

FCC Radio Test Report

FCC ID : 2AUIUWF6DBMR
Equipment : Wyze Mesh Router
Brand Name : WYZE
Model Name : WF6DBMR
Applicant : Wyze Labs, Inc.
5808 Lake Washington Blvd NE Ste 300, Kirkland, WA
98033, USA
Manufacturer : Wyze Labs, Inc.
5808 Lake Washington Blvd NE Ste 300, Kirkland, WA
98033, USA
Standard : 47 CFR FCC Part 15.247

The product was received on Jan. 28, 2022, and testing was started from Feb. 18, 2022 and completed on Mar. 04, 2022. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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


Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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



Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Testing Applied Standards	7
1.3 Testing Location Information	7
1.4 Measurement Uncertainty	7
2 TEST CONFIGURATION OF EUT.....	8
2.1 Test Channel Mode	8
2.2 The Worst Case Measurement Configuration	9
2.3 Accessories	10
2.4 Support Equipment.....	10
2.5 Test Setup Diagram	11
3 TRANSMITTER TEST RESULT	12
3.1 AC Power-line Conducted Emissions	12
3.2 DTS Bandwidth.....	14
3.3 Maximum Conducted Output Power	15
3.4 Power Spectral Density	17
3.5 Emissions in Non-restricted Frequency Bands	18
3.6 Emissions in Restricted Frequency Bands.....	19
4 TEST EQUIPMENT AND CALIBRATION DATA	23
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APPENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APPENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPENDIX G. TEST PHOTOS	
PHOTOGRAPHS OF EUT V01	



History of this test report

[illegible]

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: Sam Tsai

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
1	LITEON	N/A	PIFA	I-PEX
2	LITEON	N/A	PIFA	I-PEX
3	LITEON	N/A	PIFA	I-PEX
4	LITEON	N/A	PIFA	I-PEX
5	LITEON	N/A	PIFA	I-PEX
6	LITEON	N/A	PIFA	I-PEX

Ant.	Port	Gain (dBi)			
		2.4G	5G	BT	Zigbee
1	1	3.22	-	-	-
2	2	3.25	-	-	-
3	1	-	4.23	-	-
4	2	-	3.87	-	-
5	1	-	-	3.24	-
6	1	-	-	-	2.14

Note 1: The EUT has six antennas.

For 2.4GHz function:

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

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

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (2TX/2RX)

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

For BT function:

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

Ant. 5 (port 1) could transmit/receive

For Zigbee function:

For Zigbee mode (1TX/1RX)

Ant. 6 (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) $\geq 1/T$
Zigbee	0.912	0.4	3.411m	300

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

1.1.5 Table for Multiple Listing

SKU No.	Ethernet IC
Main Source (SKU 1)	Brand: Qualcomm / Model: QCA8081
2nd Source (SKU 2)	Brand: Qualcomm / Model: QCA8080

1.2 Testing Applied Standards

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

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

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

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

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Jack	20.4~21.5°C / 55~64%	22/Feb/2022
RF Conducted	TH07-HY	Johnny	21.1~26.6°C / 52~59%	25/Feb/2022~04/Mar/2022
Radiated	03CH02-HY	Jack	19.2~20.5°C / 58~65%	18/Feb/2022~03/Mar/2022
☐ 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.				

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	Dos 6.1
------------------------------	---------

Mode	Power Setting
Zigbee	-
2405MHz	8
2440MHz	8
2480MHz	8

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	WLAN 2.4GHz + WLAN 5GHz + Bluetooth + Zigbee
Refer to Sporton Test Report No.: FA210727 for Co-location RF Exposure Evaluation.	

2.3 Accessories

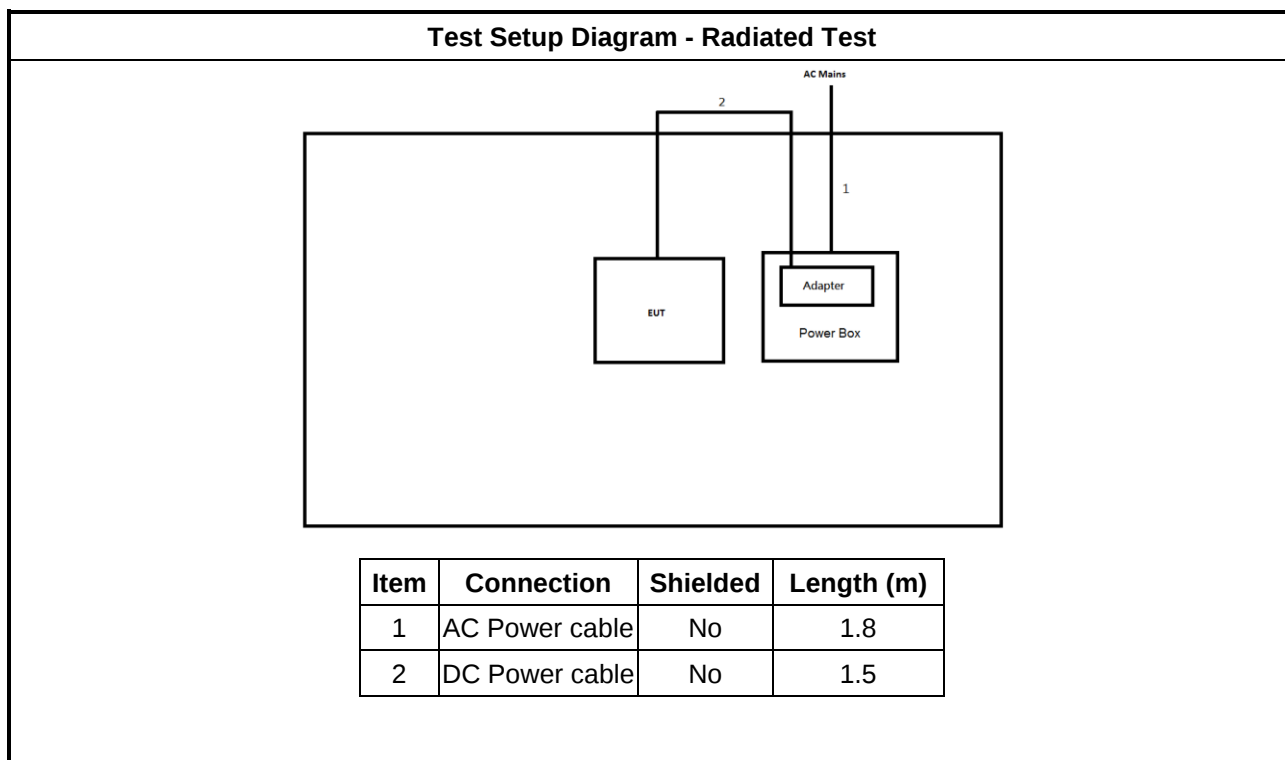
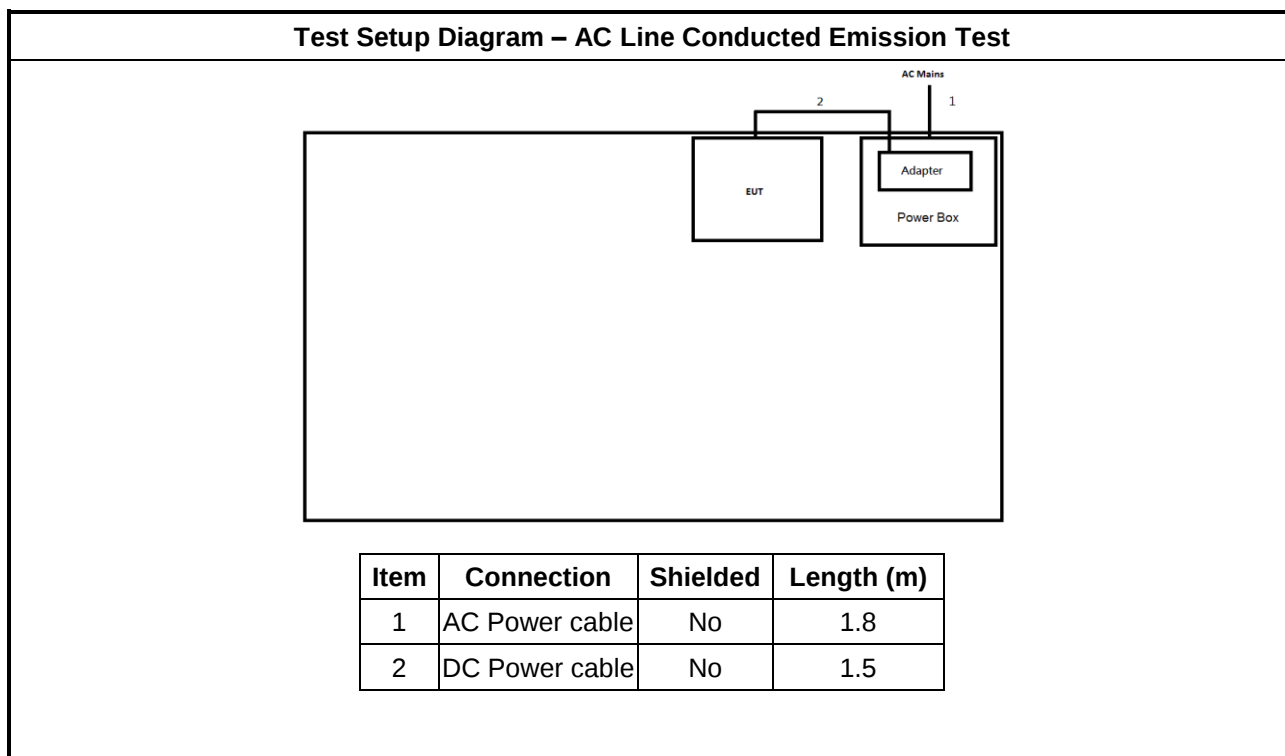
Accessories				
AC Adapter	Brand Name	APD	Model Name	WB-12G12FU
	Manufacturer	Asian Power		
	Power Rating	I/P: 100-240Vac, 50-60Hz, 0.3A, O/P: 12Vdc, 1A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		

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

2.4 Support Equipment

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

2.5 Test Setup Diagram



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

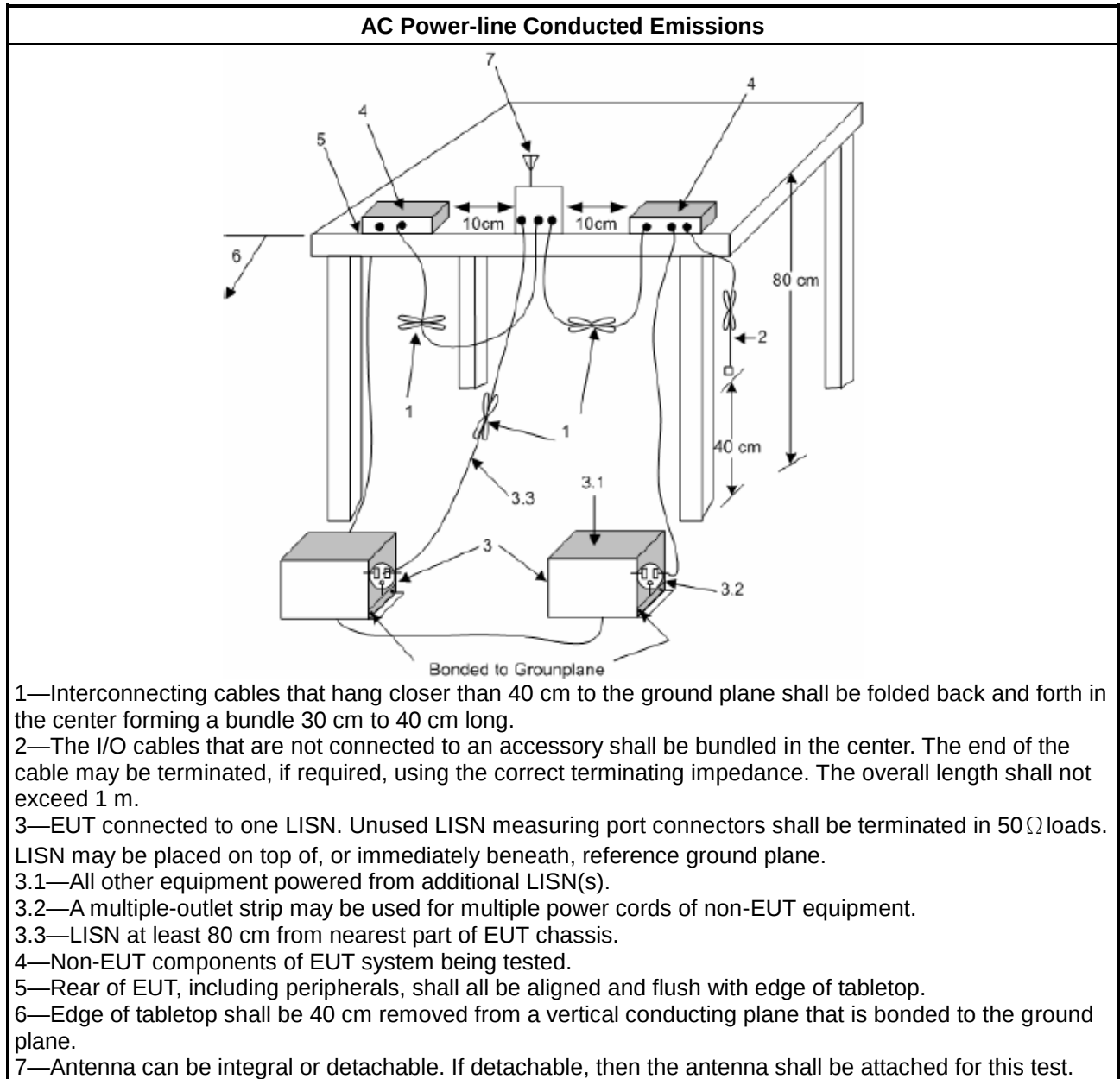
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

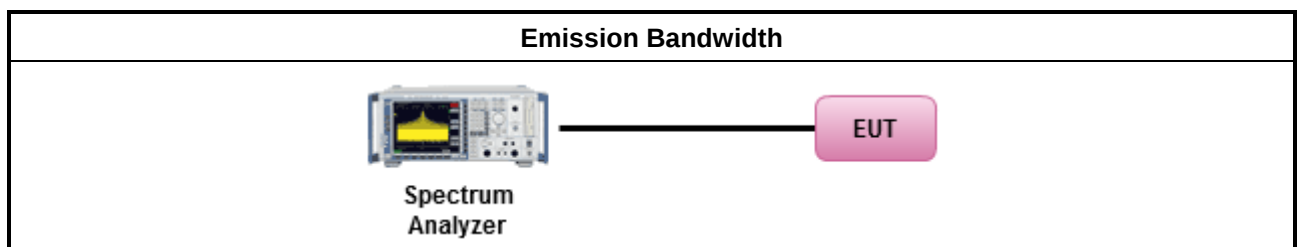
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

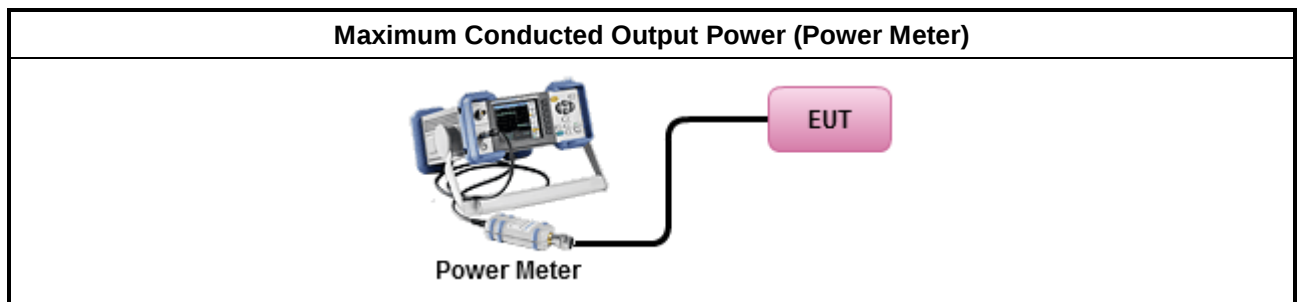
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

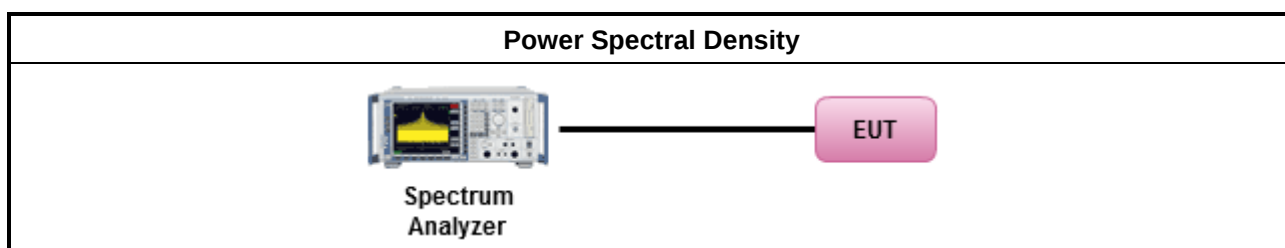
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

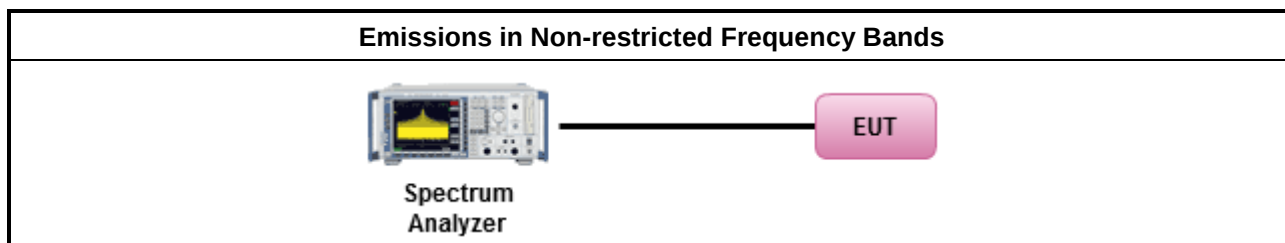
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

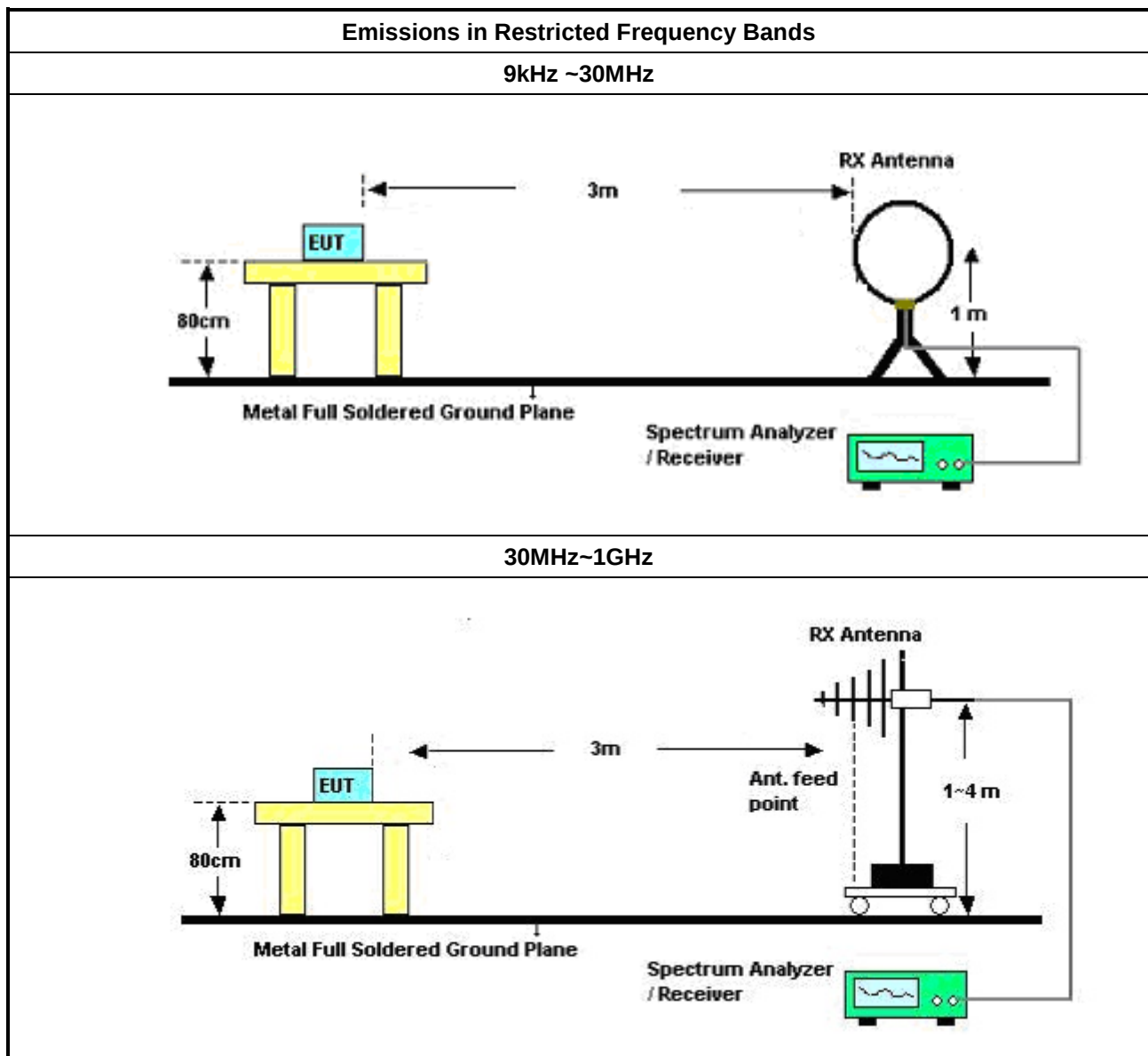
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted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

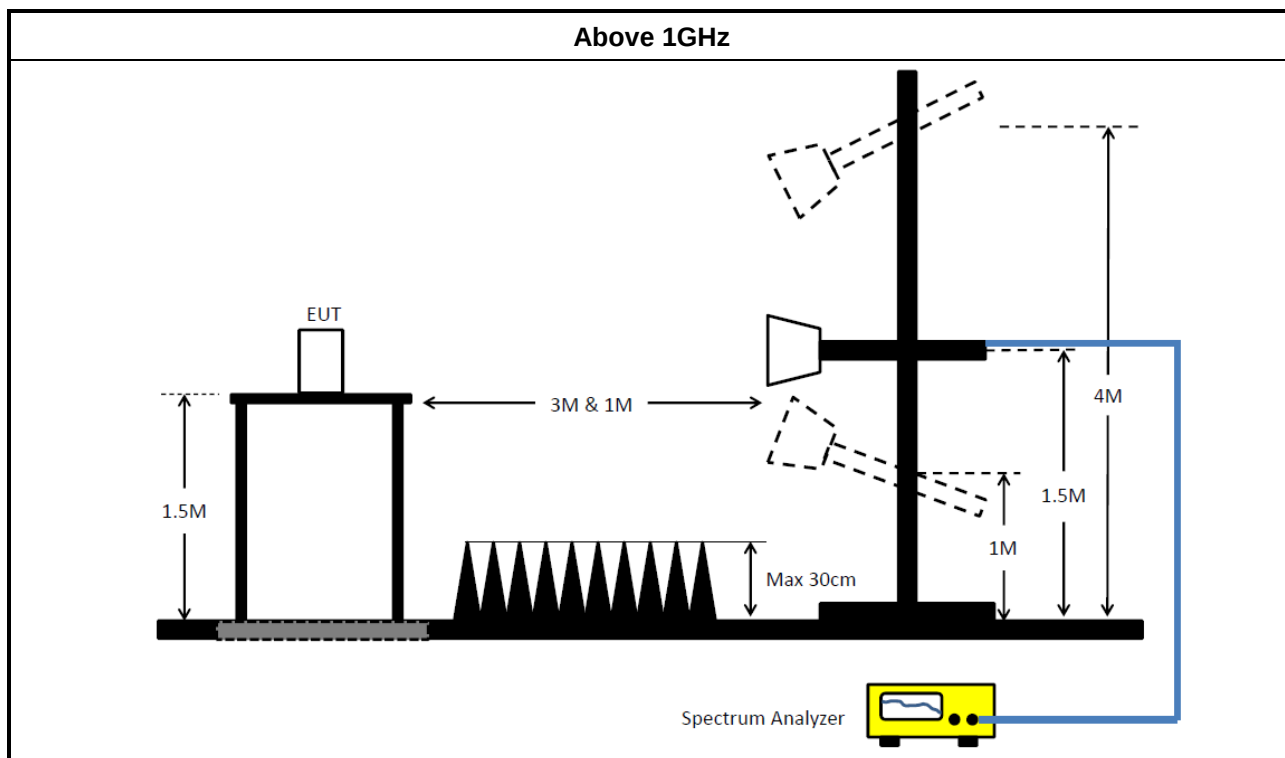
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

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

3.6.5 Test Setup





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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	21/May/2021	20/May/2022
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	12/Jan/2022	11/Jan/2023
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	03/Mar/2021	02/Mar/2022
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	26/Oct/2021	25/Oct/2022
Software	Sporton	SENSE-EMI	V5.10.7.14	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	17/Dec/2021	16/Dec/2022
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	20/Dec/2021	19/Dec/2022
Signal Analyzer	R&S	FSV 40	101029	10Hz~40GHz	20/Oct/2021	19/Oct/2022
SENSE-15247_DTS	Sporton	V5.10.7.14	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	02/Aug/2021	01/Aug/2022
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	01/Aug/2021	31/Jul/2022
Signal Analyzer	R&S	FSP40	100593	9kHz~40GHz	12/Mar/2021	11/Mar/2022
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	29/Jun/2021	28/Jun/2022
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	03/Nov/2021	02/Nov/2022
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	04/Sep/2021	03/Sep/2022
Double Ridged Guide Horn Antenna	SCHWARZBEC	BBHA 9120 D	BBHA 9120 D 01543	1GHz~18GHz	04/Jun/2021	03/Jun/2022
RF Cable	MVE	400LL	MVE-1-0802	9kHz~30MHz	05/May/2021	04/May/2022
RF Cable	MVE	400LL	MVE-1-0802	30MHz~1GHz	05/May/2021	04/May/2022
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	805193/4+805192 /4	1GHz~40GHz	06/Apr/2021	05/Apr/2022
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	11/Mar/2021	10/Mar/2022
Microwave Preamplifier	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	102052	9kHz~3.6GHz	19/Apr/2021	18/Apr/2022
SENSE-15247_DTS	Sporton	V5.10.7.13	N/A	N/A	N/A	N/A



Conducted Emissions at Powerline

Appendix A

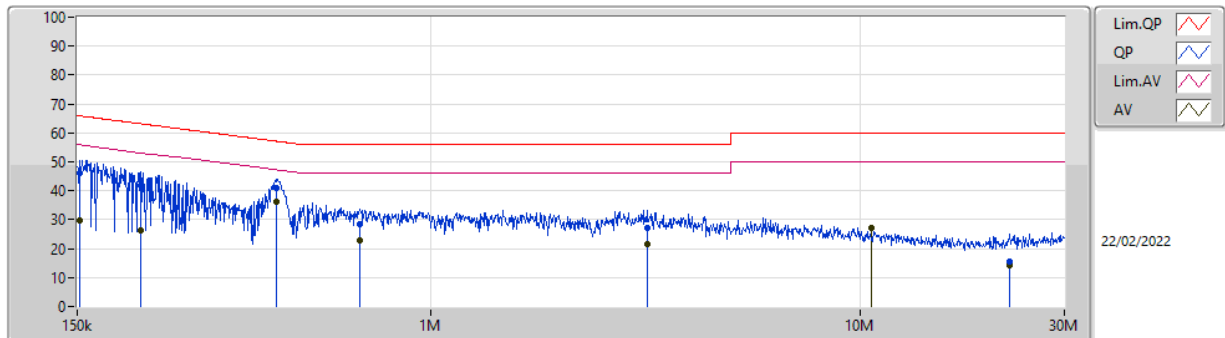
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	435.504k	36.07	47.15	-11.08	Line

Mode config

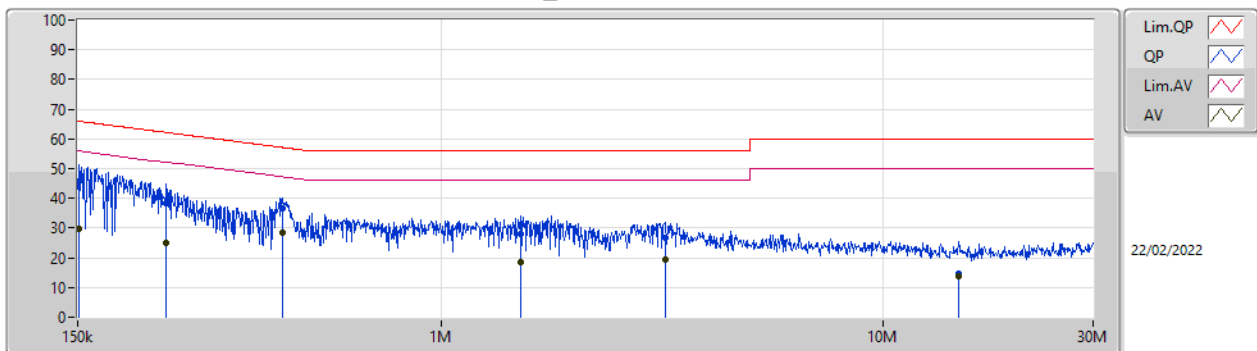
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	152.414k	46.03	65.87	-19.84	Line	-
Mode 1	Pass	AV	152.414k	29.88	55.87	-25.99	Line	-
Mode 1	Pass	QP	210.599k	41.93	63.19	-21.26	Line	-
Mode 1	Pass	AV	210.599k	26.15	53.19	-27.04	Line	-
Mode 1	Pass	QP	435.504k	40.92	57.15	-16.23	Line	-
Mode 1	Pass	AV	435.504k	36.07	47.15	-11.08	Line	-
Mode 1	Pass	QP	683.758k	28.39	56.00	-27.61	Line	-
Mode 1	Pass	AV	683.758k	22.77	46.00	-23.23	Line	-
Mode 1	Pass	QP	3.192M	27.02	56.00	-28.98	Line	-
Mode 1	Pass	AV	3.192M	21.36	46.00	-24.64	Line	-
Mode 1	Pass	QP	22.396M	15.64	60.00	-44.36	Line	-
Mode 1	Pass	AV	22.396M	14.25	50.00	-35.75	Line	-
Mode 1	Pass	AV	10.624M	27.28	50.00	-22.72	Line	-
Mode 1	Pass	AV	151.202k	29.70	55.92	-26.22	Neutral	-
Mode 1	Pass	AV	238.343k	25.09	52.16	-27.07	Neutral	-
Mode 1	Pass	AV	435.504k	28.49	47.15	-18.66	Neutral	-
Mode 1	Pass	AV	1.513M	18.57	46.00	-27.43	Neutral	-
Mode 1	Pass	AV	3.231M	19.50	46.00	-26.50	Neutral	-
Mode 1	Pass	AV	14.905M	13.80	50.00	-36.20	Neutral	-
Mode 1	Pass	QP	151.202k	45.67	65.92	-20.25	Neutral	-
Mode 1	Pass	QP	238.343k	38.45	62.16	-23.71	Neutral	-
Mode 1	Pass	QP	435.504k	36.75	57.15	-20.40	Neutral	-
Mode 1	Pass	QP	1.513M	27.95	56.00	-28.05	Neutral	-
Mode 1	Pass	QP	3.231M	26.70	56.00	-29.30	Neutral	-
Mode 1	Pass	QP	14.905M	14.66	60.00	-45.34	Neutral	-

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	152.414k	46.03	65.87	-19.84	19.55	Line	-	26.48	9.60	0.04	9.91			
AV	152.414k	29.88	55.87	-25.99	19.55	Line	-	10.33	9.60	0.04	9.91			
QP	210.599k	41.93	63.19	-21.26	19.56	Line	-	22.37	9.61	0.04	9.91			
AV	210.599k	26.15	53.19	-27.04	19.56	Line	-	6.59	9.61	0.04	9.91			
QP	435.504k	40.92	57.15	-16.23	19.57	Line	-	21.35	9.60	0.06	9.91			
AV	435.504k	36.07	47.15	-11.08	19.57	Line	-	16.50	9.60	0.06	9.91			
QP	683.758k	28.39	56.00	-27.61	19.60	Line	-	8.79	9.61	0.07	9.92			
AV	683.758k	22.77	46.00	-23.23	19.60	Line	-	3.17	9.61	0.07	9.92			
QP	3.192M	27.02	56.00	-28.98	19.68	Line	-	7.34	9.63	0.13	9.92			
AV	3.192M	21.36	46.00	-24.64	19.68	Line	-	1.68	9.63	0.13	9.92			
QP	22.396M	15.64	60.00	-44.36	19.79	Line	-	-4.15	9.55	0.31	9.93			
AV	22.396M	14.25	50.00	-35.75	19.79	Line	-	-5.54	9.55	0.31	9.93			
AV	10.624M	27.28	50.00	-22.72	19.78	Line	-	7.50	9.64	0.21	9.93			

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
AV	151.202k	29.70	55.92	-26.22	19.54	Neutral	-	10.16	9.59	0.04	9.91			
AV	238.343k	25.09	52.16	-27.07	19.55	Neutral	-	5.54	9.59	0.05	9.91			
AV	435.504k	28.49	47.15	-18.66	19.55	Neutral	-	8.94	9.58	0.06	9.91			
AV	1.513M	18.57	46.00	-27.43	19.61	Neutral	-	-1.04	9.60	0.09	9.92			
AV	3.231M	19.50	46.00	-26.50	19.66	Neutral	-	-0.16	9.61	0.13	9.92			
AV	14.905M	13.80	50.00	-36.20	19.85	Neutral	-	-6.05	9.67	0.25	9.93			
QP	151.202k	45.67	65.92	-20.25	19.54	Neutral	-	26.13	9.59	0.04	9.91			
QP	238.343k	38.45	62.16	-23.71	19.55	Neutral	-	18.90	9.59	0.05	9.91			
QP	435.504k	36.75	57.15	-20.40	19.55	Neutral	-	17.20	9.58	0.06	9.91			
QP	1.513M	27.95	56.00	-28.05	19.61	Neutral	-	8.34	9.60	0.09	9.92			
QP	3.231M	26.70	56.00	-29.30	19.66	Neutral	-	7.04	9.61	0.13	9.92			
QP	14.905M	14.66	60.00	-45.34	19.85	Neutral	-	-5.19	9.67	0.25	9.93			

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.113M	2.255M	2M26G1D	1.106M	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	Pass	500k	1.113M	2.255M
2440MHz	Pass	500k	1.106M	2.255M
2480MHz	Pass	500k	1.113M	2.255M

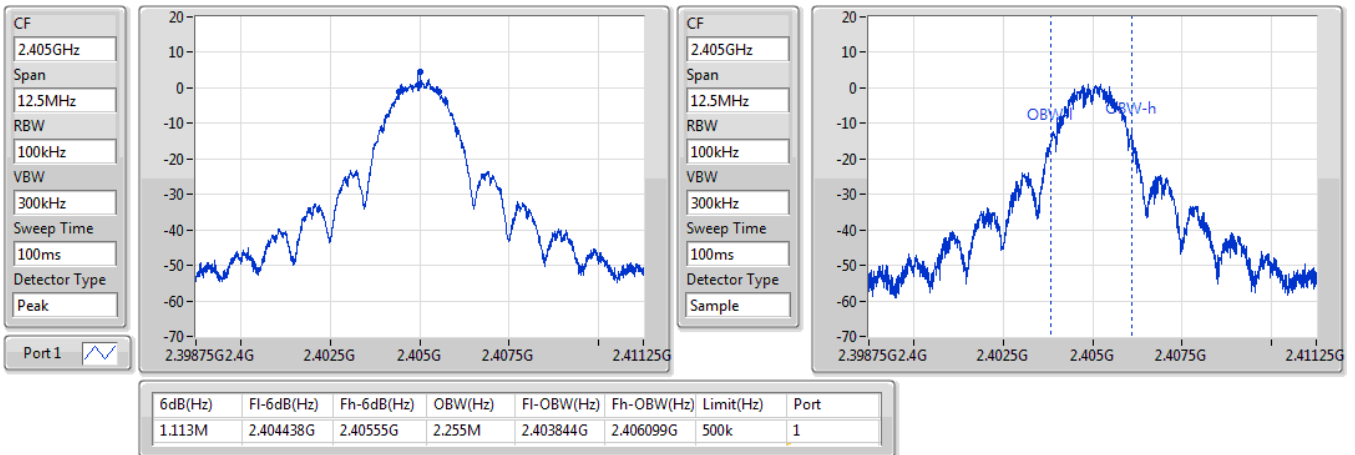
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

Zigbee

2405MHz

EBW

25/02/2022

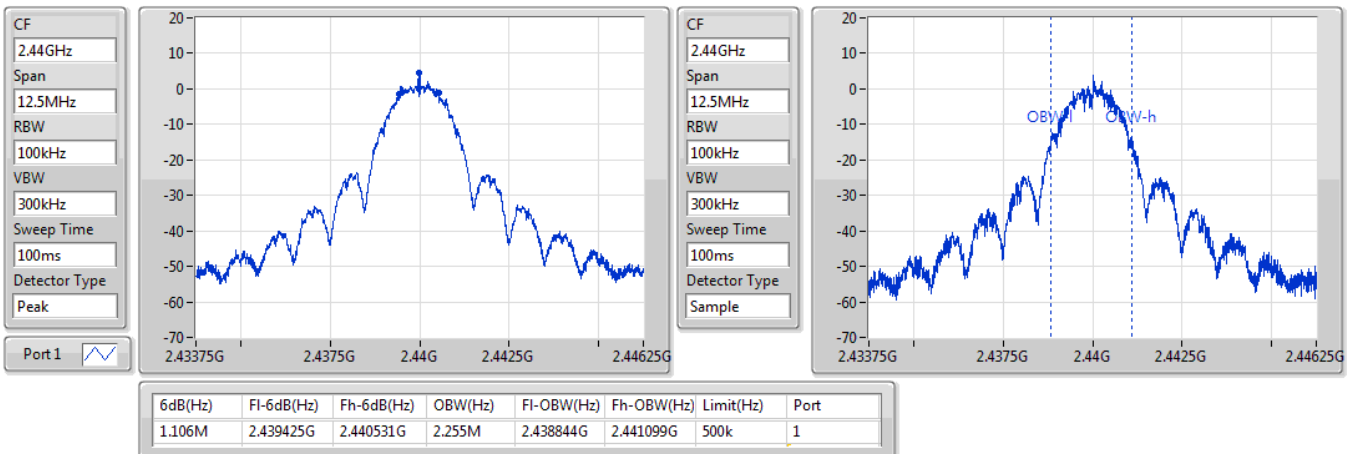


Zigbee

2440MHz

EBW

25/02/2022

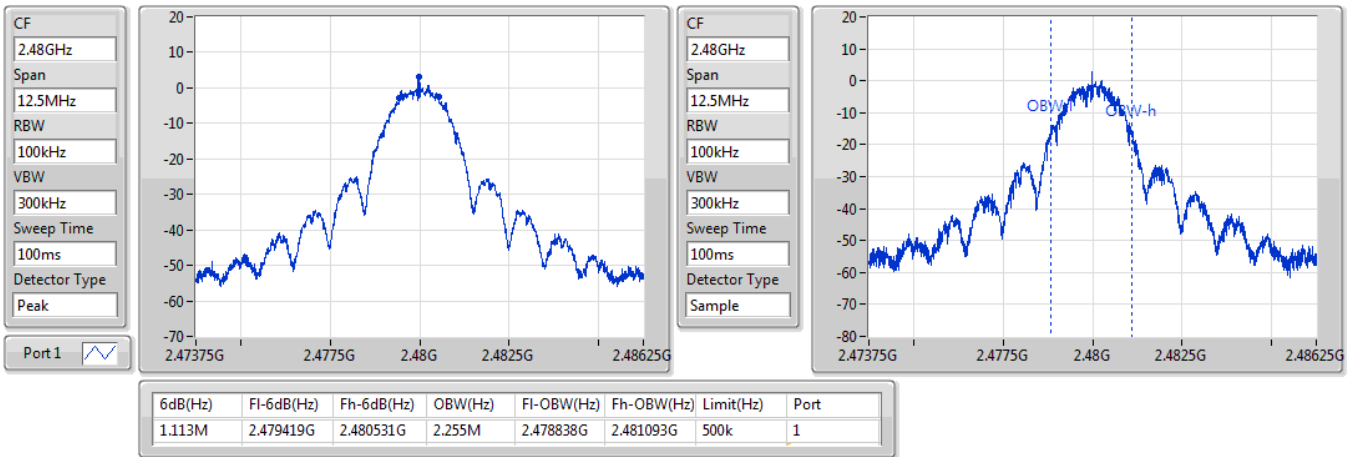


Zigbee

2480MHz

EBW

04/03/2022





Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	5.45	0.00351



Average Power

Appendix C

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	2.14	5.45	5.45	30.00
2440MHz	Pass	2.14	5.08	5.08	30.00
2480MHz	Pass	2.14	4.27	4.27	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Zigbee	-8.23

RBW = 3kHz;



Result

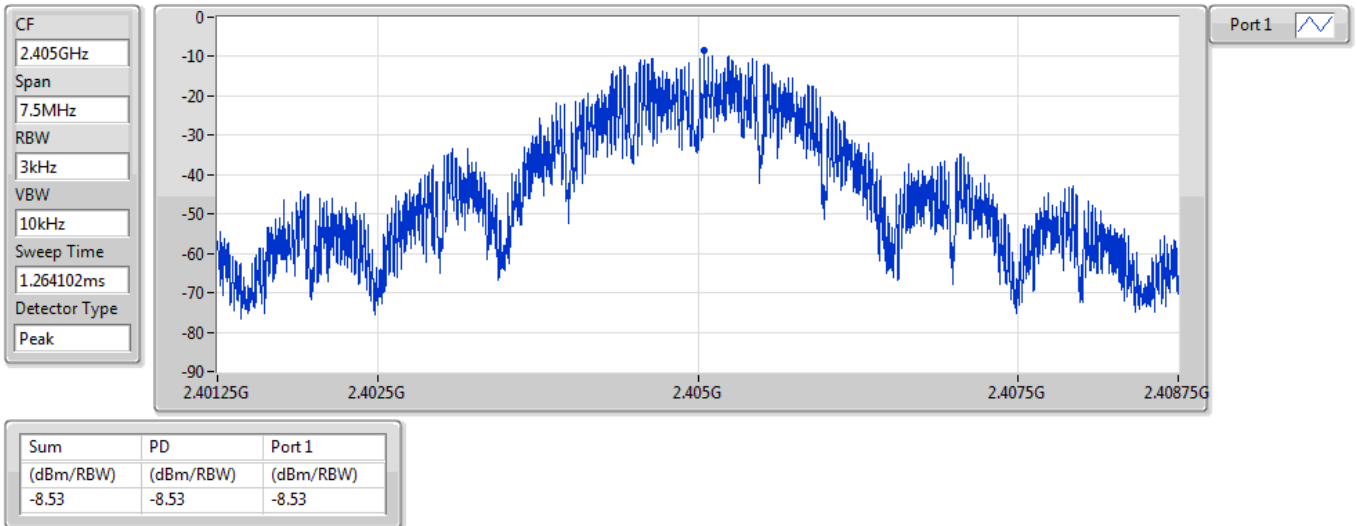
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	2.14	-8.53	-8.53	8.00
2440MHz	Pass	2.14	-8.23	-8.23	8.00
2480MHz	Pass	2.14	-9.42	-9.42	8.00

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

2405MHz

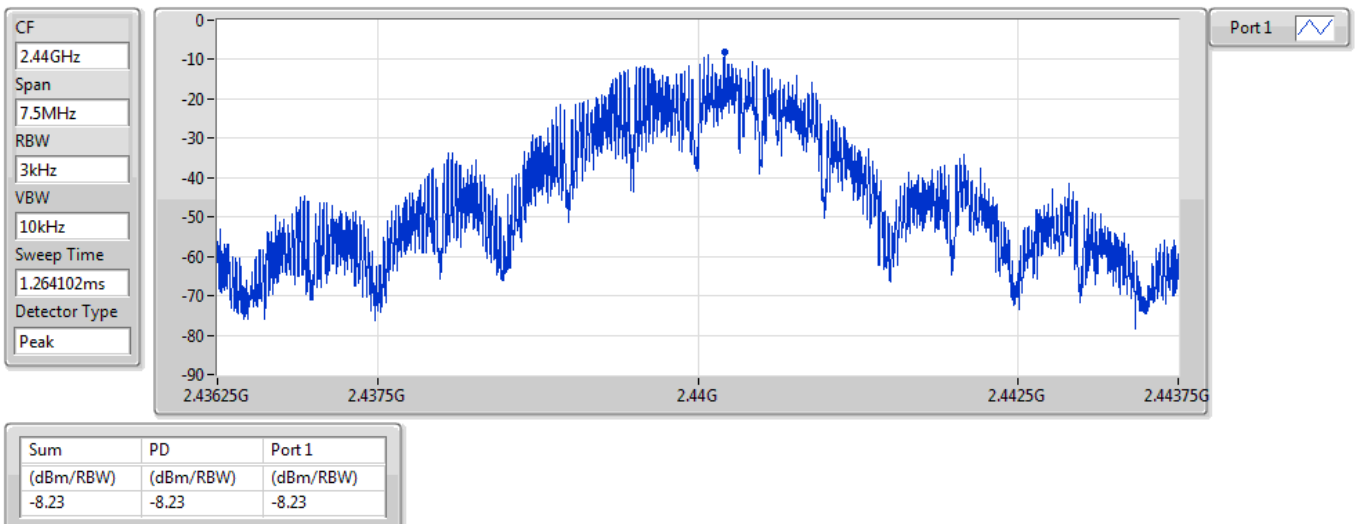
25/02/2022



Zigbee

2440MHz

25/02/2022

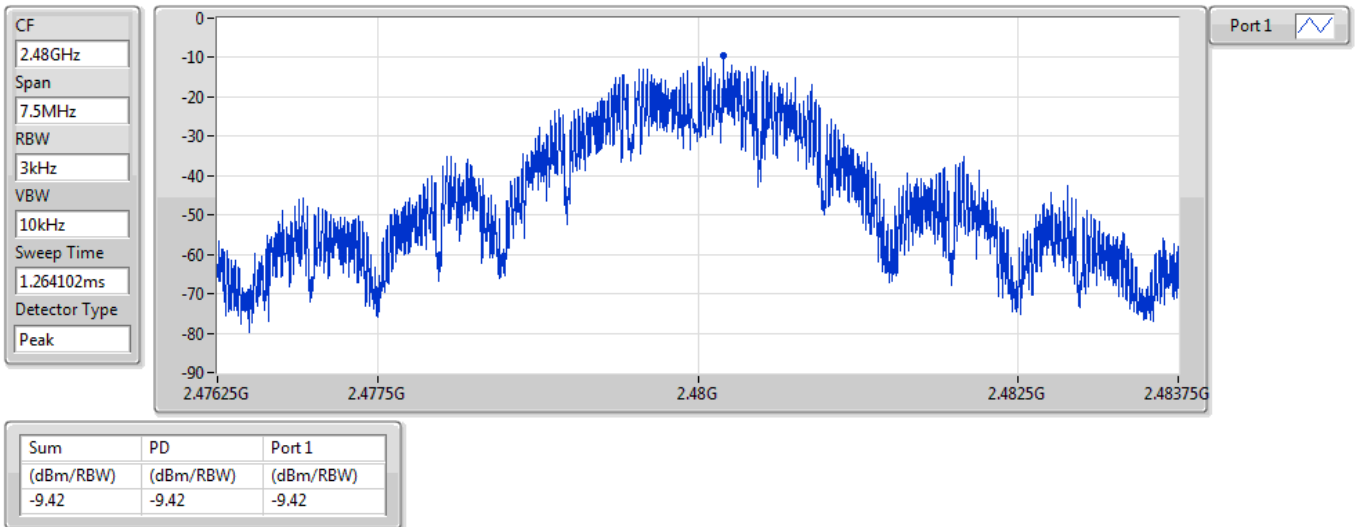


Zigbee

2480MHz

PSD

04/03/2022





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	2.40497G	4.13	-25.87	2.30711G	-56.61	2.39595G	-54.52	2.4835G	-50.11	2.48383G	-41.30	24.69898G	-42.97	1



Result

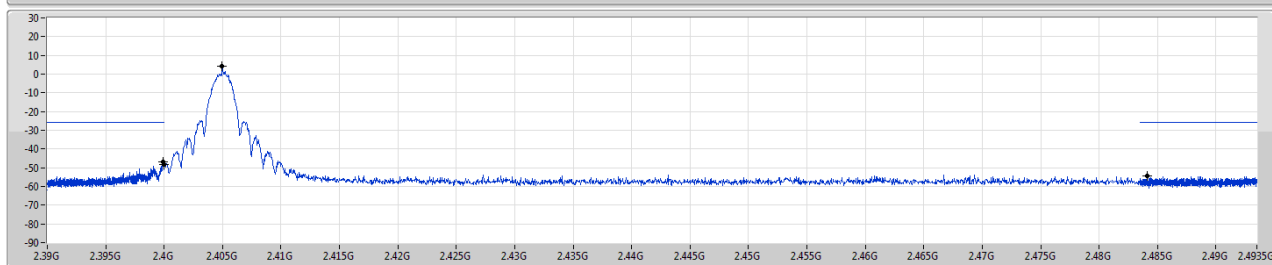
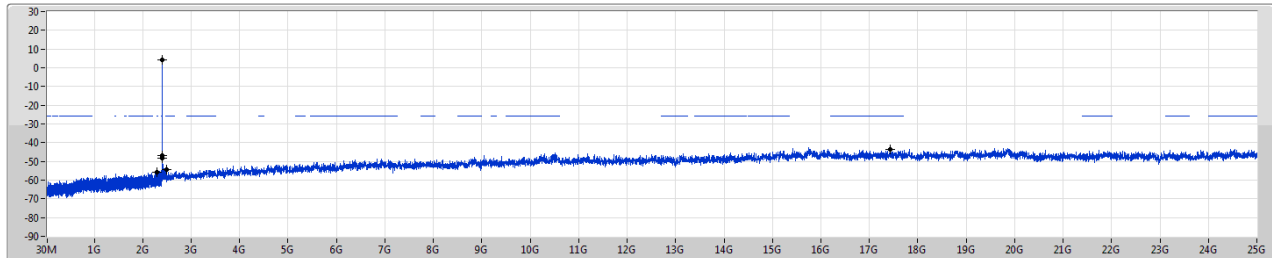
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
Zigbee	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.40497G	4.13	-25.87	2.30121G	-55.59	2.39999G	-47.01	2.4G	-48.42	2.48411G	-54.59	17.435G	-43.44	1
2440MHz	Pass	2.40497G	4.13	-25.87	2.16403G	-56.15	2.39224G	-53.15	2.4835G	-56.67	2.4845G	-54.13	17.09459G	-43.54	1
2480MHz	Pass	2.40497G	4.13	-25.87	2.30711G	-56.61	2.39595G	-54.52	2.4835G	-50.11	2.48383G	-41.30	24.69898G	-42.97	1

Zigbee 2405MHz

CSENdB

04/03/2022

Port1



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

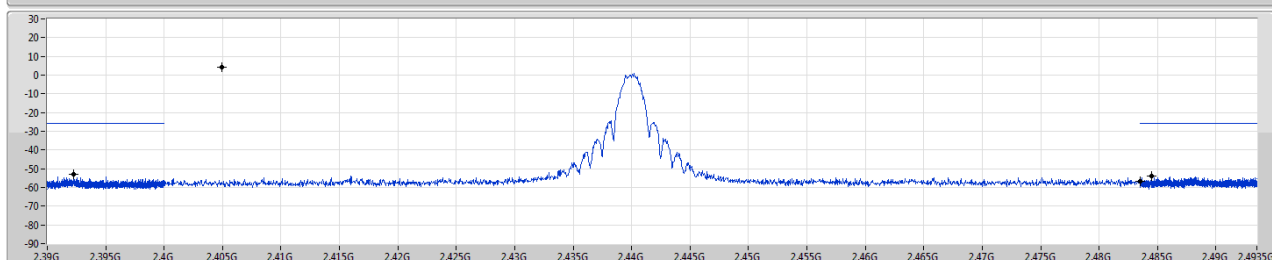
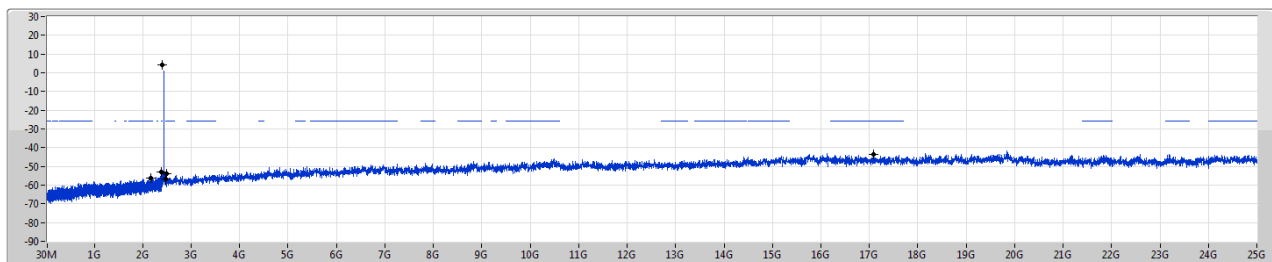
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40497G	4.13	-25.87	2.30121G	-55.59	2.3999G	-47.01	2.4G	-48.42	2.48411G	-54.59	17.435G	-43.44	1

Zigbee 2440MHz

CSENdB

04/03/2022

Port1



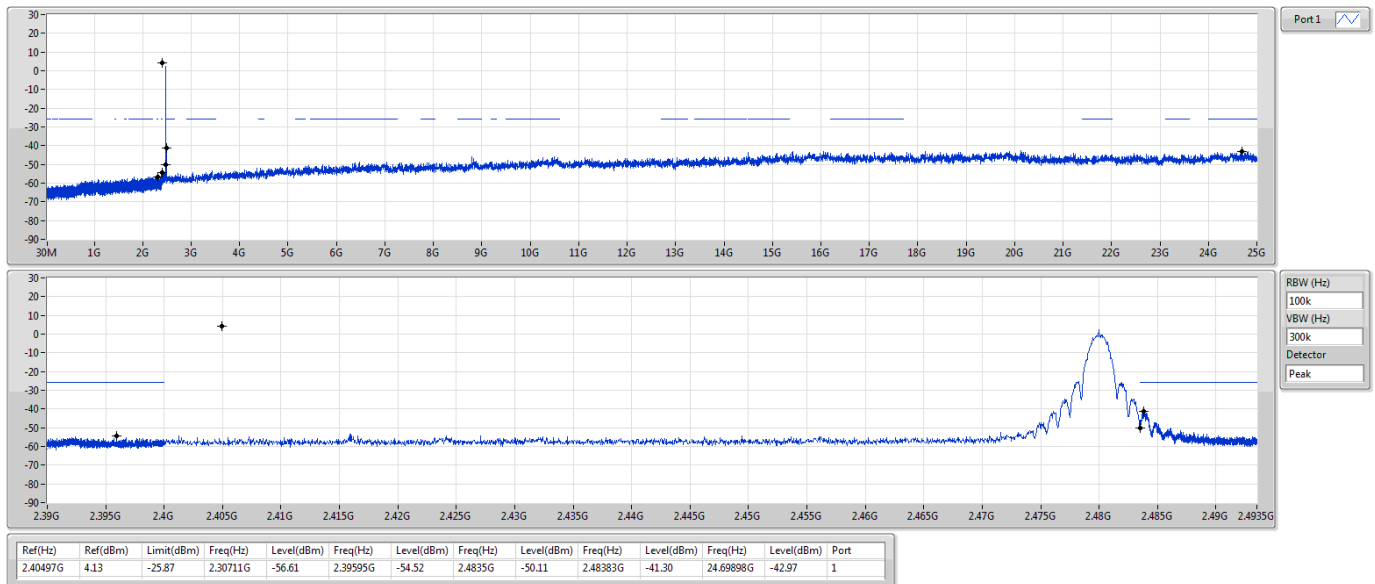
RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40497G	4.13	-25.87	2.16403G	-56.15	2.39224G	-53.15	2.4835G	-56.67	2.4845G	-54.13	17.09459G	-43.54	1

Zigbee
2480MHz

CSEn dB

04/03/2022





Summary

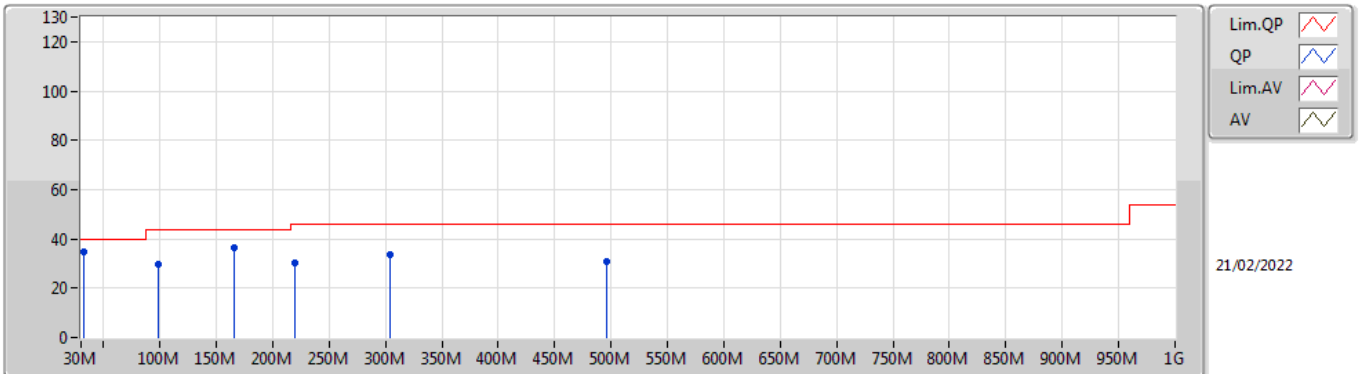
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	PK	163.86M	39.99	43.50	-3.51	3	Horizontal	0	1.00	-

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	31.94M	34.91	40.00	-5.09	3	Vertical	360	1.00	-
2440MHz	Pass	PK	97.9M	29.60	43.50	-13.90	3	Vertical	360	1.00	-
2440MHz	Pass	PK	165.8M	36.67	43.50	-6.83	3	Vertical	360	1.00	-
2440MHz	Pass	PK	220.12M	30.41	46.00	-15.59	3	Vertical	360	1.00	-
2440MHz	Pass	PK	303.54M	33.82	46.00	-12.18	3	Vertical	360	1.00	-
2440MHz	Pass	PK	495.6M	30.88	46.00	-15.12	3	Vertical	360	1.00	-
2440MHz	Pass	PK	37.76M	34.00	40.00	-6.00	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	115.36M	33.04	43.50	-10.46	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	163.86M	39.99	43.50	-3.51	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	212.36M	32.77	43.50	-10.73	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	373.38M	28.37	46.00	-17.63	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	478.14M	29.85	46.00	-16.15	3	Horizontal	0	1.00	-

Zigbee

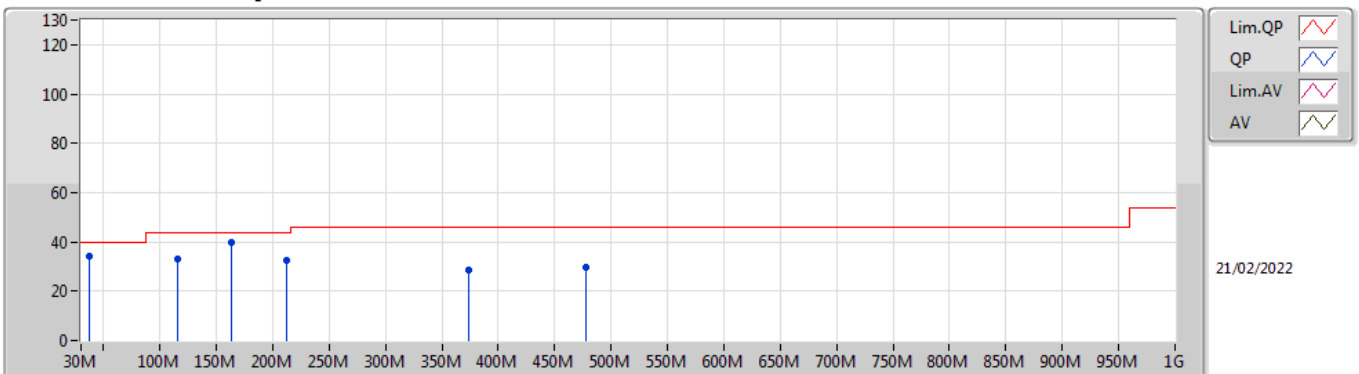
2440MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	34.91	40.00	-5.09	-3.99	3	Vertical	360	1.00	-	38.90	22.18	0.88	27.05
PK	97.9M	29.60	43.50	-13.90	-10.69	3	Vertical	360	1.00	-	40.29	15.67	1.41	27.77
PK	165.8M	36.67	43.50	-6.83	-10.62	3	Vertical	360	1.00	-	47.29	15.08	1.80	27.50
PK	220.12M	30.41	46.00	-15.59	-10.77	3	Vertical	360	1.00	-	41.18	14.39	2.04	27.20
PK	303.54M	33.82	46.00	-12.18	-6.24	3	Vertical	360	1.00	-	40.06	18.47	2.37	27.08
PK	495.6M	30.88	46.00	-15.12	-2.56	3	Vertical	360	1.00	-	33.44	22.71	3.06	28.33

Zigbee

2440MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	37.76M	34.00	40.00	-6.00	-7.31	3	Horizontal	0	1.00	-	41.31	19.02	0.94	27.27
PK	115.36M	33.04	43.50	-10.46	-8.92	3	Horizontal	0	1.00	-	41.96	17.36	1.51	27.79
PK	163.86M	39.99	43.50	-3.51	-10.61	3	Horizontal	0	1.00	-	50.60	15.11	1.79	27.51
PK	212.36M	32.77	43.50	-10.73	-11.03	3	Horizontal	0	1.00	-	43.80	14.21	2.01	27.25
PK	373.38M	28.37	46.00	-17.63	-4.86	3	Horizontal	0	1.00	-	33.23	20.04	2.64	27.54
PK	478.14M	29.85	46.00	-16.15	-2.61	3	Horizontal	0	1.00	-	32.46	22.62	3.00	28.23



Summary

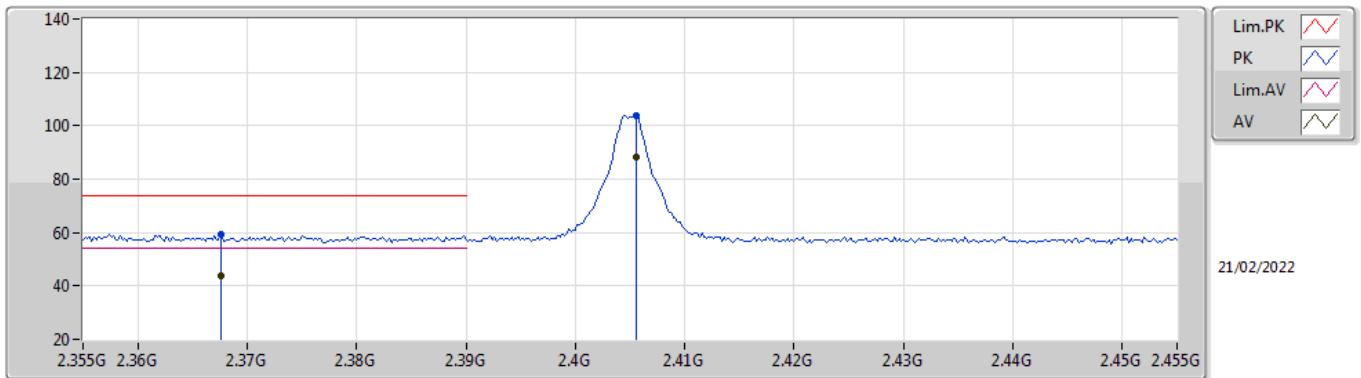
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	AV	2.4835G	53.84	54.00	-0.16	3	Vertical	129	1.58	-

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	2.3676G	43.91	54.00	-10.09	3	Vertical	15	1.47	-
2405MHz	Pass	AV	2.4056G	88.49	Inf	-Inf	3	Vertical	15	1.47	-
2405MHz	Pass	PK	2.3676G	59.25	74.00	-14.75	3	Vertical	15	1.47	-
2405MHz	Pass	PK	2.4056G	103.83	Inf	-Inf	3	Vertical	15	1.47	-
2405MHz	Pass	AV	2.3568G	43.66	54.00	-10.34	3	Horizontal	166	1.13	-
2405MHz	Pass	AV	2.4046G	87.01	Inf	-Inf	3	Horizontal	166	1.13	-
2405MHz	Pass	PK	2.3568G	59.00	74.00	-15.00	3	Horizontal	166	1.13	-
2405MHz	Pass	PK	2.4046G	102.35	Inf	-Inf	3	Horizontal	166	1.13	-
2405MHz	Pass	AV	4.80902G	29.99	54.00	-24.01	3	Vertical	116	1.00	-
2405MHz	Pass	PK	4.80902G	45.33	74.00	-28.67	3	Vertical	116	1.00	-
2405MHz	Pass	AV	4.81108G	29.36	54.00	-24.64	3	Horizontal	0	2.53	-
2405MHz	Pass	PK	4.81108G	44.70	74.00	-29.30	3	Horizontal	0	2.53	-
2440MHz	Pass	AV	2.3508G	43.44	54.00	-10.56	3	Vertical	53	1.05	-
2440MHz	Pass	AV	2.4396G	89.68	Inf	-Inf	3	Vertical	53	1.05	-
2440MHz	Pass	AV	2.4884G	42.61	54.00	-11.39	3	Vertical	53	1.05	-
2440MHz	Pass	PK	2.3508G	58.78	74.00	-15.22	3	Vertical	53	1.05	-
2440MHz	Pass	PK	2.4396G	105.02	Inf	-Inf	3	Vertical	53	1.05	-
2440MHz	Pass	PK	2.4884G	57.95	74.00	-16.05	3	Vertical	53	1.05	-
2440MHz	Pass	AV	2.3692G	43.63	54.00	-10.37	3	Horizontal	196	1.02	-
2440MHz	Pass	AV	2.4396G	86.31	Inf	-Inf	3	Horizontal	196	1.02	-
2440MHz	Pass	AV	2.4876G	43.14	54.00	-10.86	3	Horizontal	196	1.02	-
2440MHz	Pass	PK	2.3692G	58.97	74.00	-15.03	3	Horizontal	196	1.02	-
2440MHz	Pass	PK	2.4396G	101.65	Inf	-Inf	3	Horizontal	196	1.02	-
2440MHz	Pass	PK	2.4876G	58.48	74.00	-15.52	3	Horizontal	196	1.02	-
2440MHz	Pass	AV	4.88086G	29.88	54.00	-24.12	3	Vertical	110	1.46	-
2440MHz	Pass	AV	7.32154G	37.92	54.00	-16.08	3	Vertical	106	1.60	-
2440MHz	Pass	PK	4.88086G	45.22	74.00	-28.78	3	Vertical	110	1.46	-
2440MHz	Pass	PK	7.32154G	53.26	74.00	-20.74	3	Vertical	106	1.60	-
2440MHz	Pass	AV	4.8809G	29.25	54.00	-24.75	3	Horizontal	333	1.20	-
2440MHz	Pass	AV	7.3211G	36.46	54.00	-17.54	3	Horizontal	229	1.09	-
2440MHz	Pass	PK	4.8809G	44.59	74.00	-29.41	3	Horizontal	333	1.20	-
2440MHz	Pass	PK	7.3211G	51.80	74.00	-22.20	3	Horizontal	229	1.09	-
2480MHz	Pass	AV	2.4794G	88.66	Inf	-Inf	3	Vertical	129	1.58	-
2480MHz	Pass	AV	2.4835G	53.84	54.00	-0.16	3	Vertical	129	1.58	-
2480MHz	Pass	PK	2.4794G	104.00	Inf	-Inf	3	Vertical	129	1.58	-
2480MHz	Pass	PK	2.4835G	69.18	74.00	-4.82	3	Vertical	129	1.58	-
2480MHz	Pass	AV	2.4796G	87.71	Inf	-Inf	3	Horizontal	160	1.38	-
2480MHz	Pass	AV	2.4835G	53.13	54.00	-0.87	3	Horizontal	160	1.38	-
2480MHz	Pass	PK	2.4796G	103.05	Inf	-Inf	3	Horizontal	160	1.38	-
2480MHz	Pass	PK	2.4835G	68.47	74.00	-5.53	3	Horizontal	160	1.38	-
2480MHz	Pass	AV	4.95884G	30.77	54.00	-23.23	3	Vertical	120	1.48	-
2480MHz	Pass	AV	7.44116G	37.90	54.00	-16.10	3	Vertical	101	1.01	-
2480MHz	Pass	PK	4.95884G	46.11	74.00	-27.89	3	Vertical	120	1.48	-
2480MHz	Pass	PK	7.44116G	53.24	74.00	-20.76	3	Vertical	101	1.01	-
2480MHz	Pass	AV	4.96098G	29.78	54.00	-24.22	3	Horizontal	355	2.48	-
2480MHz	Pass	AV	7.4412G	35.99	54.00	-18.01	3	Horizontal	233	1.05	-
2480MHz	Pass	PK	4.96098G	45.12	74.00	-28.88	3	Horizontal	355	2.48	-
2480MHz	Pass	PK	7.4412G	51.33	74.00	-22.67	3	Horizontal	233	1.05	-

Zigbee

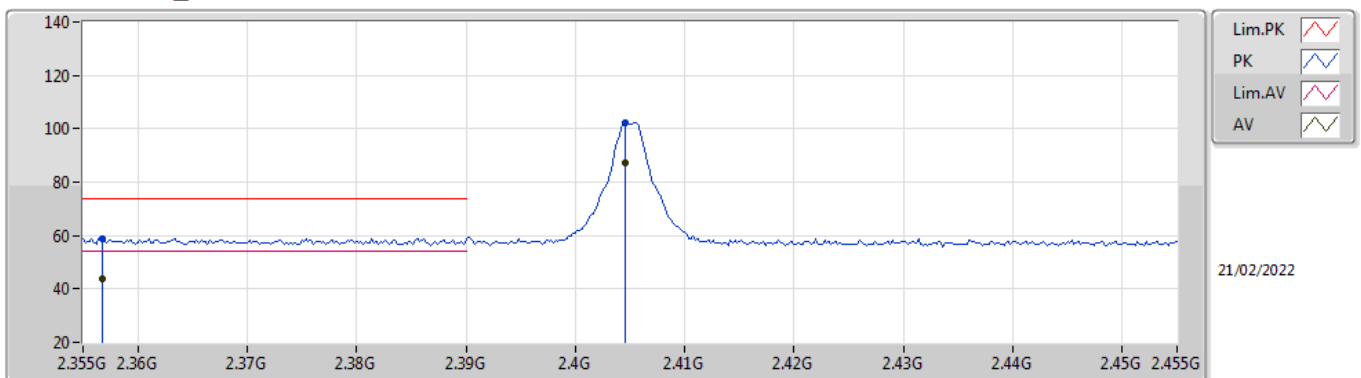
2405MHz_TX



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	2.3676G	43.91	54.00	-10.09	35.01	3	Vertical	15	1.47	-	8.90	27.76	7.25	-
AV	2.4056G	88.49	Inf	-Inf	34.93	3	Vertical	15	1.47	-	53.56	27.67	7.26	-
PK	2.3676G	59.25	74.00	-14.75	35.01	3	Vertical	15	1.47	-	24.24	27.76	7.25	-
PK	2.4056G	103.83	Inf	-Inf	34.93	3	Vertical	15	1.47	-	68.90	27.67	7.26	-

Zigbee

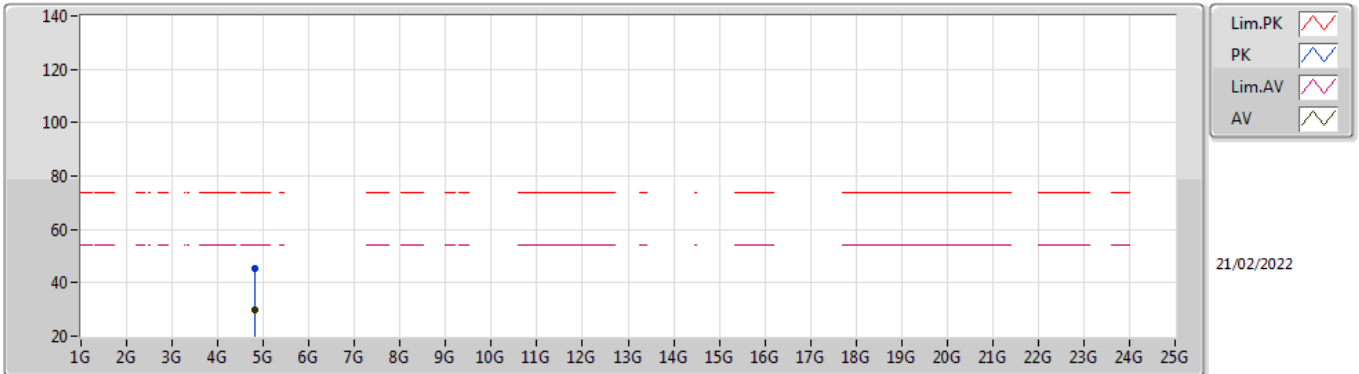
2405MHz_TX



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	2.3568G	43.66	54.00	-10.34	35.03	3	Horizontal	166	1.13	-	8.63	27.79	7.24	-
AV	2.4046G	87.01	Inf	-Inf	34.93	3	Horizontal	166	1.13	-	52.08	27.67	7.26	-
PK	2.3568G	59.00	74.00	-15.00	35.03	3	Horizontal	166	1.13	-	23.97	27.79	7.24	-
PK	2.4046G	102.35	Inf	-Inf	34.93	3	Horizontal	166	1.13	-	67.42	27.67	7.26	-

Zigbee

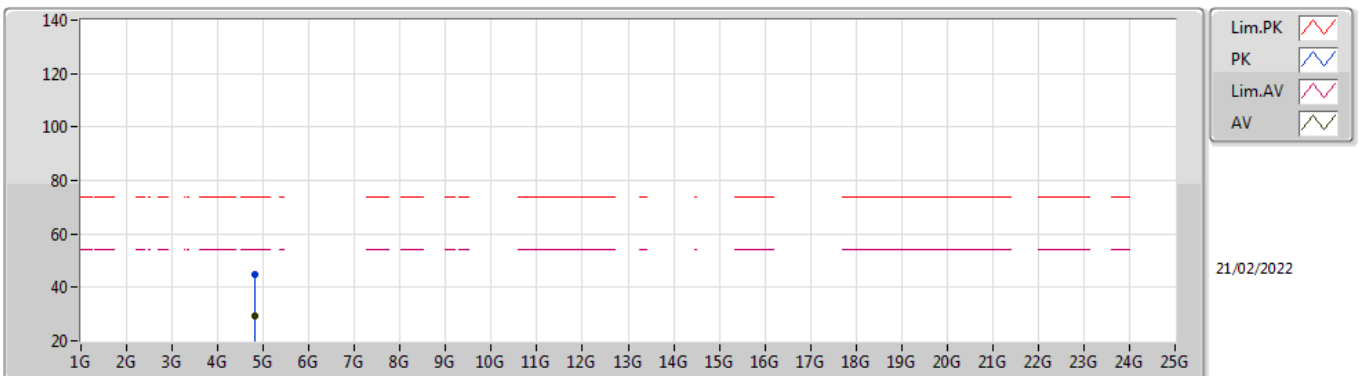
2405MHz_TX



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	4.80902G	29.99	54.00	-24.01	5.84	3	Vertical	116	1.00	-	24.15	31.12	8.91	34.19
PK	4.80902G	45.33	74.00	-28.67	5.84	3	Vertical	116	1.00	-	39.49	31.12	8.91	34.19

Zigbee

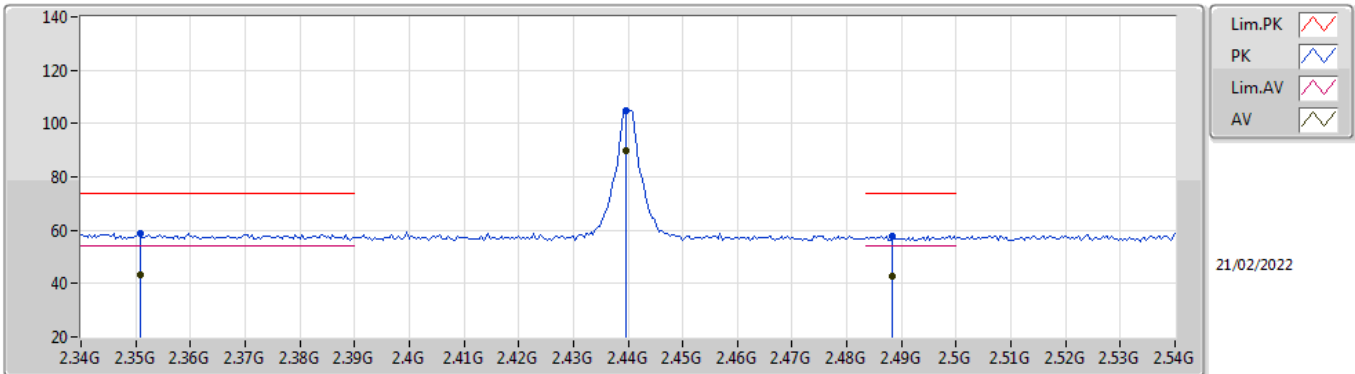
2405MHz_TX



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	4.81108G	29.36	54.00	-24.64	5.84	3	Horizontal	0	2.53	-	23.52	31.12	8.91	34.19
PK	4.81108G	44.70	74.00	-29.30	5.84	3	Horizontal	0	2.53	-	38.86	31.12	8.91	34.19

Zigbee

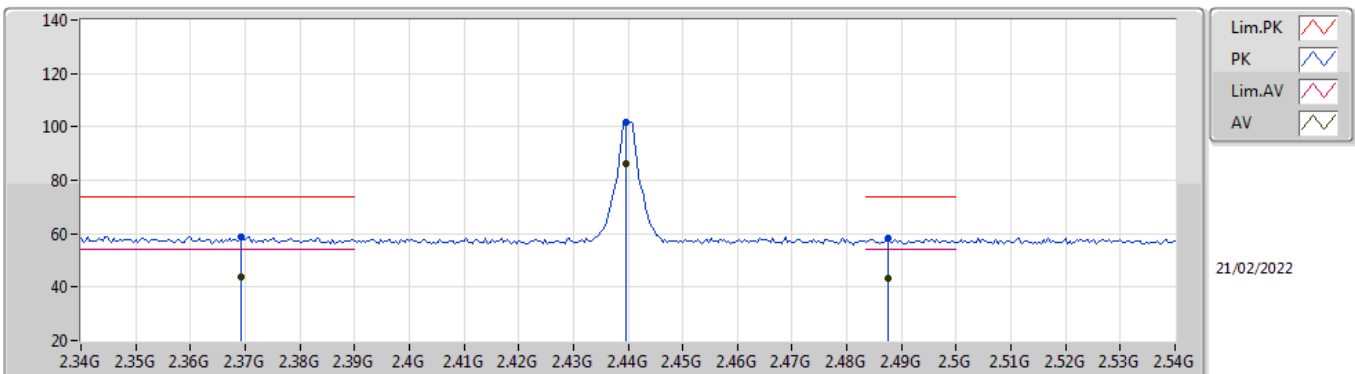
2440MHz_TX



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	2.3508G	43.44	54.00	-10.56	35.04	3	Vertical	53	1.05	-	8.40	27.80	7.24	-
AV	2.4396G	89.68	Inf	-Inf	34.75	3	Vertical	53	1.05	-	54.93	27.46	7.29	-
AV	2.4884G	42.61	54.00	-11.39	34.73	3	Vertical	53	1.05	-	7.88	27.40	7.33	-
PK	2.3508G	58.78	74.00	-15.22	35.04	3	Vertical	53	1.05	-	23.74	27.80	7.24	-
PK	2.4396G	105.02	Inf	-Inf	34.75	3	Vertical	53	1.05	-	70.27	27.46	7.29	-
PK	2.4884G	57.95	74.00	-16.05	34.73	3	Vertical	53	1.05	-	23.22	27.40	7.33	-

Zigbee

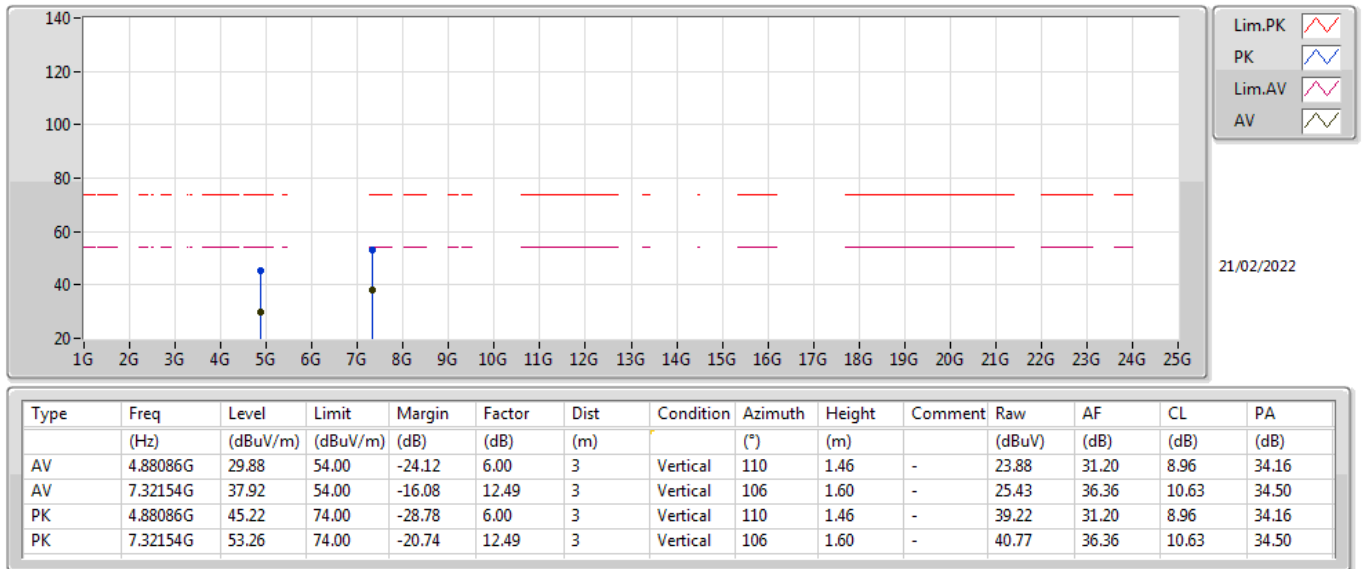
2440MHz_TX



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	2.3692G	43.63	54.00	-10.37	35.01	3	Horizontal	196	1.02	-	8.62	27.76	7.25	-
AV	2.4396G	86.31	Inf	-Inf	34.75	3	Horizontal	196	1.02	-	51.56	27.46	7.29	-
AV	2.4876G	43.14	54.00	-10.86	34.73	3	Horizontal	196	1.02	-	8.41	27.40	7.33	-
PK	2.3692G	58.97	74.00	-15.03	35.01	3	Horizontal	196	1.02	-	23.96	27.76	7.25	-
PK	2.4396G	101.65	Inf	-Inf	34.75	3	Horizontal	196	1.02	-	66.90	27.46	7.29	-
PK	2.4876G	58.48	74.00	-15.52	34.73	3	Horizontal	196	1.02	-	23.75	27.40	7.33	-

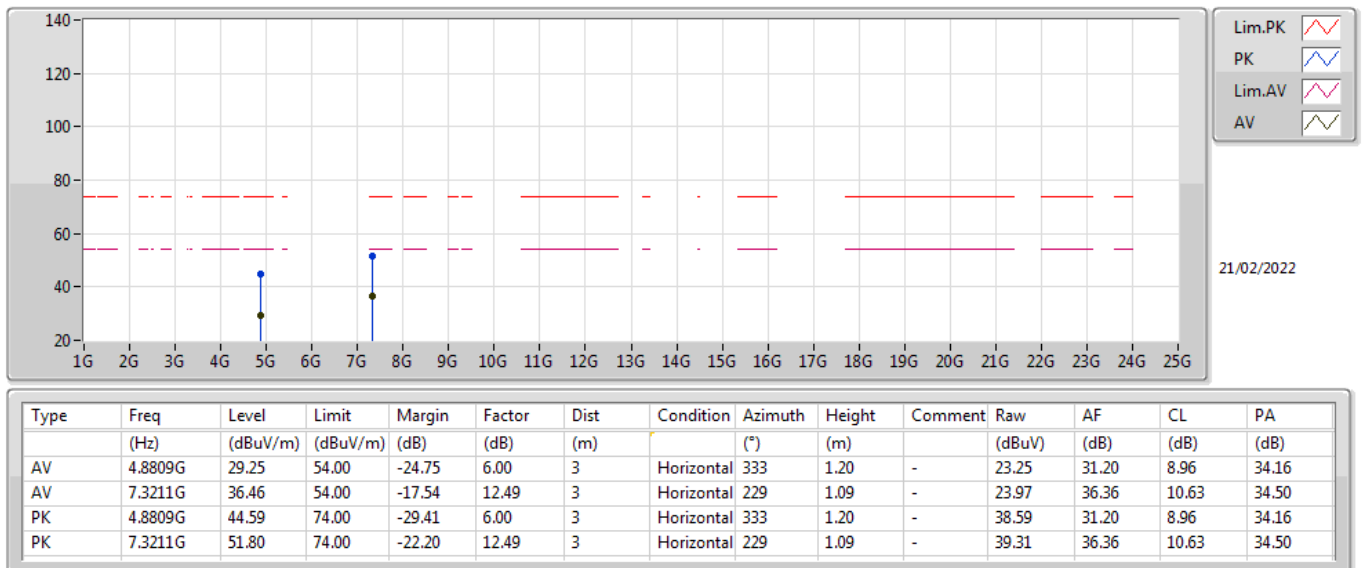
Zigbee

2440MHz_TX



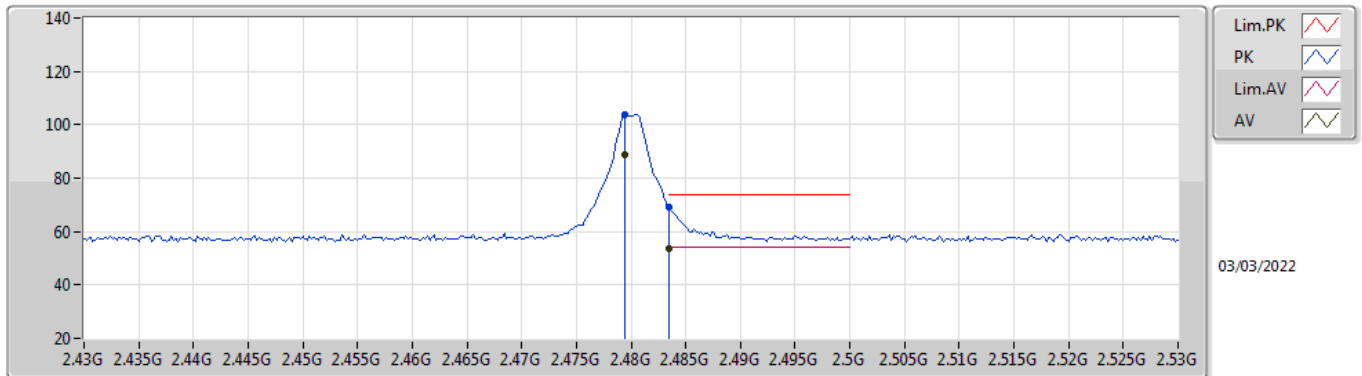
Zigbee

2440MHz_TX



Zigbee

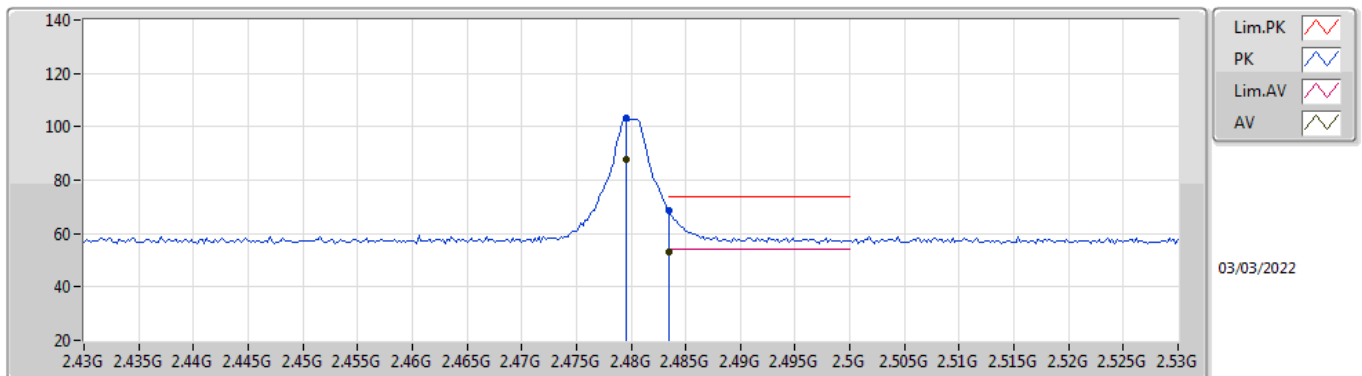
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4794G	88.66	Inf	-Inf	34.72	3	Vertical	129	1.58	-	53.94	27.40	7.32	-
AV	2.4835G	53.84	54.00	-0.16	34.73	3	Vertical	129	1.58	-	19.11	27.40	7.33	-
PK	2.4794G	104.00	Inf	-Inf	34.72	3	Vertical	129	1.58	-	69.28	27.40	7.32	-
PK	2.4835G	69.18	74.00	-4.82	34.73	3	Vertical	129	1.58	-	34.45	27.40	7.33	-

Zigbee

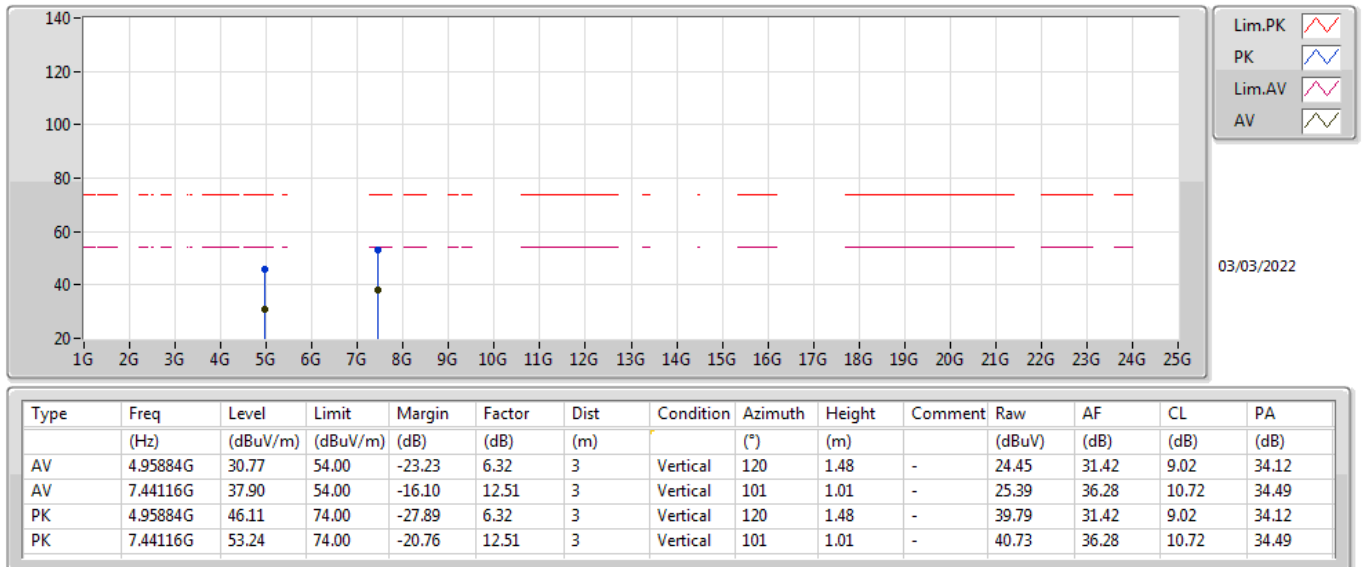
2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4796G	87.71	Inf	-Inf	34.72	3	Horizontal	160	1.38	-	52.99	27.40	7.32	-
AV	2.4835G	53.13	54.00	-0.87	34.73	3	Horizontal	160	1.38	-	18.40	27.40	7.33	-
PK	2.4796G	103.05	Inf	-Inf	34.72	3	Horizontal	160	1.38	-	68.33	27.40	7.32	-
PK	2.4835G	68.47	74.00	-5.53	34.73	3	Horizontal	160	1.38	-	33.74	27.40	7.33	-

Zigbee

2480MHz_TX



Zigbee

2480MHz_TX

