

FCC Radio Test Report

FCC ID : UDX-600173010
Equipment : Z4 Teleworker Gateway
Brand Name : CISCO
Model Name : Z4-HW
Applicant : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Manufacturer : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Standard : 47 CFR FCC Part 15.247

The product was received on Nov. 19, 2024, and testing was started from Nov. 22, 2024 and completed on Dec. 31, 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 variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.


Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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



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History of this test report

Report No.	Version	Description	Issued Date
FR450906-03AC	01	Initial issue of report	Feb. 04, 2025

Summary of Test Result

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

Declaration of Conformity:

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

Comments and explanations:

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: Barry Hsiao

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	Radio
1	SERCOMM	6172006CWA	PIFA antenna	I-PEX	Radio 1_5G Radio 2_2.4G
2	SERCOMM	6172006DWA	PIFA antenna	I-PEX	

Ant.	Port	Gain (dBi)	
		2.4G	5G
1	1	3.8	4.5
2	2	3.6	5.1

Note 1: The EUT has two 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. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

Note 2: Directional gain information

	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$

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) $\geq \frac{1}{T}$
802.11b_Nss1,(1Mbps)_2TX	0.932	0.31	17.988m	100
802.11g_Nss1,(6Mbps)_2TX	0.94	0.27	1.981m	1k
802.11ax HEW20_Nss1,(MCS0)_2TX	0.804	0.95	5.45m	200
802.11ax HEW40_Nss1,(MCS0)_2TX	0.812	0.9	5.45m	200

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

Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq \frac{1}{T}$
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.804	0.95	5.45m	200
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.812	0.9	5.45m	200

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

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR263027AC

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

Modifications	Performance Checking
Wi-Fi antenna optimize and layout change due to the modification of Wi-Fi antenna.	All RF test items

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 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	Andy Wang	21.1~21.5°C / 53~55%	31/Dec/2024
Radiated (Co-location)	03CH02-HY	Daniel Lin	19.8~21.2°C / 51~54%	05/Dec/2024
☒ Wenhua 3rd. (TAF: 3785)	ADD: No. 58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Guishan Dist. Taoyuan City 333, Taiwan (R.O.C.)			
	TEL: 886-3-327-0868			
Test site Designation No. TW0036 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH06-HY	Xun Hsieh	22.2~23.4°C / 48~53%	03/Dec/2024
Radiated	03CH26-HY	Ivan Chung	21.9~23.1°C / 52~56%	22/Nov/2024~03/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	qdart_conn.win.1.0_installer_00081.1
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Non-Beamforming

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	20
2417MHz	20
2437MHz	21
2457MHz	20
2462MHz	19.5
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	20
2417MHz	20
2437MHz	21.5
2457MHz	19
2462MHz	19
802.11ax HEW20_Nss1,(MCS0)_2TX	-
2412MHz	19
2417MHz	19.5
2437MHz	21.5
2457MHz	19.5
2462MHz	18
802.11ax HEW40_Nss1,(MCS0)_2TX	-
2422MHz	16.5
2427MHz	17.5
2437MHz	18.5
2447MHz	17.5
2452MHz	16

**Beamforming**

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
2412MHz	19
2417MHz	19.5
2437MHz	21.5
2457MHz	19.5
2462MHz	18
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
2422MHz	16.5
2427MHz	17.5
2437MHz	18.5
2447MHz	17.5
2452MHz	16

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 - Radiated measurement
Operating Mode	CTX
1	WLAN 2.4GHz+WLAN 5GHz
Refer to Sporton Test Report No.: FA450906-03 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.3 Accessories

Accessories				
AC Adapter 1	Brand Name	FSP	Model Name	FSP050-DWAA1
	Power Rating	I/P: 100 - 240 Vac, 1.6 A ,50/60Hz, O/P: 54.0 Vdc, 0.93 A,50 W		
	Power Cord	1.5 meter, non-shielded cable, with ferrite core		
AC Adapter 2	Brand Name	UMEC	Model Name	UP0451H-54PP
	Power Rating	I/P: 100-240Vac, 2A ,50/60Hz, O/P: 54.0Vdc, 0.92A,50 W		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
AC Adapter 3	Brand Name	LITEON	Model Name	PA-1500-54C1
	Power Rating	I/P: 100 - 240 Vac 50/60 Hz, 1.5 A, O/P: 54.0 Vdc, 0.925 A 50W		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
RJ45 Cable	Brand Name	NIENYI	Model Name	PLUG RJ45 8P8C 1000mm BLACK CAT.5E Patch Cord LFP
	Category	Cat5e	In/Out door	Indoor
	Signal Line	1 meter, non-shielded cable		

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

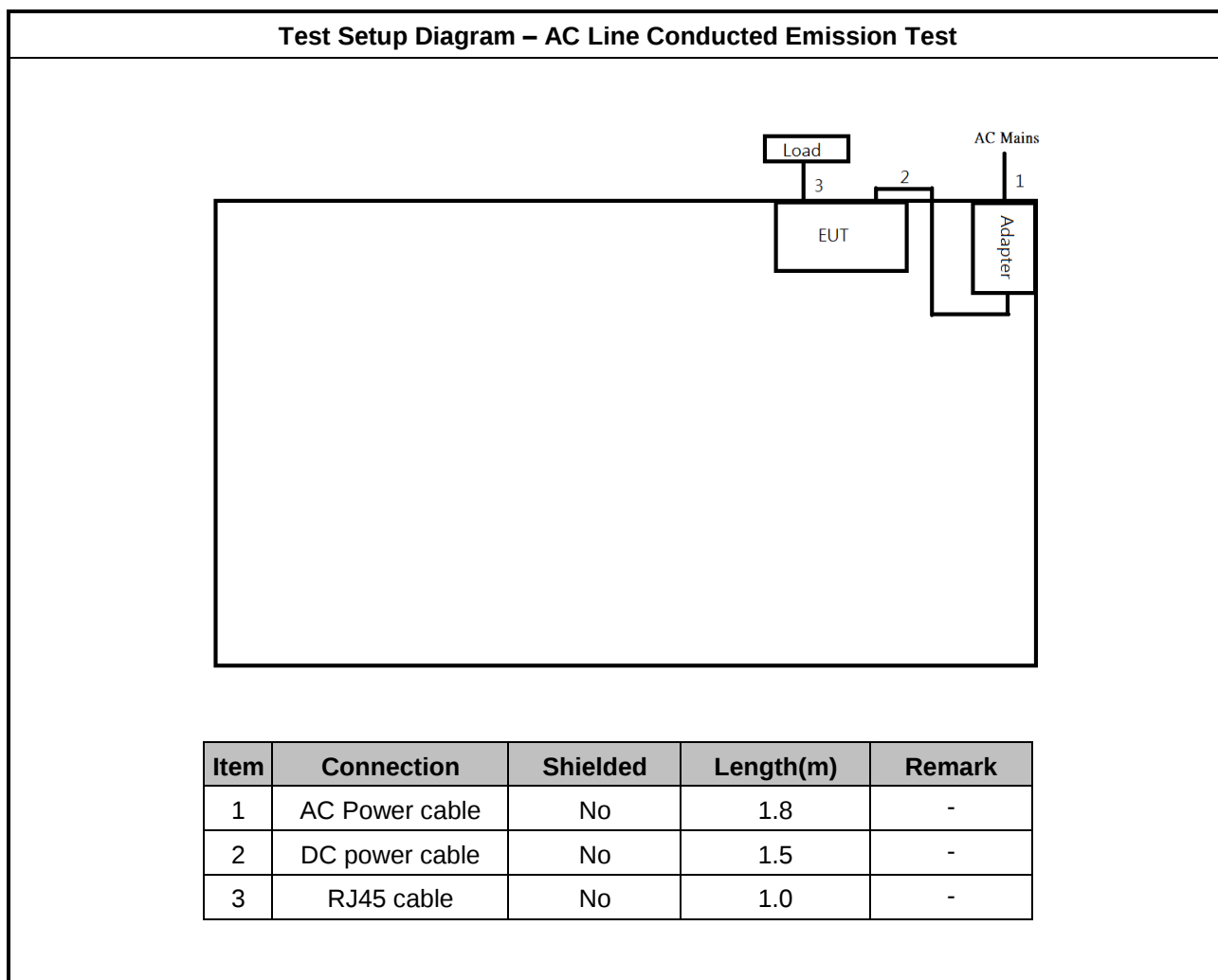
2.4 Support Equipment

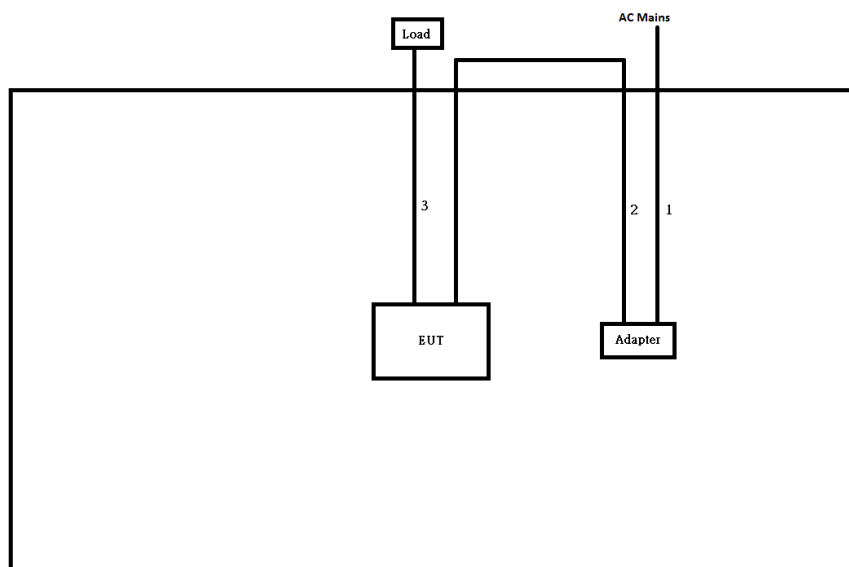
Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power cable	Power sync	PW-GPC180-3	-	-
2	Load	Sporton	Sporton	-	-

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

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	AC Power cable	Power sync	PW-GPC180-3	-	-
2	Load	Sporton	Sporton	-	-

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	1.5	-
3	RJ45 cable	No	1.0	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

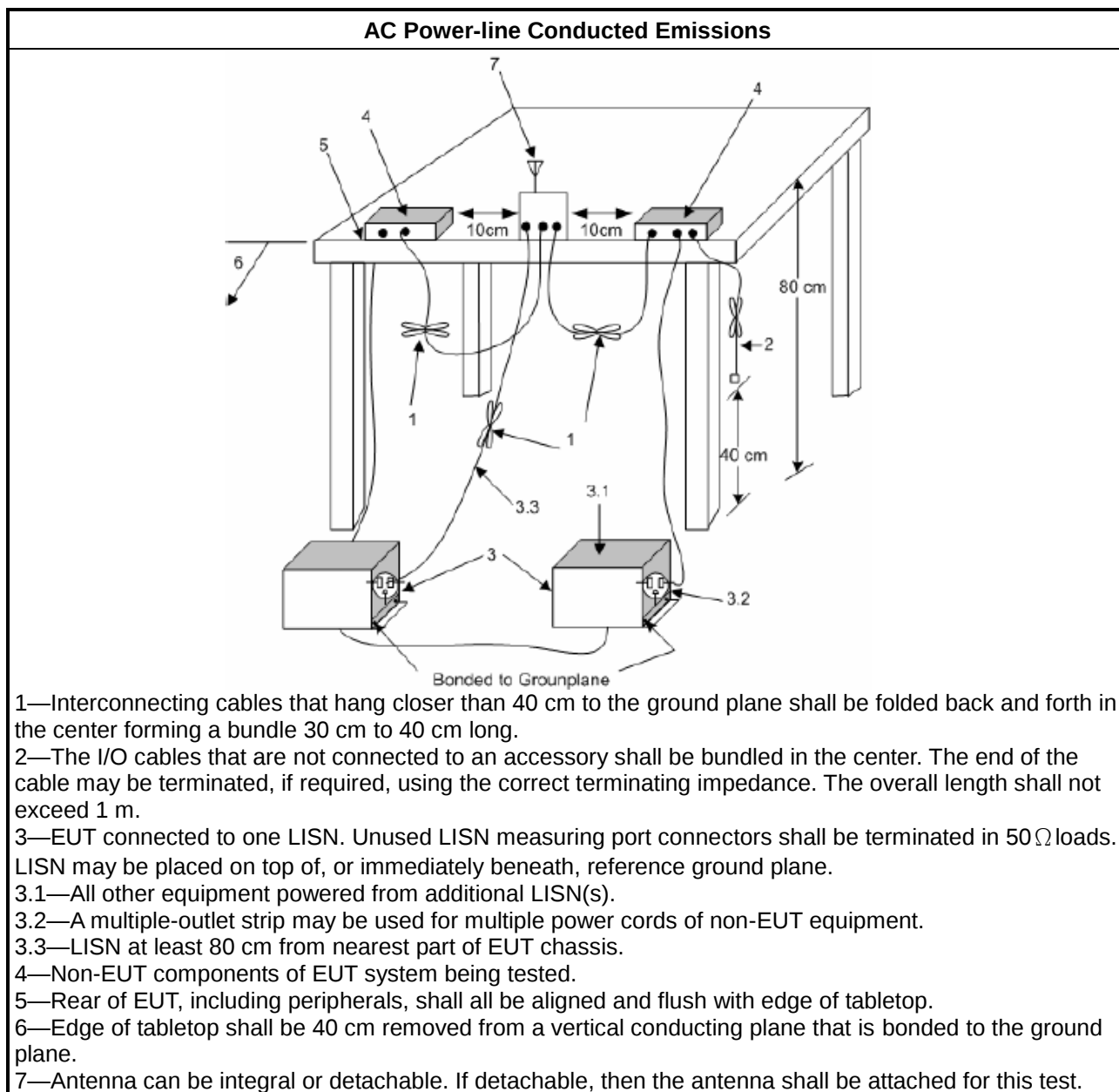
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

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.

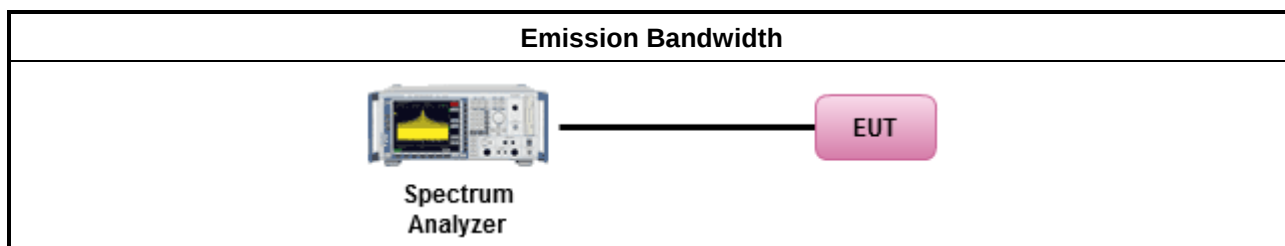
3.2.2 Measuring Instruments

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.	

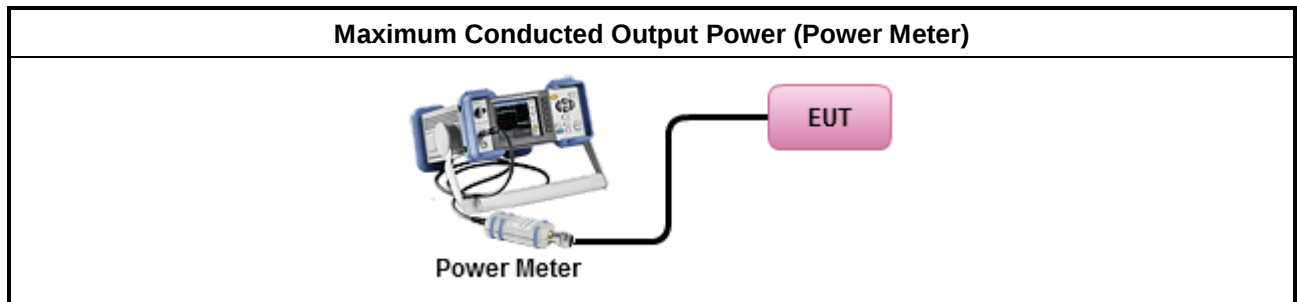
3.3.2 Measuring Instruments

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

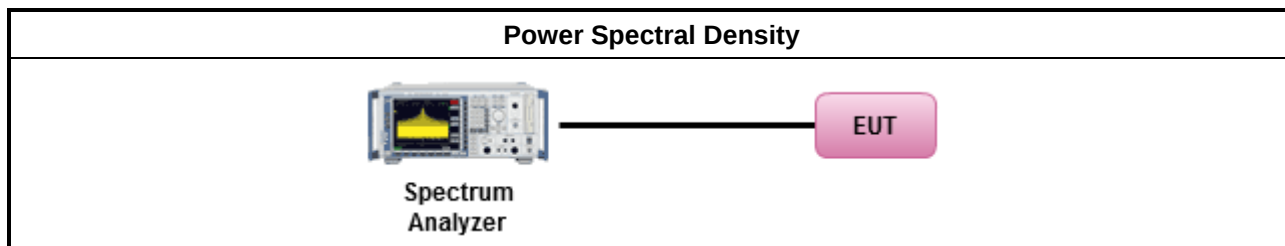
3.4.2 Measuring Instruments

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.	

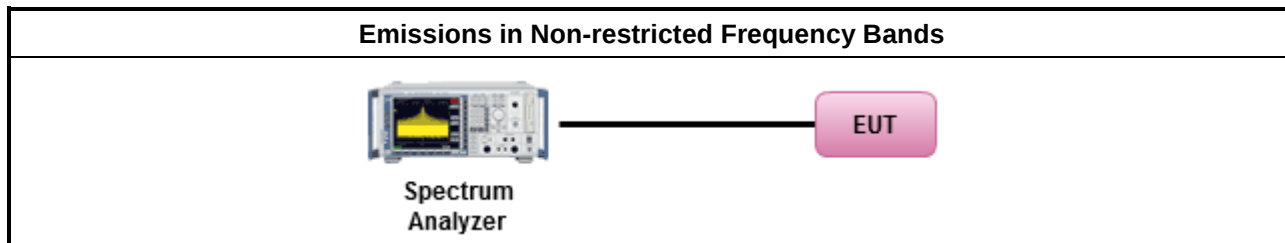
3.5.2 Measuring Instruments

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

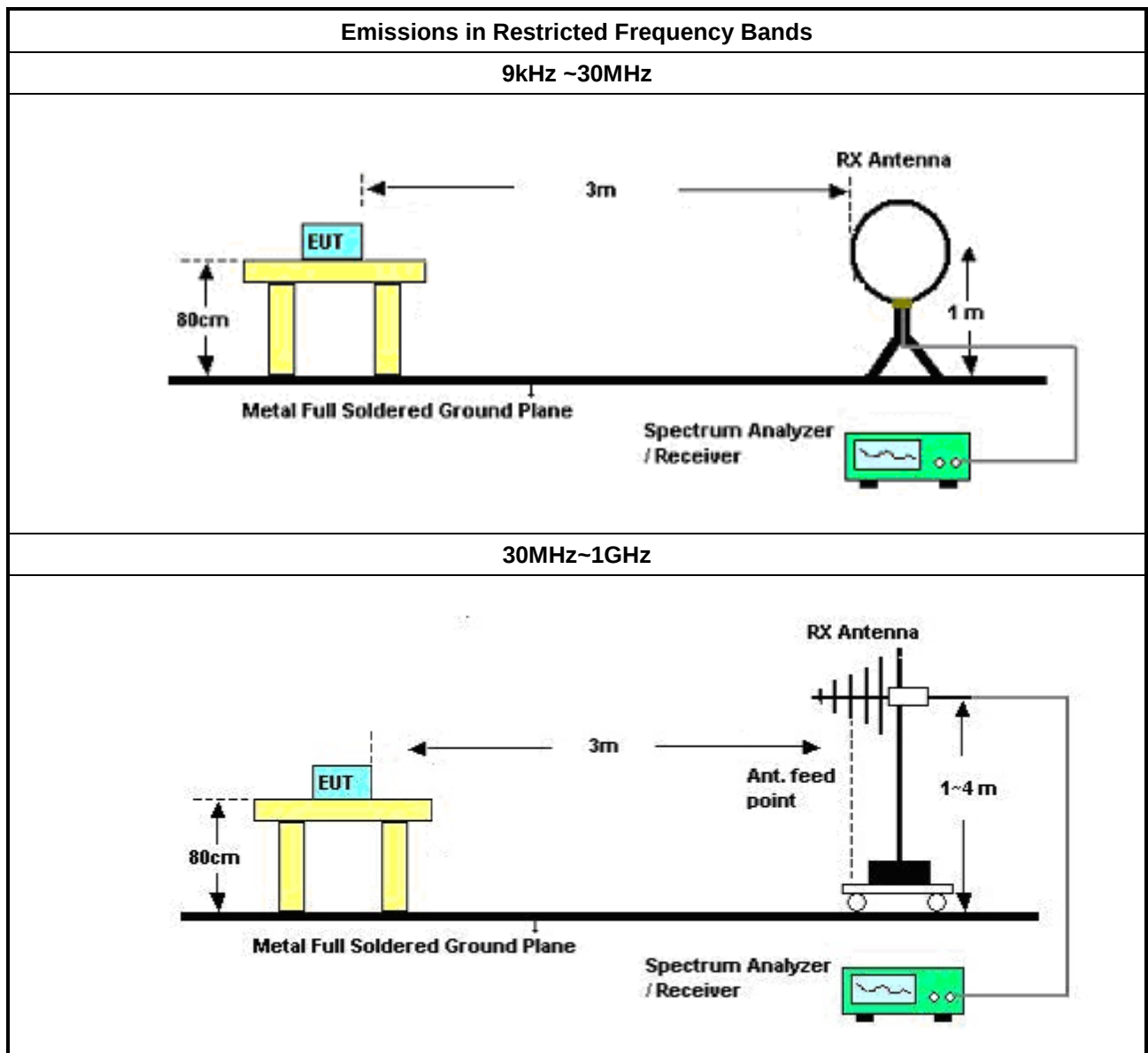
Test Method	
▪	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
▪	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪	For the transmitter unwanted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

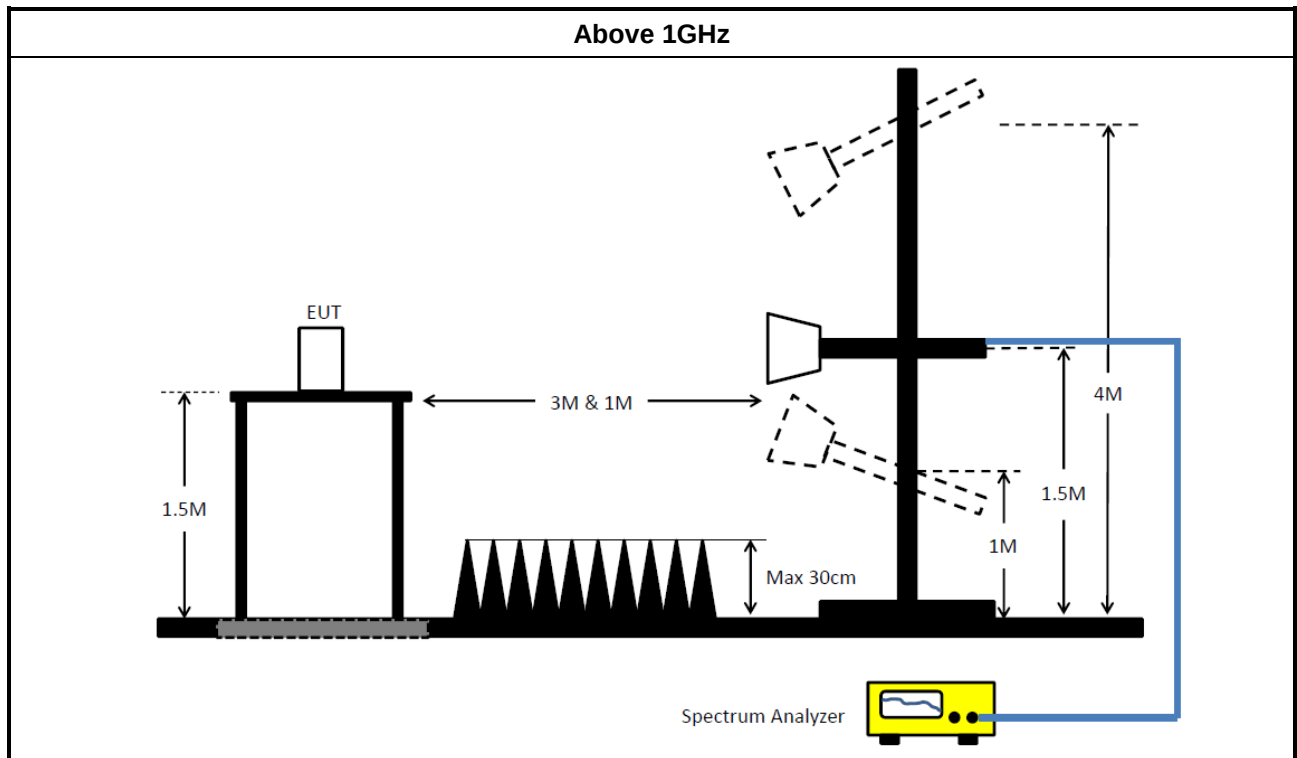
3.6.4 Measurement Results Calculation

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	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 (03CH26-HY)**

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	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	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
Microwave Preamplifier	Agilent	8449B	3008A02602	1GHz ~18GHz	15/Mar/2024	14/Mar/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
Site V.S.W.R	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3M	14/Jul/2024	13/Jul/2025
Signal Analyzer	R&S	FSP 40	100593	9kHz~40GHz	11/Mar/2024	10/Mar/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2024	22/Sep/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz~40GHz	04/Jun/2024	03/Jun/2025
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX 104	03CH02-cable-01	1GHz~40GHz	15/Feb/2024	14/Feb/2025
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	01/Oct/2024	30/Sep/2025
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~40GHz	19/Apr/2024	18/Apr/2025
SENSE-EMI	Sporton	V5.11.9	NA	NA	NA	NA



Conducted Emissions at Powerline_Non-Beamforming

Appendix A

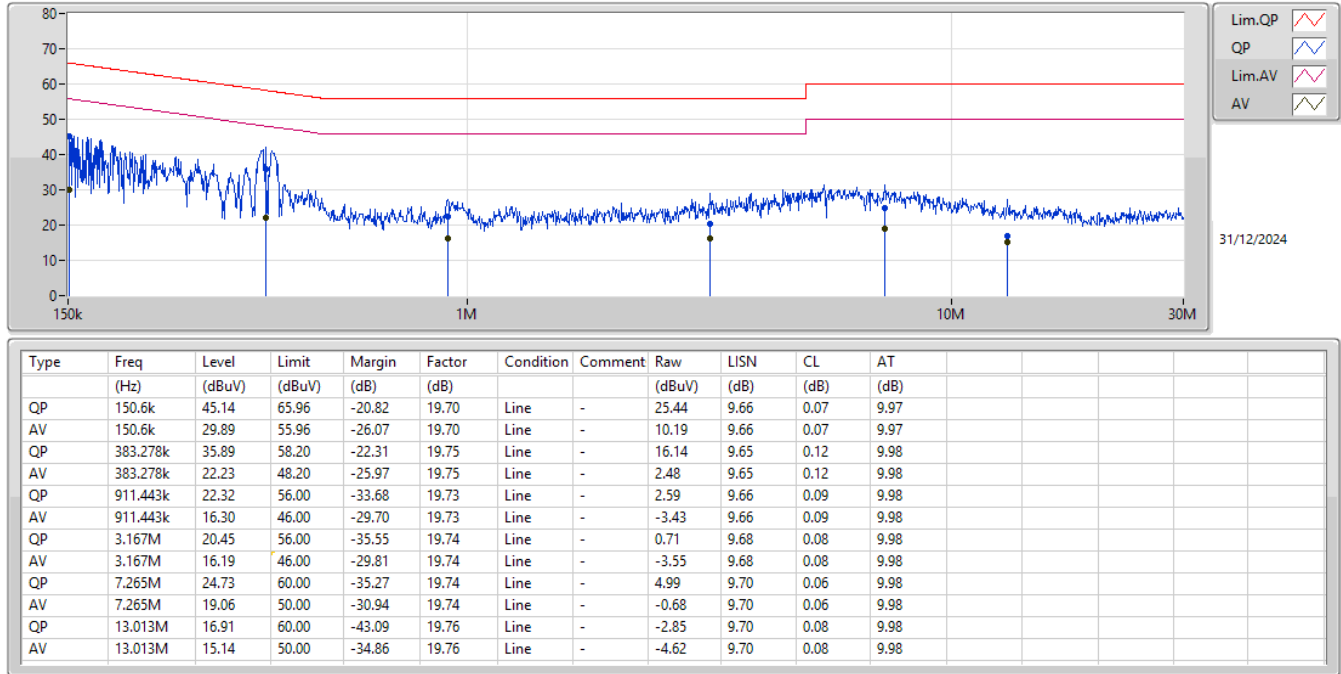
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	375.703k	37.93	48.37	-10.44	Neutral

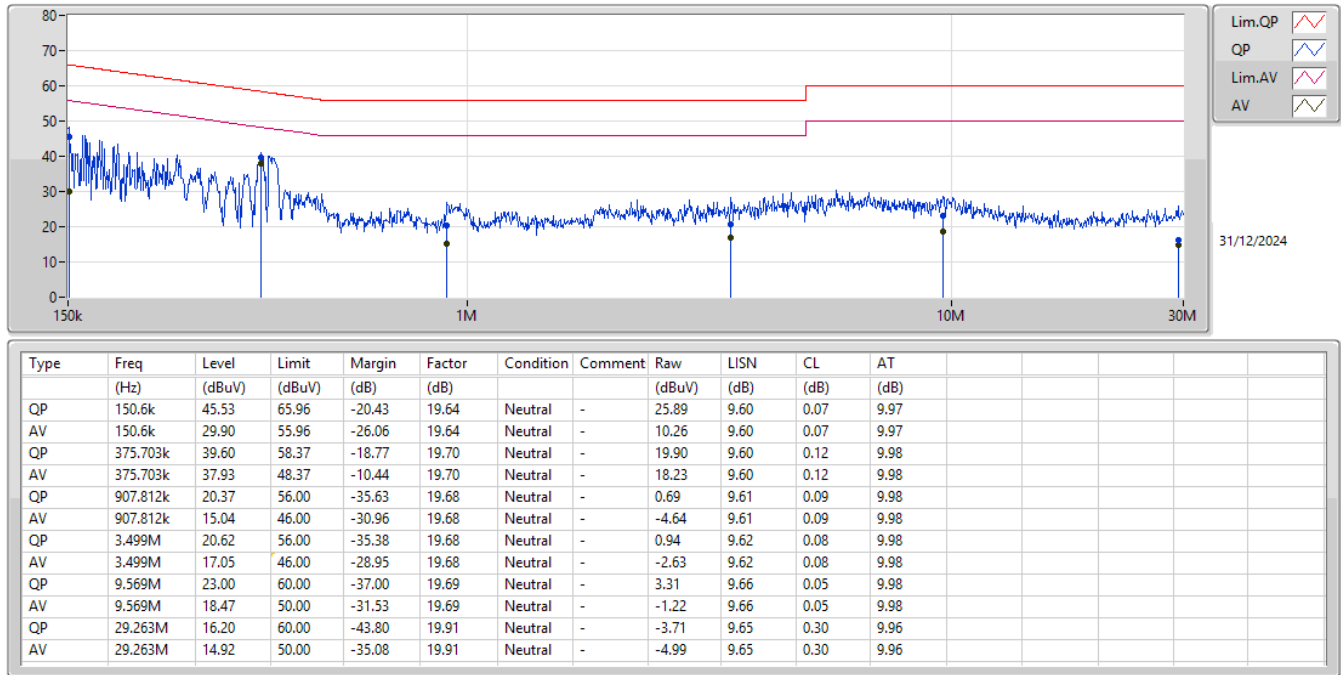
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150.6k	45.14	65.96	-20.82	Line
Mode 1	Pass	AV	150.6k	29.89	55.96	-26.07	Line
Mode 1	Pass	QP	383.278k	35.89	58.20	-22.31	Line
Mode 1	Pass	AV	383.278k	22.23	48.20	-25.97	Line
Mode 1	Pass	QP	911.443k	22.32	56.00	-33.68	Line
Mode 1	Pass	AV	911.443k	16.30	46.00	-29.70	Line
Mode 1	Pass	QP	3.167M	20.45	56.00	-35.55	Line
Mode 1	Pass	AV	3.167M	16.19	46.00	-29.81	Line
Mode 1	Pass	QP	7.265M	24.73	60.00	-35.27	Line
Mode 1	Pass	AV	7.265M	19.06	50.00	-30.94	Line
Mode 1	Pass	QP	13.013M	16.91	60.00	-43.09	Line
Mode 1	Pass	AV	13.013M	15.14	50.00	-34.86	Line
Mode 1	Pass	QP	150.6k	45.53	65.96	-20.43	Neutral
Mode 1	Pass	AV	150.6k	29.90	55.96	-26.06	Neutral
Mode 1	Pass	QP	375.703k	39.60	58.37	-18.77	Neutral
Mode 1	Pass	AV	375.703k	37.93	48.37	-10.44	Neutral
Mode 1	Pass	QP	907.812k	20.37	56.00	-35.63	Neutral
Mode 1	Pass	AV	907.812k	15.04	46.00	-30.96	Neutral
Mode 1	Pass	QP	3.499M	20.62	56.00	-35.38	Neutral
Mode 1	Pass	AV	3.499M	17.05	46.00	-28.95	Neutral
Mode 1	Pass	QP	9.569M	23.00	60.00	-37.00	Neutral
Mode 1	Pass	AV	9.569M	18.47	50.00	-31.53	Neutral
Mode 1	Pass	QP	29.263M	16.20	60.00	-43.80	Neutral
Mode 1	Pass	AV	29.263M	14.92	50.00	-35.08	Neutral

Conducted Emissions at Powerline_Mode 1



Conducted Emissions at Powerline_Mode 1



**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	8.075M	12.969M	13M0G1D	6.625M	12.429M
802.11g_Nss1,(6Mbps)_2TX	16.05M	16.69M	16M7D1D	15.25M	16.272M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.6M	19.14M	19M1D1D	16.625M	18.741M
802.11ax HEW40_Nss1,(MCS0)_2TX	34.65M	37.631M	37M6D1D	23.85M	37.331M

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	7.325M	12.864M	6.65M	12.894M
2437MHz	Pass	500k	8.075M	12.969M	7.1M	12.429M
2462MHz	Pass	500k	6.65M	12.924M	6.625M	12.954M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.05M	16.272M	15.25M	16.272M
2437MHz	Pass	500k	15.825M	16.69M	15.65M	16.602M
2462MHz	Pass	500k	15.425M	16.272M	16M	16.316M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.625M	18.791M	18.1M	18.741M
2437MHz	Pass	500k	17.825M	19.14M	18.6M	18.941M
2462MHz	Pass	500k	17.125M	18.766M	18.15M	18.791M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	32.4M	37.631M	33.25M	37.481M
2437MHz	Pass	500k	34.65M	37.481M	23.85M	37.531M
2452MHz	Pass	500k	34.3M	37.581M	31.5M	37.331M

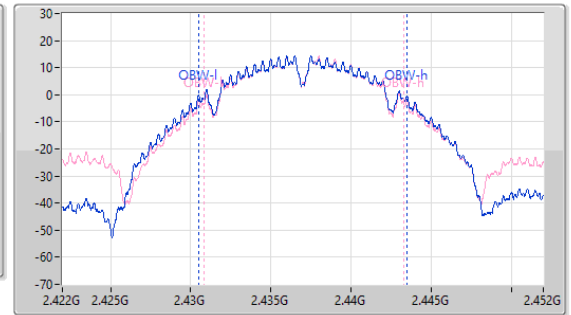
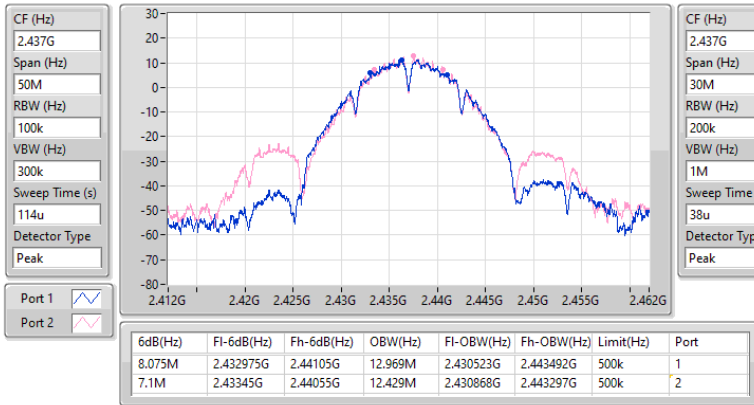
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

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

EBW

2437MHz

03/12/2024

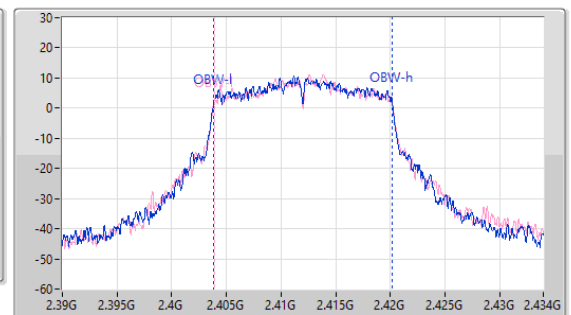
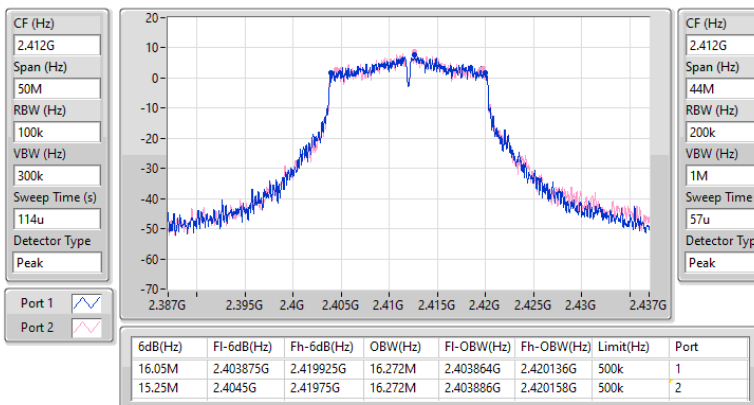


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

EBW

2412MHz

03/12/2024

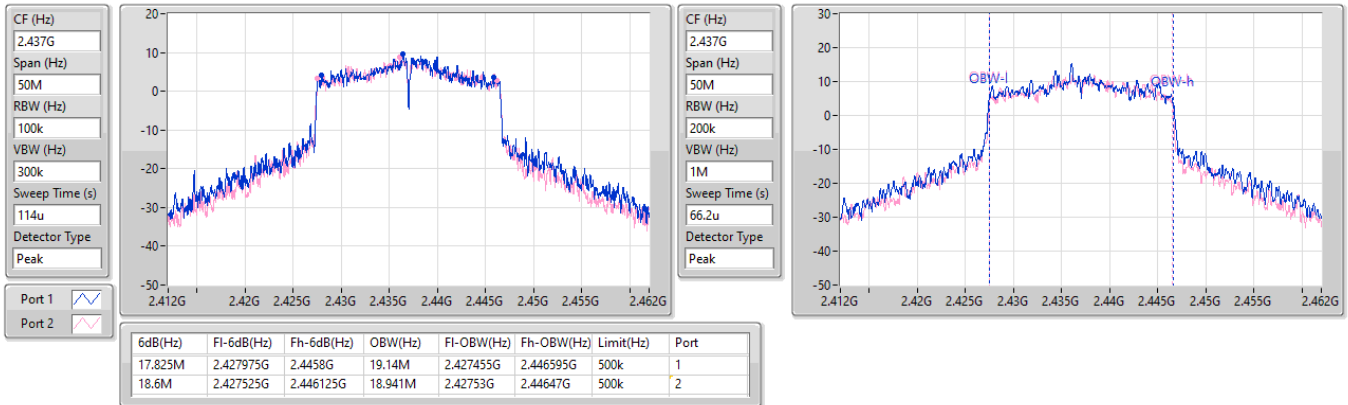


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

2437MHz

03/12/2024

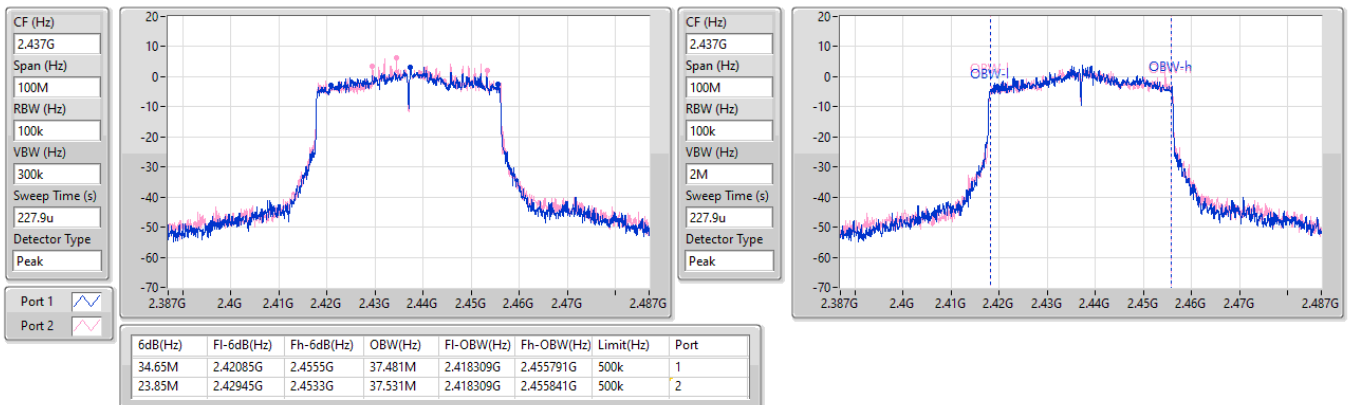


2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

2437MHz

03/12/2024





Average Power_Non-Beamforming

Appendix C.1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	24.64	0.29107
802.11g_Nss1,(6Mbps)_2TX	25.11	0.32434
802.11ax HEW20_Nss1,(MCS0)_2TX	24.69	0.29444
802.11ax HEW40_Nss1,(MCS0)_2TX	21.57	0.14355

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.80	20.65	19.46	23.11	30.00
2417MHz	Pass	3.80	20.69	19.41	23.11	30.00
2437MHz	Pass	3.80	21.75	21.51	24.64	30.00
2457MHz	Pass	3.80	20.17	20.49	23.34	30.00
2462MHz	Pass	3.80	19.72	19.39	22.57	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.80	20.26	20.08	23.18	30.00
2417MHz	Pass	3.80	20.99	20.68	23.85	30.00
2437MHz	Pass	3.80	22.21	21.98	25.11	30.00
2457MHz	Pass	3.80	19.67	19.81	22.75	30.00
2462MHz	Pass	3.80	19.62	19.68	22.66	30.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.80	18.62	18.75	21.70	30.00
2417MHz	Pass	3.80	19.50	19.69	22.61	30.00
2437MHz	Pass	3.80	21.77	21.58	24.69	30.00
2457MHz	Pass	3.80	19.75	19.82	22.80	30.00
2462MHz	Pass	3.80	17.99	18.11	21.06	30.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	3.80	17.06	17.10	20.09	30.00
2427MHz	Pass	3.80	17.63	17.75	20.70	30.00
2437MHz	Pass	3.80	18.52	18.59	21.57	30.00
2447MHz	Pass	3.80	17.26	17.58	20.43	30.00
2452MHz	Pass	3.80	17.07	17.27	20.18	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	24.69	0.29444
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	21.57	0.14355

**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	6.71	18.62	18.75	21.70	29.29
2417MHz	Pass	6.71	19.50	19.69	22.61	29.29
2437MHz	Pass	6.71	21.77	21.58	24.69	29.29
2457MHz	Pass	6.71	19.75	19.82	22.80	29.29
2462MHz	Pass	6.71	17.99	18.11	21.06	29.29
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	6.71	17.06	17.10	20.09	29.29
2427MHz	Pass	6.71	17.63	17.75	20.70	29.29
2437MHz	Pass	6.71	18.52	18.59	21.57	29.29
2447MHz	Pass	6.71	17.26	17.58	20.43	29.29
2452MHz	Pass	6.71	17.07	17.27	20.18	29.29

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	-2.61
802.11g_Nss1,(6Mbps)_2TX	-1.69
802.11ax HEW20_Nss1,(MCS0)_2TX	-0.90
802.11ax HEW40_Nss1,(MCS0)_2TX	-7.14

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	6.71	-3.86	-8.34	-2.65	7.29
2437MHz	Pass	6.71	-5.59	-5.66	-2.61	7.29
2462MHz	Pass	6.71	-7.58	-8.04	-4.87	7.29
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.71	-6.42	-6.45	-3.85	7.29
2437MHz	Pass	6.71	-4.22	-3.51	-1.69	7.29
2462MHz	Pass	6.71	-5.63	-7.36	-4.13	7.29
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.71	-5.83	-5.73	-4.79	7.29
2437MHz	Pass	6.71	-1.99	-3.10	-0.90	7.29
2462MHz	Pass	6.71	-6.87	-7.66	-6.14	7.29
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	6.71	-11.14	-10.26	-9.07	7.29
2437MHz	Pass	6.71	-9.47	-9.05	-7.14	7.29
2452MHz	Pass	6.71	-10.67	-10.25	-9.29	7.29

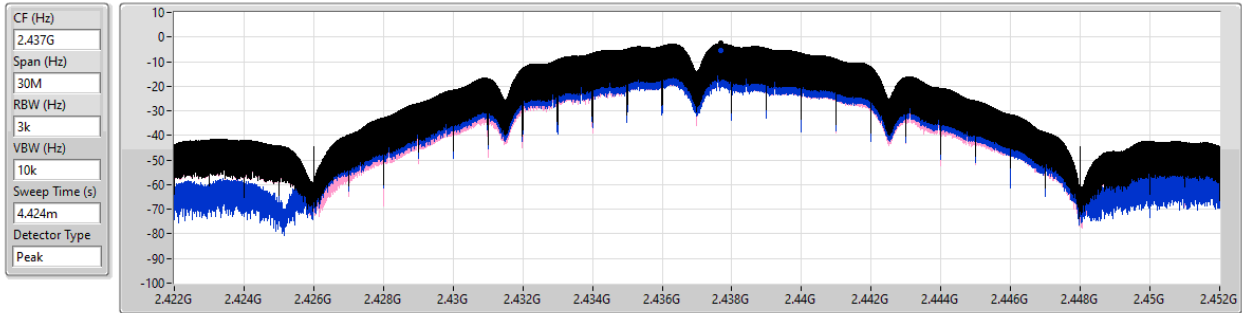
DG = Directional Gain; RBW = 3kHz;
 PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
 Inf = There's no restriction for the limit.

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

PSD

2437MHz

03/12/2024



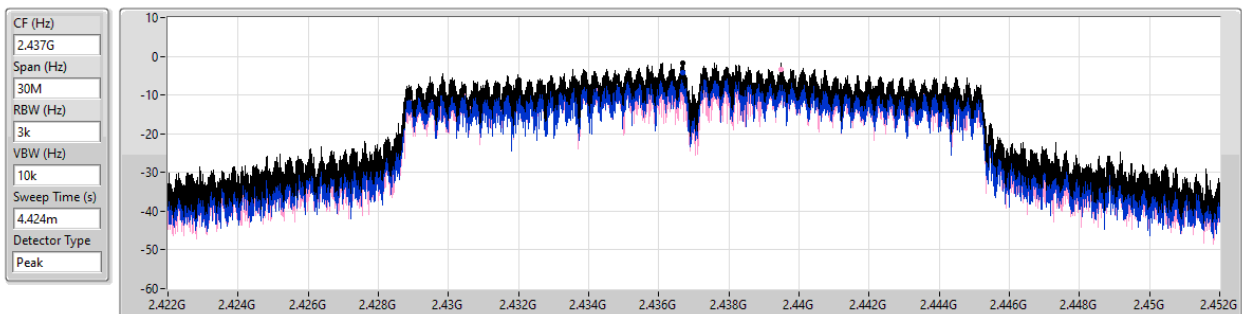
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-2.61	-2.61	-5.59	-5.66

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

PSD

2437MHz

03/12/2024



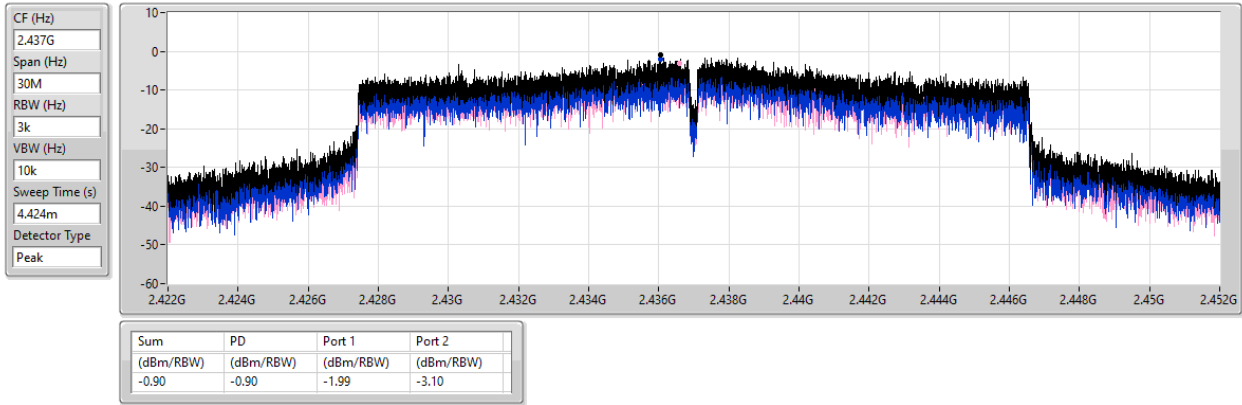
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-1.69	-1.69	-4.22	-3.51

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

PSD

2437MHz

03/12/2024

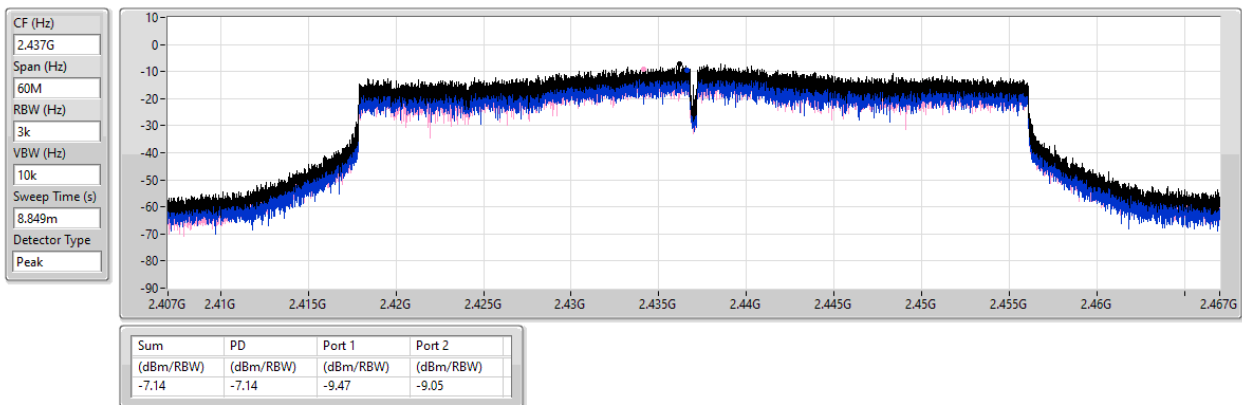


2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

PSD

2437MHz

03/12/2024





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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	2.43758G	12.84	-17.16	2.30059G	-54.17	2.39984G	-40.29	2.4G	-40.52	2.50502G	-52.37	16.82698G	-42.03	1
802.11g_Nss1,(6Mbps)_2TX	Pass	2.43574G	13.98	-16.02	716.19M	-55.51	2.39984G	-27.32	2.4G	-25.95	2.51758G	-52.67	16.27631G	-42.00	2
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	2.43574G	12.99	-17.01	2.13283G	-55.84	2.39984G	-25.52	2.4G	-26.71	2.51142G	-52.55	16.23136G	-40.78	2
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	2.4319G	6.47	-23.53	2.30283G	-54.78	2.4G	-34.05	2.4G	-31.45	2.52686G	-53.02	16.35353G	-41.48	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43758G	12.84	-17.16	2.30059G	-54.17	2.39984G	-40.29	2.4G	-40.52	2.50502G	-52.37	16.82698G	-42.03	1
2412MHz	Pass	2.43758G	12.84	-17.16	2.18292G	-54.92	2.3984G	-41.69	2.4G	-41.43	2.50294G	-53.32	15.32387G	-41.32	2
2437MHz	Pass	2.43758G	12.84	-17.16	2.11419G	-55.57	2.39752G	-51.28	2.4G	-54.24	2.51526G	-52.34	16.26507G	-41.05	1
2437MHz	Pass	2.43758G	12.84	-17.16	844.34M	-54.76	2.4G	-51.48	2.4G	-51.30	2.52118G	-52.36	17.61085G	-41.25	2
2462MHz	Pass	2.43758G	12.84	-17.16	850.16M	-55.42	2.39864G	-53.45	2.4G	-55.91	2.5107G	-51.66	16.63031G	-40.42	1
2462MHz	Pass	2.43758G	12.84	-17.16	2.30408G	-55.52	2.3996G	-53.43	2.4G	-56.06	2.50182G	-51.31	23.28617G	-41.41	2
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43574G	13.98	-16.02	2.14215G	-55.61	2.39984G	-27.34	2.4G	-26.61	2.52102G	-52.44	21.49929G	-41.89	1
2412MHz	Pass	2.43574G	13.98	-16.02	716.19M	-55.51	2.39984G	-27.32	2.4G	-25.95	2.51758G	-52.67	16.27631G	-42.00	2
2437MHz	Pass	2.43574G	13.98	-16.02	2.11535G	-54.79	2.39944G	-38.08	2.4G	-39.43	2.50142G	-47.80	16.56288G	-41.31	1
2437MHz	Pass	2.43574G	13.98	-16.02	2.15729G	-54.69	2.39992G	-38.74	2.4G	-40.90	2.50134G	-48.87	16.59379G	-41.84	2
2462MHz	Pass	2.43574G	13.98	-16.02	2.02215G	-55.33	2.39984G	-52.63	2.4G	-54.71	2.51942G	-51.88	16.26788G	-41.23	1
2462MHz	Pass	2.43574G	13.98	-16.02	2.12584G	-55.04	2.39272G	-51.79	2.4G	-54.58	2.50878G	-52.08	17.22875G	-40.70	2
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43574G	12.99	-17.01	1.80197G	-55.45	2.4G	-26.02	2.4G	-26.48	2.50374G	-53.26	17.66704G	-41.63	1
2412MHz	Pass	2.43574G	12.99	-17.01	2.13283G	-55.84	2.39984G	-25.52	2.4G	-26.71	2.51142G	-52.55	16.23136G	-40.78	2
2437MHz	Pass	2.43574G	12.99	-17.01	2.12467G	-54.50	2.39944G	-37.87	2.4G	-39.17	2.50054G	-48.05	17.1838G	-41.47	1
2437MHz	Pass	2.43574G	12.99	-17.01	2.14797G	-55.03	2.39928G	-38.47	2.4G	-40.54	2.50062G	-49.04	17.61366G	-41.11	2
2462MHz	Pass	2.43574G	12.99	-17.01	2.19108G	-55.37	2.39968G	-52.32	2.4G	-54.60	2.50782G	-51.83	16.55446G	-40.01	1
2462MHz	Pass	2.43574G	12.99	-17.01	2.11186G	-55.09	2.39384G	-52.50	2.4G	-53.53	2.50486G	-51.66	16.27912G	-41.98	2
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.4319G	6.47	-23.53	2.30283G	-54.78	2.4G	-34.05	2.4G	-31.45	2.52686G	-53.02	16.35353G	-41.48	1
2422MHz	Pass	2.4319G	6.47	-23.53	2.09673G	-55.50	2.39984G	-31.92	2.4G	-31.75	2.50638G	-51.51	17.66046G	-41.64	2
2437MHz	Pass	2.4319G	6.47	-23.53	2.19749G	-55.65	2.39968G	-43.13	2.4G	-45.80	2.50478G	-50.74	24.6326G	-41.40	1
2437MHz	Pass	2.4319G	6.47	-23.53	1.98795G	-55.59	2.39968G	-40.04	2.4G	-43.05	2.51854G	-50.59	17.60437G	-40.92	2
2452MHz	Pass	2.4319G	6.47	-23.53	915.09M	-54.67	2.39952G	-51.90	2.4G	-52.93	2.50574G	-50.36	16.58351G	-41.77	1
2452MHz	Pass	2.4319G	6.47	-23.53	950.58M	-55.55	2.39936G	-51.30	2.4G	-53.93	2.50078G	-50.68	15.21488G	-40.92	2

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

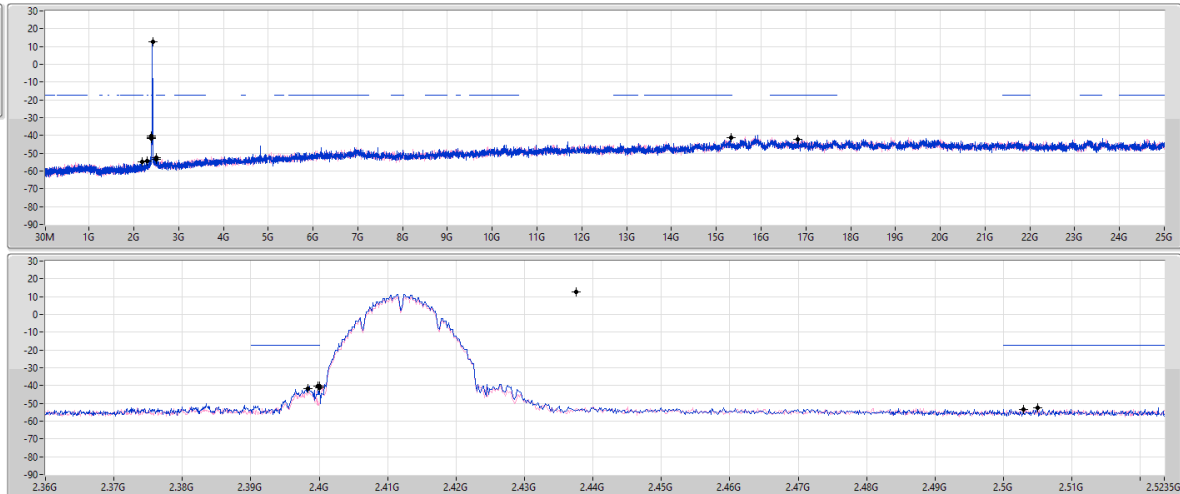
CSEndB

2412MHz

03/12/2024

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
2.43758G	12.84	-17.16	2.30059G	-54.17	2.39984G	-40.29	2.4G	-40.52	2.50502G	-52.37	16.82698G	-42.03	1
2.43758G	12.84	-17.16	2.18292G	-54.92	2.39984G	-41.69	2.4G	-41.43	2.50294G	-53.32	15.32387G	-41.32	2

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

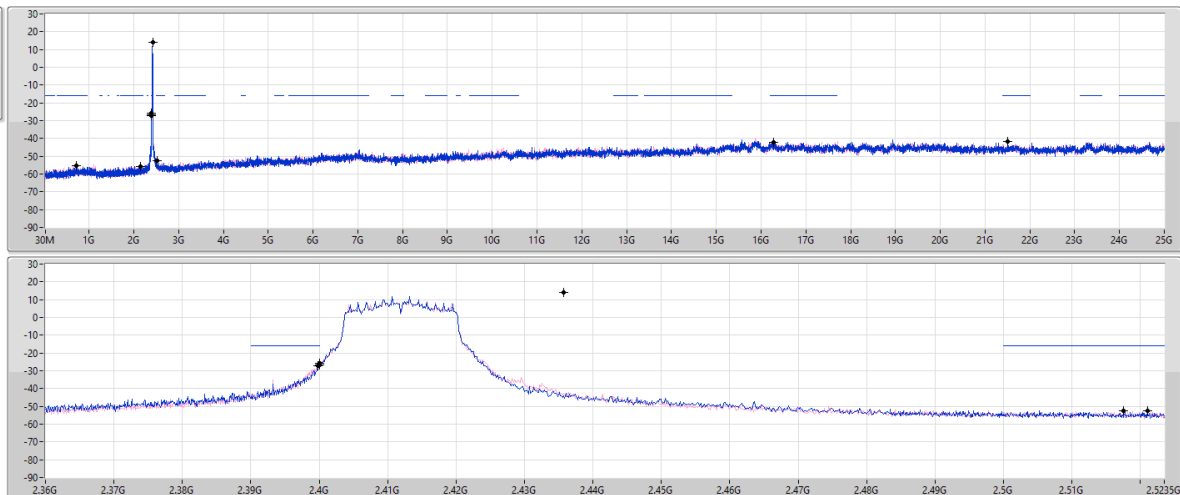
CSEndB

2412MHz

03/12/2024

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
2.43574G	13.98	-16.02	2.14215G	-55.61	2.39984G	-27.34	2.4G	-26.61	2.52102G	-52.44	21.49929G	-41.89	1
2.43574G	13.98	-16.02	716.19M	-55.51	2.39984G	-27.32	2.4G	-25.95	2.51758G	-52.67	16.27631G	-42.00	2

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

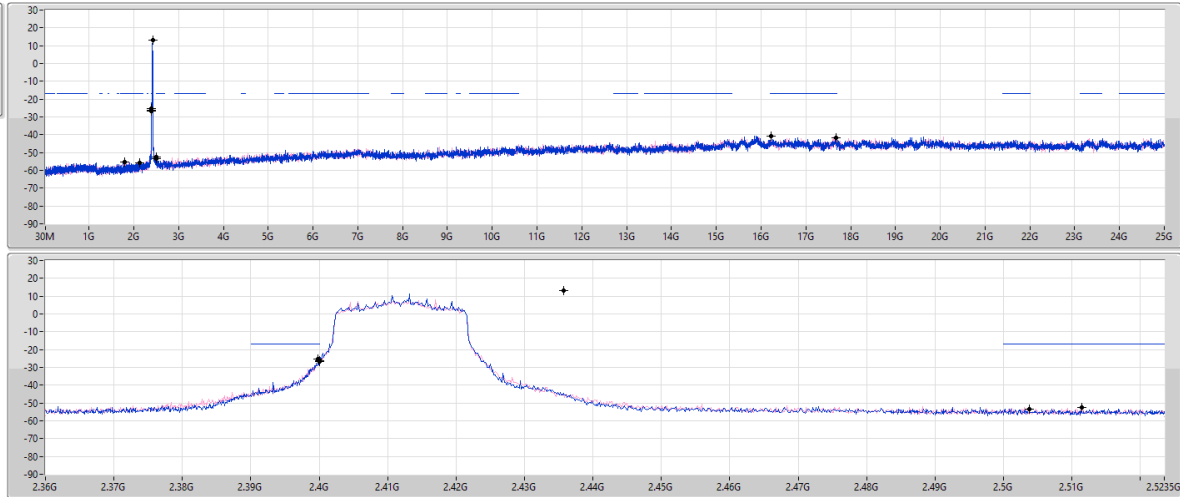
CSEndB

2412MHz

03/12/2024

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
2.43574G	12.99	-17.01	1.80197G	-55.45	2.4G	-26.02	2.4G	-26.48	2.50374G	-53.26	17.66704G	-41.63	1
2.43574G	12.99	-17.01	2.13283G	-55.84	2.39984G	-25.52	2.4G	-26.71	2.51142G	-52.55	16.23136G	-40.78	2

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

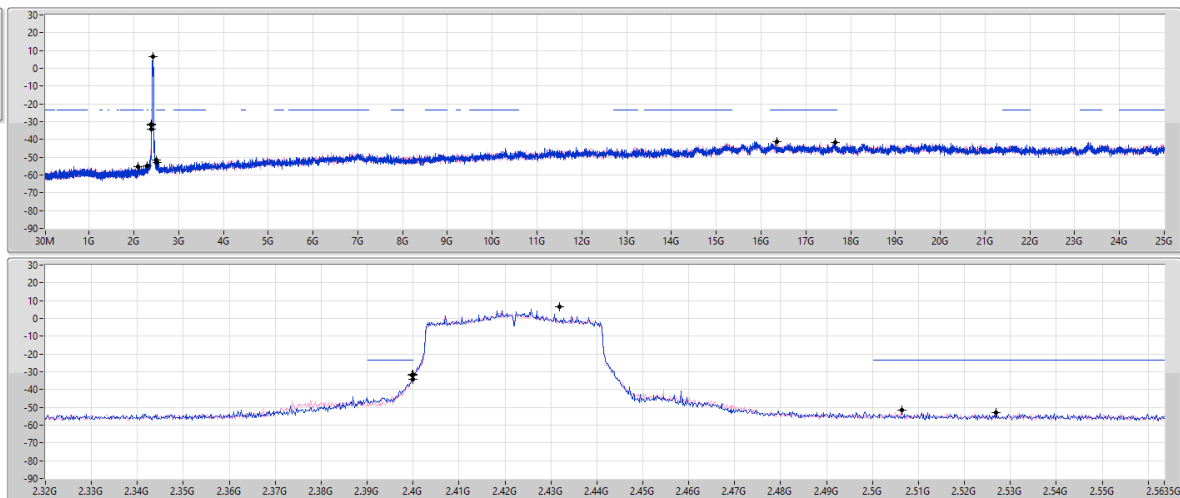
CSEndB

2422MHz

03/12/2024

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
2.4319G	6.47	-23.53	2.30283G	-54.78	2.4G	-34.05	2.4G	-31.45	2.52686G	-53.02	16.33353G	-41.48	1
2.4319G	6.47	-23.53	2.09673G	-55.50	2.39984G	-31.92	2.4G	-31.75	2.50638G	-51.51	17.66046G	-41.64	2



Summary

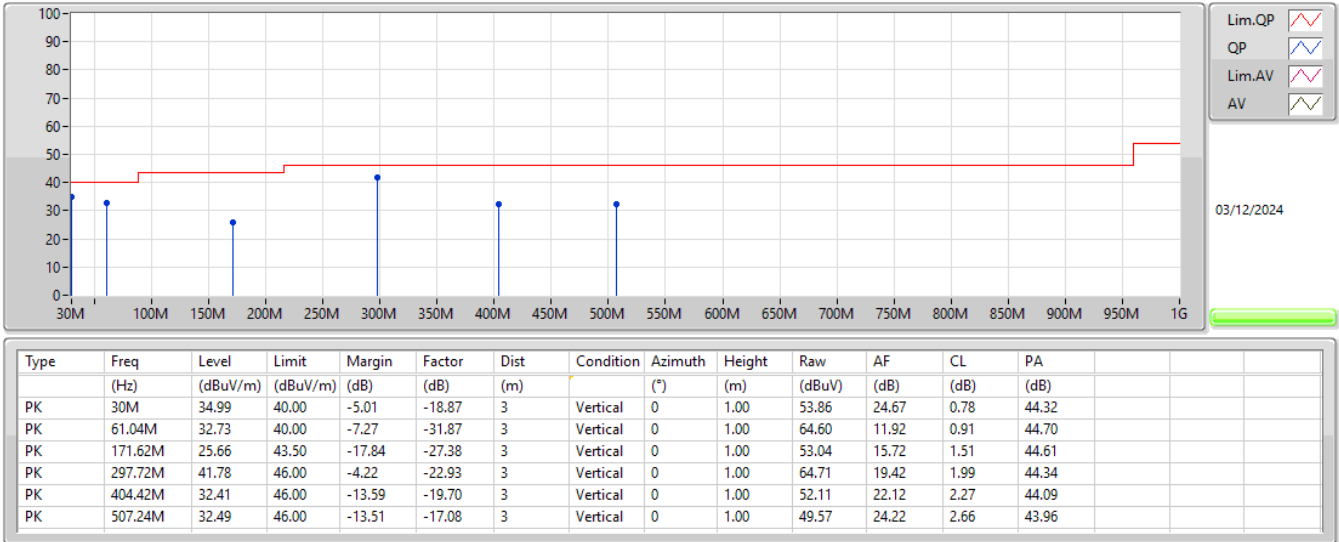
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	PK	297.72M	41.78	46.00	-4.22	3	Vertical	0	1.00

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_Adapter	Pass	PK	30M	34.99	40.00	-5.01	3	Vertical	0	1.00
2437MHz_Adapter	Pass	PK	61.04M	32.73	40.00	-7.27	3	Vertical	0	1.00
2437MHz_Adapter	Pass	PK	171.62M	25.66	43.50	-17.84	3	Vertical	0	1.00
2437MHz_Adapter	Pass	PK	297.72M	41.78	46.00	-4.22	3	Vertical	0	1.00
2437MHz_Adapter	Pass	PK	404.42M	32.41	46.00	-13.59	3	Vertical	0	1.00
2437MHz_Adapter	Pass	PK	507.24M	32.49	46.00	-13.51	3	Vertical	0	1.00
2437MHz_Adapter	Pass	PK	30M	33.95	40.00	-6.05	3	Horizontal	360	1.00
2437MHz_Adapter	Pass	PK	61.04M	24.30	40.00	-15.70	3	Horizontal	360	1.00
2437MHz_Adapter	Pass	PK	175.5M	28.13	43.50	-15.37	3	Horizontal	360	1.00
2437MHz_Adapter	Pass	PK	404.42M	30.22	46.00	-15.78	3	Horizontal	360	1.00
2437MHz_Adapter	Pass	PK	557.68M	24.98	46.00	-21.02	3	Horizontal	360	1.00
2437MHz_Adapter	Pass	QP	300.87M	41.03	46.00	-4.97	3	Horizontal	184	1.00

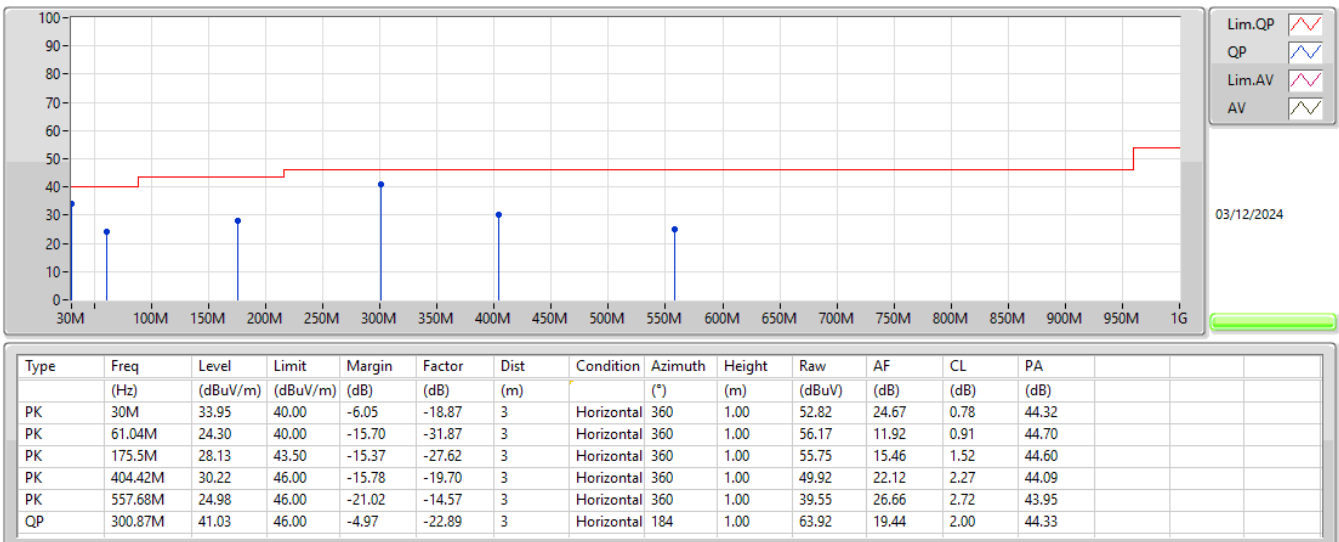
2.4-2.4835GHz_802.11ax HEW40_Nss1,(MCS0)_2TX

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	2.4946G	48.31	54.00	-5.69	3	Horizontal	56	1.50
802.11g_Nss1,(6Mbps)_2TX	Pass	AV	2.39G	53.16	54.00	-0.84	3	Horizontal	321	1.46
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	AV	2.39G	53.85	54.00	-0.15	3	Horizontal	322	1.50
802.11ax HEW40_Nss1,(MCS0)_2TX	Pass	AV	2.4846G	51.94	54.00	-2.06	3	Horizontal	56	1.63

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	2.3852G	47.43	54.00	-6.57	3	Vertical	6	1.81
2412MHz	Pass	AV	2.4128G	109.53	Inf	-Inf	3	Vertical	6	1.81
2412MHz	Pass	PK	2.383G	58.48	74.00	-15.52	3	Vertical	6	1.81
2412MHz	Pass	PK	2.4128G	111.93	Inf	-Inf	3	Vertical	6	1.81
2412MHz	Pass	AV	2.3852G	48.03	54.00	-5.97	3	Horizontal	333	1.50
2412MHz	Pass	AV	2.4128G	111.44	Inf	-Inf	3	Horizontal	333	1.50
2412MHz	Pass	PK	2.3706G	59.57	74.00	-14.43	3	Horizontal	333	1.50
2412MHz	Pass	PK	2.4128G	113.82	Inf	-Inf	3	Horizontal	333	1.50
2412MHz	Pass	AV	4.82396G	33.89	54.00	-20.11	3	Vertical	139	1.50
2412MHz	Pass	PK	4.82472G	44.54	74.00	-29.46	3	Vertical	139	1.50
2412MHz	Pass	AV	4.82392G	34.40	54.00	-19.60	3	Horizontal	7	1.10
2412MHz	Pass	PK	4.81724G	45.38	74.00	-28.62	3	Horizontal	7	1.10
2417MHz	Pass	AV	2.3878G	46.74	54.00	-7.26	3	Vertical	5	1.50
2417MHz	Pass	AV	2.4162G	107.61	Inf	-Inf	3	Vertical	5	1.50
2417MHz	Pass	PK	2.387G	57.87	74.00	-16.13	3	Vertical	5	1.50
2417MHz	Pass	PK	2.418G	110.10	Inf	-Inf	3	Vertical	5	1.50
2417MHz	Pass	AV	2.388G	47.29	54.00	-6.71	3	Horizontal	330	1.10
2417MHz	Pass	AV	2.4178G	110.15	Inf	-Inf	3	Horizontal	330	1.10
2417MHz	Pass	PK	2.3854G	58.60	74.00	-15.40	3	Horizontal	330	1.10
2417MHz	Pass	PK	2.4178G	112.57	Inf	-Inf	3	Horizontal	330	1.10
2437MHz	Pass	AV	2.3882G	46.54	54.00	-7.46	3	Vertical	0	1.47
2437MHz	Pass	AV	2.4378G	111.97	Inf	-Inf	3	Vertical	0	1.47
2437MHz	Pass	AV	2.4874G	47.03	54.00	-6.97	3	Vertical	0	1.47
2437MHz	Pass	PK	2.3714G	58.32	74.00	-15.68	3	Vertical	0	1.47
2437MHz	Pass	PK	2.4362G	114.37	Inf	-Inf	3	Vertical	0	1.47
2437MHz	Pass	PK	2.4954G	58.39	74.00	-15.61	3	Vertical	0	1.47
2437MHz	Pass	AV	2.3882G	47.18	54.00	-6.82	3	Horizontal	56	1.58
2437MHz	Pass	AV	2.4378G	112.91	Inf	-Inf	3	Horizontal	56	1.58
2437MHz	Pass	AV	2.4874G	47.68	54.00	-6.32	3	Horizontal	56	1.58
2437MHz	Pass	PK	2.3426G	58.53	74.00	-15.47	3	Horizontal	56	1.58
2437MHz	Pass	PK	2.4378G	115.30	Inf	-Inf	3	Horizontal	56	1.58
2437MHz	Pass	PK	2.4882G	58.75	74.00	-15.25	3	Horizontal	56	1.58
2437MHz	Pass	AV	4.874G	36.71	54.00	-17.29	3	Vertical	196	2.90
2437MHz	Pass	AV	7.31166G	39.09	54.00	-14.91	3	Vertical	298	1.01
2437MHz	Pass	PK	4.87388G	45.85	74.00	-28.15	3	Vertical	196	2.90
2437MHz	Pass	PK	7.3095G	50.52	74.00	-23.48	3	Vertical	298	1.01
2437MHz	Pass	AV	4.87394G	36.18	54.00	-17.82	3	Horizontal	62	1.01
2437MHz	Pass	AV	7.31184G	39.21	54.00	-14.79	3	Horizontal	336	2.74
2437MHz	Pass	PK	4.86992G	45.19	74.00	-28.81	3	Horizontal	62	1.01
2437MHz	Pass	PK	7.31208G	50.96	74.00	-23.04	3	Horizontal	336	2.74
2457MHz	Pass	AV	2.4578G	108.82	Inf	-Inf	3	Vertical	360	1.65
2457MHz	Pass	AV	2.4836G	47.48	54.00	-6.52	3	Vertical	360	1.65
2457MHz	Pass	PK	2.4562G	111.21	Inf	-Inf	3	Vertical	360	1.65
2457MHz	Pass	PK	2.4836G	58.89	74.00	-15.11	3	Vertical	360	1.65
2457MHz	Pass	AV	2.4578G	111.15	Inf	-Inf	3	Horizontal	56	1.50
2457MHz	Pass	AV	2.4946G	48.31	54.00	-5.69	3	Horizontal	56	1.50
2457MHz	Pass	PK	2.458G	113.55	Inf	-Inf	3	Horizontal	56	1.50
2457MHz	Pass	PK	2.4956G	59.29	74.00	-14.71	3	Horizontal	56	1.50
2462MHz	Pass	AV	2.4628G	107.96	Inf	-Inf	3	Vertical	360	1.65
2462MHz	Pass	AV	2.487G	47.19	54.00	-6.81	3	Vertical	360	1.65
2462MHz	Pass	PK	2.463G	110.39	Inf	-Inf	3	Vertical	360	1.65
2462MHz	Pass	PK	2.4998G	59.14	74.00	-14.86	3	Vertical	360	1.65
2462MHz	Pass	AV	2.4612G	109.79	Inf	-Inf	3	Horizontal	56	1.50
2462MHz	Pass	AV	2.4835G	48.05	54.00	-5.95	3	Horizontal	56	1.50
2462MHz	Pass	PK	2.4612G	112.36	Inf	-Inf	3	Horizontal	56	1.50
2462MHz	Pass	PK	2.4968G	59.26	74.00	-14.74	3	Horizontal	56	1.50
2462MHz	Pass	AV	4.924G	35.84	54.00	-18.16	3	Vertical	219	2.18
2462MHz	Pass	AV	7.387G	38.43	54.00	-15.57	3	Vertical	294	1.22
2462MHz	Pass	PK	4.92408G	45.05	74.00	-28.95	3	Vertical	219	2.18
2462MHz	Pass	PK	7.37716G	50.54	74.00	-23.46	3	Vertical	294	1.22

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2462MHz	Pass	AV	4.924G	35.38	54.00	-18.62	3	Horizontal	197	2.63
2462MHz	Pass	AV	7.37684G	37.94	54.00	-16.06	3	Horizontal	152	1.50
2462MHz	Pass	PK	4.92404G	45.35	74.00	-28.65	3	Horizontal	197	2.63
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.389G	50.54	54.00	-3.46	3	Vertical	5	1.33
2412MHz	Pass	AV	2.4128G	105.09	Inf	-Inf	3	Vertical	5	1.33
2412MHz	Pass	PK	2.3892G	62.48	74.00	-11.52	3	Vertical	5	1.33
2412MHz	Pass	PK	2.413G	113.40	Inf	-Inf	3	Vertical	5	1.33
2412MHz	Pass	AV	2.39G	53.16	54.00	-0.84	3	Horizontal	321	1.46
2412MHz	Pass	AV	2.411G	107.61	Inf	-Inf	3	Horizontal	321	1.46
2412MHz	Pass	PK	2.39G	65.62	74.00	-8.38	3	Horizontal	321	1.46
2412MHz	Pass	PK	2.4112G	115.89	Inf	-Inf	3	Horizontal	321	1.46
2412MHz	Pass	AV	4.82076G	33.20	54.00	-20.80	3	Vertical	235	1.89
2412MHz	Pass	PK	4.82028G	45.46	74.00	-28.54	3	Vertical	235	1.89
2412MHz	Pass	AV	4.83316G	33.06	54.00	-20.94	3	Horizontal	311	1.50
2412MHz	Pass	PK	4.83368G	45.38	74.00	-28.62	3	Horizontal	311	1.50
2417MHz	Pass	AV	2.389G	49.00	54.00	-5.00	3	Vertical	5	1.50
2417MHz	Pass	AV	2.4178G	104.90	Inf	-Inf	3	Vertical	5	1.50
2417MHz	Pass	PK	2.3896G	60.91	74.00	-13.09	3	Vertical	5	1.50
2417MHz	Pass	PK	2.418G	113.04	Inf	-Inf	3	Vertical	5	1.50
2417MHz	Pass	AV	2.39G	50.27	54.00	-3.73	3	Horizontal	319	1.50
2417MHz	Pass	AV	2.4162G	107.54	Inf	-Inf	3	Horizontal	319	1.50
2417MHz	Pass	PK	2.3898G	61.70	74.00	-12.30	3	Horizontal	319	1.50
2417MHz	Pass	PK	2.4162G	115.88	Inf	-Inf	3	Horizontal	319	1.50
2437MHz	Pass	AV	2.3878G	50.27	54.00	-3.73	3	Vertical	6	1.47
2437MHz	Pass	AV	2.4378G	108.55	Inf	-Inf	3	Vertical	6	1.47
2437MHz	Pass	AV	2.4835G	50.47	54.00	-3.53	3	Vertical	6	1.47
2437MHz	Pass	PK	2.3882G	62.64	74.00	-11.36	3	Vertical	6	1.47
2437MHz	Pass	PK	2.4378G	116.66	Inf	-Inf	3	Vertical	6	1.47
2437MHz	Pass	PK	2.4878G	62.05	74.00	-11.95	3	Vertical	6	1.47
2437MHz	Pass	AV	2.3898G	51.71	54.00	-2.29	3	Horizontal	312	1.43
2437MHz	Pass	AV	2.4358G	110.12	Inf	-Inf	3	Horizontal	312	1.43
2437MHz	Pass	AV	2.4854G	52.43	54.00	-1.57	3	Horizontal	312	1.43
2437MHz	Pass	PK	2.3862G	63.15	74.00	-10.85	3	Horizontal	312	1.43
2437MHz	Pass	PK	2.4354G	118.55	Inf	-Inf	3	Horizontal	312	1.43
2437MHz	Pass	PK	2.485G	64.56	74.00	-9.44	3	Horizontal	312	1.43
2437MHz	Pass	AV	4.87124G	33.29	54.00	-20.71	3	Vertical	26	1.50
2437MHz	Pass	AV	7.30856G	38.95	54.00	-15.05	3	Vertical	345	1.56
2437MHz	Pass	PK	4.8746G	45.24	74.00	-28.76	3	Vertical	26	1.50
2437MHz	Pass	PK	7.31836G	50.86	74.00	-23.14	3	Vertical	345	1.56
2437MHz	Pass	AV	4.87156G	33.11	54.00	-20.89	3	Horizontal	237	1.70
2437MHz	Pass	AV	7.30972G	39.52	54.00	-14.48	3	Horizontal	298	1.09
2437MHz	Pass	PK	4.87136G	45.21	74.00	-28.79	3	Horizontal	237	1.70
2437MHz	Pass	PK	7.31012G	51.21	74.00	-22.79	3	Horizontal	298	1.09
2457MHz	Pass	AV	2.458G	105.31	Inf	-Inf	3	Vertical	8	1.01
2457MHz	Pass	AV	2.4835G	50.42	54.00	-3.58	3	Vertical	8	1.01
2457MHz	Pass	PK	2.458G	113.44	Inf	-Inf	3	Vertical	8	1.01
2457MHz	Pass	PK	2.4836G	61.43	74.00	-12.57	3	Vertical	8	1.01
2457MHz	Pass	AV	2.4562G	106.89	Inf	-Inf	3	Horizontal	57	1.50
2457MHz	Pass	AV	2.4866G	49.45	54.00	-4.55	3	Horizontal	57	1.50
2457MHz	Pass	PK	2.4562G	115.30	Inf	-Inf	3	Horizontal	57	1.50
2457MHz	Pass	PK	2.487G	61.22	74.00	-12.78	3	Horizontal	57	1.50
2462MHz	Pass	AV	2.4628G	104.87	Inf	-Inf	3	Vertical	10	1.41
2462MHz	Pass	AV	2.4835G	51.69	54.00	-2.31	3	Vertical	10	1.41
2462MHz	Pass	PK	2.4632G	113.60	Inf	-Inf	3	Vertical	10	1.41
2462MHz	Pass	PK	2.484G	63.37	74.00	-10.63	3	Vertical	10	1.41
2462MHz	Pass	AV	2.4612G	107.04	Inf	-Inf	3	Horizontal	56	1.53
2462MHz	Pass	AV	2.4835G	50.39	54.00	-3.61	3	Horizontal	56	1.53
2462MHz	Pass	PK	2.4612G	115.42	Inf	-Inf	3	Horizontal	56	1.53
2462MHz	Pass	PK	2.4856G	61.88	74.00	-12.12	3	Horizontal	56	1.53
2462MHz	Pass	AV	4.91448G	33.09	54.00	-20.91	3	Vertical	76	1.16
2462MHz	Pass	AV	7.3768G	38.62	54.00	-15.38	3	Vertical	270	2.50

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2462MHz	Pass	PK	4.92528G	45.19	74.00	-28.81	3	Vertical	76	1.16
2462MHz	Pass	PK	7.3768G	50.73	74.00	-23.27	3	Vertical	270	2.50
2462MHz	Pass	AV	4.92204G	32.93	54.00	-21.07	3	Horizontal	235	1.61
2462MHz	Pass	AV	7.38252G	38.62	54.00	-15.38	3	Horizontal	176	1.45
2462MHz	Pass	PK	4.92844G	44.84	74.00	-29.16	3	Horizontal	235	1.61
2462MHz	Pass	PK	7.39356G	50.19	74.00	-23.81	3	Horizontal	176	1.45
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	49.68	54.00	-4.32	3	Vertical	7	1.50
2412MHz	Pass	AV	2.4128G	102.53	Inf	-Inf	3	Vertical	7	1.50
2412MHz	Pass	PK	2.39G	62.13	74.00	-11.87	3	Vertical	7	1.50
2412MHz	Pass	PK	2.4132G	114.70	Inf	-Inf	3	Vertical	7	1.50
2412MHz	Pass	AV	2.39G	53.85	54.00	-0.15	3	Horizontal	322	1.50
2412MHz	Pass	AV	2.4108G	104.77	Inf	-Inf	3	Horizontal	322	1.50
2412MHz	Pass	PK	2.3898G	66.78	74.00	-7.22	3	Horizontal	322	1.50
2412MHz	Pass	PK	2.4112G	116.99	Inf	-Inf	3	Horizontal	322	1.50
2412MHz	Pass	AV	4.81676G	32.27	54.00	-21.73	3	Vertical	9	1.66
2412MHz	Pass	PK	4.81524G	44.57	74.00	-29.43	3	Vertical	9	1.66
2412MHz	Pass	AV	4.82204G	32.34	54.00	-21.66	3	Horizontal	319	1.50
2412MHz	Pass	PK	4.83088G	44.50	74.00	-29.50	3	Horizontal	319	1.50
2417MHz	Pass	AV	2.39G	48.72	54.00	-5.28	3	Vertical	3	1.50
2417MHz	Pass	AV	2.4178G	103.23	Inf	-Inf	3	Vertical	3	1.50
2417MHz	Pass	PK	2.39G	61.40	74.00	-12.60	3	Vertical	3	1.50
2417MHz	Pass	PK	2.4186G	115.07	Inf	-Inf	3	Vertical	3	1.50
2417MHz	Pass	AV	2.386G	48.62	54.00	-5.38	3	Horizontal	321	1.50
2417MHz	Pass	AV	2.4156G	105.47	Inf	-Inf	3	Horizontal	321	1.50
2417MHz	Pass	PK	2.3868G	61.57	74.00	-12.43	3	Horizontal	321	1.50
2417MHz	Pass	PK	2.4154G	117.60	Inf	-Inf	3	Horizontal	321	1.50
2437MHz	Pass	AV	2.3898G	50.74	54.00	-3.26	3	Vertical	4	1.45
2437MHz	Pass	AV	2.4378G	107.38	Inf	-Inf	3	Vertical	4	1.45
2437MHz	Pass	AV	2.4846G	49.54	54.00	-4.46	3	Vertical	4	1.45
2437MHz	Pass	PK	2.3874G	62.95	74.00	-11.05	3	Vertical	4	1.45
2437MHz	Pass	PK	2.4382G	119.17	Inf	-Inf	3	Vertical	4	1.45
2437MHz	Pass	PK	2.4846G	61.80	74.00	-12.20	3	Vertical	4	1.45
2437MHz	Pass	AV	2.3878G	50.64	54.00	-3.36	3	Horizontal	319	1.03
2437MHz	Pass	AV	2.4358G	108.68	Inf	-Inf	3	Horizontal	319	1.03
2437MHz	Pass	AV	2.4835G	51.93	54.00	-2.07	3	Horizontal	319	1.03
2437MHz	Pass	PK	2.3858G	63.31	74.00	-10.69	3	Horizontal	319	1.03
2437MHz	Pass	PK	2.4362G	120.38	Inf	-Inf	3	Horizontal	319	1.03
2437MHz	Pass	PK	2.4835G	63.46	74.00	-10.54	3	Horizontal	319	1.03
2437MHz	Pass	AV	4.8682G	32.72	54.00	-21.28	3	Vertical	221	2.00
2437MHz	Pass	AV	7.32028G	38.42	54.00	-15.58	3	Vertical	287	1.50
2437MHz	Pass	PK	4.86432G	44.65	74.00	-29.35	3	Vertical	221	2.00
2437MHz	Pass	PK	7.31088G	50.69	74.00	-23.31	3	Vertical	287	1.50
2437MHz	Pass	AV	4.86808G	32.68	54.00	-21.32	3	Horizontal	189	2.67
2437MHz	Pass	AV	7.31856G	38.50	54.00	-15.50	3	Horizontal	310	1.24
2437MHz	Pass	PK	4.87576G	45.12	74.00	-28.88	3	Horizontal	189	2.67
2437MHz	Pass	PK	7.31784G	52.15	74.00	-21.85	3	Horizontal	310	1.24
2457MHz	Pass	AV	2.4582G	104.65	Inf	-Inf	3	Vertical	11	1.63
2457MHz	Pass	AV	2.4892G	49.43	54.00	-4.57	3	Vertical	11	1.63
2457MHz	Pass	PK	2.4578G	116.94	Inf	-Inf	3	Vertical	11	1.63
2457MHz	Pass	PK	2.4884G	61.80	74.00	-12.20	3	Vertical	11	1.63
2457MHz	Pass	AV	2.456G	106.12	Inf	-Inf	3	Horizontal	57	1.50
2457MHz	Pass	AV	2.4838G	51.04	54.00	-2.96	3	Horizontal	57	1.50
2457MHz	Pass	PK	2.4562G	117.97	Inf	-Inf	3	Horizontal	57	1.50
2457MHz	Pass	PK	2.486G	64.09	74.00	-9.91	3	Horizontal	57	1.50
2462MHz	Pass	AV	2.4634G	102.87	Inf	-Inf	3	Vertical	10	1.64
2462MHz	Pass	AV	2.4835G	50.14	54.00	-3.86	3	Vertical	10	1.64
2462MHz	Pass	PK	2.4638G	115.42	Inf	-Inf	3	Vertical	10	1.64
2462MHz	Pass	PK	2.484G	62.32	74.00	-11.68	3	Vertical	10	1.64
2462MHz	Pass	AV	2.461G	104.21	Inf	-Inf	3	Horizontal	56	1.50
2462MHz	Pass	AV	2.4835G	49.79	54.00	-4.21	3	Horizontal	56	1.50
2462MHz	Pass	PK	2.46G	116.37	Inf	-Inf	3	Horizontal	56	1.50



RSE TX above 1GHz Non-Beamforming

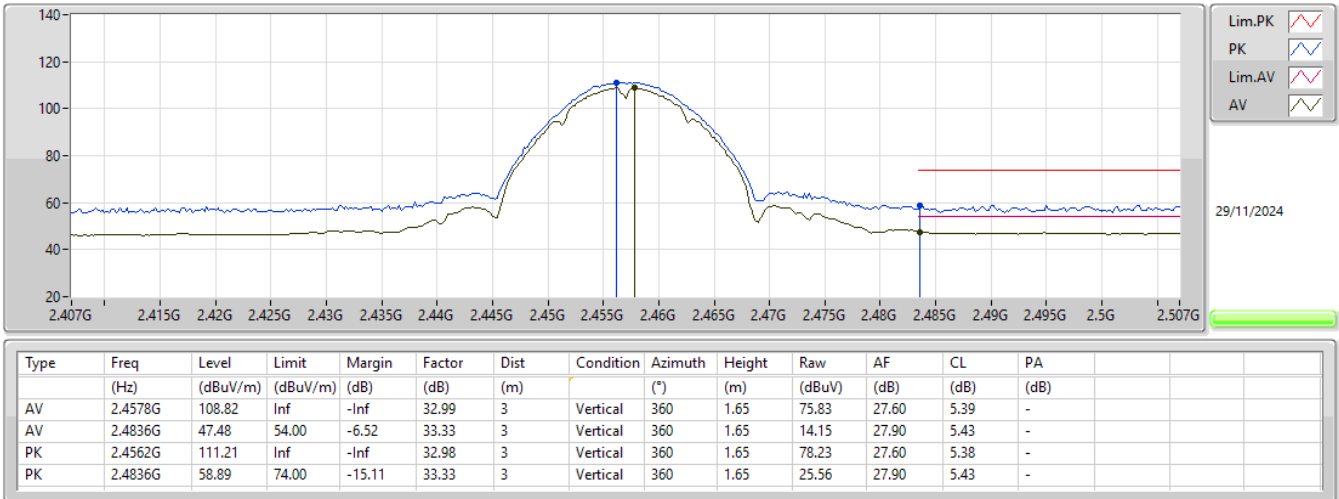
Appendix F.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2462MHz	Pass	PK	2.4836G	62.85	74.00	-11.15	3	Horizontal	56	1.50
2462MHz	Pass	AV	4.92268G	32.45	54.00	-21.55	3	Vertical	277	1.50
2462MHz	Pass	AV	7.37692G	38.09	54.00	-15.91	3	Vertical	356	2.83
2462MHz	Pass	PK	4.91984G	45.30	74.00	-28.70	3	Vertical	277	1.50
2462MHz	Pass	PK	7.38116G	50.27	74.00	-23.73	3	Vertical	356	2.83
2462MHz	Pass	AV	4.91432G	32.49	54.00	-21.51	3	Horizontal	217	2.78
2462MHz	Pass	AV	7.37752G	38.07	54.00	-15.93	3	Horizontal	84	2.82
2462MHz	Pass	PK	4.92664G	45.02	74.00	-28.98	3	Horizontal	217	2.78
2462MHz	Pass	PK	7.38056G	50.12	74.00	-23.88	3	Horizontal	84	2.82
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	AV	2.3896G	49.16	54.00	-4.84	3	Vertical	4	1.50
2422MHz	Pass	AV	2.4228G	98.19	Inf	-Inf	3	Vertical	4	1.50
2422MHz	Pass	AV	2.4835G	46.91	54.00	-7.09	3	Vertical	4	1.50
2422MHz	Pass	PK	2.388G	61.46	74.00	-12.54	3	Vertical	4	1.50
2422MHz	Pass	PK	2.424G	110.17	Inf	-Inf	3	Vertical	4	1.50
2422MHz	Pass	PK	2.4892G	59.20	74.00	-14.80	3	Vertical	4	1.50
2422MHz	Pass	AV	2.39G	51.79	54.00	-2.21	3	Horizontal	317	1.50
2422MHz	Pass	AV	2.4204G	100.34	Inf	-Inf	3	Horizontal	317	1.50
2422MHz	Pass	AV	2.484G	47.07	54.00	-6.93	3	Horizontal	317	1.50
2422MHz	Pass	PK	2.3892G	64.90	74.00	-9.10	3	Horizontal	317	1.50
2422MHz	Pass	PK	2.4184G	112.16	Inf	-Inf	3	Horizontal	317	1.50
2422MHz	Pass	PK	2.4992G	59.63	74.00	-14.37	3	Horizontal	317	1.50
2422MHz	Pass	AV	4.8444G	32.46	54.00	-21.54	3	Vertical	3	1.50
2422MHz	Pass	AV	7.25048G	38.45	54.00	-15.55	3	Vertical	228	1.50
2422MHz	Pass	PK	4.8612G	45.14	74.00	-28.86	3	Vertical	3	1.50
2422MHz	Pass	PK	7.28456G	50.84	74.00	-23.16	3	Vertical	228	1.50
2422MHz	Pass	AV	4.84896G	32.40	54.00	-21.60	3	Horizontal	189	2.08
2422MHz	Pass	AV	7.252G	38.46	54.00	-15.54	3	Horizontal	162	1.50
2422MHz	Pass	PK	4.848G	44.86	74.00	-29.14	3	Horizontal	189	2.08
2422MHz	Pass	PK	7.27024G	50.84	74.00	-23.16	3	Horizontal	162	1.50
2427MHz	Pass	AV	2.3898G	50.09	54.00	-3.91	3	Vertical	7	1.48
2427MHz	Pass	AV	2.4282G	100.21	Inf	-Inf	3	Vertical	7	1.48
2427MHz	Pass	AV	2.4902G	47.18	54.00	-6.82	3	Vertical	7	1.48
2427MHz	Pass	PK	2.3898G	62.71	74.00	-11.29	3	Vertical	7	1.48
2427MHz	Pass	PK	2.4282G	111.79	Inf	-Inf	3	Vertical	7	1.48
2427MHz	Pass	PK	2.495G	59.28	74.00	-14.72	3	Vertical	7	1.48
2427MHz	Pass	AV	2.3898G	50.57	54.00	-3.43	3	Horizontal	325	1.15
2427MHz	Pass	AV	2.4262G	100.91	Inf	-Inf	3	Horizontal	325	1.15
2427MHz	Pass	AV	2.4858G	47.38	54.00	-6.62	3	Horizontal	325	1.15
2427MHz	Pass	PK	2.3882G	63.28	74.00	-10.72	3	Horizontal	325	1.15
2427MHz	Pass	PK	2.4254G	112.51	Inf	-Inf	3	Horizontal	325	1.15
2427MHz	Pass	PK	2.4886G	59.66	74.00	-14.34	3	Horizontal	325	1.15
2437MHz	Pass	AV	2.3898G	49.86	54.00	-4.14	3	Vertical	6	1.46
2437MHz	Pass	AV	2.4382G	101.34	Inf	-Inf	3	Vertical	6	1.46
2437MHz	Pass	AV	2.4862G	49.40	54.00	-4.60	3	Vertical	6	1.46
2437MHz	Pass	PK	2.3894G	61.97	74.00	-12.03	3	Vertical	6	1.46
2437MHz	Pass	PK	2.4374G	112.25	Inf	-Inf	3	Vertical	6	1.46
2437MHz	Pass	PK	2.4862G	62.42	74.00	-11.58	3	Vertical	6	1.46
2437MHz	Pass	AV	2.3878G	50.24	54.00	-3.76	3	Horizontal	326	1.46
2437MHz	Pass	AV	2.4358G	102.17	Inf	-Inf	3	Horizontal	326	1.46
2437MHz	Pass	AV	2.4846G	51.44	54.00	-2.56	3	Horizontal	326	1.46
2437MHz	Pass	PK	2.3878G	64.31	74.00	-9.69	3	Horizontal	326	1.46
2437MHz	Pass	PK	2.4354G	114.77	Inf	-Inf	3	Horizontal	326	1.46
2437MHz	Pass	PK	2.4858G	66.08	74.00	-7.92	3	Horizontal	326	1.46
2437MHz	Pass	AV	4.86256G	32.48	54.00	-21.52	3	Vertical	138	1.10
2437MHz	Pass	AV	7.29164G	38.53	54.00	-15.47	3	Vertical	34	2.42
2437MHz	Pass	PK	4.87712G	44.68	74.00	-29.32	3	Vertical	138	1.10
2437MHz	Pass	PK	7.32388G	50.57	74.00	-23.43	3	Vertical	34	2.42
2437MHz	Pass	AV	4.86952G	32.47	54.00	-21.53	3	Horizontal	47	1.04
2437MHz	Pass	AV	7.32428G	38.51	54.00	-15.49	3	Horizontal	334	1.50
2437MHz	Pass	PK	4.87696G	44.31	74.00	-29.69	3	Horizontal	47	1.04
2437MHz	Pass	PK	7.29148G	50.37	74.00	-23.63	3	Horizontal	334	1.50

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2447MHz	Pass	AV	2.389G	46.67	54.00	-7.33	3	Vertical	8	1.37
2447MHz	Pass	AV	2.4486G	100.88	Inf	-Inf	3	Vertical	8	1.37
2447MHz	Pass	AV	2.4886G	50.85	54.00	-3.15	3	Vertical	8	1.37
2447MHz	Pass	PK	2.3502G	58.76	74.00	-15.24	3	Vertical	8	1.37
2447MHz	Pass	PK	2.449G	112.34	Inf	-Inf	3	Vertical	8	1.37
2447MHz	Pass	PK	2.4838G	65.03	74.00	-8.97	3	Vertical	8	1.37
2447MHz	Pass	AV	2.3862G	46.95	54.00	-7.05	3	Horizontal	56	1.63
2447MHz	Pass	AV	2.4458G	102.12	Inf	-Inf	3	Horizontal	56	1.63
2447MHz	Pass	AV	2.4846G	51.94	54.00	-2.06	3	Horizontal	56	1.63
2447MHz	Pass	PK	2.3866G	59.96	74.00	-14.04	3	Horizontal	56	1.63
2447MHz	Pass	PK	2.4454G	113.49	Inf	-Inf	3	Horizontal	56	1.63
2447MHz	Pass	PK	2.4854G	65.78	74.00	-8.22	3	Horizontal	56	1.63
2452MHz	Pass	AV	2.384G	46.09	54.00	-7.91	3	Vertical	10	1.36
2452MHz	Pass	AV	2.4536G	98.56	Inf	-Inf	3	Vertical	10	1.36
2452MHz	Pass	AV	2.4848G	51.49	54.00	-2.51	3	Vertical	10	1.36
2452MHz	Pass	PK	2.354G	58.92	74.00	-15.08	3	Vertical	10	1.36
2452MHz	Pass	PK	2.4544G	110.22	Inf	-Inf	3	Vertical	10	1.36
2452MHz	Pass	PK	2.4848G	67.03	74.00	-6.97	3	Vertical	10	1.36
2452MHz	Pass	AV	2.39G	46.25	54.00	-7.75	3	Horizontal	54	1.50
2452MHz	Pass	AV	2.4508G	100.18	Inf	-Inf	3	Horizontal	54	1.50
2452MHz	Pass	AV	2.4835G	51.73	54.00	-2.27	3	Horizontal	54	1.50
2452MHz	Pass	PK	2.3732G	58.63	74.00	-15.37	3	Horizontal	54	1.50
2452MHz	Pass	PK	2.4512G	112.17	Inf	-Inf	3	Horizontal	54	1.50
2452MHz	Pass	PK	2.4856G	65.21	74.00	-8.79	3	Horizontal	54	1.50
2452MHz	Pass	AV	4.91056G	32.53	54.00	-21.47	3	Vertical	360	1.50
2452MHz	Pass	AV	7.36192G	38.29	54.00	-15.71	3	Vertical	9	1.50
2452MHz	Pass	PK	4.90856G	45.19	74.00	-28.81	3	Vertical	360	1.50
2452MHz	Pass	PK	7.3632G	50.49	74.00	-23.51	3	Vertical	9	1.50
2452MHz	Pass	AV	4.90944G	32.58	54.00	-21.42	3	Horizontal	192	2.15
2452MHz	Pass	AV	7.36496G	38.35	54.00	-15.65	3	Horizontal	241	1.50
2452MHz	Pass	PK	4.90776G	44.44	74.00	-29.56	3	Horizontal	192	2.15
2452MHz	Pass	PK	7.37152G	50.61	74.00	-23.39	3	Horizontal	241	1.50

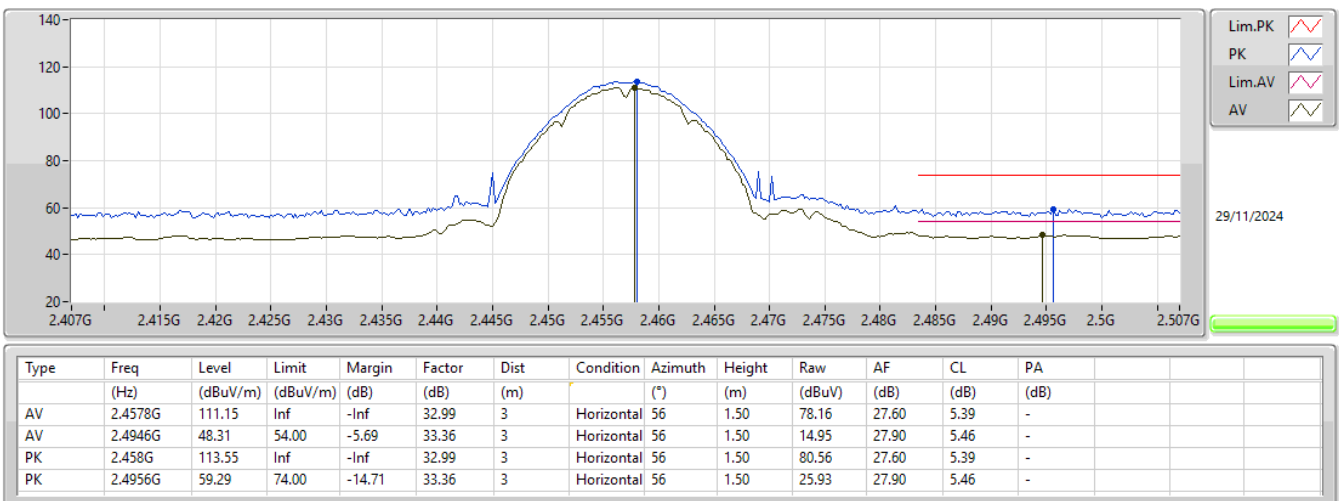
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

2457MHz_TX



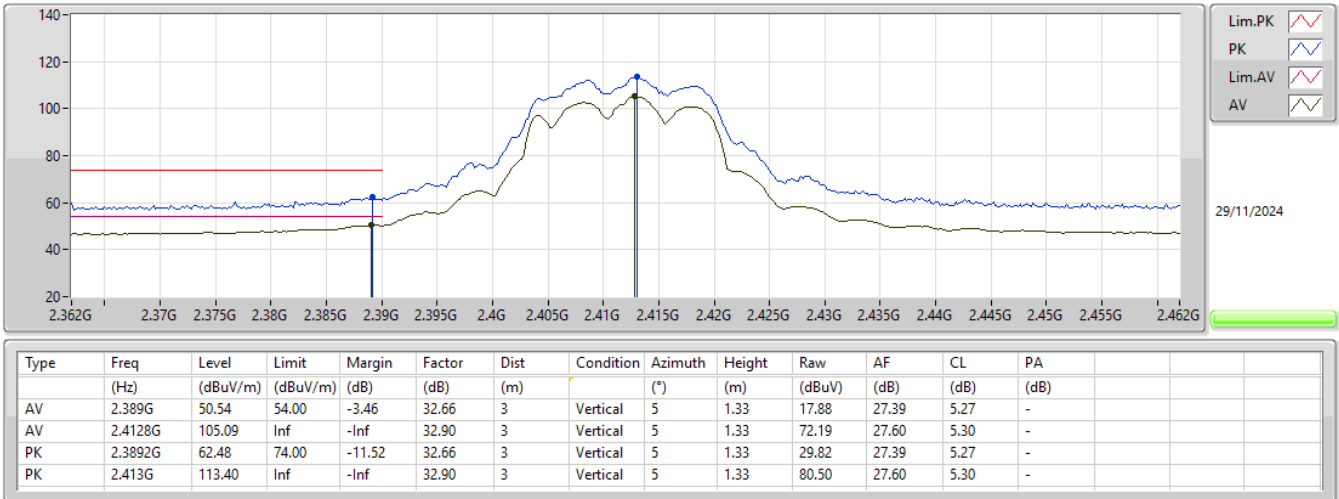
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

2457MHz_TX



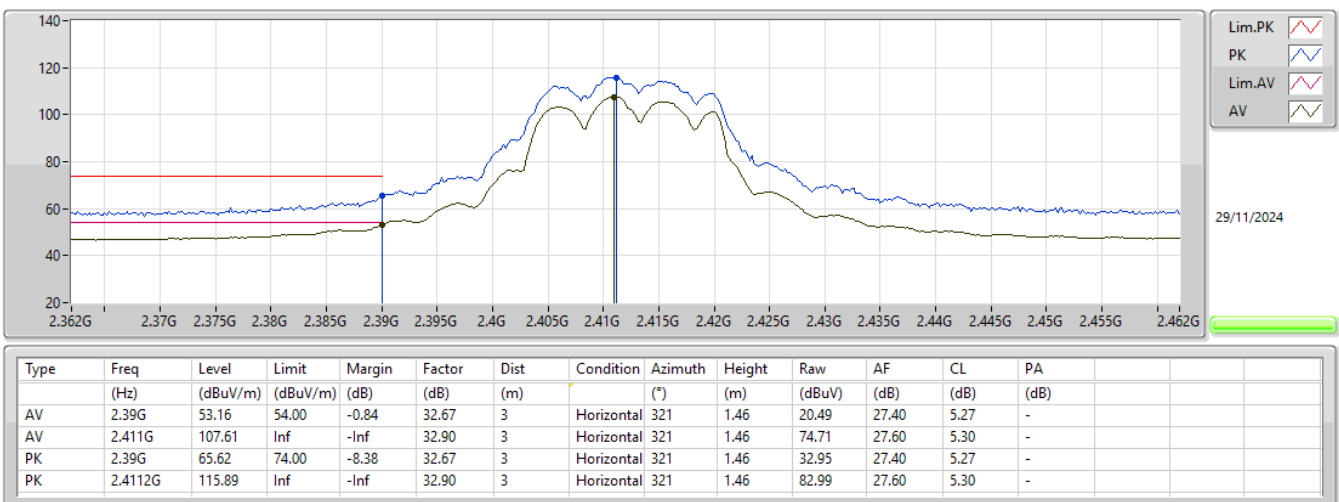
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

2412MHz_TX



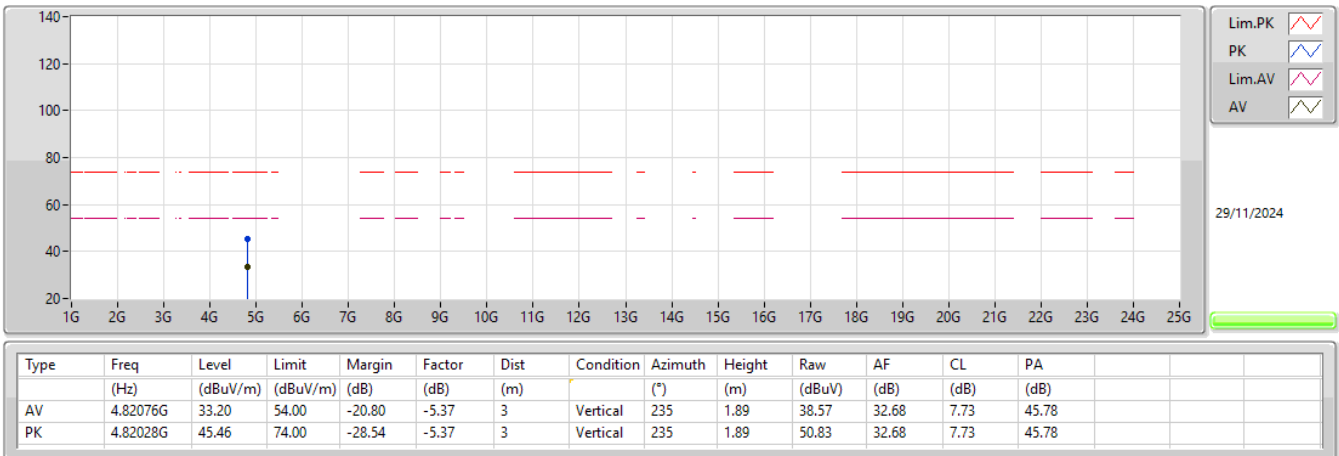
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

2412MHz_TX



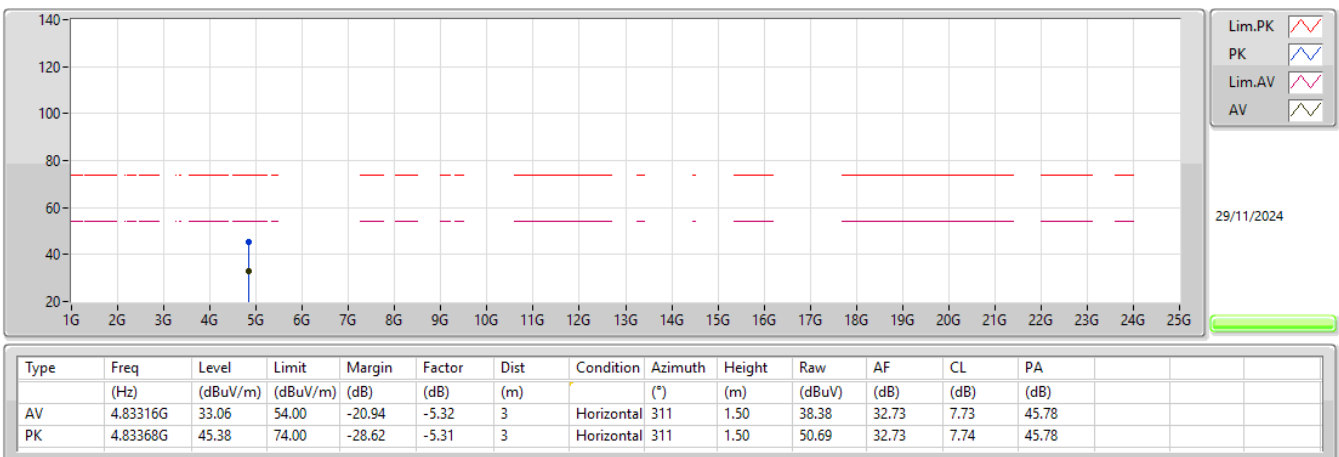
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

2412MHz_TX



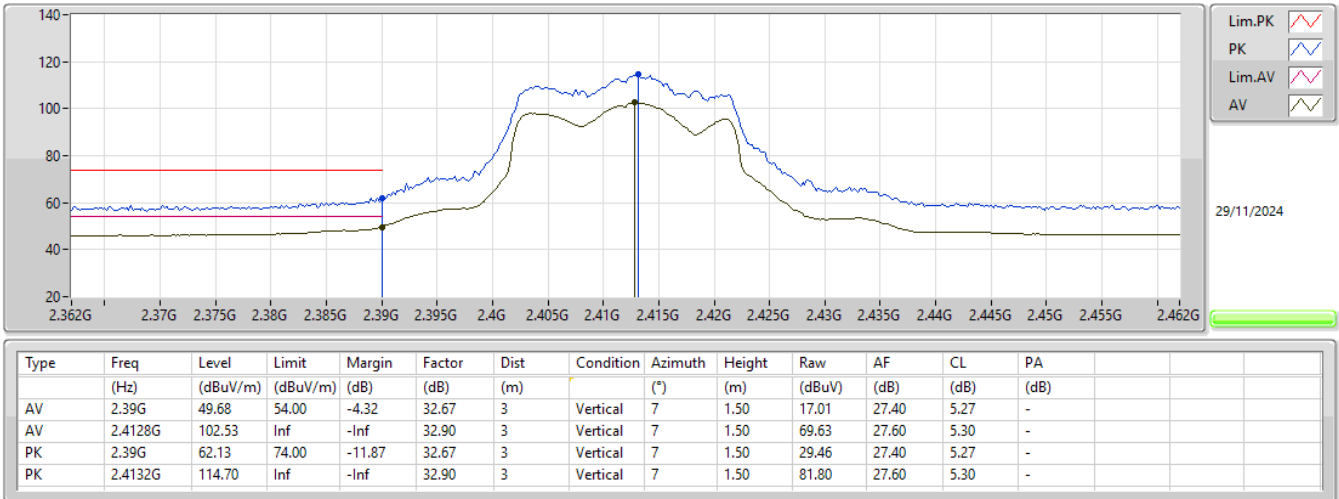
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

2412MHz_TX



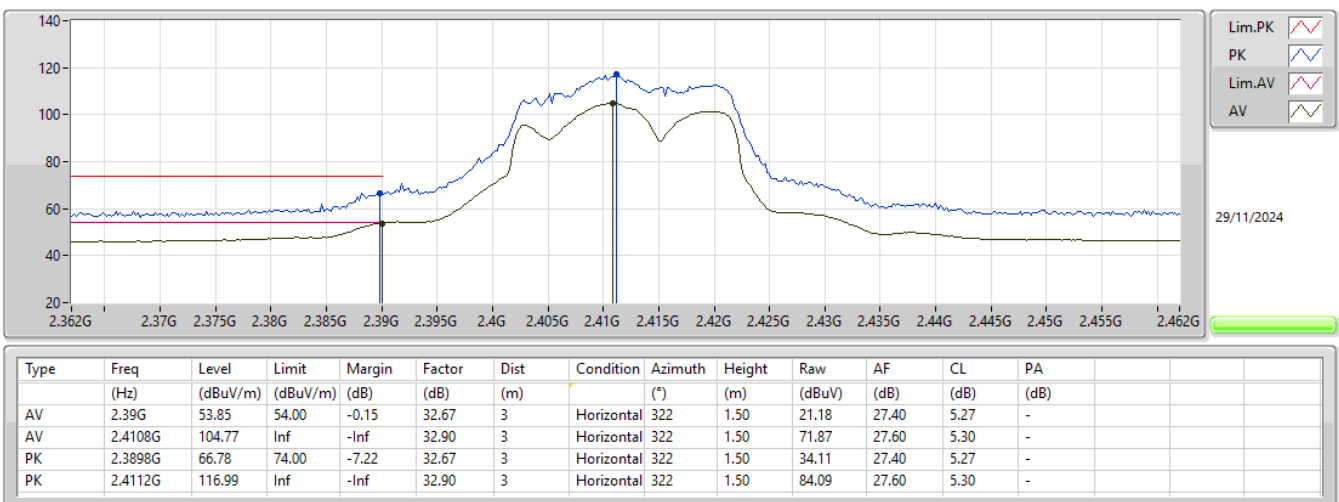
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

2412MHz_TX



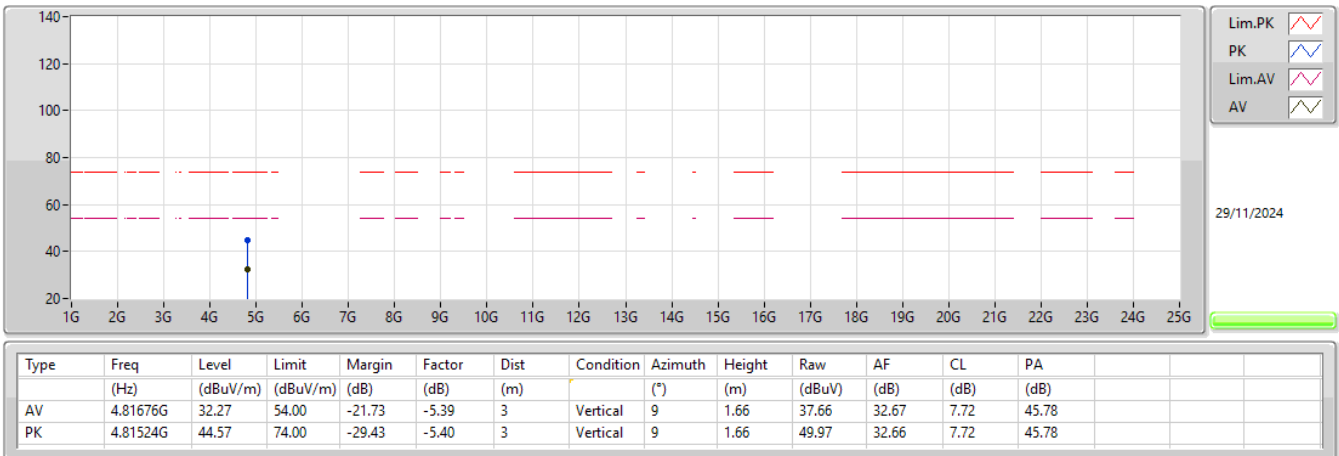
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

2412MHz_TX



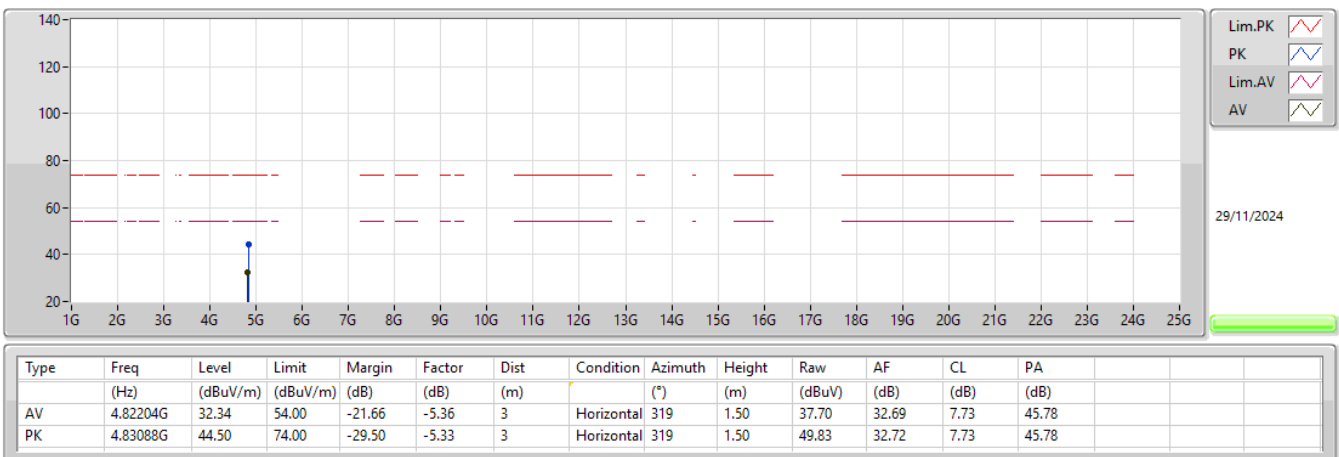
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

2412MHz_TX



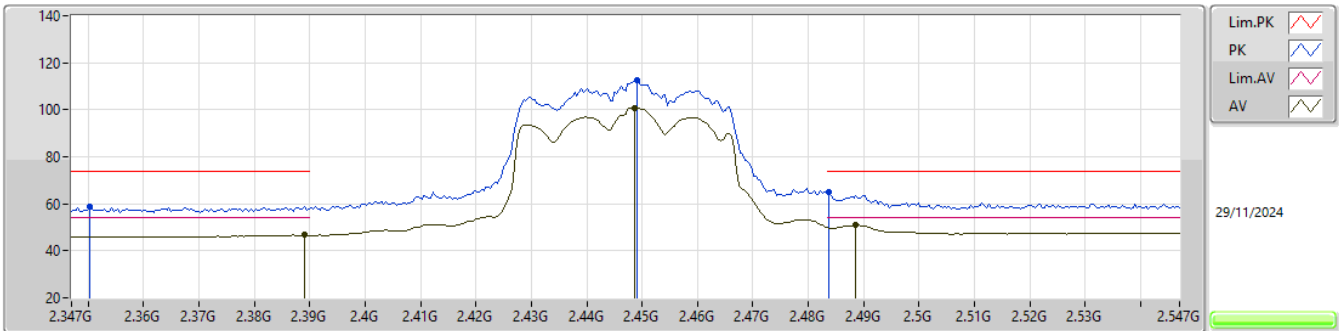
2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

2412MHz_TX



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

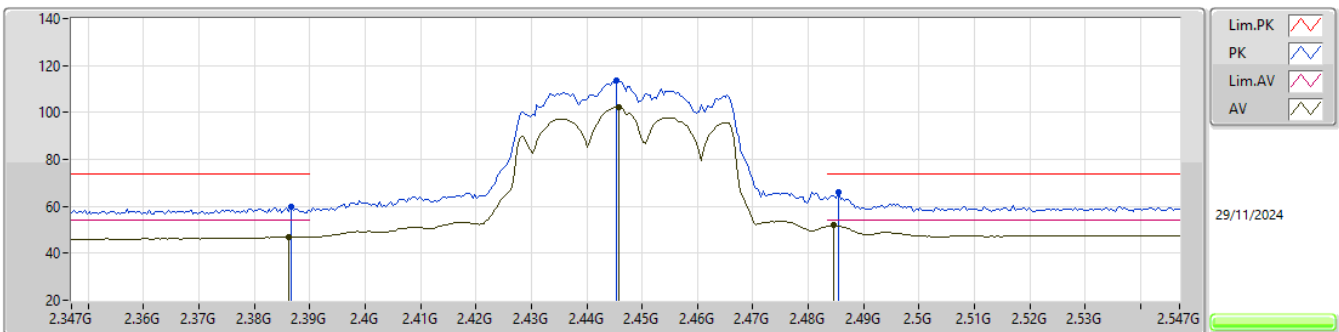
2447MHz_TX



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	2.389G	46.67	54.00	-7.33	32.66	3	Vertical	8	1.37	14.01	27.39	5.27	-
AV	2.4486G	100.88	Inf	-Inf	32.98	3	Vertical	8	1.37	67.90	27.61	5.37	-
AV	2.4886G	50.85	54.00	-3.15	33.34	3	Vertical	8	1.37	17.51	27.90	5.44	-
PK	2.3502G	58.76	74.00	-15.24	32.64	3	Vertical	8	1.37	26.12	27.40	5.24	-
PK	2.449G	112.34	Inf	-Inf	32.98	3	Vertical	8	1.37	79.36	27.61	5.37	-
PK	2.4838G	65.03	74.00	-8.97	33.34	3	Vertical	8	1.37	31.69	27.90	5.44	-

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

2447MHz_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	2.3862G	46.95	54.00	-7.05	32.63	3	Horizontal	56	1.63	14.32	27.36	5.27	-
AV	2.4458G	102.12	Inf	-Inf	33.00	3	Horizontal	56	1.63	69.12	27.64	5.36	-
AV	2.4846G	51.94	54.00	-2.06	33.34	3	Horizontal	56	1.63	18.60	27.90	5.44	-
PK	2.3866G	59.96	74.00	-14.04	32.64	3	Horizontal	56	1.63	27.32	27.37	5.27	-
PK	2.4454G	113.49	Inf	-Inf	33.01	3	Horizontal	56	1.63	80.48	27.65	5.36	-
PK	2.4854G	65.78	74.00	-8.22	33.34	3	Horizontal	56	1.63	32.44	27.90	5.44	-



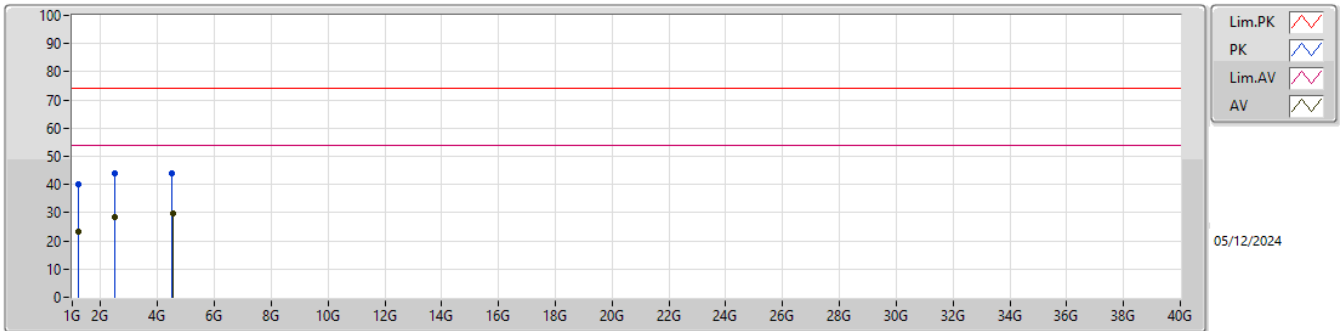
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	4.9725G	30.25	54.00	-23.75	Horizontal

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Mode 1	Pass	AV	1.19657G	23.35	54.00	-30.65	3	Vertical	256	1.99
Mode 1	Pass	AV	2.5161G	28.26	54.00	-25.74	3	Vertical	15	1.00
Mode 1	Pass	AV	4.5275G	29.83	54.00	-24.17	3	Vertical	41	2.00
Mode 1	Pass	PK	1.19657G	40.27	74.00	-33.73	3	Vertical	256	1.99
Mode 1	Pass	PK	2.5161G	44.14	74.00	-29.86	3	Vertical	15	1.00
Mode 1	Pass	PK	4.5125G	43.84	74.00	-30.16	3	Vertical	41	2.00
Mode 1	Pass	AV	1.91331G	24.09	54.00	-29.91	3	Horizontal	57	1.47
Mode 1	Pass	AV	3.23938G	26.94	54.00	-27.06	3	Horizontal	142	1.20
Mode 1	Pass	AV	4.9725G	30.25	54.00	-23.75	3	Horizontal	102	1.00
Mode 1	Pass	PK	1.91331G	37.93	74.00	-36.07	3	Horizontal	57	1.47
Mode 1	Pass	PK	3.22438G	41.64	74.00	-32.36	3	Horizontal	142	1.20
Mode 1	Pass	PK	4.9875G	44.00	74.00	-30.00	3	Horizontal	102	1.00

Radiated Emissions above 1GHz_Mode 1



Radiated Emissions above 1GHz_Mode 1

