

FCC Radio Test Report

FCC ID : YL6-143V516
Equipment : Alarm.com 1080p Indoor Wi-Fi Camera
Brand Name : ALARM.COM
Model Name : ADC-V516
Applicant : Alarm.com Incorporated
8281 Greensboro Drive, Suite 100, Tysons,
VA 22102 United States
Manufacturer : Alarm.com Incorporated
8281 Greensboro Drive, Suite 100, Tysons,
VA 22102 United States
Standard : 47 CFR FCC Part 15.247

The product was received on Oct. 24, 2024, and testing was started from Oct. 24, 2024 and completed on Nov. 28, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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



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History of this test report

Report No.	Version	Description	Issued Date
FR4N1236AC	01	Initial issue of report	Feb. 14, 2025

Summary of Test Result

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

Declaration of Conformity:

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

Comments and explanations:

Non

Reviewed by: Ben Tseng

Report Producer: Michelle Tsai

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)	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

Note:

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support
1	INPAQ	RFFPA251104IMLB402	PIFA	I-PEX	2.4G+5G+BT

Ant.	Gain (dBi)		
	2.4G	5G	BT
1	2.79	3.79	2.79

For 2.4GHz function:

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

Ant. 1 (port 1) could transmit/receive.

For 5GHz function:

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

Ant. 1 (port 1) could transmit/receive.

For BT function:

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

Ant. 1 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From AC Adapter		
EUT Function	☒ Point-to-multipoint	☐ Point-to-point	
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.:		...
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.:		...
☐	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
802.11b_Nss1,(1Mbps)_1TX	0.999	0.01	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g_Nss1,(6Mbps)_1TX	0.8	0.97	2.027m	500
802.11n HT20_Nss1,(MCS0)_1TX	0.79	1.02	1.891m	1k

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

1.2 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013

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

- ♦ KDB 558074 D01 v05r02
- ♦ KDB 662911 D01 v02r01
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Wayne Chiu	21.6~22.3°C / 55~59%	28/Nov/2024
☒ Wenhua 3rd. (TAF: 3785)	ADD: No. 58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Guishan Dist. Taoyuan City 333, Taiwan (R.O.C.)			
	TEL: 886-3-327-0868			
Test site Designation No. TW0036 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH06-HY	Johnny Yu	22.2~23.9°C / 52~53%	25/Nov/2024
Radiated	03CH25-HY	Rian Chung	20.4~21.9°C / 52~56%	24/Oct/2024~23/Nov/2024

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Power Spectral Density	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Test Software Version	PuTTY Release 0.72
-----------------------	--------------------

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	20.5
2417MHz	21.5
2437MHz	21.5
2457MHz	20.5
2462MHz	20
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	18.5
2417MHz	20.5
2437MHz	21.5
2457MHz	20
2462MHz	18
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	18
2417MHz	20.5
2437MHz	21.5
2457MHz	20
2462MHz	17.5

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	Adapter Mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	Adapter Mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	Y Plane
	

2.3 Accessories

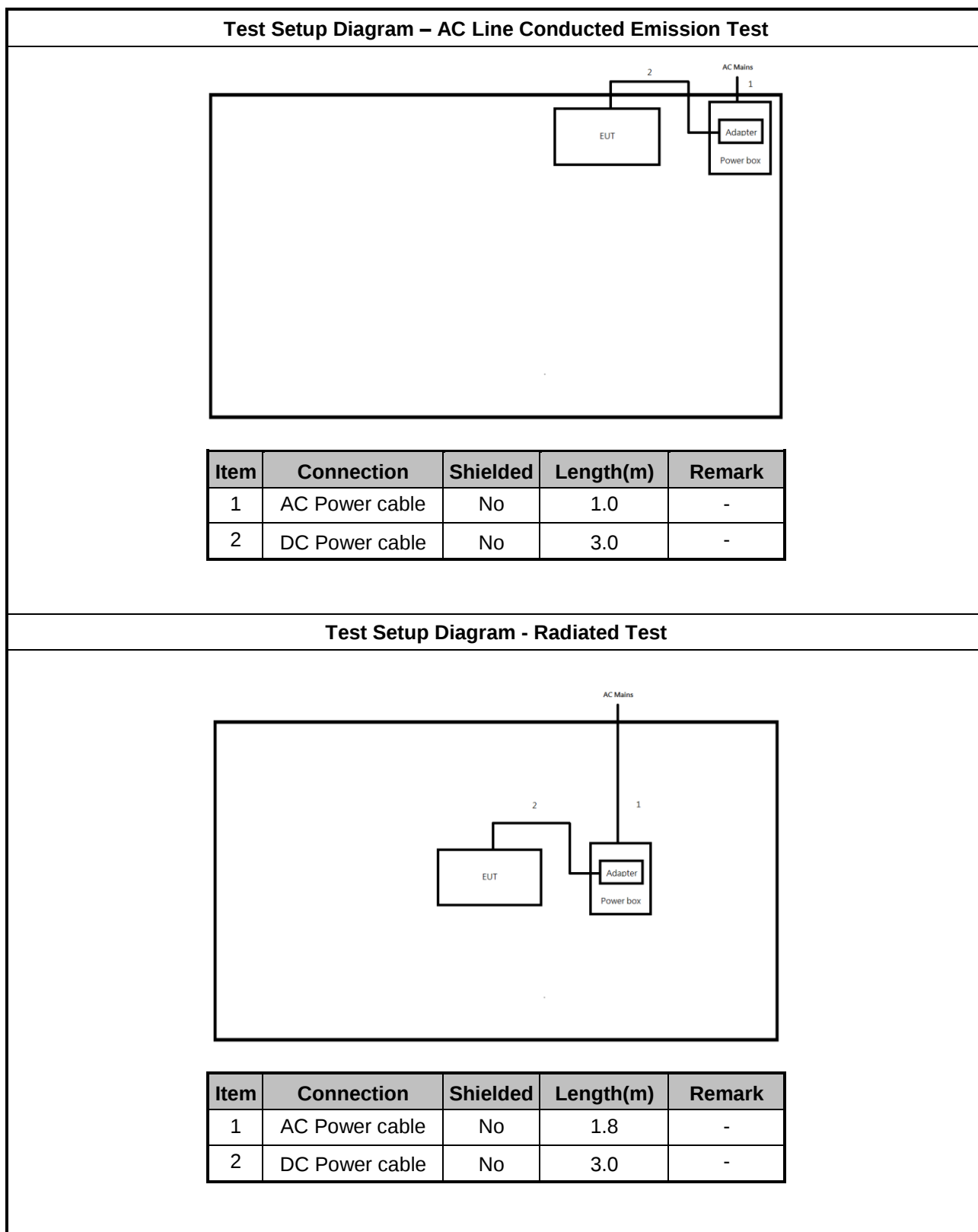
Accessories				
AC Adapter	Brand Name	APD	Model Name	WB-12G12FU
	Manufacturer	ASIAN POWER		
	Power Rating	I/P: 100-240Vac, 50-60 Hz, 0.3 A, O/P:12 Vdc, 1.0A		
	DC Power Cable	3.0meter, non-shielded cable, w/o ferrite core		

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

2.4 Support Equipment

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	Fixture	N/A	N/A	-	Provided by Customer

2.5 Test Setup Diagram



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

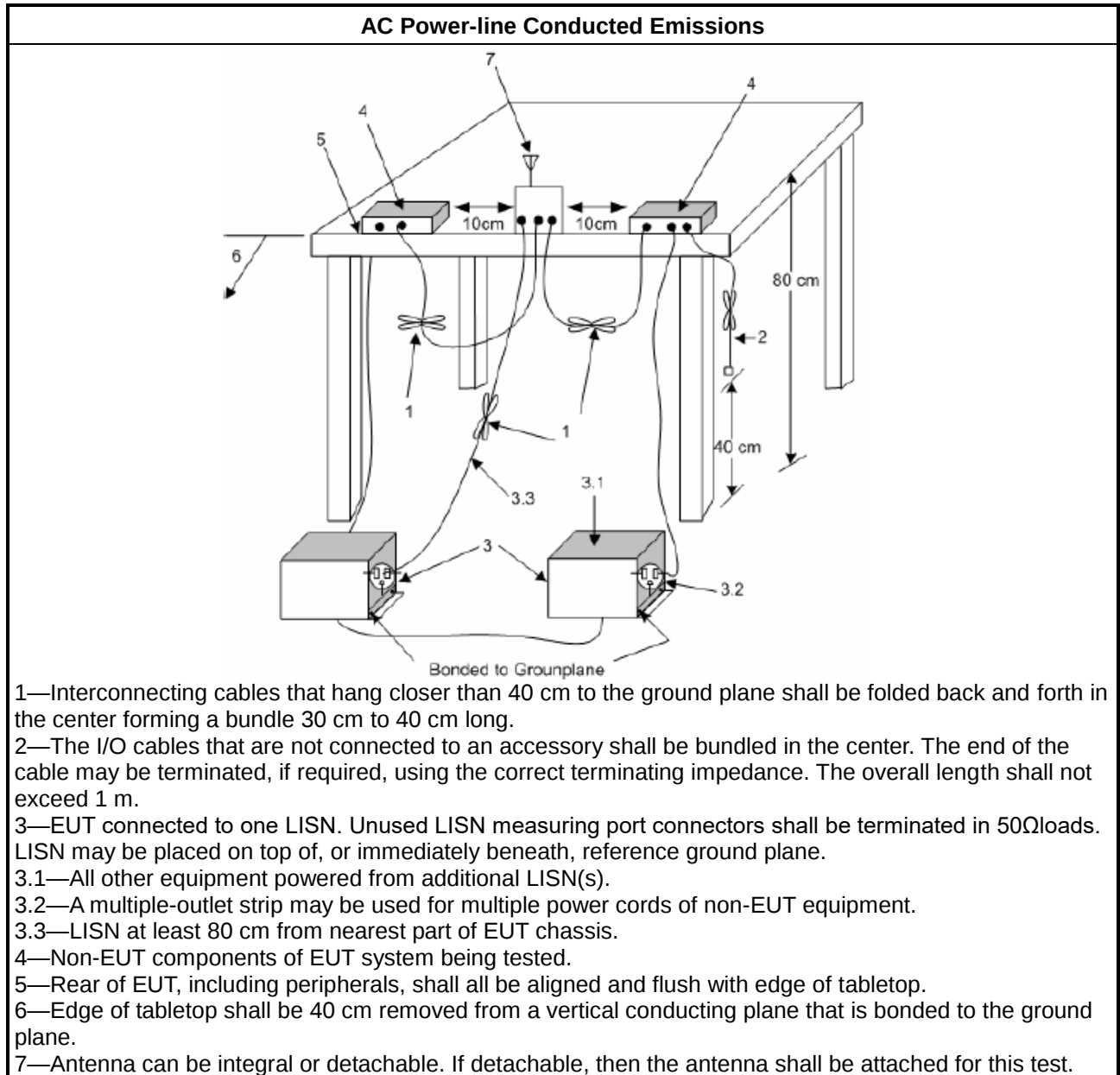
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

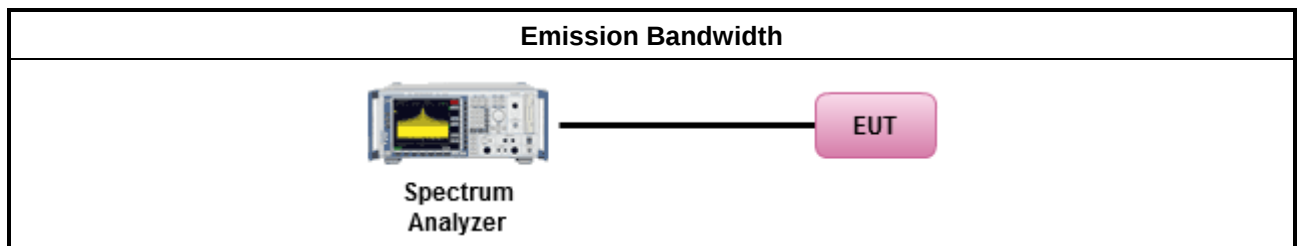
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

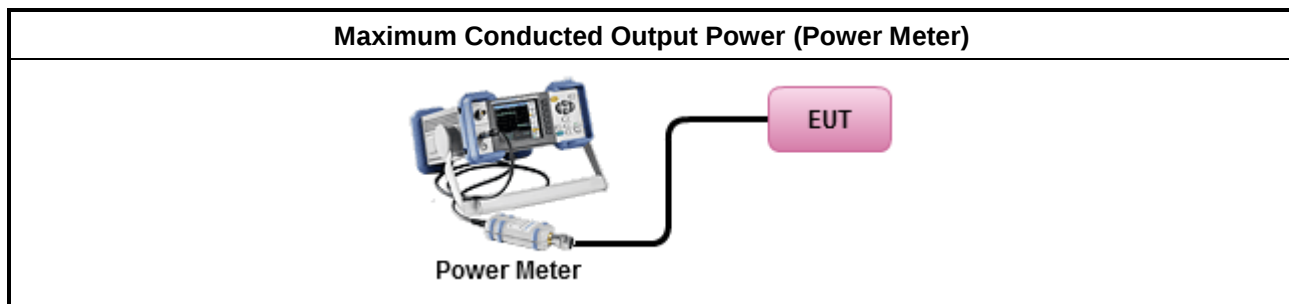
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

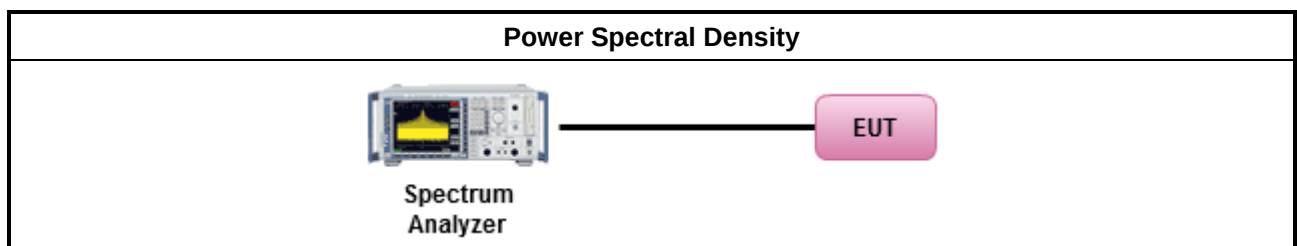
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

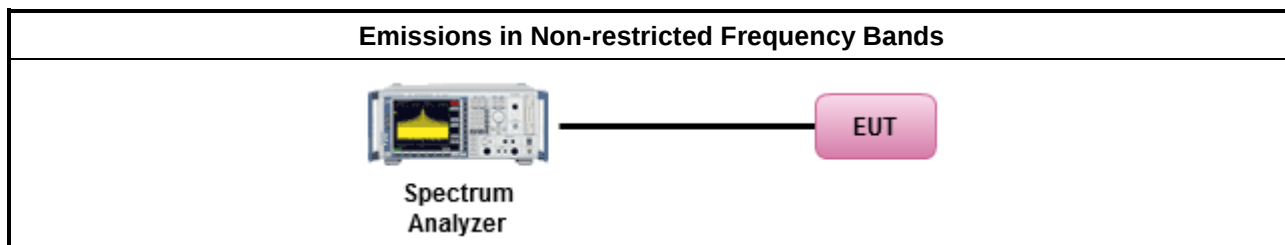
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

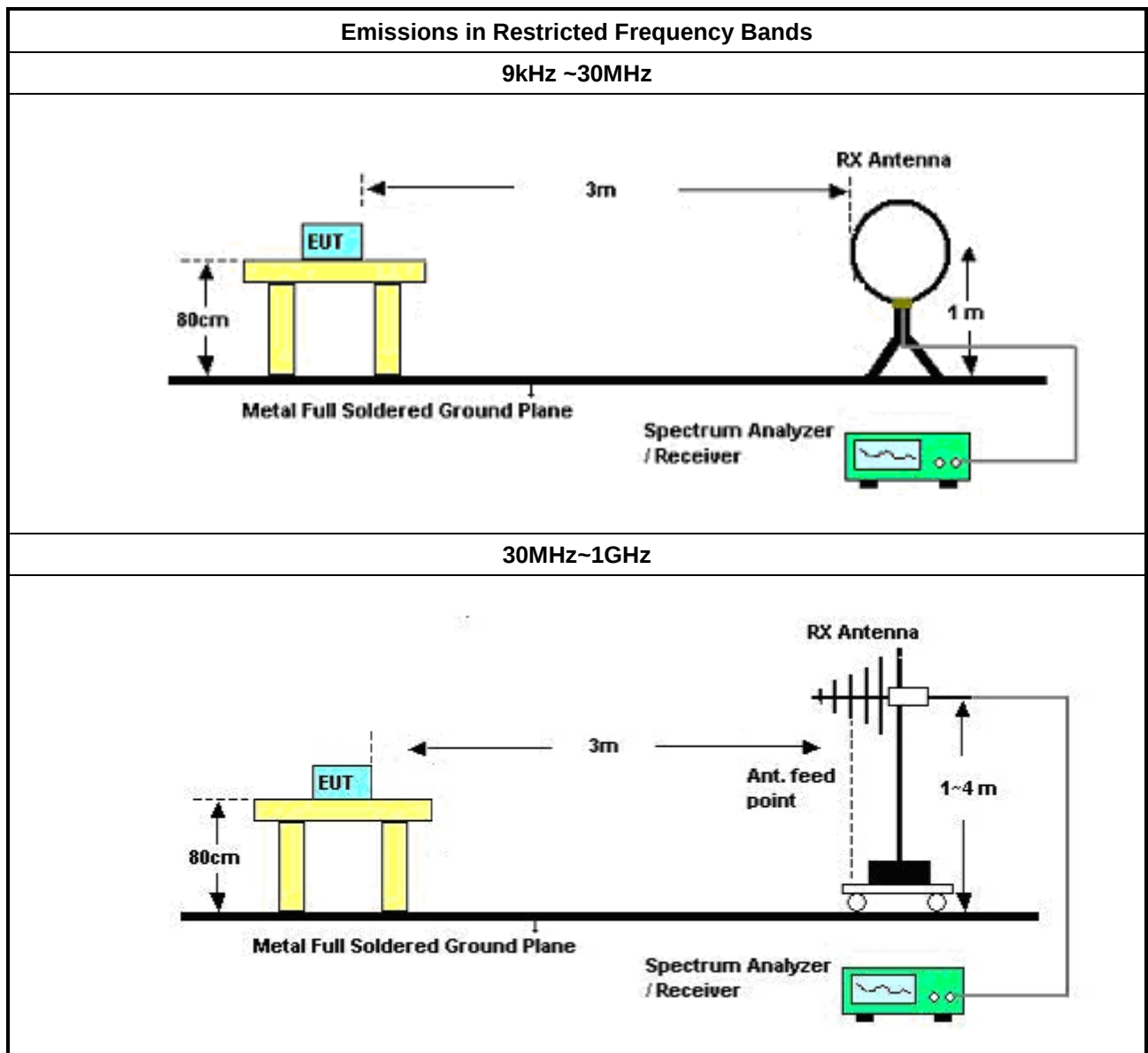
Test Method	
▪	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].
	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪	For the transmitter unwanted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

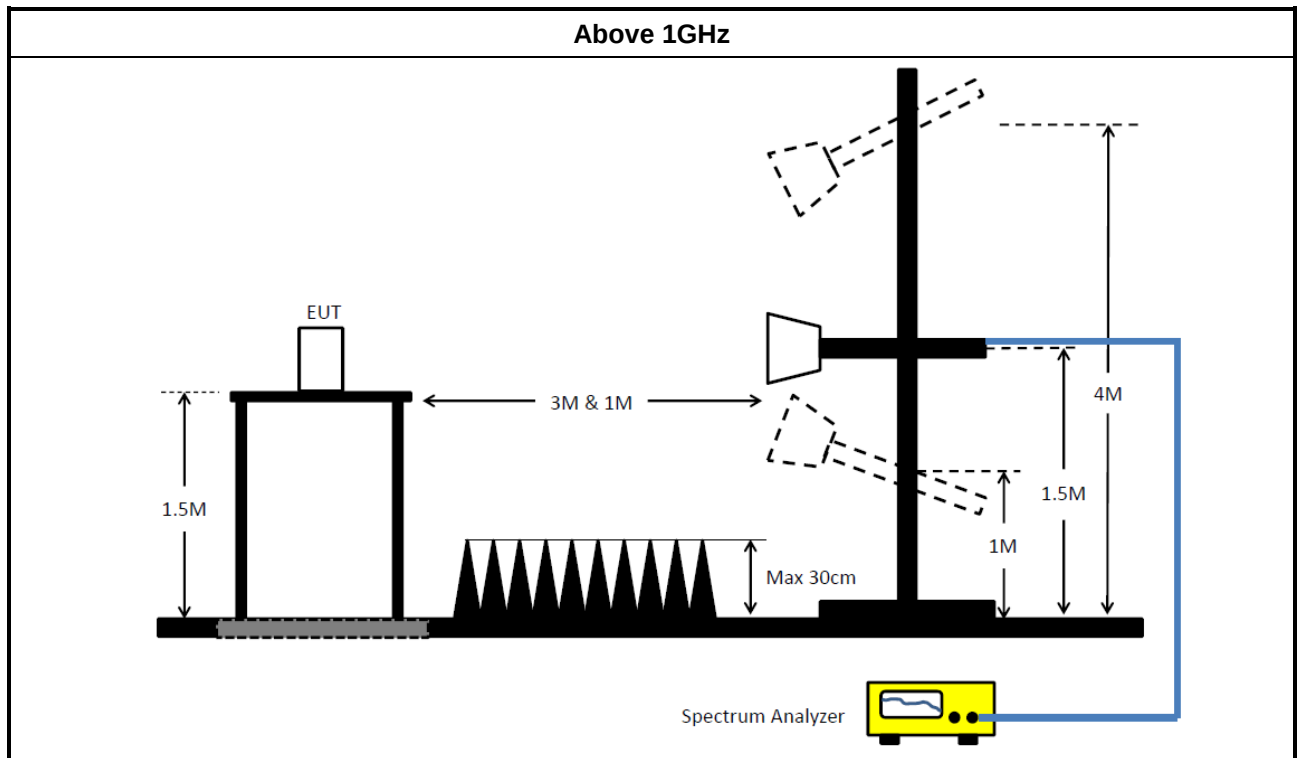
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.5 Test Setup





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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	ROHDE & SCHWARZ	ESR3	102051	9kHz ~ 3.6GHz	17/May/2024	16/May/2025
Two-Line V-Network	ROHDE & SCHWARZ	ENV 216	101274	9kHz ~ 30MHz	18/Jun/2024	17/Jun/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	27/Feb/2024	26/Feb/2025
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	17/Oct/2024	16/Oct/2025
Software	Sporton	SENSE-EMI	V5.11.3	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

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

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH25-HY	30MHz~1GHz 3m	20/Jul/2024	19/Jul/2025
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH25-HY	1GHz~18GHz 3m	08/Aug/2024	07/Aug/2025
ESR7 EMI Test Receiver	ROHDE & SCHWARZ	ESR7	102956	9kHz~3.6GHz	27/Aug/2024	26/Aug/2025
Signal Analyzer	ROHDE & SCHWARZ	FSV3044	101345	10Hz~44GHz	27/Aug/2024	26/Aug/2025
Signal Analyzer	ROHDE & SCHWARZ	FSV3044	101410	10Hz~44GHz	18/Nov/2024	17/Nov/2025
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	19/Mar/2024	18/Mar/2025
Bilog Antenna & 6dB Attenuator	TESEQ & VGT	CBL 6111D & VFA 04002-06	63537/001	30MHz~1GHz	30/May/2024	29/May/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02876	1GHz~18GHz	11/Jul/2024	10/Jul/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	01248	18GHz~40GHz	04/Oct/2024	03/Oct/2025
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	9kHz~1GHz	24/Apr/2024	23/Apr/2025
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	1GHz~40GHz	23/Apr/2024	22/Apr/2025
Preamplifier	SGH	PRAMP 903	20230515-1	25MHz~3GHz	24/May/2024	23/May/2025
Preamplifier	SGH	PRAMP 118-H	20230515-3	1GHz~18GHz	24/May/2024	23/May/2025
Amplifier	EM	EM18G40GA	060874	18GHz ~ 40GHz	15/Apr/2024	14/Apr/2025
SENSE-15247-DTS	Sporton	V5.11.20	NA	NA	NA	NA



Conducted Emissions at Powerline

Appendix A

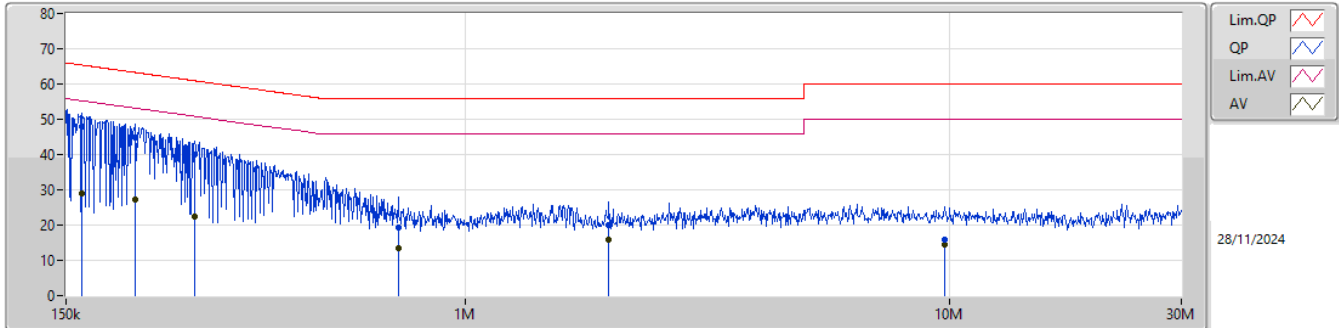
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	504.824k	31.43	46.00	-14.57	Neutral

Result

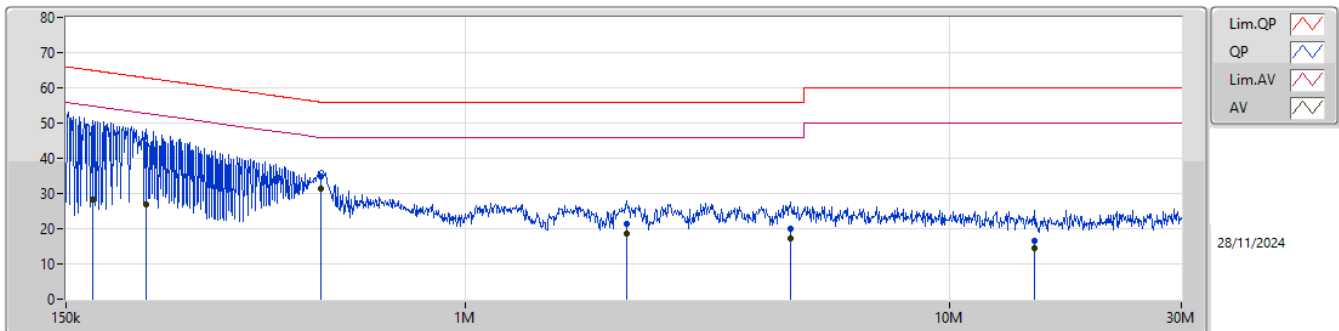
Mode	Result	Type	Freq (Hz)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	161.82k	48.10	65.37	-17.27	Line	-
Mode 1	Pass	AV	161.82k	29.03	55.37	-26.34	Line	-
Mode 1	Pass	QP	208.925k	44.72	63.25	-18.53	Line	-
Mode 1	Pass	AV	208.925k	27.18	53.25	-26.07	Line	-
Mode 1	Pass	QP	276.28k	39.89	60.93	-21.04	Line	-
Mode 1	Pass	AV	276.28k	22.54	50.93	-28.39	Line	-
Mode 1	Pass	QP	725.952k	19.20	56.00	-36.80	Line	-
Mode 1	Pass	AV	725.952k	13.53	46.00	-32.47	Line	-
Mode 1	Pass	QP	1.977M	19.88	56.00	-36.12	Line	-
Mode 1	Pass	AV	1.977M	15.84	46.00	-30.16	Line	-
Mode 1	Pass	QP	9.723M	16.01	60.00	-43.99	Line	-
Mode 1	Pass	AV	9.723M	14.40	50.00	-35.60	Line	-
Mode 1	Pass	QP	170.439k	47.04	64.93	-17.89	Neutral	-
Mode 1	Pass	AV	170.439k	28.39	54.93	-26.54	Neutral	-
Mode 1	Pass	QP	219.176k	43.92	62.85	-18.93	Neutral	-
Mode 1	Pass	AV	219.176k	26.98	52.85	-25.87	Neutral	-
Mode 1	Pass	QP	504.824k	34.66	56.00	-21.34	Neutral	-
Mode 1	Pass	AV	504.824k	31.43	46.00	-14.57	Neutral	-
Mode 1	Pass	QP	2.15M	21.52	56.00	-34.48	Neutral	-
Mode 1	Pass	AV	2.15M	18.69	46.00	-27.31	Neutral	-
Mode 1	Pass	QP	4.683M	19.83	56.00	-36.17	Neutral	-
Mode 1	Pass	AV	4.683M	17.22	46.00	-28.78	Neutral	-
Mode 1	Pass	QP	14.964M	16.47	60.00	-43.53	Neutral	-
Mode 1	Pass	AV	14.964M	14.34	50.00	-35.66	Neutral	-

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	161.82k	48.10	65.37	-17.27	19.70	Line	-	28.40	9.66	0.07	9.97						
AV	161.82k	29.03	55.37	-26.34	19.70	Line	-	9.33	9.66	0.07	9.97						
QP	208.925k	44.72	63.25	-18.53	19.71	Line	-	25.01	9.65	0.09	9.97						
AV	208.925k	27.18	53.25	-26.07	19.71	Line	-	7.47	9.65	0.09	9.97						
QP	276.28k	39.89	60.93	-21.04	19.72	Line	-	20.17	9.65	0.10	9.97						
AV	276.28k	22.54	50.93	-28.39	19.72	Line	-	2.82	9.65	0.10	9.97						
QP	725.952k	19.20	56.00	-36.80	19.74	Line	-	-0.54	9.66	0.10	9.98						
AV	725.952k	13.53	46.00	-32.47	19.74	Line	-	-6.21	9.66	0.10	9.98						
QP	1.977M	19.88	56.00	-36.12	19.75	Line	-	0.13	9.67	0.11	9.97						
AV	1.977M	15.84	46.00	-30.16	19.75	Line	-	-3.91	9.67	0.11	9.97						
QP	9.723M	16.01	60.00	-43.99	19.74	Line	-	-3.73	9.71	0.05	9.98						
AV	9.723M	14.40	50.00	-35.60	19.74	Line	-	-5.34	9.71	0.05	9.98						

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	170.439k	47.04	64.93	-17.89	19.65	Neutral	-	27.39	9.60	0.08	9.97						
AV	170.439k	28.39	54.93	-26.54	19.65	Neutral	-	8.74	9.60	0.08	9.97						
QP	219.176k	43.92	62.85	-18.93	19.66	Neutral	-	24.26	9.60	0.09	9.97						
AV	219.176k	26.98	52.85	-25.87	19.66	Neutral	-	7.32	9.60	0.09	9.97						
QP	504.824k	34.66	56.00	-21.34	19.69	Neutral	-	14.97	9.60	0.11	9.98						
AV	504.824k	31.43	46.00	-14.57	19.69	Neutral	-	11.74	9.60	0.11	9.98						
QP	2.15M	21.52	56.00	-34.48	19.69	Neutral	-	1.83	9.61	0.11	9.97						
AV	2.15M	18.69	46.00	-27.31	19.69	Neutral	-	-1.00	9.61	0.11	9.97						
QP	4.683M	19.83	56.00	-36.17	19.68	Neutral	-	0.15	9.63	0.07	9.98						
AV	4.683M	17.22	46.00	-28.78	19.68	Neutral	-	-2.46	9.63	0.07	9.98						
QP	14.964M	16.47	60.00	-43.53	19.74	Neutral	-	-3.27	9.67	0.09	9.98						
AV	14.964M	14.34	50.00	-35.66	19.74	Neutral	-	-5.40	9.67	0.09	9.98						

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	9.525M	13.868M	13M9G1D	8.575M	13.853M
802.11g_Nss1,(6Mbps)_1TX	15.85M	16.404M	16M4D1D	15.8M	16.382M
802.11n HT20_Nss1,(MCS0)_1TX	16.3M	17.516M	17M5D1D	16.05M	17.441M

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	8.575M	13.868M
2437MHz	Pass	500k	9.525M	13.853M
2462MHz	Pass	500k	9.1M	13.853M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	15.8M	16.382M
2437MHz	Pass	500k	15.85M	16.404M
2462MHz	Pass	500k	15.8M	16.404M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	16.05M	17.491M
2437MHz	Pass	500k	16.3M	17.516M
2462MHz	Pass	500k	16.05M	17.441M

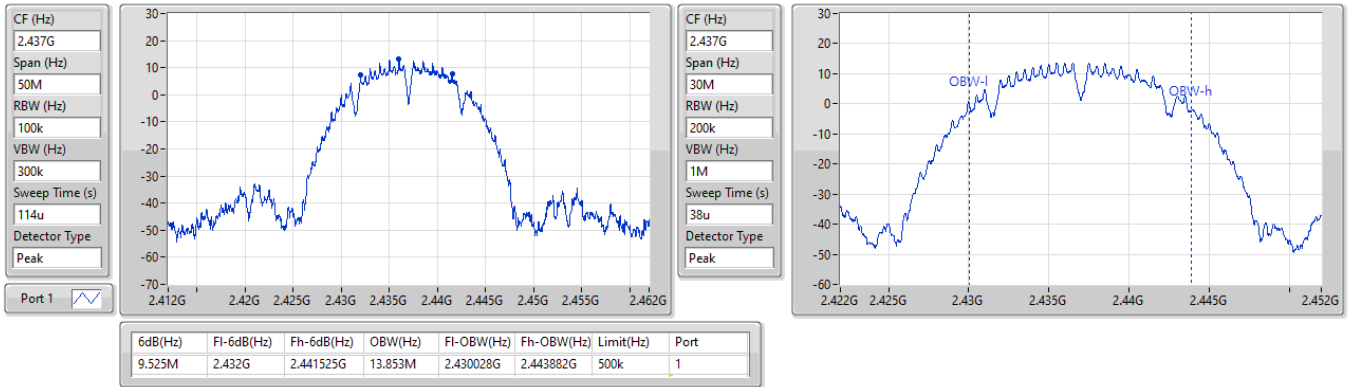
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

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

EBW

2437MHz

25/11/2024

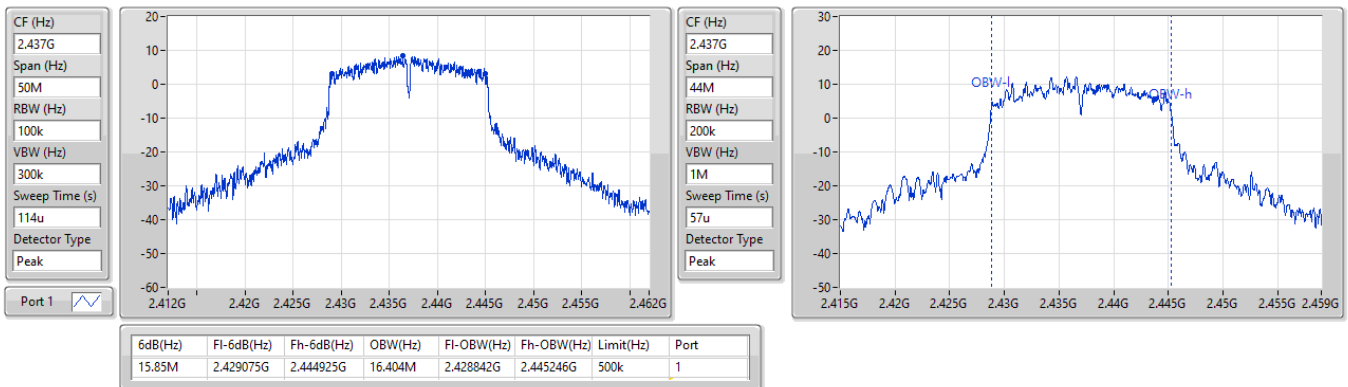


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

EBW

2437MHz

25/11/2024

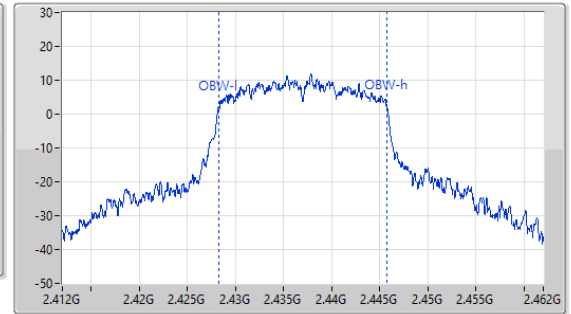
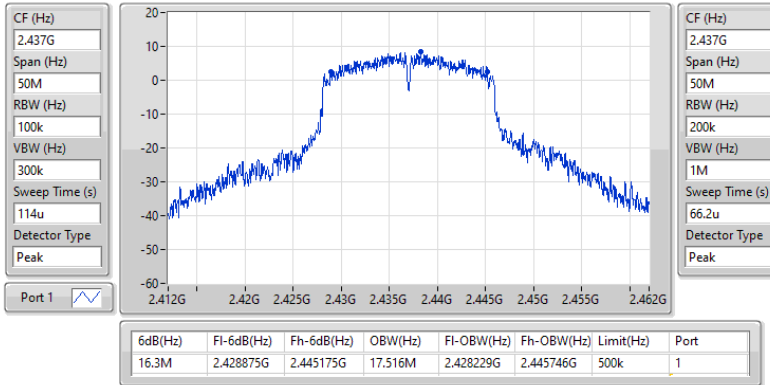


2.4-2.4835GHz_802.11n_HT20_Nss1,(MCS0)_1TX

EBW

2437MHz

25/11/2024





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	22.38	0.17298
802.11g_Nss1,(6Mbps)_1TX	22.13	0.16331
802.11n HT20_Nss1,(MCS0)_1TX	21.96	0.15704

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	21.26	21.26	30.00
2417MHz	Pass	2.79	22.32	22.32	30.00
2437MHz	Pass	2.79	22.38	22.38	30.00
2457MHz	Pass	2.79	21.54	21.54	30.00
2462MHz	Pass	2.79	21.12	21.12	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	19.39	19.39	30.00
2417MHz	Pass	2.79	21.01	21.01	30.00
2437MHz	Pass	2.79	22.13	22.13	30.00
2457MHz	Pass	2.79	21.09	21.09	30.00
2462MHz	Pass	2.79	19.35	19.35	30.00
802.11n_HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	18.86	18.86	30.00
2417MHz	Pass	2.79	21.17	21.17	30.00
2437MHz	Pass	2.79	21.96	21.96	30.00
2457MHz	Pass	2.79	21.01	21.01	30.00
2462MHz	Pass	2.79	18.62	18.62	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-1.71
802.11g_Nss1,(6Mbps)_1TX	-3.50
802.11n_HT20_Nss1,(MCS0)_1TX	-3.02

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	2.79	-2.81	-2.81	8.00
2437MHz	Pass	2.79	-1.71	-1.71	8.00
2462MHz	Pass	2.79	-4.10	-4.10	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	-6.04	-6.04	8.00
2437MHz	Pass	2.79	-3.50	-3.50	8.00
2462MHz	Pass	2.79	-6.11	-6.11	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	-6.21	-6.21	8.00
2437MHz	Pass	2.79	-3.02	-3.02	8.00
2462MHz	Pass	2.79	-6.29	-6.29	8.00

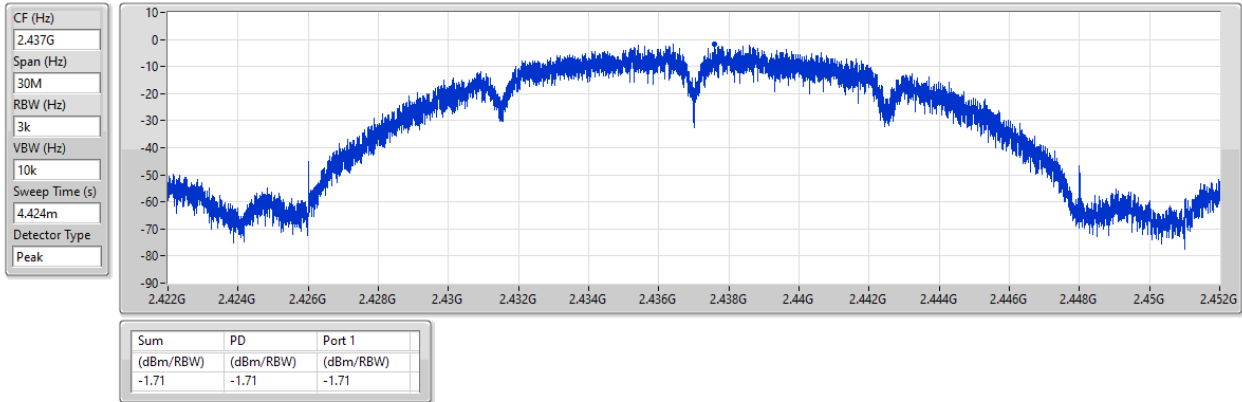
DG = Directional Gain; RBW = 3kHz;
 PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;
 Inf = There's no restriction for the limit.

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

PSD

2437MHz

25/11/2024

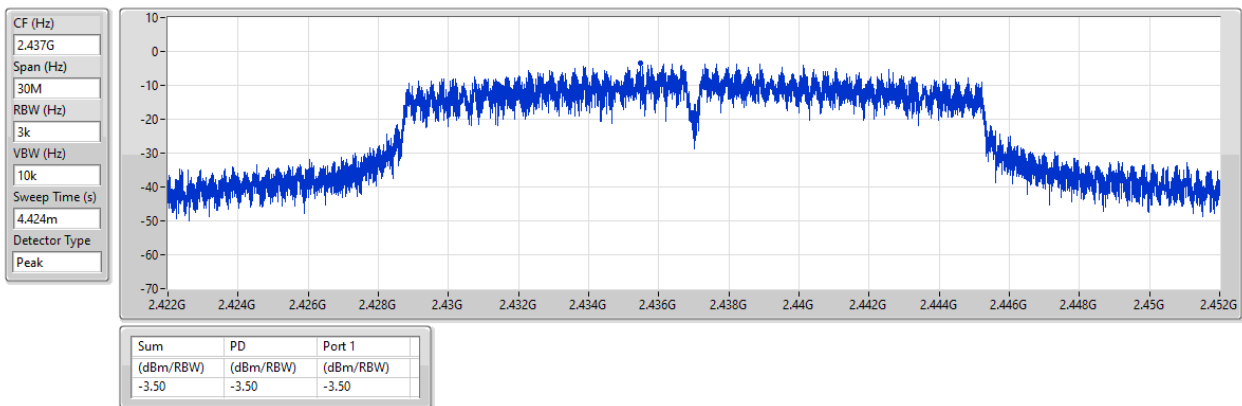


2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

PSD

2437MHz

25/11/2024

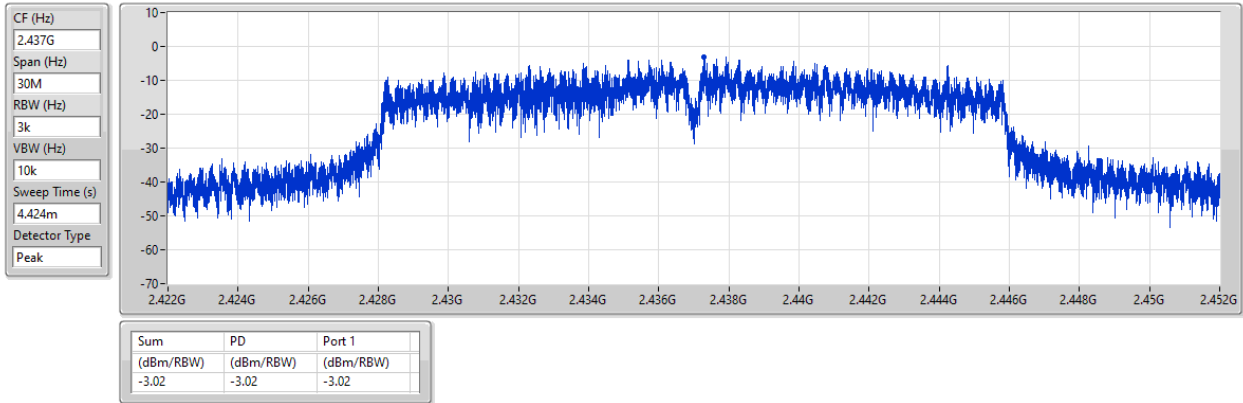


2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

PSD

2437MHz

25/11/2024





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	2.43657G	12.95	-17.05	2.09555G	-54.48	2.39608G	-34.34	2.4G	-47.14	2.50422G	-51.74	23.31988G	-41.82	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.43574G	12.28	-17.72	2.18292G	-55.09	2.39992G	-26.32	2.4G	-25.86	2.50158G	-51.88	17.63895G	-41.93	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.43824G	12.27	-17.73	2.30641G	-53.92	2.3992G	-28.84	2.4G	-27.65	2.51206G	-51.59	15.25363G	-41.75	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	2.43657G	12.95	-17.05	2.09555G	-54.48	2.39608G	-34.34	2.4G	-47.14	2.50422G	-51.74	23.31988G	-41.82	1
2437MHz	Pass	2.43657G	12.95	-17.05	2.19807G	-54.91	2.39904G	-49.19	2.4G	-47.88	2.50902G	-51.70	16.21731G	-41.00	1
2462MHz	Pass	2.43657G	12.95	-17.05	2.30758G	-54.97	2.392G	-52.14	2.4G	-54.69	2.50518G	-50.90	23.3536G	-41.22	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43574G	12.28	-17.72	2.18292G	-55.09	2.39992G	-26.32	2.4G	-25.86	2.50158G	-51.88	17.63895G	-41.93	1
2437MHz	Pass	2.43574G	12.28	-17.72	2.30292G	-53.83	2.3988G	-43.15	2.4G	-41.49	2.5111G	-51.56	23.30864G	-41.54	1
2462MHz	Pass	2.43574G	12.28	-17.72	2.12933G	-54.17	2.39816G	-52.49	2.4G	-54.62	2.50014G	-50.24	23.26369G	-41.13	1
802.11n_HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43824G	12.27	-17.73	2.30641G	-53.92	2.3992G	-28.84	2.4G	-27.65	2.51206G	-51.59	15.25363G	-41.75	1
2437MHz	Pass	2.43824G	12.27	-17.73	2.30641G	-54.81	2.39824G	-42.08	2.4G	-41.56	2.51574G	-51.44	17.60804G	-41.81	1
2462MHz	Pass	2.43824G	12.27	-17.73	1.95342G	-53.98	2.39824G	-52.35	2.4G	-55.58	2.50118G	-51.69	16.20888G	-40.90	1

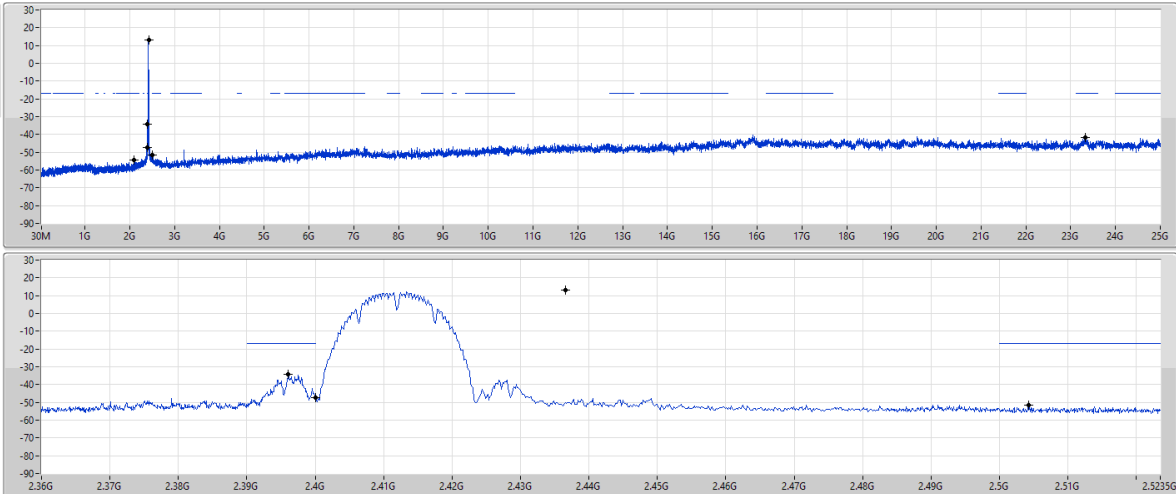
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

CSEndB

2412MHz

25/11/2024

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
2.43657G	12.95	-17.05	2.09555G	-54.48	2.39608G	-34.34	2.4G	-47.14	2.50422G	-51.74	23.31988G	-41.82	1

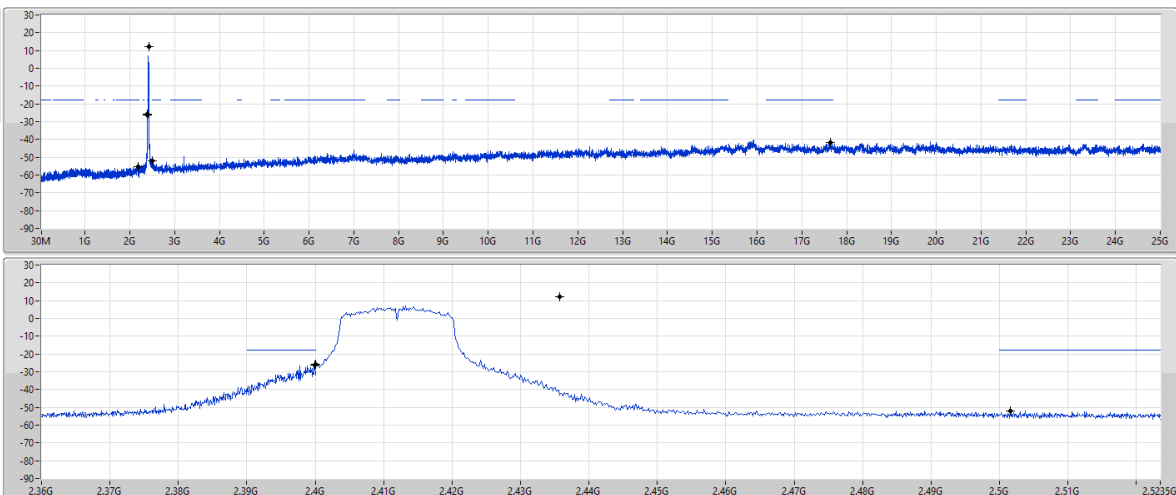
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

CSEndB

2412MHz

25/11/2024

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



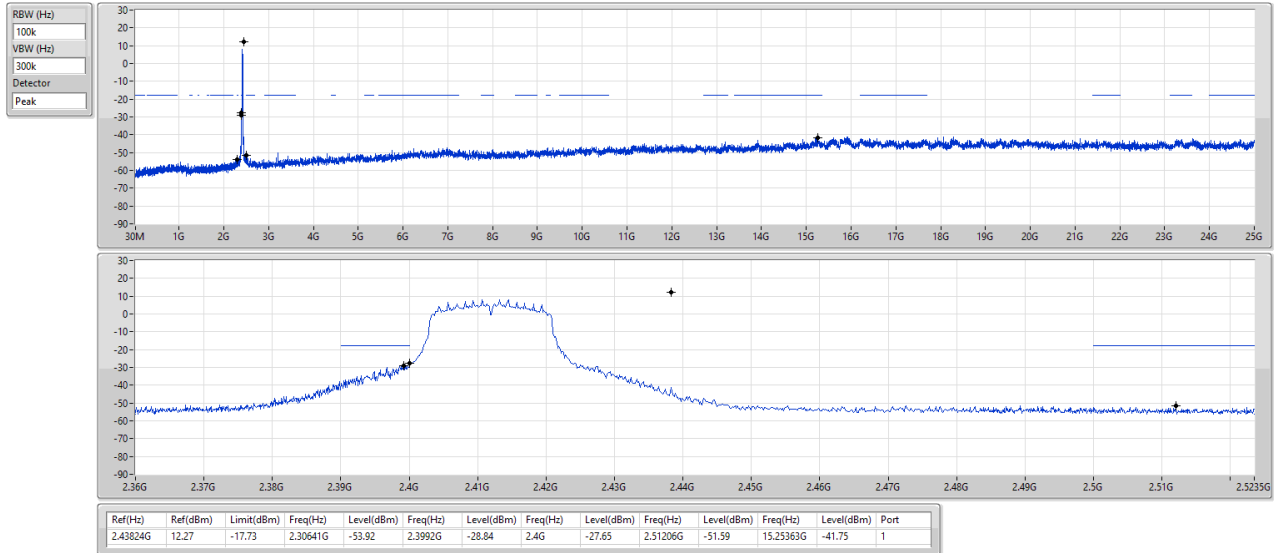
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43574G	12.28	-17.72	2.18292G	-55.09	2.39992G	-26.32	2.4G	-25.86	2.50158G	-51.88	17.63895G	-41.93	1

2.4-2.4835GHz_802.11n_HT20_Nss1,(MCS0)_1TX

CSEndB

2412MHz

25/11/2024





Summary

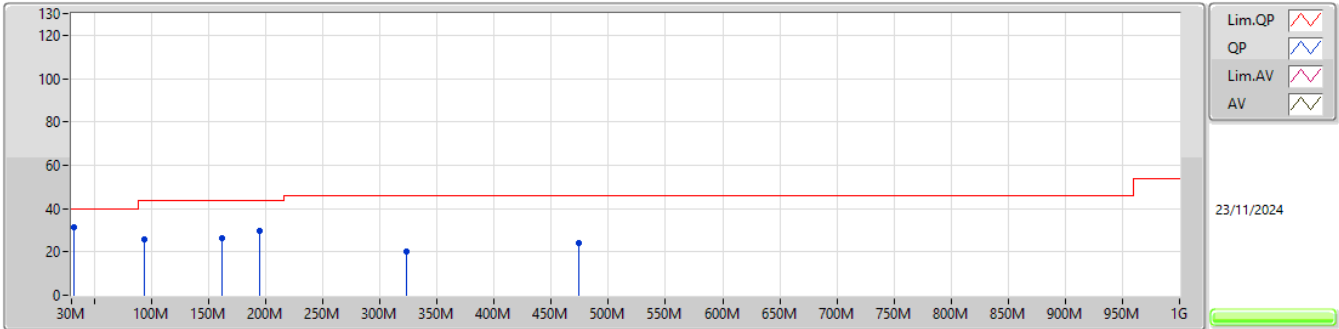
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	PK	31.94M	31.62	40.00	-8.38	3	Vertical	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.11n HT20_Nss1.(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-
2437MHz	Pass	PK	31.94M	31.62	40.00	-8.38	3	Vertical	0	1.00
2437MHz	Pass	PK	94.02M	25.86	43.50	-17.64	3	Vertical	0	1.00
2437MHz	Pass	PK	161.92M	26.19	43.50	-17.31	3	Vertical	0	1.00
2437MHz	Pass	PK	194.9M	29.48	43.50	-14.02	3	Vertical	0	1.00
2437MHz	Pass	PK	322.94M	20.26	46.00	-25.74	3	Vertical	0	1.00
2437MHz	Pass	PK	474.26M	23.84	46.00	-22.16	3	Vertical	0	1.00
2437MHz	Pass	PK	31.94M	22.62	40.00	-17.38	3	Horizontal	360	1.00
2437MHz	Pass	PK	97.9M	24.84	43.50	-18.66	3	Horizontal	360	1.00
2437MHz	Pass	PK	138.64M	27.67	43.50	-15.83	3	Horizontal	360	1.00
2437MHz	Pass	PK	175.5M	28.13	43.50	-15.37	3	Horizontal	360	1.00
2437MHz	Pass	PK	216M	31.78	43.50	-11.72	3	Horizontal	360	1.00
2437MHz	Pass	PK	274.44M	28.88	46.00	-17.12	3	Horizontal	360	1.00

2.4-2.4835GHz_802.11n_HT20_Nss1,(MCS0)_1TX

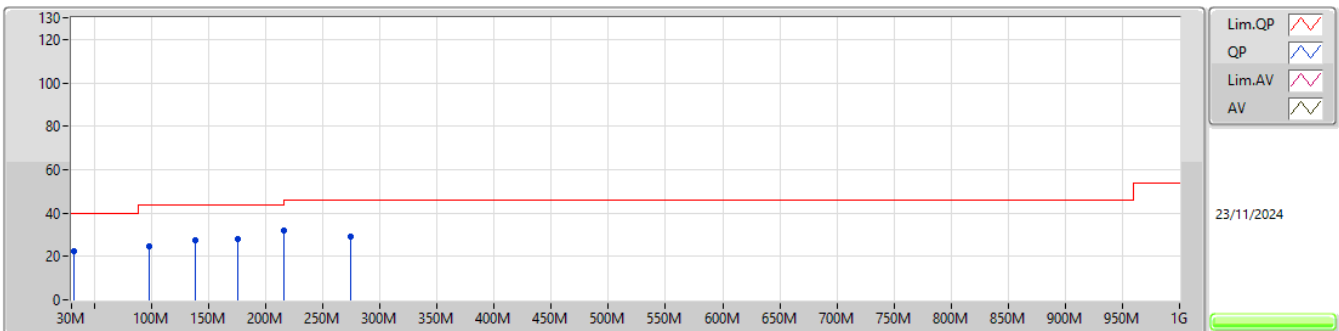
2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	31.94M	31.62	40.00	-8.38	-20.11	3	Vertical	0	1.00	51.73	23.74	0.45	44.30
PK	94.02M	25.86	43.50	-17.64	-28.42	3	Vertical	0	1.00	54.28	15.39	0.77	44.58
PK	161.92M	26.19	43.50	-17.31	-27.15	3	Vertical	0	1.00	53.34	16.42	0.98	44.55
PK	194.9M	29.48	43.50	-14.02	-28.38	3	Vertical	0	1.00	57.86	15.01	1.10	44.49
PK	322.94M	20.26	46.00	-25.74	-23.39	3	Vertical	0	1.00	43.65	19.56	1.25	44.20
PK	474.26M	23.84	46.00	-22.16	-18.67	3	Vertical	0	1.00	42.51	23.66	1.58	43.91

2.4-2.4835GHz_802.11n_HT20_Nss1,(MCS0)_1TX

2437MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	31.94M	22.62	40.00	-17.38	-20.11	3	Horizontal	360	1.00	42.73	23.74	0.45	44.30
PK	97.9M	24.84	43.50	-18.66	-27.79	3	Horizontal	360	1.00	52.63	15.97	0.79	44.55
PK	138.64M	27.67	43.50	-15.83	-26.15	3	Horizontal	360	1.00	53.82	17.45	0.98	44.58
PK	175.5M	28.13	43.50	-15.37	-28.01	3	Horizontal	360	1.00	56.14	15.50	1.02	44.53
PK	216M	31.78	43.50	-11.72	-28.21	3	Horizontal	360	1.00	59.99	15.10	1.13	44.44
PK	274.44M	28.88	46.00	-17.12	-24.28	3	Horizontal	360	1.00	53.16	18.87	1.17	44.32

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.4835G	51.84	54.00	-2.16	3	Horizontal	168	1.50
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.4835G	52.47	54.00	-1.53	3	Vertical	68	1.50
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.39G	52.44	54.00	-1.56	3	Vertical	27	1.76

Result

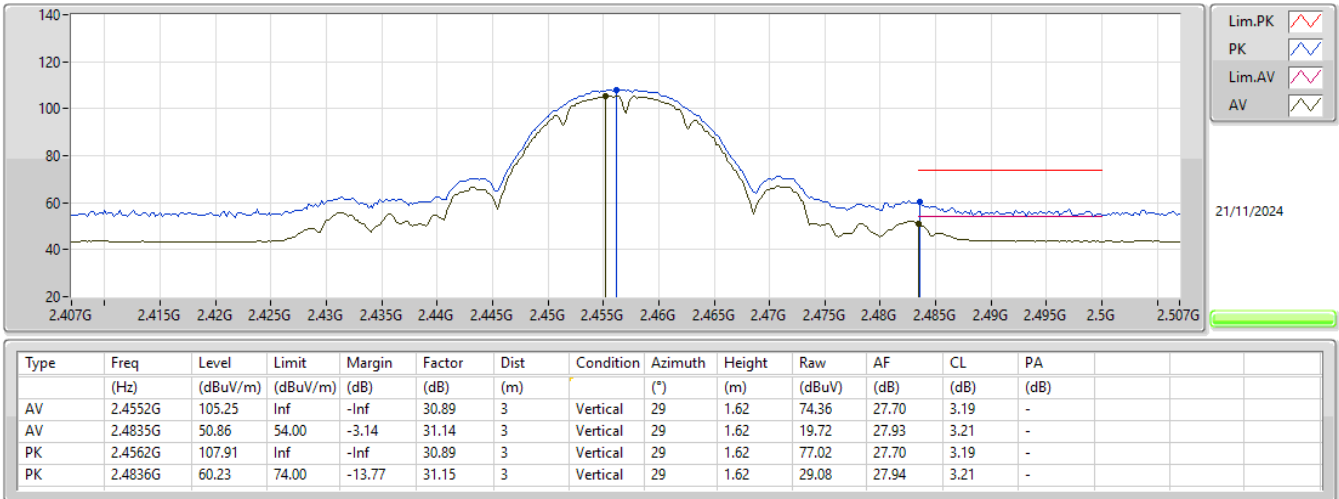
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3872G	49.53	54.00	-4.47	3	Vertical	4	2.91
2412MHz	Pass	AV	2.4112G	107.83	Inf	-Inf	3	Vertical	4	2.91
2412MHz	Pass	PK	2.3858G	59.57	74.00	-14.43	3	Vertical	4	2.91
2412MHz	Pass	PK	2.412G	110.76	Inf	-Inf	3	Vertical	4	2.91
2412MHz	Pass	AV	2.3872G	48.12	54.00	-5.88	3	Horizontal	187	1.82
2412MHz	Pass	AV	2.4128G	105.76	Inf	-Inf	3	Horizontal	187	1.82
2412MHz	Pass	PK	2.3866G	58.28	74.00	-15.72	3	Horizontal	187	1.82
2412MHz	Pass	PK	2.4118G	108.70	Inf	-Inf	3	Horizontal	187	1.82
2412MHz	Pass	AV	4.82394G	44.34	54.00	-9.66	3	Vertical	207	1.12
2412MHz	Pass	PK	4.82394G	47.74	74.00	-26.26	3	Vertical	207	1.12
2412MHz	Pass	AV	4.82394G	44.03	54.00	-9.97	3	Horizontal	21	1.05
2412MHz	Pass	PK	4.824G	47.83	74.00	-26.17	3	Horizontal	21	1.05
2417MHz	Pass	AV	2.39G	51.29	54.00	-2.71	3	Vertical	28	1.76
2417MHz	Pass	AV	2.4152G	106.64	Inf	-Inf	3	Vertical	28	1.76
2417MHz	Pass	PK	2.39G	59.95	74.00	-14.05	3	Vertical	28	1.76
2417MHz	Pass	PK	2.4168G	109.36	Inf	-Inf	3	Vertical	28	1.76
2417MHz	Pass	AV	2.39G	51.74	54.00	-2.26	3	Horizontal	167	1.50
2417MHz	Pass	AV	2.4152G	105.81	Inf	-Inf	3	Horizontal	167	1.50
2417MHz	Pass	PK	2.39G	60.23	74.00	-13.77	3	Horizontal	167	1.50
2417MHz	Pass	PK	2.4162G	108.48	Inf	-Inf	3	Horizontal	167	1.50
2437MHz	Pass	AV	2.3894G	44.43	54.00	-9.57	3	Vertical	354	2.05
2437MHz	Pass	AV	2.4378G	106.86	Inf	-Inf	3	Vertical	354	2.05
2437MHz	Pass	AV	2.4938G	43.66	54.00	-10.34	3	Vertical	354	2.05
2437MHz	Pass	PK	2.3554G	56.86	74.00	-17.14	3	Vertical	354	2.05
2437MHz	Pass	PK	2.4378G	109.58	Inf	-Inf	3	Vertical	354	2.05
2437MHz	Pass	PK	2.4922G	57.31	74.00	-16.69	3	Vertical	354	2.05
2437MHz	Pass	AV	2.3894G	44.03	54.00	-9.97	3	Horizontal	167	1.77
2437MHz	Pass	AV	2.4362G	106.25	Inf	-Inf	3	Horizontal	167	1.77
2437MHz	Pass	AV	2.4874G	43.80	54.00	-10.20	3	Horizontal	167	1.77
2437MHz	Pass	PK	2.355G	56.77	74.00	-17.23	3	Horizontal	167	1.77
2437MHz	Pass	PK	2.4362G	108.95	Inf	-Inf	3	Horizontal	167	1.77
2437MHz	Pass	PK	2.4882G	56.80	74.00	-17.20	3	Horizontal	167	1.77
2437MHz	Pass	AV	4.874G	44.24	54.00	-9.76	3	Vertical	212	1.00
2437MHz	Pass	PK	4.87412G	47.58	74.00	-26.42	3	Vertical	212	1.00
2437MHz	Pass	AV	4.87394G	42.83	54.00	-11.17	3	Horizontal	56	1.07
2437MHz	Pass	PK	4.87394G	47.41	74.00	-26.59	3	Horizontal	56	1.07
2457MHz	Pass	AV	2.4552G	105.25	Inf	-Inf	3	Vertical	29	1.62
2457MHz	Pass	AV	2.4835G	50.86	54.00	-3.14	3	Vertical	29	1.62
2457MHz	Pass	PK	2.4562G	107.91	Inf	-Inf	3	Vertical	29	1.62
2457MHz	Pass	PK	2.4836G	60.23	74.00	-13.77	3	Vertical	29	1.62
2457MHz	Pass	AV	2.4578G	105.23	Inf	-Inf	3	Horizontal	168	1.50
2457MHz	Pass	AV	2.4835G	51.84	54.00	-2.16	3	Horizontal	168	1.50
2457MHz	Pass	PK	2.4568G	108.08	Inf	-Inf	3	Horizontal	168	1.50
2457MHz	Pass	PK	2.4835G	60.26	74.00	-13.74	3	Horizontal	168	1.50
2462MHz	Pass	AV	2.4602G	103.82	Inf	-Inf	3	Vertical	30	1.59
2462MHz	Pass	AV	2.4835G	48.51	54.00	-5.49	3	Vertical	30	1.59
2462MHz	Pass	PK	2.4606G	106.51	Inf	-Inf	3	Vertical	30	1.59
2462MHz	Pass	PK	2.4878G	59.15	74.00	-14.85	3	Vertical	30	1.59
2462MHz	Pass	AV	2.4612G	104.45	Inf	-Inf	3	Horizontal	171	1.90
2462MHz	Pass	AV	2.4878G	49.29	54.00	-4.71	3	Horizontal	171	1.90
2462MHz	Pass	PK	2.4618G	107.18	Inf	-Inf	3	Horizontal	171	1.90
2462MHz	Pass	PK	2.4838G	59.48	74.00	-14.52	3	Horizontal	171	1.90
2462MHz	Pass	AV	4.924G	45.09	54.00	-8.91	3	Vertical	322	2.59
2462MHz	Pass	PK	4.92412G	48.52	74.00	-25.48	3	Vertical	322	2.59
2462MHz	Pass	AV	4.924G	43.91	54.00	-10.09	3	Horizontal	148	1.62
2462MHz	Pass	PK	4.92412G	47.58	74.00	-26.42	3	Horizontal	148	1.62
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	52.20	54.00	-1.80	3	Vertical	173	1.50
2412MHz	Pass	AV	2.413G	101.20	Inf	-Inf	3	Vertical	173	1.50
2412MHz	Pass	PK	2.3896G	70.32	74.00	-3.68	3	Vertical	173	1.50

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2412MHz	Pass	PK	2.4118G	112.16	Inf	-Inf	3	Vertical	173	1.50
2412MHz	Pass	AV	2.39G	50.59	54.00	-3.41	3	Horizontal	43	1.29
2412MHz	Pass	AV	2.413G	100.04	Inf	-Inf	3	Horizontal	43	1.29
2412MHz	Pass	PK	2.3898G	68.48	74.00	-5.52	3	Horizontal	43	1.29
2412MHz	Pass	PK	2.412G	111.21	Inf	-Inf	3	Horizontal	43	1.29
2412MHz	Pass	AV	4.82408G	30.41	54.00	-23.59	3	Vertical	16	2.26
2412MHz	Pass	PK	4.8234G	45.11	74.00	-28.89	3	Vertical	16	2.26
2412MHz	Pass	AV	4.824G	29.84	54.00	-24.16	3	Horizontal	42	2.64
2412MHz	Pass	PK	4.823G	44.35	74.00	-29.65	3	Horizontal	42	2.64
2417MHz	Pass	AV	2.39G	51.28	54.00	-2.72	3	Vertical	26	1.76
2417MHz	Pass	AV	2.4162G	101.52	Inf	-Inf	3	Vertical	26	1.76
2417MHz	Pass	PK	2.3888G	71.80	74.00	-2.20	3	Vertical	26	1.76
2417MHz	Pass	PK	2.417G	112.46	Inf	-Inf	3	Vertical	26	1.76
2417MHz	Pass	AV	2.3898G	50.19	54.00	-3.81	3	Horizontal	169	1.87
2417MHz	Pass	AV	2.4182G	100.30	Inf	-Inf	3	Horizontal	169	1.87
2417MHz	Pass	PK	2.3882G	70.24	74.00	-3.76	3	Horizontal	169	1.87
2417MHz	Pass	PK	2.4168G	111.12	Inf	-Inf	3	Horizontal	169	1.87
2437MHz	Pass	AV	2.3898G	45.85	54.00	-8.15	3	Vertical	354	2.05
2437MHz	Pass	AV	2.4382G	102.71	Inf	-Inf	3	Vertical	354	2.05
2437MHz	Pass	AV	2.4838G	44.55	54.00	-9.45	3	Vertical	354	2.05
2437MHz	Pass	PK	2.3898G	62.90	74.00	-11.10	3	Vertical	354	2.05
2437MHz	Pass	PK	2.4382G	113.15	Inf	-Inf	3	Vertical	354	2.05
2437MHz	Pass	PK	2.4838G	59.46	74.00	-14.54	3	Vertical	354	2.05
2437MHz	Pass	AV	2.389G	45.12	54.00	-8.88	3	Horizontal	203	2.17
2437MHz	Pass	AV	2.4382G	102.32	Inf	-Inf	3	Horizontal	203	2.17
2437MHz	Pass	AV	2.4835G	44.89	54.00	-9.11	3	Horizontal	203	2.17
2437MHz	Pass	PK	2.3894G	61.55	74.00	-12.45	3	Horizontal	203	2.17
2437MHz	Pass	PK	2.437G	113.01	Inf	-Inf	3	Horizontal	203	2.17
2437MHz	Pass	PK	2.4846G	59.67	74.00	-14.33	3	Horizontal	203	2.17
2437MHz	Pass	AV	4.87512G	27.84	54.00	-26.16	3	Vertical	162	1.50
2437MHz	Pass	PK	4.87136G	41.58	74.00	-32.42	3	Vertical	162	1.50
2437MHz	Pass	AV	4.87408G	33.92	54.00	-20.08	3	Horizontal	326	1.00
2437MHz	Pass	PK	4.87336G	49.49	74.00	-24.51	3	Horizontal	326	1.00
2457MHz	Pass	AV	2.458G	100.79	Inf	-Inf	3	Vertical	22	2.94
2457MHz	Pass	AV	2.4835G	50.62	54.00	-3.38	3	Vertical	22	2.94
2457MHz	Pass	PK	2.4568G	111.53	Inf	-Inf	3	Vertical	22	2.94
2457MHz	Pass	PK	2.4836G	70.12	74.00	-3.88	3	Vertical	22	2.94
2457MHz	Pass	AV	2.458G	100.24	Inf	-Inf	3	Horizontal	168	1.71
2457MHz	Pass	AV	2.4835G	51.05	54.00	-2.95	3	Horizontal	168	1.71
2457MHz	Pass	PK	2.4568G	110.90	Inf	-Inf	3	Horizontal	168	1.71
2457MHz	Pass	PK	2.4836G	71.28	74.00	-2.72	3	Horizontal	168	1.71
2462MHz	Pass	AV	2.463G	100.86	Inf	-Inf	3	Vertical	68	1.50
2462MHz	Pass	AV	2.4835G	52.47	54.00	-1.53	3	Vertical	68	1.50
2462MHz	Pass	PK	2.4618G	112.00	Inf	-Inf	3	Vertical	68	1.50
2462MHz	Pass	PK	2.484G	69.79	74.00	-4.21	3	Vertical	68	1.50
2462MHz	Pass	AV	2.463G	99.91	Inf	-Inf	3	Horizontal	161	2.72
2462MHz	Pass	AV	2.4835G	51.22	54.00	-2.78	3	Horizontal	161	2.72
2462MHz	Pass	PK	2.4622G	110.71	Inf	-Inf	3	Horizontal	161	2.72
2462MHz	Pass	PK	2.4838G	69.18	74.00	-4.82	3	Horizontal	161	2.72
2462MHz	Pass	AV	4.924G	29.28	54.00	-24.72	3	Vertical	241	1.50
2462MHz	Pass	PK	4.92516G	43.15	74.00	-30.85	3	Vertical	241	1.50
2462MHz	Pass	AV	4.92436G	30.50	54.00	-23.50	3	Horizontal	147	1.29
2462MHz	Pass	PK	4.92324G	45.08	74.00	-28.92	3	Horizontal	147	1.29
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	52.04	54.00	-1.96	3	Vertical	18	1.50
2412MHz	Pass	AV	2.4102G	99.08	Inf	-Inf	3	Vertical	18	1.50
2412MHz	Pass	PK	2.3896G	71.32	74.00	-2.68	3	Vertical	18	1.50
2412MHz	Pass	PK	2.41G	108.49	Inf	-Inf	3	Vertical	18	1.50
2412MHz	Pass	AV	2.39G	51.75	54.00	-2.25	3	Horizontal	166	1.60
2412MHz	Pass	AV	2.4114G	98.21	Inf	-Inf	3	Horizontal	166	1.60
2412MHz	Pass	PK	2.3896G	71.11	74.00	-2.89	3	Horizontal	166	1.60
2412MHz	Pass	PK	2.4102G	107.56	Inf	-Inf	3	Horizontal	166	1.60

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2412MHz	Pass	AV	4.82384G	29.39	54.00	-24.61	3	Vertical	16	1.05
2412MHz	Pass	PK	4.823G	42.46	74.00	-31.54	3	Vertical	16	1.05
2412MHz	Pass	AV	4.824G	29.57	54.00	-24.43	3	Horizontal	159	1.18
2412MHz	Pass	PK	4.8286G	43.22	74.00	-30.78	3	Horizontal	159	1.18
2417MHz	Pass	AV	2.39G	52.44	54.00	-1.56	3	Vertical	27	1.76
2417MHz	Pass	AV	2.4152G	101.68	Inf	-Inf	3	Vertical	27	1.76
2417MHz	Pass	PK	2.3892G	71.79	74.00	-2.21	3	Vertical	27	1.76
2417MHz	Pass	PK	2.4148G	111.13	Inf	-Inf	3	Vertical	27	1.76
2417MHz	Pass	AV	2.3898G	51.64	54.00	-2.36	3	Horizontal	166	1.50
2417MHz	Pass	AV	2.4152G	100.47	Inf	-Inf	3	Horizontal	166	1.50
2417MHz	Pass	PK	2.3894G	70.49	74.00	-3.51	3	Horizontal	166	1.50
2417MHz	Pass	PK	2.415G	109.84	Inf	-Inf	3	Horizontal	166	1.50
2437MHz	Pass	AV	2.3894G	46.58	54.00	-7.42	3	Vertical	354	2.63
2437MHz	Pass	AV	2.4362G	102.71	Inf	-Inf	3	Vertical	354	2.63
2437MHz	Pass	AV	2.4835G	45.08	54.00	-8.92	3	Vertical	354	2.63
2437MHz	Pass	PK	2.3858G	62.86	74.00	-11.14	3	Vertical	354	2.63
2437MHz	Pass	PK	2.4354G	112.10	Inf	-Inf	3	Vertical	354	2.63
2437MHz	Pass	PK	2.4854G	58.06	74.00	-15.94	3	Vertical	354	2.63
2437MHz	Pass	AV	2.3894G	45.85	54.00	-8.15	3	Horizontal	199	2.49
2437MHz	Pass	AV	2.4354G	102.58	Inf	-Inf	3	Horizontal	199	2.49
2437MHz	Pass	AV	2.4838G	45.08	54.00	-8.92	3	Horizontal	199	2.49
2437MHz	Pass	PK	2.3862G	61.54	74.00	-12.46	3	Horizontal	199	2.49
2437MHz	Pass	PK	2.435G	111.99	Inf	-Inf	3	Horizontal	199	2.49
2437MHz	Pass	PK	2.4838G	58.96	74.00	-15.04	3	Horizontal	199	2.49
2437MHz	Pass	AV	4.87344G	32.62	54.00	-21.38	3	Vertical	12	2.29
2437MHz	Pass	PK	4.87376G	46.25	74.00	-27.75	3	Vertical	12	2.29
2437MHz	Pass	AV	4.8728G	33.59	54.00	-20.41	3	Horizontal	328	1.00
2437MHz	Pass	PK	4.87604G	46.87	74.00	-27.13	3	Horizontal	328	1.00
2457MHz	Pass	AV	2.4552G	100.83	Inf	-Inf	3	Vertical	28	1.61
2457MHz	Pass	AV	2.4836G	51.96	54.00	-2.04	3	Vertical	28	1.61
2457MHz	Pass	PK	2.4548G	110.24	Inf	-Inf	3	Vertical	28	1.61
2457MHz	Pass	PK	2.4835G	71.05	74.00	-2.95	3	Vertical	28	1.61
2457MHz	Pass	AV	2.4564G	99.97	Inf	-Inf	3	Horizontal	168	1.70
2457MHz	Pass	AV	2.4842G	52.20	54.00	-1.80	3	Horizontal	168	1.70
2457MHz	Pass	PK	2.4548G	109.35	Inf	-Inf	3	Horizontal	168	1.70
2457MHz	Pass	PK	2.4835G	71.19	74.00	-2.81	3	Horizontal	168	1.70
2462MHz	Pass	AV	2.4612G	99.95	Inf	-Inf	3	Vertical	67	1.50
2462MHz	Pass	AV	2.4835G	52.35	54.00	-1.65	3	Vertical	67	1.50
2462MHz	Pass	PK	2.4632G	109.35	Inf	-Inf	3	Vertical	67	1.50
2462MHz	Pass	PK	2.4835G	70.58	74.00	-3.42	3	Vertical	67	1.50
2462MHz	Pass	AV	2.4612G	97.37	Inf	-Inf	3	Horizontal	167	1.38
2462MHz	Pass	AV	2.4835G	51.24	54.00	-2.76	3	Horizontal	167	1.38
2462MHz	Pass	PK	2.4598G	106.64	Inf	-Inf	3	Horizontal	167	1.38
2462MHz	Pass	PK	2.4835G	68.60	74.00	-5.40	3	Horizontal	167	1.38
2462MHz	Pass	AV	4.92404G	29.33	54.00	-24.67	3	Vertical	241	1.50
2462MHz	Pass	PK	4.92892G	42.57	74.00	-31.43	3	Vertical	241	1.50
2462MHz	Pass	AV	4.9236G	29.41	54.00	-24.59	3	Horizontal	99	2.61
2462MHz	Pass	PK	4.92184G	42.58	74.00	-31.42	3	Horizontal	99	2.61

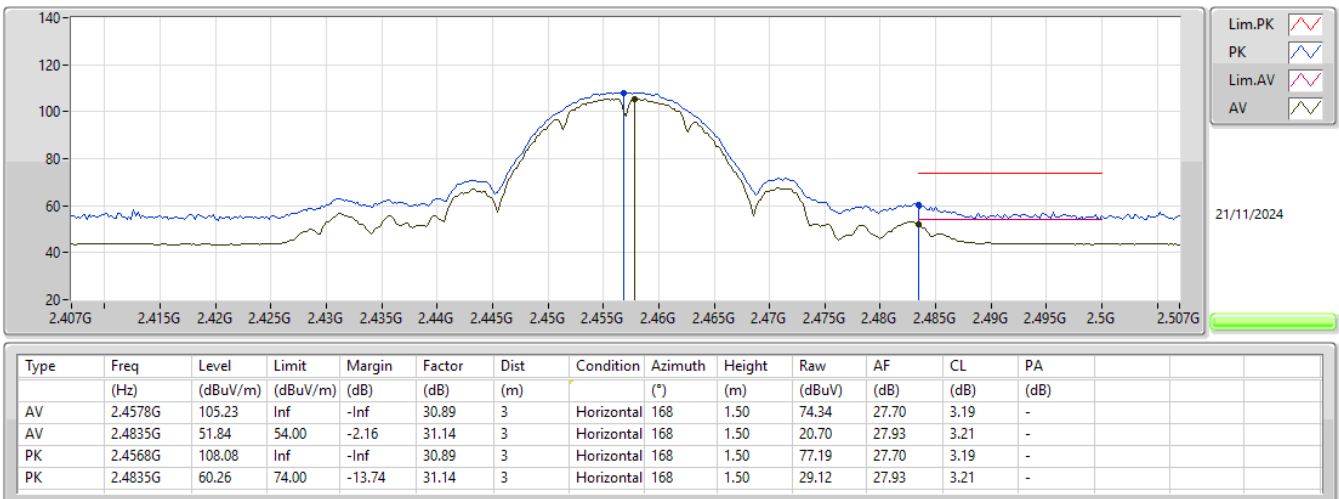
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2457MHz_TX



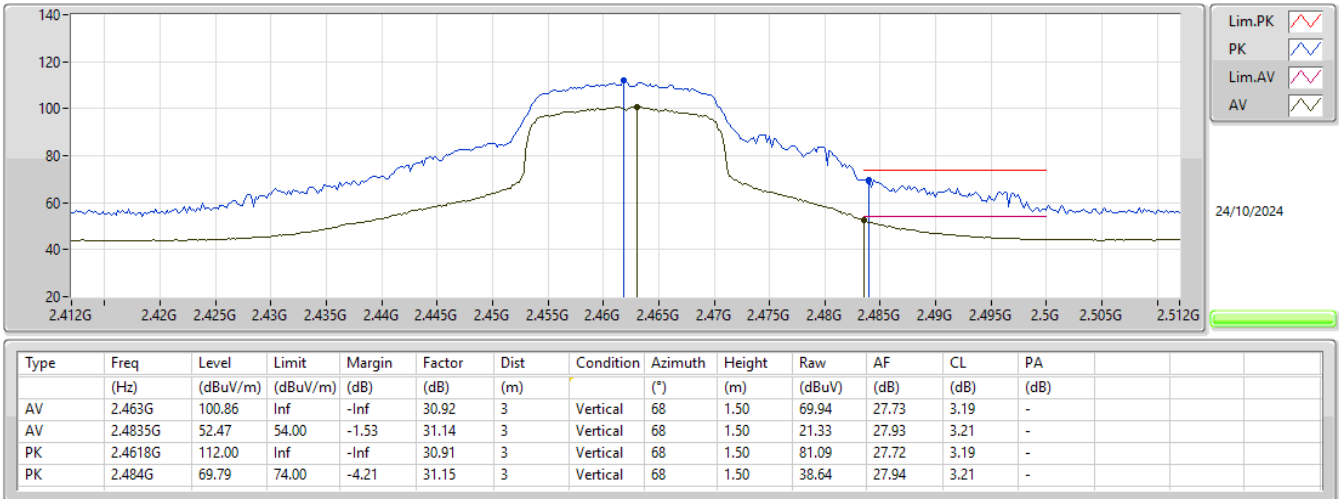
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2457MHz_TX



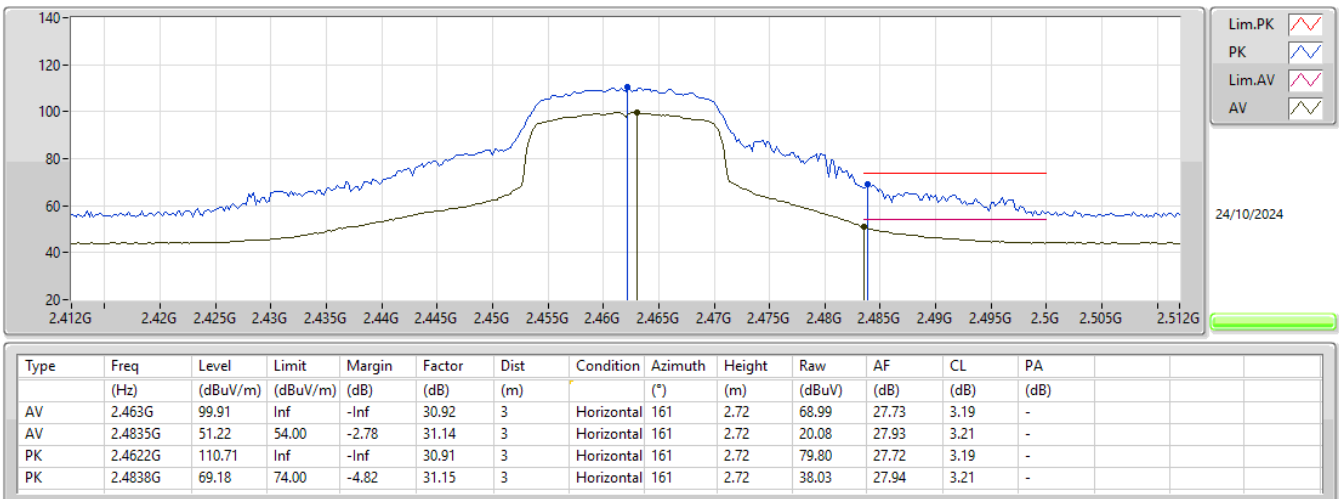
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX



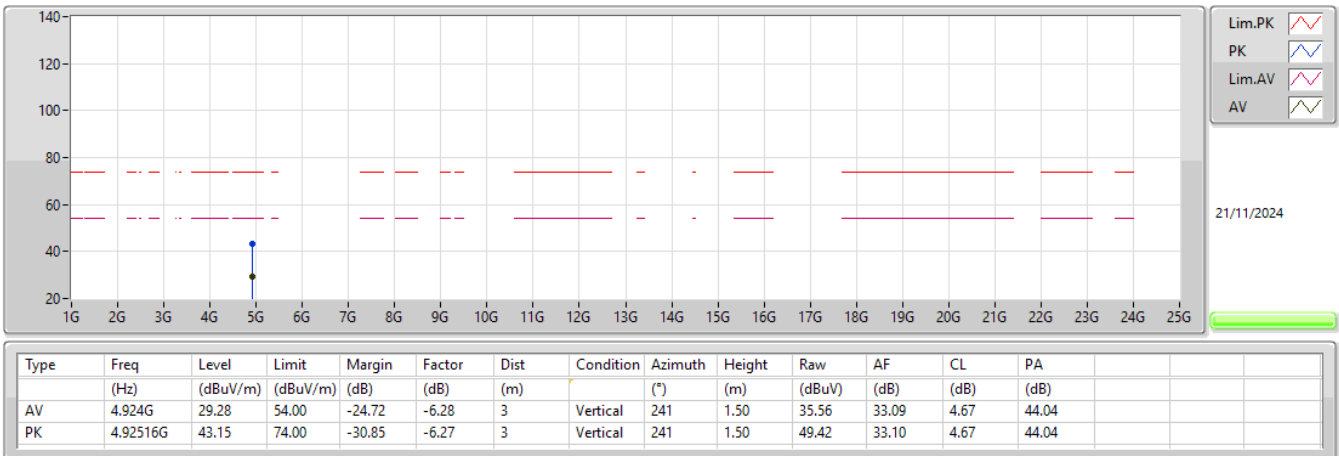
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX



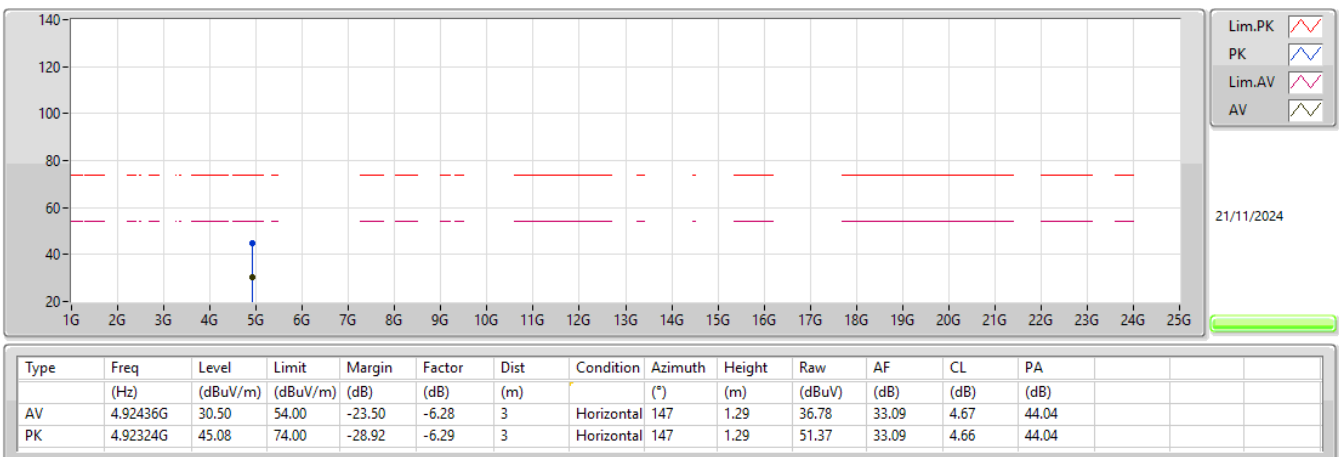
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX



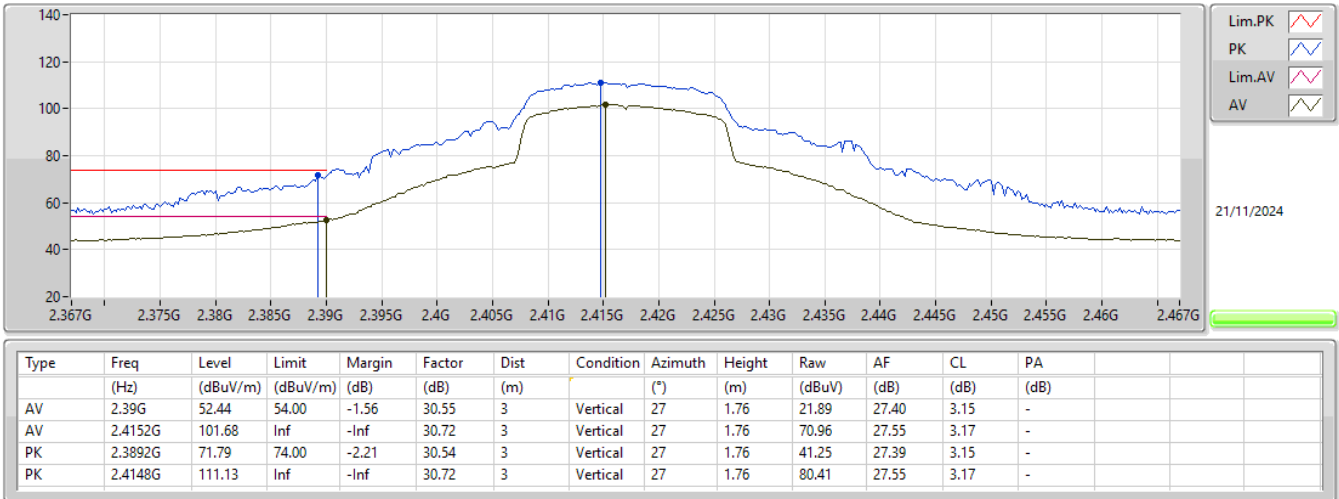
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

2462MHz_TX



2.4-2.4835GHz_802.11n_HT20_Nss1,(MCS0)_1TX

2417MHz_TX



2.4-2.4835GHz_802.11n_HT20_Nss1,(MCS0)_1TX

2417MHz_TX

