



FCC Radio Test Report

FCC ID : 2ABLK-GS2029E
Equipment : GigaSpire
Brand Name : Calix
Model Name : u4.2 GS2029E
Applicant : Calix Inc.
1035 N. McDowell Blvd. Petaluma, CA94954 U.S.A.
Manufacturer : Calix Inc.
1035 N. McDowell Blvd. Petaluma, CA94954 U.S.A.
Standard : 47 CFR FCC Part 15.247

The product was received on Sep. 30, 2024, and testing was started from Oct. 21, 2024 and completed on Nov. 12, 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.)



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PHOTOGRAPHS OF EUT V01



History of this test report

Report No.	Version	Description	Issued Date
FR491301AC	01	Initial issue of report	Nov. 19, 2024
FR491301AC	02	Model Name Revised (This report is the latest version replacing for the report issued on Nov. 19, 2024)	Nov. 21, 2024

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

The EUT supports beamforming and CDD modes, and the CDD mode is the worst case. Therefore, all test items are evaluated in the report. The beamforming mode only evaluates the output power.

Reviewed by: Ben Tseng

Report Producer: Amber Chiu

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), VHT20, ax(HEW20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), VHT40, ax(HEW40)	2422-2452	3-9 [7]

Non-Beamforming

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	2TX
2.4-2.4835GHz	802.11g	20	2TX
2.4-2.4835GHz	802.11ax HEW20	20	2TX
2.4-2.4835GHz	802.11ax HEW40	40	2TX

Beamforming

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11ax HEW20-BF	20	2TX
2.4-2.4835GHz	802.11ax HEW40-BF	40	2TX

Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Evaluated HEW20/HEW40 mode only due to the similar modulation. The power setting of HT20/HT40/VHT20/VHT40 mode are the same or lower than HEW20/HEW40.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support
1	Pegatron	1415-0AVK000	dipole	I-PEX	2.4G
2	Pegatron	1415-0AVJ000	dipole	I-PEX	2.4G
3	Pegatron	1415-0AVH000	dipole	I-PEX	5G
4	Pegatron	1415-0AVG000	dipole	I-PEX	5G

Ant.	Port	Gain (dBi)				
		2.4G	5G			
			UNII-1	UNII-2A	UNII-2C	UNII-3
1	1	3.26	-	-	-	-
2	2	2.75	-	-	-	-
3	1	-	3.43	3.51	3.58	3.91
4	2	-	3.08	3.51	3.36	3.39

		Composite Gain (dBi)				
		2.4G	5G			
			UNII-1	UNII-2A	UNII-2C	UNII-3
DG [1SS]		4.1	4.6	4.5	4.8	5.1

Note 1: The EUT has four antennas.

For 2.4GHz function:

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

Ant. 3 (port 1) and Ant. 4 (port 2) could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From AC Adapter		
EUT Function	☒ Point-to-multipoint	☐ Point-to-point	
Beamforming Function	☒ With beamforming	☐ Without beamforming	
Resource Unit	☒ Full RU	☐ Partial RU	
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

Non-Beamforming

Mode	DC	DCF (dB)	T (s)	VBW (Hz) 1/T
802.11b_Nss1,(1Mbps)_2TX	0.951	0.22	5.513m	200
802.11g_Nss1,(6Mbps)_2TX	0.954	0.2	1.977m	1k
802.11ax HEW20_Nss1,(MCS0)_2TX	0.924	0.34	1.393m	1k
802.11ax HEW40_Nss1,(MCS0)_2TX	0.864	0.63	726.562u	2k

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

Beamforming

Mode	DC	DCF (dB)	T (s)	VBW (Hz) 1/T
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.924	0.34	1.393m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.864	0.63	726.562u	2k

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 662911 D01 v02r01
- ♦ KDB 662911 D03 v01
- ♦ 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	Simon Cheng	22.1~23.6°C / 53~58%	25/Oct/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	03CH26-HY	Andy Wang	20.1~22.4°C / 53~57%	21/Oct/2024~24/Oct/2024
Radiated (Co-location)	03CH26-HY	Rian Chung	20.3~21.7°C / 54~56%	12/Nov/2024
RF Conducted	TH06-HY	Johnny Yu	23.4~23.9°C / 52~55%	23/Oct/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	Qualcomm® Radio Control Toolkit v4.0
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Non-Beamforming

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	25
2437MHz	25
2462MHz	25
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	22.5
2417MHz	22.5
2437MHz	25
2457MHz	23
2462MHz	21.5
802.11ax HEW20_Nss1,(MCS0)_2TX	-
2412MHz	22.5
2417MHz	23
2437MHz	25
2457MHz	22.5
2462MHz	22
802.11ax HEW40_Nss1,(MCS0)_2TX	-
2422MHz	21.5
2427MHz	21.5
2437MHz	22
2447MHz	20.5
2452MHz	20

**Beamforming**

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
2412MHz	22.5
2417MHz	23
2437MHz	25
2457MHz	22.5
2462MHz	22
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
2422MHz	21.5
2427MHz	21.5
2437MHz	22
2447MHz	20.5
2452MHz	20

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
Test Condition	Radiated measurement
Operating Mode	CTX
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA491301 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.3 Accessories

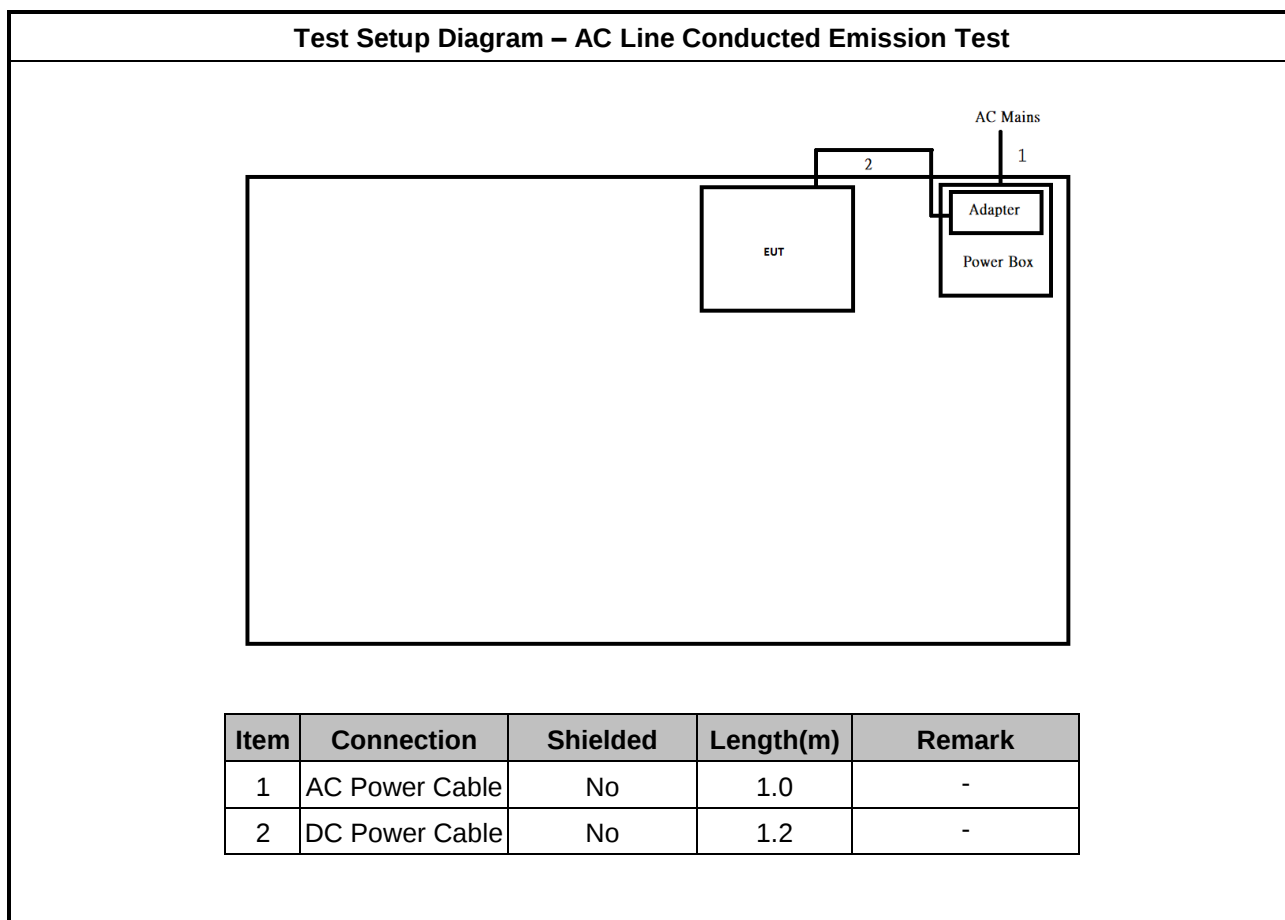
Accessories				
AC/DC Adaptor	Brand Name	MOSO	Model Name	MS-V2000R120-024Q0-US
	Power Rating	I/P: 100- 240Vac, 0.7A, O/P: 12.0 Vdc, 2.0 A		

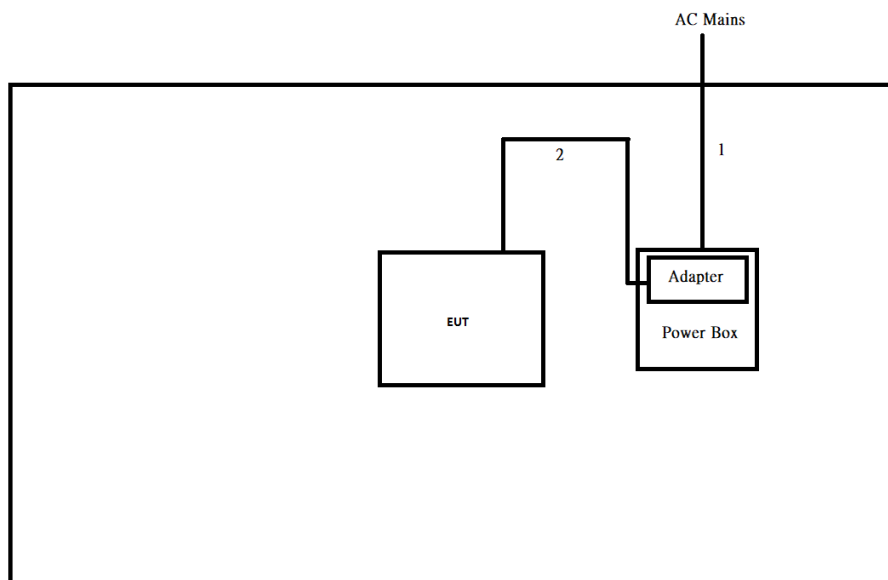
Reminder: Regarding to more detail and other information, please refer to user manual.

2.4 Support Equipment

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

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	1.8	-
2	DC Power Cable	No	1.2	-

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

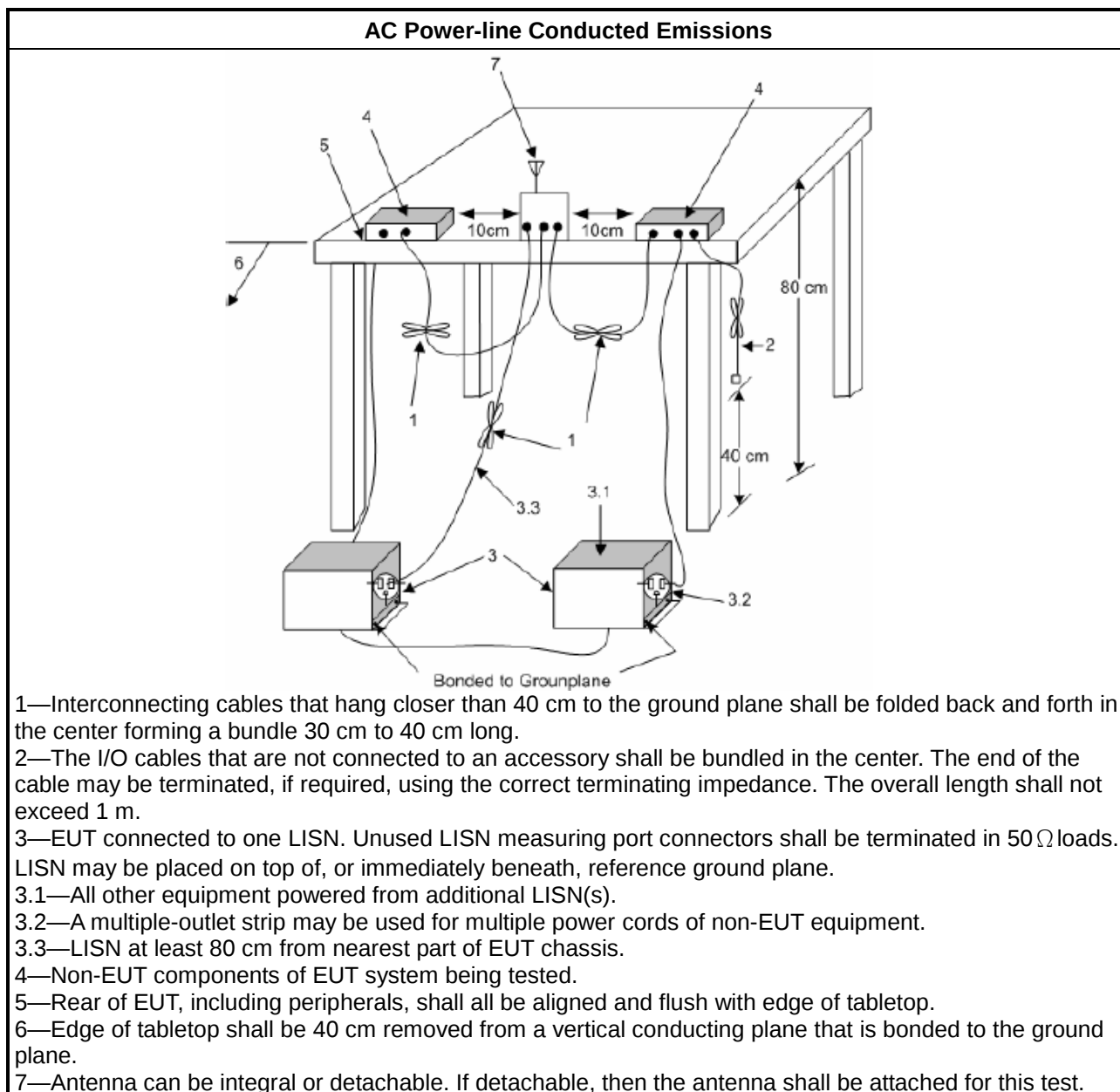
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

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.

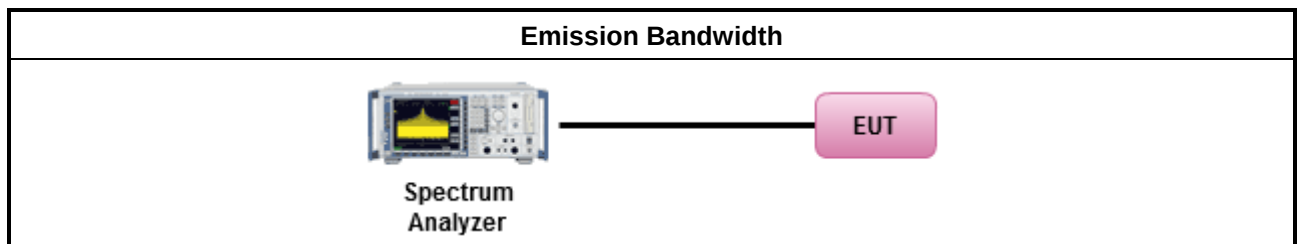
3.2.2 Measuring Instruments

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.	

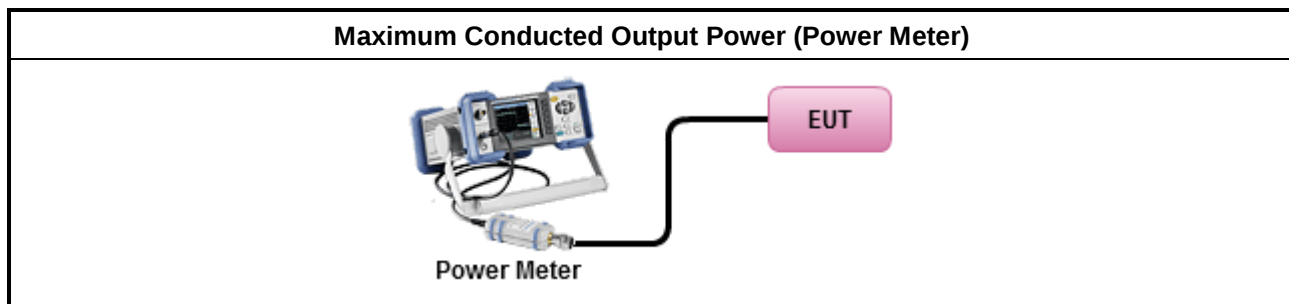
3.3.2 Measuring Instruments

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

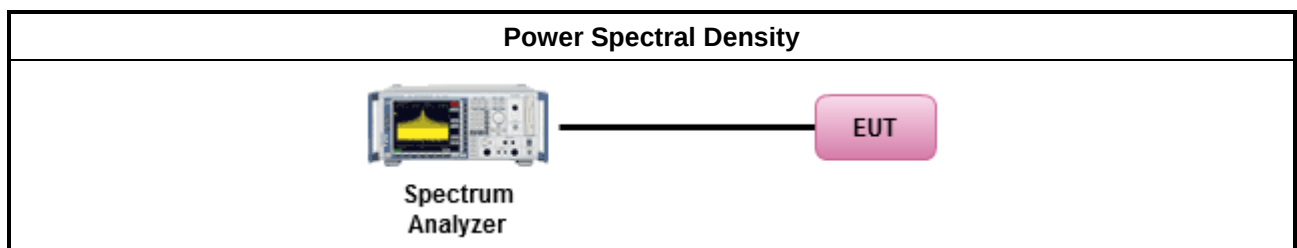
3.4.2 Measuring Instruments

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.	

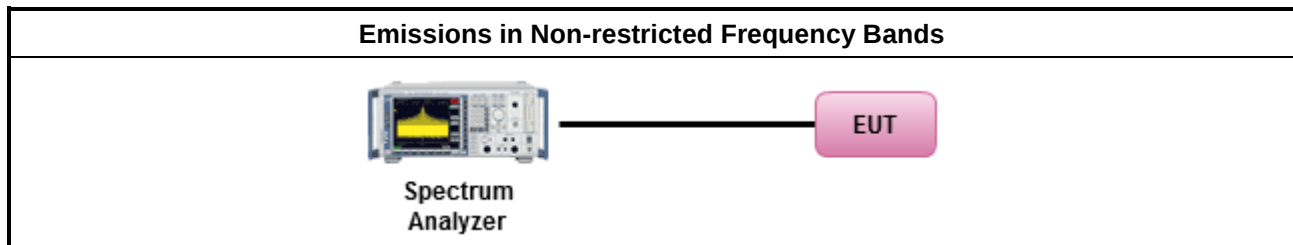
3.5.2 Measuring Instruments

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

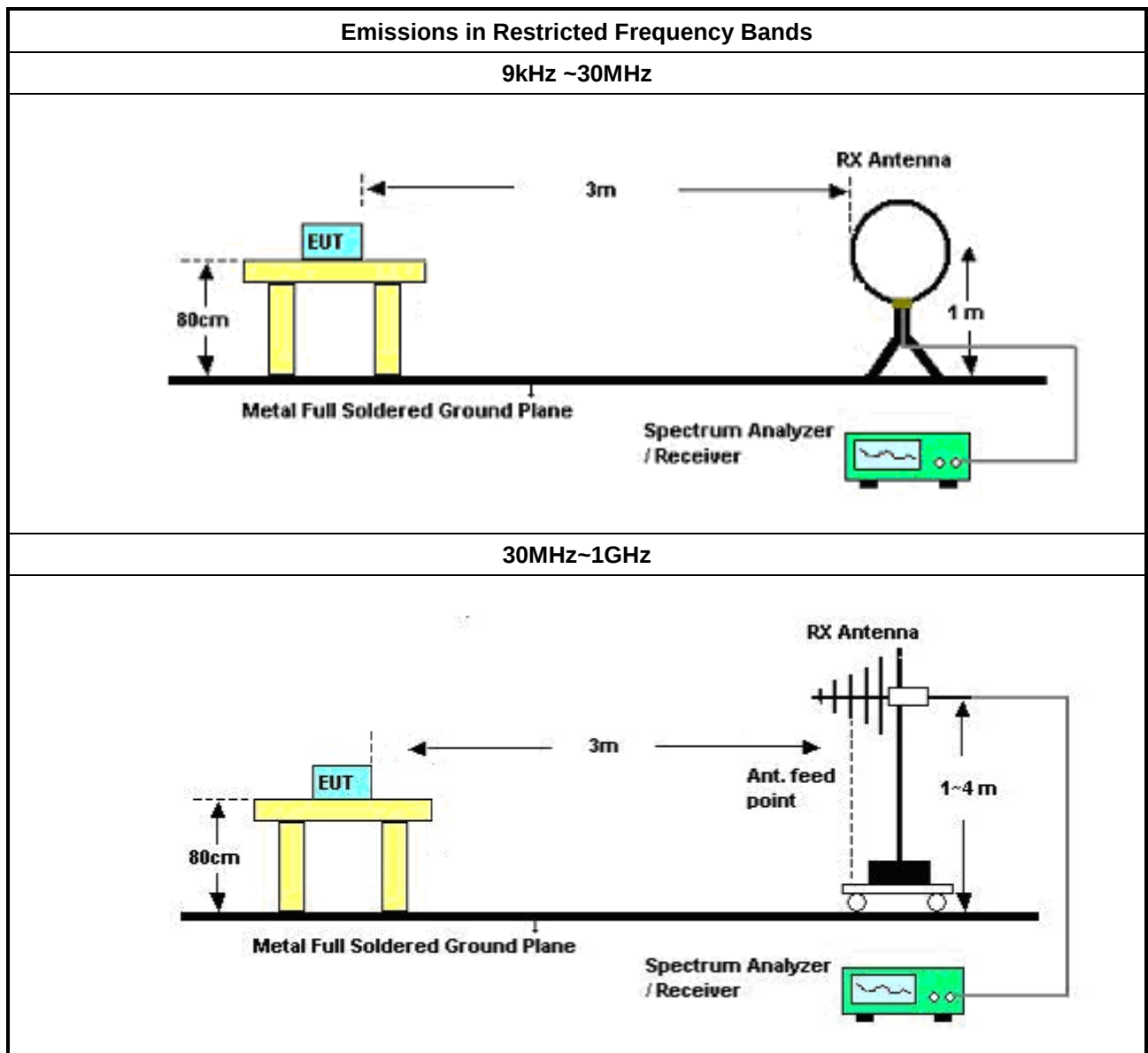
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted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

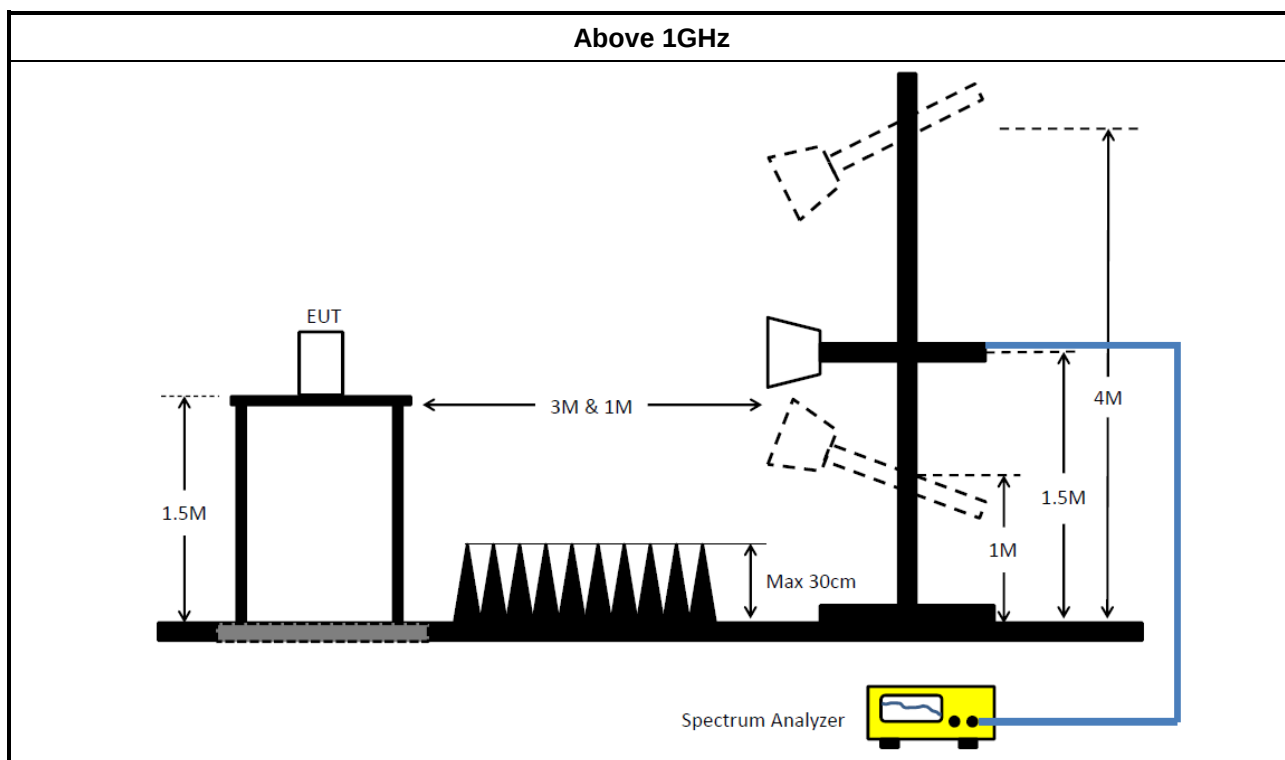
3.6.4 Measurement Results Calculation

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	FSV3044	101410	10Hz~44GHz	17/Nov/2023	16/Nov/2024
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	27/Dec/2023	26/Dec/2024
Signal Analyzer	ROHDE& SCHWARZ	FSV3044	101411	10Hz~44GHz	05/Oct/2024	04/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	BBHA 9170154	18GHz~40GHz	04/Jun/2024	03/Jun/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	V5.11.18	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
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	19/Apr/2024	18/Apr/2025
SENSE-EMI	Sporton	V5.11.8	NA	NA	NA	NA



Conducted Emissions at Powerline

Appendix A

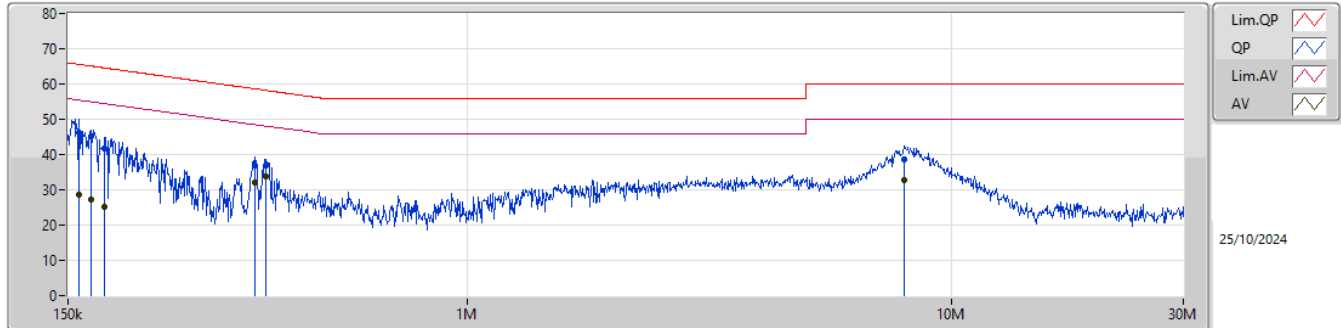
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	384.811k	35.78	48.18	-12.40	Neutral

Result

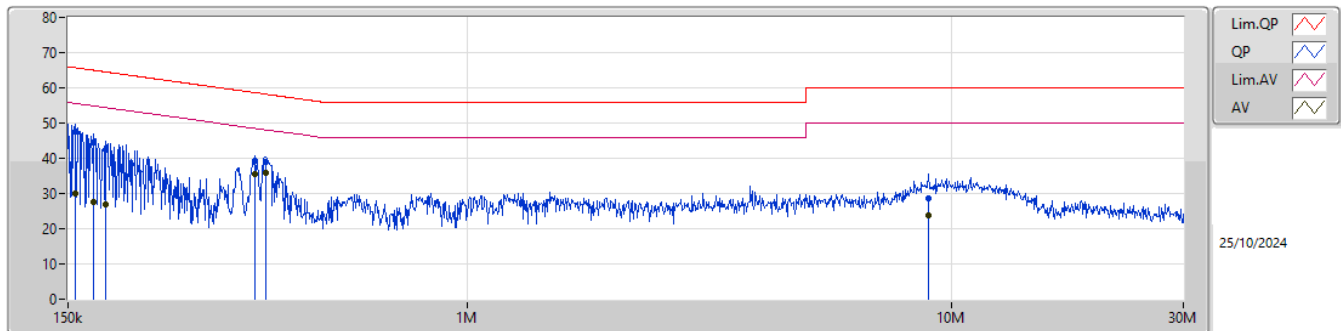
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	157.99k	46.30	65.56	-19.26	Line
Mode 1	Pass	AV	157.99k	28.61	55.56	-26.95	Line
Mode 1	Pass	QP	167.739k	45.10	65.06	-19.96	Line
Mode 1	Pass	AV	167.739k	27.10	55.06	-27.96	Line
Mode 1	Pass	QP	178.803k	41.89	64.55	-22.66	Line
Mode 1	Pass	AV	178.803k	25.33	54.55	-29.22	Line
Mode 1	Pass	QP	365.35k	36.97	58.60	-21.63	Line
Mode 1	Pass	AV	365.35k	31.94	48.60	-16.66	Line
Mode 1	Pass	QP	384.811k	36.82	58.18	-21.36	Line
Mode 1	Pass	AV	384.811k	33.70	48.18	-14.48	Line
Mode 1	Pass	QP	7.964M	38.71	60.00	-21.29	Line
Mode 1	Pass	AV	7.964M	32.90	50.00	-17.10	Line
Mode 1	Pass	QP	155.487k	47.62	65.69	-18.07	Neutral
Mode 1	Pass	AV	155.487k	29.96	55.69	-25.73	Neutral
Mode 1	Pass	QP	169.76k	44.62	64.97	-20.35	Neutral
Mode 1	Pass	AV	169.76k	27.62	54.97	-27.35	Neutral
Mode 1	Pass	QP	179.518k	42.57	64.51	-21.94	Neutral
Mode 1	Pass	AV	179.518k	27.03	54.51	-27.48	Neutral
Mode 1	Pass	QP	363.895k	39.16	58.64	-19.48	Neutral
Mode 1	Pass	AV	363.895k	35.49	48.64	-13.15	Neutral
Mode 1	Pass	QP	384.811k	38.96	58.18	-19.22	Neutral
Mode 1	Pass	AV	384.811k	35.78	48.18	-12.40	Neutral
Mode 1	Pass	QP	8.942M	28.47	60.00	-31.53	Neutral
Mode 1	Pass	AV	8.942M	23.82	50.00	-26.18	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	157.99k	46.30	65.56	-19.26	19.70	Line	-	26.60	9.66	0.07	9.97						
AV	157.99k	28.61	55.56	-26.95	19.70	Line	-	8.91	9.66	0.07	9.97						
QP	167.739k	45.10	65.06	-19.96	19.70	Line	-	25.40	9.66	0.07	9.97						
AV	167.739k	27.10	55.06	-27.96	19.70	Line	-	7.40	9.66	0.07	9.97						
QP	178.803k	41.89	64.55	-22.66	19.70	Line	-	22.19	9.65	0.08	9.97						
AV	178.803k	25.33	54.55	-29.22	19.70	Line	-	5.63	9.65	0.08	9.97						
QP	365.35k	36.97	58.60	-21.63	19.75	Line	-	17.22	9.65	0.12	9.98						
AV	365.35k	31.94	48.60	-16.66	19.75	Line	-	12.19	9.65	0.12	9.98						
QP	384.811k	36.82	58.18	-21.36	19.75	Line	-	17.07	9.65	0.12	9.98						
AV	384.811k	33.70	48.18	-14.48	19.75	Line	-	13.95	9.65	0.12	9.98						
QP	7.964M	38.71	60.00	-21.29	19.74	Line	-	18.97	9.71	0.05	9.98						
AV	7.964M	32.90	50.00	-17.10	19.74	Line	-	13.16	9.71	0.05	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	47.62	65.69	-18.07	19.64	Neutral	-	27.98	9.60	0.07	9.97						
AV	155.487k	29.96	55.69	-25.73	19.64	Neutral	-	10.32	9.60	0.07	9.97						
QP	169.76k	44.62	64.97	-20.35	19.65	Neutral	-	24.97	9.60	0.08	9.97						
AV	169.76k	27.62	54.97	-27.35	19.65	Neutral	-	7.97	9.60	0.08	9.97						
QP	179.518k	42.57	64.51	-21.94	19.65	Neutral	-	22.92	9.60	0.08	9.97						
AV	179.518k	27.03	54.51	-27.48	19.65	Neutral	-	7.38	9.60	0.08	9.97						
QP	363.895k	39.16	58.64	-19.48	19.70	Neutral	-	19.46	9.60	0.12	9.98						
AV	363.895k	35.49	48.64	-13.15	19.70	Neutral	-	15.79	9.60	0.12	9.98						
QP	384.811k	38.96	58.18	-19.22	19.70	Neutral	-	19.26	9.60	0.12	9.98						
AV	384.811k	35.78	48.18	-12.40	19.70	Neutral	-	16.08	9.60	0.12	9.98						
QP	8.942M	28.47	60.00	-31.53	19.69	Neutral	-	8.78	9.66	0.05	9.98						
AV	8.942M	23.82	50.00	-26.18	19.69	Neutral	-	4.13	9.66	0.05	9.98						

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	8.2M	12.909M	12M9G1D	6.6M	12.692M
802.11g_Nss1,(6Mbps)_2TX	16.425M	16.489M	16M5D1D	16.35M	16.359M
802.11ax HEW20_Nss1,(MCS0)_2TX	19.05M	19.018M	19M0D1D	13.75M	18.931M
802.11ax HEW40_Nss1,(MCS0)_2TX	38.1M	37.962M	38M0D1D	33.85M	37.477M

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)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	7.55M	12.898M	7.55M	12.692M
2437MHz	Pass	500k	7.575M	12.889M	7.65M	12.747M
2462MHz	Pass	500k	8.2M	12.909M	6.6M	12.778M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.35M	16.398M	16.375M	16.375M
2437MHz	Pass	500k	16.375M	16.432M	16.35M	16.489M
2462MHz	Pass	500k	16.35M	16.402M	16.425M	16.359M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	13.75M	18.95M	15.225M	18.931M
2437MHz	Pass	500k	18.775M	18.955M	19.05M	19.018M
2462MHz	Pass	500k	18.15M	18.964M	15.9M	18.935M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37.85M	37.746M	38.1M	37.477M
2437MHz	Pass	500k	37.95M	37.894M	37.95M	37.649M
2452MHz	Pass	500k	33.85M	37.793M	37.75M	37.962M

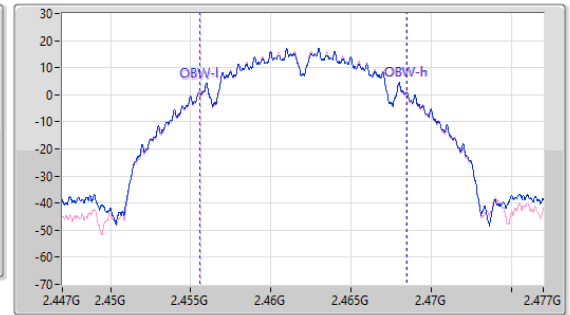
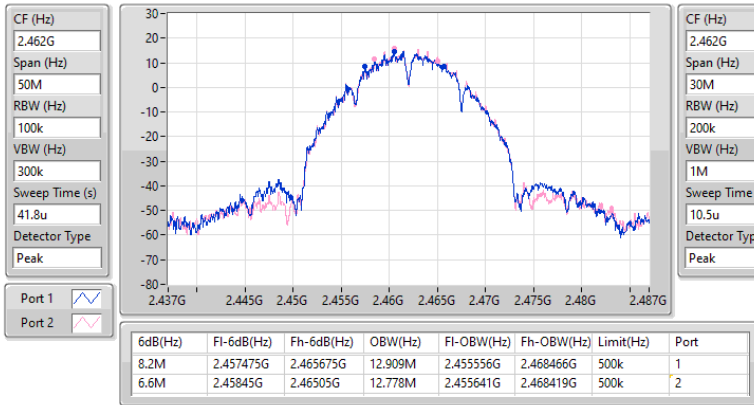
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

EBW

2462MHz

23/10/2024

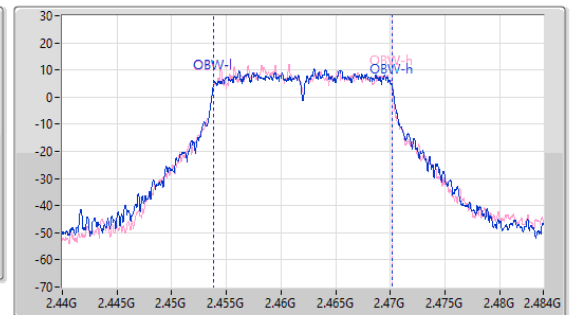
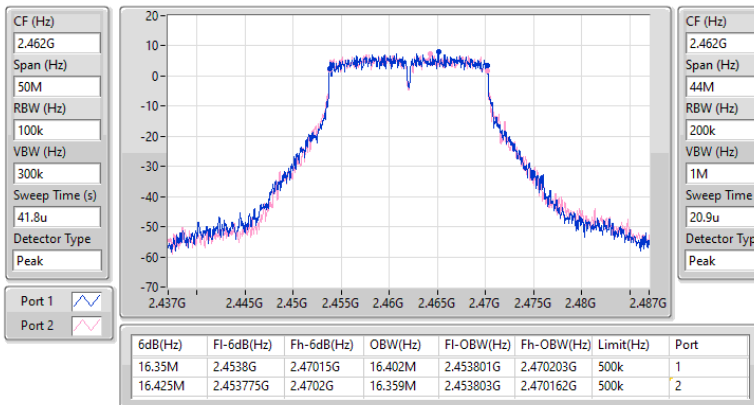


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

EBW

2462MHz

23/10/2024

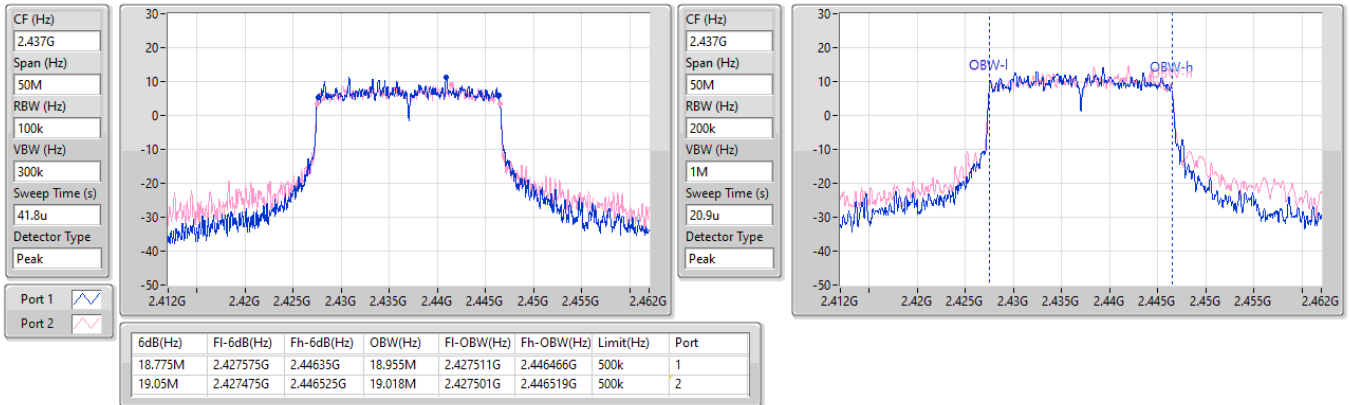


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

2437MHz

23/10/2024

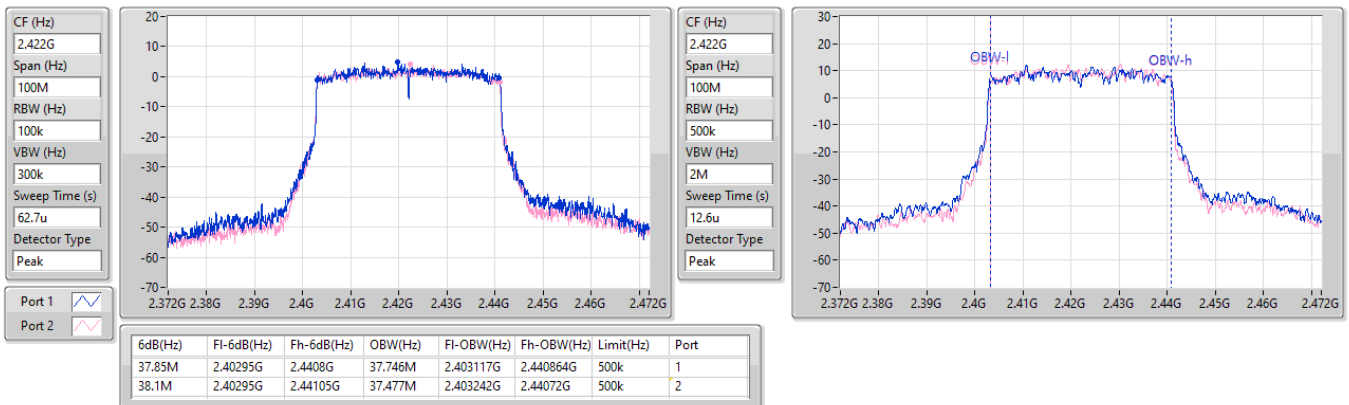


2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

2422MHz

23/10/2024





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	28.07	0.64121
802.11g_Nss1,(6Mbps)_2TX	27.91	0.61802
802.11ax HEW20_Nss1,(MCS0)_2TX	27.41	0.55081
802.11ax HEW40_Nss1,(MCS0)_2TX	24.79	0.30130

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.26	24.97	25.15	28.07	30.00
2437MHz	Pass	3.26	24.87	24.81	27.85	30.00
2462MHz	Pass	3.26	25.02	24.96	28.00	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.26	22.56	22.61	25.60	30.00
2417MHz	Pass	3.26	22.49	22.53	25.52	30.00
2437MHz	Pass	3.26	24.98	24.82	27.91	30.00
2457MHz	Pass	3.26	22.43	22.40	25.43	30.00
2462MHz	Pass	3.26	21.50	21.46	24.49	30.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.26	21.99	22.01	25.01	30.00
2417MHz	Pass	3.26	22.58	22.44	25.52	30.00
2437MHz	Pass	3.26	24.50	24.29	27.41	30.00
2457MHz	Pass	3.26	22.00	21.95	24.99	30.00
2462MHz	Pass	3.26	21.67	21.50	24.60	30.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	3.26	21.34	21.28	24.32	30.00
2427MHz	Pass	3.26	21.33	21.27	24.31	30.00
2437MHz	Pass	3.26	21.83	21.73	24.79	30.00
2447MHz	Pass	3.26	20.22	20.27	23.26	30.00
2452MHz	Pass	3.26	20.04	19.67	22.87	30.00

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



Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	27.28	0.53456
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	24.65	0.29174



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.10	21.87	21.86	24.88	30.00
2417MHz	Pass	4.10	22.45	22.30	25.39	30.00
2437MHz	Pass	4.10	24.35	24.19	27.28	30.00
2457MHz	Pass	4.10	21.90	21.82	24.87	30.00
2462MHz	Pass	4.10	21.56	21.35	24.47	30.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	4.10	21.24	21.16	24.21	30.00
2427MHz	Pass	4.10	21.22	21.16	24.20	30.00
2437MHz	Pass	4.10	21.69	21.58	24.65	30.00
2447MHz	Pass	4.10	20.11	20.12	23.13	30.00
2452MHz	Pass	4.10	19.94	19.57	22.77	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	-
802.11b_Nss1,(1Mbps)_2TX	4.27
802.11g_Nss1,(6Mbps)_2TX	0.82
802.11ax HEW20_Nss1,(MCS0)_2TX	-1.85
802.11ax HEW40_Nss1,(MCS0)_2TX	-6.43

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.10	1.68	1.44	3.05	8.00
2437MHz	Pass	4.10	0.82	1.99	3.67	8.00
2462MHz	Pass	4.10	1.15	2.85	4.27	8.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.10	-3.93	-3.55	-0.73	8.00
2437MHz	Pass	4.10	-0.42	-1.44	0.82	8.00
2462MHz	Pass	4.10	-4.36	-4.49	-2.51	8.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.10	-5.51	-5.65	-3.50	8.00
2437MHz	Pass	4.10	-2.66	-3.75	-1.85	8.00
2462MHz	Pass	4.10	-5.72	-6.28	-4.18	8.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	4.10	-9.13	-9.18	-6.85	8.00
2437MHz	Pass	4.10	-7.72	-8.79	-6.43	8.00
2452MHz	Pass	4.10	-9.23	-10.12	-8.49	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_802.11b_Nss1,(1Mbps)_2TX

PSD

2462MHz

23/10/2024

CF (Hz)
2.462G

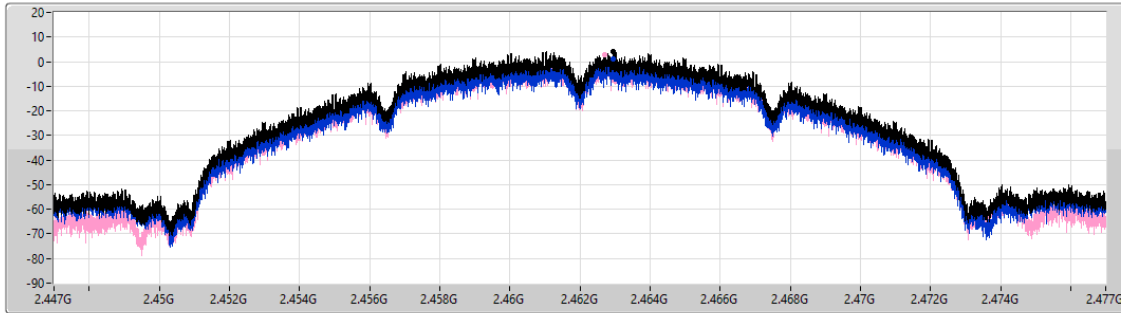
Span (Hz)
30M

RBW (Hz)
3k

VBW (Hz)
10k

Sweep Time (s)
1.4m

Detector Type
Peak



Sum 

Port 1 

Port 2 

Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
4.27	4.27	1.15	2.85

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

PSD

2437MHz

23/10/2024

CF (Hz)
2.437G

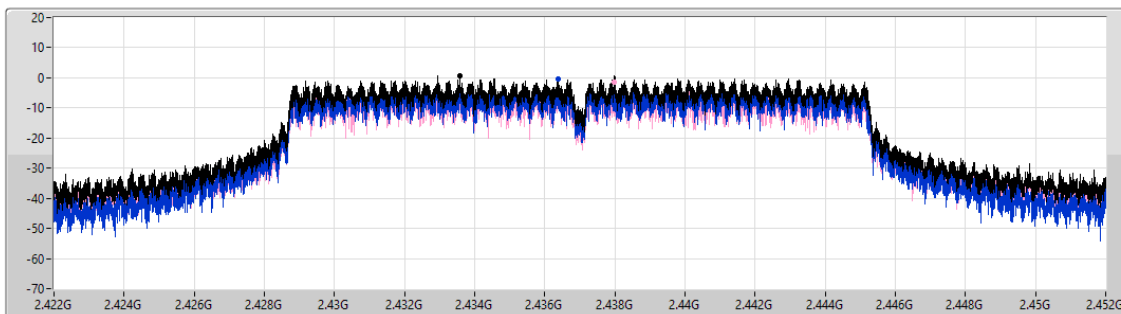
Span (Hz)
30M

RBW (Hz)
3k

VBW (Hz)
10k

Sweep Time (s)
1.4m

Detector Type
Peak



Sum 

Port 1 

Port 2 

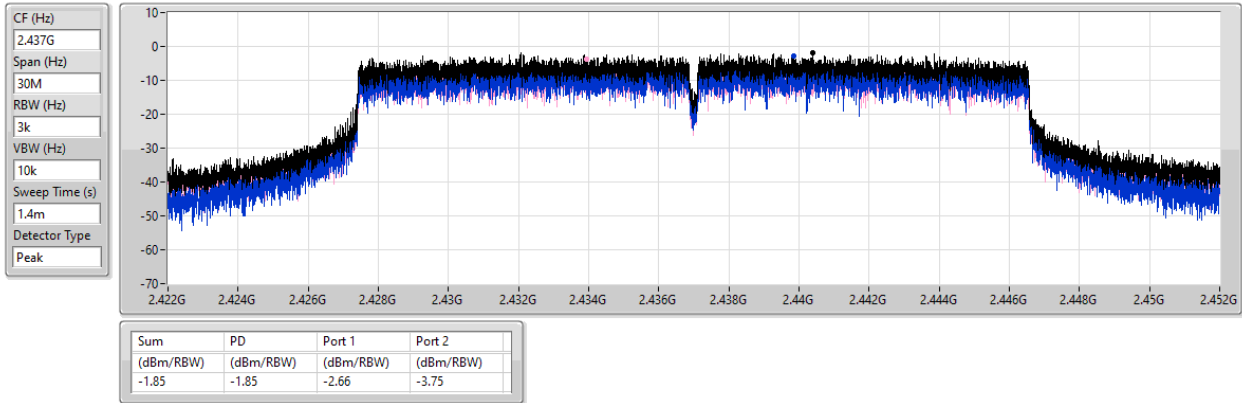
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
0.82	0.82	-0.42	-1.44

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

PSD

2437MHz

23/10/2024

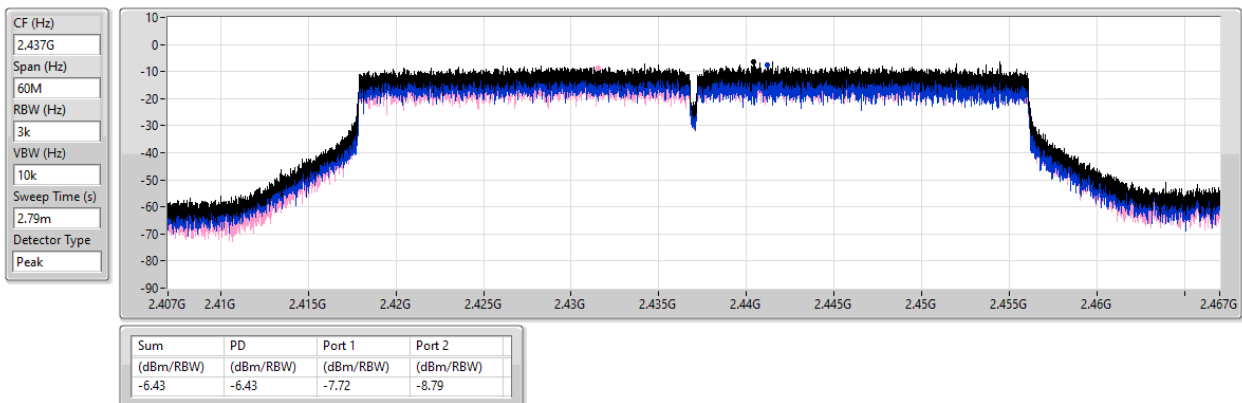


2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

PSD

2437MHz

23/10/2024



**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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	2.41236G	17.46	-12.54	1.91148G	-54.04	2.4G	-36.10	2.4G	-36.52	2.50262G	-52.25	7.23795G	-43.91	1
802.11g_Nss1,(6Mbps)_2TX	Pass	2.43824G	14.77	-15.23	2.30874G	-52.69	2.39976G	-25.24	2.4G	-24.44	2.50414G	-51.20	21.62572G	-45.40	1
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	2.44192G	14.65	-15.35	2.30408G	-53.14	2.4G	-23.47	2.4G	-22.86	2.50526G	-51.44	21.94882G	-45.17	1
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	2.44208G	8.56	-21.44	2.30741G	-53.54	2.39984G	-26.63	2.4G	-27.00	2.50622G	-50.82	21.85609G	-45.04	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
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.41236G	17.46	-12.54	1.91148G	-54.04	2.4G	-36.10	2.4G	-36.52	2.50262G	-52.25	7.23795G	-43.91	1
2412MHz	Pass	2.41236G	17.46	-12.54	2.30059G	-53.51	2.39984G	-36.38	2.4G	-36.57	2.5055G	-51.33	7.23795G	-44.44	2
2437MHz	Pass	2.41236G	17.46	-12.54	2.30292G	-54.36	2.39912G	-50.46	2.4G	-49.86	2.51062G	-51.46	21.95443G	-44.42	1
2437MHz	Pass	2.41236G	17.46	-12.54	2.30408G	-53.57	2.39104G	-51.45	2.4G	-53.30	2.5087G	-52.03	21.99658G	-45.16	2
2462MHz	Pass	2.41236G	17.46	-12.54	2.08157G	-54.49	2.39608G	-52.63	2.4G	-53.23	2.51238G	-49.87	21.54143G	-45.41	1
2462MHz	Pass	2.41236G	17.46	-12.54	2.30758G	-53.48	2.39248G	-52.71	2.4G	-53.86	2.50094G	-51.25	21.95443G	-45.92	2
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43824G	14.77	-15.23	2.30874G	-52.69	2.39976G	-25.24	2.4G	-24.44	2.50414G	-51.20	21.62572G	-45.40	1
2412MHz	Pass	2.43824G	14.77	-15.23	2.30408G	-52.71	2.39984G	-26.86	2.4G	-25.46	2.50286G	-49.95	21.9432G	-45.29	2
2437MHz	Pass	2.43824G	14.77	-15.23	2.30408G	-52.92	2.39984G	-34.23	2.4G	-36.90	2.50046G	-50.35	21.6201G	-44.66	1
2437MHz	Pass	2.43824G	14.77	-15.23	2.30408G	-52.43	2.3992G	-27.34	2.4G	-30.59	2.50222G	-42.22	21.96848G	-45.69	2
2462MHz	Pass	2.43824G	14.77	-15.23	2.30758G	-53.71	2.3976G	-52.95	2.4G	-51.93	2.51254G	-51.27	21.65662G	-45.37	1
2462MHz	Pass	2.43824G	14.77	-15.23	2.30991G	-53.94	2.398G	-51.65	2.4G	-54.24	2.51086G	-49.84	21.62572G	-44.73	2
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44192G	14.65	-15.35	2.30408G	-53.14	2.4G	-23.47	2.4G	-22.86	2.50526G	-51.44	21.94882G	-45.17	1
2412MHz	Pass	2.44192G	14.65	-15.35	2.1736G	-54.34	2.4G	-24.01	2.4G	-23.28	2.51422G	-52.45	21.67629G	-45.70	2
2437MHz	Pass	2.44192G	14.65	-15.35	2.30641G	-53.49	2.39944G	-35.43	2.4G	-35.68	2.50318G	-45.87	21.56952G	-45.71	1
2437MHz	Pass	2.44192G	14.65	-15.35	2.30991G	-54.45	2.39848G	-27.37	2.4G	-29.89	2.50134G	-40.93	21.62291G	-46.13	2
2462MHz	Pass	2.44192G	14.65	-15.35	2.12234G	-55.01	2.39752G	-52.30	2.4G	-53.48	2.50342G	-51.55	21.72405G	-45.49	1
2462MHz	Pass	2.44192G	14.65	-15.35	2.30408G	-54.32	2.4G	-52.67	2.4G	-53.85	2.50358G	-50.85	21.92634G	-44.46	2
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.44208G	8.56	-21.44	2.30741G	-53.54	2.39984G	-26.63	2.4G	-27.00	2.50622G	-50.82	21.85609G	-45.04	1
2422MHz	Pass	2.44208G	8.56	-21.44	2.30397G	-53.69	2.39952G	-28.66	2.4G	-28.55	2.5067G	-51.37	21.89815G	-44.96	2
2437MHz	Pass	2.44208G	8.56	-21.44	2.30054G	-54.19	2.39536G	-41.80	2.4G	-41.75	2.50574G	-46.64	21.97388G	-45.19	1
2437MHz	Pass	2.44208G	8.56	-21.44	30M	-53.10	2.39952G	-41.34	2.4G	-44.78	2.50574G	-47.40	21.9879G	-44.57	2
2452MHz	Pass	2.44208G	8.56	-21.44	2.30626G	-53.81	2.3904G	-50.85	2.4G	-52.17	2.50158G	-48.14	21.94303G	-45.38	1
2452MHz	Pass	2.44208G	8.56	-21.44	2.3097G	-54.16	2.39808G	-52.14	2.4G	-52.21	2.50206G	-48.91	21.85328G	-44.14	2

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

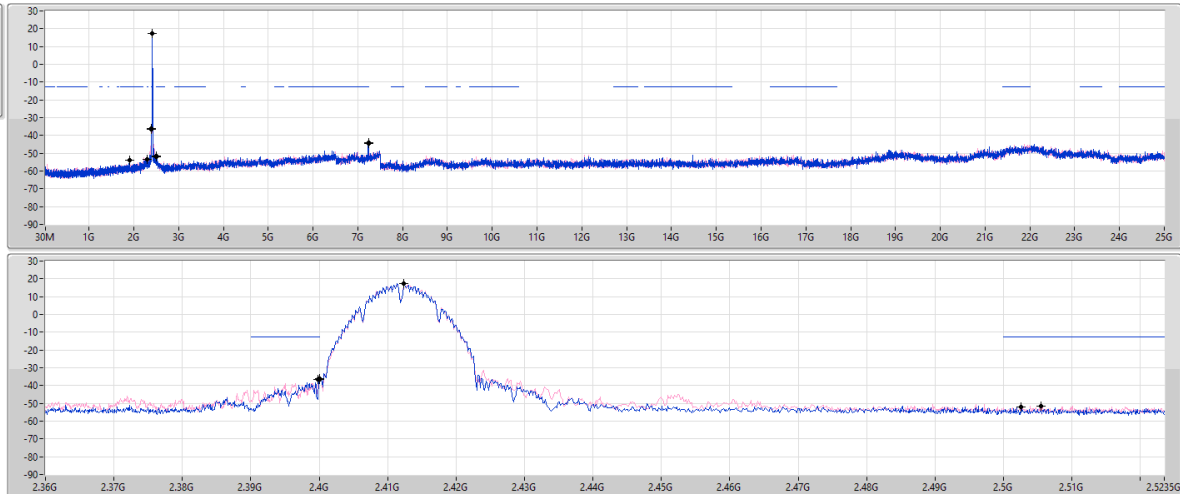
CSEndB

2412MHz

23/10/2024

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

Port 1
Port 2



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
2.41236G	17.46	-12.54	1.91148G	-54.04	2.4G	-36.10	2.4G	-36.52	2.50262G	-52.25	7.23795G	-43.91	1
2.41236G	17.46	-12.54	2.30059G	-53.51	2.39984G	-36.38	2.4G	-36.57	2.5055G	-51.33	7.23795G	-44.44	2

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

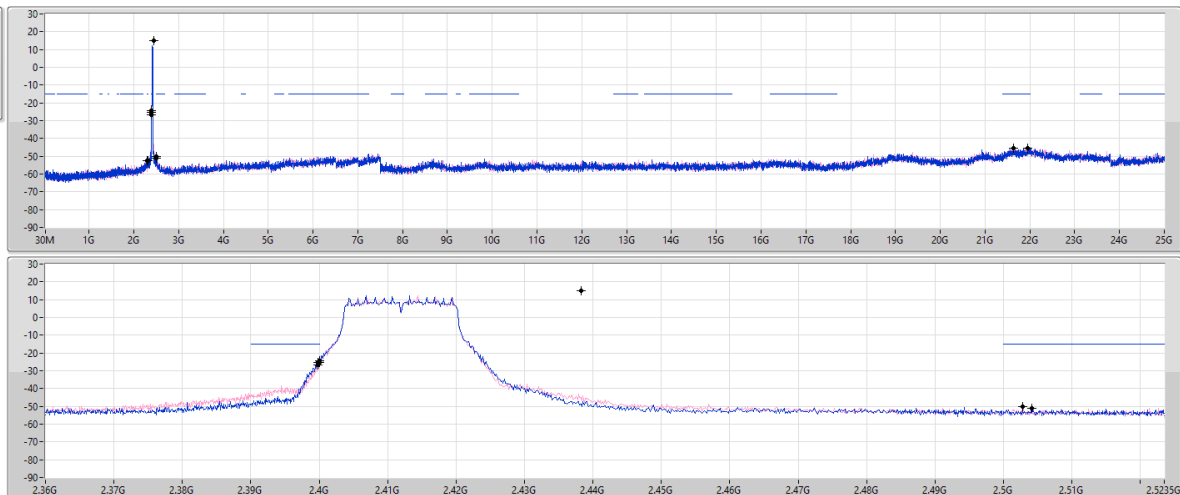
CSEndB

2412MHz

23/10/2024

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

Port 1
Port 2



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
2.43824G	14.77	-15.23	2.30874G	-52.69	2.39976G	-25.24	2.4G	-24.44	2.50414G	-51.20	21.62572G	-45.40	1
2.43824G	14.77	-15.23	2.30408G	-52.71	2.39984G	-26.86	2.4G	-25.46	2.50286G	-49.95	21.9432G	-45.29	2

2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_2TX

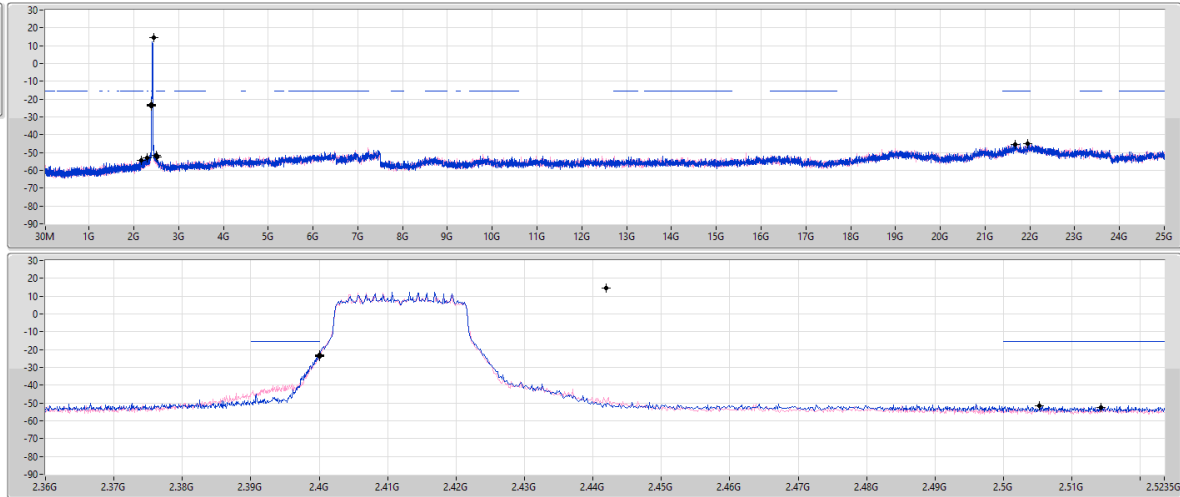
CSEndB

2412MHz

23/10/2024

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

Port 1
Port 2



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
2.44192G	14.65	-15.35	2.30408G	-53.14	2.4G	-23.47	2.4G	-22.86	2.50526G	-51.44	2.194882G	-45.17	1
2.44192G	14.65	-15.35	2.1736G	-54.34	2.4G	-24.01	2.4G	-23.28	2.51422G	-52.45	2.167629G	-45.70	2

2.4-2.4835GHz_802.11ax_HEW40_Nss1,(MCS0)_2TX

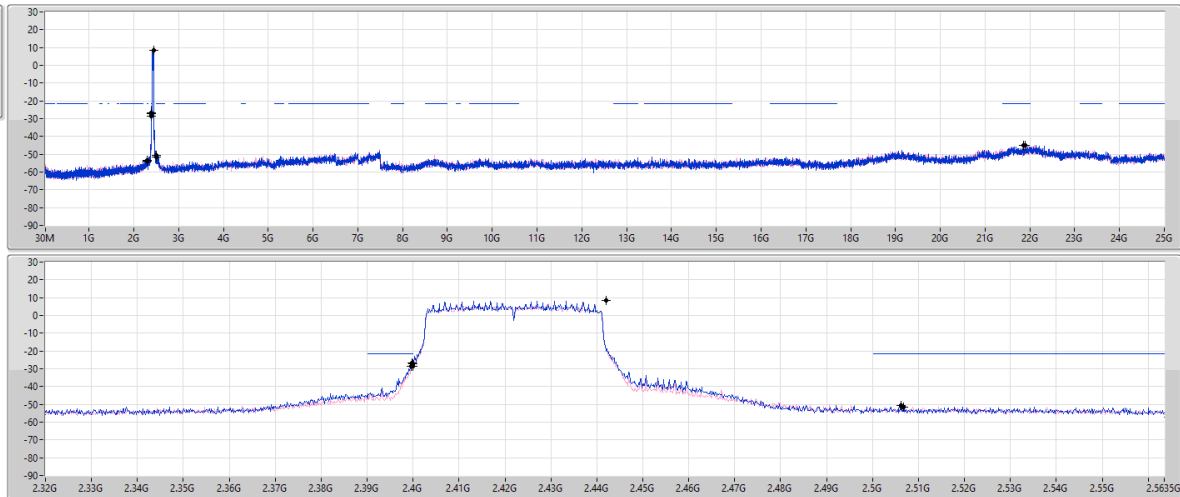
CSEndB

2422MHz

23/10/2024

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

Port 1
Port 2



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
2.44208G	8.56	-21.44	2.30741G	-53.54	2.39984G	-26.63	2.4G	-27.00	2.50622G	-50.82	2.185809G	-45.04	1
2.44208G	8.56	-21.44	2.30397G	-53.69	2.39952G	-28.66	2.4G	-28.55	2.5067G	-51.37	2.189815G	-44.96	2



Summary

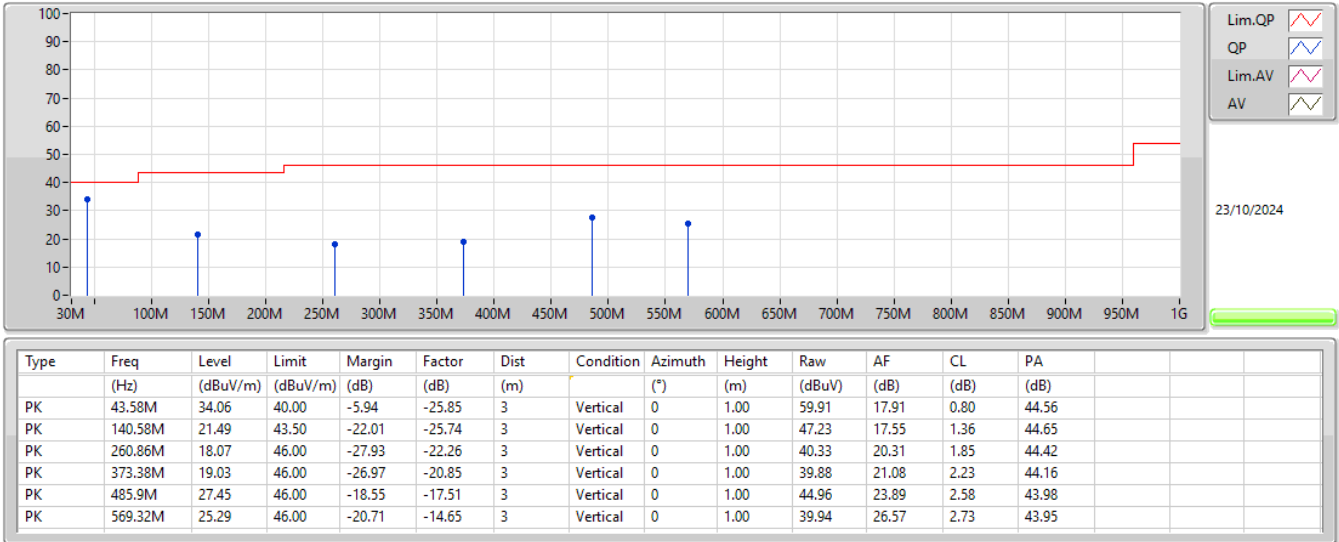
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.11ax.HEW40_Nss1,(MCS0)_2TX	Pass	PK	43.58M	34.06	40.00	-5.94	3	Vertical	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
2437MHz	Pass	PK	43.58M	34.06	40.00	-5.94	3	Vertical	0	1.00
2437MHz	Pass	PK	140.58M	21.49	43.50	-22.01	3	Vertical	0	1.00
2437MHz	Pass	PK	260.86M	18.07	46.00	-27.93	3	Vertical	0	1.00
2437MHz	Pass	PK	373.38M	19.03	46.00	-26.97	3	Vertical	0	1.00
2437MHz	Pass	PK	485.9M	27.45	46.00	-18.55	3	Vertical	0	1.00
2437MHz	Pass	PK	569.32M	25.29	46.00	-20.71	3	Vertical	0	1.00
2437MHz	Pass	PK	35.82M	27.31	40.00	-12.69	3	Horizontal	360	1.00
2437MHz	Pass	PK	156.1M	24.18	43.50	-19.32	3	Horizontal	360	1.00
2437MHz	Pass	PK	241.46M	18.38	46.00	-27.62	3	Horizontal	360	1.00
2437MHz	Pass	PK	355.92M	18.63	46.00	-27.37	3	Horizontal	360	1.00
2437MHz	Pass	PK	427.7M	20.98	46.00	-25.02	3	Horizontal	360	1.00
2437MHz	Pass	PK	546.04M	24.18	46.00	-21.82	3	Horizontal	360	1.00

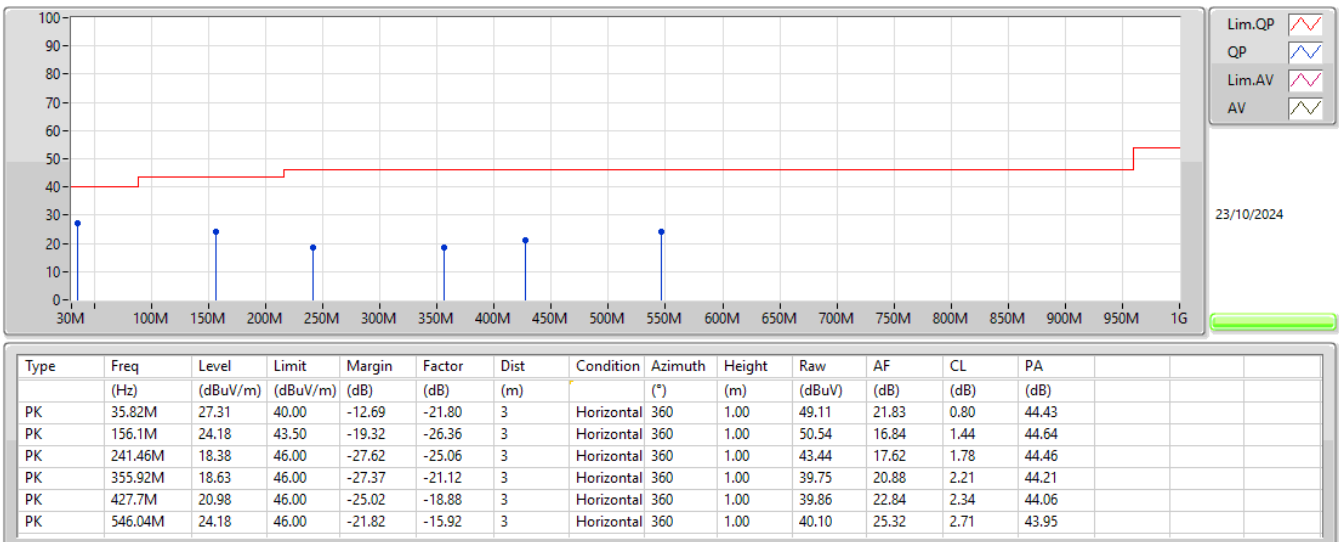
2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

2437MHz_Adapter



2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

2437MHz_Adapter



**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	AV	2.4868G	53.69	54.00	-0.31	3	Horizontal	39	1.16
802.11g_Nss1,(6Mbps)_2TX	Pass	AV	2.39G	53.64	54.00	-0.36	3	Vertical	190	1.43
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	AV	2.39G	53.64	54.00	-0.36	3	Vertical	173	1.44
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	AV	2.39G	53.83	54.00	-0.17	3	Vertical	174	1.34

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3892G	52.78	54.00	-1.22	3	Vertical	172	1.45
2412MHz	Pass	AV	2.4112G	115.80	Inf	-Inf	3	Vertical	172	1.45
2412MHz	Pass	PK	2.39G	62.32	74.00	-11.68	3	Vertical	172	1.45
2412MHz	Pass	PK	2.411G	118.41	Inf	-Inf	3	Vertical	172	1.45
2412MHz	Pass	AV	2.39G	49.37	54.00	-4.63	3	Horizontal	37	1.28
2412MHz	Pass	AV	2.4112G	112.65	Inf	-Inf	3	Horizontal	37	1.28
2412MHz	Pass	PK	2.39G	60.30	74.00	-13.70	3	Horizontal	37	1.28
2412MHz	Pass	PK	2.4128G	115.30	Inf	-Inf	3	Horizontal	37	1.28
2412MHz	Pass	AV	4.824G	32.14	54.00	-21.86	3	Vertical	153	1.49
2412MHz	Pass	AV	12.05816G	43.91	54.00	-10.09	3	Vertical	31	1.50
2412MHz	Pass	PK	4.82408G	43.05	74.00	-30.95	3	Vertical	153	1.49
2412MHz	Pass	PK	12.0586G	54.41	74.00	-19.59	3	Vertical	31	1.50
2412MHz	Pass	AV	4.82392G	32.60	54.00	-21.40	3	Horizontal	340	1.50
2412MHz	Pass	AV	12.05808G	49.28	54.00	-4.72	3	Horizontal	41	1.49
2412MHz	Pass	PK	4.82368G	43.39	74.00	-30.61	3	Horizontal	340	1.50
2412MHz	Pass	PK	12.0582G	56.56	74.00	-17.44	3	Horizontal	41	1.49
2437MHz	Pass	AV	2.3882G	47.34	54.00	-6.66	3	Vertical	157	1.49
2437MHz	Pass	AV	2.4378G	115.97	Inf	-Inf	3	Vertical	157	1.49
2437MHz	Pass	AV	2.4858G	46.98	54.00	-7.02	3	Vertical	157	1.49
2437MHz	Pass	PK	2.3874G	59.62	74.00	-14.38	3	Vertical	157	1.49
2437MHz	Pass	PK	2.4378G	118.62	Inf	-Inf	3	Vertical	157	1.49
2437MHz	Pass	PK	2.4946G	60.01	74.00	-13.99	3	Vertical	157	1.49
2437MHz	Pass	AV	2.3882G	45.51	54.00	-8.49	3	Horizontal	41	1.44
2437MHz	Pass	AV	2.4378G	112.72	Inf	-Inf	3	Horizontal	41	1.44
2437MHz	Pass	AV	2.4858G	46.96	54.00	-7.04	3	Horizontal	41	1.44
2437MHz	Pass	PK	2.3746G	58.68	74.00	-15.32	3	Horizontal	41	1.44
2437MHz	Pass	PK	2.4378G	115.41	Inf	-Inf	3	Horizontal	41	1.44
2437MHz	Pass	PK	2.4862G	59.08	74.00	-14.92	3	Horizontal	41	1.44
2437MHz	Pass	AV	4.87388G	31.79	54.00	-22.21	3	Vertical	157	1.01
2437MHz	Pass	AV	12.18312G	45.04	54.00	-8.96	3	Vertical	19	1.93
2437MHz	Pass	PK	4.87348G	43.03	74.00	-30.97	3	Vertical	157	1.01
2437MHz	Pass	PK	12.1832G	54.29	74.00	-19.71	3	Vertical	19	1.93
2437MHz	Pass	AV	4.87408G	32.40	54.00	-21.60	3	Horizontal	356	1.00
2437MHz	Pass	AV	12.18304G	50.80	54.00	-3.20	3	Horizontal	44	1.50
2437MHz	Pass	PK	4.87432G	44.10	74.00	-29.90	3	Horizontal	356	1.00
2437MHz	Pass	PK	12.1866G	57.80	74.00	-16.20	3	Horizontal	44	1.50
2462MHz	Pass	AV	2.4612G	114.81	Inf	-Inf	3	Vertical	160	1.49
2462MHz	Pass	AV	2.4868G	52.64	54.00	-1.36	3	Vertical	160	1.49
2462MHz	Pass	PK	2.4628G	117.45	Inf	-Inf	3	Vertical	160	1.49
2462MHz	Pass	PK	2.4878G	61.78	74.00	-12.22	3	Vertical	160	1.49
2462MHz	Pass	AV	2.4628G	113.97	Inf	-Inf	3	Horizontal	39	1.16
2462MHz	Pass	AV	2.4868G	53.69	54.00	-0.31	3	Horizontal	39	1.16
2462MHz	Pass	PK	2.4628G	116.60	Inf	-Inf	3	Horizontal	39	1.16
2462MHz	Pass	PK	2.4868G	62.30	74.00	-11.70	3	Horizontal	39	1.16
2462MHz	Pass	AV	4.92388G	32.03	54.00	-21.97	3	Vertical	64	1.50
2462MHz	Pass	AV	12.3112G	45.17	54.00	-8.83	3	Vertical	19	2.06
2462MHz	Pass	PK	4.92396G	43.53	74.00	-30.47	3	Vertical	64	1.50
2462MHz	Pass	PK	12.3118G	54.52	74.00	-19.48	3	Vertical	19	2.06
2462MHz	Pass	AV	4.9238G	31.64	54.00	-22.36	3	Horizontal	185	1.50
2462MHz	Pass	AV	12.31108G	52.80	54.00	-1.20	3	Horizontal	42	1.59
2462MHz	Pass	PK	4.92376G	43.43	74.00	-30.57	3	Horizontal	185	1.50
2462MHz	Pass	PK	12.31136G	59.14	74.00	-14.86	3	Horizontal	42	1.59
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	53.64	54.00	-0.36	3	Vertical	190	1.43
2412MHz	Pass	AV	2.41G	107.85	Inf	-Inf	3	Vertical	190	1.43
2412MHz	Pass	PK	2.3898G	67.31	74.00	-6.69	3	Vertical	190	1.43
2412MHz	Pass	PK	2.4104G	118.29	Inf	-Inf	3	Vertical	190	1.43
2412MHz	Pass	AV	2.3878G	51.33	54.00	-2.67	3	Horizontal	37	1.49
2412MHz	Pass	AV	2.4074G	104.66	Inf	-Inf	3	Horizontal	37	1.49
2412MHz	Pass	PK	2.3876G	67.61	74.00	-6.39	3	Horizontal	37	1.49

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2412MHz	Pass	PK	2.4088G	115.40	Inf	-Inf	3	Horizontal	37	1.49
2412MHz	Pass	AV	4.8262G	29.96	54.00	-24.04	3	Vertical	227	2.02
2412MHz	Pass	AV	12.0666G	39.93	54.00	-14.07	3	Vertical	308	2.04
2412MHz	Pass	PK	4.8334G	42.86	74.00	-31.14	3	Vertical	227	2.02
2412MHz	Pass	PK	12.06864G	53.10	74.00	-20.90	3	Vertical	308	2.04
2412MHz	Pass	AV	4.83112G	30.01	54.00	-23.99	3	Horizontal	266	1.50
2412MHz	Pass	AV	12.06804G	39.87	54.00	-14.13	3	Horizontal	9	1.19
2412MHz	Pass	PK	4.82176G	43.60	74.00	-30.40	3	Horizontal	266	1.50
2412MHz	Pass	PK	12.06332G	53.15	74.00	-20.85	3	Horizontal	9	1.19
2417MHz	Pass	AV	2.39G	51.89	54.00	-2.11	3	Vertical	174	1.50
2417MHz	Pass	AV	2.4212G	107.73	Inf	-Inf	3	Vertical	174	1.50
2417MHz	Pass	PK	2.387G	67.78	74.00	-6.22	3	Vertical	174	1.50
2417MHz	Pass	PK	2.421G	118.56	Inf	-Inf	3	Vertical	174	1.50
2417MHz	Pass	AV	2.3886G	47.96	54.00	-6.04	3	Horizontal	54	1.28
2417MHz	Pass	AV	2.4134G	105.46	Inf	-Inf	3	Horizontal	54	1.28
2417MHz	Pass	PK	2.3878G	61.97	74.00	-12.03	3	Horizontal	54	1.28
2417MHz	Pass	PK	2.4182G	115.70	Inf	-Inf	3	Horizontal	54	1.28
2437MHz	Pass	AV	2.3862G	47.50	54.00	-6.50	3	Vertical	174	1.49
2437MHz	Pass	AV	2.4362G	110.19	Inf	-Inf	3	Vertical	174	1.49
2437MHz	Pass	AV	2.4866G	47.98	54.00	-6.02	3	Vertical	174	1.49
2437MHz	Pass	PK	2.3894G	59.92	74.00	-14.08	3	Vertical	174	1.49
2437MHz	Pass	PK	2.4306G	120.51	Inf	-Inf	3	Vertical	174	1.49
2437MHz	Pass	PK	2.4862G	60.97	74.00	-13.03	3	Vertical	174	1.49
2437MHz	Pass	AV	2.389G	45.83	54.00	-8.17	3	Horizontal	41	1.48
2437MHz	Pass	AV	2.4382G	107.71	Inf	-Inf	3	Horizontal	41	1.48
2437MHz	Pass	AV	2.4835G	47.63	54.00	-6.37	3	Horizontal	41	1.48
2437MHz	Pass	PK	2.383G	58.63	74.00	-15.37	3	Horizontal	41	1.48
2437MHz	Pass	PK	2.4382G	118.26	Inf	-Inf	3	Horizontal	41	1.48
2437MHz	Pass	PK	2.4835G	60.06	74.00	-13.94	3	Horizontal	41	1.48
2437MHz	Pass	AV	4.86468G	30.07	54.00	-23.93	3	Vertical	349	2.30
2437MHz	Pass	AV	12.1888G	42.34	54.00	-11.66	3	Vertical	20	1.87
2437MHz	Pass	PK	4.86524G	43.37	74.00	-30.63	3	Vertical	349	2.30
2437MHz	Pass	PK	12.18616G	54.90	74.00	-19.10	3	Vertical	20	1.87
2437MHz	Pass	AV	4.86428G	30.19	54.00	-23.81	3	Horizontal	223	1.50
2437MHz	Pass	AV	12.1872G	46.07	54.00	-7.93	3	Horizontal	44	1.58
2437MHz	Pass	PK	4.87576G	42.86	74.00	-31.14	3	Horizontal	223	1.50
2437MHz	Pass	PK	12.18296G	60.30	74.00	-13.70	3	Horizontal	44	1.58
2457MHz	Pass	AV	2.456G	108.73	Inf	-Inf	3	Vertical	173	1.03
2457MHz	Pass	AV	2.4862G	52.26	54.00	-1.74	3	Vertical	173	1.03
2457MHz	Pass	PK	2.4558G	119.15	Inf	-Inf	3	Vertical	173	1.03
2457MHz	Pass	PK	2.4852G	69.09	74.00	-4.91	3	Vertical	173	1.03
2457MHz	Pass	AV	2.453G	106.05	Inf	-Inf	3	Horizontal	42	1.49
2457MHz	Pass	AV	2.4835G	53.61	54.00	-0.39	3	Horizontal	42	1.49
2457MHz	Pass	PK	2.4526G	116.75	Inf	-Inf	3	Horizontal	42	1.49
2457MHz	Pass	PK	2.4838G	70.11	74.00	-3.89	3	Horizontal	42	1.49
2462MHz	Pass	AV	2.4652G	106.52	Inf	-Inf	3	Vertical	191	1.50
2462MHz	Pass	AV	2.4842G	52.11	54.00	-1.89	3	Vertical	191	1.50
2462MHz	Pass	PK	2.4602G	117.24	Inf	-Inf	3	Vertical	191	1.50
2462MHz	Pass	PK	2.4848G	65.79	74.00	-8.21	3	Vertical	191	1.50
2462MHz	Pass	AV	2.4578G	104.71	Inf	-Inf	3	Horizontal	40	1.50
2462MHz	Pass	AV	2.4835G	52.48	54.00	-1.52	3	Horizontal	40	1.50
2462MHz	Pass	PK	2.458G	114.99	Inf	-Inf	3	Horizontal	40	1.50
2462MHz	Pass	PK	2.4835G	65.12	74.00	-8.88	3	Horizontal	40	1.50
2462MHz	Pass	AV	4.92688G	30.34	54.00	-23.66	3	Vertical	40	1.52
2462MHz	Pass	AV	12.31256G	39.81	54.00	-14.19	3	Vertical	154	1.37
2462MHz	Pass	PK	4.92992G	43.25	74.00	-30.75	3	Vertical	40	1.52
2462MHz	Pass	PK	12.31392G	52.88	74.00	-21.12	3	Vertical	154	1.37
2462MHz	Pass	AV	4.93592G	30.10	54.00	-23.90	3	Horizontal	164	2.92
2462MHz	Pass	AV	12.31464G	39.73	54.00	-14.27	3	Horizontal	97	2.01
2462MHz	Pass	PK	4.91192G	43.09	74.00	-30.91	3	Horizontal	164	2.92
2462MHz	Pass	PK	12.32904G	52.79	74.00	-21.21	3	Horizontal	97	2.01
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-

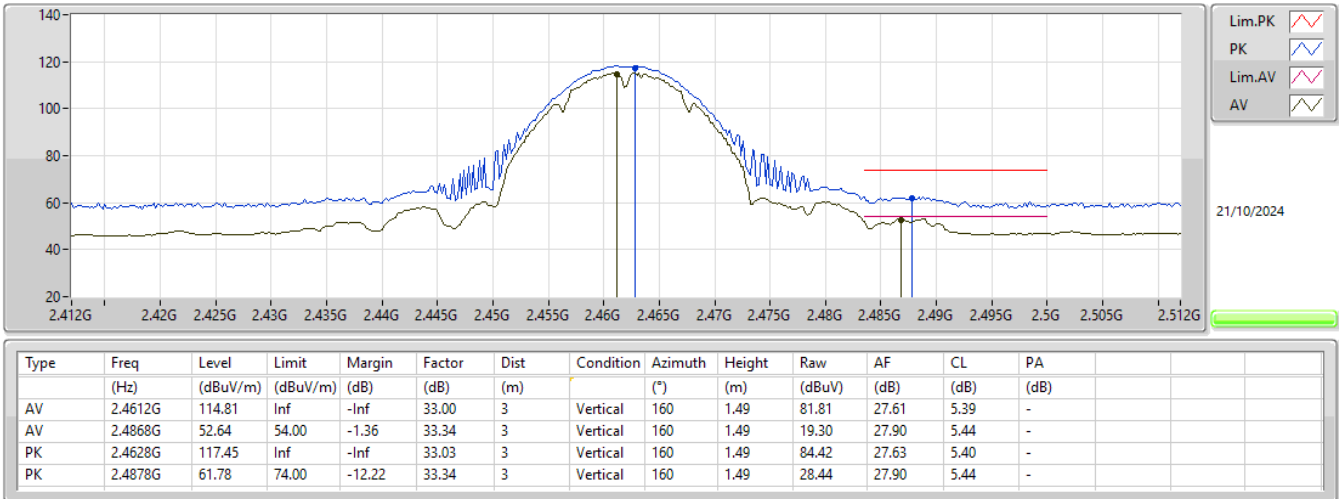
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2412MHz	Pass	AV	2.39G	53.64	54.00	-0.36	3	Vertical	173	1.44
2412MHz	Pass	AV	2.411G	107.55	Inf	-Inf	3	Vertical	173	1.44
2412MHz	Pass	PK	2.3894G	71.71	74.00	-2.29	3	Vertical	173	1.44
2412MHz	Pass	PK	2.4108G	120.69	Inf	-Inf	3	Vertical	173	1.44
2412MHz	Pass	AV	2.3856G	48.90	54.00	-5.10	3	Horizontal	52	1.26
2412MHz	Pass	AV	2.414G	104.30	Inf	-Inf	3	Horizontal	52	1.26
2412MHz	Pass	PK	2.384G	65.22	74.00	-8.78	3	Horizontal	52	1.26
2412MHz	Pass	PK	2.4142G	117.99	Inf	-Inf	3	Horizontal	52	1.26
2412MHz	Pass	AV	4.82536G	30.09	54.00	-23.91	3	Vertical	46	1.99
2412MHz	Pass	AV	12.074G	39.82	54.00	-14.18	3	Vertical	225	1.13
2412MHz	Pass	PK	4.82456G	42.75	74.00	-31.25	3	Vertical	46	1.99
2412MHz	Pass	PK	12.06272G	53.54	74.00	-20.46	3	Vertical	225	1.13
2412MHz	Pass	AV	4.83288G	30.04	54.00	-23.96	3	Horizontal	76	2.30
2412MHz	Pass	AV	12.07872G	39.90	54.00	-14.10	3	Horizontal	274	1.81
2412MHz	Pass	PK	4.82816G	43.09	74.00	-30.91	3	Horizontal	76	2.30
2412MHz	Pass	PK	12.07976G	52.99	74.00	-21.01	3	Horizontal	274	1.81
2417MHz	Pass	AV	2.3858G	51.93	54.00	-2.07	3	Vertical	174	1.50
2417MHz	Pass	AV	2.4158G	107.11	Inf	-Inf	3	Vertical	174	1.50
2417MHz	Pass	PK	2.3876G	70.47	74.00	-3.53	3	Vertical	174	1.50
2417MHz	Pass	PK	2.416G	119.76	Inf	-Inf	3	Vertical	174	1.50
2417MHz	Pass	AV	2.3898G	50.06	54.00	-3.94	3	Horizontal	51	1.29
2417MHz	Pass	AV	2.4192G	104.78	Inf	-Inf	3	Horizontal	51	1.29
2417MHz	Pass	PK	2.3888G	68.50	74.00	-5.50	3	Horizontal	51	1.29
2417MHz	Pass	PK	2.4196G	117.89	Inf	-Inf	3	Horizontal	51	1.29
2437MHz	Pass	AV	2.385G	49.12	54.00	-4.88	3	Vertical	172	1.24
2437MHz	Pass	AV	2.4358G	110.10	Inf	-Inf	3	Vertical	172	1.24
2437MHz	Pass	AV	2.4838G	50.51	54.00	-3.49	3	Vertical	172	1.24
2437MHz	Pass	PK	2.3862G	65.41	74.00	-8.59	3	Vertical	172	1.24
2437MHz	Pass	PK	2.435G	122.88	Inf	-Inf	3	Vertical	172	1.24
2437MHz	Pass	PK	2.4838G	66.39	74.00	-7.61	3	Vertical	172	1.24
2437MHz	Pass	AV	2.3894G	47.69	54.00	-6.31	3	Horizontal	41	1.46
2437MHz	Pass	AV	2.439G	107.23	Inf	-Inf	3	Horizontal	41	1.46
2437MHz	Pass	AV	2.4874G	48.99	54.00	-5.01	3	Horizontal	41	1.46
2437MHz	Pass	PK	2.389G	62.03	74.00	-11.97	3	Horizontal	41	1.46
2437MHz	Pass	PK	2.4378G	119.81	Inf	-Inf	3	Horizontal	41	1.46
2437MHz	Pass	PK	2.4878G	64.23	74.00	-9.77	3	Horizontal	41	1.46
2437MHz	Pass	AV	4.8896G	30.06	54.00	-23.94	3	Vertical	68	2.19
2437MHz	Pass	AV	12.16644G	39.83	54.00	-14.17	3	Vertical	141	2.77
2437MHz	Pass	PK	4.87352G	44.17	74.00	-29.83	3	Vertical	68	2.19
2437MHz	Pass	PK	12.18276G	52.42	74.00	-21.58	3	Vertical	141	2.77
2437MHz	Pass	AV	4.89024G	30.06	54.00	-23.94	3	Horizontal	252	1.20
2437MHz	Pass	AV	12.19228G	40.24	54.00	-13.76	3	Horizontal	307	2.90
2437MHz	Pass	PK	4.8928G	42.77	74.00	-31.23	3	Horizontal	252	1.20
2437MHz	Pass	PK	12.19252G	53.37	74.00	-20.63	3	Horizontal	307	2.90
2457MHz	Pass	AV	2.4558G	107.44	Inf	-Inf	3	Vertical	172	1.00
2457MHz	Pass	AV	2.4838G	52.44	54.00	-1.56	3	Vertical	172	1.00
2457MHz	Pass	PK	2.4558G	120.40	Inf	-Inf	3	Vertical	172	1.00
2457MHz	Pass	PK	2.4836G	70.98	74.00	-3.02	3	Vertical	172	1.00
2457MHz	Pass	AV	2.4586G	104.58	Inf	-Inf	3	Horizontal	39	1.48
2457MHz	Pass	AV	2.4884G	50.52	54.00	-3.48	3	Horizontal	39	1.48
2457MHz	Pass	PK	2.4598G	117.70	Inf	-Inf	3	Horizontal	39	1.48
2457MHz	Pass	PK	2.4862G	68.76	74.00	-5.24	3	Horizontal	39	1.48
2462MHz	Pass	AV	2.4602G	105.91	Inf	-Inf	3	Vertical	176	1.49
2462MHz	Pass	AV	2.4835G	52.09	54.00	-1.91	3	Vertical	176	1.49
2462MHz	Pass	PK	2.4596G	118.49	Inf	-Inf	3	Vertical	176	1.49
2462MHz	Pass	PK	2.4835G	65.90	74.00	-8.10	3	Vertical	176	1.49
2462MHz	Pass	AV	2.4636G	104.04	Inf	-Inf	3	Horizontal	42	1.50
2462MHz	Pass	AV	2.4835G	53.54	54.00	-0.46	3	Horizontal	42	1.50
2462MHz	Pass	PK	2.4652G	117.82	Inf	-Inf	3	Horizontal	42	1.50
2462MHz	Pass	PK	2.4844G	66.65	74.00	-7.35	3	Horizontal	42	1.50
2462MHz	Pass	AV	4.92432G	30.17	54.00	-23.83	3	Vertical	208	1.52
2462MHz	Pass	AV	12.30752G	39.80	54.00	-14.20	3	Vertical	199	2.88

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2462MHz	Pass	PK	4.93584G	43.32	74.00	-30.68	3	Vertical	208	1.52
2462MHz	Pass	PK	12.32304G	52.91	74.00	-21.09	3	Vertical	199	2.88
2462MHz	Pass	AV	4.92664G	30.13	54.00	-23.87	3	Horizontal	173	1.37
2462MHz	Pass	AV	12.3204G	39.81	54.00	-14.19	3	Horizontal	82	1.20
2462MHz	Pass	PK	4.94096G	43.19	74.00	-30.81	3	Horizontal	173	1.37
2462MHz	Pass	PK	12.30024G	53.99	74.00	-20.01	3	Horizontal	82	1.20
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	AV	2.39G	53.83	54.00	-0.17	3	Vertical	174	1.34
2422MHz	Pass	AV	2.4208G	104.29	Inf	-Inf	3	Vertical	174	1.34
2422MHz	Pass	AV	2.492G	47.46	54.00	-6.54	3	Vertical	174	1.34
2422MHz	Pass	PK	2.39G	67.15	74.00	-6.85	3	Vertical	174	1.34
2422MHz	Pass	PK	2.4212G	117.00	Inf	-Inf	3	Vertical	174	1.34
2422MHz	Pass	PK	2.4835G	61.65	74.00	-12.35	3	Vertical	174	1.34
2422MHz	Pass	AV	2.3832G	49.47	54.00	-4.53	3	Horizontal	40	1.18
2422MHz	Pass	AV	2.4332G	101.69	Inf	-Inf	3	Horizontal	40	1.18
2422MHz	Pass	AV	2.4835G	47.96	54.00	-6.04	3	Horizontal	40	1.18
2422MHz	Pass	PK	2.39G	64.44	74.00	-9.56	3	Horizontal	40	1.18
2422MHz	Pass	PK	2.4328G	113.30	Inf	-Inf	3	Horizontal	40	1.18
2422MHz	Pass	PK	2.4844G	63.17	74.00	-10.83	3	Horizontal	40	1.18
2422MHz	Pass	AV	4.84664G	30.53	54.00	-23.47	3	Vertical	24	1.99
2422MHz	Pass	AV	12.10328G	40.48	54.00	-13.52	3	Vertical	0	1.31
2422MHz	Pass	PK	4.85336G	43.14	74.00	-30.86	3	Vertical	24	1.99
2422MHz	Pass	PK	12.0964G	53.38	74.00	-20.62	3	Vertical	0	1.31
2422MHz	Pass	AV	4.8596G	30.54	54.00	-23.46	3	Horizontal	285	2.04
2422MHz	Pass	AV	12.11824G	40.41	54.00	-13.59	3	Horizontal	234	2.17
2422MHz	Pass	PK	4.84672G	43.07	74.00	-30.93	3	Horizontal	285	2.04
2422MHz	Pass	PK	12.10144G	53.18	74.00	-20.82	3	Horizontal	234	2.17
2427MHz	Pass	AV	2.3866G	52.86	54.00	-1.14	3	Vertical	174	1.49
2427MHz	Pass	AV	2.4258G	103.94	Inf	-Inf	3	Vertical	174	1.49
2427MHz	Pass	AV	2.4858G	48.82	54.00	-5.18	3	Vertical	174	1.49
2427MHz	Pass	PK	2.3858G	65.81	74.00	-8.19	3	Vertical	174	1.49
2427MHz	Pass	PK	2.4362G	116.82	Inf	-Inf	3	Vertical	174	1.49
2427MHz	Pass	PK	2.4846G	62.77	74.00	-11.23	3	Vertical	174	1.49
2427MHz	Pass	AV	2.3894G	49.39	54.00	-4.61	3	Horizontal	42	1.48
2427MHz	Pass	AV	2.4382G	101.16	Inf	-Inf	3	Horizontal	42	1.48
2427MHz	Pass	AV	2.4886G	47.76	54.00	-6.24	3	Horizontal	42	1.48
2427MHz	Pass	PK	2.3898G	63.00	74.00	-11.00	3	Horizontal	42	1.48
2427MHz	Pass	PK	2.439G	113.94	Inf	-Inf	3	Horizontal	42	1.48
2427MHz	Pass	PK	2.487G	62.42	74.00	-11.58	3	Horizontal	42	1.48
2437MHz	Pass	AV	2.3866G	50.04	54.00	-3.96	3	Vertical	175	1.25
2437MHz	Pass	AV	2.4362G	104.59	Inf	-Inf	3	Vertical	175	1.25
2437MHz	Pass	AV	2.4846G	52.53	54.00	-1.47	3	Vertical	175	1.25
2437MHz	Pass	PK	2.3842G	67.03	74.00	-6.97	3	Vertical	175	1.25
2437MHz	Pass	PK	2.445G	116.43	Inf	-Inf	3	Vertical	175	1.25
2437MHz	Pass	PK	2.4846G	67.85	74.00	-6.15	3	Vertical	175	1.25
2437MHz	Pass	AV	2.3898G	48.86	54.00	-5.14	3	Horizontal	55	1.50
2437MHz	Pass	AV	2.4494G	101.99	Inf	-Inf	3	Horizontal	55	1.50
2437MHz	Pass	AV	2.4886G	49.57	54.00	-4.43	3	Horizontal	55	1.50
2437MHz	Pass	PK	2.3802G	61.85	74.00	-12.15	3	Horizontal	55	1.50
2437MHz	Pass	PK	2.4394G	113.76	Inf	-Inf	3	Horizontal	55	1.50
2437MHz	Pass	PK	2.4906G	64.90	74.00	-9.10	3	Horizontal	55	1.50
2437MHz	Pass	AV	4.87464G	30.70	54.00	-23.30	3	Vertical	288	2.10
2437MHz	Pass	AV	12.19452G	40.41	54.00	-13.59	3	Vertical	178	2.24
2437MHz	Pass	PK	4.89144G	42.56	74.00	-31.44	3	Vertical	288	2.10
2437MHz	Pass	PK	12.1914G	51.64	74.00	-22.36	3	Vertical	178	2.24
2437MHz	Pass	AV	4.89328G	30.64	54.00	-23.36	3	Horizontal	87	1.77
2437MHz	Pass	AV	12.18032G	40.94	54.00	-13.06	3	Horizontal	287	1.39
2437MHz	Pass	PK	4.87912G	42.71	74.00	-31.29	3	Horizontal	87	1.77
2437MHz	Pass	PK	12.18504G	53.29	74.00	-20.71	3	Horizontal	287	1.39
2447MHz	Pass	AV	2.3842G	46.37	54.00	-7.63	3	Vertical	170	1.26
2447MHz	Pass	AV	2.4458G	102.72	Inf	-Inf	3	Vertical	170	1.26
2447MHz	Pass	AV	2.4835G	53.37	54.00	-0.63	3	Vertical	170	1.26

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2447MHz	Pass	PK	2.3506G	58.63	74.00	-15.37	3	Vertical	170	1.26
2447MHz	Pass	PK	2.4374G	114.95	Inf	-Inf	3	Vertical	170	1.26
2447MHz	Pass	PK	2.4846G	66.35	74.00	-7.65	3	Vertical	170	1.26
2447MHz	Pass	AV	2.3818G	45.76	54.00	-8.24	3	Horizontal	55	1.50
2447MHz	Pass	AV	2.4498G	100.89	Inf	-Inf	3	Horizontal	55	1.50
2447MHz	Pass	AV	2.4894G	51.03	54.00	-2.97	3	Horizontal	55	1.50
2447MHz	Pass	PK	2.3582G	58.58	74.00	-15.42	3	Horizontal	55	1.50
2447MHz	Pass	PK	2.4402G	112.39	Inf	-Inf	3	Horizontal	55	1.50
2447MHz	Pass	PK	2.4835G	66.32	74.00	-7.68	3	Horizontal	55	1.50
2452MHz	Pass	AV	2.3812G	46.18	54.00	-7.82	3	Vertical	172	1.04
2452MHz	Pass	AV	2.4508G	102.80	Inf	-Inf	3	Vertical	172	1.04
2452MHz	Pass	AV	2.4892G	53.19	54.00	-0.81	3	Vertical	172	1.04
2452MHz	Pass	PK	2.3668G	58.71	74.00	-15.29	3	Vertical	172	1.04
2452MHz	Pass	PK	2.4512G	116.02	Inf	-Inf	3	Vertical	172	1.04
2452MHz	Pass	PK	2.4896G	65.15	74.00	-8.85	3	Vertical	172	1.04
2452MHz	Pass	AV	2.3852G	45.69	54.00	-8.31	3	Horizontal	42	1.49
2452MHz	Pass	AV	2.4536G	100.09	Inf	-Inf	3	Horizontal	42	1.49
2452MHz	Pass	AV	2.484G	53.66	54.00	-0.34	3	Horizontal	42	1.49
2452MHz	Pass	PK	2.3676G	58.32	74.00	-15.68	3	Horizontal	42	1.49
2452MHz	Pass	PK	2.454G	113.36	Inf	-Inf	3	Horizontal	42	1.49
2452MHz	Pass	PK	2.4884G	67.03	74.00	-6.97	3	Horizontal	42	1.49
2452MHz	Pass	AV	4.89184G	30.63	54.00	-23.37	3	Vertical	243	2.64
2452MHz	Pass	AV	12.24432G	40.66	54.00	-13.34	3	Vertical	228	2.80
2452MHz	Pass	PK	4.89376G	42.93	74.00	-31.07	3	Vertical	243	2.64
2452MHz	Pass	PK	12.24328G	52.94	74.00	-21.06	3	Vertical	228	2.80
2452MHz	Pass	AV	4.89456G	30.66	54.00	-23.34	3	Horizontal	259	1.33
2452MHz	Pass	AV	12.25088G	40.31	54.00	-13.69	3	Horizontal	42	2.00
2452MHz	Pass	PK	4.90224G	43.10	74.00	-30.90	3	Horizontal	259	1.33
2452MHz	Pass	PK	12.24112G	53.92	74.00	-20.08	3	Horizontal	42	2.00

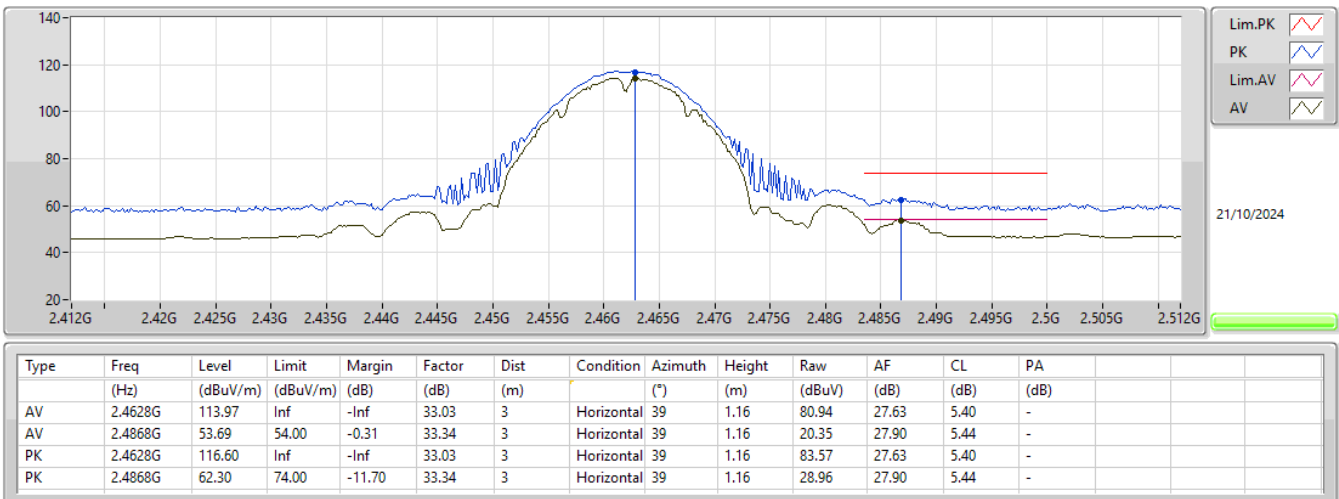
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

2462MHz_TX



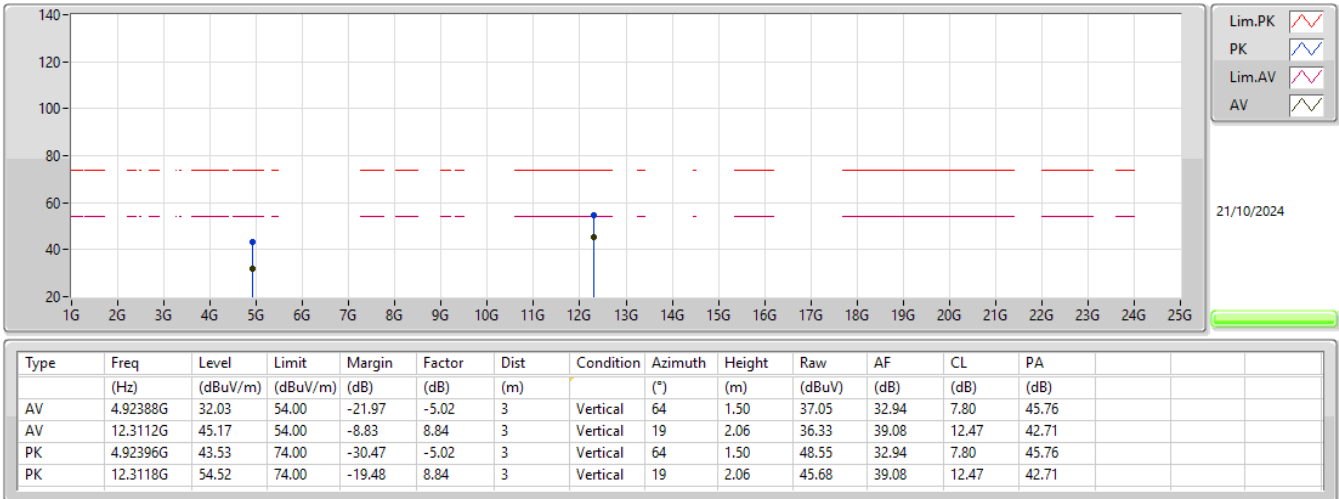
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

2462MHz_TX



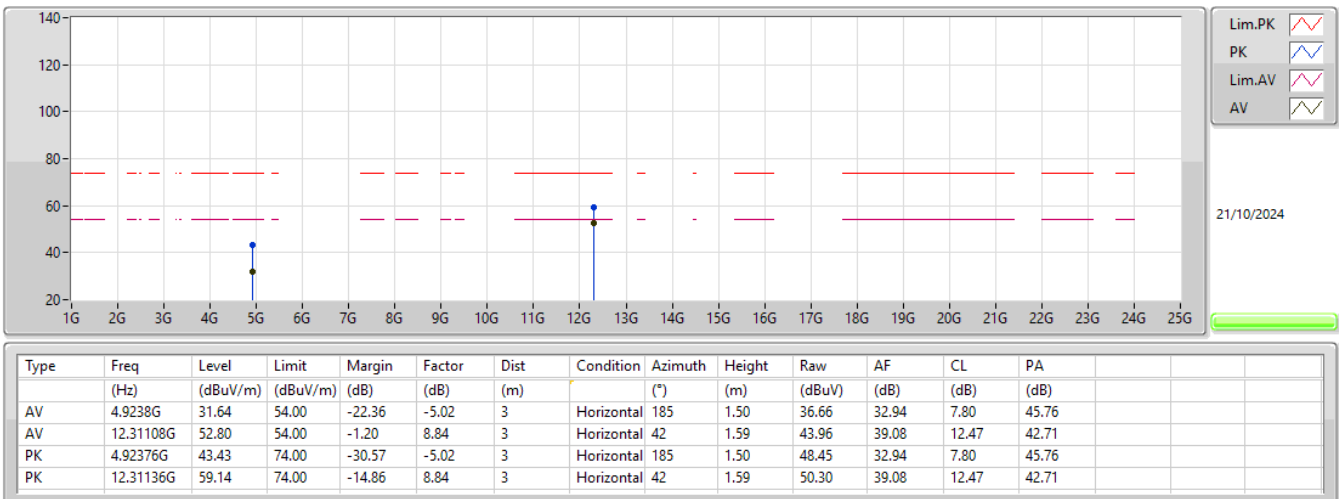
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2462MHz_TX



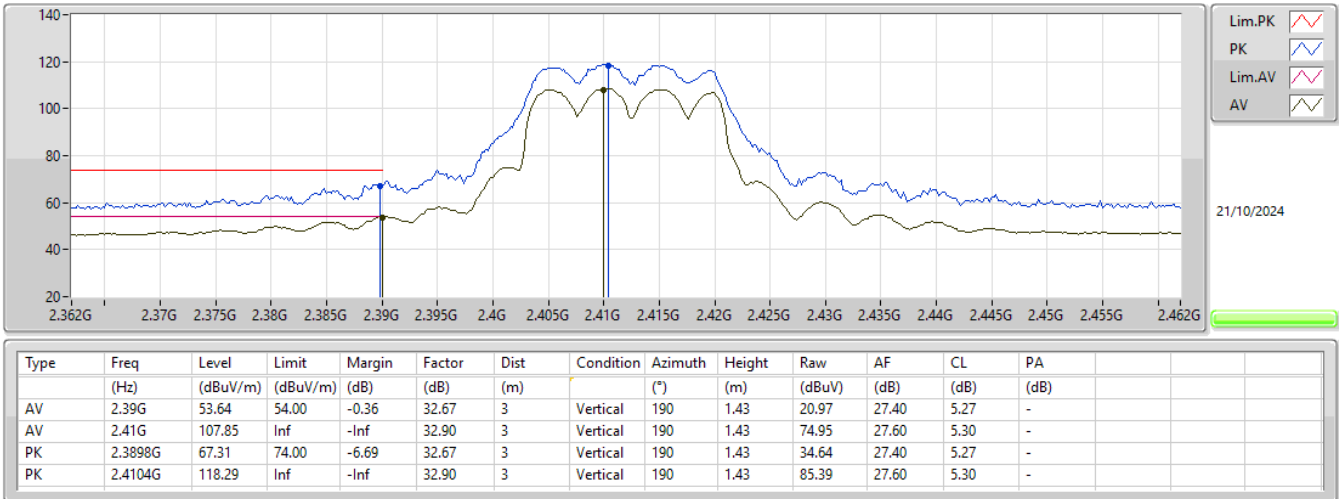
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2462MHz_TX



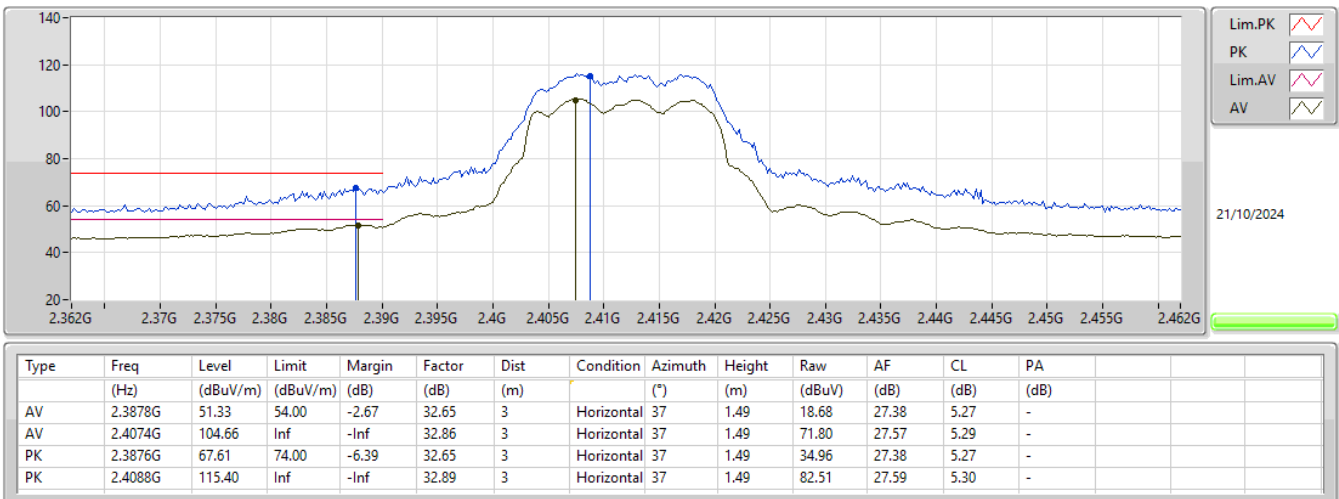
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

2412MHz_TX



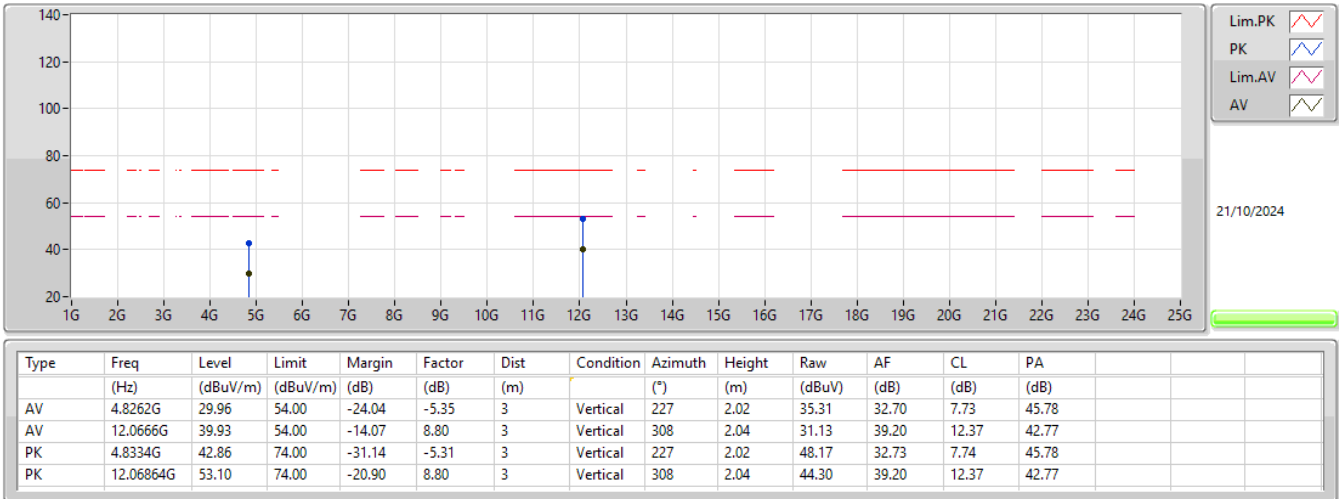
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2412MHz_TX



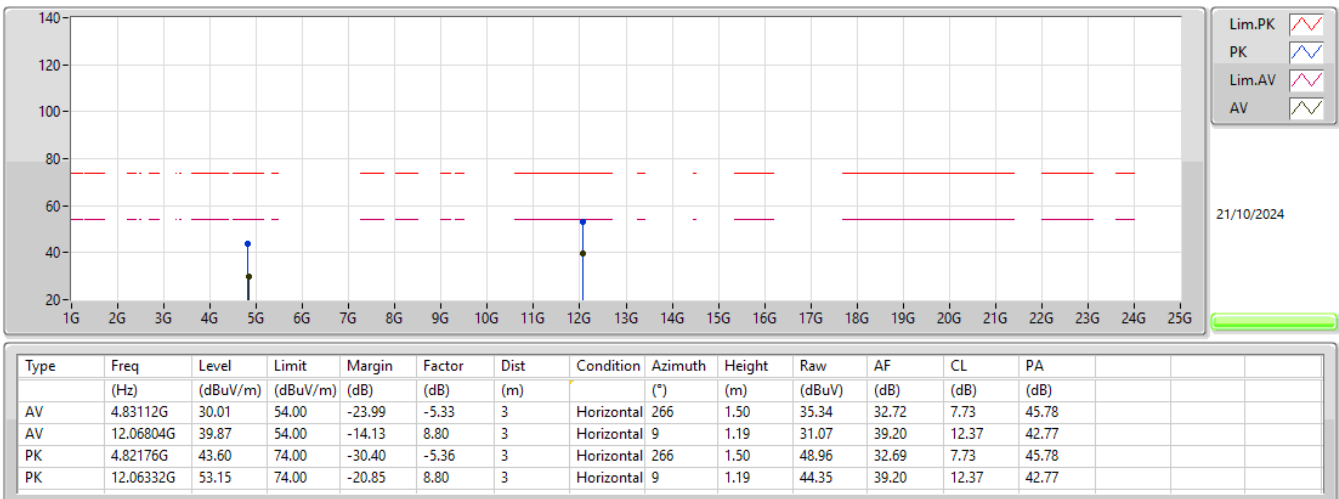
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2412MHz_TX



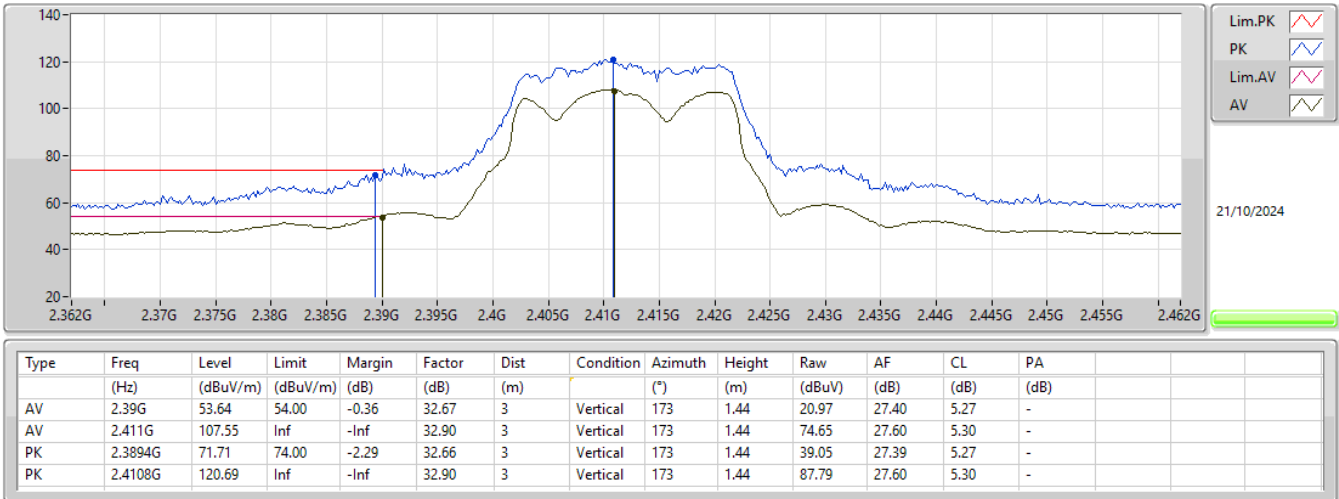
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

2412MHz_TX



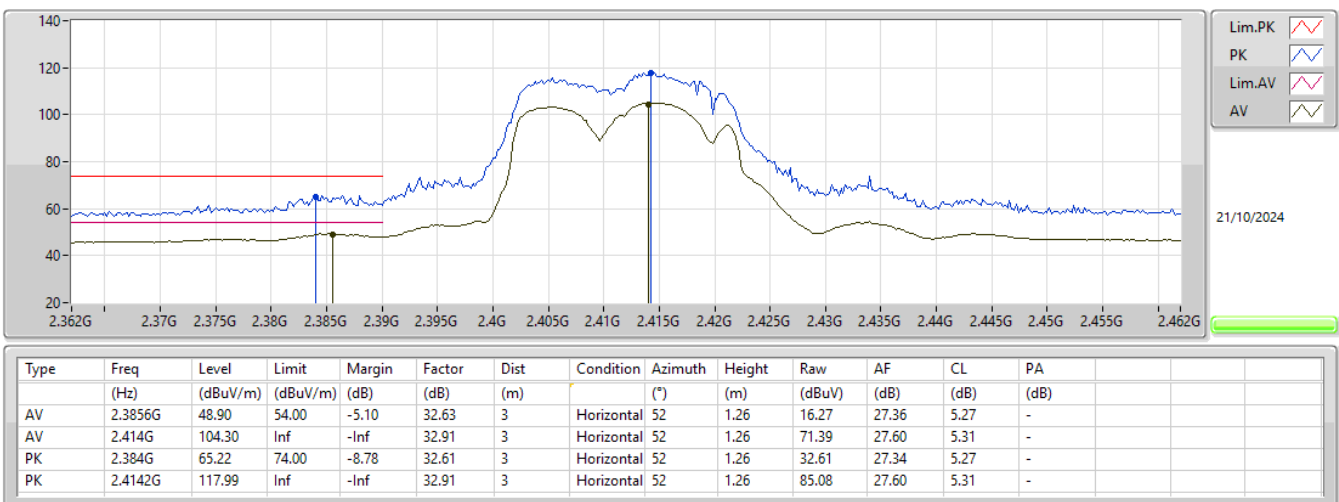
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

2412MHz_TX



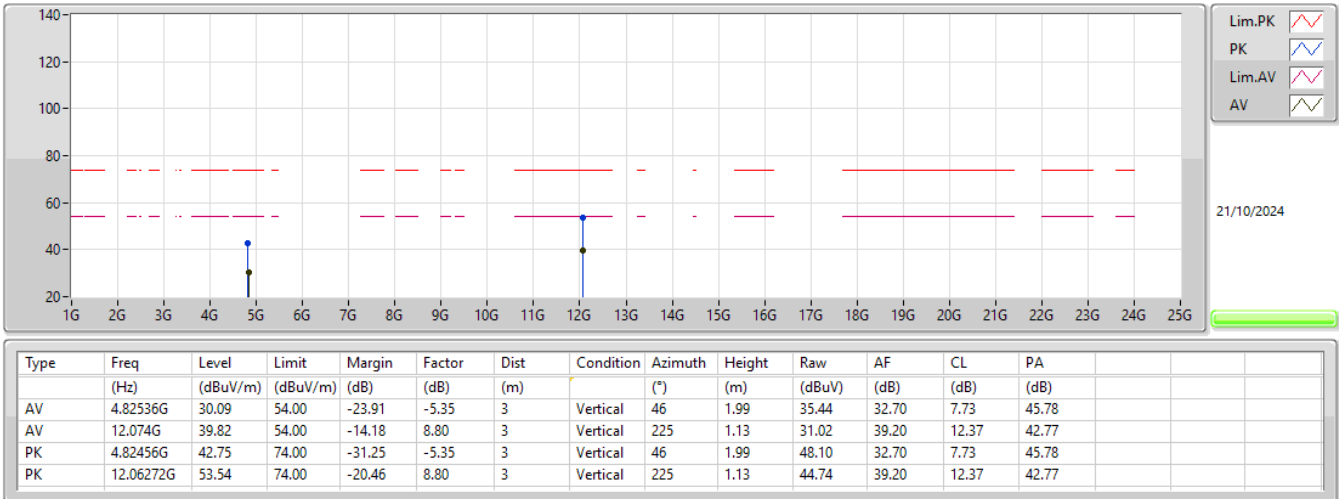
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2412MHz_TX



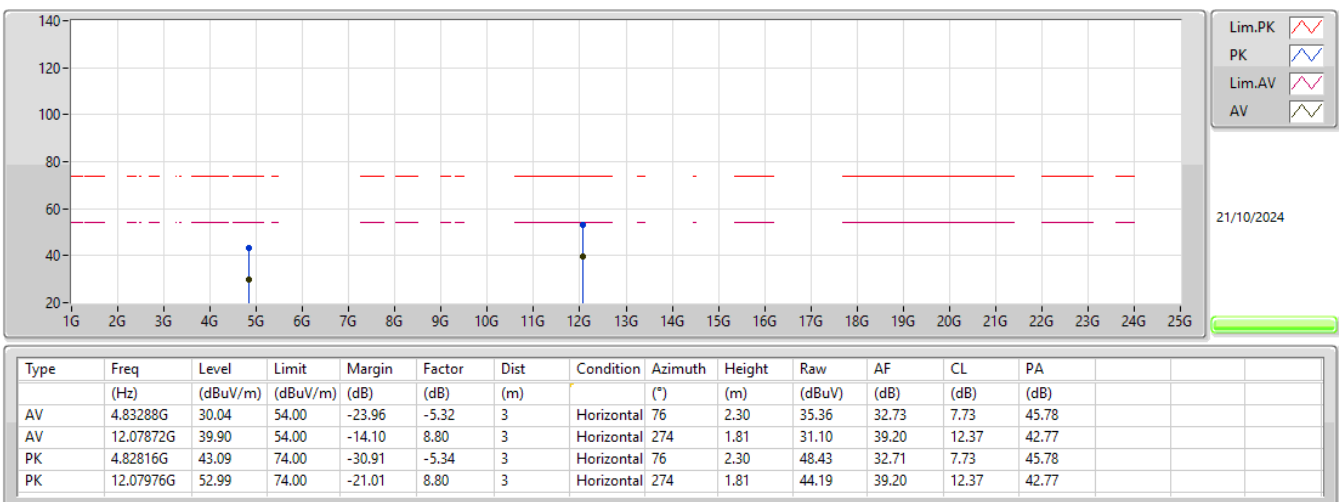
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2412MHz_TX



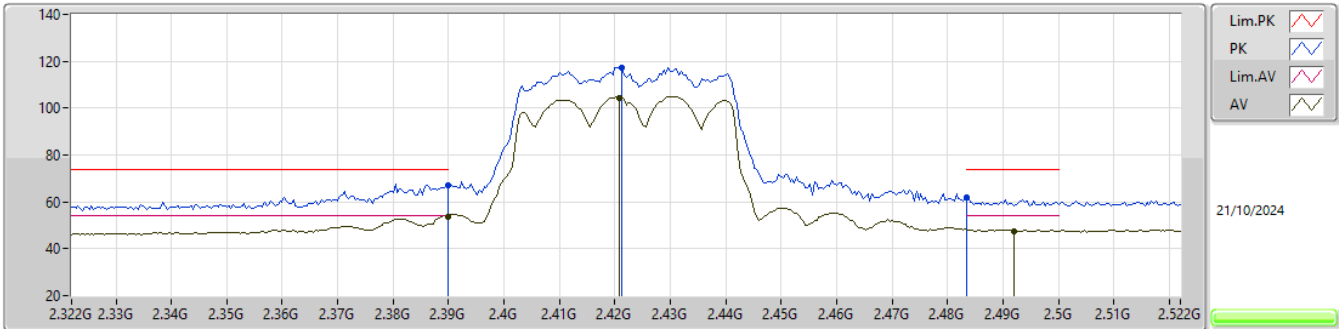
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

2412MHz_TX



2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

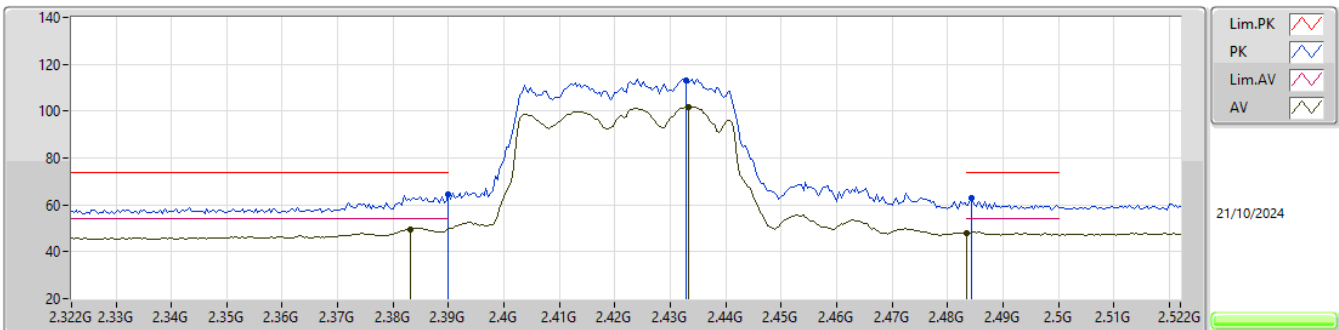
2422MHz_TX



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)
AV	2.39G	53.83	54.00	-0.17	32.67	3	Vertical	174	1.34	21.16	27.40	5.27	-
AV	2.4208G	104.29	Inf	-Inf	32.93	3	Vertical	174	1.34	71.36	27.61	5.32	-
AV	2.492G	47.46	54.00	-6.54	33.35	3	Vertical	174	1.34	14.11	27.90	5.45	-
PK	2.39G	67.15	74.00	-6.85	32.67	3	Vertical	174	1.34	34.48	27.40	5.27	-
PK	2.4212G	117.00	Inf	-Inf	32.93	3	Vertical	174	1.34	84.07	27.61	5.32	-
PK	2.4835G	61.65	74.00	-12.35	33.33	3	Vertical	174	1.34	28.32	27.90	5.43	-

2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

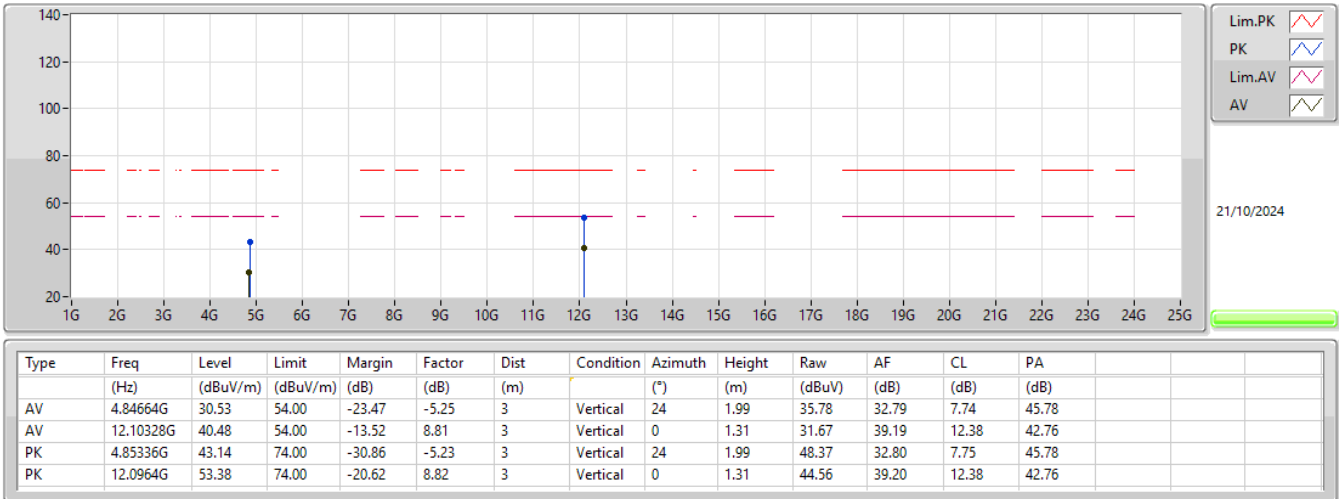
2422MHz_TX



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)
AV	2.3832G	49.47	54.00	-4.53	32.60	3	Horizontal	40	1.18	16.87	27.33	5.27	-
AV	2.4332G	101.69	Inf	-Inf	33.04	3	Horizontal	40	1.18	68.65	27.70	5.34	-
AV	2.4835G	47.96	54.00	-6.04	33.33	3	Horizontal	40	1.18	14.63	27.90	5.43	-
PK	2.39G	64.44	74.00	-9.56	32.67	3	Horizontal	40	1.18	31.77	27.40	5.27	-
PK	2.4328G	113.30	Inf	-Inf	33.04	3	Horizontal	40	1.18	80.26	27.70	5.34	-
PK	2.4844G	63.17	74.00	-10.83	33.34	3	Horizontal	40	1.18	29.83	27.90	5.44	-

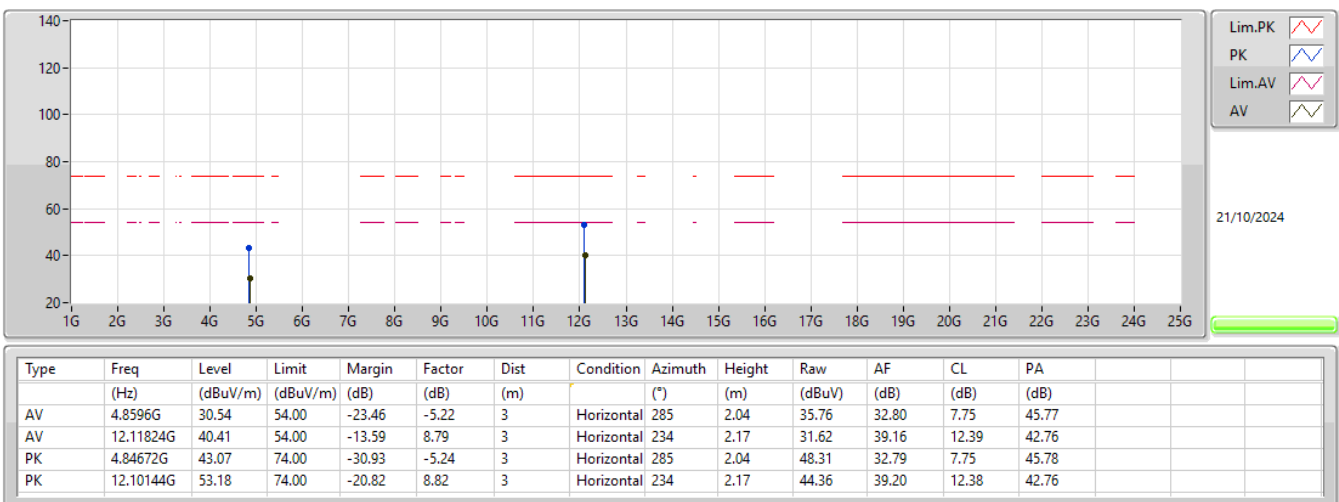
2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

2422MHz_TX



2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

2422MHz_TX





Summary

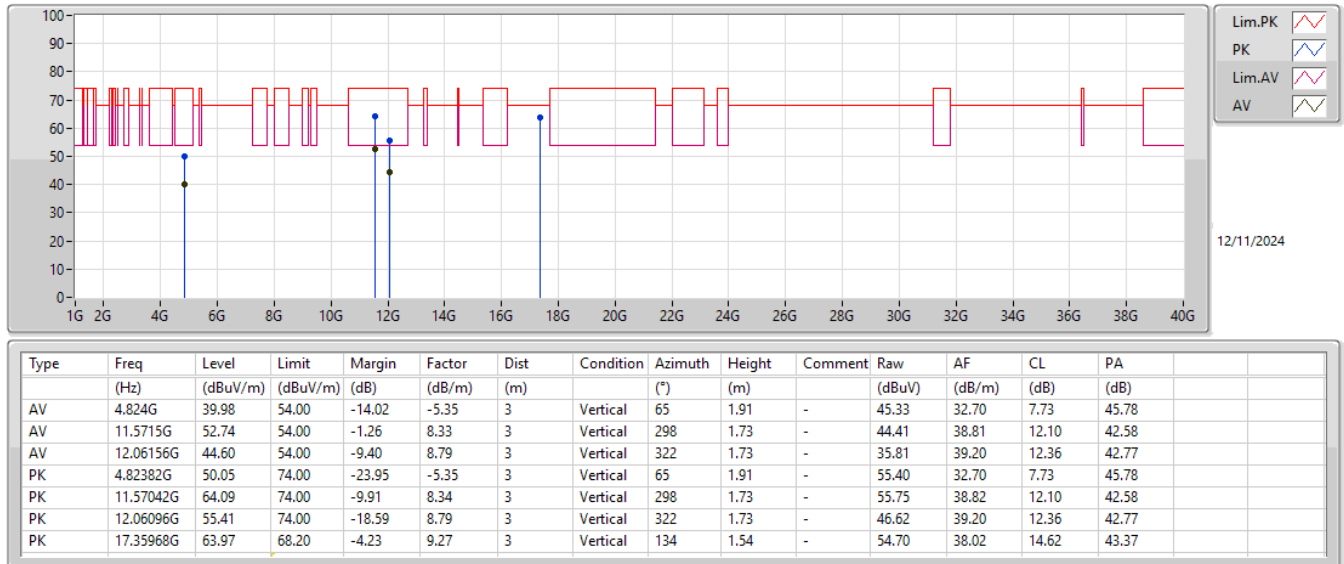
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	12.06168G	53.79	54.00	-0.21	Horizontal



Result

Mode Mode 1	Configure 2.4G+5G
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Radiated Emissions above 1GHz_Mode 1



Radiated Emissions above 1GHz_Mode 1

