Testing Laboratory 3785

FCC Radio Test Report

FCC ID	:	**2AGBW9290030674X**
Equipment	:	**Hue Outdoor sensor**
Brand Name	:	**PHILIPS**
Model Name	:	**9290030674**
Applicant	:	**Signify (China) Investment Co., Ltd. Building 9, Lane 888, Tianlin Road, Minhang District, Shanghai 200233 China**
Manufacturer	:	**Signify (China) Investment Co., Ltd. Building 9, Lane 888, Tianlin Road, Minhang District, Shanghai 200233 China**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Apr. 30, 2021, and testing was started from May 13, 2021 and completed on May 13, 2021. 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: Allen Lin

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
FR140205-01AZ	01	Initial issue of report	Sep. 02, 2021

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
-	15.207	AC Power-line Conducted Emissions	Not Required	Only employ battery power.
3.1	15.247(a)	DTS Bandwidth	PASS	-
3.2	15.247(b)	Maximum Conducted Output Power	PASS	-
3.3	15.247(e)	Power Spectral Density	PASS	-
3.4	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.5	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Note: From Sporton Project No.: FR140205AZ.

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: Sam Tsai
Report Producer: Debby Hung

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	Gain (dBi)
1	LITEON	SZ3507SL-00	PCB	N/A	1.3

For Zigbee function:

For Zigbee mode (1TX/1RX)

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

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From Battery			
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	20.001m	10

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**
RF Conducted	TH07-HY	Justin Pan	22.1~26.5°C / 35.9~50.1%	13/May/2021
☒ 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.				
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**
Radiated	03CH09-HY	Ryan Hsiao	22.8~23.6°C / 41~48%	13/May/2021

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 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	52
2440MHz	52
2475MHz	52
2480MHz	52

2.2 The Worst Case Measurement Configuration

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	Battery mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT		V	

2.3 Accessories

Accessories				
Battery * 2	**Brand Name**	GP Batteries	**Model Name**	GN15A
	Power Rating	1.5Vdc, AA	**Type**	Alkaline

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

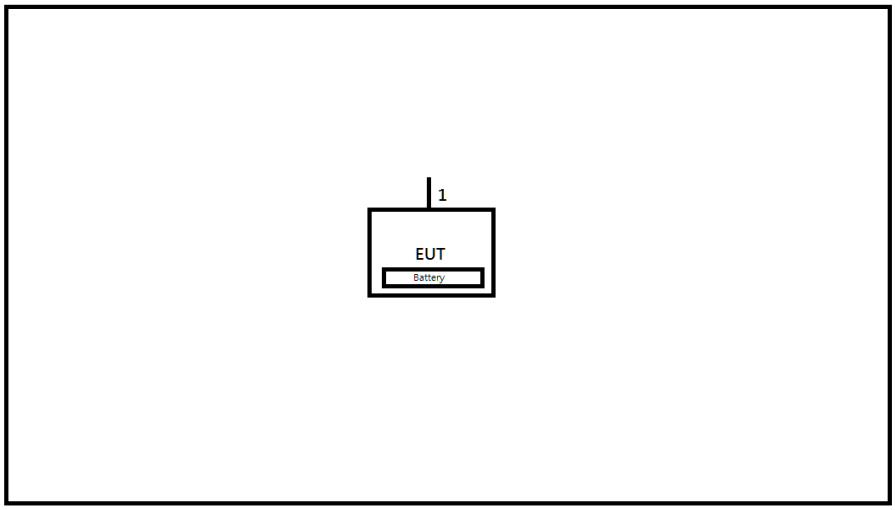
2.4 Support Equipment

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	HP	5220M	-	-
2	Adapter for NB	HP	PPP012L-E	-	-
3	Fixture cable	-	-	-	Provided by Customer

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Fixture cable	-	-	-	Provided by Customer

2.5 Test Setup Diagram

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	fixture cable	No	0.15	-

3 Transmitter Test Result

3.1 DTS Bandwidth

3.1.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
▪ 6 dB bandwidth ≥ 500 kHz.

3.1.2 Measuring Instruments

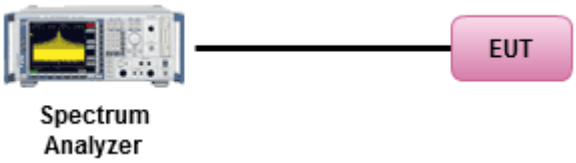
Refer a test equipment and calibration data table in this test report.

3.1.3 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.

3.1.4 Test Setup

Emission Bandwidth



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.2 Maximum Conducted Output Power

3.2.1 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.		

3.2.2 Measuring Instruments

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

3.2.3 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]) $EIRP_{total} = P_{total} + DG$

3.2.4 Test Setup

Maximum Conducted Output Power (Power Meter)


3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

3.3 Power Spectral Density

3.3.1 Power Spectral Density Limit

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

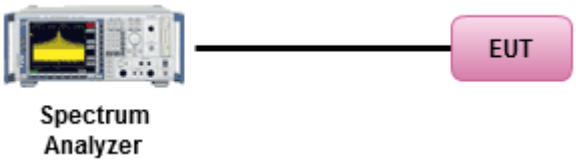
3.3.2 Measuring Instruments

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

3.3.3 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.

3.3.4 Test Setup

Power Spectral Density


3.3.5 Test Result of Power Spectral Density

Refer as Appendix C

3.4 Emissions in Non-restricted Frequency Bands

3.4.1 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.	

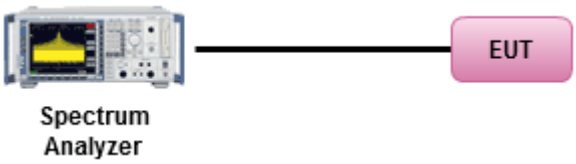
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup

Emissions in Non-restricted Frequency Bands


3.4.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix D

3.5 Emissions in Restricted Frequency Bands

3.5.1 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.

3.5.2 Measuring Instruments

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

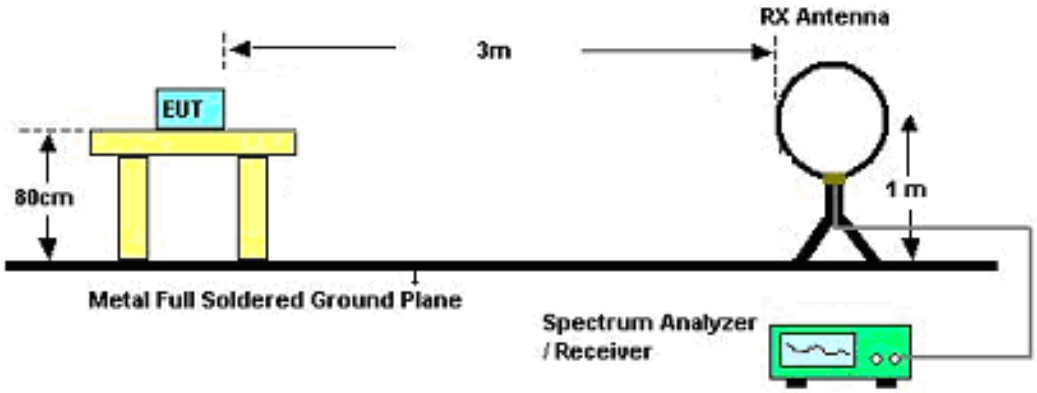
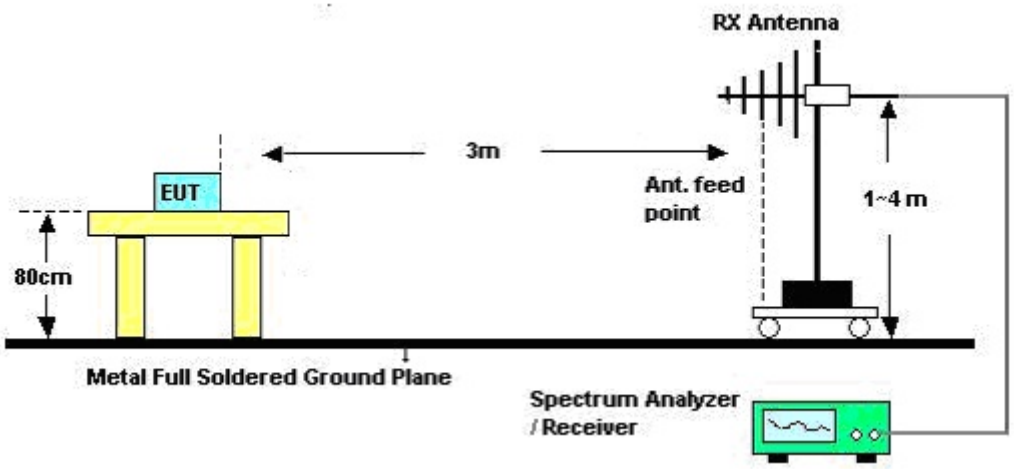
3.5.3 Test Procedures

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.

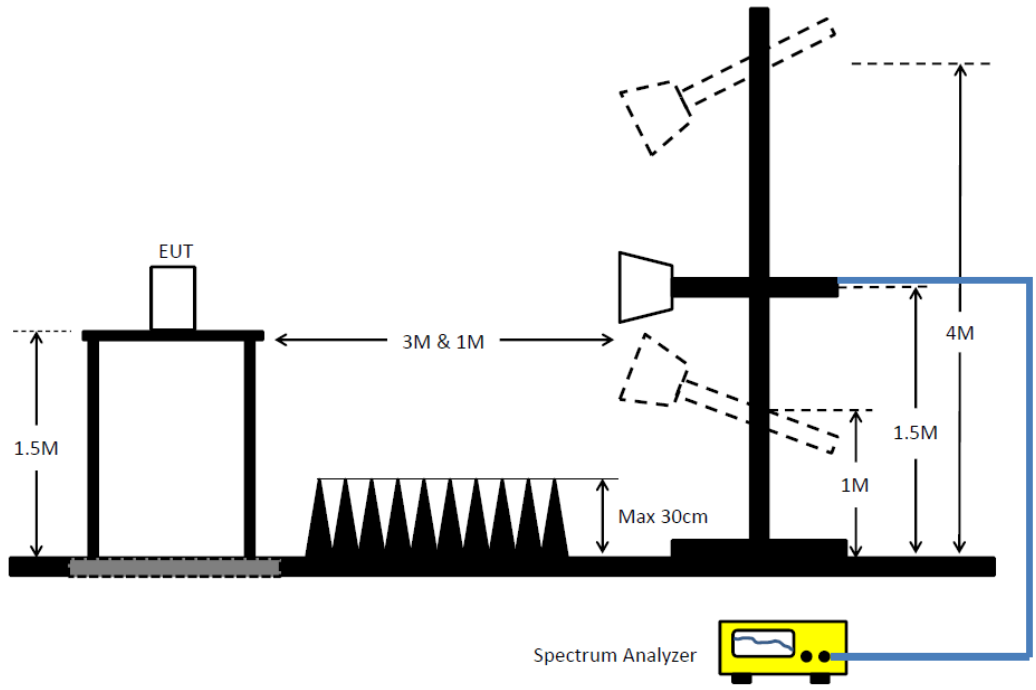
3.5.4 Measurement Results Calculation

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

3.5.5 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



3.5.6 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.

3.5.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E

4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	26/Mar/2021	25/Mar/2022
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	20/Oct/2020	19/Oct/2021
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	27/Nov/2020	26/Nov/2021
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	27/Nov/2020	26/Nov/2021

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	26/Mar/2021	25/Mar/2022
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	18/Mar/2021	17/Mar/2022
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	11/Aug/2020	10/Aug/2021
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	12/Apr/2021	11/Apr/2022
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	24/Jul/2020	23/Jul/2021
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MTJ 6102-05	35418 & 3	30MHz~1GHz	06/Sep/2020	05/Sep/2021
Double Ridged Guide Horn Antenna	COM-POWER	AH-118	071028	1GHz~18GHz	09/Jun/2020	08/Jun/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/ 4	9kHz~30MHz	03/Sep/2020	02/Sep/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/ 4	30MHz~1GHz	09/Feb/2021	08/Feb/2022
RF CABLE 5m+3m+1m	HUBER+SUHNER	SUCOFLEX104	SN MY25918/4+ SN MY39478/4 + SN 324530/4	1GHz~40GHz	15/Aug/2020	14/Aug/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	11/Mar/2021	10/Mar/2022
Microwave Premplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	09/Mar/2021	08/Mar/2022
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	16/Mar/2021	15/Mar/2022
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	29/May/2020	28/May/2021

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.644M	2.261M	2M26G1D	1.625M	2.255M

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

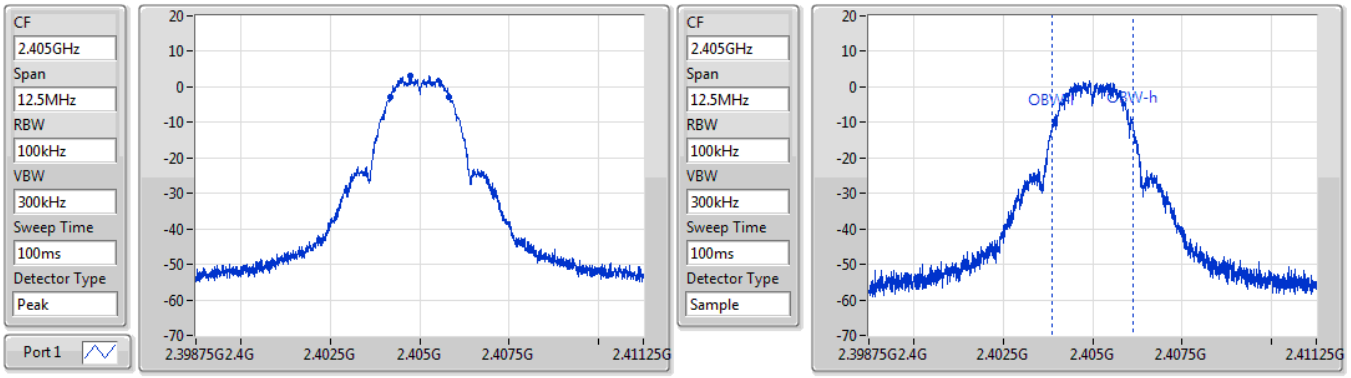
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Zigbee	-	-	-	-
2405MHz_TnomVnom	Pass	500k	1.631M	2.255M
2440MHz_TnomVnom	Pass	500k	1.644M	2.261M
2475MHz_TnomVnom	Pass	500k	1.625M	2.255M
2480MHz_TnomVnom	Pass	500k	1.644M	2.255M

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

Zigbee EBW

2405MHz

13/05/2021

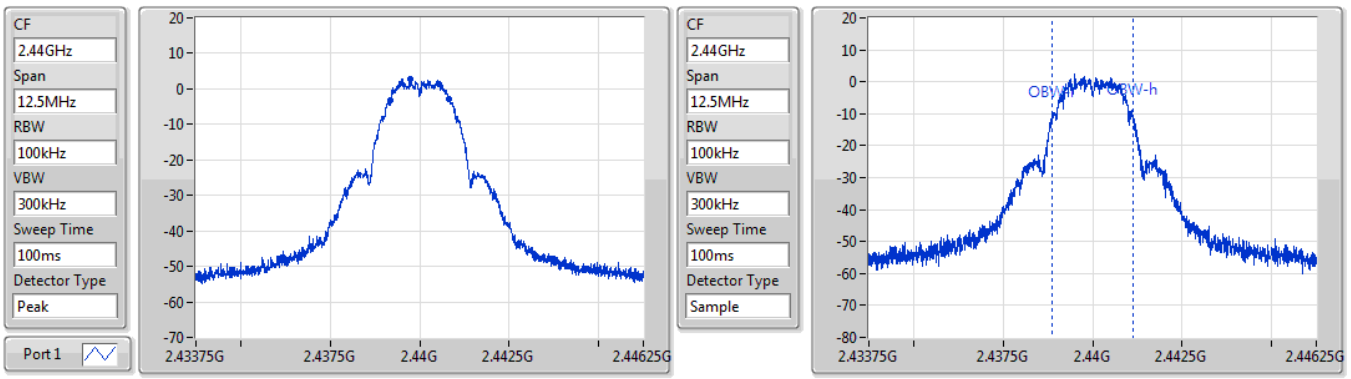


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.631M	2.404194G	2.405825G	2.255M	2.403869G	2.406124G	500k	1

Zigbee EBW

2440MHz

13/05/2021

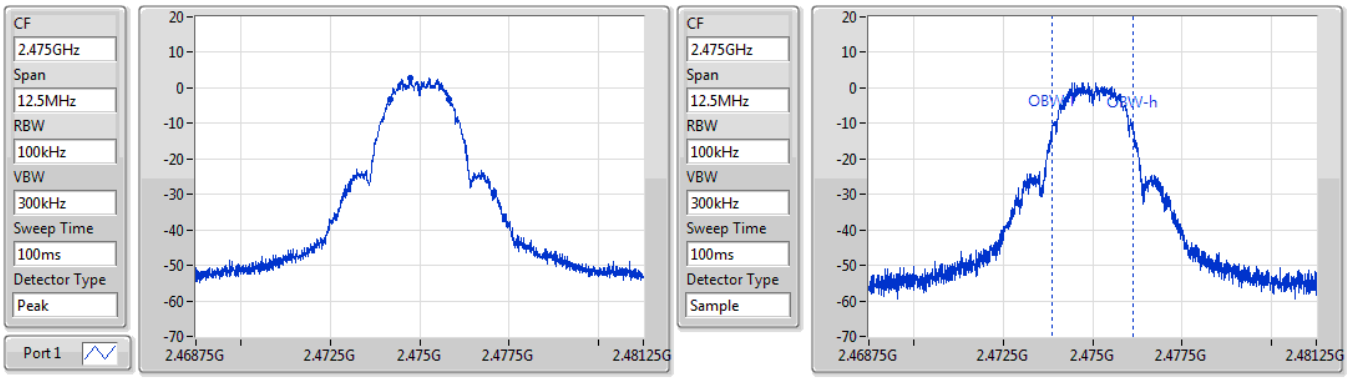


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.644M	2.439181G	2.440825G	2.261M	2.438869G	2.441131G	500k	1

Zigbee EBW

2475MHz

13/05/2021

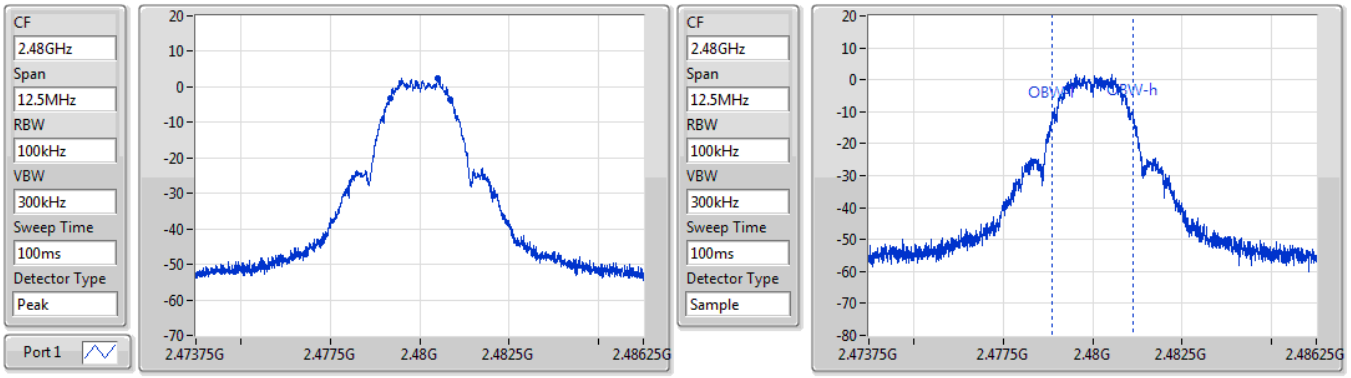


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.625M	2.474194G	2.475819G	2.255M	2.473876G	2.476131G	500k	1

Zigbee EBW

2480MHz

13/05/2021



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.644M	2.479194G	2.480838G	2.255M	2.478876G	2.481131G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	7.38	0.00547

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz_TnomVnom	Pass	1.30	7.38	7.38	30.00
2440MHz_TnomVnom	Pass	1.30	7.28	7.28	30.00
2475MHz_TnomVnom	Pass	1.30	6.90	6.90	30.00
2480MHz_TnomVnom	Pass	1.30	6.87	6.87	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Zigbee	-9.50

RBW = 3kHz;

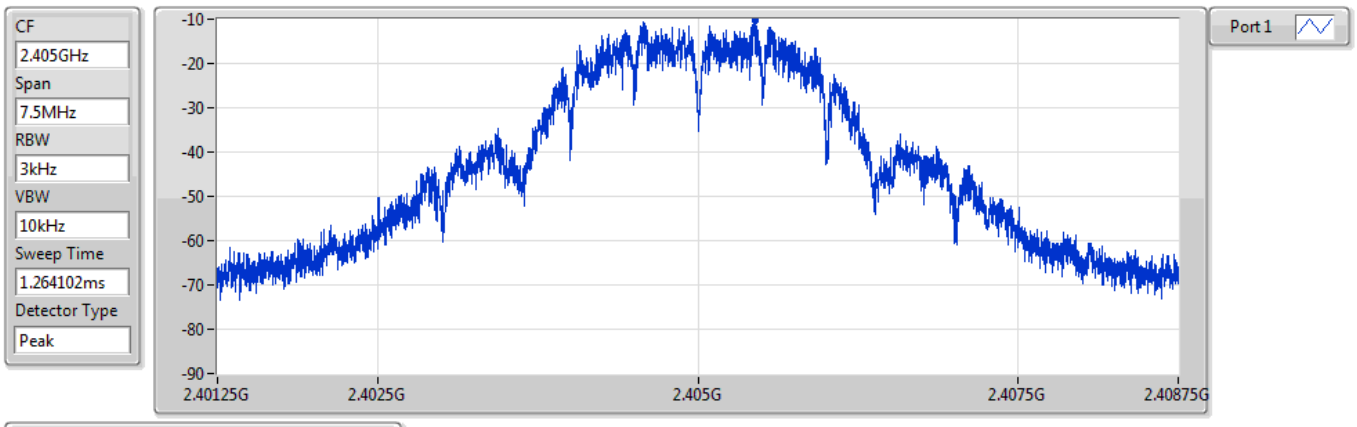
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz_TnomVnom	Pass	1.30	-10.29	-10.29	8.00
2440MHz_TnomVnom	Pass	1.30	-9.50	-9.50	8.00
2475MHz_TnomVnom	Pass	1.30	-10.04	-10.04	8.00
2480MHz_TnomVnom	Pass	1.30	-10.09	-10.09	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;

Zigbee PSD

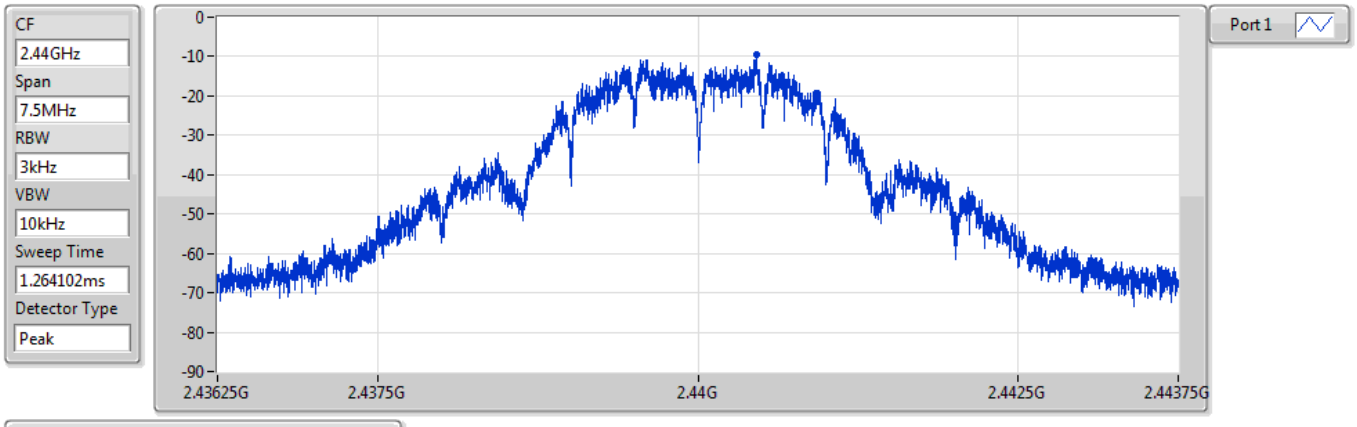
2405MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.29	-10.29	-10.29

Zigbee PSD

2440MHz



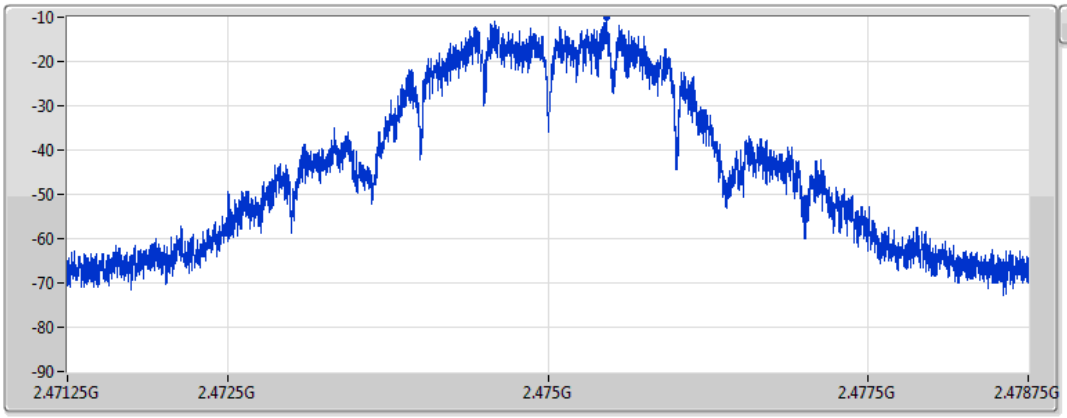
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.50	-9.50	-9.50

Zigbee PSD

2475MHz

13/05/2021

CF	2.475GHz
Span	7.5MHz
RBW	3kHz
VBW	10kHz
Sweep Time	1.264102ms
Detector Type	Peak



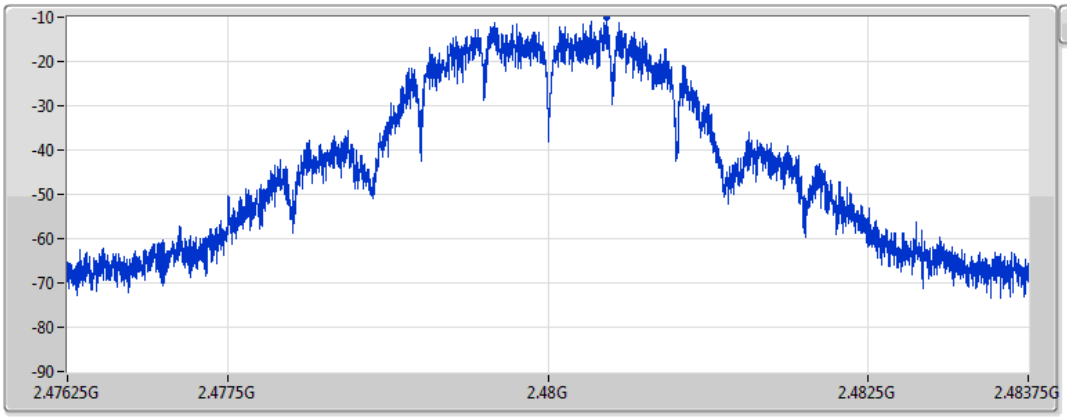
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.04	-10.04	-10.04

Zigbee PSD

2480MHz

13/05/2021

CF	2.48GHz
Span	7.5MHz
RBW	3kHz
VBW	10kHz
Sweep Time	1.264102ms
Detector Type	Peak



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.09	-10.09	-10.09

Summary

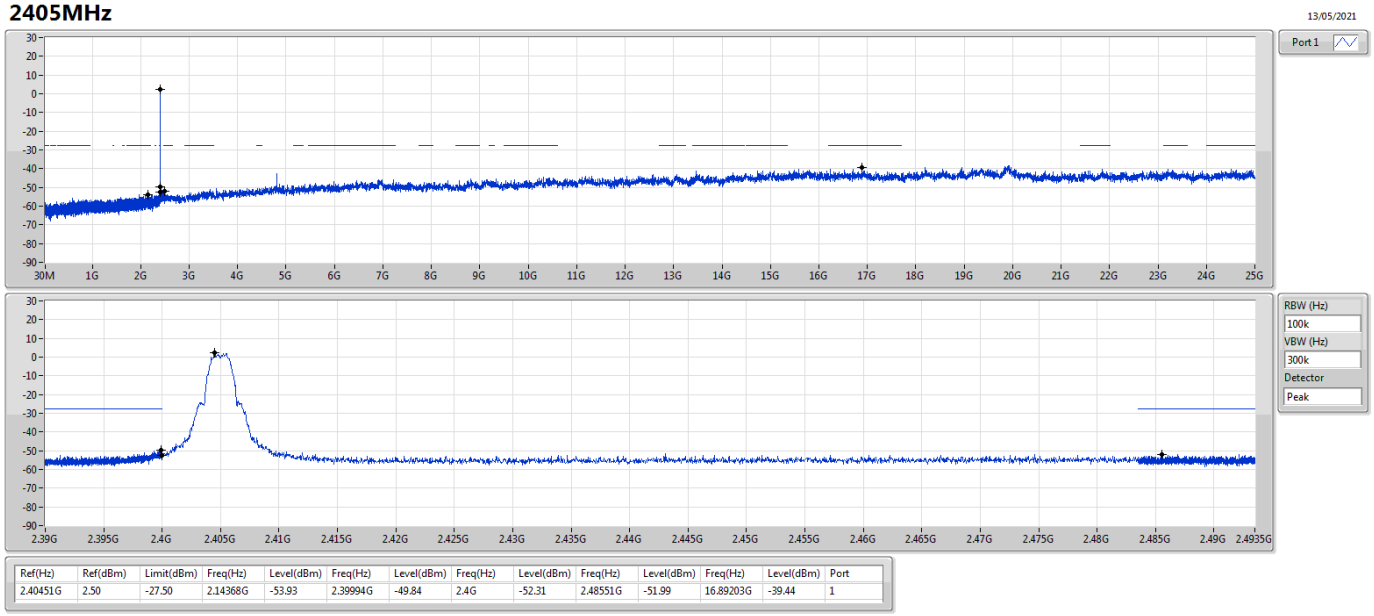
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	2.40451G	2.50	-27.50	2.15725G	-53.61	2.3944G	-51.82	2.4835G	-47.86	2.48356G	-44.71	16.2731G	-39.71	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_TnomVnom	Pass	2.40451G	2.50	-27.50	2.14368G	-53.93	2.39994G	-49.84	2.4G	-52.31	2.48551G	-51.99	16.89203G	-39.44	1
2440MHz_TnomVnom	Pass	2.40451G	2.50	-27.50	2.0953G	-54.41	2.39005G	-52.67	2.4835G	-55.64	2.49262G	-51.60	16.22809G	-40.66	1
2475MHz_TnomVnom	Pass	2.40451G	2.50	-27.50	2.12922G	-53.07	2.39565G	-52.36	2.4835G	-54.79	2.48505G	-51.37	16.75137G	-40.13	1
2480MHz_TnomVnom	Pass	2.40451G	2.50	-27.50	2.15725G	-53.61	2.3944G	-51.82	2.4835G	-47.86	2.48356G	-44.71	16.2731G	-39.71	1

Zigbee **CSENdB**

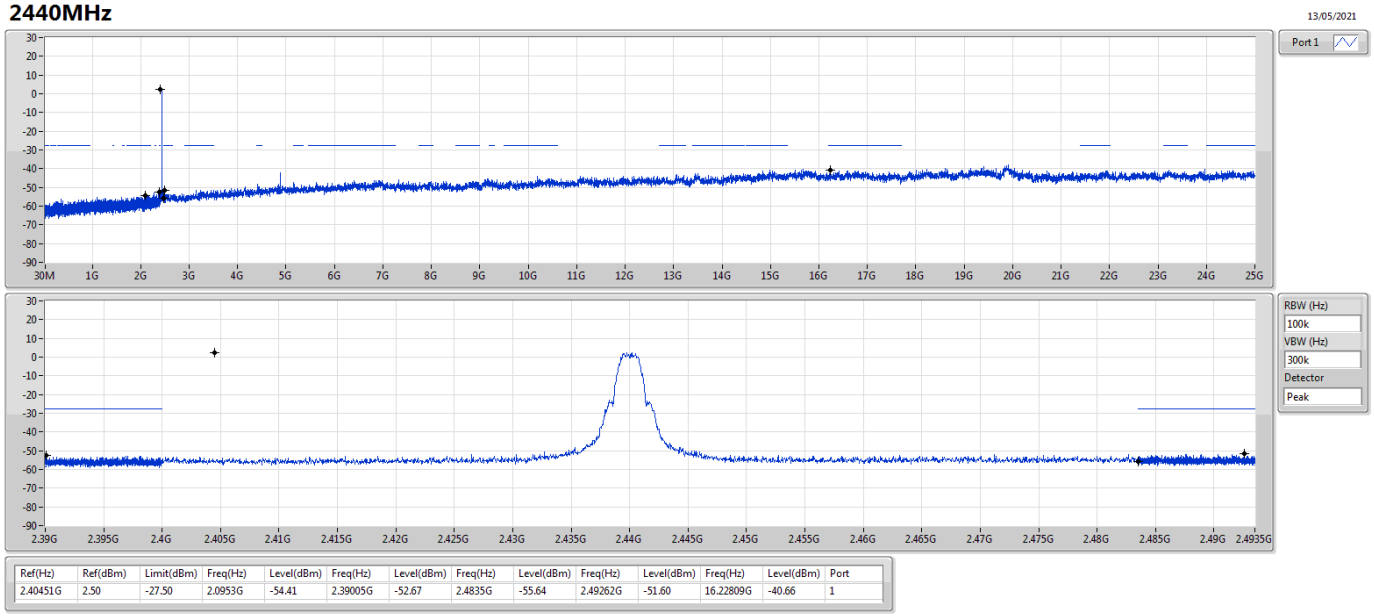
2405MHz



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
2.40451G	2.50	-27.50	2.14368G	-53.93	2.39994G	-49.84	2.4G	-52.31	2.48551G	-51.99	16.89203G	-39.44	1

Zigbee **CSENdB**

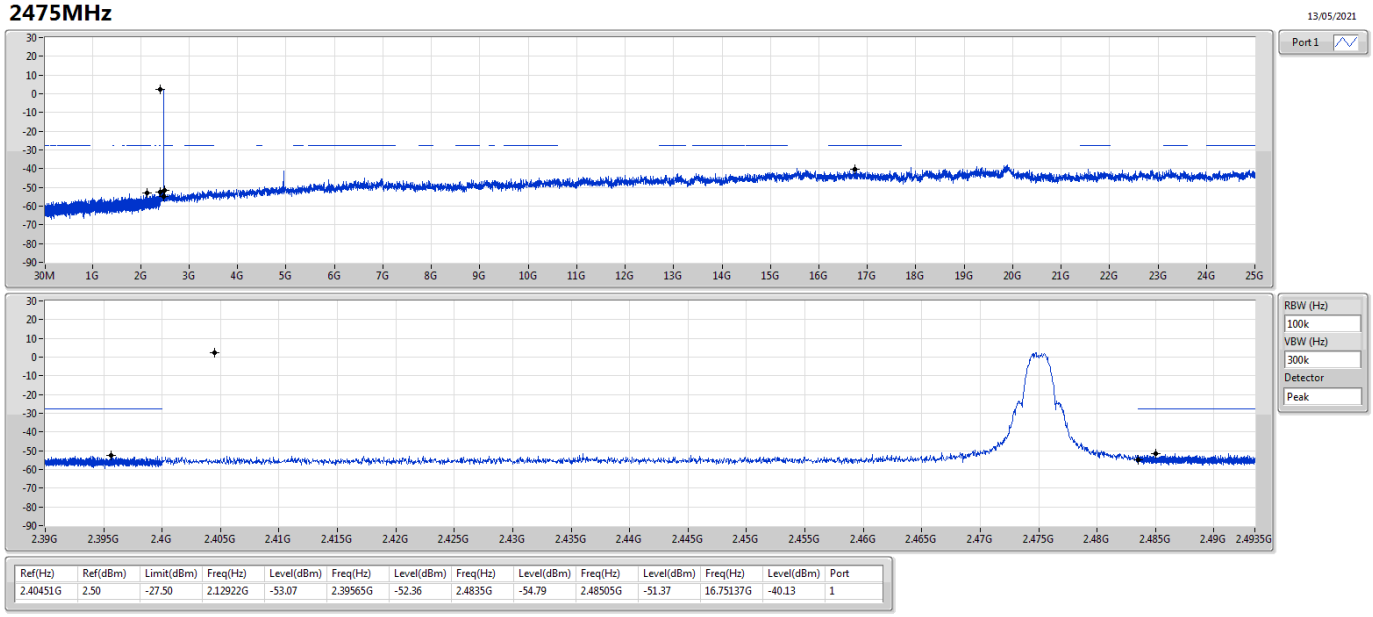
2440MHz



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
2.40451G	2.50	-27.50	2.0953G	-54.41	2.39005G	-52.67	2.4835G	-55.64	2.49262G	-51.60	16.22809G	-40.66	1

Zigbee **CSENdB**

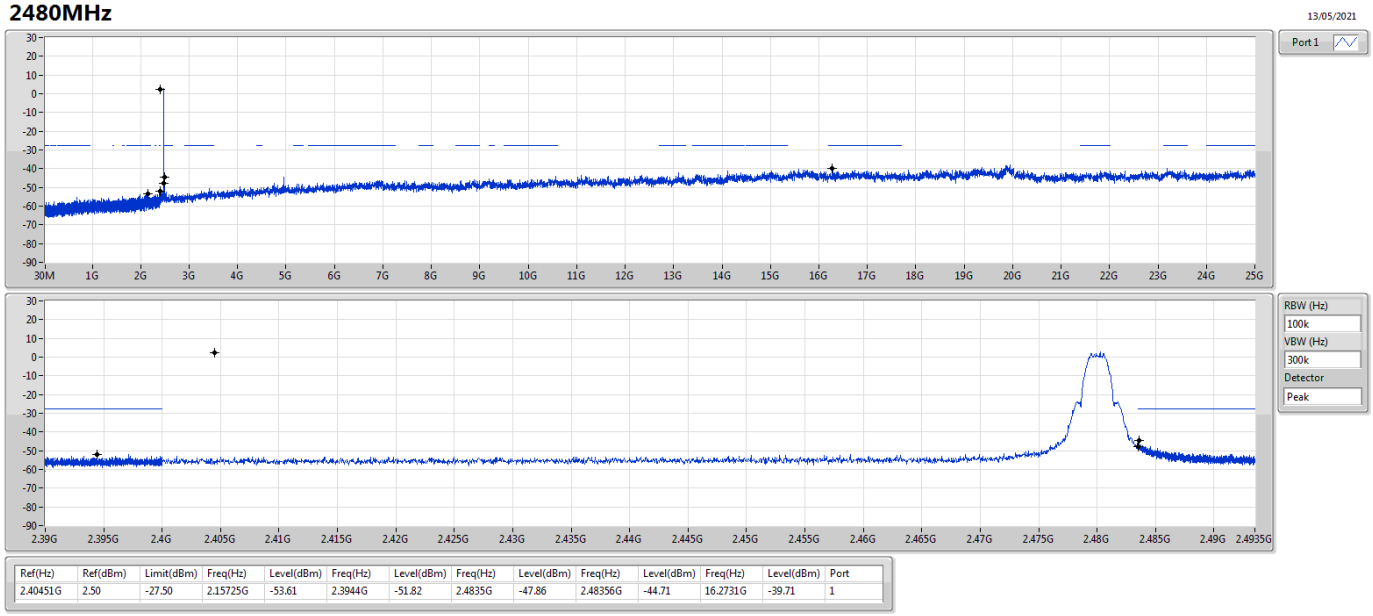
2475MHz



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
2.40451G	2.50	-27.50	2.12922G	-53.07	2.39565G	-52.36	2.4835G	-54.79	2.48505G	-51.37	16.75137G	-40.13	1

Zigbee **CSENdB**

2480MHz



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
2.40451G	2.50	-27.50	2.15725G	-53.61	2.3944G	-51.82	2.4835G	-47.86	2.48356G	-44.71	16.2731G	-39.71	1

Summary

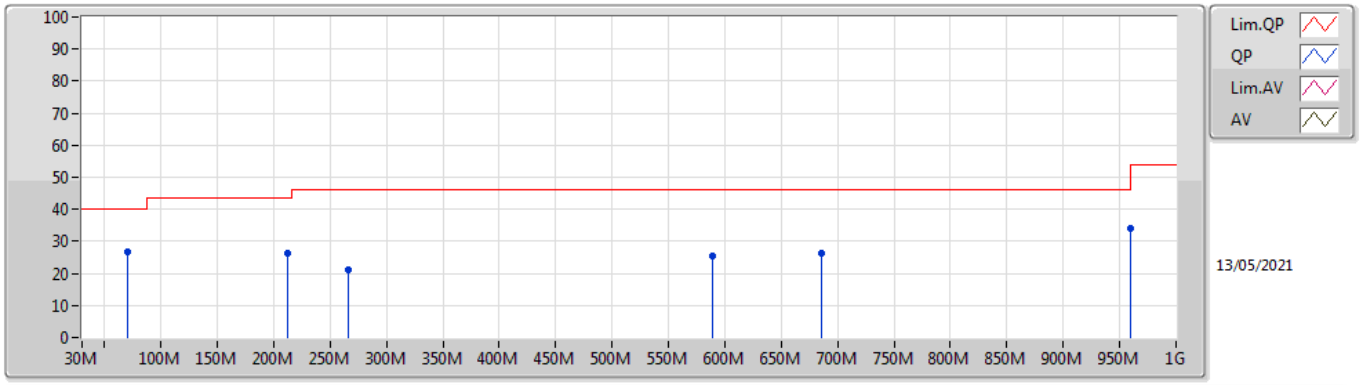
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	PK	960M	34.13	46.00	-11.87	3	Vertical	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	70.74M	26.82	40.00	-13.18	3	Vertical	360	1.00	-
2440MHz	Pass	PK	212.36M	26.37	43.50	-17.13	3	Vertical	360	1.00	-
2440MHz	Pass	PK	266.68M	20.94	46.00	-25.06	3	Vertical	360	1.00	-
2440MHz	Pass	PK	588.72M	25.43	46.00	-20.57	3	Vertical	360	1.00	-
2440MHz	Pass	PK	685.72M	26.33	46.00	-19.67	3	Vertical	360	1.00	-
2440MHz	Pass	PK	960M	34.13	46.00	-11.87	3	Vertical	360	1.00	-
2440MHz	Pass	PK	35.82M	18.64	40.00	-21.36	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	94.02M	17.19	43.50	-26.31	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	260.86M	18.45	46.00	-27.55	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	491.72M	22.22	46.00	-23.78	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	639.16M	25.69	46.00	-20.31	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	960M	33.37	46.00	-12.63	3	Horizontal	0	1.00	-

Zigbee

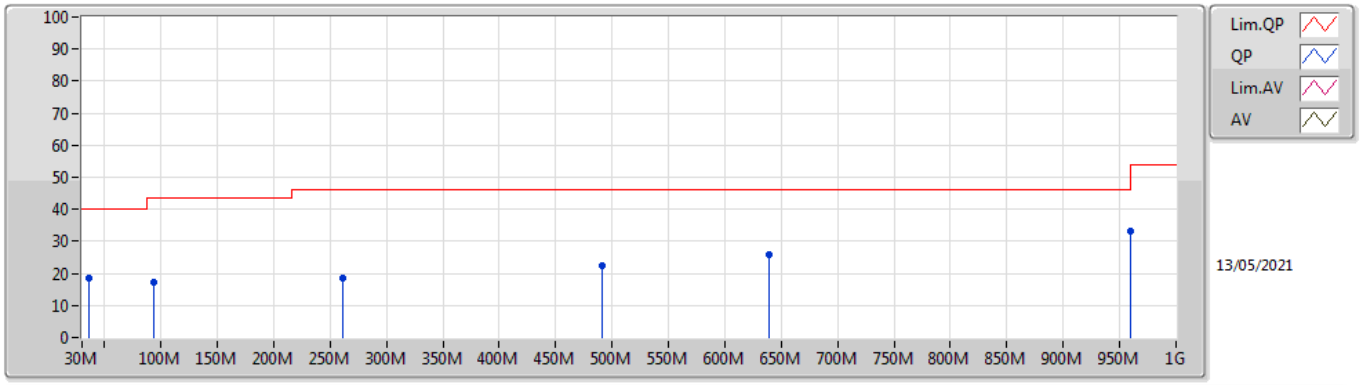
2440MHz_Battery



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	70.74M	26.82	40.00	-13.18	-24.70	3	Vertical	360	1.00	-	51.52	11.43	0.84	36.97
PK	212.36M	26.37	43.50	-17.13	-20.77	3	Vertical	360	1.00	-	47.14	14.17	1.36	36.30
PK	266.68M	20.94	46.00	-25.06	-16.12	3	Vertical	360	1.00	-	37.06	18.73	1.56	36.41
PK	588.72M	25.43	46.00	-20.57	-9.88	3	Vertical	360	1.00	-	35.31	24.78	2.45	37.11
PK	685.72M	26.33	46.00	-19.67	-8.96	3	Vertical	360	1.00	-	35.29	25.66	2.66	37.28
PK	960M	34.13	46.00	-11.87	-4.11	3	Vertical	360	1.00	-	38.24	30.25	3.11	37.47

Zigbee

2440MHz_Battery



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	35.82M	18.64	40.00	-21.36	-15.77	3	Horizontal	0	1.00	-	34.41	20.63	0.67	37.07
PK	94.02M	17.19	43.50	-26.31	-21.27	3	Horizontal	0	1.00	-	38.46	14.47	0.96	36.70
PK	260.86M	18.45	46.00	-27.55	-15.70	3	Horizontal	0	1.00	-	34.15	19.16	1.54	36.40
PK	491.72M	22.22	46.00	-23.78	-11.57	3	Horizontal	0	1.00	-	33.79	23.15	2.21	36.93
PK	639.16M	25.69	46.00	-20.31	-9.09	3	Horizontal	0	1.00	-	34.78	25.54	2.59	37.22
PK	960M	33.37	46.00	-12.63	-4.11	3	Horizontal	0	1.00	-	37.48	30.25	3.11	37.47

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	AV	4.94907G	50.00	54.00	-4.00	3	Vertical	188	2.13	-

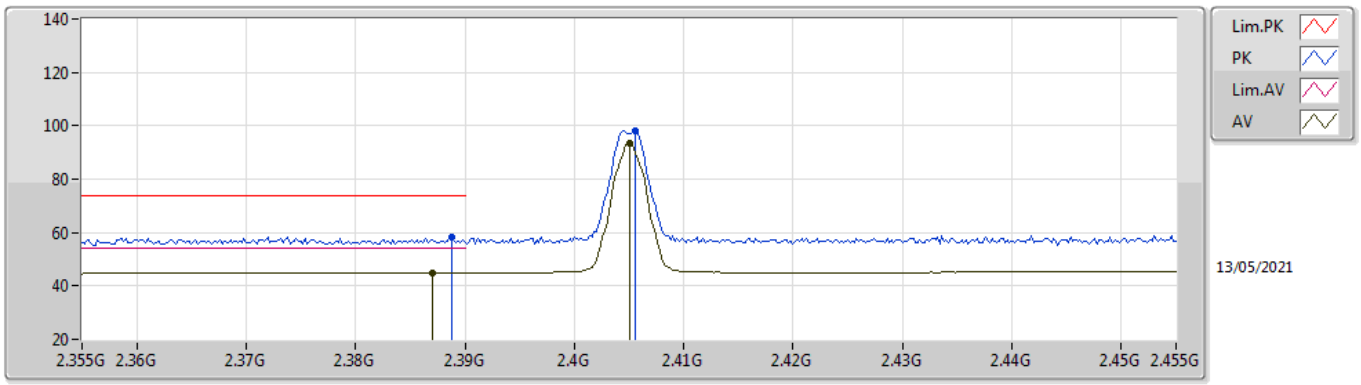
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Zigbee	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	AV	2.387G	44.80	54.00	-9.20	3	Vertical	311	1.07	-
2405MHz	Pass	AV	2.405G	93.59	Inf	-Inf	3	Vertical	311	1.07	-
2405MHz	Pass	PK	2.3888G	58.39	74.00	-15.61	3	Vertical	311	1.07	-
2405MHz	Pass	PK	2.4056G	98.01	Inf	-Inf	3	Vertical	311	1.07	-
2405MHz	Pass	AV	2.3894G	44.79	54.00	-9.21	3	Horizontal	208	1.07	-
2405MHz	Pass	AV	2.405G	95.64	Inf	-Inf	3	Horizontal	208	1.07	-
2405MHz	Pass	PK	2.3856G	58.18	74.00	-15.82	3	Horizontal	208	1.07	-
2405MHz	Pass	PK	2.4056G	100.03	Inf	-Inf	3	Horizontal	208	1.07	-
2405MHz	Pass	AV	4.80903G	49.00	54.00	-5.00	3	Vertical	192	1.41	-
2405MHz	Pass	PK	4.80883G	58.75	74.00	-15.25	3	Vertical	192	1.41	-
2405MHz	Pass	AV	4.80903G	46.33	54.00	-7.67	3	Horizontal	54	2.00	-
2405MHz	Pass	PK	4.80903G	56.20	74.00	-17.80	3	Horizontal	54	2.00	-
2440MHz	Pass	AV	2.3848G	44.90	54.00	-9.10	3	Vertical	330	1.00	-
2440MHz	Pass	AV	2.44G	93.85	Inf	-Inf	3	Vertical	330	1.00	-
2440MHz	Pass	AV	2.4992G	46.28	54.00	-7.72	3	Vertical	330	1.00	-
2440MHz	Pass	PK	2.3844G	58.00	74.00	-16.00	3	Vertical	330	1.00	-
2440MHz	Pass	PK	2.4404G	98.26	Inf	-Inf	3	Vertical	330	1.00	-
2440MHz	Pass	PK	2.4876G	59.97	74.00	-14.03	3	Vertical	330	1.00	-
2440MHz	Pass	AV	2.3896G	44.80	54.00	-9.20	3	Horizontal	350	1.48	-
2440MHz	Pass	AV	2.44G	95.37	Inf	-Inf	3	Horizontal	350	1.48	-
2440MHz	Pass	AV	2.4976G	46.19	54.00	-7.81	3	Horizontal	350	1.48	-
2440MHz	Pass	PK	2.3444G	58.17	74.00	-15.83	3	Horizontal	350	1.48	-
2440MHz	Pass	PK	2.4396G	99.71	Inf	-Inf	3	Horizontal	350	1.48	-
2440MHz	Pass	PK	2.4952G	59.99	74.00	-14.01	3	Horizontal	350	1.48	-
2440MHz	Pass	AV	4.87906G	47.65	54.00	-6.35	3	Vertical	190	2.18	-
2440MHz	Pass	AV	7.32146G	49.67	54.00	-4.33	3	Vertical	180	2.66	-
2440MHz	Pass	PK	4.87887G	57.38	74.00	-16.62	3	Vertical	190	2.18	-
2440MHz	Pass	PK	7.31848G	60.93	74.00	-13.07	3	Vertical	180	2.66	-
2440MHz	Pass	AV	4.87908G	44.78	54.00	-9.22	3	Horizontal	210	1.00	-
2440MHz	Pass	AV	7.32143G	47.65	54.00	-6.35	3	Horizontal	178	1.00	-
2440MHz	Pass	PK	4.87896G	54.75	74.00	-19.25	3	Horizontal	210	1.00	-
2440MHz	Pass	PK	7.32157G	59.01	74.00	-14.99	3	Horizontal	178	1.00	-
2475MHz	Pass	AV	2.475G	93.43	Inf	-Inf	3	Vertical	352	1.05	-
2475MHz	Pass	AV	2.4992G	46.25	54.00	-7.75	3	Vertical	352	1.05	-
2475MHz	Pass	PK	2.4746G	97.85	Inf	-Inf	3	Vertical	352	1.05	-
2475MHz	Pass	PK	2.4912G	59.44	74.00	-14.56	3	Vertical	352	1.05	-
2475MHz	Pass	AV	2.475G	94.91	Inf	-Inf	3	Horizontal	350	1.48	-
2475MHz	Pass	AV	2.4996G	46.22	54.00	-7.78	3	Horizontal	350	1.48	-
2475MHz	Pass	PK	2.4744G	99.30	Inf	-Inf	3	Horizontal	350	1.48	-
2475MHz	Pass	PK	2.4934G	59.30	74.00	-14.70	3	Horizontal	350	1.48	-
2475MHz	Pass	AV	4.94907G	50.00	54.00	-4.00	3	Vertical	188	2.13	-
2475MHz	Pass	AV	7.42363G	48.76	54.00	-5.24	3	Vertical	180	2.33	-
2475MHz	Pass	PK	4.9489G	59.55	74.00	-14.45	3	Vertical	188	2.13	-
2475MHz	Pass	PK	7.42654G	59.95	74.00	-14.05	3	Vertical	180	2.33	-
2475MHz	Pass	AV	4.95098G	46.84	54.00	-7.16	3	Horizontal	207	1.16	-
2475MHz	Pass	AV	7.42363G	47.26	54.00	-6.74	3	Horizontal	176	1.03	-
2475MHz	Pass	PK	4.94895G	56.75	74.00	-17.25	3	Horizontal	207	1.16	-
2475MHz	Pass	PK	7.42353G	58.57	74.00	-15.43	3	Horizontal	176	1.03	-
2480MHz	Pass	AV	2.48G	93.25	Inf	-Inf	3	Vertical	353	1.06	-
2480MHz	Pass	AV	2.4835G	47.99	54.00	-6.01	3	Vertical	353	1.06	-
2480MHz	Pass	PK	2.4806G	97.66	Inf	-Inf	3	Vertical	353	1.06	-
2480MHz	Pass	PK	2.4876G	59.98	74.00	-14.02	3	Vertical	353	1.06	-
2480MHz	Pass	AV	2.48G	94.67	Inf	-Inf	3	Horizontal	352	1.50	-
2480MHz	Pass	AV	2.4835G	48.46	54.00	-5.54	3	Horizontal	352	1.50	-
2480MHz	Pass	PK	2.4806G	99.07	Inf	-Inf	3	Horizontal	352	1.50	-
2480MHz	Pass	PK	2.4918G	59.69	74.00	-14.31	3	Horizontal	352	1.50	-
2480MHz	Pass	AV	4.96099G	49.64	54.00	-4.36	3	Vertical	182	2.41	-
2480MHz	Pass	AV	7.43865G	49.02	54.00	-4.98	3	Vertical	188	2.32	-
2480MHz	Pass	PK	4.96101G	59.07	74.00	-14.93	3	Vertical	182	2.41	-
2480MHz	Pass	PK	7.43848G	60.16	74.00	-13.84	3	Vertical	188	2.32	-

Mode	Result	Type	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
2480MHz	Pass	AV	4.961G	47.06	54.00	-6.94	3	Horizontal	205	1.08	-
2480MHz	Pass	AV	7.43859G	47.21	54.00	-6.79	3	Horizontal	175	1.02	-
2480MHz	Pass	PK	4.96111G	56.74	74.00	-17.26	3	Horizontal	205	1.08	-
2480MHz	Pass	PK	7.44189G	59.28	74.00	-14.72	3	Horizontal	175	1.02	-

Zigbee

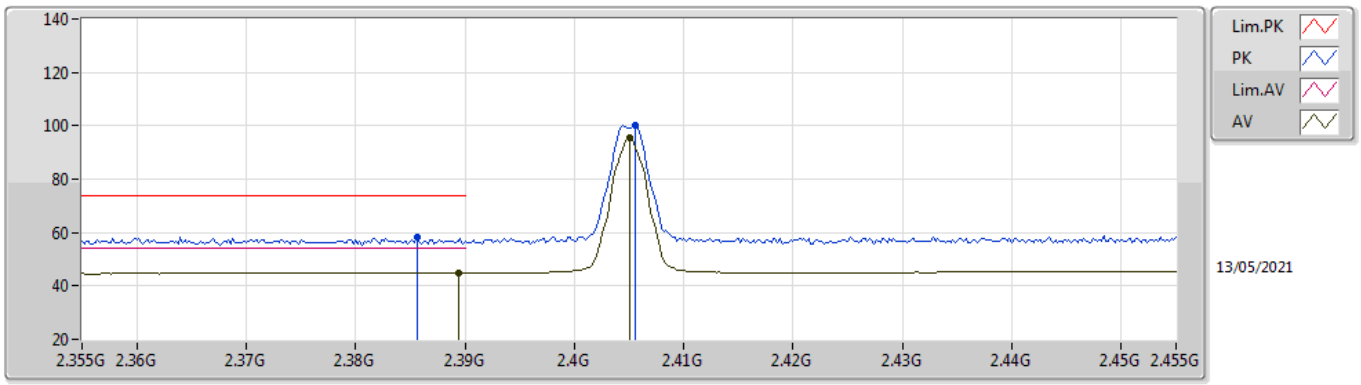
2405MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.387G	44.80	54.00	-9.20	33.23	3	Vertical	311	1.07	-	11.57	29.35	3.88	-
AV	2.405G	93.59	Inf	-Inf	33.32	3	Vertical	311	1.07	-	60.27	29.41	3.91	-
PK	2.3888G	58.39	74.00	-15.61	33.24	3	Vertical	311	1.07	-	25.15	29.36	3.88	-
PK	2.4056G	98.01	Inf	-Inf	33.32	3	Vertical	311	1.07	-	64.69	29.41	3.91	-

Zigbee

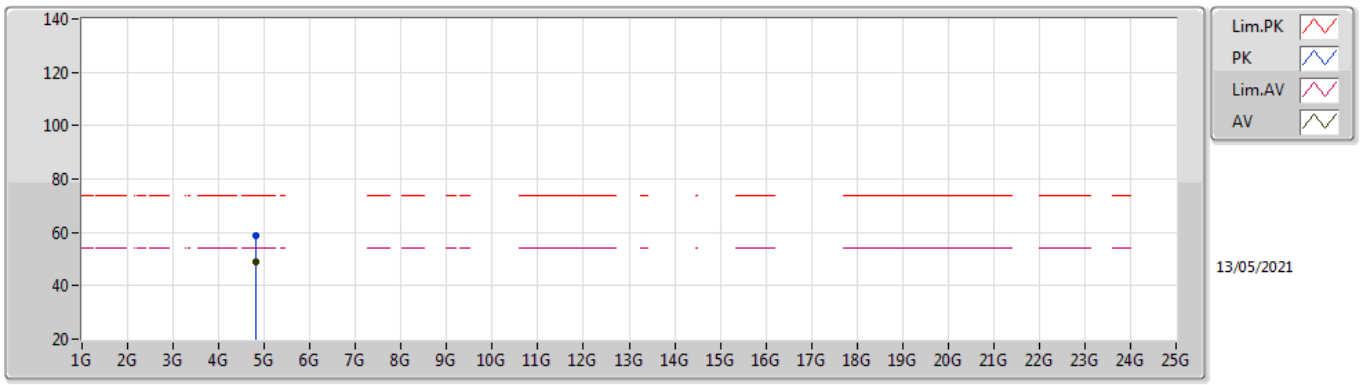
2405MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3894G	44.79	54.00	-9.21	33.24	3	Horizontal	208	1.07	-	11.55	29.36	3.88	-
AV	2.405G	95.64	Inf	-Inf	33.32	3	Horizontal	208	1.07	-	62.32	29.41	3.91	-
PK	2.3856G	58.18	74.00	-15.82	33.22	3	Horizontal	208	1.07	-	24.96	29.34	3.88	-
PK	2.4056G	100.03	Inf	-Inf	33.32	3	Horizontal	208	1.07	-	66.71	29.41	3.91	-

Zigbee

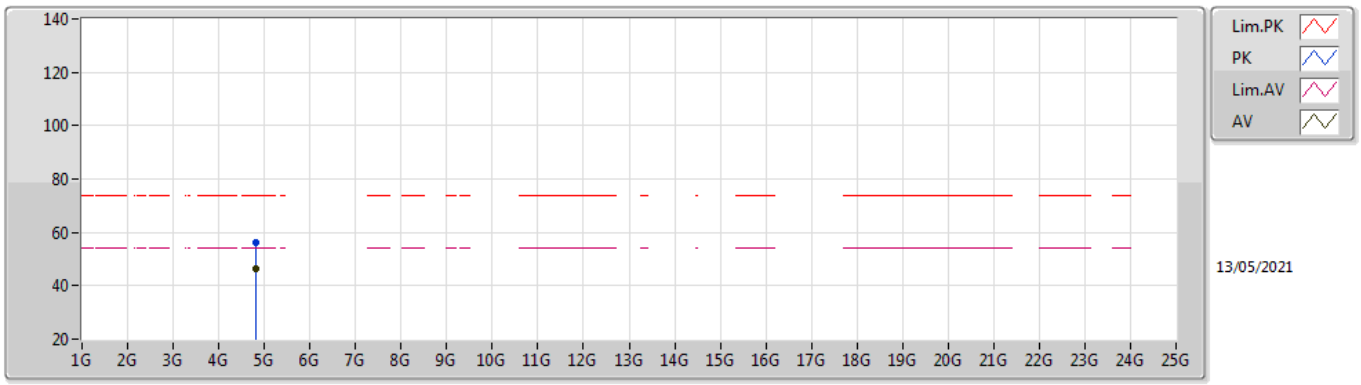
2405MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80903G	49.00	54.00	-5.00	3.82	3	Vertical	192	1.41	-	45.18	33.45	5.30	34.93
PK	4.80883G	58.75	74.00	-15.25	3.82	3	Vertical	192	1.41	-	54.93	33.45	5.30	34.93

Zigbee

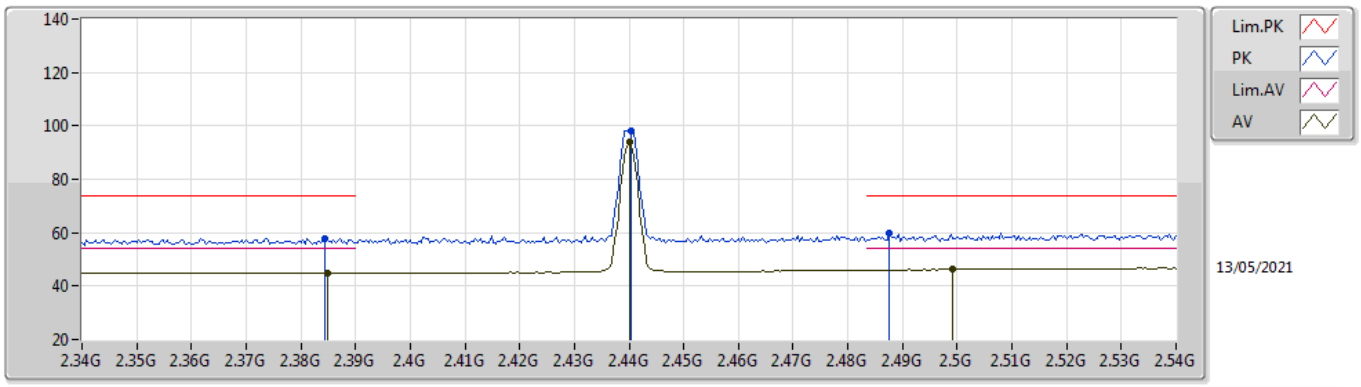
2405MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80903G	46.33	54.00	-7.67	3.82	3	Horizontal	54	2.00	-	42.51	33.45	5.30	34.93
PK	4.80903G	56.20	74.00	-17.80	3.82	3	Horizontal	54	2.00	-	52.38	33.45	5.30	34.93

Zigbee

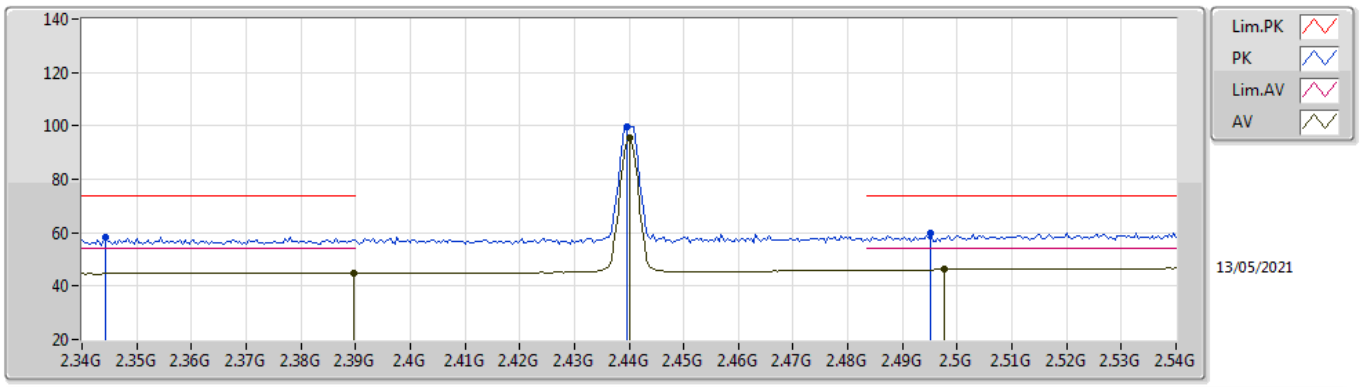
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3848G	44.90	54.00	-9.10	33.22	3	Vertical	330	1.00	-	11.68	29.34	3.88	-
AV	2.44G	93.85	Inf	-Inf	33.44	3	Vertical	330	1.00	-	60.41	29.48	3.96	-
AV	2.4992G	46.28	54.00	-7.72	34.24	3	Vertical	330	1.00	-	12.04	30.19	4.05	-
PK	2.3844G	58.00	74.00	-16.00	33.22	3	Vertical	330	1.00	-	24.78	29.34	3.88	-
PK	2.4404G	98.26	Inf	-Inf	33.44	3	Vertical	330	1.00	-	64.82	29.48	3.96	-
PK	2.4876G	59.97	74.00	-14.03	34.06	3	Vertical	330	1.00	-	25.91	30.03	4.03	-

Zigbee

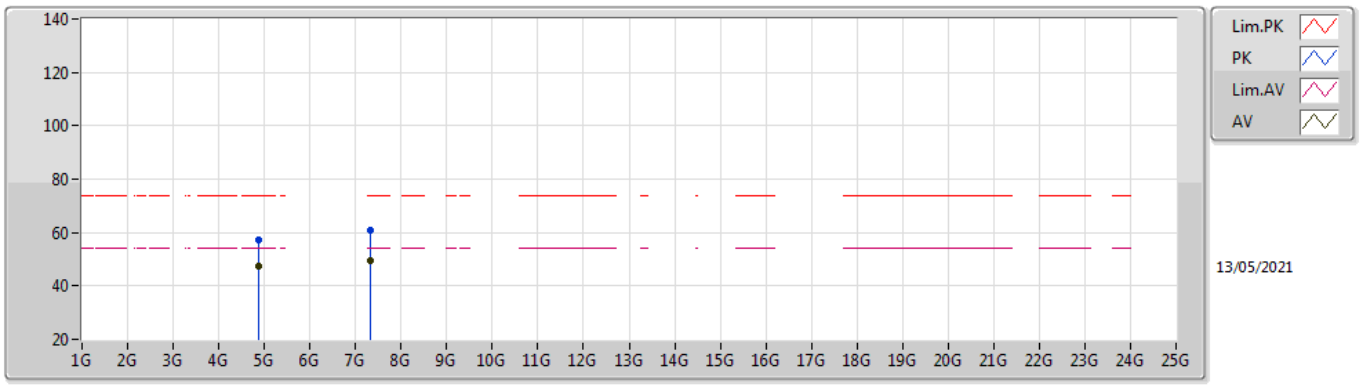
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3896G	44.80	54.00	-9.20	33.24	3	Horizontal	350	1.48	-	11.56	29.36	3.88	-
AV	2.44G	95.37	Inf	-Inf	33.44	3	Horizontal	350	1.48	-	61.93	29.48	3.96	-
AV	2.4976G	46.19	54.00	-7.81	34.22	3	Horizontal	350	1.48	-	11.97	30.17	4.05	-
PK	2.3444G	58.17	74.00	-15.83	33.03	3	Horizontal	350	1.48	-	25.14	29.21	3.82	-
PK	2.4396G	99.71	Inf	-Inf	33.44	3	Horizontal	350	1.48	-	66.27	29.48	3.96	-
PK	2.4952G	59.99	74.00	-14.01	34.17	3	Horizontal	350	1.48	-	25.82	30.13	4.04	-

Zigbee

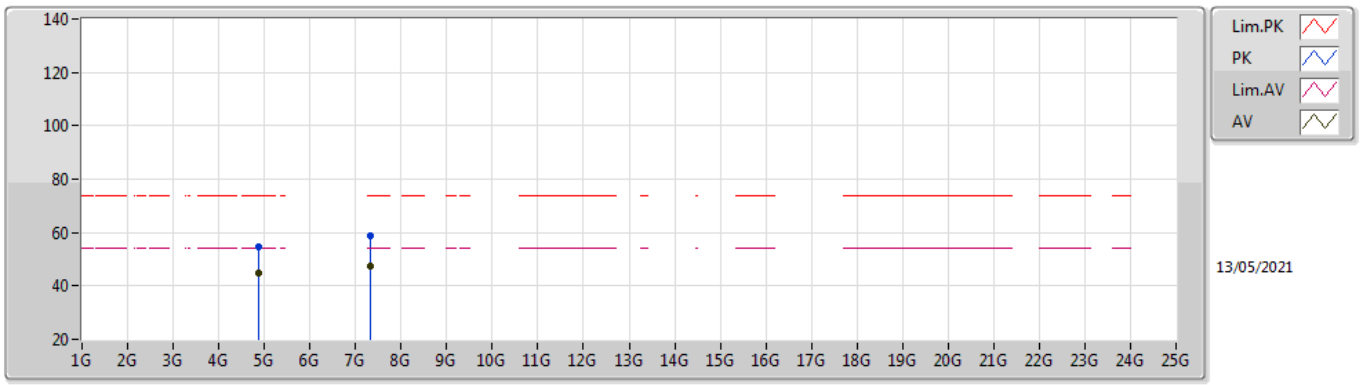
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87906G	47.65	54.00	-6.35	4.23	3	Vertical	190	2.18	-	43.42	33.82	5.34	34.93
AV	7.32146G	49.67	54.00	-4.33	11.26	3	Vertical	180	2.66	-	38.41	39.64	6.80	35.18
PK	4.87887G	57.38	74.00	-16.62	4.23	3	Vertical	190	2.18	-	53.15	33.82	5.34	34.93
PK	7.31848G	60.93	74.00	-13.07	11.26	3	Vertical	180	2.66	-	49.67	39.64	6.80	35.18

Zigbee

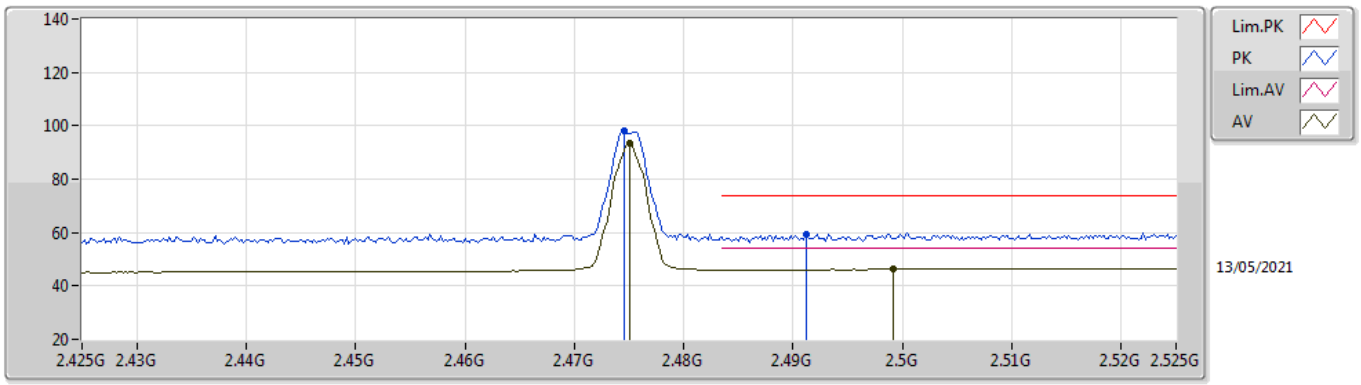
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87908G	44.78	54.00	-9.22	4.23	3	Horizontal	210	1.00	-	40.55	33.82	5.34	34.93
AV	7.32143G	47.65	54.00	-6.35	11.26	3	Horizontal	178	1.00	-	36.39	39.64	6.80	35.18
PK	4.87896G	54.75	74.00	-19.25	4.23	3	Horizontal	210	1.00	-	50.52	33.82	5.34	34.93
PK	7.32157G	59.01	74.00	-14.99	11.26	3	Horizontal	178	1.00	-	47.75	39.64	6.80	35.18

Zigbee

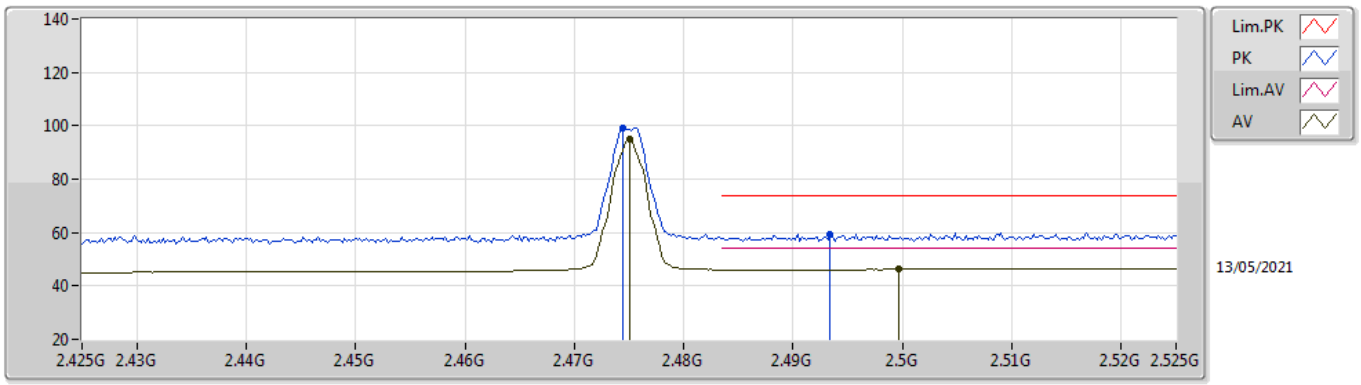
2475MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.475G	93.43	Inf	-Inf	33.86	3	Vertical	352	1.05	-	59.57	29.85	4.01	-
AV	2.4992G	46.25	54.00	-7.75	34.24	3	Vertical	352	1.05	-	12.01	30.19	4.05	-
PK	2.4746G	97.85	Inf	-Inf	33.85	3	Vertical	352	1.05	-	64.00	29.84	4.01	-
PK	2.4912G	59.44	74.00	-14.56	34.12	3	Vertical	352	1.05	-	25.32	30.08	4.04	-

Zigbee

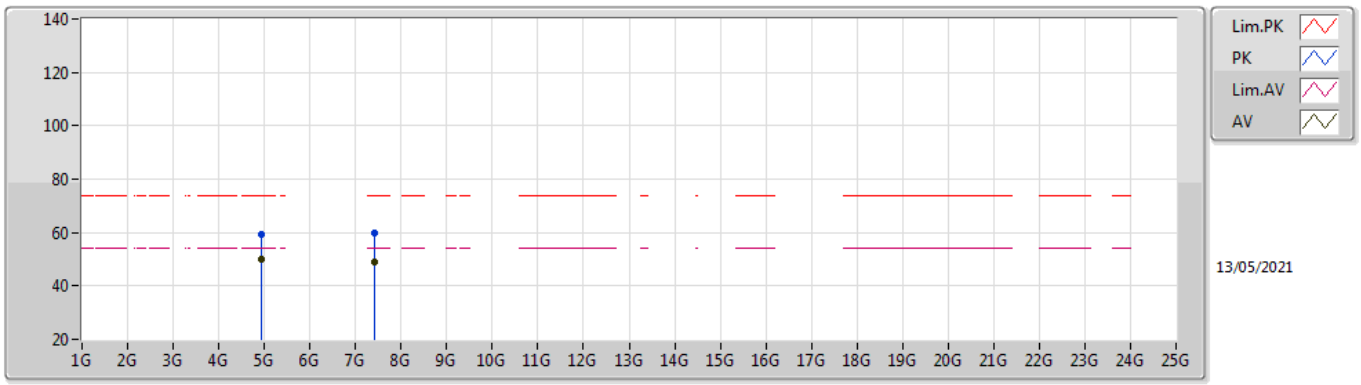
2475MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.475G	94.91	Inf	-Inf	33.86	3	Horizontal	350	1.48	-	61.05	29.85	4.01	-
AV	2.4996G	46.22	54.00	-7.78	34.24	3	Horizontal	350	1.48	-	11.98	30.19	4.05	-
PK	2.4744G	99.30	Inf	-Inf	33.85	3	Horizontal	350	1.48	-	65.45	29.84	4.01	-
PK	2.4934G	59.30	74.00	-14.70	34.15	3	Horizontal	350	1.48	-	25.15	30.11	4.04	-

Zigbee

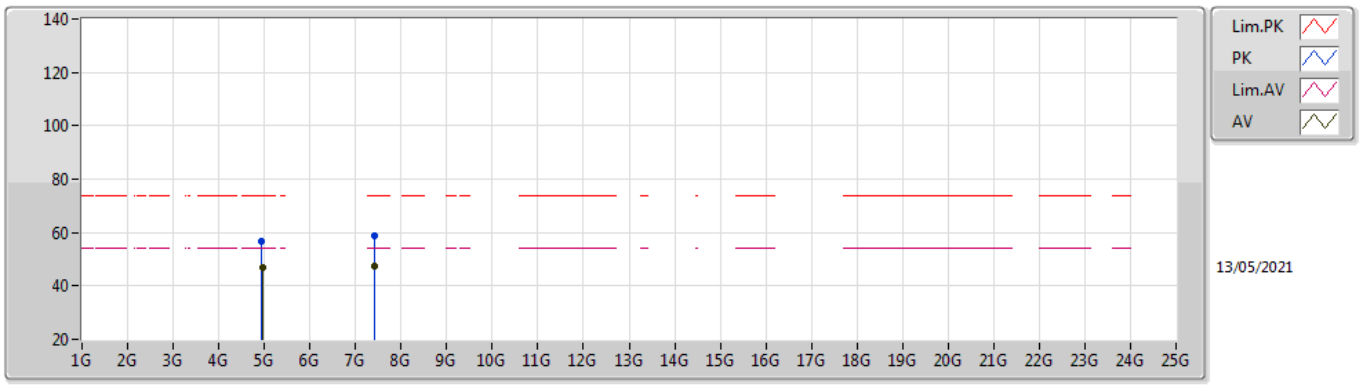
2475MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.94907G	50.00	54.00	-4.00	4.43	3	Vertical	188	2.13	-	45.57	34.00	5.37	34.94
AV	7.42363G	48.76	54.00	-5.24	11.58	3	Vertical	180	2.33	-	37.18	39.94	6.81	35.17
PK	4.9489G	59.55	74.00	-14.45	4.43	3	Vertical	188	2.13	-	55.12	34.00	5.37	34.94
PK	7.42654G	59.95	74.00	-14.05	11.60	3	Vertical	180	2.33	-	48.35	39.96	6.81	35.17

Zigbee

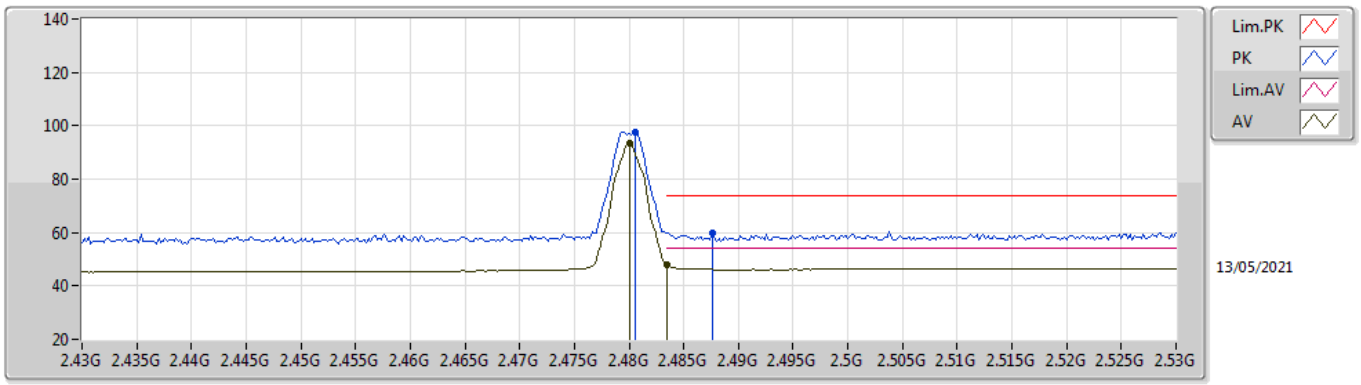
2475MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95098G	46.84	54.00	-7.16	4.44	3	Horizontal	207	1.16	-	42.40	34.00	5.38	34.94
AV	7.42363G	47.26	54.00	-6.74	11.58	3	Horizontal	176	1.03	-	35.68	39.94	6.81	35.17
PK	4.94895G	56.75	74.00	-17.25	4.43	3	Horizontal	207	1.16	-	52.32	34.00	5.37	34.94
PK	7.42353G	58.57	74.00	-15.43	11.58	3	Horizontal	176	1.03	-	46.99	39.94	6.81	35.17

Zigbee

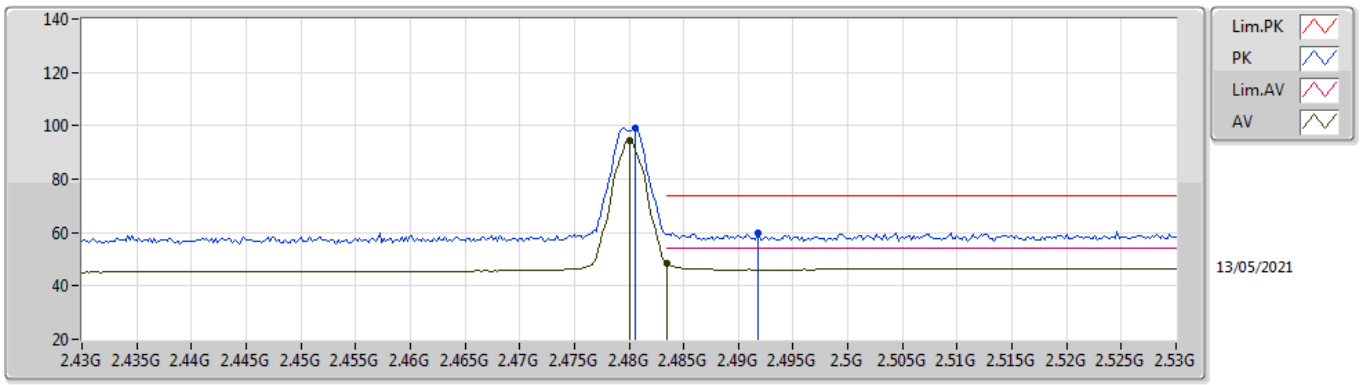
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	93.25	Inf	-Inf	33.94	3	Vertical	353	1.06	-	59.31	29.92	4.02	-
AV	2.4835G	47.99	54.00	-6.01	34.00	3	Vertical	353	1.06	-	13.99	29.97	4.03	-
PK	2.4806G	97.66	Inf	-Inf	33.95	3	Vertical	353	1.06	-	63.71	29.93	4.02	-
PK	2.4876G	59.98	74.00	-14.02	34.06	3	Vertical	353	1.06	-	25.92	30.03	4.03	-

Zigbee

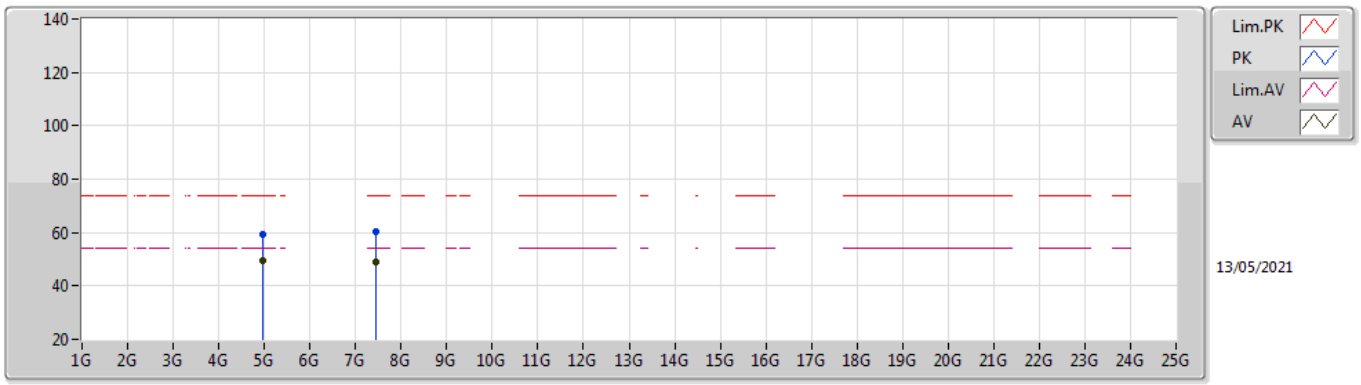
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	94.67	Inf	-Inf	33.94	3	Horizontal	352	1.50	-	60.73	29.92	4.02	-
AV	2.4835G	48.46	54.00	-5.54	34.00	3	Horizontal	352	1.50	-	14.46	29.97	4.03	-
PK	2.4806G	99.07	Inf	-Inf	33.95	3	Horizontal	352	1.50	-	65.12	29.93	4.02	-
PK	2.4918G	59.69	74.00	-14.31	34.13	3	Horizontal	352	1.50	-	25.56	30.09	4.04	-

Zigbee

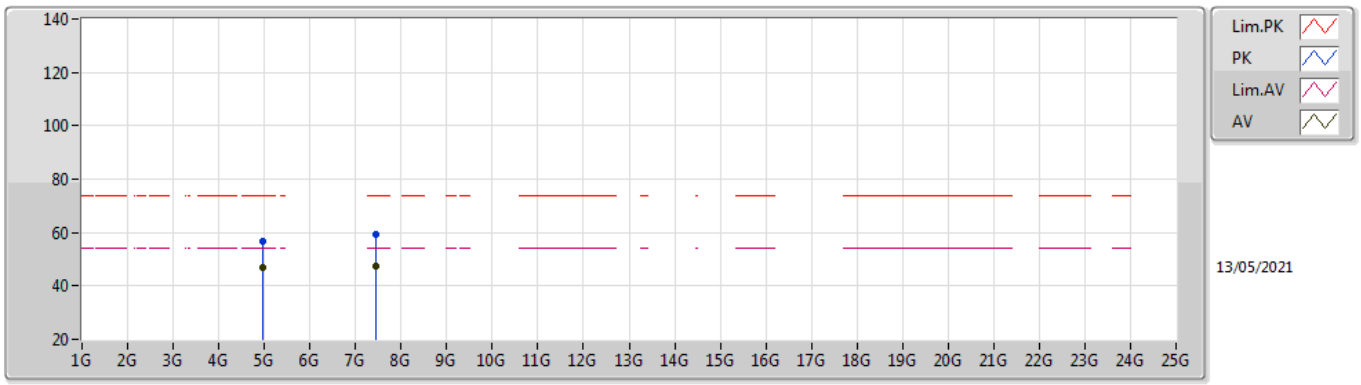
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96099G	49.64	54.00	-4.36	4.44	3	Vertical	182	2.41	-	45.20	34.00	5.38	34.94
AV	7.43865G	49.02	54.00	-4.98	11.68	3	Vertical	188	2.32	-	37.34	40.03	6.82	35.17
PK	4.96101G	59.07	74.00	-14.93	4.44	3	Vertical	182	2.41	-	54.63	34.00	5.38	34.94
PK	7.43848G	60.16	74.00	-13.84	11.68	3	Vertical	188	2.32	-	48.48	40.03	6.82	35.17

Zigbee

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.961G	47.06	54.00	-6.94	4.44	3	Horizontal	205	1.08	-	42.62	34.00	5.38	34.94
AV	7.43859G	47.21	54.00	-6.79	11.68	3	Horizontal	175	1.02	-	35.53	40.03	6.82	35.17
PK	4.96111G	56.74	74.00	-17.26	4.44	3	Horizontal	205	1.08	-	52.30	34.00	5.38	34.94
PK	7.44189G	59.28	74.00	-14.72	11.70	3	Horizontal	175	1.02	-	47.58	40.05	6.82	35.17