RADIO TEST REPORT

FCC ID	:	G954981X
Equipment	:	DOCSIS Cable Gateway
Brand Name	:	Technicolor
Model Name	:	CGM4981COM, CGM4981COX
Applicant	:	Technicolor Connected Home USA LLC 4855 Peachtree Industrial Blvd. Norcross, GA 30092
Manufacturer	:	Technicolor Connected Home USA LLC 4855 Peachtree Industrial Blvd. Norcross, GA 30092
Standard	:	47 CFR FCC Part 15.247

The product was received on Jul. 14, 2021, and testing was started from Aug. 30, 2021 and completed on Sep. 17, 2021. We, Sporton International Inc. Hsinchu 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. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR171403AC	01	Initial issue of report	Sep. 30, 2021
FR171403AC	02	Revising antenna information	Oct. 01, 2021

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:

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Wendy Pan

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	2405-2475	11-25 [15]

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

Note:
- Zigbee uses a O-QPSK (250kbps) modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port					Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4 GHz	WLAN 5 GHz	WLAN 6E	Zigbee	Bluetooth					
1	1	4	-	-	-	Airgain	N03TCAFB-PK1-B165U	PCB	I-PEX	Note 1
2	2	3	-	-	-	Airgain	N03TCAFE-PK1-G140U	PCB	I-PEX	
3	3	2	-	-	-	Airgain	N03TCAFN-PK1-R150U	PCB	I-PEX	
4	4	1	-	-	-	Airgain	N03TCAFG-PK1-A230U	PCB	I-PEX	
5	-	-	1	-	-	Airgain	N06TCAFC-PK1-B105U	PCB	I-PEX	
6	-	-	2	-	-	Airgain	N06TCAFH-PK1-G200U	PCB	I-PEX	
7	-	-	3	-	-	Airgain	N06TCAFJ-PK1-R150U	PCB	I-PEX	
8	-	-	4	1	-	Airgain	N04TCAFD-PK1-A150U	PCB	I-PEX	
9	-	-	-	2	-	Airgain	N01TCAFM-PK1-W230U	PCB	I-PEX	
10	-	-	-	-	1	Airgain	N01TCAFM-PK1-W190U	PCB	I-PEX	

Note1:

Ant.	Port					Antenna Gain (dBi)							
	WLAN 2.4 GHz	WLAN 5GHz	WLAN 6E	Zigbee	Bluetooth	WLAN 2.4 GHz	WLAN 5GHz UNII 1	WLAN 5GHz UNII 2A	WLAN 5GHz UNII 2C	WLAN 5GHz UNII 3	WLAN 6E	Zigbee	Bluetooth
1	1	4	-	-	-	2.7	2.59	2.85	2.34	3.5	-	-	-
2	2	3	-	-	-	3.12	2.05	2.62	2.3	3.12	-	-	-
3	3	2	-	-	-	2.57	2.71	1.98	1.87	3.08	-	-	-
4	4	1	-	-	-	2.2	2.18	2.7	2.08	2.02	-	-	-
5	-	-	1	-	-	-	-	-	-	-	3.7	-	-
6	-	-	2	-	-	-	-	-	-	-	4.1	-	-
7	-	-	3	-	-	-	-	-	-	-	3.7	-	-
8	-	-	4	1	-	-	-	-	-	-	5.5	4.8	-
9	-	-	-	2	-	-	-	-	-	-	-	2.5	-
10	-	-	-	-	1	-	-	-	-	-	-	-	4.1

Directional Gain (dBi)					
Band (MHz)	**2400-2483.5**	**5150-5250**	**5250-5350**	**5470-5725**	**5725-5850**
Frequency (Hz)	**2.45G**	**5.2G**	**5.3G**	**5.6G**	**5.785G**
Ant. 1 Max Gain (dBi)	2.7	2.59	2.85	2.34	3.5
Ant. 2 Max Gain (dBi)	3.12	2.05	2.62	2.3	3.12
Ant. 3 Max Gain (dBi)	2.57	2.71	1.98	1.87	3.08
Ant. 4 Max Gain (dBi)	2.2	2.18	2.7	2.08	2.02
Max Gain (dBi)	3.12	2.71	2.85	2.34	3.5
DG [1SS] (dBi)	5.45	4.96	3.99	4.1	4.82
DG [2SS] (dBi)	3.12	2.71	2.85	2.34	3.5
DG [4SS] (dBi)	0.1	-0.52	-0.64	-1.23	-0.43

Note2: The above information was declared by manufacturer.

The antenna report is provided in the operational description for this application.

The EUT enables WLAN 2.4GHz, 5GHz UNII 1, UNII 3, Zigbee and Bluetooth function only.

For WLAN 2.4GHz function:

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

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For WLAN 5GHz function:

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

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For WLAN 6E function:

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

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For Zigbee function (1TX/1RX):

The EUT supports the Ant.8 and Ant.9 with TX and RX diversity functions.

Both Ant.8 (Port 1) and Ant.9 (Port 2) support transmit and receive functions, but only one of them will be used at one time.

All test results will be recorded in the report.

For Bluetooth function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
Zigbee	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note:
- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	Mtool (ver.3.2.1.4)			

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Model Name	Description
CGM4981COM	All the models are identical, the difference model served as marketing strategy.
CGM4981COX	

Note 1: From the above models, model: CGM4981COM was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.2 Applicable Standards

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

- 47 CFR FCC Part 15.247
- ANSI C63.10-2013

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

- FCC KDB 558074 D01 v05r02
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information	
Test Lab.：Sporton International Inc. Hsinchu Laboratory	
Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Serway Li	22.1~22.7 / 73~76	Sep. 06, 2021~ Sep. 17, 2021
Radiated<1GHz	10CH01-CB	Peter Wu	23~24 / 58~59	Sep. 16, 2021
Radiated>1GHz	03CH02-CB	Brian Sun	24.4~25.5 / 55-58	Aug. 30, 2021~ Sep. 17, 2021
	03CH04-CB	Brian Sun	24.6~25.7 / 56-59	Jul. 30, 2021~ Sep. 17, 2021
AC Conduction	CO01-CB	Peter Wu	21~23 / 55~57	Sep. 16, 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)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.5 dB	Confidence levels of 95%
Bandwidth Measurement	0.9%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
Zigbee	-
2405MHz	3
2440MHz	3
2475MHz	3

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	Normal Link
1	Normal Link (WLAN) + CTX (Zigbee)+CTX (Bluetooth) - EUT + Adapter 1
2	Normal Link (WLAN) + CTX (Zigbee)+CTX (Bluetooth) - EUT + Adapter 2
3	Normal Link (WLAN) + CTX (Zigbee)+CTX (Bluetooth) - EUT + Adapter 3
For operating mode 1 is the worst case and it was record in this test report.	

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	
Test Mode	1	EUT + Antenna 8
	2	EUT + Antenna 9

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	Normal Link
1	Normal Link (WLAN) + CTX (Zigbee)+CTX (Bluetooth) - EUT + Adapter 1
2	Normal Link (WLAN) + CTX (Zigbee)+CTX (Bluetooth) - EUT + Adapter 2
3	Normal Link (WLAN) + CTX (Zigbee)+CTX (Bluetooth) - EUT + Adapter 3
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
1	EUT + Antenna 8
2	EUT + Antenna 9

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz+WLAN 5GHz+ Zigbee (Ant.9) +Bluetooth
2	WLAN 2.4GHz+WLAN 5GHz+ Zigbee (Ant.8) +Bluetooth
Refer to Sporton Test Report No.: FA171403 for Co-location RF Exposure Evaluation.	

Note1: The manufacturer declares that the Type-C port can not be used by end-user. It is generally used for updating FW.
Note2: The EUT can only be used in Y axis position.

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	**Brand Name**	**Model Name**	**Rating**
Adapter 1	AcBel	ADK002	INPUT: 100-120V~50/60Hz, 1.5A OUTPUT: 12.0V, 4.6A
Adapter 2	Delta	ADH-55AW BK	INPUT: 100-120V~50/60Hz, 1.2A OUTPUT: 12.0V, 4.6A
Adapter 3	Netbit	NBC56A120460VU	INPUT: 100-120V~50/60Hz, 1.5A OUTPUT: 12.0V, 4.6A

2.5 Support Equipment

For AC Conduction and Radiated (below 1GHz):

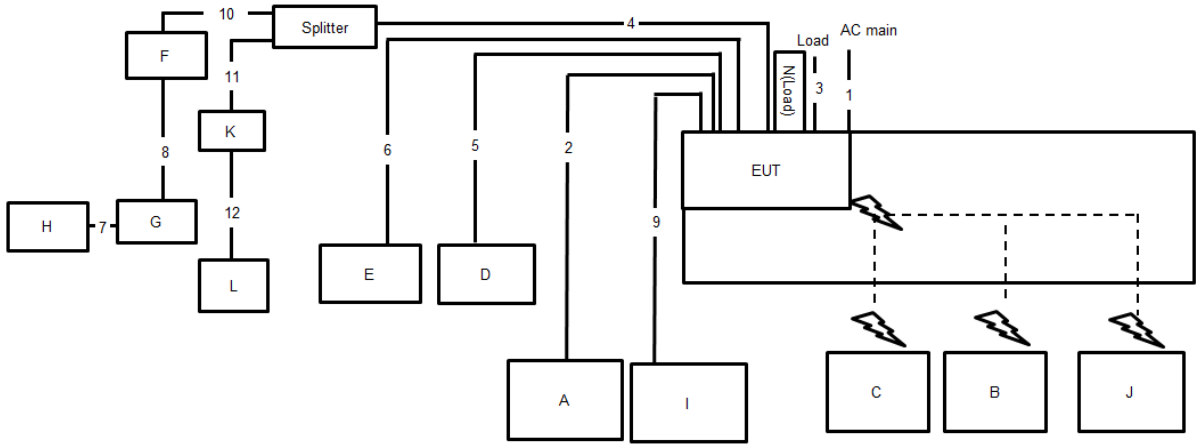
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	LAN NB	DELL	E6430	N/A
B	2.4G NB	DELL	E6430	N/A
C	5G NB	DELL	E6430	N/A
D	Phone1	SAMPO	HT-B 907WL	N/A
E	Phone2	SAMPO	HT-B 907WL	N/A
F	Terminal system	HUAWEI	SmartAX ma5633	N/A
G	Server	HUAWEI	N/A	N/A
H	Terminal system NB	DELL	INSPIRON 3576	N/A
I	2.5G PC	DELL	T3400	N/A
J	6G NB	DELL	AX210	N/A
K	MOCA	N/A	N/A	N/A
L	MOCA NB	DELL	E6430	N/A
N	Type-C Dongle	Transcend	16GB	N/A

For Radiated (above 1GHz) and RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A

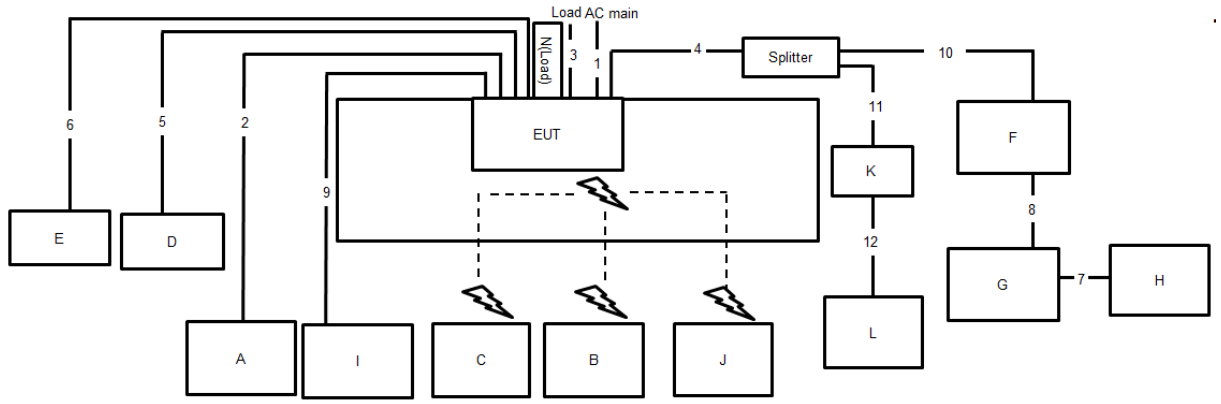
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



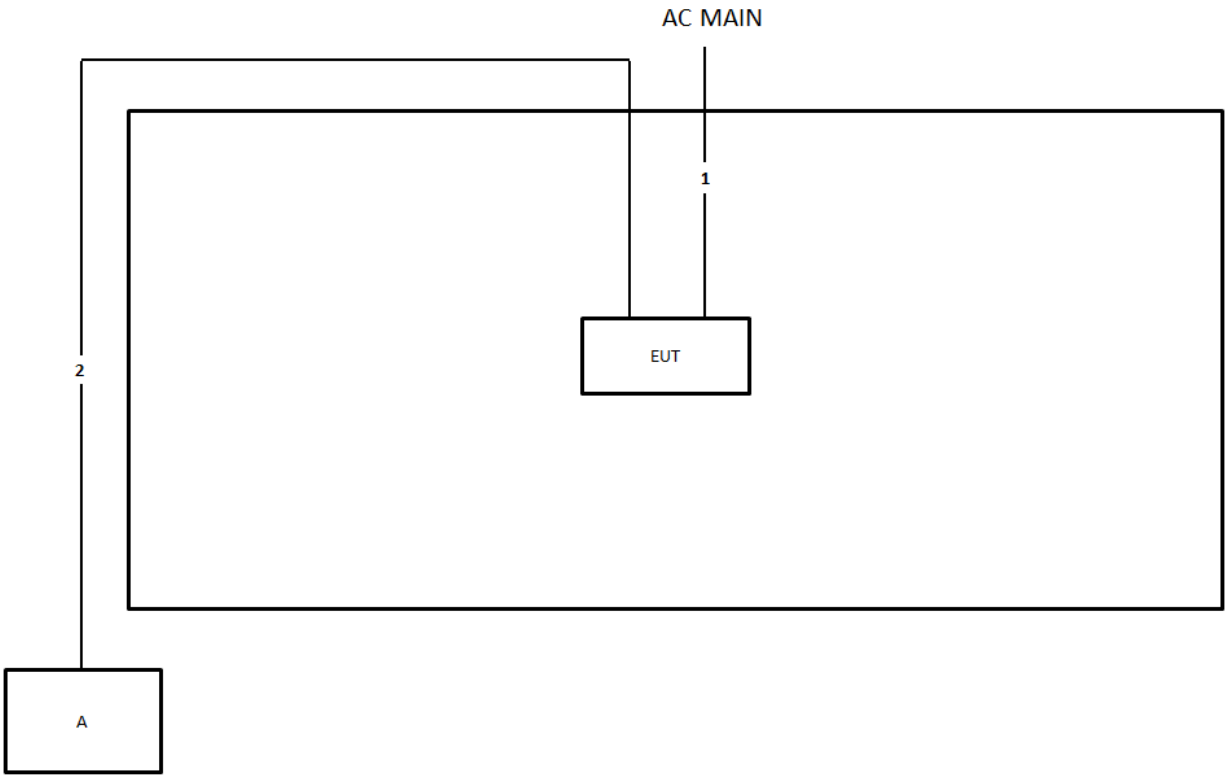
Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	RJ-45 cable	No	10m
3	RJ-45 cable*2	No	1.5m
4	Coaxial cable	Yes	10m
5	RJ-11 cable	No	10m
6	RJ-11 cable	No	10m
7	RJ-45 cable	No	1.5m
8	Fiber cable	No	10m
9	RJ-45 cable	No	10m
10	Coaxial cable	Yes	10m
11	Coaxial cable	Yes	1.5m
12	RJ-45 cable	No	3m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	RJ-45 cable	No	10m
3	RJ-45 cable*2	No	1.5m
4	Coaxial cable	Yes	10m
5	RJ-11 cable	No	10m
6	RJ-11 cable	No	10m
7	RJ-45 cable	No	1.5m
8	Fiber cable	No	10m
9	RJ-45 cable	No	10m
10	Coaxial cable	Yes	10m
11	Coaxial cable	Yes	1.5m
12	RJ-45 cable	No	3m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	RJ-45 cable	No	10m

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

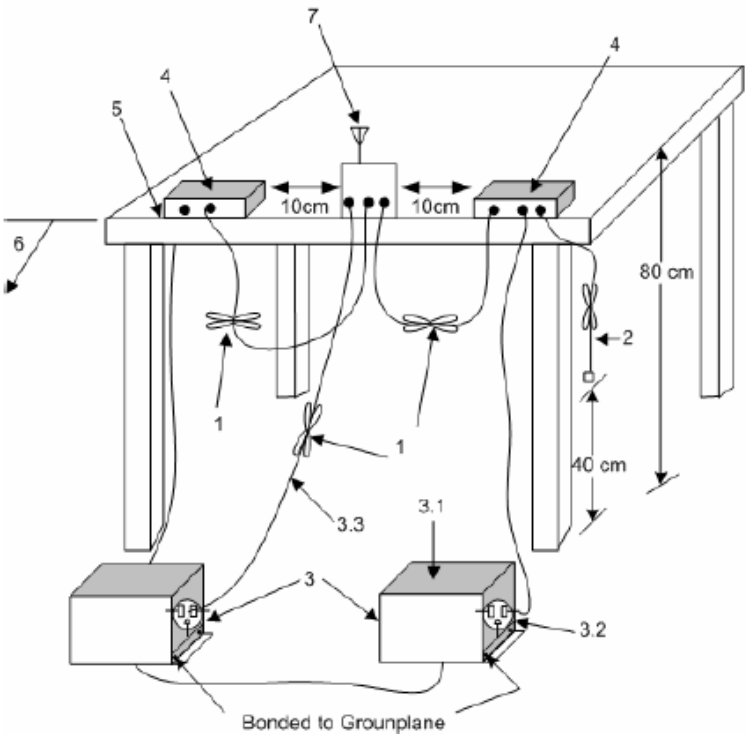
Refer a test equipment and calibration data table in this test report.

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 Test Setup

AC Power-line Conducted Emissions



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

3.1.5 Measurement Results Calculation

The measured Level is calculated using:

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

b. Margin = -Limit + Level

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

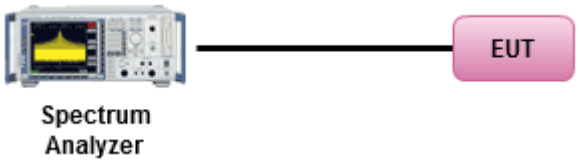
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
	☒ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
	☐ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
	☐ Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth
 Spectrum Analyzer

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
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 FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
	☐ Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Measurement using a power meter (PM)
	☐ Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
	☒ Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

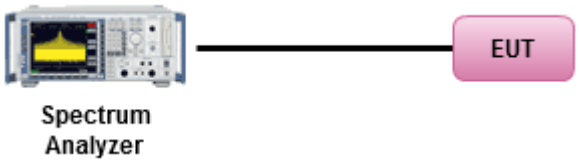
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).		
	☒ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.	
▪ For conducted measurement.		
	▪ If The EUT supports multiple transmit chains using options given below:	
		☐ Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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.
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dBc)**
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 PSD 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 PSD level.	

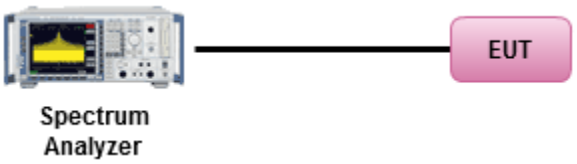
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
▪ Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup

Emissions in Non-restricted Frequency Bands


3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

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

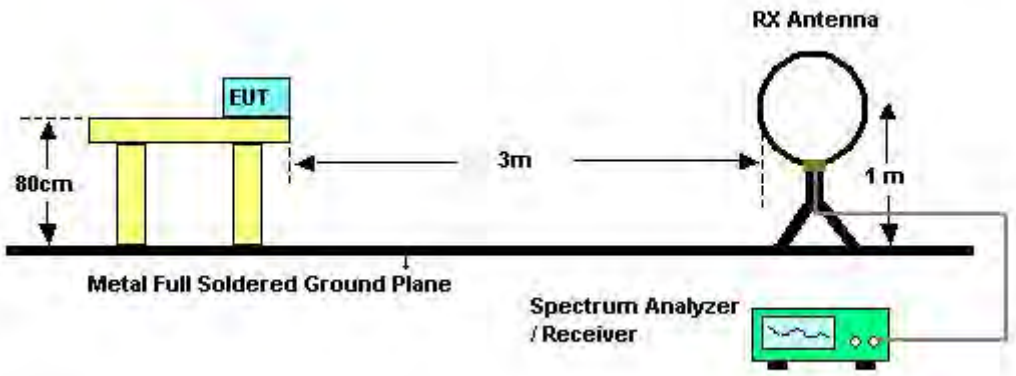
3.6.3 Test Procedures

Test Method
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪ For the transmitter unwanted emissions shall be measured using following options below:
▪ Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle ≥98%).
☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).
☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:
▪ Refer as FCC KDB 558074 clause 8.7 & c63.10 clause 11.13.1, 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 FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

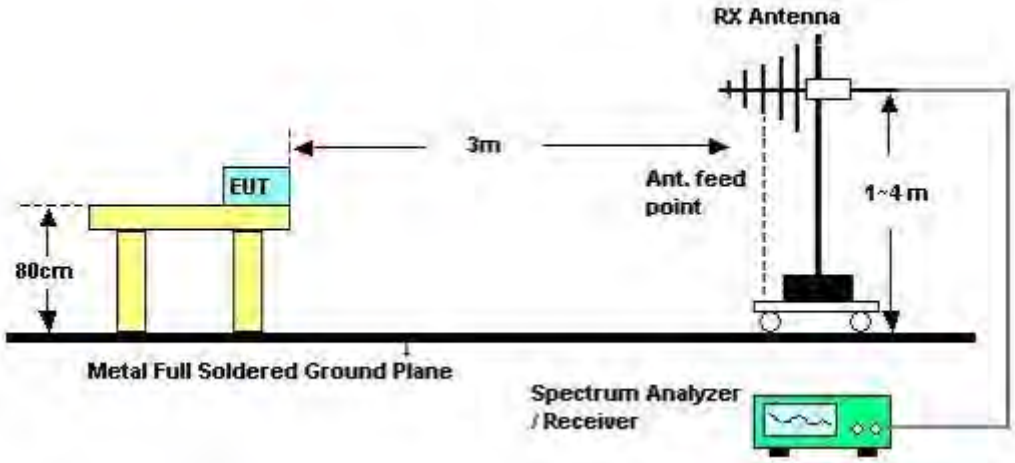
3.6.4 Test Setup

Emissions in Restricted Frequency Bands

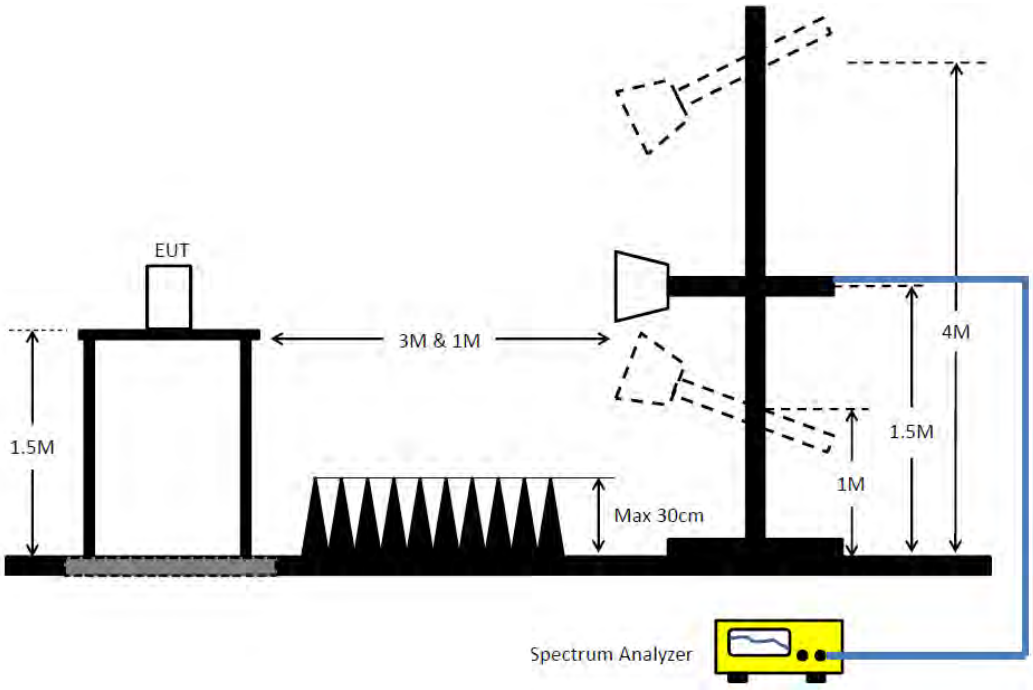
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.6.5 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 03, 2021	Mar. 02, 2022	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Jan. 06, 2021	Jan. 05, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Mar. 07, 2021	Mar. 06, 2022	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 30, 2021	Jan. 29, 2022	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 19, 2021	May 18, 2022	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 28, 2021	Jan. 27, 2022	Radiation (10CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 11, 2021	Mar. 10, 2022	Radiation (10CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 11, 2021	Mar. 10, 2022	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 20, 2020	Oct. 19, 2021	Radiation (10CH01-CB)
High Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 20, 2020	Oct. 19, 2021	Radiation (10CH01-CB)
Bilog Antenna with 6dB Attenuator	Chase & EMCI	CBL6111A &N-6-06	1543 &AT-N0609	30MHz ~ 1GHz	Jul. 01, 2021	Jun. 30, 2022	Radiation (10CH01-CB)
EMI Test Receiver	Rohde&Schwarz	ESCI	100186	9kHz ~ 3GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (10CH01-CB)
Spectrum Analyzer	Rohde&Schwarz	FSV30	101026	9kHz ~ 30GHz	Mar. 08, 2021	Mar. 07, 2022	Radiation (10CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (10CH01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (10CH01-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz 3m	Mar. 27, 2021	Mar. 26, 2022	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	May 04, 2021	May 03, 2022	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Oct. 15, 2020	Oct. 14, 2021	Radiation (03CH02-CB)

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 25, 2021	Feb. 24, 2022	Radiation (03CH04-CB)
Horn Antenna	ETS・Lindgren	3115	00143147	750MHz~18GHz	Oct. 23, 2020	Oct. 22, 2021	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Nov. 05, 2020	Nov. 04, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Dec. 31, 2020	Dec. 30, 2021	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 22, 2021	Aug. 21, 2022	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 22, 2021	Aug. 21, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz –18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz –18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz –18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz –18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH03-CB)

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-15	1 GHz –18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

Note: Calibration Interval of instruments listed above is one year.

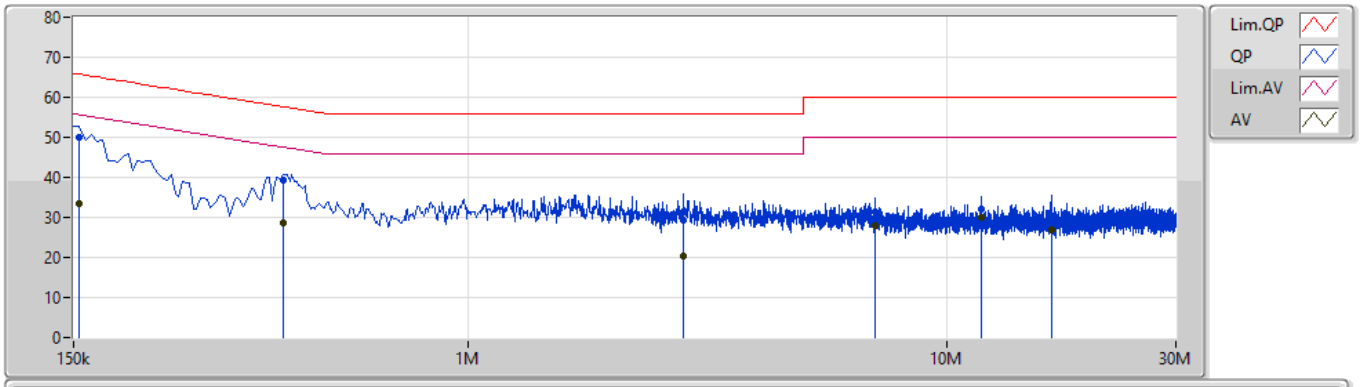
NCR means Non-Calibration required.

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	150k	52.16	66.00	-13.84	Neutral

Mode 1

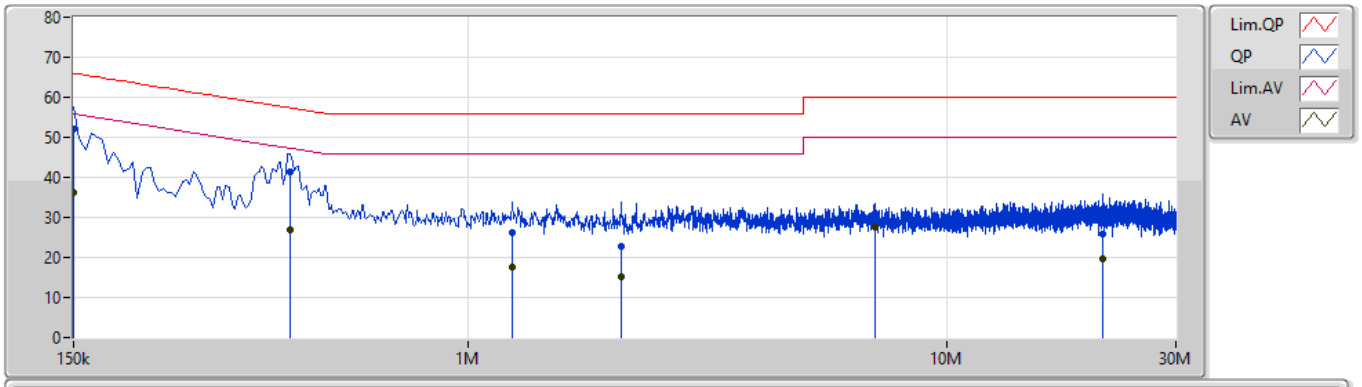
16/09/2021



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	154.5k	49.95	65.75	-15.80	9.89	Line	"Worst"	40.06	0.04	0.04	9.81
AV	154.5k	33.31	55.75	-22.44	9.89	Line	-	23.42	0.04	0.04	9.81
QP	411k	39.44	57.63	-18.19	9.90	Line	-	29.54	0.04	0.04	9.82
AV	411k	28.63	47.63	-19.00	9.90	Line	-	18.73	0.04	0.04	9.82
QP	2.805M	29.43	56.00	-26.57	10.04	Line	-	19.39	0.11	0.09	9.84
AV	2.805M	20.31	46.00	-25.69	10.04	Line	-	10.27	0.11	0.09	9.84
QP	7.058M	31.41	60.00	-28.59	10.22	Line	-	21.19	0.19	0.14	9.89
AV	7.058M	27.95	50.00	-22.05	10.22	Line	-	17.73	0.19	0.14	9.89
QP	11.76M	31.99	60.00	-28.01	10.30	Line	-	21.69	0.24	0.16	9.90
AV	11.76M	29.84	50.00	-20.16	10.30	Line	-	19.54	0.24	0.16	9.90
QP	16.467M	29.25	60.00	-30.75	10.42	Line	-	18.83	0.29	0.19	9.94
AV	16.467M	26.77	50.00	-23.23	10.42	Line	-	16.35	0.29	0.19	9.94

Mode 1

16/09/2021



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	52.16	66.00	-13.84	9.88	Neutral	"Worst"	42.28	0.03	0.04	9.81
AV	150k	36.07	56.00	-19.93	9.88	Neutral	-	26.19	0.03	0.04	9.81
QP	424.5k	41.47	57.36	-15.89	9.89	Neutral	-	31.58	0.03	0.04	9.82
AV	424.5k	26.80	47.36	-20.56	9.89	Neutral	-	16.91	0.03	0.04	9.82
QP	1.235M	26.37	56.00	-29.63	9.94	Neutral	-	16.43	0.06	0.05	9.83
AV	1.235M	17.54	46.00	-28.46	9.94	Neutral	-	7.60	0.06	0.05	9.83
QP	2.085M	22.61	56.00	-33.39	9.96	Neutral	-	12.65	0.07	0.07	9.82
AV	2.085M	15.01	46.00	-30.99	9.96	Neutral	-	5.05	0.07	0.07	9.82
QP	7.058M	30.89	60.00	-29.11	10.19	Neutral	-	20.70	0.16	0.14	9.89
AV	7.058M	27.45	50.00	-22.55	10.19	Neutral	-	17.26	0.16	0.14	9.89
QP	21.174M	26.02	60.00	-33.98	10.55	Neutral	-	15.47	0.31	0.24	10.00
AV	21.174M	19.52	50.00	-30.48	10.55	Neutral	-	8.97	0.31	0.24	10.00

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.675M	2.274M	2M27G1D	1.644M	2.261M

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

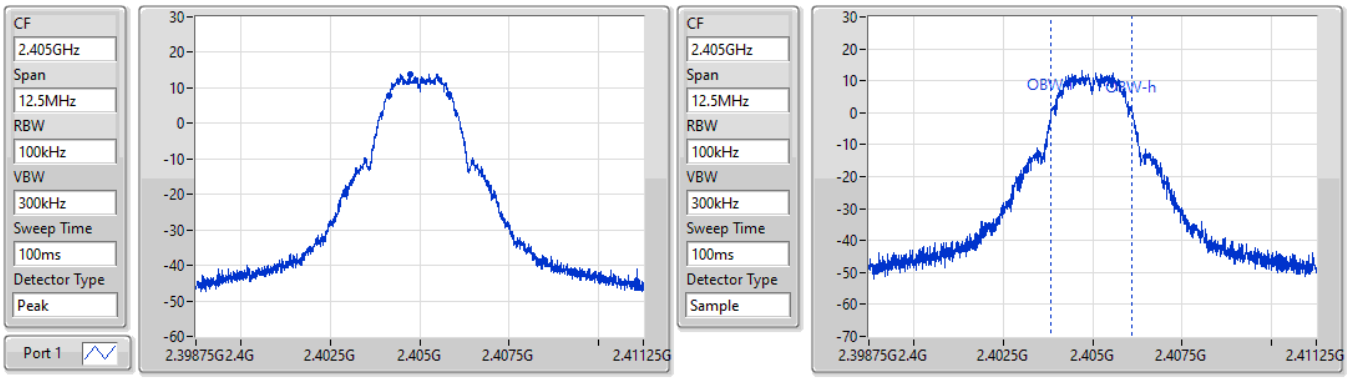
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Zigbee	-	-	-	-
2405MHz	Pass	500k	1.675M	2.261M
2440MHz	Pass	500k	1.644M	2.274M
2475MHz	Pass	500k	1.656M	2.274M

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

Zigbee **EBW**

2405MHz

17/09/2021

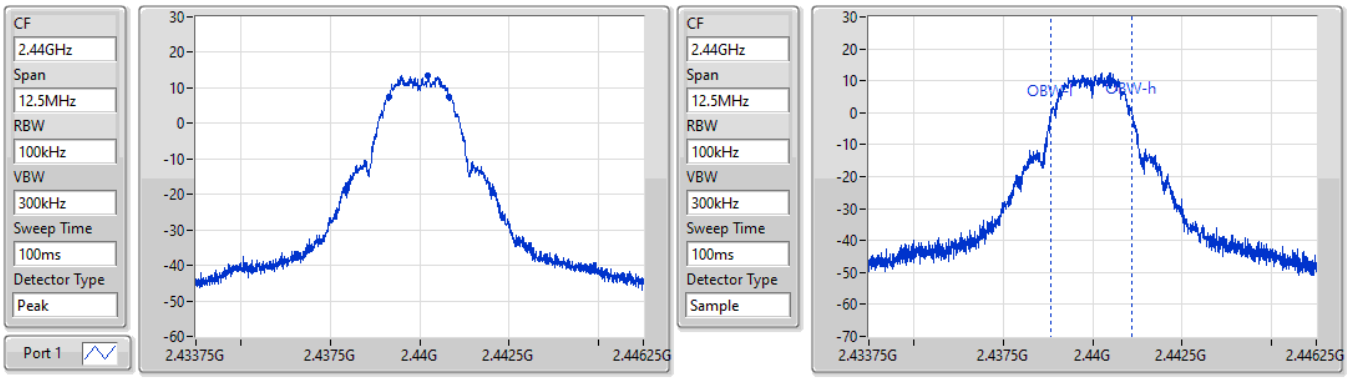


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.675M	2.404138G	2.405813G	2.261M	2.403851G	2.406112G	500k	1

Zigbee **EBW**

2440MHz

17/09/2021

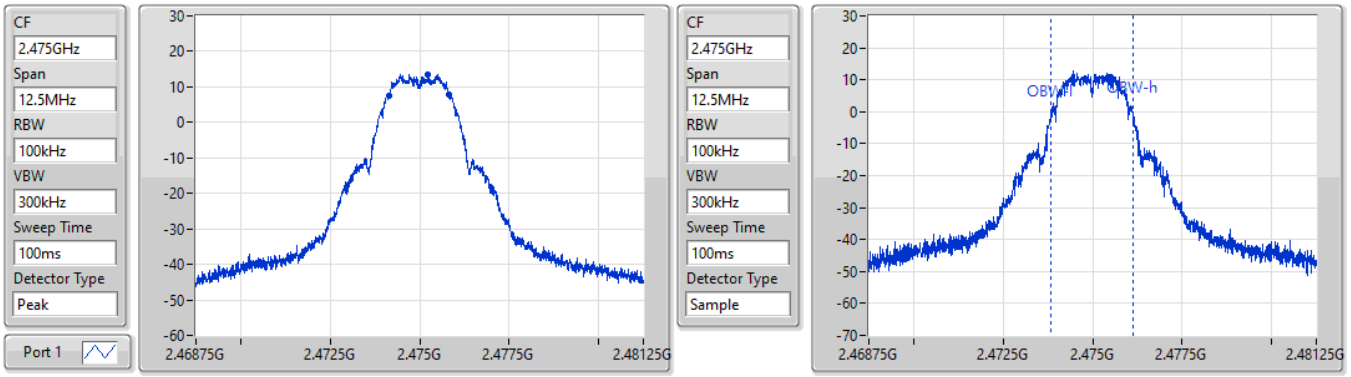


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.644M	2.439163G	2.440806G	2.274M	2.438838G	2.441112G	500k	1

Zigbee **EBW**

2475MHz

17/09/2021



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.656M	2.474156G	2.475813G	2.274M	2.473844G	2.476118G	500k	1

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
Zigbee	1.669M	2.274M	2M27G1D	1.644M	2.261M

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

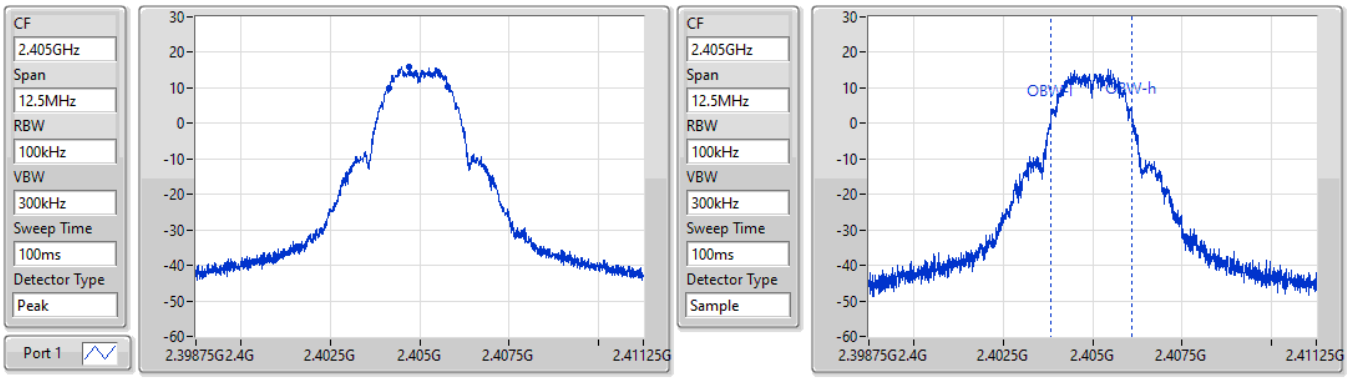
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Zigbee	-	-	-	-
2405MHz	Pass	500k	1.644M	2.274M
2440MHz	Pass	500k	1.663M	2.261M
2475MHz	Pass	500k	1.669M	2.274M

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

Zigbee **EBW**

2405MHz

14/09/2021

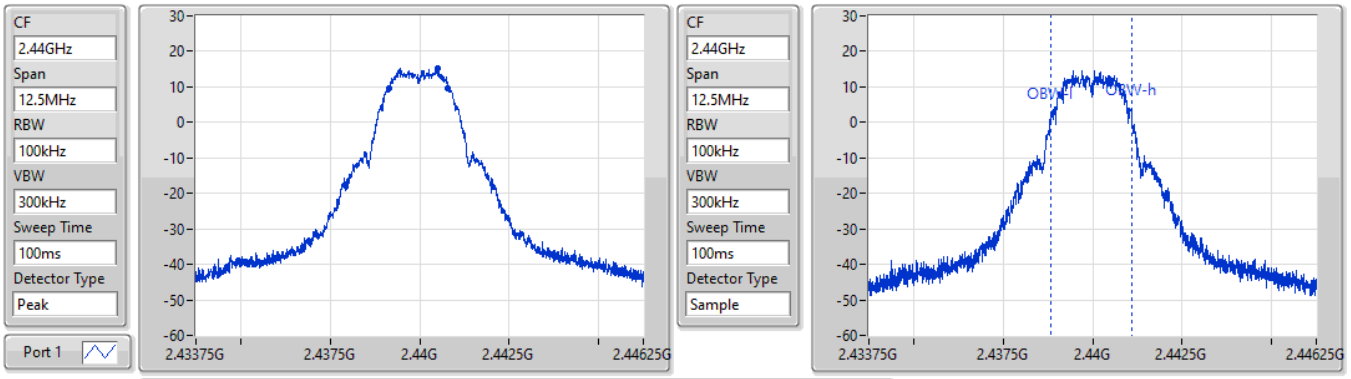


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.644M	2.404156G	2.4058G	2.274M	2.403838G	2.406112G	500k	1

Zigbee **EBW**

2440MHz

14/09/2021

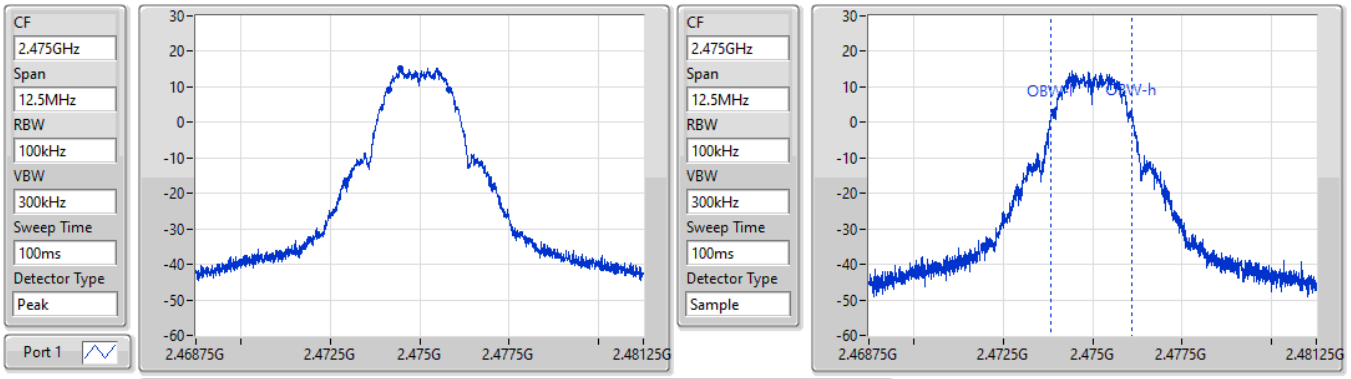


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.663M	2.439138G	2.4408G	2.261M	2.438838G	2.441099G	500k	1

Zigbee **EBW**

2475MHz

15/09/2021



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.669M	2.474138G	2.475806G	2.274M	2.473838G	2.476112G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	18.56	0.07178

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	4.80	18.56	18.56	30.00
2440MHz	Pass	4.80	18.19	18.19	30.00
2475MHz	Pass	4.80	18.29	18.29	30.00

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

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
Zigbee	19.78	0.09506

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
Zigbee	-	-	-	-	-
2405MHz	Pass	2.50	19.45	19.45	30.00
2440MHz	Pass	2.50	19.78	19.78	30.00
2475MHz	Pass	2.50	19.12	19.12	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Zigbee	1.31

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	4.80	0.44	0.44	8.00
2440MHz	Pass	4.80	0.76	0.76	8.00
2475MHz	Pass	4.80	1.31	1.31	8.00

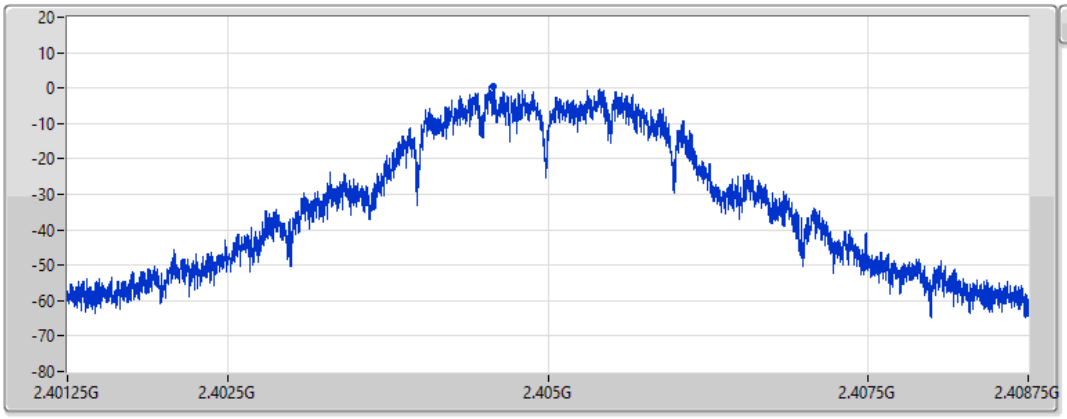
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

Zigbee **PSD**

2405MHz

17/09/2021

CF	2.405GHz
Span	7.5MHz
RBW	3kHz
VBW	10kHz
Sweep Time	1.264102ms
Detector Type	Peak



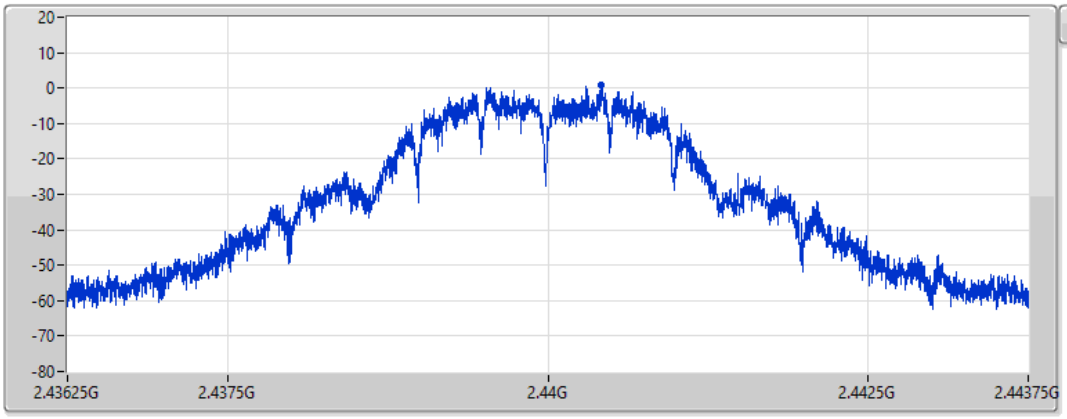
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.44	0.44	0.44

Zigbee **PSD**

2440MHz

17/09/2021

CF	2.44GHz
Span	7.5MHz
RBW	3kHz
VBW	10kHz
Sweep Time	1.264102ms
Detector Type	Peak

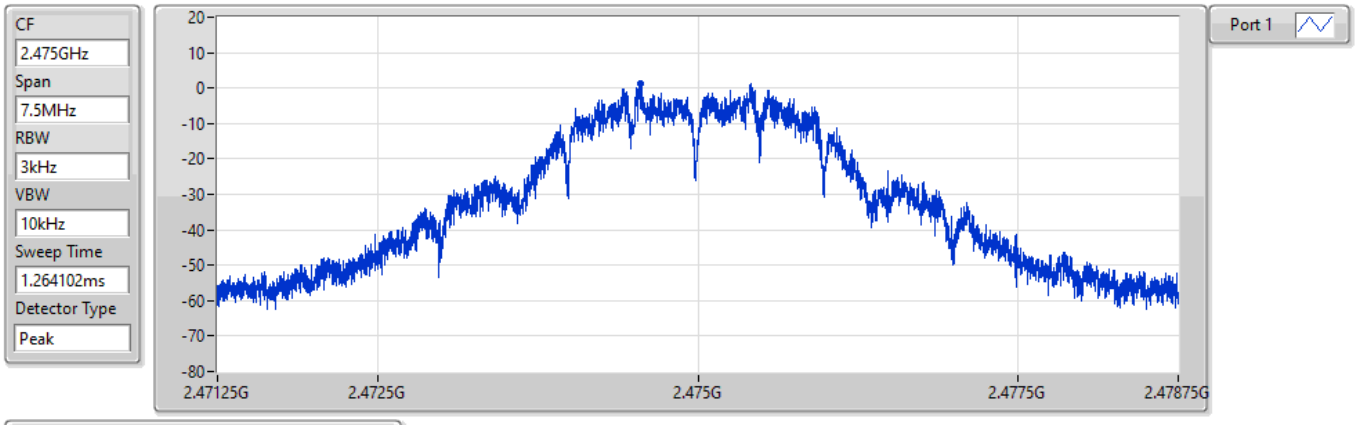


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.76	0.76	0.76

Zigbee **PSD**

2475MHz

17/09/2021



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.31	1.31	1.31

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
Zigbee	3.69

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Zigbee	-	-	-	-	-
2405MHz	Pass	2.50	2.34	2.34	8.00
2440MHz	Pass	2.50	3.69	3.69	8.00
2475MHz	Pass	2.50	2.79	2.79	8.00

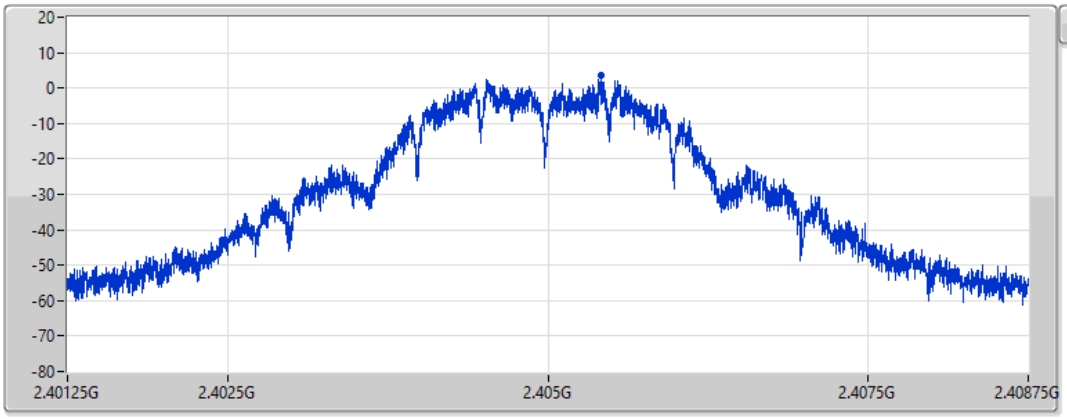
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

Zigbee **PSD**

2405MHz

14/09/2021

CF	2.405GHz
Span	7.5MHz
RBW	3kHz
VBW	10kHz
Sweep Time	1.264102ms
Detector Type	Peak



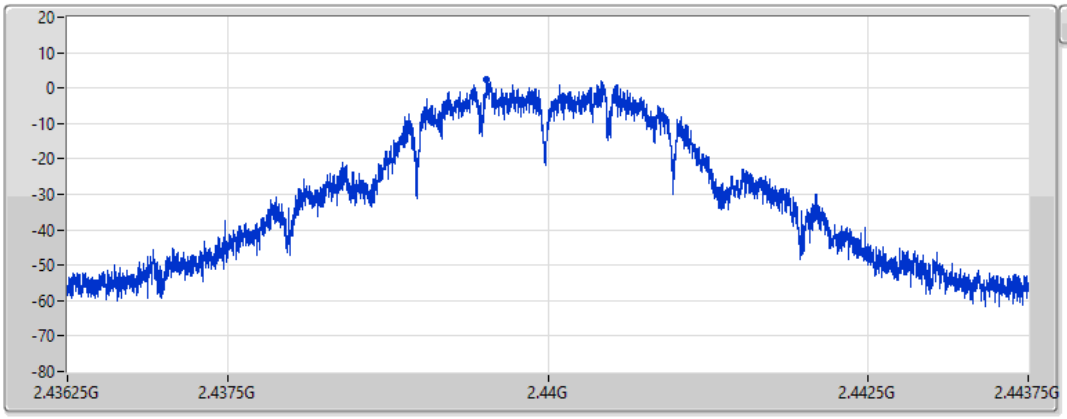
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.34	2.34	2.34

Zigbee **PSD**

2440MHz

14/09/2021

CF	2.44GHz
Span	7.5MHz
RBW	3kHz
VBW	10kHz
Sweep Time	1.264102ms
Detector Type	Peak

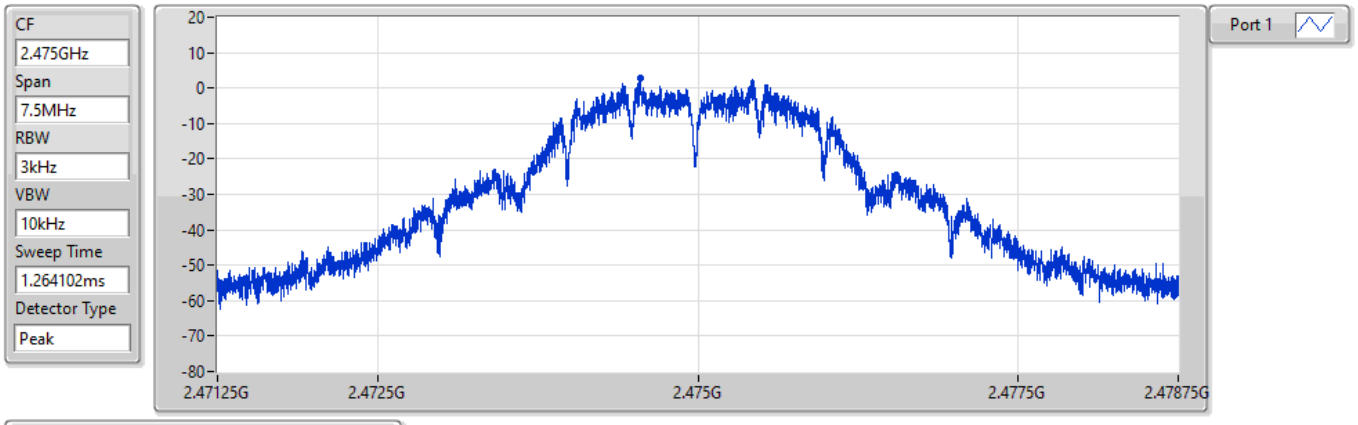


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.69	3.69	3.69

Zigbee **PSD**

2475MHz

15/09/2021



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.79	2.79	2.79

Summary

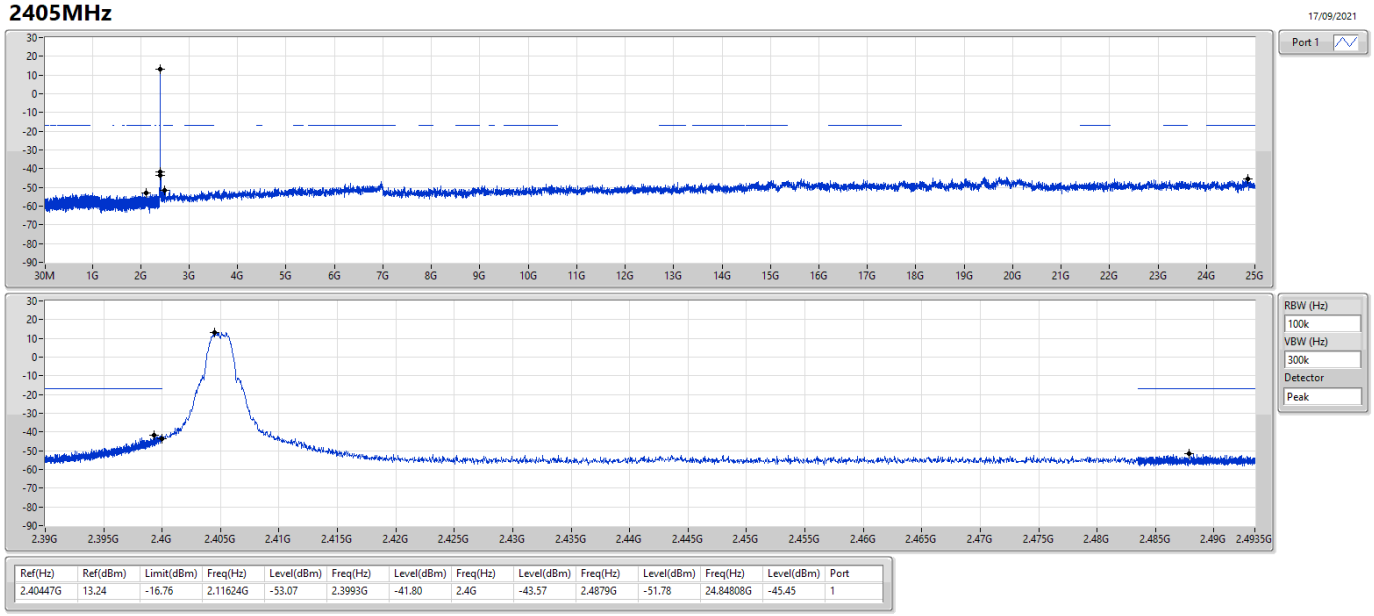
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	2.40447G	13.24	-16.76	2.11624G	-53.07	2.3993G	-41.80	2.4G	-43.57	2.4879G	-51.78	24.84808G	-45.45	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	2.40447G	13.24	-16.76	2.11624G	-53.07	2.3993G	-41.80	2.4G	-43.57	2.4879G	-51.78	24.84808G	-45.45	1
2440MHz	Pass	2.40447G	13.24	-16.76	617.05M	-53.32	2.39739G	-52.50	2.4835G	-54.47	2.4913G	-51.56	16.9483G	-45.31	1
2475MHz	Pass	2.40447G	13.24	-16.76	927.39M	-52.52	2.39022G	-52.07	2.4835G	-47.38	2.48375G	-45.89	24.89028G	-45.05	1

Zigbee **CSENdB**

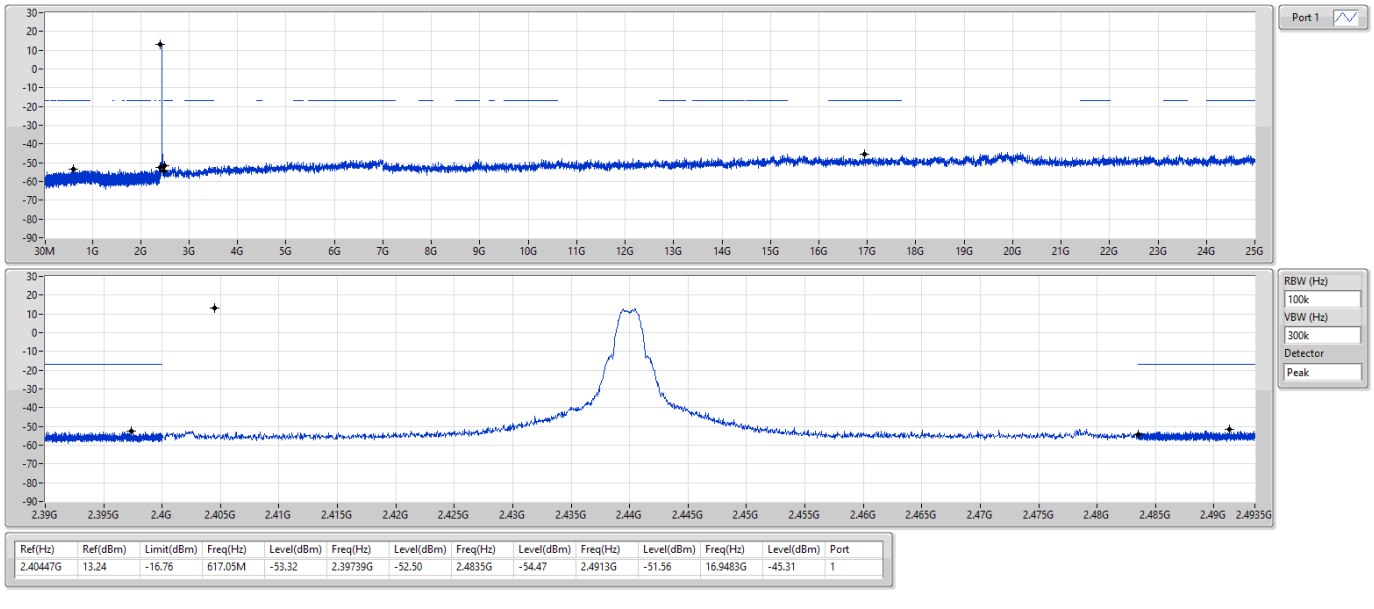
2405MHz



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
2.40447G	13.24	-16.76	2.11624G	-53.07	2.3993G	-41.80	2.4G	-43.57	2.4879G	-51.78	24.84808G	-45.45	1

Zigbee **CSENdB**

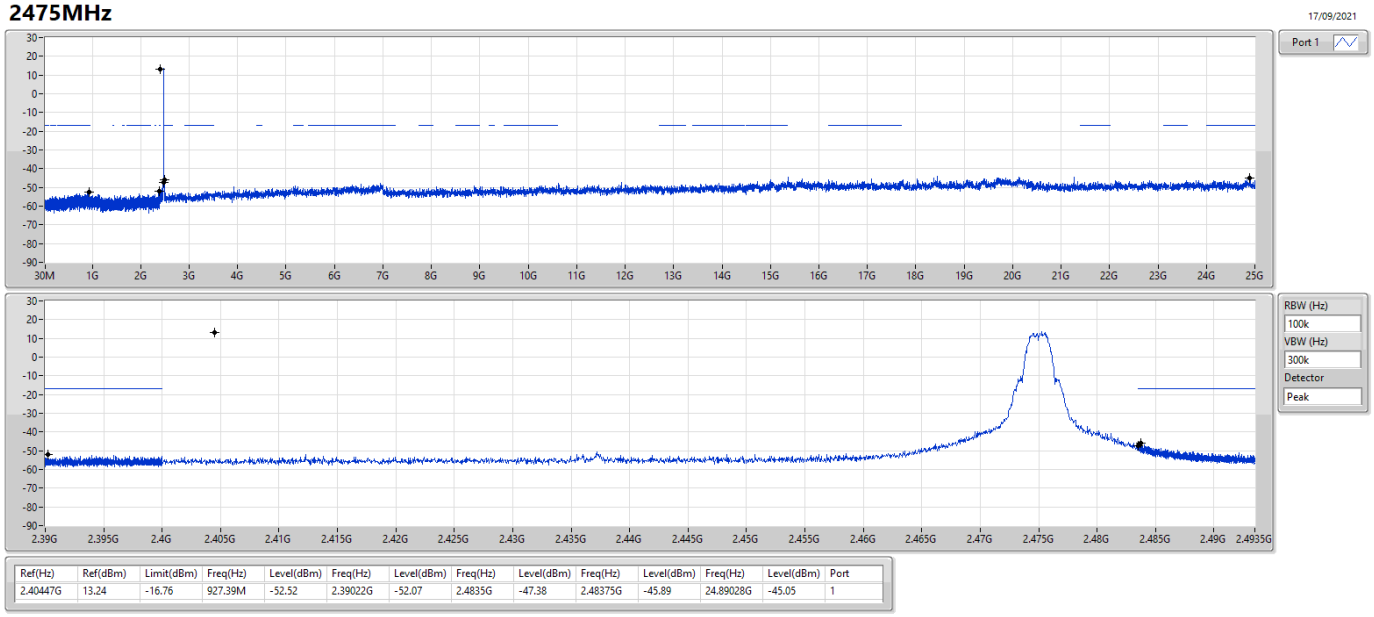
2440MHz



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
2.40447G	13.24	-16.76	617.05M	-53.32	2.39739G	-52.50	2.4835G	-54.47	2.4913G	-51.56	16.9483G	-45.31	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
2.40447G	13.24	-16.76	927.39M	-52.52	2.39022G	-52.07	2.4835G	-47.38	2.48375G	-45.89	24.89028G	-45.05	1

Summary

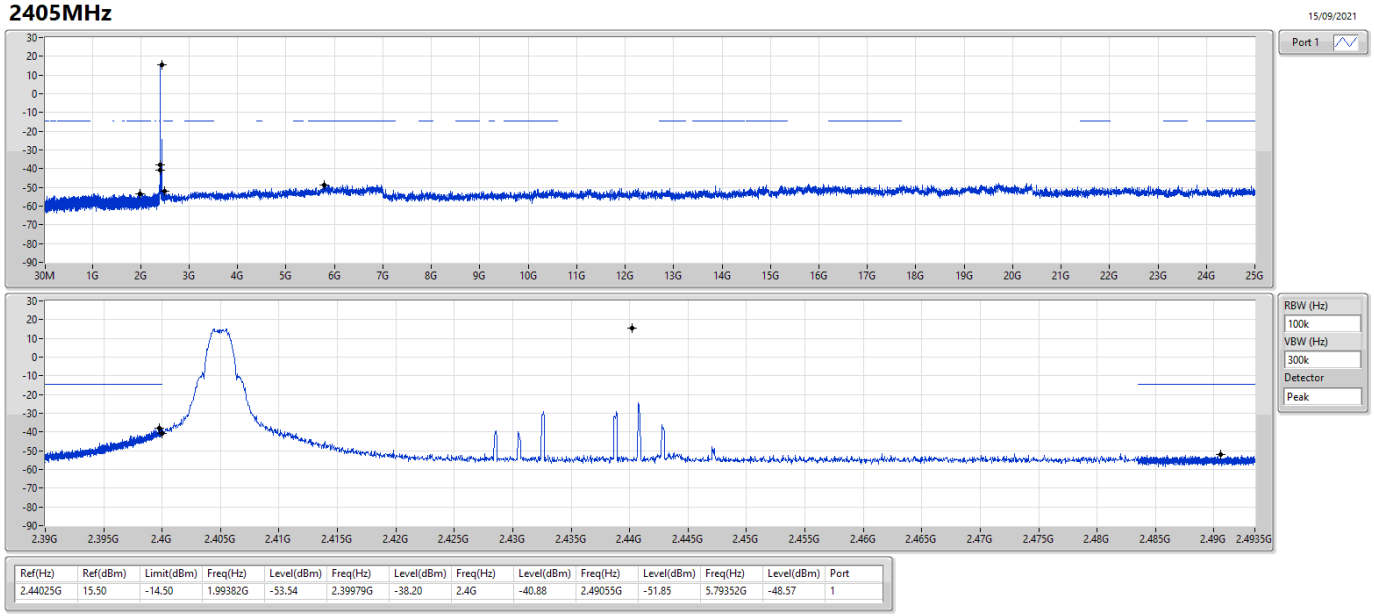
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	2.44025G	15.50	-14.50	1.99382G	-53.54	2.39979G	-38.20	2.4G	-40.88	2.49055G	-51.85	5.79352G	-48.57	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	2.44025G	15.50	-14.50	1.99382G	-53.54	2.39979G	-38.20	2.4G	-40.88	2.49055G	-51.85	5.79352G	-48.57	1
2440MHz	Pass	2.44025G	15.50	-14.50	879.01M	-52.78	2.39767G	-51.48	2.4835G	-54.23	2.48705G	-52.25	6.87664G	-48.22	1
2475MHz	Pass	2.44025G	15.50	-14.50	1.90915G	-53.61	2.39956G	-51.20	2.4835G	-46.47	2.48361G	-45.03	14.85238G	-48.12	1

Zigbee **CSENdB**

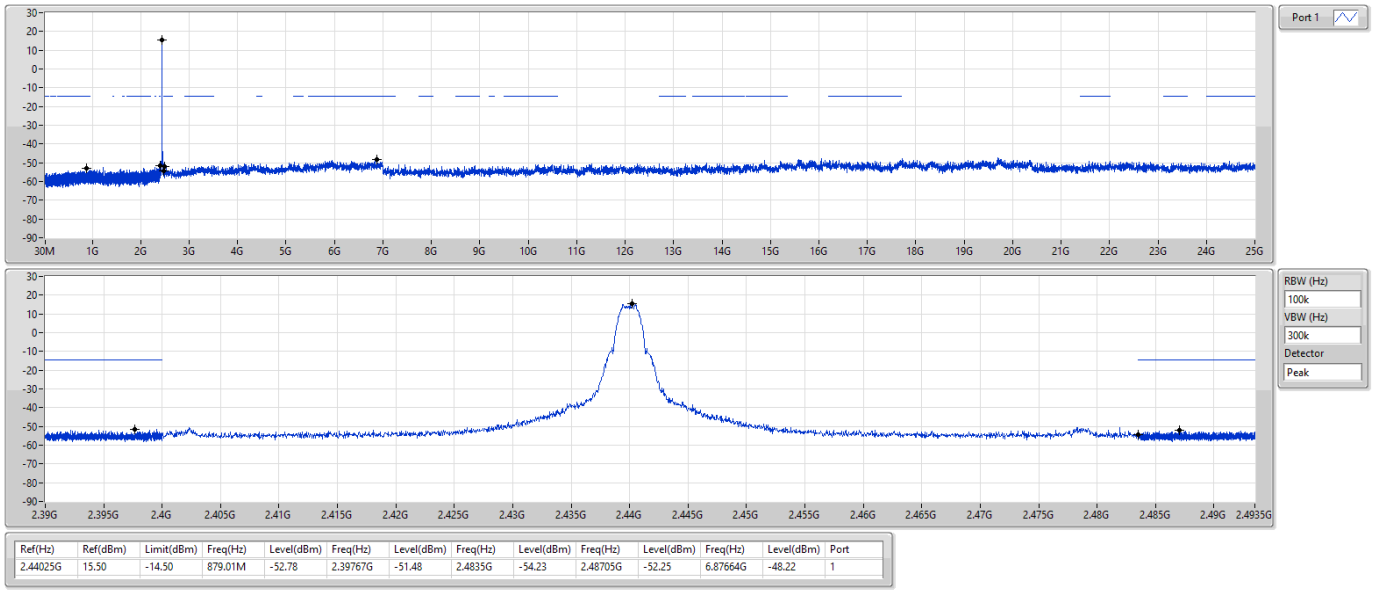
2405MHz



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
2.44025G	15.50	-14.50	1.99382G	-53.54	2.39979G	-38.20	2.4G	-40.88	2.49055G	-51.85	5.79352G	-48.57	1

Zigbee **CSENdB**

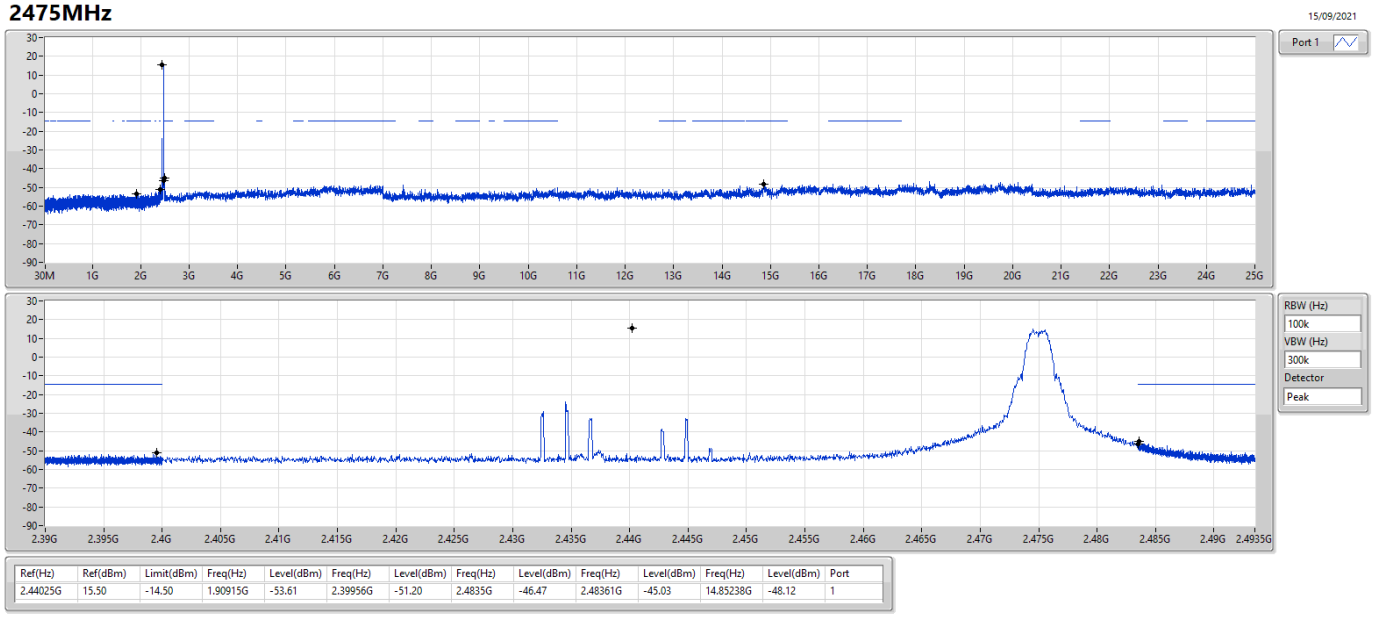
2440MHz



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
2.44025G	15.50	-14.50	879.01M	-52.78	2.39767G	-51.48	2.4835G	-54.23	2.48705G	-52.25	6.87664G	-48.22	1

Zigbee **CSENdB**

2475MHz



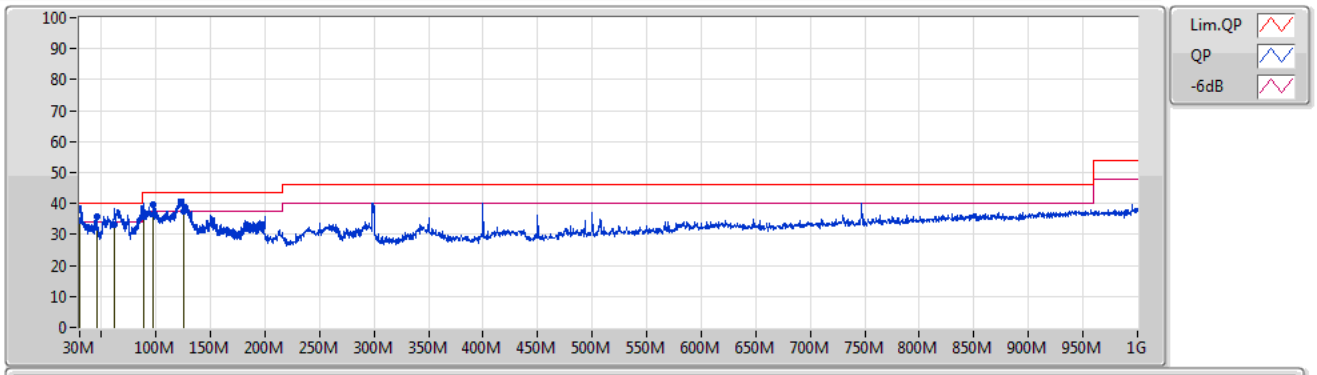
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44025G	15.50	-14.50	1.90915G	-53.61	2.39956G	-51.20	2.4835G	-46.47	2.48361G	-45.03	14.85238G	-48.12	1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	PK	46.07M	35.95	40.00	-4.05	Vertical

Mode 2

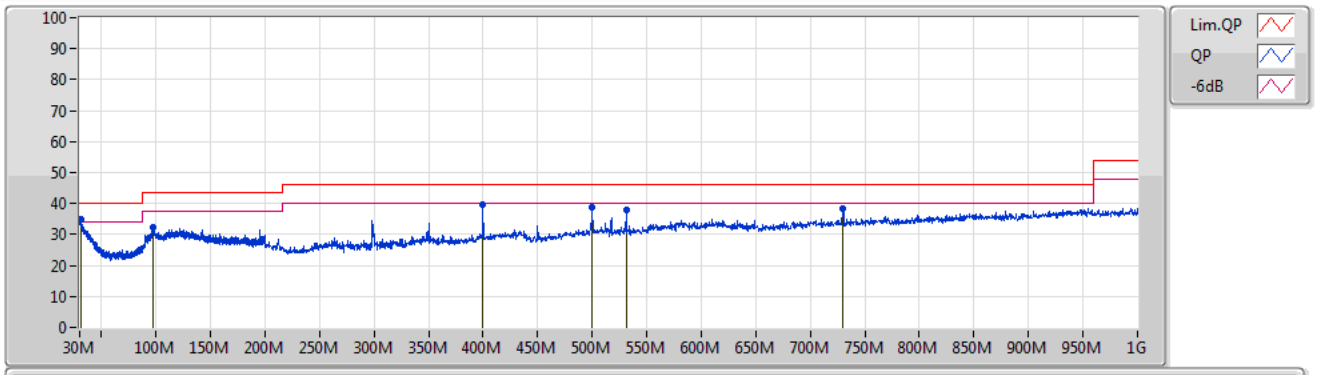
16/09/2021



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)
QP	30M	34.30	40.00	-5.70	-3.09	3	Vertical	43	1.00	-	37.39	23.79	1.00	27.88
PK	46.07M	35.95	40.00	-4.05	-11.20	3	Vertical	247	1.00	"Worst"	47.15	15.31	1.42	27.93
QP	62.05M	33.30	40.00	-6.70	-13.64	3	Vertical	97	2.00	-	46.94	12.44	1.74	27.82
QP	88.23M	36.08	43.50	-7.42	-11.14	3	Vertical	58	4.00	-	47.22	14.51	2.20	27.85
PK	97.49M	39.45	43.50	-4.05	-9.10	3	Vertical	54	2.00	-	48.55	16.37	2.35	27.82
QP	125.03M	37.55	43.50	-5.95	-6.71	3	Vertical	193	1.00	-	44.26	18.12	2.78	27.61

Mode 2

16/09/2021



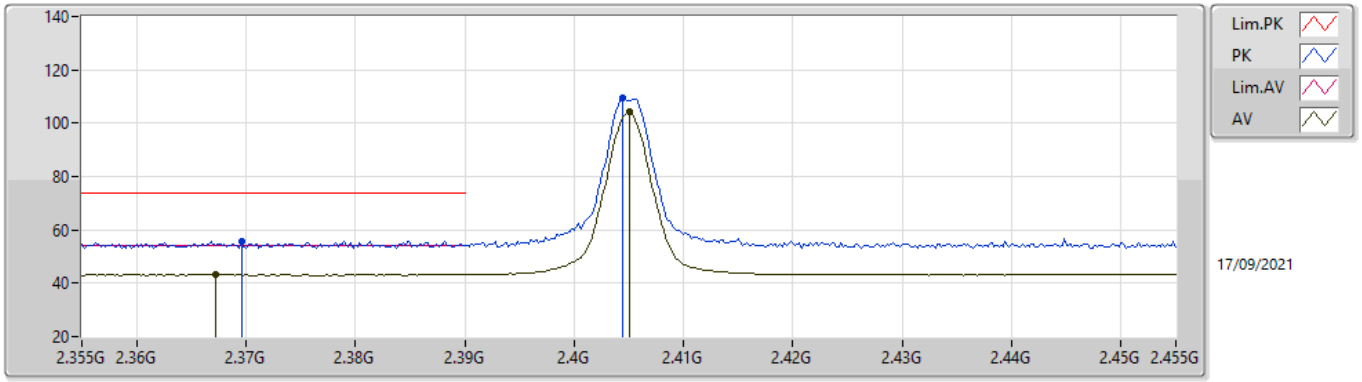
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	31.45M	34.85	40.00	-5.15	-3.65	3	Horizontal	213	1.00	"Worst"	38.50	23.18	1.06	27.89
PK	97.07M	32.31	43.50	-11.19	-9.19	3	Horizontal	359	1.00	-	41.50	16.29	2.34	27.82
PK	400M	39.78	46.00	-6.22	-6.81	3	Horizontal	294	4.00	-	46.59	16.23	4.30	27.34
PK	500M	38.63	46.00	-7.37	-5.58	3	Horizontal	297	2.00	-	44.21	17.52	4.80	27.90
PK	531.6M	38.12	46.00	-7.88	-5.04	3	Horizontal	359	2.00	-	43.16	17.88	4.99	27.91
PK	729.6M	38.40	46.00	-7.60	-1.00	3	Horizontal	9	2.00	-	39.40	20.70	5.92	27.62

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	47.90	54.00	-6.10	3	Horizontal	261	2.40	-

Zigbee

2405MHz_TX

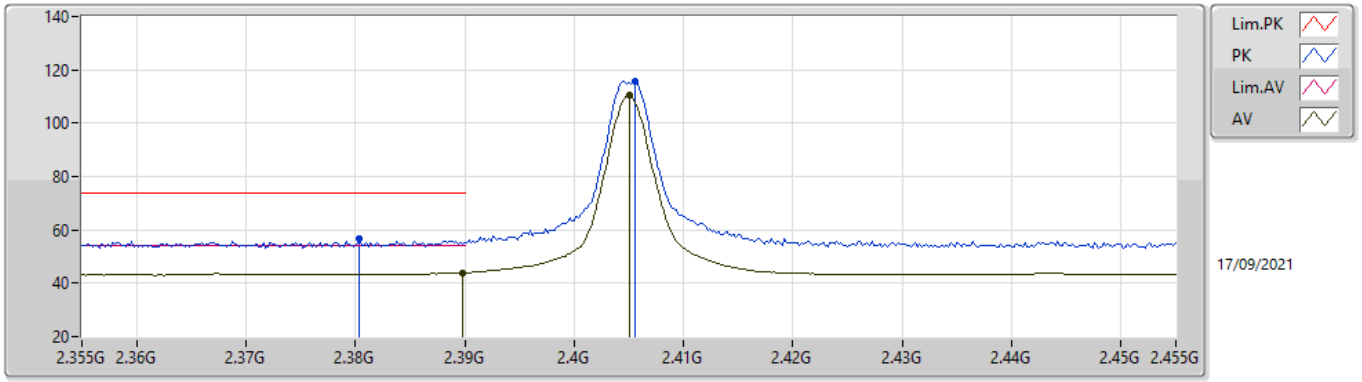


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3696G	55.85	74.00	-18.15	25.21	3	Vertical	313	1.87	-	27.44	3.20	-
AV	2.3672G	43.43	54.00	-10.57	12.80	3	Vertical	313	1.87	-	27.43	3.20	-
PK	2.4044G	109.41	Inf	-Inf	78.70	3	Vertical	313	1.87	-	27.51	3.20	-
AV	2.405G	104.09	Inf	-Inf	73.37	3	Vertical	313	1.87	-	27.51	3.21	-

Zigbee

2405MHz_TX

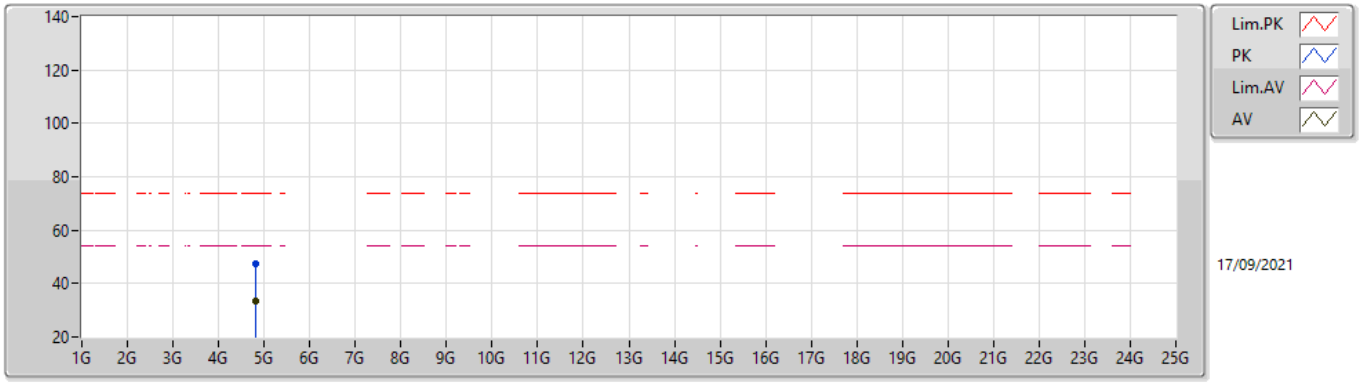


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3804G	56.98	74.00	-17.02	26.32	3	Horizontal	265	2.38	-	27.46	3.20	-
AV	2.3898G	43.95	54.00	-10.05	13.27	3	Horizontal	265	2.38	-	27.48	3.20	-
PK	2.4056G	115.58	Inf	-Inf	84.86	3	Horizontal	265	2.38	-	27.51	3.21	-
AV	2.405G	110.46	Inf	-Inf	79.74	3	Horizontal	265	2.38	-	27.51	3.21	-

Zigbee

2405MHz_TX

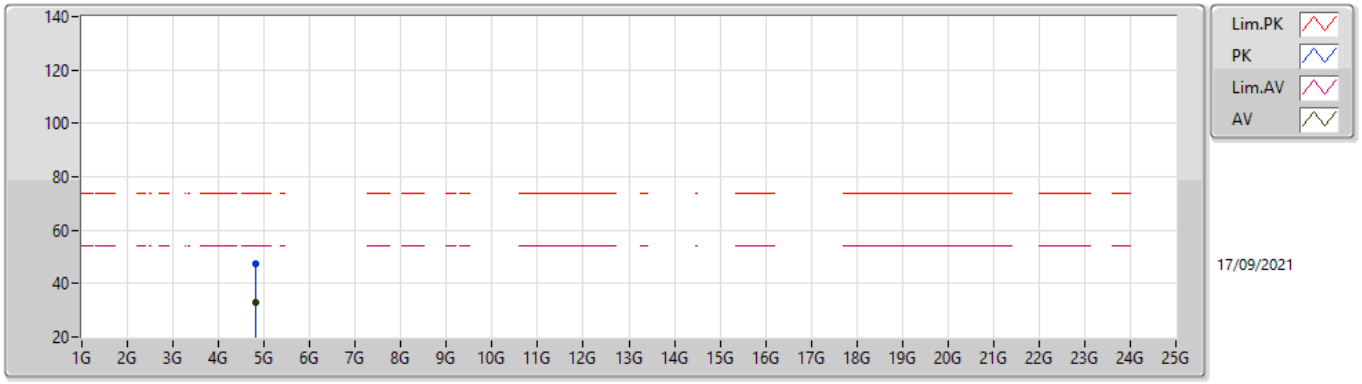


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.81468G	47.35	74.00	-26.65	42.71	3	Vertical	323	2.44	-	32.49	5.41	33.26
AV	4.81486G	33.19	54.00	-20.81	28.55	3	Vertical	323	2.44	-	32.49	5.41	33.26

Zigbee

2405MHz_TX

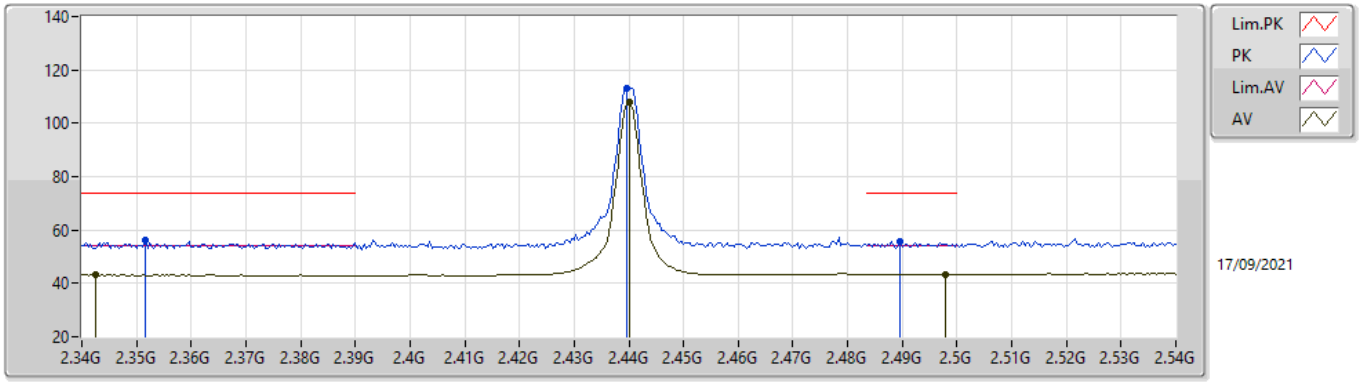


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.81276G	47.39	74.00	-26.61	42.76	3	Horizontal	333	3.00	-	32.48	5.41	33.26
AV	4.81484G	33.16	54.00	-20.84	28.52	3	Horizontal	333	3.00	-	32.49	5.41	33.26

Zigbee

2440MHz_TX

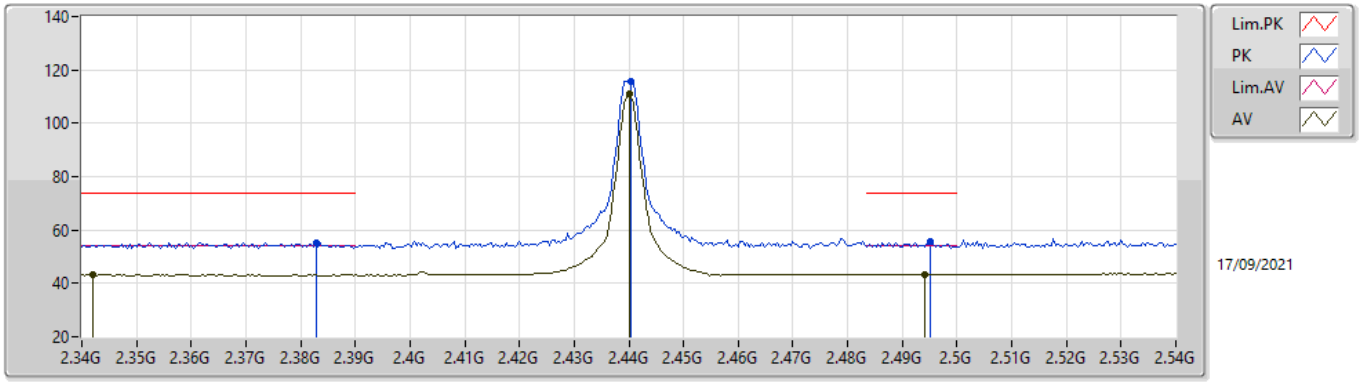


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3516G	56.21	74.00	-17.79	25.61	3	Vertical	313	1.88	-	27.40	3.20	-
AV	2.3424G	43.16	54.00	-10.84	12.56	3	Vertical	313	1.88	-	27.40	3.20	-
PK	2.4396G	112.97	Inf	-Inf	82.15	3	Vertical	313	1.88	-	27.58	3.24	-
AV	2.44G	107.85	Inf	-Inf	77.03	3	Vertical	313	1.88	-	27.58	3.24	-
PK	2.4896G	55.66	74.00	-18.34	24.61	3	Vertical	313	1.88	-	27.76	3.29	-
AV	2.498G	43.43	54.00	-10.57	12.34	3	Vertical	313	1.88	-	27.79	3.30	-

Zigbee

2440MHz_TX

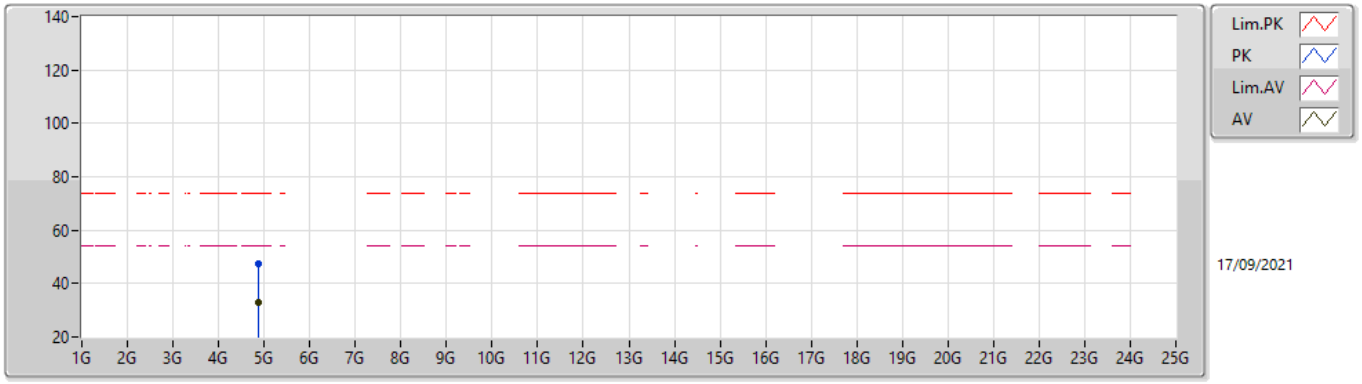


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3828G	55.39	74.00	-18.61	24.72	3	Horizontal	267	2.39	-	27.47	3.20	-
AV	2.342G	43.11	54.00	-10.89	12.51	3	Horizontal	267	2.39	-	27.40	3.20	-
PK	2.4404G	115.92	Inf	-Inf	85.10	3	Horizontal	267	2.39	-	27.58	3.24	-
AV	2.44G	110.80	Inf	-Inf	79.98	3	Horizontal	267	2.39	-	27.58	3.24	-
PK	2.4952G	55.62	74.00	-18.38	24.54	3	Horizontal	267	2.39	-	27.78	3.30	-
AV	2.494G	43.34	54.00	-10.66	12.27	3	Horizontal	267	2.39	-	27.78	3.29	-

Zigbee

2440MHz_TX

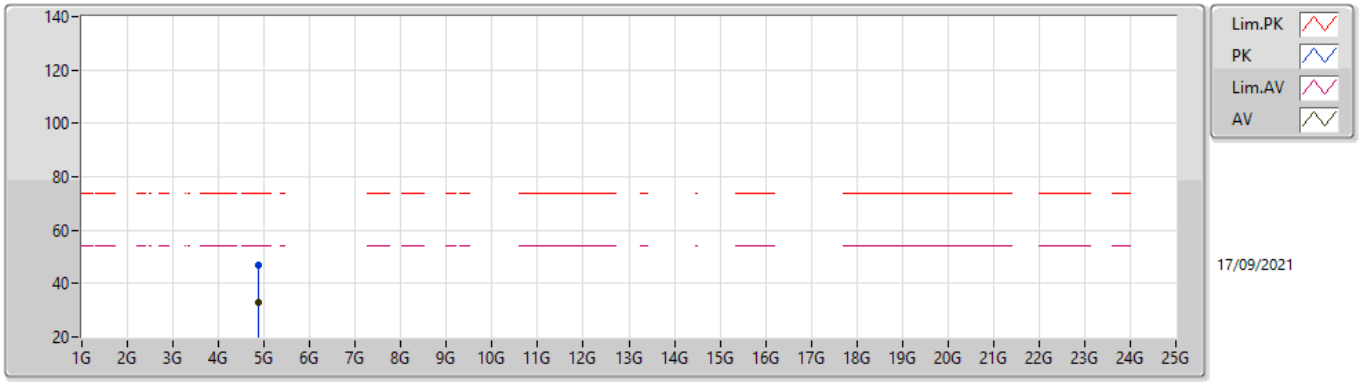


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.88468G	47.38	74.00	-26.62	42.39	3	Vertical	242	2.05	-	32.77	5.44	33.22
AV	4.88426G	32.84	54.00	-21.16	27.85	3	Vertical	242	2.05	-	32.77	5.44	33.22

Zigbee

2440MHz_TX

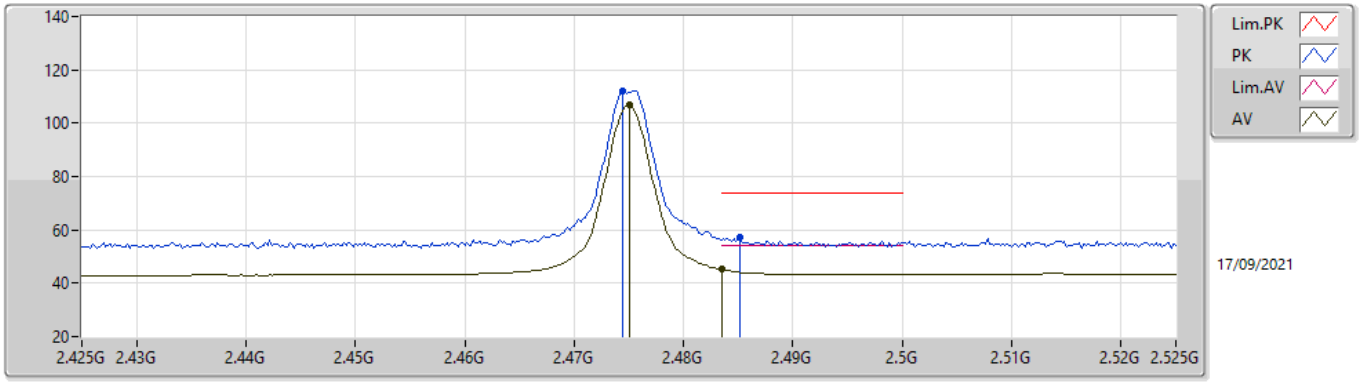


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.88098G	46.72	74.00	-27.28	41.74	3	Horizontal	69	2.83	-	32.76	5.44	33.22
AV	4.88452G	33.16	54.00	-20.84	28.17	3	Horizontal	69	2.83	-	32.77	5.44	33.22

Zigbee

2475MHz_TX

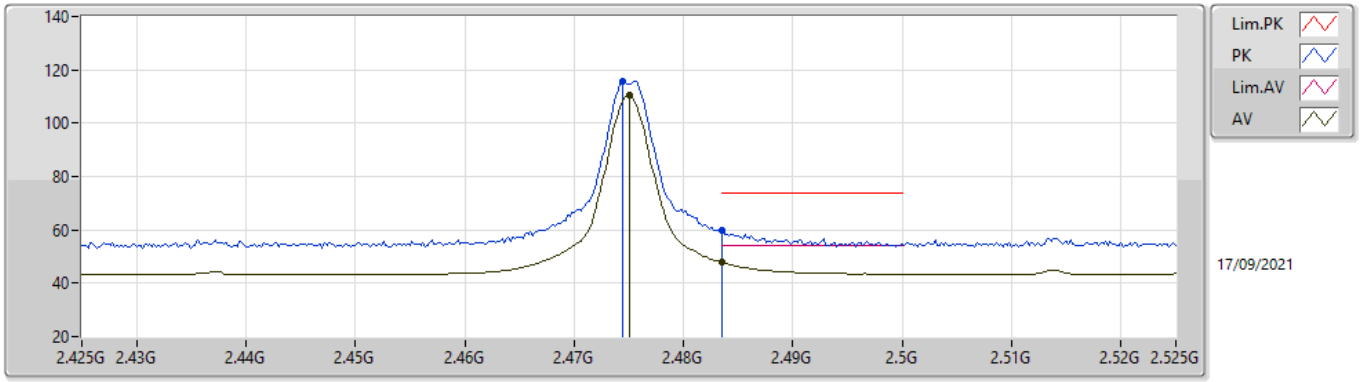


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.4744G	112.03	Inf	-Inf	81.06	3	Vertical	230	1.74	-	27.70	3.27	-
AV	2.475G	106.92	Inf	-Inf	75.95	3	Vertical	230	1.74	-	27.70	3.27	-
PK	2.4852G	57.02	74.00	-16.98	25.99	3	Vertical	230	1.74	-	27.74	3.29	-
AV	2.4835G	45.15	54.00	-8.85	14.14	3	Vertical	230	1.74	-	27.73	3.28	-

Zigbee

2475MHz_TX

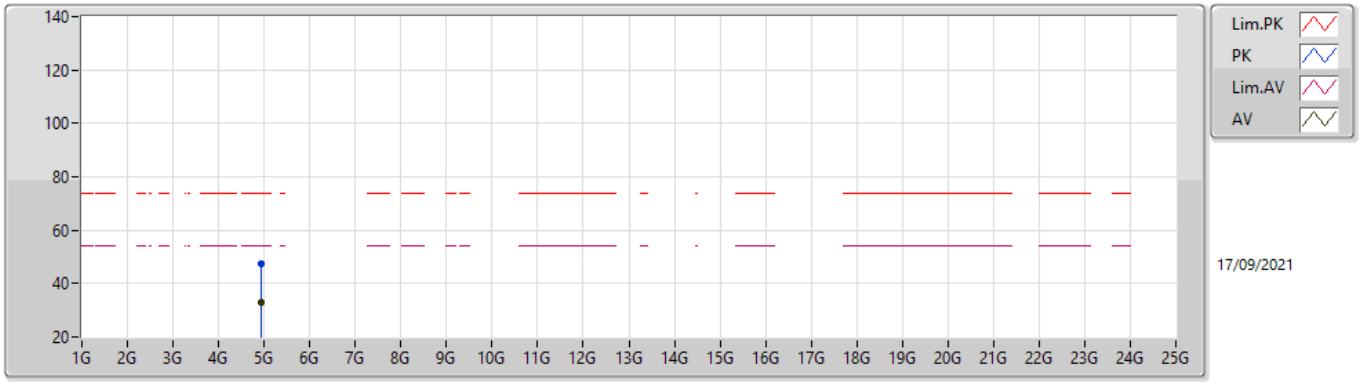


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.4744G	115.55	Inf	-Inf	84.58	3	Horizontal	261	2.40	-	27.70	3.27	-
AV	2.475G	110.43	Inf	-Inf	79.46	3	Horizontal	261	2.40	-	27.70	3.27	-
PK	2.4835G	60.05	74.00	-13.95	29.04	3	Horizontal	261	2.40	-	27.73	3.28	-
AV	2.4835G	47.90	54.00	-6.10	16.89	3	Horizontal	261	2.40	-	27.73	3.28	-

Zigbee

2475MHz_TX

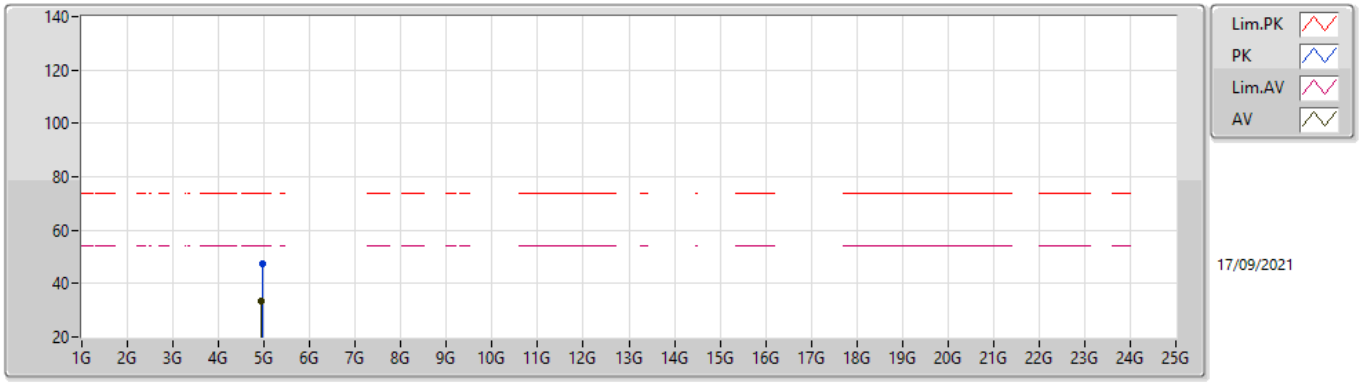


EUT Y_1TX
Setting 3
04-D-G-2

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.94566G	47.32	74.00	-26.68	42.06	3	Vertical	336.7	1.82	-	32.98	5.47	33.19
AV	4.9451G	33.15	54.00	-20.85	27.89	3	Vertical	336.7	1.82	-	32.98	5.47	33.19

Zigbee

2475MHz_TX



EUT Y_1TX
Setting 3
04-D-G-2

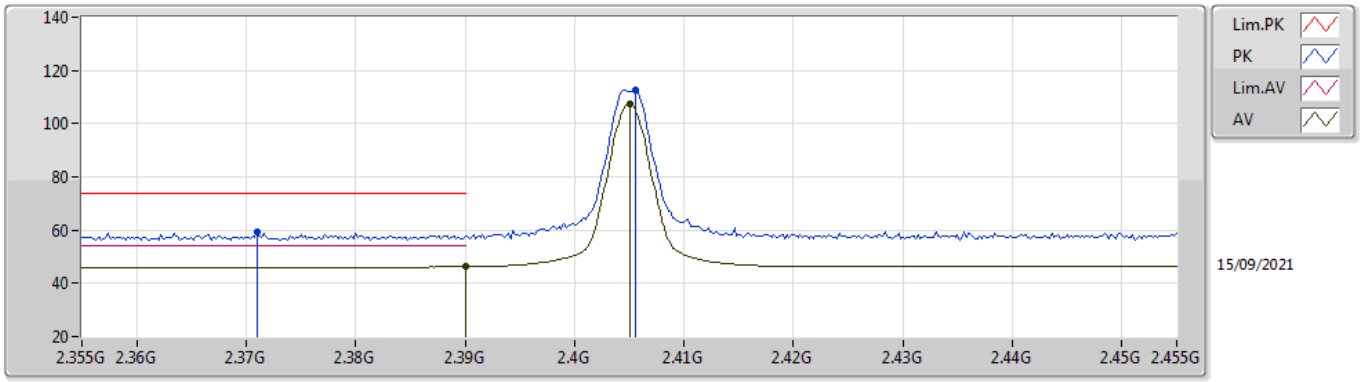
Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.95388G	47.25	74.00	-26.75	41.96	3	Horizontal	235	2.03	-	32.99	5.48	33.18
AV	4.94506G	33.29	54.00	-20.71	28.03	3	Horizontal	235	2.03	-	32.98	5.47	33.19

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	49.44	54.00	-4.56	3	Horizontal	38	1.95	-

Zigbee

2405MHz_TX

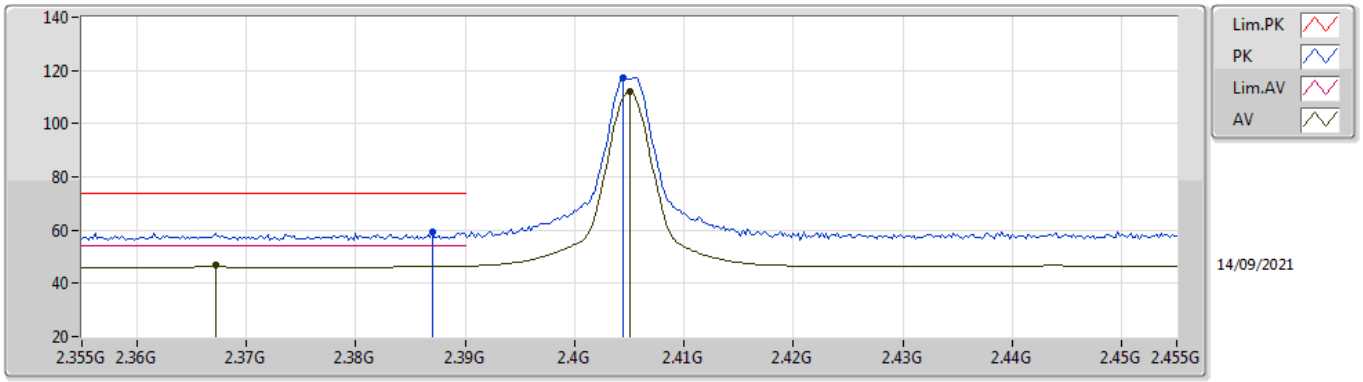


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.371G	59.51	74.00	-14.49	28.76	3	Vertical	272	2.64	-	28.34	2.41	-
AV	2.39G	46.23	54.00	-7.77	15.44	3	Vertical	272	2.64	-	28.38	2.41	-
PK	2.4056G	112.65	Inf	-Inf	81.85	3	Vertical	272	2.64	-	28.40	2.40	-
AV	2.405G	107.37	Inf	-Inf	76.57	3	Vertical	272	2.64	-	28.40	2.40	-

Zigbee

2405MHz_TX

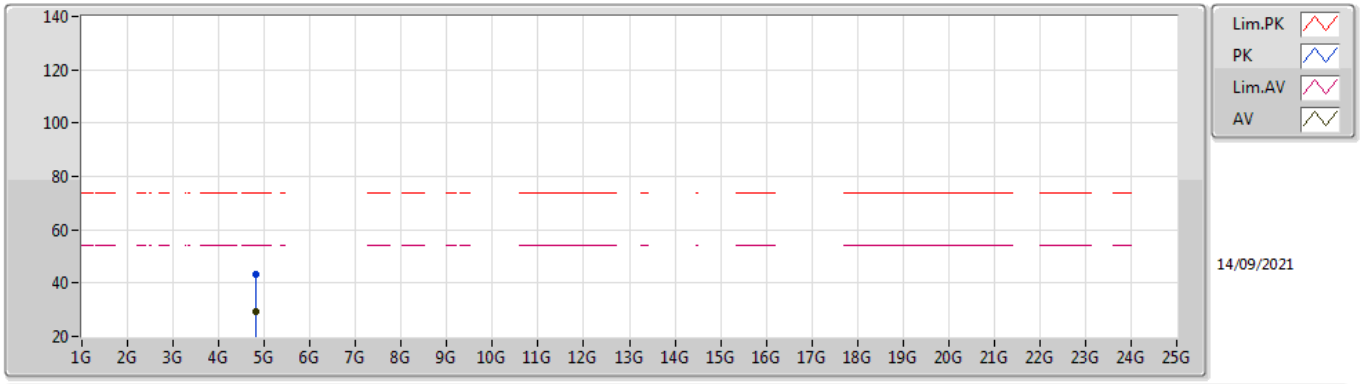


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.387G	59.14	74.00	-14.86	28.36	3	Horizontal	42	2.13	-	28.37	2.41	-
AV	2.3672G	46.68	54.00	-7.32	15.93	3	Horizontal	42	2.13	-	28.33	2.42	-
PK	2.4044G	117.31	Inf	-Inf	86.51	3	Horizontal	42	2.13	-	28.40	2.40	-
AV	2.405G	112.07	Inf	-Inf	81.27	3	Horizontal	42	2.13	-	28.40	2.40	-

Zigbee

2405MHz_TX

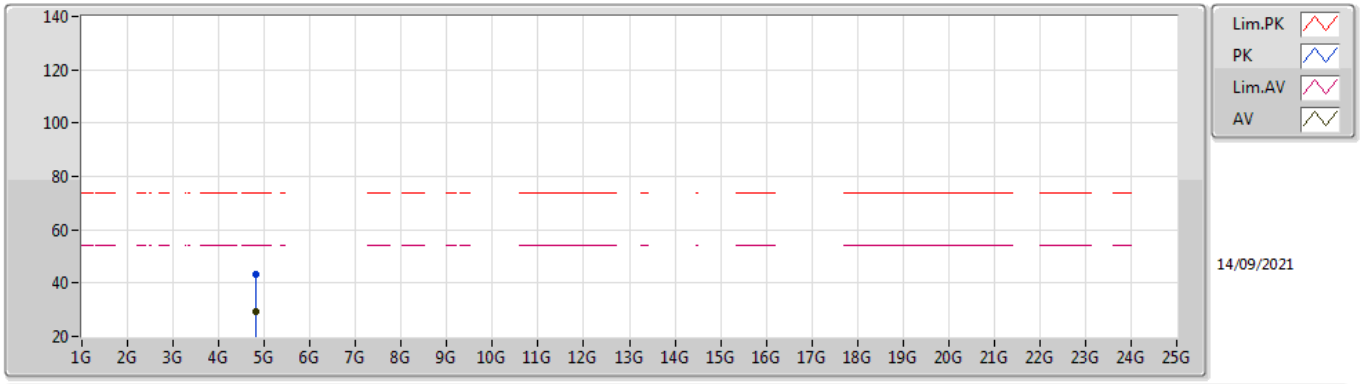


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.81056G	43.42	74.00	-30.58	38.21	3	Vertical	191	1.80	-	32.74	4.70	32.23
AV	4.81082G	29.30	54.00	-24.70	24.09	3	Vertical	191	1.80	-	32.74	4.70	32.23

Zigbee

2405MHz_TX

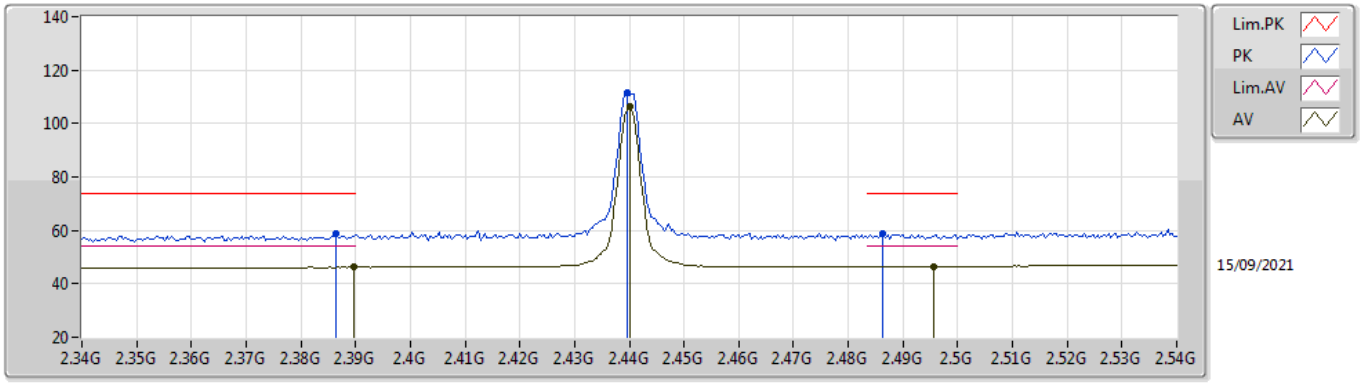


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.80985G	43.46	74.00	-30.54	38.25	3	Horizontal	160	1.80	-	32.74	4.70	32.23
AV	4.81093G	29.50	54.00	-24.50	24.29	3	Horizontal	160	1.80	-	32.74	4.70	32.23

Zigbee

2440MHz_TX

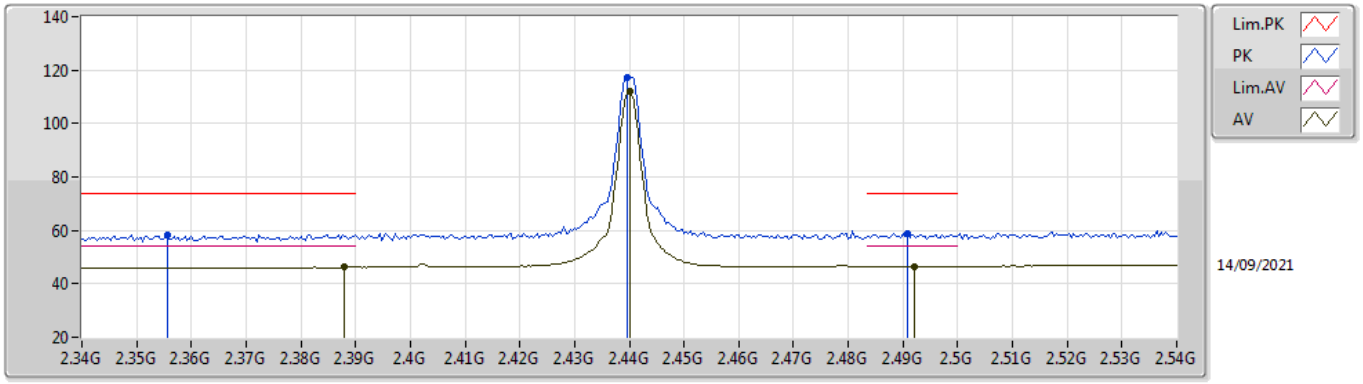


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3864G	58.77	74.00	-15.23	27.99	3	Vertical	268	2.36	-	28.37	2.41	-
AV	2.3896G	46.21	54.00	-7.79	15.42	3	Vertical	268	2.36	-	28.38	2.41	-
PK	2.4396G	111.36	Inf	-Inf	80.54	3	Vertical	268	2.36	-	28.40	2.42	-
AV	2.44G	106.14	Inf	-Inf	75.32	3	Vertical	268	2.36	-	28.40	2.42	-
PK	2.4864G	58.89	74.00	-15.11	27.90	3	Vertical	268	2.36	-	28.55	2.44	-
AV	2.4956G	46.52	54.00	-7.48	15.49	3	Vertical	268	2.36	-	28.58	2.45	-

Zigbee

2440MHz_TX

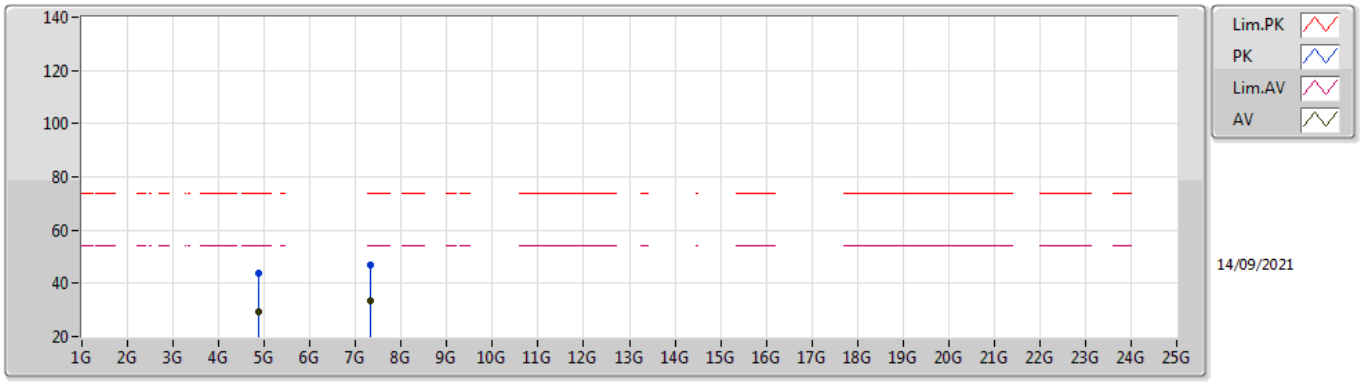


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3556G	58.36	74.00	-15.64	27.63	3	Horizontal	22	2.09	-	28.31	2.42	-
AV	2.388G	46.21	54.00	-7.79	15.42	3	Horizontal	22	2.09	-	28.38	2.41	-
PK	2.4396G	117.16	Inf	-Inf	86.34	3	Horizontal	22	2.09	-	28.40	2.42	-
AV	2.44G	111.95	Inf	-Inf	81.13	3	Horizontal	22	2.09	-	28.40	2.42	-
PK	2.4908G	58.90	74.00	-15.10	27.89	3	Horizontal	22	2.09	-	28.56	2.45	-
AV	2.492G	46.50	54.00	-7.50	15.48	3	Horizontal	22	2.09	-	28.57	2.45	-

Zigbee

2440MHz_TX

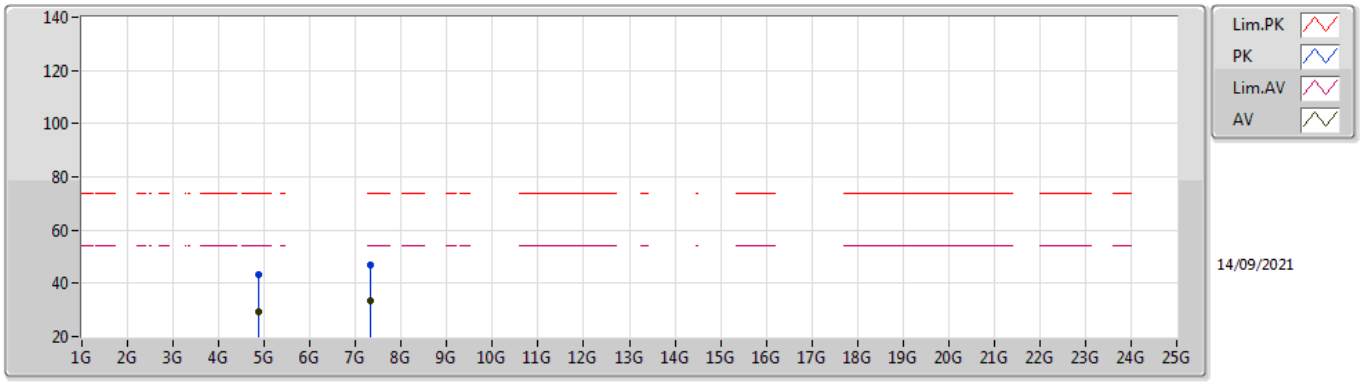


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.8765G	43.58	74.00	-30.42	38.13	3	Vertical	285	1.18	-	32.95	4.70	32.20
AV	4.88296G	29.25	54.00	-24.75	23.78	3	Vertical	285	1.18	-	32.97	4.70	32.20
PK	7.32452G	46.96	74.00	-27.04	37.59	3	Vertical	317	1.89	-	36.45	5.76	32.84
AV	7.32474G	33.23	54.00	-20.77	23.87	3	Vertical	317	1.89	-	36.45	5.76	32.85

Zigbee

2440MHz_TX

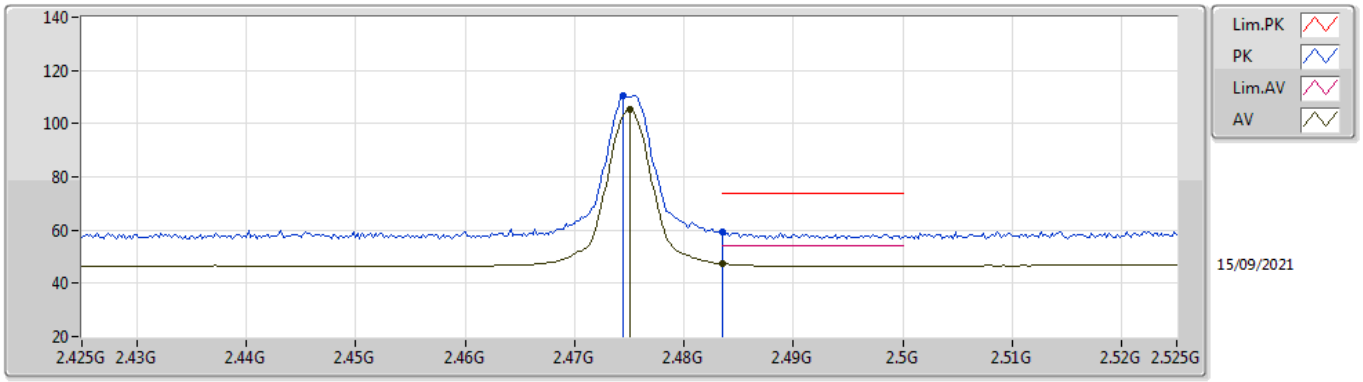


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.88494G	43.20	74.00	-30.80	37.73	3	Horizontal	202	2.63	-	32.97	4.70	32.20
AV	4.88494G	29.23	54.00	-24.77	23.76	3	Horizontal	202	2.63	-	32.97	4.70	32.20
PK	7.31818G	46.92	74.00	-27.08	37.55	3	Horizontal	229	1.28	-	36.44	5.76	32.83
AV	7.32326G	33.29	54.00	-20.71	23.92	3	Horizontal	229	1.28	-	36.45	5.76	32.84

Zigbee

2475MHz_TX

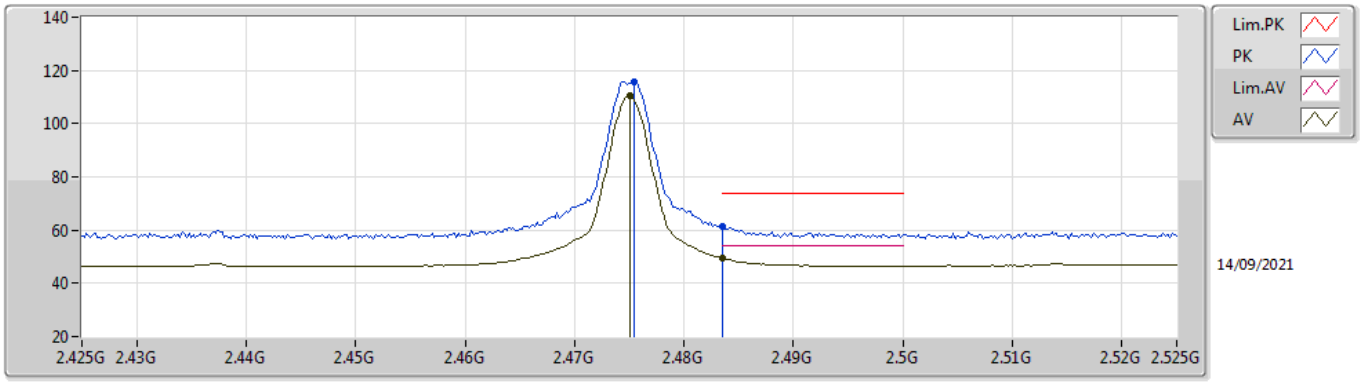


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.4744G	110.55	Inf	-Inf	79.61	3	Vertical	270	2.08	-	28.50	2.44	-
AV	2.475G	105.42	Inf	-Inf	74.48	3	Vertical	270	2.08	-	28.50	2.44	-
PK	2.4835G	59.41	74.00	-14.59	28.44	3	Vertical	270	2.08	-	28.53	2.44	-
AV	2.4835G	47.47	54.00	-6.53	16.50	3	Vertical	270	2.08	-	28.53	2.44	-

Zigbee

2475MHz_TX

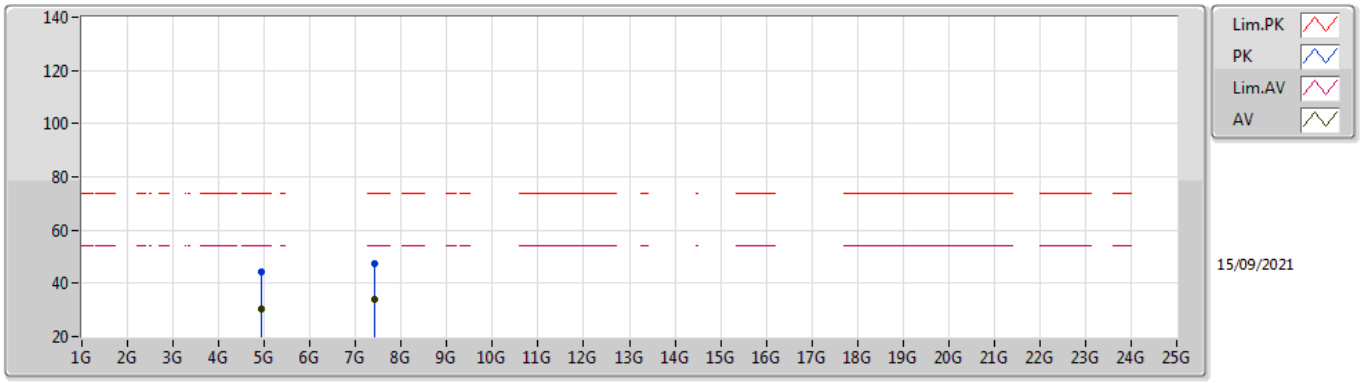


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.4754G	115.72	Inf	-Inf	84.78	3	Horizontal	38	1.95	-	28.50	2.44	-
AV	2.475G	110.55	Inf	-Inf	79.61	3	Horizontal	38	1.95	-	28.50	2.44	-
PK	2.4835G	61.56	74.00	-12.44	30.59	3	Horizontal	38	1.95	-	28.53	2.44	-
AV	2.4835G	49.44	54.00	-4.56	18.47	3	Horizontal	38	1.95	-	28.53	2.44	-

Zigbee

2475MHz_TX

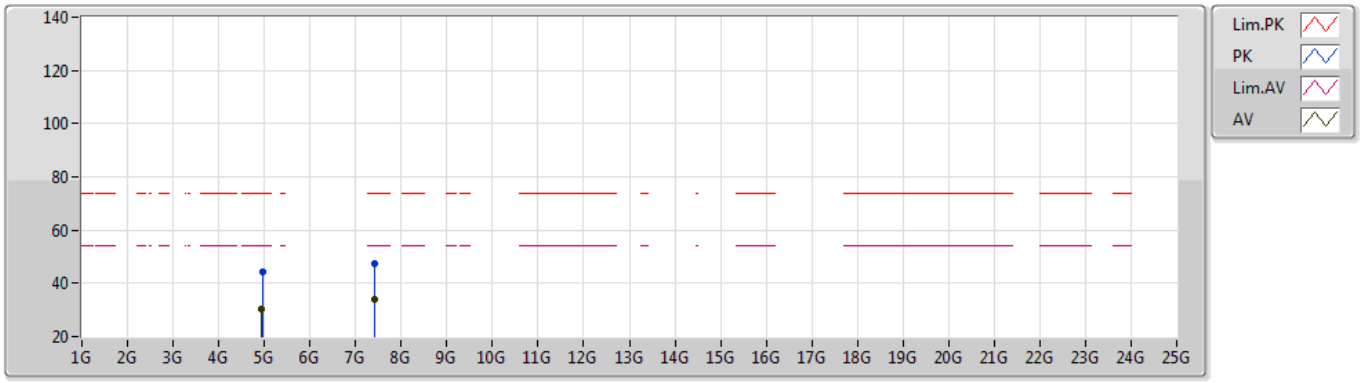


EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.9461G	44.32	74.00	-29.68	38.52	3	Vertical	191	1.06	-	33.28	4.70	32.18
AV	4.94754G	30.34	54.00	-23.66	24.53	3	Vertical	191	1.06	-	33.29	4.70	32.18
PK	7.42202G	47.67	74.00	-26.33	38.30	3	Vertical	333	1.00	-	36.56	5.82	33.01
AV	7.42182G	33.98	54.00	-20.02	24.61	3	Vertical	333	1.00	-	36.56	5.82	33.01

Zigbee

2475MHz_TX



EUT Y_1TX
Setting 3
02-B-S-8

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.94984G	44.12	74.00	-29.88	38.30	3	Horizontal	298	2.23	-	33.30	4.70	32.18
AV	4.94724G	30.38	54.00	-23.62	24.58	3	Horizontal	298	2.23	-	33.28	4.70	32.18
PK	7.42296G	47.65	74.00	-26.35	38.30	3	Horizontal	213	1.39	-	36.55	5.82	33.02
AV	7.4227G	33.92	54.00	-20.08	24.57	3	Horizontal	213	1.39	-	36.55	5.82	33.02