

FCC Radio Test Report

FCC ID : H8NSBE1V1K
Equipment : WiFi 7 Router
Model Name : SBE1V1K
Applicant : ASKEY COMPUTER CORPORATION
10F, No.119, Jiankang Rd., Zhonghe
Dist., New Taipei City, Taiwan
Manufacturer : ASKEY COMPUTER CORPORATION
10F, No.119, Jiankang Rd., Zhonghe
Dist., New Taipei City, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Dec. 08, 2023, and testing was started from Jan. 09, 2024 and completed on Feb. 02, 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
FR3N0237AT	01	Initial issue of report	Feb. 26, 2024
FR3N0237AT	02	Update Antenna Information and Photographs of EUT (This report is the latest version replacing for the report issued on Feb. 26, 2024)	Mar. 26, 2024

Summary of Test Result

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

Declaration of Conformity:

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

Comments and explanations:

None

Reviewed by: Terry Chang

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std.	Ch. Frequency (MHz)	Channel Number
2400-2483.5	802.15.4	2405-2480	11-26 [16]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	Thread	5	1TX

Note:

- ♦ Thread uses a O-QPSK (250kbps) modulation for DSSS.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support	Radio
1	NA	N03AKBYA	PCB	I-Pex	2.4G+5G	Radio 1
2	NA	N03AKBYB	PCB	I-Pex	2.4G+5G	Radio 1
3	NA	N03AKBYC	PCB	I-Pex	2.4G+5G	Radio 1
4	NA	N03AKBYD	PCB	I-Pex	2.4G+5G	Radio 1
5	NA	N06AKBYE	PCB	I-Pex	6G	Radio 2
6	NA	N06AKBYF	PCB	I-Pex	6G	Radio 2
7	NA	N06AKBG	PCB	I-Pex	6G	Radio 2
8	NA	N06AKBYH	PCB	I-Pex	6G	Radio 2
9	NA	N01AKBYJ	PCB	I-Pex	BT+Thread	Radio 3

Ant.	Port	Gain (dBi)									
		2.4G	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G	BT+ Thread
1	1	3.1	4.97	5.15	5.24	5.22	-	-	-	-	-
2	2	1.08	3.48	3.77	4.84	4.89	-	-	-	-	-
3	3	1.62	2.48	4.45	4.3	5.28	-	-	-	-	-
4	4	1.27	1.28	2.25	3.67	4.13	-	-	-	-	-
5	1	-	-	-	-	-	3.65	2.68	2.4	2.38	-
6	2	-	-	-	-	-	3.09	2.54	3.38	1.79	-
7	3	-	-	-	-	-	4.21	3.27	3.47	2.7	-
8	4	-	-	-	-	-	3.78	3.55	2.51	2.69	-
9	1	-	-	-	-	-	-	-	-	-	5.3



Composite Gain (dBi)									
	2.4G	5.2G	5.3G	5.6G	5.785G	6.175G	6.475G	6.695G	6.995G
DG [1SS]	3.46	5.06	5.53	5.83	6.19	6.56	6.96	6.38	5.94
DG [2SS]	3.1	4.97	5.15	5.24	5.28	4.21	3.96	3.47	2.94
DG [4SS]	3.1	4.97	5.15	5.24	5.28	4.21	3.55	3.47	2.7

Note 1: The EUT has nine antennas.

Note 2: The composite gain is derived as KDB 662911 D03 v01 which was used as directional gain. For more detail information, please refer to the Antenna Pattern Report AP3N0237.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax/be mode (4TX/4RX)

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

For 5GHz function:

For IEEE 802.11 a/n/ac/ax/be mode (4TX/4RX)

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

For 6GHz function:

For IEEE 802.11 ax/be mode (4TX/4RX)

Ant. 5 (port 1), Ant. 6 (port 2), Ant. 7 (port 3) and Ant. 8 (port 4) could transmit/receive simultaneously.

For BT function:

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

Ant. 9 (port 1) could transmit/receive.

For 802.15.4 function:

For IEEE 802.15.4 mode (1TX/1RX)

Ant. 9 (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
Thread	0.449	3.48	913.75u	3k

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 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	21.9~22.6°C / 54~58%	10/Jan/2024
RF Conducted	TH07-HY	Yuna Lin	22.4~23.2°C / 48~52%	09/Jan/2024~10/Jan/2024
Radiated (Co-location)	03CH02-HY	Daniel Lin	21.9~22.6°C / 53~55%	01/Feb/2024~02/Feb/2024
☐ Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				
☒ Wenhua 3rd. (TAF: 3785)	ADD: No. 58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Guishan Dist. Taoyuan City 333, Taiwan (R.O.C.)			
	TEL: 886-3-327-0868			
Test site Designation No. TW0036 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH25-HY	Edward Wang	22.1~23.0°C / 55~62%	09/Jan/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
Thread	-
2405MHz	200
2440MHz	200
2475MHz	200
2480MHz	95

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
	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	CTX
1	WLAN 2.4GHz + WLAN 5GHz + Bluetooth
2	WLAN 2.4GHz + WLAN 5GHz + Thread
3	WLAN 2.4GHz + WLAN 6GHz + Bluetooth
4	WLAN 2.4GHz + WLAN 6GHz + Thread
Refer to Sporton Test Report No.: FA3N0237 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.3 Accessories

Accessories				
AC Adapter (US Plug)	Brand Name	DELTA	Model Name	RPSU3
	Power Rating	I/P: 100- 120 Vac, 1.0 A, O/P: 12.0 Vdc, 3.5 A		
	Power Cord	1.8 meter, non-shielded cable, w/o ferrite core		
RJ45 Cable [CAT. 6]	Power Cord	1.75 meter, non-shielded cable, w/o ferrite core		

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

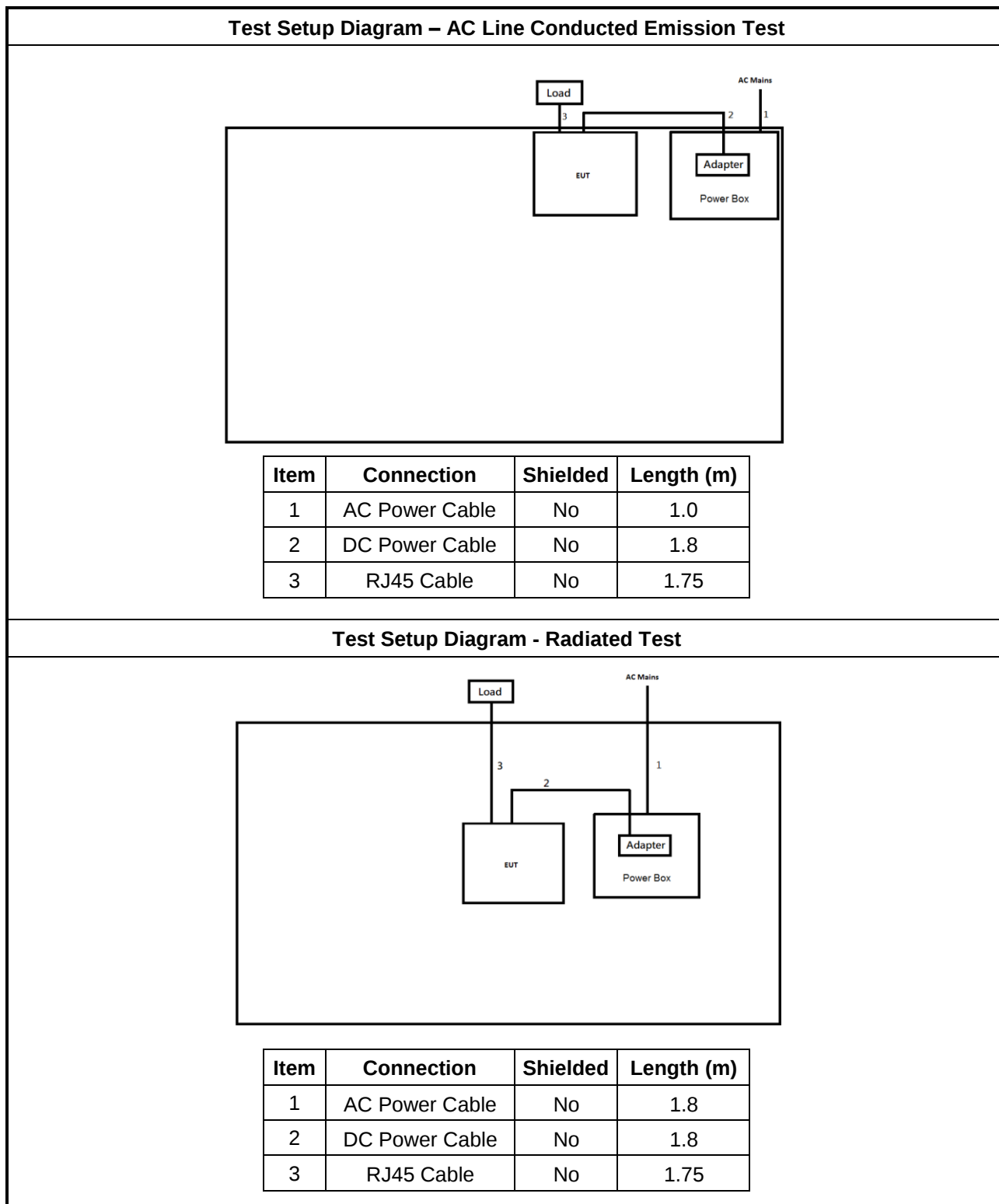
2.4 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Load	Sporton	Sporton	-	-

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

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Load	Sporton	Sporton	-	-
2	RJ45 cable	Power Sync	CAT-6E-01	-	-

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

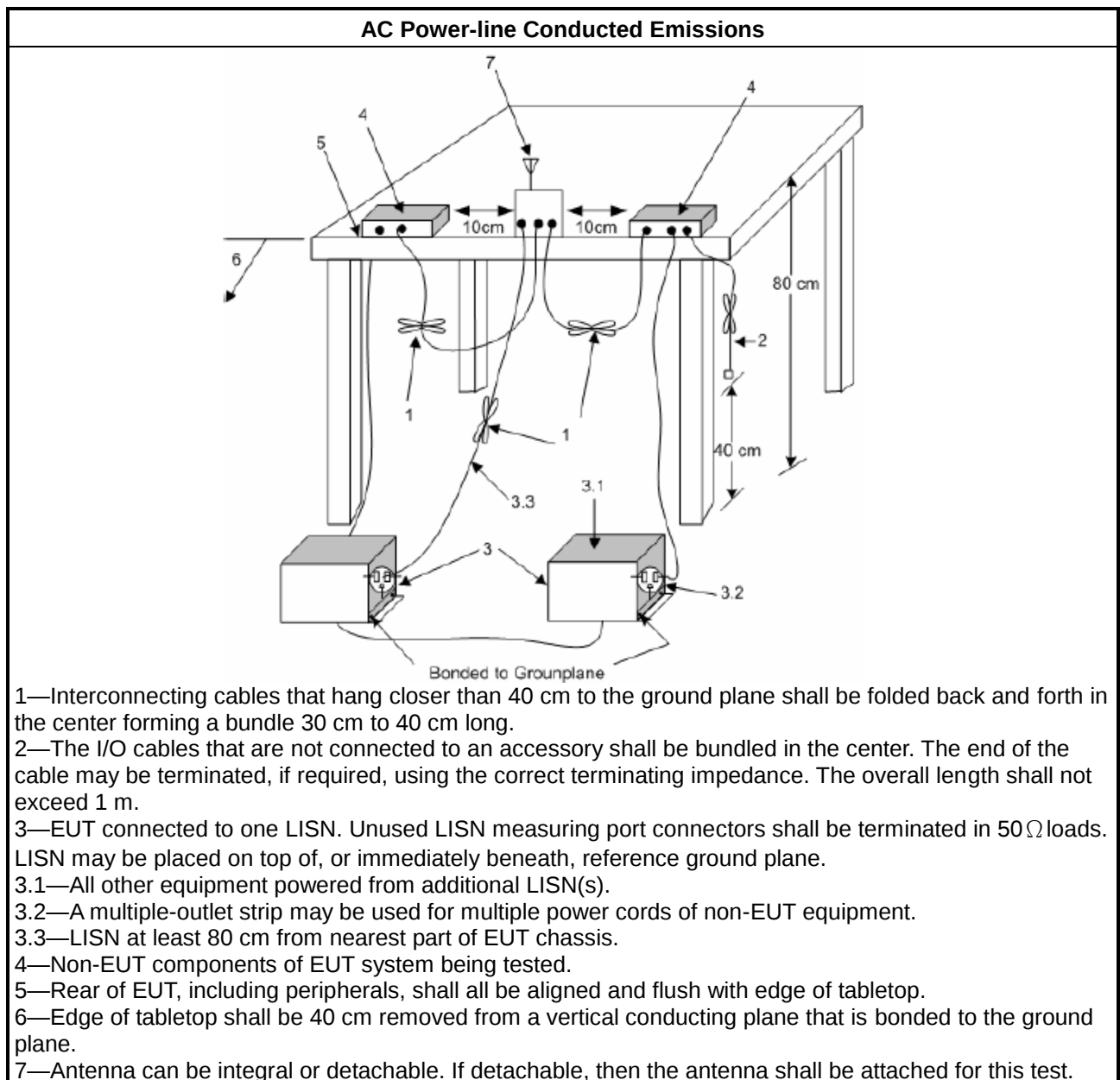
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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.

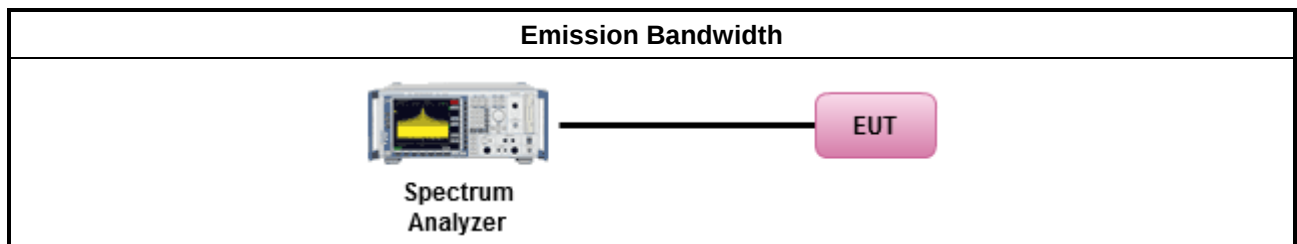
3.2.2 Measuring Instruments

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 $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB 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.	

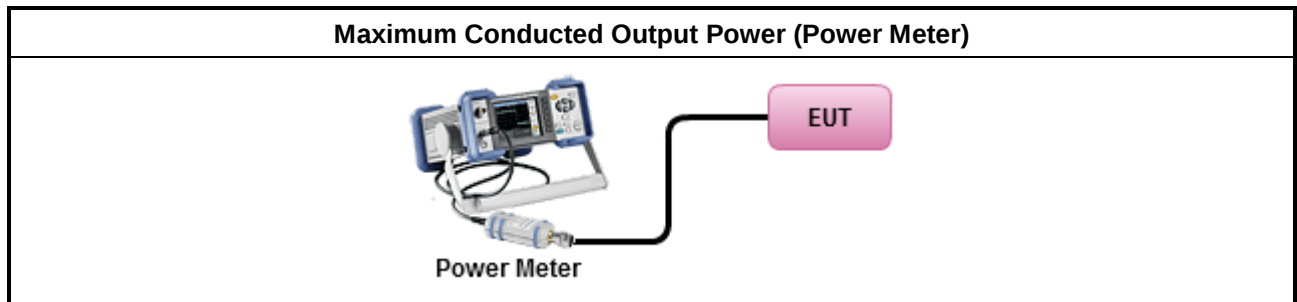
3.3.2 Measuring Instruments

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

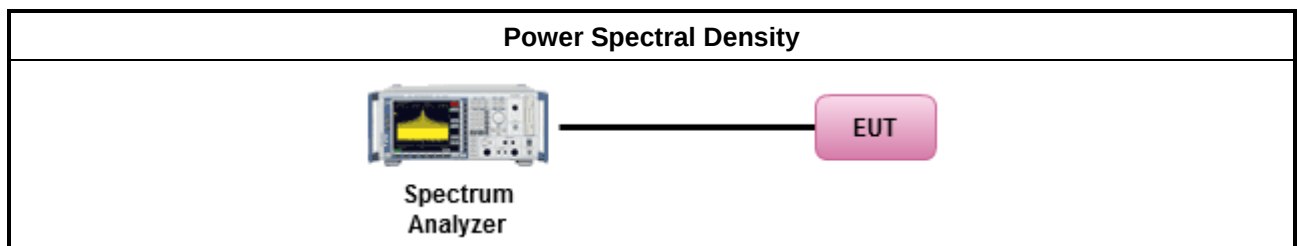
3.4.2 Measuring Instruments

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.	

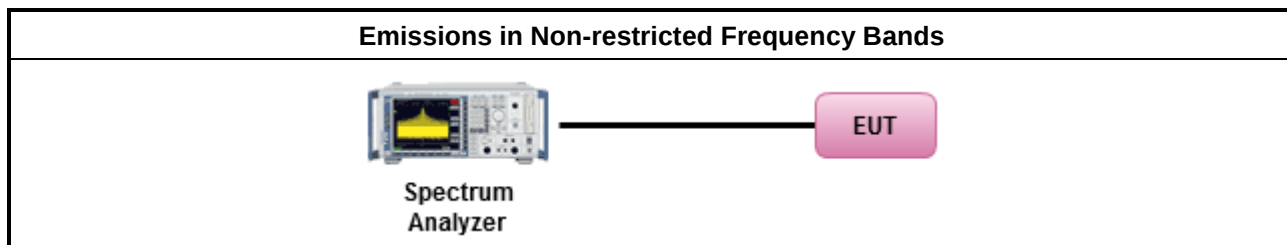
3.5.2 Measuring Instruments

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

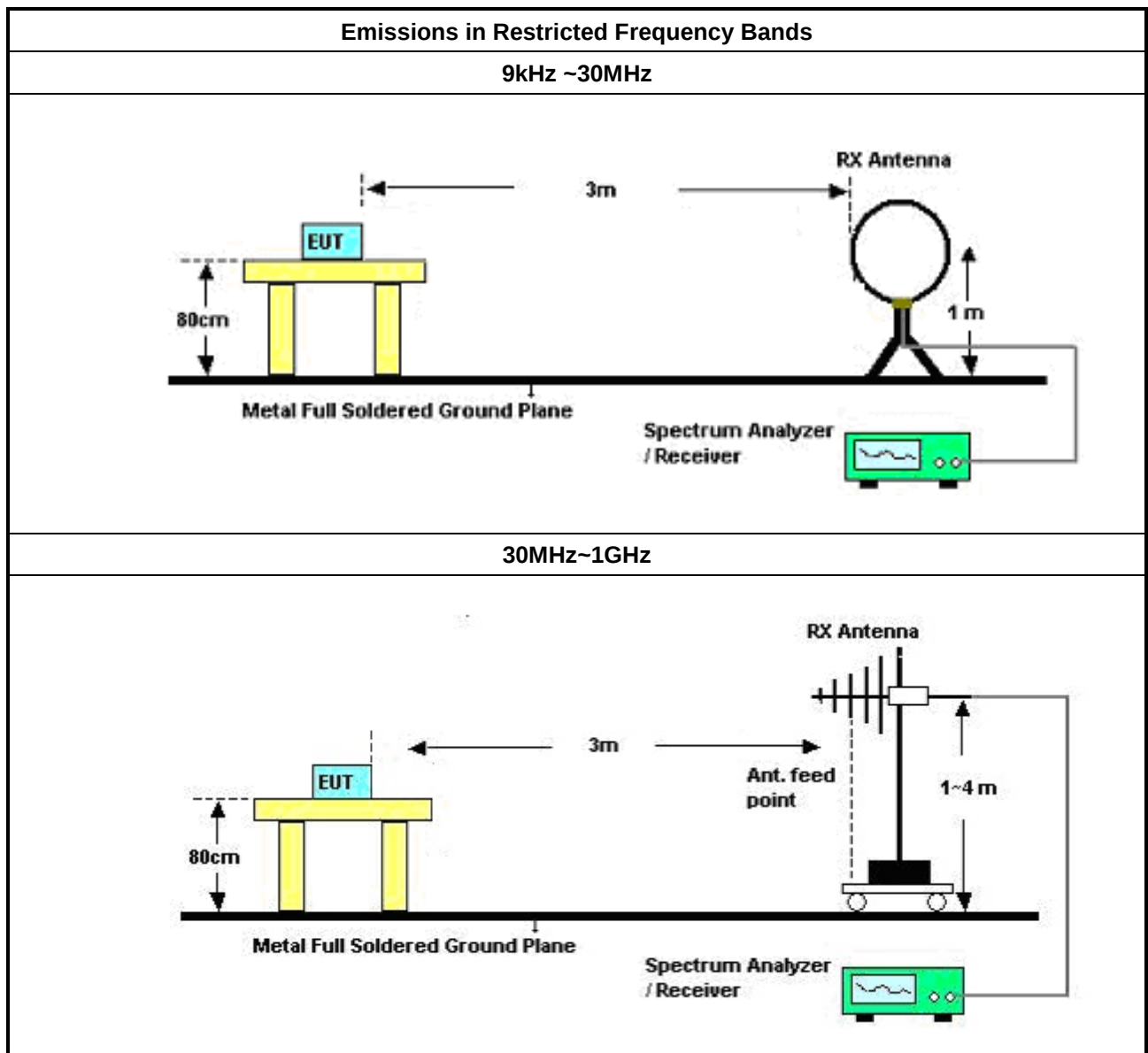
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted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

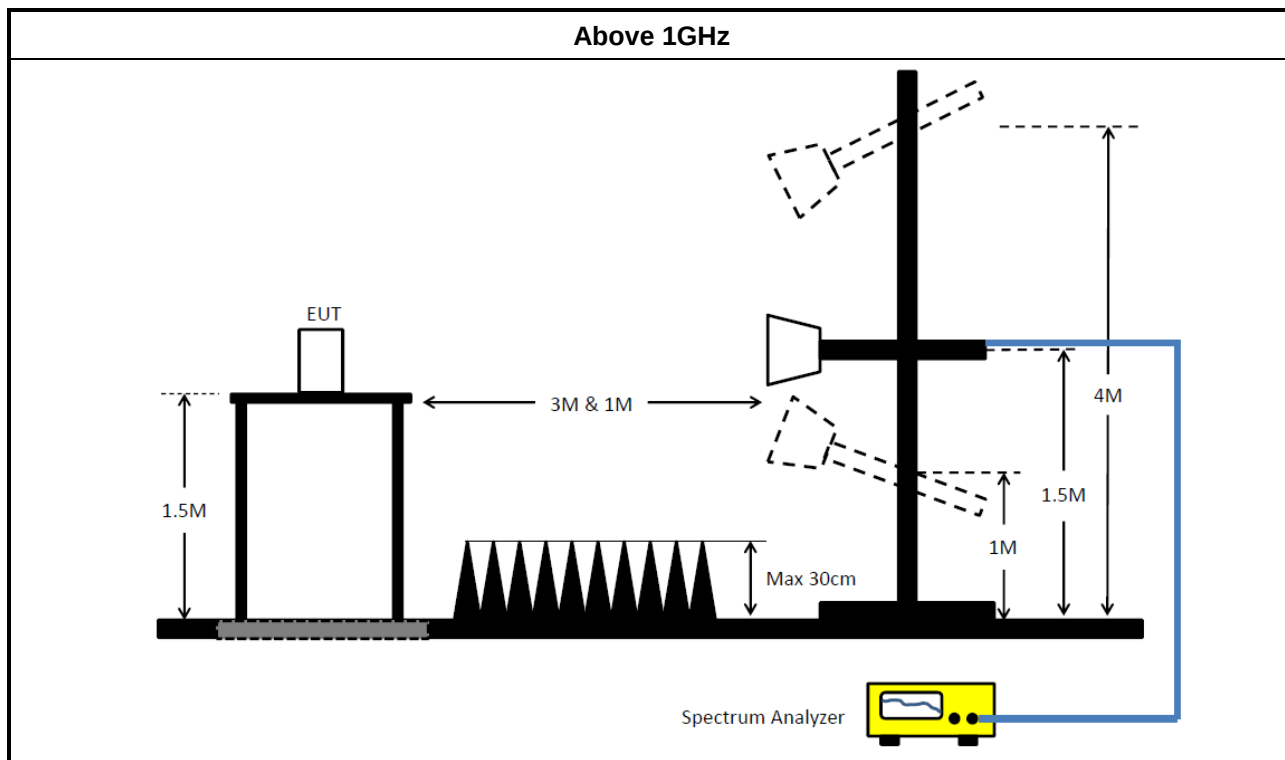
3.6.4 Measurement Results Calculation

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	R&S	ESR	102051	9kHz ~ 3.6GHz	16/May/2023	15/May/2024
Two-Line V-Network	R&S	ENV 216	101295	9kHz ~ 30MHz	31/Jan/2023	30/Jan/2024
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	28/Feb/2023	27/Feb/2024
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	18/Oct/2023	17/Oct/2024
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	101515	9kHz~40GHz	14/Feb/2023	13/Feb/2024
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	20/Oct/2023	19/Oct/2024
Power Meter	Anritsu	ML2495A	2105003	300MHz~40GHz	19/Sep/2023	18/Sep/2024
Pulse Sensor	Anritsu	MA2411B	1911254	300MHz~40GHz	19/Sep/2023	18/Sep/2024
SENSE-15247_DTS	Sporton	V5.11.15	N/A	N/A	N/A	N/A

Instrument for Radiated Test (03CH25-HY)

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	03/Aug/2023	02/Aug/2024
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH25-HY	1GHz~18GHz 3m	09/Aug/2023	08/Aug/2024
EMI Test Receiver	ROHDE & SCHWARZ	ESR	102318	9kHz~3.6GHz	27/Dec/2023	26/Dec/2024
Signal Analyzer	ROHDE&SCHWARZ	FSV3044	101410	10Hz~44GHz	17/Nov/2023	16/Nov/2024
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	23/Mar/2023	22/Mar/2024
Bilog Antenna & 6dB Attenuator	TESEQ & VGT	CBL 6111D & VFA 04002-06	63537/001	30MHz~1GHz	31/May/2023	30/May/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02876	1GHz~18GHz	12/Jul/2023	11/Jul/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	01248	18GHz~40GHz	21/Aug/2023	20/Aug/2024
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	9kHz~1GHz	24/Apr/2023	23/Apr/2024
RF Cable	HUBER+SUHNER	SUOFLEX 104	CB007	1GHz~40GHz	24/Apr/2023	23/Apr/2024
Preamplifier	SGH	PRAMP 903	20230515-1	25MHz~3GHz	25/May/2023	24/May/2024
Preamplifier	SGH	PRAMP 118-H	20230515-3	1GHz ~18GHz	25/May/2023	24/May/2024
Microwave Premplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	16/Mar/2023	15/Mar/2024
SENSE-15247_DTS	Sporton	V5.11.15	NA	NA	NA	NA

**Instrument for Radiated Test (03CH02-HY)**

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
Signal Analyzer	R&S	FSP 40	100593	9kHz~40GHz	17/Mar/2023	16/Mar/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2023	22/Sep/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	01248	18GHz~40GHz	21/Aug/2023	20/Aug/2024
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	03CH02-cable-01	1GHz~40GHz	10/Feb/2023	09/Feb/2024
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	24/Oct/2023	23/Oct/2024
Amplifier	EMC INSTRUMENTS	EM18G40GA	060604	18GHz ~40GHz	16/Mar/2023	15/Mar/2024
SENSE-EMI	Sporton	V5.11.6	N/A	N/A	N/A	N/A



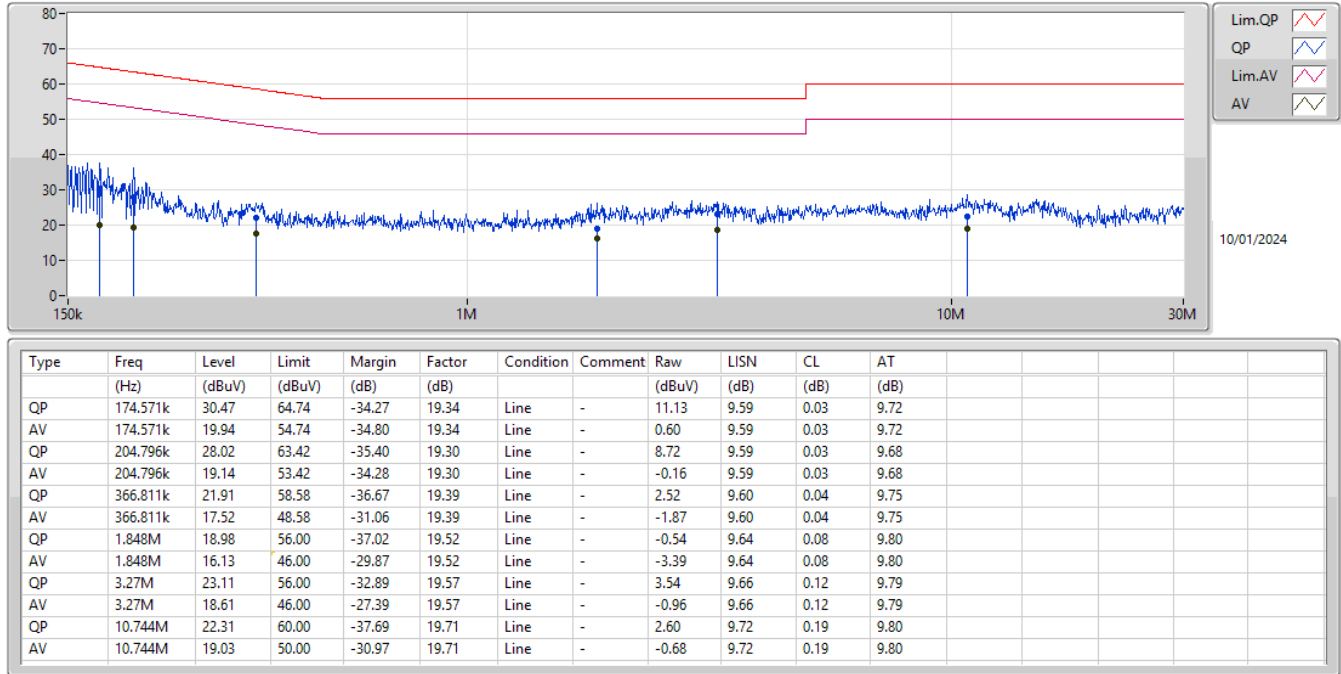
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	378.715k	22.41	48.31	-25.90	Neutral

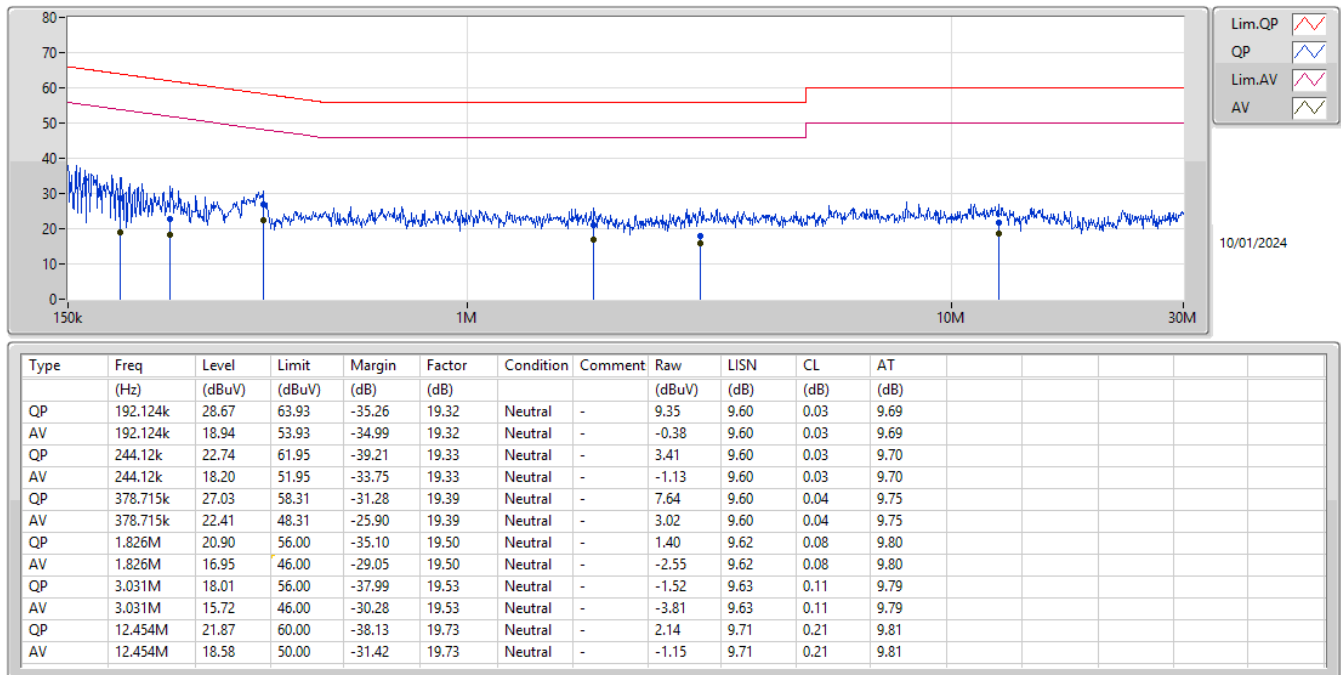
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	174.571k	30.47	64.74	-34.27	Line
Mode 1	Pass	AV	174.571k	19.94	54.74	-34.80	Line
Mode 1	Pass	QP	204.796k	28.02	63.42	-35.40	Line
Mode 1	Pass	AV	204.796k	19.14	53.42	-34.28	Line
Mode 1	Pass	QP	366.811k	21.91	58.58	-36.67	Line
Mode 1	Pass	AV	366.811k	17.52	48.58	-31.06	Line
Mode 1	Pass	QP	1.848M	18.98	56.00	-37.02	Line
Mode 1	Pass	AV	1.848M	16.13	46.00	-29.87	Line
Mode 1	Pass	QP	3.27M	23.11	56.00	-32.89	Line
Mode 1	Pass	AV	3.27M	18.61	46.00	-27.39	Line
Mode 1	Pass	QP	10.744M	22.31	60.00	-37.69	Line
Mode 1	Pass	AV	10.744M	19.03	50.00	-30.97	Line
Mode 1	Pass	QP	192.124k	28.67	63.93	-35.26	Neutral
Mode 1	Pass	AV	192.124k	18.94	53.93	-34.99	Neutral
Mode 1	Pass	QP	244.12k	22.74	61.95	-39.21	Neutral
Mode 1	Pass	AV	244.12k	18.20	51.95	-33.75	Neutral
Mode 1	Pass	QP	378.715k	27.03	58.31	-31.28	Neutral
Mode 1	Pass	AV	378.715k	22.41	48.31	-25.90	Neutral
Mode 1	Pass	QP	1.826M	20.90	56.00	-35.10	Neutral
Mode 1	Pass	AV	1.826M	16.95	46.00	-29.05	Neutral
Mode 1	Pass	QP	3.031M	18.01	56.00	-37.99	Neutral
Mode 1	Pass	AV	3.031M	15.72	46.00	-30.28	Neutral
Mode 1	Pass	QP	12.454M	21.87	60.00	-38.13	Neutral
Mode 1	Pass	AV	12.454M	18.58	50.00	-31.42	Neutral

Conducted Emissions at Powerline_Mode 1



Conducted Emissions at Powerline_Mode 1



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Thread	1.85M	2.249M	2M25D1D	1.45M	2.118M

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)
Thread	-	-	-	-
2405MHz	Pass	500k	1.45M	2.118M
2440MHz	Pass	500k	1.781M	2.205M
2475MHz	Pass	500k	1.85M	2.124M
2480MHz	Pass	500k	1.463M	2.249M

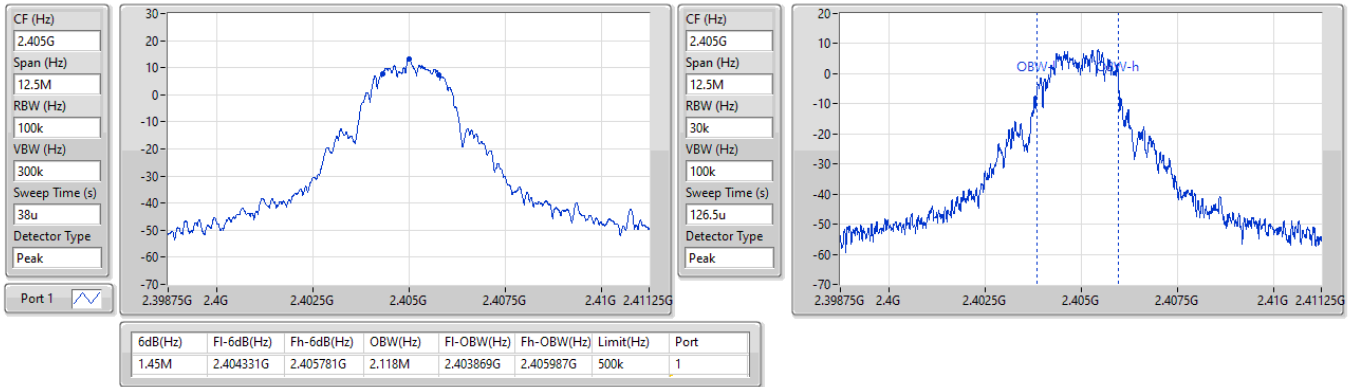
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_Thread

EBW

2405MHz

09/01/2024

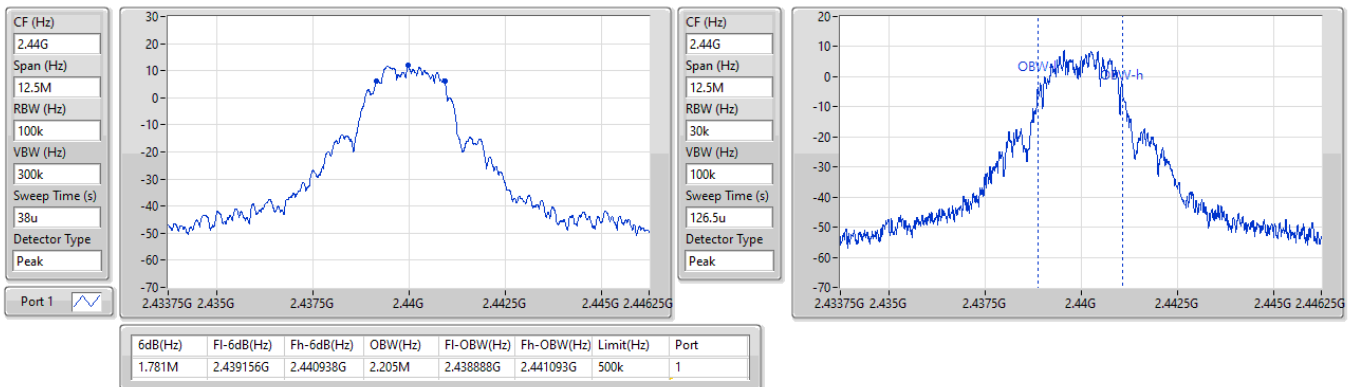


2.4-2.4835GHz_Thread

EBW

2440MHz

09/01/2024

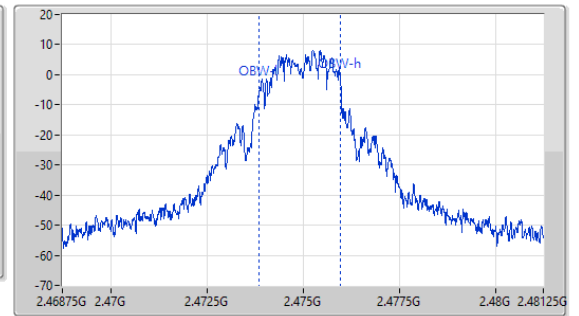
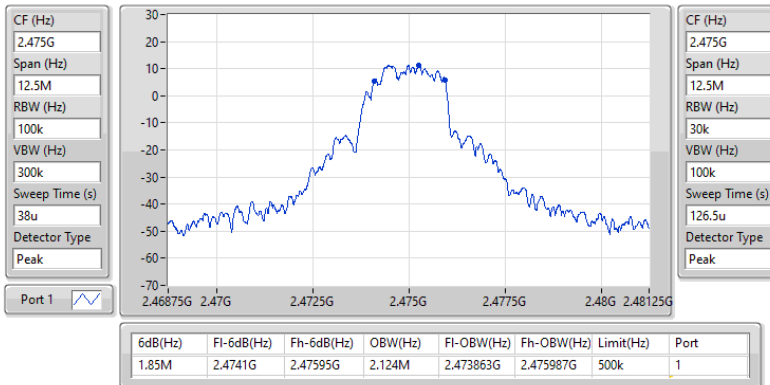


2.4-2.4835GHz_Thread

EBW

2475MHz

09/01/2024

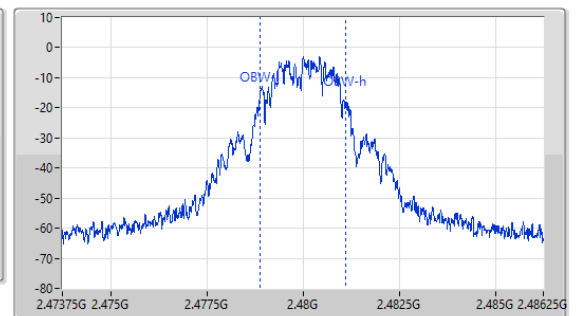
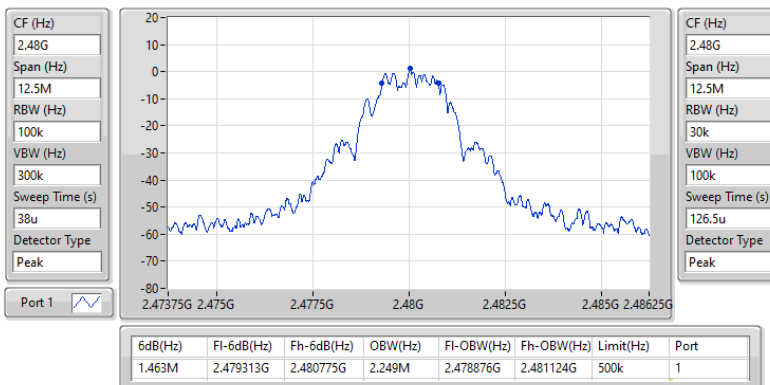


2.4-2.4835GHz_Thread

EBW

2480MHz

09/01/2024





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Thread	18.33	0.06808



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Thread	-	-	-	-	-
2405MHz	Pass	5.30	18.33	18.33	30.00
2440MHz	Pass	5.30	18.30	18.30	30.00
2475MHz	Pass	5.30	18.26	18.26	30.00
2480MHz	Pass	5.30	6.82	6.82	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Thread	3.13

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Thread	-	-	-	-	-
2405MHz	Pass	5.30	3.13	3.13	8.00
2440MHz	Pass	5.30	3.09	3.09	8.00
2475MHz	Pass	5.30	3.06	3.06	8.00
2480MHz	Pass	5.30	-8.72	-8.72	8.00

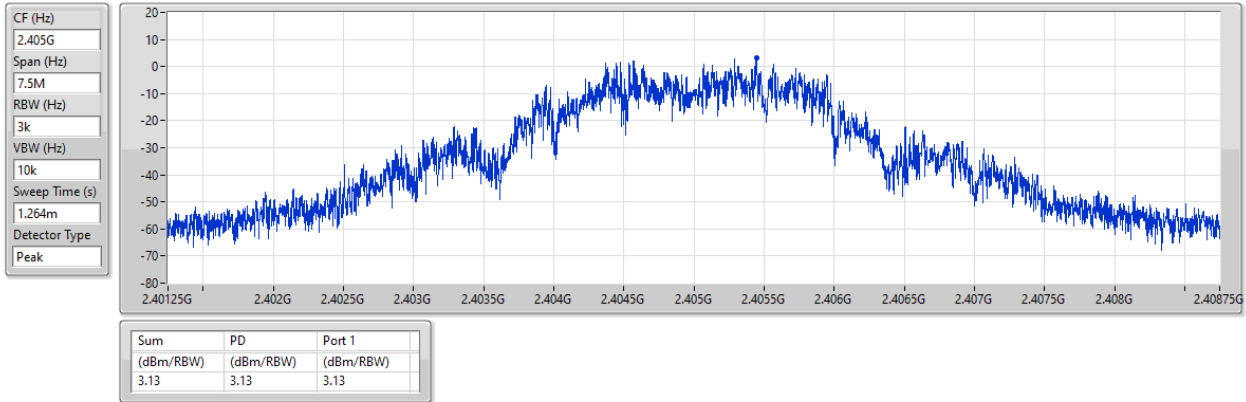
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

2.4-2.4835GHz_Thread

PSD

2405MHz

09/01/2024

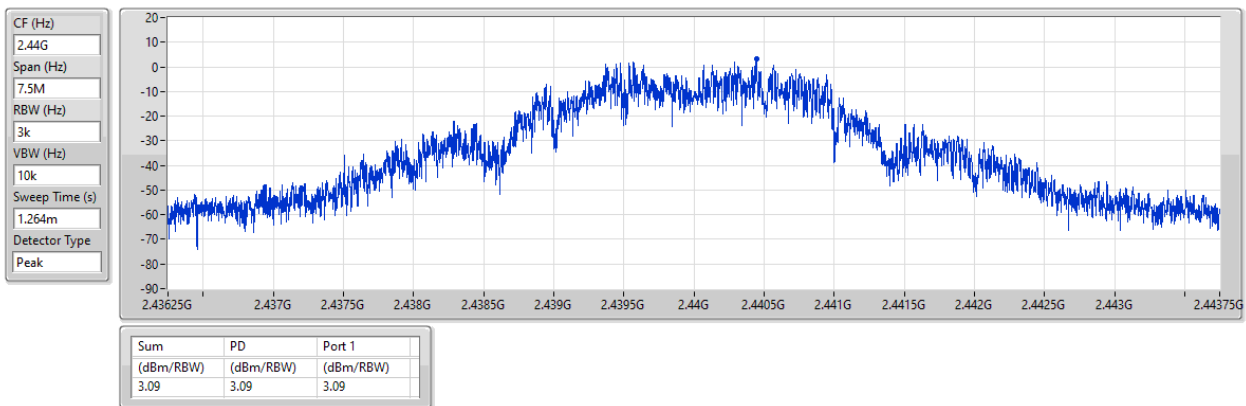


2.4-2.4835GHz_Thread

PSD

2440MHz

09/01/2024

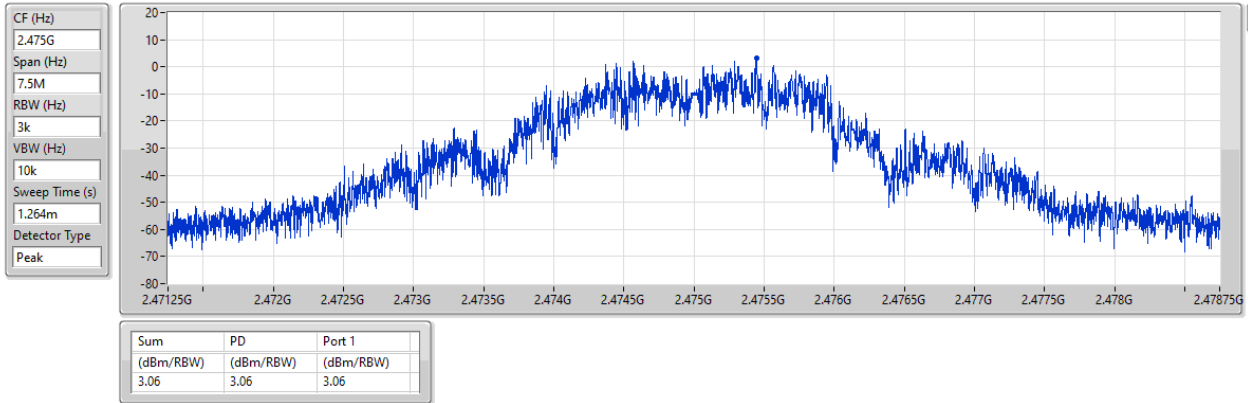


2.4-2.4835GHz_Thread

PSD

2475MHz

09/01/2024

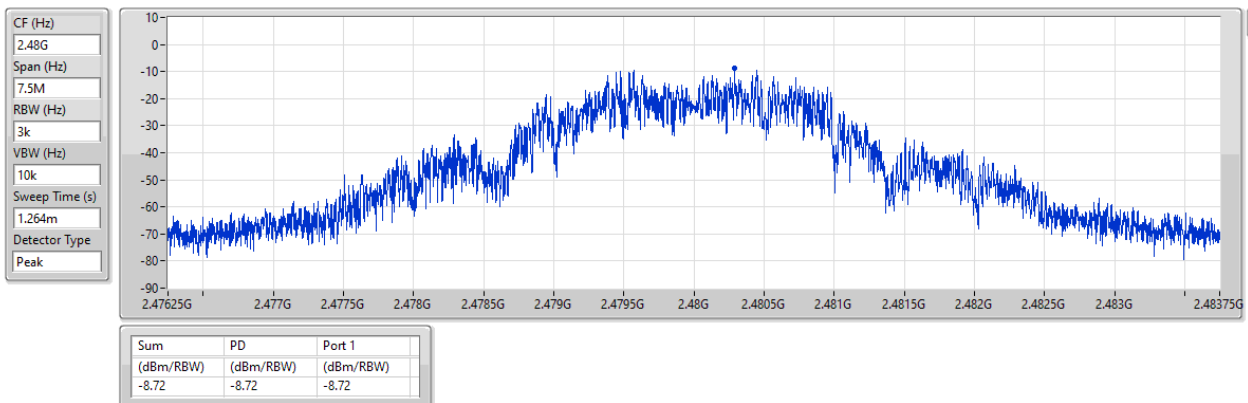


2.4-2.4835GHz_Thread

PSD

2480MHz

09/01/2024





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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thread	Pass	2.40484G	17.46	-12.54	2.14618G	-56.04	2.39984G	-39.98	2.4G	-42.34	2.50074G	-54.76	14.99749G	-43.70	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
Thread	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.40484G	17.46	-12.54	2.14618G	-56.04	2.39984G	-39.98	2.4G	-42.34	2.50074G	-54.76	14.99749G	-43.70	1
2440MHz	Pass	2.40484G	17.46	-12.54	2.13325G	-55.58	2.39032G	-54.24	2.4G	-56.09	2.50086G	-54.27	16.23761G	-43.87	1
2475MHz	Pass	2.40484G	17.46	-12.54	2.07803G	-55.00	2.39824G	-52.98	2.4G	-56.57	2.50058G	-53.17	23.19184G	-42.35	1
2480MHz	Pass	2.40484G	17.46	-12.54	2.30128G	-55.04	2.39128G	-53.87	2.4G	-57.35	2.50082G	-53.98	15.00593G	-42.26	1

2.4-2.4835GHz_Thread

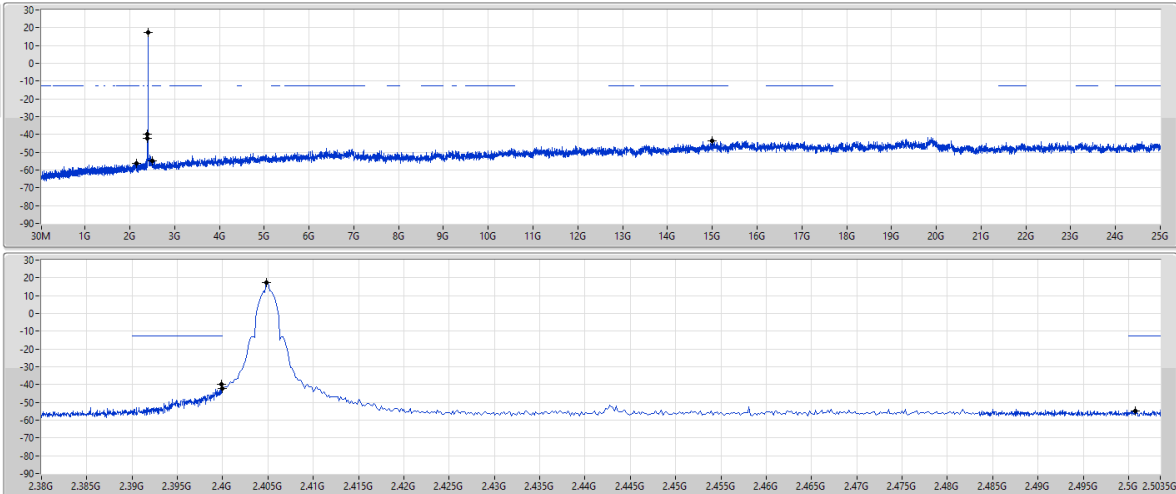
CSEndB

2405MHz

09/01/2024

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

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40484G	17.46	-12.54	2.14618G	-56.04	2.39984G	-39.98	2.4G	-42.34	2.50074G	-54.76	14.99749G	-43.70	1

2.4-2.4835GHz_Thread

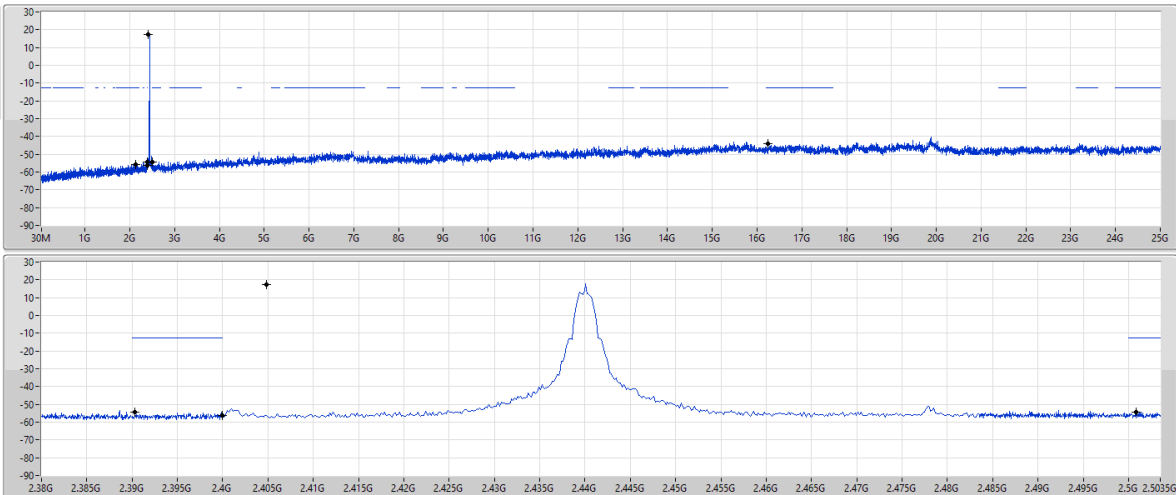
CSEndB

2440MHz

09/01/2024

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

Port 1



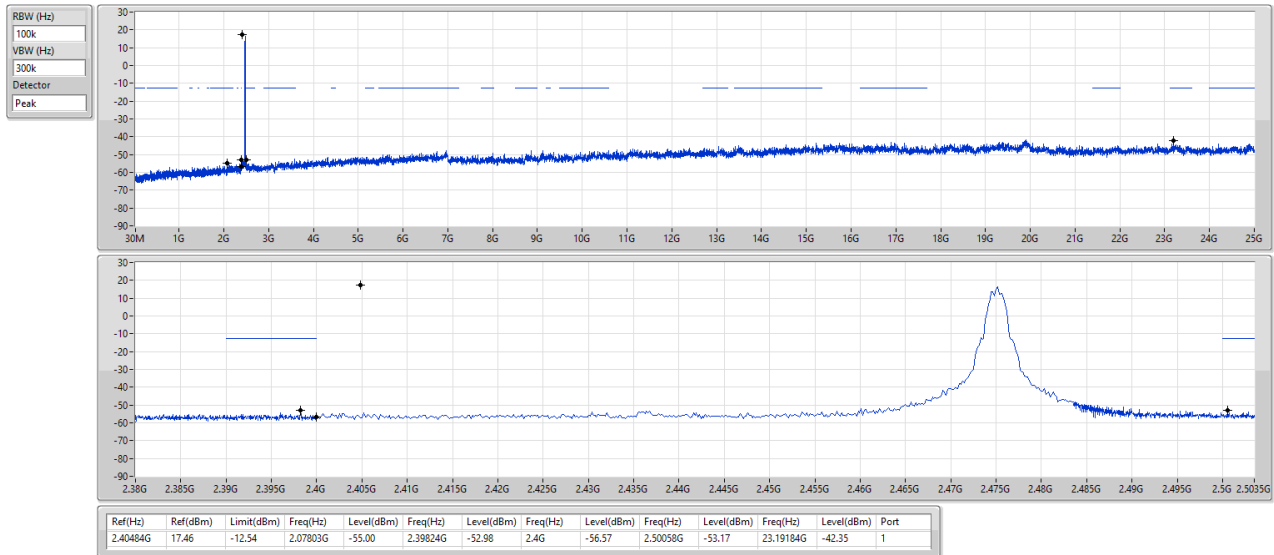
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40484G	17.46	-12.54	2.13325G	-55.58	2.39032G	-54.24	2.4G	-56.09	2.50086G	-54.27	16.23761G	-43.87	1

2.4-2.4835GHz_Thread

CSEndB

2475MHz

09/01/2024

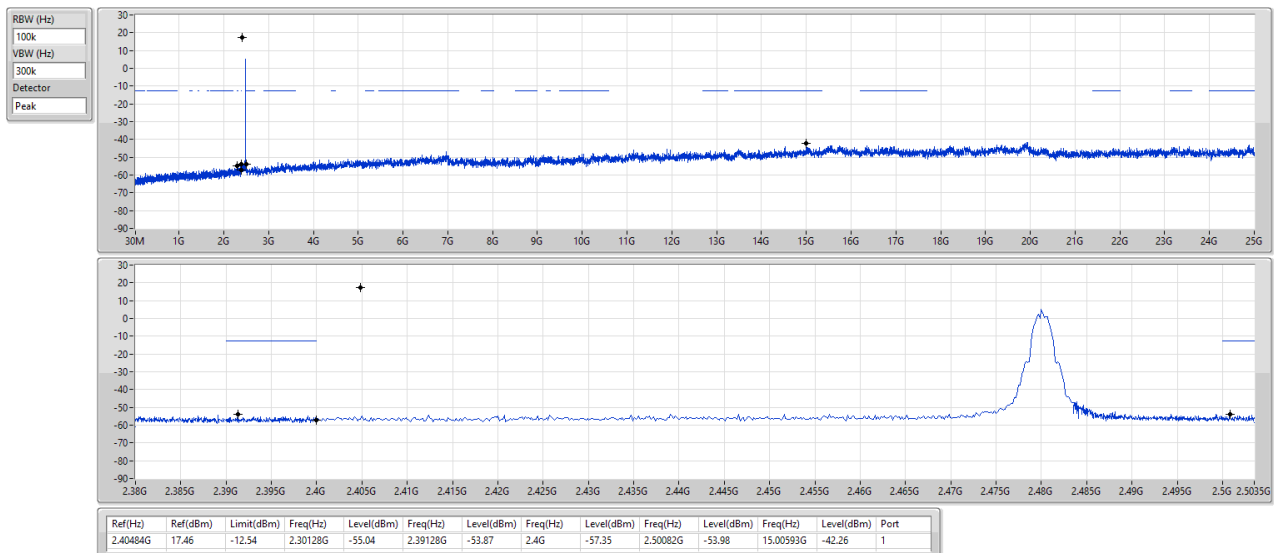


2.4-2.4835GHz_Thread

CSEndB

2480MHz

09/01/2024





Summary

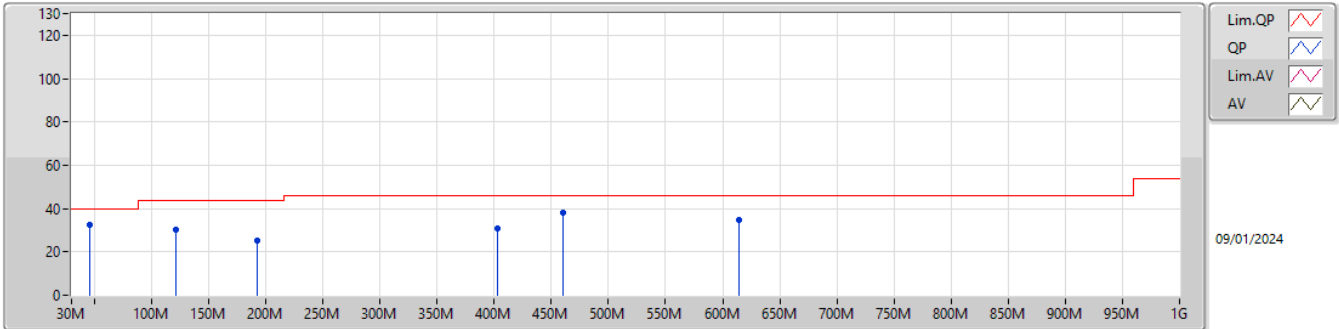
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
Thread	Pass	PK	45.52M	32.49	40.00	-7.51	3	Vertical	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Thread	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	45.52M	32.49	40.00	-7.51	3	Vertical	0	1.00
2440MHz	Pass	PK	121.18M	30.49	43.50	-13.01	3	Vertical	0	1.00
2440MHz	Pass	PK	192.96M	25.01	43.50	-18.49	3	Vertical	0	1.00
2440MHz	Pass	PK	402.48M	30.90	46.00	-15.10	3	Vertical	0	1.00
2440MHz	Pass	PK	460.68M	38.02	46.00	-7.98	3	Vertical	0	1.00
2440MHz	Pass	PK	613.94M	34.73	46.00	-11.27	3	Vertical	0	1.00
2440MHz	Pass	PK	119.24M	31.80	43.50	-11.70	3	Horizontal	360	1.00
2440MHz	Pass	PK	192.96M	27.56	43.50	-15.94	3	Horizontal	360	1.00
2440MHz	Pass	PK	251.16M	24.76	46.00	-21.24	3	Horizontal	360	1.00
2440MHz	Pass	PK	307.42M	24.57	46.00	-21.43	3	Horizontal	360	1.00
2440MHz	Pass	PK	460.68M	33.47	46.00	-12.53	3	Horizontal	360	1.00
2440MHz	Pass	PK	613.94M	28.50	46.00	-17.50	3	Horizontal	360	1.00

2.4-2.4835GHz_Thread

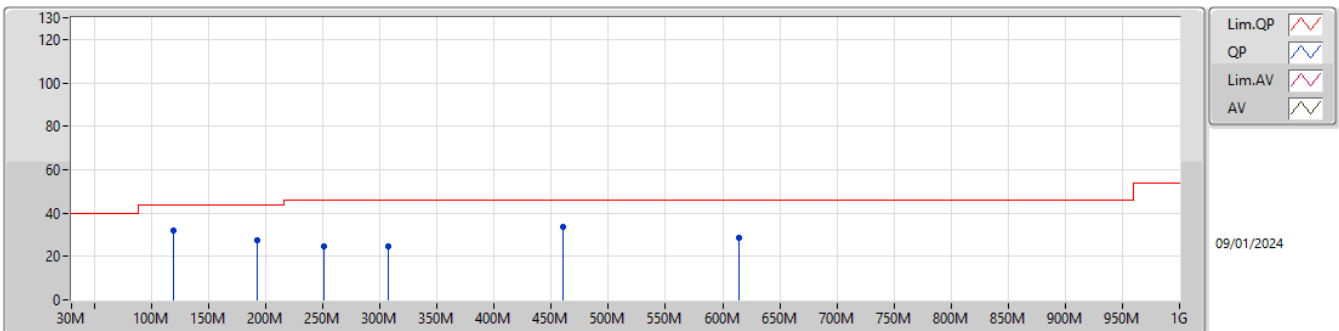
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	45.52M	32.49	40.00	-7.51	-26.57	3	Vertical	0	1.00	59.06	17.34	0.43	44.34
PK	121.18M	30.49	43.50	-13.01	-26.20	3	Vertical	0	1.00	56.69	17.44	0.74	44.38
PK	192.96M	25.01	43.50	-18.49	-28.33	3	Vertical	0	1.00	53.34	15.00	0.94	44.27
PK	402.48M	30.90	46.00	-15.10	-20.29	3	Vertical	0	1.00	51.19	22.30	1.34	43.93
PK	460.68M	38.02	46.00	-7.98	-18.90	3	Vertical	0	1.00	56.92	23.51	1.45	43.86
PK	613.94M	34.73	46.00	-11.27	-16.00	3	Vertical	0	1.00	50.73	26.00	1.66	43.66

2.4-2.4835GHz_Thread

2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	119.24M	31.80	43.50	-11.70	-26.09	3	Horizontal	360	1.00	57.89	17.55	0.74	44.38
PK	192.96M	27.56	43.50	-15.94	-28.33	3	Horizontal	360	1.00	55.89	15.00	0.94	44.27
PK	251.16M	24.76	46.00	-21.24	-24.06	3	Horizontal	360	1.00	48.82	19.04	1.08	44.18
PK	307.42M	24.57	46.00	-21.43	-23.46	3	Horizontal	360	1.00	48.03	19.45	1.18	44.09
PK	460.68M	33.47	46.00	-12.53	-18.90	3	Horizontal	360	1.00	52.37	23.51	1.45	43.86
PK	613.94M	28.50	46.00	-17.50	-16.00	3	Horizontal	360	1.00	44.50	26.00	1.66	43.66



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
Thread	Pass	AV	2.4835G	52.91	54.00	-1.09	3	Vertical	322	2.24

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Thread	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	AV	2.366G	46.96	54.00	-7.04	3	Vertical	329	2.88
2405MHz	Pass	AV	2.405G	115.03	Inf	-Inf	3	Vertical	329	2.88
2405MHz	Pass	PK	2.3898G	58.16	74.00	-15.84	3	Vertical	329	2.88
2405MHz	Pass	PK	2.4056G	118.46	Inf	-Inf	3	Vertical	329	2.88
2405MHz	Pass	AV	2.3838G	44.75	54.00	-9.25	3	Horizontal	275	1.69
2405MHz	Pass	AV	2.405G	107.28	Inf	-Inf	3	Horizontal	275	1.69
2405MHz	Pass	PK	2.3562G	57.74	74.00	-16.26	3	Horizontal	275	1.69
2405MHz	Pass	PK	2.405G	110.77	Inf	-Inf	3	Horizontal	275	1.69
2405MHz	Pass	AV	4.81108G	35.59	54.00	-18.41	3	Vertical	147	1.60
2405MHz	Pass	PK	4.809G	45.37	74.00	-28.63	3	Vertical	147	1.60
2405MHz	Pass	AV	4.81106G	34.73	54.00	-19.27	3	Horizontal	48	1.80
2405MHz	Pass	PK	4.81084G	45.07	74.00	-28.93	3	Horizontal	48	1.80
2440MHz	Pass	AV	2.3632G	44.84	54.00	-9.16	3	Vertical	329	2.26
2440MHz	Pass	AV	2.44G	115.30	Inf	-Inf	3	Vertical	329	2.26
2440MHz	Pass	AV	2.4932G	45.42	54.00	-8.58	3	Vertical	329	2.26
2440MHz	Pass	PK	2.3744G	56.97	74.00	-17.03	3	Vertical	329	2.26
2440MHz	Pass	PK	2.4404G	118.69	Inf	-Inf	3	Vertical	329	2.26
2440MHz	Pass	PK	2.4876G	57.50	74.00	-16.50	3	Vertical	329	2.26
2440MHz	Pass	AV	2.3896G	44.57	54.00	-9.43	3	Horizontal	268	1.00
2440MHz	Pass	AV	2.44G	108.86	Inf	-Inf	3	Horizontal	268	1.00
2440MHz	Pass	AV	2.4844G	45.31	54.00	-8.69	3	Horizontal	268	1.00
2440MHz	Pass	PK	2.3432G	57.07	74.00	-16.93	3	Horizontal	268	1.00
2440MHz	Pass	PK	2.44G	112.42	Inf	-Inf	3	Horizontal	268	1.00
2440MHz	Pass	PK	2.4916G	57.70	74.00	-16.30	3	Horizontal	268	1.00
2440MHz	Pass	AV	4.88096G	34.36	54.00	-19.64	3	Vertical	79	1.90
2440MHz	Pass	AV	7.32158G	44.29	54.00	-9.71	3	Vertical	40	1.47
2440MHz	Pass	PK	4.88098G	44.86	74.00	-29.14	3	Vertical	79	1.90
2440MHz	Pass	PK	7.3185G	54.06	74.00	-19.94	3	Vertical	40	1.47
2440MHz	Pass	AV	4.88105G	35.67	54.00	-18.33	3	Horizontal	49	1.71
2440MHz	Pass	AV	7.32144G	46.48	54.00	-7.52	3	Horizontal	35	1.34
2440MHz	Pass	PK	4.88006G	45.68	74.00	-28.32	3	Horizontal	49	1.71
2440MHz	Pass	PK	7.32G	56.31	74.00	-17.69	3	Horizontal	35	1.34
2475MHz	Pass	AV	2.4748G	114.24	Inf	-Inf	3	Vertical	323	2.27
2475MHz	Pass	AV	2.4835G	50.22	54.00	-3.78	3	Vertical	323	2.27
2475MHz	Pass	PK	2.475G	118.05	Inf	-Inf	3	Vertical	323	2.27
2475MHz	Pass	PK	2.4835G	61.95	74.00	-12.05	3	Vertical	323	2.27
2475MHz	Pass	AV	2.475G	109.91	Inf	-Inf	3	Horizontal	276	1.21
2475MHz	Pass	AV	2.4836G	47.48	54.00	-6.52	3	Horizontal	276	1.21
2475MHz	Pass	PK	2.475G	113.31	Inf	-Inf	3	Horizontal	276	1.21
2475MHz	Pass	PK	2.4848G	58.92	74.00	-15.08	3	Horizontal	276	1.21
2475MHz	Pass	AV	4.95102G	35.70	54.00	-18.30	3	Vertical	145	1.62
2475MHz	Pass	AV	7.42643G	46.62	54.00	-7.38	3	Vertical	351	1.22
2475MHz	Pass	PK	4.9499G	46.25	74.00	-27.75	3	Vertical	145	1.62
2475MHz	Pass	PK	7.42341G	56.47	74.00	-17.53	3	Vertical	351	1.22
2475MHz	Pass	AV	4.95098G	37.78	54.00	-16.22	3	Horizontal	48	1.45
2475MHz	Pass	AV	7.42635G	48.20	54.00	-5.80	3	Horizontal	35	1.32
2475MHz	Pass	PK	4.95G	47.64	74.00	-26.36	3	Horizontal	48	1.45
2475MHz	Pass	PK	7.42665G	57.70	74.00	-16.30	3	Horizontal	35	1.32
2480MHz	Pass	AV	2.48G	103.43	Inf	-Inf	3	Vertical	322	2.24
2480MHz	Pass	AV	2.4835G	52.91	54.00	-1.09	3	Vertical	322	2.24
2480MHz	Pass	PK	2.4794G	106.94	Inf	-Inf	3	Vertical	322	2.24
2480MHz	Pass	PK	2.4835G	64.42	74.00	-9.58	3	Vertical	322	2.24
2480MHz	Pass	AV	2.48G	99.48	Inf	-Inf	3	Horizontal	277	1.00
2480MHz	Pass	AV	2.4835G	50.01	54.00	-3.99	3	Horizontal	277	1.00
2480MHz	Pass	PK	2.4794G	102.90	Inf	-Inf	3	Horizontal	277	1.00
2480MHz	Pass	PK	2.4835G	60.91	74.00	-13.09	3	Horizontal	277	1.00
2480MHz	Pass	AV	4.96111G	33.31	54.00	-20.69	3	Vertical	147	1.72
2480MHz	Pass	AV	7.4418G	37.23	54.00	-16.77	3	Vertical	42	1.37
2480MHz	Pass	PK	4.96099G	44.18	74.00	-29.82	3	Vertical	147	1.72
2480MHz	Pass	PK	7.43837G	49.26	74.00	-24.74	3	Vertical	42	1.37



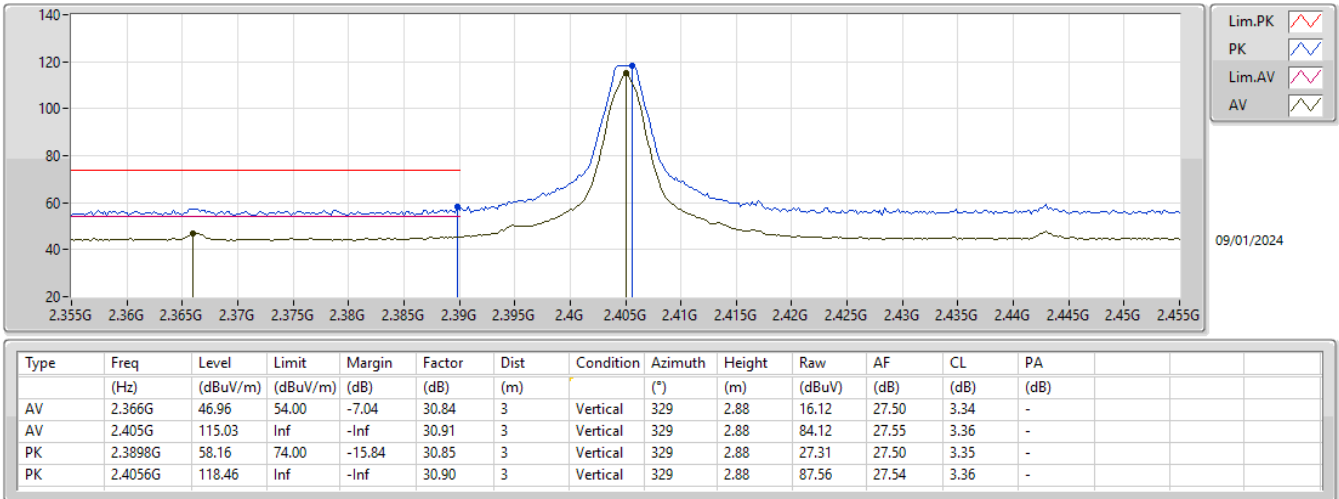
RSE TX above 1GHz

Appendix F.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2480MHz	Pass	AV	4.96108G	33.92	54.00	-20.08	3	Horizontal	49	1.36
2480MHz	Pass	AV	7.44144G	38.66	54.00	-15.34	3	Horizontal	36	1.28
2480MHz	Pass	PK	4.95909G	45.36	74.00	-28.64	3	Horizontal	49	1.36
2480MHz	Pass	PK	7.44176G	49.90	74.00	-24.10	3	Horizontal	36	1.28

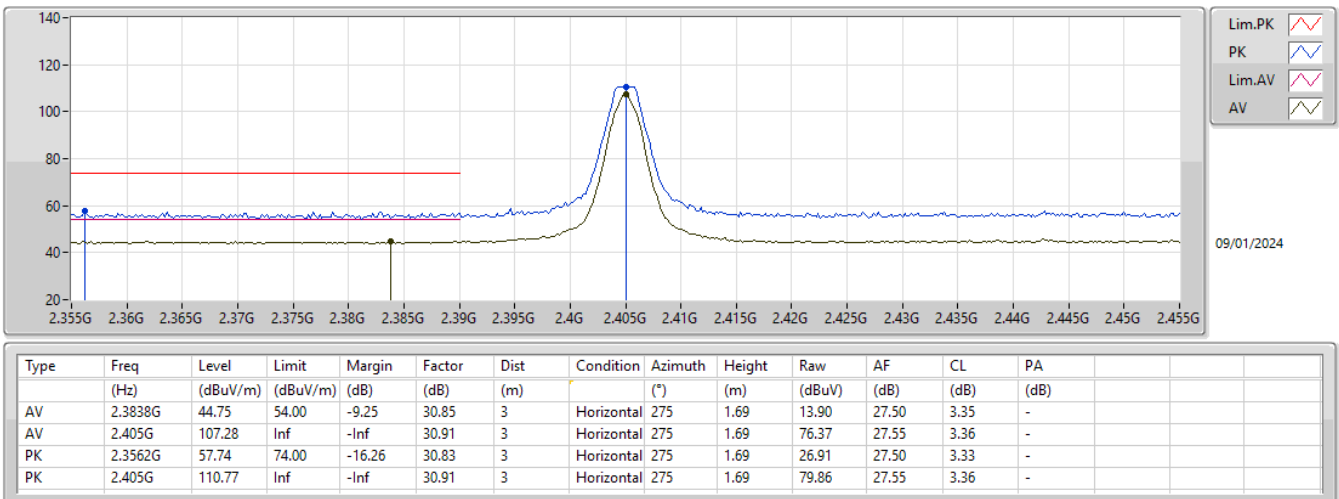
2.4-2.4835GHz_Thread

2405MHz_TX



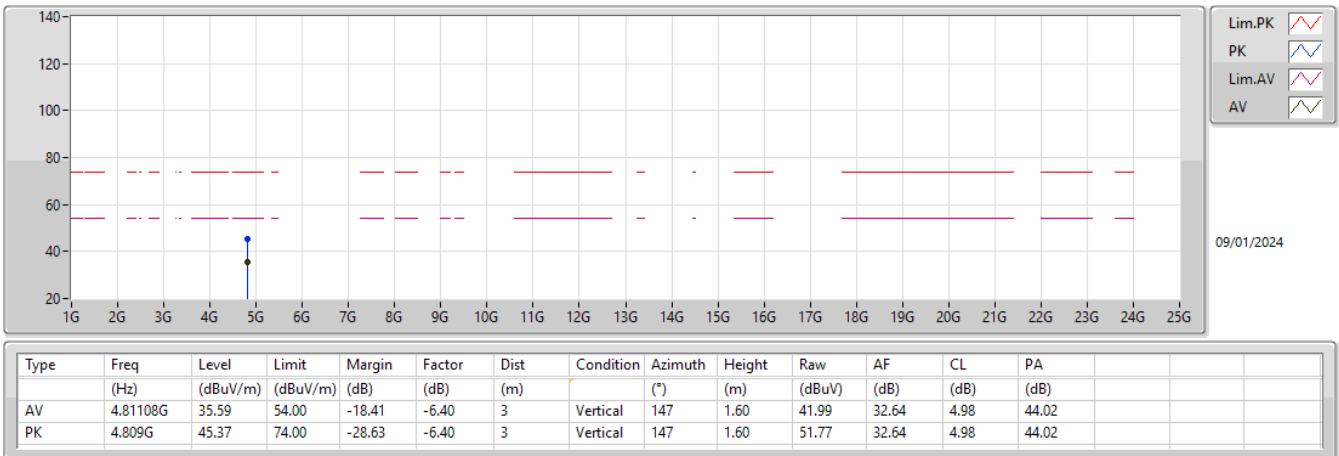
2.4-2.4835GHz_Thread

2405MHz_TX



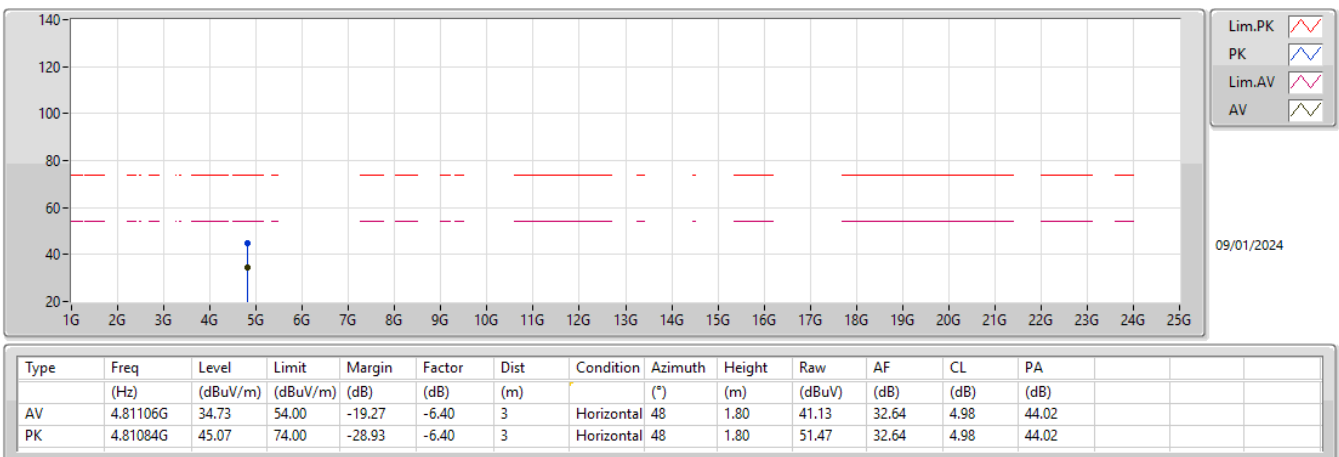
2.4-2.4835GHz_Thread

2405MHz_TX



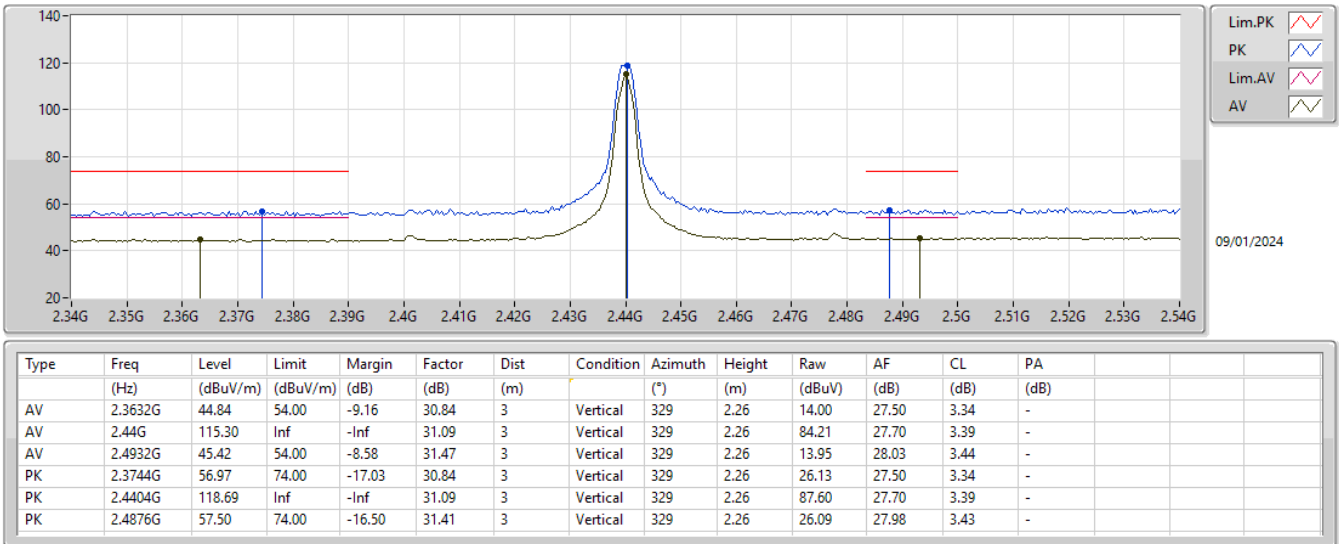
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2405MHz_TX



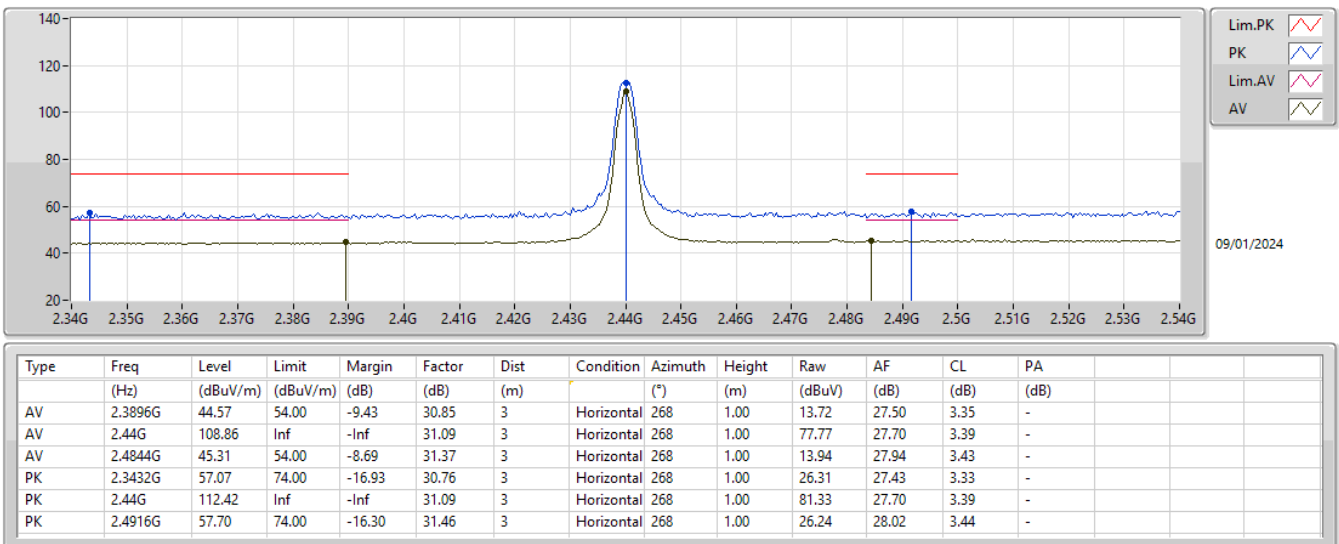
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2440MHz_TX



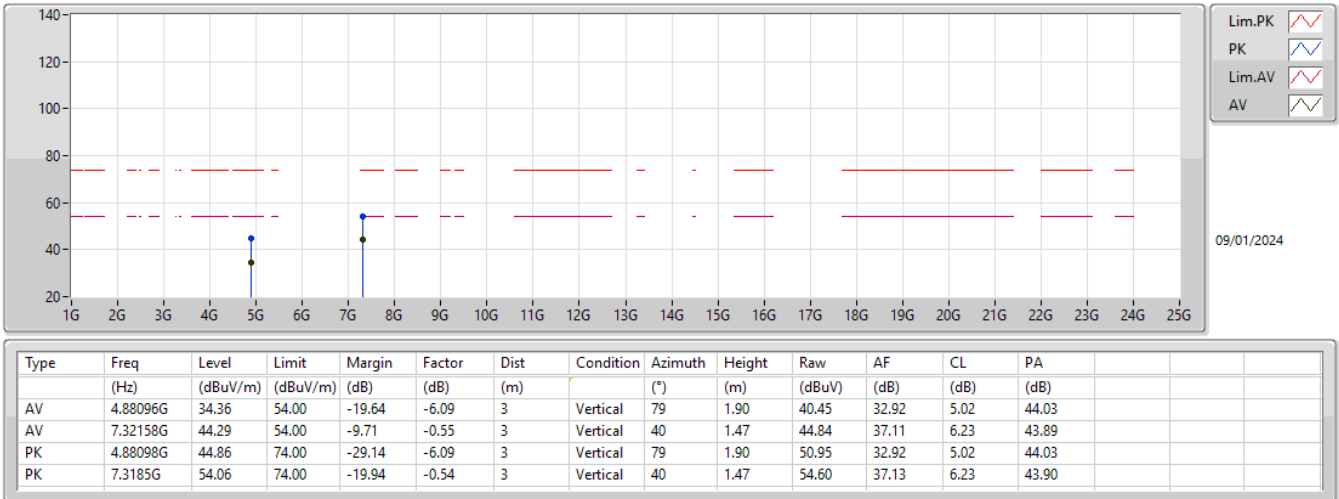
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2440MHz_TX



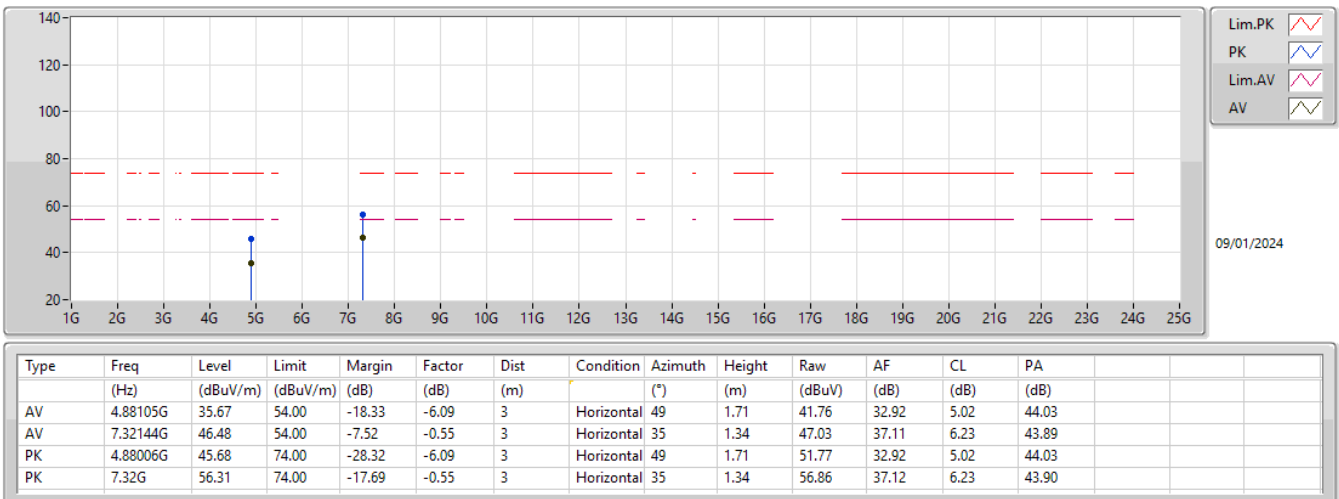
2.4-2.4835GHz_Thread

2440MHz_TX



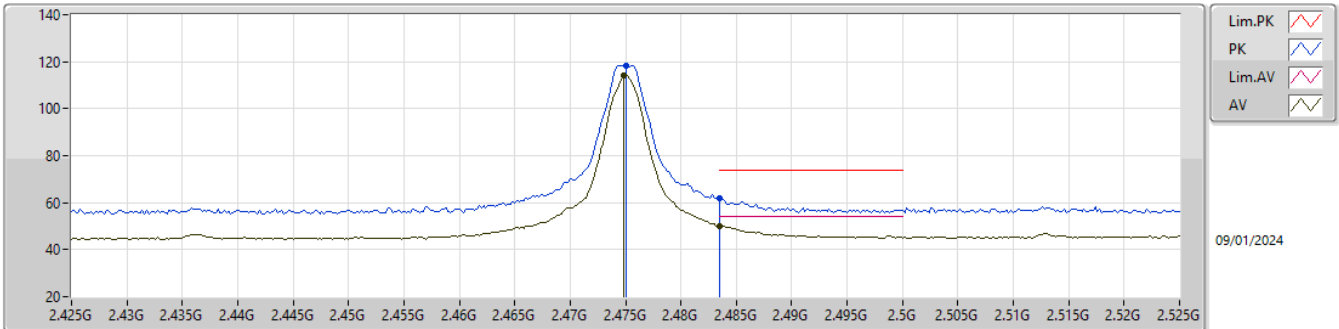
2.4-2.4835GHz_Thread

2440MHz_TX



2.4-2.4835GHz_Thread

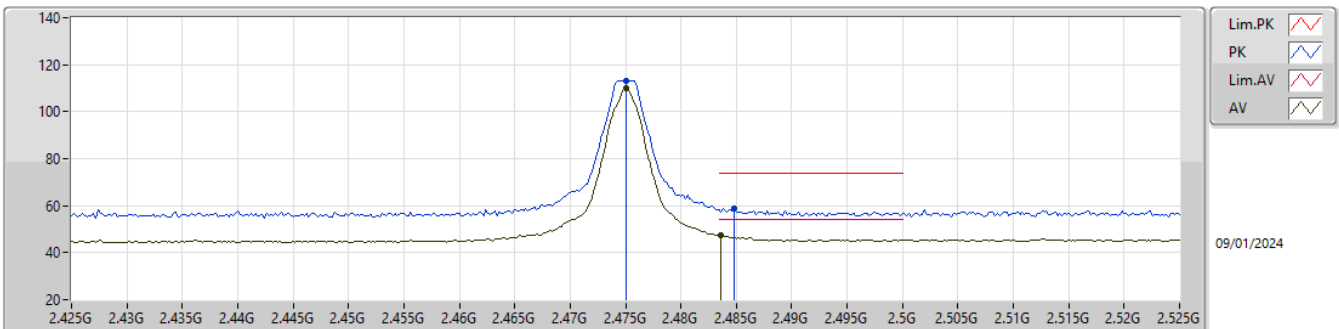
2475MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.4748G	114.24	Inf	-Inf	31.27	3	Vertical	323	2.27	82.97	27.85	3.42	-
AV	2.4835G	50.22	54.00	-3.78	31.37	3	Vertical	323	2.27	18.85	27.94	3.43	-
PK	2.475G	118.05	Inf	-Inf	31.27	3	Vertical	323	2.27	86.78	27.85	3.42	-
PK	2.4835G	61.95	74.00	-12.05	31.37	3	Vertical	323	2.27	30.58	27.94	3.43	-

2.4-2.4835GHz_Thread

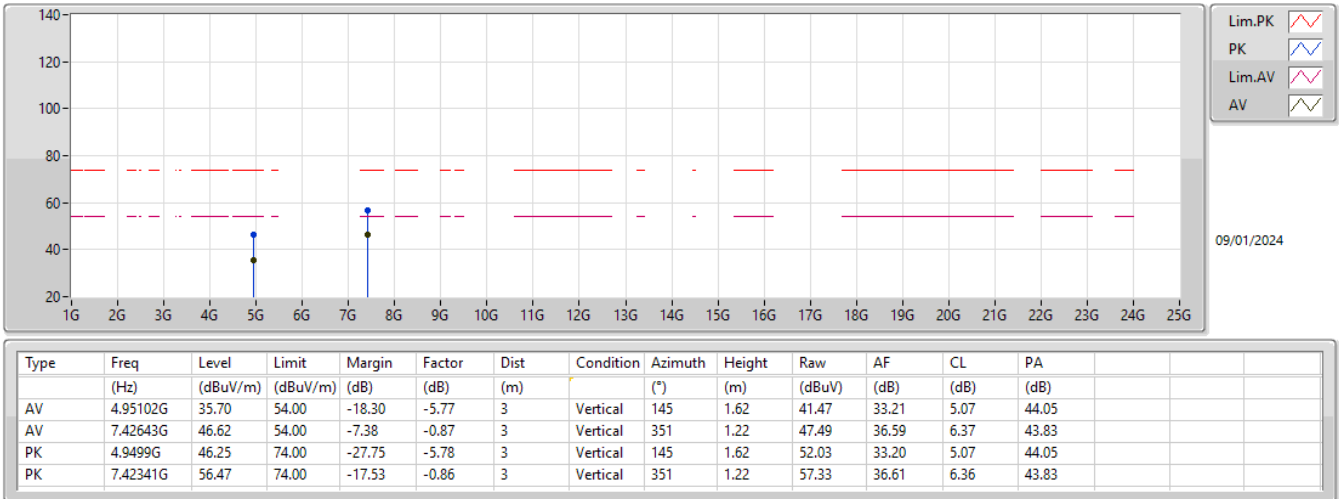
2475MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.475G	109.91	Inf	-Inf	31.27	3	Horizontal	276	1.21	78.64	27.85	3.42	-
AV	2.4836G	47.48	54.00	-6.52	31.37	3	Horizontal	276	1.21	16.11	27.94	3.43	-
PK	2.475G	113.31	Inf	-Inf	31.27	3	Horizontal	276	1.21	82.04	27.85	3.42	-
PK	2.4848G	58.92	74.00	-15.08	31.38	3	Horizontal	276	1.21	27.54	27.95	3.43	-

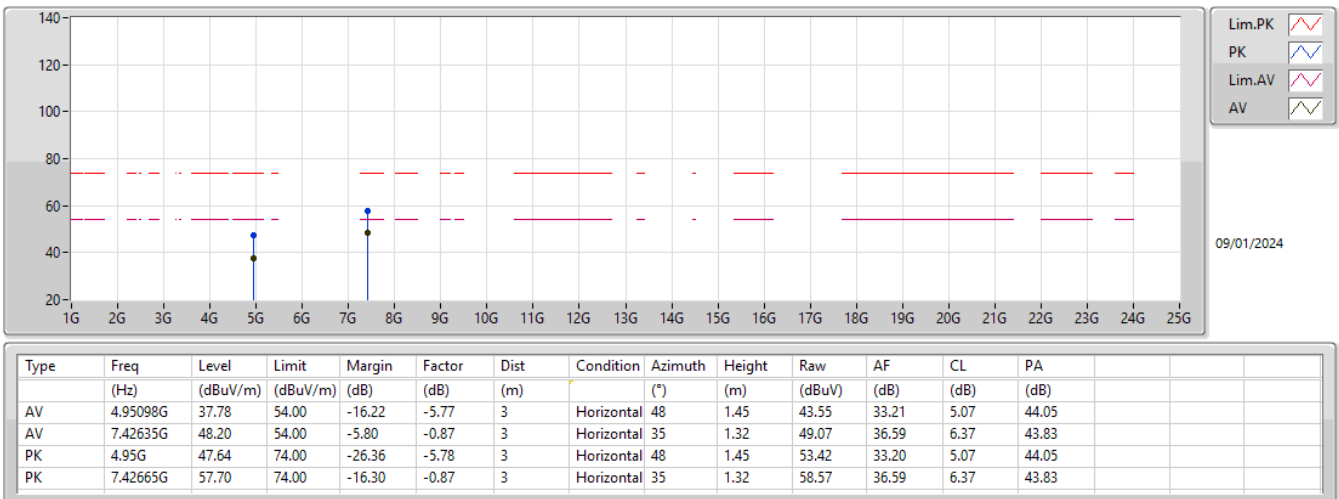
2.4-2.4835GHz_Thred

2475MHz_TX



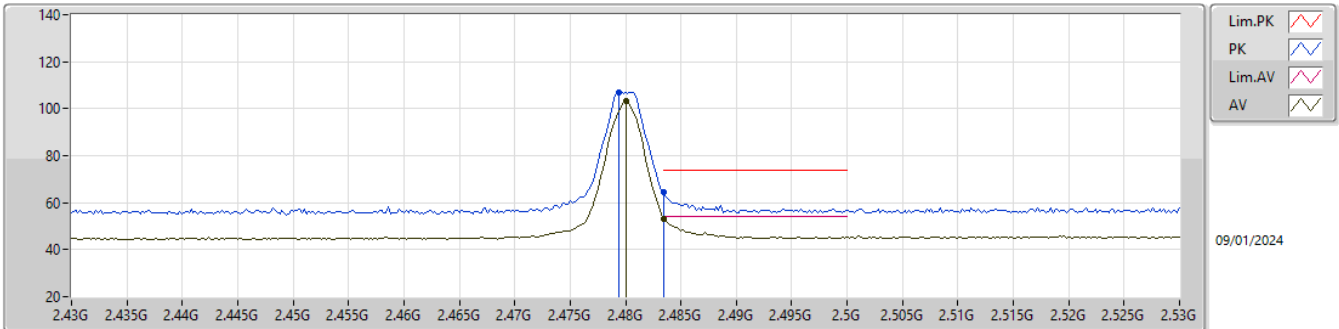
2.4-2.4835GHz_Thred

2475MHz_TX



2.4-2.4835GHz_Thred

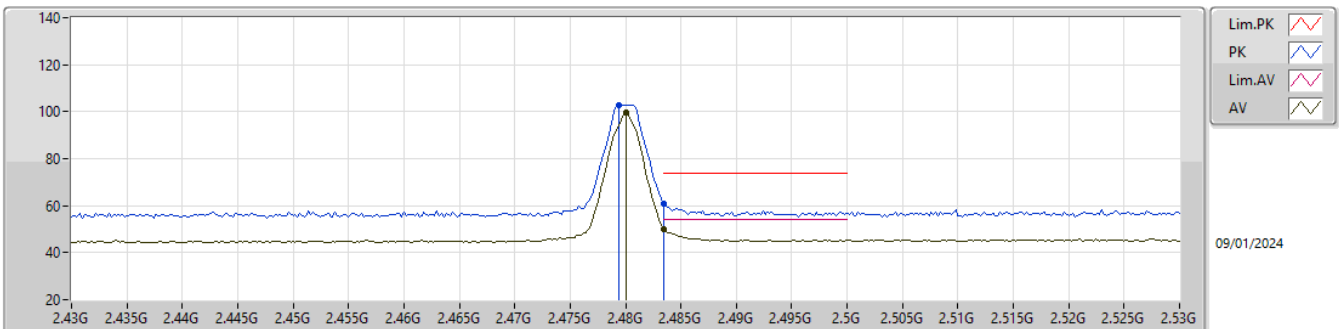
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	103.43	Inf	-Inf	31.33	3	Vertical	322	2.24	72.10	27.90	3.43	-
AV	2.4835G	52.91	54.00	-1.09	31.36	3	Vertical	322	2.24	21.55	27.93	3.43	-
PK	2.4794G	106.94	Inf	-Inf	31.32	3	Vertical	322	2.24	75.62	27.89	3.43	-
PK	2.4835G	64.42	74.00	-9.58	31.36	3	Vertical	322	2.24	33.06	27.93	3.43	-

2.4-2.4835GHz_Thred

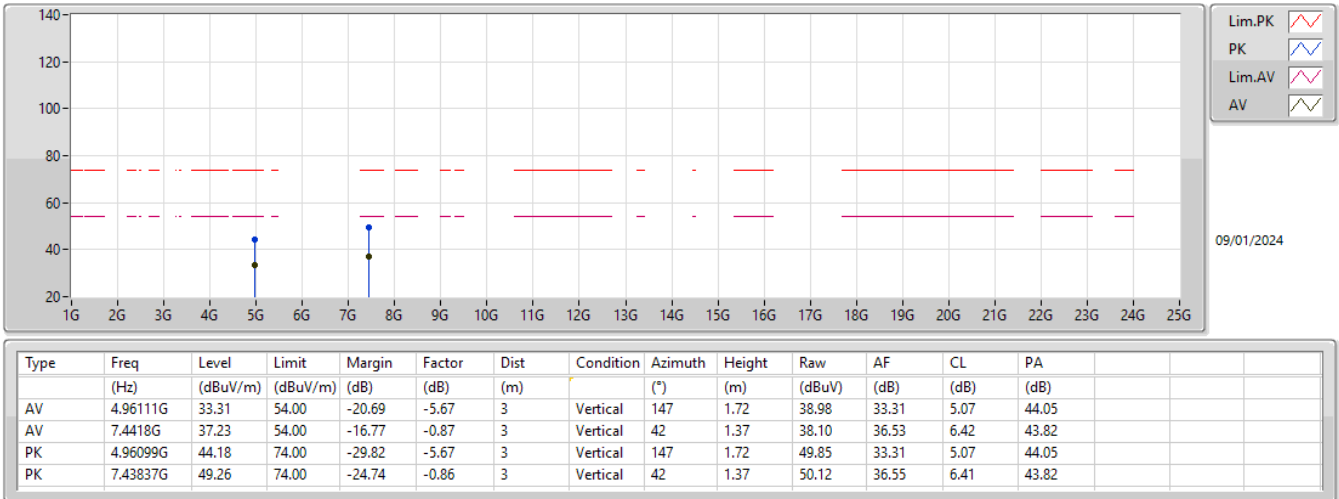
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	99.48	Inf	-Inf	31.33	3	Horizontal	277	1.00	68.15	27.90	3.43	-
AV	2.4835G	50.01	54.00	-3.99	31.37	3	Horizontal	277	1.00	18.64	27.94	3.43	-
PK	2.4794G	102.90	Inf	-Inf	31.32	3	Horizontal	277	1.00	71.58	27.89	3.43	-
PK	2.4835G	60.91	74.00	-13.09	31.37	3	Horizontal	277	1.00	29.54	27.94	3.43	-

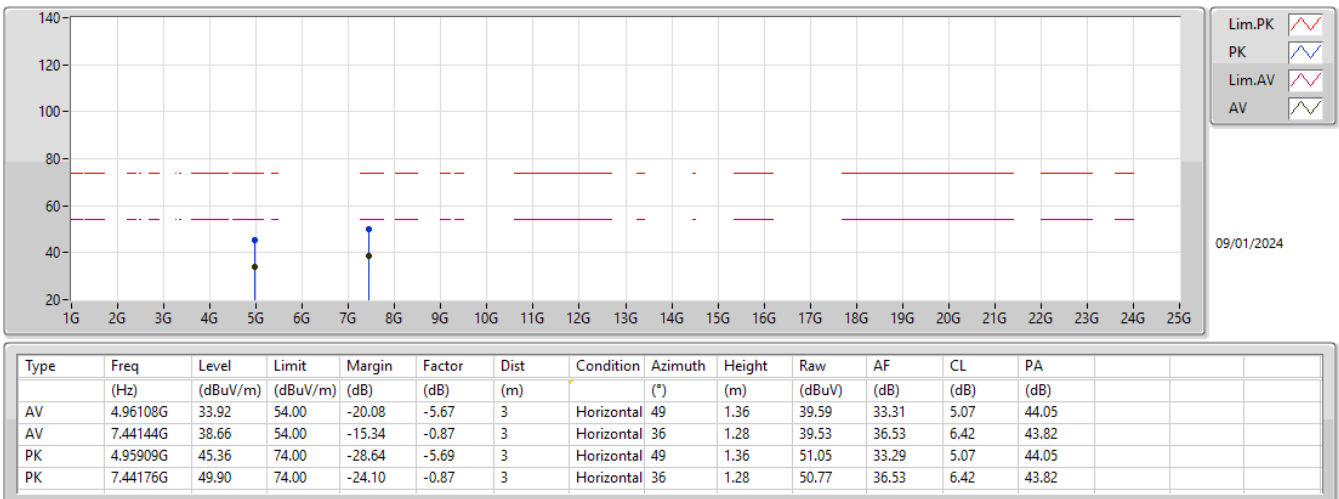
2.4-2.4835GHz_Thread

2480MHz_TX



2.4-2.4835GHz_Thread

2480MHz_TX





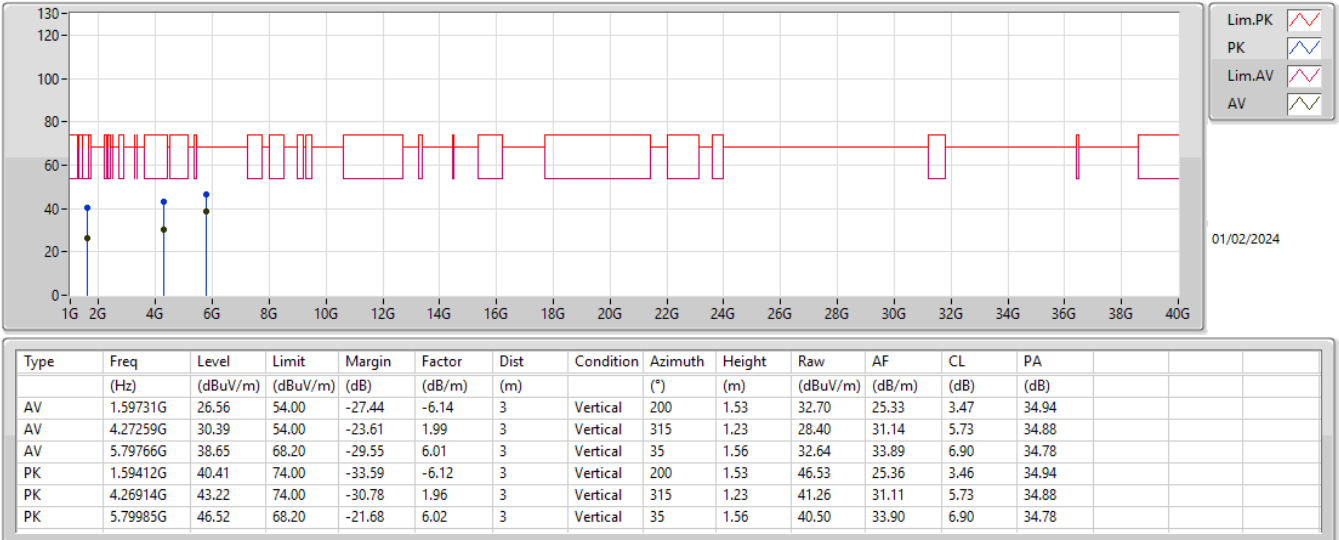
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	5.79985G	46.52	68.20	-21.68	Vertical
Mode 2	Pass	PK	5.79336G	50.67	68.20	-17.53	Vertical
Mode 3	Pass	AV	4.9867G	34.12	54.00	-19.88	Horizontal
Mode 4	Pass	AV	1.59628G	27.45	54.00	-26.55	Horizontal

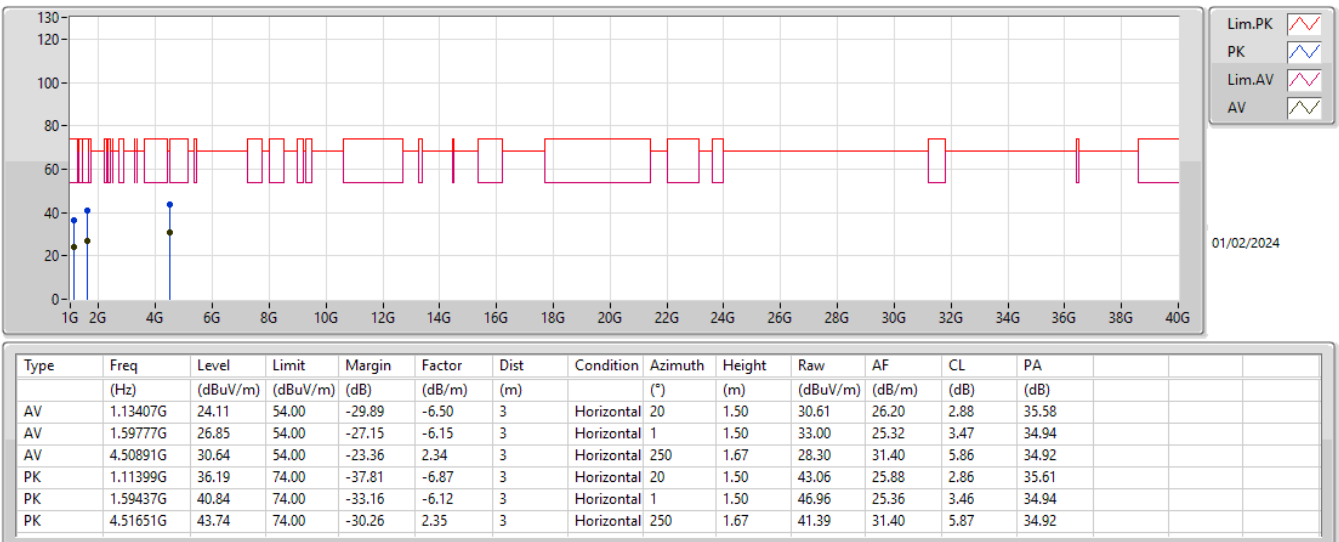
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	1.59731G	26.56	54.00	-27.44	3	Vertical	200	1.53	-
Mode 1	Pass	AV	4.27259G	30.39	54.00	-23.61	3	Vertical	315	1.23	-
Mode 1	Pass	AV	5.79766G	38.65	68.20	-29.55	3	Vertical	35	1.56	-
Mode 1	Pass	PK	1.59412G	40.41	74.00	-33.59	3	Vertical	200	1.53	-
Mode 1	Pass	PK	4.26914G	43.22	74.00	-30.78	3	Vertical	315	1.23	-
Mode 1	Pass	PK	5.79985G	46.52	68.20	-21.68	3	Vertical	35	1.56	-
Mode 1	Pass	AV	1.13407G	24.11	54.00	-29.89	3	Horizontal	20	1.50	-
Mode 1	Pass	AV	1.59777G	26.85	54.00	-27.15	3	Horizontal	1	1.50	-
Mode 1	Pass	AV	4.50891G	30.64	54.00	-23.36	3	Horizontal	250	1.67	-
Mode 1	Pass	PK	1.11399G	36.19	74.00	-37.81	3	Horizontal	20	1.50	-
Mode 1	Pass	PK	1.59437G	40.84	74.00	-33.16	3	Horizontal	1	1.50	-
Mode 1	Pass	PK	4.51651G	43.74	74.00	-30.26	3	Horizontal	250	1.67	-
Mode 2	Pass	AV	1.59725G	27.19	54.00	-26.81	3	Vertical	221	1.50	-
Mode 2	Pass	AV	3.52G	30.56	68.20	-37.64	3	Vertical	149	2.80	-
Mode 2	Pass	AV	5.7864G	35.75	68.20	-32.45	3	Vertical	48	2.73	-
Mode 2	Pass	PK	1.59615G	41.69	74.00	-32.31	3	Vertical	221	1.50	-
Mode 2	Pass	PK	3.49486G	46.24	68.20	-21.96	3	Vertical	149	2.80	-
Mode 2	Pass	PK	5.79336G	50.67	68.20	-17.53	3	Vertical	48	2.73	-
Mode 2	Pass	AV	1.59772G	27.14	54.00	-26.86	3	Horizontal	354	1.32	-
Mode 2	Pass	AV	3.50844G	30.28	68.20	-37.92	3	Horizontal	48	1.50	-
Mode 2	Pass	AV	5.83578G	35.51	68.20	-32.69	3	Horizontal	10	1.07	-
Mode 2	Pass	PK	1.5943G	40.88	74.00	-33.12	3	Horizontal	354	1.32	-
Mode 2	Pass	PK	3.4869G	49.20	68.20	-19.00	3	Horizontal	48	1.50	-
Mode 2	Pass	PK	5.83242G	47.72	68.20	-20.48	3	Horizontal	10	1.07	-
Mode 3	Pass	AV	1.59494G	26.37	54.00	-27.63	3	Vertical	185	1.50	-
Mode 3	Pass	AV	3.24866G	30.99	68.20	-37.21	3	Vertical	26	2.43	-
Mode 3	Pass	AV	5.17222G	34.43	68.20	-33.77	3	Vertical	252	2.39	-
Mode 3	Pass	PK	1.59758G	39.90	74.00	-34.10	3	Vertical	185	1.50	-
Mode 3	Pass	PK	3.24542G	43.38	88.20	-44.82	3	Vertical	26	2.43	-
Mode 3	Pass	PK	5.16898G	46.34	88.20	-41.86	3	Vertical	252	2.39	-
Mode 3	Pass	AV	1.59736G	28.56	54.00	-25.44	3	Horizontal	353	1.50	-
Mode 3	Pass	AV	3.7252G	31.51	54.00	-22.49	3	Horizontal	124	1.21	-
Mode 3	Pass	AV	4.9867G	34.12	54.00	-19.88	3	Horizontal	73	1.46	-
Mode 3	Pass	PK	1.59712G	41.65	74.00	-32.35	3	Horizontal	353	1.50	-
Mode 3	Pass	PK	3.71488G	43.53	74.00	-30.47	3	Horizontal	124	1.21	-
Mode 3	Pass	PK	4.99624G	46.87	74.00	-27.13	3	Horizontal	73	1.46	-
Mode 4	Pass	AV	1.59763G	27.26	54.00	-26.74	3	Vertical	220	1.27	-
Mode 4	Pass	AV	2.50491G	32.01	68.20	-36.19	3	Vertical	290	1.96	-
Mode 4	Pass	AV	5.80438G	33.41	68.20	-34.79	3	Vertical	284	1.49	-
Mode 4	Pass	PK	1.59645G	43.66	74.00	-30.34	3	Vertical	220	1.27	-
Mode 4	Pass	PK	2.51432G	52.52	88.20	-35.68	3	Vertical	290	1.96	-
Mode 4	Pass	PK	5.79535G	46.41	88.20	-41.79	3	Vertical	284	1.49	-
Mode 4	Pass	AV	1.59628G	27.45	54.00	-26.55	3	Horizontal	335	2.26	-
Mode 4	Pass	AV	4.45454G	31.17	68.20	-37.03	3	Horizontal	15	1.50	-
Mode 4	Pass	AV	5.89774G	34.20	68.20	-34.00	3	Horizontal	360	1.50	-
Mode 4	Pass	PK	1.5994G	45.56	74.00	-28.44	3	Horizontal	335	2.26	-
Mode 4	Pass	PK	4.43234G	44.02	88.20	-44.18	3	Horizontal	15	1.50	-
Mode 4	Pass	PK	5.90392G	46.87	88.20	-41.33	3	Horizontal	360	1.50	-

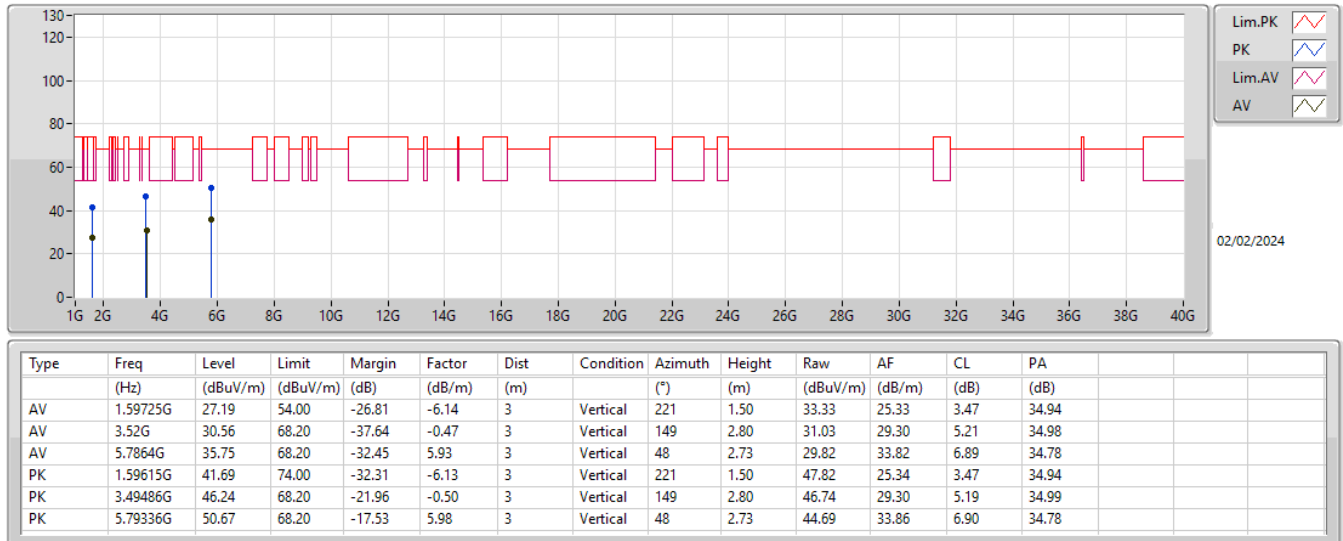
Radiated Emissions above 1GHz_Mode 1



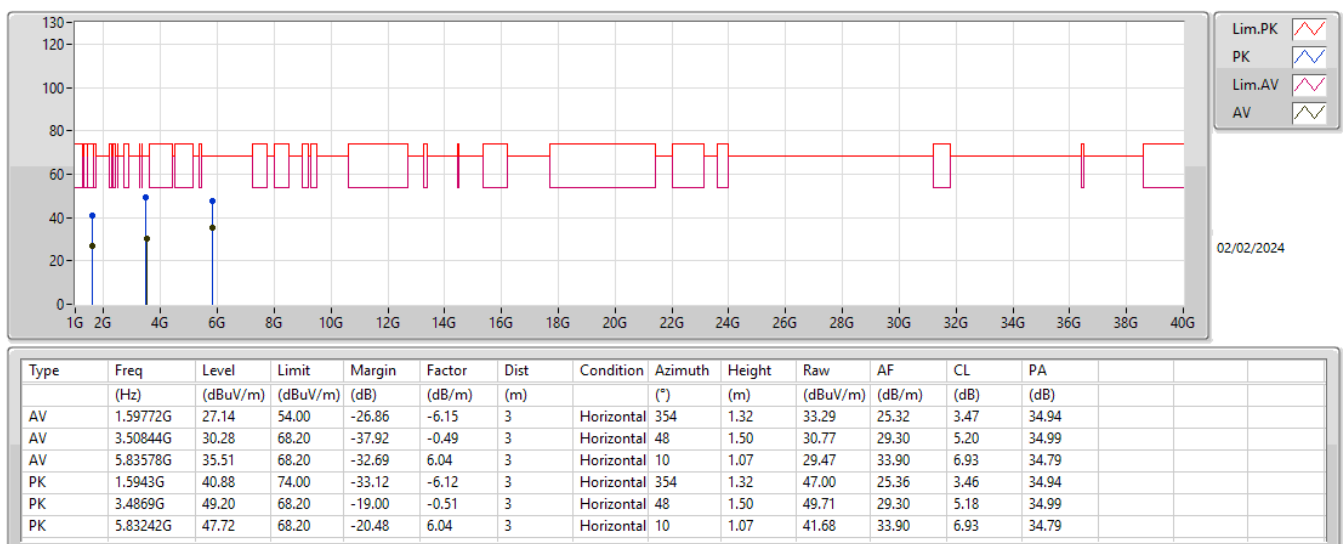
Radiated Emissions above 1GHz_Mode 1



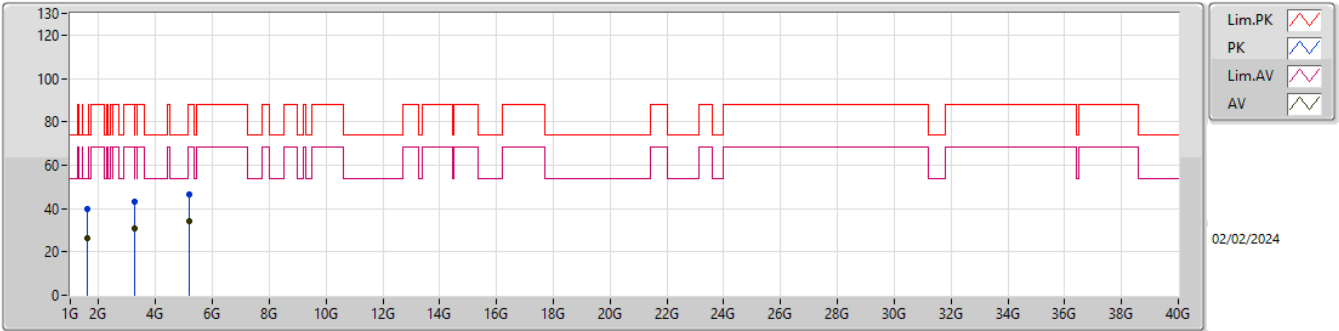
Radiated Emissions above 1GHz_Mode 2



Radiated Emissions above 1GHz_Mode 2

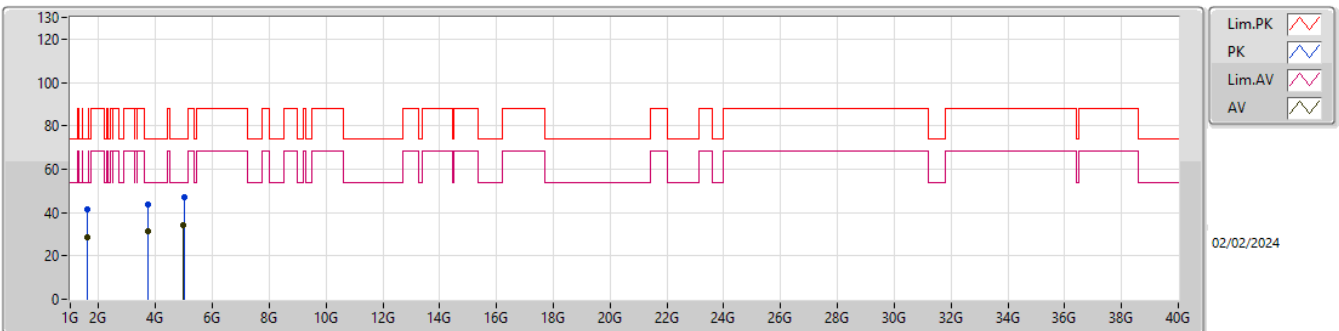


Radiated Emissions above 1GHz_Mode 3



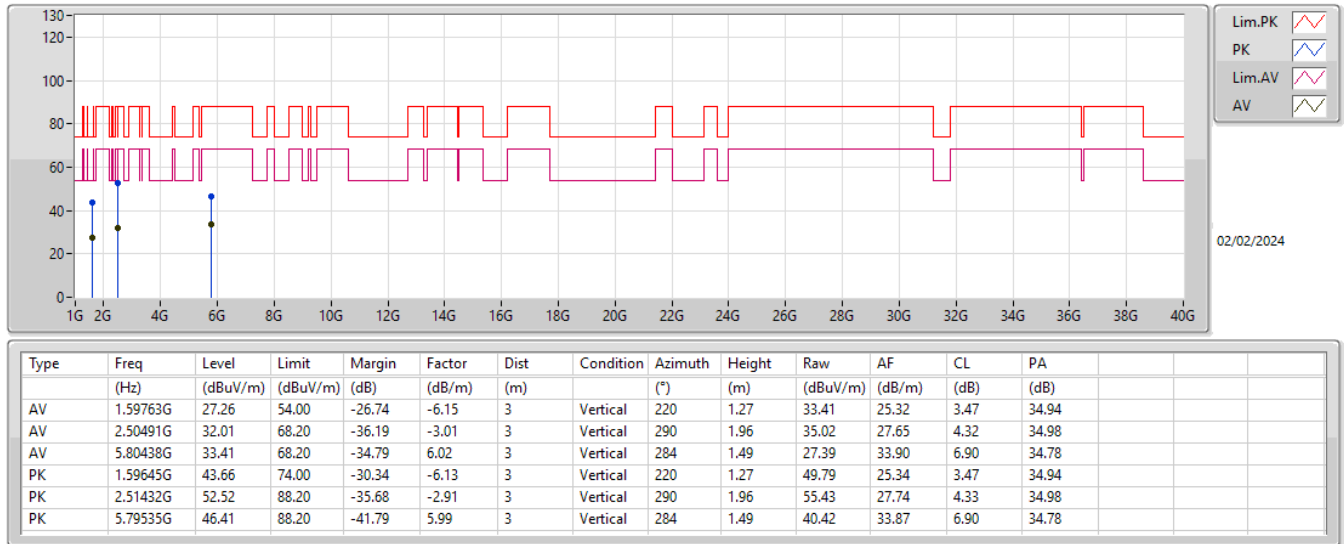
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)				
AV	1.59494G	26.37	54.00	-27.63	-6.13	3	Vertical	185	1.50	32.50	25.35	3.46	34.94				
AV	3.24866G	30.99	68.20	-37.21	-0.53	3	Vertical	26	2.43	31.52	29.51	4.98	35.02				
AV	5.17222G	34.43	68.20	-33.77	4.69	3	Vertical	252	2.39	29.74	33.01	6.43	34.75				
PK	1.59758G	39.90	74.00	-34.10	-6.15	3	Vertical	185	1.50	46.05	25.32	3.47	34.94				
PK	3.24542G	43.38	88.20	-44.82	-0.52	3	Vertical	26	2.43	43.90	29.52	4.98	35.02				
PK	5.16898G	46.34	88.20	-41.86	4.70	3	Vertical	252	2.39	41.64	33.02	6.43	34.75				

Radiated Emissions above 1GHz_Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)				
AV	1.59736G	28.56	54.00	-25.44	-6.14	3	Horizontal	353	1.50	34.70	25.33	3.47	34.94				
AV	3.7252G	31.51	54.00	-22.49	0.32	3	Horizontal	124	1.21	31.19	29.85	5.39	34.92				
AV	4.9867G	34.12	54.00	-19.88	4.57	3	Horizontal	73	1.46	29.55	33.05	6.29	34.77				
PK	1.59712G	41.65	74.00	-32.35	-6.14	3	Horizontal	353	1.50	47.79	25.33	3.47	34.94				
PK	3.71488G	43.53	74.00	-30.47	0.24	3	Horizontal	124	1.21	43.29	29.79	5.38	34.93				
PK	4.99624G	46.87	74.00	-27.13	4.61	3	Horizontal	73	1.46	42.26	33.08	6.30	34.77				

Radiated Emissions above 1GHz_Mode 4



Radiated Emissions above 1GHz_Mode 4

