FCC Radio Test Report

FCC ID	:	**TVE-240601**
Equipment	:	**Network Security Gateway**
Brand Name	:	**FORTINET**
Model Name	:	**FORTIGATE-200Gxxxxxxxxxx, FortiGate 200Gxxxxxxxxxx, FG-200Gxxxxxxxxxx, FORTIGATE-201Gxxxxxxxxxx, FortiGate 201Gxxxxxxxxxx, FG-201Gxxxxxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes, or marketing purposes only)**
Applicant	:	**Fortinet, Inc. 909 Kifer Road, Sunnyvale, CA, United States, 94086**
Manufacturer	:	**Fortinet, Inc. 909 Kifer Road, Sunnyvale, CA, United States, 94086**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on May 29, 2024, and testing was started from Jul. 04, 2024 and completed on Aug. 19, 2024. 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.

Jackson Tsai

Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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

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PHOTOGRAPHS OF EUT V01

History of this test report

Report No.	Version	Description	Issued Date
FR452212AL	01	Initial issue of report	Sep. 02, 2024

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: Ben Tseng

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(125kbps)	1.0	1TX
2.4-2.4835GHz	BT-LE(500kbps)	1.0	1TX
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 (125kbps/500kbps/1Mbps/2Mbps) modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Wieson	ARY196-0047-014-00	PIFA	MHF1	0.93

Note 1: The EUT has one antenna.

For BT function:

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

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

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From Switching Power Supply			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point

Type of EUT		
☒	Stand-alone	
☐	Combined (EUT where the radio part is fully integrated within another device)	
	Combined Equipment - Brand Name / Model No.:	…
☐	Plug-in radio (EUT intended for a variety of host systems)	
	Host System - Brand Name / Model No.:	…
☐	Other:	

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
BT-LE(125kbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
BT-LE(500kbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
BT-LE(1Mbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
BT-LE(2Mbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

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

1.1.5 Table for Multiple Listing

Model Name	Description
FORTIGATE-200Gxxxxxxxxxx, FortiGate 200Gxxxxxxxxxx, FG-200Gxxxxxxxxxx (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes, or marketing purposes only)	Without Storage
FORTIGATE-201Gxxxxxxxxxx, FortiGate 201Gxxxxxxxxxx, FG-201Gxxxxxxxxxx (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes, or marketing purposes only)	With Storage (1x 480GB SSD)

From the above models, model: FG-201G was selected as representative model for the test and its data was recorded in this report.

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	CO04-HY	Henry Ho	22.5~23.5°C / 51~53%	04/Jul/2024
RF Conducted	TH07-HY	Xun Hsieh	23.9~24.5°C / 55~58%	30/Jul/2024
Radiated	03CH03-HY	Henry Ho	22.2~23.4°C / 50~52%	30/Jul/2024~19/Aug/2024
☐ 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**
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Power Spectral Density	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Test Software Version	Tera Term Version 4.76

Mode	Power Setting
BT-LE(125kbps)	-
2402MHz	8
2440MHz	4
2480MHz	6
BT-LE(500kbps)	-
2402MHz	8
2440MHz	4
2480MHz	6
BT-LE(1Mbps)	-
2402MHz	8
2440MHz	4
2480MHz	6
BT-LE(2Mbps)	-
2402MHz	8
2440MHz	4
2480MHz	6

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	Switching Power Supply 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	Switching Power Supply mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
Worst Planes of EUT			V

2.3 Accessories

Accessories				
Switching Power Supply 1 (Specify 2 qty)	**Brand Name**	FSP	**Model Name**	FSP250-H24-A12
	Manufacturer	FSP Group Inc.		
	Power Rating	I/P: 100 - 240Vac, 3.5A, 50-60Hz O/P: 1) +12.0Vdc, 12.5A Max (Natural convection flow) 1) +12.0Vdc, 20.83A Max (14.0CFM air flow)		
Switching Power Supply 2 (Specify 2 qty)	**Brand Name**	LITEON	**Model Name**	PA-1251-12F1
	Manufacturer	Lite-on Technology Corp.		
	Power Rating	I/P: 100 - 240Vac, 3.5A, 50-60Hz O/P: 250W Max. +12.0Vdc, 20.83A Max (250W with 14.0CFM air flow)		
RJ-45 Cable	**Brand Name**	YIMTEK(穎鎂)	**Model Name**	LAN-66
	Signal Line	2.0 meter, non-shielded cable, w/o ferrite core		
AC Power Cable *2	**Brand Name**	SHEELINE(升林)	**Model Name**	SL-203+SL-3
	1.8 meter, non-shielded cable, w/o ferrite core			
Console Cable	**Brand Name**	FORTINET	**Model Name**	SP-CONSOLE-USB
	Signal Line	1.9 meter, non-shielded cable, w/o ferrite core		

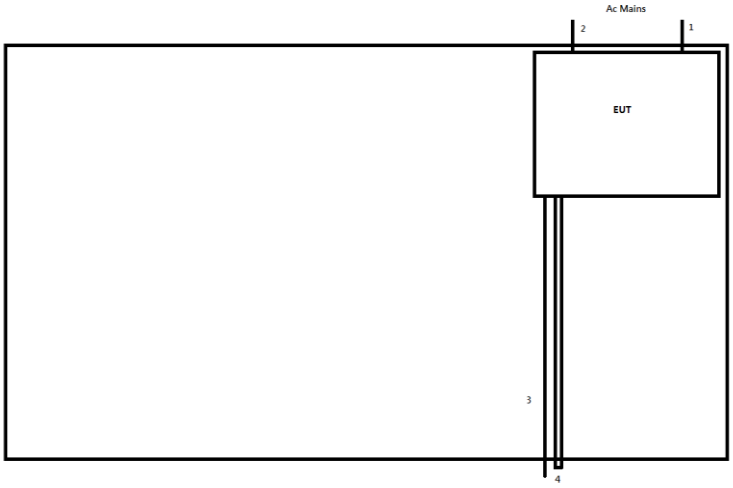
Reminder: Regarding to more detail and other information, please refer to user manual.

2.4 Support Equipment

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	RJ45 Cable	YIMTEK	LAN-66	-	Provided by Customer

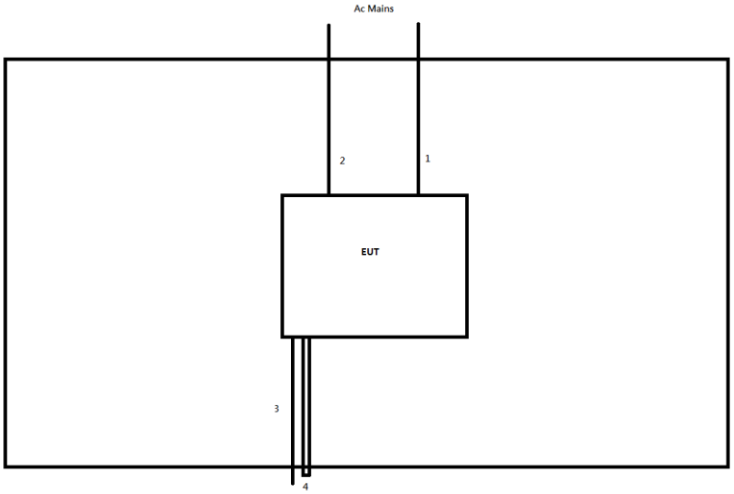
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)
1	Power cord	No	1.8
2	Power cord	No	1.8
3	Console Cable	No	1.9
4	RJ45 Cable	No	2.0

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)
1	Power cord	No	1.8
2	Power cord	No	1.8
3	Console Cable	No	1.9
4	RJ45 Cable	No	2.0

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

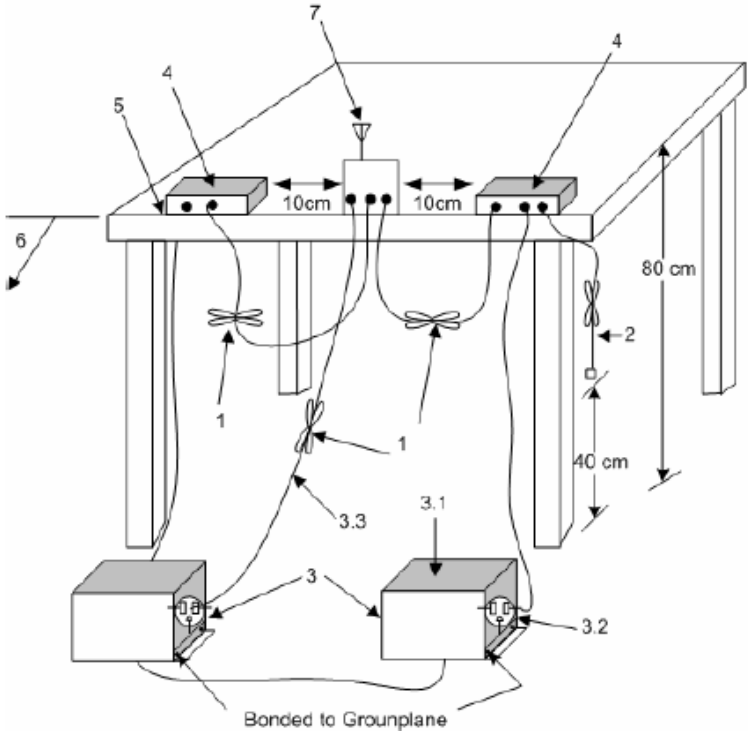
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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

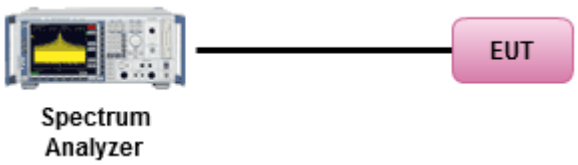
Refer a test equipment and calibration data table in this test report.

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 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

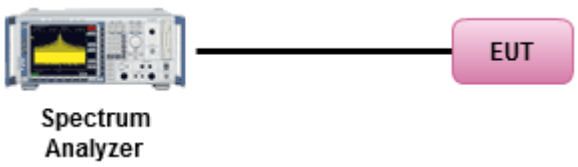
3.4.2 Measuring Instruments

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

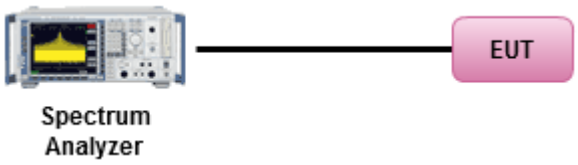
Refer a test equipment and calibration data table in this test report.

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.

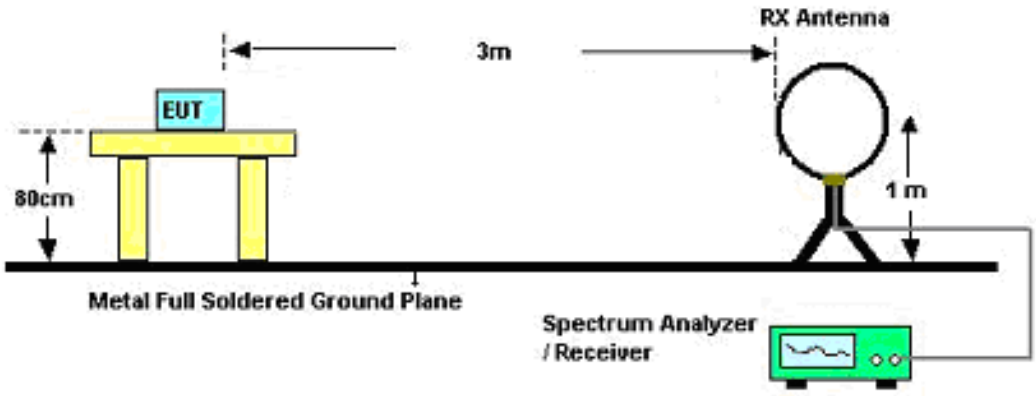
3.6.4 Measurement Results Calculation

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

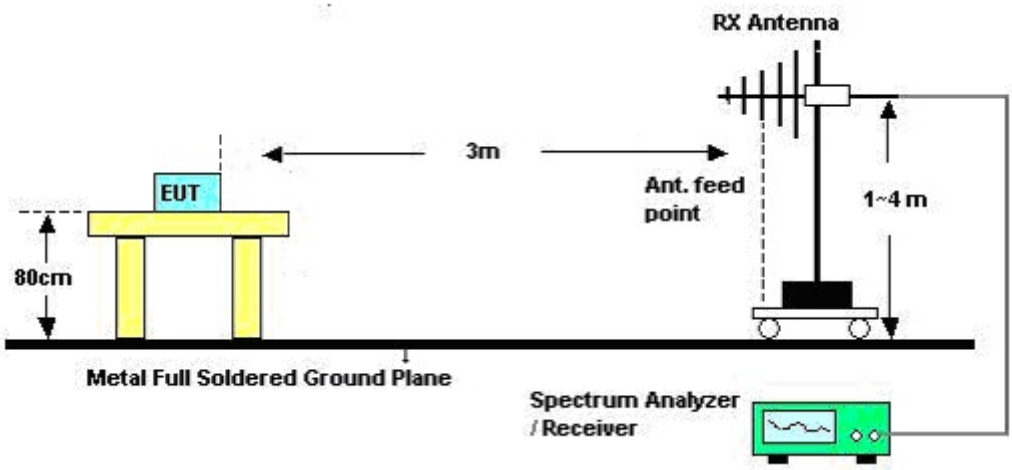
3.6.5 Test Setup

Emissions in Restricted Frequency Bands

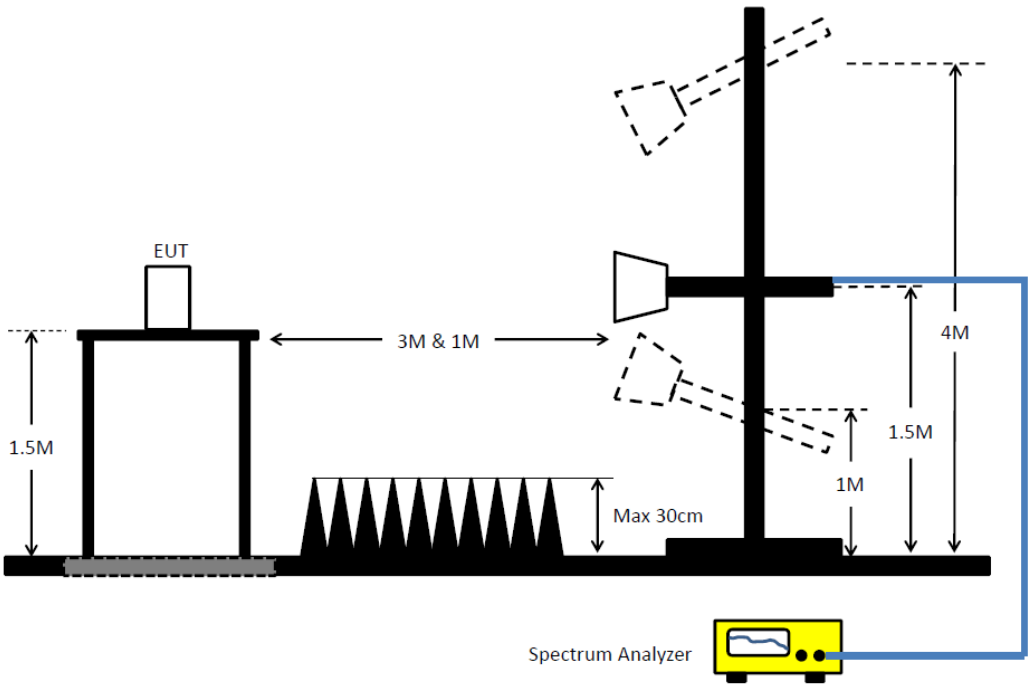
9kHz ~30MHz



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	ESR	102051	9kHz ~ 3.6GHz	17/May/2024	16/May/2025
Two-Line V-Network	R&S	ENV 216	101274	9kHz ~ 30MHz	18/Jun/2024	17/Jun/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9kHz ~ 200MHz	27/Feb/2024	26/Feb/2025
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	18/Oct/2023	17/Oct/2024
Software	Sporton	SENSE-EMI	V5.11.3	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	9kHz~40GHz	02/Feb/2024	01/Feb/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	20/Oct/2023	19/Oct/2024
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	15/Dec/2023	14/Dec/2024
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	15/Dec/2023	14/Dec/2024
SENSE-15247_FS	Sporton	V5.11.18	N/A	N/A	N/A	N/A

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	14/Jul/2024	13/Jul/2025
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	14/Jul/2024	13/Jul/2025
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	03/May/2024	02/May/2025
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	26/Oct/2023	25/Oct/2024
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	19/Mar/2024	18/Mar/2025
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMCI	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	15/Oct/2023	14/Oct/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02267	1GHz~18GHz	04/Oct/2023	03/Oct/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	04/Jun/2024	03/Jun/2025
Amplifier	Aglient	8447D	2944A08033	100kHz ~ 1.3 GHz	14/Sep/2023	13/Sep/2024
Microwave Premplifier	Agilent	8449B	3008A02326	1GHz~26.5GHz	25/Jul/2024	24/Jul/2025
Microwave Premplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	19/Apr/2024	18/Apr/2025
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	12/Jun/2024	11/Jun/2025
RF Cable-R03m	Jye Bao	RG142	03CH03-cable-02	30MHz~1GHz	12/Jun/2024	11/Jun/2025
RF CABLE 5+8m	HUBER+SUHNER	SUOFLEX 104	03CH03-cable-03	1GHz~40GHz	20/Feb/2024	19/Feb/2025
SENSE-15407_FS	Sporton	V5.11	NA	NA	NA	NA

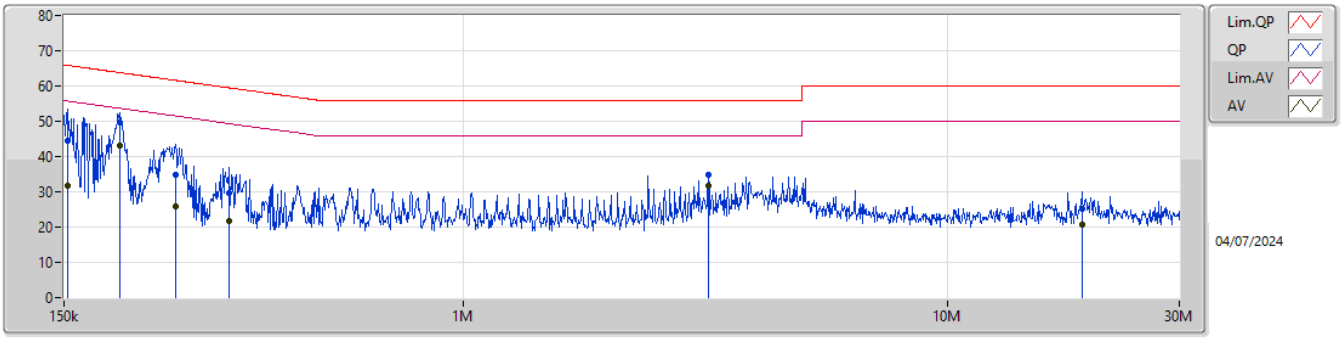
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	195.216k	43.19	53.80	-10.61	Line

Result

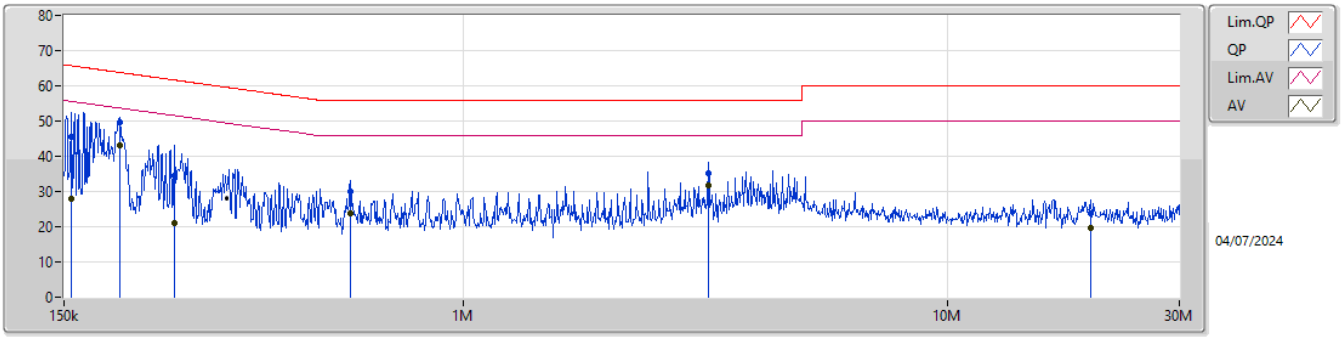
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	152.414k	44.43	65.87	-21.44	Line	-
Mode 1	Pass	AV	152.414k	31.89	55.87	-23.98	Line	-
Mode 1	Pass	QP	195.216k	49.51	63.80	-14.29	Line	-
Mode 1	Pass	AV	195.216k	43.19	53.80	-10.61	Line	-
Mode 1	Pass	QP	255.079k	34.73	61.58	-26.85	Line	-
Mode 1	Pass	AV	255.079k	25.75	51.58	-25.83	Line	-
Mode 1	Pass	QP	329.331k	29.66	59.46	-29.80	Line	-
Mode 1	Pass	AV	329.331k	21.86	49.46	-27.60	Line	-
Mode 1	Pass	QP	3.205M	34.97	56.00	-21.03	Line	-
Mode 1	Pass	AV	3.205M	31.87	46.00	-14.13	Line	-
Mode 1	Pass	QP	18.863M	25.30	60.00	-34.70	Line	-
Mode 1	Pass	AV	18.863M	20.76	50.00	-29.24	Line	-
Mode 1	Pass	QP	154.868k	45.39	65.73	-20.34	Neutral	-
Mode 1	Pass	AV	154.868k	27.79	55.73	-27.94	Neutral	-
Mode 1	Pass	QP	195.216k	49.60	63.80	-14.20	Neutral	-
Mode 1	Pass	AV	195.216k	43.15	53.80	-10.65	Neutral	-
Mode 1	Pass	QP	253.051k	34.44	61.66	-27.22	Neutral	-
Mode 1	Pass	AV	253.051k	20.90	51.66	-30.76	Neutral	-
Mode 1	Pass	QP	585.177k	30.03	56.00	-25.97	Neutral	-
Mode 1	Pass	AV	585.177k	23.87	46.00	-22.13	Neutral	-
Mode 1	Pass	QP	3.205M	35.13	56.00	-20.87	Neutral	-
Mode 1	Pass	AV	3.205M	31.56	46.00	-14.44	Neutral	-
Mode 1	Pass	QP	19.71M	23.64	60.00	-36.36	Neutral	-
Mode 1	Pass	AV	19.71M	19.78	50.00	-30.22	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	152.414k	44.43	65.87	-21.44	19.48	Line	-	24.95	9.66	0.07	9.75
AV	152.414k	31.89	55.87	-23.98	19.48	Line	-	12.41	9.66	0.07	9.75
QP	195.216k	49.51	63.80	-14.29	19.43	Line	-	30.08	9.65	0.09	9.69
AV	195.216k	43.19	53.80	-10.61	19.43	Line	-	23.76	9.65	0.09	9.69
QP	255.079k	34.73	61.58	-26.85	19.46	Line	-	15.27	9.65	0.10	9.71
AV	255.079k	25.75	51.58	-25.83	19.46	Line	-	6.29	9.65	0.10	9.71
QP	329.331k	29.66	59.46	-29.80	19.50	Line	-	10.16	9.65	0.11	9.74
AV	329.331k	21.86	49.46	-27.60	19.50	Line	-	2.36	9.65	0.11	9.74
QP	3.205M	34.97	56.00	-21.03	19.55	Line	-	15.42	9.68	0.08	9.79
AV	3.205M	31.87	46.00	-14.13	19.55	Line	-	12.32	9.68	0.08	9.79
QP	18.863M	25.30	60.00	-34.70	19.62	Line	-	5.68	9.68	0.11	9.83
AV	18.863M	20.76	50.00	-29.24	19.62	Line	-	1.14	9.68	0.11	9.83

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	154.868k	45.39	65.73	-20.34	19.42	Neutral	-	25.97	9.60	0.07	9.75
AV	154.868k	27.79	55.73	-27.94	19.42	Neutral	-	8.37	9.60	0.07	9.75
QP	195.216k	49.60	63.80	-14.20	19.38	Neutral	-	30.22	9.60	0.09	9.69
AV	195.216k	43.15	53.80	-10.65	19.38	Neutral	-	23.77	9.60	0.09	9.69
QP	253.051k	34.44	61.66	-27.22	19.41	Neutral	-	15.03	9.60	0.10	9.71
AV	253.051k	20.90	51.66	-30.76	19.41	Neutral	-	1.49	9.60	0.10	9.71
QP	585.177k	30.03	56.00	-25.97	19.49	Neutral	-	10.54	9.60	0.11	9.78
AV	585.177k	23.87	46.00	-22.13	19.49	Neutral	-	4.38	9.60	0.11	9.78
QP	3.205M	35.13	56.00	-20.87	19.49	Neutral	-	15.64	9.62	0.08	9.79
AV	3.205M	31.56	46.00	-14.44	19.49	Neutral	-	12.07	9.62	0.08	9.79
QP	19.71M	23.64	60.00	-36.36	19.62	Neutral	-	4.02	9.67	0.12	9.83
AV	19.71M	19.78	50.00	-30.22	19.62	Neutral	-	0.16	9.67	0.12	9.83

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)	765k	1.085M	1M09F1D	668.75k	1.084M
BT-LE(2Mbps)	1.328M	2.081M	2M08F1D	1.22M	2.051M
BT-LE(125kbps)	712.5k	1.09M	1M09F1D	691.25k	1.087M
BT-LE(500kbps)	742.5k	1.089M	1M09F1D	711.25k	1.072M

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

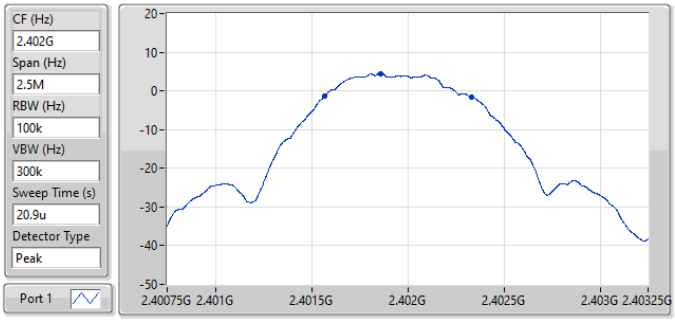
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	765k	1.084M
2440MHz	Pass	500k	685k	1.085M
2480MHz	Pass	500k	668.75k	1.085M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.22M	2.081M
2440MHz	Pass	500k	1.29M	2.051M
2480MHz	Pass	500k	1.328M	2.052M
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	500k	711.25k	1.09M
2440MHz	Pass	500k	712.5k	1.09M
2480MHz	Pass	500k	691.25k	1.087M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	742.5k	1.072M
2440MHz	Pass	500k	737.5k	1.079M
2480MHz	Pass	500k	711.25k	1.089M

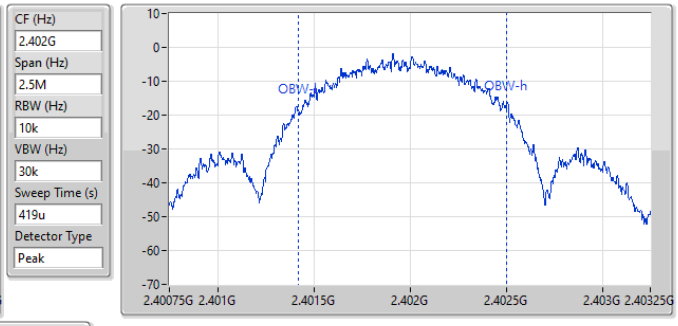
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

2402MHz

30/07/2024



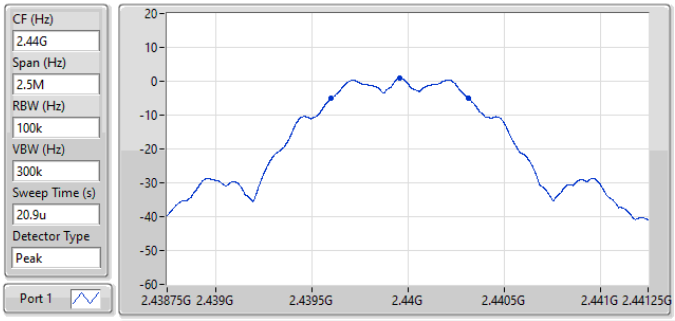


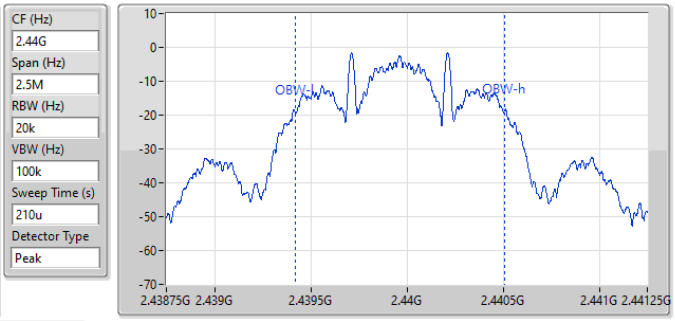
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
765k	2.40157G	2.402335G	1.084M	2.401419G	2.402504G	500k	1

2.4-2.4835GHz_BT-LE(125kbps) **EBW-DTS**

2440MHz

30/07/2024



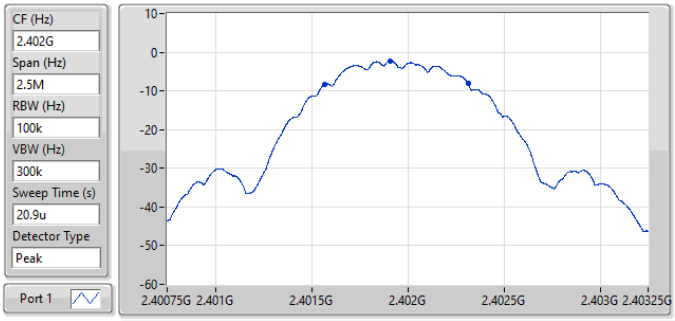


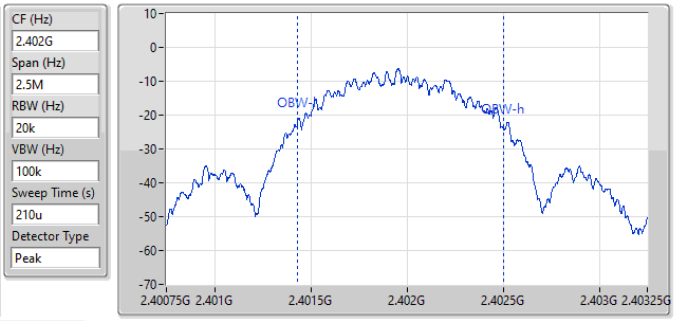
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
712.5k	2.439604G	2.440316G	1.09M	2.439418G	2.440508G	500k	1

2.4-2.4835GHz_BT-LE(500kbps) **EBW-DTS**

2402MHz

30/07/2024



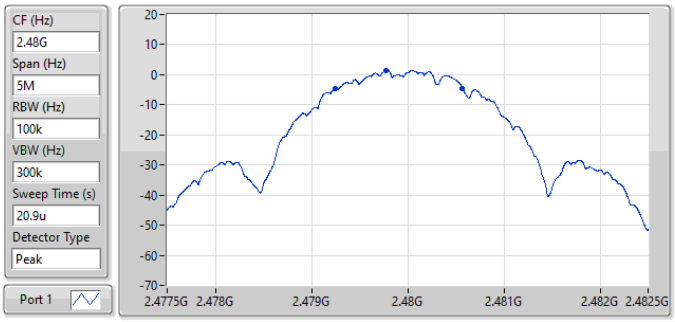


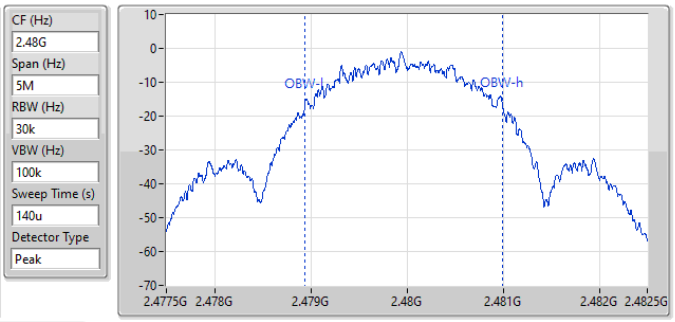
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
742.5k	2.401571G	2.402314G	1.072M	2.401431G	2.402503G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

2480MHz

30/07/2024





6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.328M	2.479243G	2.48057G	2.052M	2.478941G	2.480993G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	6.92	0.00492
BT-LE(2Mbps)	6.90	0.00490
BT-LE(125kbps)	6.91	0.00491
BT-LE(500kbps)	6.91	0.00491

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	0.93	6.92	30.00
2440MHz	Pass	0.93	4.29	30.00
2480MHz	Pass	0.93	5.40	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	0.93	6.90	30.00
2440MHz	Pass	0.93	4.28	30.00
2480MHz	Pass	0.93	5.39	30.00
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	0.93	6.91	30.00
2440MHz	Pass	0.93	4.36	30.00
2480MHz	Pass	0.93	5.44	30.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	0.93	6.91	30.00
2440MHz	Pass	0.93	4.28	30.00
2480MHz	Pass	0.93	5.38	30.00

DG = Directional Gain; Port X = Port X output power;
Inf = There's no restriction for the limit.

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-7.20
BT-LE(2Mbps)	-9.17
BT-LE(125kbps)	0.78
BT-LE(500kbps)	-7.58

RBW = 3kHz;

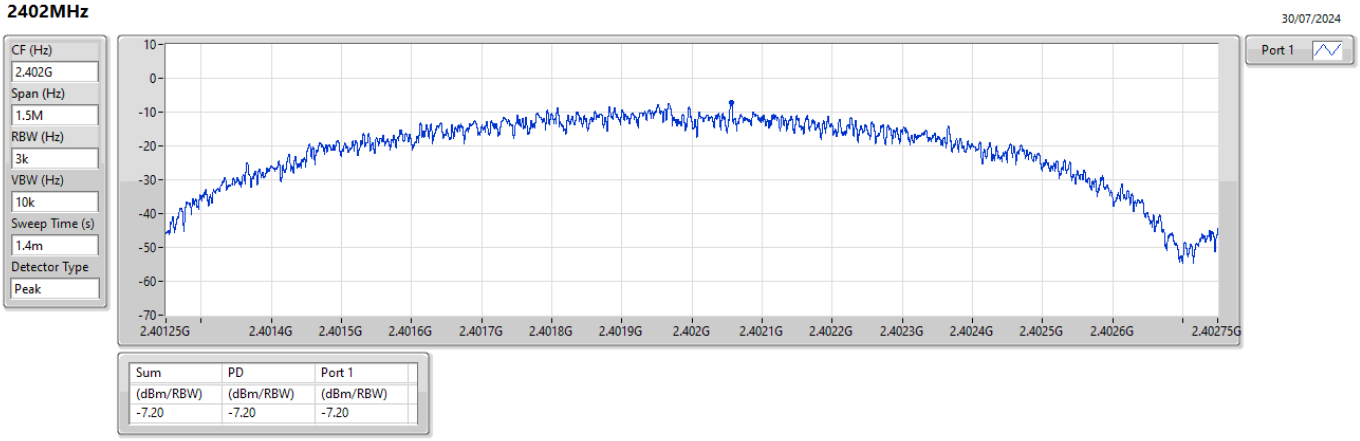
Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	0.93	-7.20	8.00
2440MHz	Pass	0.93	-10.22	8.00
2480MHz	Pass	0.93	-8.95	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	0.93	-9.17	8.00
2440MHz	Pass	0.93	-12.66	8.00
2480MHz	Pass	0.93	-11.85	8.00
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	0.93	0.78	8.00
2440MHz	Pass	0.93	-1.83	8.00
2480MHz	Pass	0.93	-0.75	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	0.93	-7.63	8.00
2440MHz	Pass	0.93	-9.76	8.00
2480MHz	Pass	0.93	-7.58	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;
Inf = There's no restriction for the limit.

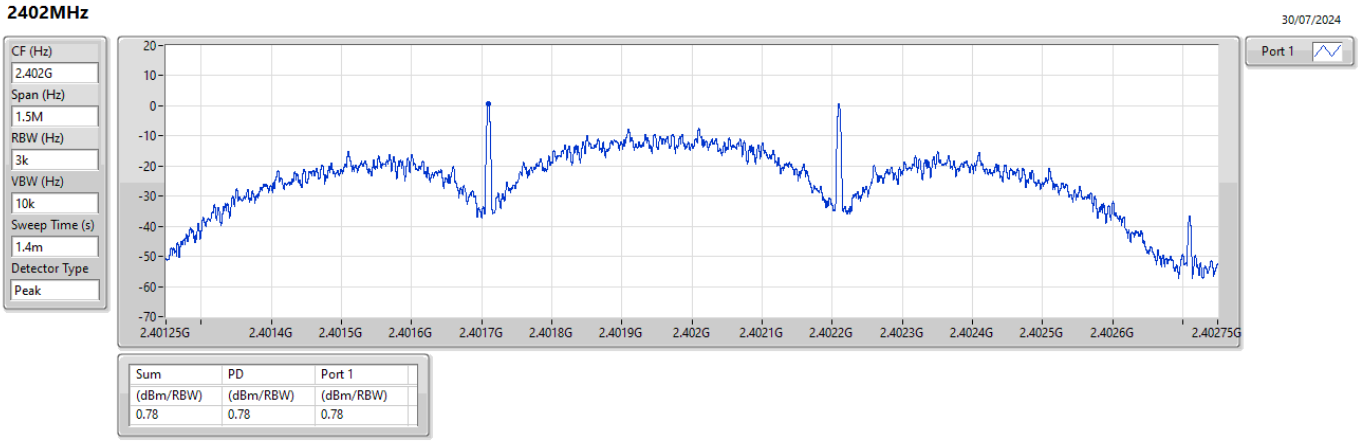
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2402MHz



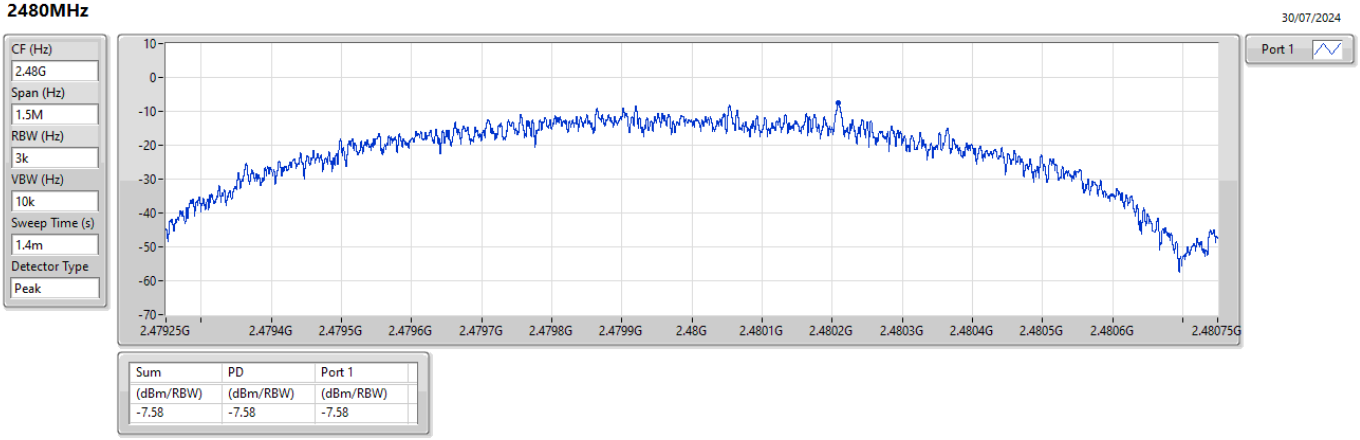
2.4-2.4835GHz_BT-LE(125kbps) **PSD**

2402MHz



2.4-2.4835GHz_BT-LE(500kbps) **PSD**

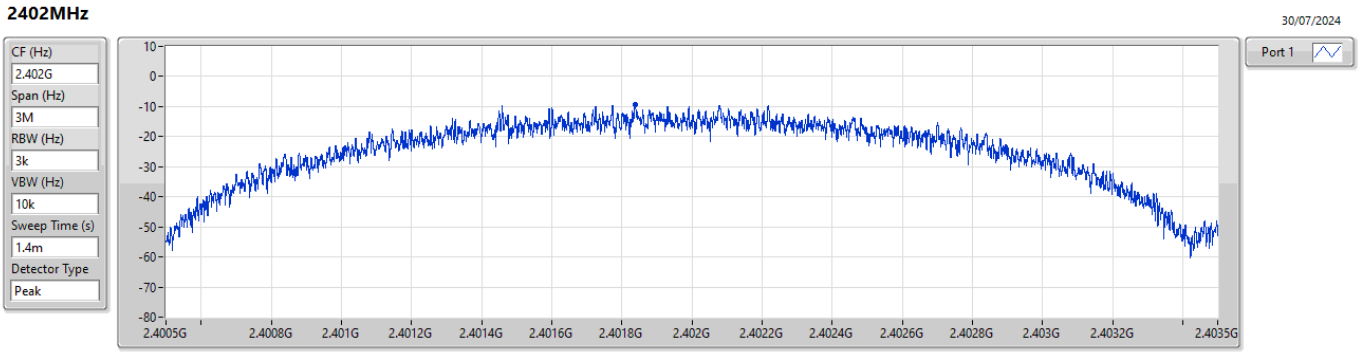
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.58	-7.58	-7.58

2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.17	-9.17	-9.17

Summary

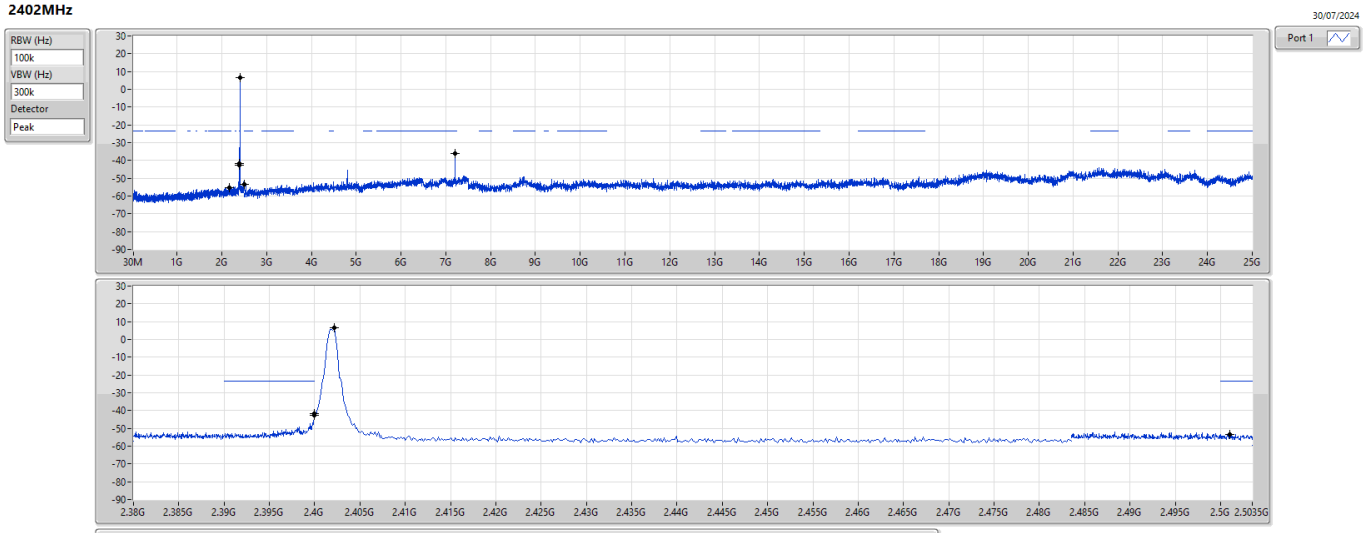
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.40217G	6.37	-23.63	2.17203G	-55.14	2.4G	-41.95	2.4G	-42.43	2.50098G	-53.36	7.20527G	-36.17	1
BT-LE(2Mbps)	Pass	2.402G	4.58	-25.42	1.77605G	-55.19	2.4G	-27.22	2.4G	-25.57	2.50114G	-51.96	7.20527G	-39.04	1
BT-LE(125kbps)	Pass	2.40167G	3.24	-26.76	2.3048G	-54.65	2.4G	-43.21	2.4G	-42.40	2.5033G	-51.99	7.20527G	-36.45	1
BT-LE(500kbps)	Pass	2.40167G	6.30	-23.70	1.75255G	-54.80	2.4G	-42.61	2.4G	-42.16	2.50126G	-51.88	7.20527G	-38.40	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40217G	6.37	-23.63	2.17203G	-55.14	2.4G	-41.95	2.4G	-42.43	2.50098G	-53.36	7.20527G	-36.17	1
2440MHz	Pass	2.40217G	6.37	-23.63	2.30363G	-54.65	2.39724G	-52.57	2.4G	-56.74	2.50258G	-52.35	21.60584G	-44.18	1
2480MHz	Pass	2.40217G	6.37	-23.63	2.00048G	-55.14	2.39932G	-52.37	2.4G	-56.80	2.5001G	-51.62	21.4568G	-44.27	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	4.58	-25.42	1.77605G	-55.19	2.4G	-27.22	2.4G	-25.57	2.50114G	-51.96	7.20527G	-39.04	1
2440MHz	Pass	2.402G	4.58	-25.42	1.91118G	-55.02	2.39844G	-52.55	2.4G	-55.74	2.50282G	-52.09	21.58053G	-44.03	1
2480MHz	Pass	2.402G	4.58	-25.42	2.1779G	-54.57	2.39624G	-52.49	2.4G	-57.63	2.50246G	-52.39	21.59178G	-43.91	1
BT-LE(125kbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40167G	3.24	-26.76	2.3048G	-54.65	2.4G	-43.21	2.4G	-42.40	2.5033G	-51.99	7.20527G	-36.45	1
2440MHz	Pass	2.40167G	3.24	-26.76	2.30128G	-54.16	2.39228G	-51.74	2.4G	-57.11	2.50246G	-52.00	21.8758G	-44.21	1
2480MHz	Pass	2.40167G	3.24	-26.76	1.65973G	-54.73	2.3906G	-52.53	2.4G	-55.60	2.50122G	-52.87	21.48492G	-44.55	1
BT-LE(500kbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40167G	6.30	-23.70	1.75255G	-54.80	2.4G	-42.61	2.4G	-42.16	2.50126G	-51.88	7.20527G	-38.40	1
2440MHz	Pass	2.40167G	6.30	-23.70	1.76548G	-54.74	2.3914G	-52.07	2.4G	-56.86	2.50018G	-52.31	21.58334G	-44.27	1
2480MHz	Pass	2.40167G	6.30	-23.70	2.08625G	-54.63	2.39804G	-52.74	2.4G	-56.88	2.50086G	-51.99	21.56366G	-44.45	1

2.4-2.4835GHz_BT-LE(1Mbps) **CSENdB-DTS**

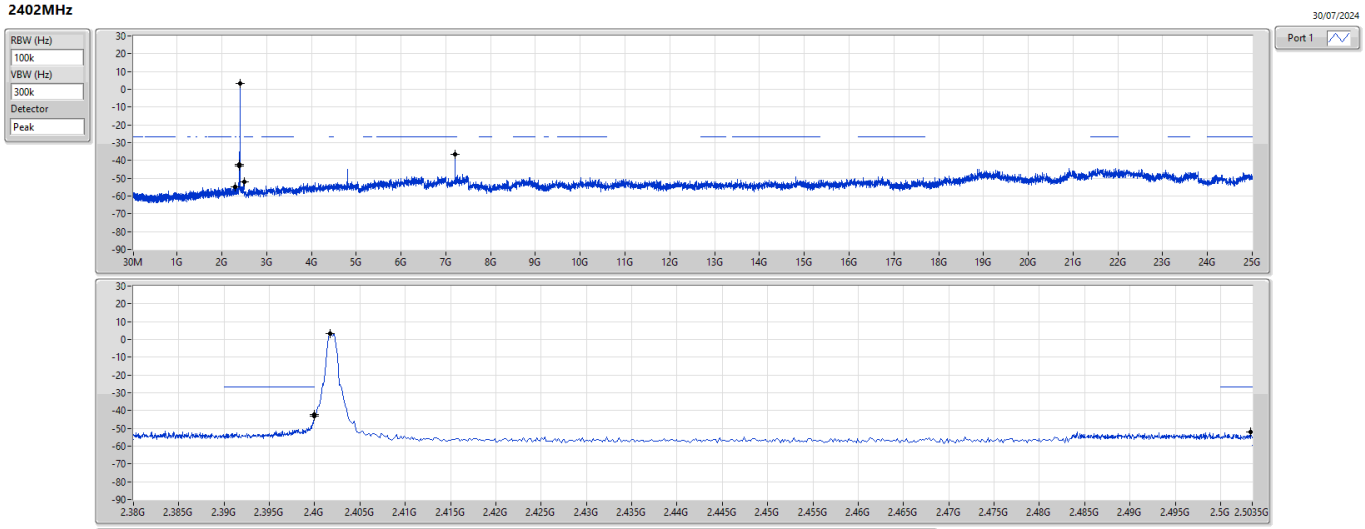
2402MHz



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
2.40217G	6.37	-23.63	2.17203G	-55.14	2.4G	-41.95	2.4G	-42.43	2.50098G	-53.36	7.20527G	-36.17	1

2.4-2.4835GHz_BT-LE(125kbps) **CSENdB-DTS**

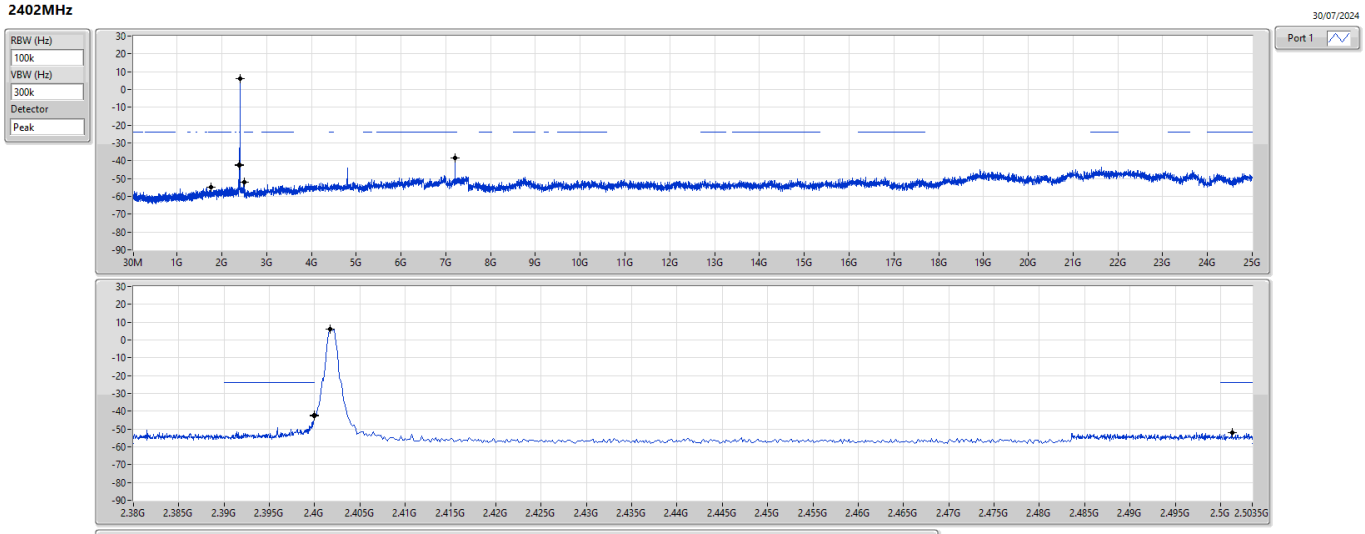
2402MHz



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
2.40167G	3.24	-26.76	2.3048G	-54.65	2.4G	-43.21	2.4G	-42.40	2.5033G	-51.99	7.20527G	-36.45	1

2.4-2.4835GHz_BT-LE(500kbps) **CSENdB-DTS**

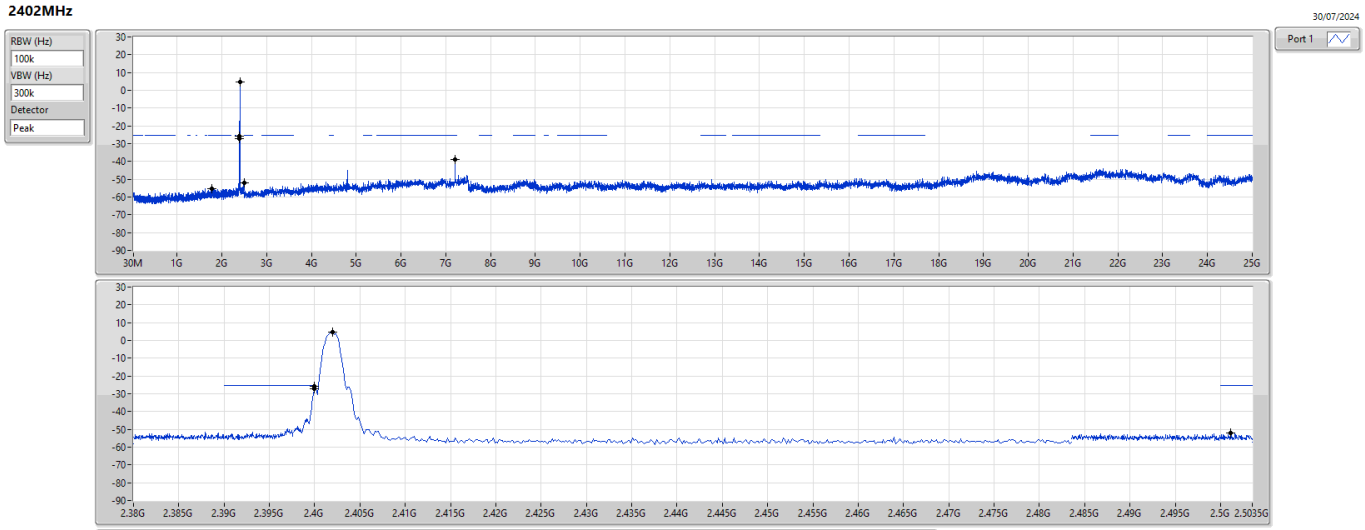
2402MHz



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
2.40167G	6.30	-23.70	1.75255G	-54.80	2.4G	-42.61	2.4G	-42.16	2.50126G	-51.88	7.20527G	-38.40	1

2.4-2.4835GHz_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
2.402G	4.58	-25.42	1.77605G	-55.19	2.4G	-27.22	2.4G	-25.57	2.50114G	-51.96	7.20527G	-39.04	1

Summary

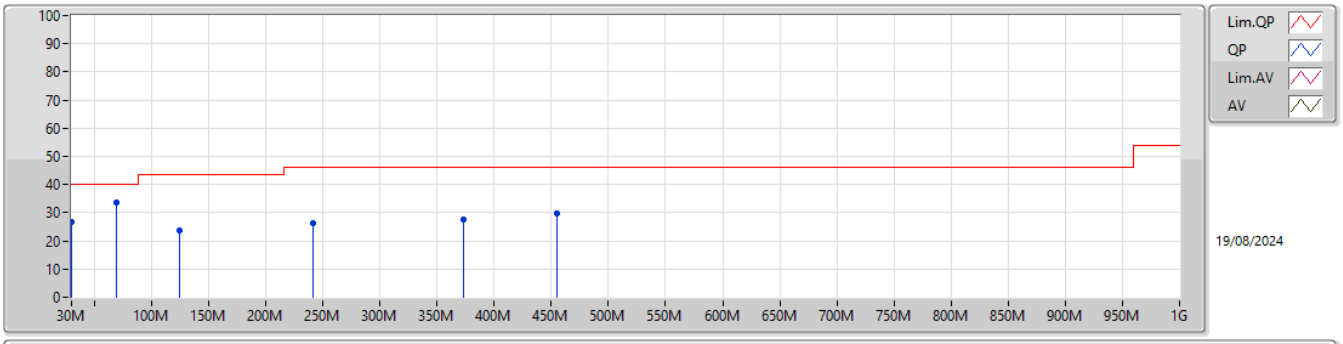
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	PK	68.8M	33.67	40.00	-6.33	3	Vertical	360	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	PK	30M	26.51	40.00	-13.49	3	Vertical	360	1.00
2402MHz	Pass	PK	68.8M	33.67	40.00	-6.33	3	Vertical	360	1.00
2402MHz	Pass	PK	125.06M	23.75	43.50	-19.75	3	Vertical	360	1.00
2402MHz	Pass	PK	241.46M	26.27	46.00	-19.73	3	Vertical	360	1.00
2402MHz	Pass	PK	373.38M	27.43	46.00	-18.57	3	Vertical	360	1.00
2402MHz	Pass	PK	454.86M	29.68	46.00	-16.32	3	Vertical	360	1.00
2402MHz	Pass	PK	30M	25.75	40.00	-14.25	3	Horizontal	0	1.00
2402MHz	Pass	PK	68.8M	31.45	40.00	-8.55	3	Horizontal	0	1.00
2402MHz	Pass	PK	127M	25.60	43.50	-17.90	3	Horizontal	0	1.00
2402MHz	Pass	PK	249.22M	27.67	46.00	-18.33	3	Horizontal	0	1.00
2402MHz	Pass	PK	340.4M	27.48	46.00	-18.52	3	Horizontal	0	1.00
2402MHz	Pass	PK	452.92M	29.23	46.00	-16.77	3	Horizontal	0	1.00

2.4-2.4835GHz_BT-LE(2Mbps)

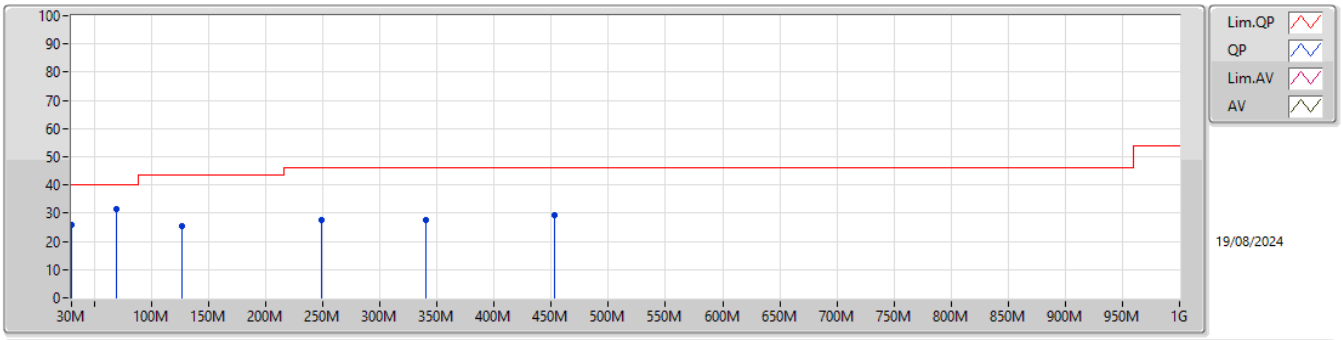
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	30M	26.51	40.00	-13.49	-3.86	3	Vertical	360	1.00	30.37	23.49	0.24	27.59
PK	68.8M	33.67	40.00	-6.33	-15.41	3	Vertical	360	1.00	49.08	11.50	0.63	27.54
PK	125.06M	23.75	43.50	-19.75	-8.58	3	Vertical	360	1.00	32.33	17.43	1.33	27.34
PK	241.46M	26.27	46.00	-19.73	-8.26	3	Vertical	360	1.00	34.53	16.66	2.14	27.06
PK	373.38M	27.43	46.00	-18.57	-4.62	3	Vertical	360	1.00	32.05	20.02	2.59	27.23
PK	454.86M	29.68	46.00	-16.32	-2.48	3	Vertical	360	1.00	32.16	22.41	2.93	27.82

2.4-2.4835GHz_BT-LE(2Mbps)

2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	30M	25.75	40.00	-14.25	-3.86	3	Horizontal	0	1.00	29.61	23.49	0.24	27.59
PK	68.8M	31.45	40.00	-8.55	-15.41	3	Horizontal	0	1.00	46.86	11.50	0.63	27.54
PK	127M	25.60	43.50	-17.90	-8.56	3	Horizontal	0	1.00	34.16	17.43	1.35	27.34
PK	249.22M	27.67	46.00	-18.33	-7.38	3	Horizontal	0	1.00	35.05	17.51	2.16	27.05
PK	340.4M	27.48	46.00	-18.52	-5.59	3	Horizontal	0	1.00	33.07	19.03	2.45	27.07
PK	452.92M	29.23	46.00	-16.77	-2.55	3	Horizontal	0	1.00	31.78	22.34	2.92	27.81

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	7.32042G	53.64	54.00	-0.36	3	Vertical	187	1.30
BT-LE(125kbps)	Pass	AV	7.32041G	53.03	54.00	-0.97	3	Vertical	191	1.00
BT-LE(500kbps)	Pass	AV	7.32039G	53.67	54.00	-0.33	3	Vertical	189	1.02
BT-LE(2Mbps)	Pass	AV	7.32106G	53.04	54.00	-0.96	3	Vertical	179	1.37

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.367G	45.68	54.00	-8.32	3	Vertical	205	1.00
2402MHz_TX	Pass	AV	2.402G	96.36	Inf	-Inf	3	Vertical	205	1.00
2402MHz_TX	Pass	PK	2.3572G	57.31	74.00	-16.69	3	Vertical	205	1.00
2402MHz_TX	Pass	PK	2.4018G	98.01	Inf	-Inf	3	Vertical	205	1.00
2402MHz_TX	Pass	AV	2.3588G	45.70	54.00	-8.30	3	Horizontal	114	2.80
2402MHz_TX	Pass	AV	2.402G	95.97	Inf	-Inf	3	Horizontal	114	2.80
2402MHz_TX	Pass	PK	2.3862G	57.65	74.00	-16.35	3	Horizontal	114	2.80
2402MHz_TX	Pass	PK	2.4018G	97.61	Inf	-Inf	3	Horizontal	114	2.80
2402MHz_TX	Pass	AV	4.80432G	34.64	54.00	-19.36	3	Vertical	203	2.00
2402MHz_TX	Pass	PK	4.80342G	47.55	74.00	-26.45	3	Vertical	203	2.00
2402MHz_TX	Pass	AV	4.80372G	33.77	54.00	-20.23	3	Horizontal	205	1.20
2402MHz_TX	Pass	PK	4.80004G	46.90	74.00	-27.10	3	Horizontal	205	1.20
2440MHz_TX	Pass	AV	2.3692G	45.67	54.00	-8.33	3	Vertical	202	1.47
2440MHz_TX	Pass	AV	2.44G	92.80	Inf	-Inf	3	Vertical	202	1.47
2440MHz_TX	Pass	AV	2.49G	46.42	54.00	-7.58	3	Vertical	202	1.47
2440MHz_TX	Pass	PK	2.3684G	58.44	74.00	-15.56	3	Vertical	202	1.47
2440MHz_TX	Pass	PK	2.4396G	94.30	Inf	-Inf	3	Vertical	202	1.47
2440MHz_TX	Pass	PK	2.4964G	57.72	74.00	-16.28	3	Vertical	202	1.47
2440MHz_TX	Pass	AV	2.3596G	45.67	54.00	-8.33	3	Horizontal	113	2.70
2440MHz_TX	Pass	AV	2.44G	92.42	Inf	-Inf	3	Horizontal	113	2.70
2440MHz_TX	Pass	AV	2.5G	46.44	54.00	-7.56	3	Horizontal	113	2.70
2440MHz_TX	Pass	PK	2.3648G	57.39	74.00	-16.61	3	Horizontal	113	2.70
2440MHz_TX	Pass	PK	2.4404G	93.95	Inf	-Inf	3	Horizontal	113	2.70
2440MHz_TX	Pass	PK	2.4956G	58.69	74.00	-15.31	3	Horizontal	113	2.70
2440MHz_TX	Pass	AV	4.87944G	33.25	54.00	-20.75	3	Vertical	13	1.50
2440MHz_TX	Pass	AV	7.32042G	53.64	54.00	-0.36	3	Vertical	187	1.30
2440MHz_TX	Pass	PK	4.87632G	47.91	74.00	-26.09	3	Vertical	13	1.50
2440MHz_TX	Pass	PK	7.31922G	63.24	74.00	-10.76	3	Vertical	187	1.30
2440MHz_TX	Pass	AV	4.88024G	33.23	54.00	-20.77	3	Horizontal	192	1.50
2440MHz_TX	Pass	AV	7.32046G	49.89	54.00	-4.11	3	Horizontal	230	1.07
2440MHz_TX	Pass	PK	4.87208G	47.09	74.00	-26.91	3	Horizontal	192	1.50
2440MHz_TX	Pass	PK	7.31916G	60.16	74.00	-13.84	3	Horizontal	230	1.07
2480MHz_TX	Pass	AV	2.48G	90.83	Inf	-Inf	3	Vertical	202	1.82
2480MHz_TX	Pass	AV	2.4835G	47.23	54.00	-6.77	3	Vertical	202	1.82
2480MHz_TX	Pass	PK	2.4802G	92.41	Inf	-Inf	3	Vertical	202	1.82
2480MHz_TX	Pass	PK	2.4864G	58.40	74.00	-15.60	3	Vertical	202	1.82
2480MHz_TX	Pass	AV	2.48G	91.27	Inf	-Inf	3	Horizontal	112	2.62
2480MHz_TX	Pass	AV	2.4835G	47.31	54.00	-6.69	3	Horizontal	112	2.62
2480MHz_TX	Pass	PK	2.4798G	92.81	Inf	-Inf	3	Horizontal	112	2.62
2480MHz_TX	Pass	PK	2.4898G	58.74	74.00	-15.26	3	Horizontal	112	2.62
2480MHz_TX	Pass	AV	4.96004G	34.90	54.00	-19.10	3	Vertical	192	2.37
2480MHz_TX	Pass	AV	7.4404G	53.42	54.00	-0.58	3	Vertical	178	1.01
2480MHz_TX	Pass	PK	4.96052G	47.94	74.00	-26.06	3	Vertical	192	2.37
2480MHz_TX	Pass	PK	7.43924G	63.51	74.00	-10.49	3	Vertical	178	1.01
2480MHz_TX	Pass	AV	4.9506G	33.57	54.00	-20.43	3	Horizontal	190	1.50
2480MHz_TX	Pass	AV	7.43934G	49.89	54.00	-4.11	3	Horizontal	234	2.23
2480MHz_TX	Pass	PK	4.96856G	47.64	74.00	-26.36	3	Horizontal	190	1.50
2480MHz_TX	Pass	PK	7.4391G	60.07	74.00	-13.93	3	Horizontal	234	2.23
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.366G	45.69	54.00	-8.31	3	Vertical	204	1.00
2402MHz_TX	Pass	AV	2.402G	94.77	Inf	-Inf	3	Vertical	204	1.00
2402MHz_TX	Pass	PK	2.3592G	58.37	74.00	-15.63	3	Vertical	204	1.00
2402MHz_TX	Pass	PK	2.4016G	98.20	Inf	-Inf	3	Vertical	204	1.00
2402MHz_TX	Pass	AV	2.3648G	45.69	54.00	-8.31	3	Horizontal	114	2.80
2402MHz_TX	Pass	AV	2.402G	94.36	Inf	-Inf	3	Horizontal	114	2.80
2402MHz_TX	Pass	PK	2.3684G	57.68	74.00	-16.32	3	Horizontal	114	2.80
2402MHz_TX	Pass	PK	2.4016G	97.78	Inf	-Inf	3	Horizontal	114	2.80
2402MHz_TX	Pass	AV	4.78504G	33.90	54.00	-20.10	3	Vertical	2	1.86
2402MHz_TX	Pass	PK	4.79184G	50.79	74.00	-23.21	3	Vertical	2	1.86
2402MHz_TX	Pass	AV	4.7876G	35.28	54.00	-18.72	3	Horizontal	334	1.42

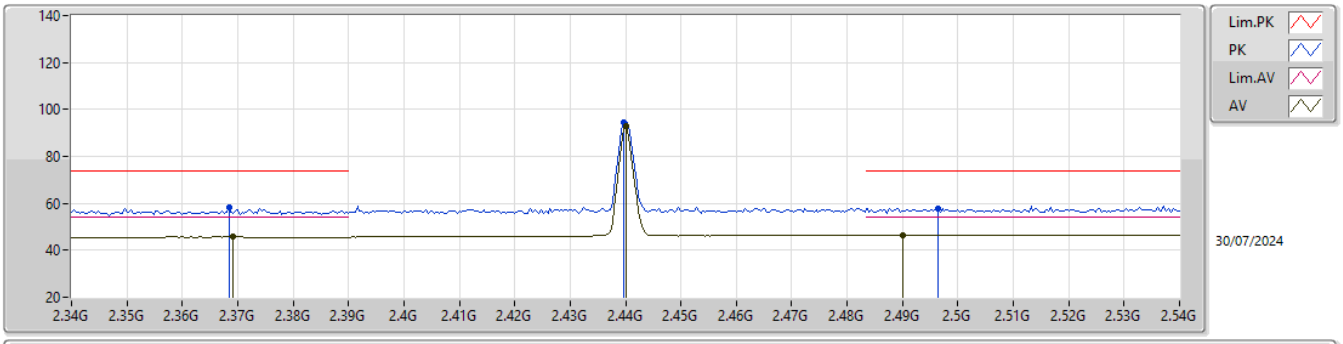
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2402MHz_TX	Pass	PK	4.81544G	48.00	74.00	-26.00	3	Horizontal	334	1.42
2440MHz_TX	Pass	AV	2.3612G	45.69	54.00	-8.31	3	Vertical	203	1.06
2440MHz_TX	Pass	AV	2.44G	92.77	Inf	-Inf	3	Vertical	203	1.06
2440MHz_TX	Pass	AV	2.5G	46.47	54.00	-7.53	3	Vertical	203	1.06
2440MHz_TX	Pass	PK	2.3484G	57.41	74.00	-16.59	3	Vertical	203	1.06
2440MHz_TX	Pass	PK	2.4396G	94.41	Inf	-Inf	3	Vertical	203	1.06
2440MHz_TX	Pass	PK	2.4844G	57.63	74.00	-16.37	3	Vertical	203	1.06
2440MHz_TX	Pass	AV	2.3584G	45.68	54.00	-8.32	3	Horizontal	113	2.69
2440MHz_TX	Pass	AV	2.44G	92.92	Inf	-Inf	3	Horizontal	113	2.69
2440MHz_TX	Pass	AV	2.5G	46.53	54.00	-7.47	3	Horizontal	113	2.69
2440MHz_TX	Pass	PK	2.3408G	57.46	74.00	-16.54	3	Horizontal	113	2.69
2440MHz_TX	Pass	PK	2.4404G	94.57	Inf	-Inf	3	Horizontal	113	2.69
2440MHz_TX	Pass	PK	2.4912G	58.00	74.00	-16.00	3	Horizontal	113	2.69
2440MHz_TX	Pass	AV	4.8804G	33.07	54.00	-20.93	3	Vertical	220	2.37
2440MHz_TX	Pass	AV	7.32106G	53.04	54.00	-0.96	3	Vertical	179	1.37
2440MHz_TX	Pass	PK	4.88007G	47.35	74.00	-26.65	3	Vertical	220	2.37
2440MHz_TX	Pass	PK	7.32136G	63.23	74.00	-10.77	3	Vertical	179	1.37
2440MHz_TX	Pass	AV	4.88037G	33.01	54.00	-20.99	3	Horizontal	219	1.50
2440MHz_TX	Pass	AV	7.32087G	49.00	54.00	-5.00	3	Horizontal	225	1.14
2440MHz_TX	Pass	PK	4.87984G	47.71	74.00	-26.29	3	Horizontal	219	1.50
2440MHz_TX	Pass	PK	7.32147G	60.83	74.00	-13.17	3	Horizontal	225	1.14
2480MHz_TX	Pass	AV	2.48G	91.15	Inf	-Inf	3	Vertical	170	1.78
2480MHz_TX	Pass	AV	2.4835G	47.36	54.00	-6.64	3	Vertical	170	1.78
2480MHz_TX	Pass	PK	2.4802G	92.89	Inf	-Inf	3	Vertical	170	1.78
2480MHz_TX	Pass	PK	2.4874G	57.96	74.00	-16.04	3	Vertical	170	1.78
2480MHz_TX	Pass	AV	2.48G	89.91	Inf	-Inf	3	Horizontal	327	1.10
2480MHz_TX	Pass	AV	2.4835G	47.10	54.00	-6.90	3	Horizontal	327	1.10
2480MHz_TX	Pass	PK	2.4798G	91.71	Inf	-Inf	3	Horizontal	327	1.10
2480MHz_TX	Pass	PK	2.4894G	58.47	74.00	-15.53	3	Horizontal	327	1.10
2480MHz_TX	Pass	AV	4.96052G	34.00	54.00	-20.00	3	Vertical	192	2.18
2480MHz_TX	Pass	AV	7.43876G	52.41	54.00	-1.59	3	Vertical	189	1.02
2480MHz_TX	Pass	PK	4.95972G	48.46	74.00	-25.54	3	Vertical	192	2.18
2480MHz_TX	Pass	PK	7.44144G	62.93	74.00	-11.07	3	Vertical	189	1.02
2480MHz_TX	Pass	AV	4.95897G	33.22	54.00	-20.78	3	Horizontal	201	1.01
2480MHz_TX	Pass	AV	7.44087G	47.75	54.00	-6.25	3	Horizontal	234	2.19
2480MHz_TX	Pass	PK	4.95975G	47.66	74.00	-26.34	3	Horizontal	201	1.01
2480MHz_TX	Pass	PK	7.44149G	59.94	74.00	-14.06	3	Horizontal	234	2.19
BT-LE(125kbps)	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.366G	45.60	54.00	-8.40	3	Vertical	193	1.15
2402MHz_TX	Pass	AV	2.402G	96.38	Inf	-Inf	3	Vertical	193	1.15
2402MHz_TX	Pass	PK	2.3734G	57.93	74.00	-16.07	3	Vertical	193	1.15
2402MHz_TX	Pass	PK	2.4018G	98.20	Inf	-Inf	3	Vertical	193	1.15
2402MHz_TX	Pass	AV	2.3596G	45.60	54.00	-8.40	3	Horizontal	114	2.72
2402MHz_TX	Pass	AV	2.402G	95.84	Inf	-Inf	3	Horizontal	114	2.72
2402MHz_TX	Pass	PK	2.3864G	57.73	74.00	-16.27	3	Horizontal	114	2.72
2402MHz_TX	Pass	PK	2.4018G	97.62	Inf	-Inf	3	Horizontal	114	2.72
2402MHz_TX	Pass	AV	4.81104G	33.14	54.00	-20.86	3	Vertical	204	1.89
2402MHz_TX	Pass	PK	4.79328G	47.35	74.00	-26.65	3	Vertical	204	1.89
2402MHz_TX	Pass	AV	4.81264G	33.05	54.00	-20.95	3	Horizontal	334	1.49
2402MHz_TX	Pass	PK	4.78824G	47.43	74.00	-26.57	3	Horizontal	334	1.49
2440MHz_TX	Pass	AV	2.3588G	45.66	54.00	-8.34	3	Vertical	203	1.06
2440MHz_TX	Pass	AV	2.44G	92.74	Inf	-Inf	3	Vertical	203	1.06
2440MHz_TX	Pass	AV	2.4896G	46.45	54.00	-7.55	3	Vertical	203	1.06
2440MHz_TX	Pass	PK	2.37G	57.74	74.00	-16.26	3	Vertical	203	1.06
2440MHz_TX	Pass	PK	2.4404G	94.39	Inf	-Inf	3	Vertical	203	1.06
2440MHz_TX	Pass	PK	2.4856G	58.12	74.00	-15.88	3	Vertical	203	1.06
2440MHz_TX	Pass	AV	2.36G	45.67	54.00	-8.33	3	Horizontal	113	2.69
2440MHz_TX	Pass	AV	2.44G	92.93	Inf	-Inf	3	Horizontal	113	2.69
2440MHz_TX	Pass	AV	2.4944G	46.49	54.00	-7.51	3	Horizontal	113	2.69
2440MHz_TX	Pass	PK	2.3608G	58.17	74.00	-15.83	3	Horizontal	113	2.69
2440MHz_TX	Pass	PK	2.4404G	94.60	Inf	-Inf	3	Horizontal	113	2.69
2440MHz_TX	Pass	PK	2.4924G	58.55	74.00	-15.45	3	Horizontal	113	2.69

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2440MHz_TX	Pass	AV	4.87924G	33.04	54.00	-20.96	3	Vertical	200	1.39
2440MHz_TX	Pass	AV	7.32041G	53.03	54.00	-0.97	3	Vertical	191	1.00
2440MHz_TX	Pass	PK	4.87925G	47.41	74.00	-26.59	3	Vertical	200	1.39
2440MHz_TX	Pass	PK	7.31925G	63.62	74.00	-10.38	3	Vertical	191	1.00
2440MHz_TX	Pass	AV	4.87917G	32.98	54.00	-21.02	3	Horizontal	215	1.48
2440MHz_TX	Pass	AV	7.32022G	49.54	54.00	-4.46	3	Horizontal	226	1.15
2440MHz_TX	Pass	PK	4.87902G	47.27	74.00	-26.73	3	Horizontal	215	1.48
2440MHz_TX	Pass	PK	7.32061G	61.28	74.00	-12.72	3	Horizontal	226	1.15
2480MHz_TX	Pass	AV	2.48G	91.18	Inf	-Inf	3	Vertical	170	1.78
2480MHz_TX	Pass	AV	2.4835G	47.35	54.00	-6.65	3	Vertical	170	1.78
2480MHz_TX	Pass	PK	2.4798G	92.90	Inf	-Inf	3	Vertical	170	1.78
2480MHz_TX	Pass	PK	2.4902G	58.07	74.00	-15.93	3	Vertical	170	1.78
2480MHz_TX	Pass	AV	2.48G	90.00	Inf	-Inf	3	Horizontal	328	1.11
2480MHz_TX	Pass	AV	2.4835G	47.06	54.00	-6.94	3	Horizontal	328	1.11
2480MHz_TX	Pass	PK	2.4798G	91.75	Inf	-Inf	3	Horizontal	328	1.11
2480MHz_TX	Pass	PK	2.484G	58.33	74.00	-15.67	3	Horizontal	328	1.11
2480MHz_TX	Pass	AV	4.96005G	34.71	54.00	-19.29	3	Vertical	194	2.49
2480MHz_TX	Pass	AV	7.4404G	51.96	54.00	-2.04	3	Vertical	197	1.25
2480MHz_TX	Pass	PK	4.96047G	48.47	74.00	-25.53	3	Vertical	194	2.49
2480MHz_TX	Pass	PK	7.43929G	62.73	74.00	-11.27	3	Vertical	197	1.25
2480MHz_TX	Pass	AV	4.96008G	33.09	54.00	-20.91	3	Horizontal	154	1.50
2480MHz_TX	Pass	AV	7.44023G	48.28	54.00	-5.72	3	Horizontal	234	2.12
2480MHz_TX	Pass	PK	4.96045G	47.35	74.00	-26.65	3	Horizontal	154	1.50
2480MHz_TX	Pass	PK	7.44064G	60.06	74.00	-13.94	3	Horizontal	234	2.12
BT-LE(500kbps)	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.3588G	45.59	54.00	-8.41	3	Vertical	193	1.15
2402MHz_TX	Pass	AV	2.402G	96.53	Inf	-Inf	3	Vertical	193	1.15
2402MHz_TX	Pass	PK	2.3858G	57.35	74.00	-16.65	3	Vertical	193	1.15
2402MHz_TX	Pass	PK	2.4018G	98.20	Inf	-Inf	3	Vertical	193	1.15
2402MHz_TX	Pass	AV	2.3598G	45.59	54.00	-8.41	3	Horizontal	326	1.14
2402MHz_TX	Pass	AV	2.402G	94.84	Inf	-Inf	3	Horizontal	326	1.14
2402MHz_TX	Pass	PK	2.3536G	57.92	74.00	-16.08	3	Horizontal	326	1.14
2402MHz_TX	Pass	PK	2.4018G	96.43	Inf	-Inf	3	Horizontal	326	1.14
2402MHz_TX	Pass	AV	4.81096G	33.13	54.00	-20.87	3	Vertical	203	1.49
2402MHz_TX	Pass	PK	4.8044G	47.62	74.00	-26.38	3	Vertical	203	1.49
2402MHz_TX	Pass	AV	4.81112G	33.03	54.00	-20.97	3	Horizontal	335	1.50
2402MHz_TX	Pass	PK	4.78808G	47.82	74.00	-26.18	3	Horizontal	335	1.50
2440MHz_TX	Pass	AV	2.3628G	45.69	54.00	-8.31	3	Vertical	203	1.50
2440MHz_TX	Pass	AV	2.44G	92.44	Inf	-Inf	3	Vertical	203	1.50
2440MHz_TX	Pass	AV	2.5G	46.43	54.00	-7.57	3	Vertical	203	1.50
2440MHz_TX	Pass	PK	2.3604G	57.16	74.00	-16.84	3	Vertical	203	1.50
2440MHz_TX	Pass	PK	2.4396G	93.96	Inf	-Inf	3	Vertical	203	1.50
2440MHz_TX	Pass	PK	2.4992G	58.30	74.00	-15.70	3	Vertical	203	1.50
2440MHz_TX	Pass	AV	2.3596G	45.67	54.00	-8.33	3	Horizontal	113	2.68
2440MHz_TX	Pass	AV	2.44G	93.06	Inf	-Inf	3	Horizontal	113	2.68
2440MHz_TX	Pass	AV	2.4904G	46.42	54.00	-7.58	3	Horizontal	113	2.68
2440MHz_TX	Pass	PK	2.3868G	57.61	74.00	-16.39	3	Horizontal	113	2.68
2440MHz_TX	Pass	PK	2.4404G	94.57	Inf	-Inf	3	Horizontal	113	2.68
2440MHz_TX	Pass	PK	2.4976G	58.23	74.00	-15.77	3	Horizontal	113	2.68
2440MHz_TX	Pass	AV	4.87975G	33.38	54.00	-20.62	3	Vertical	202	1.61
2440MHz_TX	Pass	AV	7.32039G	53.67	54.00	-0.33	3	Vertical	189	1.02
2440MHz_TX	Pass	PK	4.87945G	47.35	74.00	-26.65	3	Vertical	202	1.61
2440MHz_TX	Pass	PK	7.32065G	63.82	74.00	-10.18	3	Vertical	189	1.02
2440MHz_TX	Pass	AV	4.87944G	33.02	54.00	-20.98	3	Horizontal	207	1.50
2440MHz_TX	Pass	AV	7.32008G	49.61	54.00	-4.39	3	Horizontal	225	1.00
2440MHz_TX	Pass	PK	4.88011G	48.02	74.00	-25.98	3	Horizontal	207	1.50
2440MHz_TX	Pass	PK	7.31908G	60.81	74.00	-13.19	3	Horizontal	225	1.00
2480MHz_TX	Pass	AV	2.48G	91.08	Inf	-Inf	3	Vertical	170	1.79
2480MHz_TX	Pass	AV	2.4835G	47.27	54.00	-6.73	3	Vertical	170	1.79
2480MHz_TX	Pass	PK	2.4802G	92.65	Inf	-Inf	3	Vertical	170	1.79
2480MHz_TX	Pass	PK	2.4988G	59.05	74.00	-14.95	3	Vertical	170	1.79
2480MHz_TX	Pass	AV	2.48G	90.08	Inf	-Inf	3	Horizontal	328	1.10

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2480MHz_TX	Pass	AV	2.4835G	47.06	54.00	-6.94	3	Horizontal	328	1.10
2480MHz_TX	Pass	PK	2.4802G	91.70	Inf	-Inf	3	Horizontal	328	1.10
2480MHz_TX	Pass	PK	2.497G	59.41	74.00	-14.59	3	Horizontal	328	1.10
2480MHz_TX	Pass	AV	4.95989G	34.89	54.00	-19.11	3	Vertical	193	2.54
2480MHz_TX	Pass	AV	7.4404G	53.13	54.00	-0.87	3	Vertical	179	1.00
2480MHz_TX	Pass	PK	4.95971G	48.84	74.00	-25.16	3	Vertical	193	2.54
2480MHz_TX	Pass	PK	7.43914G	63.18	74.00	-10.82	3	Vertical	179	1.00
2480MHz_TX	Pass	AV	4.9599G	33.46	54.00	-20.54	3	Horizontal	224	1.77
2480MHz_TX	Pass	AV	7.44023G	47.92	54.00	-6.08	3	Horizontal	217	1.14
2480MHz_TX	Pass	PK	4.96013G	47.44	74.00	-26.56	3	Horizontal	224	1.77
2480MHz_TX	Pass	PK	7.44062G	59.44	74.00	-14.56	3	Horizontal	217	1.14

2.4-2.4835GHz_BT-LE(1Mbps)

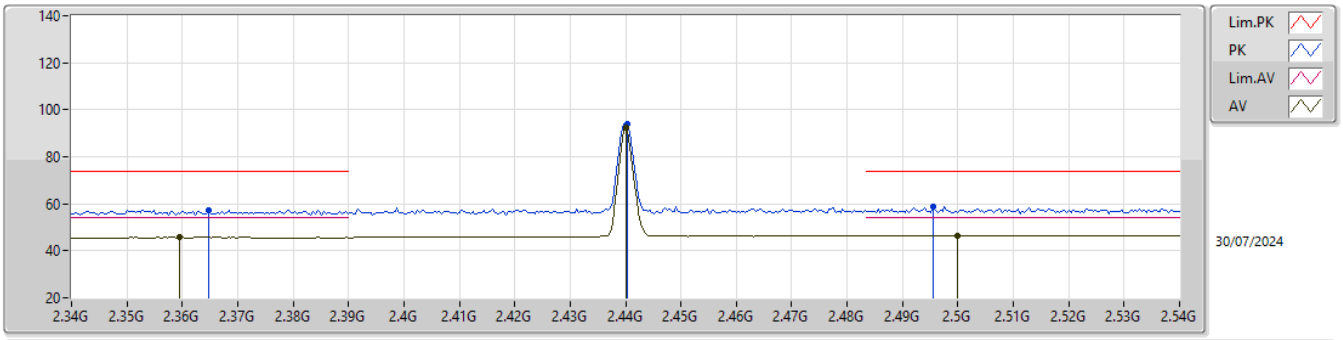
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3692G	45.67	54.00	-8.33	32.58	3	Vertical	202	1.47	13.09	27.20	5.38	-
AV	2.44G	92.80	Inf	-Inf	33.06	3	Vertical	202	1.47	59.74	27.60	5.46	-
AV	2.49G	46.42	54.00	-7.58	33.32	3	Vertical	202	1.47	13.10	27.80	5.52	-
PK	2.3684G	58.44	74.00	-15.56	32.58	3	Vertical	202	1.47	25.86	27.20	5.38	-
PK	2.4396G	94.30	Inf	-Inf	33.06	3	Vertical	202	1.47	61.24	27.60	5.46	-
PK	2.4964G	57.72	74.00	-16.28	33.33	3	Vertical	202	1.47	24.39	27.80	5.53	-

2.4-2.4835GHz_BT-LE(1Mbps)

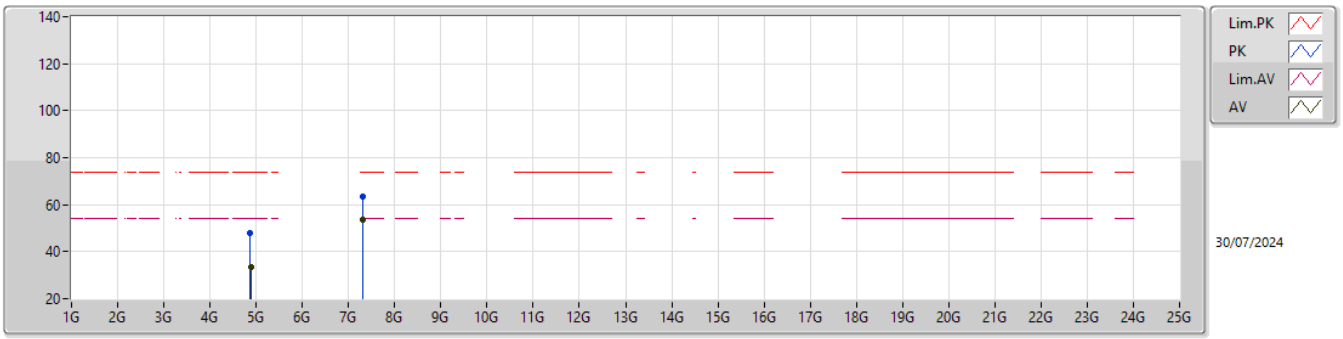
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3596G	45.67	54.00	-8.33	32.57	3	Horizontal	113	2.70	13.10	27.20	5.37	-
AV	2.44G	92.42	Inf	-Inf	33.06	3	Horizontal	113	2.70	59.36	27.60	5.46	-
AV	2.5G	46.44	54.00	-7.56	33.34	3	Horizontal	113	2.70	13.10	27.80	5.54	-
PK	2.3648G	57.39	74.00	-16.61	32.58	3	Horizontal	113	2.70	24.81	27.20	5.38	-
PK	2.4404G	93.95	Inf	-Inf	33.06	3	Horizontal	113	2.70	60.89	27.60	5.46	-
PK	2.4956G	58.69	74.00	-15.31	33.33	3	Horizontal	113	2.70	25.36	27.80	5.53	-

2.4-2.4835GHz_BT-LE(1Mbps)

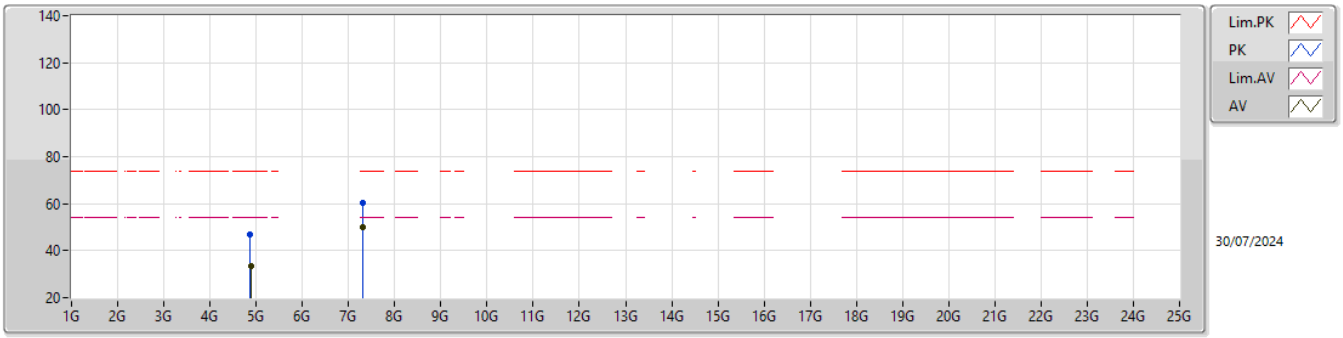
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.87944G	33.25	54.00	-20.75	6.54	3	Vertical	13	1.50	26.71	32.48	7.97	33.91
AV	7.32042G	53.64	54.00	-0.36	12.13	3	Vertical	187	1.30	41.51	36.66	9.54	34.07
PK	4.87632G	47.91	74.00	-26.09	6.52	3	Vertical	13	1.50	41.39	32.46	7.97	33.91
PK	7.31922G	63.24	74.00	-10.76	12.13	3	Vertical	187	1.30	51.11	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(1Mbps)

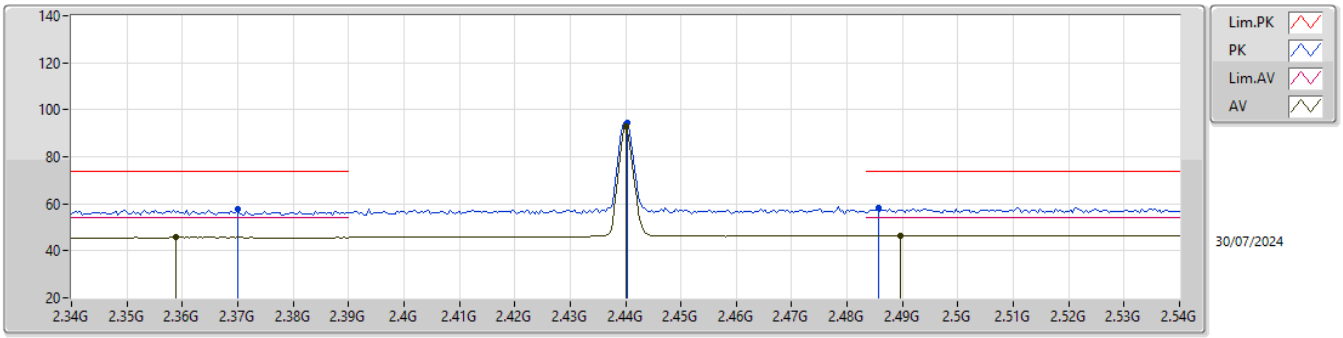
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.88024G	33.23	54.00	-20.77	6.54	3	Horizontal	192	1.50	26.69	32.48	7.97	33.91
AV	7.32046G	49.89	54.00	-4.11	12.13	3	Horizontal	230	1.07	37.76	36.66	9.54	34.07
PK	4.87208G	47.09	74.00	-26.91	6.50	3	Horizontal	192	1.50	40.59	32.43	7.97	33.90
PK	7.31916G	60.16	74.00	-13.84	12.13	3	Horizontal	230	1.07	48.03	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(125kbps)

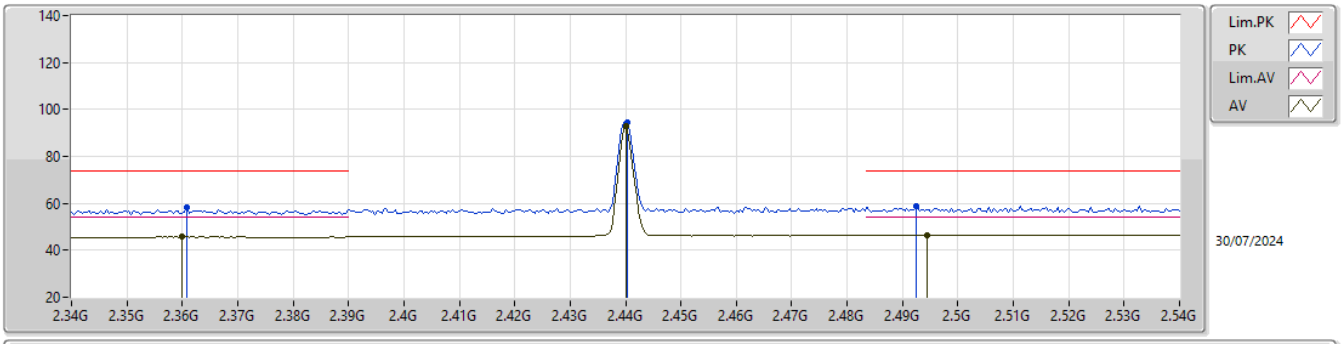
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3588G	45.66	54.00	-8.34	32.56	3	Vertical	203	1.06	13.10	27.19	5.37	-
AV	2.44G	92.74	Inf	-Inf	33.06	3	Vertical	203	1.06	59.68	27.60	5.46	-
AV	2.4896G	46.45	54.00	-7.55	33.32	3	Vertical	203	1.06	13.13	27.80	5.52	-
PK	2.37G	57.74	74.00	-16.26	32.58	3	Vertical	203	1.06	25.16	27.20	5.38	-
PK	2.4404G	94.39	Inf	-Inf	33.06	3	Vertical	203	1.06	61.33	27.60	5.46	-
PK	2.4856G	58.12	74.00	-15.88	33.28	3	Vertical	203	1.06	24.84	27.76	5.52	-

2.4-2.4835GHz_BT-LE(125kbps)

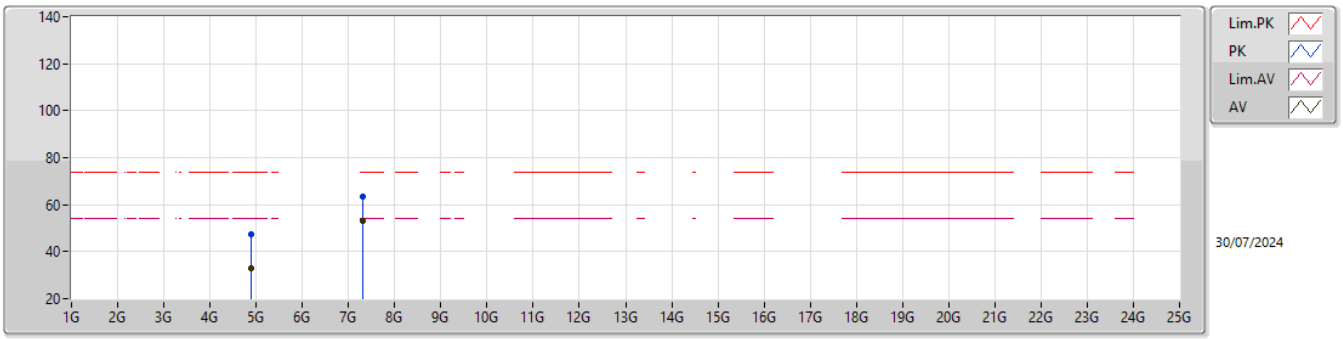
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.36G	45.67	54.00	-8.33	32.57	3	Horizontal	113	2.69	13.10	27.20	5.37	-
AV	2.44G	92.93	Inf	-Inf	33.06	3	Horizontal	113	2.69	59.87	27.60	5.46	-
AV	2.4944G	46.49	54.00	-7.51	33.33	3	Horizontal	113	2.69	13.16	27.80	5.53	-
PK	2.3608G	58.17	74.00	-15.83	32.57	3	Horizontal	113	2.69	25.60	27.20	5.37	-
PK	2.4404G	94.60	Inf	-Inf	33.06	3	Horizontal	113	2.69	61.54	27.60	5.46	-
PK	2.4924G	58.55	74.00	-15.45	33.33	3	Horizontal	113	2.69	25.22	27.80	5.53	-

2.4-2.4835GHz_BT-LE(125kbps)

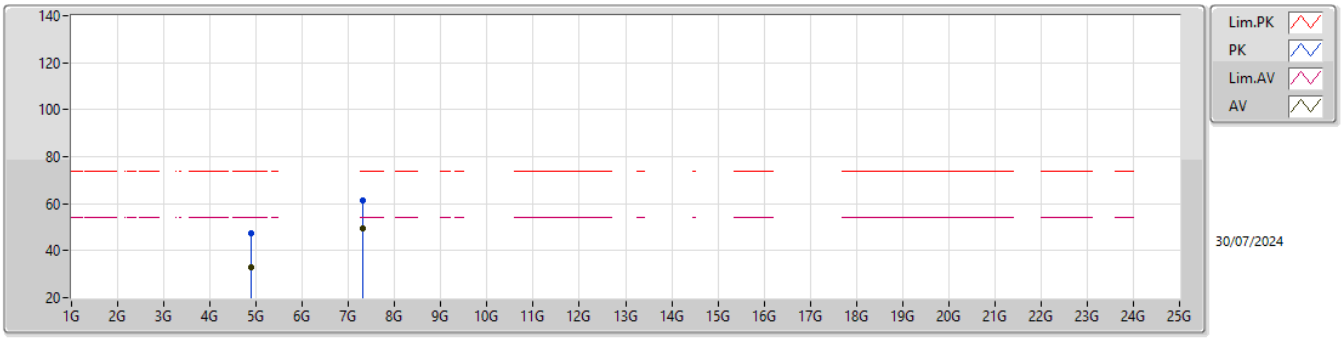
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.87924G	33.04	54.00	-20.96	6.54	3	Vertical	200	1.39	26.50	32.48	7.97	33.91
AV	7.32041G	53.03	54.00	-0.97	12.13	3	Vertical	191	1.00	40.90	36.66	9.54	34.07
PK	4.87925G	47.41	74.00	-26.59	6.54	3	Vertical	200	1.39	40.87	32.48	7.97	33.91
PK	7.31925G	63.62	74.00	-10.38	12.13	3	Vertical	191	1.00	51.49	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(125kbps)

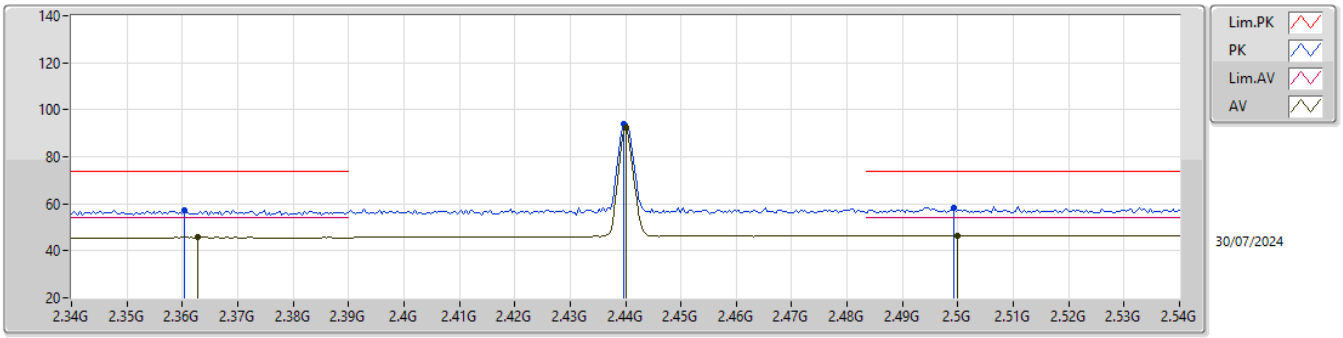
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.87917G	32.98	54.00	-21.02	6.54	3	Horizontal	215	1.48	26.44	32.48	7.97	33.91
AV	7.32022G	49.54	54.00	-4.46	12.13	3	Horizontal	226	1.15	37.41	36.66	9.54	34.07
PK	4.87902G	47.27	74.00	-26.73	6.53	3	Horizontal	215	1.48	40.74	32.47	7.97	33.91
PK	7.32061G	61.28	74.00	-12.72	12.13	3	Horizontal	226	1.15	49.15	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(500kbps)

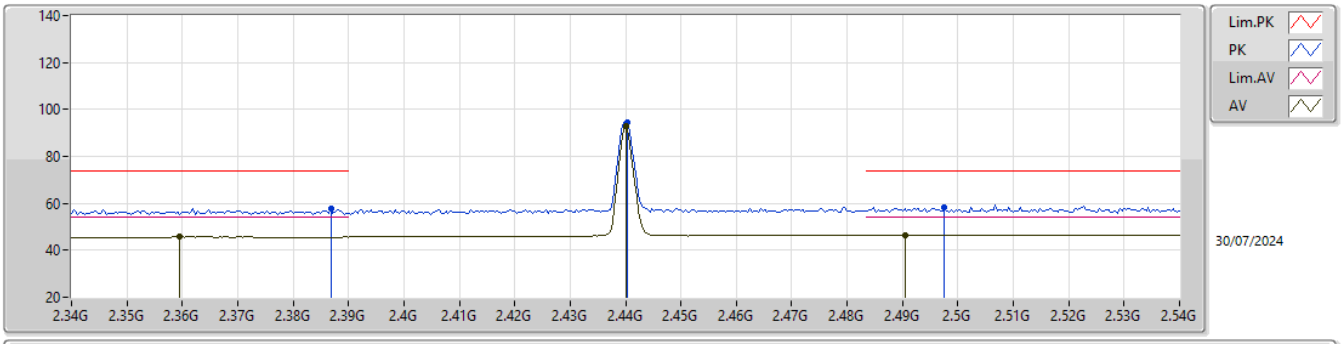
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3628G	45.69	54.00	-8.31	32.57	3	Vertical	203	1.50	13.12	27.20	5.37	-
AV	2.44G	92.44	Inf	-Inf	33.06	3	Vertical	203	1.50	59.38	27.60	5.46	-
AV	2.5G	46.43	54.00	-7.57	33.34	3	Vertical	203	1.50	13.09	27.80	5.54	-
PK	2.3604G	57.16	74.00	-16.84	32.57	3	Vertical	203	1.50	24.59	27.20	5.37	-
PK	2.4396G	93.96	Inf	-Inf	33.06	3	Vertical	203	1.50	60.90	27.60	5.46	-
PK	2.4992G	58.30	74.00	-15.70	33.33	3	Vertical	203	1.50	24.97	27.80	5.53	-

2.4-2.4835GHz_BT-LE(500kbps)

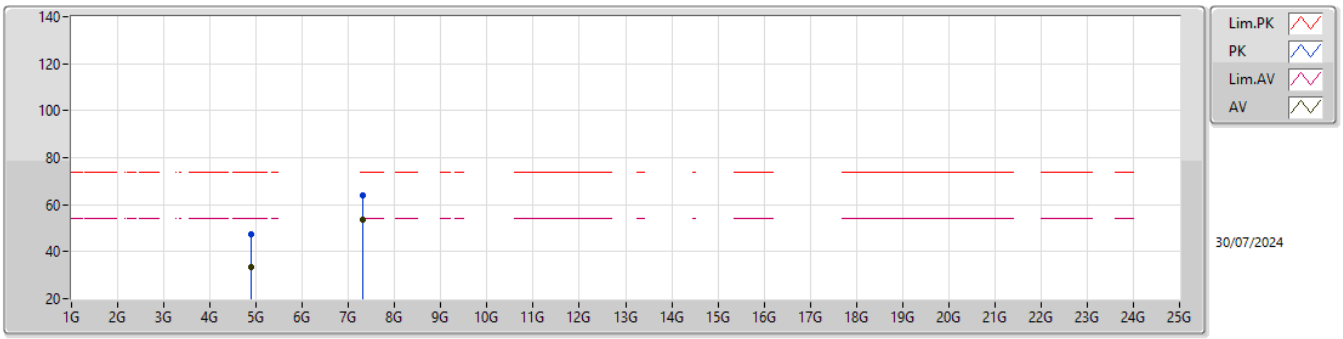
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3596G	45.67	54.00	-8.33	32.57	3	Horizontal	113	2.68	13.10	27.20	5.37	-
AV	2.44G	93.06	Inf	-Inf	33.06	3	Horizontal	113	2.68	60.00	27.60	5.46	-
AV	2.4904G	46.42	54.00	-7.58	33.32	3	Horizontal	113	2.68	13.10	27.80	5.52	-
PK	2.3868G	57.61	74.00	-16.39	32.57	3	Horizontal	113	2.68	25.04	27.17	5.40	-
PK	2.4404G	94.57	Inf	-Inf	33.06	3	Horizontal	113	2.68	61.51	27.60	5.46	-
PK	2.4976G	58.23	74.00	-15.77	33.33	3	Horizontal	113	2.68	24.90	27.80	5.53	-

2.4-2.4835GHz_BT-LE(500kbps)

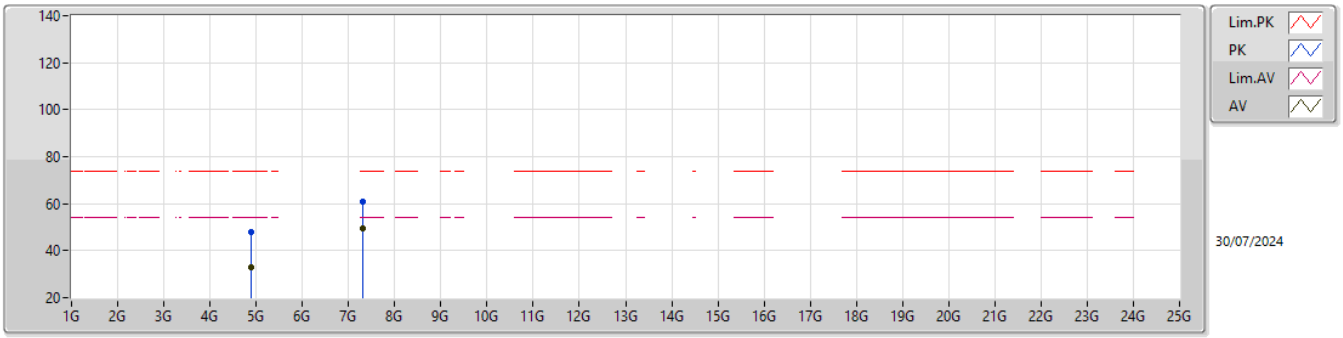
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.87975G	33.38	54.00	-20.62	6.54	3	Vertical	202	1.61	26.84	32.48	7.97	33.91
AV	7.32039G	53.67	54.00	-0.33	12.13	3	Vertical	189	1.02	41.54	36.66	9.54	34.07
PK	4.87945G	47.35	74.00	-26.65	6.54	3	Vertical	202	1.61	40.81	32.48	7.97	33.91
PK	7.32065G	63.82	74.00	-10.18	12.13	3	Vertical	189	1.02	51.69	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(500kbps)

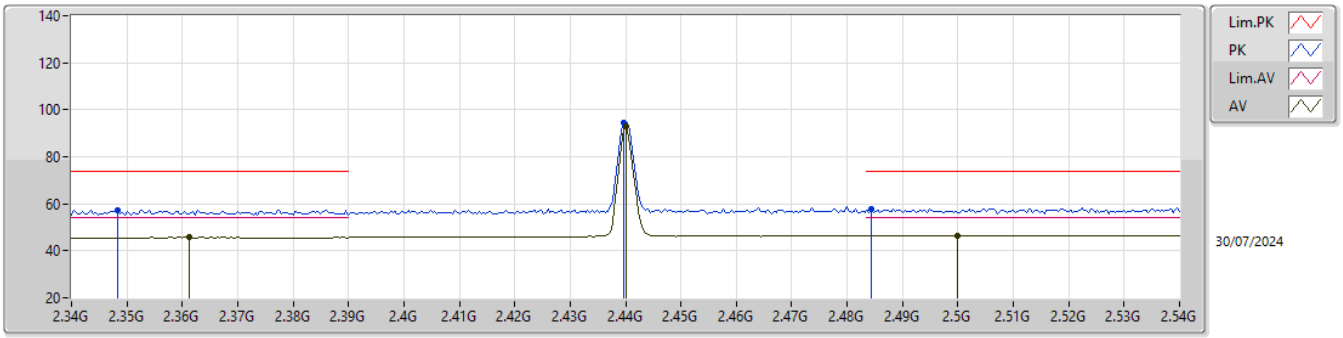
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.87944G	33.02	54.00	-20.98	6.54	3	Horizontal	207	1.50	26.48	32.48	7.97	33.91
AV	7.32008G	49.61	54.00	-4.39	12.13	3	Horizontal	225	1.00	37.48	36.66	9.54	34.07
PK	4.88011G	48.02	74.00	-25.98	6.54	3	Horizontal	207	1.50	41.48	32.48	7.97	33.91
PK	7.31908G	60.81	74.00	-13.19	12.13	3	Horizontal	225	1.00	48.68	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(2Mbps)

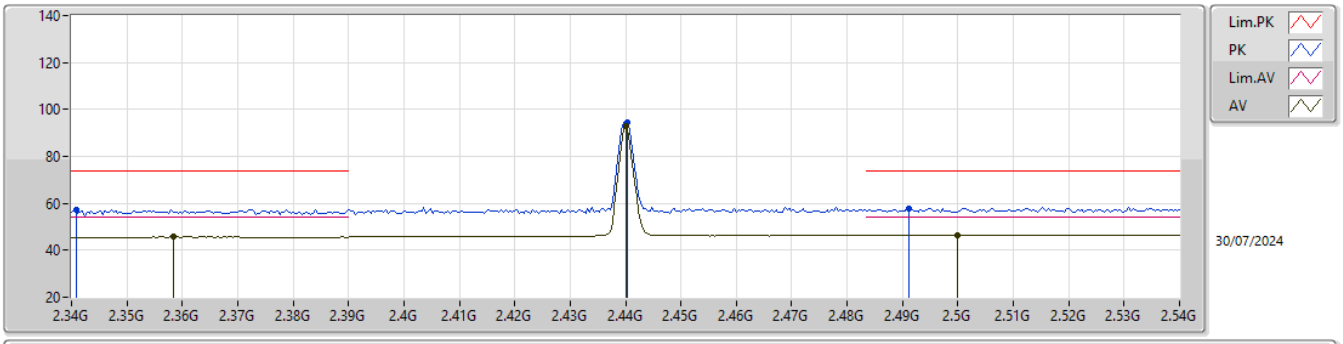
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3612G	45.69	54.00	-8.31	32.57	3	Vertical	203	1.06	13.12	27.20	5.37	-
AV	2.44G	92.77	Inf	-Inf	33.06	3	Vertical	203	1.06	59.71	27.60	5.46	-
AV	2.5G	46.47	54.00	-7.53	33.34	3	Vertical	203	1.06	13.13	27.80	5.54	-
PK	2.3484G	57.41	74.00	-16.59	32.44	3	Vertical	203	1.06	24.97	27.08	5.36	-
PK	2.4396G	94.41	Inf	-Inf	33.06	3	Vertical	203	1.06	61.35	27.60	5.46	-
PK	2.4844G	57.63	74.00	-16.37	33.26	3	Vertical	203	1.06	24.37	27.74	5.52	-

2.4-2.4835GHz_BT-LE(2Mbps)

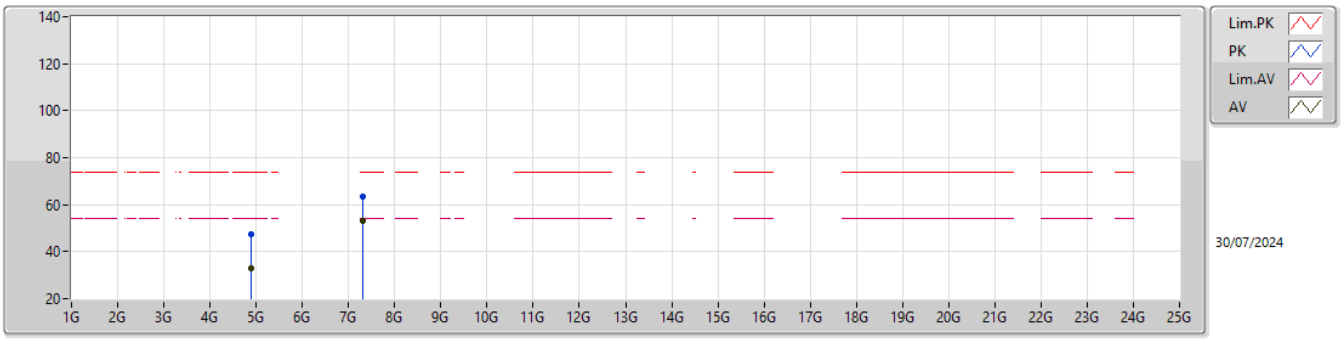
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.3584G	45.68	54.00	-8.32	32.55	3	Horizontal	113	2.69	13.13	27.18	5.37	-
AV	2.44G	92.92	Inf	-Inf	33.06	3	Horizontal	113	2.69	59.86	27.60	5.46	-
AV	2.5G	46.53	54.00	-7.47	33.34	3	Horizontal	113	2.69	13.19	27.80	5.54	-
PK	2.3408G	57.46	74.00	-16.54	32.36	3	Horizontal	113	2.69	25.10	27.01	5.35	-
PK	2.4404G	94.57	Inf	-Inf	33.06	3	Horizontal	113	2.69	61.51	27.60	5.46	-
PK	2.4912G	58.00	74.00	-16.00	33.32	3	Horizontal	113	2.69	24.68	27.80	5.52	-

2.4-2.4835GHz_BT-LE(2Mbps)

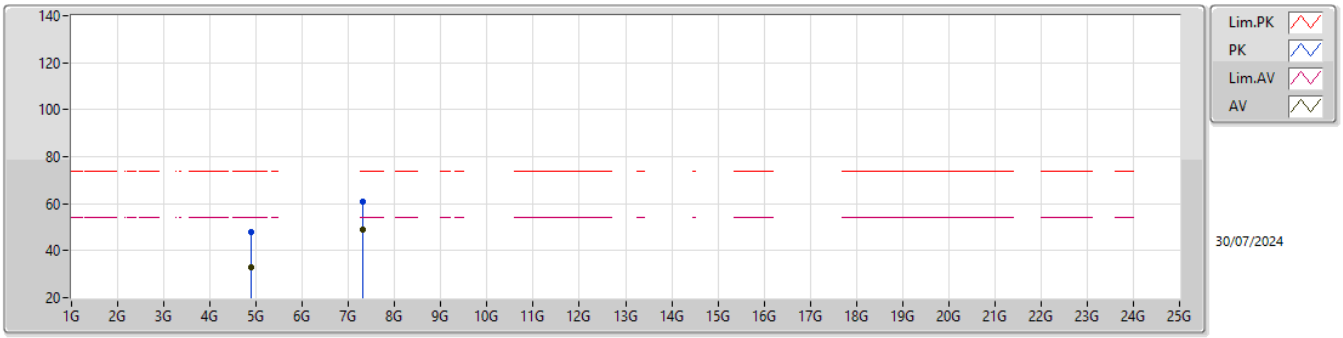
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.8804G	33.07	54.00	-20.93	6.54	3	Vertical	220	2.37	26.53	32.48	7.97	33.91
AV	7.32106G	53.04	54.00	-0.96	12.13	3	Vertical	179	1.37	40.91	36.66	9.54	34.07
PK	4.88007G	47.35	74.00	-26.65	6.54	3	Vertical	220	2.37	40.81	32.48	7.97	33.91
PK	7.32136G	63.23	74.00	-10.77	12.13	3	Vertical	179	1.37	51.10	36.66	9.54	34.07

2.4-2.4835GHz_BT-LE(2Mbps)

2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.88037G	33.01	54.00	-20.99	6.54	3	Horizontal	219	1.50	26.47	32.48	7.97	33.91
AV	7.32087G	49.00	54.00	-5.00	12.13	3	Horizontal	225	1.14	36.87	36.66	9.54	34.07
PK	4.87984G	47.71	74.00	-26.29	6.54	3	Horizontal	219	1.50	41.17	32.48	7.97	33.91
PK	7.32147G	60.83	74.00	-13.17	12.13	3	Horizontal	225	1.14	48.70	36.66	9.54	34.07