



RADIO TEST REPORT

FCC ID : ZQ6-AP6275P
Equipment : Wi-Fi/Bluetooth Module
Brand Name : AMPAK Technology Inc.
Model Name : AP6275P
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 Jun. 17, 2024, and testing was started from Jun. 20, 2024 and completed on Aug. 09, 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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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_10 Ver1.3



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: Cathy 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), ax (HEW20)	2412-2462	1-11 [11]

Band	Mode	BWch	Nant
2.4-2.4835GHz	802.11b	20	2TX
2.4-2.4835GHz	802.11g	20	2TX
2.4-2.4835GHz	802.11n HT20	20	2TX
2.4-2.4835GHz	802.11ax HEW20	20	2TX

Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ HEW20 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Ant.	Port			Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	2.4GHz	5GHz	Bluetooth					
1	1	1	1	PULSE ELECTRONICS PTE LTD	TZ2412W	Dipole	Reversed-SMA	Note1
2	2	2	-	PULSE ELECTRONICS PTE LTD	TZ2412W	Dipole	Reversed-SMA	

Note1:

Ant.	Antenna Gain (dBi)		
	WLAN 2.4GHz	WLAN 5GHz UNII 1~3	Bluetooth
1	3.68	4.65	3.68
2	3.68	4.65	-

Note2: The above information was declared by manufacturer.

Note3: Directional gain information

Type	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 ≤ 4	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

$$g_{j,k} = (Nss1(g1,1) + Nss1(g1,2) + Nss1(g1,3) + Nss1(g1,4))^2$$

$$DG = 10 \log[(Nss1(g1,1) + Nss1(g1,2) + Nss1(g1,3) + Nss1(g1,4))^2 / N_{ANT}] \Rightarrow 10$$

$$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

Where ;

$$2.4G \ G1 = 3.68 \text{ dBi} ; G2 = 3.68 \text{ dBi} ;$$

$$5G \text{ UNII-1} \ G1 = 4.65 \text{ dBi} ; G2 = 4.65 \text{ dBi} ;$$

$$5G \text{ UNII-2A} \ G1 = 4.65 \text{ dBi} ; G2 = 4.65 \text{ dBi} ;$$

$$5G \text{ UNII-2C} \ G1 = 4.65 \text{ dBi} ; G2 = 4.65 \text{ dBi} ;$$

$$5G \text{ UNII-3} \ G1 = 4.65 \text{ dBi} ; G2 = 4.65 \text{ dBi} ;$$

$$2.4G \ DG = 6.69 \text{ dBi}$$

$$5G \text{ UNII-1} \ DG = 7.66 \text{ dBi}$$

$$5G \text{ UNII-2A} \ DG = 7.66 \text{ dBi}$$

$$5G \text{ UNII-2C} \ DG = 7.66 \text{ dB}$$

$$5G \text{ UNII-3} \ DG = 7.66 \text{ dBi}$$

**For 2.4GHz function:****For IEEE 802.11b/g/n/ax (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:**For IEEE 802.11a/n/ac/ax (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

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)	0.931	0.31	1.398m	1k
802.11ax HEW20_Nss 1,(M0)	0.963	0.16	3.72m	300

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Beamforming Function	☐	With beamforming	☒	Without beamforming
Function	☒	Point-to-multipoint	☐	Point-to-point
Support RU	☒	Full RU	☐	Partial RU
Test Software Version	DOS [ver 6.1.7601]			

Note: 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 662911 D01 v02r01
- ♦ 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 ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH02-CB	Mason Chen	22.2~25.7 / 61~66	Jun. 27, 2024~ Jun. 29, 2024
Radiated (below 1GHz)	03CH06-CB	Jackson Peng	21.9-22.4 / 55-58	Aug. 05, 2024
Radiated (above 1GHz)	03CH01-CB	Gordon Hung	21.8-22.9 / 55-58	Jun. 20, 2024~ Jun. 25, 2024
	03CH06-CB	Gordon Hung	21.6-22.7 / 56-59	Jun. 20, 2024~ Jun. 25, 2024
AC Conduction	CO01-CB	Ryan Huang	22~23 / 61~63	Aug. 09, 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)	3.8 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.0 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	2.1 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode
802.11b_Nss1,(1Mbps)_2TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz
802.11g_Nss1,(6Mbps)_2TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz
802.11ax HEW20_Nss1,(MCS0)_2TX
2412MHz
2417MHz
2437MHz
2457MHz
2462MHz

Note:

- ♦ Evaluated HEW20 mode only due to the similar modulation. The power setting of HT20 mode 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	Normal Link
1	EUT + Bluetooth
2	EUT + WLAN 2.4GHz
3	EUT + WLAN 5GHz
For operating mode 3 is the worst case and it was record 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	Normal Link
After evaluating, the worst case was found at Z axis, so it was selected to perform test and its test result was written in the report.	
1	EUT in Z axis + Bluetooth
2	EUT in Z axis + WLAN 2.4GHz
3	EUT in Z axis + WLAN 5GHz
For operating mode 3 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
After evaluating, the worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.	
1	EUT in Y axis



2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	T420	N/A
B	Fixture	AMPAK Technology Inc.	AP6271P_EVB_V05	N/A
C	ExpressCard	AMPAK Technology Inc.	E2M V1.0	N/A
D	Earphone	SHYARO CHI	MIC-04	N/A
E	Mouse	HP	FM100	N/A
F	BT Fixture	AMPAK Technology Inc.	UART_V06	N/A
G	AP Router	ASUS	RT-AX88U	MSQ-RTAXHP00
H	Adapter	Oppo	AK933GB	N/A

**For Radiated (below 1GHz):**

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	Lenovo	42T4430	N/A
B	Fixture	AMPAK Technology Inc.	AP6271P_EVB_V05	N/A
C	ExpressCard	AMPAK Technology Inc.	E2M V1.0	N/A
D	Earphone	e-Power	S90W	N/A
E	Mouse	Logitech	M-U0026	N/A
F	BT Fixture	AMPAK Technology Inc.	UART_V06	N/A
G	AP Router	ASUS	RT-AX88U	N/A
H	Adapter	Apple	A1385	N/A

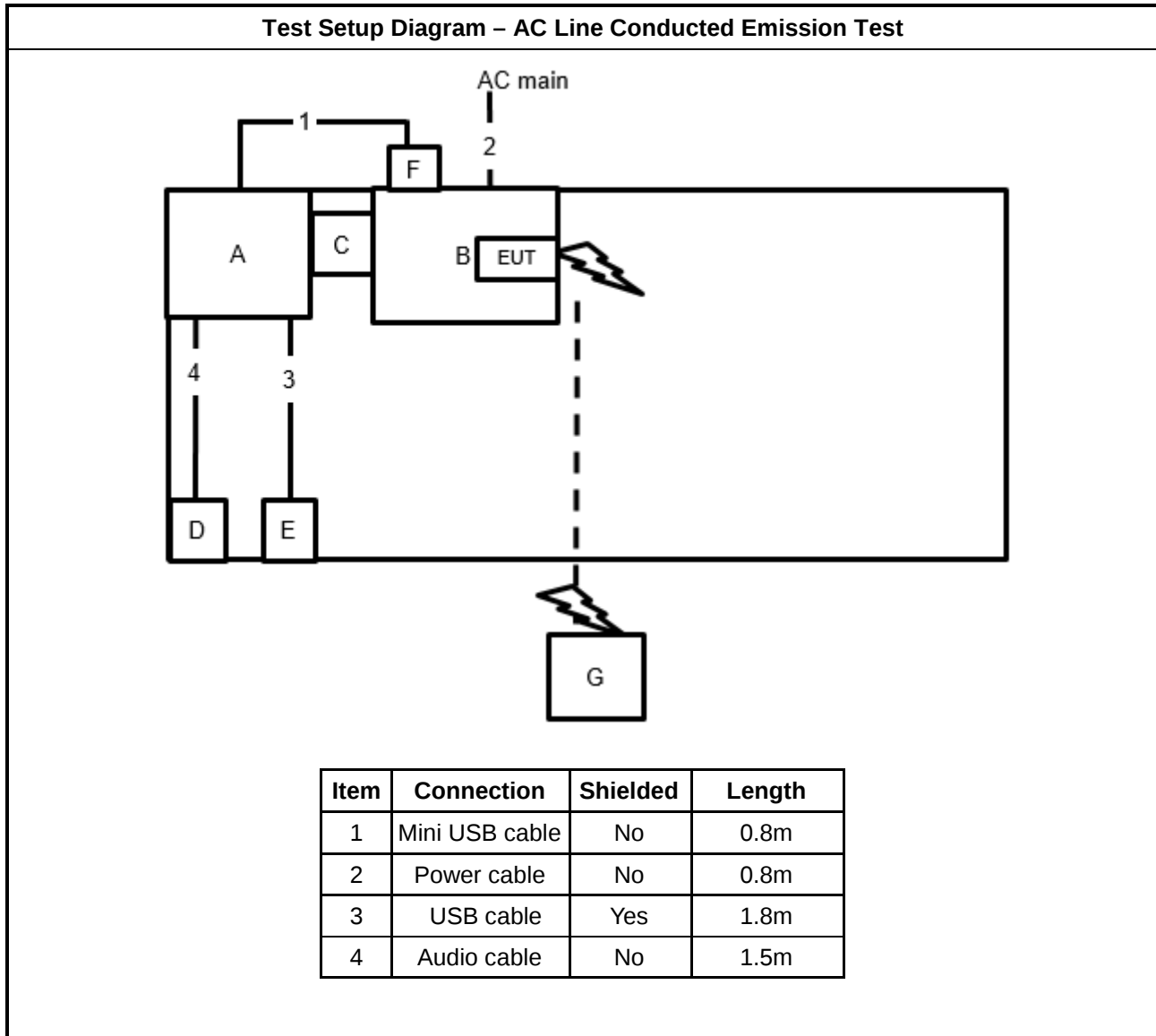
For Radiated (above 1GHz):

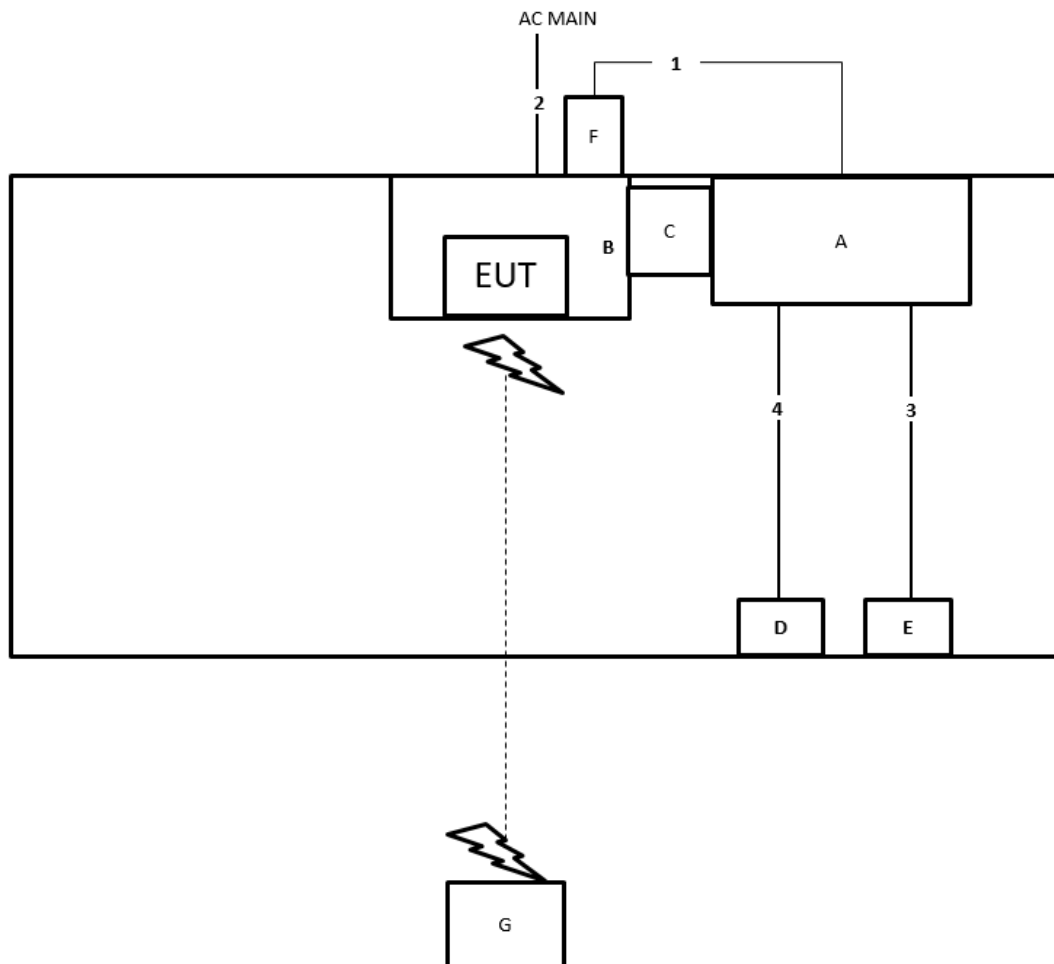
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	DC Power Supply	MOTECH	LPS-305	N/A
B	PC	AMPAK Technology Inc.	H81-PLUS	N/A
C	Fixture	AMPAK Technology Inc.	AP6271P_EVB_V05	N/A

For RF Conducted:

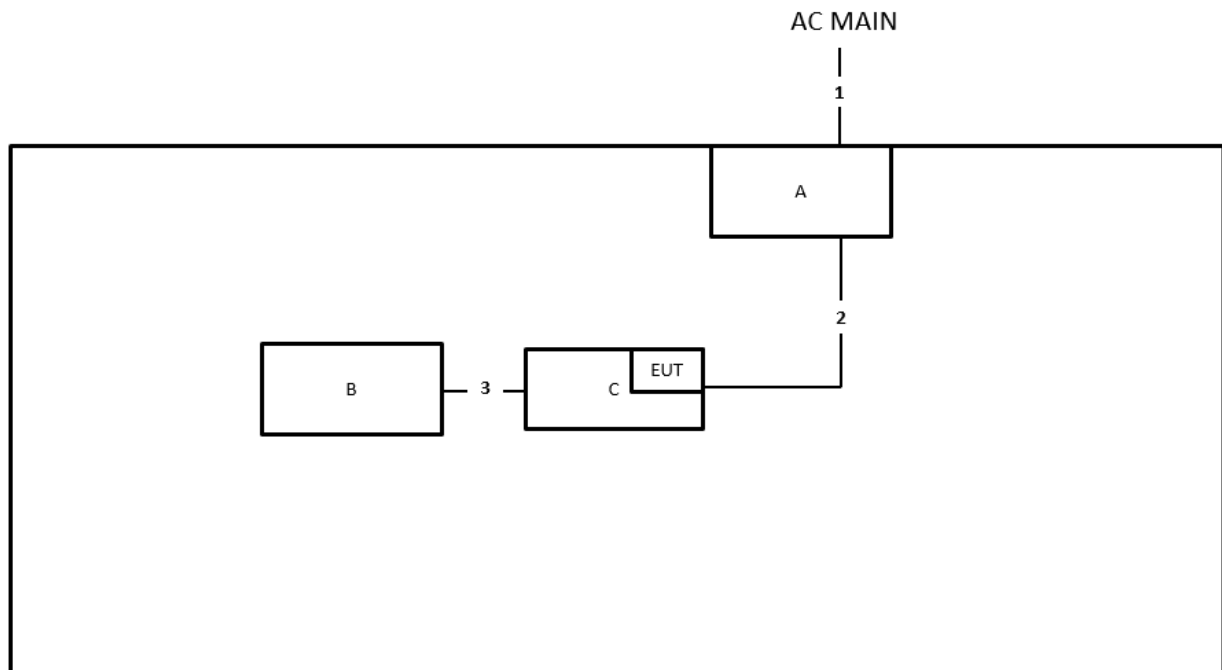
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PC	AMPAK Technology Inc.	H81-PLUS	N/A
B	Fixture	AMPAK Technology Inc.	AP6271P_EVB_V05	N/A
C	DC Power Supply	MOTECH	LPS-305	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Mini USB cable	No	1m
2	Power cable	No	1.5m
3	USB cable	Yes	1m
4	Audio cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	1m
2	Crocodile clip cable*2	No	1m
3	Console cable	No	1m



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.		

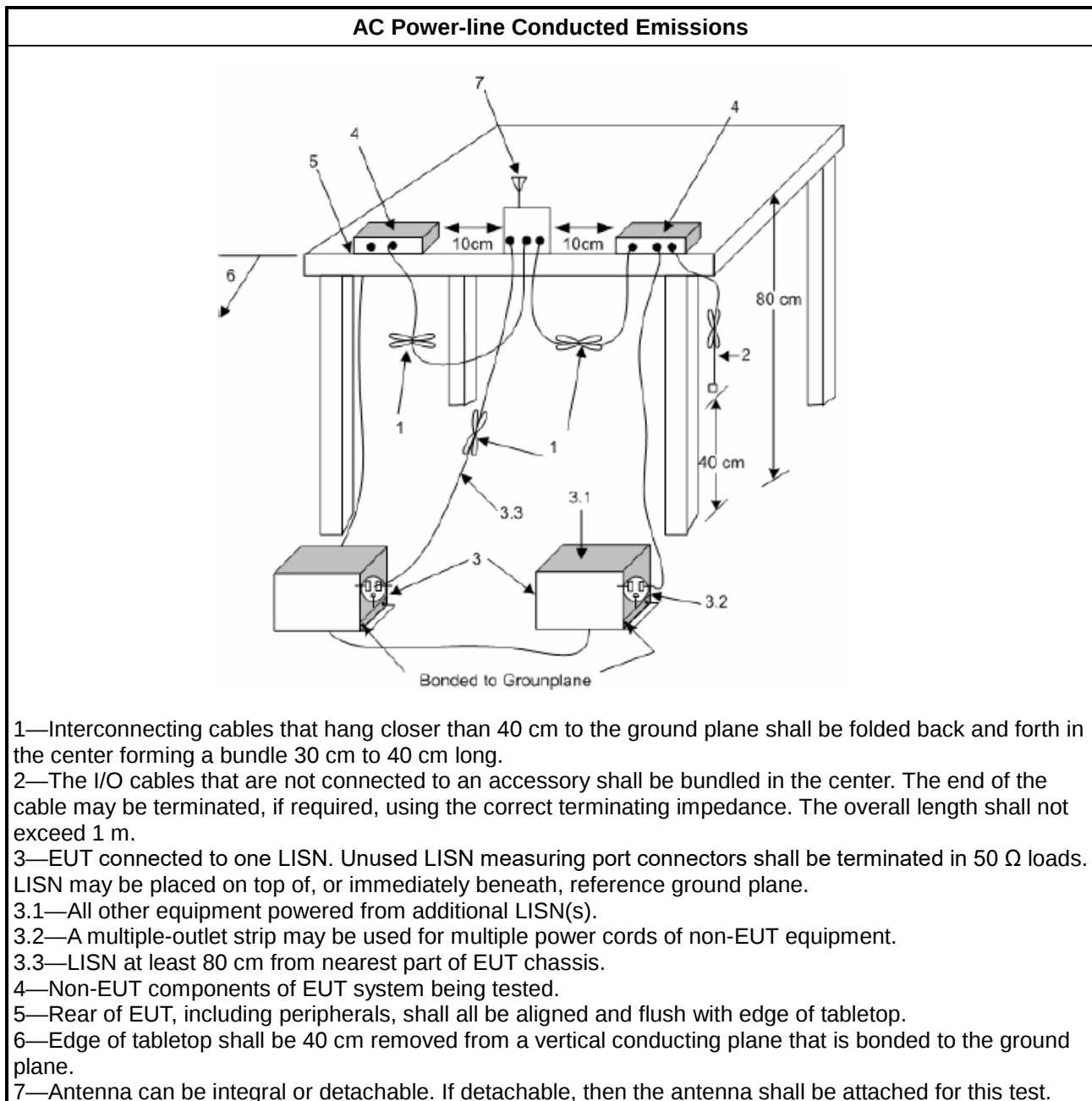
3.1.2 Measuring Instruments

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 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:
6 dB bandwidth $\geq$ 500 kHz.

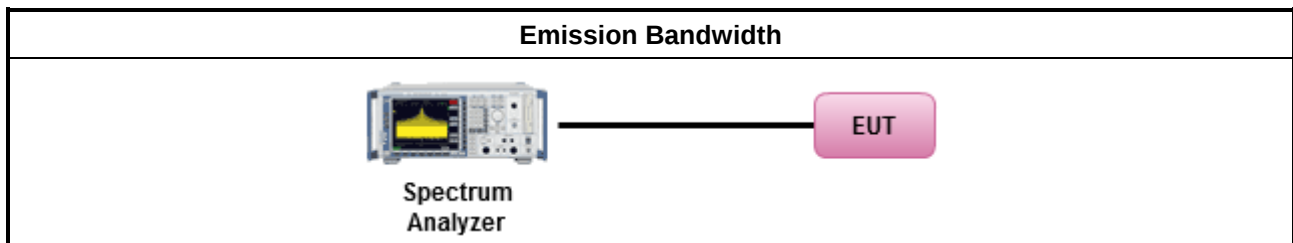
3.2.2 Measuring Instruments

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 FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
☐ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
☐ 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.	

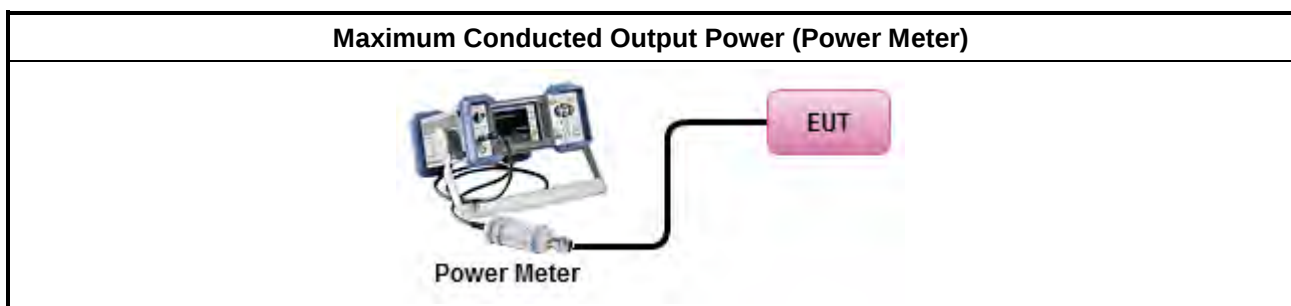
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
☐	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]	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
☐	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	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
☐	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)	
☐	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).
☒	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: $P_{\text{total}} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $\text{EIRP}_{\text{total}} = P_{\text{total}} + \text{DG}$	

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

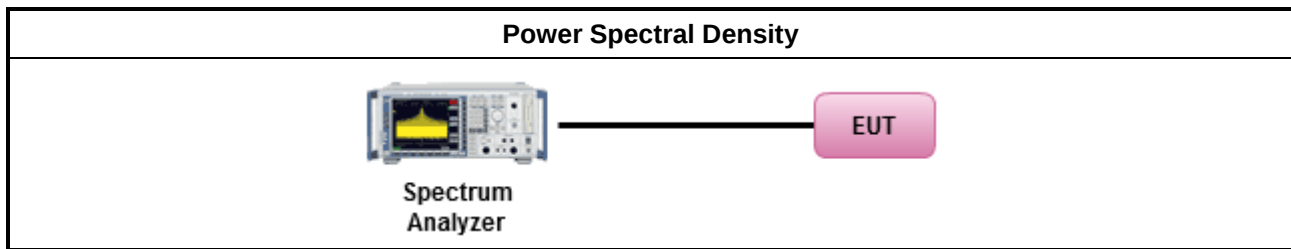
3.4.2 Measuring Instruments

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 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:	
☒	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.
☐	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,
☐	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
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. 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.	

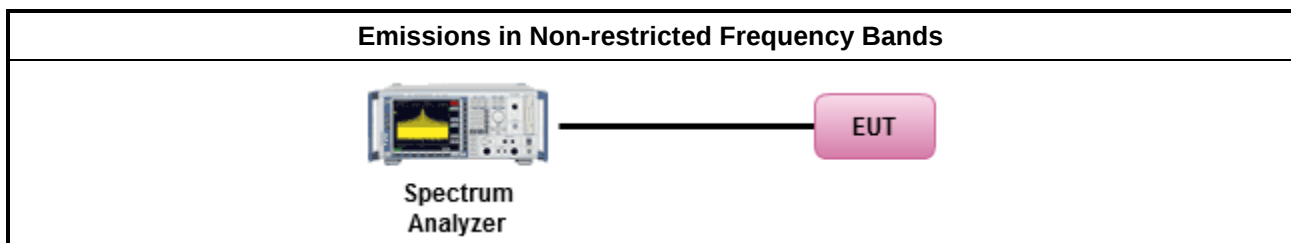
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as 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

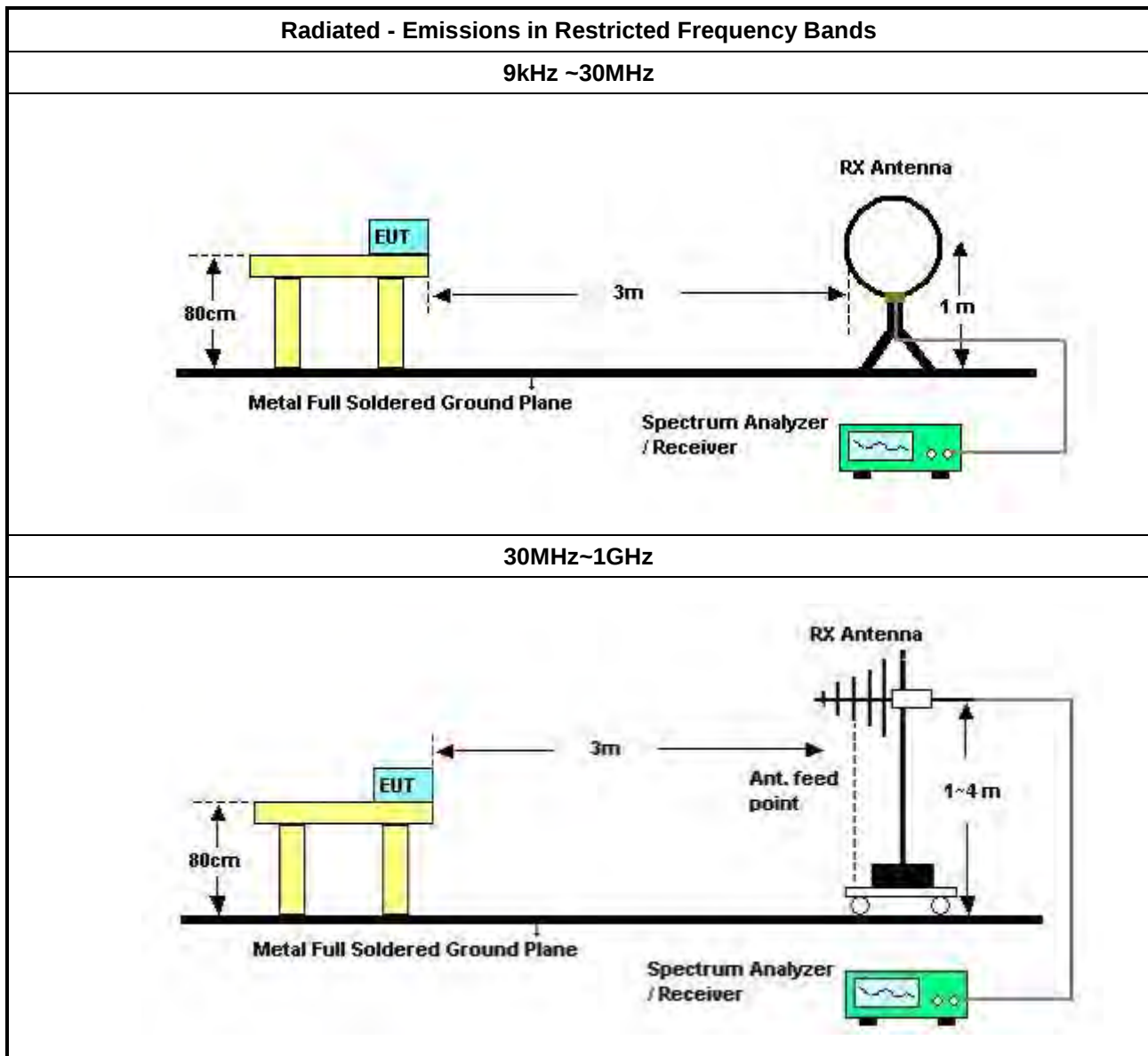
Refer a test equipment and calibration data table in this test report.

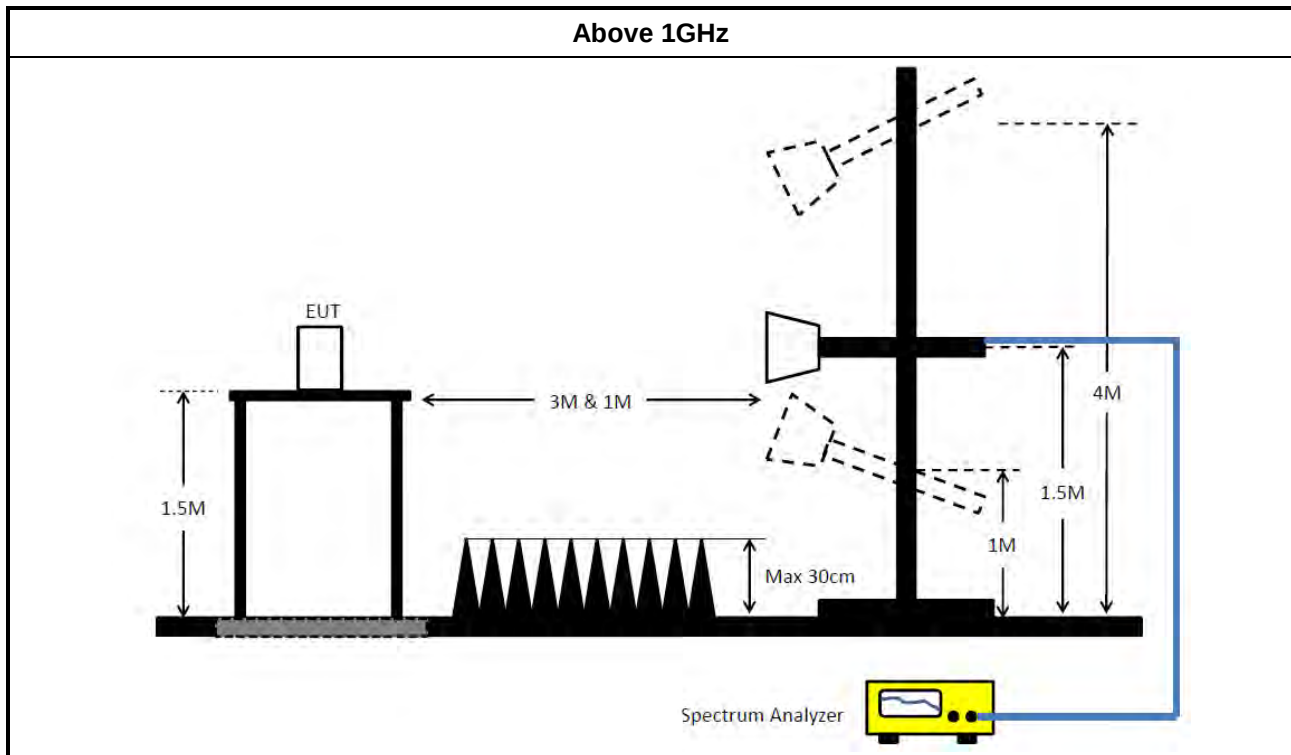


3.6.3 Test Procedures

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.
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq 1/T$).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ 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-5 0-16-2	04083	150kHz ~ 100MHz	Feb. 19, 2024	Feb. 18, 2025	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 24, 2024	Apr. 23, 2025	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)
Test Software	SPORTON	SENSE-EMI	V5.11	150kHz-30MHz	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30 MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (03CH06-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 02, 2024	Aug. 01, 2025	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMC	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 29, 2024	Jul. 28, 2025	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA9120 D	BBHA 9120D-1292	1GHz~18GHz	Jul. 31, 2023	Jul. 30, 2024	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA9120 D	BBHA 9120D-1292	1GHz~18GHz	Jul. 29, 2024	Jul. 28, 2025	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 03, 2023	Nov. 02, 2024	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	Aug. 01, 2023	Jul. 31, 2024	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	Jul. 31, 2024	Jul. 30, 2025	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 26, 2024	Apr. 25, 2025	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 20, 2023	Oct. 19, 2024	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-24+68	30MHz~1GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+68	1GHz~18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE-152 47_DTS	V5.11.18	2.4GHz-2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH06-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Test Software	SPORTON	SENSE-EMI	V5.11.8	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 04, 2024	May 03, 2025	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120D-01816	1GHz~18GHz	Dec. 20, 2023	Dec. 19, 2024	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 17, 2024	May 16, 2025	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Nov. 28, 2023	Nov. 27, 2024	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Nov. 06, 2023	Nov. 05, 2024	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Nov. 06, 2023	Nov. 05, 2024	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 14, 2023	Aug. 13, 2024	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 19, 2023	Oct. 18, 2024	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 19, 2023	Oct. 18, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1 –26.5 GHz	Oct. 03, 2023	Oct. 02, 2024	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

Note: Calibration Interval of instruments listed above is one year.
NCR means Non-Calibration required.



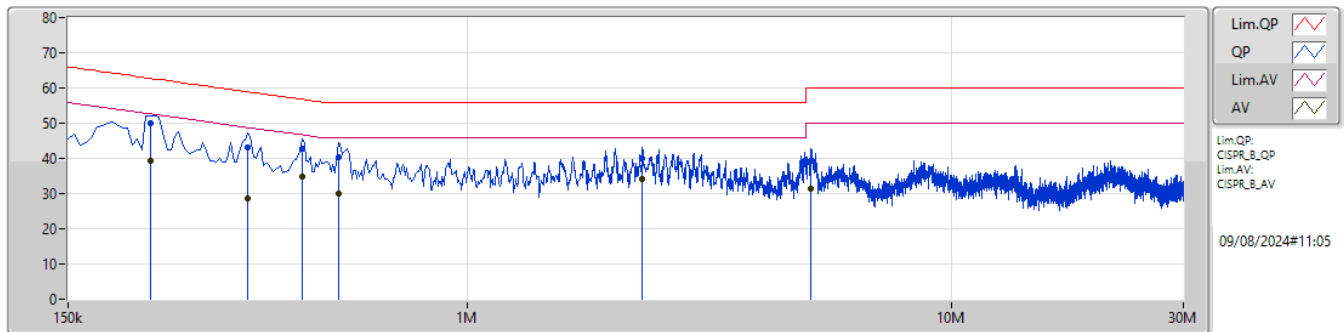
Conducted Emissions at Powerline

Appendix A

Summary

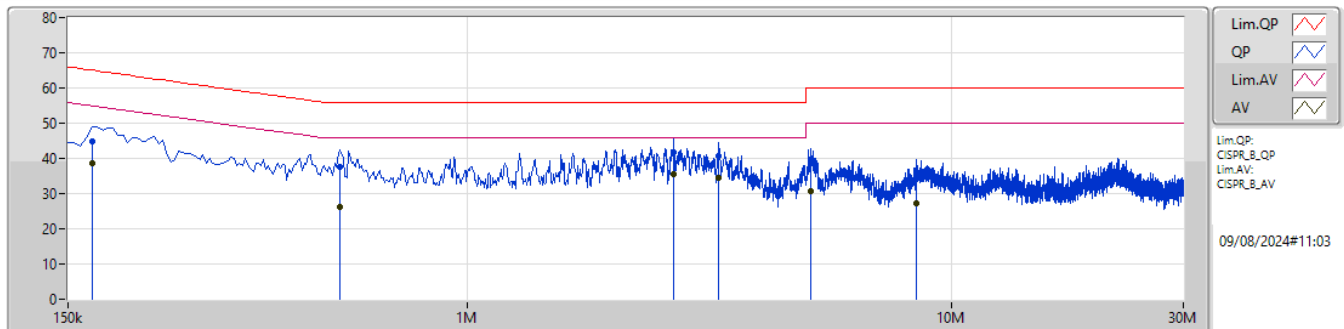
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	AV	2.666M	35.47	46.00	-10.53	Neutral

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	222k	49.88	62.75	-12.87	9.92	Line	-	39.96	0.04	0.02	9.86						
AV	222k	39.37	52.75	-13.38	9.92	Line	-	29.45	0.04	0.02	9.86						
QP	352.5k	43.04	58.91	-15.87	9.95	Line	-	33.09	0.05	0.02	9.88						
AV	352.5k	28.75	48.91	-20.16	9.95	Line	-	18.80	0.05	0.02	9.88						
QP	456k	42.62	56.76	-14.14	9.96	Line	-	32.66	0.05	0.02	9.89						
AV	456k	34.96	46.76	-11.80	9.96	Line	"Worst"	25.00	0.05	0.02	9.89						
QP	541.5k	40.27	56.00	-15.73	9.98	Line	-	30.29	0.06	0.02	9.90						
AV	541.5k	30.03	46.00	-15.97	9.98	Line	-	20.05	0.06	0.02	9.90						
QP	2.297M	39.86	56.00	-16.14	10.07	Line	-	29.79	0.10	0.08	9.89						
AV	2.297M	34.03	46.00	-11.97	10.07	Line	-	23.96	0.10	0.08	9.89						
QP	5.123M	39.46	60.00	-20.54	10.20	Line	-	29.26	0.16	0.14	9.90						
AV	5.123M	31.39	50.00	-18.61	10.20	Line	-	21.19	0.16	0.14	9.90						

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	168k	44.75	65.06	-20.31	9.94	Neutral	-	34.81	0.06	0.02	9.86						
AV	168k	38.65	55.06	-16.41	9.94	Neutral	-	28.71	0.06	0.02	9.86						
QP	546k	37.71	56.00	-18.29	9.99	Neutral	-	27.72	0.07	0.02	9.90						
AV	546k	26.19	46.00	-19.81	9.99	Neutral	-	16.20	0.07	0.02	9.90						
QP	2.666M	41.76	56.00	-14.24	10.10	Neutral	-	31.66	0.11	0.10	9.89						
AV	2.666M	35.47	46.00	-10.53	10.10	Neutral	"Worst"	25.37	0.11	0.10	9.89						
QP	3.3M	40.58	56.00	-15.42	10.14	Neutral	-	30.44	0.12	0.12	9.90						
AV	3.3M	34.36	46.00	-11.64	10.14	Neutral	-	24.22	0.12	0.12	9.90						
QP	5.123M	38.53	60.00	-21.47	10.20	Neutral	-	28.33	0.16	0.14	9.90						
AV	5.123M	30.70	50.00	-19.30	10.20	Neutral	-	20.50	0.16	0.14	9.90						
QP	8.444M	34.18	60.00	-25.82	10.27	Neutral	-	23.91	0.22	0.14	9.91						
AV	8.444M	27.15	50.00	-22.85	10.27	Neutral	-	16.88	0.22	0.14	9.91						

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	8.525M	12.882M	12M9G1D	7.075M	10.742M
802.11g_Nss1,(6Mbps)_2TX	16.375M	17.773M	17M8D1D	16.325M	16.502M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.975M	18.971M	19M0D1D	17.65M	18.819M

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

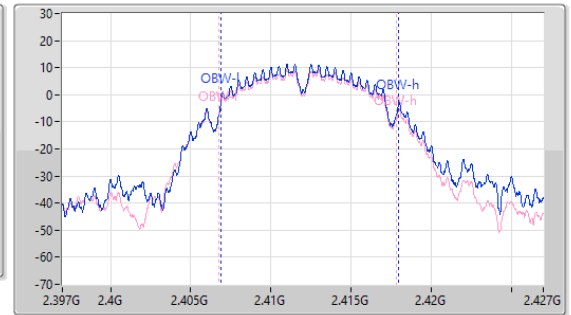
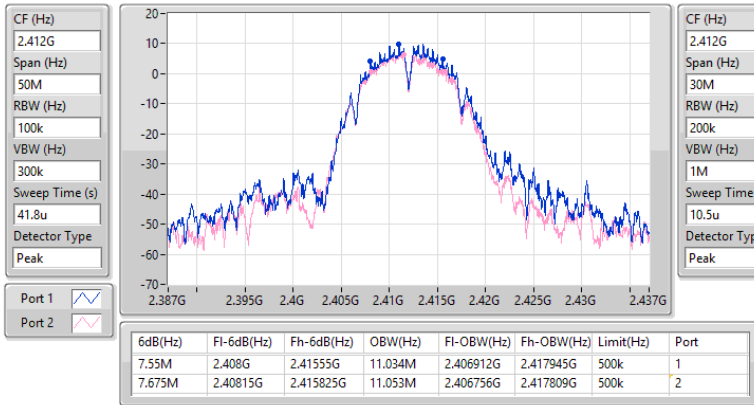
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	7.55M	11.034M	7.675M	11.053M
2437MHz	Pass	500k	7.55M	12.882M	8.525M	12.319M
2462MHz	Pass	500k	7.075M	10.742M	7.575M	10.879M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.35M	16.502M	16.35M	16.648M
2437MHz	Pass	500k	16.35M	16.852M	16.325M	17.773M
2462MHz	Pass	500k	16.375M	16.824M	16.375M	16.73M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	18.55M	18.847M	18.875M	18.868M
2437MHz	Pass	500k	17.65M	18.95M	18.975M	18.971M
2462MHz	Pass	500k	18.25M	18.819M	18.7M	18.91M

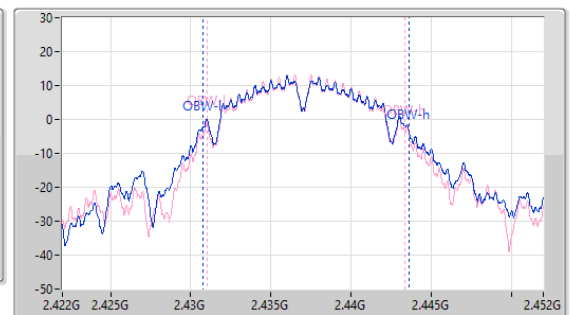
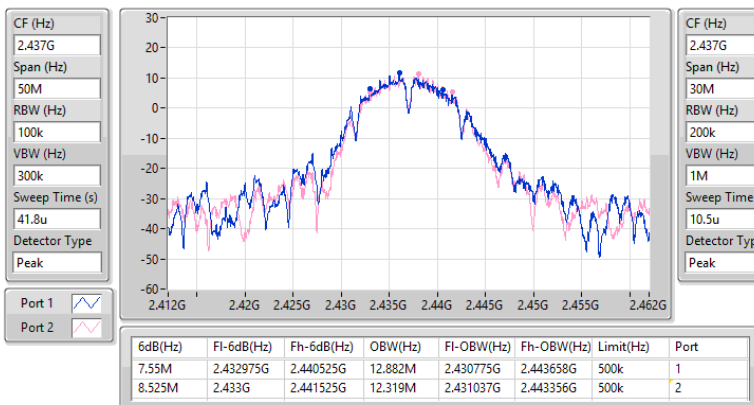
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX
EBW
2412MHz

27/06/2024


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX
EBW
2437MHz

27/06/2024

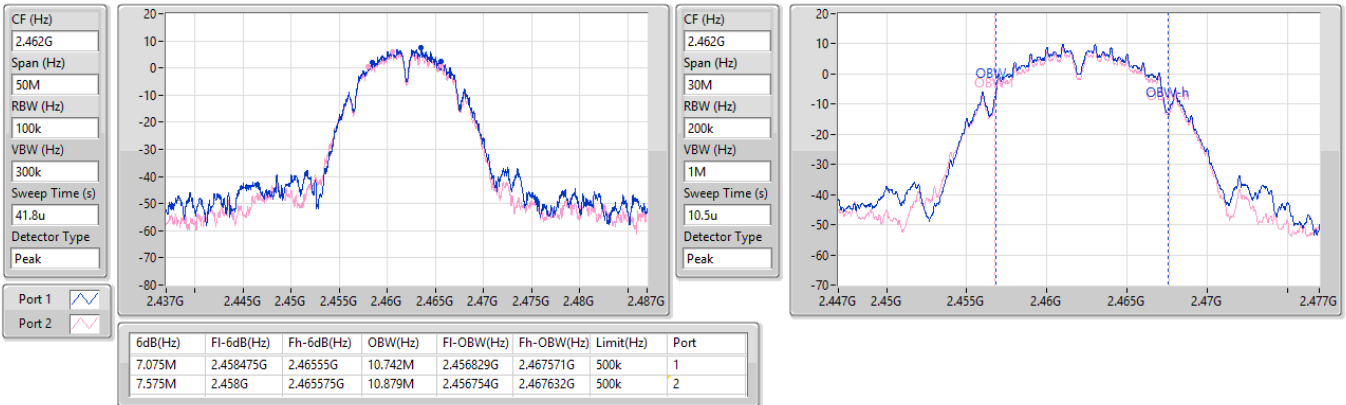


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

EBW

2462MHz

27/06/2024

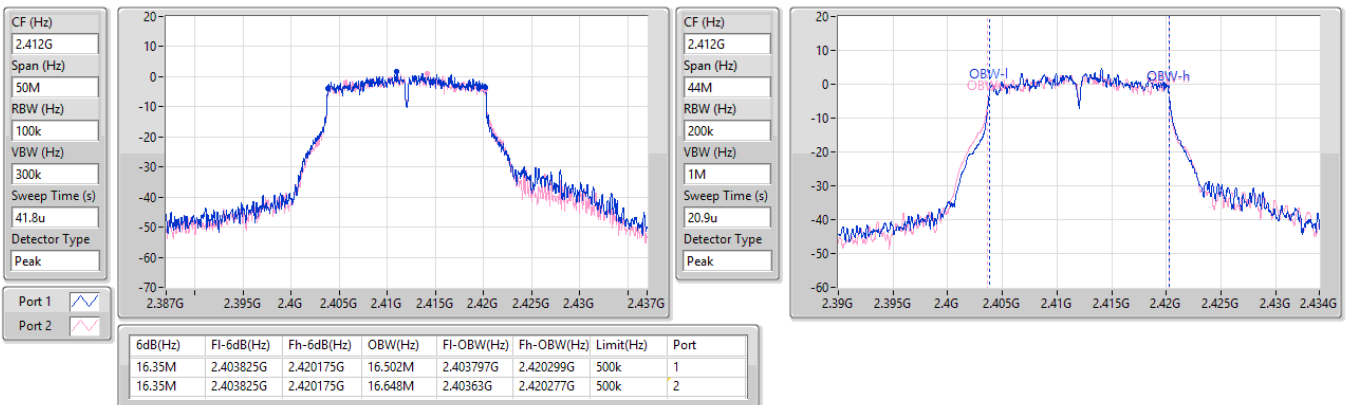


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

EBW

2412MHz

27/06/2024

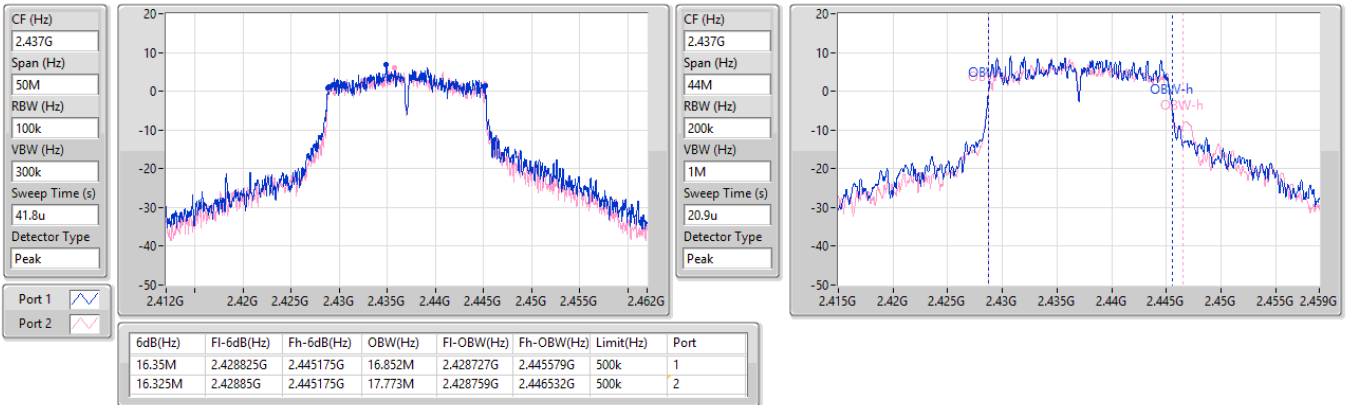


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

EBW

2437MHz

27/06/2024

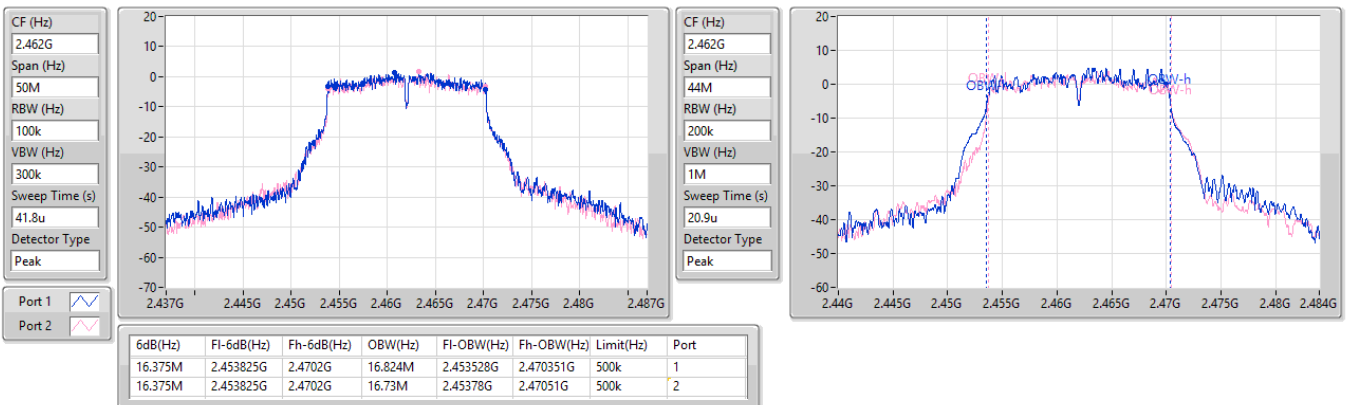


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

EBW

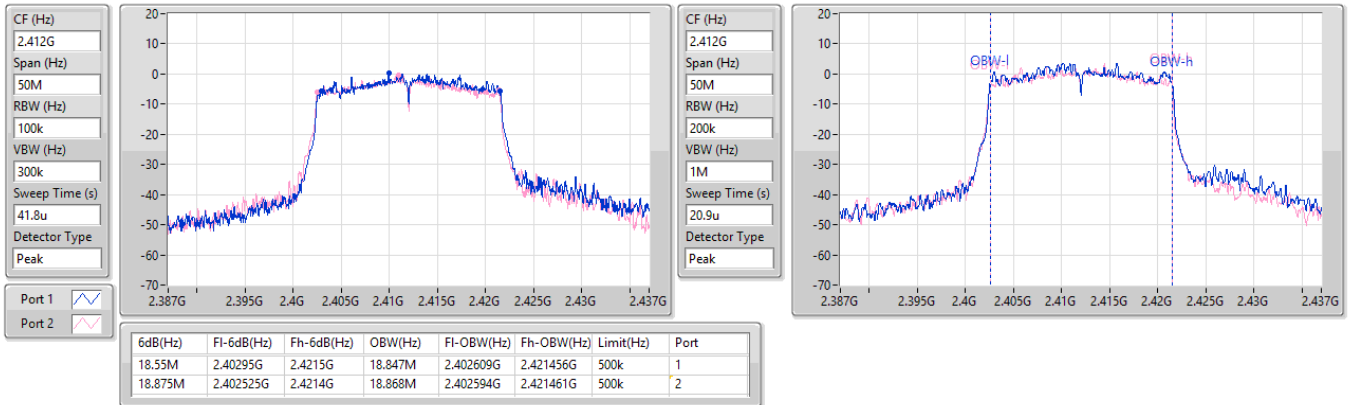
2462MHz

27/06/2024

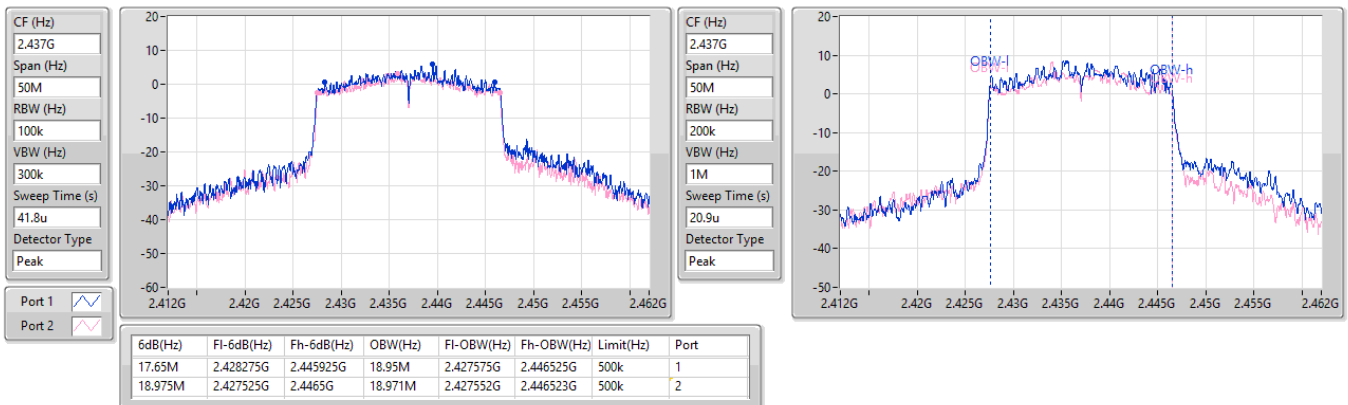


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
2412MHz

27/06/2024


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
2437MHz

27/06/2024

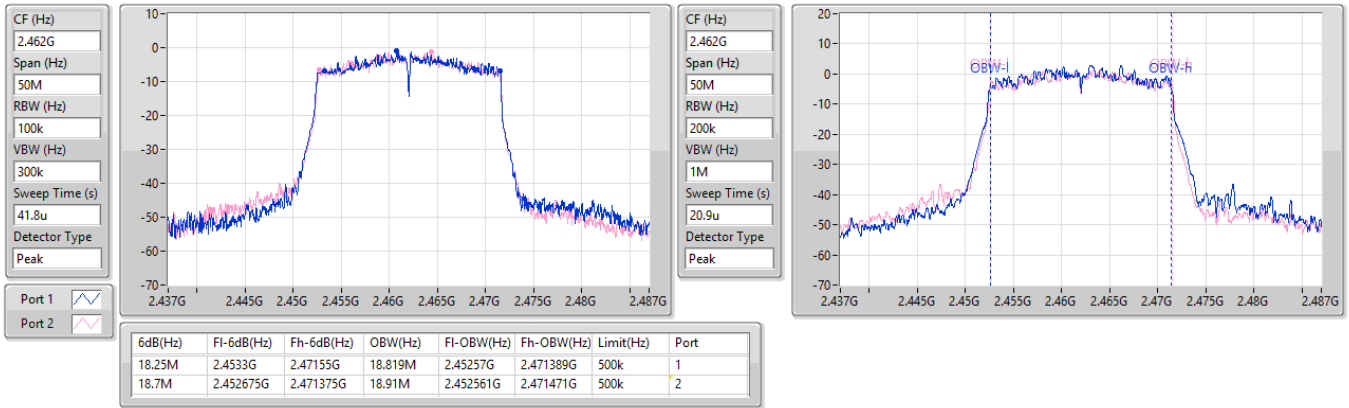


2.4-2.4835GHz_802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

2462MHz

27/06/2024





Average Power

Appendix C

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	24.25	0.26607
802.11g_Nss1,(6Mbps)_2TX	22.47	0.17660
802.11ax HEW20_Nss1,(MCS0)_2TX	21.62	0.14521

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.68	18.85	17.72	21.33	30.00
2417MHz	Pass	3.68	18.44	17.20	20.87	30.00
2437MHz	Pass	3.68	21.49	20.97	24.25	30.00
2457MHz	Pass	3.68	19.04	18.27	21.68	30.00
2462MHz	Pass	3.68	17.89	16.58	20.29	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.68	15.29	14.90	18.11	30.00
2417MHz	Pass	3.68	16.28	15.58	18.95	30.00
2437MHz	Pass	3.68	19.71	19.20	22.47	30.00
2457MHz	Pass	3.68	16.06	15.67	18.88	30.00
2462MHz	Pass	3.68	15.66	15.16	18.43	30.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	3.68	14.76	14.40	17.59	30.00
2417MHz	Pass	3.68	16.06	15.70	18.89	30.00
2437MHz	Pass	3.68	19.05	18.12	21.62	30.00
2457MHz	Pass	3.68	15.26	14.91	18.10	30.00
2462MHz	Pass	3.68	13.57	13.24	16.42	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_2TX	-0.39
802.11g_Nss1,(6Mbps)_2TX	-4.02
802.11ax HEW20_Nss1,(MCS0)_2TX	-6.34

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	6.69	-5.62	-5.52	-3.76	7.31
2437MHz	Pass	6.69	-2.60	-2.28	-0.39	7.31
2462MHz	Pass	6.69	-5.17	-7.17	-4.69	7.31
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.69	-10.14	-10.09	-7.61	7.31
2437MHz	Pass	6.69	-5.65	-6.68	-4.02	7.31
2462MHz	Pass	6.69	-9.49	-10.54	-7.49	7.31
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.69	-11.57	-13.47	-10.68	7.31
2437MHz	Pass	6.69	-8.21	-7.99	-6.34	7.31
2462MHz	Pass	6.69	-13.74	-13.30	-11.11	7.31

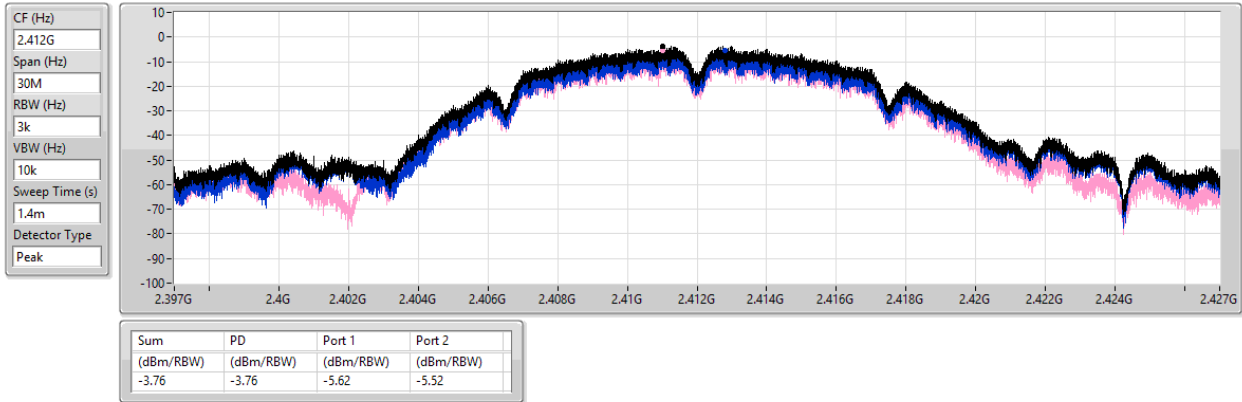
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

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

PSD

2412MHz

27/06/2024

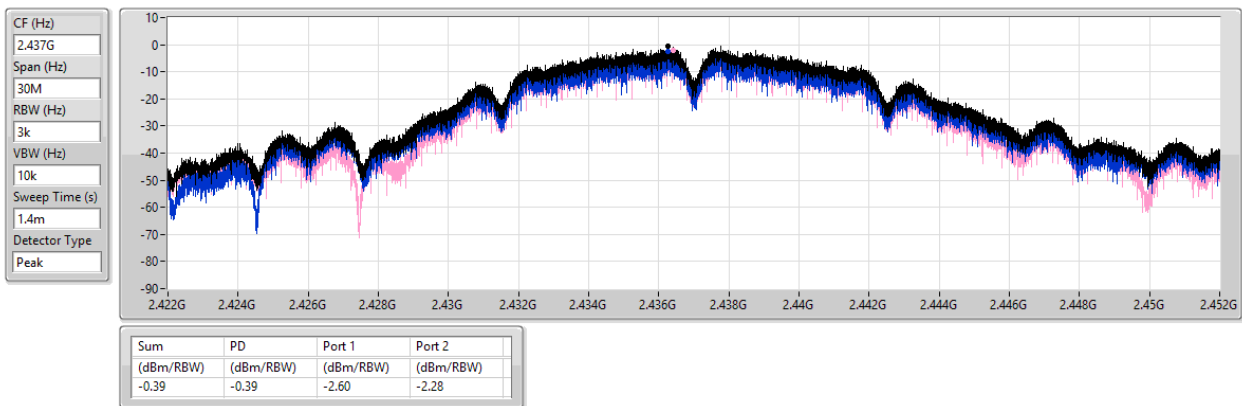


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

PSD

2437MHz

27/06/2024



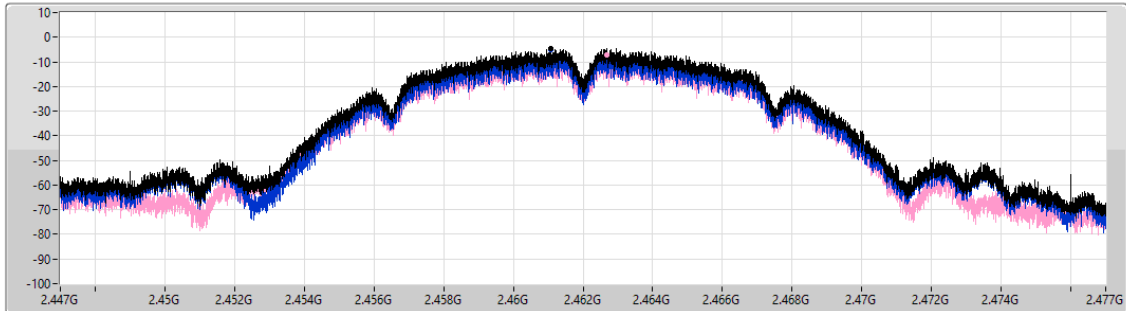
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

PSD

2462MHz

27/06/2024

CF (Hz)
2.462G
Span (Hz)
30M
RBW (Hz)
3k
VBW (Hz)
10k
Sweep Time (s)
1.4m
Detector Type
Peak



Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-4.69	-4.69	-5.17	-7.17

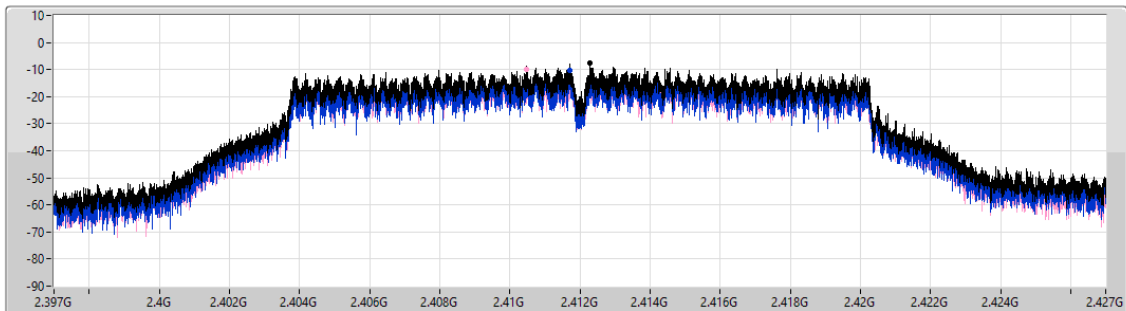
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

PSD

2412MHz

27/06/2024

CF (Hz)
2.412G
Span (Hz)
30M
RBW (Hz)
3k
VBW (Hz)
10k
Sweep Time (s)
1.4m
Detector Type
Peak



Sum
Port 1
Port 2

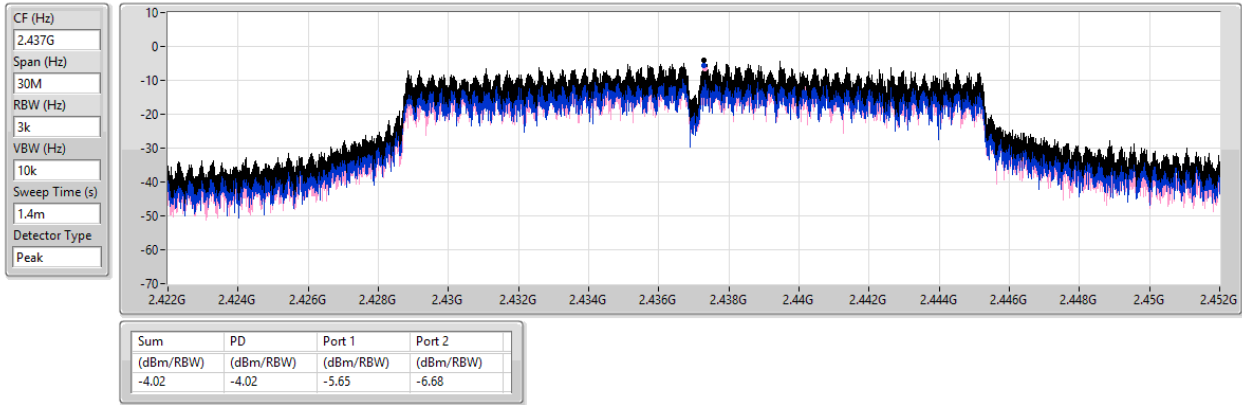
Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-7.61	-7.61	-10.14	-10.09

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

PSD

2437MHz

27/06/2024

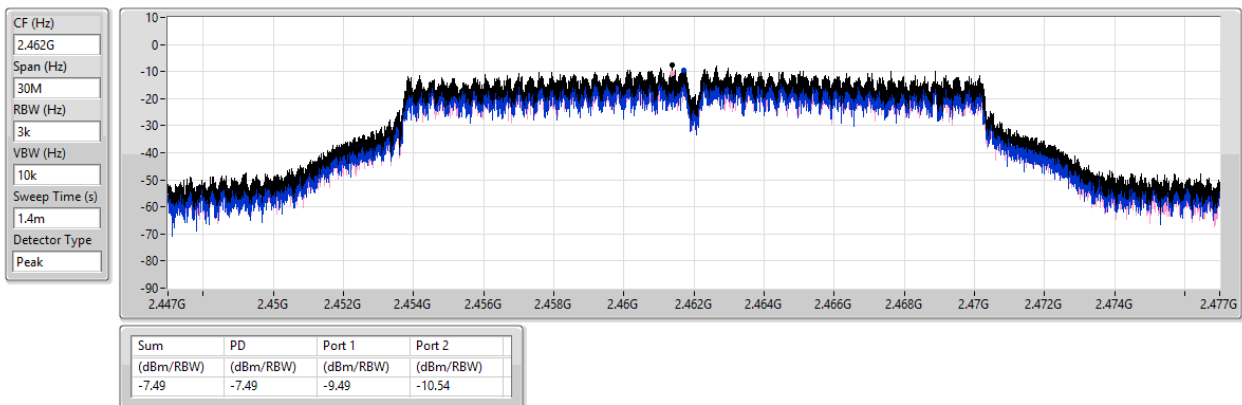


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_2TX

PSD

2462MHz

27/06/2024

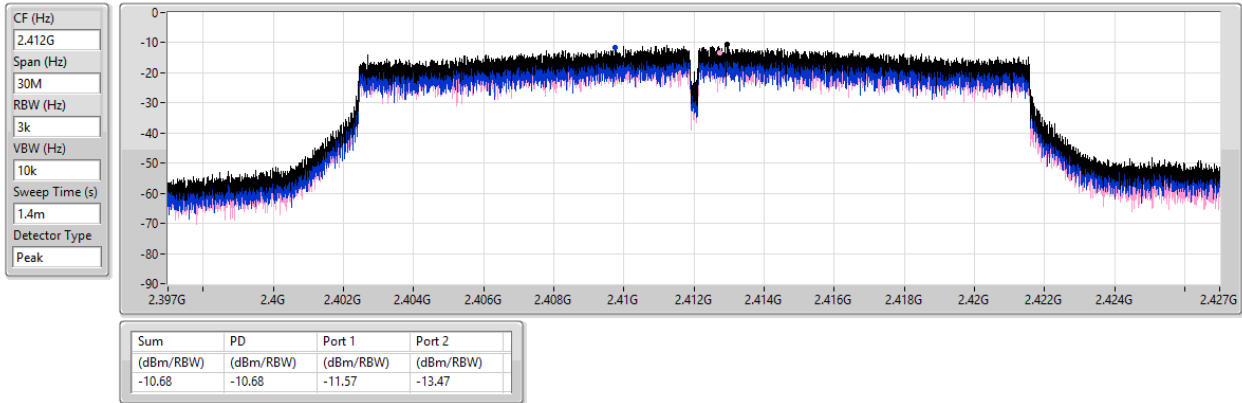


2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_2TX

PSD

2412MHz

27/06/2024

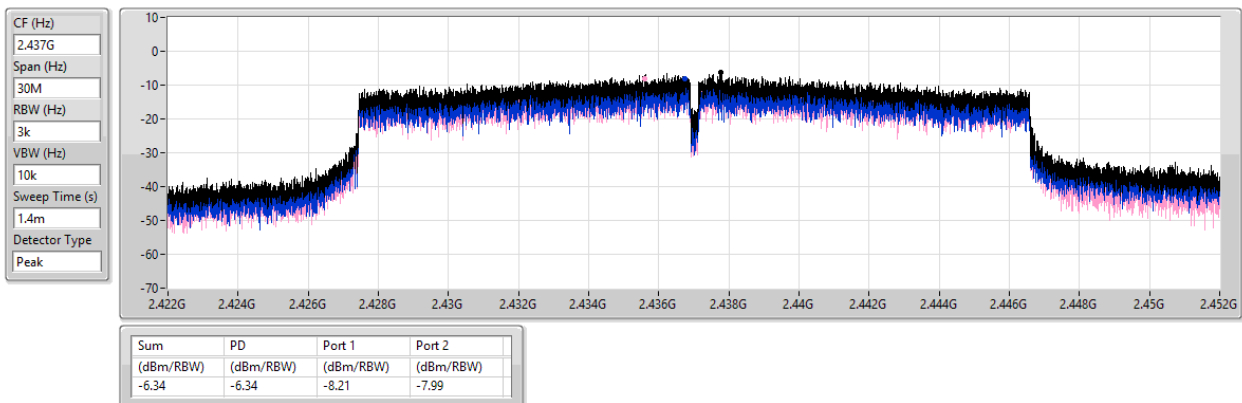


2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_2TX

PSD

2437MHz

27/06/2024

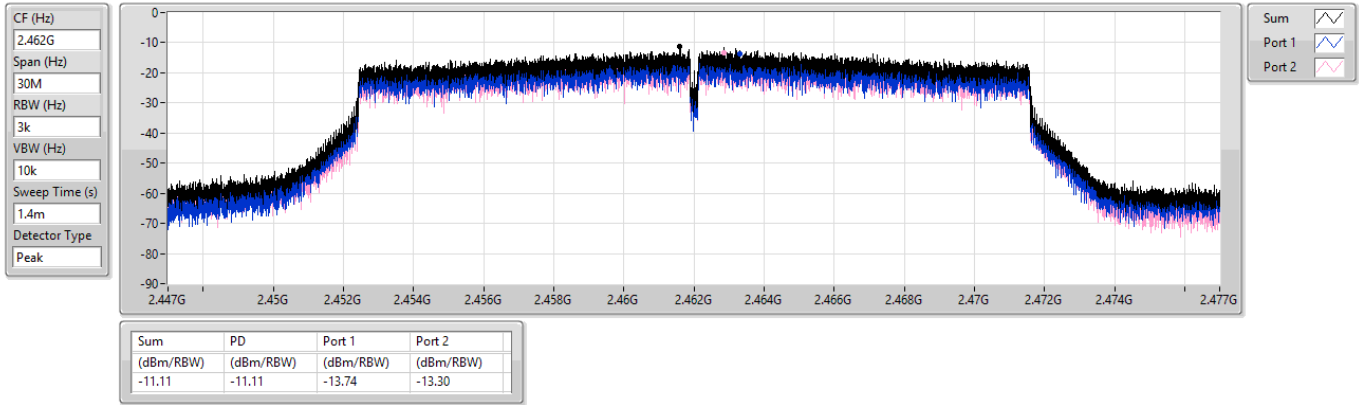


2.4-2.4835GHz_802.11ax_HEW20_Nss1,(MCS0)_2TX

PSD

2462MHz

27/06/2024





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	2.43607G	13.01	-16.99	2.09904G	-54.77	2.4G	-33.71	2.4G	-32.41	2.5027G	-50.48	21.57233G	-48.84	1
802.11g_Nss1,(6Mbps)_2TX	Pass	2.44459G	7.91	-22.09	2.1736G	-54.94	2.39928G	-34.62	2.4G	-33.03	2.51454G	-44.68	21.99377G	-48.04	1
802.11ax HEW20_Nss1,(MCS0)_2TX	Pass	2.43791G	6.58	-23.42	2.16661G	-54.46	2.3996G	-35.80	2.4G	-34.91	2.50582G	-51.23	21.65381G	-47.35	1

Result

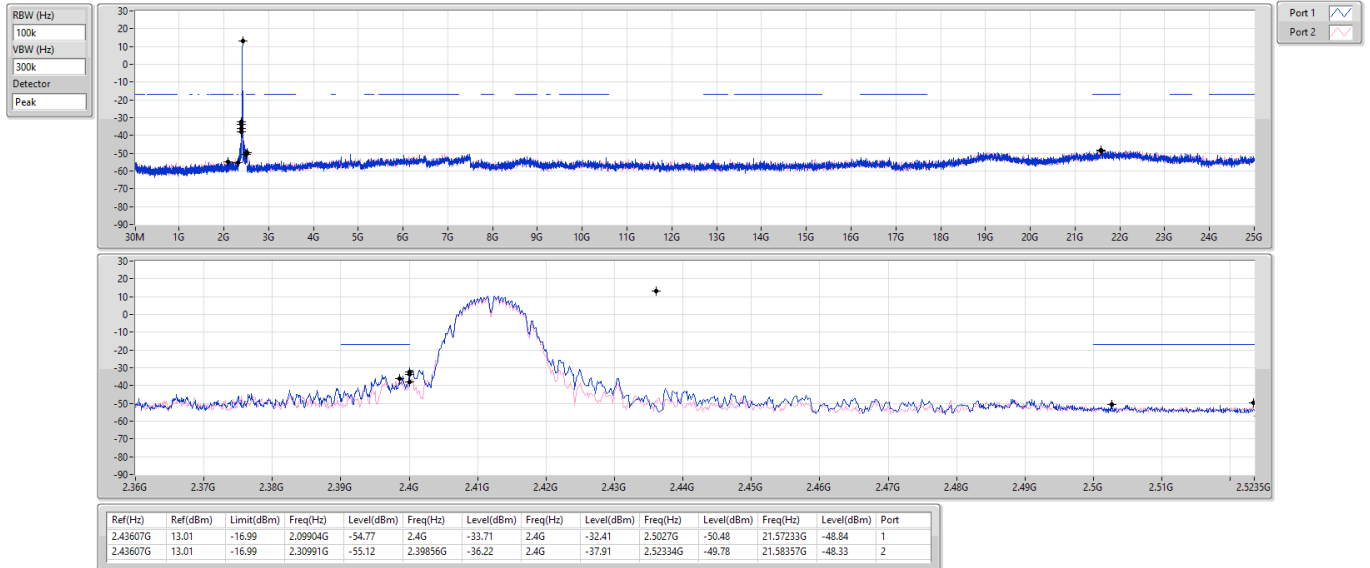
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_Nss1.(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43607G	13.01	-16.99	2.09904G	-54.77	2.4G	-33.71	2.4G	-32.41	2.5027G	-50.48	21.57233G	-48.84	1
2412MHz	Pass	2.43607G	13.01	-16.99	2.30991G	-55.12	2.39856G	-36.22	2.4G	-37.91	2.52334G	-49.78	21.58357G	-48.33	2
2437MHz	Pass	2.43607G	13.01	-16.99	2.11302G	-55.29	2.39656G	-35.58	2.4G	-40.53	2.50502G	-48.64	21.67067G	-47.76	1
2437MHz	Pass	2.43607G	13.01	-16.99	2.12234G	-54.29	2.39952G	-38.89	2.4G	-46.20	2.5051G	-48.68	21.71G	-47.89	2
2462MHz	Pass	2.43607G	13.01	-16.99	2.30758G	-54.99	2.39432G	-51.43	2.4G	-55.91	2.50006G	-47.33	21.6201G	-46.42	1
2462MHz	Pass	2.43607G	13.01	-16.99	2.30292G	-53.38	2.39552G	-52.05	2.4G	-54.80	2.52102G	-50.11	21.99377G	-48.13	2
802.11g_Nss1.(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.44459G	7.91	-22.09	2.0373G	-55.08	2.3996G	-36.71	2.4G	-37.14	2.50006G	-51.39	21.77462G	-48.64	1
2412MHz	Pass	2.44459G	7.91	-22.09	2.08739G	-54.93	2.39712G	-35.10	2.4G	-37.36	2.50694G	-51.14	21.57514G	-48.96	2
2437MHz	Pass	2.44459G	7.91	-22.09	2.1736G	-54.94	2.39928G	-34.62	2.4G	-33.03	2.51454G	-44.68	21.99377G	-48.04	1
2437MHz	Pass	2.44459G	7.91	-22.09	2.12234G	-55.21	2.4G	-37.75	2.4G	-37.75	2.50062G	-47.07	21.74934G	-48.83	2
2462MHz	Pass	2.44459G	7.91	-22.09	102.23M	-54.80	2.39728G	-51.26	2.4G	-55.07	2.5011G	-46.01	21.51333G	-48.73	1
2462MHz	Pass	2.44459G	7.91	-22.09	2.30641G	-54.68	2.392G	-51.22	2.4G	-55.26	2.5019G	-49.37	21.45152G	-48.67	2
802.11ax HEW20_Nss1.(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43791G	6.58	-23.42	2.16661G	-54.46	2.3996G	-35.80	2.4G	-34.91	2.50582G	-51.23	21.65381G	-47.35	1
2412MHz	Pass	2.43791G	6.58	-23.42	2.10487G	-55.02	2.3972G	-35.00	2.4G	-38.28	2.50494G	-50.80	21.90386G	-47.99	2
2437MHz	Pass	2.43791G	6.58	-23.42	2.08972G	-54.67	2.39824G	-37.39	2.4G	-38.88	2.5035G	-46.60	21.50771G	-47.40	1
2437MHz	Pass	2.43791G	6.58	-23.42	2.30874G	-53.91	2.4G	-39.60	2.4G	-40.33	2.50382G	-46.30	21.99377G	-48.62	2
2462MHz	Pass	2.43791G	6.58	-23.42	2.06642G	-54.49	2.39064G	-51.29	2.4G	-55.21	2.50438G	-50.18	21.97129G	-48.55	1
2462MHz	Pass	2.43791G	6.58	-23.42	1.75886G	-54.44	2.3912G	-50.67	2.4G	-54.42	2.50854G	-50.20	21.62853G	-48.00	2

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

CSEndB

2412MHz

27/06/2024

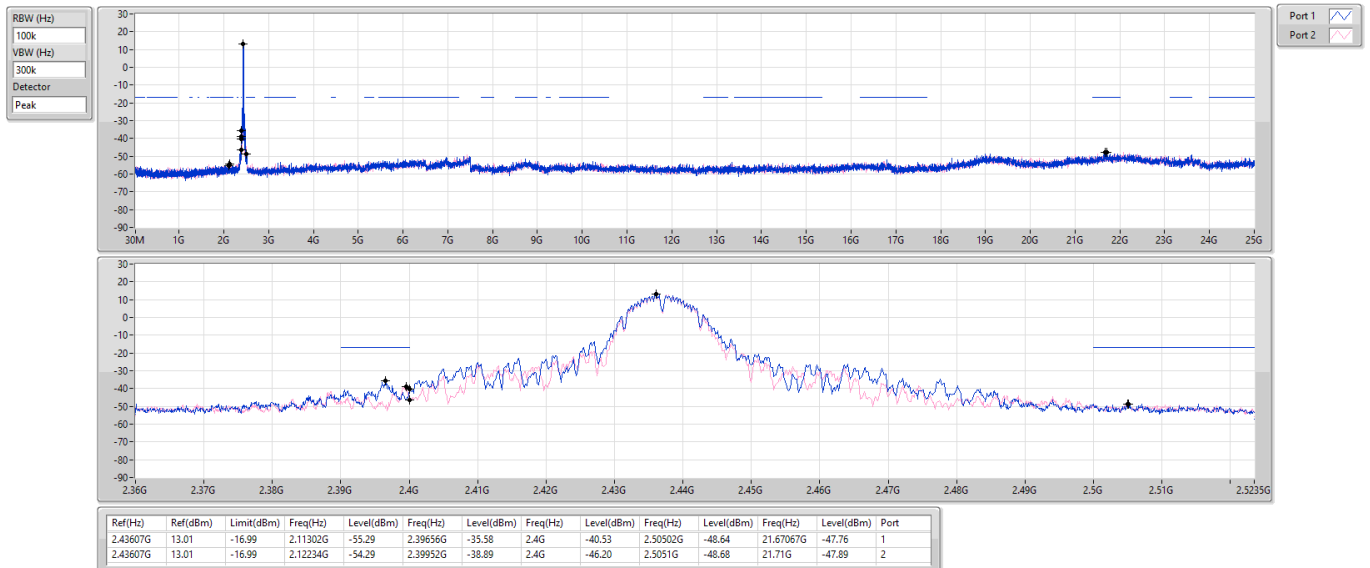


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

CSEndB

2437MHz

27/06/2024

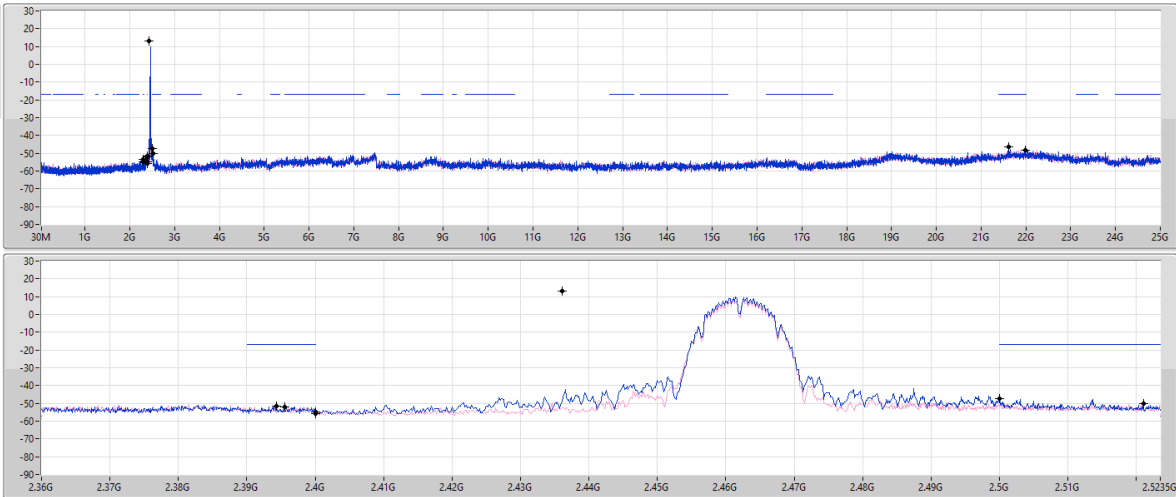


2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_2TX

CSEndB

2462MHz

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



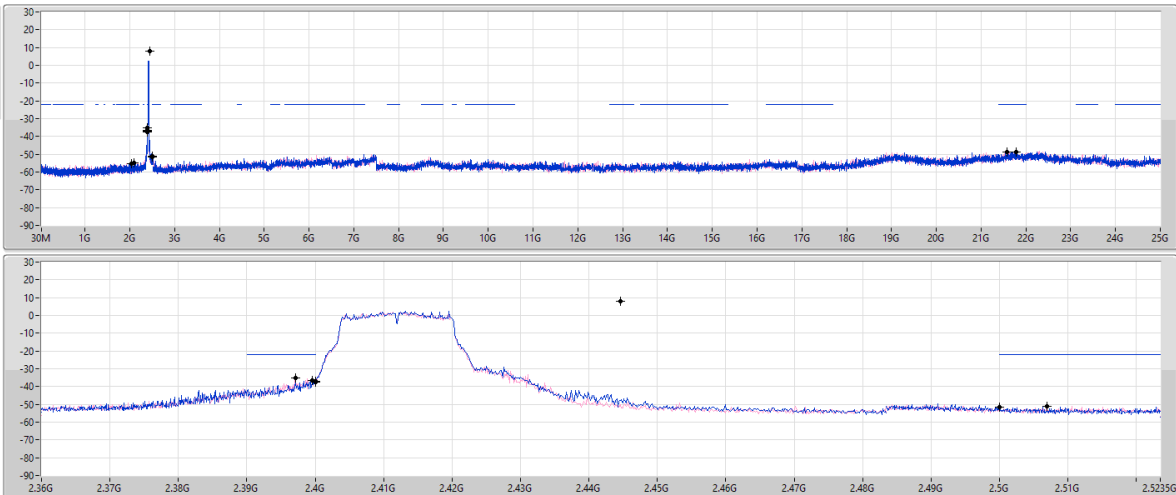
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43607G	13.01	-16.99	2.30758G	-54.99	2.39432G	-51.43	2.4G	-55.91	2.50006G	-47.33	21.6201G	-46.42	1
2.43607G	13.01	-16.99	2.30292G	-53.38	2.39552G	-52.05	2.4G	-54.80	2.52102G	-50.11	21.99377G	-48.13	2

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

CSEndB

2412MHz

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



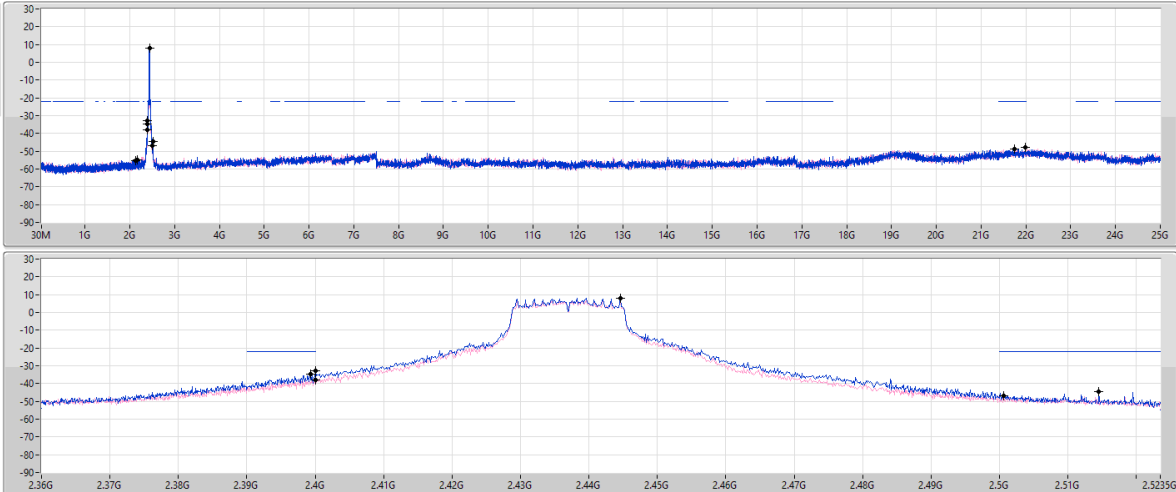
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44439G	7.91	-22.09	2.0373G	-55.08	2.3996G	-36.71	2.4G	-37.14	2.50006G	-51.39	21.77462G	-48.64	1
2.44439G	7.91	-22.09	2.08739G	-54.93	2.39712G	-35.10	2.4G	-37.36	2.50694G	-51.14	21.57514G	-48.96	2

2.4-2.4835GHz_802.11g_(6Mbps)_2TX

CSEndB

2437MHz

27/06/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
PeakPort 1
Port 2

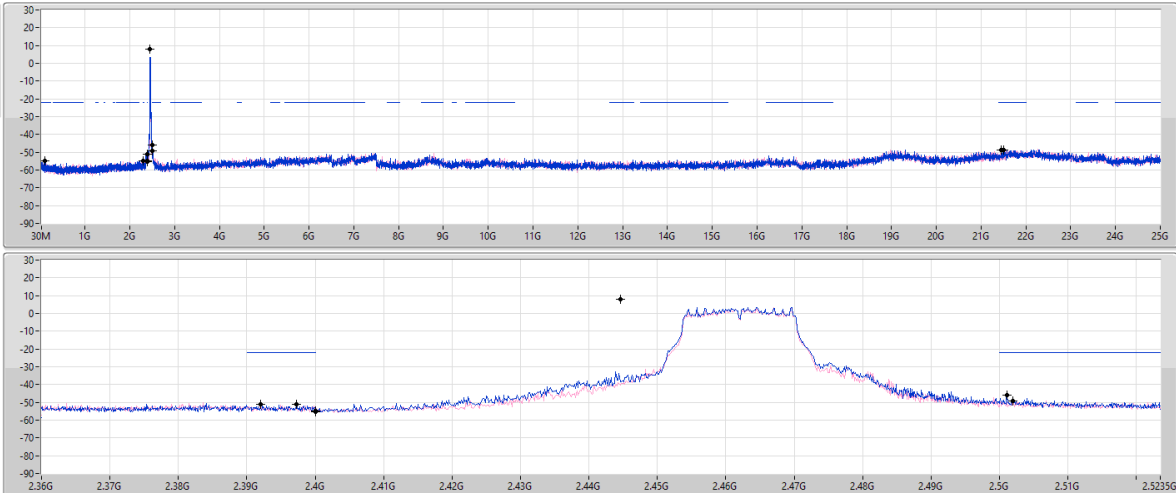
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44459G	7.91	-22.09	2.1736G	-54.94	2.39928G	-34.62	2.4G	-33.03	2.51454G	-44.68	21.99377G	-48.04	1
2.44459G	7.91	-22.09	2.12234G	-55.21	2.4G	-37.75	2.4G	-37.75	2.50062G	-47.07	21.74934G	-48.83	2

2.4-2.4835GHz_802.11g_(6Mbps)_2TX

CSEndB

2462MHz

27/06/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
PeakPort 1
Port 2

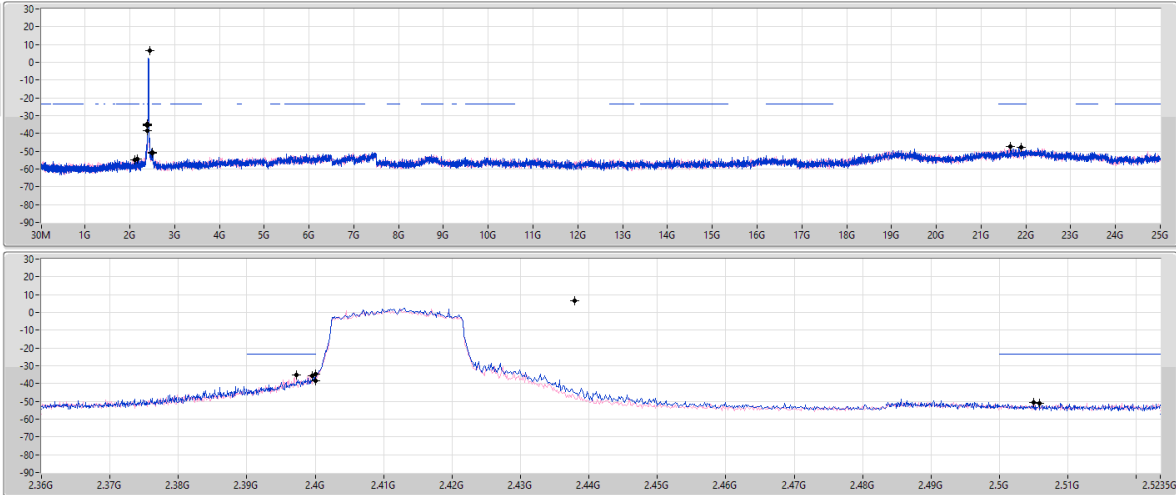
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44459G	7.91	-22.09	102.23M	-54.80	2.39728G	-51.26	2.4G	-55.07	2.5011G	-46.01	21.51333G	-48.73	1
2.44459G	7.91	-22.09	2.30641G	-54.68	2.392G	-51.22	2.4G	-55.26	2.5019G	-49.37	21.45152G	-48.67	2

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

CSEndB

2412MHz

27/06/2024

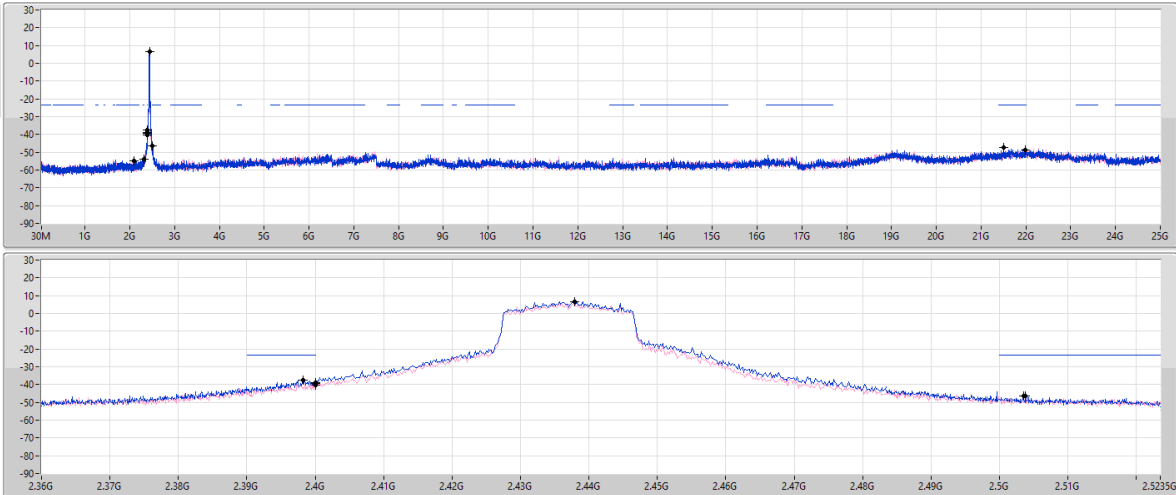
RBW (Hz)
100k
VBW (Hz)
300k
Detector
PeakPort 1
Port 2

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

CSEndB

2437MHz

27/06/2024

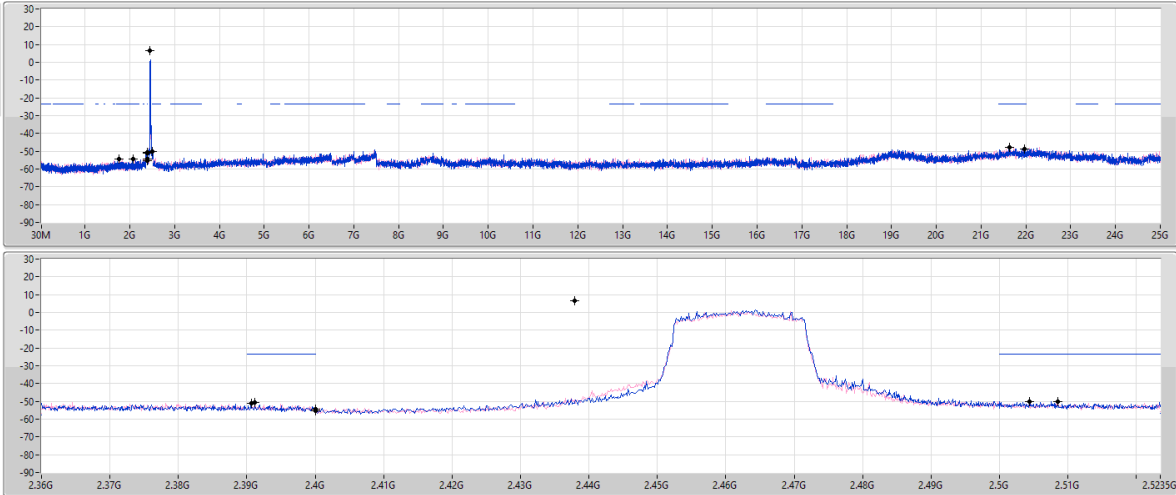
RBW (Hz)
100k
VBW (Hz)
300k
Detector
PeakPort 1
Port 2

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

CSEndB

2462MHz

27/06/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
PeakPort 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
2.43791G	6.58	-23.42	2.06642G	-54.49	2.39064G	-51.29	2.4G	-55.21	2.50438G	-50.18	21.97129G	-48.55	1
2.43791G	6.58	-23.42	1.75886G	-54.44	2.3912G	-50.67	2.4G	-54.42	2.50854G	-50.20	21.62853G	-48.00	2



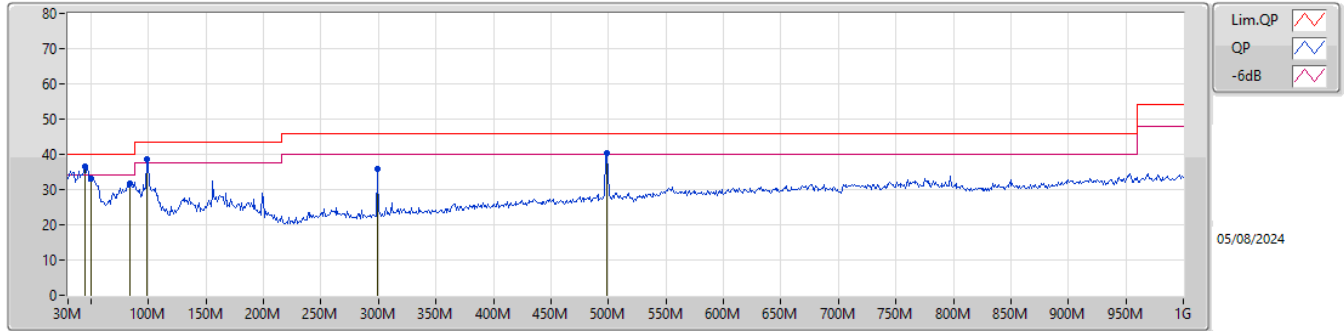
Radiated Emissions below 1GHz

Appendix F.1

Summary

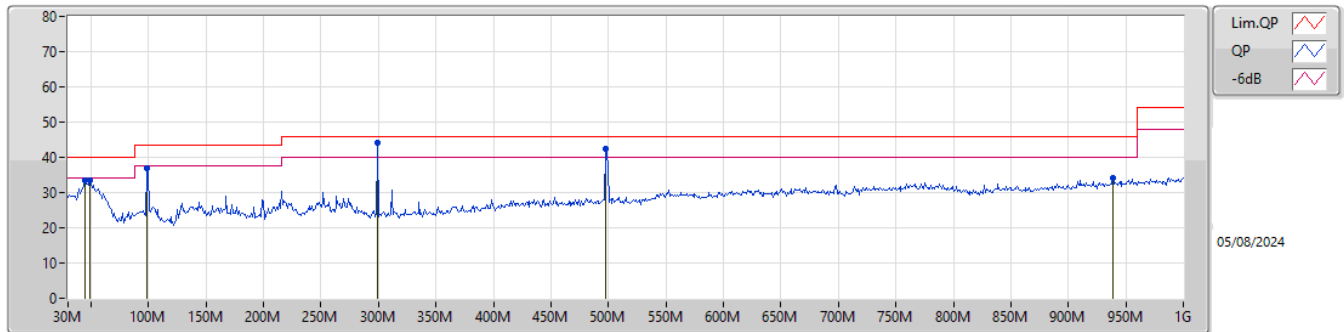
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 3	Pass	QP	299.66M	44.13	46.00	-1.87	Horizontal

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)		
PK	44.55M	36.63	40.00	-3.37	-14.56	3	Vertical	98	1.00	"Worst"	51.19	16.50	1.30	32.36		
PK	50.37M	33.05	40.00	-6.95	-17.04	3	Vertical	81	1.00	-	50.09	13.97	1.32	32.33		
PK	84.32M	31.89	40.00	-8.11	-17.24	3	Vertical	73	1.00	-	49.13	13.55	1.59	32.38		
PK	98.87M	38.53	43.50	-4.97	-14.24	3	Vertical	181	1.00	-	52.77	16.45	1.67	32.36		
PK	298.69M	35.71	46.00	-10.29	-10.36	3	Vertical	165	1.50	-	46.07	19.01	2.59	31.96		
PK	498.51M	40.29	46.00	-5.71	-5.54	3	Vertical	198	1.25	-	45.83	23.24	3.25	32.03		

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)		
PK	44.55M	33.39	40.00	-6.61	-14.56	3	Horizontal	3	1.25	-	47.95	16.50	1.30	32.36		
PK	49.4M	33.51	40.00	-6.49	-16.67	3	Horizontal	340	1.50	-	50.18	14.34	1.32	32.33		
PK	98.87M	37.00	43.50	-6.50	-14.24	3	Horizontal	9	3.00	-	51.24	16.45	1.67	32.36		
QP	299.66M	44.13	46.00	-1.87	-10.34	3	Horizontal	212	1.25	"Worst"	54.47	19.02	2.59	31.95		
PK	497.54M	42.41	46.00	-3.59	-5.57	3	Horizontal	318	1.00	-	47.98	23.22	3.24	32.03		
PK	938.89M	34.17	46.00	-11.83	0.10	3	Horizontal	358	3.00	-	34.07	26.42	4.37	30.69		

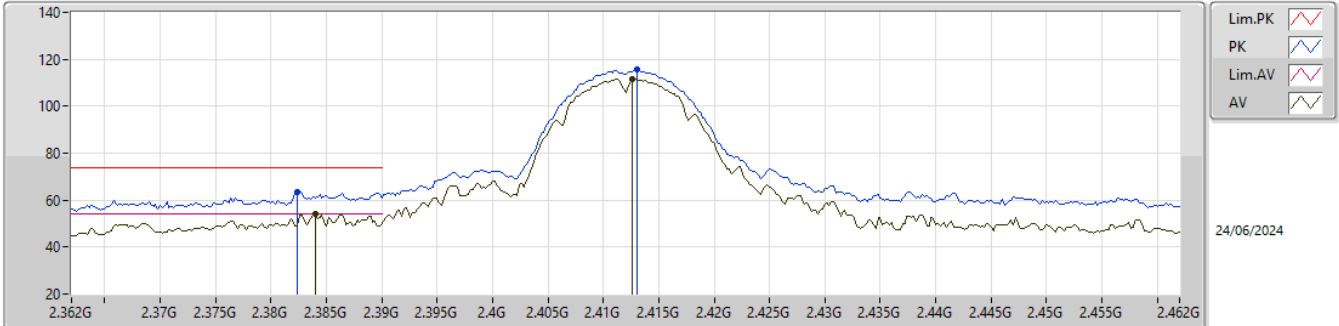


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1.(1Mbps)_2TX	Pass	AV	2.384G	53.98	54.00	-0.02	3	Vertical	87	2.18	-

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

2412MHz_TX

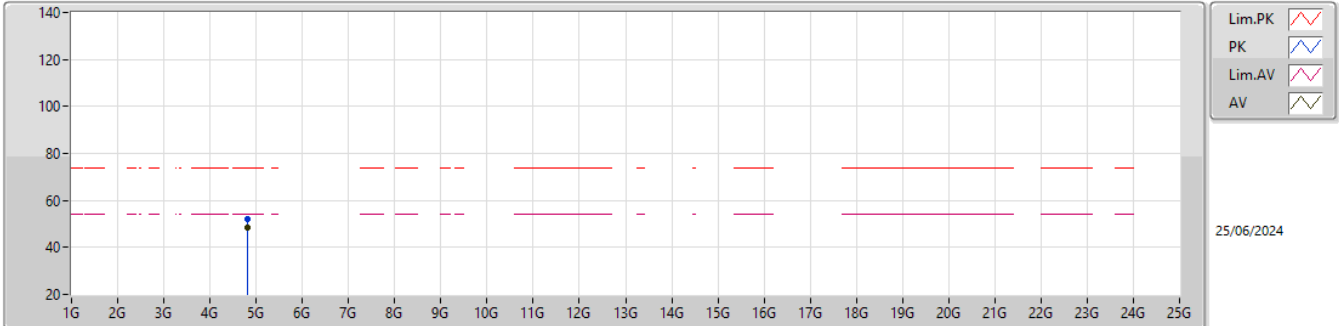


EUT_Y_2TX
Setting 70
04-C-G-4

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	2.3824G	63.30	74.00	-10.70	32.56	3	Vertical	87	2.18	-	27.40	3.34	-				
AV	2.384G	53.98	54.00	-0.02	23.24	3	Vertical	87	2.18	-	27.40	3.34	-				
PK	2.413G	115.63	Inf	-Inf	84.77	3	Vertical	87	2.18	-	27.50	3.36	-				
AV	2.4126G	111.36	Inf	-Inf	80.50	3	Vertical	87	2.18	-	27.50	3.36	-				

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

2412MHz_TX

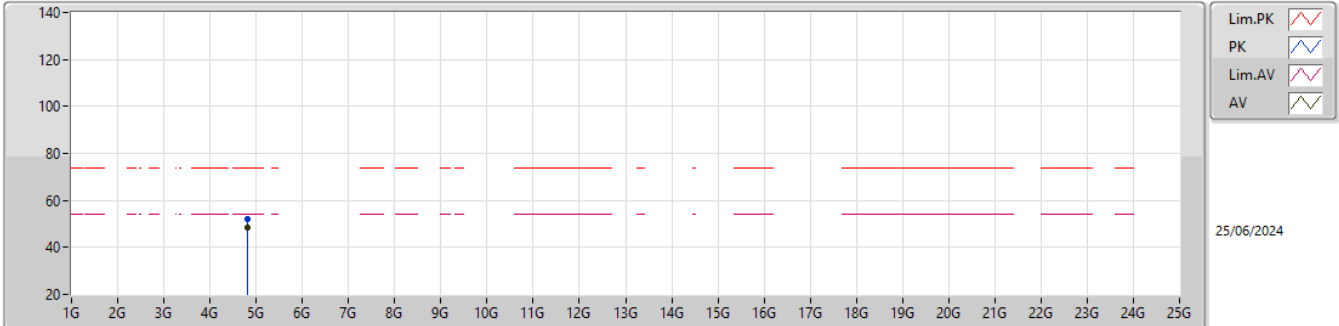


EUT_Y_2TX
Setting 70
04-C-G-4

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	4.82412G	52.05	74.00	-21.95	57.97	3	Vertical	40	1.80	-	32.35	5.67	43.94			
AV	4.82406G	48.68	54.00	-5.32	54.60	3	Vertical	40	1.80	-	32.35	5.67	43.94			

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

2412MHz_TX

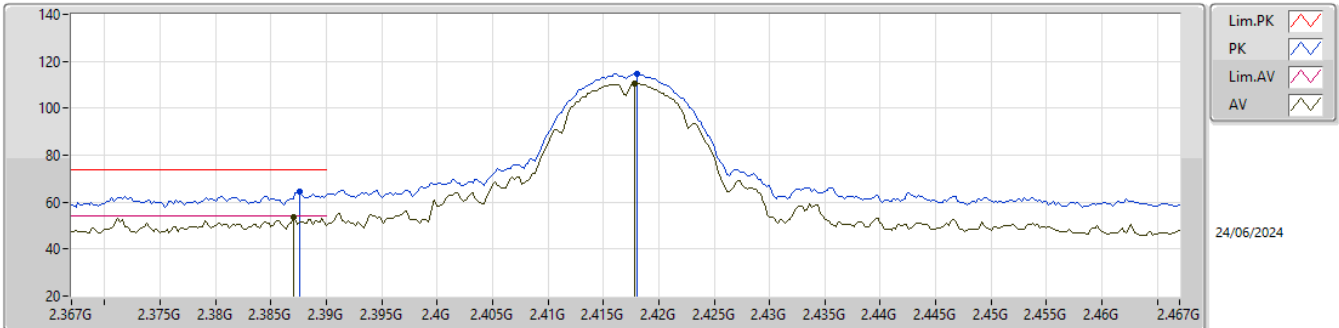


EUT_Y_2TX
Setting 70
04-C-G-4

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	4.82406G	52.06	74.00	-21.94	57.98	3	Horizontal	40	1.80	-	32.35	5.67	43.94			
AV	4.82406G	48.54	54.00	-5.46	54.46	3	Horizontal	40	1.80	-	32.35	5.67	43.94			

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

2417MHz_TX

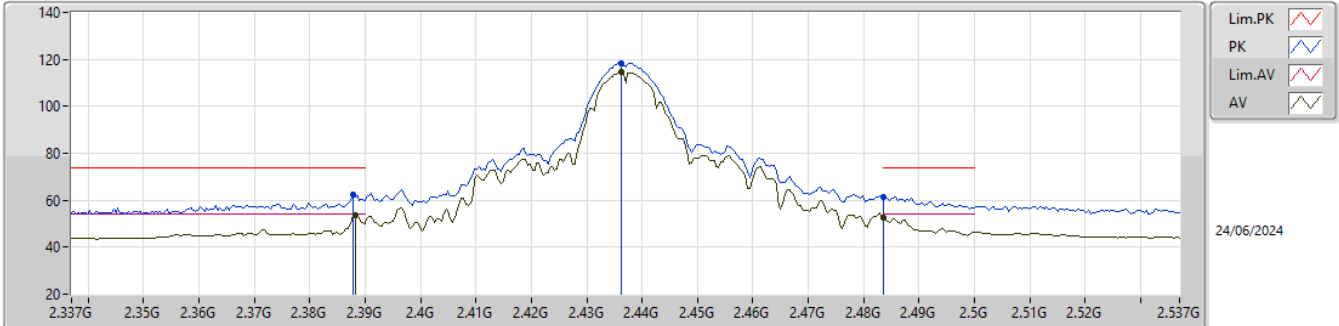


EUT_Y_2TX
Setting 68
04-C-G-4

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	2.3876G	64.70	74.00	-9.30	33.95	3	Vertical	204	1.68	-	27.40	3.35	-			
AV	2.387G	53.85	54.00	-0.15	23.11	3	Vertical	204	1.68	-	27.40	3.34	-			
PK	2.418G	114.78	Inf	-Inf	83.92	3	Vertical	204	1.68	-	27.50	3.36	-			
AV	2.4178G	110.45	Inf	-Inf	79.59	3	Vertical	204	1.68	-	27.50	3.36	-			

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

2437MHz_TX

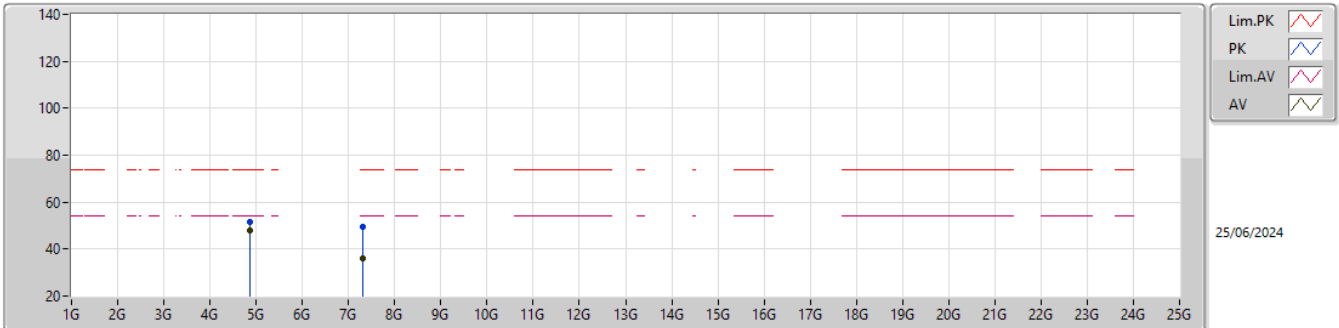


EUT_Y_2TX
Setting 85
04-C-G-4

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	62.24	74.00	-11.76	31.49	3	Vertical	148	1.80	-	27.40	3.35	-			
AV	2.3882G	53.66	54.00	-0.34	22.91	3	Vertical	148	1.80	-	27.40	3.35	-			
PK	2.4362G	118.38	Inf	-Inf	87.45	3	Vertical	148	1.80	-	27.56	3.37	-			
AV	2.4362G	114.59	Inf	-Inf	83.66	3	Vertical	148	1.80	-	27.56	3.37	-			
PK	2.4835G	61.62	74.00	-12.38	30.58	3	Vertical	148	1.80	-	27.64	3.40	-			
AV	2.4835G	52.61	54.00	-1.39	21.57	3	Vertical	148	1.80	-	27.64	3.40	-			

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

2437MHz_TX

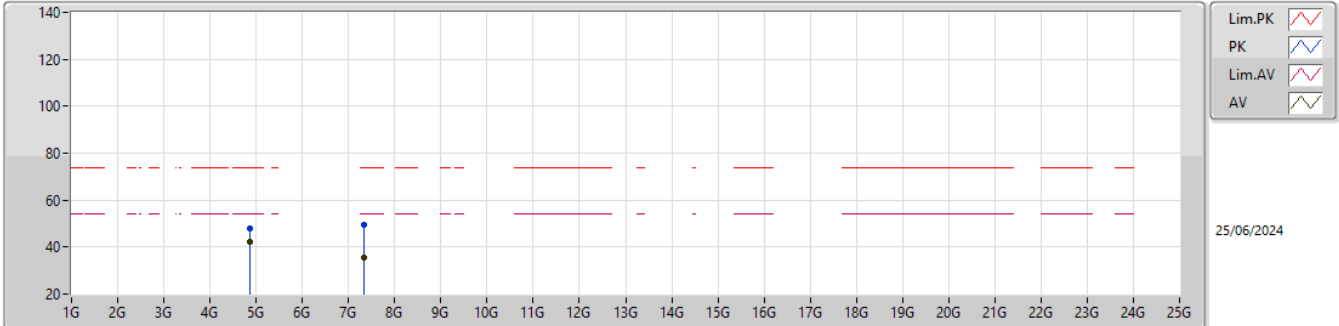


EUT_Y_2TX
Setting 85
04-C-G-4

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	4.87406G	51.55	74.00	-22.45	57.25	3	Vertical	44	1.80	-	32.50	5.72	43.92			
AV	4.874G	47.95	54.00	-6.05	53.65	3	Vertical	44	1.80	-	32.50	5.72	43.92			
PK	7.31424G	49.31	74.00	-24.69	47.76	3	Vertical	344	1.79	-	37.20	7.12	42.77			
AV	7.31214G	36.23	54.00	-17.77	34.68	3	Vertical	344	1.79	-	37.20	7.12	42.77			

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

2437MHz_TX

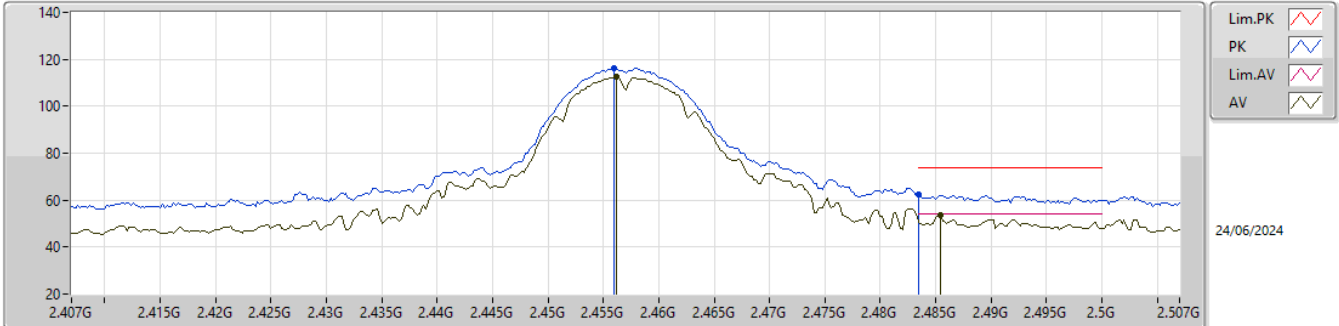


EUT_Y_2TX
Setting 85
04-C-G-4

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	4.874G	48.14	74.00	-25.86	53.84	3	Horizontal	355	2.21	-	32.50	5.72	43.92			
AV	4.874G	42.23	54.00	-11.77	47.93	3	Horizontal	355	2.21	-	32.50	5.72	43.92			
PK	7.3245G	49.67	74.00	-24.33	48.12	3	Horizontal	73	2.04	-	37.20	7.13	42.78			
AV	7.32264G	35.60	54.00	-18.40	34.05	3	Horizontal	73	2.04	-	37.20	7.13	42.78			

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

2457MHz_TX

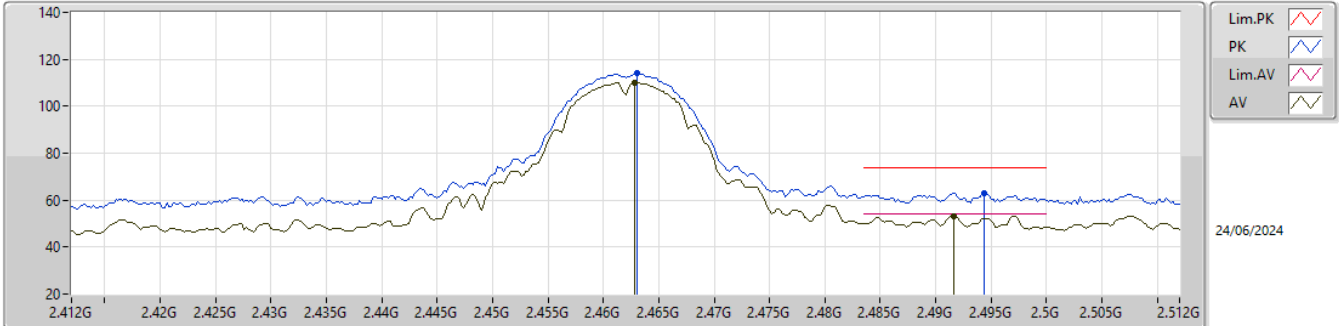


EUT_Y_2TX
Setting 70
04-C-G-4

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	2.456G	116.29	Inf	-Inf	85.31	3	Vertical	75	1.09	-	27.60	3.38	-				
AV	2.456G	112.35	Inf	-Inf	81.37	3	Vertical	75	1.09	-	27.60	3.38	-				
PK	2.4835G	62.54	74.00	-11.46	31.50	3	Vertical	75	1.09	-	27.64	3.40	-				
AV	2.4834G	53.39	54.00	-0.61	22.34	3	Vertical	75	1.09	-	27.65	3.40	-				

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

2462MHz_TX

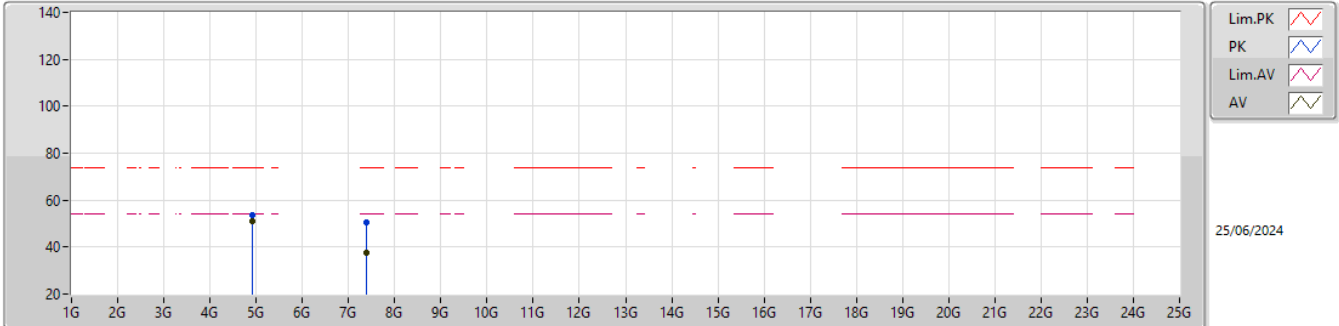


EUT_Y_2TX
Setting 65
04-C-G-4

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	114.18	Inf	-Inf	83.20	3	Vertical	208	1.33	-	27.60	3.38	-				
AV	2.4628G	109.99	Inf	-Inf	79.01	3	Vertical	208	1.33	-	27.60	3.38	-				
PK	2.4944G	62.78	74.00	-11.22	31.68	3	Vertical	208	1.33	-	27.70	3.40	-				
AV	2.4916G	53.22	54.00	-0.78	22.12	3	Vertical	208	1.33	-	27.70	3.40	-				

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

2462MHz_TX

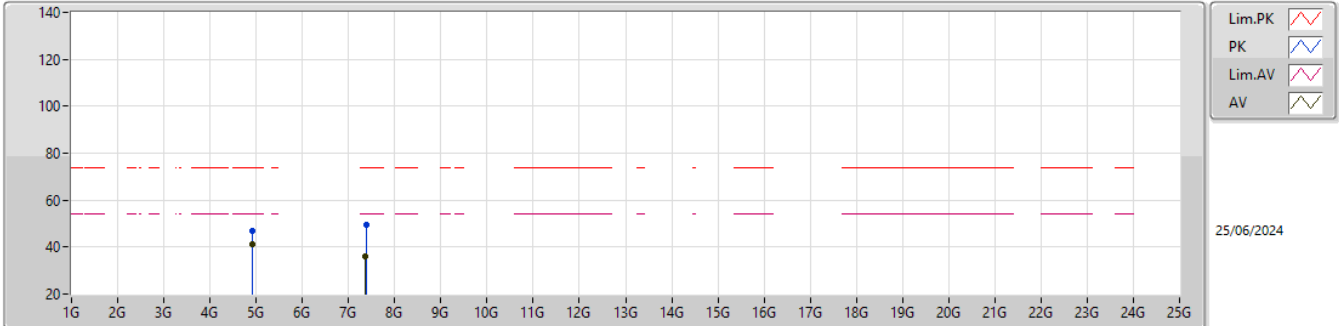


EUT_Y_2TX
Setting 65
04-C-G-4

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	4.924G	53.58	74.00	-20.42	59.08	3	Vertical	216	1.80	-	32.65	5.76	43.91			
AV	4.924G	51.05	54.00	-2.95	56.55	3	Vertical	216	1.80	-	32.65	5.76	43.91			
PK	7.38642G	50.39	74.00	-23.61	48.90	3	Vertical	-0	2.31	-	37.20	7.16	42.87			
AV	7.38432G	37.47	54.00	-16.53	35.98	3	Vertical	-0	2.31	-	37.20	7.16	42.87			

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

2462MHz_TX

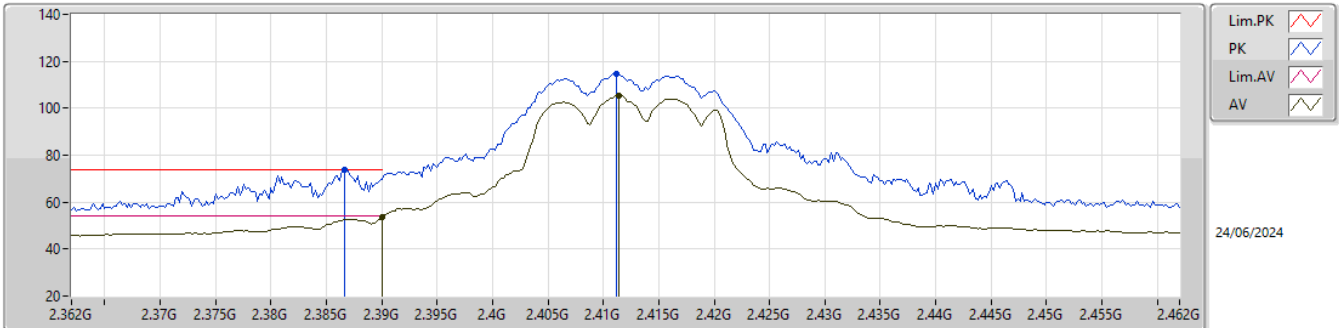


EUT_Y_2TX
Setting 65
04-C-G-4

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	4.92394G	47.05	74.00	-26.95	52.55	3	Horizontal	160	1.64	-	32.65	5.76	43.91			
AV	4.924G	41.35	54.00	-12.65	46.85	3	Horizontal	160	1.64	-	32.65	5.76	43.91			
PK	7.39956G	49.66	74.00	-24.34	48.18	3	Horizontal	61	1.93	-	37.20	7.17	42.89			
AV	7.37232G	36.02	54.00	-17.98	34.52	3	Horizontal	61	1.93	-	37.20	7.15	42.85			

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

2412MHz_TX

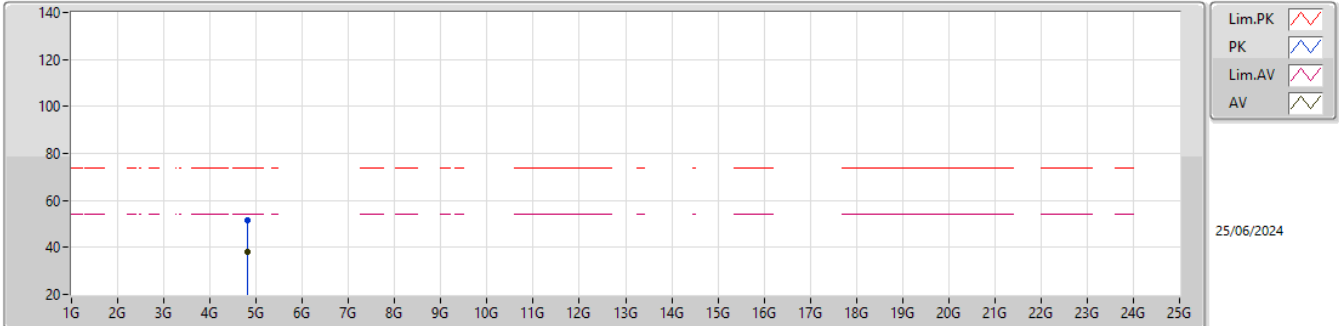


EUT_Y_2TX
Setting 55
04-C-G-4

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	2.3866G	73.79	74.00	-0.21	43.05	3	Vertical	89	2.16	-	27.40	3.34	-			
AV	2.39G	53.56	54.00	-0.44	22.81	3	Vertical	89	2.16	-	27.40	3.35	-			
PK	2.4112G	114.55	Inf	-Inf	83.69	3	Vertical	89	2.16	-	27.50	3.36	-			
AV	2.4114G	105.39	Inf	-Inf	74.53	3	Vertical	89	2.16	-	27.50	3.36	-			

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

2412MHz_TX

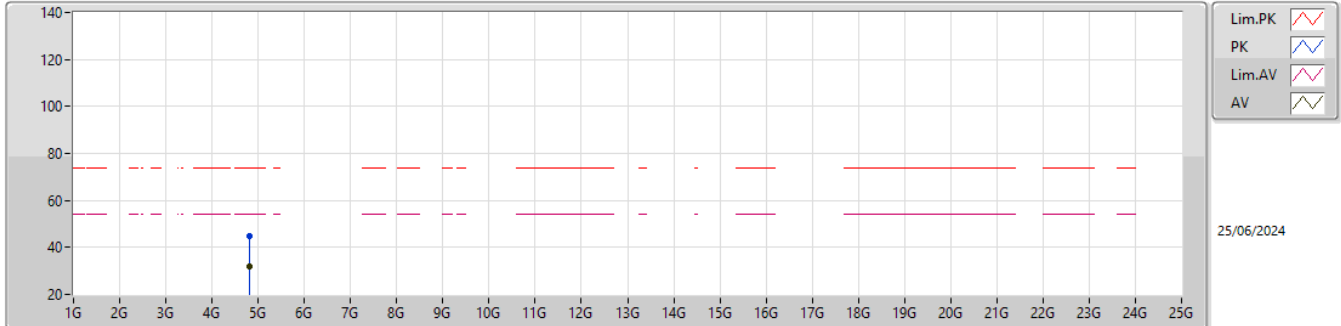


EUT_Y_2TX
Setting 55
04-C-G-4

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	4.8201G	51.81	74.00	-22.19	57.74	3	Vertical	42	1.80	-	32.34	5.67	43.94			
AV	4.82466G	38.06	54.00	-15.94	43.98	3	Vertical	42	1.80	-	32.35	5.67	43.94			

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

2412MHz_TX

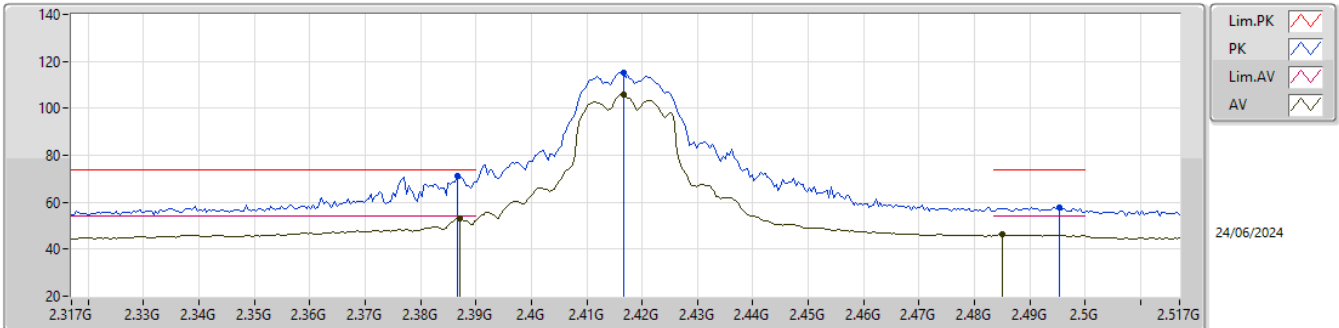


EUT_Y_2TX
Setting 55
04-C-G-4

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	4.81938G	44.96	74.00	-29.04	50.89	3	Horizontal	342	1.76	-	32.34	5.67	43.94			
AV	4.8246G	32.04	54.00	-21.96	37.96	3	Horizontal	342	1.76	-	32.35	5.67	43.94			

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

2417MHz_TX

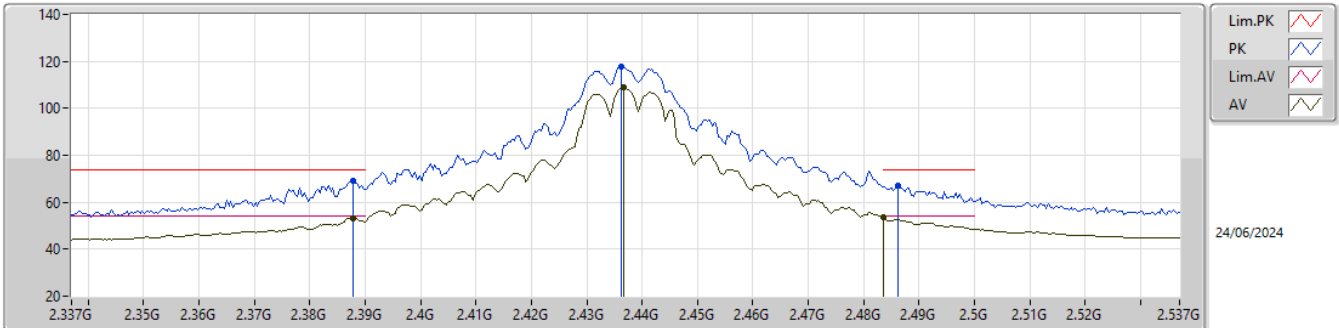


EUT Y_2TX
Setting 59
04-C-G-4

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	2.3866G	71.41	74.00	-2.59	40.67	3	Vertical	58	1.54	-	27.40	3.34	-				
AV	2.387G	53.25	54.00	-0.75	22.51	3	Vertical	58	1.54	-	27.40	3.34	-				
PK	2.4166G	115.25	Inf	-Inf	84.39	3	Vertical	58	1.54	-	27.50	3.36	-				
AV	2.4166G	106.10	Inf	-Inf	75.24	3	Vertical	58	1.54	-	27.50	3.36	-				
PK	2.4954G	57.97	74.00	-16.03	26.87	3	Vertical	58	1.54	-	27.70	3.40	-				
AV	2.485G	46.55	54.00	-7.45	15.50	3	Vertical	58	1.54	-	27.65	3.40	-				

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

2437MHz_TX

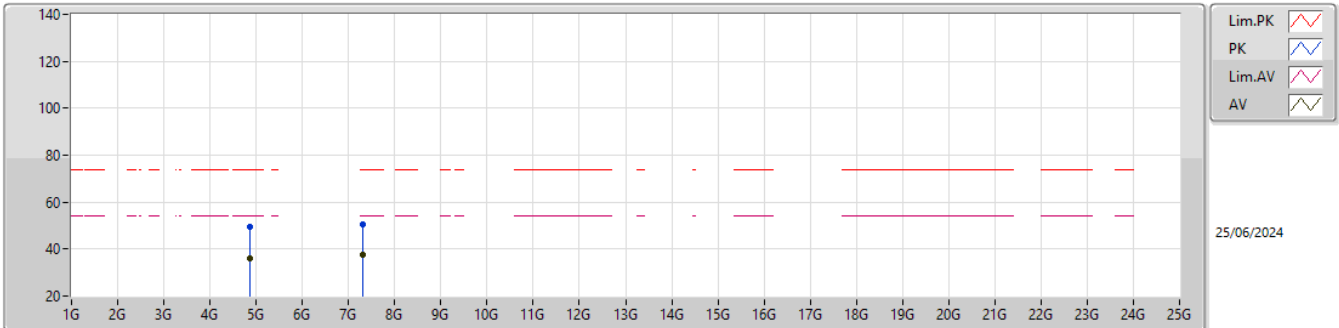


EUT Y_2TX
Setting 71
04-C-G-4

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	69.13	74.00	-4.87	38.38	3	Vertical	145	1.80	-	27.40	3.35	-			
AV	2.3878G	53.26	54.00	-0.74	22.51	3	Vertical	145	1.80	-	27.40	3.35	-			
PK	2.4362G	117.84	Inf	-Inf	86.91	3	Vertical	145	1.80	-	27.56	3.37	-			
AV	2.4366G	109.13	Inf	-Inf	78.19	3	Vertical	145	1.80	-	27.57	3.37	-			
PK	2.4862G	67.23	74.00	-6.77	36.17	3	Vertical	145	1.80	-	27.66	3.40	-			
AV	2.4835G	53.43	54.00	-0.57	22.39	3	Vertical	145	1.80	-	27.64	3.40	-			

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

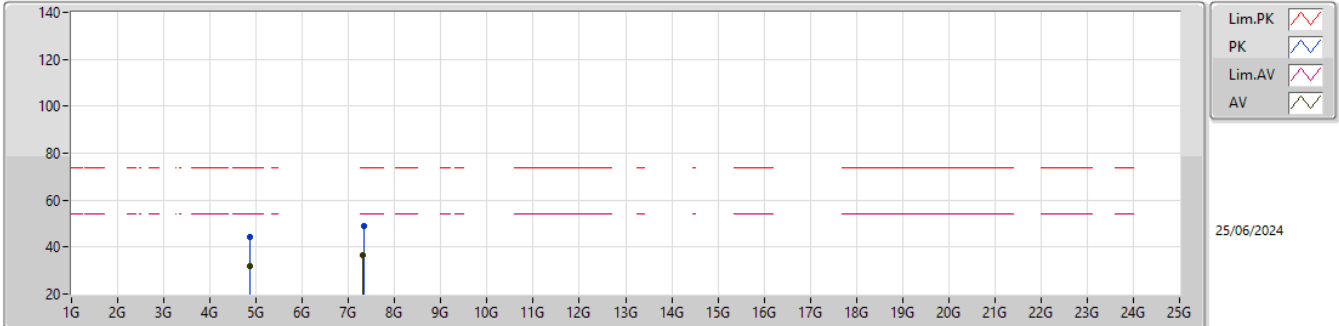
2437MHz_TX


EUT Y_2TX
Setting 71
04-C-G-4

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	4.8701G	49.74	74.00	-24.26	55.47	3	Vertical	41	1.80	-	32.48	5.71	43.92			
AV	4.87472G	36.28	54.00	-17.72	41.98	3	Vertical	41	1.80	-	32.50	5.72	43.92			
PK	7.3083G	50.26	74.00	-23.74	48.70	3	Vertical	46	1.76	-	37.20	7.12	42.76			
AV	7.30878G	37.82	54.00	-16.18	36.26	3	Vertical	46	1.76	-	37.20	7.12	42.76			

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

2437MHz_TX

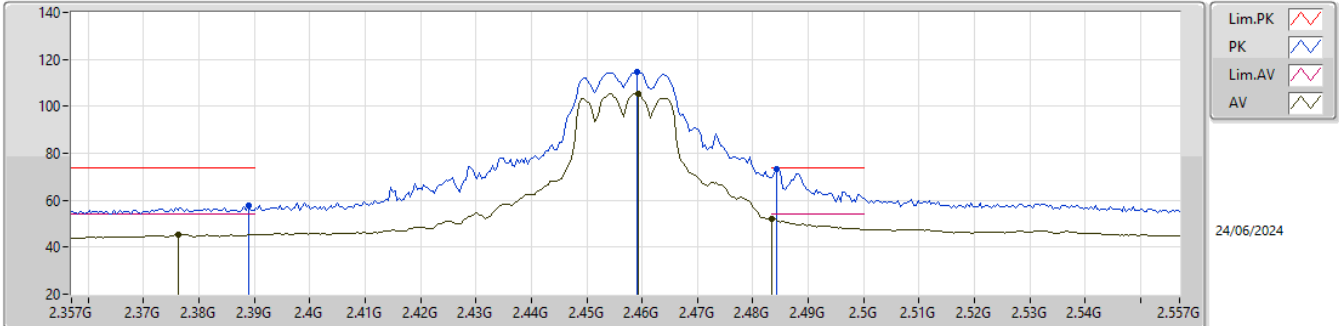


EUT Y_2TX
Setting 71
04-C-G-4

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	4.874G	44.45	74.00	-29.55	50.15	3	Horizontal	344	1.96	-	32.50	5.72	43.92			
AV	4.87418G	31.84	54.00	-22.16	37.54	3	Horizontal	344	1.96	-	32.50	5.72	43.92			
PK	7.32468G	48.98	74.00	-25.02	47.43	3	Horizontal	233	1.77	-	37.20	7.13	42.78			
AV	7.3104G	36.66	54.00	-17.34	35.10	3	Horizontal	233	1.77	-	37.20	7.12	42.76			

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

2457MHz_TX

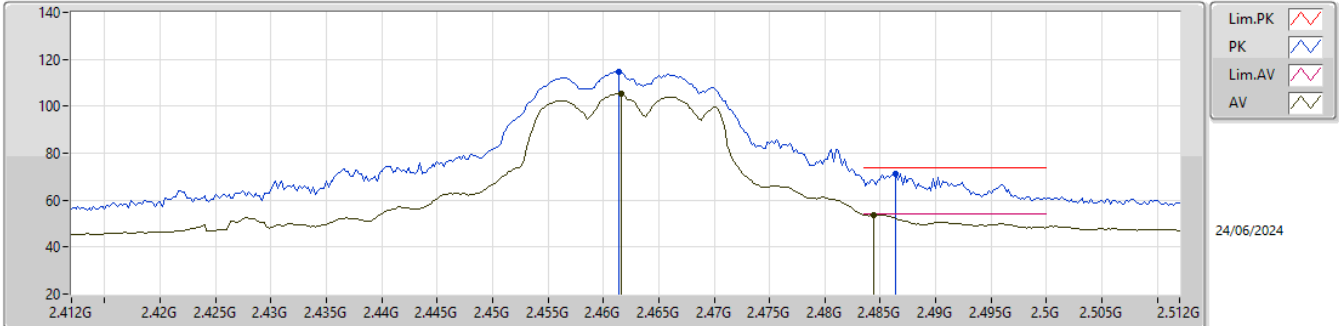


EUT Y_2TX
Setting 58
04-C-G-4

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	2.389G	57.77	74.00	-16.23	27.02	3	Vertical	82	1.94	-	27.40	3.35	-			
AV	2.3762G	45.29	54.00	-8.71	14.51	3	Vertical	82	1.94	-	27.44	3.34	-			
PK	2.459G	114.67	Inf	-Inf	83.69	3	Vertical	82	1.94	-	27.60	3.38	-			
AV	2.4594G	105.42	Inf	-Inf	74.44	3	Vertical	82	1.94	-	27.60	3.38	-			
PK	2.4842G	73.18	74.00	-0.82	42.14	3	Vertical	82	1.94	-	27.64	3.40	-			
AV	2.4835G	52.18	54.00	-1.82	21.14	3	Vertical	82	1.94	-	27.64	3.40	-			

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

2462MHz_TX

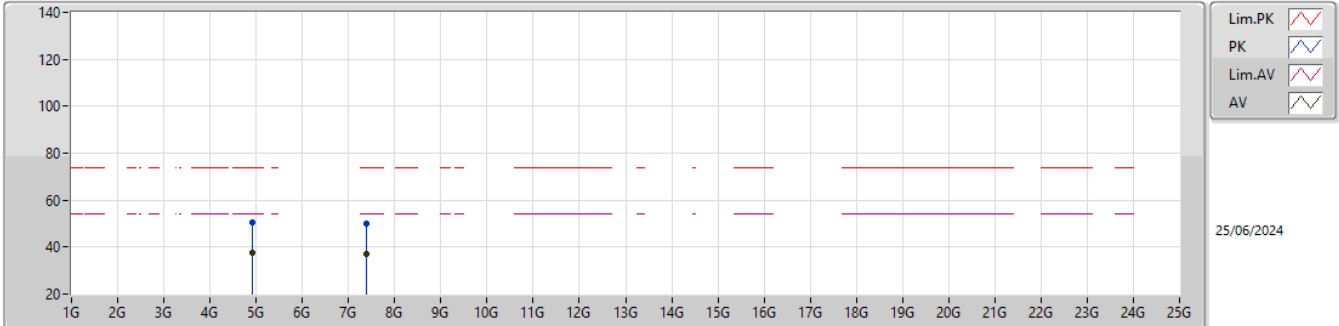


EUT_Y_2TX
Setting 56
04-C-G-4

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	2.4614G	114.90	Inf	-Inf	83.92	3	Vertical	82	1.20	-	27.60	3.38	-				
AV	2.4616G	105.41	Inf	-Inf	74.43	3	Vertical	82	1.20	-	27.60	3.38	-				
PK	2.4864G	71.43	74.00	-2.57	40.37	3	Vertical	82	1.20	-	27.66	3.40	-				
AV	2.4844G	53.77	54.00	-0.23	22.73	3	Vertical	82	1.20	-	27.64	3.40	-				

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

2462MHz_TX

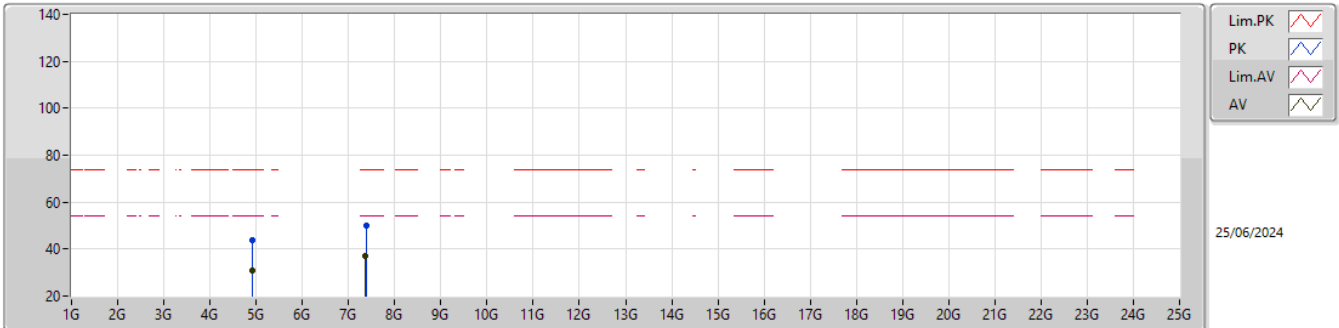


EUT_Y_2TX
Setting 56
04-C-G-4

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	4.92022G	50.36	74.00	-23.64	55.87	3	Vertical	42	1.80	-	32.64	5.76	43.91			
AV	4.92508G	37.34	54.00	-16.66	42.84	3	Vertical	42	1.80	-	32.65	5.76	43.91			
PK	7.38348G	49.85	74.00	-24.15	48.36	3	Vertical	330	1.36	-	37.20	7.16	42.87			
AV	7.37514G	37.10	54.00	-16.90	35.60	3	Vertical	330	1.36	-	37.20	7.16	42.86			

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

2462MHz_TX

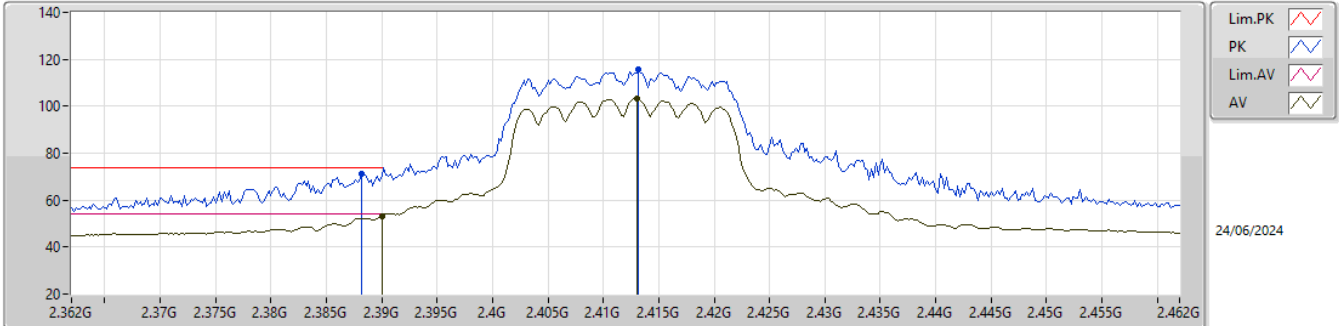


EUT_Y_2TX
Setting 56
04-C-G-4

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	4.92628G	43.98	74.00	-30.02	49.48	3	Horizontal	162	1.80	-	32.65	5.76	43.91			
AV	4.92922G	30.84	54.00	-23.16	36.32	3	Horizontal	162	1.80	-	32.66	5.77	43.91			
PK	7.37472G	49.89	74.00	-24.11	48.39	3	Horizontal	0	1.32	-	37.20	7.16	42.86			
AV	7.37238G	36.83	54.00	-17.17	35.33	3	Horizontal	0	1.32	-	37.20	7.15	42.85			

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

2412MHz_TX

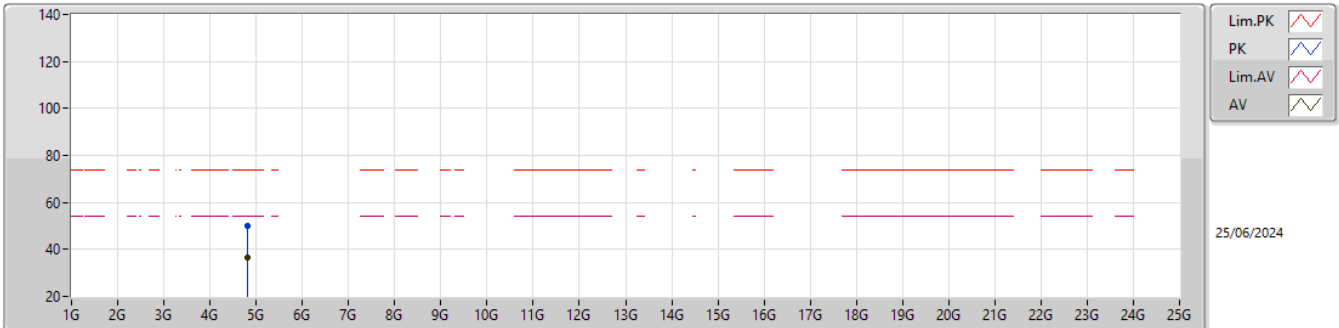


EUT_Y_2TX
Setting 52
04-C-G-4

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	71.19	74.00	-2.81	40.44	3	Vertical	50	1.72	-	27.40	3.35	-			
AV	2.39G	53.09	54.00	-0.91	22.34	3	Vertical	50	1.72	-	27.40	3.35	-			
PK	2.4132G	115.74	Inf	-Inf	84.88	3	Vertical	50	1.72	-	27.50	3.36	-			
AV	2.413G	103.10	Inf	-Inf	72.24	3	Vertical	50	1.72	-	27.50	3.36	-			

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

2412MHz_TX

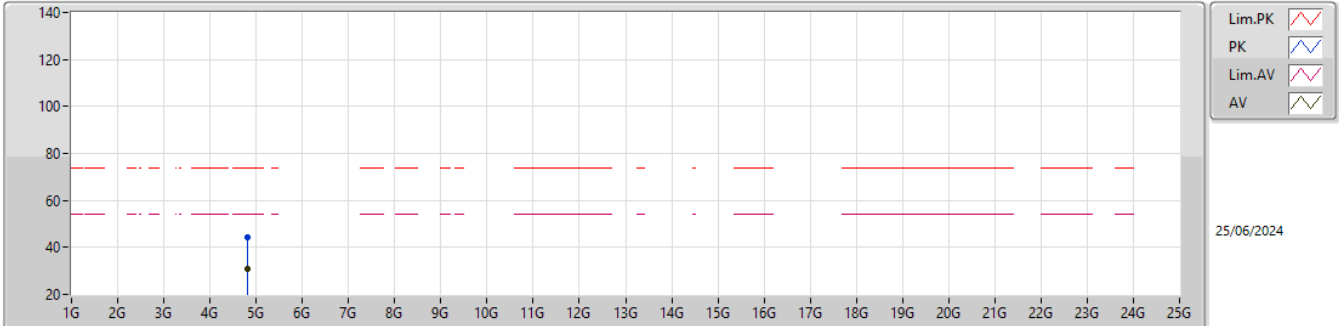


EUT_Y_2TX
Setting 52
04-C-G-4

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	4.81992G	49.86	74.00	-24.14	55.79	3	Vertical	44	1.80	-	32.34	5.67	43.94			
AV	4.81968G	36.69	54.00	-17.31	42.62	3	Vertical	44	1.80	-	32.34	5.67	43.94			

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

2412MHz_TX

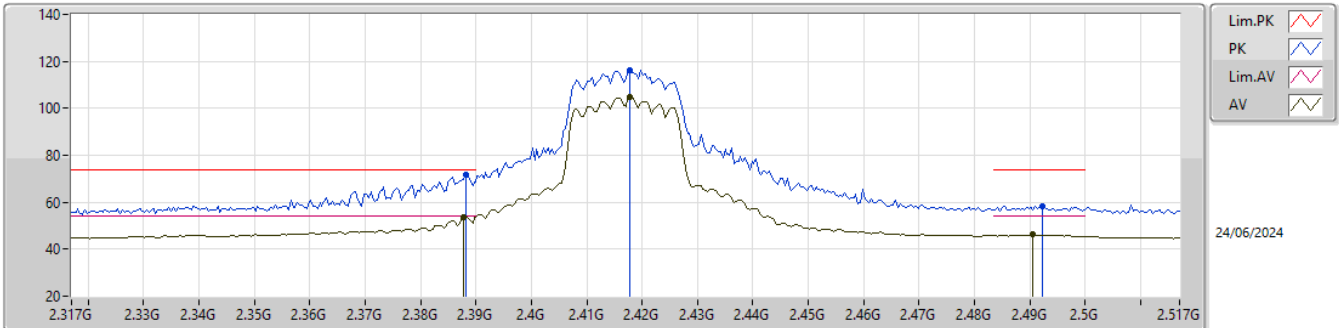


EUT_Y_2TX
Setting 52
04-C-G-4

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	4.8237G	44.43	74.00	-29.57	50.35	3	Horizontal	345	2.36	-	32.35	5.67	43.94			
AV	4.82178G	31.04	54.00	-22.96	36.97	3	Horizontal	345	2.36	-	32.34	5.67	43.94			

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

2417MHz_TX

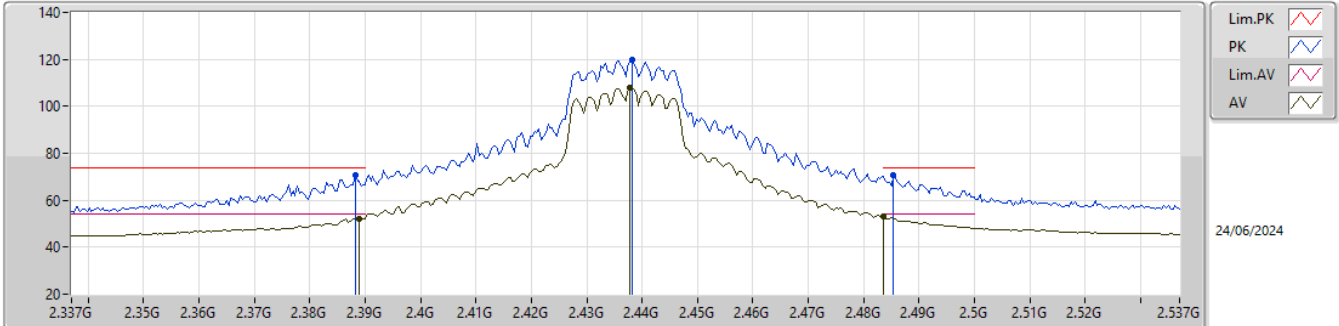


EUT Y_2TX
Setting 57
04-C-G-4

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	71.97	74.00	-2.03	41.22	3	Vertical	58	1.55	-	27.40	3.35	-			
AV	2.3878G	53.48	54.00	-0.52	22.73	3	Vertical	58	1.55	-	27.40	3.35	-			
PK	2.4178G	116.40	Inf	-Inf	85.54	3	Vertical	58	1.55	-	27.50	3.36	-			
AV	2.4178G	104.80	Inf	-Inf	73.94	3	Vertical	58	1.55	-	27.50	3.36	-			
PK	2.4922G	58.18	74.00	-15.82	27.08	3	Vertical	58	1.55	-	27.70	3.40	-			
AV	2.4906G	46.17	54.00	-7.83	15.07	3	Vertical	58	1.55	-	27.70	3.40	-			

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

2437MHz_TX

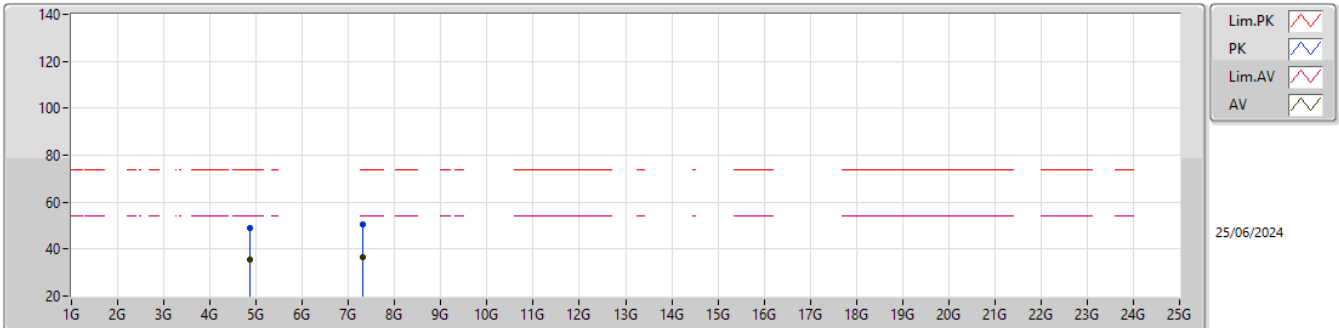


EUT_Y_2TX
Setting 67
04-C-G-4

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	70.62	74.00	-3.38	39.87	3	Vertical	147	1.80	-	27.40	3.35	-			
AV	2.389G	52.27	54.00	-1.73	21.52	3	Vertical	147	1.80	-	27.40	3.35	-			
PK	2.4382G	119.70	Inf	-Inf	88.75	3	Vertical	147	1.80	-	27.58	3.37	-			
AV	2.4378G	107.74	Inf	-Inf	76.79	3	Vertical	147	1.80	-	27.58	3.37	-			
PK	2.4854G	70.72	74.00	-3.28	39.67	3	Vertical	147	1.80	-	27.65	3.40	-			
AV	2.4835G	53.21	54.00	-0.79	22.17	3	Vertical	147	1.80	-	27.64	3.40	-			

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

2437MHz_TX

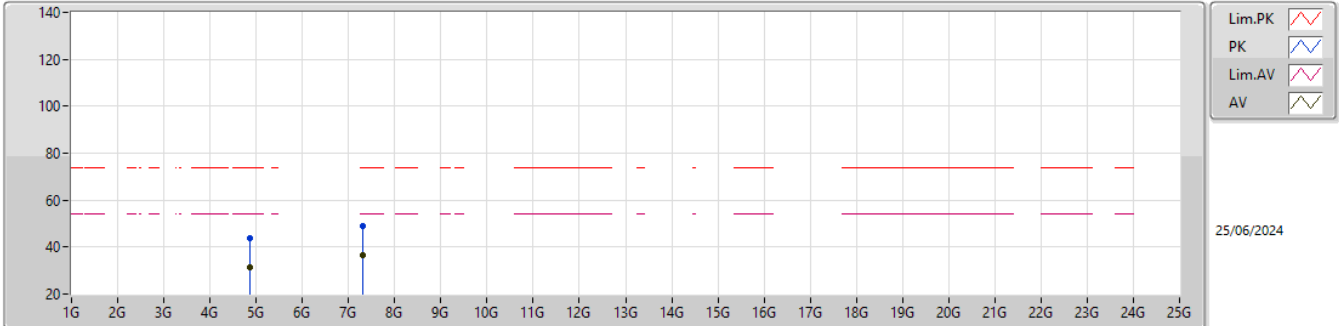


EUT_Y_2TX
Setting 67
04-C-G-4

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	4.87712G	48.93	74.00	-25.07	54.62	3	Vertical	44	1.80	-	32.51	5.72	43.92			
AV	4.8746G	35.47	54.00	-18.53	41.17	3	Vertical	44	1.80	-	32.50	5.72	43.92			
PK	7.32006G	50.27	74.00	-23.73	48.72	3	Vertical	46	1.97	-	37.20	7.13	42.78			
AV	7.30998G	36.76	54.00	-17.24	35.20	3	Vertical	46	1.97	-	37.20	7.12	42.76			

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

2437MHz_TX

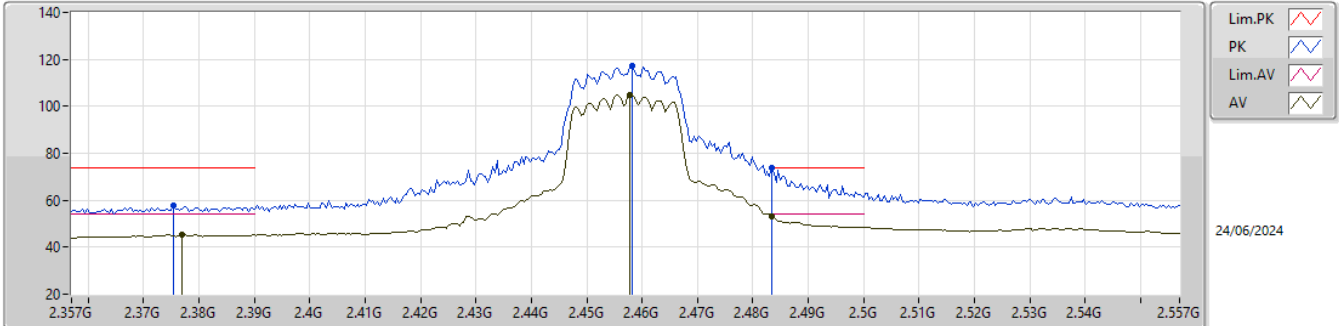


EUT_Y_2TX
Setting 67
04-C-G-4

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	4.87364G	43.96	74.00	-30.04	49.67	3	Horizontal	345	2.03	-	32.49	5.72	43.92			
AV	4.87406G	31.14	54.00	-22.86	36.84	3	Horizontal	345	2.03	-	32.50	5.72	43.92			
PK	7.3071G	49.15	74.00	-24.85	47.59	3	Horizontal	66	1.46	-	37.20	7.12	42.76			
AV	7.30758G	36.63	54.00	-17.37	35.07	3	Horizontal	66	1.46	-	37.20	7.12	42.76			

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

2457MHz_TX

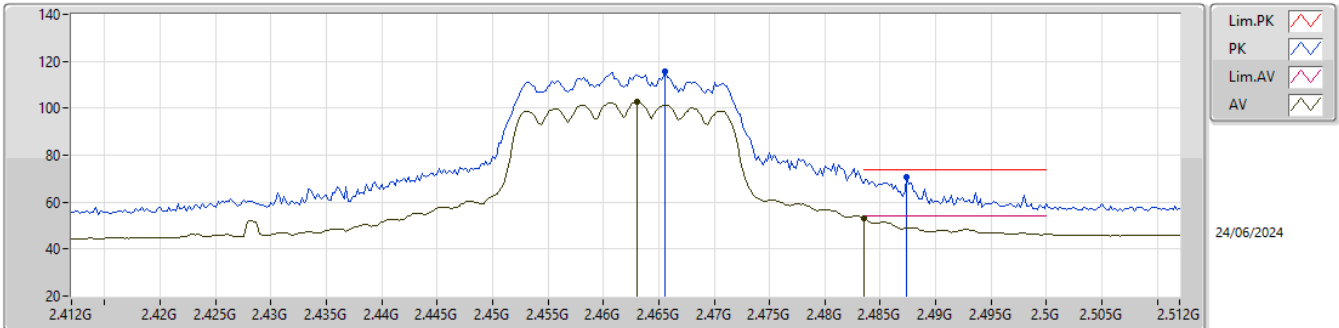


EUT_Y_2TX
Setting 54
04-C-G-4

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	2.3754G	57.90	74.00	-16.10	27.11	3	Vertical	78	1.03	-	27.45	3.34	-			
AV	2.377G	45.14	54.00	-8.86	14.37	3	Vertical	78	1.03	-	27.43	3.34	-			
PK	2.4582G	117.00	Inf	-Inf	86.02	3	Vertical	78	1.03	-	27.60	3.38	-			
AV	2.4578G	104.83	Inf	-Inf	73.85	3	Vertical	78	1.03	-	27.60	3.38	-			
PK	2.4835G	73.89	74.00	-0.11	42.85	3	Vertical	78	1.03	-	27.64	3.40	-			
AV	2.4835G	53.24	54.00	-0.76	22.20	3	Vertical	78	1.03	-	27.64	3.40	-			

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

2462MHz_TX

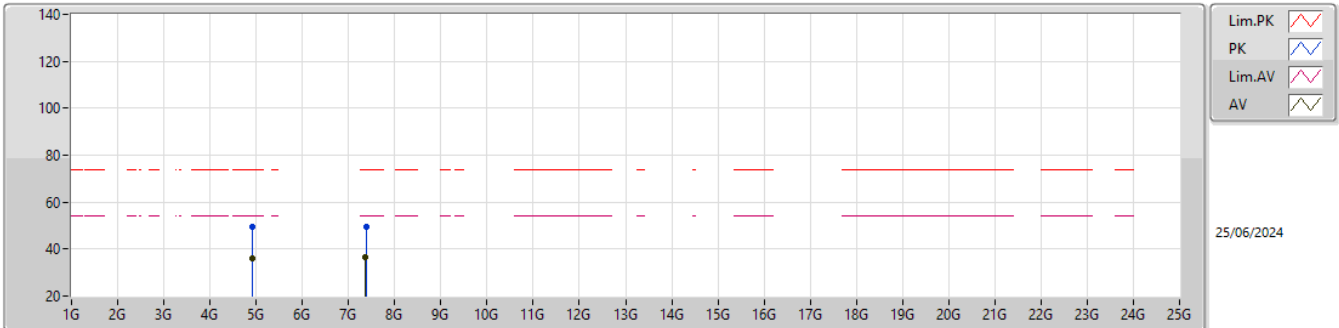


EUT_Y_2TX
Setting 47
04-C-G-4

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	2.4656G	115.60	Inf	-Inf	84.61	3	Vertical	78	1.90	-	27.60	3.39	-			
AV	2.463G	102.61	Inf	-Inf	71.63	3	Vertical	78	1.90	-	27.60	3.38	-			
PK	2.4874G	70.87	74.00	-3.13	39.80	3	Vertical	78	1.90	-	27.67	3.40	-			
AV	2.4835G	53.08	54.00	-0.92	22.04	3	Vertical	78	1.90	-	27.64	3.40	-			

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

2462MHz_TX

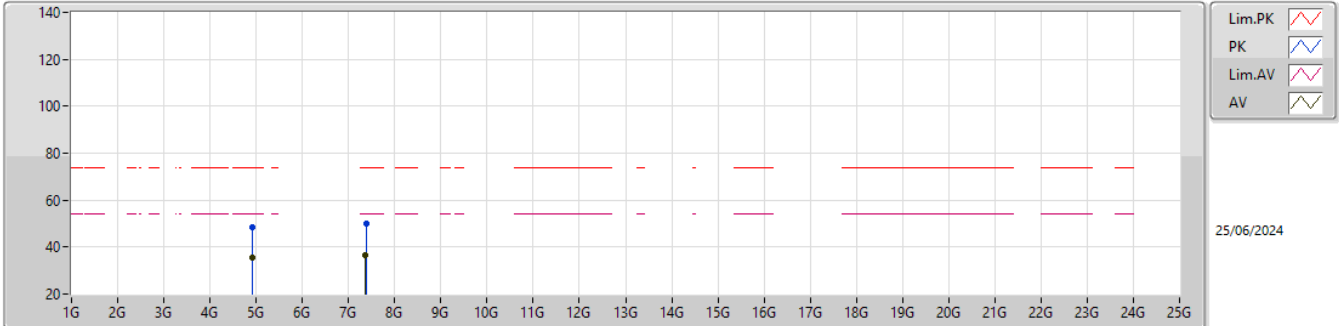


EUT_Y_2TX
Setting 47
04-C-G-4

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	4.92676G	49.28	74.00	-24.72	54.78	3	Vertical	30	1.80	-	32.65	5.76	43.91			
AV	4.92442G	35.82	54.00	-18.18	41.32	3	Vertical	30	1.80	-	32.65	5.76	43.91			
PK	7.3998G	49.54	74.00	-24.46	48.06	3	Vertical	338	2.31	-	37.20	7.17	42.89			
AV	7.37388G	36.79	54.00	-17.21	35.29	3	Vertical	338	2.31	-	37.20	7.16	42.86			

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

2462MHz_TX



EUT_Y_2TX
Setting 47
04-C-G-4

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	4.92712G	48.68	74.00	-25.32	54.18	3	Horizontal	40	1.80	-	32.65	5.76	43.91			
AV	4.92448G	35.38	54.00	-18.62	40.88	3	Horizontal	40	1.80	-	32.65	5.76	43.91			
PK	7.37784G	50.17	74.00	-23.83	48.67	3	Horizontal	1	2.21	-	37.20	7.16	42.86			
AV	7.37136G	36.53	54.00	-17.47	35.03	3	Horizontal	1	2.21	-	37.20	7.15	42.85			