Testing Laboratory
3785

FCC Radio Test Report

FCC ID	**:**	**TVE-512178E8741**
Equipment	**:**	**Secured Wireless Access Point**
Brand Name	**:**	**FORTINET**
Model Name	**:**	**FortiAP 443Kxxxxxx, FAP-443Kxxxxxx, FORTIAP-443Kxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)**
Applicant	**:**	**Fortinet, Inc. 899 Kifer Road, Sunnyvale, CA 94086, USA**
Manufacturer	**:**	**Fortinet, Inc. 899 Kifer Road, Sunnyvale, CA 94086, USA**
Standard	**:**	**47 CFR FCC Part 15.247**

The product was received on Oct. 27, 2023, and testing was started from Oct. 27, 2023 and completed on Dec. 09, 2023. 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.

Ben Tseng

Approved by: Ben Tseng

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR370714-02BZ	01	Initial issue of report	Apr. 12, 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: Barry Hsiao

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	Zigbee	5	1TX

Note:.
- Zigbee 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	AWAN	7102A0668000	Dipole	Reverse SMA	2.4G	Radio 1
					5G	Radio 2
2	AWAN	7102A0668000	Dipole	Reverse SMA	2.4G	Radio 1
					5G	Radio 2
3	AWAN	7102A0668000	Dipole	Reverse SMA	2.4G	Radio 1
					5G	Radio 2
4	AWAN	7102A0668000	Dipole	Reverse SMA	2.4G	Radio 1
					5G	Radio 2
5	AWAN	7102A0667000	Dipole	Reverse SMA	6E	Radio 3
6	AWAN	7102A0667000	Dipole	Reverse SMA	6E	Radio 3
7	AWAN	7102A0667000	Dipole	Reverse SMA	6E	Radio 3
8	AWAN	7102A0667000	Dipole	Reverse SMA	6E	Radio 3
9	AWAN	7102A0669000	Dipole	Reverse SMA	2.4G/5G/6E	Scan radio
10	AWAN	7102A0669000	Dipole	Reverse SMA	2.4G/5G/6E	Scan radio
11	Senao	5718A0736300	PIFA	I-Pex	BT& Zigbee	-
12	Quectel	7102A0656000	Patch	I-Pex	GPS	-
13	Quectel	Y4SEN00A1EA	Patch	Reverse SMA	GPS	-

Ant.	Port	Gain (dBi)										
		2.4G	UNII-1	UNII-2A	UNII-2C	UNII-3	UNII-5	UNII-6	UNII-7	UNII-8	BT/ Zigbee	GPS
1	1	2.09	3.8	3.29	4.33	3.96	-	-	-	-	-	-
2	2	3.21	4.66	5.01	5.49	5.28	-	-	-	-	-	-
3	3	2.14	4.51	5.64	5.94	5..78	-	-	-	-	-	-
4	4	2.42	4.08	3.89	5.43	5.25	-	-	-	-	-	-
5	1	-	-	-	-	-	4.44	4.67	4.72	5.69	-	-
6	2	-	-	-	-	-	5.23	4.75	5.27	4.4	-	-
7	3	-	-	-	-	-	4.46	4.71	5.87	5.89	-	-
8	4	-	-	-	-	-	5.30	4.53	5.86	5.8	-	-
9	1	2.12	4.25	3.56	4.66	4.47	5.88	5.30	5.29	4.25	-	-
10	2	2.22	4.66	5.90	5.63	5.49	5.81	5.83	5.90	4.79	-	-
11	1	-	-	-	-	-	-	-	-	-	4.5	-
12	1	-	-	-	-	-	-	-	-	-	-	-0.5
13	2	-	-	-	-	-	-	-	-	-	-	1.4

Composite Gain (dBi)										
	2.4G	UNII-1	UNII-2A	UNII-2C	UNII-3	5.885G	6.175G	6.475G	6.695G	6.995G
DG [1SS]	5.45	8.76	8.85	9.06	9.27	9.23	8.72	8.18	8.76	8.30
DG [2SS]	3.21	5.76	5.85	6.06	6.27	6.23	5.72	5.18	5.87	5.89
DG [4SS]	3.21	4.66	5.64	5.94	5.78	5.87	5.30	4.75	5.87	5.89

Note 1: The EUT has thirteen antennas.

Note 2: The antenna 13 mentioned above will not be sold with the EUT in the market

Note 3: 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 AP370714-03.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax 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 IEEE 802.11 b/g/n/VHT/ax mode (2RX)

Ant. 9 (port 1) and Ant. 10 (port 2) could 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 IEEE 802.11 a/n/ac/ax/be mode (2RX)

Ant. 9 (port 1) and Ant. 10 (port 2) could 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 IEEE 802.11ax/be mode (2RX)

Ant. 9 (port 1) and Ant. 10 (port 2) could receive simultaneously.

For BT function:
For IEEE 802.15.1 Bluetooth mode (1TX/1RX)
Ant. 11 (port 1) could transmit/receive.
For 802.15.4 function:
For IEEE 802.15.4 mode (1TX/1RX)
Ant. 11 (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
Zigbee	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

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

1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
FortiAP 443Kxxxxxx, FAP-443Kxxxxxx, FORTIAP-443Kxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)	All the models are identical, the different model served as marketing strategy.

From the above models, model: FAP-443K was selected as representative model for the test and its data was recorded in this report.

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

<table>
<tr><td colspan="5">Test Lab.：Sporton International Inc. Hsinhua Laboratory</td></tr>
<tr><td rowspan="2">☒ Hsinhua
(TAF: 3785)</td><td colspan="4">ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)</td></tr>
<tr><td colspan="2">TEL: 886-3-327-3456</td><td colspan="2">FAX: 886-3-327-0973</td></tr>
<tr><td colspan="5">Test site Designation No. TW3785 with FCC.</td></tr>
<tr><th>Test Condition</th><th>Test Site No.</th><th>Test Engineer</th><th>Test Environment</th><th>Test Date</th></tr>
<tr><td>AC Conduction</td><td>CO04-HY</td><td>Daniel Lin</td><td>21.3~22.4°C / 49~53%</td><td>09/Dec/2023</td></tr>
<tr><td>RF Conducted</td><td>TH07-HY</td><td>Xun Hsieh</td><td>24.1~25.2°C / 55~59%</td><td>27/Oct/2023</td></tr>
<tr><td>Radiated</td><td>03CH02-HY</td><td>Ivan Chung</td><td>23.4~25.6°C / 53.1~58.2%</td><td>28/Oct/2023~1/Nov/2023</td></tr>
<tr><td>Radiated (co-location)</td><td>03CH02-HY</td><td>Lego Lin</td><td>23.1~24.2°C / 53.5~60.2%</td><td>08/Nov/2023~09/Nov/2023</td></tr>
<tr><td rowspan="2">☐ Wenhua 3rd.
(TAF: 3785)</td><td colspan="4">ADD: No. 58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Guishan Dist. Taoyuan City 333, Taiwan (R.O.C.)</td></tr>
<tr><td colspan="2">TEL: 886-3-327-0868</td><td colspan="2"></td></tr>
<tr><td colspan="5">Test site Designation No. TW0036 with FCC.</td></tr>
<tr><td rowspan="2">☐ Wen 33rd.St.
(TAF: 3785)</td><td colspan="4">ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)</td></tr>
<tr><td colspan="2">TEL: 886-3-318-0787</td><td colspan="2">FAX: 886-3-318-0287</td></tr>
<tr><td colspan="5">Test site Designation No. TW0008 with FCC.</td></tr>
</table>

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 0.62

Mode	**Power Setting**
Zigbee	-
2405MHz	100
2440MHz	100
2475MHz	100
2480MHz	100

2.2 The Worst Case Measurement Configuration

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

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

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	Radio 1_2.4GHz+Radio 2_5G+Radio 3_6E+Bluetooth
2	Radio 1_2.4GHz+Radio 2_5G+Radio 3_6E+Zigbee
Refer to Sporton Test Report No.: FA370714-02 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.3 Accessories

Accessories				
Bracket ceiling mount 1	**Brand Name**	DRAGONJET CORPORTION	**Model Name**	CLIP CEILING 9/16 LFP
Bracket ceiling mount 2	**Brand Name**	DRAGONJET CORPORTION	**Model Name**	CLIP CEILING 15/16 LFP

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

2.4 Support Equipment

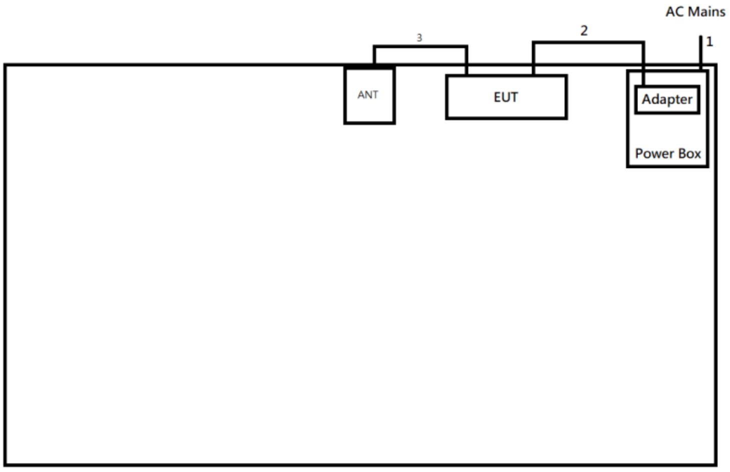
Support Equipment – AC Conduction					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Adapter	ASIAN POWER DEVICES INC.	WA-48A12R	-	Provided by Customer

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	AC Adapter	ASIAN POWER DEVICES INC.	WA-48A12R	-	Provided by Customer

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	AC Adapter	ASIAN POWER DEVICES INC.	WA-48A12R	-	Provided by Customer

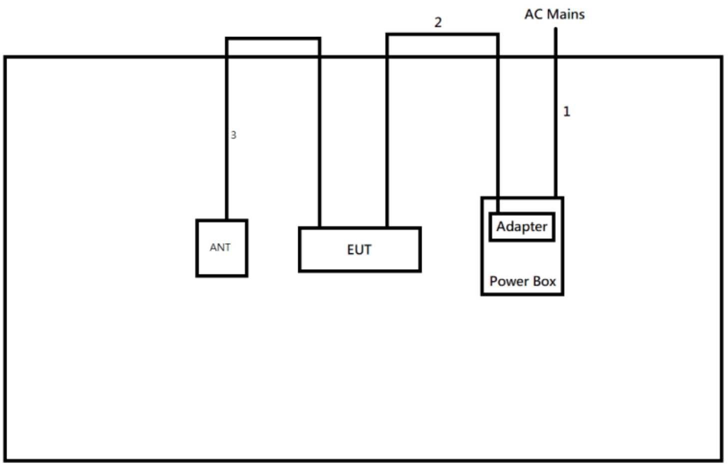
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)
1	AC Power cable	No	1.8
2	DC Power cable	No	1.5
3	ANT cable	No	3.0

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)
1	AC Power cable	No	1.8
2	DC Power cable	No	1.5
3	ANT cable	No	3.0

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

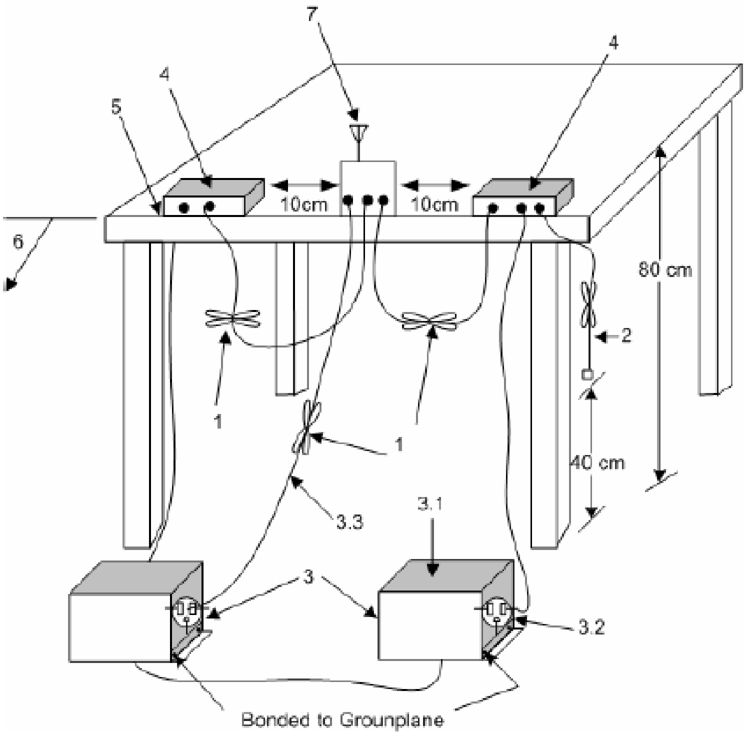
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) +LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

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 ≥ 500 kHz.

3.2.2 Measuring Instruments

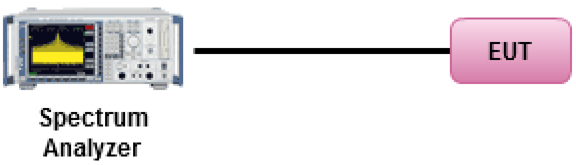
Refer a test equipment and calibration data table in this test report.

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 for occupied bandwidth testing.
	☐ Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth



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} ≤ 6 dBi, then P_{Out} ≤ 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 + 8dB dBm
e.i.r.p. Power Limit:		
▪ 2400-2483.5 MHz Band		
	▪ Point-to-multipoint systems (P2M): P_{eirp} ≤ 36 dBm (4 W)	
	▪ Point-to-point systems (P2P): P_{eirp} ≤ MAX(36, [P_{Out} + G_{TX}]) dBm	
	▪ Smart antenna system (SAS)	
		- Single beam: P_{eirp} ≤ MAX(36, P_{Out} + G_{TX}) dBm
		- Overlap beam: P_{eirp} ≤ MAX(36, P_{Out} + G_{TX}) dBm
		- Aggregate power on all beams: P_{eirp} ≤ 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

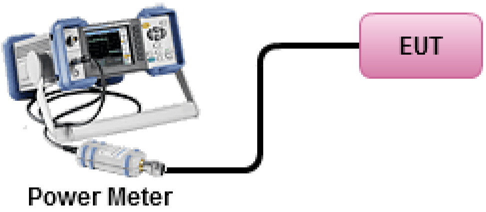
Refer a test equipment and calibration data table in this test report.

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: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)



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

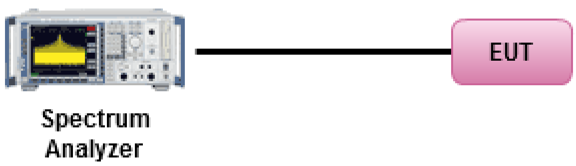
Refer a test equipment and calibration data table in this test report.

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

Power Spectral Density



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

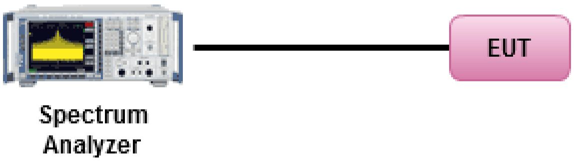
Refer a test equipment and calibration data table in this test report.

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

Emissions in Non-restricted Frequency Bands



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

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

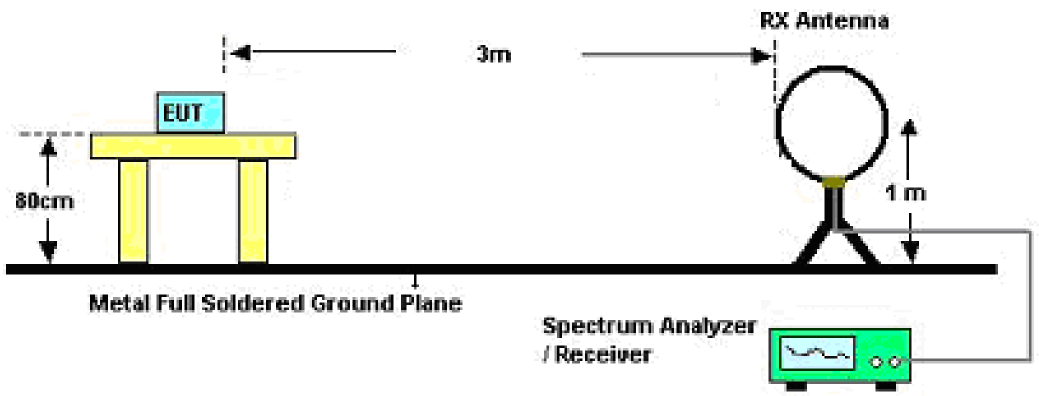
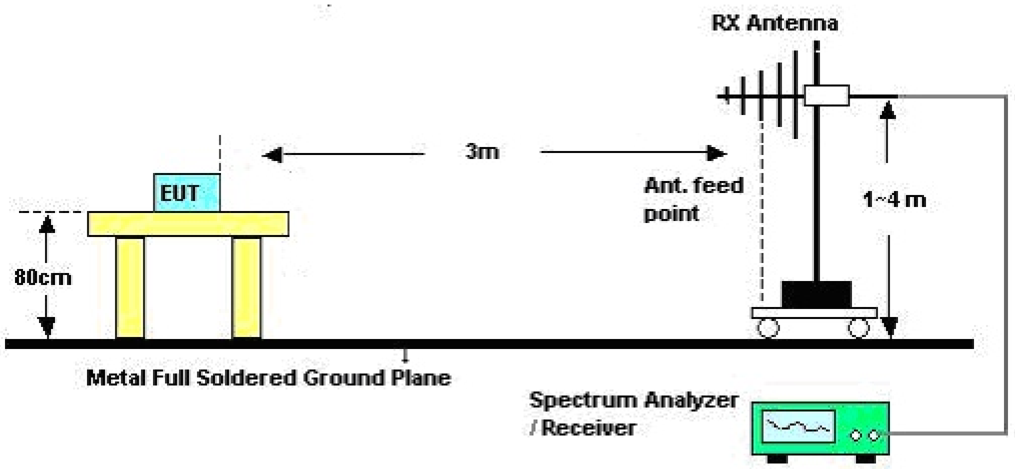
3.6.3 Test Procedures

Test Method	
▪	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
▪	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪	For the transmitter unwanted emissions shall be measured using following options below:
	▪ Refer as 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 (i.e., 1 MHz).
▪	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 ≥ 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.

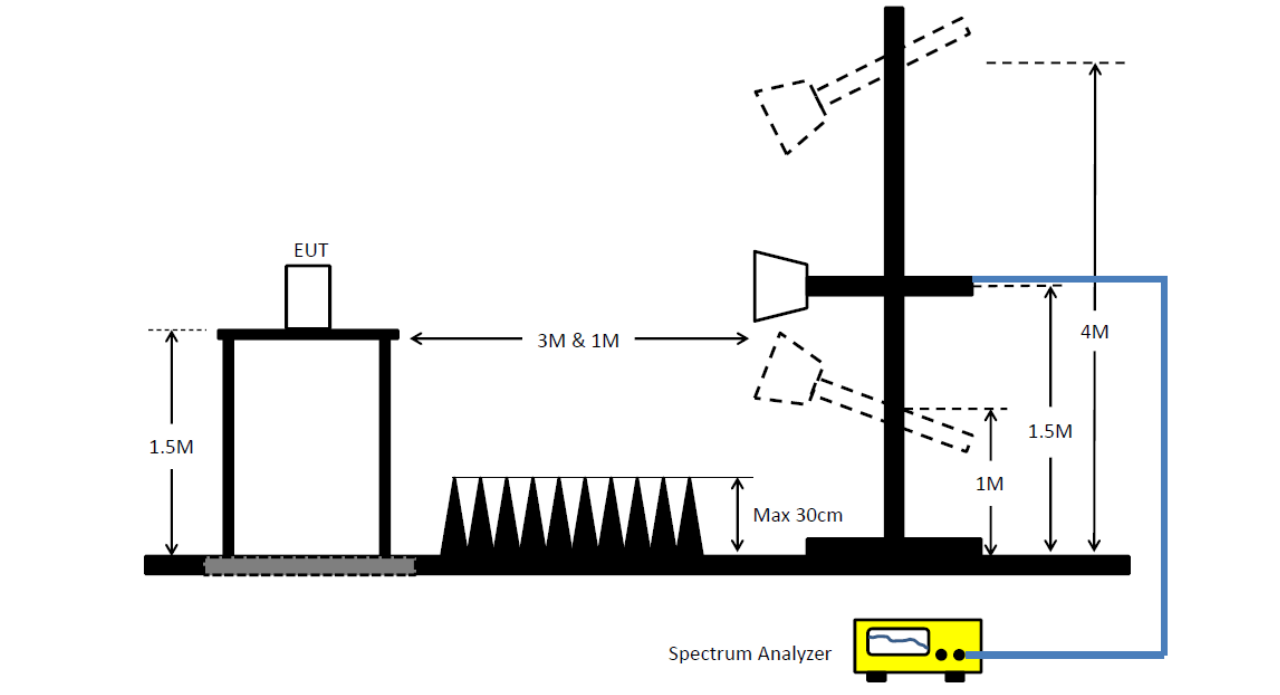
3.6.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

3.6.5 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



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	9kHz ~ 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	177785	1MHz-40GHz	19/Sep/2023	18/Sep/2024
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	14/Dec/2022	13/Dec/2023
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	14/Dec/2022	13/Dec/2023
SENSE-15247_DTS	Sporton	V5.11.10	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	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz~1GHz 3m	29/Jul/2023	28/Jul/2024
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
EMI Test Receiver	R&S	ESR	102052	9kHz~3.6GHz	26/May/2023	25/May/2024
Signal Analyzer	R&S	FSP 40	100305	9kHz~40GHz	25/Mar/2023	24/Mar/2024
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	23/Mar/2023	22/Mar/2024
Bilog Antenna & 6dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723/2	30MHz~1GHz	27/Aug/2023	26/Aug/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	BBHA 9170154	15GHz~40GHz	25/Mar/2023	24/Mar/2024
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	9kHz~30MHz	20/Dec/2022	19/Dec/2023
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	30MHz~1GHz	20/Dec/2022	19/Dec/2023
RF Cable-R03m	HUBER+SUHNE R	SUCOFLEX104	03CH02-cable-01	1GHz~40GHz	10/Feb/2023	09/Feb/2024
Amplifier	Aglient	8447D	2944A11149	100kHz~1.3GHz	27/Jun/2023	26/Jun/2024
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	24/Oct/2023	23/Oct/2024
SENSE-15.247_DTS	Sporton	V5.11.13	NA	NA	NA	NA

Instrument for Radiated Test (Co-location)

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	100305	9kHz~40GHz	25/Mar/2023	24/Mar/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2023	22/Sep/2024
RF Cable-R03m	HUBER+SUHNE R	SUCOFLEX104	03CH02-cable-01	1GHz~40GHz	10/Feb/2023	09/Feb/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz~40GHz	25/Mar/2023	24/Mar/2024
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	24/Oct/2023	23/Oct/2024
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~40GHz	16/Mar/2023	15/Mar/2024
SENSE-EMI	Sporton	V5.11.6	N/A	N/A	N/A	N/A

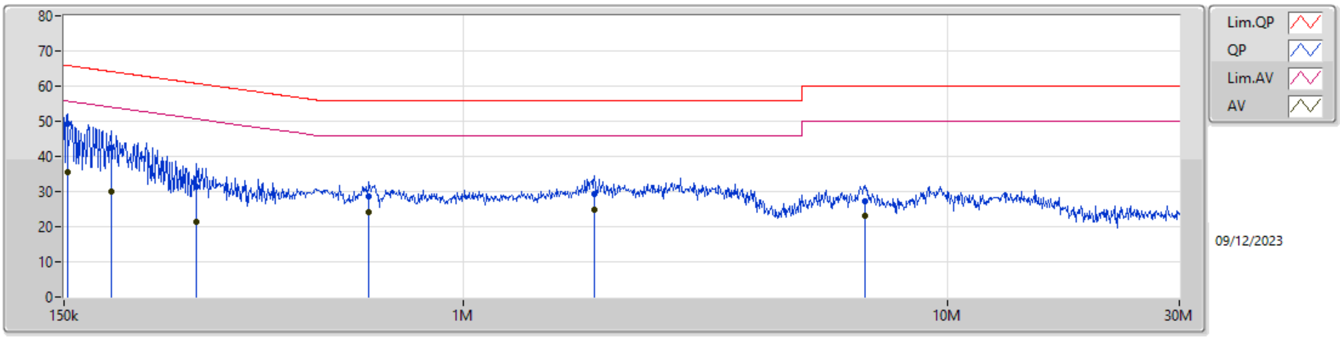
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	152.414k	49.34	65.87	-16.53	Line

Result

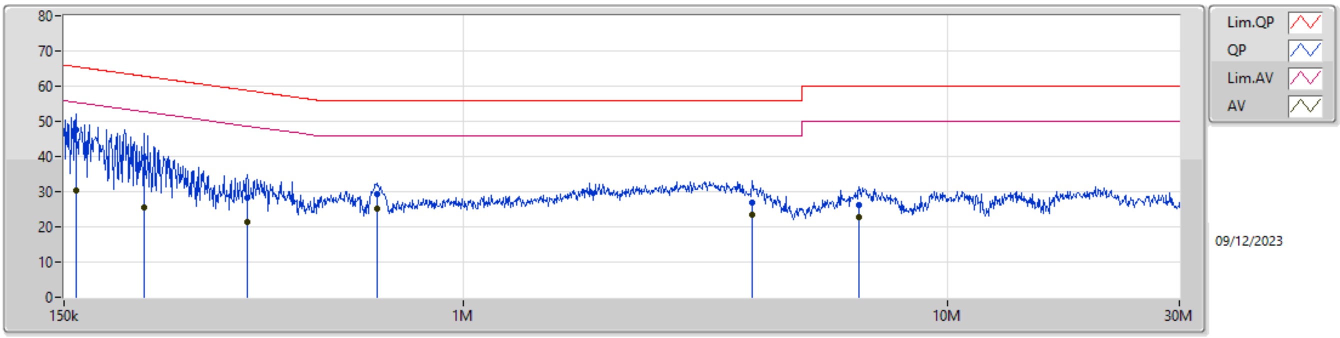
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	152.414k	49.34	65.87	-16.53	Line
Mode 1	Pass	AV	152.414k	35.39	55.87	-20.48	Line
Mode 1	Pass	QP	187.577k	42.42	64.15	-21.73	Line
Mode 1	Pass	AV	187.577k	29.94	54.15	-24.21	Line
Mode 1	Pass	QP	280.727k	31.35	60.80	-29.45	Line
Mode 1	Pass	AV	280.727k	21.32	50.80	-29.48	Line
Mode 1	Pass	QP	638.894k	28.59	56.00	-27.41	Line
Mode 1	Pass	AV	638.894k	24.31	46.00	-21.69	Line
Mode 1	Pass	QP	1.862M	29.34	56.00	-26.66	Line
Mode 1	Pass	AV	1.862M	24.86	46.00	-21.14	Line
Mode 1	Pass	QP	6.735M	27.21	60.00	-32.79	Line
Mode 1	Pass	AV	6.735M	22.97	50.00	-27.03	Line
Mode 1	Pass	QP	158.622k	47.73	65.54	-17.81	Neutral
Mode 1	Pass	AV	158.622k	30.32	55.54	-25.22	Neutral
Mode 1	Pass	QP	220.053k	39.57	62.81	-23.24	Neutral
Mode 1	Pass	AV	220.053k	25.49	52.81	-27.32	Neutral
Mode 1	Pass	QP	358.13k	28.44	58.77	-30.33	Neutral
Mode 1	Pass	AV	358.13k	21.50	48.77	-27.27	Neutral
Mode 1	Pass	QP	664.915k	29.23	56.00	-26.77	Neutral
Mode 1	Pass	AV	664.915k	25.22	46.00	-20.78	Neutral
Mode 1	Pass	QP	3.945M	26.95	56.00	-29.05	Neutral
Mode 1	Pass	AV	3.945M	23.52	46.00	-22.48	Neutral
Mode 1	Pass	QP	6.549M	26.22	60.00	-33.78	Neutral
Mode 1	Pass	AV	6.549M	22.70	50.00	-27.30	Neutral

Conducted Emissions at Powerline_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	152.414k	49.34	65.87	-16.53	19.37	Line	-	29.97	9.59	0.03	9.75
AV	152.414k	35.39	55.87	-20.48	19.37	Line	-	16.02	9.59	0.03	9.75
QP	187.577k	42.42	64.15	-21.73	19.32	Line	-	23.10	9.59	0.03	9.70
AV	187.577k	29.94	54.15	-24.21	19.32	Line	-	10.62	9.59	0.03	9.70
QP	280.727k	31.35	60.80	-29.45	19.34	Line	-	12.01	9.59	0.03	9.72
AV	280.727k	21.32	50.80	-29.48	19.34	Line	-	1.98	9.59	0.03	9.72
QP	638.894k	28.59	56.00	-27.41	19.44	Line	-	9.15	9.61	0.05	9.78
AV	638.894k	24.31	46.00	-21.69	19.44	Line	-	4.87	9.61	0.05	9.78
QP	1.862M	29.34	56.00	-26.66	19.52	Line	-	9.82	9.64	0.08	9.80
AV	1.862M	24.86	46.00	-21.14	19.52	Line	-	5.34	9.64	0.08	9.80
QP	6.735M	27.21	60.00	-32.79	19.65	Line	-	7.56	9.70	0.16	9.79
AV	6.735M	22.97	50.00	-27.03	19.65	Line	-	3.32	9.70	0.16	9.79

Conducted Emissions at Powerline_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	158.622k	47.73	65.54	-17.81	19.37	Neutral	-	28.36	9.60	0.03	9.74
AV	158.622k	30.32	55.54	-25.22	19.37	Neutral	-	10.95	9.60	0.03	9.74
QP	220.053k	39.57	62.81	-23.24	19.32	Neutral	-	20.25	9.60	0.03	9.69
AV	220.053k	25.49	52.81	-27.32	19.32	Neutral	-	6.17	9.60	0.03	9.69
QP	358.13k	28.44	58.77	-30.33	19.39	Neutral	-	9.05	9.60	0.04	9.75
AV	358.13k	21.50	48.77	-27.27	19.39	Neutral	-	2.11	9.60	0.04	9.75
QP	664.915k	29.23	56.00	-26.77	19.44	Neutral	-	9.79	9.61	0.05	9.78
AV	664.915k	25.22	46.00	-20.78	19.44	Neutral	-	5.78	9.61	0.05	9.78
QP	3.945M	26.95	56.00	-29.05	19.56	Neutral	-	7.39	9.64	0.13	9.79
AV	3.945M	23.52	46.00	-22.48	19.56	Neutral	-	3.96	9.64	0.13	9.79
QP	6.549M	26.22	60.00	-33.78	19.62	Neutral	-	6.60	9.67	0.16	9.79
AV	6.549M	22.70	50.00	-27.30	19.62	Neutral	-	3.08	9.67	0.16	9.79

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.831M	2.261M	2M26G1D	1.588M	2.218M

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)
Zigbee	-	-	-	-
2405MHz	Pass	500k	1.631M	2.261M
2440MHz	Pass	500k	1.663M	2.243M
2475MHz	Pass	500k	1.588M	2.218M
2480MHz	Pass	500k	1.831M	2.255M

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

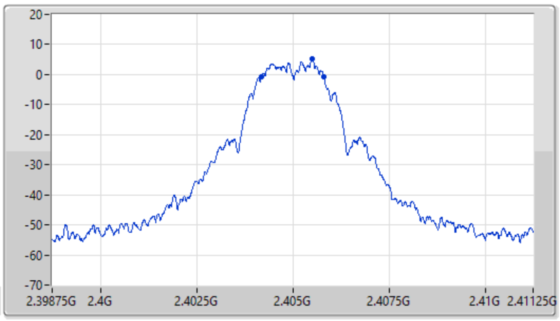
2.4-2.4835GHz_Zigbee **EBW**

2405MHz

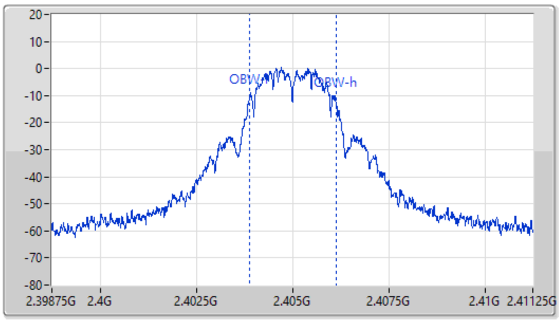
27/10/2023

CF (Hz)	Span (Hz)	RBW (Hz)	VBW (Hz)	Sweep Time (s)	Detector Type
2.405G	12.5M	100k	300k	38u	Peak

Port 1



CF (Hz)	Span (Hz)	RBW (Hz)	VBW (Hz)	Sweep Time (s)	Detector Type
2.405G	12.5M	30k	100k	126.5u	Peak



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.631M	2.404181G	2.405813G	2.261M	2.403876G	2.406137G	500k	1

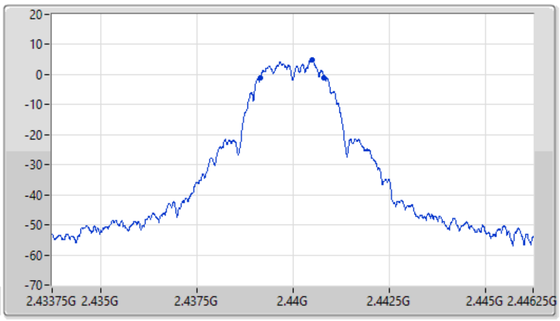
2.4-2.4835GHz_Zigbee **EBW**

2440MHz

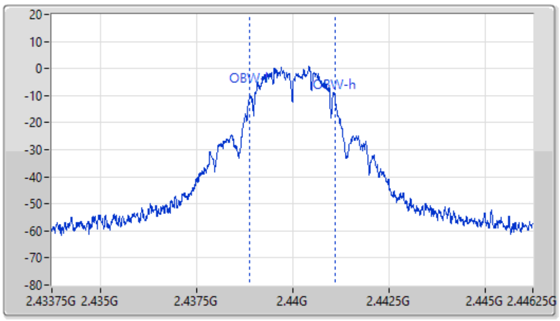
27/10/2023

CF (Hz)	Span (Hz)	RBW (Hz)	VBW (Hz)	Sweep Time (s)	Detector Type
2.44G	12.5M	100k	300k	38u	Peak

Port 1



CF (Hz)	Span (Hz)	RBW (Hz)	VBW (Hz)	Sweep Time (s)	Detector Type
2.44G	12.5M	30k	100k	126.5u	Peak

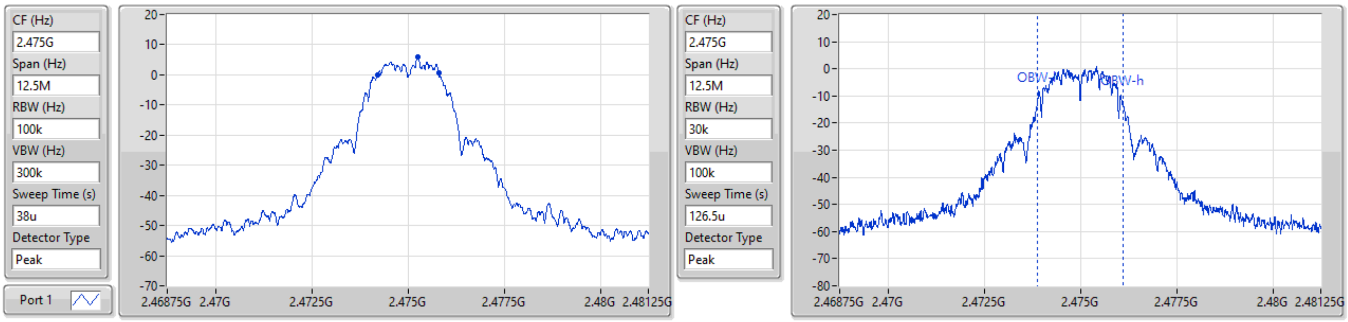


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.663M	2.439156G	2.440819G	2.243M	2.438876G	2.441118G	500k	1

2.4-2.4835GHz_Zigbee **EBW**

2475MHz

27/10/2023

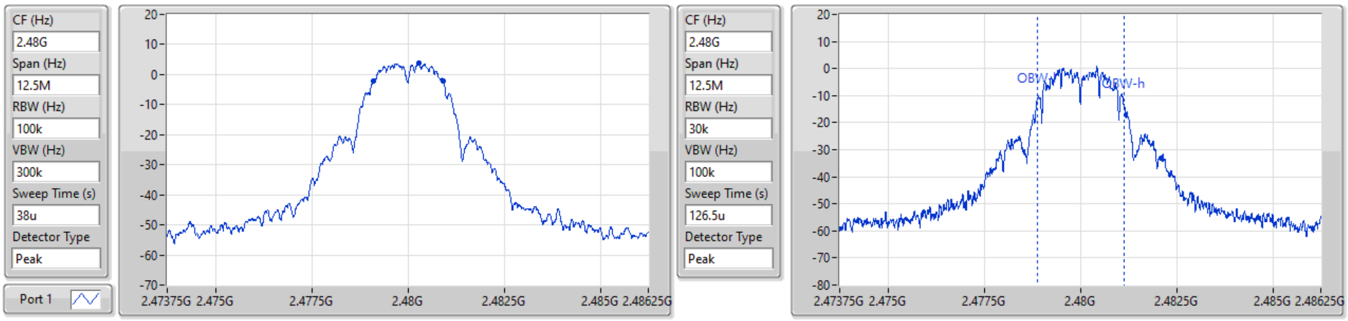


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.588M	2.474213G	2.4758G	2.218M	2.473888G	2.476106G	500k	1

2.4-2.4835GHz_Zigbee **EBW**

2480MHz

27/10/2023



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.831M	2.479094G	2.480925G	2.255M	2.478882G	2.481137G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	9.99	0.00998

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	4.50	9.94	9.94	30.00
2440MHz	Pass	4.50	9.96	9.96	30.00
2475MHz	Pass	4.50	9.97	9.97	30.00
2480MHz	Pass	4.50	9.99	9.99	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Zigbee	-6.06

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	4.50	-6.06	-6.06	8.00
2440MHz	Pass	4.50	-7.65	-7.65	8.00
2475MHz	Pass	4.50	-7.97	-7.97	8.00
2480MHz	Pass	4.50	-6.89	-6.89	8.00

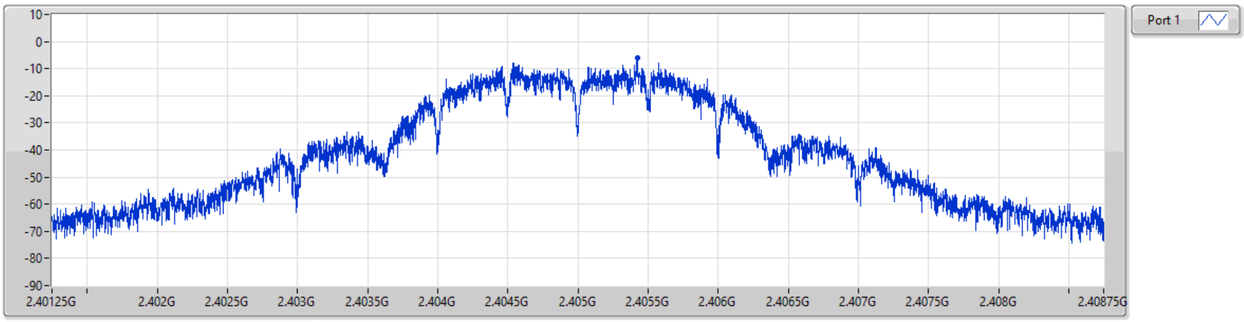
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

2.4-2.4835GHz_Zigbee **PSD**

2405MHz

27/10/2023

CF (Hz)	2.405G
Span (Hz)	7.5M
RBW (Hz)	3k
VBW (Hz)	10k
Sweep Time (s)	1.264m
Detector Type	Peak



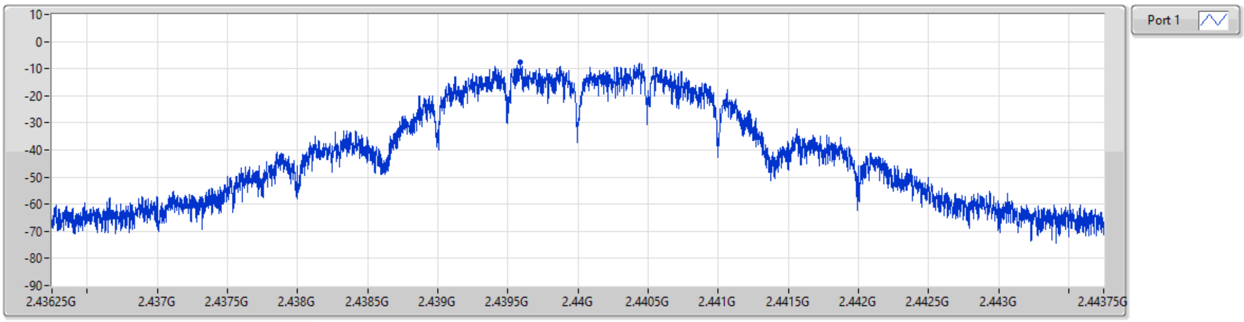
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.06	-6.06	-6.06

2.4-2.4835GHz_Zigbee **PSD**

2440MHz

27/10/2023

CF (Hz)	2.44G
Span (Hz)	7.5M
RBW (Hz)	3k
VBW (Hz)	10k
Sweep Time (s)	1.264m
Detector Type	Peak

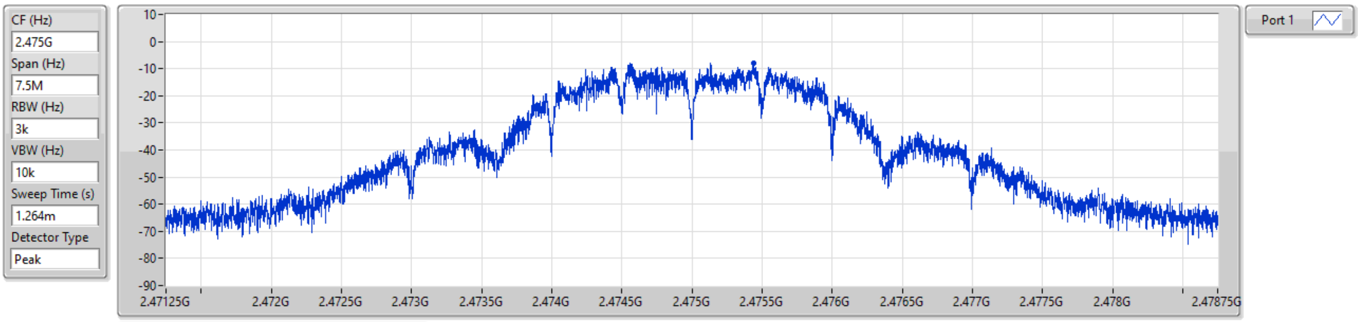


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.65	-7.65	-7.65

2.4-2.4835GHz_Zigbee PSD

2475MHz

27/10/2023

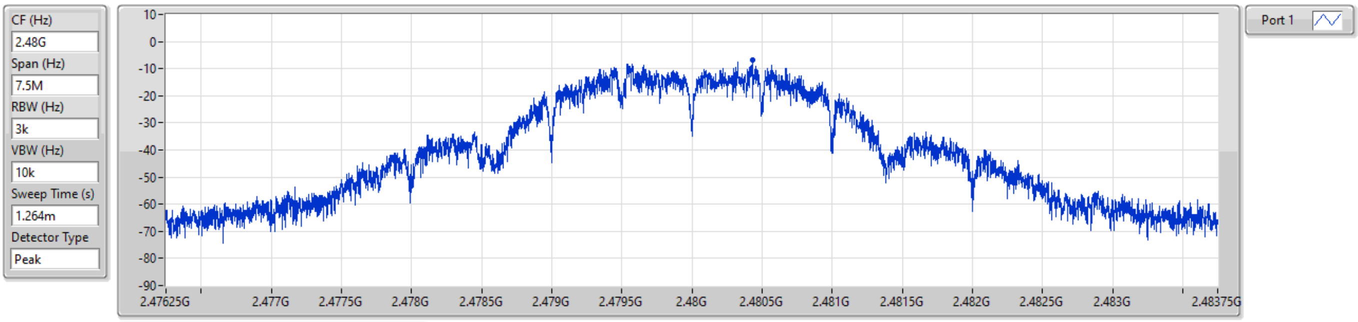


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.97	-7.97	-7.97

2.4-2.4835GHz_Zigbee PSD

2480MHz

27/10/2023



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.89	-6.89	-6.89

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	2.48033G	6.15	-23.85	2.12973G	-53.99	2.39976G	-47.47	2.4G	-48.45	2.50238G	-52.92	16.36416G	-42.18	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
Zigbee	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.48033G	6.15	-23.85	2.12973G	-53.99	2.39976G	-47.47	2.4G	-48.45	2.50238G	-52.92	16.36416G	-42.18	1
2440MHz	Pass	2.48033G	6.15	-23.85	2.11445G	-53.81	2.39824G	-53.32	2.4G	-54.82	2.50282G	-52.18	24.88189G	-41.87	1
2475MHz	Pass	2.48033G	6.15	-23.85	2.30128G	-53.11	2.3986G	-51.82	2.4G	-55.81	2.5027G	-52.60	23.23965G	-40.51	1
2480MHz	Pass	2.48033G	6.15	-23.85	2.14148G	-54.43	2.3986G	-53.01	2.4G	-54.66	2.5005G	-52.35	15.08467G	-41.60	1

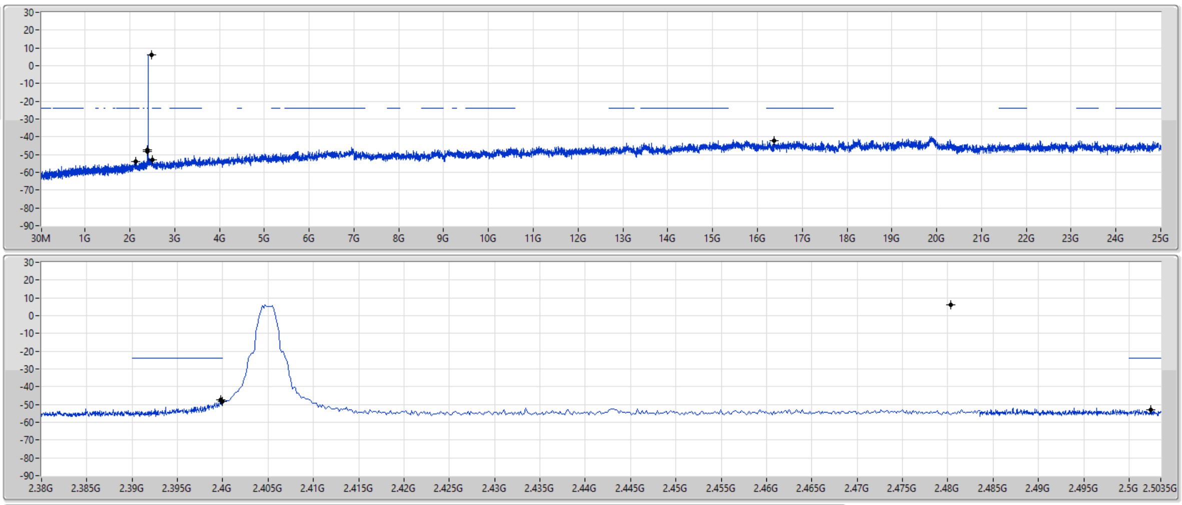
2.4-2.4835GHz_Zigbee **CSENdB**

2405MHz

27/10/2023

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
2.48033G	6.15	-23.85	2.12973G	-53.99	2.39976G	-47.47	2.4G	-48.45	2.50238G	-52.92	16.36416G	-42.18	1

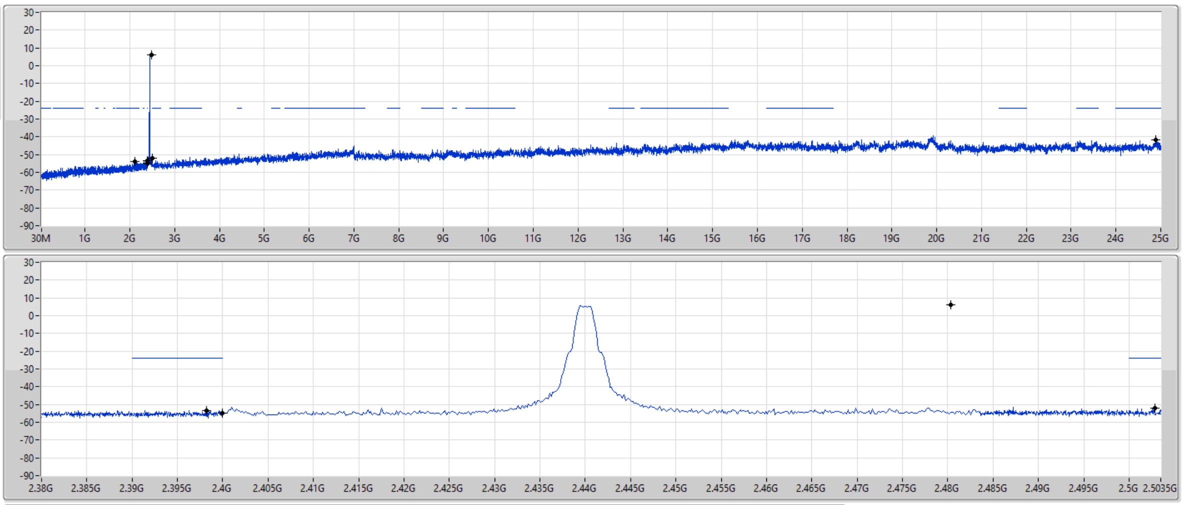
2.4-2.4835GHz_Zigbee **CSENdB**

2440MHz

27/10/2023

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

Port 1

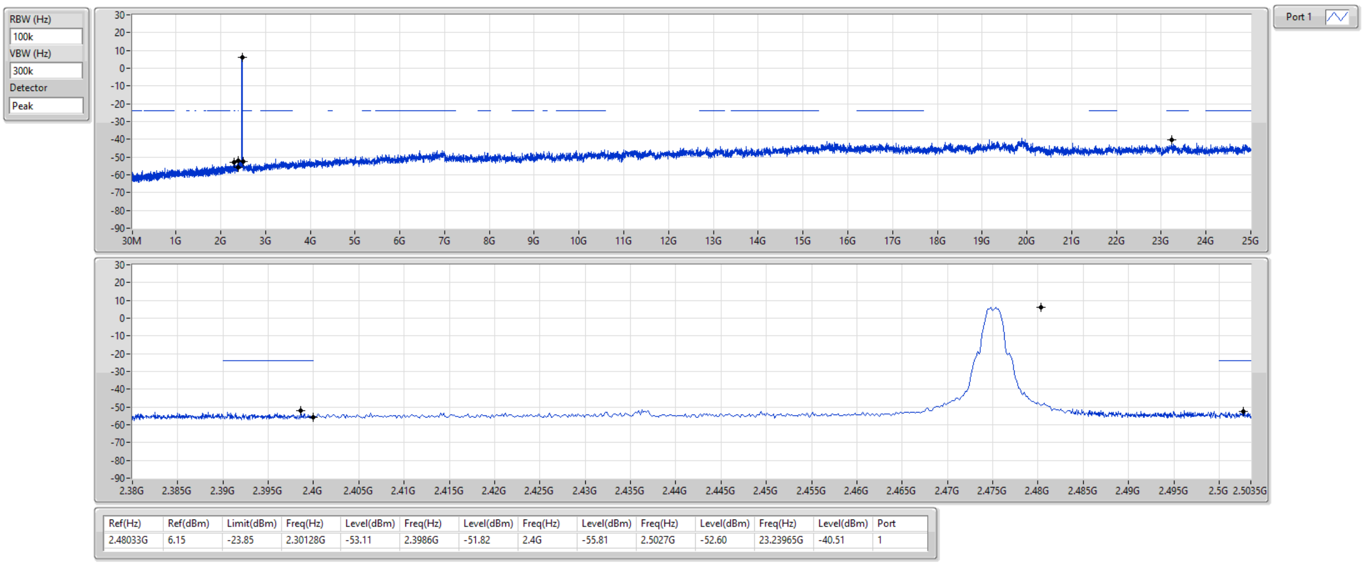


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48033G	6.15	-23.85	2.11445G	-53.81	2.39824G	-53.32	2.4G	-54.82	2.50282G	-52.18	24.88189G	-41.87	1

2.4-2.4835GHz_Zigbee **CSENdB**

2475MHz

27/10/2023

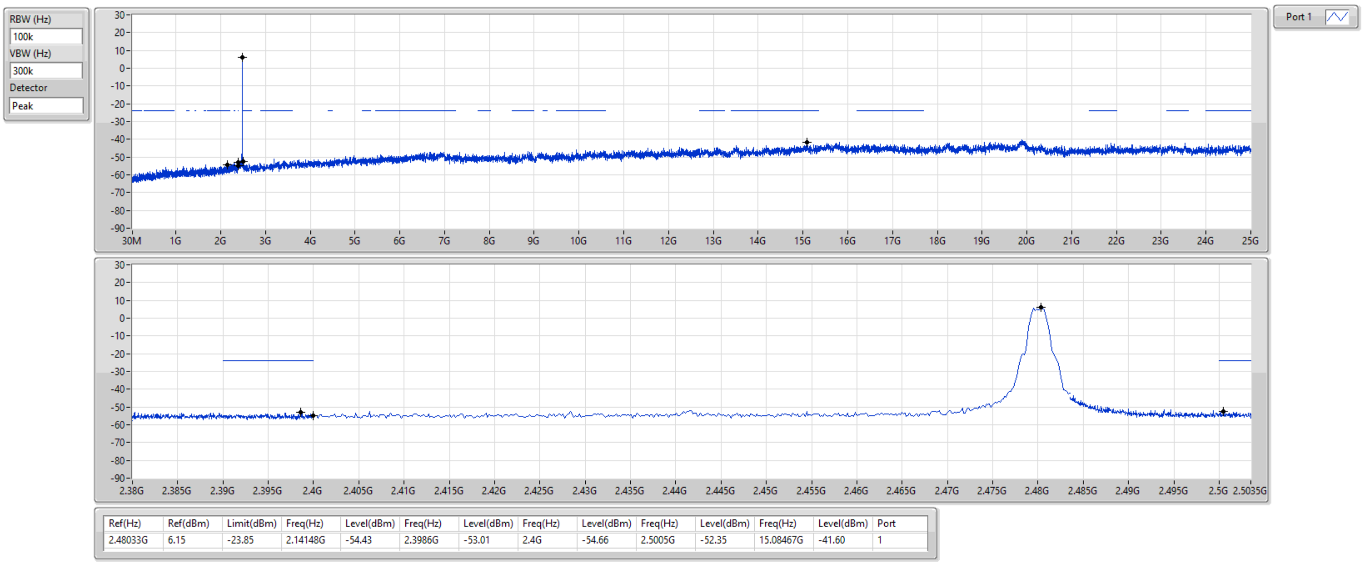


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48033G	6.15	-23.85	2.30128G	-53.11	2.3986G	-51.82	2.4G	-55.81	2.5027G	-52.60	23.23965G	-40.51	1

2.4-2.4835GHz_Zigbee **CSENdB**

2480MHz

27/10/2023



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
2.48033G	6.15	-23.85	2.14148G	-54.43	2.3986G	-53.01	2.4G	-54.66	2.5005G	-52.35	15.08467G	-41.60	1

Summary

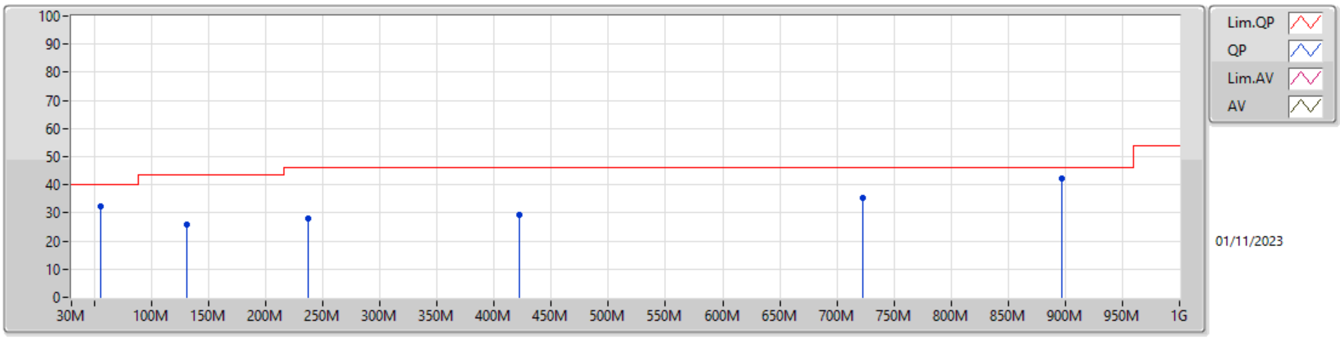
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	PK	897.18M	42.09	46.00	-3.91	3	Vertical	360	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Zigbee	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	PK	55.22M	32.49	40.00	-7.51	3	Vertical	360	1.00
2405MHz	Pass	PK	130.88M	25.68	43.50	-17.82	3	Vertical	360	1.00
2405MHz	Pass	PK	237.58M	28.14	46.00	-17.86	3	Vertical	360	1.00
2405MHz	Pass	PK	421.88M	29.16	46.00	-16.84	3	Vertical	360	1.00
2405MHz	Pass	PK	722.58M	35.22	46.00	-10.78	3	Vertical	360	1.00
2405MHz	Pass	PK	897.18M	42.09	46.00	-3.91	3	Vertical	360	1.00
2405MHz	Pass	PK	41.64M	29.95	40.00	-10.05	3	Horizontal	0	1.00
2405MHz	Pass	PK	150.28M	29.95	43.50	-13.55	3	Horizontal	0	1.00
2405MHz	Pass	PK	220.12M	28.49	46.00	-17.51	3	Horizontal	0	1.00
2405MHz	Pass	PK	464.56M	29.09	46.00	-16.91	3	Horizontal	0	1.00
2405MHz	Pass	PK	718.7M	36.83	46.00	-9.17	3	Horizontal	0	1.00
2405MHz	Pass	PK	901.06M	34.60	46.00	-11.40	3	Horizontal	0	1.00

2.4-2.4835GHz_Zigbee

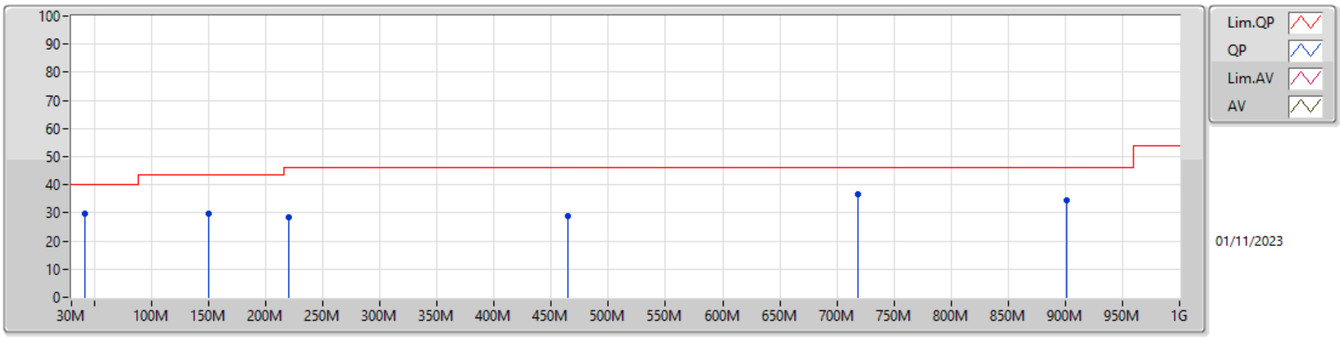
2405MHz_TX



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)
PK	55.22M	32.49	40.00	-7.51	-13.67	3	Vertical	360	1.00	46.16	12.05	1.45	27.17
PK	130.88M	25.68	43.50	-17.82	-8.51	3	Vertical	360	1.00	34.19	17.05	2.23	27.79
PK	237.58M	28.14	46.00	-17.86	-8.10	3	Vertical	360	1.00	36.24	16.20	2.98	27.28
PK	421.88M	29.16	46.00	-16.84	-2.20	3	Vertical	360	1.00	31.36	21.83	4.07	28.10
PK	722.58M	35.22	46.00	-10.78	1.31	3	Vertical	360	1.00	33.91	24.24	5.43	28.36
PK	897.18M	42.09	46.00	-3.91	3.77	3	Vertical	360	1.00	38.32	25.49	6.16	27.88

2.4-2.4835GHz_Zigbee

2405MHz_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)
PK	41.64M	29.95	40.00	-10.05	-7.89	3	Horizontal	0	1.00	37.84	17.36	1.43	26.68
PK	150.28M	29.95	43.50	-13.55	-9.72	3	Horizontal	0	1.00	39.67	15.61	2.40	27.73
PK	220.12M	28.49	46.00	-17.51	-10.13	3	Horizontal	0	1.00	38.62	14.35	2.90	27.38
PK	464.56M	29.09	46.00	-16.91	-1.72	3	Horizontal	0	1.00	30.81	22.31	4.32	28.35
PK	718.7M	36.83	46.00	-9.17	1.16	3	Horizontal	0	1.00	35.67	24.11	5.42	28.37
PK	901.06M	34.60	46.00	-11.40	3.84	3	Horizontal	0	1.00	30.76	25.52	6.19	27.87

Summary

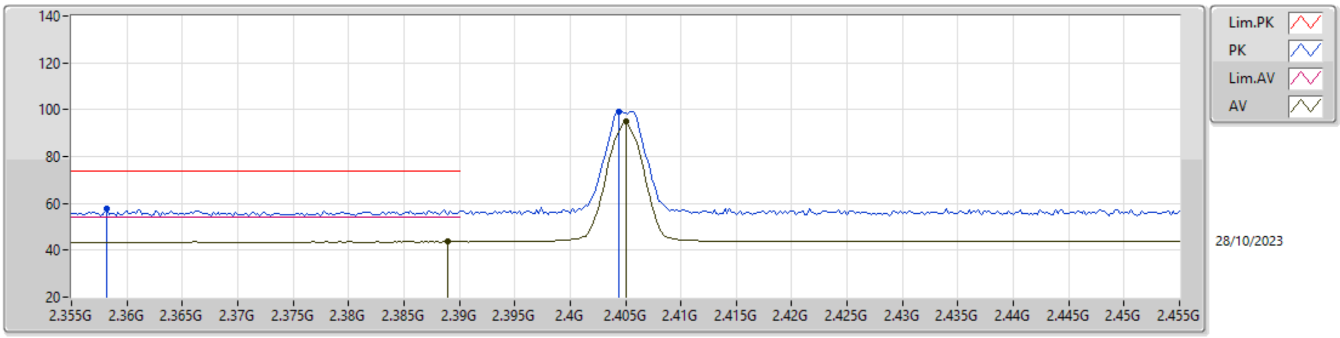
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	AV	2.4835G	53.29	54.00	-0.71	3	Horizontal	74	2.26

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Zigbee	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	AV	2.389G	43.72	54.00	-10.28	3	Vertical	349	1.12
2405MHz	Pass	AV	2.405G	94.96	Inf	-Inf	3	Vertical	349	1.12
2405MHz	Pass	PK	2.3582G	57.59	74.00	-16.41	3	Vertical	349	1.12
2405MHz	Pass	PK	2.4044G	99.17	Inf	-Inf	3	Vertical	349	1.12
2405MHz	Pass	AV	2.3662G	44.93	54.00	-9.07	3	Horizontal	66	2.17
2405MHz	Pass	AV	2.405G	105.50	Inf	-Inf	3	Horizontal	66	2.17
2405MHz	Pass	PK	2.3862G	58.16	74.00	-15.84	3	Horizontal	66	2.17
2405MHz	Pass	PK	2.4044G	109.68	Inf	-Inf	3	Horizontal	66	2.17
2405MHz	Pass	AV	4.81143G	26.81	54.00	-27.19	3	Vertical	167	1.50
2405MHz	Pass	PK	4.80996G	40.75	74.00	-33.25	3	Vertical	167	1.50
2405MHz	Pass	AV	4.81133G	27.07	54.00	-26.93	3	Horizontal	208	1.40
2405MHz	Pass	PK	4.80893G	41.56	74.00	-32.44	3	Horizontal	208	1.40
2440MHz	Pass	AV	2.3868G	43.67	54.00	-10.33	3	Vertical	30	2.58
2440MHz	Pass	AV	2.44G	97.22	Inf	-Inf	3	Vertical	30	2.58
2440MHz	Pass	AV	2.4896G	44.12	54.00	-9.88	3	Vertical	30	2.58
2440MHz	Pass	PK	2.3636G	57.35	74.00	-16.65	3	Vertical	30	2.58
2440MHz	Pass	PK	2.4396G	101.40	Inf	-Inf	3	Vertical	30	2.58
2440MHz	Pass	PK	2.4968G	58.87	74.00	-15.13	3	Vertical	30	2.58
2440MHz	Pass	AV	2.3896G	43.69	54.00	-10.31	3	Horizontal	63	2.34
2440MHz	Pass	AV	2.44G	105.42	Inf	-Inf	3	Horizontal	63	2.34
2440MHz	Pass	AV	2.4984G	44.21	54.00	-9.79	3	Horizontal	63	2.34
2440MHz	Pass	PK	2.3812G	57.27	74.00	-16.73	3	Horizontal	63	2.34
2440MHz	Pass	PK	2.4396G	109.62	Inf	-Inf	3	Horizontal	63	2.34
2440MHz	Pass	PK	2.5G	58.13	74.00	-15.87	3	Horizontal	63	2.34
2440MHz	Pass	AV	4.879G	27.39	54.00	-26.61	3	Vertical	13	3.00
2440MHz	Pass	PK	4.88021G	42.13	74.00	-31.87	3	Vertical	13	3.00
2440MHz	Pass	AV	4.88115G	27.42	54.00	-26.58	3	Horizontal	308	1.50
2440MHz	Pass	PK	4.88118G	41.63	74.00	-32.37	3	Horizontal	308	1.50
2475MHz	Pass	AV	2.475G	91.58	Inf	-Inf	3	Vertical	314	1.09
2475MHz	Pass	AV	2.489G	44.22	54.00	-9.78	3	Vertical	314	1.09
2475MHz	Pass	PK	2.4744G	95.79	Inf	-Inf	3	Vertical	314	1.09
2475MHz	Pass	PK	2.4908G	58.29	74.00	-15.71	3	Vertical	314	1.09
2475MHz	Pass	AV	2.475G	105.41	Inf	-Inf	3	Horizontal	64	2.07
2475MHz	Pass	AV	2.4835G	45.38	54.00	-8.62	3	Horizontal	64	2.07
2475MHz	Pass	PK	2.4744G	109.60	Inf	-Inf	3	Horizontal	64	2.07
2475MHz	Pass	PK	2.4838G	60.09	74.00	-13.91	3	Horizontal	64	2.07
2475MHz	Pass	AV	4.9509G	27.79	54.00	-26.21	3	Vertical	61	1.45
2475MHz	Pass	PK	4.94774G	42.30	74.00	-31.70	3	Vertical	61	1.45
2475MHz	Pass	AV	4.94884G	28.23	54.00	-25.77	3	Horizontal	100	1.50
2475MHz	Pass	PK	4.94876G	42.37	74.00	-31.63	3	Horizontal	100	1.50
2480MHz	Pass	AV	2.48G	96.82	Inf	-Inf	3	Vertical	34	2.52
2480MHz	Pass	AV	2.4835G	46.98	54.00	-7.02	3	Vertical	34	2.52
2480MHz	Pass	PK	2.4795G	101.12	Inf	-Inf	3	Vertical	34	2.52
2480MHz	Pass	PK	2.4835G	58.71	74.00	-15.29	3	Vertical	34	2.52
2480MHz	Pass	AV	2.48G	105.16	Inf	-Inf	3	Horizontal	74	2.26
2480MHz	Pass	AV	2.4835G	53.29	54.00	-0.71	3	Horizontal	74	2.26
2480MHz	Pass	PK	2.4795G	109.34	Inf	-Inf	3	Horizontal	74	2.26
2480MHz	Pass	PK	2.4835G	65.67	74.00	-8.33	3	Horizontal	74	2.26
2480MHz	Pass	AV	4.95904G	28.32	54.00	-25.68	3	Vertical	40	1.50
2480MHz	Pass	PK	4.96069G	42.56	74.00	-31.44	3	Vertical	40	1.50
2480MHz	Pass	AV	4.96098G	28.73	54.00	-25.27	3	Horizontal	148	1.60
2480MHz	Pass	PK	4.96082G	43.10	74.00	-30.90	3	Horizontal	148	1.60

2.4-2.4835GHz_Zigbee

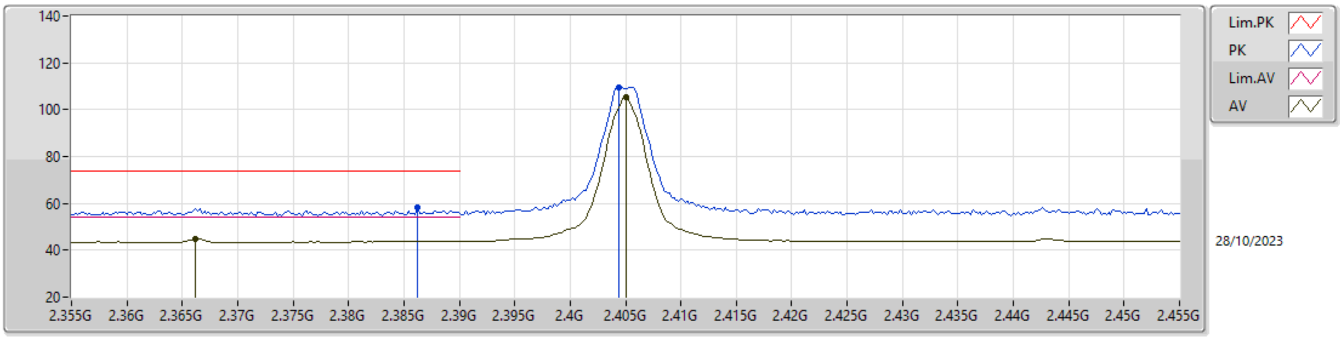
2405MHz_TX



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	2.389G	43.72	54.00	-10.28	31.54	3	Vertical	349	1.12	12.18	27.29	4.25	-
AV	2.405G	94.96	Inf	-Inf	31.66	3	Vertical	349	1.12	63.30	27.40	4.26	-
PK	2.3582G	57.59	74.00	-16.41	31.40	3	Vertical	349	1.12	26.19	27.18	4.22	-
PK	2.4044G	99.17	Inf	-Inf	31.66	3	Vertical	349	1.12	67.51	27.40	4.26	-

2.4-2.4835GHz_Zigbee

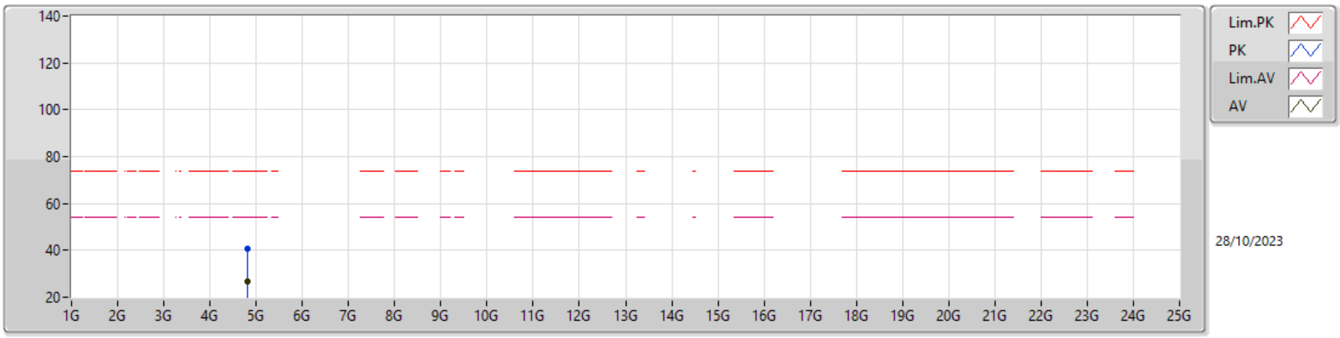
2405MHz_TX



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	2.3662G	44.93	54.00	-9.07	31.37	3	Horizontal	66	2.17	13.56	27.14	4.23	-
AV	2.405G	105.50	Inf	-Inf	31.66	3	Horizontal	66	2.17	73.84	27.40	4.26	-
PK	2.3862G	58.16	74.00	-15.84	31.51	3	Horizontal	66	2.17	26.65	27.26	4.25	-
PK	2.4044G	109.68	Inf	-Inf	31.66	3	Horizontal	66	2.17	78.02	27.40	4.26	-

2.4-2.4835GHz_Zigbee

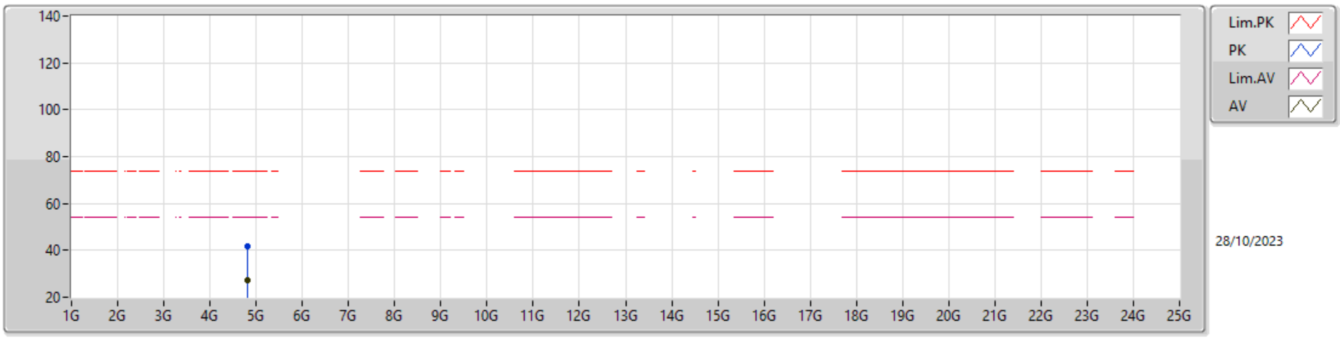
2405MHz_TX



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	4.81143G	26.81	54.00	-27.19	3.59	3	Vertical	167	1.50	23.22	32.25	6.17	34.83
PK	4.80996G	40.75	74.00	-33.25	3.58	3	Vertical	167	1.50	37.17	32.24	6.17	34.83

2.4-2.4835GHz_Zigbee

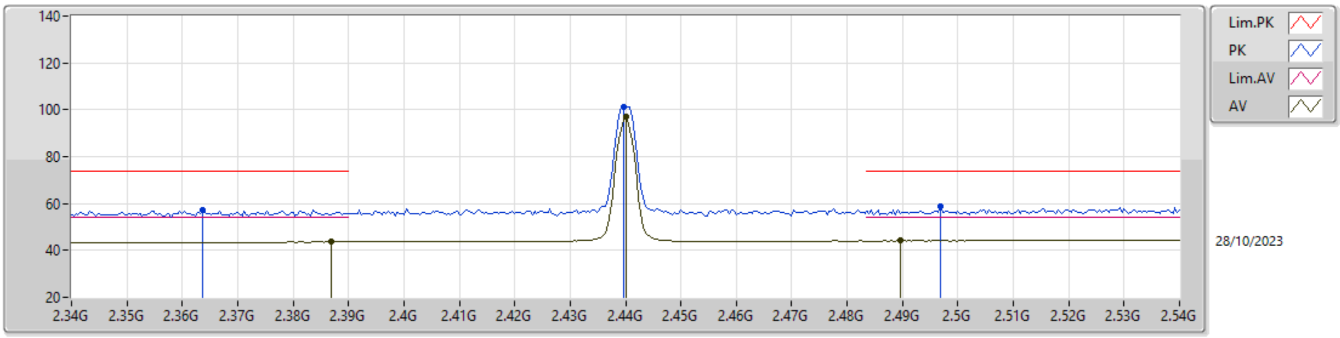
2405MHz_TX



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	4.81133G	27.07	54.00	-26.93	3.59	3	Horizontal	208	1.40	23.48	32.25	6.17	34.83
PK	4.80893G	41.56	74.00	-32.44	3.58	3	Horizontal	208	1.40	37.98	32.24	6.17	34.83

2.4-2.4835GHz_Zigbee

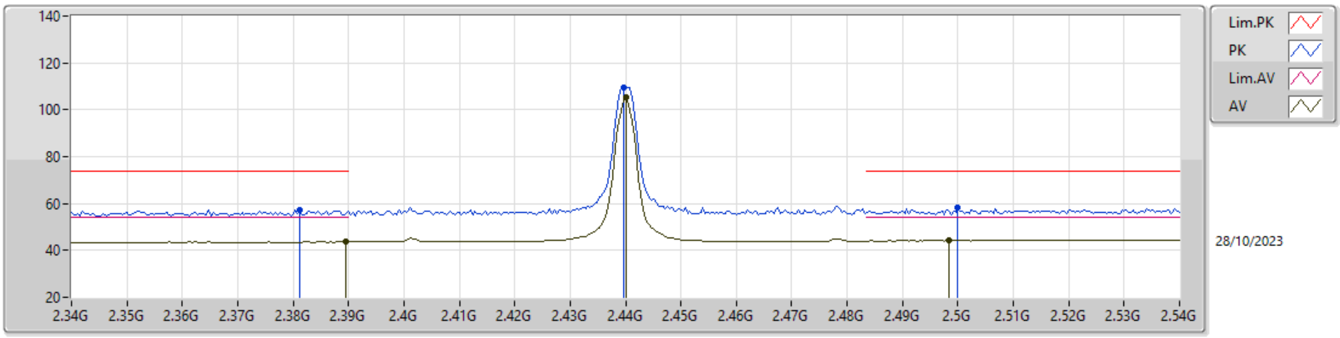
2440MHz_TX



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	2.3868G	43.67	54.00	-10.33	31.52	3	Vertical	30	2.58	12.15	27.27	4.25	-
AV	2.44G	97.22	Inf	-Inf	31.68	3	Vertical	30	2.58	65.54	27.40	4.28	-
AV	2.4896G	44.12	54.00	-9.88	31.91	3	Vertical	30	2.58	12.21	27.60	4.31	-
PK	2.3636G	57.35	74.00	-16.65	31.39	3	Vertical	30	2.58	25.96	27.16	4.23	-
PK	2.4396G	101.40	Inf	-Inf	31.68	3	Vertical	30	2.58	69.72	27.40	4.28	-
PK	2.4968G	58.87	74.00	-15.13	31.92	3	Vertical	30	2.58	26.95	27.60	4.32	-

2.4-2.4835GHz_Zigbee

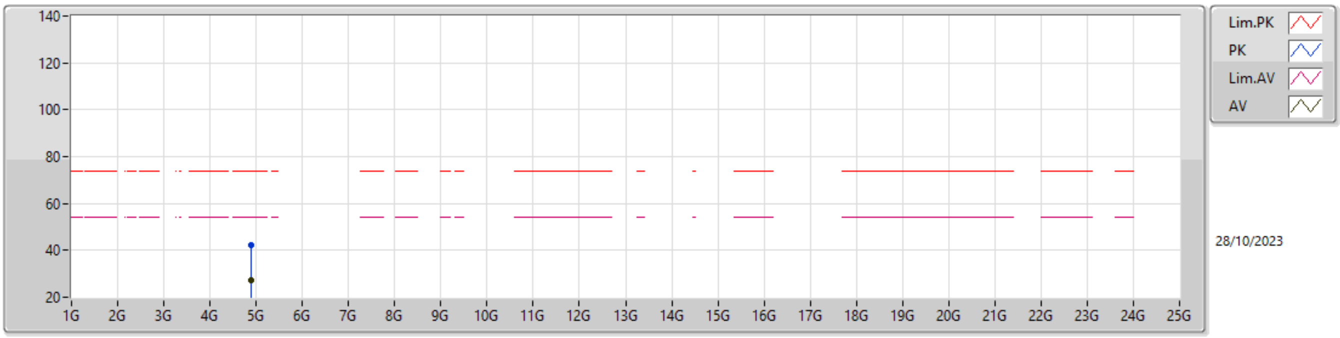
2440MHz_TX



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	2.3896G	43.69	54.00	-10.31	31.55	3	Horizontal	63	2.34	12.14	27.30	4.25	-
AV	2.44G	105.42	Inf	-Inf	31.68	3	Horizontal	63	2.34	73.74	27.40	4.28	-
AV	2.4984G	44.21	54.00	-9.79	31.92	3	Horizontal	63	2.34	12.29	27.60	4.32	-
PK	2.3812G	57.27	74.00	-16.73	31.45	3	Horizontal	63	2.34	25.82	27.21	4.24	-
PK	2.4396G	109.62	Inf	-Inf	31.68	3	Horizontal	63	2.34	77.94	27.40	4.28	-
PK	2.5G	58.13	74.00	-15.87	31.92	3	Horizontal	63	2.34	26.21	27.60	4.32	-

2.4-2.4835GHz_Zigbee

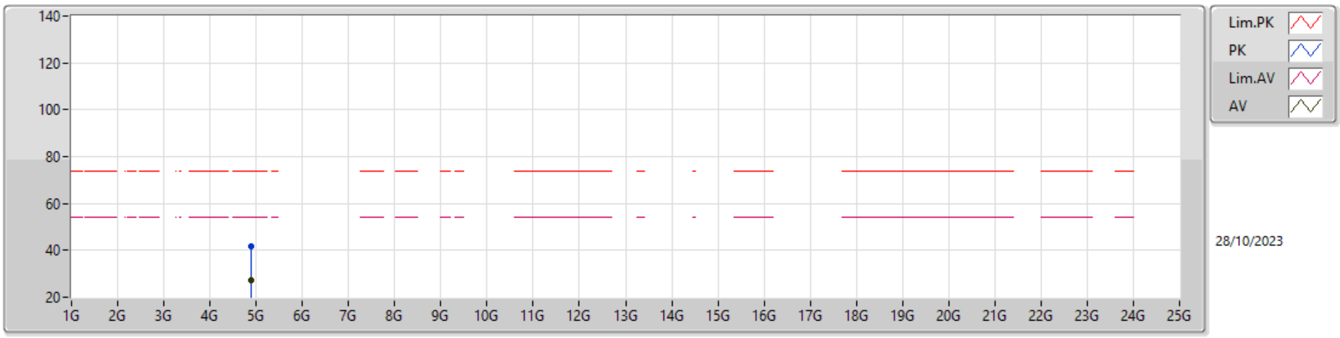
2440MHz_TX



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	4.879G	27.39	54.00	-26.61	3.93	3	Vertical	13	3.00	23.46	32.52	6.22	34.81
PK	4.88021G	42.13	74.00	-31.87	3.93	3	Vertical	13	3.00	38.20	32.52	6.22	34.81

2.4-2.4835GHz_Zigbee

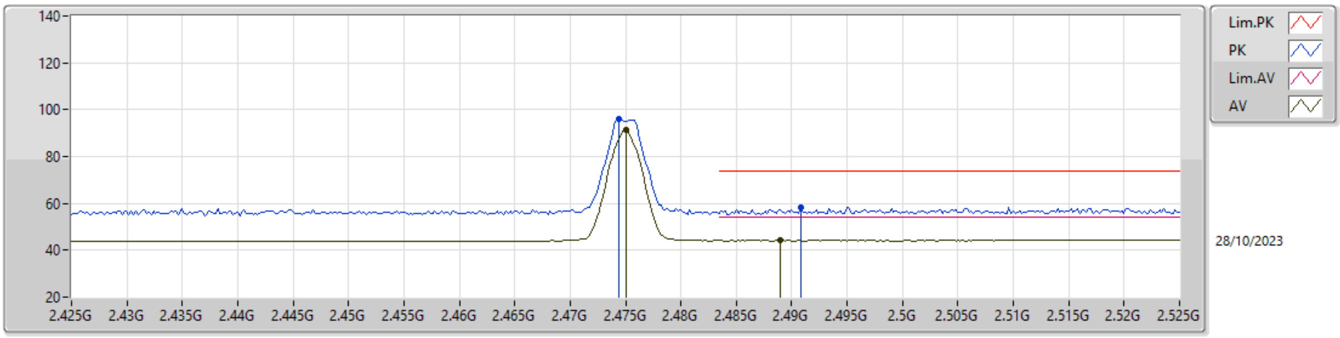
2440MHz_TX



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	4.88115G	27.42	54.00	-26.58	3.93	3	Horizontal	308	1.50	23.49	32.52	6.22	34.81
PK	4.88118G	41.63	74.00	-32.37	3.93	3	Horizontal	308	1.50	37.70	32.52	6.22	34.81

2.4-2.4835GHz_Zigbee

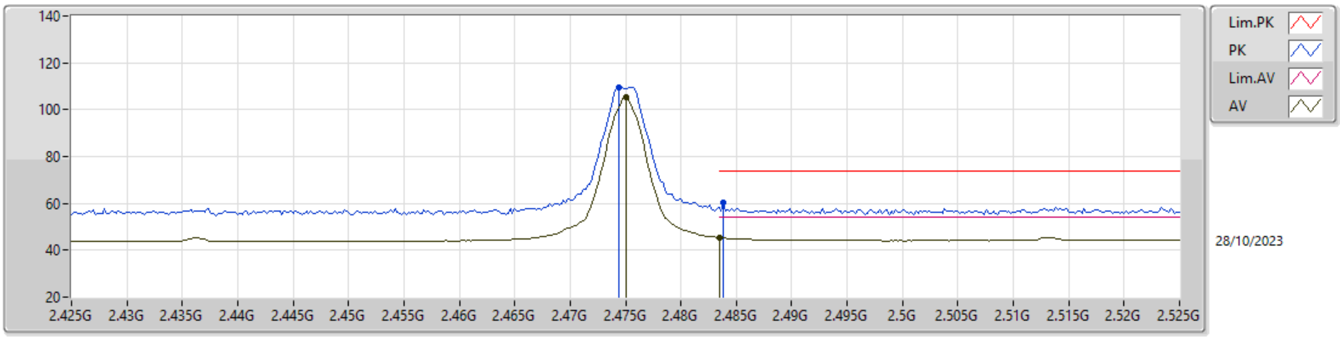
2475MHz_TX



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	91.58	Inf	-Inf	31.75	3	Vertical	314	1.09	59.83	27.45	4.30	-
AV	2.489G	44.22	54.00	-9.78	31.90	3	Vertical	314	1.09	12.32	27.59	4.31	-
PK	2.4744G	95.79	Inf	-Inf	31.74	3	Vertical	314	1.09	64.05	27.44	4.30	-
PK	2.4908G	58.29	74.00	-15.71	31.91	3	Vertical	314	1.09	26.38	27.60	4.31	-

2.4-2.4835GHz_Zigbee

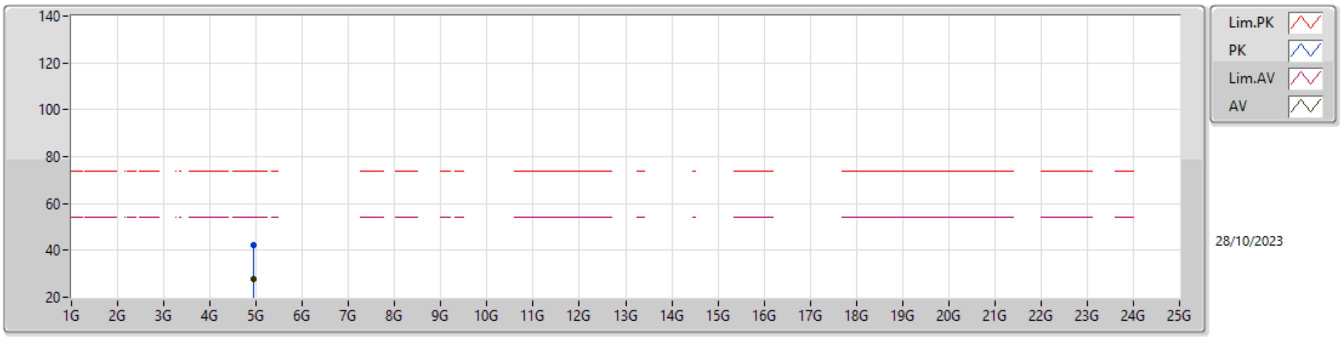
2475MHz_TX



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	105.41	Inf	-Inf	31.75	3	Horizontal	64	2.07	73.66	27.45	4.30	-
AV	2.4835G	45.38	54.00	-8.62	31.85	3	Horizontal	64	2.07	13.53	27.54	4.31	-
PK	2.4744G	109.60	Inf	-Inf	31.74	3	Horizontal	64	2.07	77.86	27.44	4.30	-
PK	2.4838G	60.09	74.00	-13.91	31.85	3	Horizontal	64	2.07	28.24	27.54	4.31	-

2.4-2.4835GHz_Zigbee

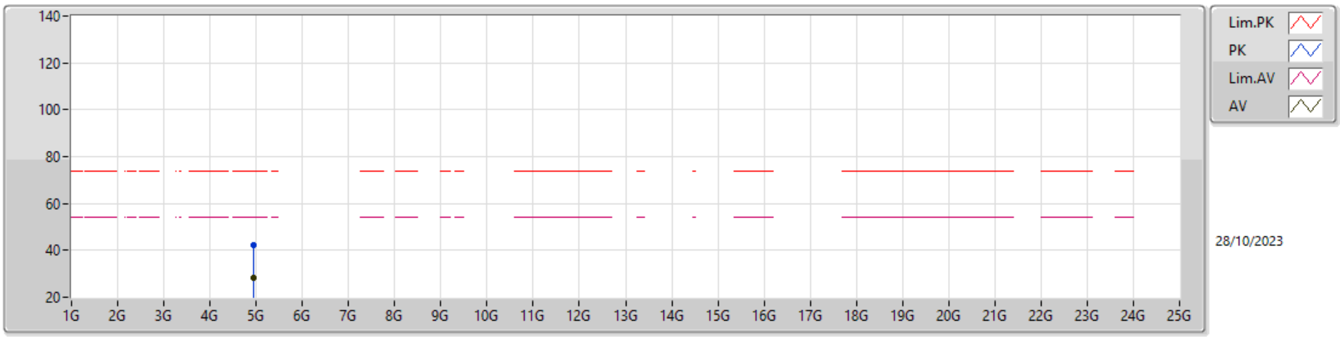
2475MHz_TX



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	4.9509G	27.79	54.00	-26.21	4.39	3	Vertical	61	1.45	23.40	32.90	6.27	34.78
PK	4.94774G	42.30	74.00	-31.70	4.36	3	Vertical	61	1.45	37.94	32.89	6.26	34.79

2.4-2.4835GHz_Zigbee

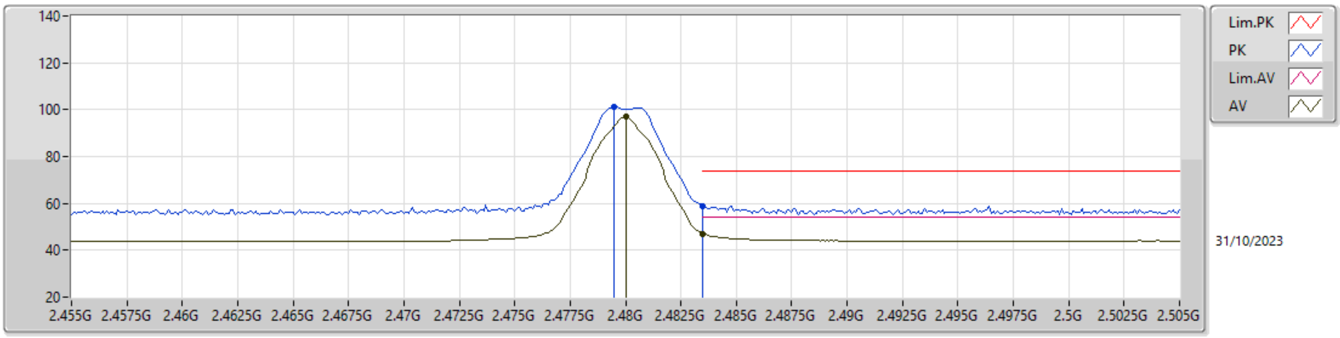
2475MHz_TX



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	4.94884G	28.23	54.00	-25.77	4.36	3	Horizontal	100	1.50	23.87	32.89	6.26	34.79
PK	4.94876G	42.37	74.00	-31.63	4.36	3	Horizontal	100	1.50	38.01	32.89	6.26	34.79

2.4-2.4835GHz_Zigbee

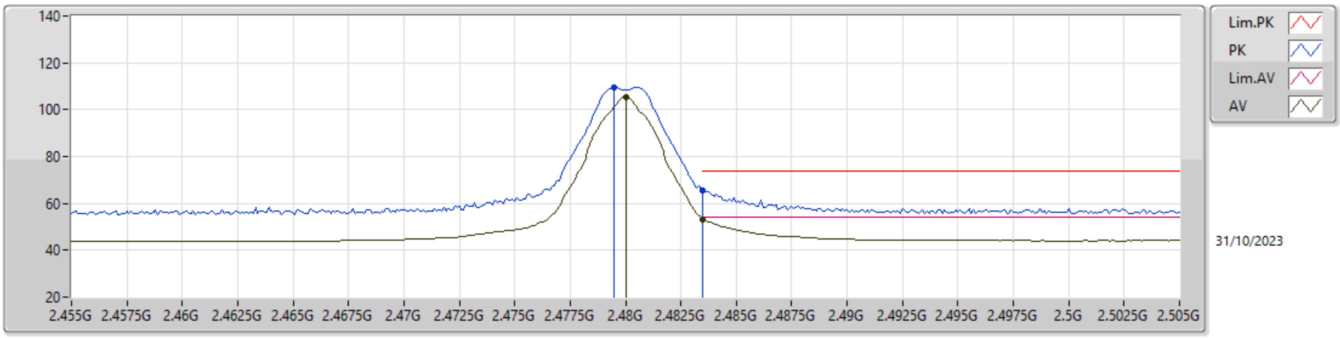
2480MHz_TX



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	96.82	Inf	-Inf	31.81	3	Vertical	34	2.52	65.01	27.50	4.31	-
AV	2.4835G	46.98	54.00	-7.02	31.85	3	Vertical	34	2.52	15.13	27.54	4.31	-
PK	2.4795G	101.12	Inf	-Inf	31.80	3	Vertical	34	2.52	69.32	27.49	4.31	-
PK	2.4835G	58.71	74.00	-15.29	31.85	3	Vertical	34	2.52	26.86	27.54	4.31	-

2.4-2.4835GHz_Zigbee

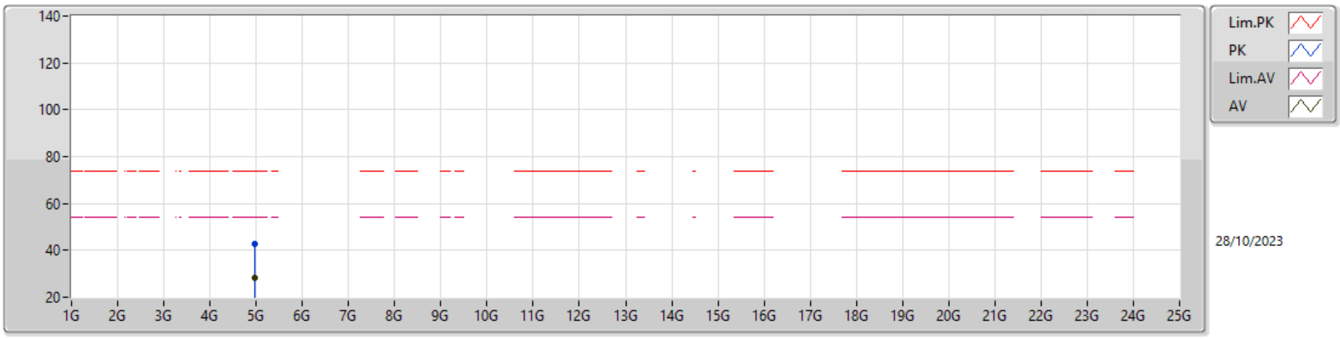
2480MHz_TX



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	105.16	Inf	-Inf	31.81	3	Horizontal	74	2.26	73.35	27.50	4.31	-
AV	2.4835G	53.29	54.00	-0.71	31.85	3	Horizontal	74	2.26	21.44	27.54	4.31	-
PK	2.4795G	109.34	Inf	-Inf	31.80	3	Horizontal	74	2.26	77.54	27.49	4.31	-
PK	2.4835G	65.67	74.00	-8.33	31.85	3	Horizontal	74	2.26	33.82	27.54	4.31	-

2.4-2.4835GHz_Zigbee

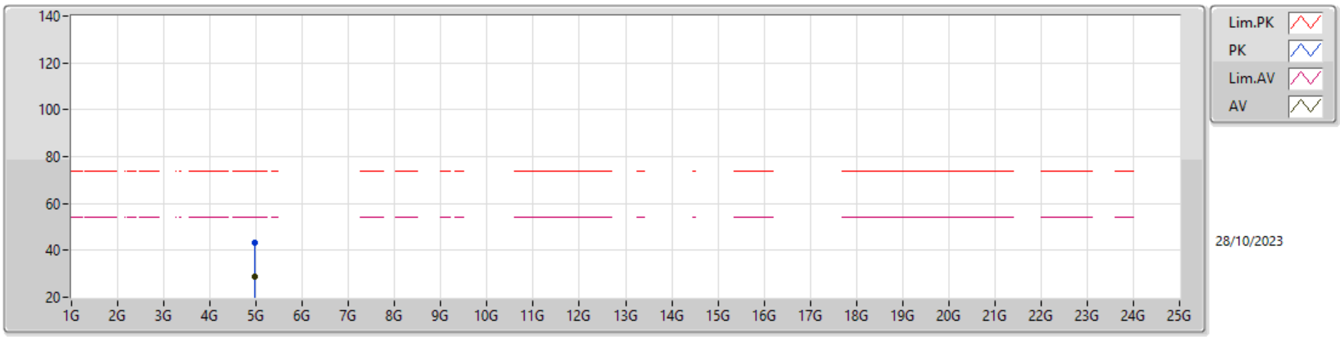
2480MHz_TX



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	4.95904G	28.32	54.00	-25.68	4.43	3	Vertical	40	1.50	23.89	32.94	6.27	34.78
PK	4.96069G	42.56	74.00	-31.44	4.43	3	Vertical	40	1.50	38.13	32.94	6.27	34.78

2.4-2.4835GHz_Zigbee

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	4.96098G	28.73	54.00	-25.27	4.43	3	Horizontal	148	1.60	24.30	32.94	6.27	34.78
PK	4.96082G	43.10	74.00	-30.90	4.43	3	Horizontal	148	1.60	38.67	32.94	6.27	34.78

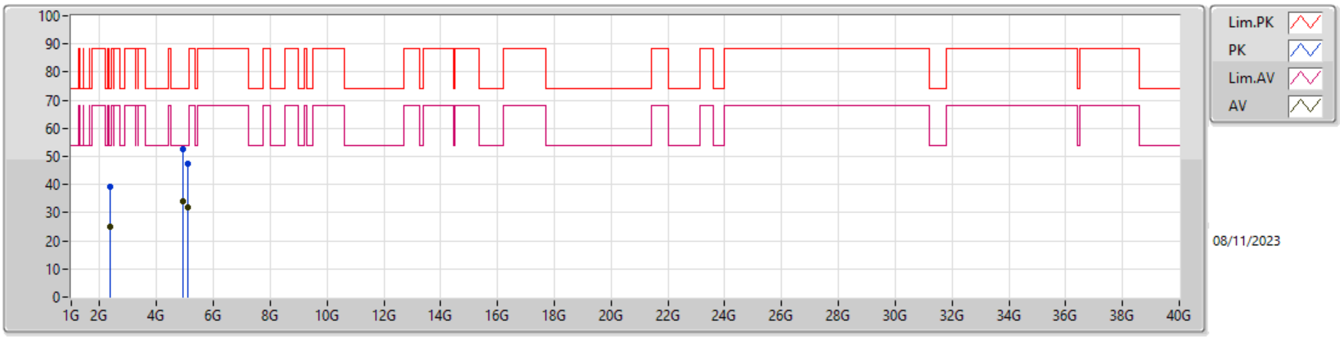
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	5.11722G	67.41	74.00	-6.59	Horizontal
Mode 2	Pass	AV	4.91877G	42.08	54.00	-11.92	Horizontal

Result

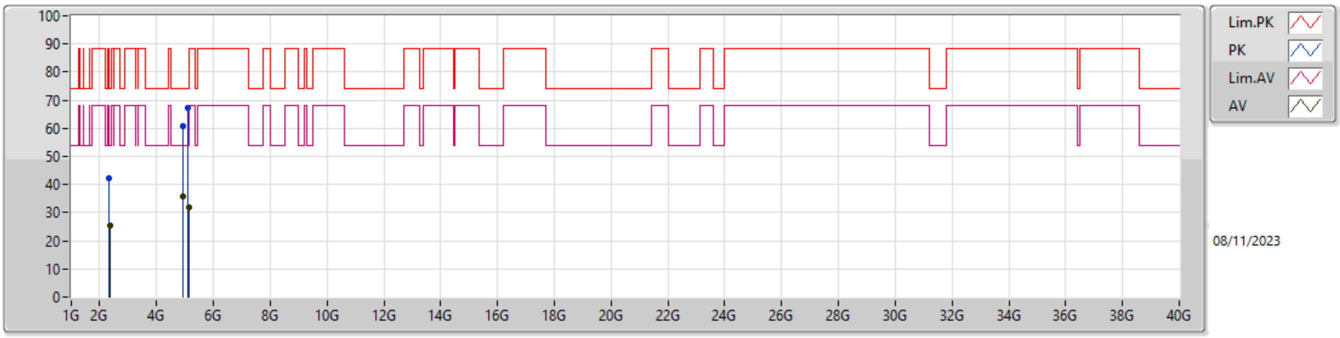
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Mode 1	Pass	AV	2.35024G	24.88	54.00	-29.12	3	Vertical	218	1.45
Mode 1	Pass	AV	4.91393G	33.92	54.00	-20.08	3	Vertical	11	2.46
Mode 1	Pass	AV	5.09623G	31.72	54.00	-22.28	3	Vertical	121	1.17
Mode 1	Pass	PK	2.34736G	39.05	74.00	-34.95	3	Vertical	218	1.45
Mode 1	Pass	PK	4.91401G	52.48	74.00	-21.52	3	Vertical	11	2.46
Mode 1	Pass	PK	5.10952G	47.36	74.00	-26.64	3	Vertical	121	1.17
Mode 1	Pass	AV	2.34923G	25.27	54.00	-28.73	3	Horizontal	341	1.24
Mode 1	Pass	AV	4.91402G	35.66	54.00	-18.34	3	Horizontal	93	1.00
Mode 1	Pass	AV	5.1293G	31.98	54.00	-22.02	3	Horizontal	259	1.74
Mode 1	Pass	PK	2.34468G	42.12	74.00	-31.88	3	Horizontal	341	1.24
Mode 1	Pass	PK	4.91395G	60.89	74.00	-13.11	3	Horizontal	93	1.00
Mode 1	Pass	PK	5.11722G	67.41	74.00	-6.59	3	Horizontal	259	1.74
Mode 2	Pass	AV	2.46062G	28.29	68.20	-39.91	3	Vertical	189	1.50
Mode 2	Pass	AV	4.91404G	34.55	54.00	-19.45	3	Vertical	0	2.47
Mode 2	Pass	AV	5.21878G	32.30	68.20	-35.90	3	Vertical	123	1.50
Mode 2	Pass	PK	2.46034G	44.83	88.20	-43.37	3	Vertical	189	1.50
Mode 2	Pass	PK	4.9139G	52.79	74.00	-21.21	3	Vertical	0	2.47
Mode 2	Pass	PK	5.2176G	53.38	88.20	-34.82	3	Vertical	123	1.50
Mode 2	Pass	AV	2.3463G	38.74	54.00	-15.26	3	Horizontal	72	2.15
Mode 2	Pass	AV	4.91877G	42.08	54.00	-11.92	3	Horizontal	92	1.00
Mode 2	Pass	AV	5.21412G	47.64	68.20	-20.56	3	Horizontal	273	2.11
Mode 2	Pass	PK	2.34478G	57.02	74.00	-16.98	3	Horizontal	72	2.15
Mode 2	Pass	PK	4.91398G	61.68	74.00	-12.32	3	Horizontal	92	1.00
Mode 2	Pass	PK	5.21568G	65.62	88.20	-22.58	3	Horizontal	273	2.11

Radiated Emissions above 1GHz_Mode 1



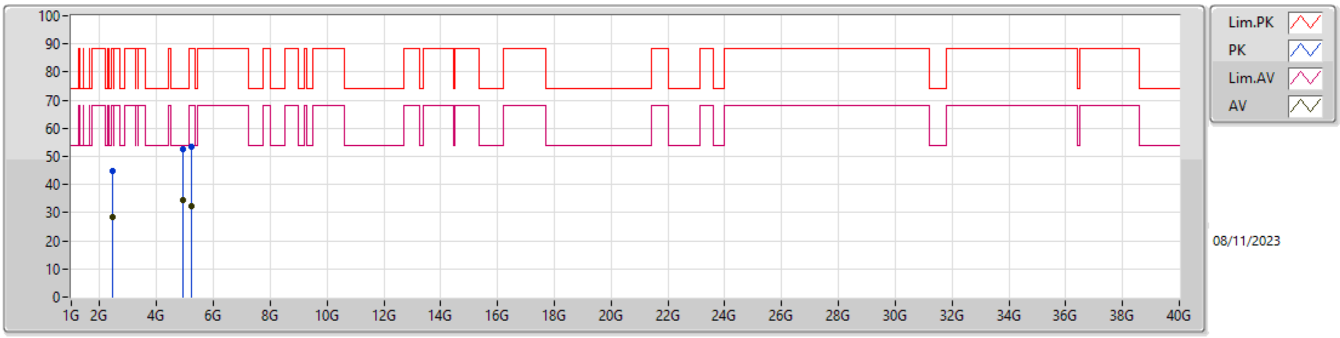
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	2.35024G	24.88	54.00	-29.12	-3.62	3	Vertical	218	1.45	28.50	27.10	4.22	34.94
AV	4.91393G	33.92	54.00	-20.08	4.12	3	Vertical	11	2.46	29.80	32.68	6.24	34.80
AV	5.09623G	31.72	54.00	-22.28	4.42	3	Vertical	121	1.17	27.30	32.81	6.37	34.76
PK	2.34736G	39.05	74.00	-34.95	-3.64	3	Vertical	218	1.45	42.69	27.07	4.22	34.93
PK	4.91401G	52.48	74.00	-21.52	4.12	3	Vertical	11	2.46	48.36	32.68	6.24	34.80
PK	5.10952G	47.36	74.00	-26.64	4.48	3	Vertical	121	1.17	42.88	32.86	6.38	34.76

Radiated Emissions above 1GHz_Mode 1



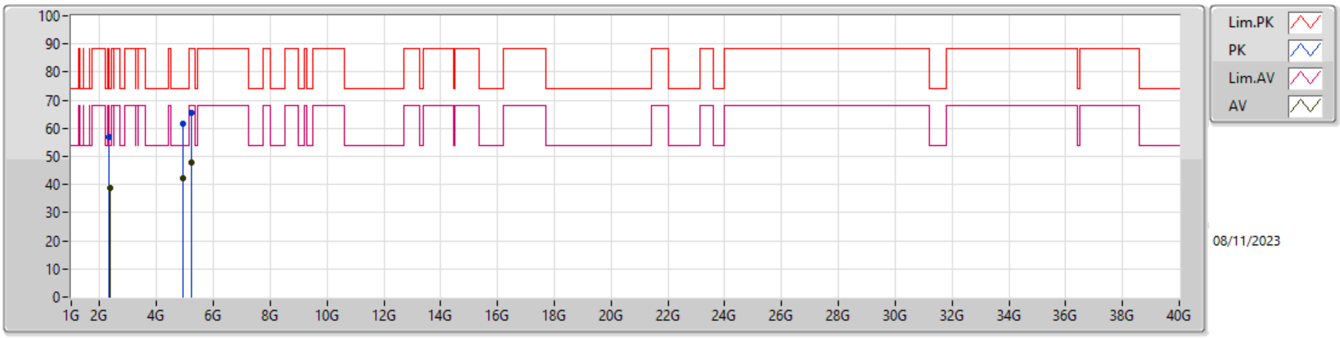
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	2.34923G	25.27	54.00	-28.73	-3.62	3	Horizontal	341	1.24	28.89	27.09	4.22	34.93
AV	4.91402G	35.66	54.00	-18.34	4.12	3	Horizontal	93	1.00	31.54	32.68	6.24	34.80
AV	5.1293G	31.98	54.00	-22.02	4.62	3	Horizontal	259	1.74	27.36	32.98	6.40	34.76
PK	2.34468G	42.12	74.00	-31.88	-3.67	3	Horizontal	341	1.24	45.79	27.05	4.21	34.93
PK	4.91395G	60.89	74.00	-13.11	4.12	3	Horizontal	93	1.00	56.77	32.68	6.24	34.80
PK	5.11722G	67.41	74.00	-6.59	4.53	3	Horizontal	259	1.74	62.88	32.90	6.39	34.76

Radiated Emissions above 1GHz_Mode 2



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	2.46062G	28.29	68.20	-39.91	-3.27	3	Vertical	189	1.50	31.56	27.40	4.30	34.97
AV	4.91404G	34.55	54.00	-19.45	4.12	3	Vertical	0	2.47	30.43	32.68	6.24	34.80
AV	5.21878G	32.30	68.20	-35.90	4.57	3	Vertical	123	1.50	27.73	32.86	6.46	34.75
PK	2.46034G	44.83	88.20	-43.37	-3.27	3	Vertical	189	1.50	48.10	27.40	4.30	34.97
PK	4.9139G	52.79	74.00	-21.21	4.12	3	Vertical	0	2.47	48.67	32.68	6.24	34.80
PK	5.2176G	53.38	88.20	-34.82	4.57	3	Vertical	123	1.50	48.81	32.86	6.46	34.75

Radiated Emissions above 1GHz_Mode 2



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	2.3463G	38.74	54.00	-15.26	-3.66	3	Horizontal	72	2.15	42.40	27.06	4.21	34.93
AV	4.91877G	42.08	54.00	-11.92	4.16	3	Horizontal	92	1.00	37.92	32.71	6.24	34.79
AV	5.21412G	47.64	68.20	-20.56	4.58	3	Horizontal	273	2.11	43.06	32.87	6.46	34.75
PK	2.34478G	57.02	74.00	-16.98	-3.67	3	Horizontal	72	2.15	60.69	27.05	4.21	34.93
PK	4.91398G	61.68	74.00	-12.32	4.12	3	Horizontal	92	1.00	57.56	32.68	6.24	34.80
PK	5.21568G	65.62	88.20	-22.58	4.58	3	Horizontal	273	2.11	61.04	32.87	6.46	34.75