass	AV	150k	23.25	56.00	-32.75	Line	-
Mode 1	Pass	QP	323.25k	19.37	59.61	-40.24	Line	-
Mode 1	Pass	AV	323.25k	10.49	49.61	-39.12	Line	-
Mode 1	Pass	QP	465k	28.62	56.61	-27.99	Line	-
Mode 1	Pass	AV	465k	20.99	46.61	-25.62	Line	-
Mode 1	Pass	QP	845.25k	16.63	56.00	-39.37	Line	-
Mode 1	Pass	AV	845.25k	10.55	46.00	-35.45	Line	-
Mode 1	Pass	QP	2.211M	19.66	56.00	-36.34	Line	-
Mode 1	Pass	AV	2.211M	13.61	46.00	-32.39	Line	-
Mode 1	Pass	QP	15.644M	20.13	60.00	-39.87	Line	-
Mode 1	Pass	AV	15.644M	14.36	50.00	-35.64	Line	-
Mode 1	Pass	QP	150k	41.62	66.00	-24.38	Neutral	-
Mode 1	Pass	AV	150k	24.35	56.00	-31.65	Neutral	-
Mode 1	Pass	QP	255.75k	27.44	61.56	-34.12	Neutral	-
Mode 1	Pass	AV	255.75k	18.25	51.56	-33.31	Neutral	-
Mode 1	Pass	QP	467.25k	29.69	56.55	-26.86	Neutral	-
Mode 1	Pass	AV	467.25k	21.70	46.55	-24.85	Neutral	-
Mode 1	Pass	QP	759.75k	18.63	56.00	-37.37	Neutral	-
Mode 1	Pass	AV	759.75k	12.41	46.00	-33.59	Neutral	-
Mode 1	Pass	QP	2.243M	20.65	56.00	-35.35	Neutral	-
Mode 1	Pass	AV	2.243M	12.78	46.00	-33.22	Neutral	-
Mode 1	Pass	QP	16.049M	20.18	60.00	-39.82	Neutral	-
Mode 1	Pass	AV	16.049M	14.31	50.00	-35.69	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	150k	41.49	66.00	-24.51	19.63	Line	-	21.86	9.69	0.04	9.90
AV	150k	23.25	56.00	-32.75	19.63	Line	-	3.62	9.69	0.04	9.90
QP	323.25k	19.37	59.61	-40.24	19.62	Line	-	-0.25	9.67	0.05	9.90
AV	323.25k	10.49	49.61	-39.12	19.62	Line	-	-9.13	9.67	0.05	9.90
QP	465k	28.62	56.61	-27.99	19.61	Line	-	9.01	9.67	0.06	9.88
AV	465k	20.99	46.61	-25.62	19.61	Line	-	1.38	9.67	0.06	9.88
QP	845.25k	16.63	56.00	-39.37	19.57	Line	-	-2.94	9.67	0.08	9.82
AV	845.25k	10.55	46.00	-35.45	19.57	Line	-	-9.02	9.67	0.08	9.82
QP	2.211M	19.66	56.00	-36.34	19.60	Line	-	0.06	9.68	0.11	9.81
AV	2.211M	13.61	46.00	-32.39	19.60	Line	-	-5.99	9.68	0.11	9.81
QP	15.644M	20.13	60.00	-39.87	19.85	Line	-	0.28	9.69	0.26	9.90
AV	15.644M	14.36	50.00	-35.64	19.85	Line	-	-5.49	9.69	0.26	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	41.62	66.00	-24.38	19.63	Neutral	-	21.99	9.69	0.04	9.90
AV	150k	24.35	56.00	-31.65	19.63	Neutral	-	4.72	9.69	0.04	9.90
QP	255.75k	27.44	61.56	-34.12	19.63	Neutral	-	7.81	9.68	0.05	9.90
AV	255.75k	18.25	51.56	-33.31	19.63	Neutral	-	-1.38	9.68	0.05	9.90
QP	467.25k	29.69	56.55	-26.86	19.61	Neutral	-	10.08	9.67	0.06	9.88
AV	467.25k	21.70	46.55	-24.85	19.61	Neutral	-	2.09	9.67	0.06	9.88
QP	759.75k	18.63	56.00	-37.37	19.57	Neutral	-	-0.94	9.67	0.07	9.83
AV	759.75k	12.41	46.00	-33.59	19.57	Neutral	-	-7.16	9.67	0.07	9.83
QP	2.243M	20.65	56.00	-35.35	19.61	Neutral	-	1.04	9.68	0.11	9.82
AV	2.243M	12.78	46.00	-33.22	19.61	Neutral	-	-6.83	9.68	0.11	9.82
QP	16.049M	20.18	60.00	-39.82	19.90	Neutral	-	0.28	9.74	0.26	9.90
AV	16.049M	14.31	50.00	-35.69	19.90	Neutral	-	-5.59	9.74	0.26	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)	693.75k	1.09M	1M09F1D	690k	1.031M

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

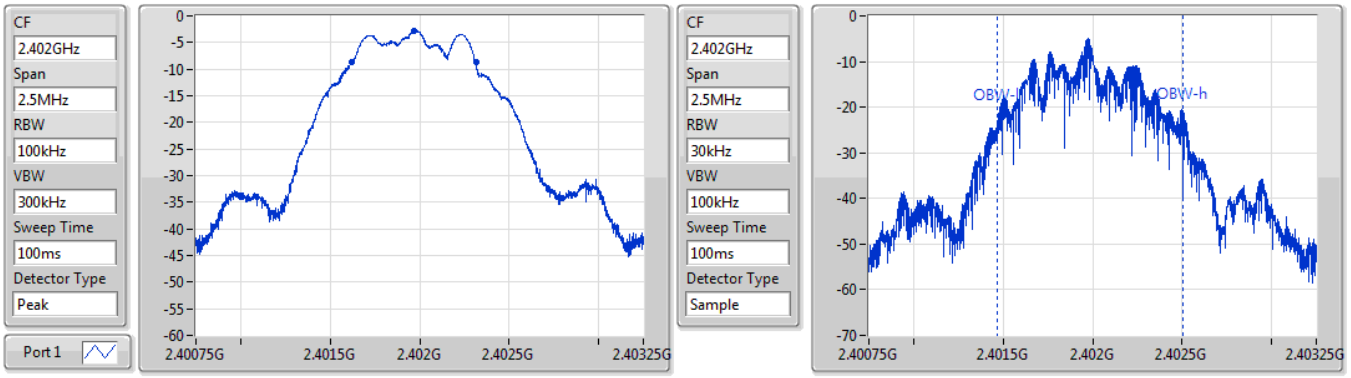
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	693.75k	1.035M
2440MHz	Pass	500k	690k	1.09M
2480MHz	Pass	500k	691.25k	1.031M

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

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

2402MHz

19/05/2021

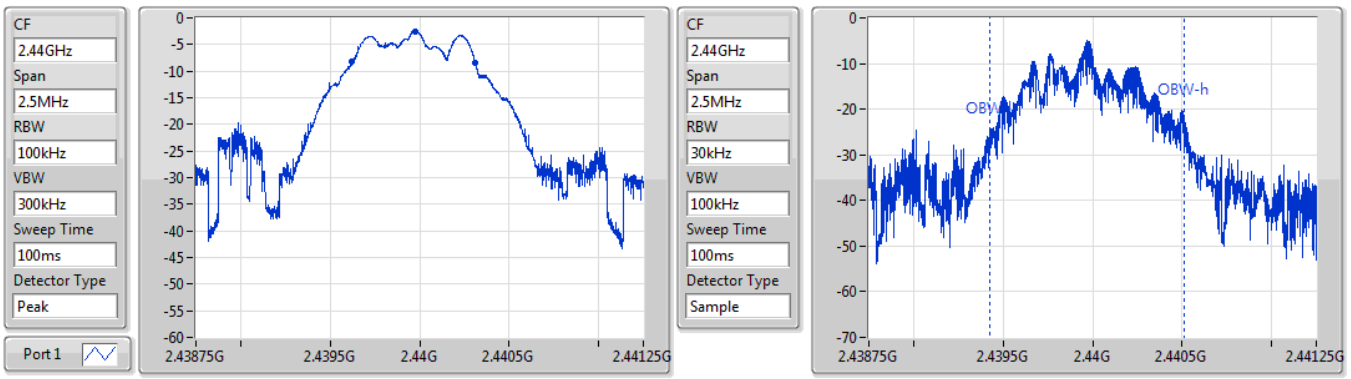


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
693.75k	2.40162G	2.402314G	1.035M	2.40147G	2.402505G	500k	1

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

2440MHz

19/05/2021

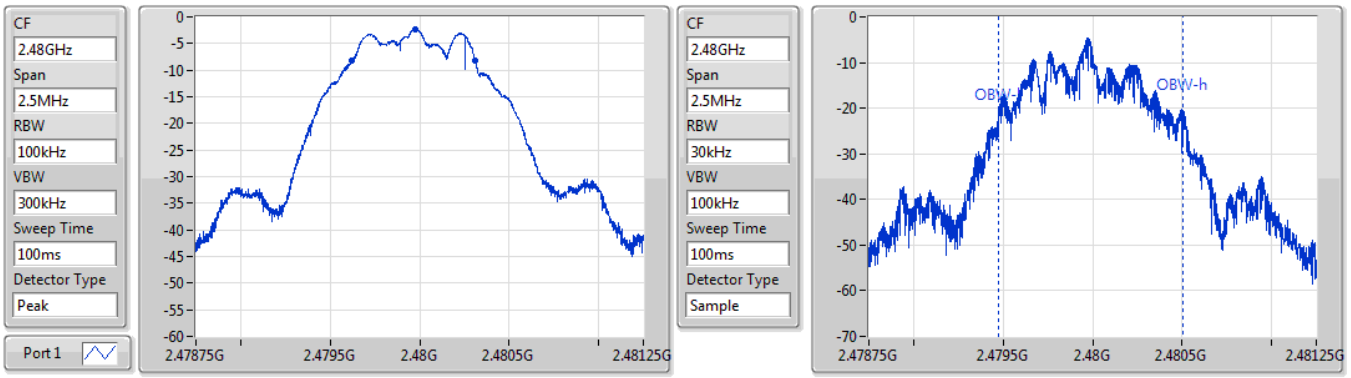


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
690k	2.439623G	2.440313G	1.09M	2.439423G	2.440513G	500k	1

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

2480MHz

19/05/2021



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
691.25k	2.47962G	2.480311G	1.031M	2.479473G	2.480504G	500k	1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	-2.95	0.00051

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.85	-3.50	30.00
2440MHz	Pass	1.85	-3.48	30.00
2480MHz	Pass	1.85	-2.95	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-20.60

RBW = 3kHz;

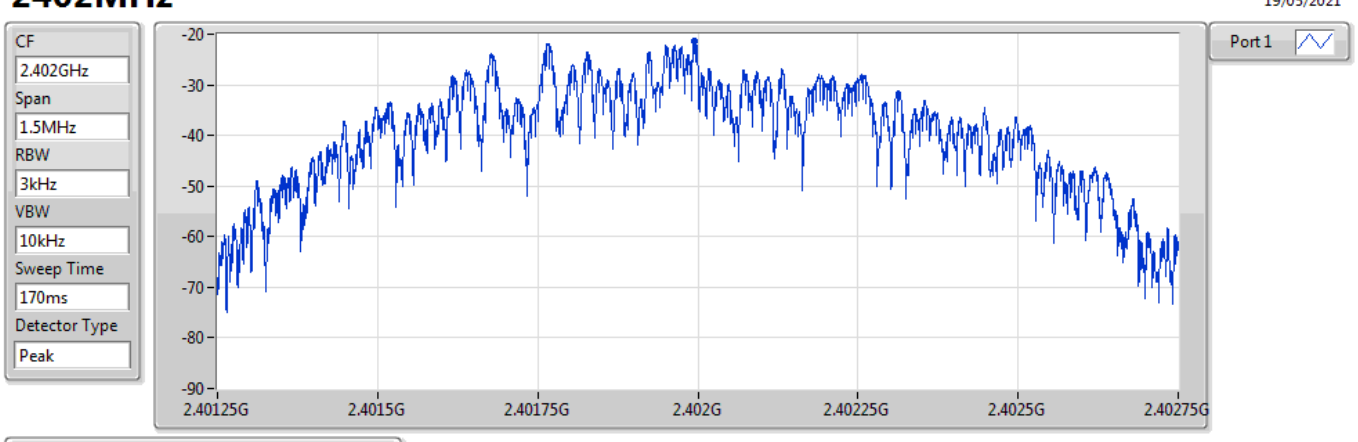
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.85	-21.29	8.00
2440MHz	Pass	1.85	-20.94	8.00
2480MHz	Pass	1.85	-20.60	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

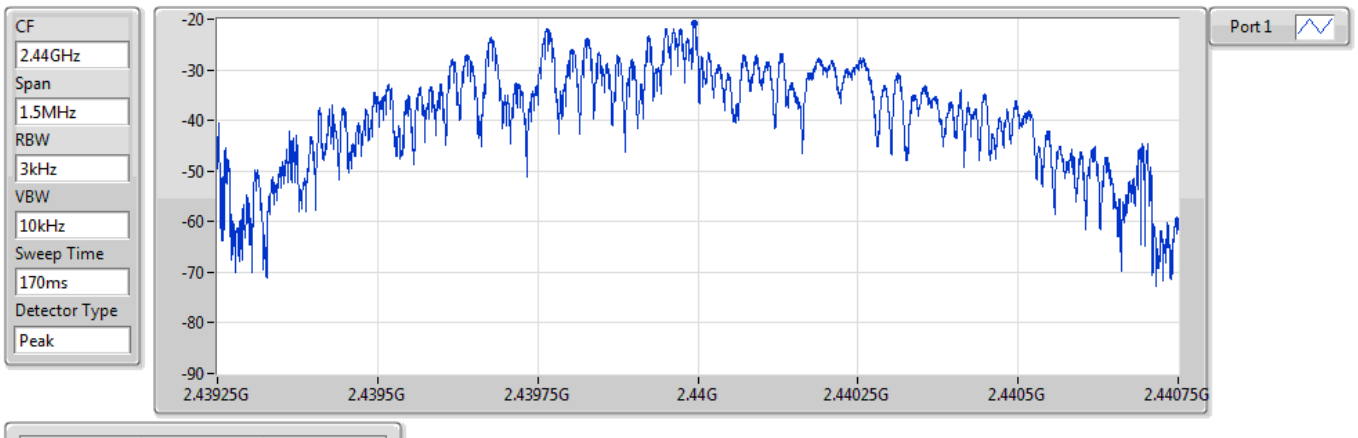
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-21.29	-21.29	-21.29

BT-LE(1Mbps) PSD

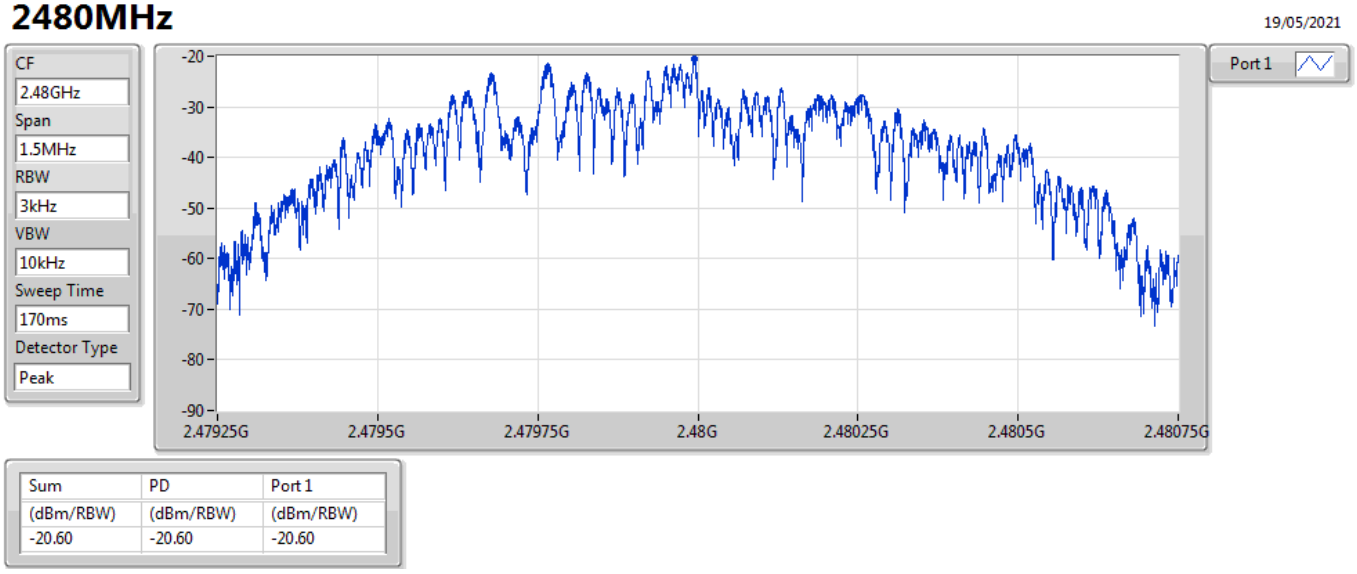
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-20.94	-20.94	-20.94

BT-LE(1Mbps) **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-20.60	-20.60	-20.60

Summary

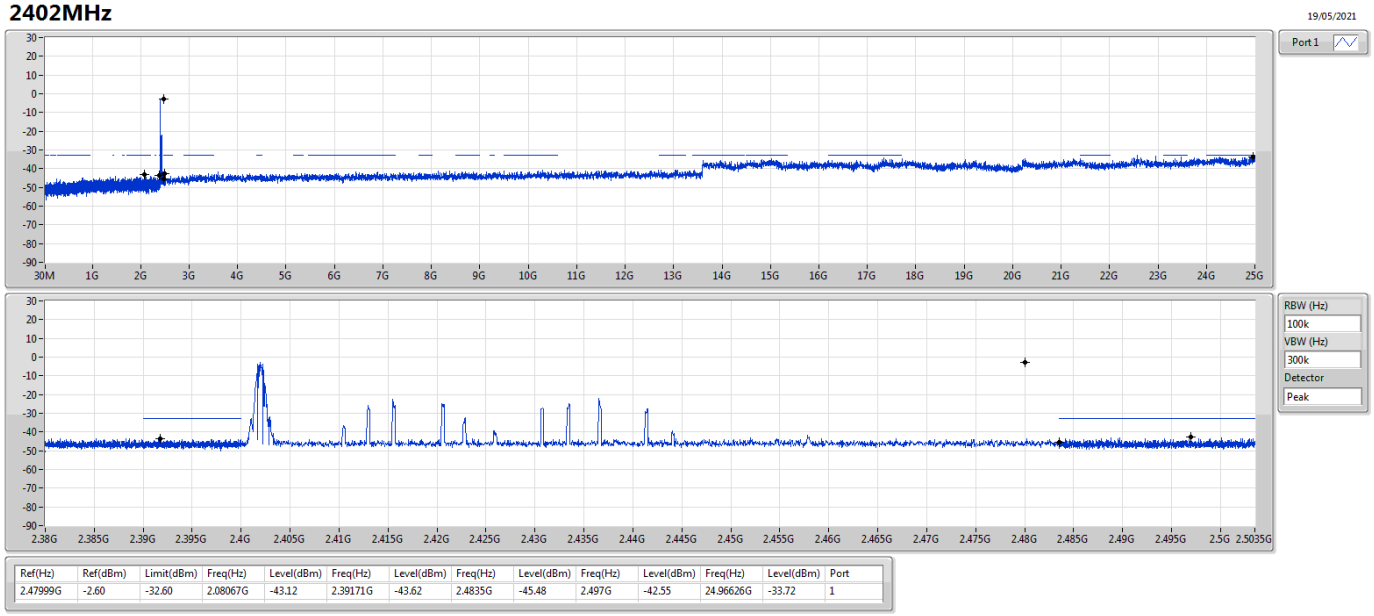
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.47999G	-2.60	-32.60	2.12591G	-44.30	2.39403G	-42.03	2.4835G	-46.34	2.50048G	-42.61	24.28292G	-33.48	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	2.47999G	-2.60	-32.60	2.08067G	-43.12	2.39171G	-43.62	2.4835G	-45.48	2.497G	-42.55	24.96626G	-33.72	1
2440MHz	Pass	2.47999G	-2.60	-32.60	2.12591G	-44.30	2.39403G	-42.03	2.4835G	-46.34	2.50048G	-42.61	24.28292G	-33.48	1
2480MHz	Pass	2.47999G	-2.60	-32.60	1.84038G	-43.82	2.39653G	-43.38	2.4835G	-45.17	2.4873G	-42.61	24.22949G	-33.47	1

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

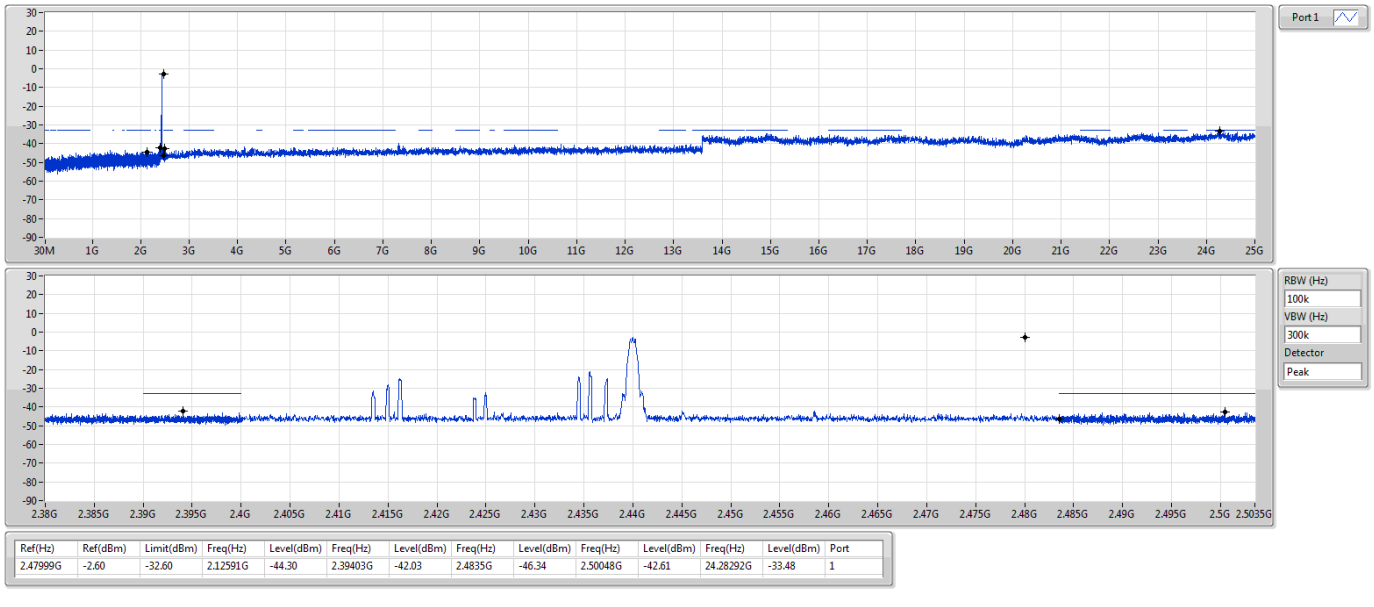
2402MHz



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
2.47999G	-2.60	-32.60	2.08067G	-43.12	2.39171G	-43.62	2.4835G	-45.48	2.497G	-42.55	24.96626G	-33.72	1

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

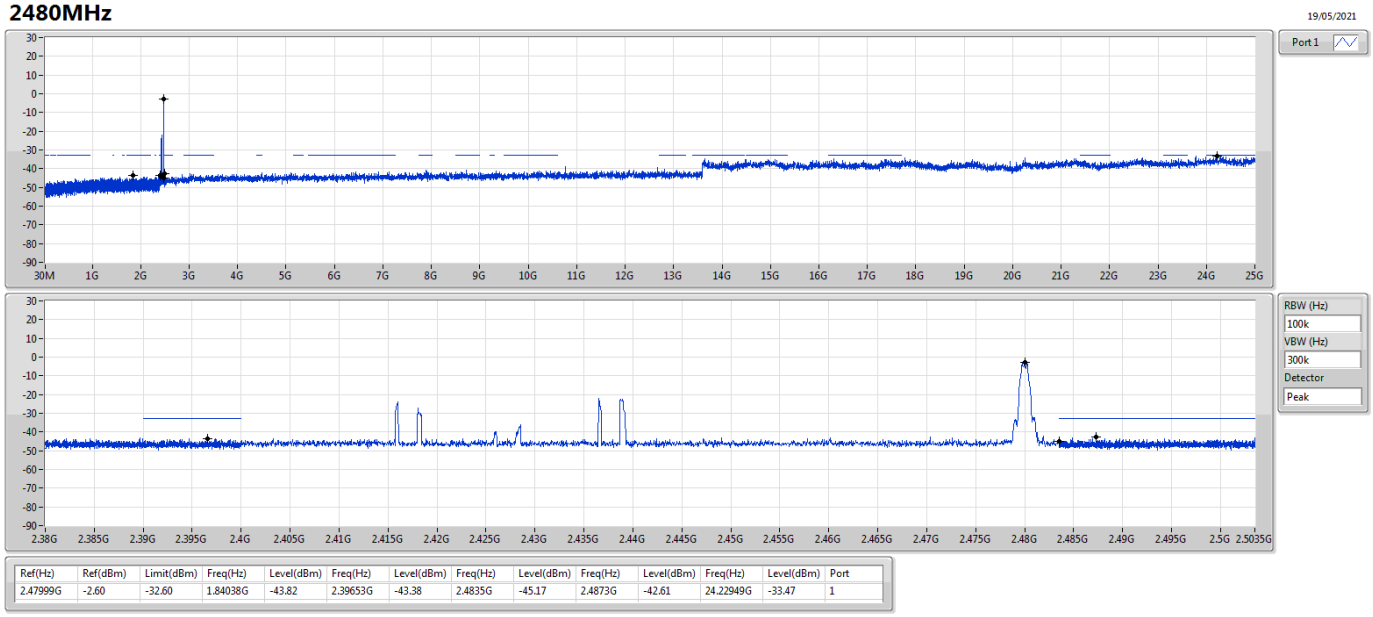
2440MHz



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
2.47999G	-2.60	-32.60	2.12591G	-44.30	2.39403G	-42.03	2.4835G	-46.34	2.50048G	-42.61	24.28292G	-33.48	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
2.47999G	-2.60	-32.60	1.84038G	-43.82	2.39653G	-43.38	2.4835G	-45.17	2.4873G	-42.61	24.22949G	-33.47	1

Summary

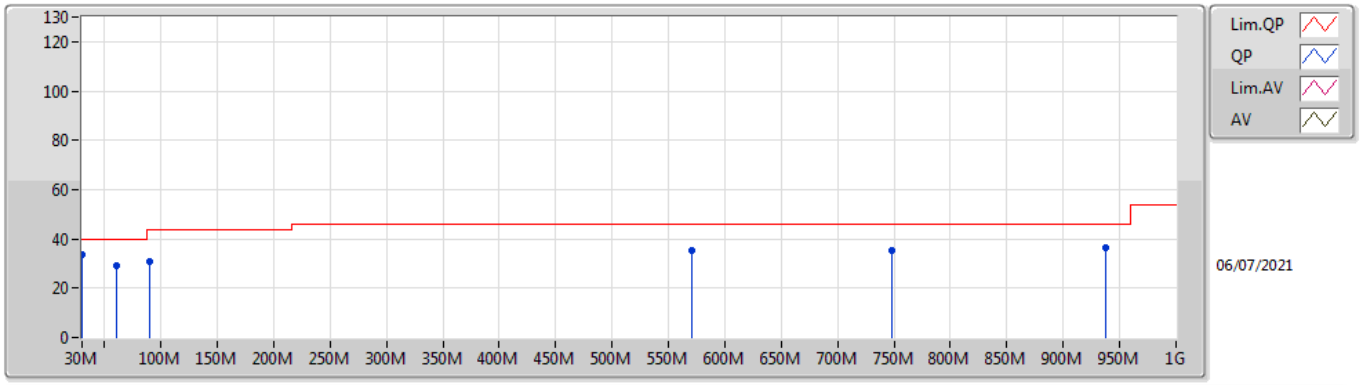
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	49.4M	36.92	40.00	-3.08	3	Horizontal	0	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	30M	33.52	40.00	-6.48	3	Vertical	360	1.00	-
2440MHz	Pass	PK	61.04M	29.14	40.00	-10.86	3	Vertical	360	1.00	-
2440MHz	Pass	PK	90.14M	30.55	43.50	-12.95	3	Vertical	360	1.00	-
2440MHz	Pass	PK	571.26M	35.20	46.00	-10.80	3	Vertical	360	1.00	-
2440MHz	Pass	PK	747.8M	35.17	46.00	-10.83	3	Vertical	360	1.00	-
2440MHz	Pass	PK	937.92M	36.59	46.00	-9.41	3	Vertical	360	1.00	-
2440MHz	Pass	PK	49.4M	36.92	40.00	-3.08	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	194.9M	24.90	43.50	-18.60	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	375.32M	27.57	46.00	-18.43	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	561.56M	37.22	46.00	-8.78	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	825.4M	34.88	46.00	-11.12	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	897.18M	37.01	46.00	-8.99	3	Horizontal	0	1.00	-

BT-LE(1Mbps)

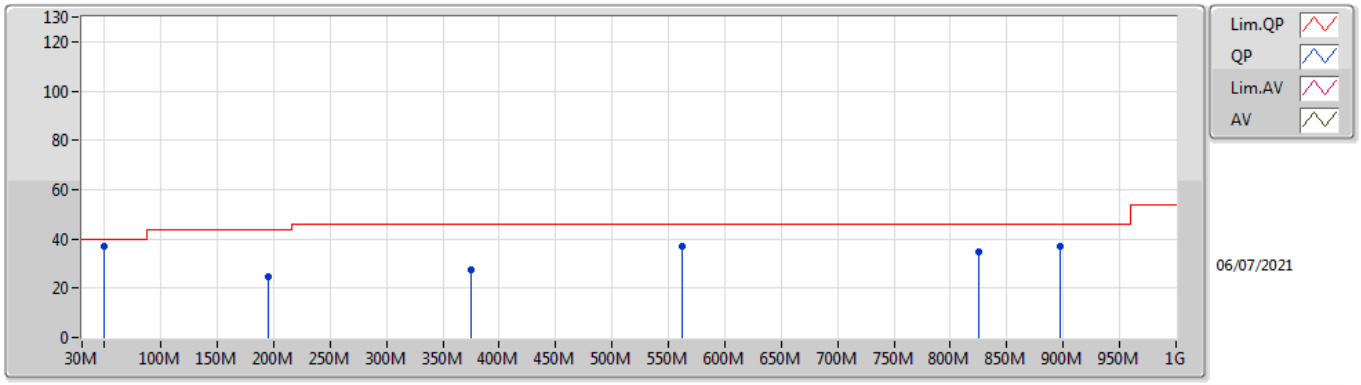
2440MHz_Adapter



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	33.52	40.00	-6.48	-2.81	3	Vertical	360	1.00	-	36.33	23.32	0.86	26.99
PK	61.04M	29.14	40.00	-10.86	-15.09	3	Vertical	360	1.00	-	44.23	11.54	1.15	27.78
PK	90.14M	30.55	43.50	-12.95	-12.41	3	Vertical	360	1.00	-	42.96	14.08	1.35	27.84
PK	571.26M	35.20	46.00	-10.80	-1.08	3	Vertical	360	1.00	-	36.28	24.02	3.27	28.37
PK	747.8M	35.17	46.00	-10.83	0.51	3	Vertical	360	1.00	-	34.66	24.89	3.70	28.08
PK	937.92M	36.59	46.00	-9.41	2.68	3	Vertical	360	1.00	-	33.91	25.85	4.16	27.33

BT-LE(1Mbps)

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	49.4M	36.92	40.00	-3.08	-13.24	3	Horizontal	0	1.00	-	50.16	13.40	1.06	27.70
PK	194.9M	24.90	43.50	-18.60	-11.08	3	Horizontal	0	1.00	-	35.98	14.35	1.93	27.36
PK	375.32M	27.57	46.00	-18.43	-4.80	3	Horizontal	0	1.00	-	32.37	20.11	2.65	27.56
PK	561.56M	37.22	46.00	-8.78	-1.00	3	Horizontal	0	1.00	-	38.22	24.12	3.23	28.35
PK	825.4M	34.88	46.00	-11.12	1.37	3	Horizontal	0	1.00	-	33.51	25.23	3.94	27.80
PK	897.18M	37.01	46.00	-8.99	2.23	3	Horizontal	0	1.00	-	34.78	25.64	4.10	27.51

Summary

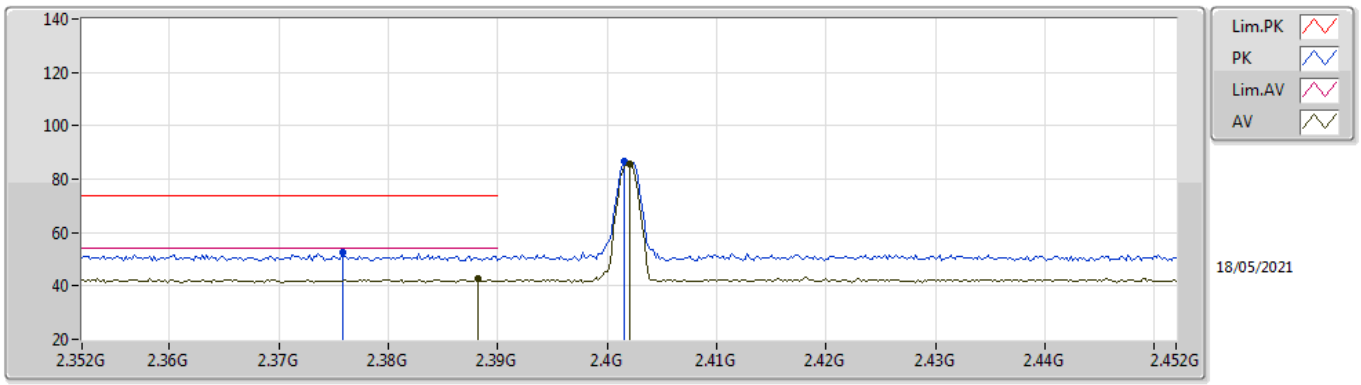
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.9599G	49.24	54.00	-4.76	3	Vertical	11	3.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3882G	42.68	54.00	-11.32	3	Vertical	319	1.10	-
2402MHz	Pass	AV	2.402G	85.54	Inf	-Inf	3	Vertical	319	1.10	-
2402MHz	Pass	PK	2.3758G	52.51	74.00	-21.49	3	Vertical	319	1.10	-
2402MHz	Pass	PK	2.4016G	86.49	Inf	-Inf	3	Vertical	319	1.10	-
2402MHz	Pass	AV	2.3872G	42.67	54.00	-11.33	3	Horizontal	82	1.14	-
2402MHz	Pass	AV	2.402G	87.11	Inf	-Inf	3	Horizontal	82	1.14	-
2402MHz	Pass	PK	2.3874G	52.23	74.00	-21.77	3	Horizontal	82	1.14	-
2402MHz	Pass	PK	2.4016G	88.02	Inf	-Inf	3	Horizontal	82	1.14	-
2402MHz	Pass	AV	4.8039G	42.92	54.00	-11.08	3	Vertical	11	2.83	-
2402MHz	Pass	PK	4.80393G	52.79	74.00	-21.21	3	Vertical	11	2.83	-
2402MHz	Pass	AV	4.80394G	39.38	54.00	-14.62	3	Horizontal	15	1.03	-
2402MHz	Pass	PK	4.80402G	49.72	74.00	-24.28	3	Horizontal	15	1.03	-
2440MHz	Pass	AV	2.3648G	42.24	54.00	-11.76	3	Vertical	310	1.31	-
2440MHz	Pass	AV	2.44G	82.50	Inf	-Inf	3	Vertical	310	1.31	-
2440MHz	Pass	AV	2.5G	43.49	54.00	-10.51	3	Vertical	310	1.31	-
2440MHz	Pass	PK	2.3496G	51.37	74.00	-22.63	3	Vertical	310	1.31	-
2440MHz	Pass	PK	2.4396G	83.46	Inf	-Inf	3	Vertical	310	1.31	-
2440MHz	Pass	PK	2.4892G	50.95	74.00	-23.05	3	Vertical	310	1.31	-
2440MHz	Pass	AV	2.342G	42.15	54.00	-11.85	3	Horizontal	92	1.00	-
2440MHz	Pass	AV	2.44G	85.50	Inf	-Inf	3	Horizontal	92	1.00	-
2440MHz	Pass	AV	2.484G	42.07	54.00	-11.93	3	Horizontal	92	1.00	-
2440MHz	Pass	PK	2.3636G	51.79	74.00	-22.21	3	Horizontal	92	1.00	-
2440MHz	Pass	PK	2.4396G	86.43	Inf	-Inf	3	Horizontal	92	1.00	-
2440MHz	Pass	PK	2.4896G	51.27	74.00	-22.73	3	Horizontal	92	1.00	-
2440MHz	Pass	AV	4.87997G	47.85	54.00	-6.15	3	Vertical	11	2.93	-
2440MHz	Pass	PK	4.8799G	55.80	74.00	-18.20	3	Vertical	11	2.93	-
2440MHz	Pass	AV	4.87942G	43.05	54.00	-10.95	3	Horizontal	259	1.00	-
2440MHz	Pass	PK	4.88009G	51.40	74.00	-22.60	3	Horizontal	259	1.00	-
2480MHz	Pass	AV	2.48G	80.10	Inf	-Inf	3	Vertical	310	1.26	-
2480MHz	Pass	AV	2.5G	43.49	54.00	-10.51	3	Vertical	310	1.26	-
2480MHz	Pass	PK	2.48G	81.10	Inf	-Inf	3	Vertical	310	1.26	-
2480MHz	Pass	PK	2.4838G	51.58	74.00	-22.42	3	Vertical	310	1.26	-
2480MHz	Pass	AV	2.48G	81.36	Inf	-Inf	3	Horizontal	42	1.60	-
2480MHz	Pass	AV	2.489G	42.52	54.00	-11.48	3	Horizontal	42	1.60	-
2480MHz	Pass	PK	2.48G	82.36	Inf	-Inf	3	Horizontal	42	1.60	-
2480MHz	Pass	PK	2.4958G	52.32	74.00	-21.68	3	Horizontal	42	1.60	-
2480MHz	Pass	AV	4.9599G	49.24	54.00	-4.76	3	Vertical	11	3.00	-
2480MHz	Pass	PK	4.96003G	55.04	74.00	-18.96	3	Vertical	11	3.00	-
2480MHz	Pass	AV	4.95993G	40.83	54.00	-13.17	3	Horizontal	10	1.16	-
2480MHz	Pass	PK	4.9592G	49.53	74.00	-24.47	3	Horizontal	10	1.16	-

BT-LE(1Mbps)

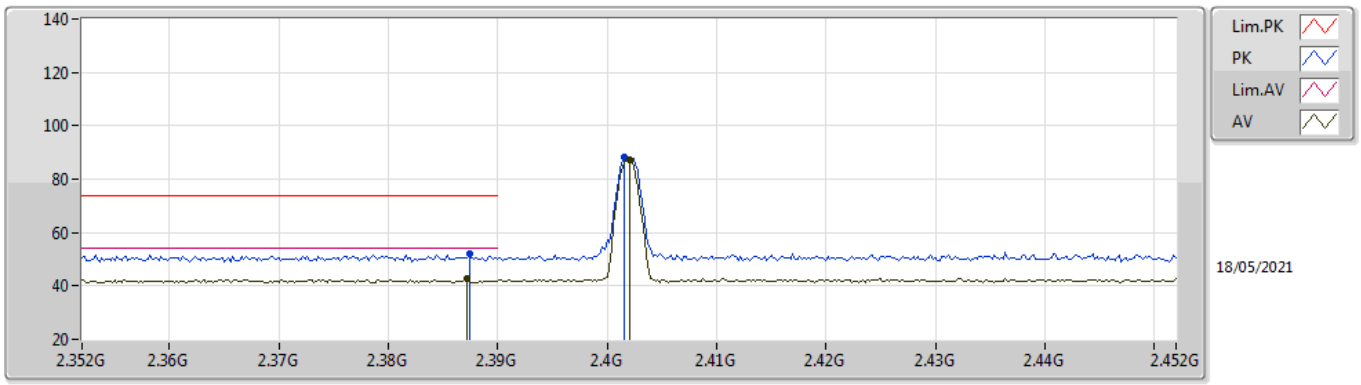
2402MHz_TX



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	2.3882G	42.68	54.00	-11.32	0.56	3	Vertical	319	1.10	-	42.12	27.62	7.25	34.31
AV	2.402G	85.54	Inf	-Inf	0.53	3	Vertical	319	1.10	-	85.01	27.59	7.26	34.32
PK	2.3758G	52.51	74.00	-21.49	0.59	3	Vertical	319	1.10	-	51.92	27.65	7.25	34.31
PK	2.4016G	86.49	Inf	-Inf	0.53	3	Vertical	319	1.10	-	85.96	27.59	7.26	34.32

BT-LE(1Mbps)

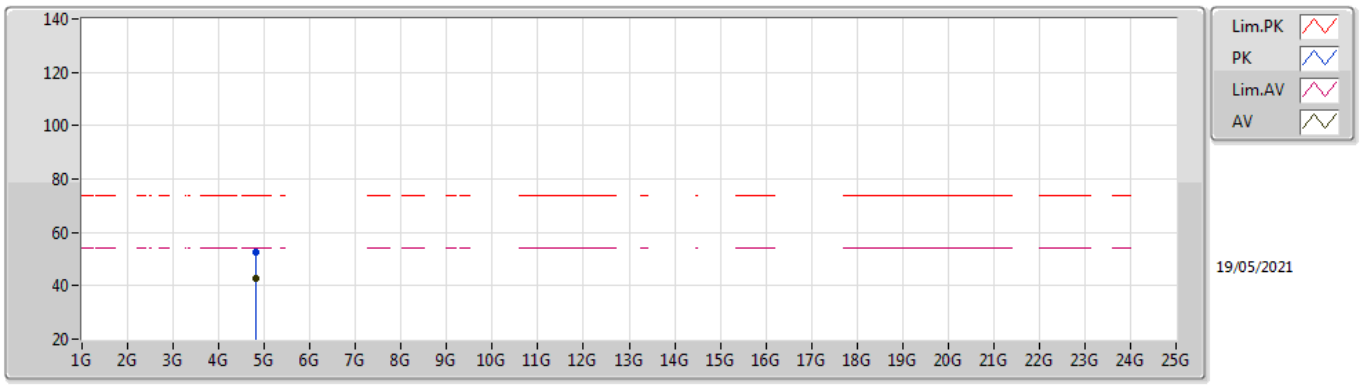
2402MHz_TX



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	2.3872G	42.67	54.00	-11.33	0.57	3	Horizontal	82	1.14	-	42.10	27.63	7.25	34.31
AV	2.402G	87.11	Inf	-Inf	0.53	3	Horizontal	82	1.14	-	86.58	27.59	7.26	34.32
PK	2.3874G	52.23	74.00	-21.77	0.57	3	Horizontal	82	1.14	-	51.66	27.63	7.25	34.31
PK	2.4016G	88.02	Inf	-Inf	0.53	3	Horizontal	82	1.14	-	87.49	27.59	7.26	34.32

BT-LE(1Mbps)

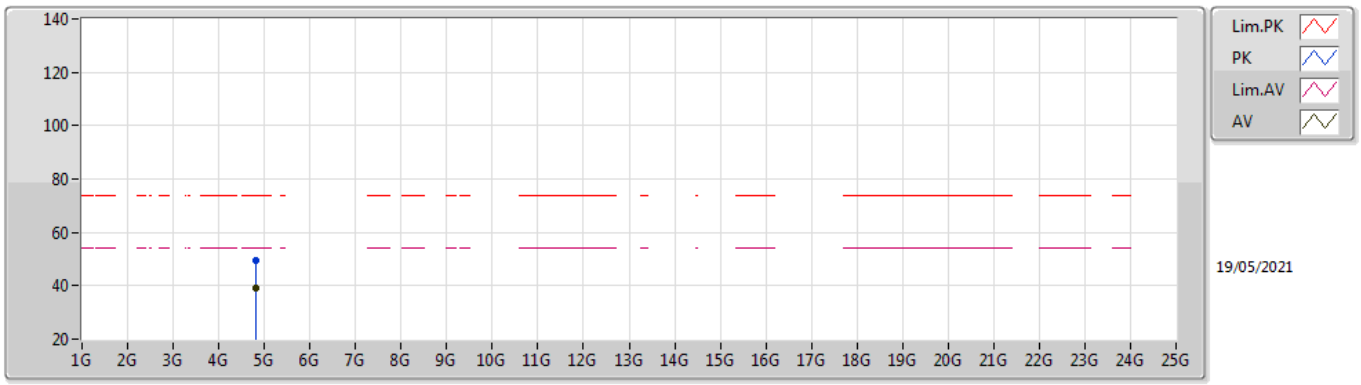
2402MHz_TX



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	4.8039G	42.92	54.00	-11.08	5.53	3	Vertical	11	2.83	-	37.39	30.92	8.90	34.29
PK	4.80393G	52.79	74.00	-21.21	5.53	3	Vertical	11	2.83	-	47.26	30.92	8.90	34.29

BT-LE(1Mbps)

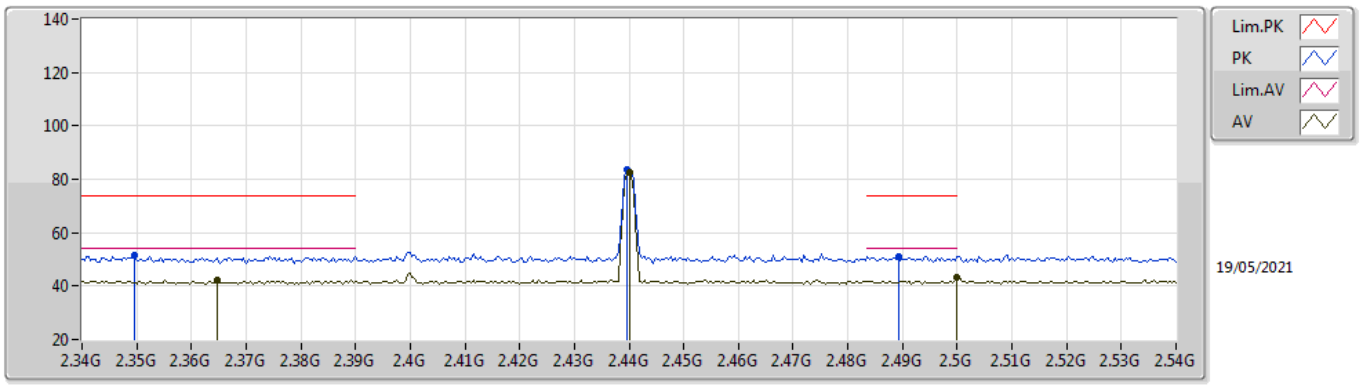
2402MHz_TX



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	4.80394G	39.38	54.00	-14.62	5.53	3	Horizontal	15	1.03	-	33.85	30.92	8.90	34.29
PK	4.80402G	49.72	74.00	-24.28	5.53	3	Horizontal	15	1.03	-	44.19	30.92	8.90	34.29

BT-LE(1Mbps)

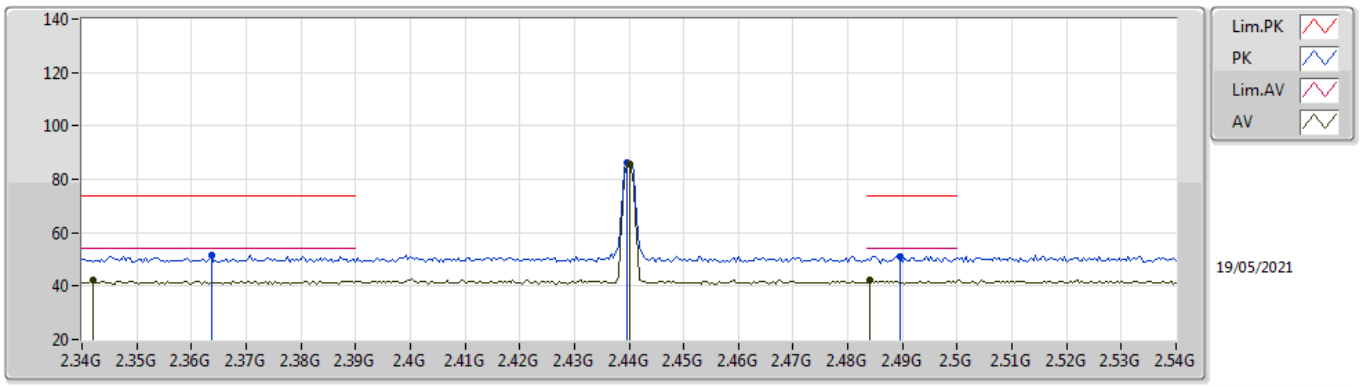
2440MHz_TX



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	2.3648G	42.24	54.00	-11.76	0.60	3	Vertical	310	1.31	-	41.64	27.67	7.24	34.31
AV	2.44G	82.50	Inf	-Inf	0.40	3	Vertical	310	1.31	-	82.10	27.44	7.29	34.33
AV	2.5G	43.49	54.00	-10.51	0.40	3	Vertical	310	1.31	-	43.09	27.40	7.34	34.34
PK	2.3496G	51.37	74.00	-22.63	0.64	3	Vertical	310	1.31	-	50.73	27.70	7.24	34.30
PK	2.4396G	83.46	Inf	-Inf	0.40	3	Vertical	310	1.31	-	83.06	27.44	7.29	34.33
PK	2.4892G	50.95	74.00	-23.05	0.39	3	Vertical	310	1.31	-	50.56	27.40	7.33	34.34

BT-LE(1Mbps)

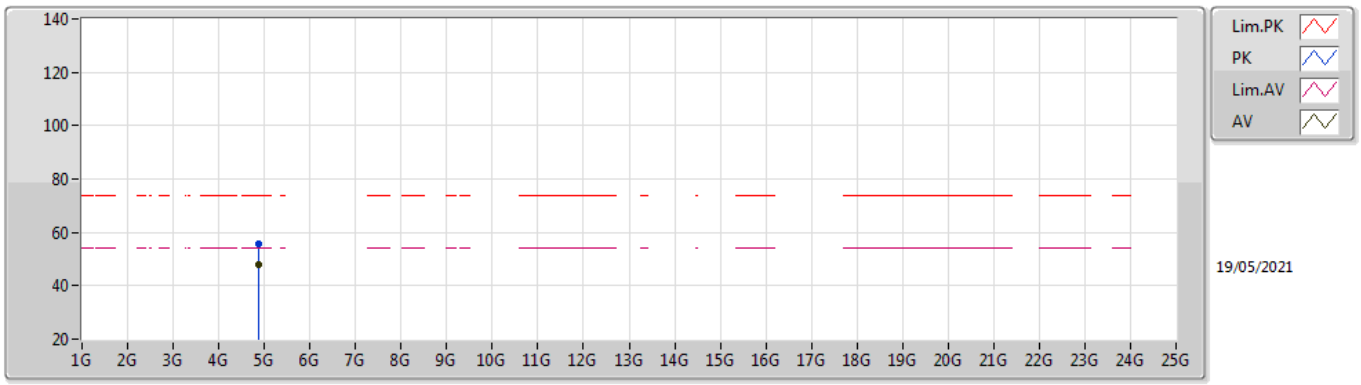
2440MHz_TX



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	2.342G	42.15	54.00	-11.85	0.66	3	Horizontal	92	1.00	-	41.49	27.73	7.23	34.30
AV	2.44G	85.50	Inf	-Inf	0.40	3	Horizontal	92	1.00	-	85.10	27.44	7.29	34.33
AV	2.484G	42.07	54.00	-11.93	0.39	3	Horizontal	92	1.00	-	41.68	27.40	7.33	34.34
PK	2.3636G	51.79	74.00	-22.21	0.60	3	Horizontal	92	1.00	-	51.19	27.67	7.24	34.31
PK	2.4396G	86.43	Inf	-Inf	0.40	3	Horizontal	92	1.00	-	86.03	27.44	7.29	34.33
PK	2.4896G	51.27	74.00	-22.73	0.39	3	Horizontal	92	1.00	-	50.88	27.40	7.33	34.34

BT-LE(1Mbps)

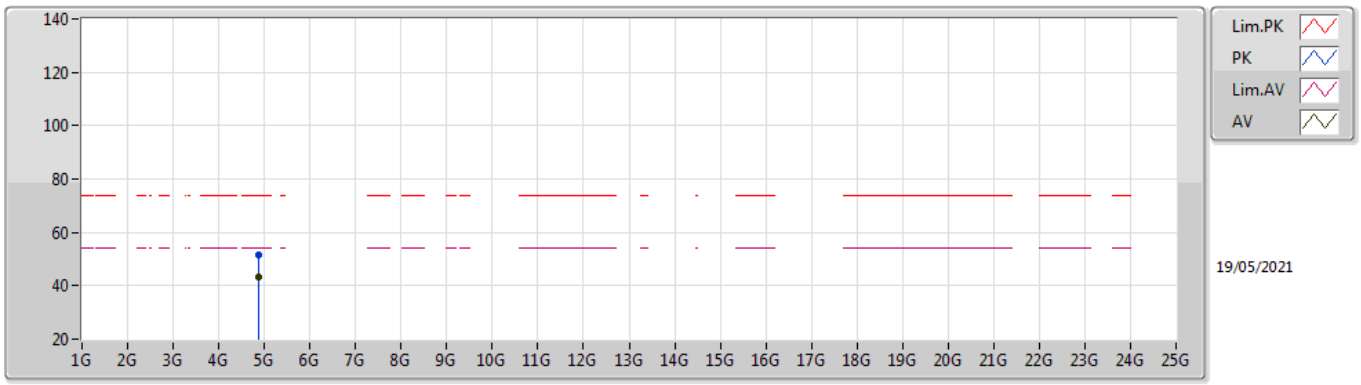
2440MHz_TX



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	4.87997G	47.85	54.00	-6.15	5.74	3	Vertical	11	2.93	-	42.11	31.04	8.96	34.26
PK	4.8799G	55.80	74.00	-18.20	5.74	3	Vertical	11	2.93	-	50.06	31.04	8.96	34.26

BT-LE(1Mbps)

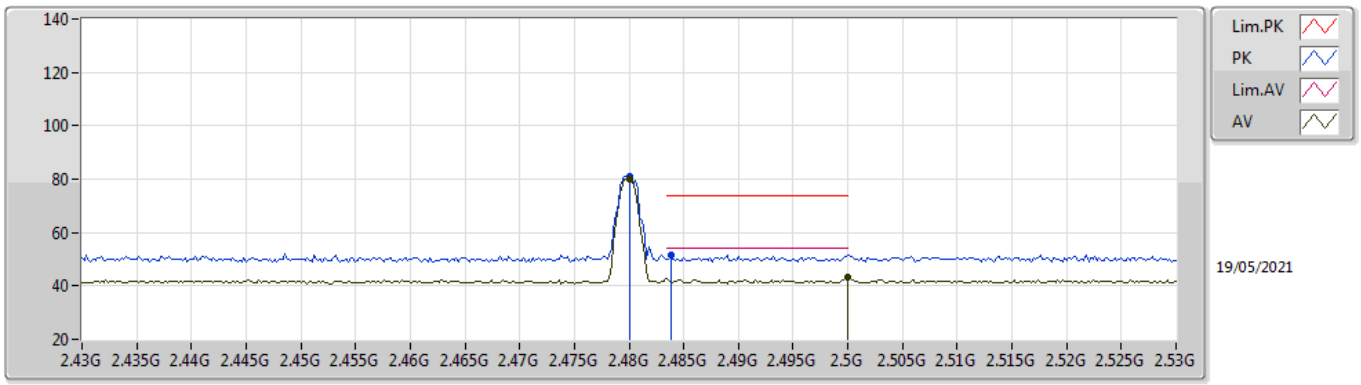
2440MHz_TX



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	4.87942G	43.05	54.00	-10.95	5.74	3	Horizontal	259	1.00	-	37.31	31.04	8.96	34.26
PK	4.88009G	51.40	74.00	-22.60	5.74	3	Horizontal	259	1.00	-	45.66	31.04	8.96	34.26

BT-LE(1Mbps)

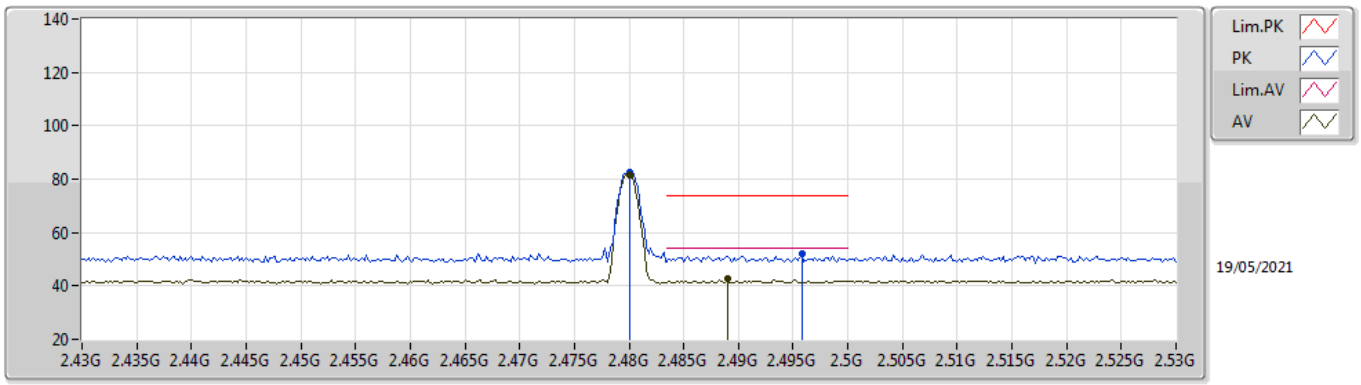
2480MHz_TX



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	80.10	Inf	-Inf	0.38	3	Vertical	310	1.26	-	79.72	27.40	7.32	34.34
AV	2.5G	43.49	54.00	-10.51	0.40	3	Vertical	310	1.26	-	43.09	27.40	7.34	34.34
PK	2.48G	81.10	Inf	-Inf	0.38	3	Vertical	310	1.26	-	80.72	27.40	7.32	34.34
PK	2.4838G	51.58	74.00	-22.42	0.39	3	Vertical	310	1.26	-	51.19	27.40	7.33	34.34

BT-LE(1Mbps)

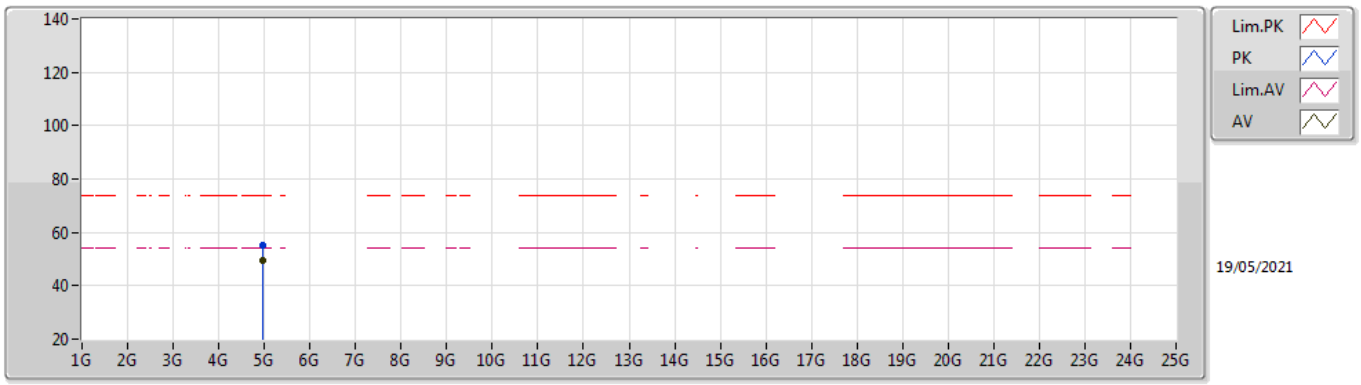
2480MHz_TX



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	81.36	Inf	-Inf	0.38	3	Horizontal	42	1.60	-	80.98	27.40	7.32	34.34
AV	2.489G	42.52	54.00	-11.48	0.39	3	Horizontal	42	1.60	-	42.13	27.40	7.33	34.34
PK	2.48G	82.36	Inf	-Inf	0.38	3	Horizontal	42	1.60	-	81.98	27.40	7.32	34.34
PK	2.4958G	52.32	74.00	-21.68	0.40	3	Horizontal	42	1.60	-	51.92	27.40	7.34	34.34

BT-LE(1Mbps)

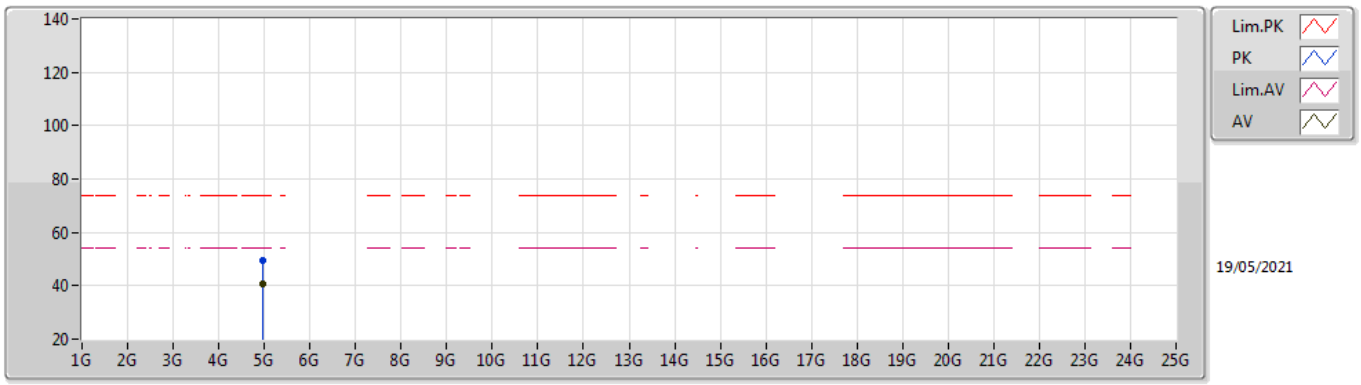
2480MHz_TX



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	49.24	54.00	-4.76	6.01	3	Vertical	11	3.00	-	43.23	31.22	9.02	34.23
PK	4.96003G	55.04	74.00	-18.96	6.01	3	Vertical	11	3.00	-	49.03	31.22	9.02	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	4.95993G	40.83	54.00	-13.17	6.01	3	Horizontal	10	1.16	-	34.82	31.22	9.02	34.23
PK	4.9592G	49.53	74.00	-24.47	6.01	3	Horizontal	10	1.16	-	43.52	31.22	9.02	34.23