

FCC Radio Test Report

FCC ID : XPYMAYAW4A

Equipment : Host-based multi-radio modules with Wi-Fi 6,
Bluetooth Low Energy 5.4 and 802.15.4

Brand Name : u-blox

Model Name : MAYA-W476-00B, MAYA-W466-00B, MAYA-W446-00B,
MAYA-W436-00B, MAYA-W473-00B, MAYA-W463-00B,
MAYA-W443-00B, MAYA-W433-00B

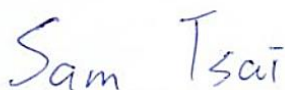
Applicant : u-Blox AG
Zürcherstrasse 68, 8800 Thalwil Switzerland

Manufacturer : u-Blox AG
Zürcherstrasse 68, 8800 Thalwil Switzerland

Standard : 47 CFR FCC Part 15.247

The product was received on Nov. 28, 2024, and testing was started from Dec. 14, 2024 and completed on Jan. 09, 2025. 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: Sam Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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



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History of this test report

[illegible]

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: Julie Tseng

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std.	Ch. Frequency (MHz)	Channel Number
2400-2483.5	802.15.4	2405-2480	11-26 [16]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	Zigbee	5	1

Note:.

- ♦ Zigbee uses a O-QPSK (250kbps) modulation for DSSS.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

MAYA-W476-00B

Ant.	Brand	Model Name	Antenna Type	Support
1	U-Blox	MAYA-W4 PCB	PCB Antenna	2.4G+5G+BLE+802.15.4

Ant.	Gain (dBi)							
	2.4G	UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-4	BT	802.15.4
1	1.56	-1.74	1.56	1.56	-2.23	-0.95	1.56	1.56

For 2.4GHz function:

For IEEE 802.11 b/g/n/ax mode (1TX/1RX)

Ant. 1 could transmit/receive.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (1TX/1RX)

Ant. 1 could transmit/receive.

For BT function:

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

Ant. 1 could transmit/receive.

For Zigbee function:

For IEEE 802.15.4 mode (1TX/1RX)

Ant. 1 could transmit/receive.

MAYA-W473-00B

Ant.	Brand	Model Name	Antenna Type	Support
1	Linx	ANT-DB1-RAF-RPS	Dual-band dipole antenna	2.4G+5G+BLE+802.15.4
2	Chang Hong	DA-2458-02-SMR	Dual-band dipole antenna	2.4G+5G+BLE+802.15.4
3	Laird	001-0012	Dual-band dipole antenna	2.4G+5G+BLE+802.15.4
4	Taoglas	GW.59.3153	Dual-band dipole antenna	2.4G+5G+BLE+802.15.4
5	Laird	MAF94051	Dual-band dipole antenna	2.4G+5G+BLE+802.15.4
6	Unictron	H2B1PD1A1C385L	PCB antenna	2.4G+5G+BLE+802.15.4
7	Molex	1461530050	PCB antenna	2.4G+5G+BLE+802.15.4
8	Molex	2042810100	PCB antenna	2.4G+5G+BLE+802.15.4

Ant.	Gain (dBi)							
	2.4G	UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-4	BT	802.15.4
1	4.1	5.1	5.1	5.1	5.1	5.1	4.1	4.1
2	2.85	1.52	0.36	1.35	2.17	1.49	2.85	2.85
3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
4	3.8	5.3	5.3	5.3	5.3	5.3	3.8	3.8
5	2.1	2.6	2.6	2.6	2.6	3.4	2.1	2.1
6	2.7	3.5	3.5	3.5	3.5	3.5	2.7	2.7
7	3.2	4.25	4.25	4.25	4.25	4.25	3.2	3.2
8	2.0	3.3	3.3	3.3	3.3	3.3	2.0	2.0

For 2.4GHz function:

For IEEE 802.11 b/g/n/ax mode (1TX/1RX)

Ant. 1 ~ Ant. 8 could transmit/receive.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (1TX/1RX)

Ant. 1 ~ Ant. 8 could transmit/receive.

For BT function:

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

Ant. 1 ~ Ant. 8 could transmit/receive.

For Zigbee function:

For IEEE 802.15.4 mode (1TX/1RX)

Ant. 1 ~ Ant. 8 could transmit/receive.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From Host system		
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
802.15.4_1TX	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

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

Model Name	Description	Chipset used	Radio Technologies	Antenna Type	Antenna item
MAYA-W476-00B	Product with integrated antenna	NXP IW610G	2.4G+5G Wi-Fi, BLE, 802.15.4	PCB Antenna	W9
MAYA-W466-00B	Product with integrated antenna	NXP IW610F	2.4G+5G Wi-Fi, BLE	PCB Antenna	W9
MAYA-W446-00B	Product with integrated antenna	NXP IW610C	2.4G Wi-Fi, BLE, 802.15.4	PCB Antenna	W9
MAYA-W436-00B	Product with integrated antenna	NXP IW610B	2.4G Wi-Fi, BLE	PCB Antenna	W9
MAYA-W473-00B	Product with antenna pin	NXP IW610G	2.4G+5G Wi-Fi, BLE, 802.15.4	External Antenna Dual-Band dipole Antenna or External PCB Antenna	W1~8
MAYA-W463-00B	Product with antenna pin	NXP IW610F	2.4G+5G Wi-Fi, BLE	External Antenna Dual-Band dipole Antenna or External PCB Antenna	W1~8
MAYA-W443-00B	Product with antenna pin	NXP IW610C	2.4G Wi-Fi, BLE, 802.15.4	External Antenna Dual-Band dipole Antenna or External PCB Antenna	W1~8
MAYA-W433-00B	Product with antenna pin	NXP IW610B	2.4G Wi-Fi, BLE	External Antenna Dual-Band dipole Antenna or External PCB Antenna	W1~8

From the above models, model: MAYA-W476-00B, MAYA-W473-00B 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 (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	Rian Chung	19.3~21.8°C / 53~56%	08/Jan/2025
☒ 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	03CH26-HY	Andy Wang	20.4~20.8°C / 59~62%	14/Dec/2024~30/Dec/2024
Radiated (Co-location)	03CH26-HY	Ivan Chung	19.1~19.4°C / 60~62%	09/Jan/2025
RF Conducted	TH06-HY	Johnny Yu	23.4~25°C / 52~56%	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	Dut labtool v2.0.0.21
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Mode	Power Setting
802.15.4_1TX	-
2405MHz	13
2440MHz	13
2480MHz	0

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	Fixture 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	Fixture 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
Test Condition	Radiated measurement
Operating Mode	CTX
1	WLAN 5GHz+Bluetooth
2	WLAN 5GHz+802.15.4
Refer to Sporton Test Report No.: FA4O2915 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

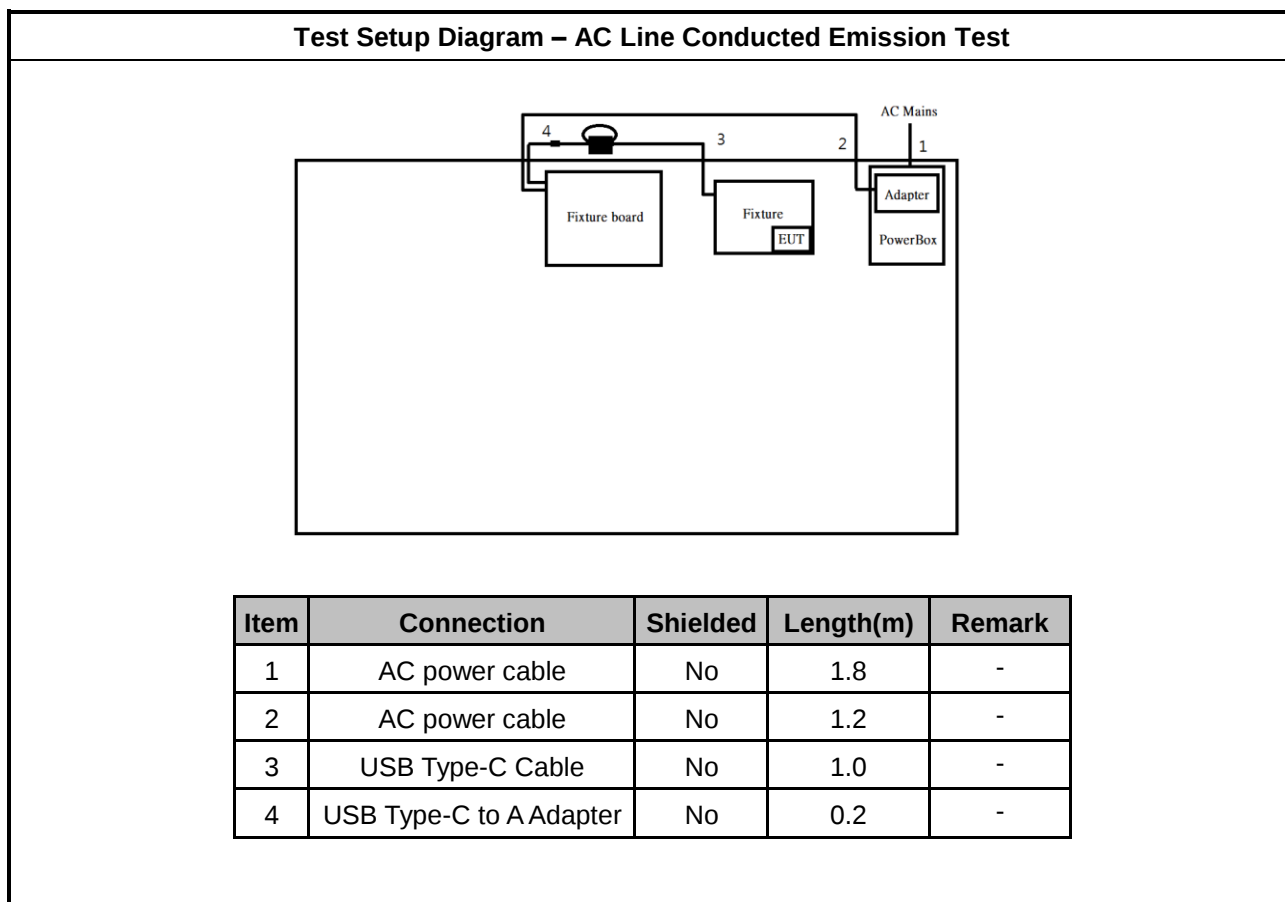
2.3 Support Equipment

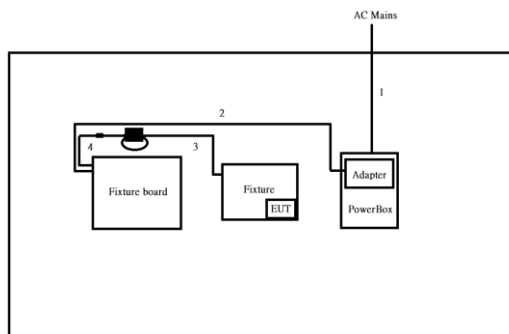
Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	EVKB Board	NXP	8MMINILPDDR4-EVKB	-	-
2	Adapter	EDAC	EA1045CR	-	-
3	USB Type-C to A Adapter	Customer provide	Customer provide	-	-
4	USB Type-C Cable	Customer provide	Customer provide	-	-
5	Black Core	Sporton	Sporton	-	-
6	Fixture	U-blox	MAYA-W4 EUK	-	-

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	Fixture	U-blox	MAYA-W4 EUK	-	-
4	EVKB Board	NXP	8MMINILPDDR4-EVKB	-	-

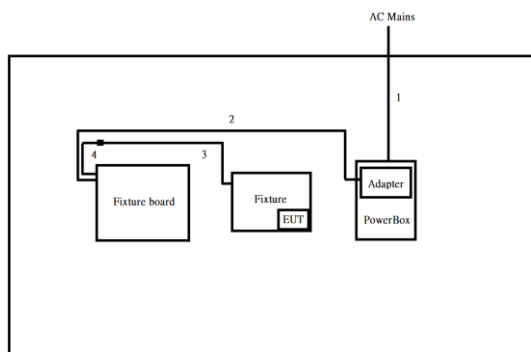
Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	EVKB Board	NXP	8MMINILPDDR4-EVKB	-	-
2	Adapter	EDAC	EA1045CR	-	-
3	USB Type-C to A Adapter	Customer provide	Customer provide	-	-
4	USB Type-C Cable	Customer provide	Customer provide	-	-
5	Black Core	Sporton	Sporton	-	-
6	Fixture	U-blox	MAYA-W4 EUK	-	-

2.4 Test Setup Diagram



Test Setup Diagram - Radiated Below 1G Test


Item	Connection	Shielded	Length(m)	Remark
1	AC power cable	No	1.8	-
2	AC power cable	No	1.2	-
3	USB Type-C Cable	No	1.0	-
4	USB Type-C to A Adapter	No	0.2	-

Test Setup Diagram - Radiated Above 1G Test


Item	Connection	Shielded	Length(m)	Remark
1	AC power cable	No	1.8	-
2	AC power cable	No	1.2	-
3	USB Type-C Cable	No	1.0	-
4	USB Type-C to A Adapter	No	0.2	-

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

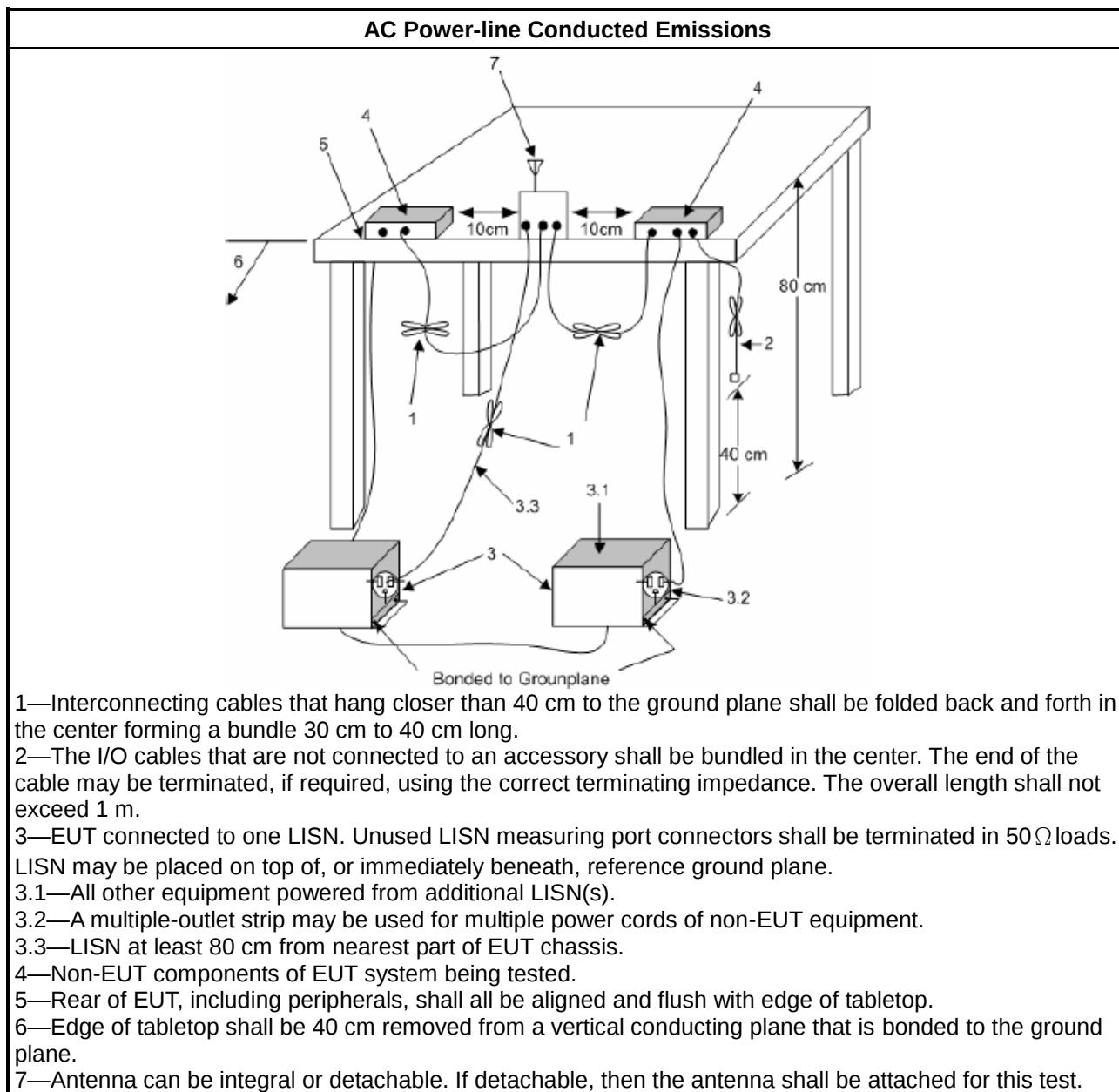
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

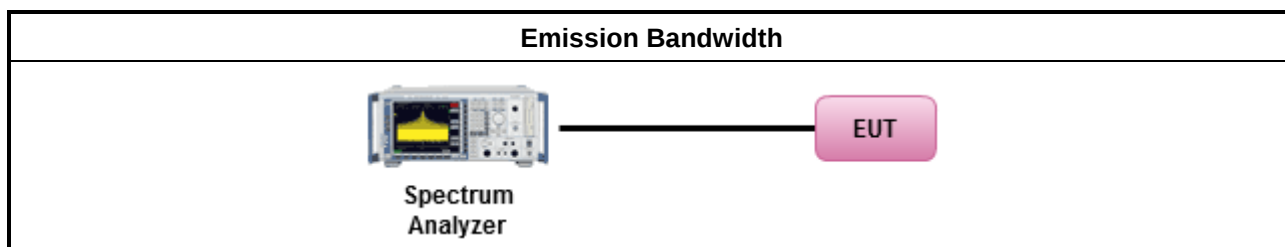
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dBm
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

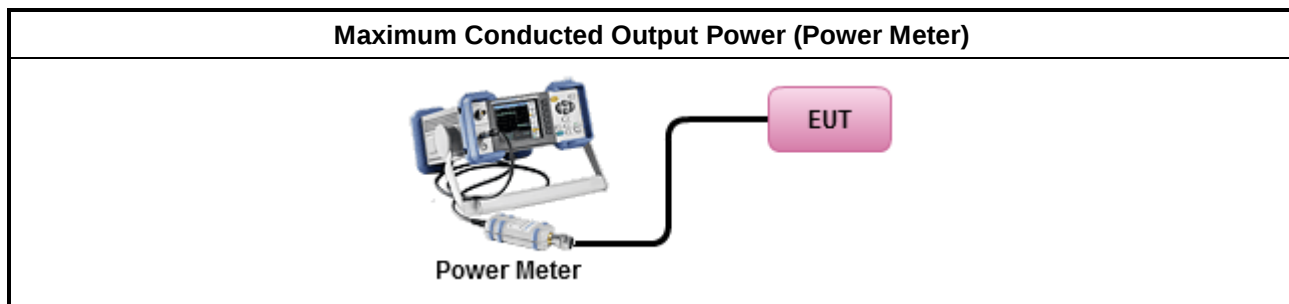
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

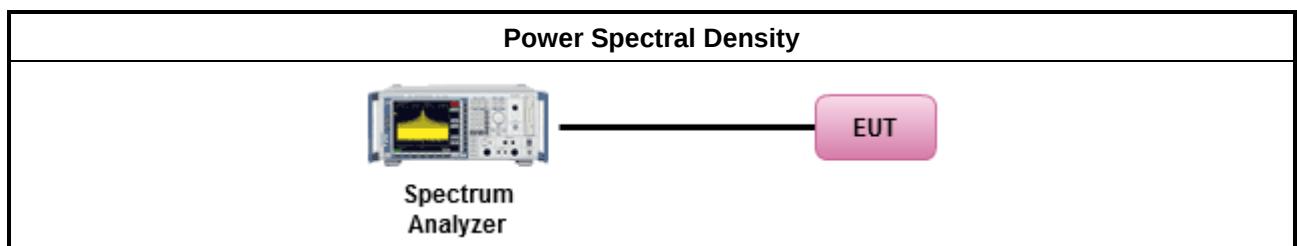
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
▪	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
▪	Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.	

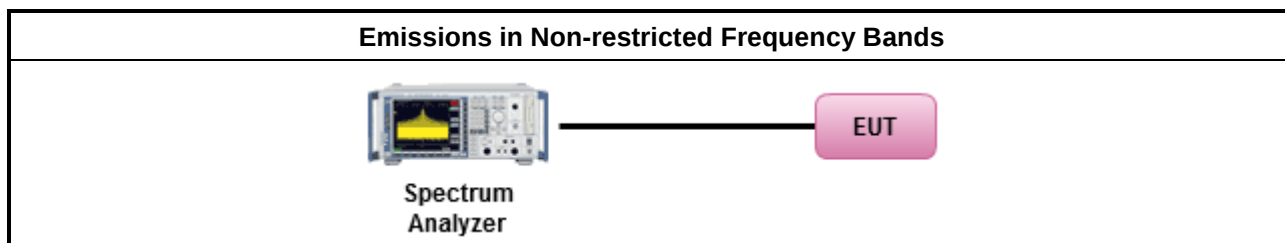
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

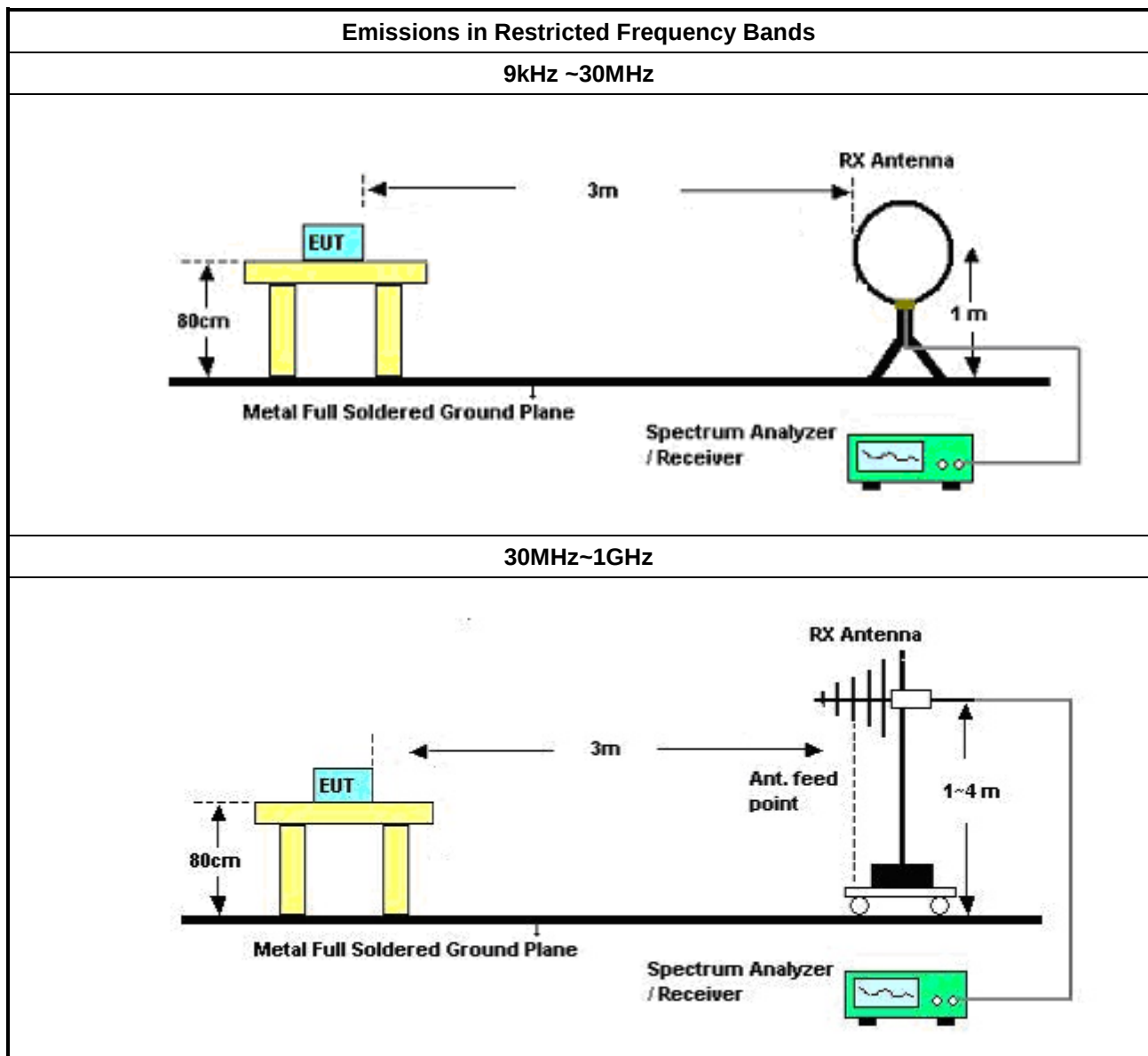
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

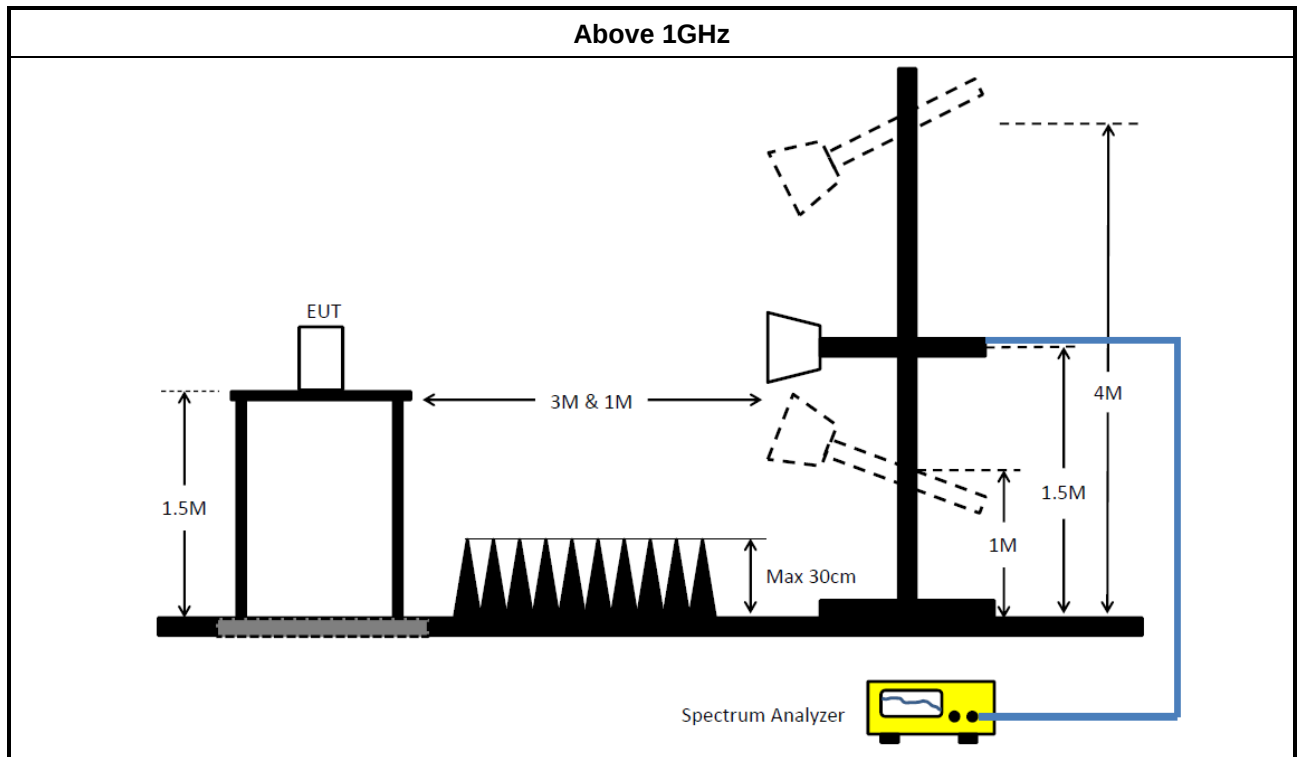
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.5 Test Setup





3.6.6 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	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	101029	10Hz~40GHz	28/Oct/2024	27/Oct/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	16/Oct/2024	15/Oct/2025
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	01/Apr/2024	31/Mar/2025
Pulse Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	02/Apr/2024	01/Apr/2025
SENSE-15247_DTS	Sporton	V5.11.20	N/A	N/A	N/A	N/A

**Instrument for Radiated Test**

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH26-HY	30MHz~1GHz 3m	07/Aug/2024	06/Aug/2025
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH26-HY	1GHz~18GHz 3m	07/Aug/2024	06/Aug/2025
EMI Test Receiver	ROHDE & SCHWARZ	ESR	102318	9kHz~3.6GHz	06/Dec/2024	05/Dec/2025
Signal Analyzer	ROHDE&SCHWARZ	FSV3044	101411	10Hz~44GHz	09/Oct/2024	08/Oct/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	63540/002	30MHz~1GHz	05/Jun/2024	04/Jun/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02877	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	CB009	9kHz~1GHz	21/Oct/2024	20/Oct/2025
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB009	1GHz~40GHz	21/Oct/2024	20/Oct/2025
Preamplifier	SGH	PRAMP 903	20230515-2	30MHz~1GHz	24/May/2024	23/May/2025
Preamplifier	SGH	PRAMP 118-H	20230515-4	1GHz ~18GHz	24/May/2024	23/May/2025
Amplifier	EM	EM18G40G	060874	18GHz ~ 40GHz	15/Apr/2024	14/Apr/2025
SENSE-15247-DTS	Sporton	V5.11.20	NA	NA	NA	NA

Instrument for Radiated Test (Co-location)

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH26-HY	1GHz~18GHz 3m	07/Aug/2024	06/Aug/2025
Signal Analyzer	ROHDE&SCHWARZ	FSV3044	101411	10Hz~44GHz	09/Oct/2024	08/Oct/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02877	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	CB009	1GHz~40GHz	21/Oct/2024	20/Oct/2025
Preamplifier	SGH	PRAMP 118-H	20230515-4	1GHz ~18GHz	24/May/2024	23/May/2025
Amplifier	EM	EM18G40G	060874	18GHz ~ 40GHz	15/Apr/2024	14/Apr/2025
SENSE-EMI	Sporton	V5.11.8	NA	NA	NA	NA



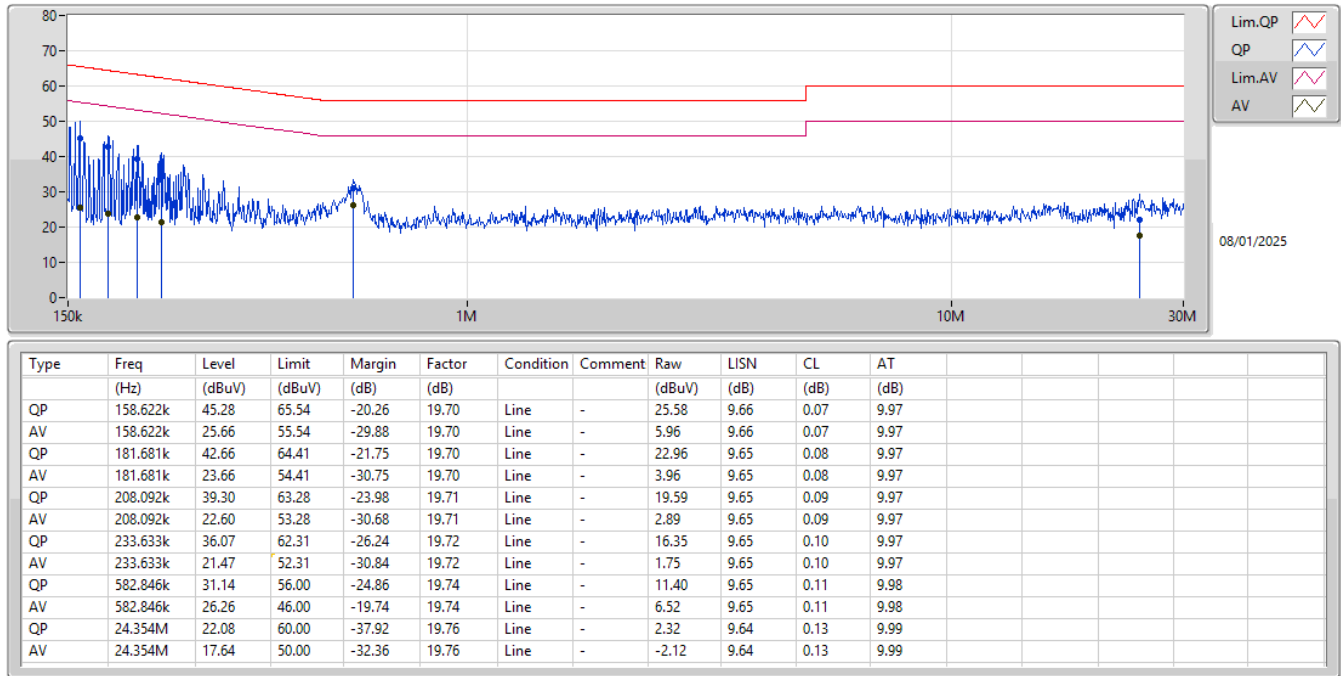
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	156.109k	46.43	65.67	-19.24	Neutral

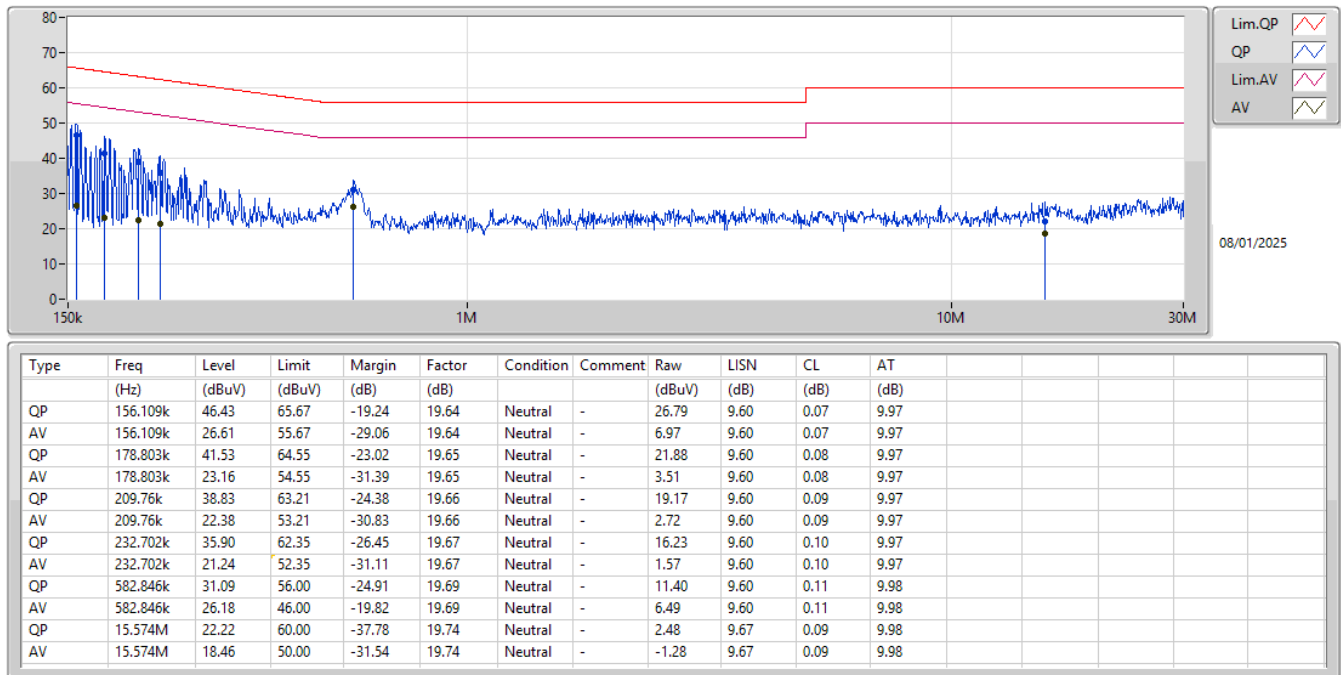
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	158.622k	45.28	65.54	-20.26	Line
Mode 1	Pass	AV	158.622k	25.66	55.54	-29.88	Line
Mode 1	Pass	QP	181.681k	42.66	64.41	-21.75	Line
Mode 1	Pass	AV	181.681k	23.66	54.41	-30.75	Line
Mode 1	Pass	QP	208.092k	39.30	63.28	-23.98	Line
Mode 1	Pass	AV	208.092k	22.60	53.28	-30.68	Line
Mode 1	Pass	QP	233.633k	36.07	62.31	-26.24	Line
Mode 1	Pass	AV	233.633k	21.47	52.31	-30.84	Line
Mode 1	Pass	QP	582.846k	31.14	56.00	-24.86	Line
Mode 1	Pass	AV	582.846k	26.26	46.00	-19.74	Line
Mode 1	Pass	QP	24.354M	22.08	60.00	-37.92	Line
Mode 1	Pass	AV	24.354M	17.64	50.00	-32.36	Line
Mode 1	Pass	QP	156.109k	46.43	65.67	-19.24	Neutral
Mode 1	Pass	AV	156.109k	26.61	55.67	-29.06	Neutral
Mode 1	Pass	QP	178.803k	41.53	64.55	-23.02	Neutral
Mode 1	Pass	AV	178.803k	23.16	54.55	-31.39	Neutral
Mode 1	Pass	QP	209.76k	38.83	63.21	-24.38	Neutral
Mode 1	Pass	AV	209.76k	22.38	53.21	-30.83	Neutral
Mode 1	Pass	QP	232.702k	35.90	62.35	-26.45	Neutral
Mode 1	Pass	AV	232.702k	21.24	52.35	-31.11	Neutral
Mode 1	Pass	QP	582.846k	31.09	56.00	-24.91	Neutral
Mode 1	Pass	AV	582.846k	26.18	46.00	-19.82	Neutral
Mode 1	Pass	QP	15.574M	22.22	60.00	-37.78	Neutral
Mode 1	Pass	AV	15.574M	18.46	50.00	-31.54	Neutral

Conducted Emissions at Powerline_Mode 1



Conducted Emissions at Powerline_Mode 1





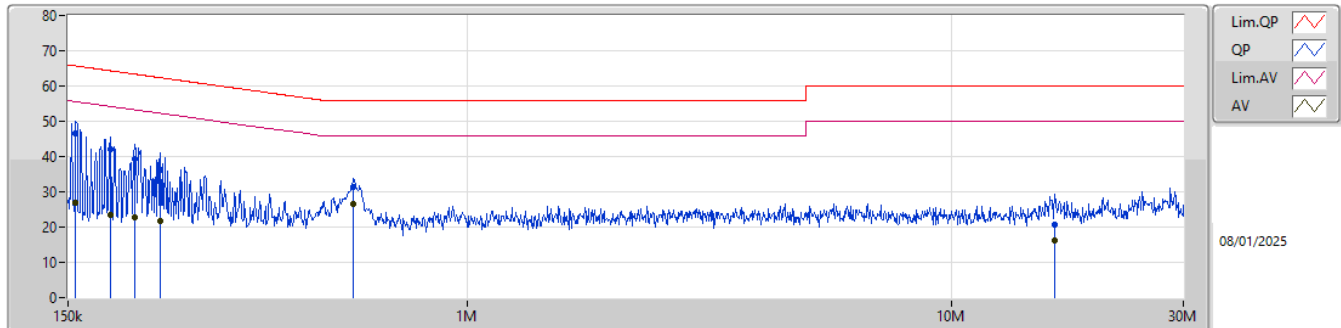
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	155.487k	46.64	65.69	-19.05	Line

Result

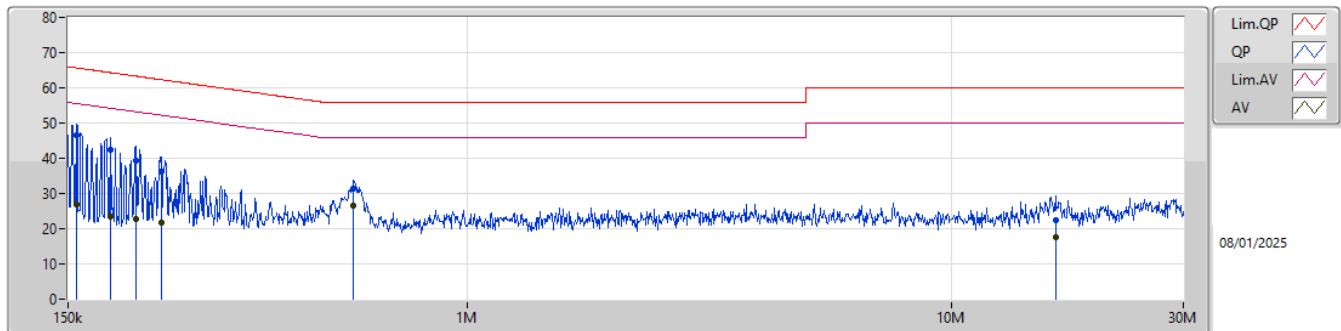
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	155.487k	46.64	65.69	-19.05	Line
Mode 1	Pass	AV	155.487k	26.90	55.69	-28.79	Line
Mode 1	Pass	QP	183.87k	42.23	64.30	-22.07	Line
Mode 1	Pass	AV	183.87k	23.46	54.30	-30.84	Line
Mode 1	Pass	QP	206.437k	39.21	63.34	-24.13	Line
Mode 1	Pass	AV	206.437k	22.69	53.34	-30.65	Line
Mode 1	Pass	QP	232.702k	36.05	62.35	-26.30	Line
Mode 1	Pass	AV	232.702k	21.58	52.35	-30.77	Line
Mode 1	Pass	QP	582.846k	31.40	56.00	-24.60	Line
Mode 1	Pass	AV	582.846k	26.58	46.00	-19.42	Line
Mode 1	Pass	QP	16.273M	20.75	60.00	-39.25	Line
Mode 1	Pass	AV	16.273M	16.21	50.00	-33.79	Line
Mode 1	Pass	QP	156.109k	46.55	65.67	-19.12	Neutral
Mode 1	Pass	AV	156.109k	26.85	55.67	-28.82	Neutral
Mode 1	Pass	QP	183.137k	42.50	64.34	-21.84	Neutral
Mode 1	Pass	AV	183.137k	23.53	54.34	-30.81	Neutral
Mode 1	Pass	QP	207.263k	39.35	63.30	-23.95	Neutral
Mode 1	Pass	AV	207.263k	22.76	53.30	-30.54	Neutral
Mode 1	Pass	QP	233.633k	36.10	62.31	-26.21	Neutral
Mode 1	Pass	AV	233.633k	21.60	52.31	-30.71	Neutral
Mode 1	Pass	QP	582.846k	31.41	56.00	-24.59	Neutral
Mode 1	Pass	AV	582.846k	26.54	46.00	-19.46	Neutral
Mode 1	Pass	QP	16.338M	22.39	60.00	-37.61	Neutral
Mode 1	Pass	AV	16.338M	17.73	50.00	-32.27	Neutral

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	155.487k	46.64	65.69	-19.05	19.70	Line	-	26.94	9.66	0.07	9.97						
AV	155.487k	26.90	55.69	-28.79	19.70	Line	-	7.20	9.66	0.07	9.97						
QP	183.87k	42.23	64.30	-22.07	19.70	Line	-	22.53	9.65	0.08	9.97						
AV	183.87k	23.46	54.30	-30.84	19.70	Line	-	3.76	9.65	0.08	9.97						
QP	206.437k	39.21	63.34	-24.13	19.71	Line	-	19.50	9.65	0.09	9.97						
AV	206.437k	22.69	53.34	-30.65	19.71	Line	-	2.98	9.65	0.09	9.97						
QP	232.702k	36.05	62.35	-26.30	19.72	Line	-	16.33	9.65	0.10	9.97						
AV	232.702k	21.58	52.35	-30.77	19.72	Line	-	1.86	9.65	0.10	9.97						
QP	582.846k	31.40	56.00	-24.60	19.74	Line	-	11.66	9.65	0.11	9.98						
AV	582.846k	26.58	46.00	-19.42	19.74	Line	-	6.84	9.65	0.11	9.98						
QP	16.273M	20.75	60.00	-39.25	19.77	Line	-	0.98	9.69	0.10	9.98						
AV	16.273M	16.21	50.00	-33.79	19.77	Line	-	-3.56	9.69	0.10	9.98						

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	156.109k	46.55	65.67	-19.12	19.64	Neutral	-	26.91	9.60	0.07	9.97						
AV	156.109k	26.85	55.67	-28.82	19.64	Neutral	-	7.21	9.60	0.07	9.97						
QP	183.137k	42.50	64.34	-21.84	19.65	Neutral	-	22.85	9.60	0.08	9.97						
AV	183.137k	23.53	54.34	-30.81	19.65	Neutral	-	3.88	9.60	0.08	9.97						
QP	207.263k	39.35	63.30	-23.95	19.66	Neutral	-	19.69	9.60	0.09	9.97						
AV	207.263k	22.76	53.30	-30.54	19.66	Neutral	-	3.10	9.60	0.09	9.97						
QP	233.633k	36.10	62.31	-26.21	19.67	Neutral	-	16.43	9.60	0.10	9.97						
AV	233.633k	21.60	52.31	-30.71	19.67	Neutral	-	1.93	9.60	0.10	9.97						
QP	582.846k	31.41	56.00	-24.59	19.69	Neutral	-	11.72	9.60	0.11	9.98						
AV	582.846k	26.54	46.00	-19.46	19.69	Neutral	-	6.85	9.60	0.11	9.98						
QP	16.338M	22.39	60.00	-37.61	19.75	Neutral	-	2.64	9.67	0.10	9.98						
AV	16.338M	17.73	50.00	-32.27	19.75	Neutral	-	-2.02	9.67	0.10	9.98						



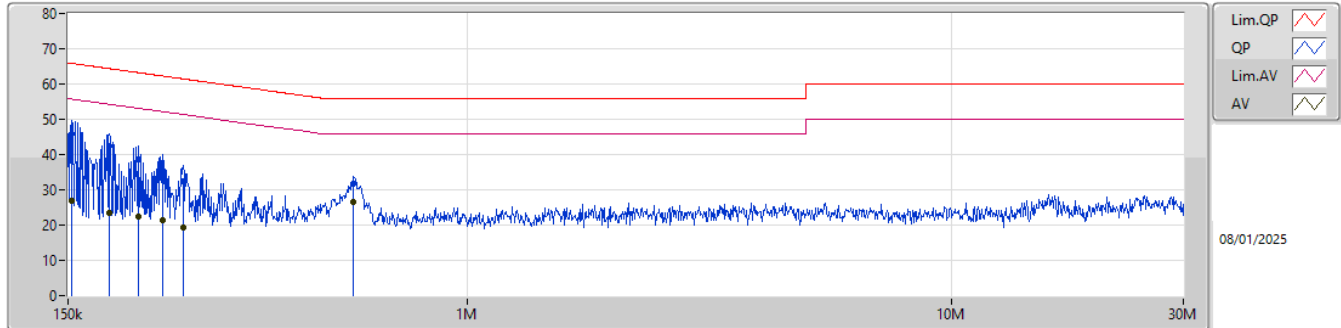
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	582.846k	26.72	46.00	-19.28	Line

Result

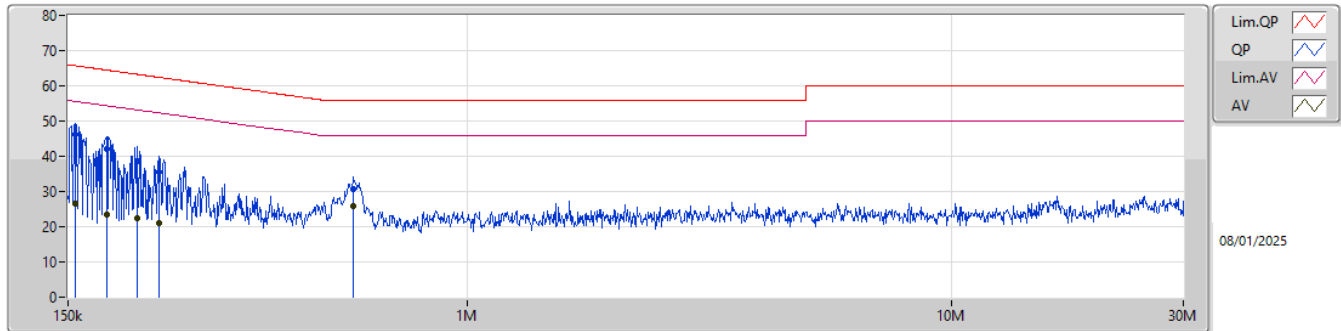
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	153.024k	45.81	65.83	-20.02	Line
Mode 1	Pass	AV	153.024k	26.78	55.83	-29.05	Line
Mode 1	Pass	QP	182.408k	42.37	64.37	-22.00	Line
Mode 1	Pass	AV	182.408k	23.59	54.37	-30.78	Line
Mode 1	Pass	QP	209.76k	38.58	63.21	-24.63	Line
Mode 1	Pass	AV	209.76k	22.42	53.21	-30.79	Line
Mode 1	Pass	QP	235.505k	35.55	62.25	-26.70	Line
Mode 1	Pass	AV	235.505k	21.47	52.25	-30.78	Line
Mode 1	Pass	QP	259.185k	32.37	61.45	-29.08	Line
Mode 1	Pass	AV	259.185k	19.29	51.45	-32.16	Line
Mode 1	Pass	QP	582.846k	31.56	56.00	-24.44	Line
Mode 1	Pass	AV	582.846k	26.72	46.00	-19.28	Line
Mode 1	Pass	QP	155.487k	46.19	65.69	-19.50	Neutral
Mode 1	Pass	AV	155.487k	26.58	55.69	-29.11	Neutral
Mode 1	Pass	QP	180.236k	42.21	64.47	-22.26	Neutral
Mode 1	Pass	AV	180.236k	23.60	54.47	-30.87	Neutral
Mode 1	Pass	QP	208.925k	38.74	63.25	-24.51	Neutral
Mode 1	Pass	AV	208.925k	22.55	53.25	-30.70	Neutral
Mode 1	Pass	QP	208.925k	38.76	63.25	-24.49	Neutral
Mode 1	Pass	AV	208.925k	22.50	53.25	-30.75	Neutral
Mode 1	Pass	QP	231.775k	35.37	62.39	-27.02	Neutral
Mode 1	Pass	AV	231.775k	21.13	52.39	-31.26	Neutral
Mode 1	Pass	QP	582.846k	30.63	56.00	-25.37	Neutral
Mode 1	Pass	AV	582.846k	25.85	46.00	-20.15	Neutral

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	153.024k	45.81	65.83	-20.02	19.70	Line	-	26.11	9.66	0.07	9.97						
AV	153.024k	26.78	55.83	-29.05	19.70	Line	-	7.08	9.66	0.07	9.97						
QP	182.408k	42.37	64.37	-22.00	19.70	Line	-	22.67	9.65	0.08	9.97						
AV	182.408k	23.59	54.37	-30.78	19.70	Line	-	3.89	9.65	0.08	9.97						
QP	209.76k	38.58	63.21	-24.63	19.71	Line	-	18.87	9.65	0.09	9.97						
AV	209.76k	22.42	53.21	-30.79	19.71	Line	-	2.71	9.65	0.09	9.97						
QP	235.505k	35.55	62.25	-26.70	19.72	Line	-	15.83	9.65	0.10	9.97						
AV	235.505k	21.47	52.25	-30.78	19.72	Line	-	1.75	9.65	0.10	9.97						
QP	259.185k	32.37	61.45	-29.08	19.72	Line	-	12.65	9.65	0.10	9.97						
AV	259.185k	19.29	51.45	-32.16	19.72	Line	-	-0.43	9.65	0.10	9.97						
QP	582.846k	31.56	56.00	-24.44	19.74	Line	-	11.82	9.65	0.11	9.98						
AV	582.846k	26.72	46.00	-19.28	19.74	Line	-	6.98	9.65	0.11	9.98						

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	155.487k	46.19	65.69	-19.50	19.64	Neutral	-	26.55	9.60	0.07	9.97						
AV	155.487k	26.58	55.69	-29.11	19.64	Neutral	-	6.94	9.60	0.07	9.97						
QP	180.236k	42.21	64.47	-22.26	19.65	Neutral	-	22.56	9.60	0.08	9.97						
AV	180.236k	23.60	54.47	-30.87	19.65	Neutral	-	3.95	9.60	0.08	9.97						
QP	208.925k	38.74	63.25	-24.51	19.66	Neutral	-	19.08	9.60	0.09	9.97						
AV	208.925k	22.55	53.25	-30.70	19.66	Neutral	-	2.89	9.60	0.09	9.97						
QP	208.925k	38.76	63.25	-24.49	19.66	Neutral	-	19.10	9.60	0.09	9.97						
AV	208.925k	22.50	53.25	-30.75	19.66	Neutral	-	2.84	9.60	0.09	9.97						
QP	231.775k	35.37	62.39	-27.02	19.67	Neutral	-	15.70	9.60	0.10	9.97						
AV	231.775k	21.13	52.39	-31.26	19.67	Neutral	-	1.46	9.60	0.10	9.97						
QP	582.846k	30.63	56.00	-25.37	19.69	Neutral	-	10.94	9.60	0.11	9.98						
AV	582.846k	25.85	46.00	-20.15	19.69	Neutral	-	6.16	9.60	0.11	9.98						

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.15.4_1TX	1.594M	2.411M	2M41D1D	1.569M	2.243M

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)
802.15.4_1TX	-	-	-	-
2405MHz	Pass	500k	1.569M	2.399M
2440MHz	Pass	500k	1.594M	2.411M
2480MHz	Pass	500k	1.581M	2.243M

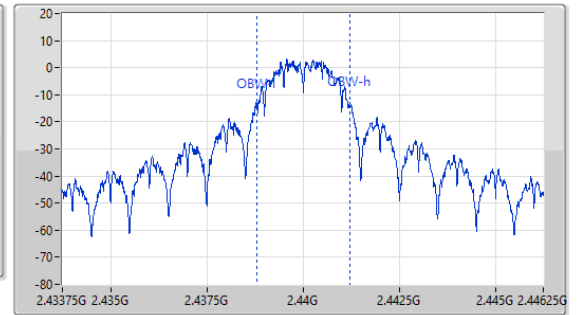
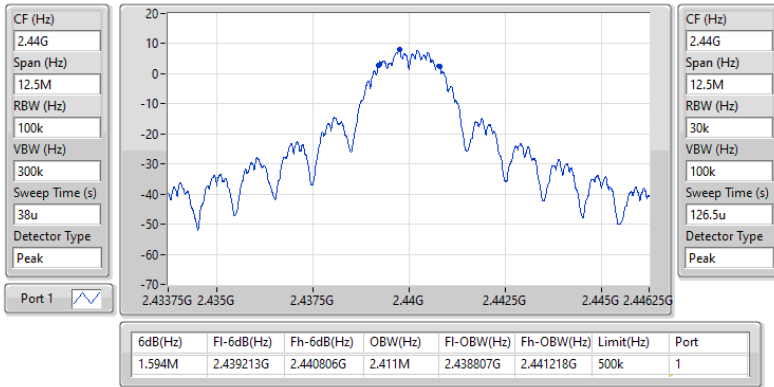
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_802.15.4_1TX

EBW

2440MHz

17/12/2024





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.15.4_1TX	12.74	0.01879



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.15.4_1TX	-	-	-	-	-
2405MHz	Pass	4.10	12.63	12.63	30.00
2440MHz	Pass	4.10	12.74	12.74	30.00
2480MHz	Pass	4.10	-3.30	-3.30	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	-
802.15.4_1TX	-4.27

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.15.4_1TX	-	-	-	-	-
2405MHz	Pass	4.10	-5.95	-5.95	8.00
2440MHz	Pass	4.10	-4.27	-4.27	8.00
2480MHz	Pass	4.10	-20.75	-20.75	8.00

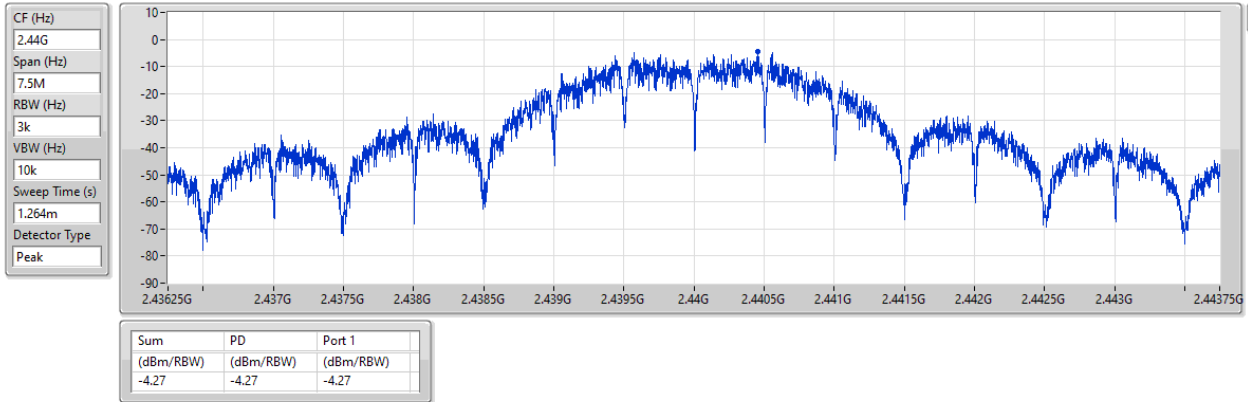
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
Inf = There's no restriction for the limit.

2.4-2.4835GHz_802.15.4_1TX

PSD

2440MHz

17/12/2024





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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
802.15.4_1TX	Pass	2.43975G	8.38	-21.62	2.02985G	-55.85	2.39996G	-33.77	2.4G	-33.66	2.50162G	-53.07	16.20949G	-41.99	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
802.15.4_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.43975G	8.38	-21.62	2.02985G	-55.85	2.39996G	-33.77	2.4G	-33.66	2.50162G	-53.07	16.20949G	-41.99	1
2440MHz	Pass	2.43975G	8.38	-21.62	2.3095G	-54.86	2.394G	-53.18	2.4G	-55.70	2.5007G	-53.64	16.94063G	-42.57	1
2480MHz	Pass	2.43975G	8.38	-21.62	2.30245G	-55.64	2.39204G	-54.34	2.4G	-56.26	2.50062G	-54.13	16.3051G	-42.56	1

2.4-2.4835GHz_802.15.4_1TX

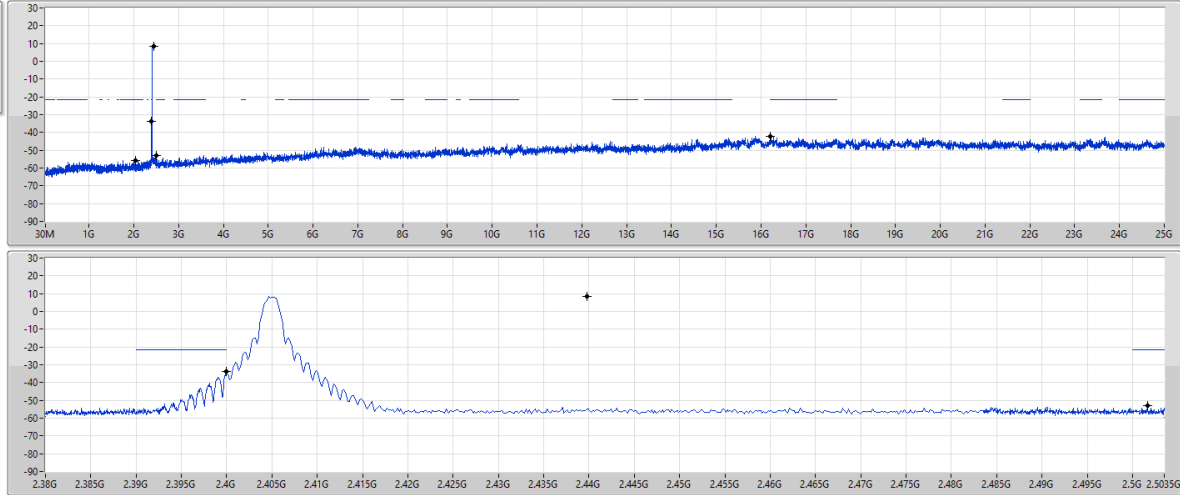
CSEndB

2405MHz

17/12/2024

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

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43975G	8.38	-21.62	2.02985G	-55.85	2.39996G	-33.77	2.4G	-33.66	2.50162G	-53.07	16.20949G	-41.99	1



Summary

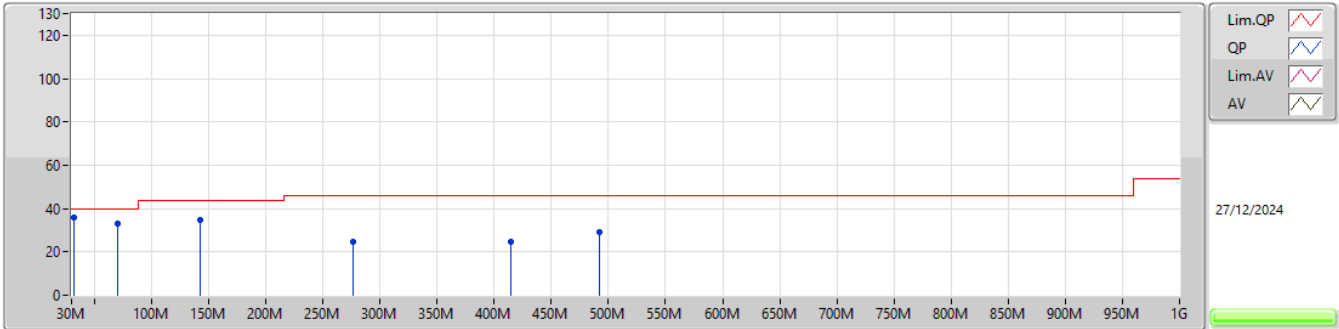
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	PK	31.94M	35.95	40.00	-4.05	3	Vertical	360	1.00

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.15.4	-	-	-	-	-	-	-	-	-	-
2440MHz_Fixture	Pass	PK	31.94M	35.95	40.00	-4.05	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	70.74M	33.06	40.00	-6.94	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	142.52M	34.48	43.50	-9.02	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	276.38M	24.47	46.00	-21.53	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	414.12M	24.64	46.00	-21.36	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	491.72M	29.28	46.00	-16.72	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	30M	26.68	40.00	-13.32	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	105.66M	34.29	43.50	-9.21	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	216M	30.98	46.00	-15.02	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	276.38M	32.00	46.00	-14.00	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	414.12M	30.03	46.00	-15.97	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	491.72M	30.23	46.00	-15.77	3	Horizontal	0	1.00

2.4-2.4835GHz_802.15.4

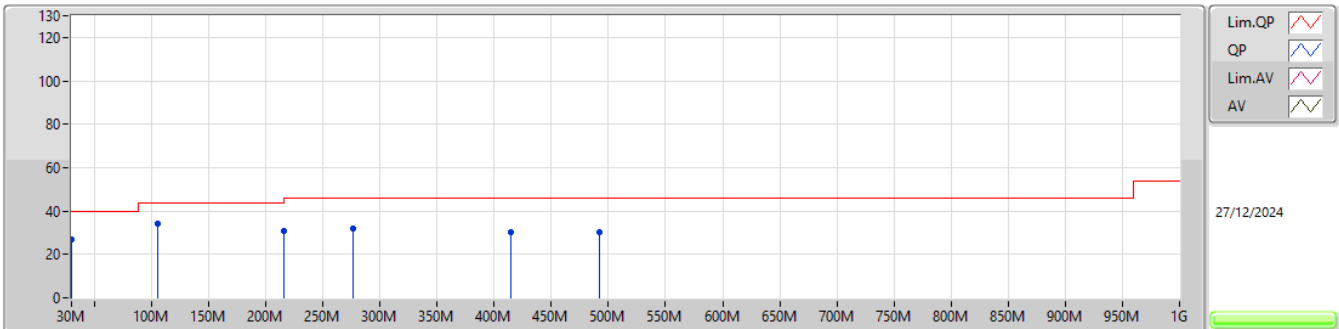
2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	35.95	40.00	-4.05	-19.86	3	Vertical	360	1.00	55.81	23.72	0.78	44.36
PK	70.74M	33.06	40.00	-6.94	-31.29	3	Vertical	360	1.00	64.35	12.44	0.99	44.72
PK	142.52M	34.48	43.50	-9.02	-25.68	3	Vertical	360	1.00	60.16	17.60	1.37	44.65
PK	276.38M	24.47	46.00	-21.53	-23.53	3	Vertical	360	1.00	48.00	18.94	1.91	44.38
PK	414.12M	24.64	46.00	-21.36	-19.22	3	Vertical	360	1.00	43.86	22.56	2.30	44.08
PK	491.72M	29.28	46.00	-16.72	-17.37	3	Vertical	360	1.00	46.65	23.99	2.61	43.97

2.4-2.4835GHz_802.15.4

2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30M	26.68	40.00	-13.32	-18.87	3	Horizontal	0	1.00	45.55	24.67	0.78	44.32
PK	105.66M	34.29	43.50	-9.21	-26.81	3	Horizontal	0	1.00	61.10	16.59	1.20	44.60
PK	216M	30.98	46.00	-15.02	-27.41	3	Horizontal	0	1.00	58.39	15.42	1.68	44.51
PK	276.38M	32.00	46.00	-14.00	-23.53	3	Horizontal	0	1.00	55.53	18.94	1.91	44.38
PK	414.12M	30.03	46.00	-15.97	-19.22	3	Horizontal	0	1.00	49.25	22.56	2.30	44.08
PK	491.72M	30.23	46.00	-15.77	-17.37	3	Horizontal	0	1.00	47.60	23.99	2.61	43.97



Summary

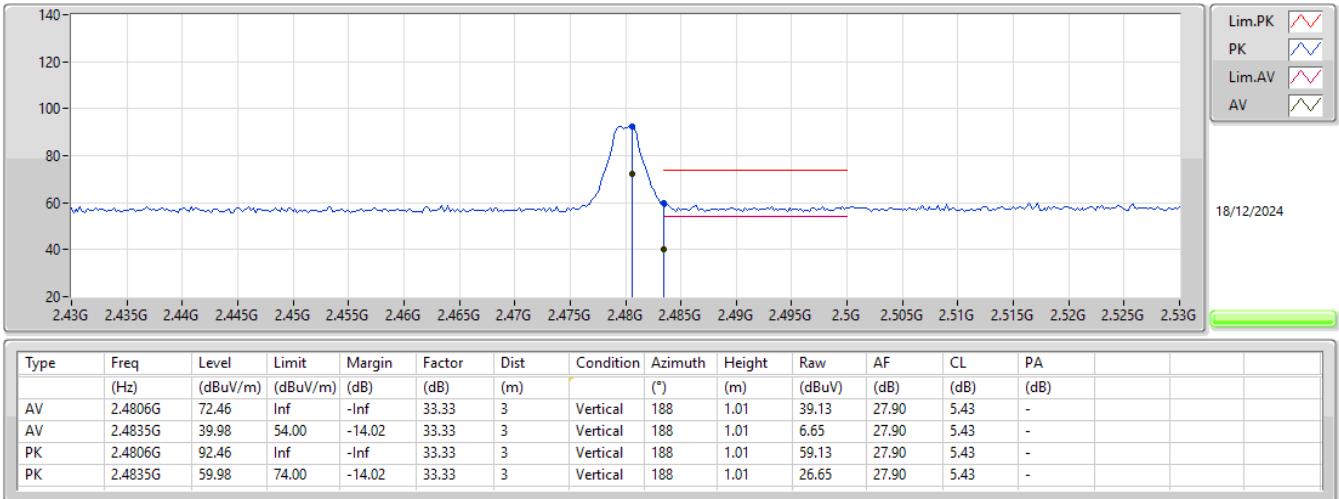
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	AV	2.4835G	39.98	54.00	-14.02	3	Vertical	188	1.01

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.15.4	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	AV	2.3702G	37.85	54.00	-16.15	3	Vertical	131	1.49
2405MHz	Pass	AV	2.4056G	83.35	Inf	-Inf	3	Vertical	131	1.49
2405MHz	Pass	PK	2.3702G	57.85	74.00	-16.15	3	Vertical	131	1.49
2405MHz	Pass	PK	2.4056G	103.35	Inf	-Inf	3	Vertical	131	1.49
2405MHz	Pass	AV	2.3554G	37.96	54.00	-16.04	3	Horizontal	57	1.50
2405MHz	Pass	AV	2.4056G	74.27	Inf	-Inf	3	Horizontal	57	1.50
2405MHz	Pass	PK	2.3554G	57.96	74.00	-16.04	3	Horizontal	57	1.50
2405MHz	Pass	PK	2.4056G	94.27	Inf	-Inf	3	Horizontal	57	1.50
2405MHz	Pass	AV	4.81079G	25.46	54.00	-28.54	3	Vertical	346	1.05
2405MHz	Pass	PK	4.81079G	45.46	74.00	-28.54	3	Vertical	346	1.05
2405MHz	Pass	AV	4.80927G	24.97	54.00	-29.03	3	Horizontal	212	1.81
2405MHz	Pass	PK	4.80927G	44.97	74.00	-29.03	3	Horizontal	212	1.81
2440MHz	Pass	AV	2.3524G	38.27	54.00	-15.73	3	Vertical	187	1.01
2440MHz	Pass	AV	2.4396G	85.95	Inf	-Inf	3	Vertical	187	1.01
2440MHz	Pass	AV	2.4988G	38.75	54.00	-15.25	3	Vertical	187	1.01
2440MHz	Pass	PK	2.3524G	58.27	74.00	-15.73	3	Vertical	187	1.01
2440MHz	Pass	PK	2.4396G	105.95	Inf	-Inf	3	Vertical	187	1.01
2440MHz	Pass	PK	2.4988G	58.75	74.00	-15.25	3	Vertical	187	1.01
2440MHz	Pass	AV	2.3832G	37.97	54.00	-16.03	3	Horizontal	304	1.08
2440MHz	Pass	AV	2.4404G	78.66	Inf	-Inf	3	Horizontal	304	1.08
2440MHz	Pass	AV	2.4872G	38.75	54.00	-15.25	3	Horizontal	304	1.08
2440MHz	Pass	PK	2.3832G	57.97	74.00	-16.03	3	Horizontal	304	1.08
2440MHz	Pass	PK	2.4404G	98.66	Inf	-Inf	3	Horizontal	304	1.08
2440MHz	Pass	PK	2.4872G	58.75	74.00	-15.25	3	Horizontal	304	1.08
2440MHz	Pass	AV	4.87922G	26.62	54.00	-27.38	3	Vertical	340	1.00
2440MHz	Pass	PK	4.87922G	46.62	74.00	-27.38	3	Vertical	340	1.00
2440MHz	Pass	AV	4.87916G	25.87	54.00	-28.13	3	Horizontal	67	1.30
2440MHz	Pass	PK	4.87916G	45.87	74.00	-28.13	3	Horizontal	67	1.30
2480MHz	Pass	AV	2.4806G	72.46	Inf	-Inf	3	Vertical	188	1.01
2480MHz	Pass	AV	2.4835G	39.98	54.00	-14.02	3	Vertical	188	1.01
2480MHz	Pass	PK	2.4806G	92.46	Inf	-Inf	3	Vertical	188	1.01
2480MHz	Pass	PK	2.4835G	59.98	74.00	-14.02	3	Vertical	188	1.01
2480MHz	Pass	AV	2.4804G	64.77	Inf	-Inf	3	Horizontal	304	1.01
2480MHz	Pass	AV	2.4934G	39.25	54.00	-14.75	3	Horizontal	304	1.01
2480MHz	Pass	PK	2.4804G	84.77	Inf	-Inf	3	Horizontal	304	1.01
2480MHz	Pass	PK	2.4934G	59.25	74.00	-14.75	3	Horizontal	304	1.01
2480MHz	Pass	AV	4.95952G	24.99	54.00	-29.01	3	Vertical	189	2.73
2480MHz	Pass	PK	4.95952G	44.99	74.00	-29.01	3	Vertical	189	2.73
2480MHz	Pass	AV	4.96072G	24.72	54.00	-29.28	3	Horizontal	24	1.52
2480MHz	Pass	PK	4.96072G	44.72	74.00	-29.28	3	Horizontal	24	1.52

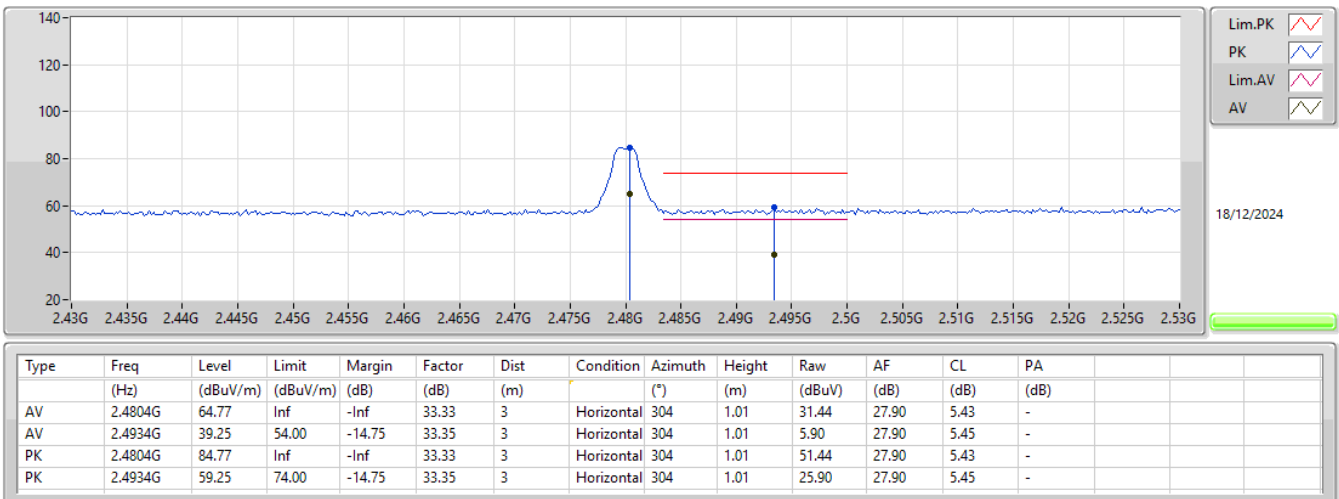
2.4-2.4835GHz_802.15.4

2480MHz_TX



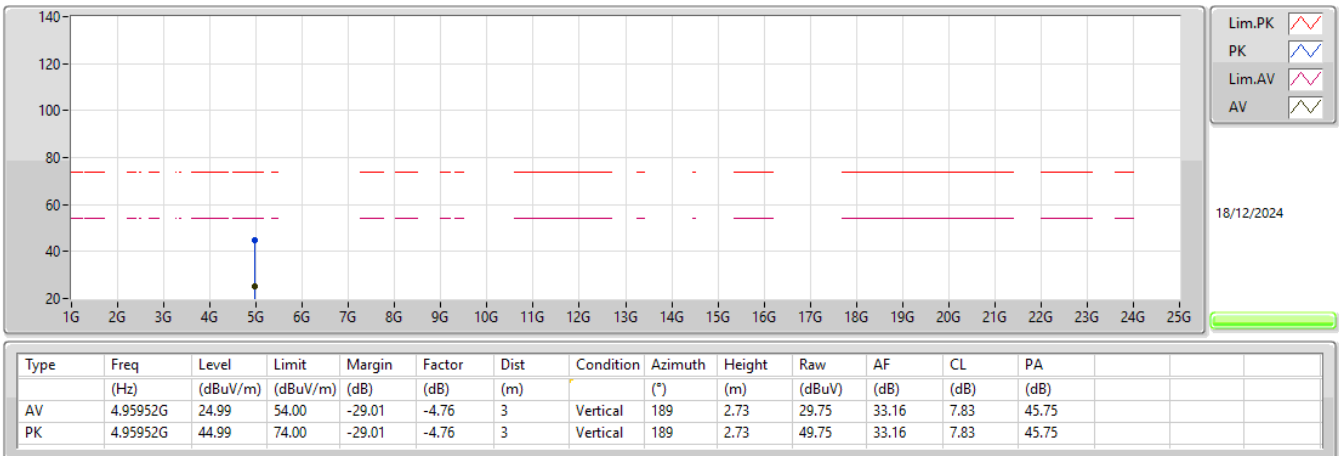
2.4-2.4835GHz_802.15.4

2480MHz_TX



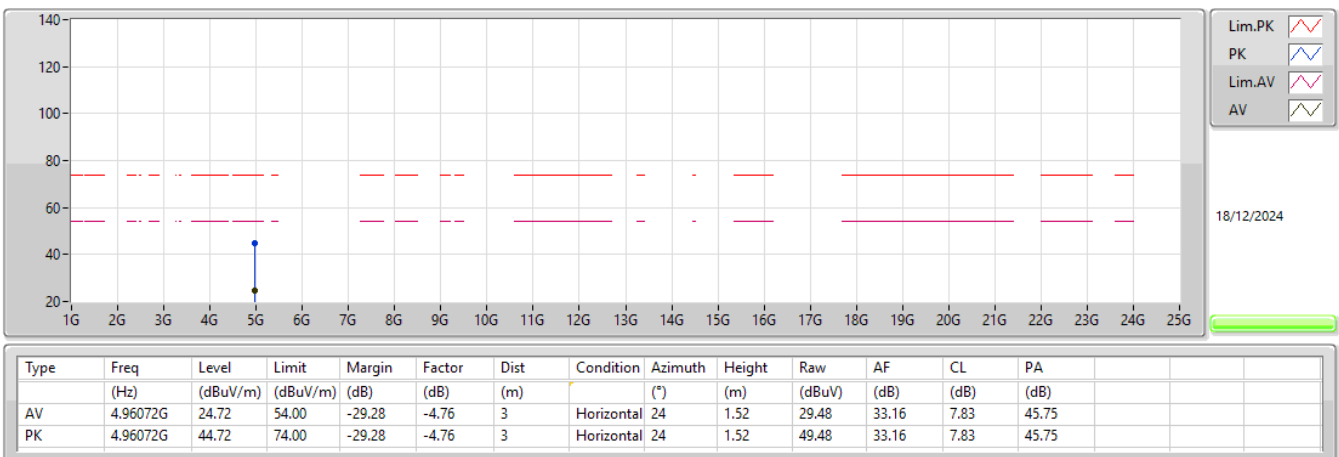
2.4-2.4835GHz_802.15.4

2480MHz_TX



2.4-2.4835GHz_802.15.4

2480MHz_TX





Summary

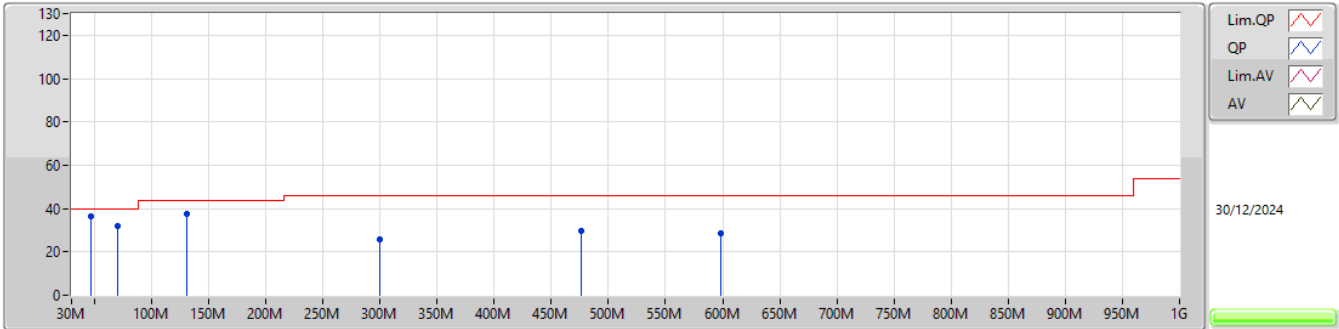
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	PK	47.46M	36.63	40.00	-3.37	3	Vertical	360	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.15.4	-	-	-	-	-	-	-	-	-	-
2440MHz_Fixture	Pass	PK	47.46M	36.63	40.00	-3.37	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	70.74M	31.88	40.00	-8.12	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	130.88M	37.39	43.50	-6.11	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	299.66M	25.78	46.00	-20.22	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	476.2M	29.54	46.00	-16.46	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	598.42M	28.71	46.00	-17.29	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	78.5M	25.28	40.00	-14.72	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	130.88M	35.04	43.50	-8.46	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	216M	32.14	46.00	-13.86	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	419.94M	27.62	46.00	-18.38	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	600.36M	30.38	46.00	-15.62	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	800.18M	30.04	46.00	-15.96	3	Horizontal	0	1.00

2.4-2.4835GHz_802.15.4

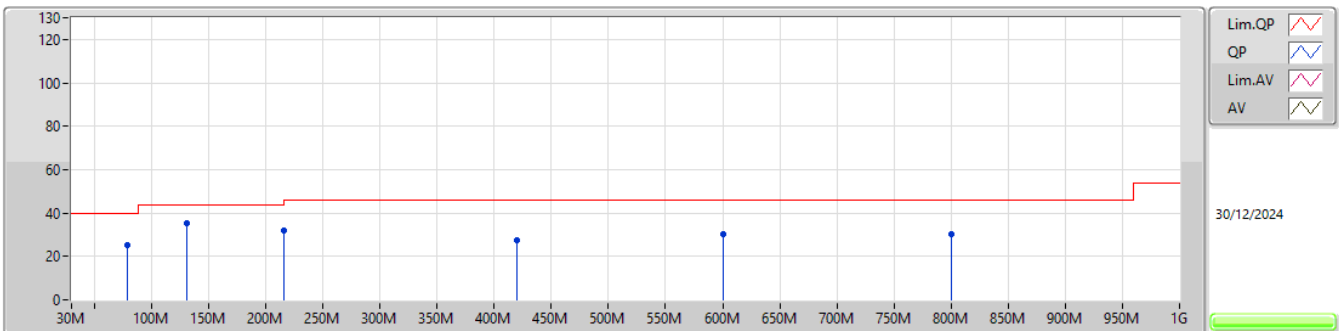
2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	47.46M	36.63	40.00	-3.37	-27.97	3	Vertical	360	1.00	64.60	15.85	0.79	44.61
PK	70.74M	31.88	40.00	-8.12	-31.29	3	Vertical	360	1.00	63.17	12.44	0.99	44.72
PK	130.88M	37.39	43.50	-6.11	-25.41	3	Vertical	360	1.00	62.80	17.91	1.32	44.64
PK	299.66M	25.78	46.00	-20.22	-22.90	3	Vertical	360	1.00	48.68	19.43	2.00	44.33
PK	476.2M	29.54	46.00	-16.46	-17.73	3	Vertical	360	1.00	47.27	23.73	2.53	43.99
PK	598.42M	28.71	46.00	-17.29	-15.09	3	Vertical	360	1.00	43.80	26.08	2.77	43.94

2.4-2.4835GHz_802.15.4

2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	78.5M	25.28	40.00	-14.72	-30.32	3	Horizontal	0	1.00	55.60	13.34	1.04	44.70
PK	130.88M	35.04	43.50	-8.46	-25.41	3	Horizontal	0	1.00	60.45	17.91	1.32	44.64
PK	216M	32.14	46.00	-13.86	-27.41	3	Horizontal	0	1.00	59.55	15.42	1.68	44.51
PK	419.94M	27.62	46.00	-18.38	-18.95	3	Horizontal	0	1.00	46.57	22.80	2.32	44.07
PK	600.36M	30.38	46.00	-15.62	-15.15	3	Horizontal	0	1.00	45.53	26.02	2.77	43.94
PK	800.18M	30.04	46.00	-15.96	-12.38	3	Horizontal	0	1.00	42.42	28.16	3.26	43.80



Summary

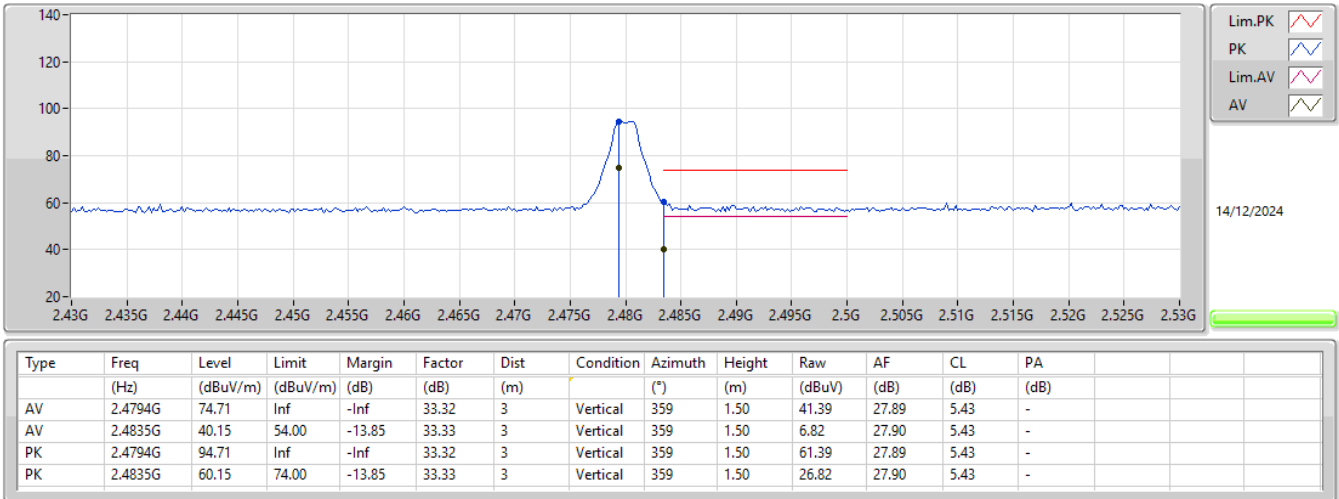
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	AV	2.4835G	40.15	54.00	-13.85	3	Vertical	359	1.50

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.15.4	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	AV	2.3672G	37.97	54.00	-16.03	3	Vertical	316	1.50
2405MHz	Pass	AV	2.4046G	88.55	Inf	-Inf	3	Vertical	316	1.50
2405MHz	Pass	PK	2.3672G	57.97	74.00	-16.03	3	Vertical	316	1.50
2405MHz	Pass	PK	2.4046G	108.55	Inf	-Inf	3	Vertical	316	1.50
2405MHz	Pass	AV	2.3894G	38.50	54.00	-15.50	3	Horizontal	292	1.33
2405MHz	Pass	AV	2.4046G	82.88	Inf	-Inf	3	Horizontal	292	1.33
2405MHz	Pass	PK	2.3894G	58.50	74.00	-15.50	3	Horizontal	292	1.33
2405MHz	Pass	PK	2.4046G	102.88	Inf	-Inf	3	Horizontal	292	1.33
2405MHz	Pass	AV	4.80927G	25.95	54.00	-28.05	3	Vertical	335	1.00
2405MHz	Pass	PK	4.80927G	45.95	74.00	-28.05	3	Vertical	335	1.00
2405MHz	Pass	AV	4.80897G	25.76	54.00	-28.24	3	Horizontal	352	1.00
2405MHz	Pass	PK	4.80897G	45.76	74.00	-28.24	3	Horizontal	352	1.00
2440MHz	Pass	AV	2.3532G	37.48	54.00	-16.52	3	Vertical	313	1.50
2440MHz	Pass	AV	2.4396G	89.41	Inf	-Inf	3	Vertical	313	1.50
2440MHz	Pass	AV	2.498G	38.82	54.00	-15.18	3	Vertical	313	1.50
2440MHz	Pass	PK	2.3532G	57.48	74.00	-16.52	3	Vertical	313	1.50
2440MHz	Pass	PK	2.4396G	109.41	Inf	-Inf	3	Vertical	313	1.50
2440MHz	Pass	PK	2.498G	58.82	74.00	-15.18	3	Vertical	313	1.50
2440MHz	Pass	AV	2.3832G	38.65	54.00	-15.35	3	Horizontal	79	2.33
2440MHz	Pass	AV	2.4396G	83.34	Inf	-Inf	3	Horizontal	79	2.33
2440MHz	Pass	AV	2.4892G	38.51	54.00	-15.49	3	Horizontal	79	2.33
2440MHz	Pass	PK	2.3832G	58.65	74.00	-15.35	3	Horizontal	79	2.33
2440MHz	Pass	PK	2.4396G	103.34	Inf	-Inf	3	Horizontal	79	2.33
2440MHz	Pass	PK	2.4892G	58.51	74.00	-15.49	3	Horizontal	79	2.33
2440MHz	Pass	AV	4.88085G	26.76	54.00	-27.24	3	Vertical	335	1.00
2440MHz	Pass	PK	4.88085G	46.76	74.00	-27.24	3	Vertical	335	1.00
2440MHz	Pass	AV	4.87914G	25.22	54.00	-28.78	3	Horizontal	330	1.06
2440MHz	Pass	PK	4.87914G	45.22	74.00	-28.78	3	Horizontal	330	1.06
2480MHz	Pass	AV	2.4794G	74.71	Inf	-Inf	3	Vertical	359	1.50
2480MHz	Pass	AV	2.4835G	40.15	54.00	-13.85	3	Vertical	359	1.50
2480MHz	Pass	PK	2.4794G	94.71	Inf	-Inf	3	Vertical	359	1.50
2480MHz	Pass	PK	2.4835G	60.15	74.00	-13.85	3	Vertical	359	1.50
2480MHz	Pass	AV	2.4806G	67.68	Inf	-Inf	3	Horizontal	293	1.05
2480MHz	Pass	AV	2.4972G	38.69	54.00	-15.31	3	Horizontal	293	1.05
2480MHz	Pass	PK	2.4806G	87.68	Inf	-Inf	3	Horizontal	293	1.05
2480MHz	Pass	PK	2.4972G	58.69	74.00	-15.31	3	Horizontal	293	1.05
2480MHz	Pass	AV	4.96018G	24.84	54.00	-29.16	3	Vertical	17	2.51
2480MHz	Pass	PK	4.96018G	44.84	74.00	-29.16	3	Vertical	17	2.51
2480MHz	Pass	AV	4.9617G	25.45	54.00	-28.55	3	Horizontal	206	2.45
2480MHz	Pass	PK	4.9617G	45.45	74.00	-28.55	3	Horizontal	206	2.45

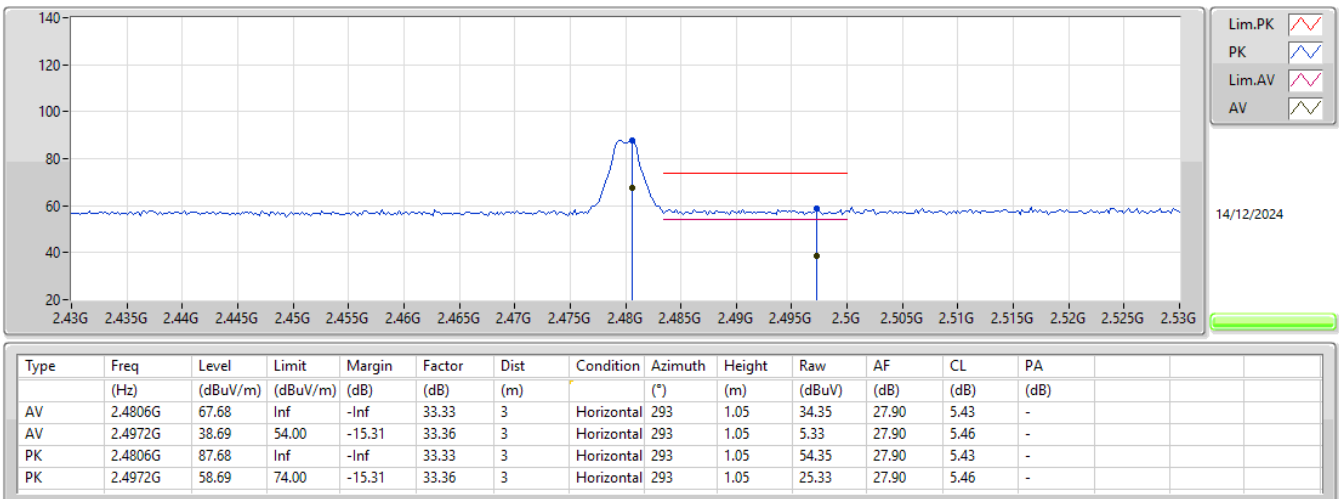
2.4-2.4835GHz_802.15.4

2480MHz_TX



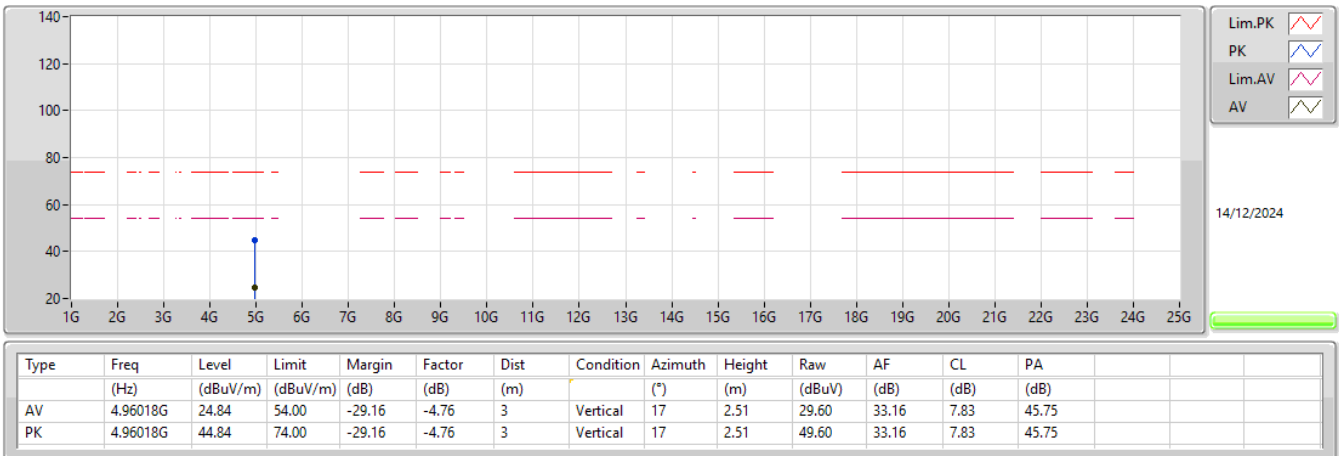
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2480MHz_TX



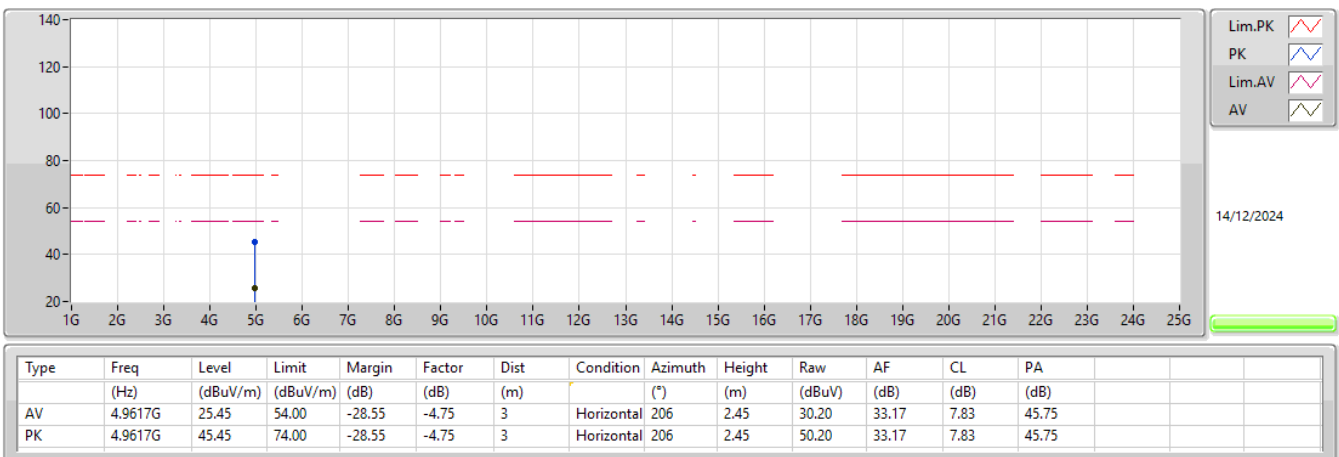
2.4-2.4835GHz_802.15.4

2480MHz_TX



2.4-2.4835GHz_802.15.4

2480MHz_TX





Summary

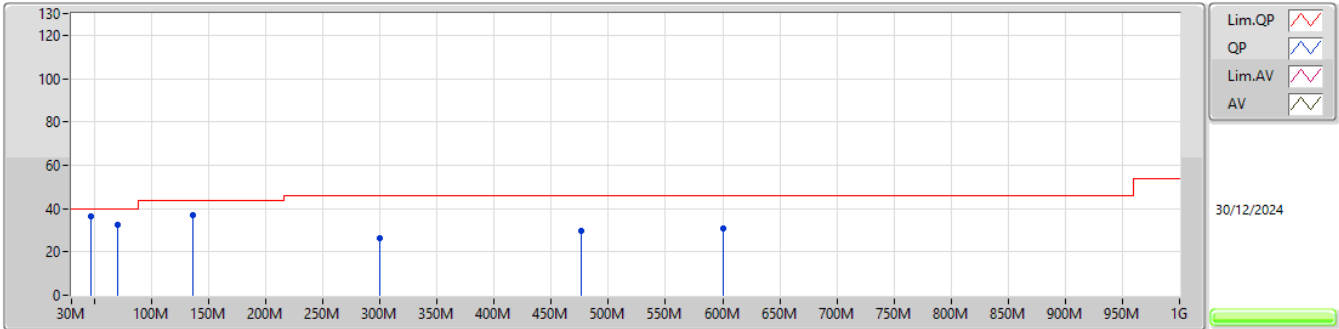
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	PK	47.46M	36.54	40.00	-3.46	3	Vertical	360	1.00

**Result**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.15.4	-	-	-	-	-	-	-	-	-	-
2440MHz_Fixture	Pass	PK	47.46M	36.54	40.00	-3.46	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	70.74M	32.78	40.00	-7.22	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	136.7M	37.14	43.50	-6.36	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	299.66M	26.54	46.00	-19.46	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	476.2M	29.48	46.00	-16.52	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	600.36M	30.71	46.00	-15.29	3	Vertical	360	1.00
2440MHz_Fixture	Pass	PK	33.88M	26.76	40.00	-13.24	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	111.48M	32.99	43.50	-10.51	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	142.52M	35.92	43.50	-7.58	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	216M	31.48	46.00	-14.52	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	476.2M	30.33	46.00	-15.67	3	Horizontal	0	1.00
2440MHz_Fixture	Pass	PK	804.06M	31.93	46.00	-14.07	3	Horizontal	0	1.00

2.4-2.4835GHz_802.15.4

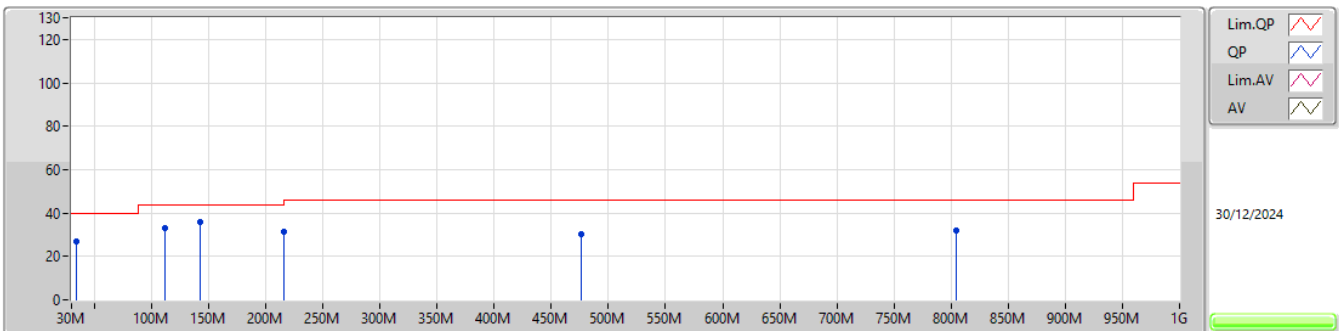
2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	47.46M	36.54	40.00	-3.46	-27.97	3	Vertical	360	1.00	64.51	15.85	0.79	44.61
PK	70.74M	32.78	40.00	-7.22	-31.29	3	Vertical	360	1.00	64.07	12.44	0.99	44.72
PK	136.7M	37.14	43.50	-6.36	-25.67	3	Vertical	360	1.00	62.81	17.63	1.35	44.65
PK	299.66M	26.54	46.00	-19.46	-22.90	3	Vertical	360	1.00	49.44	19.43	2.00	44.33
PK	476.2M	29.48	46.00	-16.52	-17.73	3	Vertical	360	1.00	47.21	23.73	2.53	43.99
PK	600.36M	30.71	46.00	-15.29	-15.15	3	Vertical	360	1.00	45.86	26.02	2.77	43.94

2.4-2.4835GHz_802.15.4

2440MHz_Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	26.76	40.00	-13.24	-20.79	3	Horizontal	0	1.00	47.55	22.82	0.79	44.40
PK	111.48M	32.99	43.50	-10.51	-26.22	3	Horizontal	0	1.00	59.21	17.16	1.23	44.61
PK	142.52M	35.92	43.50	-7.58	-25.68	3	Horizontal	0	1.00	61.60	17.60	1.37	44.65
PK	216M	31.48	46.00	-14.52	-27.41	3	Horizontal	0	1.00	58.89	15.42	1.68	44.51
PK	476.2M	30.33	46.00	-15.67	-17.73	3	Horizontal	0	1.00	48.06	23.73	2.53	43.99
PK	804.06M	31.93	46.00	-14.07	-12.34	3	Horizontal	0	1.00	44.27	28.19	3.27	43.80



Summary

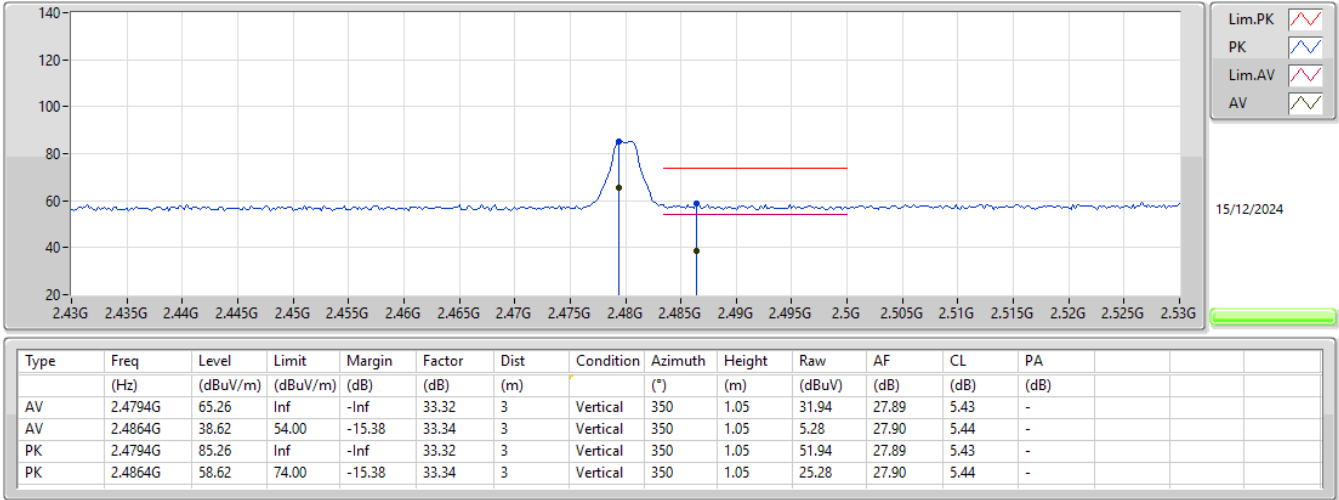
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	AV	2.4835G	38.95	54.00	-15.05	3	Horizontal	0	1.46

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.15.4	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	AV	2.3728G	38.06	54.00	-15.94	3	Vertical	241	1.54
2405MHz	Pass	AV	2.4056G	80.00	Inf	-Inf	3	Vertical	241	1.54
2405MHz	Pass	PK	2.3728G	58.06	74.00	-15.94	3	Vertical	241	1.54
2405MHz	Pass	PK	2.4056G	100.00	Inf	-Inf	3	Vertical	241	1.54
2405MHz	Pass	AV	2.377G	38.34	54.00	-15.66	3	Horizontal	350	1.01
2405MHz	Pass	AV	2.4056G	87.17	Inf	-Inf	3	Horizontal	350	1.01
2405MHz	Pass	PK	2.377G	58.34	74.00	-15.66	3	Horizontal	350	1.01
2405MHz	Pass	PK	2.4056G	107.17	Inf	-Inf	3	Horizontal	350	1.01
2405MHz	Pass	AV	4.8091G	25.97	54.00	-28.03	3	Vertical	338	1.01
2405MHz	Pass	PK	4.8091G	45.97	74.00	-28.03	3	Vertical	338	1.01
2405MHz	Pass	AV	4.80939G	25.74	54.00	-28.26	3	Horizontal	335	1.02
2405MHz	Pass	PK	4.80939G	45.74	74.00	-28.26	3	Horizontal	335	1.02
2440MHz	Pass	AV	2.3544G	38.43	54.00	-15.57	3	Vertical	182	1.50
2440MHz	Pass	AV	2.4396G	79.03	Inf	-Inf	3	Vertical	182	1.50
2440MHz	Pass	AV	2.4984G	38.77	54.00	-15.23	3	Vertical	182	1.50
2440MHz	Pass	PK	2.3544G	58.43	74.00	-15.57	3	Vertical	182	1.50
2440MHz	Pass	PK	2.4396G	99.03	Inf	-Inf	3	Vertical	182	1.50
2440MHz	Pass	PK	2.4984G	58.77	74.00	-15.23	3	Vertical	182	1.50
2440MHz	Pass	AV	2.3548G	38.10	54.00	-15.90	3	Horizontal	357	1.01
2440MHz	Pass	AV	2.4404G	86.96	Inf	-Inf	3	Horizontal	357	1.01
2440MHz	Pass	AV	2.4892G	38.38	54.00	-15.62	3	Horizontal	357	1.01
2440MHz	Pass	PK	2.3548G	58.10	74.00	-15.90	3	Horizontal	357	1.01
2440MHz	Pass	PK	2.4404G	106.96	Inf	-Inf	3	Horizontal	357	1.01
2440MHz	Pass	PK	2.4892G	58.38	74.00	-15.62	3	Horizontal	357	1.01
2440MHz	Pass	AV	4.88115G	26.39	54.00	-27.61	3	Vertical	338	1.08
2440MHz	Pass	PK	4.88115G	46.39	74.00	-27.61	3	Vertical	338	1.08
2440MHz	Pass	AV	4.88049G	25.71	54.00	-28.29	3	Horizontal	213	2.50
2440MHz	Pass	PK	4.88049G	45.71	74.00	-28.29	3	Horizontal	213	2.50
2480MHz	Pass	AV	2.4794G	65.26	Inf	-Inf	3	Vertical	350	1.05
2480MHz	Pass	AV	2.4864G	38.62	54.00	-15.38	3	Vertical	350	1.05
2480MHz	Pass	PK	2.4794G	85.26	Inf	-Inf	3	Vertical	350	1.05
2480MHz	Pass	PK	2.4864G	58.62	74.00	-15.38	3	Vertical	350	1.05
2480MHz	Pass	AV	2.4804G	71.60	Inf	-Inf	3	Horizontal	0	1.46
2480MHz	Pass	AV	2.4835G	38.95	54.00	-15.05	3	Horizontal	0	1.46
2480MHz	Pass	PK	2.4804G	91.60	Inf	-Inf	3	Horizontal	0	1.46
2480MHz	Pass	PK	2.4835G	58.95	74.00	-15.05	3	Horizontal	0	1.46
2480MHz	Pass	AV	4.96213G	24.70	54.00	-29.30	3	Vertical	105	1.50
2480MHz	Pass	PK	4.96213G	44.70	74.00	-29.30	3	Vertical	105	1.50
2480MHz	Pass	AV	4.9597G	24.84	54.00	-29.16	3	Horizontal	309	2.87
2480MHz	Pass	PK	4.9597G	44.84	74.00	-29.16	3	Horizontal	309	2.87

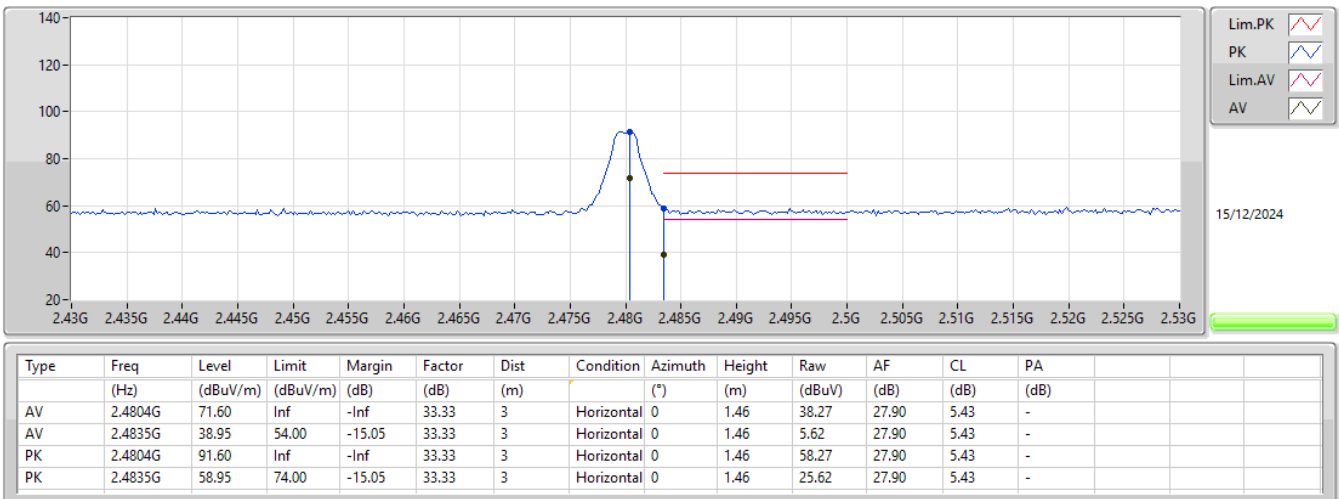
2.4-2.4835GHz_802.15.4

2480MHz_TX



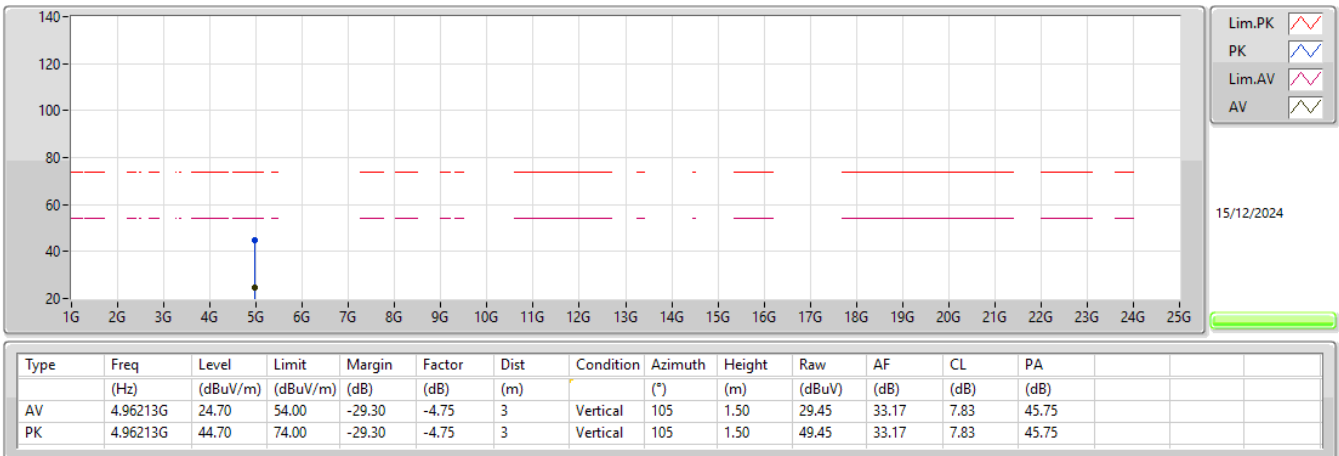
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2480MHz_TX



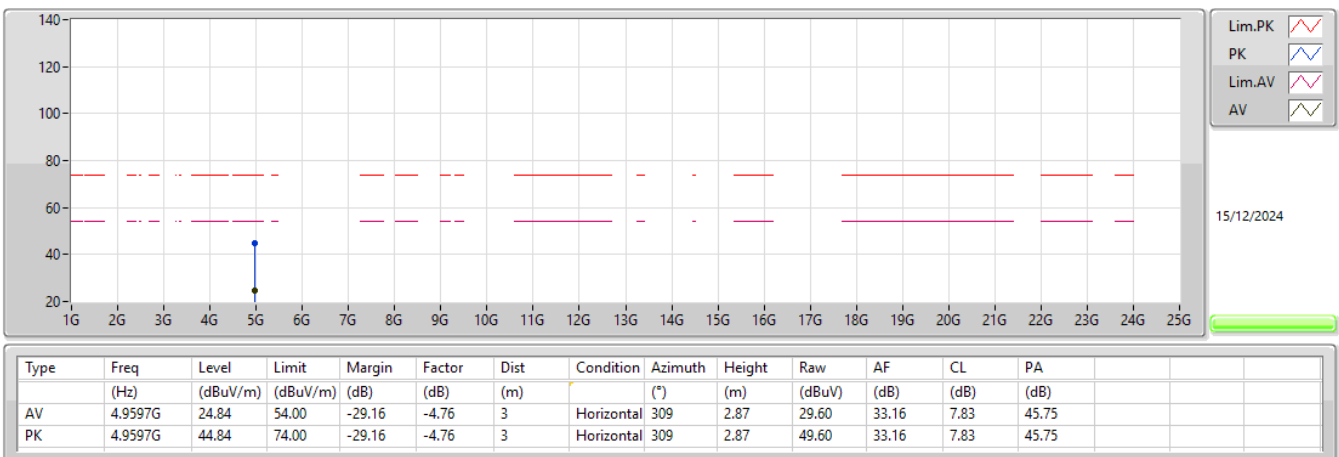
2.4-2.4835GHz_802.15.4

2480MHz_TX



2.4-2.4835GHz_802.15.4

2480MHz_TX





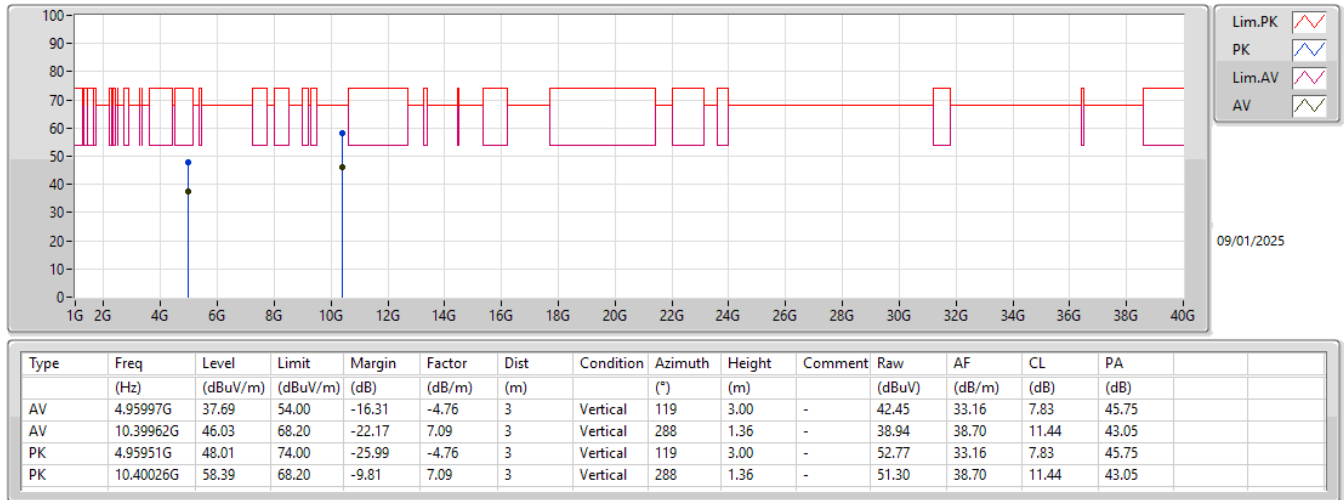
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	10.40366G	64.16	68.20	-4.04	Horizontal
Mode 2	Pass	PK	10.40016G	63.13	68.20	-5.07	Horizontal

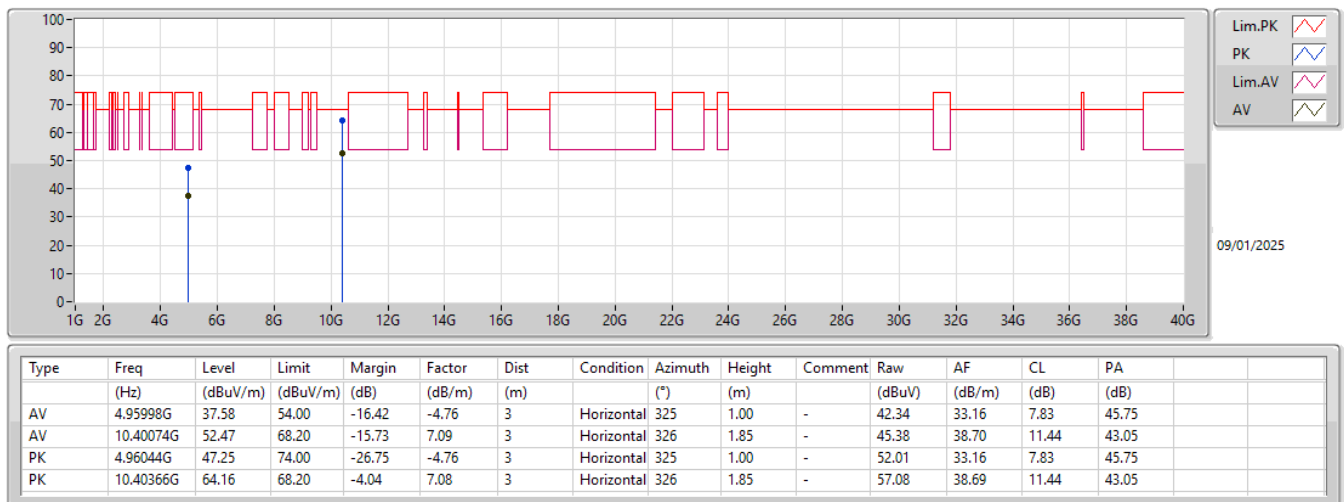
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.95997G	37.69	54.00	-16.31	3	Vertical	119	3.00	-
Mode 1	Pass	AV	10.39962G	46.03	68.20	-22.17	3	Vertical	288	1.36	-
Mode 1	Pass	PK	4.95951G	48.01	74.00	-25.99	3	Vertical	119	3.00	-
Mode 1	Pass	PK	10.40026G	58.39	68.20	-9.81	3	Vertical	288	1.36	-
Mode 1	Pass	AV	4.95998G	37.58	54.00	-16.42	3	Horizontal	325	1.00	-
Mode 1	Pass	AV	10.40074G	52.47	68.20	-15.73	3	Horizontal	326	1.85	-
Mode 1	Pass	PK	4.96044G	47.25	74.00	-26.75	3	Horizontal	325	1.00	-
Mode 1	Pass	PK	10.40366G	64.16	68.20	-4.04	3	Horizontal	326	1.85	-
Mode 2	Pass	AV	4.8809G	34.71	54.00	-19.29	3	Vertical	331	2.54	-
Mode 2	Pass	AV	10.39862G	46.32	68.20	-21.88	3	Vertical	155	1.58	-
Mode 2	Pass	PK	4.8808G	45.77	74.00	-28.23	3	Vertical	331	2.54	-
Mode 2	Pass	PK	10.40044G	58.53	68.20	-9.67	3	Vertical	155	1.58	-
Mode 2	Pass	AV	4.88084G	34.95	54.00	-19.05	3	Horizontal	276	1.11	-
Mode 2	Pass	AV	10.4004G	51.46	68.20	-16.74	3	Horizontal	311	1.01	-
Mode 2	Pass	PK	4.88104G	46.78	74.00	-27.22	3	Horizontal	276	1.11	-
Mode 2	Pass	PK	10.40016G	63.13	68.20	-5.07	3	Horizontal	311	1.01	-

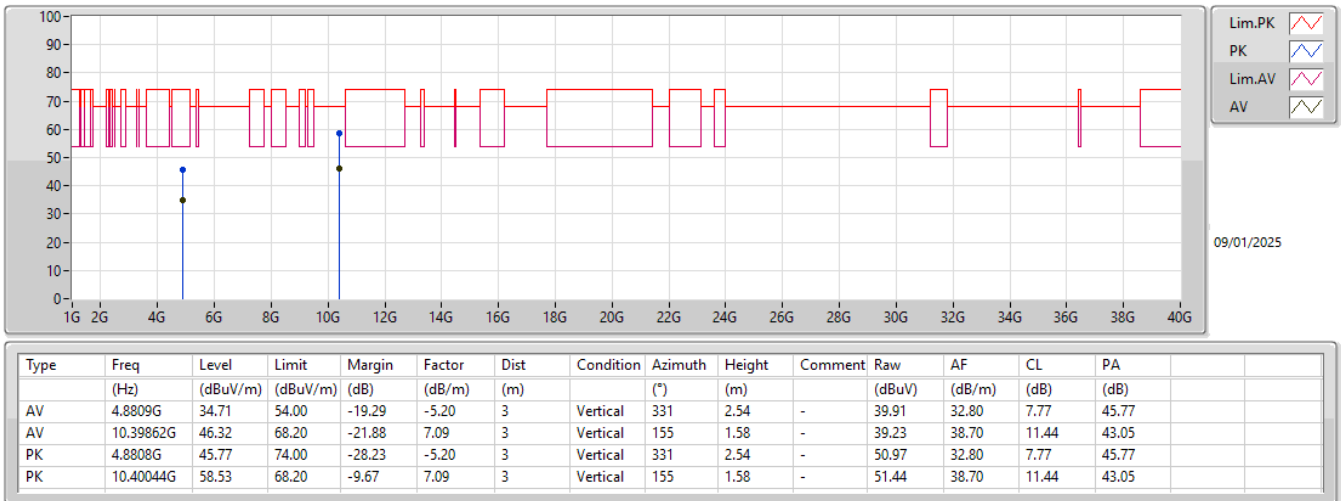
Radiated Emissions above 1GHz_Mode 1



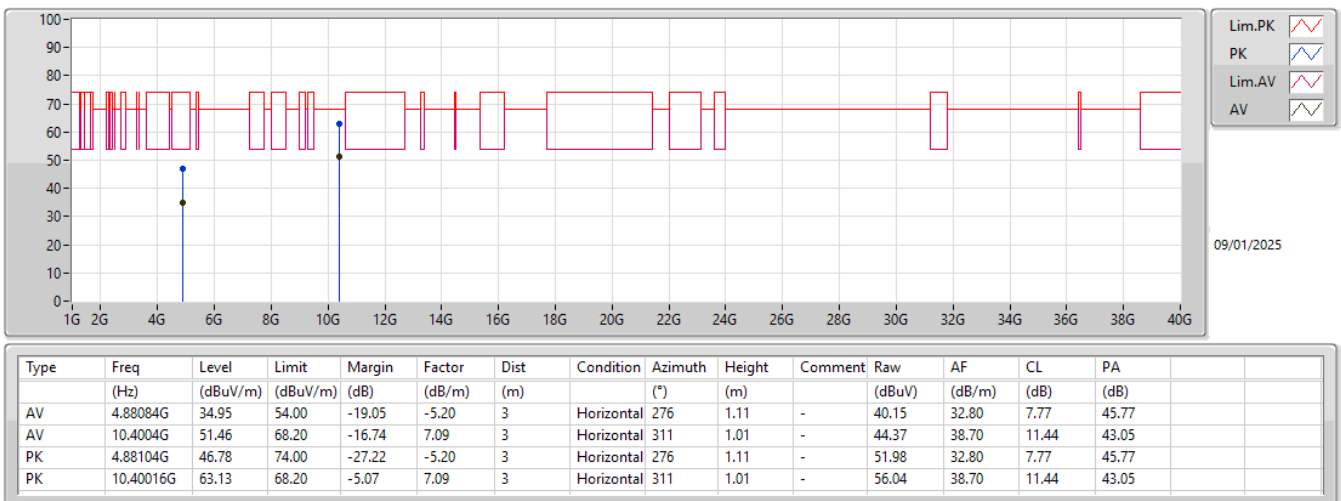
Radiated Emissions above 1GHz_Mode 1



Radiated Emissions above 1GHz_Mode 2



Radiated Emissions above 1GHz_Mode 2





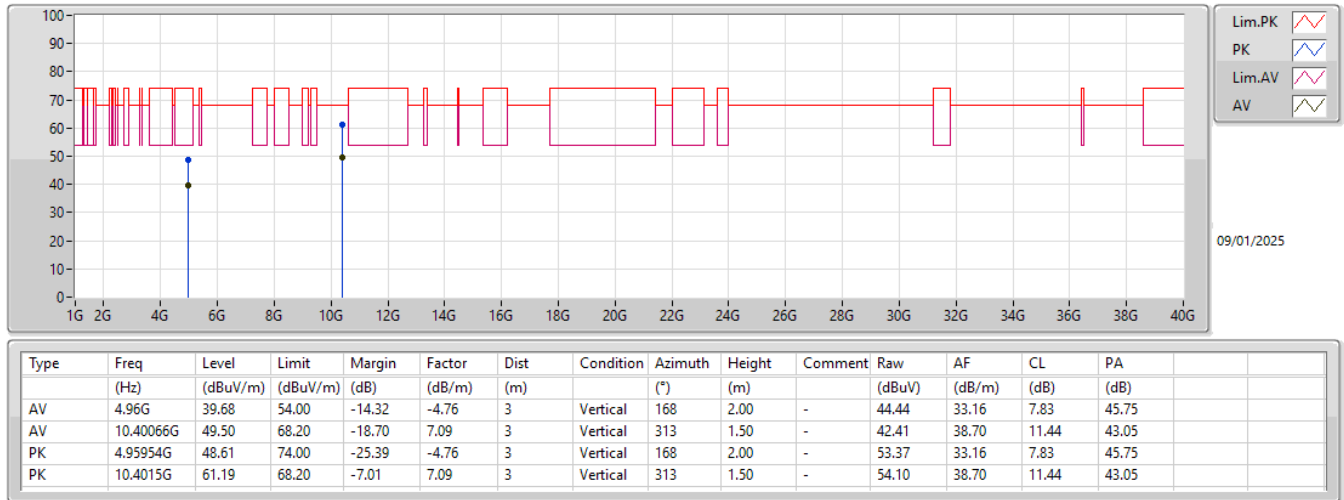
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	10.4015G	61.19	68.20	-7.01	Vertical
Mode 2	Pass	PK	10.3989G	62.65	68.20	-5.55	Vertical

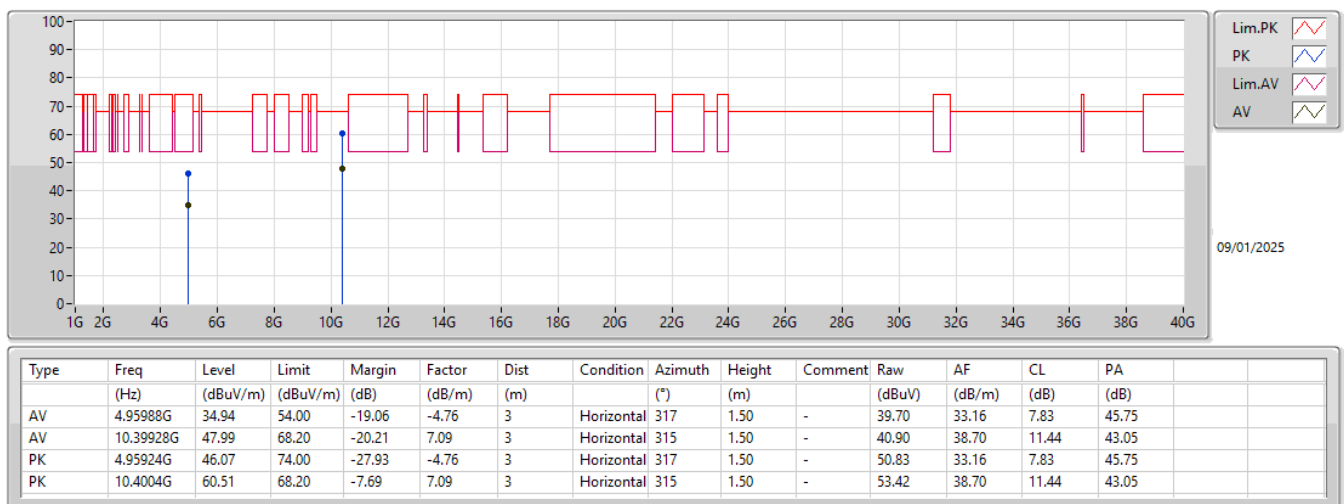
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.96G	39.68	54.00	-14.32	3	Vertical	168	2.00	-
Mode 1	Pass	AV	10.40066G	49.50	68.20	-18.70	3	Vertical	313	1.50	-
Mode 1	Pass	PK	4.95954G	48.61	74.00	-25.39	3	Vertical	168	2.00	-
Mode 1	Pass	PK	10.4015G	61.19	68.20	-7.01	3	Vertical	313	1.50	-
Mode 1	Pass	AV	4.95988G	34.94	54.00	-19.06	3	Horizontal	317	1.50	-
Mode 1	Pass	AV	10.39928G	47.99	68.20	-20.21	3	Horizontal	315	1.50	-
Mode 1	Pass	PK	4.95924G	46.07	74.00	-27.93	3	Horizontal	317	1.50	-
Mode 1	Pass	PK	10.4004G	60.51	68.20	-7.69	3	Horizontal	315	1.50	-
Mode 2	Pass	AV	4.87896G	36.76	54.00	-17.24	3	Vertical	142	1.50	-
Mode 2	Pass	AV	10.40038G	50.95	68.20	-17.25	3	Vertical	317	1.32	-
Mode 2	Pass	PK	4.8796G	46.94	74.00	-27.06	3	Vertical	142	1.50	-
Mode 2	Pass	PK	10.3989G	62.65	68.20	-5.55	3	Vertical	317	1.32	-
Mode 2	Pass	AV	4.87888G	35.21	54.00	-18.79	3	Horizontal	289	1.00	-
Mode 2	Pass	AV	10.40092G	48.14	68.20	-20.06	3	Horizontal	311	1.52	-
Mode 2	Pass	PK	4.87902G	46.29	74.00	-27.71	3	Horizontal	289	1.00	-
Mode 2	Pass	PK	10.40256G	60.04	68.20	-8.16	3	Horizontal	311	1.52	-

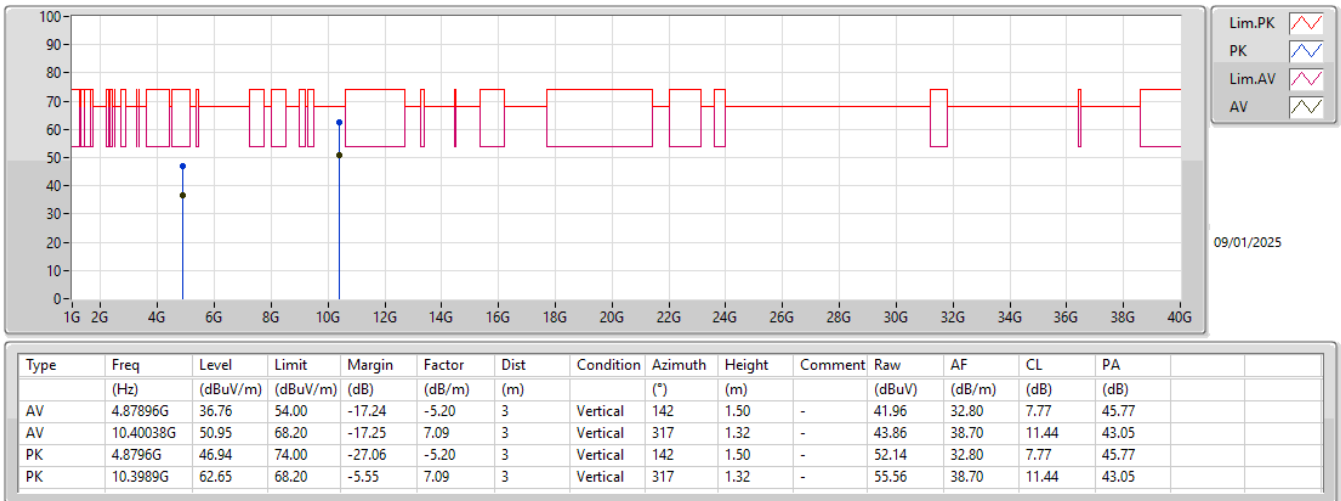
Radiated Emissions above 1GHz_Mode 1



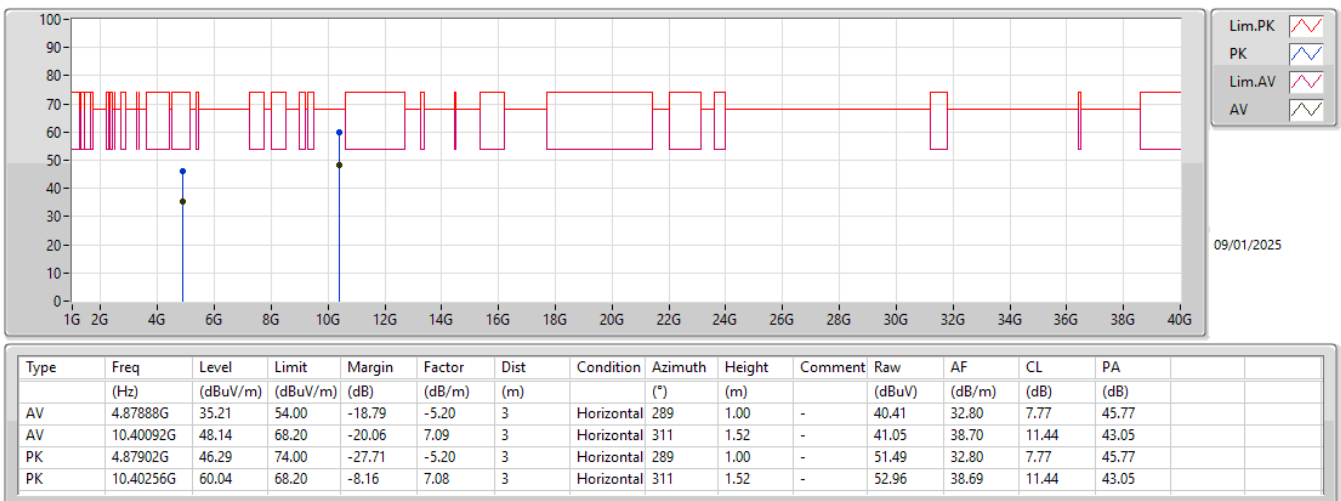
Radiated Emissions above 1GHz_Mode 1



Radiated Emissions above 1GHz_Mode 2



Radiated Emissions above 1GHz_Mode 2





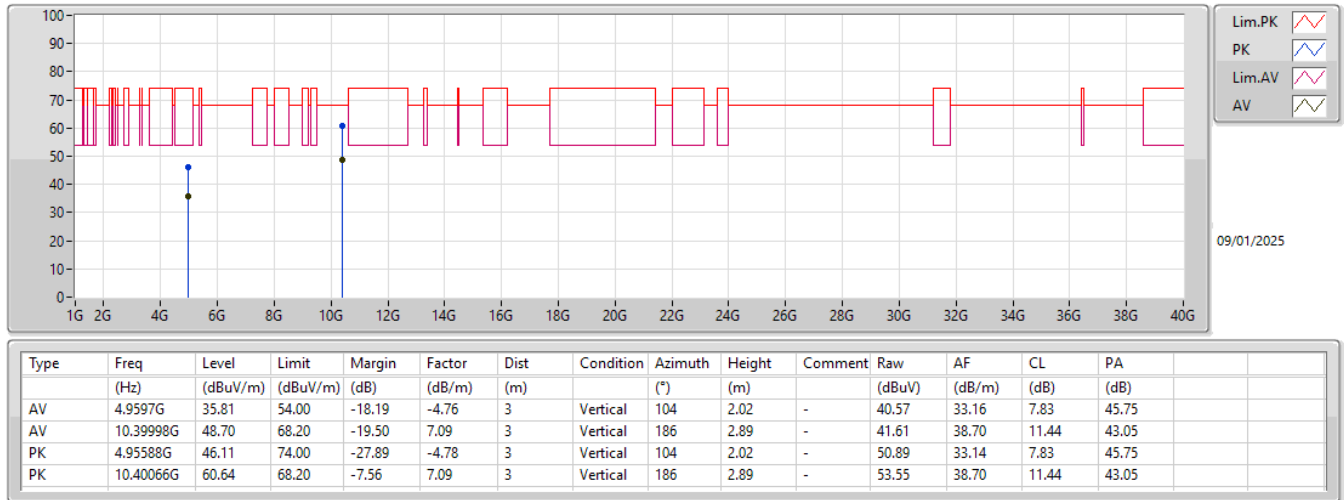
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	10.40522G	64.42	68.20	-3.78	Horizontal
Mode 2	Pass	PK	10.39676G	63.22	68.20	-4.98	Horizontal

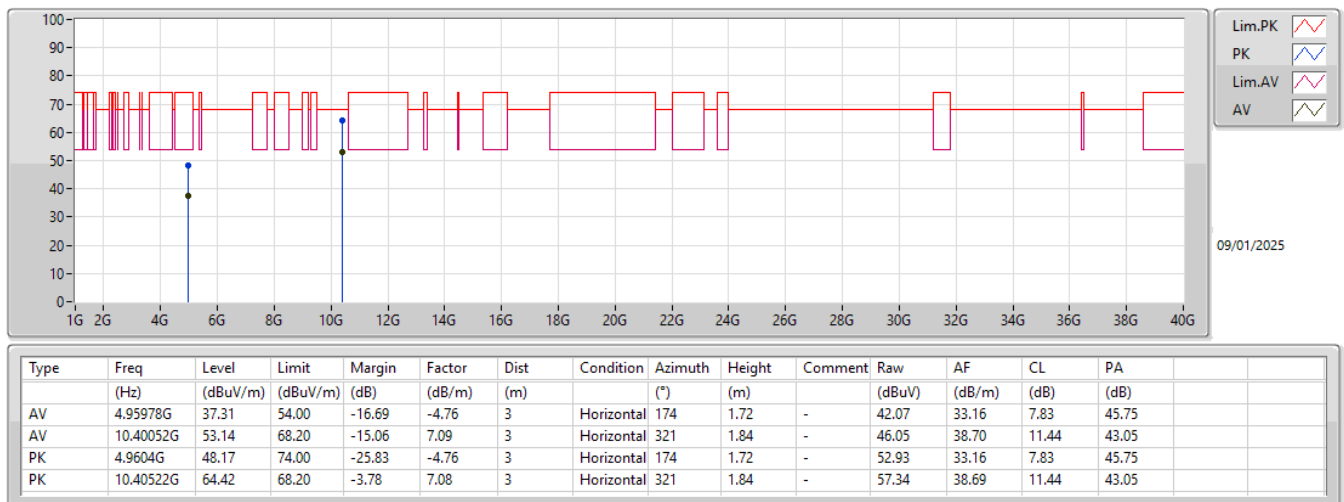
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.9597G	35.81	54.00	-18.19	3	Vertical	104	2.02	-
Mode 1	Pass	AV	10.39998G	48.70	68.20	-19.50	3	Vertical	186	2.89	-
Mode 1	Pass	PK	4.95588G	46.11	74.00	-27.89	3	Vertical	104	2.02	-
Mode 1	Pass	PK	10.40066G	60.64	68.20	-7.56	3	Vertical	186	2.89	-
Mode 1	Pass	AV	4.95978G	37.31	54.00	-16.69	3	Horizontal	174	1.72	-
Mode 1	Pass	AV	10.40052G	53.14	68.20	-15.06	3	Horizontal	321	1.84	-
Mode 1	Pass	PK	4.9604G	48.17	74.00	-25.83	3	Horizontal	174	1.72	-
Mode 1	Pass	PK	10.40522G	64.42	68.20	-3.78	3	Horizontal	321	1.84	-
Mode 2	Pass	AV	4.87906G	34.94	54.00	-19.06	3	Vertical	71	1.14	-
Mode 2	Pass	AV	10.3994G	50.27	68.20	-17.93	3	Vertical	191	1.46	-
Mode 2	Pass	PK	4.87902G	47.21	74.00	-26.79	3	Vertical	71	1.14	-
Mode 2	Pass	PK	10.3961G	62.39	68.20	-5.81	3	Vertical	191	1.46	-
Mode 2	Pass	AV	4.87912G	34.74	54.00	-19.26	3	Horizontal	17	1.50	-
Mode 2	Pass	AV	10.39956G	51.61	68.20	-16.59	3	Horizontal	324	1.50	-
Mode 2	Pass	PK	4.88132G	45.56	74.00	-28.44	3	Horizontal	17	1.50	-
Mode 2	Pass	PK	10.39676G	63.22	68.20	-4.98	3	Horizontal	324	1.50	-

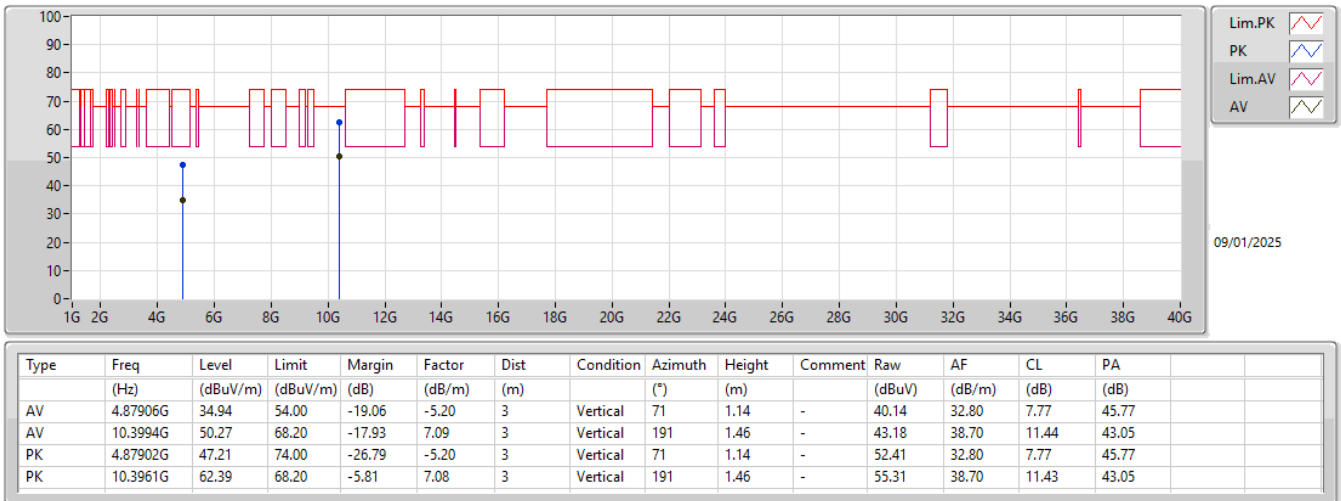
Radiated Emissions above 1GHz_Mode 1



Radiated Emissions above 1GHz_Mode 1



Radiated Emissions above 1GHz_Mode 2



Radiated Emissions above 1GHz_Mode 2

