

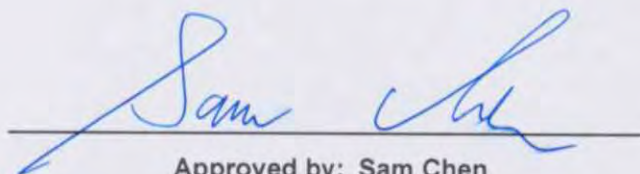
Testing Laboratory
3787

RADIO TEST REPORT

FCC ID : ZQ6-AP6611S
Equipment : Wi-Fi/Bluetooth Module
Brand Name : AMPAK Technology Inc
Model Name : AP6611S, AP12611_M2, WNFS-163AXI(BT)
Applicant : AMPAK Technology Inc.
3F, No. 1, Jen Ai Road, Hsinchu Industrial
Park, Hsinchu City 30352, Taiwan (R.O.C.)
Manufacturer : BILLIONTON SYSTEMS INC.
No. 21, Sui-Lih Rd., Hsin-Chu City 300, Taiwan (R.O.C.)
Standard : 47 CFR FCC Part 15.247

The product was received on Feb. 27, 2024, and testing was started from Mar. 01, 2024 and completed on Apr. 15, 2024. We, Sporton International Inc. Hsinchu 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. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_10 Ver1.3

Page Number : 3 of 29
Issued Date : May 02, 2024
Report Version : 01



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	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen**Report Producer: Sophia Shiung**



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]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX
2.4-2.4835GHz	VHT20	20	1TX
2.4-2.4835GHz	802.11ax HEW20	20	1TX

Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g and HT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

**1.1.2 Antenna Information**

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	PULSE ELECTRONICS PTE LTD	TZ2412W	Dipole	Reversed-SMA	Note 1

Note 1:

Ant.	Gain (dBi)			
	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth
1	3.68	4.65	4.62	3.68

Note 2: The above antenna gain doesn't include cable loss.

Cable Loss of Antenna:

Ant.	Cable Loss (dB)			
	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth
1	0.4	0.7	0.8	0.4

Note 3: For conducted measurement, the measurement port is from the reversed-SMA connector.

Note 4: The above information was declared by manufacturer.

Note 5: **For 2.4GHz function:****For IEEE 802.11 b/g/n/VHT/ax (1TX/1RX):**

Only Port 1 can be used as transmitting/receiving antenna.

For 5GHz function:**For IEEE 802.11a/n/ac/ax (1TX/1RX):**

Only Port 1 can be used as transmitting/receiving antenna.

For 6GHz function:**For IEEE 802.11ax (1TX/1RX):**

Only Port 1 can be used as transmitting/receiving antenna.

For Bluetooth function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
802.11b_Nss 1,(1D)	0.998	0.01	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g_Nss 1,(6D)	0.985	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ax HEW20_Nss 1,(M0)	0.979	0.09	1.488m	1k

Note:

- ♦ DC is Duty Cycle.
- ♦ DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Beamforming Function	<input type="checkbox"/>	With beamforming	<input checked="" type="checkbox"/>	Without beamforming
Function	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
Support RU	<input checked="" type="checkbox"/>	Full RU	<input type="checkbox"/>	Partial RU
Test Software Version	DOS [ver 6.1.7601]			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model Name	Description
AP6611S	All the models are identical, the different model names serve as marketing strategy.
AP12611_M2	
WNFS-163AXI(BT)	

Note 1: From the above models, model: AP6611S was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15.247
- ♦ ANSI C63.10-2013

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

- ♦ FCC KDB 558074 D01 v05r02
- ♦ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information				
Test Lab. : Sporton International Inc. Hsinchu Laboratory				
Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)				
(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085				
Test site Designation No. TW3787 with FCC.				
Conformity Assessment Body Identifier (CABID) TW3787 with ISCED.				

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Mason Chan	21.9~23.5 / 64~67	Mar. 01, 2024~ Mar. 15, 2024
Radiated < 1GHz	03CH05-CB	Roy Mai	21.9~22.4 / 55~58	Mar. 02, 2024~ Apr. 12, 2024
Radiated > 1GHz	03CH02-CB	Roy Mai	22~23 / 55~58	Mar. 02, 2024~ Apr. 12, 2024
	03CH04-CB		22.7~23.8 / 56~59	
AC Conduction	CO01-CB	Allen Chung	22~23 / 52~53	Apr. 15, 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
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode
802.11b_Nss1,(1Mbps)_1TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz
802.11g_Nss1,(6Mbps)_1TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz
802.11ax HEW20_Nss1,(MCS0)_1TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz

Note:

- ♦ Evaluated HEW20 mode only, due to similar modulation. The power setting of HT20 / VHT20 modes are the same or lower than HEW20.

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	EUT_Bluetooth
2	EUT_WLAN 2.4GHz
3	EUT_WLAN 5GHz
4	EUT_WLAN 6GHz
For operating, mode 1 is the worst case and it was recorded in this test report.	

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
	The EUT was performed at X axis, Y axis and Z axis positions with each function at Radiated measurement > 1GH, and the worst cases were found at Z axis for WLAN 2.4GHz, 6GHz and Bluetooth, and X axis for WLAN 5GHz. Thus, the measurement will follow these same test configurations.
	1 EUT in Z axis_Bluetooth
	2 EUT in Z axis_WLAN 2.4GHz
	3 EUT in X axis_WLAN 5GHz
	4 EUT in Z axis_WLAN 6GHz
For operating, mode 2 is the worst case and it was recorded in this test report.	
Operating Mode > 1GHz	CTX
	The EUT was performed at X axis, Y axis and Z axis positions, and the worst case was found at Z axis. Thus, the measurement will follow this same test configuration.
1	EUT in Z axis

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	EUT Fixture 1	AMPAK Technology Inc	AP12281_M2_V01	N/A
B	BT Fixture	AMPAK Technology Inc	UART_V07	N/A
C	NB	ASUS	PU401L	N/A
D	Power Supply	MOTECH	LPS-305	N/A
E	Earphone	e-Power	GT-02	N/A
F	Mouse	Logitech	M-UAE96	N/A
G	EUT Fixture 2	AMPAK Technology Inc	AP12611_M2	N/A

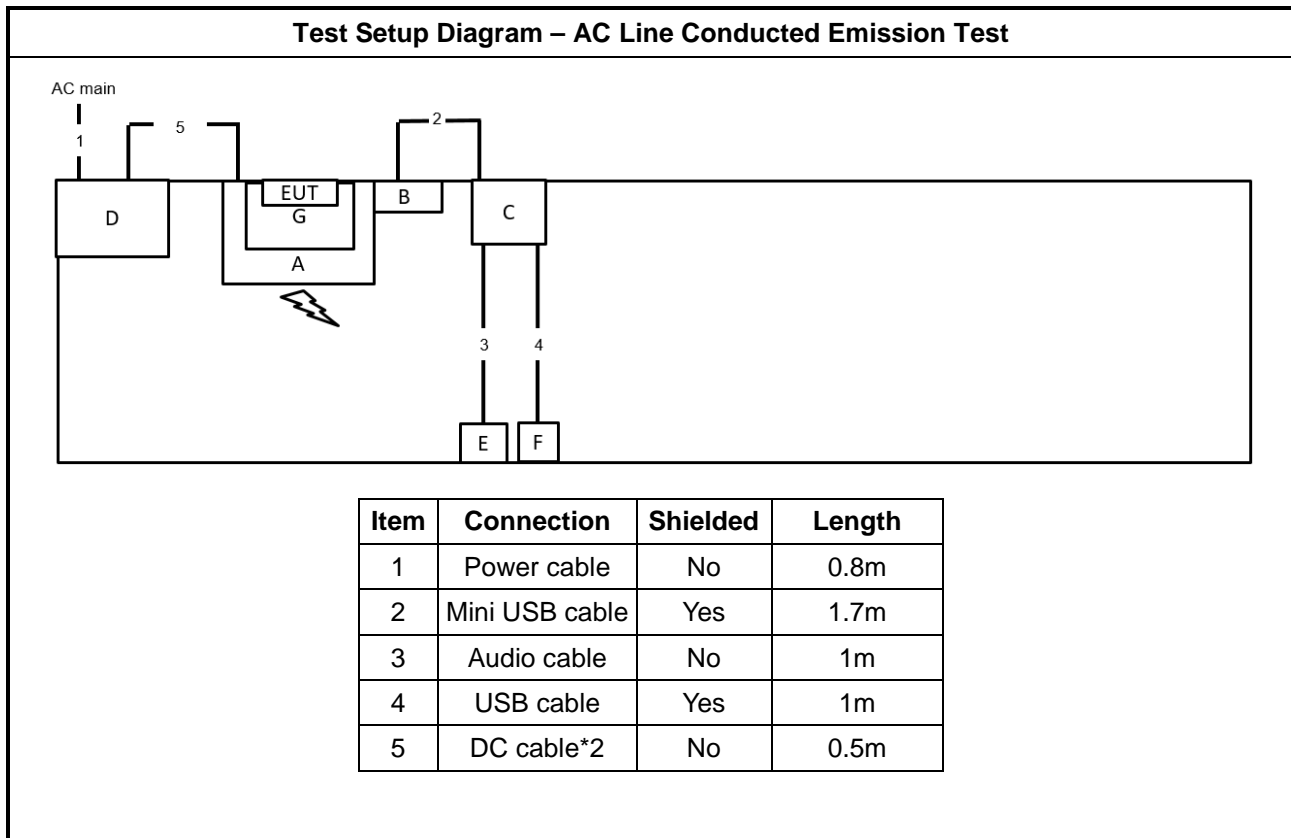
For Radiated:

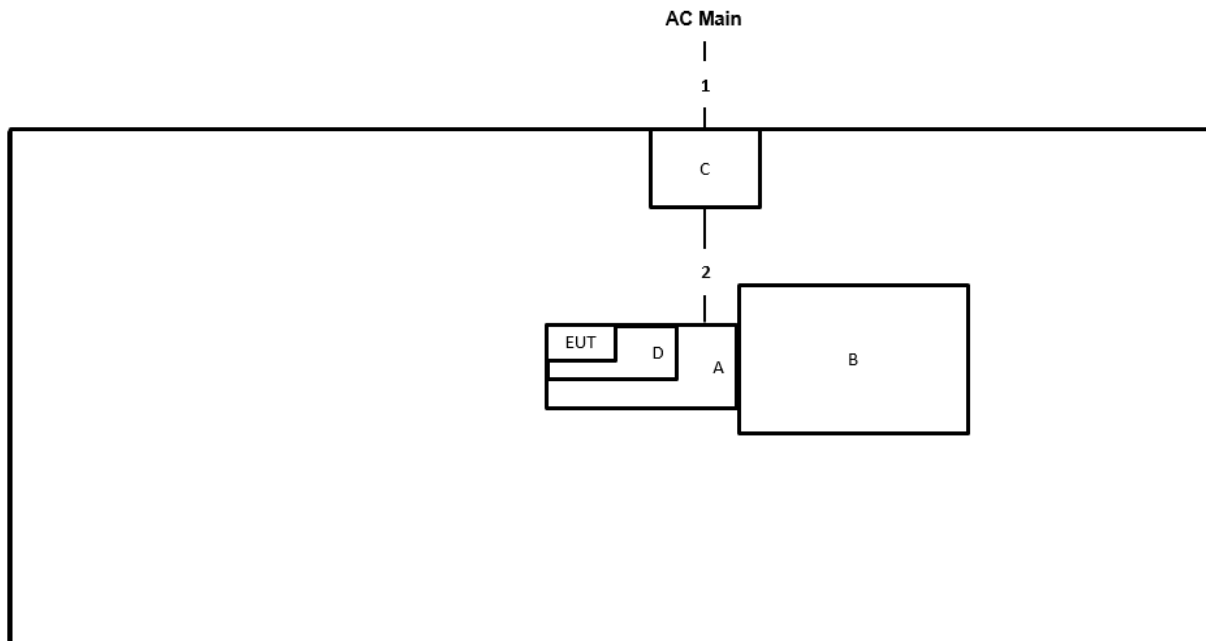
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	EUT Fixture 1	AMPAK Technology Inc	AP12281_M2_V01	N/A
B	WIFI Fixture	AMPAK Technology Inc	A113D_EVB_V01	N/A
C	Power Supply	MOTECH	LPS-305	N/A
D	EUT Fixture 2	AMPAK Technology Inc	AP12611_M2	N/A

For RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PC	AMPAK Technology Inc	H81-PLUS	N/A
B	EUT Fixture 1	AMPAK Technology Inc	AP12281_M2_V01	N/A
C	WIFI Fixture	AMPAK Technology Inc	AP6255_EVB_V01	N/A
D	EUT Fixture 2	AMPAK Technology Inc	AP12611_M2	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	Crocodile clip cable*2	No	0.3m



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.		

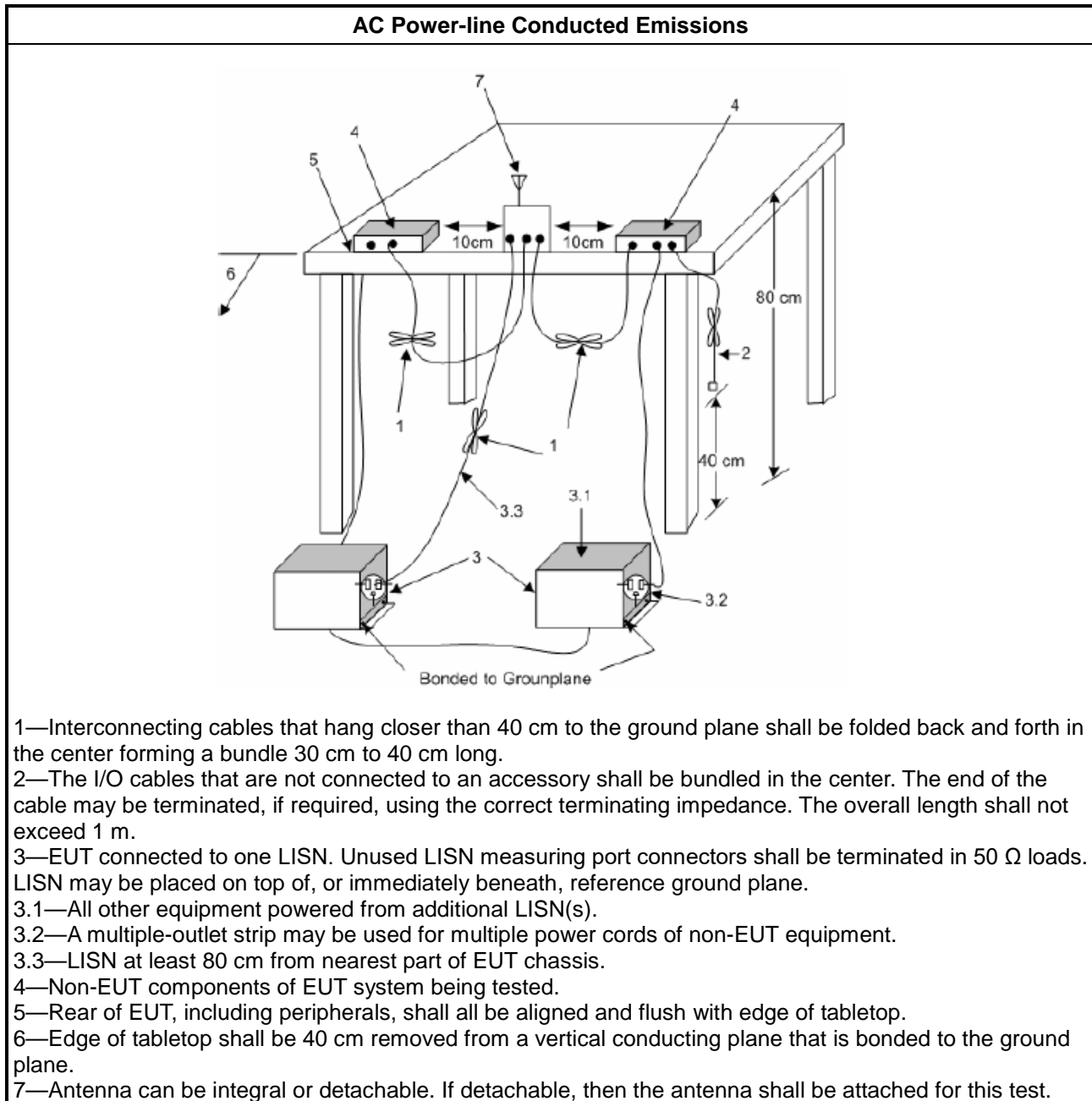
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- Margin = -Limit + Level

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:
<ul style="list-style-type: none"> 6 dB bandwidth \geq 500 kHz.

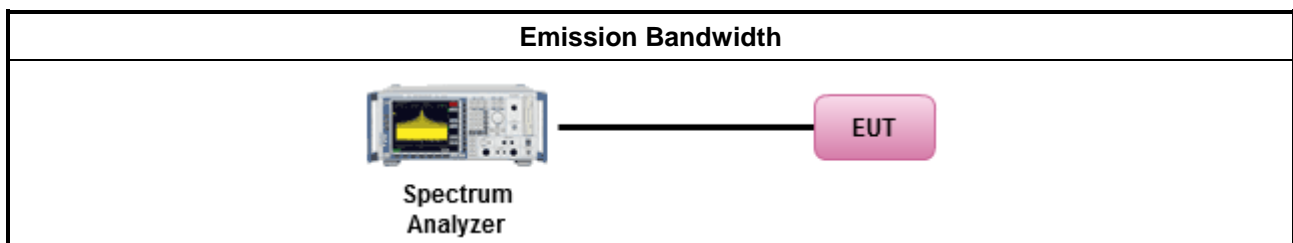
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 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 $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB 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.	

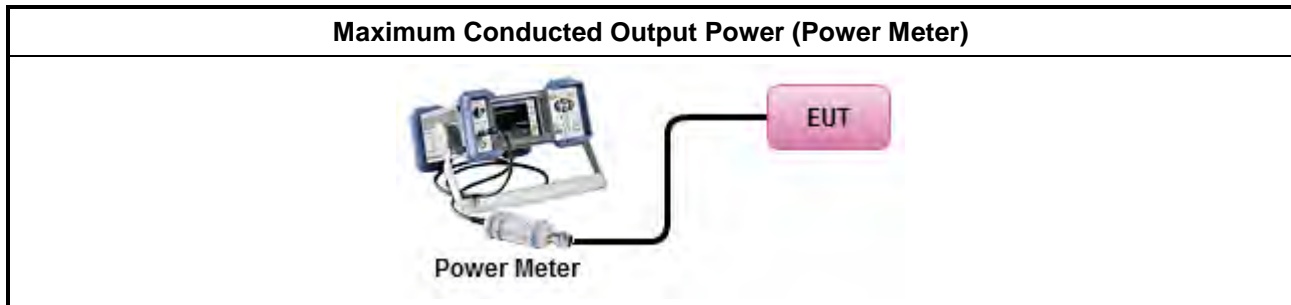
3.3.2 Measuring Instruments

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

**3.3.3 Test Procedures**

Test Method	
▪ Maximum Peak Conducted Output Power	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
[duty cycle ≥ 98% or external video / power trigger]	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
duty cycle < 98% and average over on/off periods with duty factor	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
Measurement using a power meter (PM)	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
▪ For conducted measurement.	
▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC 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

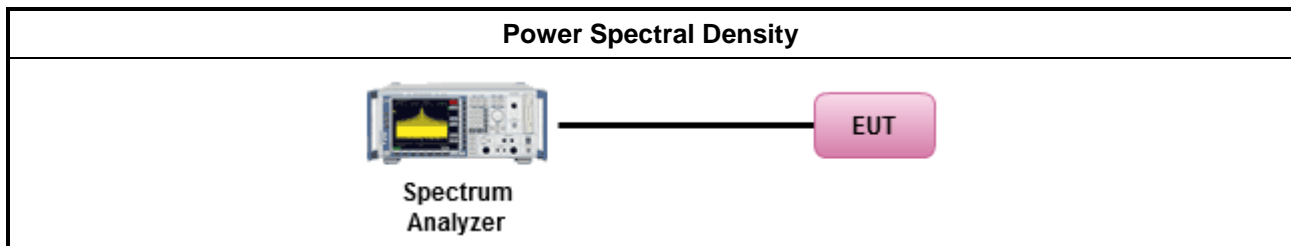
3.4.2 Measuring Instruments

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).	
<input checked="" type="checkbox"/>	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.
▪ For conducted measurement.	
▪ If The EUT supports multiple transmit chains using options given below:	
<input type="checkbox"/>	Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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.
<input type="checkbox"/>	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
<input type="checkbox"/>	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

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 (dBc)
Peak output power procedure	20
Average output power procedure	30
<p>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 PSD level.</p> <p>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 PSD level.</p>	

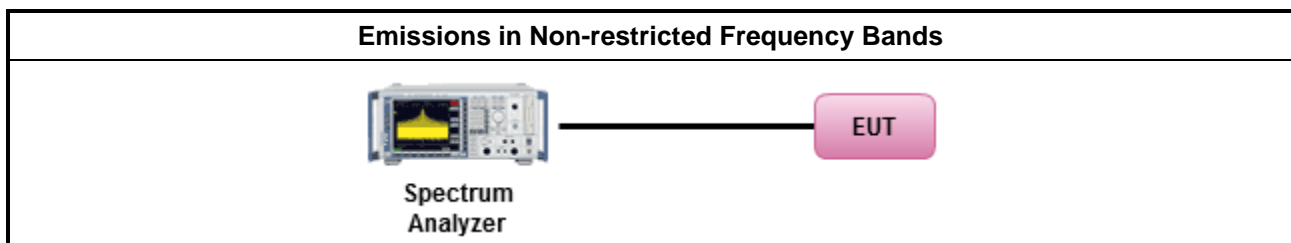
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted 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.

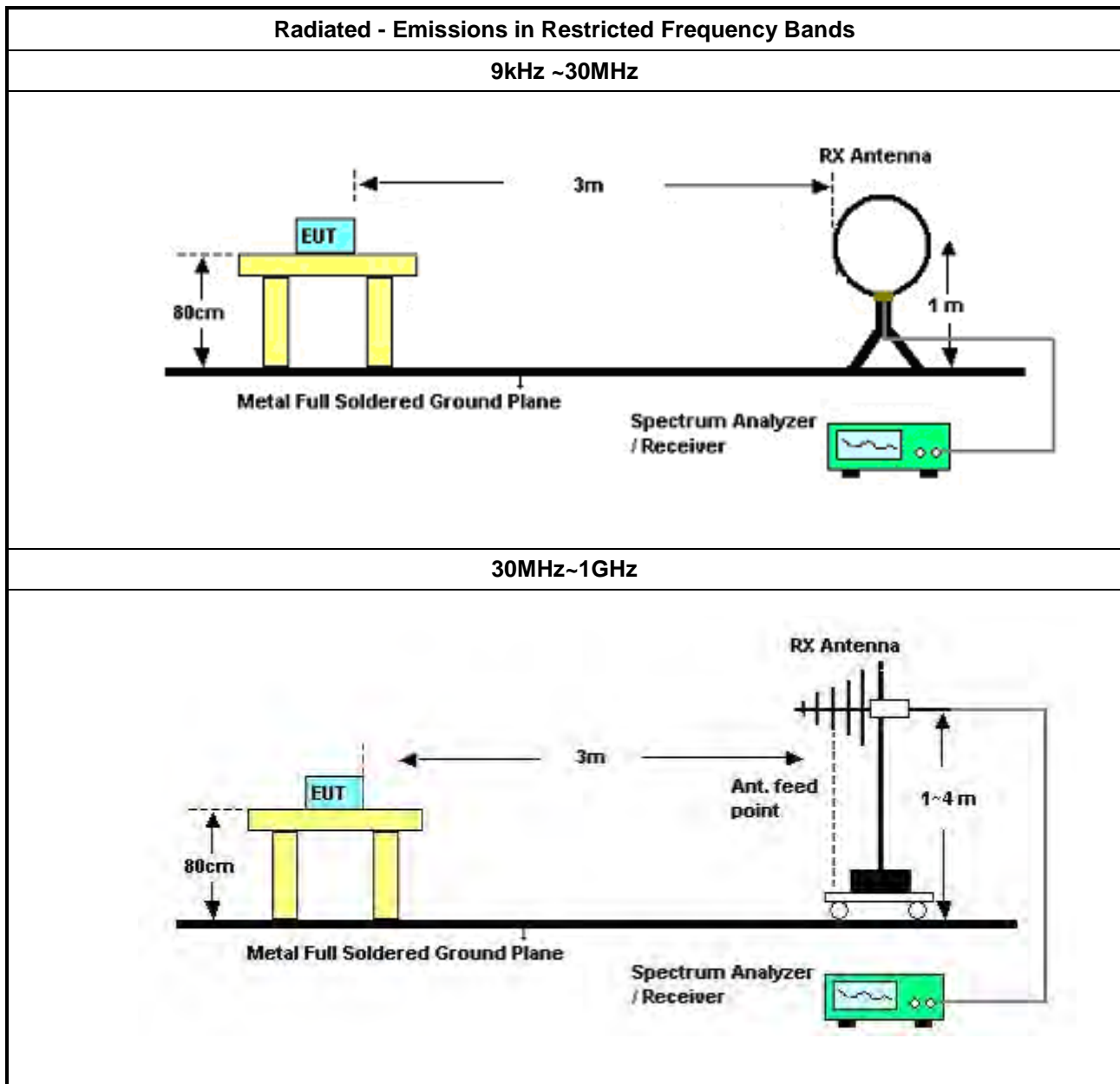
3.6.2 Measuring Instruments

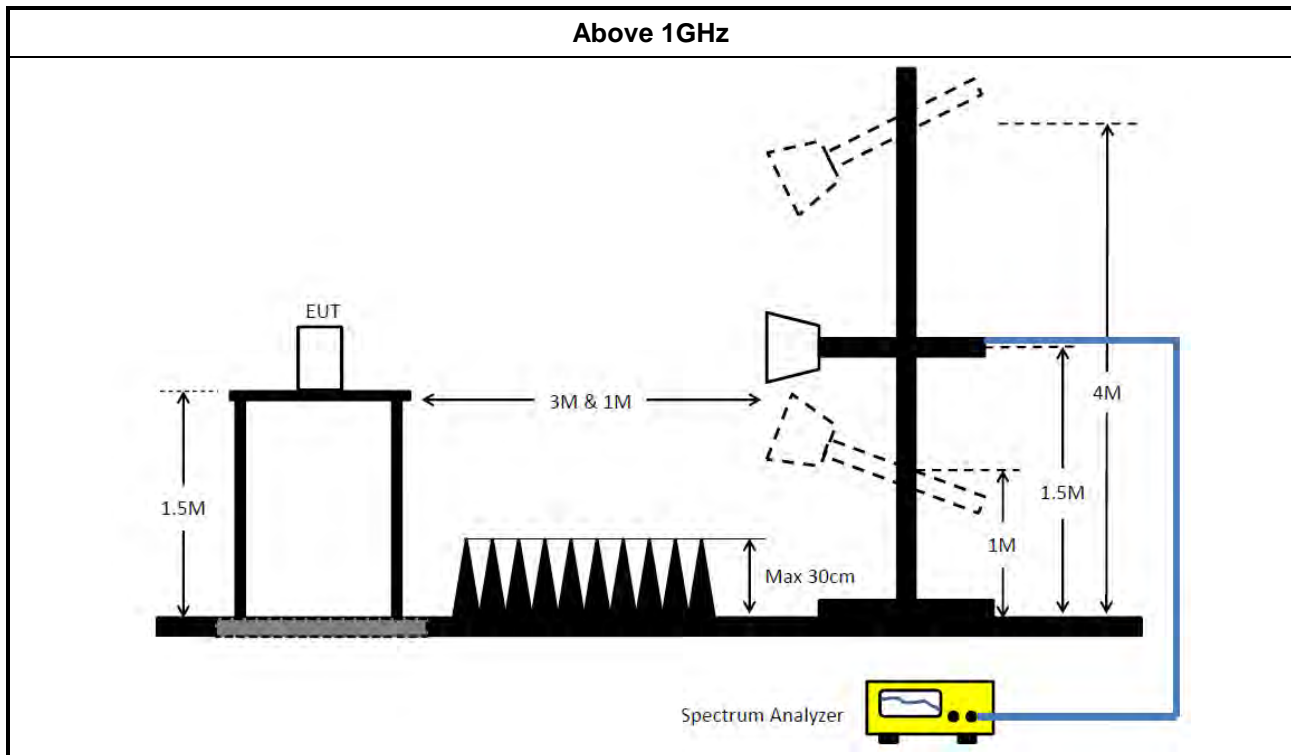
Refer a test equipment and calibration data table in this test report.

**3.6.3 Test Procedures**

Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 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 FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq 1/T$).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, 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 FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.6.4 Test Setup





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 01, 2024	Feb. 28, 2025	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 19, 2024	Feb. 18, 2025	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 08, 2024	Feb. 07, 2025	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 17, 2023	Oct. 16, 2024	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz ~ 30MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30MHz ~ 1GHz	Aug. 02, 2023	Aug. 01, 2024	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCi	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 24, 2023	Mar. 23, 2024	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCi	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 23, 2024	Mar. 22, 2025	Radiation (03CH05-CB)
Amplifier	EMCi	EMC330N	980331	20MHz ~ 3GHz	May 03, 2023	May 02, 2024	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Apr. 18, 2023	Apr. 17, 2024	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Dec. 06, 2023	Dec. 05, 2024	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 25, 2023	Mar. 24, 2024	Radiation (03CH02-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 24, 2024	Mar. 23, 2025	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 18, 2023	Apr. 17, 2024	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 24, 2023	Nov. 23, 2024	Radiation (03CH02-CB)
Signal Analyzer	R&S	FSV40	101903	9kHz ~ 40GHz	May 29, 2023	May 28, 2024	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 22, 2024	Feb. 21, 2025	Radiation (03CH04-CB)
Horn Antenna	ETS-Lindgren	3115	00143147	750MHz~18GHz	Oct. 04, 2023	Oct. 03, 2024	Radiation (03CH04-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH04-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 24, 2023	Nov. 23, 2024	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 21, 2023	Mar. 20, 2024	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 19, 2024	Mar. 18, 2025	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH04-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 29, 2023	May 28, 2024	Conducted (TH01-CB)
Switch	SPTCB	SP-SWI	SWI-01	1~26.5GHz	Oct. 03, 2023	Oct. 02, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)

**RADIO TEST REPORT****Report No. : FR412210AA**

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-09	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1GHz – 18GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	1339408	300MHz~40GHz	Sep. 12, 2023	Sep. 11, 2024	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1517009	300MHz~40GHz	Sep. 12, 2023	Sep. 11, 2024	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.



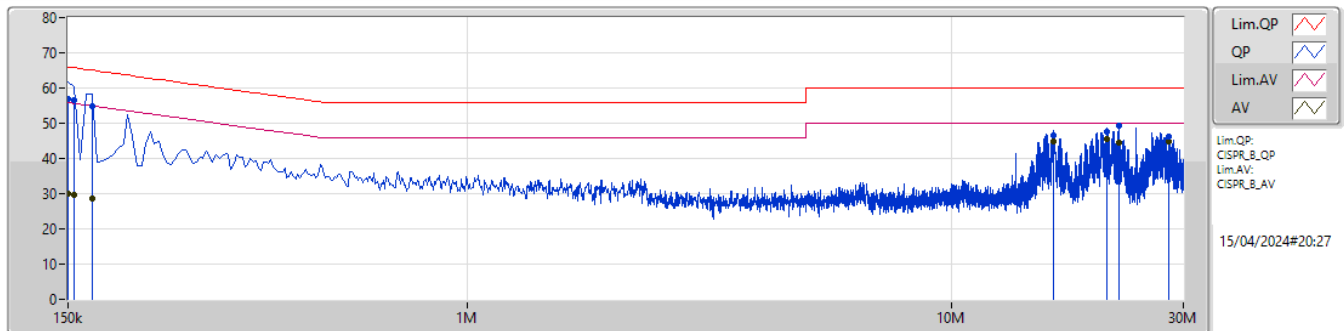
Conducted Emissions at Powerline

Appendix A

Summary

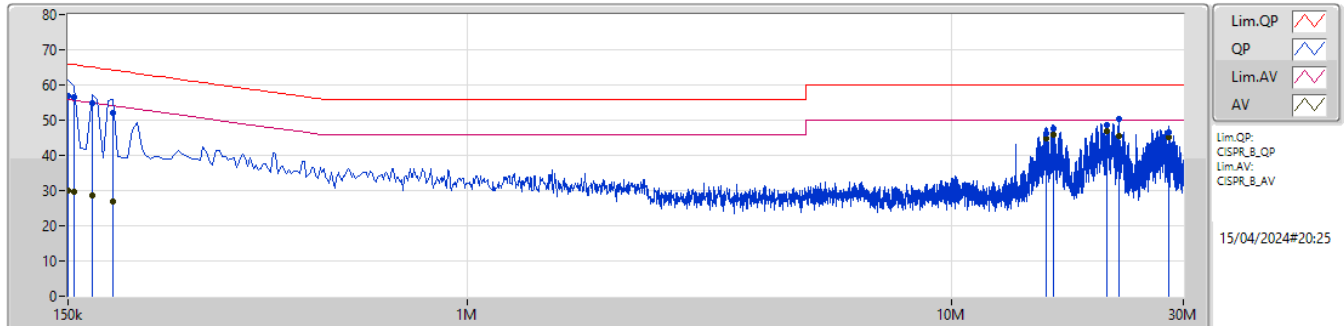
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	20.922M	46.89	50.00	-3.11	Neutral

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	57.06	66.00	-8.94	9.98	Line	-	47.08	0.09	0.02	9.87						
AV	150k	29.92	56.00	-26.08	9.98	Line	-	19.94	0.09	0.02	9.87						
QP	154.5k	56.55	65.75	-9.20	9.97	Line	-	46.58	0.09	0.02	9.86						
AV	154.5k	29.56	55.75	-26.19	9.97	Line	-	19.59	0.09	0.02	9.86						
QP	168k	54.89	65.06	-10.17	9.97	Line	-	44.92	0.09	0.02	9.86						
AV	168k	28.67	55.06	-26.39	9.97	Line	-	18.70	0.09	0.02	9.86						
QP	16.161M	46.65	60.00	-13.35	10.44	Line	-	36.21	0.28	0.19	9.97						
AV	16.161M	44.72	50.00	-5.28	10.44	Line	-	34.28	0.28	0.19	9.97						
QP	20.882M	47.54	60.00	-12.46	10.56	Line	-	36.98	0.30	0.23	10.03						
AV	20.882M	45.68	50.00	-4.32	10.56	Line	"Worst"	35.12	0.30	0.23	10.03						
QP	22.119M	49.45	60.00	-10.55	10.57	Line	-	38.88	0.31	0.23	10.03						
AV	22.119M	44.62	50.00	-5.38	10.57	Line	-	34.05	0.31	0.23	10.03						
QP	28.041M	46.22	60.00	-13.78	10.71	Line	-	35.51	0.33	0.32	10.06						
AV	28.041M	44.85	50.00	-5.15	10.71	Line	-	34.14	0.33	0.32	10.06						

Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT						
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)						
QP	150k	57.05	66.00	-8.95	9.96	Neutral	-	47.09	0.07	0.02	9.87						
AV	150k	29.96	56.00	-26.04	9.96	Neutral	-	20.00	0.07	0.02	9.87						
QP	154.5k	56.49	65.75	-9.26	9.95	Neutral	-	46.54	0.07	0.02	9.86						
AV	154.5k	29.53	55.75	-26.22	9.95	Neutral	-	19.58	0.07	0.02	9.86						
QP	168k	54.87	65.06	-10.19	9.95	Neutral	-	44.92	0.07	0.02	9.86						
AV	168k	28.65	55.06	-26.41	9.95	Neutral	-	18.70	0.07	0.02	9.86						
QP	186k	51.92	64.20	-12.28	9.94	Neutral	-	41.98	0.07	0.02	9.85						
AV	186k	26.98	54.20	-27.22	9.94	Neutral	-	17.04	0.07	0.02	9.85						
QP	15.603M	46.18	60.00	-13.82	10.41	Neutral	-	35.77	0.26	0.19	9.96						
AV	15.603M	44.69	50.00	-5.31	10.41	Neutral	-	34.28	0.26	0.19	9.96						
QP	16.161M	47.66	60.00	-12.34	10.42	Neutral	-	37.24	0.26	0.19	9.97						
AV	16.161M	45.86	50.00	-4.14	10.42	Neutral	-	35.44	0.26	0.19	9.97						
QP	20.922M	48.56	60.00	-11.44	10.55	Neutral	-	38.01	0.29	0.23	10.03						
AV	20.922M	46.89	50.00	-3.11	10.55	Neutral	"Worst"	36.34	0.29	0.23	10.03						
QP	22.119M	50.34	60.00	-9.66	10.57	Neutral	-	39.77	0.31	0.23	10.03						
AV	22.119M	45.43	50.00	-4.57	10.57	Neutral	-	34.86	0.31	0.23	10.03						
QP	28.041M	46.67	60.00	-13.33	10.77	Neutral	-	35.90	0.39	0.32	10.06						
AV	28.041M	45.28	50.00	-4.72	10.77	Neutral	-	34.51	0.39	0.32	10.06						

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)_1TX	7.775M	12.805M	12M8G1D	6.6M	10.847M
802.11g_Nss1,(6Mbps)_1TX	16.55M	17.703M	17M7D1D	16.425M	16.458M
802.11ax HEW20_Nss1,(MCS0)_1TX	19.2M	19.122M	19M1D1D	19.1M	18.962M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	7.05M	10.847M
2437MHz	Pass	500k	7.775M	12.805M
2462MHz	Pass	500k	6.6M	11.001M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.525M	16.458M
2437MHz	Pass	500k	16.55M	17.703M
2462MHz	Pass	500k	16.425M	16.518M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	19.15M	18.962M
2437MHz	Pass	500k	19.2M	19.122M
2462MHz	Pass	500k	19.1M	18.994M

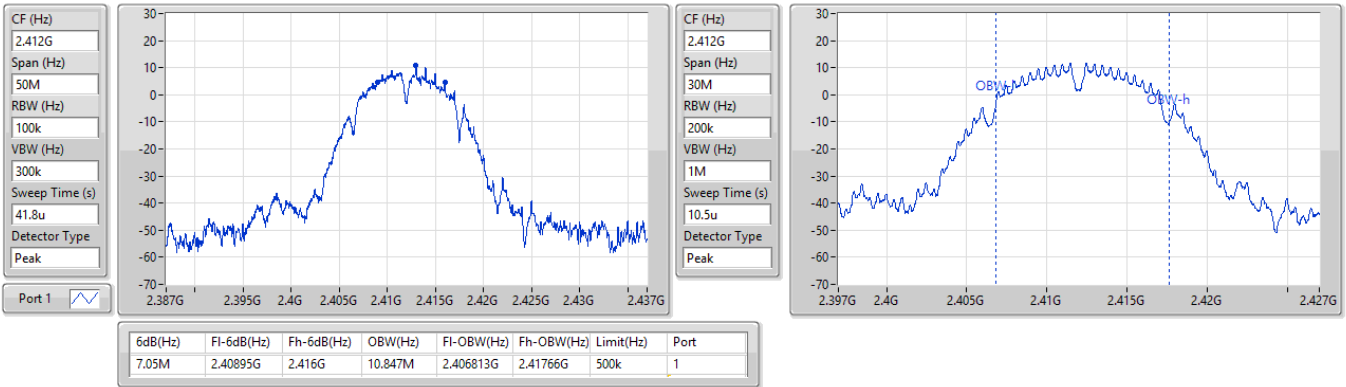
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

EBW

2412MHz

06/03/2024

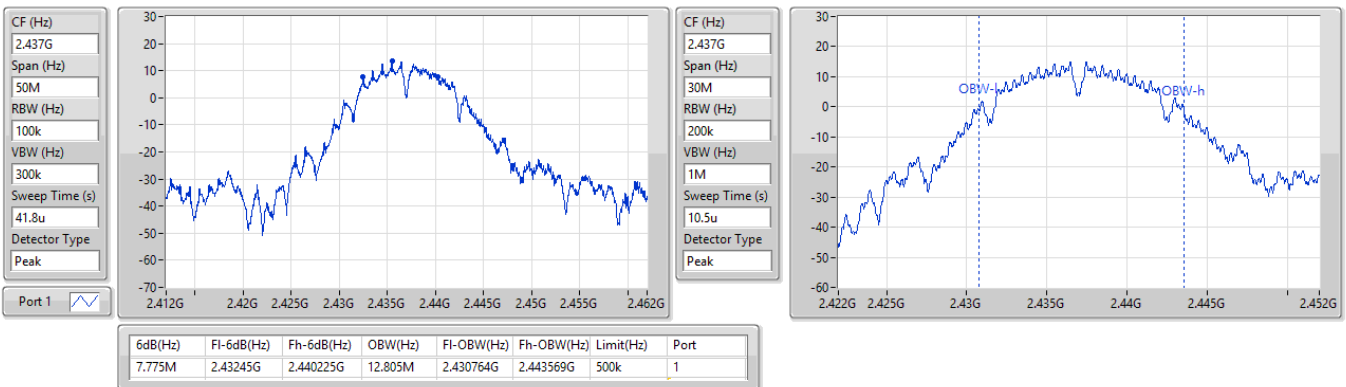


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

EBW

2437MHz

06/03/2024

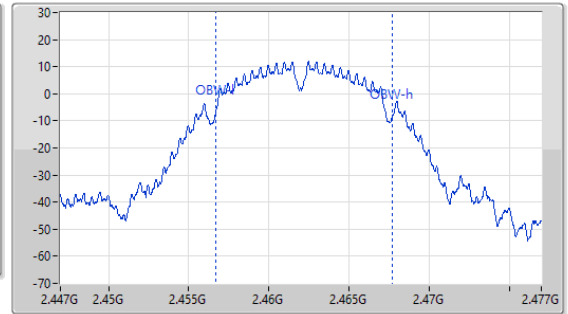
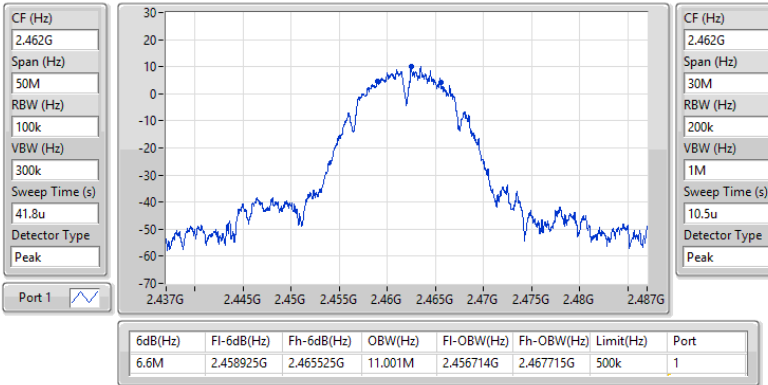


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

EBW

2462MHz

06/03/2024

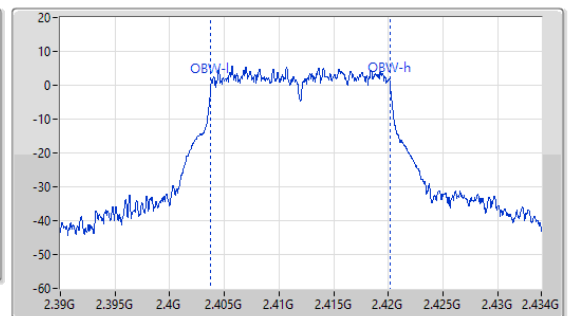
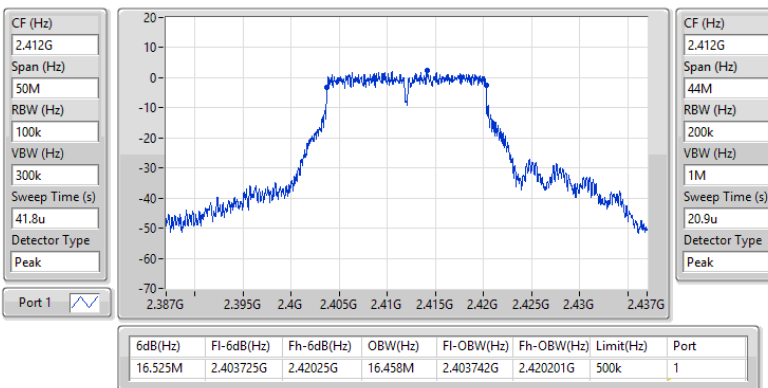


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

EBW

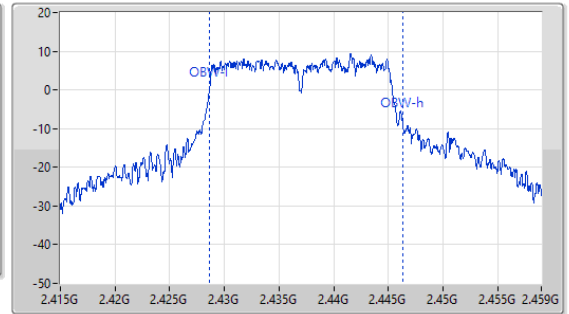
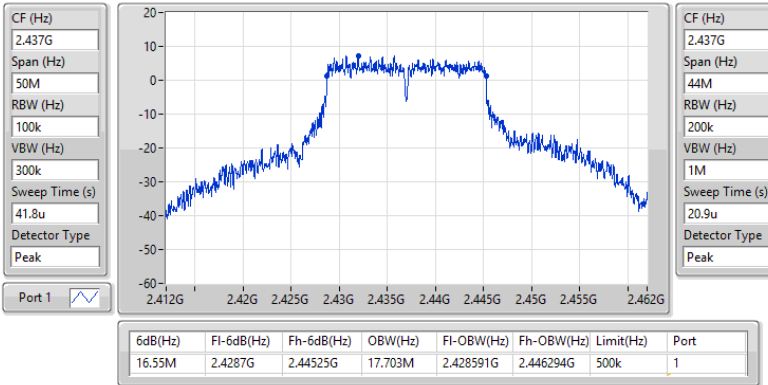
2412MHz

06/03/2024

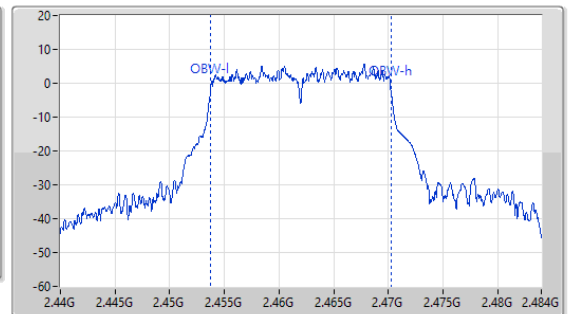
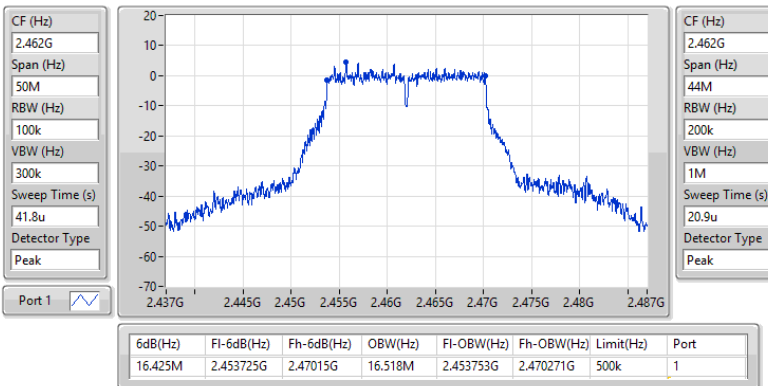


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX
EBW
2437MHz

06/03/2024


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX
EBW
2462MHz

06/03/2024

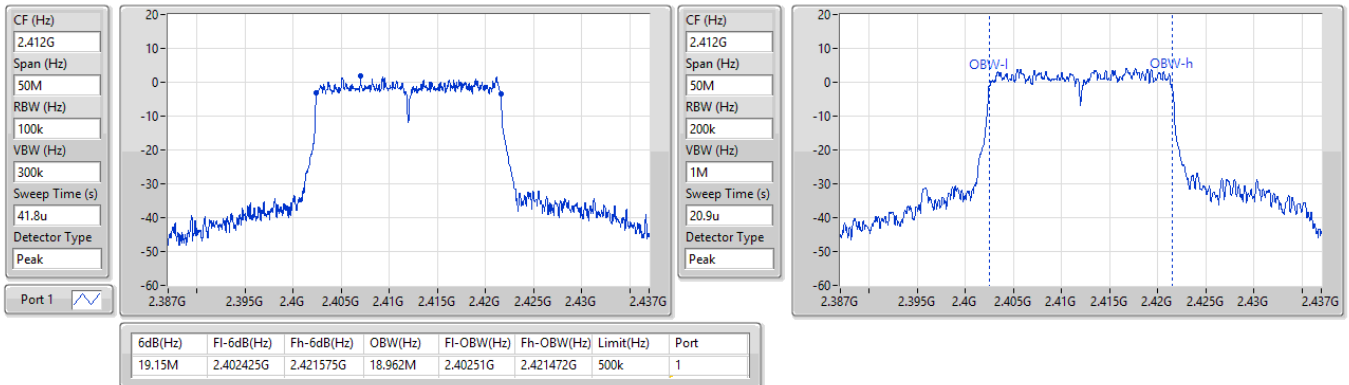


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2412MHz

06/03/2024

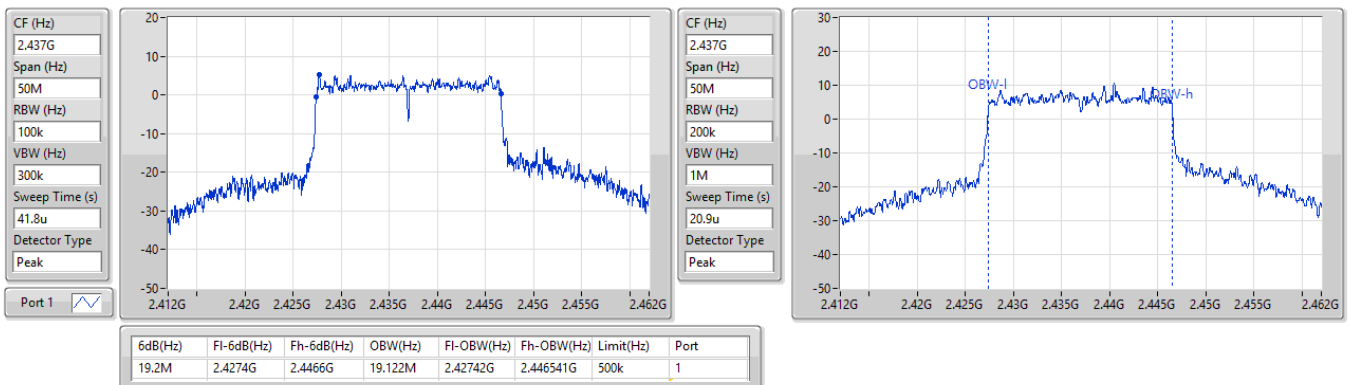


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2437MHz

06/03/2024

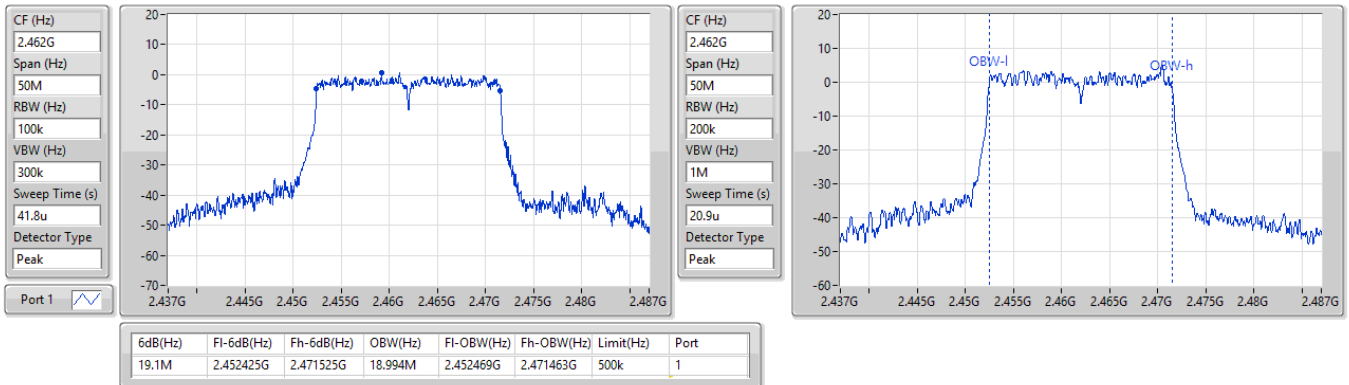


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2462MHz

06/03/2024





Average Power

Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	22.81	0.19099
802.11g_Nss1,(6Mbps)_1TX	21.13	0.12972
802.11ax HEW20_Nss1,(MCS0)_1TX	20.76	0.11912

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	19.34	19.34	30.00
2417MHz	Pass	3.68	21.64	21.64	30.00
2437MHz	Pass	3.68	22.81	22.81	30.00
2457MHz	Pass	3.68	21.74	21.74	30.00
2462MHz	Pass	3.68	19.53	19.53	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	16.76	16.76	30.00
2417MHz	Pass	3.68	19.78	19.78	30.00
2437MHz	Pass	3.68	21.13	21.13	30.00
2457MHz	Pass	3.68	19.54	19.54	30.00
2462MHz	Pass	3.68	16.85	16.85	30.00
802.11ax_HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	16.60	16.60	30.00
2417MHz	Pass	3.68	18.50	18.50	30.00
2437MHz	Pass	3.68	20.76	20.76	30.00
2457MHz	Pass	3.68	17.41	17.41	30.00
2462MHz	Pass	3.68	15.57	15.57	30.00

DG = Directional Gain; Port X = Port X output power

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-0.21
802.11g_Nss1,(6Mbps)_1TX	-5.13
802.11ax HEW20_Nss1,(MCS0)_1TX	-7.02

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	-4.65	-4.65	8.00
2437MHz	Pass	3.68	-0.21	-0.21	8.00
2462MHz	Pass	3.68	-4.31	-4.31	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	-9.38	-9.38	8.00
2437MHz	Pass	3.68	-5.13	-5.13	8.00
2462MHz	Pass	3.68	-9.47	-9.47	8.00
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	-11.59	-11.59	8.00
2437MHz	Pass	3.68	-7.02	-7.02	8.00
2462MHz	Pass	3.68	-12.74	-12.74	8.00

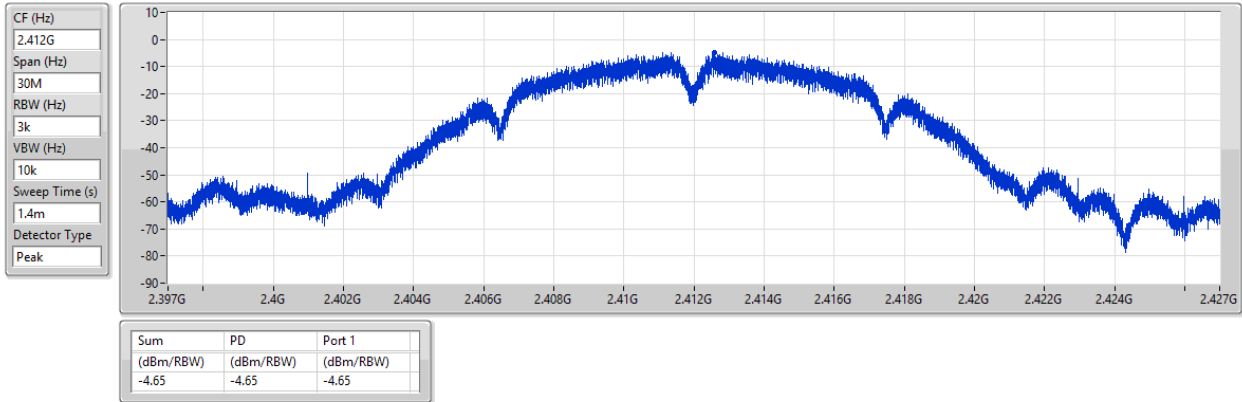
DG = Directional Gain; RBW = 3kHz;
 PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

PSD

2412MHz

06/03/2024

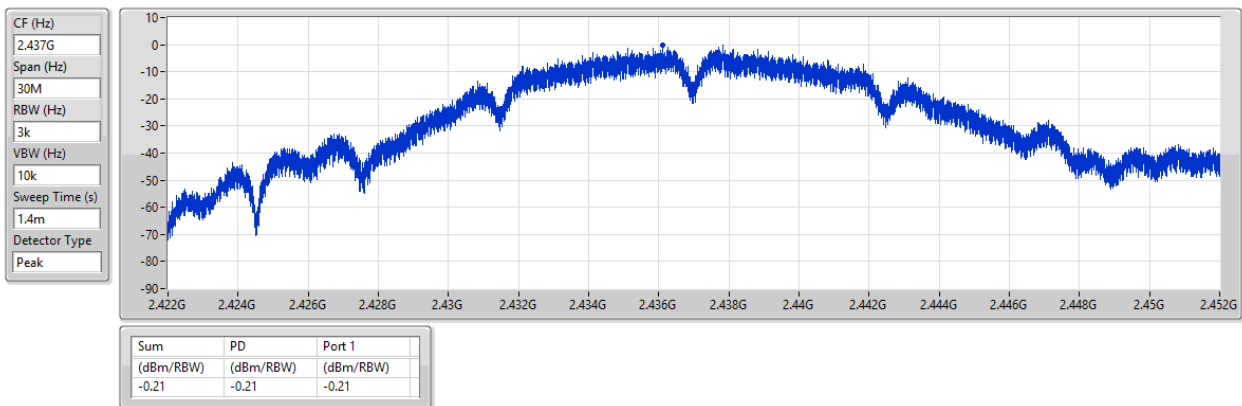


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

PSD

2437MHz

06/03/2024

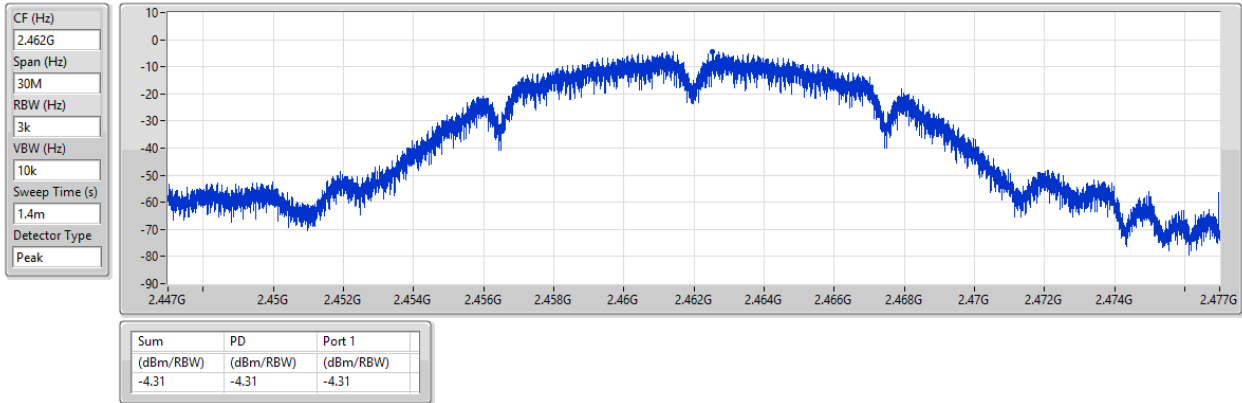


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

PSD

2462MHz

06/03/2024

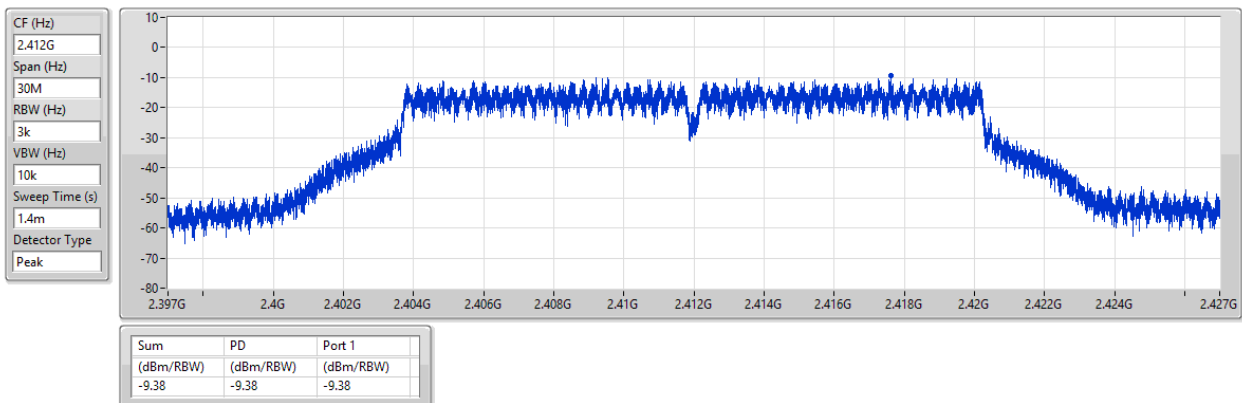


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

PSD

2412MHz

06/03/2024

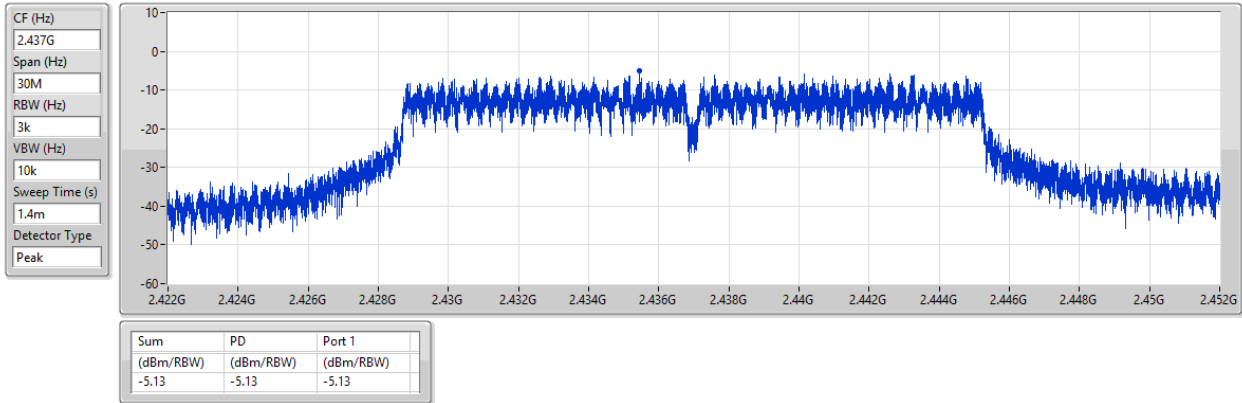


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

PSD

2437MHz

06/03/2024

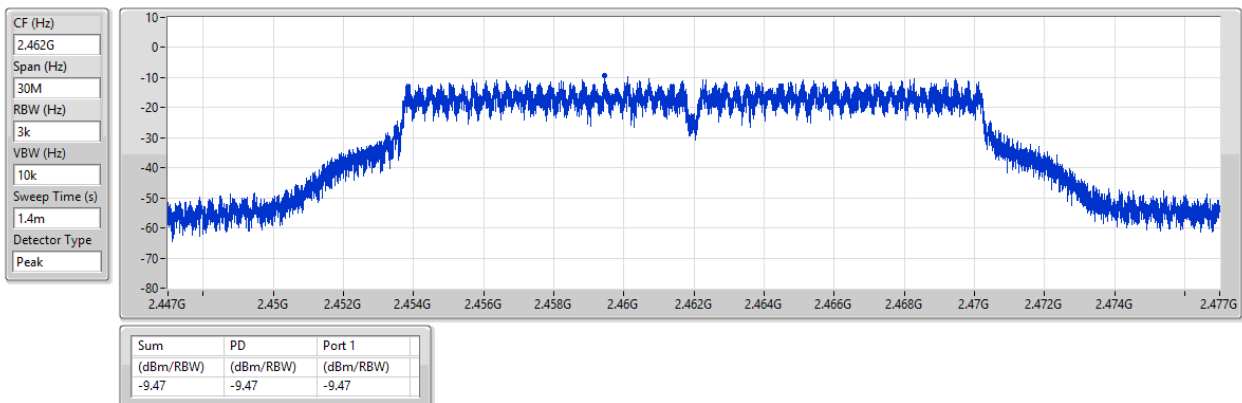


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

PSD

2462MHz

06/03/2024

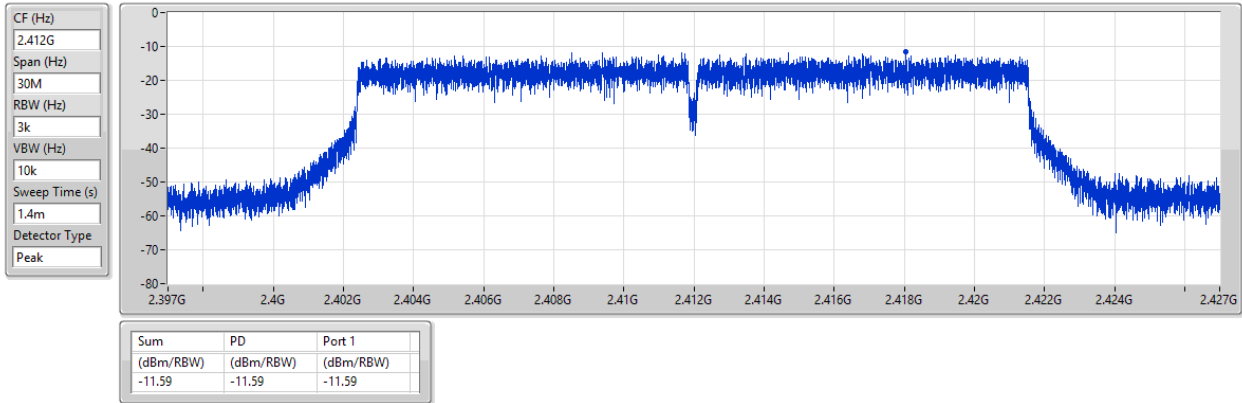


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

PSD

2412MHz

06/03/2024

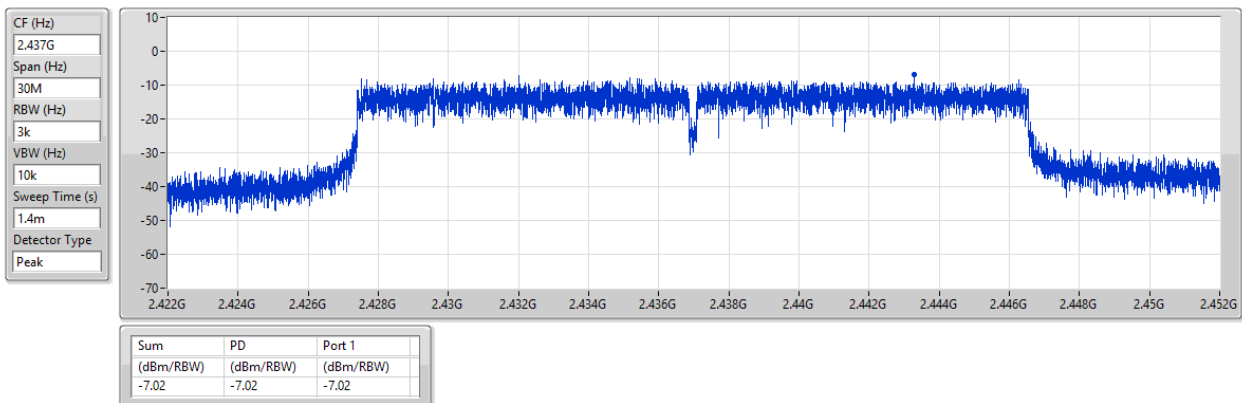


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

PSD

2437MHz

06/03/2024

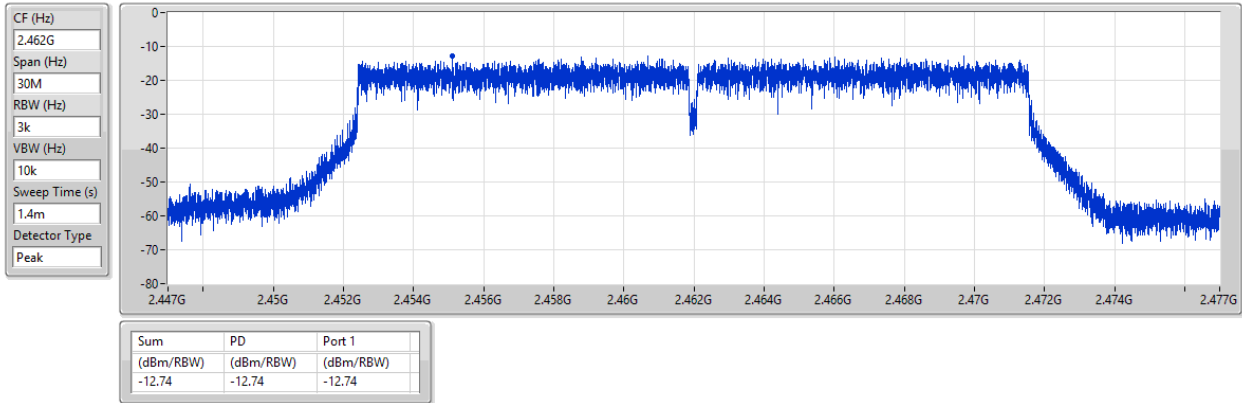


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

PSD

2462MHz

06/03/2024





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)_1TX	Pass	2.43641G	14.11	-15.89	1.79381G	-54.31	2.39848G	-34.21	2.4G	-38.02	2.50094G	-49.62	21.78305G	-47.82	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.44192G	9.11	-20.89	1.88934G	-54.68	2.39952G	-29.45	2.4G	-33.35	2.5019G	-51.03	21.69595G	-48.05	1
802.11ax HEW20_Nss1,(MCS0)_1TX	Pass	2.43941G	8.42	-21.58	1.98837G	-53.60	2.39992G	-30.68	2.4G	-30.24	2.50094G	-49.55	21.71281G	-48.32	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)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43641G	14.11	-15.89	1.79381G	-54.31	2.39848G	-34.21	2.4G	-38.02	2.50094G	-49.62	21.78305G	-47.82	1
2437MHz	Pass	2.43641G	14.11	-15.89	2.06176G	-53.99	2.39104G	-44.92	2.4G	-49.46	2.5159G	-49.42	21.90948G	-47.53	1
2462MHz	Pass	2.43641G	14.11	-15.89	2.14448G	-54.91	2.39096G	-50.43	2.4G	-53.72	2.50246G	-47.24	21.93477G	-47.39	1
802.11g_Nss1(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44192G	9.11	-20.89	1.88934G	-54.68	2.39952G	-29.45	2.4G	-33.35	2.5019G	-51.03	21.69595G	-48.05	1
2437MHz	Pass	2.44192G	9.11	-20.89	1.78216G	-54.22	2.398G	-36.33	2.4G	-37.61	2.50238G	-46.42	21.69314G	-47.07	1
2462MHz	Pass	2.44192G	9.11	-20.89	2.09205G	-55.07	2.39552G	-51.15	2.4G	-54.61	2.50022G	-47.62	21.80553G	-47.72	1
802.11ax HEW20_Nss1(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43941G	8.42	-21.58	1.98837G	-53.60	2.39992G	-30.68	2.4G	-30.24	2.50094G	-49.55	21.71281G	-48.32	1
2437MHz	Pass	2.43941G	8.42	-21.58	2.30408G	-54.36	2.39904G	-36.80	2.4G	-37.58	2.50006G	-48.04	21.74372G	-47.98	1
2462MHz	Pass	2.43941G	8.42	-21.58	1.90798G	-54.46	2.39096G	-51.63	2.4G	-56.01	2.50294G	-48.92	21.97691G	-48.17	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

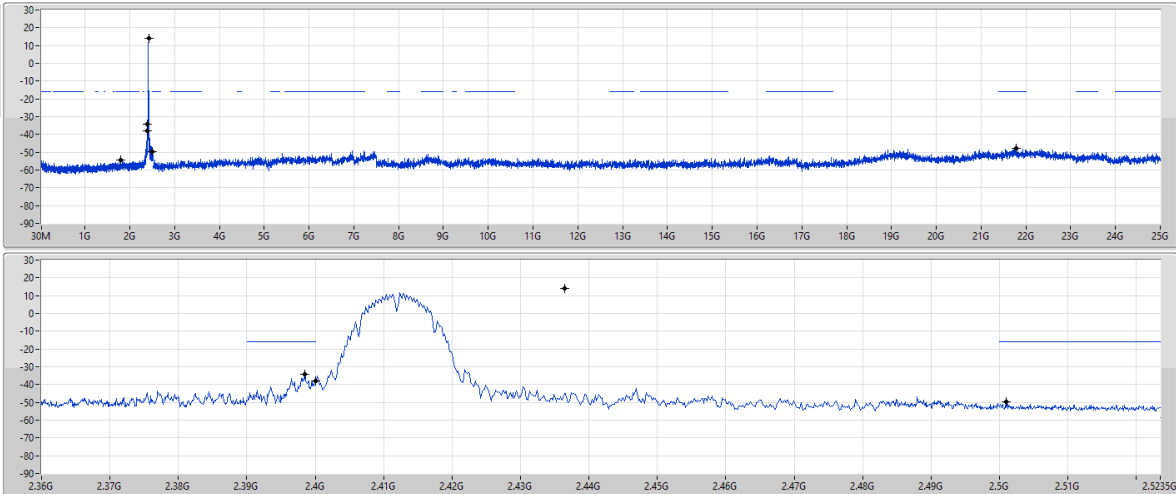
CSEndB

2412MHz

06/03/2024

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

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43641G	14.11	-15.89	1.79381G	-54.31	2.39848G	-34.21	2.4G	-38.02	2.50094G	-49.62	21.78305G	-47.82	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

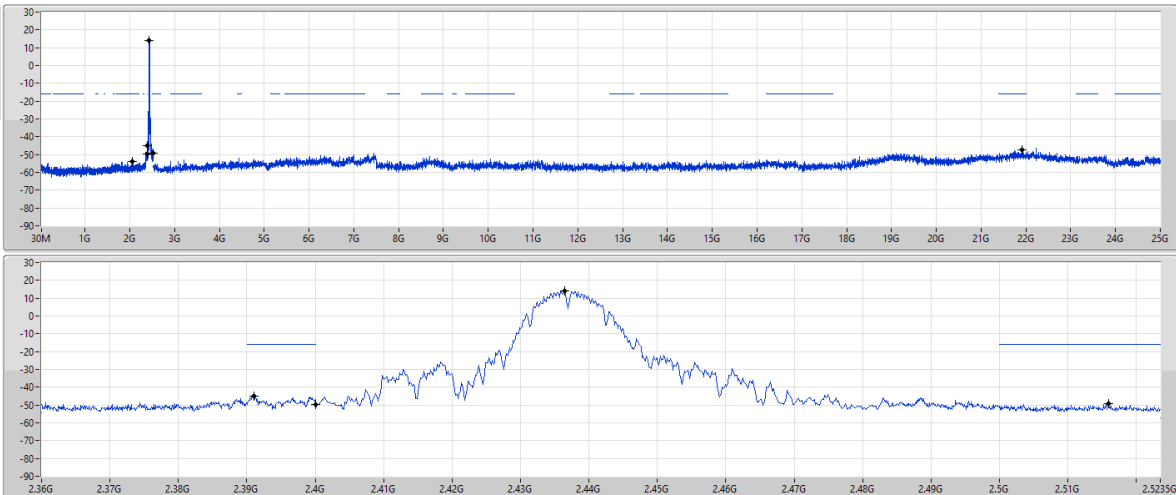
CSEndB

2437MHz

06/03/2024

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

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43641G	14.11	-15.89	2.06176G	-53.99	2.39104G	-44.92	2.4G	-49.46	2.5159G	-49.42	21.90948G	-47.53	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

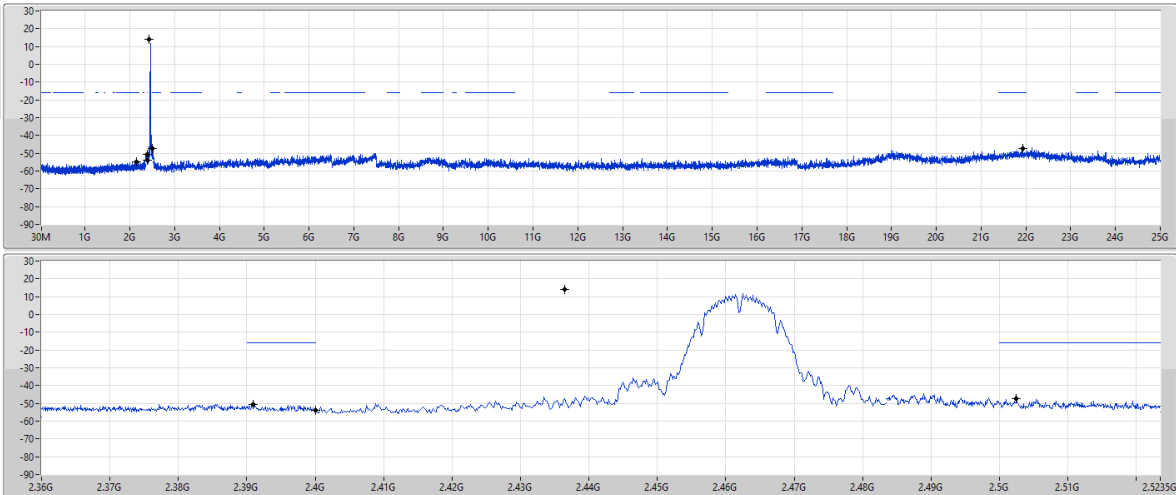
CSEndB

2462MHz

06/03/2024

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

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43641G	14.11	-15.89	2.14448G	-54.91	2.39096G	-50.43	2.4G	-53.72	2.50246G	-47.24	2.193477G	-47.39	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

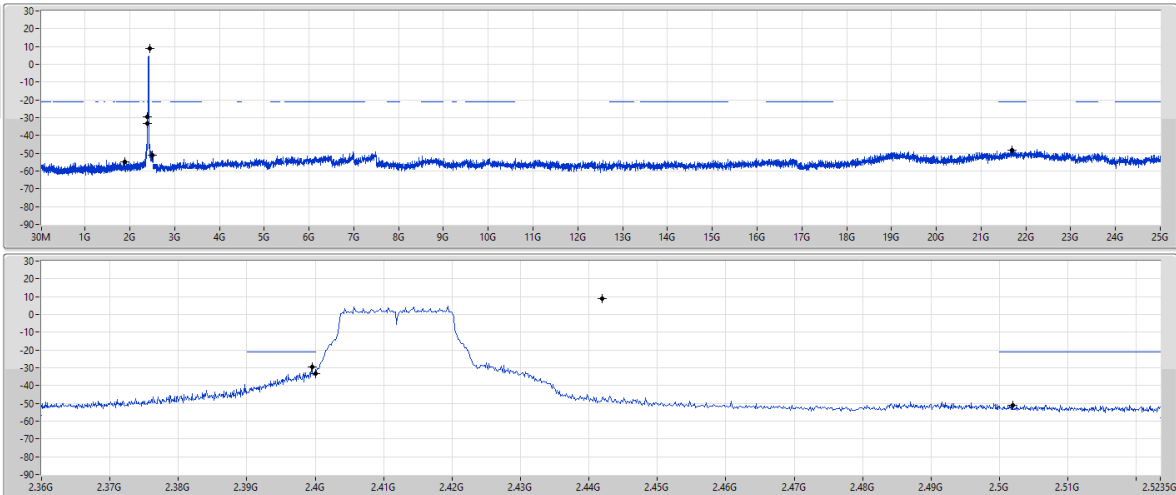
CSEndB

2412MHz

06/03/2024

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

Port 1

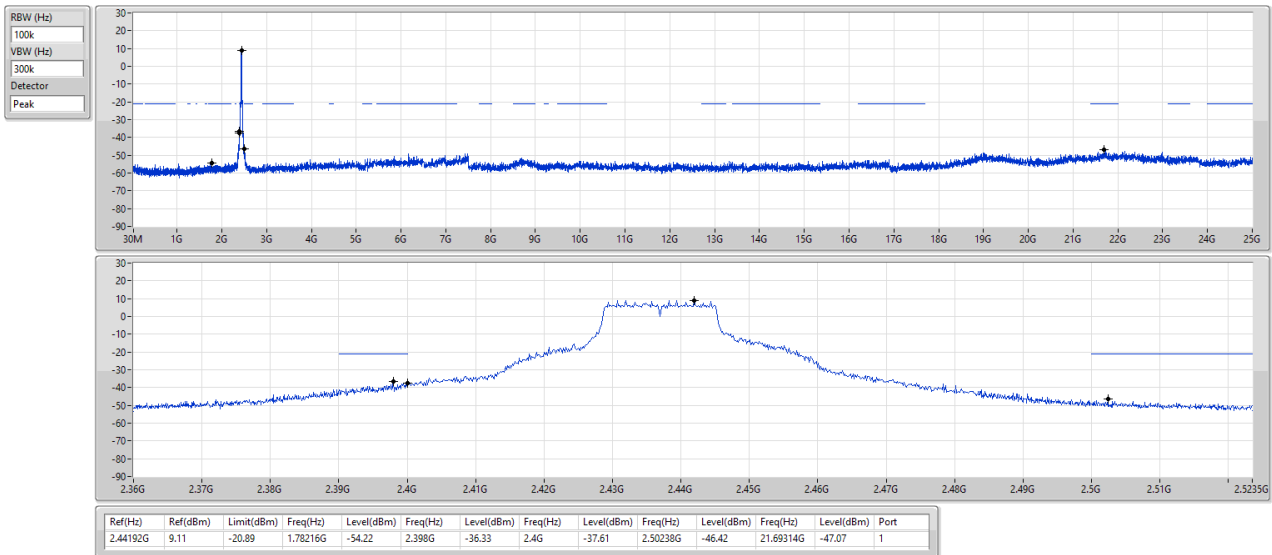


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44192G	9.11	-20.89	1.88934G	-54.68	2.39952G	-29.45	2.4G	-33.35	2.5019G	-51.03	2.169595G	-48.05	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

CSEndB

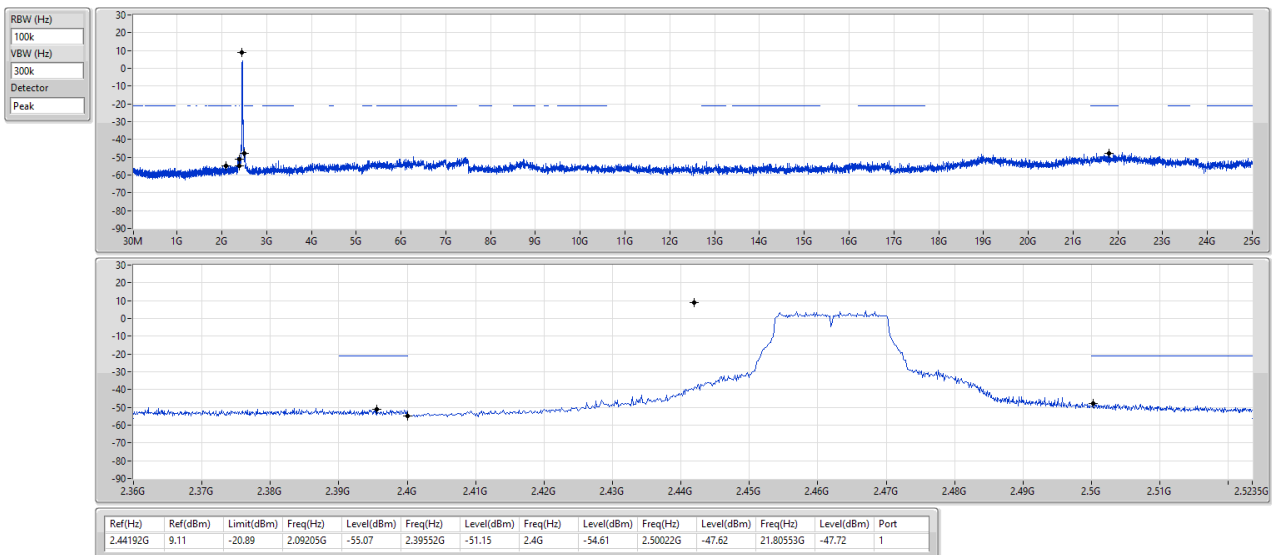
2437MHz



2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

CSEndB

2462MHz



2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_1TX

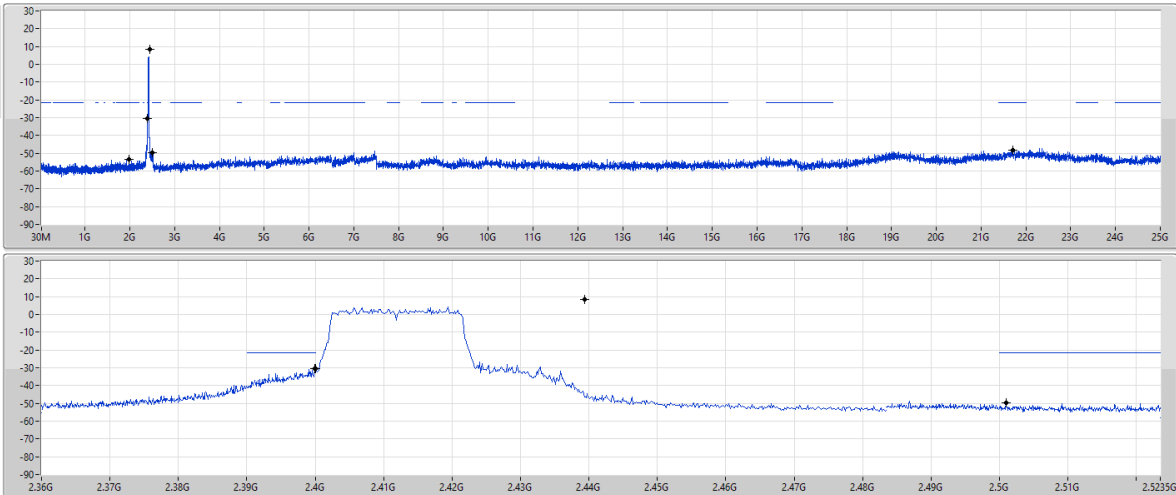
CSEndB

2412MHz

06/03/2024

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

Port 1



2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_1TX

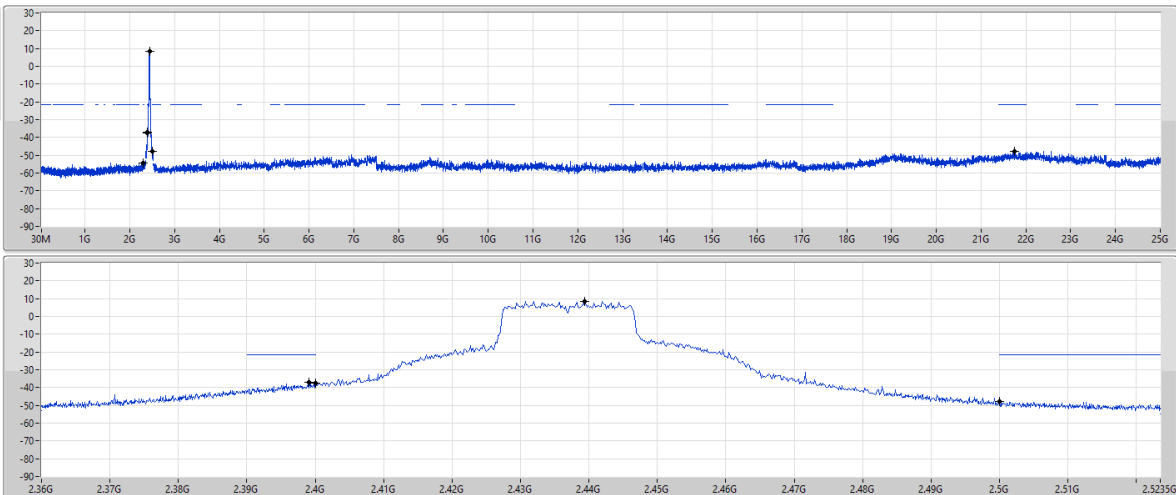
CSEndB

2437MHz

06/03/2024

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

Port 1

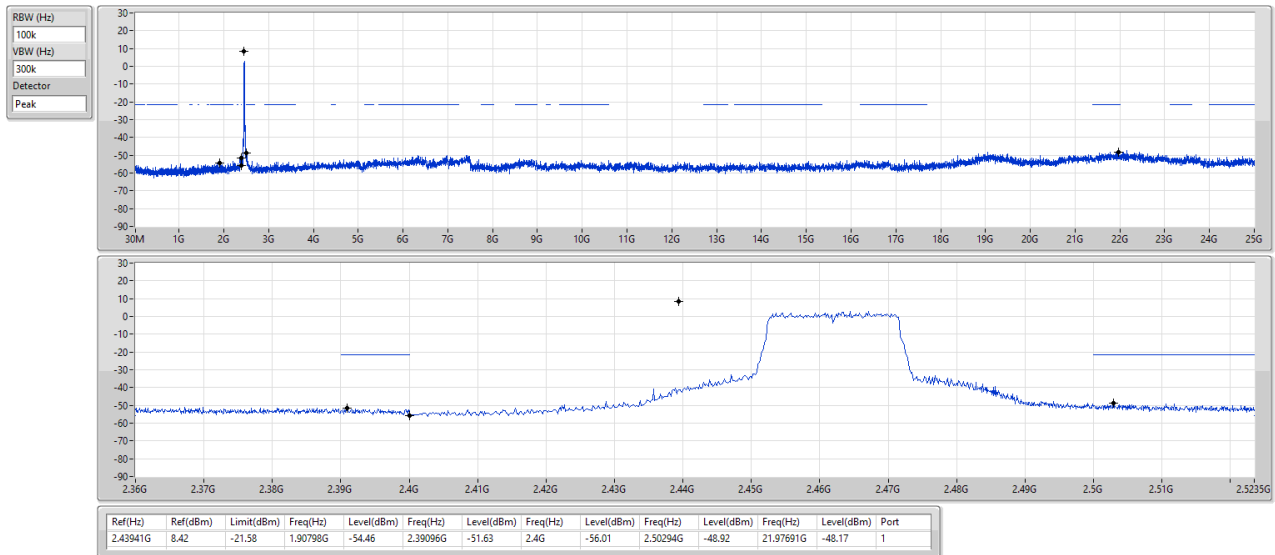


2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_1TX

CSEndB

2462MHz

06/03/2024





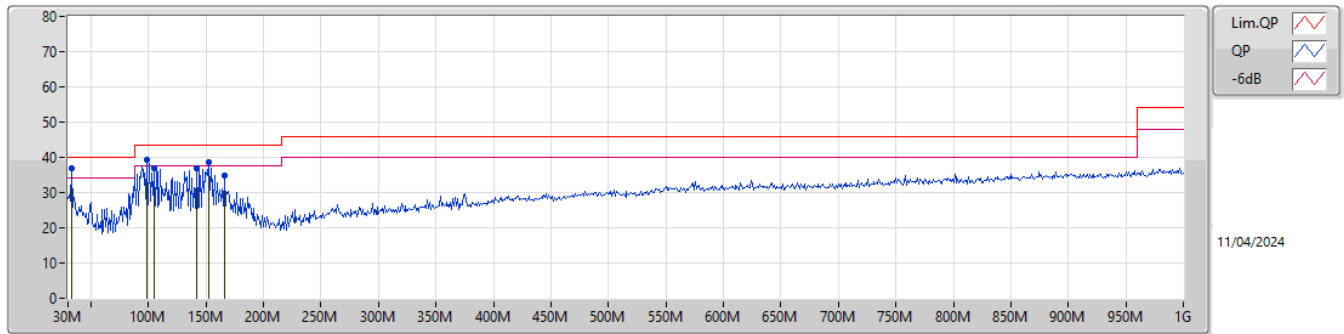
Radiated Emissions below 1GHz

Appendix F.1

Summary

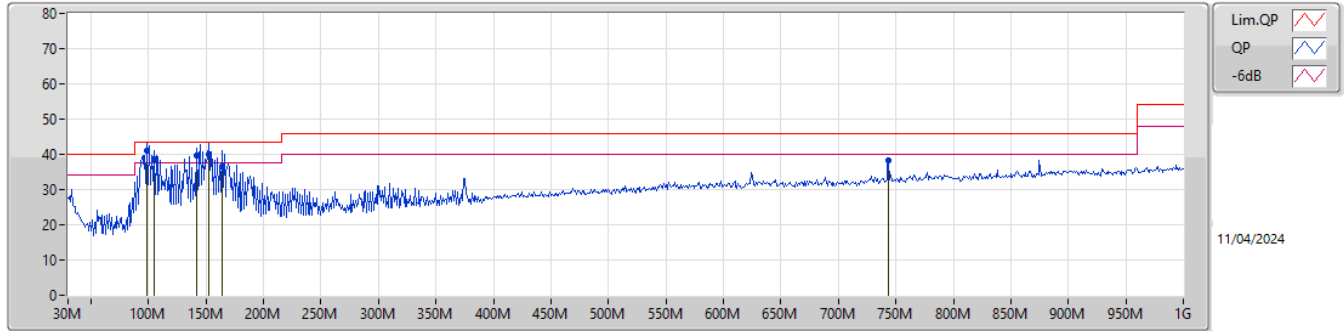
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	QP	98.87M	41.07	43.50	-2.43	Horizontal

Mode 2



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)		
PK	32.91M	36.89	40.00	-3.11	-7.75	3	Vertical	255	1.25	"Worst"	44.64	22.92	0.95	31.62		
PK	98.87M	39.17	43.50	-4.33	-13.58	3	Vertical	294	1.00	-	52.75	16.63	1.74	31.95		
PK	104.69M	37.01	43.50	-6.49	-12.90	3	Vertical	294	1.00	-	49.91	17.26	1.79	31.95		
PK	141.55M	36.99	43.50	-6.51	-12.84	3	Vertical	131	1.25	-	49.83	17.06	2.08	31.98		
PK	152.22M	38.63	43.50	-4.87	-13.58	3	Vertical	262	2.00	-	52.21	16.28	2.16	32.02		
PK	165.8M	34.80	43.50	-8.70	-13.93	3	Vertical	236	2.00	-	48.73	15.85	2.26	32.04		

Mode 2



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)		
QP	98.87M	41.07	43.50	-2.43	-13.58	3	Horizontal	324	3.00	"Worst"	54.65	16.63	1.74	31.95		
QP	104.69M	38.70	43.50	-4.80	-12.90	3	Horizontal	342	3.00	-	51.60	17.26	1.79	31.95		
QP	141.55M	39.82	43.50	-3.68	-12.84	3	Horizontal	267	2.00	-	52.66	17.06	2.08	31.98		
QP	152.22M	40.09	43.50	-3.41	-13.58	3	Horizontal	340	2.00	-	53.67	16.28	2.16	32.02		
QP	163.86M	36.63	43.50	-6.87	-13.96	3	Horizontal	340	2.00	-	50.59	15.83	2.25	32.04		
PK	743.92M	38.32	46.00	-7.68	-1.95	3	Horizontal	0	1.00	-	40.27	25.49	5.20	32.64		

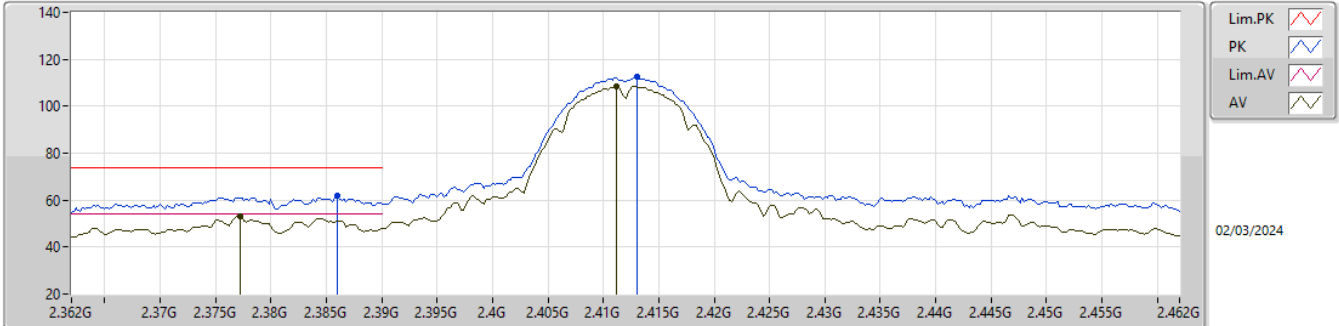


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	Pass	PK	2.3894G	73.96	74.00	-0.04	3	Vertical	212	1.79	-

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2412MHz_TX

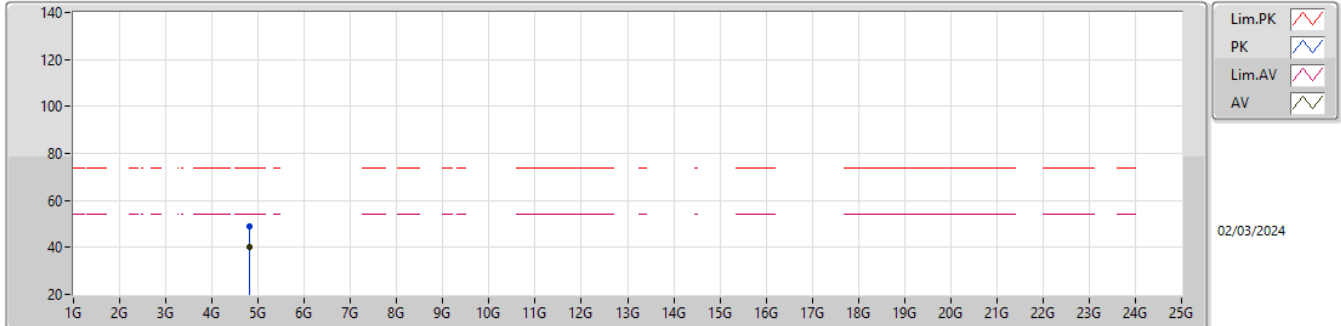


EUT_Z_1TX
Setting 72
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.386G	62.10	74.00	-11.90	31.36	3	Vertical	81	2.54	-	27.40	3.34	-			
AV	2.3772G	53.26	54.00	-0.74	22.49	3	Vertical	81	2.54	-	27.43	3.34	-			
PK	2.413G	112.33	Inf	-Inf	81.47	3	Vertical	81	2.54	-	27.50	3.36	-			
AV	2.4112G	108.25	Inf	-Inf	77.39	3	Vertical	81	2.54	-	27.50	3.36	-			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2412MHz_TX

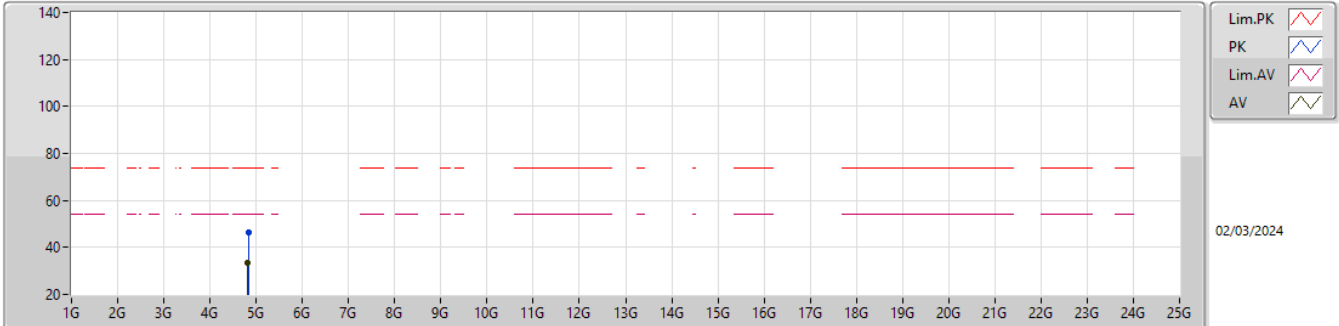


EUT_Z_1TX
Setting 72
04-C-J-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA			
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)			
PK	4.82382G	49.10	74.00	-24.90	44.35	3	Vertical	235	2.45	-	32.35	5.67	33.27			
AV	4.82394G	39.93	54.00	-14.07	35.18	3	Vertical	235	2.45	-	32.35	5.67	33.27			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2412MHz_TX

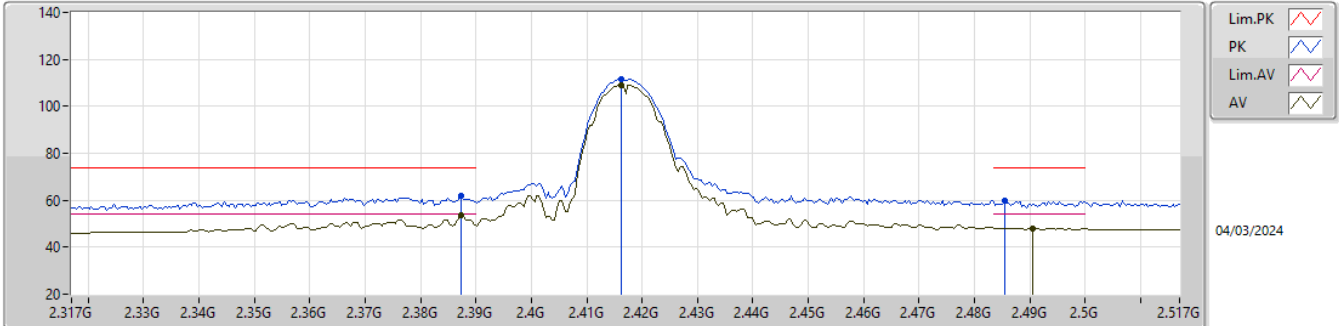


EUT_Z_1TX
Setting 72
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.82838G	46.46	74.00	-27.54	41.69	3	Horizontal	234	2.24	-	32.36	5.68	33.27			
AV	4.82406G	33.27	54.00	-20.73	28.52	3	Horizontal	234	2.24	-	32.35	5.67	33.27			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2417MHz_TX

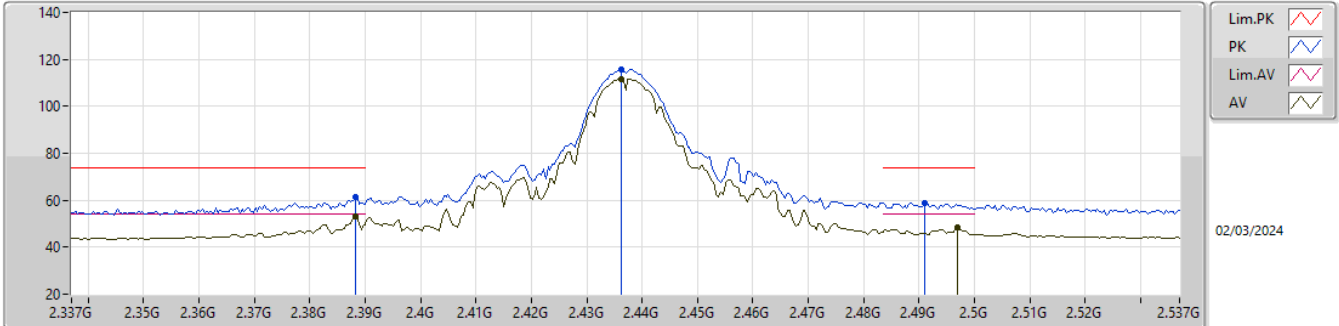


EUT_Z_1TX
Setting 82
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3874G	61.99	74.00	-12.01	30.54	3	Vertical	116	2.13	-	28.40	3.05	-			
AV	2.3874G	53.46	54.00	-0.54	22.01	3	Vertical	116	2.13	-	28.40	3.07	-			
PK	2.4162G	111.57	Inf	-Inf	80.10	3	Vertical	116	2.13	-	28.40	3.07	-			
AV	2.4162G	109.14	Inf	-Inf	77.67	3	Vertical	116	2.13	-	28.40	3.07	-			
PK	2.4854G	59.62	74.00	-14.38	28.03	3	Vertical	116	2.13	-	28.50	3.09	-			
AV	2.4906G	48.02	54.00	-5.98	16.41	3	Vertical	116	2.13	-	28.51	3.10	-			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2437MHz_TX

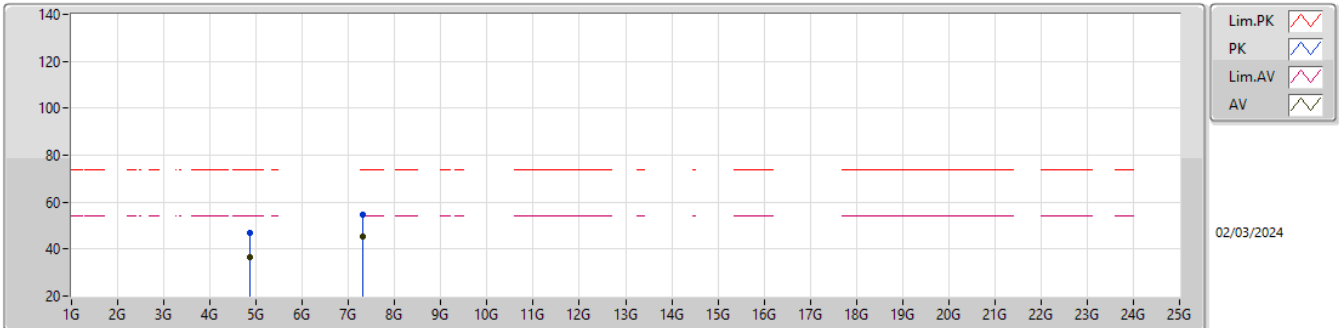


EUT_Z_1TX
Setting 90
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3882G	61.42	74.00	-12.58	30.67	3	Vertical	200	2.50	-	27.40	3.35	-			
AV	2.3882G	52.93	54.00	-1.07	22.18	3	Vertical	200	2.50	-	27.40	3.35	-			
PK	2.4362G	115.70	Inf	-Inf	84.77	3	Vertical	200	2.50	-	27.56	3.37	-			
AV	2.4362G	111.72	Inf	-Inf	80.79	3	Vertical	200	2.50	-	27.56	3.37	-			
PK	2.491G	58.97	74.00	-15.03	27.87	3	Vertical	200	2.50	-	27.70	3.40	-			
AV	2.497G	48.56	54.00	-5.44	17.46	3	Vertical	200	2.50	-	27.70	3.40	-			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2437MHz_TX

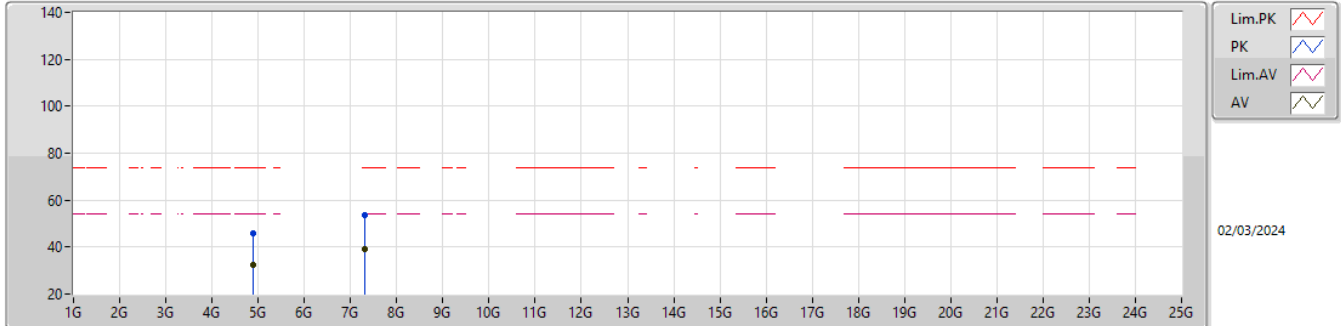


EUT_Z_1TX
Setting 90
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.87668G	46.87	74.00	-27.13	41.89	3	Vertical	137	2.05	-	32.51	5.72	33.25			
AV	4.87396G	36.76	54.00	-17.24	31.80	3	Vertical	137	2.05	-	32.50	5.72	33.26			
PK	7.31032G	54.87	74.00	-19.13	44.64	3	Vertical	65	2.78	-	37.20	7.12	34.09			
AV	7.31016G	45.20	54.00	-8.80	34.97	3	Vertical	65	2.78	-	37.20	7.12	34.09			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2437MHz_TX

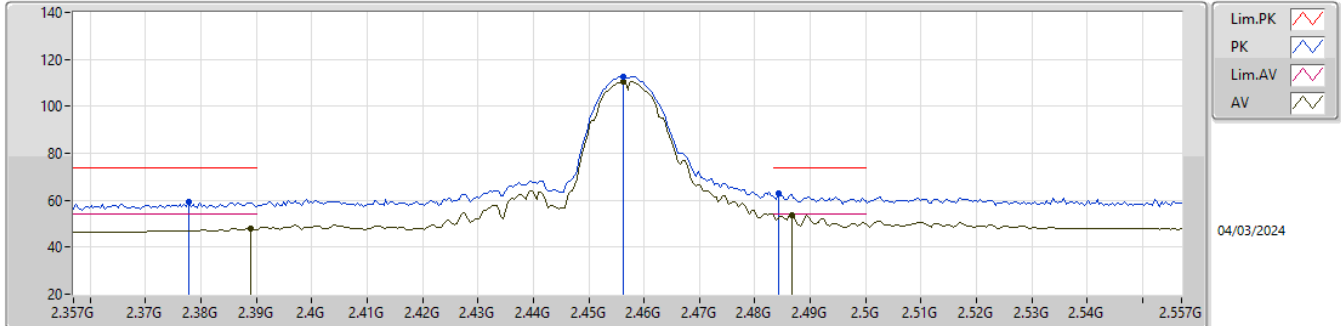


EUT_Z_1TX
Setting 90
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.87868G	46.07	74.00	-27.93	41.09	3	Horizontal	353	1.50	-	32.51	5.72	33.25			
AV	4.8774G	32.26	54.00	-21.74	27.28	3	Horizontal	353	1.50	-	32.51	5.72	33.25			
PK	7.3092G	53.51	74.00	-20.49	43.28	3	Horizontal	329	2.35	-	37.20	7.12	34.09			
AV	7.31004G	39.04	54.00	-14.96	28.81	3	Horizontal	329	2.35	-	37.20	7.12	34.09			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2457MHz_TX

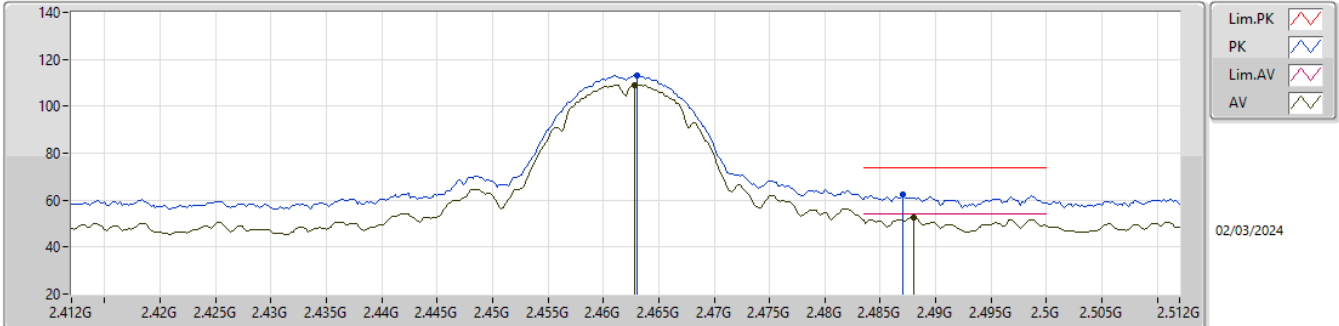


EUT_Z_1TX
Setting 82
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3778G	59.07	74.00	-14.93	27.64	3	Vertical	217	1.76	-	28.38	3.05	-			
AV	2.389G	48.01	54.00	-5.99	16.56	3	Vertical	217	1.76	-	28.40	3.05	-			
PK	2.4562G	112.82	Inf	-Inf	81.28	3	Vertical	217	1.76	-	28.46	3.08	-			
AV	2.4562G	110.44	Inf	-Inf	78.90	3	Vertical	217	1.76	-	28.46	3.08	-			
PK	2.4842G	63.01	74.00	-10.99	31.42	3	Vertical	217	1.76	-	28.50	3.09	-			
AV	2.4866G	53.72	54.00	-0.28	22.13	3	Vertical	217	1.76	-	28.50	3.09	-			

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2462MHz_TX

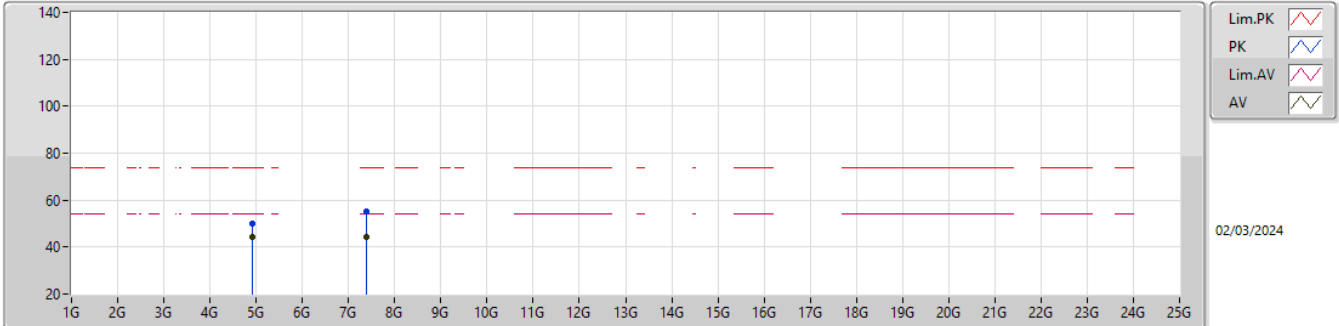


EUT_Z_1TX
Setting 74
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	2.463G	113.31	Inf	-Inf	82.33	3	Vertical	61	1.98	-	27.60	3.38	-				
AV	2.4628G	109.22	Inf	-Inf	78.24	3	Vertical	61	1.98	-	27.60	3.38	-				
PK	2.487G	62.23	74.00	-11.77	31.16	3	Vertical	61	1.98	-	27.67	3.40	-				
AV	2.488G	52.68	54.00	-1.32	21.60	3	Vertical	61	1.98	-	27.68	3.40	-				

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2462MHz_TX

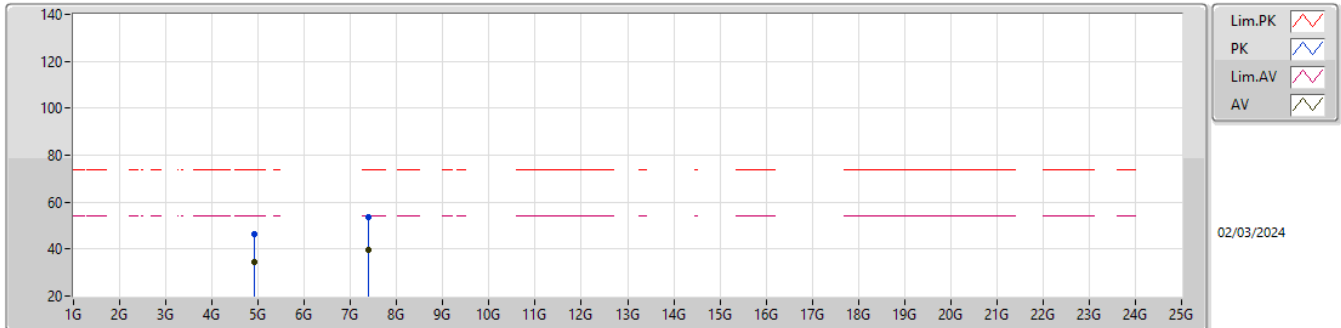


EUT_Z_1TX
Setting 74
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)				
PK	4.92406G	50.10	74.00	-23.90	44.93	3	Vertical	331	2.42	-	32.65	5.76	33.24				
AV	4.92394G	44.34	54.00	-9.66	39.17	3	Vertical	331	2.42	-	32.65	5.76	33.24				
PK	7.3869G	55.03	74.00	-18.97	44.79	3	Vertical	266	1.97	-	37.20	7.16	34.12				
AV	7.38516G	44.23	54.00	-9.77	33.99	3	Vertical	266	1.97	-	37.20	7.16	34.12				

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

2462MHz_TX

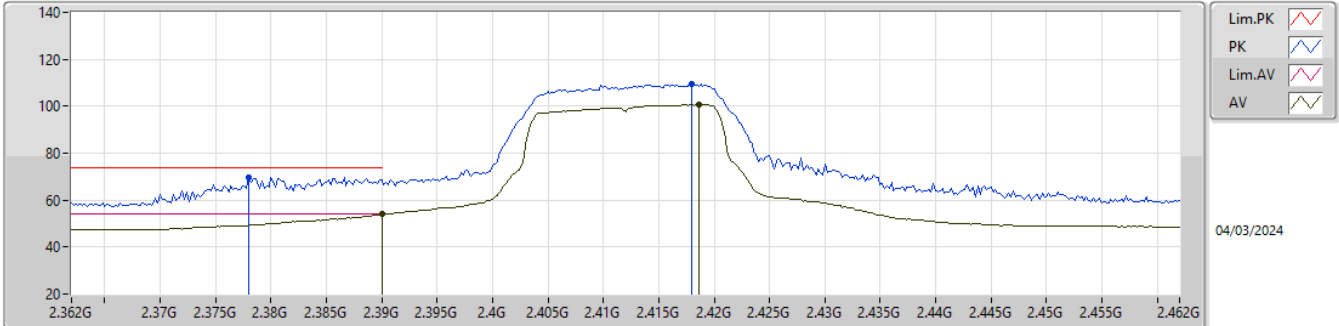


EUT_Z_1TX
Setting 74
04-C-J-8

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.91326G	46.24	74.00	-27.76	41.10	3	Horizontal	284	2.06	-	32.63	5.75	33.24			
AV	4.92388G	34.62	54.00	-19.38	29.45	3	Horizontal	284	2.06	-	32.65	5.76	33.24			
PK	7.39488G	53.48	74.00	-20.52	43.24	3	Horizontal	316	1.48	-	37.20	7.17	34.13			
AV	7.3854G	39.68	54.00	-14.32	29.44	3	Horizontal	316	1.48	-	37.20	7.16	34.12			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2412MHz_TX

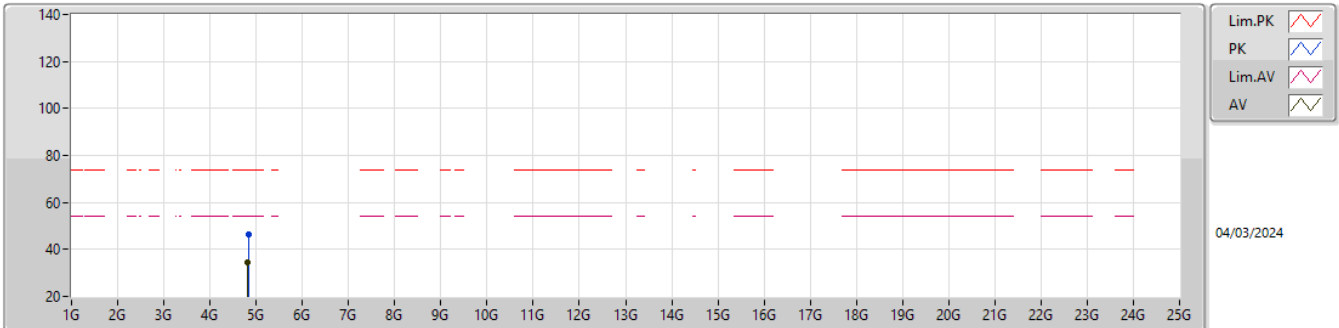


EUT_Z_1TX
Setting 58
02-P-E-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.378G	69.57	74.00	-4.43	38.14	3	Vertical	308	1.13	-	28.38	3.05	-			
AV	2.39G	53.88	54.00	-0.12	22.42	3	Vertical	308	1.13	-	28.40	3.06	-			
PK	2.418G	109.44	Inf	-Inf	77.97	3	Vertical	308	1.13	-	28.40	3.07	-			
AV	2.4186G	100.64	Inf	-Inf	69.17	3	Vertical	308	1.13	-	28.40	3.07	-			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2412MHz_TX

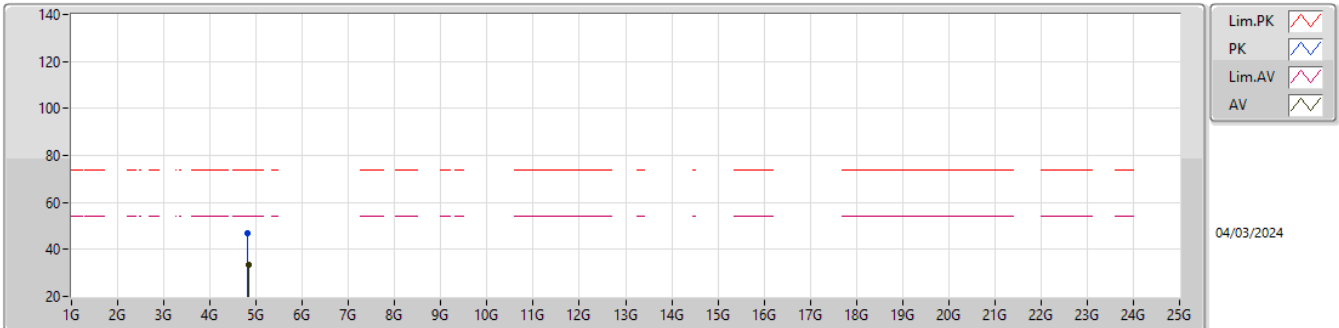


EUT_Z_1TX
Setting 58
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.83342G	46.58	74.00	-27.42	39.15	3	Vertical	112	1.80	-	33.00	5.10	30.67			
AV	4.824G	34.28	54.00	-19.72	26.92	3	Vertical	112	1.80	-	32.94	5.10	30.68			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2412MHz_TX

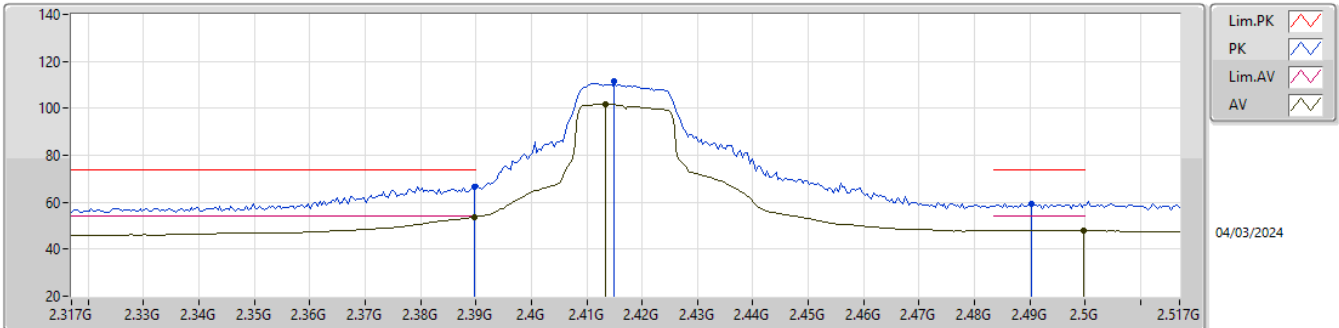


EUT_Z_1TX
Setting 58
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.82052G	46.72	74.00	-27.28	39.38	3	Horizontal	45	1.80	-	32.92	5.10	30.68			
AV	4.83648G	33.63	54.00	-20.37	26.18	3	Horizontal	45	1.80	-	33.02	5.10	30.67			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2417MHz_TX

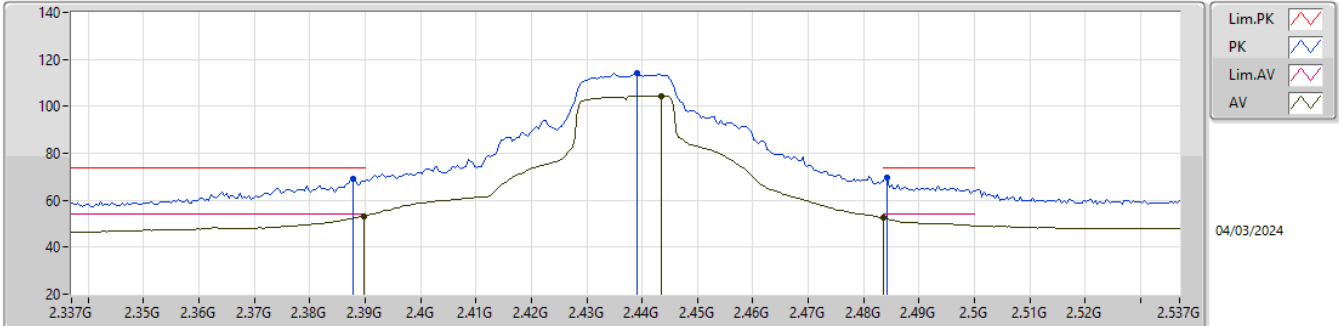


EUT_Z_1TX
Setting 70
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3898G	66.63	74.00	-7.37	35.18	3	Vertical	117	1.83	-	28.40	3.05	-			
AV	2.3898G	53.75	54.00	-0.25	22.30	3	Vertical	117	1.83	-	28.40	3.05	-			
PK	2.415G	111.78	Inf	-Inf	80.31	3	Vertical	117	1.83	-	28.40	3.07	-			
AV	2.4134G	101.66	Inf	-Inf	70.19	3	Vertical	117	1.83	-	28.40	3.07	-			
PK	2.4902G	59.26	74.00	-14.74	27.66	3	Vertical	117	1.83	-	28.50	3.10	-			
AV	2.4998G	47.84	54.00	-6.16	16.14	3	Vertical	117	1.83	-	28.60	3.10	-			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2437MHz_TX

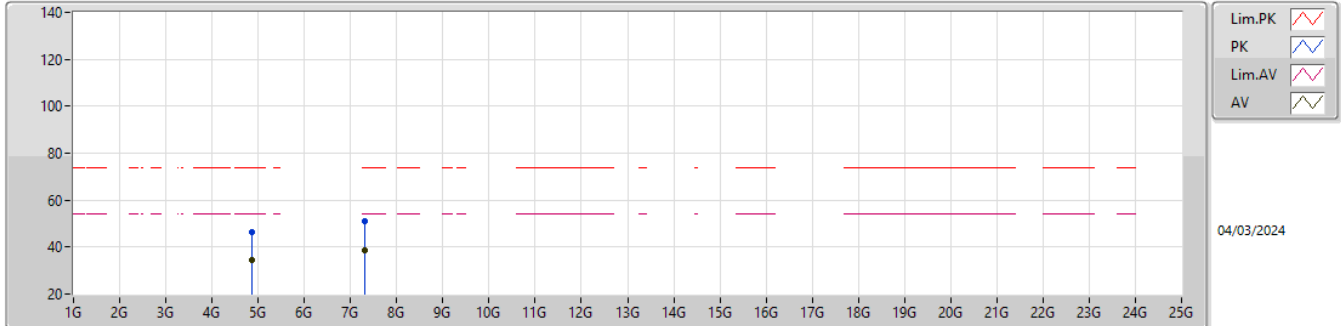


EUT_Z_1TX
Setting 75
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3878G	68.91	74.00	-5.09	37.46	3	Vertical	217	1.80	-	28.40	3.05	-			
AV	2.3898G	53.32	54.00	-0.68	21.87	3	Vertical	217	1.80	-	28.40	3.05	-			
PK	2.439G	114.32	Inf	-Inf	82.83	3	Vertical	217	1.80	-	28.41	3.08	-			
AV	2.4434G	104.43	Inf	-Inf	72.95	3	Vertical	217	1.80	-	28.40	3.08	-			
PK	2.4842G	69.55	74.00	-4.45	37.96	3	Vertical	217	1.80	-	28.50	3.09	-			
AV	2.4835G	52.42	54.00	-1.58	20.83	3	Vertical	217	1.80	-	28.50	3.09	-			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2437MHz_TX

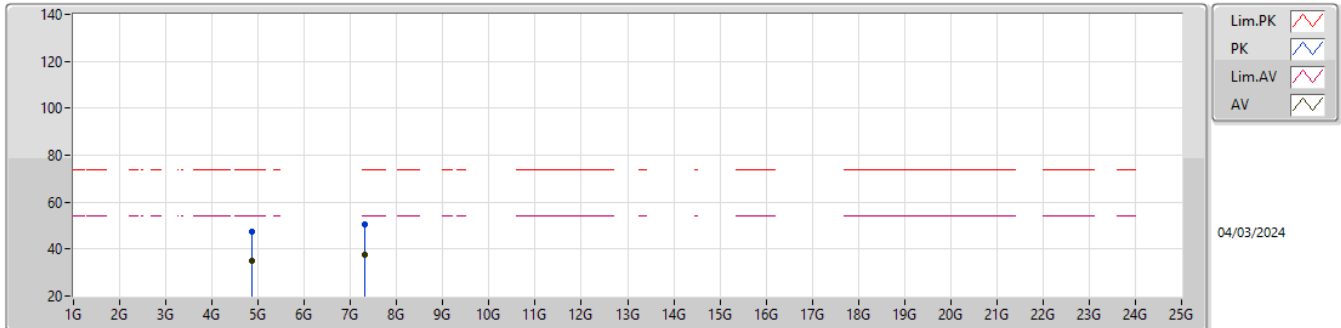


EUT_Z_1TX
Setting 75
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.87118G	46.46	74.00	-27.54	38.86	3	Vertical	138	1.86	-	33.14	5.11	30.65			
AV	4.87388G	34.32	54.00	-19.68	26.70	3	Vertical	138	1.86	-	33.15	5.11	30.64			
PK	7.30998G	50.88	74.00	-23.12	39.86	3	Vertical	336	1.15	-	36.62	6.51	32.11			
AV	7.31046G	38.66	54.00	-15.34	27.64	3	Vertical	336	1.15	-	36.62	6.51	32.11			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2437MHz_TX

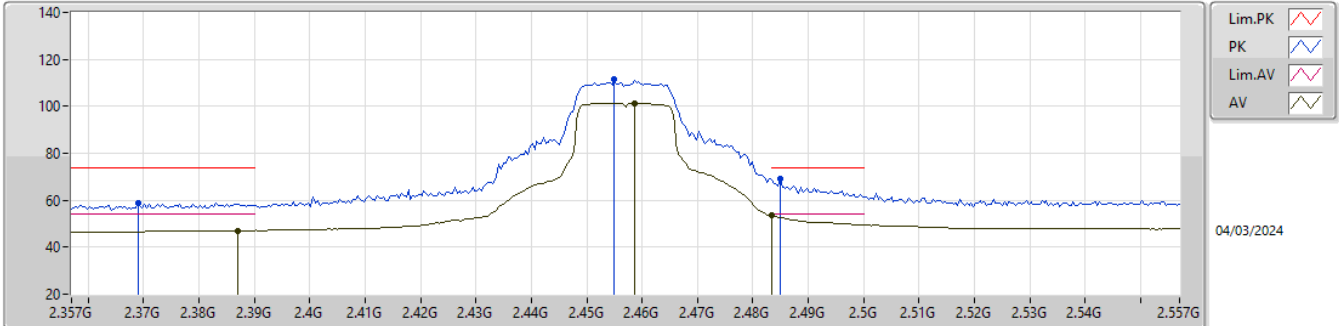


EUT_Z_1TX
Setting 75
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.85978G	47.54	74.00	-26.46	39.96	3	Horizontal	312	2.48	-	33.12	5.11	30.65			
AV	4.8596G	34.88	54.00	-19.12	27.30	3	Horizontal	312	2.48	-	33.12	5.11	30.65			
PK	7.2963G	50.47	74.00	-23.53	39.49	3	Horizontal	71	1.79	-	36.59	6.50	32.11			
AV	7.30014G	37.54	54.00	-16.46	26.54	3	Horizontal	71	1.79	-	36.60	6.51	32.11			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2457MHz_TX

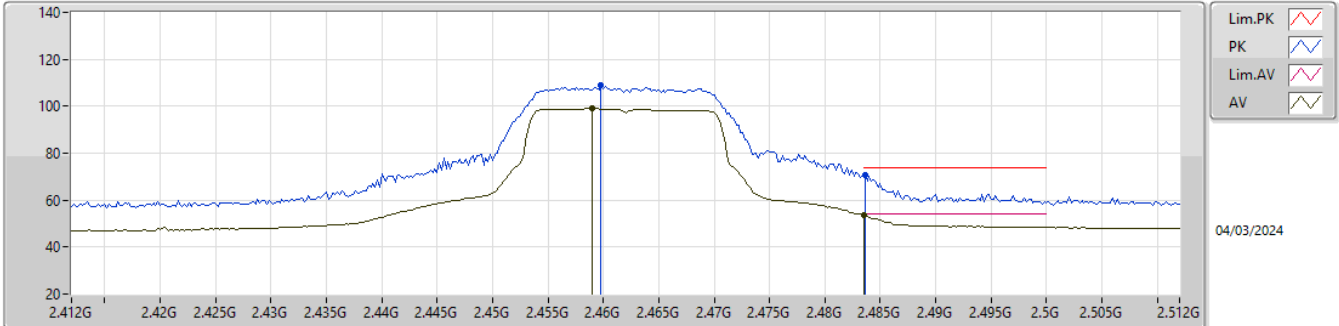


EUT_Z_1TX
Setting 70
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.369G	58.92	74.00	-15.08	27.59	3	Vertical	217	1.78	-	28.29	3.04	-			
AV	2.387G	47.14	54.00	-6.86	15.69	3	Vertical	217	1.78	-	28.40	3.05	-			
PK	2.455G	111.41	Inf	-Inf	79.88	3	Vertical	217	1.78	-	28.45	3.08	-			
AV	2.4586G	101.24	Inf	-Inf	69.67	3	Vertical	217	1.78	-	28.49	3.08	-			
PK	2.485G	68.91	74.00	-5.09	37.32	3	Vertical	217	1.78	-	28.50	3.09	-			
AV	2.4835G	53.40	54.00	-0.60	21.81	3	Vertical	217	1.78	-	28.50	3.09	-			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX

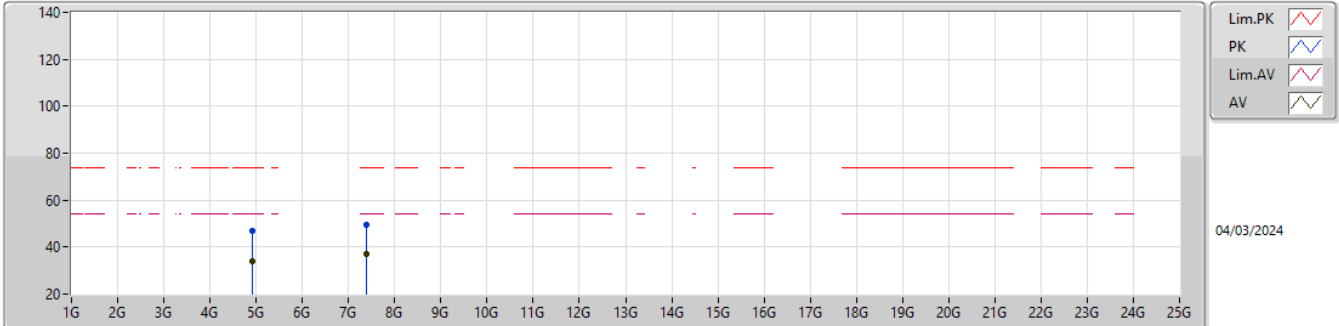


EUT_Z_1TX
Setting 61
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.4598G	108.96	Inf	-Inf	77.38	3	Vertical	217	1.78	-	28.50	3.08	-			
AV	2.459G	98.90	Inf	-Inf	67.33	3	Vertical	217	1.78	-	28.49	3.08	-			
PK	2.4836G	70.85	74.00	-3.15	39.26	3	Vertical	217	1.78	-	28.50	3.09	-			
AV	2.4835G	53.56	54.00	-0.44	21.97	3	Vertical	217	1.78	-	28.50	3.09	-			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX

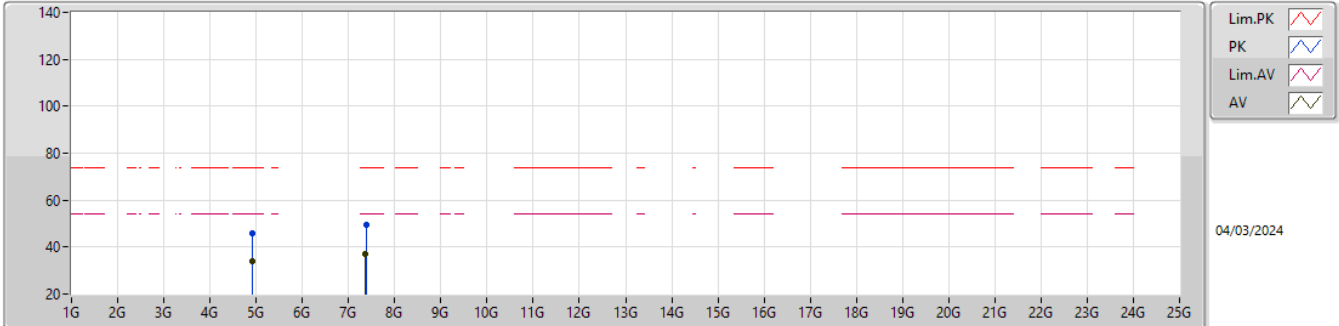


EUT_Z_1TX
Setting 61
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.91116G	46.76	74.00	-27.24	39.04	3	Vertical	20	2.47	-	33.22	5.12	30.62			
AV	4.92394G	33.78	54.00	-20.22	26.01	3	Vertical	20	2.47	-	33.25	5.13	30.61			
PK	7.3926G	49.48	74.00	-24.52	38.38	3	Vertical	14	2.43	-	36.70	6.56	32.16			
AV	7.37562G	37.13	54.00	-16.87	26.03	3	Vertical	14	2.43	-	36.70	6.55	32.15			

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX

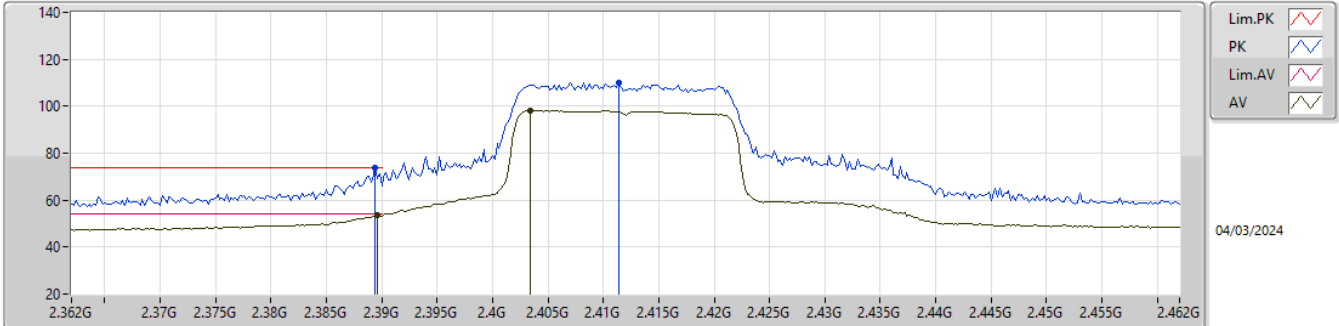


EUT_Z_1TX
Setting 61
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.92034G	45.97	74.00	-28.03	38.21	3	Horizontal	358	2.71	-	33.24	5.13	30.61			
AV	4.92376G	33.78	54.00	-20.22	26.01	3	Horizontal	358	2.71	-	33.25	5.13	30.61			
PK	7.39008G	49.35	74.00	-24.65	38.26	3	Horizontal	38	1.91	-	36.70	6.55	32.16			
AV	7.37274G	37.04	54.00	-16.96	25.94	3	Horizontal	38	1.91	-	36.70	6.55	32.15			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2412MHz_TX

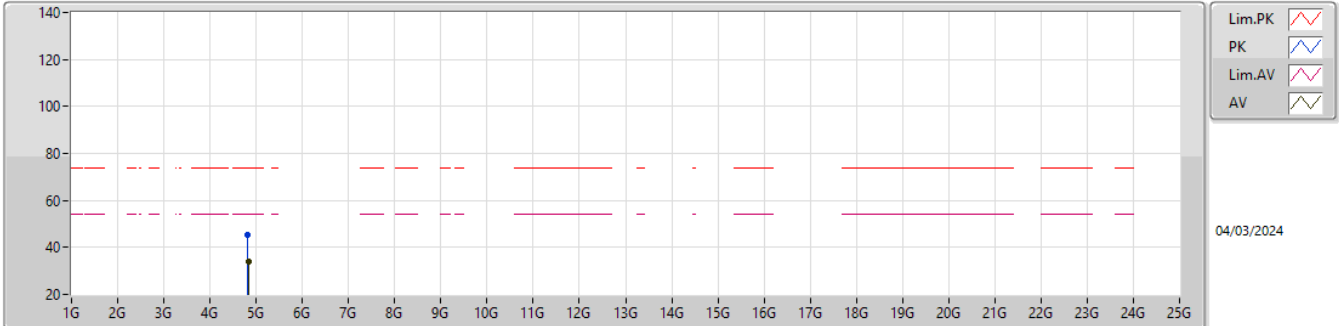


EUT_Z_1TX
Setting 55
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3894G	73.96	74.00	-0.04	42.51	3	Vertical	212	1.79	-	28.40	3.05	-			
AV	2.3896G	53.61	54.00	-0.39	22.16	3	Vertical	212	1.79	-	28.40	3.05	-			
PK	2.4114G	110.03	Inf	-Inf	78.57	3	Vertical	212	1.79	-	28.40	3.06	-			
AV	2.4034G	98.01	Inf	-Inf	66.55	3	Vertical	212	1.79	-	28.40	3.06	-			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2412MHz_TX

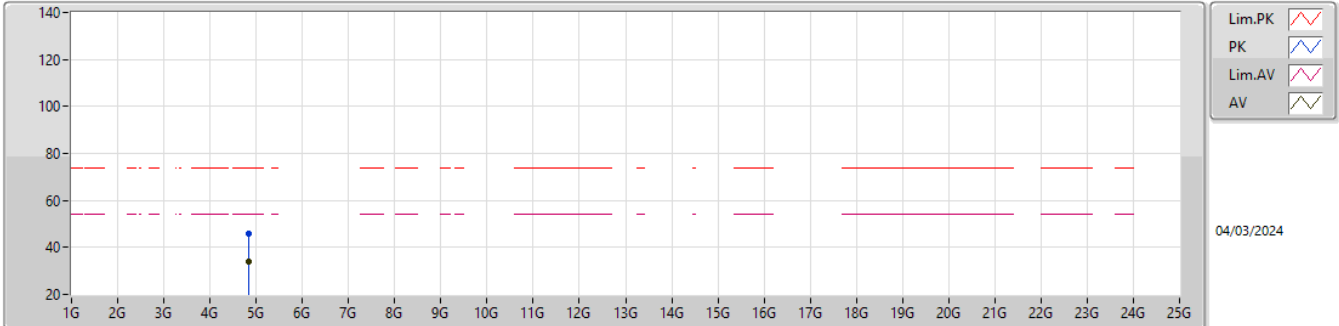


EUT_Z_1TX
Setting 55
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.81362G	45.49	74.00	-28.51	38.20	3	Vertical	300	1.99	-	32.88	5.09	30.68			
AV	4.83468G	33.96	54.00	-20.04	26.52	3	Vertical	300	1.99	-	33.01	5.10	30.67			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2412MHz_TX

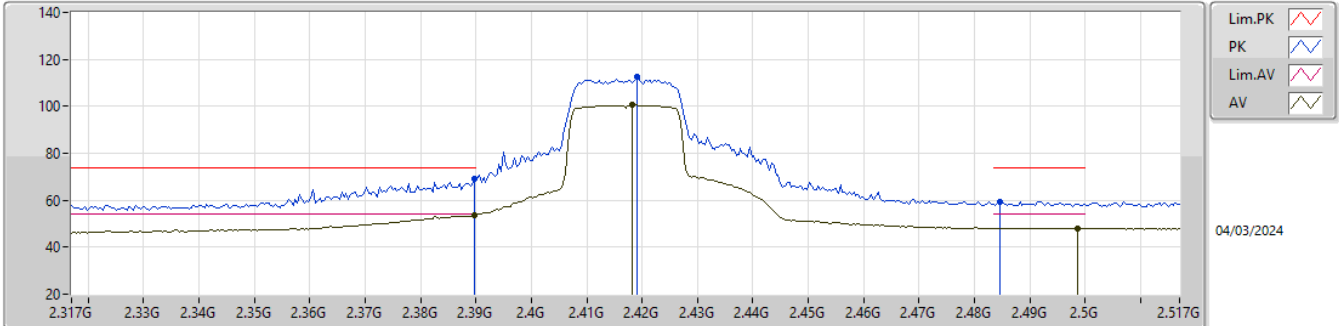


EUT_Z_1TX
Setting 55
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.83852G	45.88	74.00	-28.12	38.42	3	Horizontal	237	1.00	-	33.03	5.10	30.67			
AV	4.83672G	33.97	54.00	-20.03	26.52	3	Horizontal	237	1.00	-	33.02	5.10	30.67			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2417MHz_TX

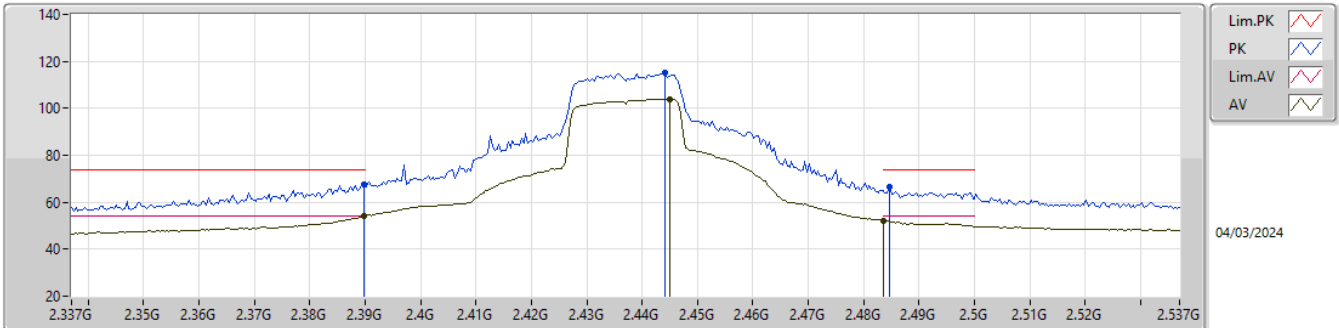


EUT_Z_1TX
Setting 65
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3898G	68.97	74.00	-5.03	37.52	3	Vertical	117	2.14	-	28.40	3.05	-			
AV	2.3898G	53.61	54.00	-0.39	22.16	3	Vertical	117	2.14	-	28.40	3.05	-			
PK	2.419G	112.50	Inf	-Inf	81.03	3	Vertical	117	2.14	-	28.40	3.07	-			
AV	2.4182G	100.57	Inf	-Inf	69.10	3	Vertical	117	2.14	-	28.40	3.07	-			
PK	2.4846G	59.47	74.00	-14.53	27.88	3	Vertical	117	2.14	-	28.50	3.09	-			
AV	2.4986G	48.12	54.00	-5.88	16.43	3	Vertical	117	2.14	-	28.59	3.10	-			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2437MHz_TX

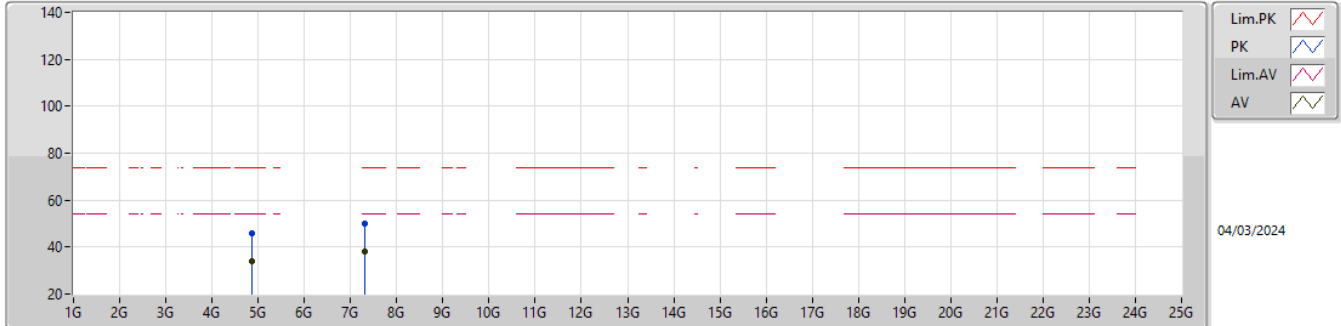


EUT_Z_1TX
Setting 73
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.3898G	67.70	74.00	-6.30	36.25	3	Vertical	220	1.80	-	28.40	3.05	-			
AV	2.3898G	53.89	54.00	-0.11	22.44	3	Vertical	220	1.80	-	28.40	3.05	-			
PK	2.4442G	115.22	Inf	-Inf	83.74	3	Vertical	220	1.80	-	28.40	3.08	-			
AV	2.445G	103.86	Inf	-Inf	72.38	3	Vertical	220	1.80	-	28.40	3.08	-			
PK	2.4846G	66.67	74.00	-7.33	35.08	3	Vertical	220	1.80	-	28.50	3.09	-			
AV	2.4835G	52.24	54.00	-1.76	20.65	3	Vertical	220	1.80	-	28.50	3.09	-			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2437MHz_TX

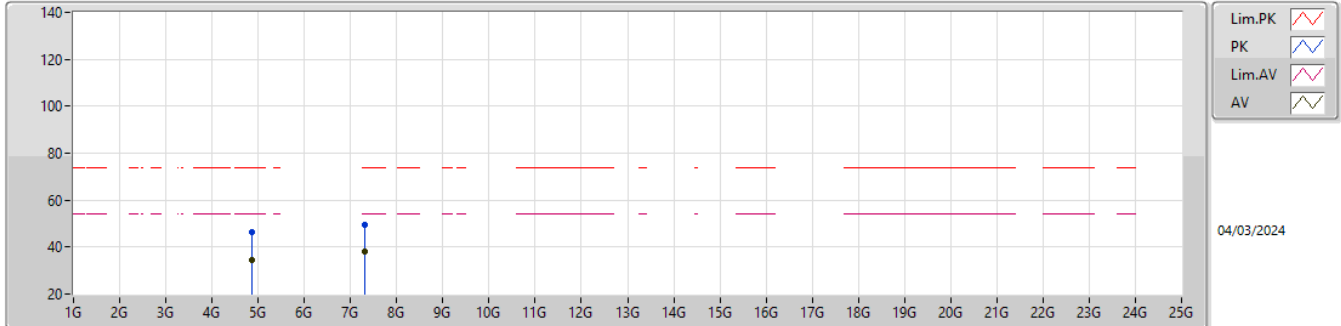


EUT_Z_1TX
Setting 73
02-P-V-1

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA			
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)			
PK	4.8734G	45.93	74.00	-28.07	38.31	3	Vertical	215	2.13	-	33.15	5.11	30.64			
AV	4.86308G	34.16	54.00	-19.84	26.57	3	Vertical	215	2.13	-	33.13	5.11	30.65			
PK	7.29684G	50.23	74.00	-23.77	39.25	3	Vertical	211	2.61	-	36.59	6.50	32.11			
AV	7.30746G	38.21	54.00	-15.79	27.20	3	Vertical	211	2.61	-	36.61	6.51	32.11			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2437MHz_TX

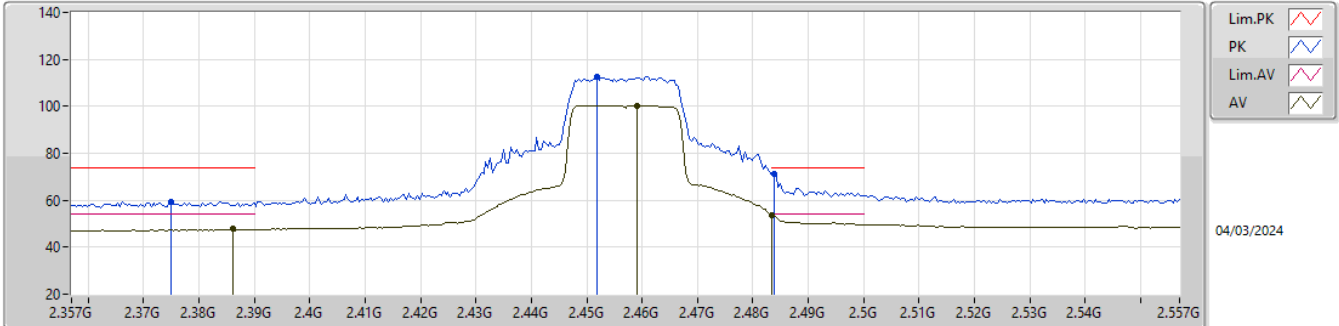


EUT_Z_1TX
Setting 73
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.86458G	46.28	74.00	-27.72	38.69	3	Horizontal	157	1.32	-	33.13	5.11	30.65			
AV	4.87388G	34.42	54.00	-19.58	26.80	3	Horizontal	157	1.32	-	33.15	5.11	30.64			
PK	7.29834G	49.52	74.00	-24.48	38.54	3	Horizontal	223	2.76	-	36.59	6.50	32.11			
AV	7.31334G	38.19	54.00	-15.81	27.17	3	Horizontal	223	2.76	-	36.63	6.51	32.12			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2457MHz_TX

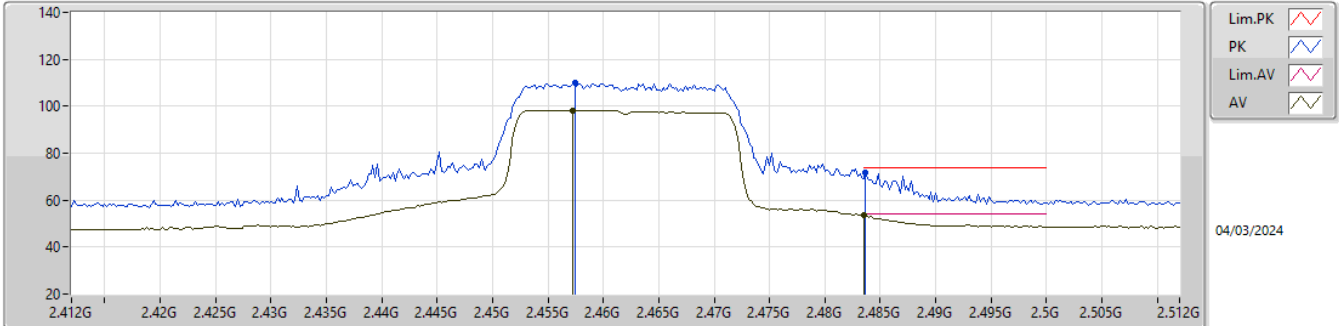


EUT_Z_1TX
Setting 62
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.375G	59.53	74.00	-14.47	28.13	3	Vertical	218	1.81	-	28.35	3.05	-			
AV	2.3862G	47.71	54.00	-6.29	16.26	3	Vertical	218	1.81	-	28.40	3.05	-			
PK	2.4518G	112.66	Inf	-Inf	81.16	3	Vertical	218	1.81	-	28.42	3.08	-			
AV	2.459G	100.36	Inf	-Inf	68.79	3	Vertical	218	1.81	-	28.49	3.08	-			
PK	2.4838G	71.11	74.00	-2.89	39.52	3	Vertical	218	1.81	-	28.50	3.09	-			
AV	2.4835G	53.56	54.00	-0.44	21.97	3	Vertical	218	1.81	-	28.50	3.09	-			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2462MHz_TX

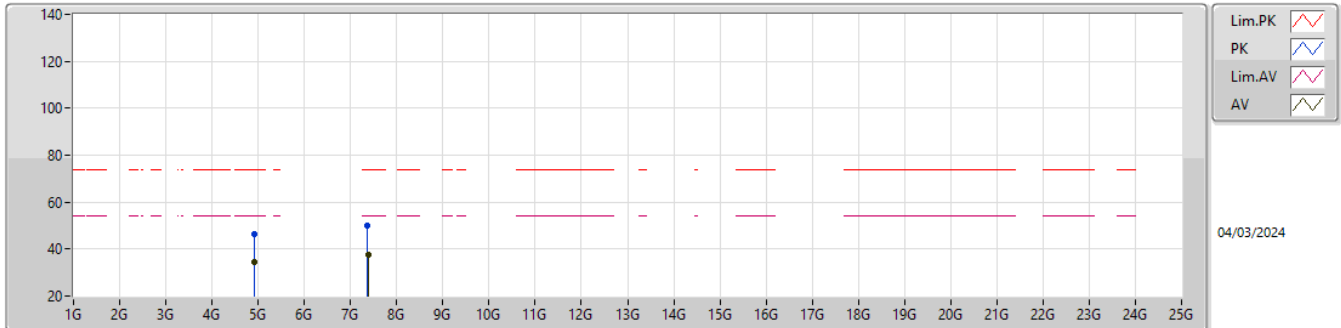


EUT_Z_1TX
Setting 53
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	2.4574G	109.96	Inf	-Inf	78.41	3	Vertical	216	1.78	-	28.47	3.08	-			
AV	2.4572G	98.24	Inf	-Inf	66.69	3	Vertical	216	1.78	-	28.47	3.08	-			
PK	2.4836G	71.73	74.00	-2.27	40.14	3	Vertical	216	1.78	-	28.50	3.09	-			
AV	2.4835G	53.40	54.00	-0.60	21.81	3	Vertical	216	1.78	-	28.50	3.09	-			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2462MHz_TX

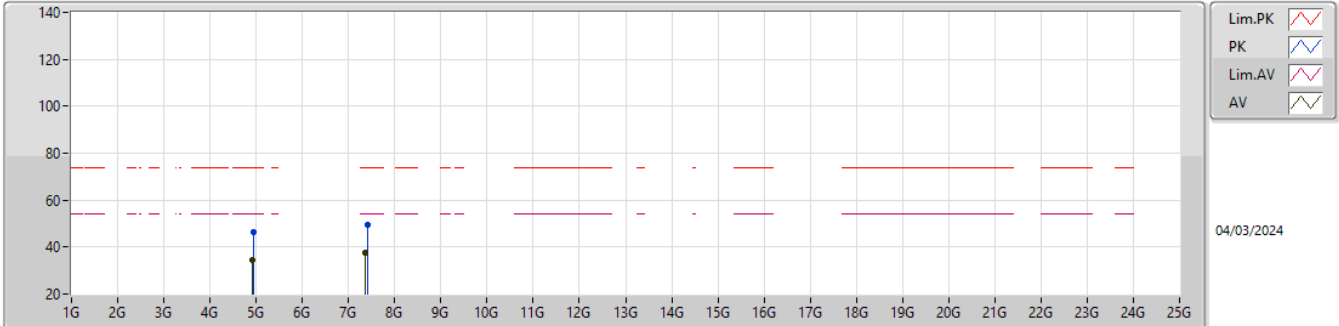


EUT_Z_1TX
Setting 53
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.91896G	46.31	74.00	-27.69	38.55	3	Vertical	286	1.80	-	33.24	5.13	30.61			
AV	4.924G	34.24	54.00	-19.76	26.47	3	Vertical	286	1.80	-	33.25	5.13	30.61			
PK	7.3716G	50.00	74.00	-24.00	38.91	3	Vertical	137	1.66	-	36.70	6.54	32.15			
AV	7.37664G	37.72	54.00	-16.28	26.62	3	Vertical	137	1.66	-	36.70	6.55	32.15			

2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_1TX

2462MHz_TX



EUT_Z_1TX
Setting 53
02-P-V-1

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)			
PK	4.93354G	46.28	74.00	-27.72	38.48	3	Horizontal	44	2.06	-	33.27	5.13	30.60			
AV	4.9237G	34.47	54.00	-19.53	26.70	3	Horizontal	44	2.06	-	33.25	5.13	30.61			
PK	7.40088G	49.38	74.00	-24.62	38.28	3	Horizontal	77	1.16	-	36.70	6.56	32.16			
AV	7.37142G	37.68	54.00	-16.32	26.59	3	Horizontal	77	1.16	-	36.70	6.54	32.15			