Testing Laboratory 3785

FCC Radio Test Report

FCC ID	:	**2ASJ3-ATS**
Equipment	:	**Console module (ATS)**
Brand Name	:	**AVIRON**
Model Name	:	**ATS**
Applicant	:	**Aviron Interactive** **265 Bartley Drive, North York, Ontario, M4A 2N7, Canada**
Manufacturer	:	**Qisda Corporation** **157 , Shan-Ying Road, Gueishan, Taoyuan 333, Taiwan**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Oct. 24, 2024, and testing was started from Nov. 29, 2024 and completed on Dec. 17, 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.

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
FR4O2313AL	01	Initial issue of report	Jan. 06, 2025
FR4O2313AL	02	Revised Connector. (This report is the latest version replacing for the report issued on Jan. 06, 2025.)	Jan. 10, 2025

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: Amber Chiu

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(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 (1Mbps/2Mbps/125kbps/500kbps) modulation.
- BWch is the nominal channel bandwidth.
- Bluetooth LE 125k/500k/1Mbps uses the same modulation, and 1Mbps was found to be the worst case scenario which was performed full test and recorded in this test report.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support
1	INPAQ	WA-P-LB-02-1095	PCB	I-Pex	2.4G+5G+BT
2	INPAQ	WA-P-LB-01-335	PCB	I-Pex	2.4G+5G

Ant.	Port	Gain (dBi)			
		2.4G	5G		BT
			U-NII-1	U-NII-3	
1	1	2.92	3.21	3.20	2.92
2	2	2.90	3.14	3.12	2.90

Note 1: The EUT has two antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n 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)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

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)	0.854	0.69	2.136m	1k
BT-LE(2Mbps)	0.877	0.57	1.096m	1k

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

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab.：Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua **(TAF:** 3785**)**	**ADD:** No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		**FAX:** 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**
AC Conduction	CO04-HY	Daniel Lin	21.1~22.5°C / 51~54%	17/Dec/2024
RF Conducted	TH01-HY	Jin Jing	22.2~23.8°C / 53~58%	03/Dec/2024~04/Dec/2024
☒ **Wenhua 3rd. (TAF:** 3785**)**	**ADD:** No. 58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Guishan Dist. Taoyuan City 333, Taiwan (R.O.C.)			
	TEL: 886-3-327-0868			
Test site Designation No. TW0036 with FCC.				
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**
Radiated	03CH25-HY	Rian Chung	20.6~21.7°C / 52~55%	29/Nov/2024~01/Dec/2024
Radiated (Co-location)	03CH25-HY	Billy Wang	20.1~20.5°C / 54~55%	17/Dec/2024

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	Dos 6.1

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

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	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	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT	V		

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA4O2313 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.3 Support Equipment

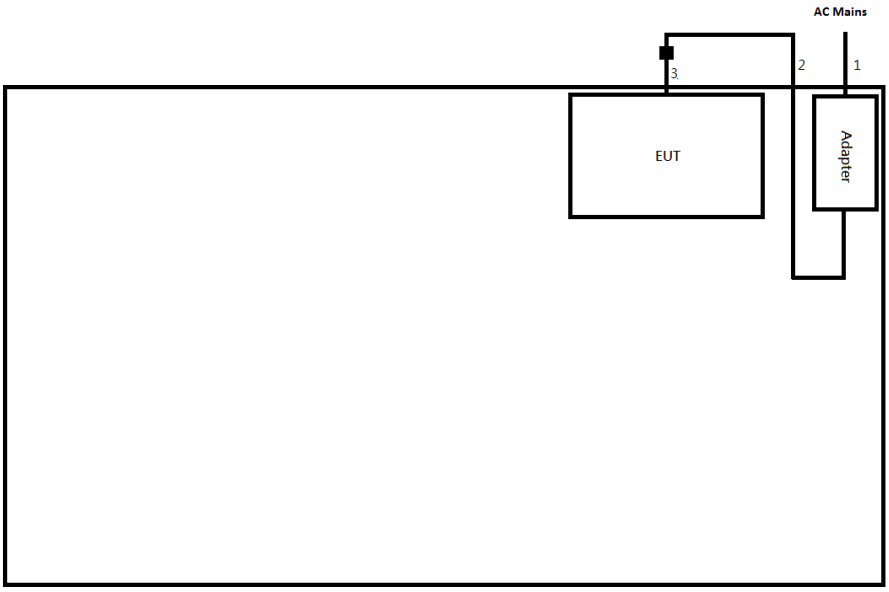
Support Equipment – AC Conduction					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Adapter	GVE	GM60-120500-F	-	-
2	Fixture	N/A	N/A	-	Provided by Customer
3	Power Cord	N/A	N/A	-	Provided by Customer

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Adapter	GVE	GM60-120500-F	-	-
2	Fixture	N/A	N/A	-	Provided by Customer
3	Power Cord	N/A	N/A	-	Provided by Customer

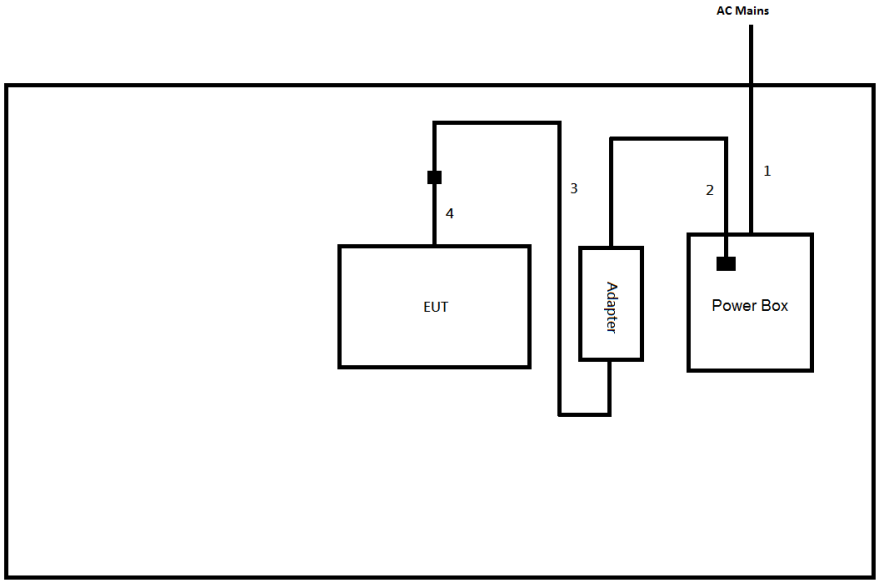
2.4 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.5	-
2	DC Power cable	No	1.3	-
3	Fixture cable	No	0.4	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	AC Power cable	No	1.5	-
3	DC Power cable	No	1.3	-
4	Fixture cable	No	0.4	-

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

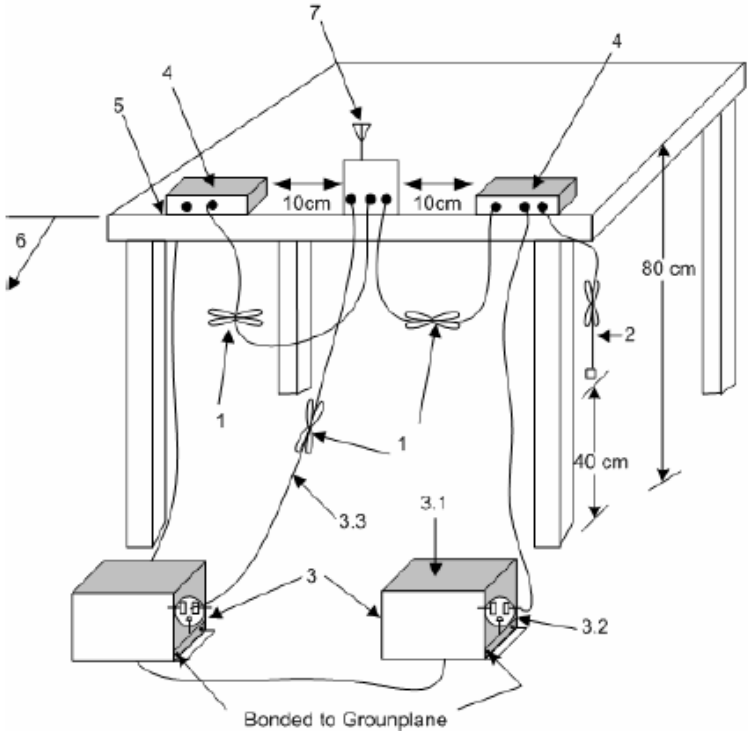
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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.

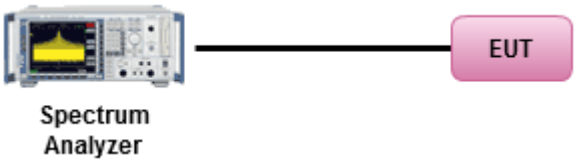
3.2.2 Measuring Instruments

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

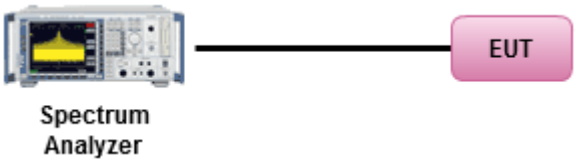
3.4.2 Measuring Instruments

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.	

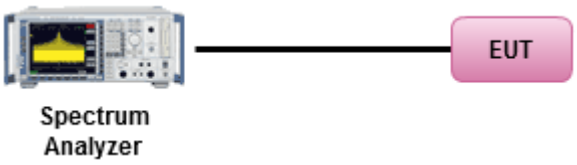
3.5.2 Measuring Instruments

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

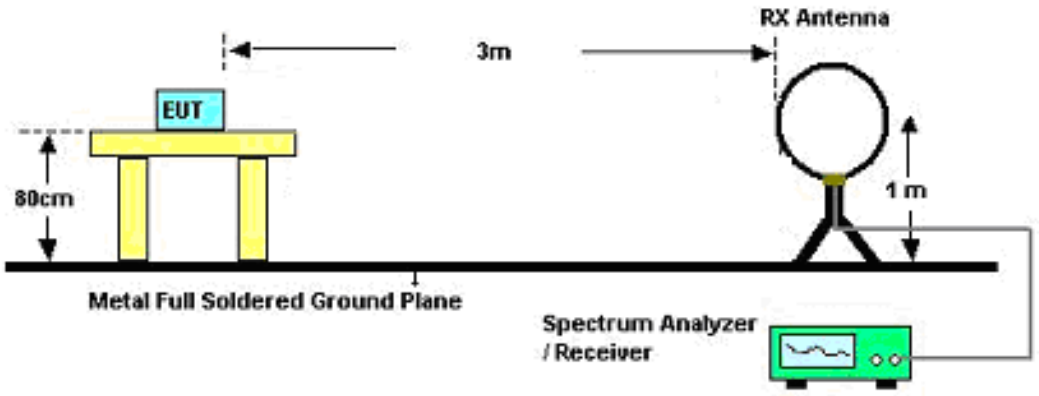
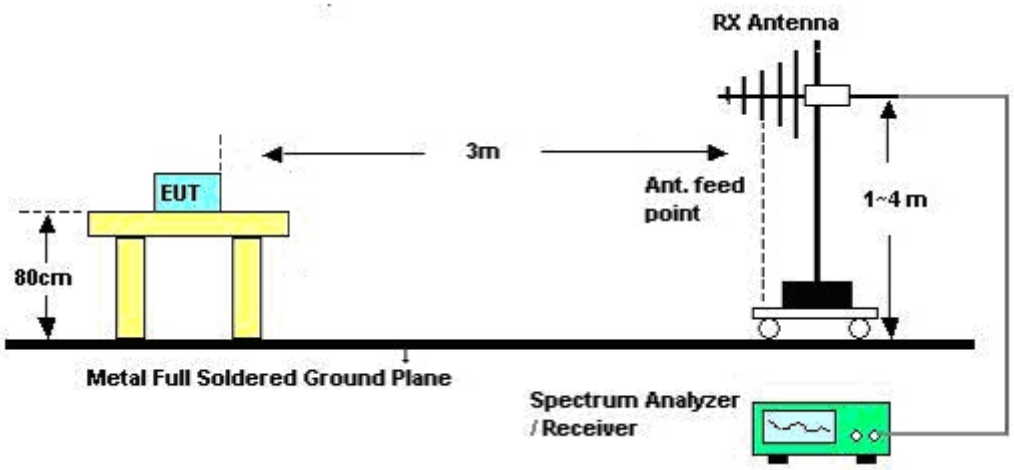
Test Method	
▪	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
▪	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪	For the transmitter unwanted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

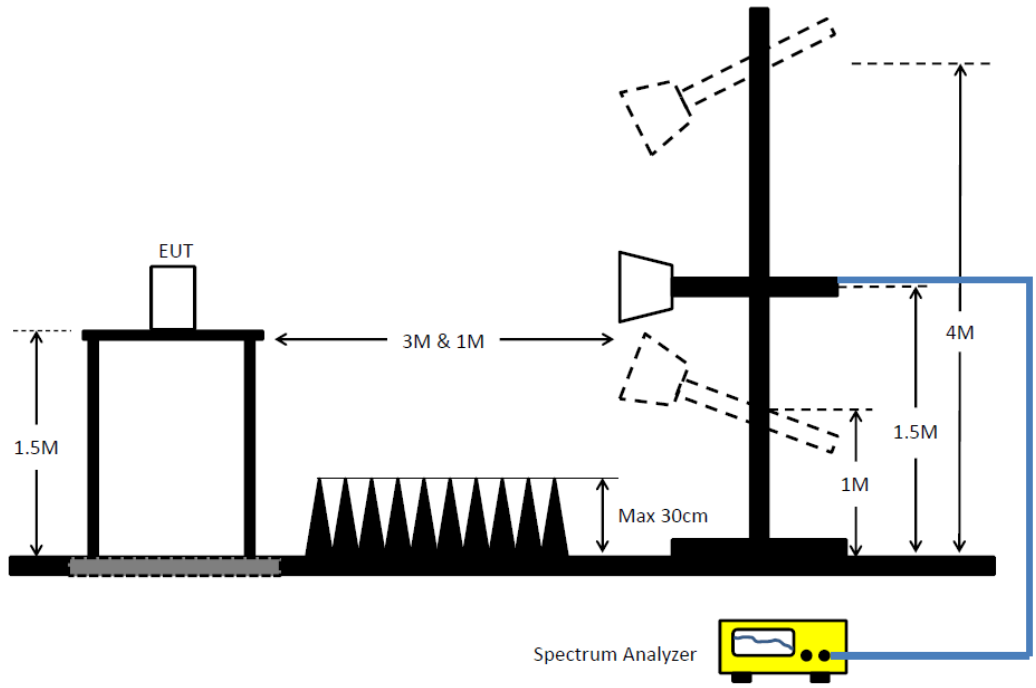
The measured Level is calculated using:

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	ROHDE & SCHWARZ	ESR3	102051	9kHz ~ 3.6GHz	17/May/2024	16/May/2025
Two-Line V-Network	ROHDE & SCHWARZ	ENV 216	101274	9kHz ~ 30MHz	18/Jun/2024	17/Jun/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	27/Feb/2024	26/Feb/2025
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	17/Oct/2024	16/Oct/2025
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	101013	10Hz~40GHz	09/Apr/2024	08/Apr/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	16/Oct/2024	15/Oct/2025
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	17/Feb/2024	16/Feb/2025
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	17/Feb/2024	16/Feb/2025
SENSE-15247_FS	Sporton	V5.11.18	N/A	N/A	N/A	N/A

Instrument for Radiated Test (03CH25-HY)

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH25-HY	30MHz~1GHz 3m	20/Jul/2024	19/Jul/2025
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH25-HY	1GHz~18GHz 3m	08/Aug/2024	07/Aug/2025
ESR7 EMI Test Receiver	ROHDE & SCHWARZ	ESR7	102956	9kHz~3.6GHz	27/Aug/2024	26/Aug/2025
Signal Analyzer	ROHDE& SCHWARZ	FSV3044	101410	10Hz~44GHz	18/Nov/2024	17/Nov/2025
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	19/Mar/2024	18/Mar/2025
Bilog Antenna & 6dB Attenuator	TESEQ & VGT	CBL 6111D & VFA 04002-06	63537/001	30MHz~1GHz	30/May/2024	29/May/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02876	1GHz~18GHz	11/Jul/2024	10/Jul/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	01248	18GHz~40GHz	04/Oct/2024	03/Oct/2025
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	9kHz~1GHz	24/Apr/2024	23/Apr/2025
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	1GHz~40GHz	23/Apr/2024	22/Apr/2025
Preamplifier	SGH	PRAMP 903	20230515-1	25MHz~3GHz	24/May/2024	23/May/2025
Preamplifier	SGH	PRAMP 118-H	20230515-3	1GHz~18GHz	24/May/2024	23/May/2025
Amplifier	EM	EM18G40GA	060874	18GHz ~ 40GHz	15/Apr/2024	14/Apr/2025
SENSE-15247-FS	Sporton	V5.11.20	N/A	N/A	N/A	N/A

Instrument for Radiated Test (Co-location)

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH25-HY	1GHz~18GHz 3m	08/Aug/2024	07/Aug/2025
Signal Analyzer	ROHDE& SCHWARZ	FSV3044	101410	10Hz~44GHz	18/Nov/2024	17/Nov/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02876	1GHz~18GHz	11/Jul/2024	10/Jul/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz~40GHz	04/Jun/2024	03/Jun/2025
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	1GHz~40GHz	23/Apr/2024	22/Apr/2025
Preamplifier	SGH	PRAMP 118-H	20230515-3	1GHz~18GHz	24/May/2024	23/May/2025
Amplifier	EM	EM18G40GA	060874	18GHz ~ 40GHz	21/Sep/2024	22/Sep/2025
SENSE-EMI	Sporton	V5.11.6	N/A	N/A	N/A	N/A

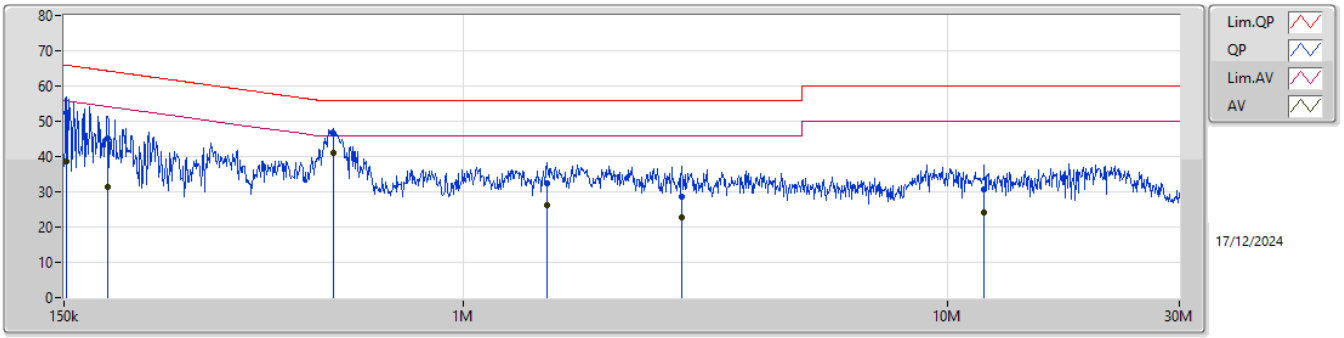
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	538.12k	41.15	46.00	-4.85	Line

Result

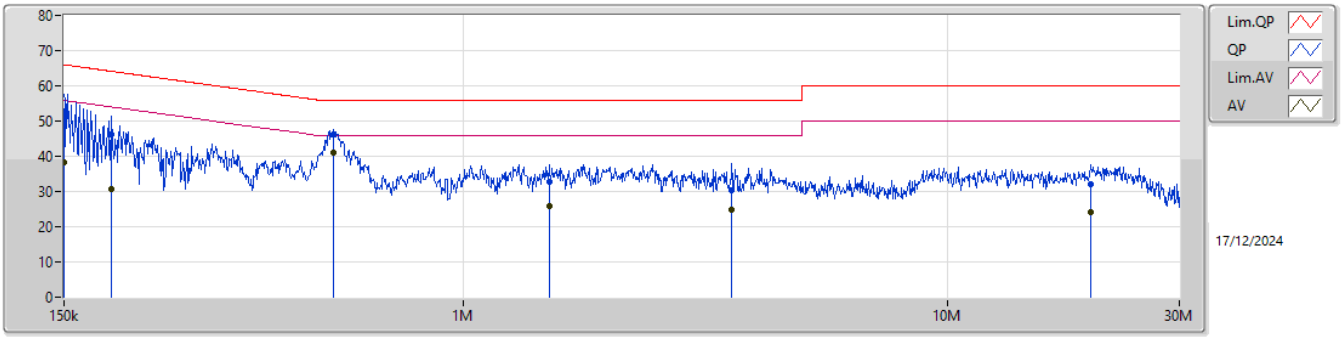
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	151.807k	52.38	65.90	-13.52	Line
Mode 1	Pass	AV	151.807k	38.50	55.90	-17.40	Line
Mode 1	Pass	QP	184.605k	45.11	64.28	-19.17	Line
Mode 1	Pass	AV	184.605k	31.32	54.28	-22.96	Line
Mode 1	Pass	QP	538.12k	46.49	56.00	-9.51	Line
Mode 1	Pass	AV	538.12k	41.15	46.00	-4.85	Line
Mode 1	Pass	QP	1.489M	32.45	56.00	-23.55	Line
Mode 1	Pass	AV	1.489M	26.33	46.00	-19.67	Line
Mode 1	Pass	QP	2.821M	28.72	56.00	-27.28	Line
Mode 1	Pass	AV	2.821M	22.74	46.00	-23.26	Line
Mode 1	Pass	QP	11.872M	30.57	60.00	-29.43	Line
Mode 1	Pass	AV	11.872M	24.31	50.00	-25.69	Line
Mode 1	Pass	QP	150k	52.68	66.00	-13.32	Neutral
Mode 1	Pass	AV	150k	38.32	56.00	-17.68	Neutral
Mode 1	Pass	QP	188.327k	46.23	64.11	-17.88	Neutral
Mode 1	Pass	AV	188.327k	30.64	54.11	-23.47	Neutral
Mode 1	Pass	QP	538.12k	46.30	56.00	-9.70	Neutral
Mode 1	Pass	AV	538.12k	40.93	46.00	-5.07	Neutral
Mode 1	Pass	QP	1.501M	32.79	56.00	-23.21	Neutral
Mode 1	Pass	AV	1.501M	25.69	46.00	-20.31	Neutral
Mode 1	Pass	QP	3.584M	30.27	56.00	-25.73	Neutral
Mode 1	Pass	AV	3.584M	24.76	46.00	-21.24	Neutral
Mode 1	Pass	QP	19.71M	32.07	60.00	-27.93	Neutral
Mode 1	Pass	AV	19.71M	24.28	50.00	-25.72	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	151.807k	52.38	65.90	-13.52	19.70	Line	-	32.68	9.66	0.07	9.97
AV	151.807k	38.50	55.90	-17.40	19.70	Line	-	18.80	9.66	0.07	9.97
QP	184.605k	45.11	64.28	-19.17	19.70	Line	-	25.41	9.65	0.08	9.97
AV	184.605k	31.32	54.28	-22.96	19.70	Line	-	11.62	9.65	0.08	9.97
QP	538.12k	46.49	56.00	-9.51	19.74	Line	-	26.75	9.65	0.11	9.98
AV	538.12k	41.15	46.00	-4.85	19.74	Line	-	21.41	9.65	0.11	9.98
QP	1.489M	32.45	56.00	-23.55	19.74	Line	-	12.71	9.67	0.10	9.97
AV	1.489M	26.33	46.00	-19.67	19.74	Line	-	6.59	9.67	0.10	9.97
QP	2.821M	28.72	56.00	-27.28	19.74	Line	-	8.98	9.68	0.09	9.97
AV	2.821M	22.74	46.00	-23.26	19.74	Line	-	3.00	9.68	0.09	9.97
QP	11.872M	30.57	60.00	-29.43	19.75	Line	-	10.82	9.70	0.07	9.98
AV	11.872M	24.31	50.00	-25.69	19.75	Line	-	4.56	9.70	0.07	9.98

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	52.68	66.00	-13.32	19.64	Neutral	-	33.04	9.60	0.07	9.97
AV	150k	38.32	56.00	-17.68	19.64	Neutral	-	18.68	9.60	0.07	9.97
QP	188.327k	46.23	64.11	-17.88	19.65	Neutral	-	26.58	9.60	0.08	9.97
AV	188.327k	30.64	54.11	-23.47	19.65	Neutral	-	10.99	9.60	0.08	9.97
QP	538.12k	46.30	56.00	-9.70	19.69	Neutral	-	26.61	9.60	0.11	9.98
AV	538.12k	40.93	46.00	-5.07	19.69	Neutral	-	21.24	9.60	0.11	9.98
QP	1.501M	32.79	56.00	-23.21	19.68	Neutral	-	13.11	9.61	0.10	9.97
AV	1.501M	25.69	46.00	-20.31	19.68	Neutral	-	6.01	9.61	0.10	9.97
QP	3.584M	30.27	56.00	-25.73	19.68	Neutral	-	10.59	9.62	0.08	9.98
AV	3.584M	24.76	46.00	-21.24	19.68	Neutral	-	5.08	9.62	0.08	9.98
QP	19.71M	32.07	60.00	-27.93	19.77	Neutral	-	12.30	9.67	0.12	9.98
AV	19.71M	24.28	50.00	-25.72	19.77	Neutral	-	4.51	9.67	0.12	9.98

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)	757.5k	1.068M	1M07F1D	671.25k	1.064M
BT-LE(2Mbps)	1.33M	2.111M	2M11F1D	932.5k	2.106M

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

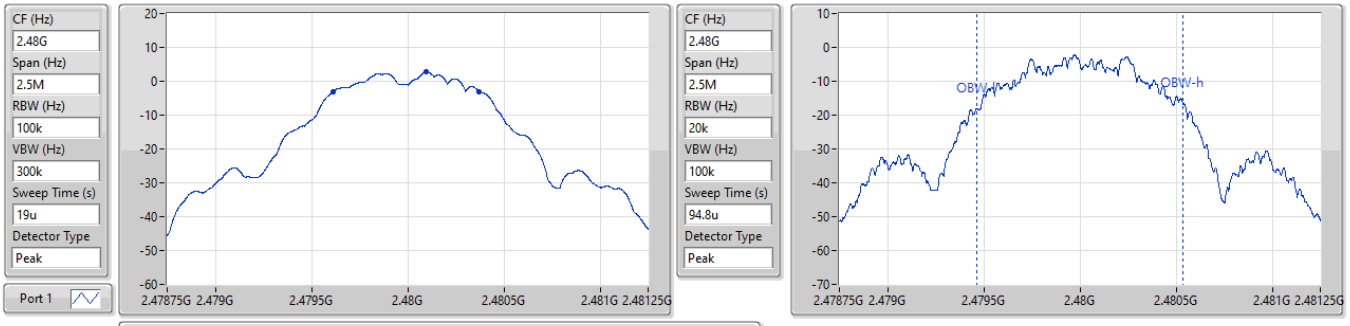
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	753.75k	1.066M
2440MHz	Pass	500k	671.25k	1.064M
2480MHz	Pass	500k	757.5k	1.068M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	932.5k	2.109M
2440MHz	Pass	500k	1.33M	2.111M
2480MHz	Pass	500k	997.5k	2.106M

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**

2480MHz

03/12/2024

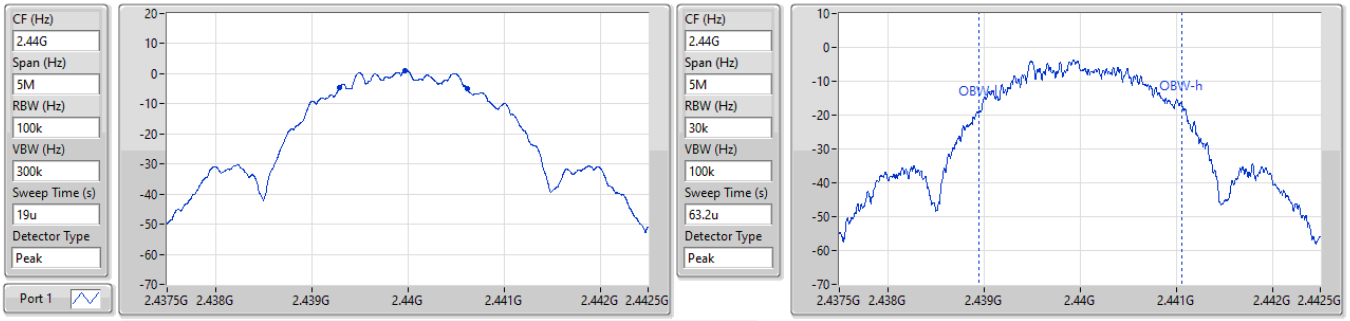


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
757.5k	2.479614G	2.480371G	1.068M	2.479467G	2.480535G	500k	1

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

2440MHz

03/12/2024



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.33M	2.43929G	2.44062G	2.111M	2.438953G	2.441064G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	4.97	0.00314
BT-LE(2Mbps)	4.88	0.00308

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.92	4.84	30.00
2440MHz	Pass	2.92	4.97	30.00
2480MHz	Pass	2.92	4.46	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.92	4.65	30.00
2440MHz	Pass	2.92	4.88	30.00
2480MHz	Pass	2.92	4.31	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)	-11.77
BT-LE(2Mbps)	-11.80

RBW = 3kHz;

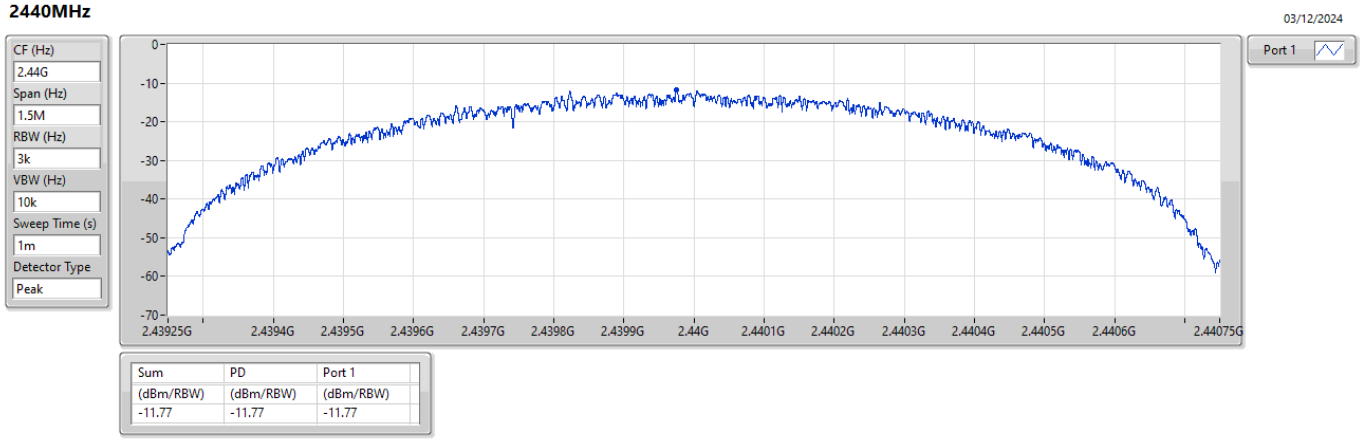
Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.92	-11.84	8.00
2440MHz	Pass	2.92	-11.77	8.00
2480MHz	Pass	2.92	-12.60	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.92	-11.92	8.00
2440MHz	Pass	2.92	-11.80	8.00
2480MHz	Pass	2.92	-12.44	8.00

DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
Inf = There's no restriction for the limit.

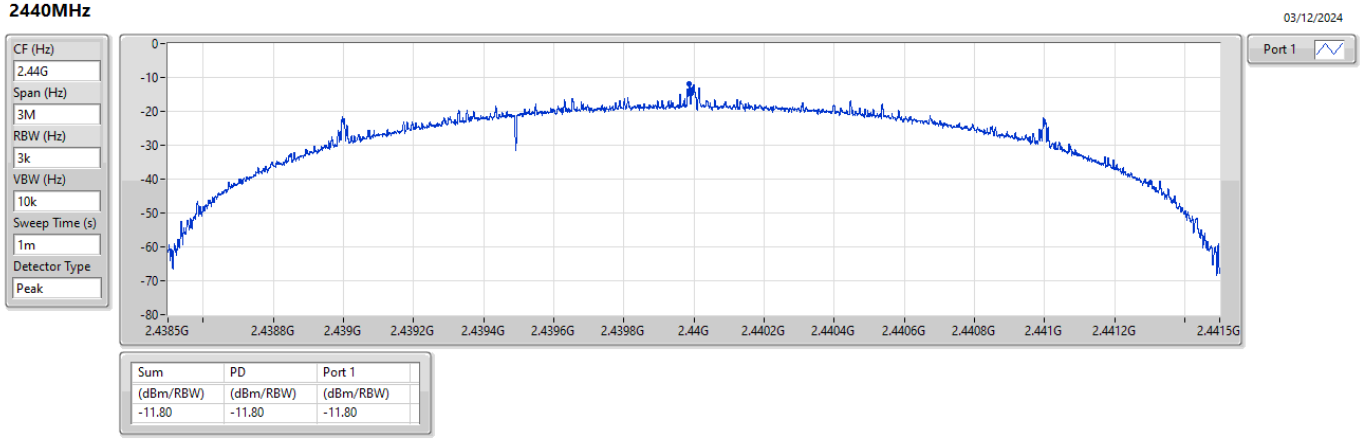
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2440MHz



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

2440MHz



Summary

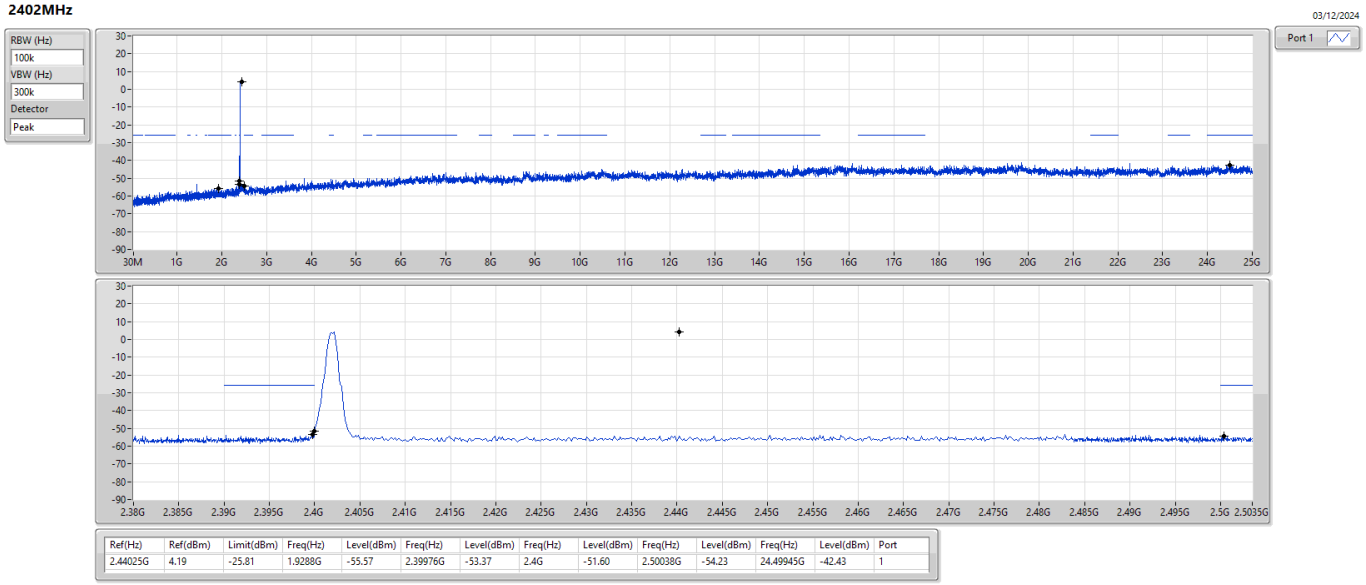
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44025G	4.19	-25.81	1.9288G	-55.57	2.39976G	-53.37	2.4G	-51.60	2.50038G	-54.23	24.49945G	-42.43	1
BT-LE(2Mbps)	Pass	2.43991G	4.30	-25.70	1.96758G	-55.46	2.4G	-27.42	2.4G	-28.21	2.50306G	-54.31	24.47977G	-42.43	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	2.44025G	4.19	-25.81	1.9288G	-55.57	2.39976G	-53.37	2.4G	-51.60	2.50038G	-54.23	24.49945G	-42.43	1
2440MHz	Pass	2.44025G	4.19	-25.81	2.13795G	-55.95	2.3914G	-54.59	2.4G	-56.83	2.5031G	-54.04	15.14935G	-41.42	1
2480MHz	Pass	2.44025G	4.19	-25.81	1.8865G	-55.50	2.39432G	-54.45	2.4G	-56.70	2.50194G	-54.07	16.57787G	-42.46	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.43991G	4.30	-25.70	1.96758G	-55.46	2.4G	-27.42	2.4G	-28.21	2.50306G	-54.31	24.47977G	-42.43	1
2440MHz	Pass	2.43991G	4.30	-25.70	1.96053G	-55.84	2.39028G	-54.43	2.4G	-58.22	2.50078G	-53.95	15.18028G	-41.90	1
2480MHz	Pass	2.43991G	4.30	-25.70	2.3095G	-54.90	2.39148G	-54.27	2.4G	-55.96	2.50218G	-53.97	15.18028G	-41.55	1

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

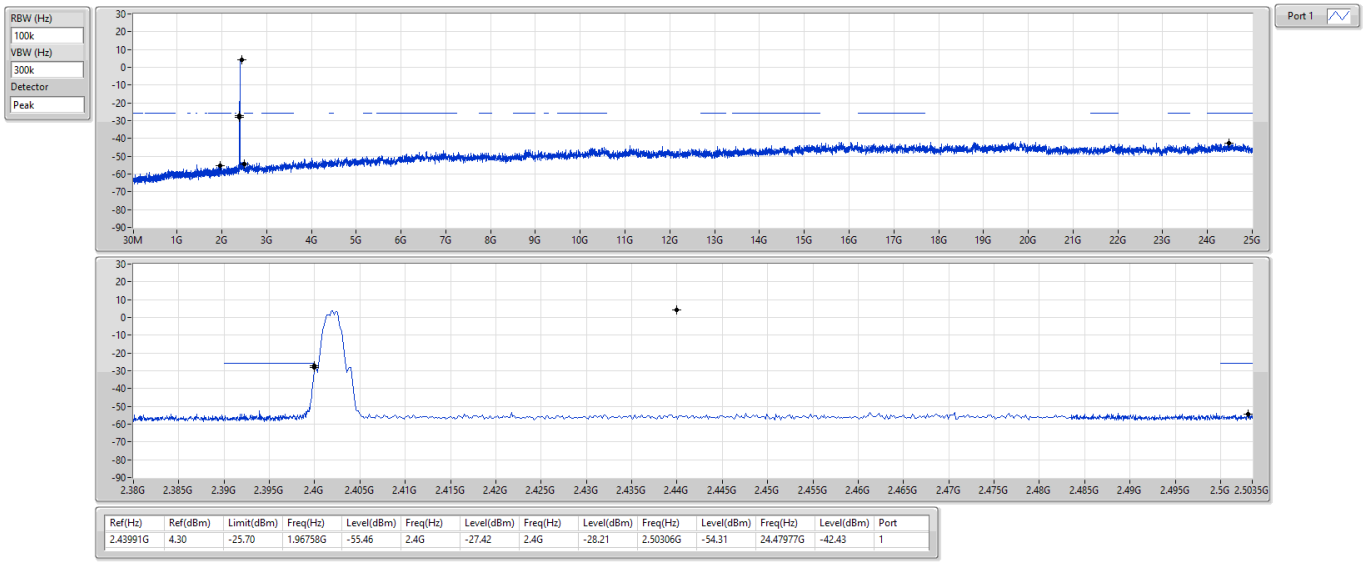
2402MHz



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
2.44025G	4.19	-25.81	1.9288G	-55.57	2.39976G	-53.37	2.4G	-51.60	2.50038G	-54.23	24.49945G	-42.43	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
2.43991G	4.30	-25.70	1.96758G	-55.46	2.4G	-27.42	2.4G	-28.21	2.50306G	-54.31	24.47977G	-42.43	1

Summary

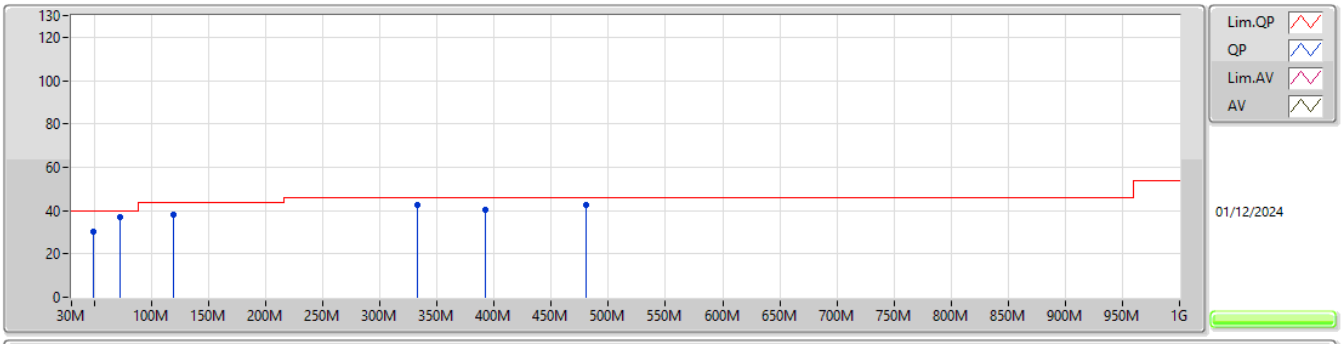
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	QP	72.68M	36.87	40.00	-3.13	3	Vertical	53	1.14

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	119.24M	37.89	43.50	-5.61	3	Vertical	360	1.00
2440MHz	Pass	PK	332.64M	42.44	46.00	-3.56	3	Vertical	360	1.00
2440MHz	Pass	PK	480.08M	42.49	46.00	-3.51	3	Vertical	360	1.00
2440MHz	Pass	QP	49.4M	30.47	40.00	-9.53	3	Vertical	211	1.02
2440MHz	Pass	QP	72.68M	36.87	40.00	-3.13	3	Vertical	53	1.14
2440MHz	Pass	QP	392.78M	40.21	46.00	-5.79	3	Vertical	8	1.08
2440MHz	Pass	PK	72.68M	35.07	40.00	-4.93	3	Horizontal	0	1.00
2440MHz	Pass	PK	119.24M	34.08	43.50	-9.42	3	Horizontal	0	1.00
2440MHz	Pass	PK	251.16M	36.74	46.00	-9.26	3	Horizontal	0	1.00
2440MHz	Pass	PK	480.08M	34.35	46.00	-11.65	3	Horizontal	0	1.00
2440MHz	Pass	PK	625.58M	34.28	46.00	-11.72	3	Horizontal	0	1.00
2440MHz	Pass	QP	396.66M	40.47	46.00	-5.53	3	Horizontal	149	1.99

2.4-2.4835GHz_BT-LE(2Mbps)

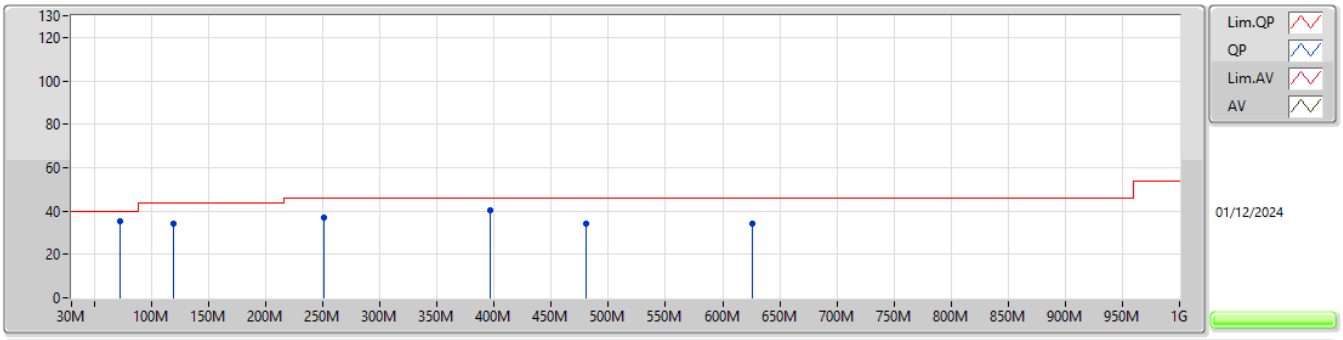
2440MHz_TX



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)
PK	119.24M	37.89	43.50	-5.61	-26.21	3	Vertical	360	1.00	64.10	17.51	0.83	44.55
PK	332.64M	42.44	46.00	-3.56	-22.98	3	Vertical	360	1.00	65.42	19.93	1.27	44.18
PK	480.08M	42.49	46.00	-3.51	-18.60	3	Vertical	360	1.00	61.09	23.71	1.59	43.90
QP	49.4M	30.47	40.00	-9.53	-29.20	3	Vertical	211	1.02	59.67	14.89	0.48	44.57
QP	72.68M	36.87	40.00	-3.13	-31.37	3	Vertical	53	1.14	68.24	12.63	0.66	44.66
QP	392.78M	40.21	46.00	-5.79	-20.91	3	Vertical	8	1.08	61.12	21.70	1.43	44.04

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)
PK	72.68M	35.07	40.00	-4.93	-31.37	3	Horizontal	0	1.00	66.44	12.63	0.66	44.66
PK	119.24M	34.08	43.50	-9.42	-26.21	3	Horizontal	0	1.00	60.29	17.51	0.83	44.55
PK	251.16M	36.74	46.00	-9.26	-24.44	3	Horizontal	0	1.00	61.18	18.78	1.15	44.37
PK	480.08M	34.35	46.00	-11.65	-18.60	3	Horizontal	0	1.00	52.95	23.71	1.59	43.90
PK	625.58M	34.28	46.00	-11.72	-15.75	3	Horizontal	0	1.00	50.03	26.37	1.74	43.86
QP	396.66M	40.47	46.00	-5.53	-20.74	3	Horizontal	149	1.99	61.21	21.85	1.44	44.03

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	2.484G	44.07	54.00	-9.93	3	Horizontal	275	1.61
BT-LE(2Mbps)	Pass	AV	2.4835G	44.52	54.00	-9.48	3	Vertical	186	1.69

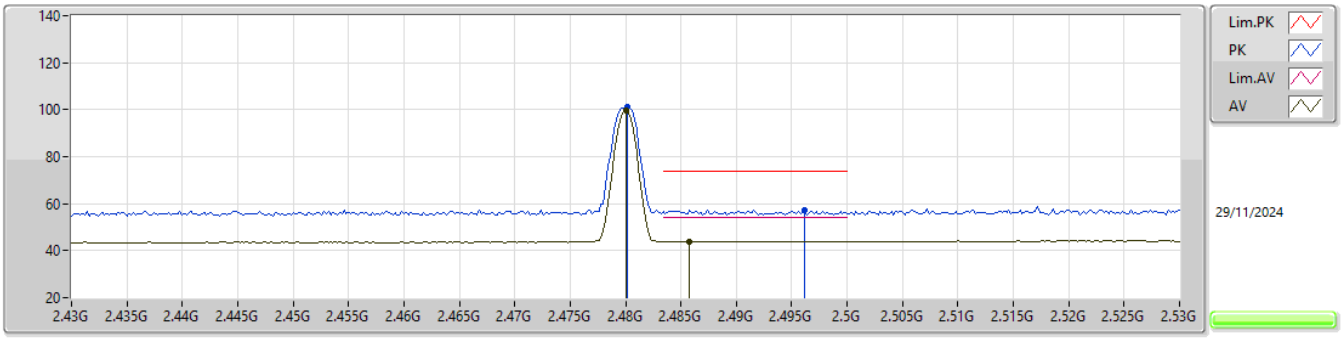
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3622G	43.28	54.00	-10.72	3	Vertical	198	1.78
2402MHz	Pass	AV	2.402G	99.25	Inf	-Inf	3	Vertical	198	1.78
2402MHz	Pass	PK	2.3776G	56.83	74.00	-17.17	3	Vertical	198	1.78
2402MHz	Pass	PK	2.4018G	100.46	Inf	-Inf	3	Vertical	198	1.78
2402MHz	Pass	AV	2.367G	43.22	54.00	-10.78	3	Horizontal	274	1.71
2402MHz	Pass	AV	2.402G	94.99	Inf	-Inf	3	Horizontal	274	1.71
2402MHz	Pass	PK	2.3886G	57.06	74.00	-16.94	3	Horizontal	274	1.71
2402MHz	Pass	PK	2.4022G	96.26	Inf	-Inf	3	Horizontal	274	1.71
2402MHz	Pass	AV	4.79932G	27.83	54.00	-26.17	3	Vertical	178	1.50
2402MHz	Pass	PK	4.79954G	45.65	74.00	-28.35	3	Vertical	178	1.50
2402MHz	Pass	AV	4.79936G	27.60	54.00	-26.40	3	Horizontal	205	1.42
2402MHz	Pass	PK	4.79976G	47.47	74.00	-26.53	3	Horizontal	205	1.42
2440MHz	Pass	AV	2.3704G	43.27	54.00	-10.73	3	Vertical	201	1.62
2440MHz	Pass	AV	2.44G	98.79	Inf	-Inf	3	Vertical	201	1.62
2440MHz	Pass	AV	2.494G	44.02	54.00	-9.98	3	Vertical	201	1.62
2440MHz	Pass	PK	2.3572G	57.19	74.00	-16.81	3	Vertical	201	1.62
2440MHz	Pass	PK	2.4396G	100.00	Inf	-Inf	3	Vertical	201	1.62
2440MHz	Pass	PK	2.488G	57.17	74.00	-16.83	3	Vertical	201	1.62
2440MHz	Pass	AV	2.3864G	43.17	54.00	-10.83	3	Horizontal	275	1.69
2440MHz	Pass	AV	2.44G	95.92	Inf	-Inf	3	Horizontal	275	1.69
2440MHz	Pass	AV	2.492G	43.96	54.00	-10.04	3	Horizontal	275	1.69
2440MHz	Pass	PK	2.374G	56.55	74.00	-17.45	3	Horizontal	275	1.69
2440MHz	Pass	PK	2.4396G	97.19	Inf	-Inf	3	Horizontal	275	1.69
2440MHz	Pass	PK	2.4904G	56.91	74.00	-17.09	3	Horizontal	275	1.69
2440MHz	Pass	AV	4.87588G	27.32	54.00	-26.68	3	Vertical	24	1.50
2440MHz	Pass	PK	4.88224G	41.95	74.00	-32.05	3	Vertical	24	1.50
2440MHz	Pass	AV	4.87562G	27.31	54.00	-26.69	3	Horizontal	237	2.35
2440MHz	Pass	PK	4.87646G	41.56	74.00	-32.44	3	Horizontal	237	2.35
2480MHz	Pass	AV	2.48G	99.75	Inf	-Inf	3	Vertical	187	1.68
2480MHz	Pass	AV	2.4858G	44.04	54.00	-9.96	3	Vertical	187	1.68
2480MHz	Pass	PK	2.4802G	101.00	Inf	-Inf	3	Vertical	187	1.68
2480MHz	Pass	PK	2.4962G	57.32	74.00	-16.68	3	Vertical	187	1.68
2480MHz	Pass	AV	2.48G	98.61	Inf	-Inf	3	Horizontal	275	1.61
2480MHz	Pass	AV	2.484G	44.07	54.00	-9.93	3	Horizontal	275	1.61
2480MHz	Pass	PK	2.4802G	99.86	Inf	-Inf	3	Horizontal	275	1.61
2480MHz	Pass	PK	2.4838G	58.33	74.00	-15.67	3	Horizontal	275	1.61
2480MHz	Pass	AV	4.9598G	28.27	54.00	-25.73	3	Vertical	127	1.50
2480MHz	Pass	PK	4.95776G	41.77	74.00	-32.23	3	Vertical	127	1.50
2480MHz	Pass	AV	4.96002G	28.04	54.00	-25.96	3	Horizontal	66	1.50
2480MHz	Pass	PK	4.959G	42.05	74.00	-31.95	3	Horizontal	66	1.50
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3626G	43.72	54.00	-10.28	3	Vertical	198	1.79
2402MHz	Pass	AV	2.402G	97.18	Inf	-Inf	3	Vertical	198	1.79
2402MHz	Pass	PK	2.3694G	57.05	74.00	-16.95	3	Vertical	198	1.79
2402MHz	Pass	PK	2.4014G	100.28	Inf	-Inf	3	Vertical	198	1.79
2402MHz	Pass	AV	2.3712G	43.55	54.00	-10.45	3	Horizontal	275	1.71
2402MHz	Pass	AV	2.402G	92.95	Inf	-Inf	3	Horizontal	275	1.71
2402MHz	Pass	PK	2.387G	57.08	74.00	-16.92	3	Horizontal	275	1.71
2402MHz	Pass	PK	2.4024G	96.07	Inf	-Inf	3	Horizontal	275	1.71
2402MHz	Pass	AV	4.79946G	28.84	54.00	-25.16	3	Vertical	184	1.46
2402MHz	Pass	PK	4.79916G	48.94	74.00	-25.06	3	Vertical	184	1.46
2402MHz	Pass	AV	4.7996G	28.35	54.00	-25.65	3	Horizontal	205	1.45
2402MHz	Pass	PK	4.7996G	46.80	74.00	-27.20	3	Horizontal	205	1.45
2440MHz	Pass	AV	2.384G	43.51	54.00	-10.49	3	Vertical	202	1.61
2440MHz	Pass	AV	2.44G	96.84	Inf	-Inf	3	Vertical	202	1.61
2440MHz	Pass	AV	2.4912G	44.39	54.00	-9.61	3	Vertical	202	1.61
2440MHz	Pass	PK	2.3776G	57.18	74.00	-16.82	3	Vertical	202	1.61
2440MHz	Pass	PK	2.4396G	99.91	Inf	-Inf	3	Vertical	202	1.61
2440MHz	Pass	PK	2.4904G	57.08	74.00	-16.92	3	Vertical	202	1.61
2440MHz	Pass	AV	2.3728G	43.63	54.00	-10.37	3	Horizontal	275	1.68

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2440MHz	Pass	AV	2.44G	93.88	Inf	-Inf	3	Horizontal	275	1.68
2440MHz	Pass	AV	2.4876G	44.33	54.00	-9.67	3	Horizontal	275	1.68
2440MHz	Pass	PK	2.3612G	56.64	74.00	-17.36	3	Horizontal	275	1.68
2440MHz	Pass	PK	2.4396G	97.00	Inf	-Inf	3	Horizontal	275	1.68
2440MHz	Pass	PK	2.4896G	57.12	74.00	-16.88	3	Horizontal	275	1.68
2440MHz	Pass	AV	4.8841G	27.68	54.00	-26.32	3	Vertical	68	1.00
2440MHz	Pass	PK	4.88432G	41.49	74.00	-32.51	3	Vertical	68	1.00
2440MHz	Pass	AV	4.88366G	27.75	54.00	-26.25	3	Horizontal	181	2.12
2440MHz	Pass	PK	4.88072G	41.04	74.00	-32.96	3	Horizontal	181	2.12
2480MHz	Pass	AV	2.48G	97.77	Inf	-Inf	3	Vertical	186	1.69
2480MHz	Pass	AV	2.4835G	44.52	54.00	-9.48	3	Vertical	186	1.69
2480MHz	Pass	PK	2.4806G	100.94	Inf	-Inf	3	Vertical	186	1.69
2480MHz	Pass	PK	2.4836G	57.49	74.00	-16.51	3	Vertical	186	1.69
2480MHz	Pass	AV	2.48G	96.71	Inf	-Inf	3	Horizontal	276	1.46
2480MHz	Pass	AV	2.4835G	44.27	54.00	-9.73	3	Horizontal	276	1.46
2480MHz	Pass	PK	2.4804G	99.83	Inf	-Inf	3	Horizontal	276	1.46
2480MHz	Pass	PK	2.4838G	57.79	74.00	-16.21	3	Horizontal	276	1.46
2480MHz	Pass	AV	4.96386G	28.46	54.00	-25.54	3	Vertical	283	1.50
2480MHz	Pass	PK	4.9573G	41.89	74.00	-32.11	3	Vertical	283	1.50
2480MHz	Pass	AV	4.9572G	28.30	54.00	-25.70	3	Horizontal	15	1.50
2480MHz	Pass	PK	4.9619G	41.82	74.00	-32.18	3	Horizontal	15	1.50

2.4-2.4835GHz_BT-LE(1Mbps)

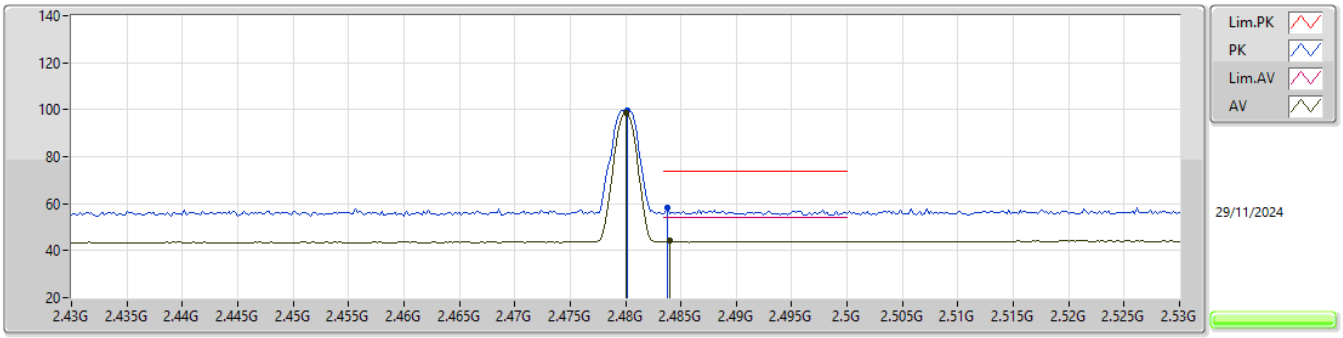
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	99.75	Inf	-Inf	31.10	3	Vertical	187	1.68	68.65	27.90	3.20	-
AV	2.4858G	44.04	54.00	-9.96	31.17	3	Vertical	187	1.68	12.87	27.96	3.21	-
PK	2.4802G	101.00	Inf	-Inf	31.10	3	Vertical	187	1.68	69.90	27.90	3.20	-
PK	2.4962G	57.32	74.00	-16.68	31.15	3	Vertical	187	1.68	26.17	27.94	3.21	-

2.4-2.4835GHz_BT-LE(1Mbps)

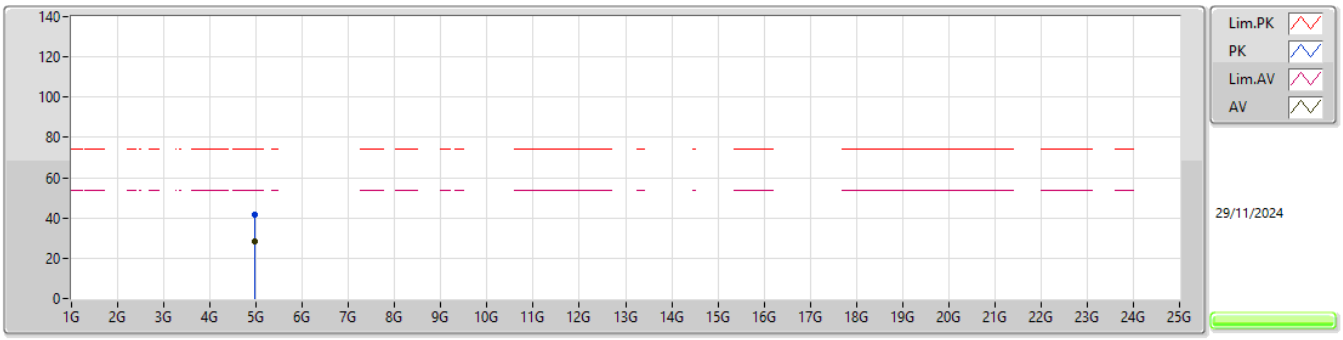
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	98.61	Inf	-Inf	31.10	3	Horizontal	275	1.61	67.51	27.90	3.20	-
AV	2.484G	44.07	54.00	-9.93	31.15	3	Horizontal	275	1.61	12.92	27.94	3.21	-
PK	2.4802G	99.86	Inf	-Inf	31.10	3	Horizontal	275	1.61	68.76	27.90	3.20	-
PK	2.4838G	58.33	74.00	-15.67	31.15	3	Horizontal	275	1.61	27.18	27.94	3.21	-

2.4-2.4835GHz_BT-LE(1Mbps)

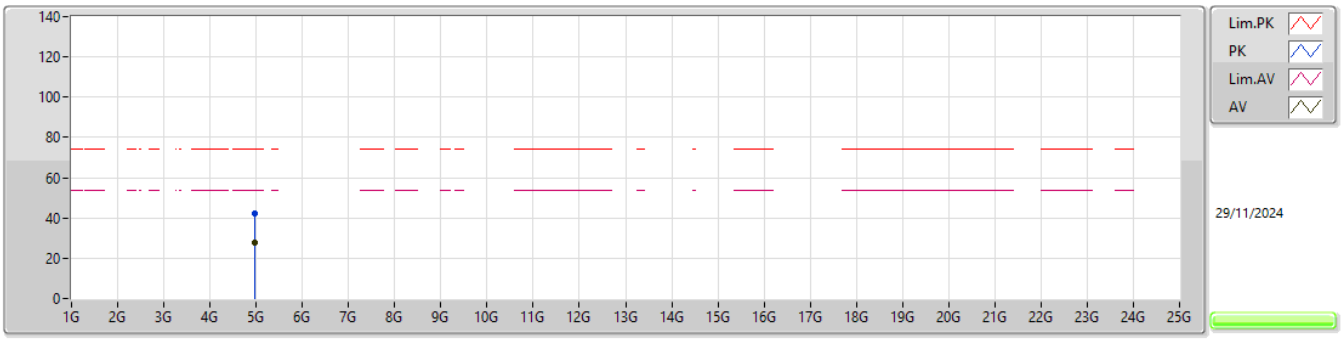
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.9598G	28.27	54.00	-25.73	-6.00	3	Vertical	127	1.50	34.27	33.34	4.70	44.04
PK	4.95776G	41.77	74.00	-32.23	-6.02	3	Vertical	127	1.50	47.79	33.33	4.69	44.04

2.4-2.4835GHz_BT-LE(1Mbps)

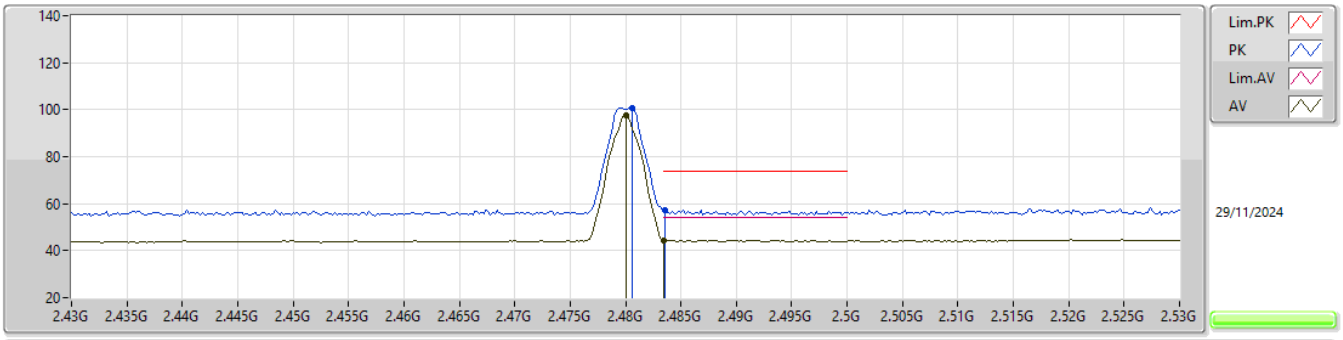
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.96002G	28.04	54.00	-25.96	-6.00	3	Horizontal	66	1.50	34.04	33.34	4.70	44.04
PK	4.959G	42.05	74.00	-31.95	-6.00	3	Horizontal	66	1.50	48.05	33.34	4.70	44.04

2.4-2.4835GHz_BT-LE(2Mbps)

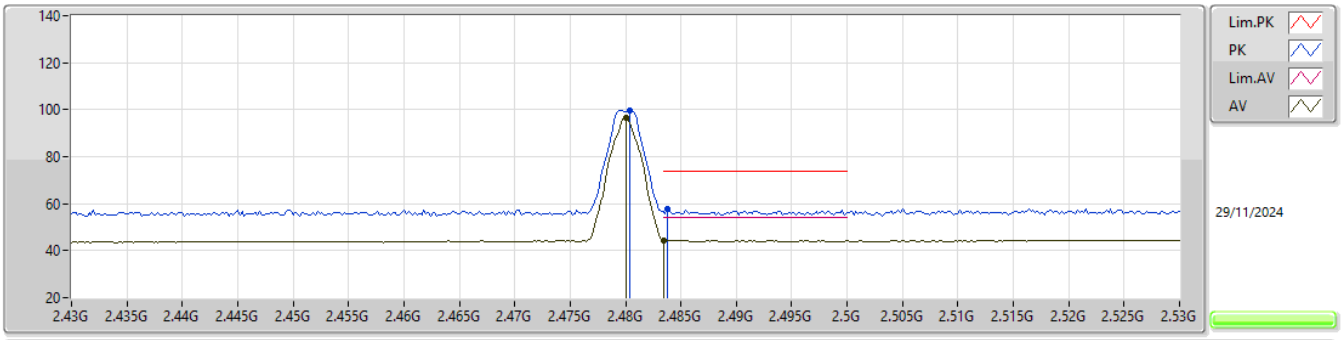
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	97.77	Inf	-Inf	31.10	3	Vertical	186	1.69	66.67	27.90	3.20	-
AV	2.4835G	44.52	54.00	-9.48	31.15	3	Vertical	186	1.69	13.37	27.94	3.21	-
PK	2.4806G	100.94	Inf	-Inf	31.11	3	Vertical	186	1.69	69.83	27.91	3.20	-
PK	2.4836G	57.49	74.00	-16.51	31.15	3	Vertical	186	1.69	26.34	27.94	3.21	-

2.4-2.4835GHz_BT-LE(2Mbps)

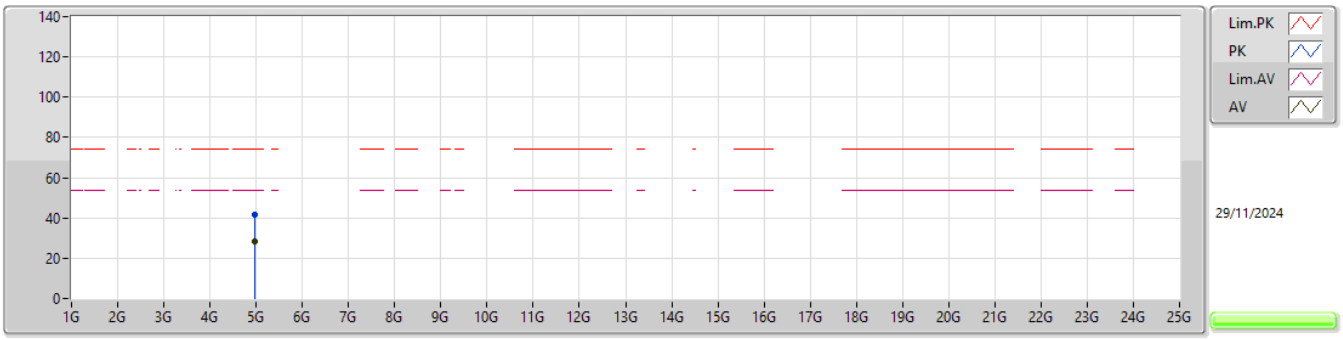
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	96.71	Inf	-Inf	31.10	3	Horizontal	276	1.46	65.61	27.90	3.20	-
AV	2.4835G	44.27	54.00	-9.73	31.15	3	Horizontal	276	1.46	13.12	27.94	3.21	-
PK	2.4804G	99.83	Inf	-Inf	31.10	3	Horizontal	276	1.46	68.73	27.90	3.20	-
PK	2.4838G	57.79	74.00	-16.21	31.15	3	Horizontal	276	1.46	26.64	27.94	3.21	-

2.4-2.4835GHz_BT-LE(2Mbps)

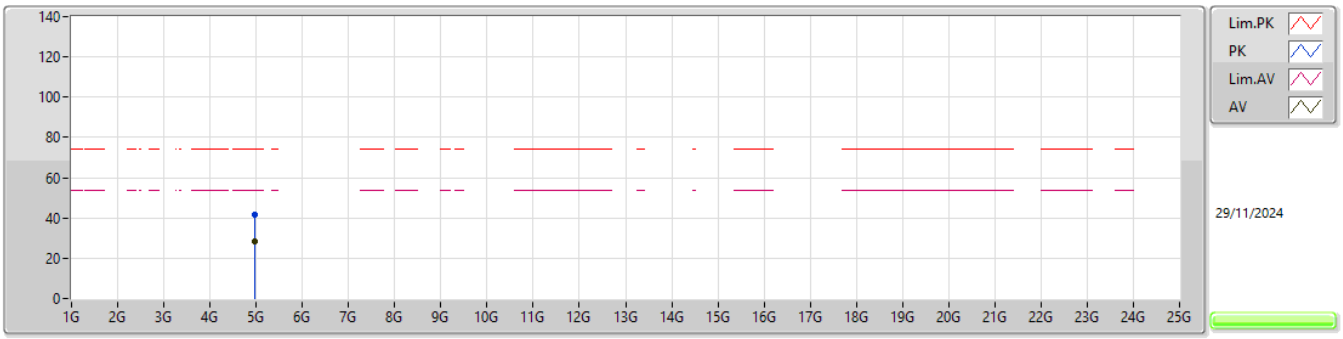
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.96386G	28.46	54.00	-25.54	-5.98	3	Vertical	283	1.50	34.44	33.36	4.70	44.04
PK	4.9573G	41.89	74.00	-32.11	-6.02	3	Vertical	283	1.50	47.91	33.33	4.69	44.04

2.4-2.4835GHz_BT-LE(2Mbps)

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.9572G	28.30	54.00	-25.70	-6.02	3	Horizontal	15	1.50	34.32	33.33	4.69	44.04
PK	4.9619G	41.82	74.00	-32.18	-5.99	3	Horizontal	15	1.50	47.81	33.35	4.70	44.04

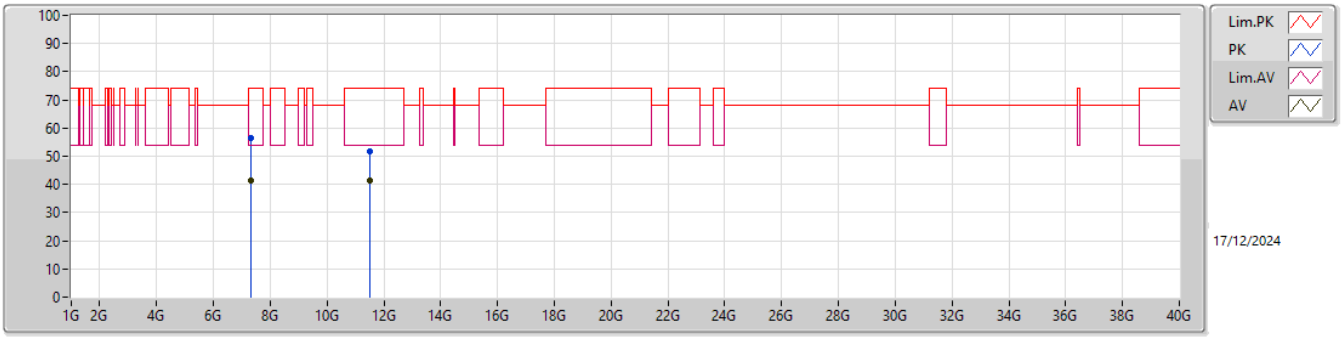
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	7.31264G	43.57	54.00	-10.43	Horizontal

Result

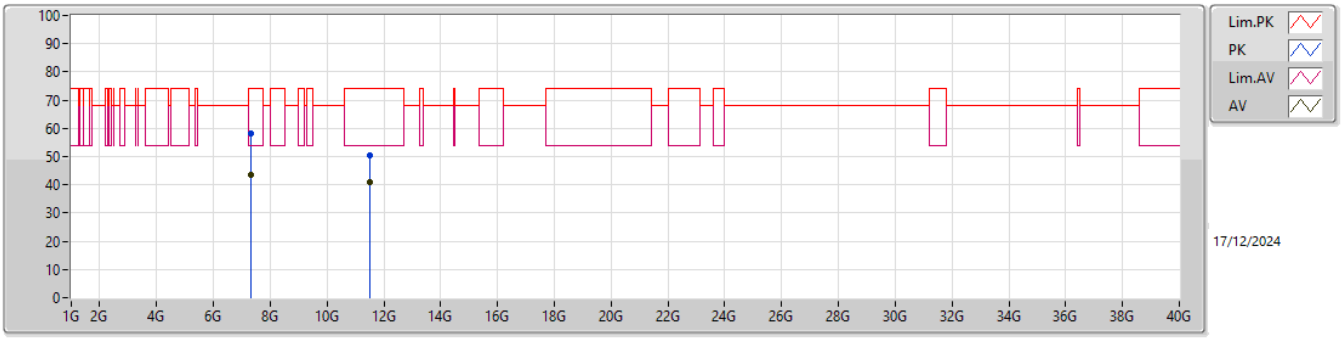
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	7.31238G	41.59	54.00	-12.41	3	Vertical	0	0.00	-
Mode 1	Pass	AV	11.48983G	41.39	54.00	-12.61	3	Vertical	54	1.50	-
Mode 1	Pass	PK	7.31479G	56.54	74.00	-17.46	3	Vertical	0	0.00	-
Mode 1	Pass	PK	11.48888G	51.87	74.00	-22.13	3	Vertical	54	1.50	-
Mode 1	Pass	AV	7.31264G	43.57	54.00	-10.43	3	Horizontal	162	1.12	-
Mode 1	Pass	AV	11.48974G	40.85	54.00	-13.15	3	Horizontal	156	1.54	-
Mode 1	Pass	PK	7.31396G	58.24	74.00	-15.76	3	Horizontal	162	1.12	-
Mode 1	Pass	PK	11.49025G	50.62	74.00	-23.38	3	Horizontal	156	1.54	-

Radiated Emissions above 1GHz_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	7.31238G	41.59	54.00	-12.41	-0.60	3	Vertical	0	0.00	42.19	37.15	5.99	43.74
AV	11.48983G	41.39	54.00	-12.61	5.26	3	Vertical	54	1.50	36.13	39.28	7.78	41.80
PK	7.31479G	56.54	74.00	-17.46	-0.61	3	Vertical	0	0.00	57.15	37.14	5.99	43.74
PK	11.48888G	51.87	74.00	-22.13	5.26	3	Vertical	54	1.50	46.61	39.28	7.78	41.80

Radiated Emissions above 1GHz_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	7.31264G	43.57	54.00	-10.43	-0.60	3	Horizontal	162	1.12	44.17	37.15	5.99	43.74
AV	11.48974G	40.85	54.00	-13.15	5.26	3	Horizontal	156	1.54	35.59	39.28	7.78	41.80
PK	7.31396G	58.24	74.00	-15.76	-0.61	3	Horizontal	162	1.12	58.85	37.14	5.99	43.74
PK	11.49025G	50.62	74.00	-23.38	5.26	3	Horizontal	156	1.54	45.36	39.28	7.78	41.80