



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. Suite 200. Norcross, GA 30092
Manufacturer : Technicolor Connected Home USA LLC
4855 Peachtree Industrial Blvd. Suite 200. Norcross, GA 30092
Standard : 47 CFR FCC Part 15.247

The product was received on Oct. 18, 2022, and testing was started from Oct. 19, 2022 and completed on Nov. 09, 2022. 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 variant 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.)



Table of Contents

History of this test report.....3

Summary of Test Result.....4

1 General Description5

1.1 Information.....5

1.2 Applicable Standards7

1.3 Testing Location Information7

1.4 Measurement Uncertainty7

2 Test Configuration of EUT8

2.1 The Worst Case Measurement Configuration8

2.2 EUT Operation during Test8

2.3 Accessories9

2.4 Support Equipment.....9

2.5 Test Setup Diagram10

3 Transmitter Test Result12

3.1 AC Power-line Conducted Emissions12

3.2 Emissions in Restricted Frequency Bands.....14

4 Test Equipment and Calibration Data18

Appendix A. Test Results of AC Power-line Conducted Emissions

Appendix B. Test Results of Emissions in Restricted Frequency Bands

Appendix C. Test Photos

Photographs of EUT v01



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(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

Comments and Explanations:

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: **Vicky Huang**



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)
	Zigbee					
1	1	Airgain	N04TCAFD-PK1-A150U	PCB	I-PEX	4.8
2	2	Airgain	N01TCAFM-PK1-W230U	PCB	I-PEX	2.5

Note1:

Note2: The above information was declared by manufacturer.

For Zigbee function (1TX/1RX):

The EUT supports the Ant.1 and Ant.2 with TX and RX diversity functions.

Both Ant.1 (Port 1) and Ant.2 (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.



1.1.3 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.			
Function	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
Test Software Version	DOS [ver 6.1.7601]			

Note: The above information was declared by manufacturer.

1.1.4 Table for Multiple Listing

Model Name	Description
CGM4981COM	All the models are identical, For marketing reason the same product will be covered by different name.
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.

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FD171403

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding a second source of Zigbee chip version (EFR32MG13P732F512GM48) as an option.	1. AC Power-line Conducted Emissions 2. Radiated Emissions
2. Revising the manufacturer and applicant's address to "4855 Peachtree Industrial Blvd. Suite 200. Norcross, GA 30092" from "4855 Peachtree Industrial Blvd. Norcross, GA 30092".	After evaluating, It doesn't affect the test result.



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
Radiated (Below 1GHz)	03CH03-CB	RJ Huang	22.2~24 / 56~60	Oct. 19, 2022~ Nov. 08, 2022
Radiated (Above 1GHz)	03CH02-CB	RJ Huang	23.2~23.9 / 57~58	Oct. 19, 2022~ Nov. 08, 2022
AC Conduction	CO01-CB	Tim Chen	23~24 / 58~59	Nov. 09, 2022

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)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.2 dB	Confidence levels of 95%
Bandwidth Measurement	2.0 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 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
The maximum power is generated at Ant. 2, so the measurement will follow this same test configuration.	
1	EUT + Zigbee (Ant. 2) + Adapter 1
2	EUT + Zigbee (Ant. 2) + Adapter 2
3	EUT + Zigbee (Ant. 2) + Adapter 3
For operating mode 3 is the worst case and it was record in this test report.	

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
The maximum power is generated at Ant. 2, so the measurement will follow this same test configuration.	
1	EUT + Zigbee (Ant. 2) + Adapter 1
2	EUT + Zigbee (Ant. 2) + Adapter 2
3	EUT + Zigbee (Ant. 2) + Adapter 3
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
1	EUT + Ant. 1
2	EUT + Ant. 2

Note: After evaluating, and the worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.

2.2 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



2.3 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

2.4 Support Equipment

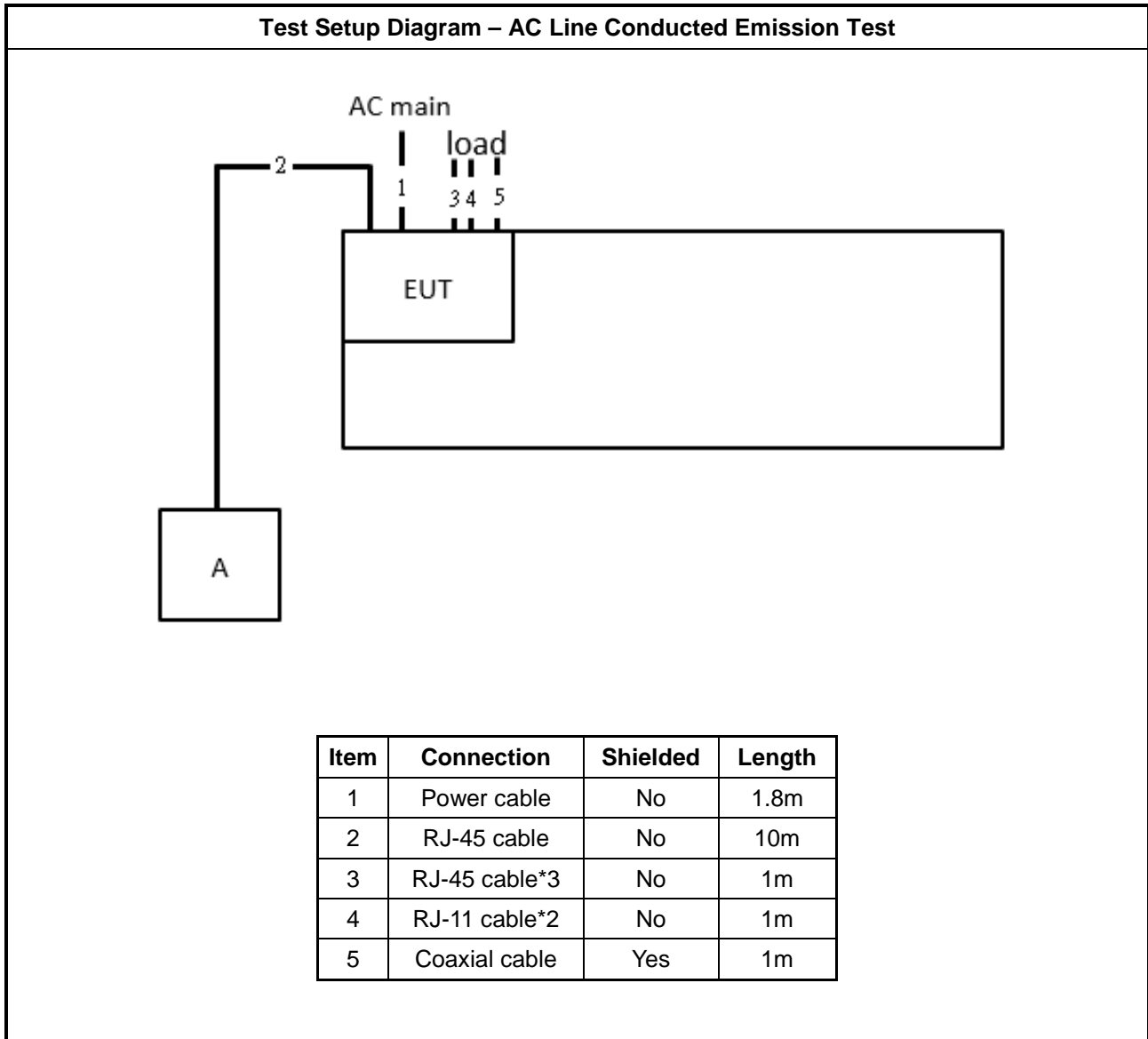
For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E6430	N/A

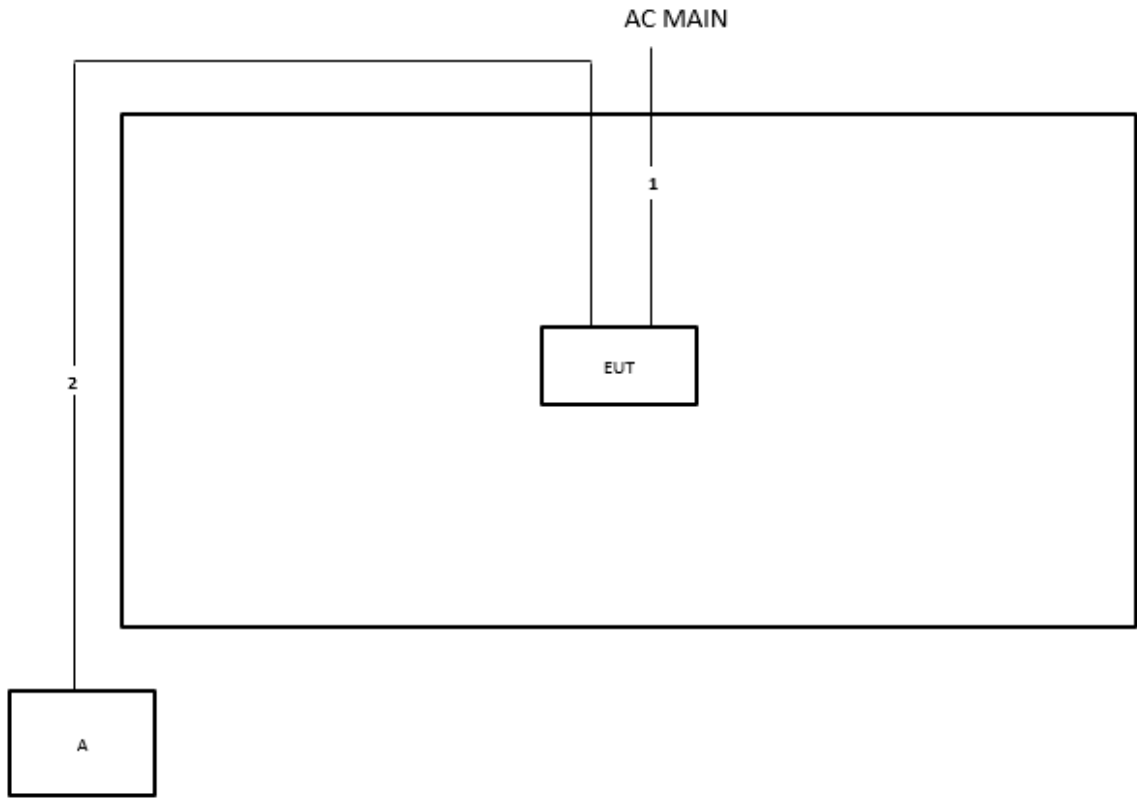
For Radiated:

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

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test



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
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.



3.2 Emissions in Restricted Frequency Bands

3.2.1 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.

3.2.2 Measuring Instruments

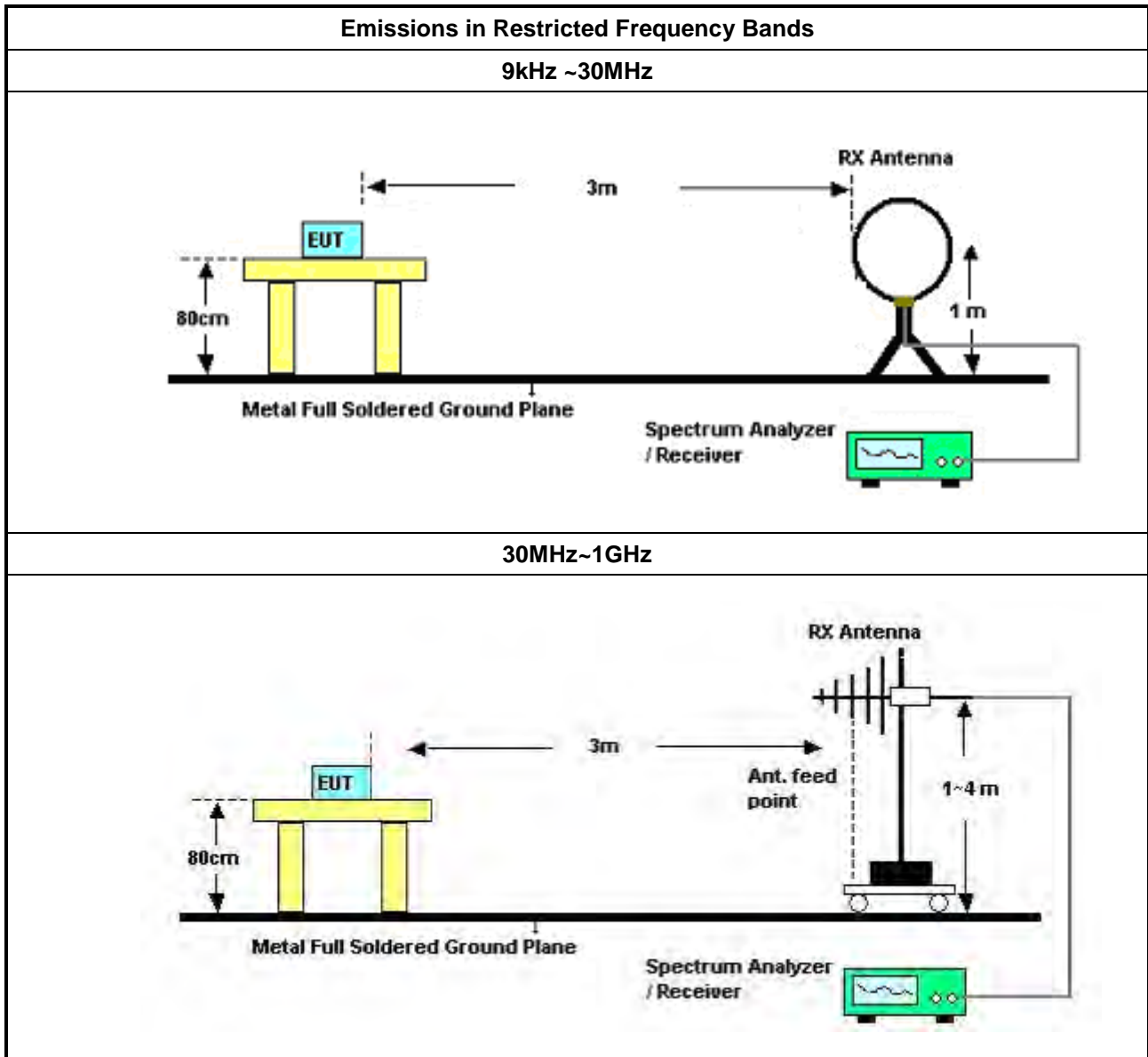
Refer a test equipment and calibration data table in this test report.

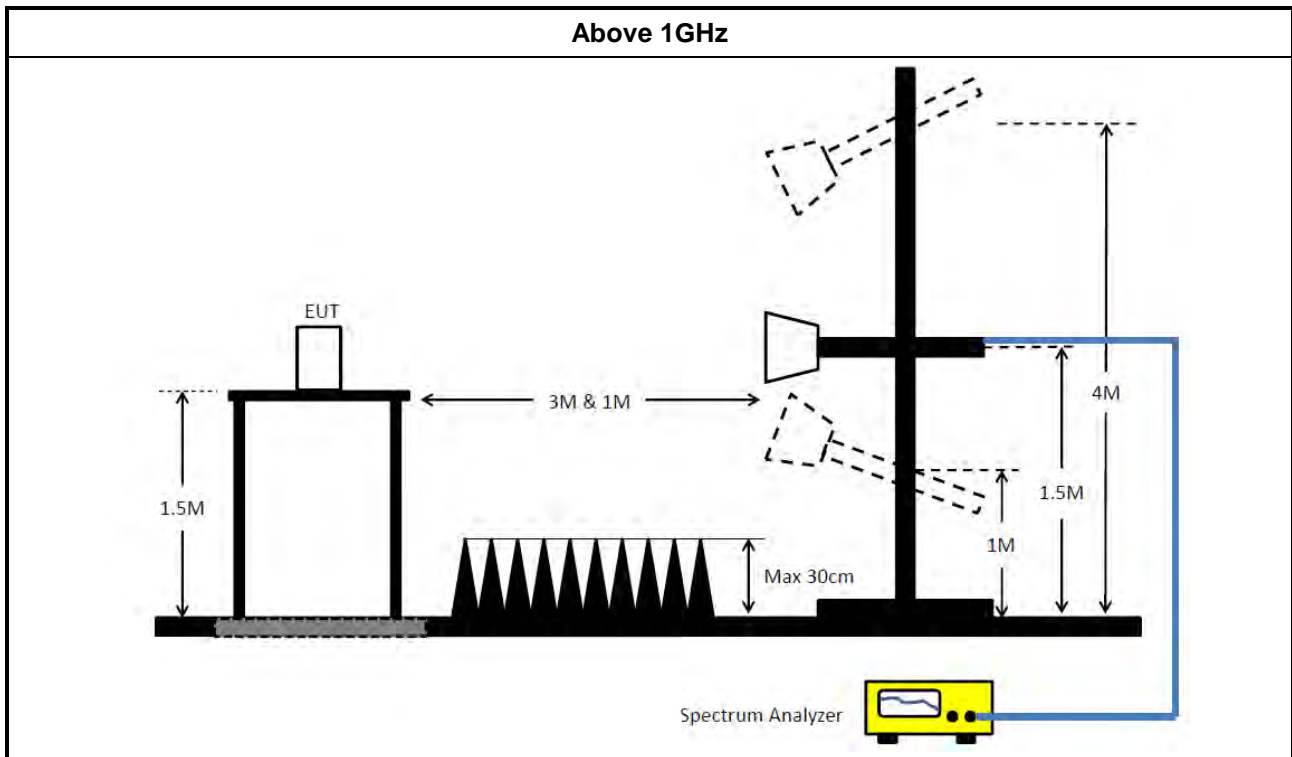


3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> ▪ 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. 	
<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle \geq 98%).
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW \geq 1/T).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
<ul style="list-style-type: none"> ▪ For the transmitter band-edge emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ 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.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> ▪ 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).
	<ul style="list-style-type: none"> ▪ 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
	<ul style="list-style-type: none"> ▪ 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.

3.2.4 Test Setup





3.2.5 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.

3.2.6 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.

3.2.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix B



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	Feb. 22, 2022	Feb. 21, 2023	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 09, 2022	Feb. 08, 2023	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 12, 2022	Apr. 11, 2023	Conduction (CO01-CB)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 10, 2022	Feb. 09, 2023	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH03-CB	30 MHz ~ 1 GHz	Jan. 26, 2022	Jan. 25, 2023	Radiation (03CH03-CB)
Bilog Antenna with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	2928 & AT-N0608	20MHz ~ 2GHz	Feb. 21, 2022	Feb. 20, 2023	Radiation (03CH03-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8447D	2944A10259	9kHz ~ 1.3GHz	Jan. 10, 2022	Jan. 09, 2023	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 10, 2022	Jun. 09, 2023	Radiation (03CH03-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH03-CB)
RF Cable-low	Woken	RG402	Low Cable-02+29	30MHz ~ 1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 26, 2022	Mar. 25, 2023	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 19, 2022	Apr. 18, 2023	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBEAK	BBHA9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSP	100593	9kHz~40GHz	Apr. 08, 2022	Apr. 07, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)

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

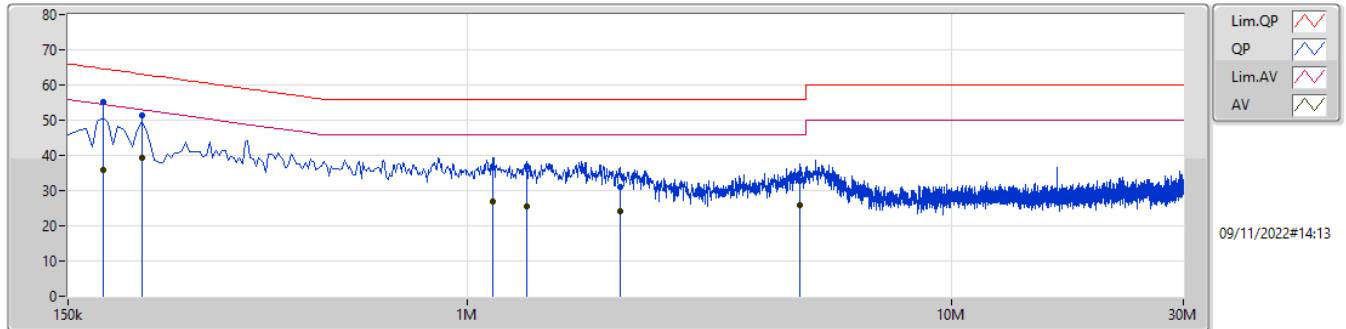
NCR means Non-Calibration required.



Summary

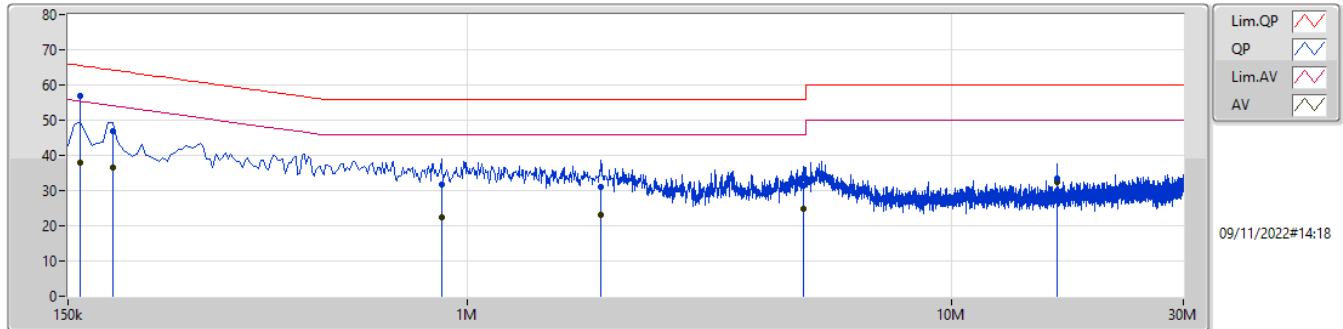
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	QP	159k	56.97	65.52	-8.55	Neutral

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	177k	55.24	64.62	-9.38	9.99	Line	"Worst"	45.25	0.06	0.04	9.89
AV	177k	35.74	54.62	-18.88	9.99	Line	-	25.75	0.06	0.04	9.89
QP	213k	51.50	63.09	-11.59	9.99	Line	-	41.51	0.06	0.04	9.89
AV	213k	39.40	53.09	-13.69	9.99	Line	-	29.41	0.06	0.04	9.89
QP	1.131M	36.44	56.00	-19.56	10.01	Line	-	26.43	0.07	0.05	9.89
AV	1.131M	26.91	46.00	-19.09	10.01	Line	-	16.90	0.07	0.05	9.89
QP	1.325M	36.78	56.00	-19.22	10.03	Line	-	26.75	0.08	0.06	9.89
AV	1.325M	25.38	46.00	-20.62	10.03	Line	-	15.35	0.08	0.06	9.89
QP	2.063M	30.92	56.00	-25.08	10.07	Line	-	20.85	0.09	0.09	9.89
AV	2.063M	24.12	46.00	-21.88	10.07	Line	-	14.05	0.09	0.09	9.89
QP	4.857M	32.61	56.00	-23.39	10.14	Line	-	22.47	0.14	0.11	9.89
AV	4.857M	25.98	46.00	-20.02	10.14	Line	-	15.84	0.14	0.11	9.89

Mode 3



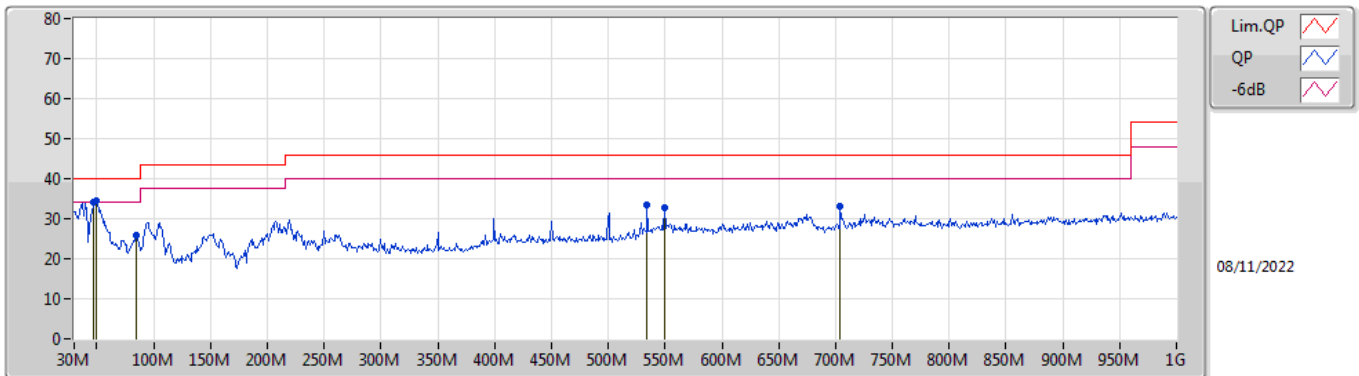
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	159k	56.97	65.52	-8.55	10.00	Neutral	"Worst"	46.97	0.07	0.04	9.89
AV	159k	37.88	55.52	-17.64	10.00	Neutral	-	27.88	0.07	0.04	9.89
QP	186k	46.98	64.20	-17.22	10.00	Neutral	-	36.98	0.07	0.04	9.89
AV	186k	36.72	54.20	-17.48	10.00	Neutral	-	26.72	0.07	0.04	9.89
QP	883.5k	31.73	56.00	-24.27	10.01	Neutral	-	21.72	0.08	0.04	9.89
AV	883.5k	22.46	46.00	-23.54	10.01	Neutral	-	12.45	0.08	0.04	9.89
QP	1.887M	31.09	56.00	-24.91	10.08	Neutral	-	21.01	0.10	0.09	9.89
AV	1.887M	23.18	46.00	-22.82	10.08	Neutral	-	13.10	0.10	0.09	9.89
QP	4.934M	31.54	56.00	-24.46	10.16	Neutral	-	21.38	0.16	0.11	9.89
AV	4.934M	24.73	46.00	-21.27	10.16	Neutral	-	14.57	0.16	0.11	9.89
QP	16.467M	33.59	60.00	-26.41	10.42	Neutral	-	23.17	0.28	0.19	9.95
AV	16.467M	32.40	50.00	-17.60	10.42	Neutral	-	21.98	0.28	0.19	9.95



Summary

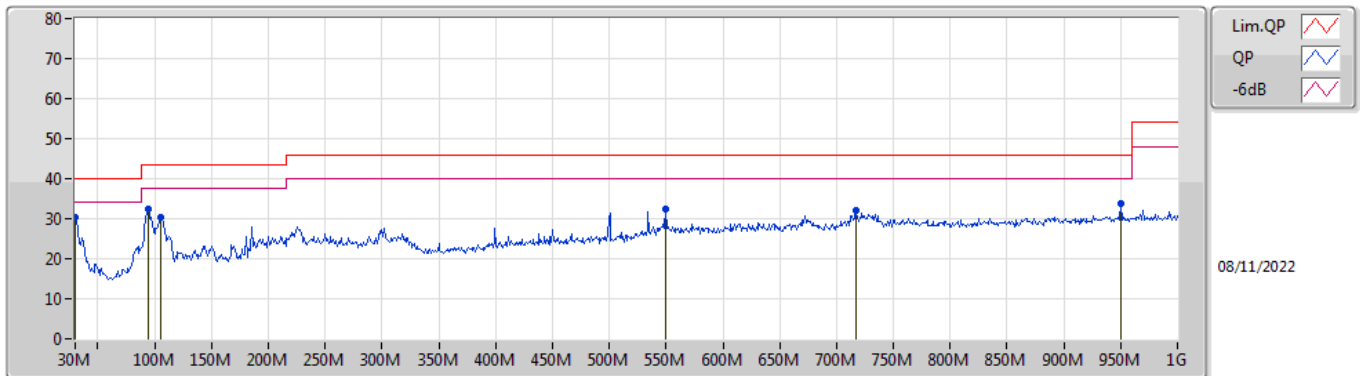
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	PK	49.4M	34.52	40.00	-5.48	Vertical

Mode 2



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	47.46M	34.17	40.00	-5.83	-12.33	3	Vertical	4	1.25	-	46.50	15.25	0.90	28.48
PK	49.4M	34.52	40.00	-5.48	-13.04	3	Vertical	0	1.25	"Worst"	47.56	14.52	0.92	28.48
PK	84.32M	25.80	40.00	-14.20	-13.69	3	Vertical	198	1.00	-	39.49	13.65	1.19	28.53
PK	534.4M	33.47	46.00	-12.53	-2.40	3	Vertical	12	1.25	-	35.87	23.78	3.08	29.26
PK	549.92M	32.81	46.00	-13.19	-1.29	3	Vertical	187	1.00	-	34.10	24.88	3.14	29.31
PK	704.15M	33.13	46.00	-12.87	-0.92	3	Vertical	142	1.50	-	34.05	24.79	3.47	29.18

Mode 2



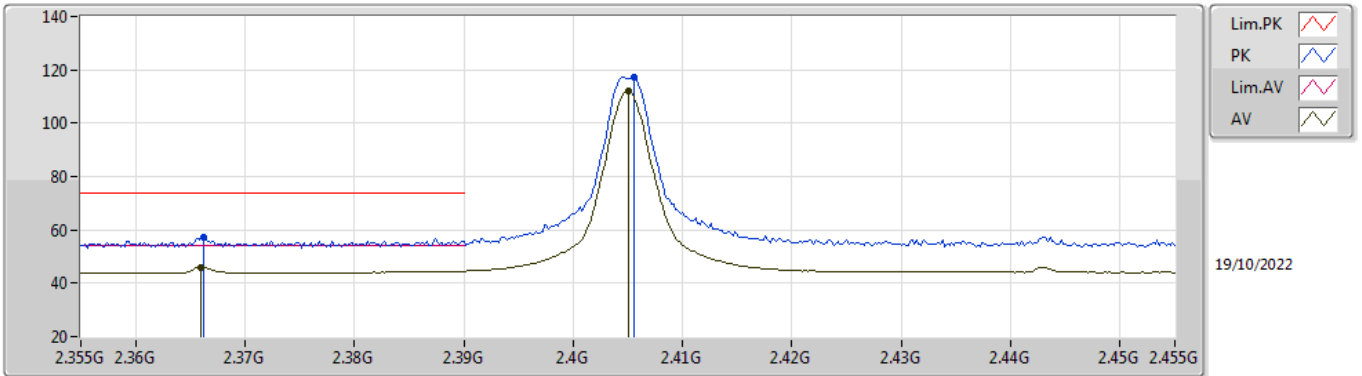
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	30M	30.20	40.00	-9.80	-2.53	3	Horizontal	327	1.00	"Worst"	32.73	25.20	0.74	28.47
PK	94.02M	32.45	43.50	-11.05	-11.82	3	Horizontal	176	2.00	-	44.27	15.40	1.25	28.47
PK	105.66M	30.18	43.50	-13.32	-9.96	3	Horizontal	100	2.00	-	40.14	17.11	1.32	28.39
PK	549.92M	32.39	46.00	-13.61	-1.29	3	Horizontal	224	1.50	-	33.68	24.88	3.14	29.31
PK	716.76M	32.23	46.00	-13.77	-0.73	3	Horizontal	87	1.25	-	32.96	24.89	3.51	29.13
PK	950.53M	33.80	46.00	-12.20	2.32	3	Horizontal	142	1.00	-	31.48	26.72	4.18	28.58



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	49.39	54.00	-4.61	3	Vertical	24	2.42	-

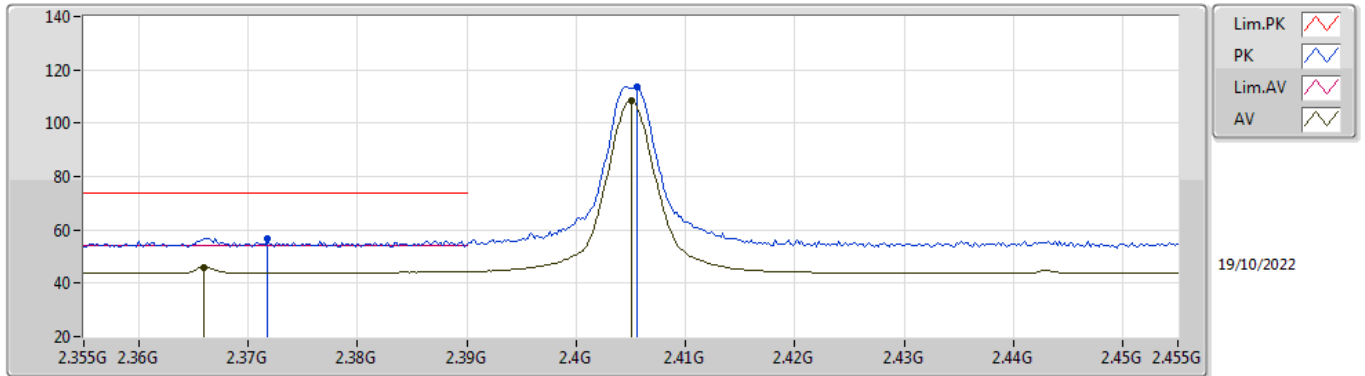
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -2
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3662G	57.27	74.00	-16.73	25.76	3	Vertical	13	2.73	-	28.33	3.18	-
AV	2.366G	45.91	54.00	-8.09	14.40	3	Vertical	13	2.73	-	28.33	3.18	-
PK	2.4056G	117.16	Inf	-Inf	85.56	3	Vertical	13	2.73	-	28.40	3.20	-
AV	2.405G	111.98	Inf	-Inf	80.38	3	Vertical	13	2.73	-	28.40	3.20	-

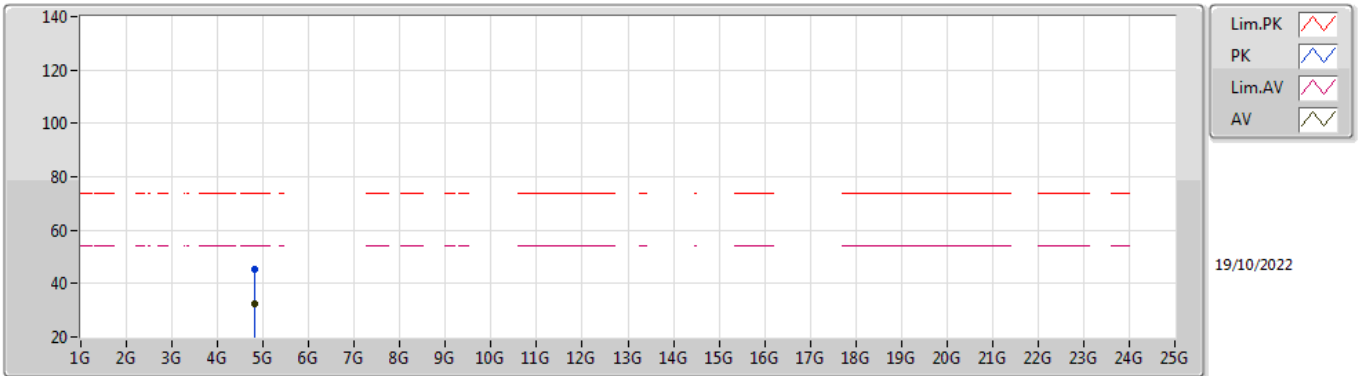
Zigbee 2405MHz_TX



EUT_V_1TX
Setting -2
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3718G	56.96	74.00	-17.04	25.43	3	Horizontal	74	2.30	-	28.34	3.19	-
AV	2.366G	45.99	54.00	-8.01	14.48	3	Horizontal	74	2.30	-	28.33	3.18	-
PK	2.4056G	113.58	Inf	-Inf	81.98	3	Horizontal	74	2.30	-	28.40	3.20	-
AV	2.405G	108.39	Inf	-Inf	76.79	3	Horizontal	74	2.30	-	28.40	3.20	-

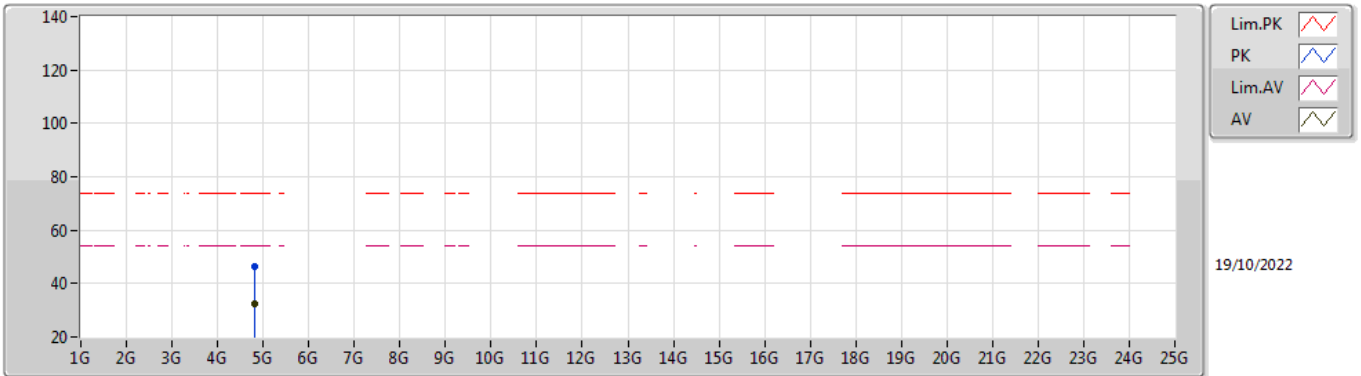
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -2
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80879G	45.44	74.00	-28.56	37.80	3	Vertical	69	2.43	-	32.85	5.60	30.81
AV	4.8113G	32.38	54.00	-21.62	24.71	3	Vertical	69	2.43	-	32.87	5.61	30.81

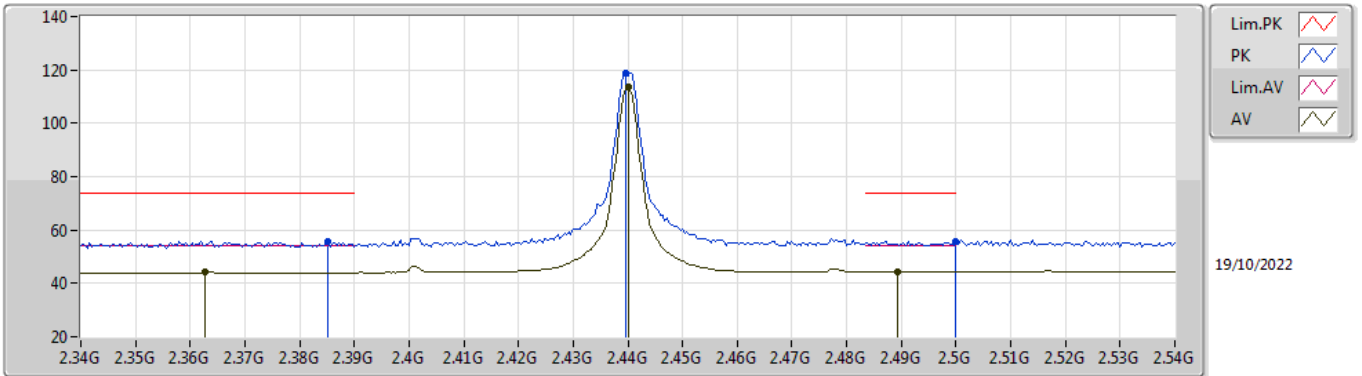
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -2
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80917G	46.30	74.00	-27.70	38.65	3	Horizontal	223	2.23	-	32.86	5.60	30.81
AV	4.81186G	32.39	54.00	-21.61	24.72	3	Horizontal	223	2.23	-	32.87	5.61	30.81

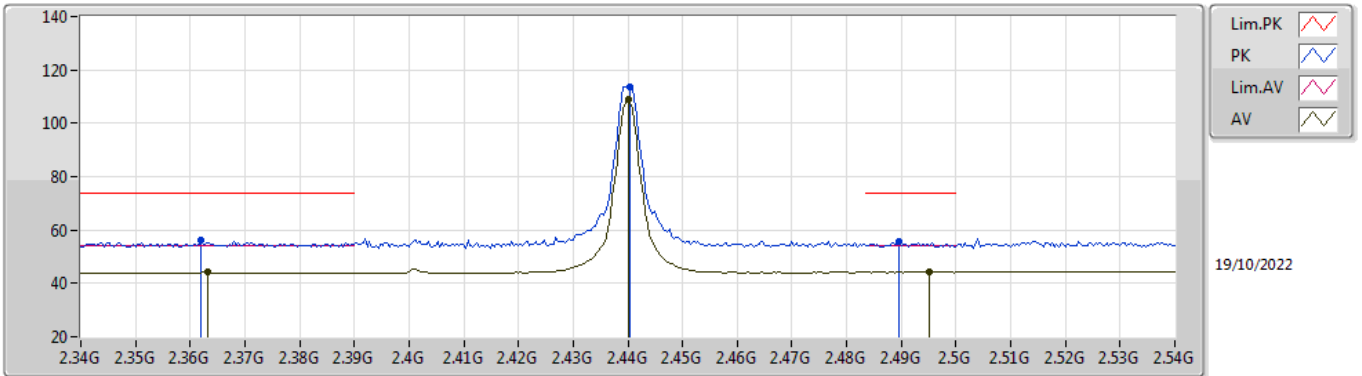
Zigbee 2440MHz_TX



EUT_V_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3852G	55.88	74.00	-18.12	24.32	3	Vertical	23	2.71	-	28.37	3.19	-
AV	2.3628G	44.20	54.00	-9.80	12.69	3	Vertical	23	2.71	-	28.33	3.18	-
PK	2.4396G	118.72	Inf	-Inf	87.10	3	Vertical	23	2.71	-	28.40	3.22	-
AV	2.44G	113.67	Inf	-Inf	82.05	3	Vertical	23	2.71	-	28.40	3.22	-
PK	2.5G	55.67	74.00	-18.33	23.82	3	Vertical	23	2.71	-	28.60	3.25	-
AV	2.4892G	44.27	54.00	-9.73	12.47	3	Vertical	23	2.71	-	28.56	3.24	-

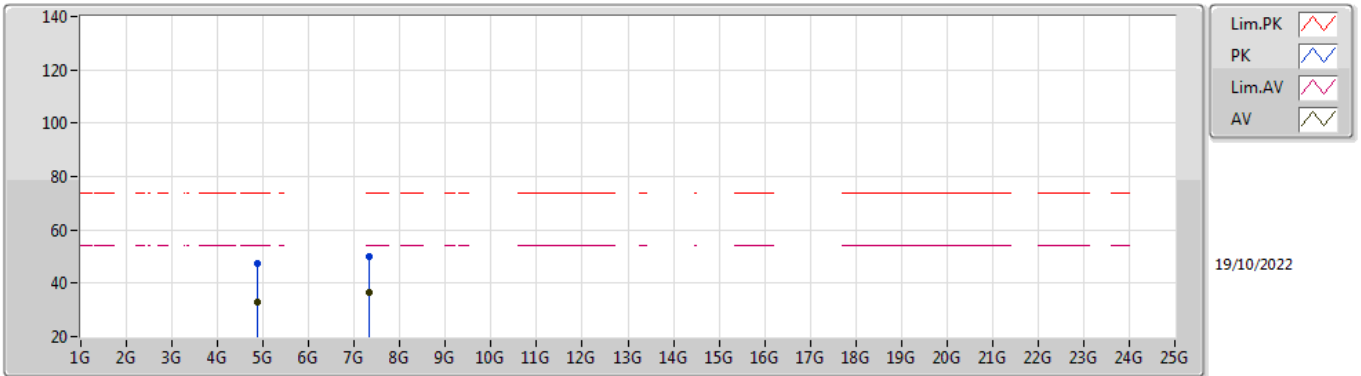
Zigbee 2440MHz_TX



EUT_V_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.362G	56.32	74.00	-17.68	24.82	3	Horizontal	76	2.28	-	28.32	3.18	-
AV	2.3632G	44.25	54.00	-9.75	12.74	3	Horizontal	76	2.28	-	28.33	3.18	-
PK	2.4404G	113.82	Inf	-Inf	82.20	3	Horizontal	76	2.28	-	28.40	3.22	-
AV	2.44G	108.84	Inf	-Inf	77.22	3	Horizontal	76	2.28	-	28.40	3.22	-
PK	2.4896G	55.58	74.00	-18.42	23.78	3	Horizontal	76	2.28	-	28.56	3.24	-
AV	2.4952G	44.17	54.00	-9.83	12.34	3	Horizontal	76	2.28	-	28.58	3.25	-

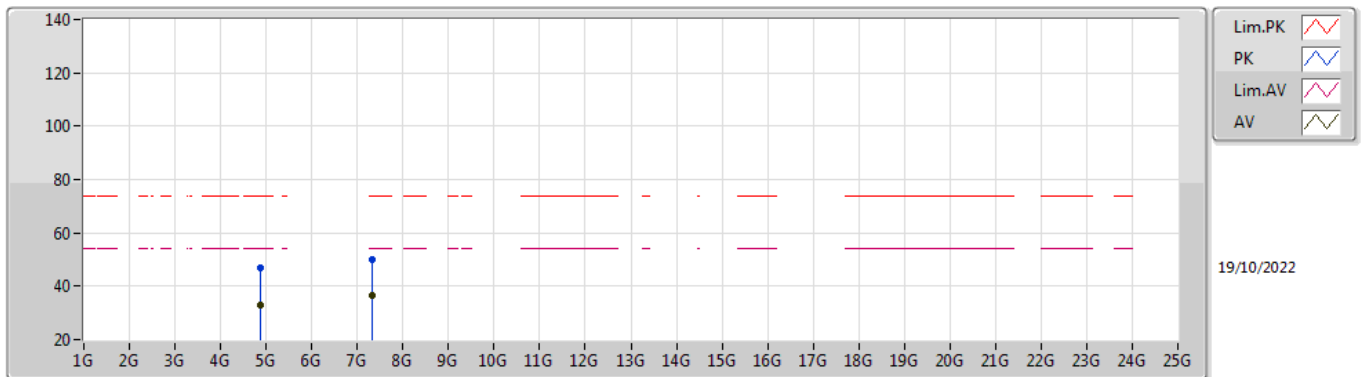
Zigbee 2440MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.88188G	47.21	74.00	-26.79	39.19	3	Vertical	330	2.26	-	33.16	5.64	30.78
AV	4.8824G	32.74	54.00	-21.26	24.72	3	Vertical	330	2.26	-	33.16	5.64	30.78
PK	7.31844G	50.13	74.00	-23.87	38.77	3	Vertical	55	2.85	-	36.44	6.84	31.92
AV	7.32218G	36.63	54.00	-17.37	25.28	3	Vertical	55	2.85	-	36.44	6.84	31.93

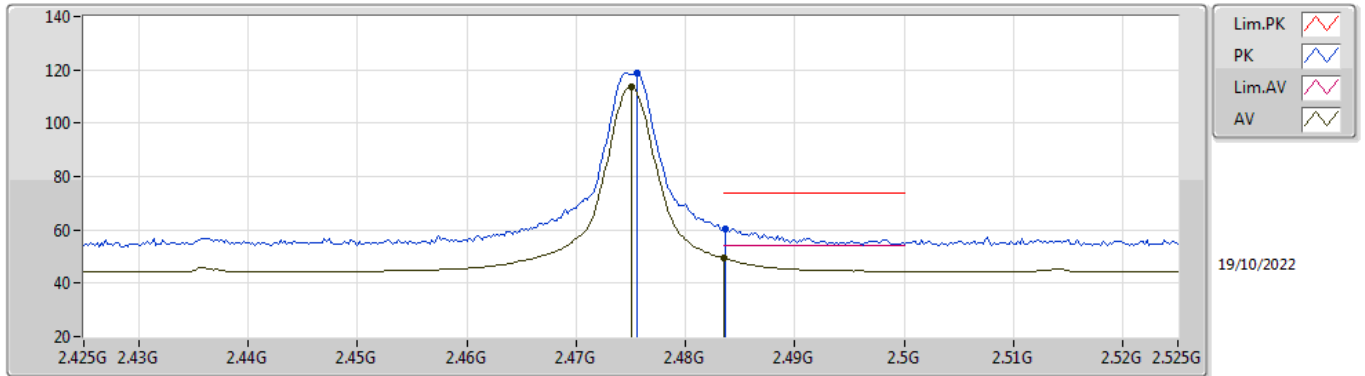
Zigbee 2440MHz_TX



EUT_Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.88075G	46.76	74.00	-27.24	38.74	3	Horizontal	293	2.27	-	33.16	5.64	30.78
AV	4.88239G	32.76	54.00	-21.24	24.74	3	Horizontal	293	2.27	-	33.16	5.64	30.78
PK	7.32148G	50.15	74.00	-23.85	38.80	3	Horizontal	260	2.23	-	36.44	6.84	31.93
AV	7.319G	36.75	54.00	-17.25	25.40	3	Horizontal	260	2.23	-	36.44	6.84	31.93

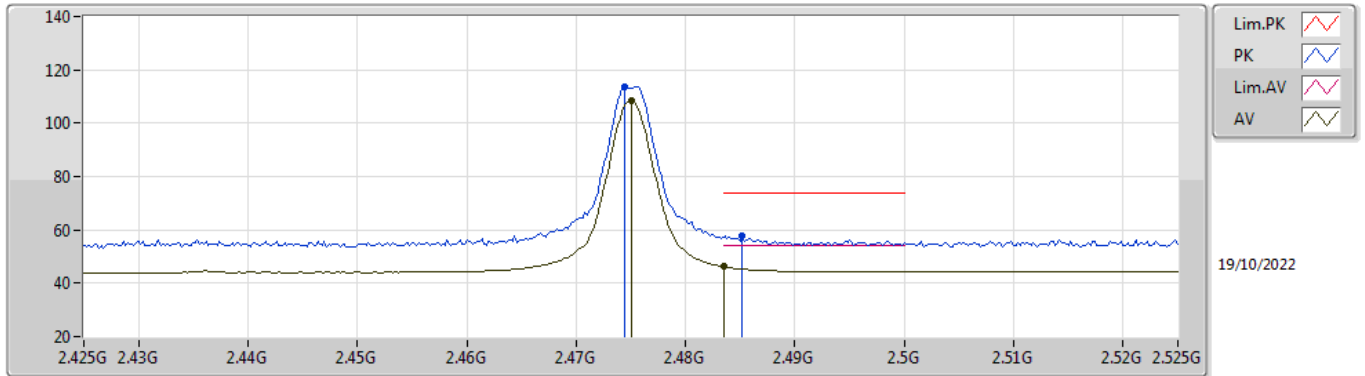
Zigbee 2475MHz_TX



EUT Y_1TX
Setting 0
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4756G	118.92	Inf	-Inf	87.18	3	Vertical	24	2.42	-	28.50	3.24	-
AV	2.475G	113.81	Inf	-Inf	82.07	3	Vertical	24	2.42	-	28.50	3.24	-
PK	2.4836G	60.55	74.00	-13.45	28.78	3	Vertical	24	2.42	-	28.53	3.24	-
AV	2.4835G	49.39	54.00	-4.61	17.62	3	Vertical	24	2.42	-	28.53	3.24	-

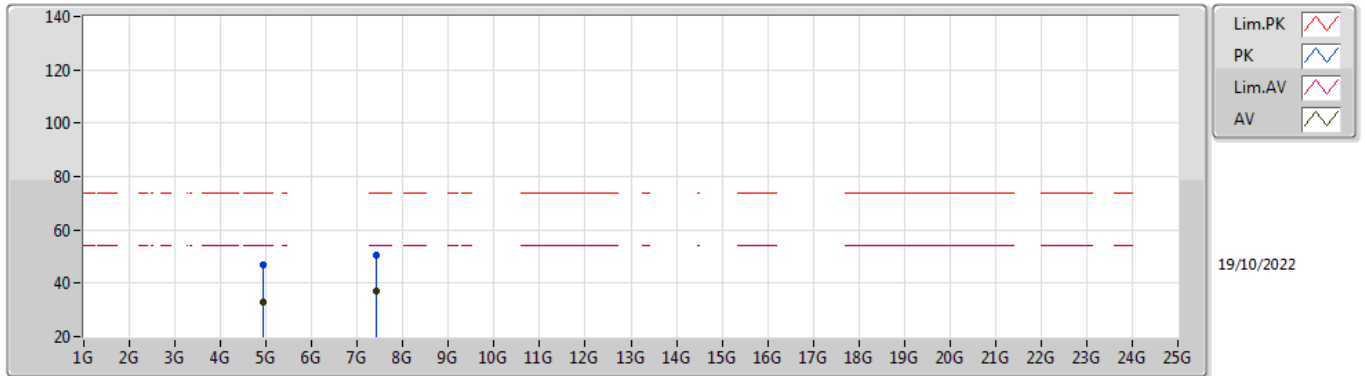
Zigbee 2475MHz_TX



EUT Y_1TX
Setting 0
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4744G	113.76	Inf	-Inf	82.02	3	Horizontal	59	2.71	-	28.50	3.24	-
AV	2.475G	108.66	Inf	-Inf	76.92	3	Horizontal	59	2.71	-	28.50	3.24	-
PK	2.4852G	57.87	74.00	-16.13	26.09	3	Horizontal	59	2.71	-	28.54	3.24	-
AV	2.4835G	46.26	54.00	-7.74	14.49	3	Horizontal	59	2.71	-	28.53	3.24	-

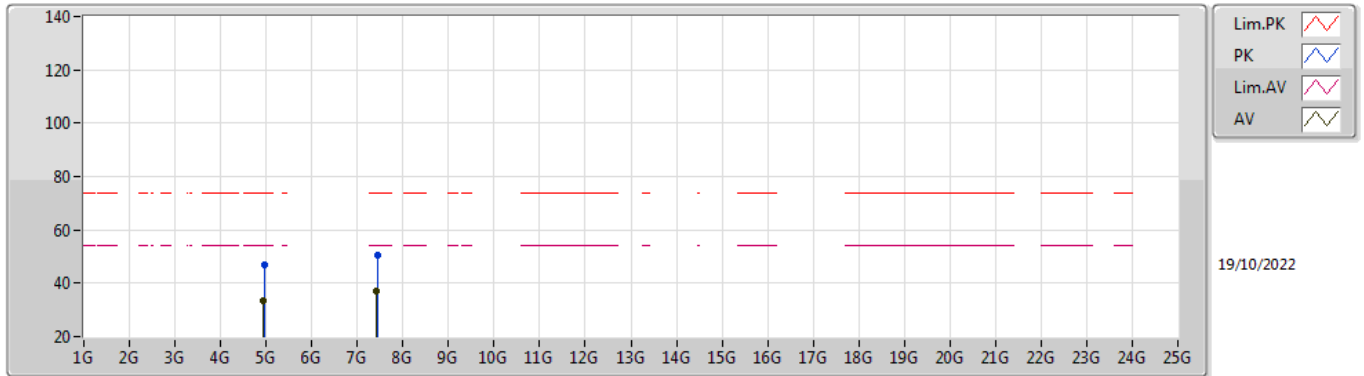
Zigbee 2475MHz_TX



EUT Y_1TX
Setting 0
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.94779G	46.74	74.00	-27.26	38.52	3	Vertical	68	1.80	-	33.30	5.67	30.75
AV	4.94859G	32.99	54.00	-21.01	24.77	3	Vertical	68	1.80	-	33.30	5.67	30.75
PK	7.42546G	50.57	74.00	-23.43	39.23	3	Vertical	219	1.90	-	36.50	6.83	31.99
AV	7.42516G	36.83	54.00	-17.17	25.49	3	Vertical	219	1.90	-	36.50	6.83	31.99

Zigbee 2475MHz_TX



EUT Y_1TX
Setting 0
02-F-B-5

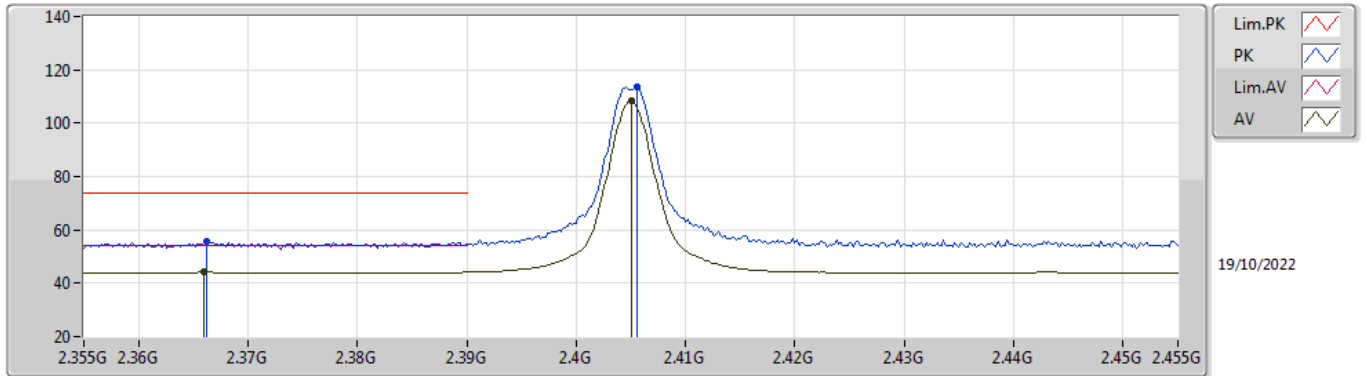
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.94976G	47.12	74.00	-26.88	38.90	3	Horizontal	266	1.91	-	33.30	5.67	30.75
AV	4.94791G	33.31	54.00	-20.69	25.09	3	Horizontal	266	1.91	-	33.30	5.67	30.75
PK	7.4313G	50.76	74.00	-23.24	39.42	3	Horizontal	13	2.75	-	36.50	6.83	31.99
AV	7.4298G	36.94	54.00	-17.06	25.60	3	Horizontal	13	2.75	-	36.50	6.83	31.99



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	52.63	54.00	-1.37	3	Horizontal	38	1.86	-

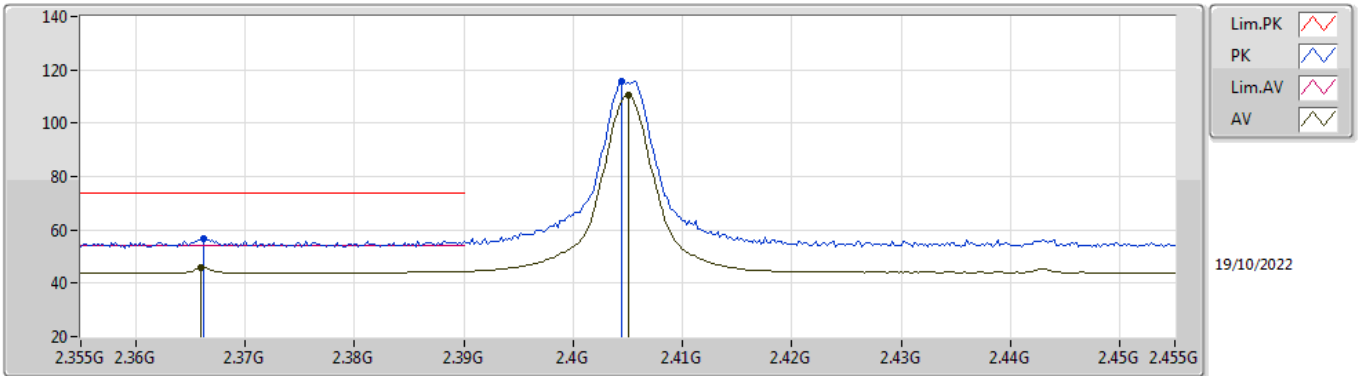
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3662G	55.60	74.00	-18.40	24.09	3	Vertical	258	2.18	-	28.33	3.18	-
AV	2.366G	44.29	54.00	-9.71	12.78	3	Vertical	258	2.18	-	28.33	3.18	-
PK	2.4056G	113.52	Inf	-Inf	81.92	3	Vertical	258	2.18	-	28.40	3.20	-
AV	2.405G	108.36	Inf	-Inf	76.76	3	Vertical	258	2.18	-	28.40	3.20	-

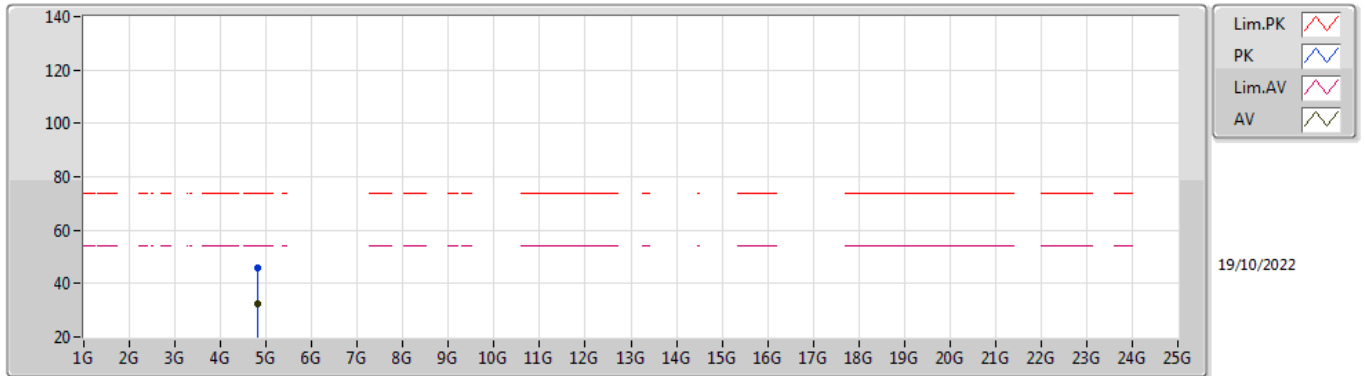
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3662G	56.79	74.00	-17.21	25.28	3	Horizontal	7	2.06	-	28.33	3.18	-
AV	2.366G	45.84	54.00	-8.16	14.33	3	Horizontal	7	2.06	-	28.33	3.18	-
PK	2.4044G	115.72	Inf	-Inf	84.12	3	Horizontal	7	2.06	-	28.40	3.20	-
AV	2.405G	110.57	Inf	-Inf	78.97	3	Horizontal	7	2.06	-	28.40	3.20	-

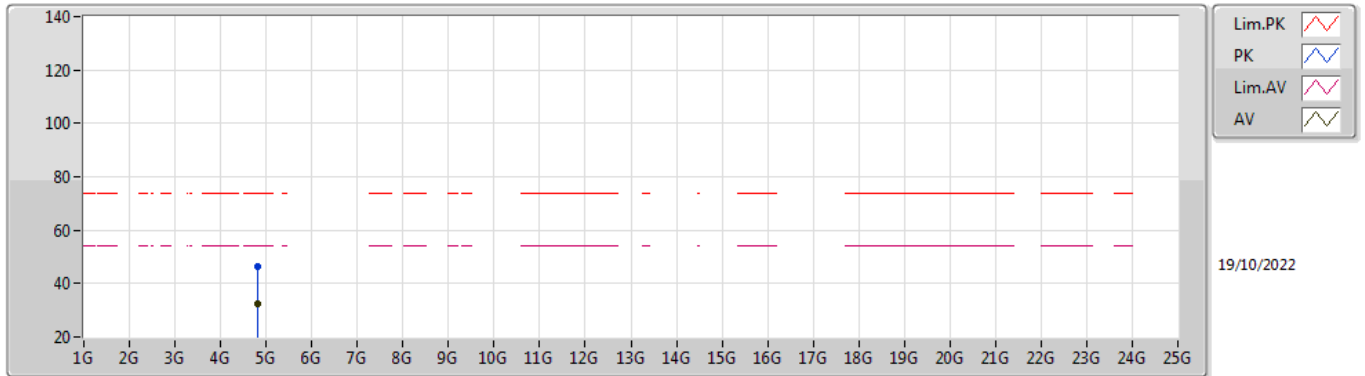
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.81436G	45.89	74.00	-28.11	38.20	3	Vertical	192	2.04	-	32.89	5.61	30.81
AV	4.81206G	32.41	54.00	-21.59	24.74	3	Vertical	192	2.04	-	32.87	5.61	30.81

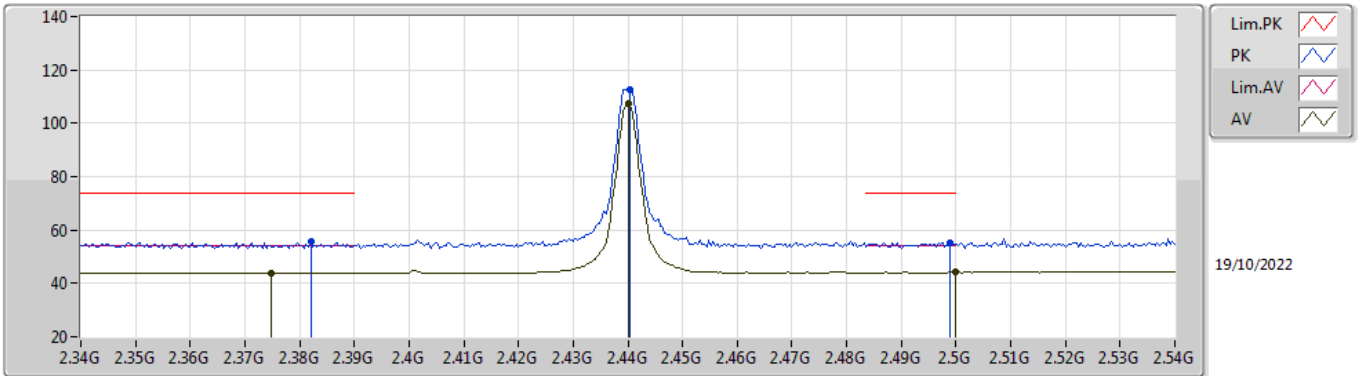
Zigbee 2405MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.81132G	46.14	74.00	-27.86	38.47	3	Horizontal	102	1.74	-	32.87	5.61	30.81
AV	4.81402G	32.38	54.00	-21.62	24.70	3	Horizontal	102	1.74	-	32.88	5.61	30.81

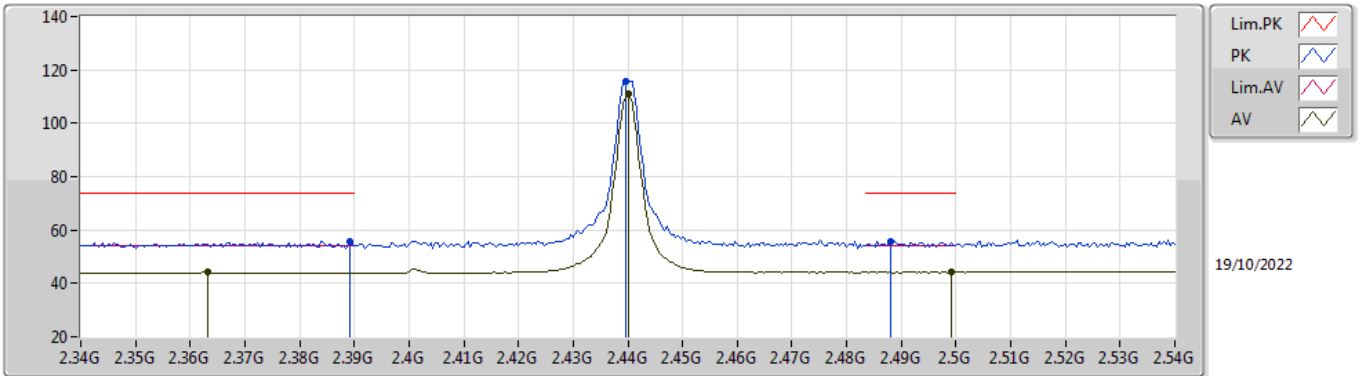
Zigbee 2440MHz_TX



EUT_V_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.382G	55.51	74.00	-18.49	23.96	3	Vertical	263	1.80	-	28.36	3.19	-
AV	2.3748G	43.83	54.00	-10.17	12.29	3	Vertical	263	1.80	-	28.35	3.19	-
PK	2.4404G	112.60	Inf	-Inf	80.98	3	Vertical	263	1.80	-	28.40	3.22	-
AV	2.44G	107.54	Inf	-Inf	75.92	3	Vertical	263	1.80	-	28.40	3.22	-
PK	2.4988G	55.41	74.00	-18.59	23.56	3	Vertical	263	1.80	-	28.60	3.25	-
AV	2.5G	44.10	54.00	-9.90	12.25	3	Vertical	263	1.80	-	28.60	3.25	-

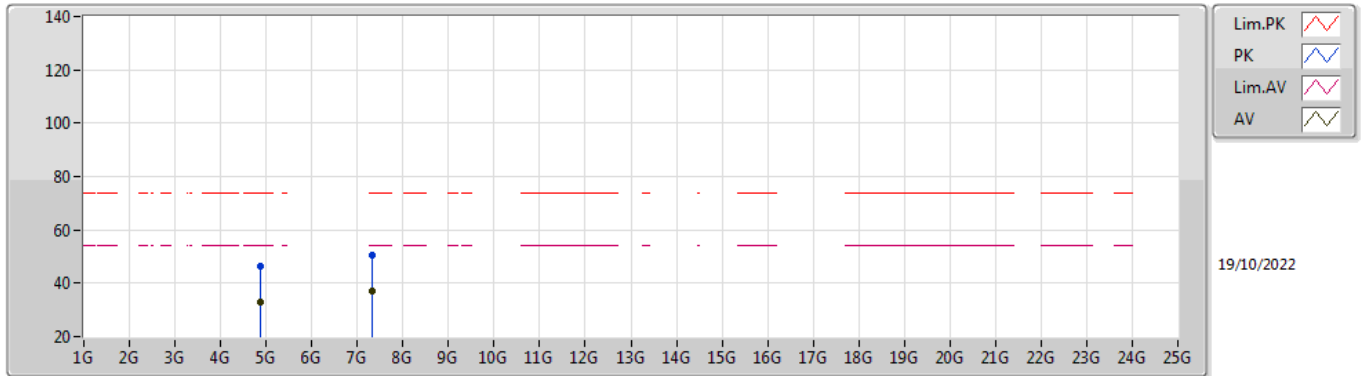
Zigbee 2440MHz_TX



EUT_V_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3892G	55.91	74.00	-18.09	24.34	3	Horizontal	11	2.09	-	28.38	3.19	-
AV	2.3632G	44.14	54.00	-9.86	12.63	3	Horizontal	11	2.09	-	28.33	3.18	-
PK	2.4396G	115.94	Inf	-Inf	84.32	3	Horizontal	11	2.09	-	28.40	3.22	-
AV	2.44G	110.81	Inf	-Inf	79.19	3	Horizontal	11	2.09	-	28.40	3.22	-
PK	2.488G	55.74	74.00	-18.26	23.95	3	Horizontal	11	2.09	-	28.55	3.24	-
AV	2.4992G	44.14	54.00	-9.86	12.29	3	Horizontal	11	2.09	-	28.60	3.25	-

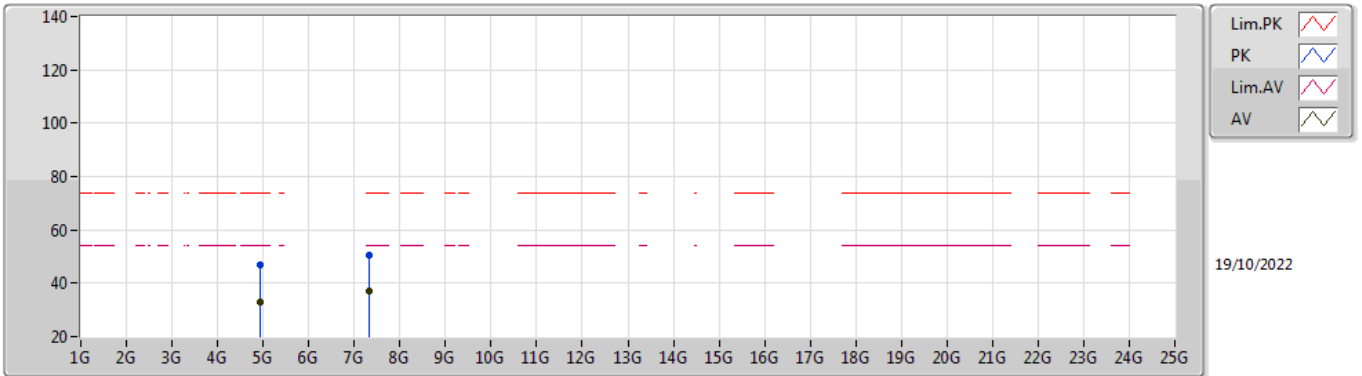
Zigbee 2440MHz_TX



EUT_Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.88492G	46.31	74.00	-27.69	38.28	3	Vertical	103	1.46	-	33.17	5.64	30.78
AV	4.8753G	32.86	54.00	-21.14	24.85	3	Vertical	103	1.46	-	33.15	5.64	30.78
PK	7.31942G	50.47	74.00	-23.53	39.12	3	Vertical	277	1.06	-	36.44	6.84	31.93
AV	7.3218G	36.89	54.00	-17.11	25.54	3	Vertical	277	1.06	-	36.44	6.84	31.93

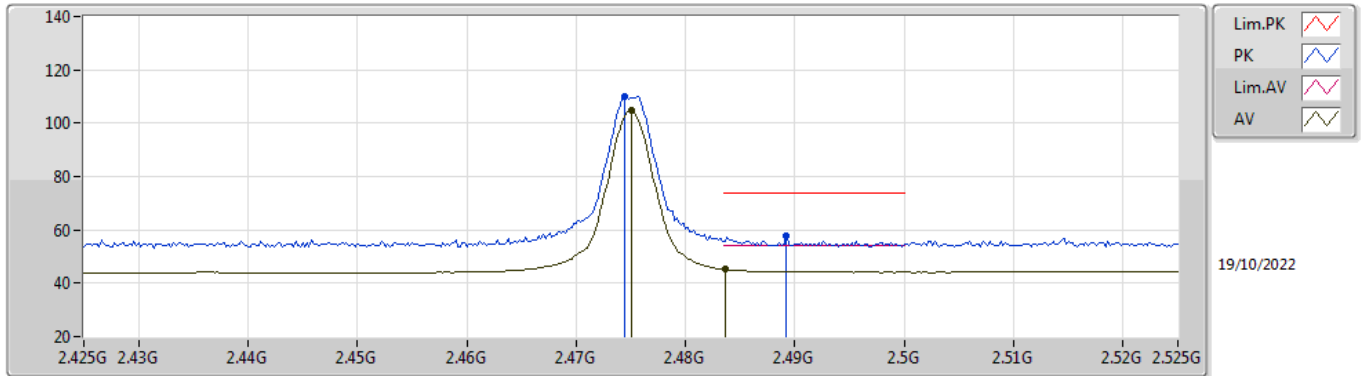
Zigbee 2440MHz_TX



EUT_Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.94626G	46.67	74.00	-27.33	38.46	3	Horizontal	313	2.02	-	33.29	5.67	30.75
AV	4.94524G	33.03	54.00	-20.97	24.82	3	Horizontal	313	2.02	-	33.29	5.67	30.75
PK	7.32174G	50.40	74.00	-23.60	39.05	3	Horizontal	266	2.49	-	36.44	6.84	31.93
AV	7.31954G	36.82	54.00	-17.18	25.47	3	Horizontal	266	2.49	-	36.44	6.84	31.93

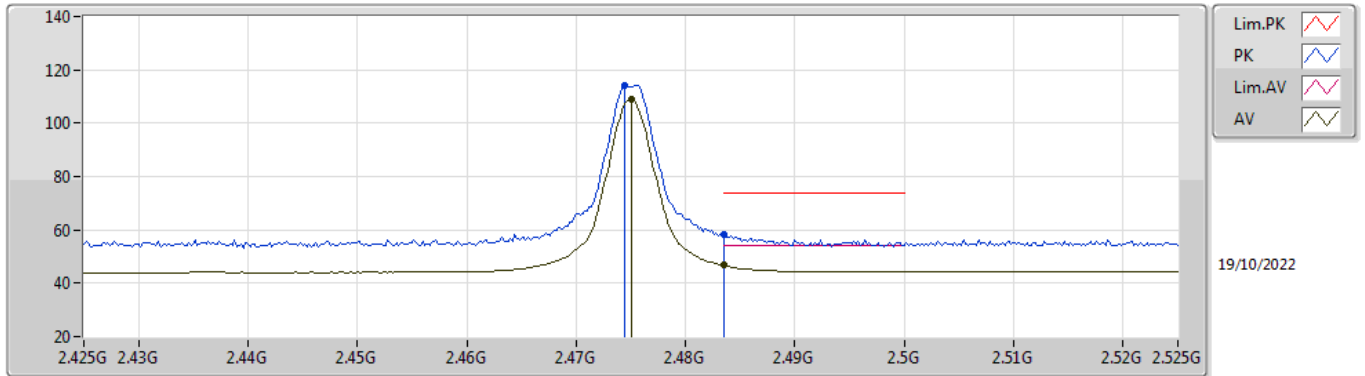
Zigbee 2475MHz_TX



EUT_V_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4744G	110.03	Inf	-Inf	78.29	3	Vertical	259	1.98	-	28.50	3.24	-
AV	2.475G	104.94	Inf	-Inf	73.20	3	Vertical	259	1.98	-	28.50	3.24	-
PK	2.4892G	57.51	74.00	-16.49	25.71	3	Vertical	259	1.98	-	28.56	3.24	-
AV	2.4836G	45.32	54.00	-8.68	13.55	3	Vertical	259	1.98	-	28.53	3.24	-

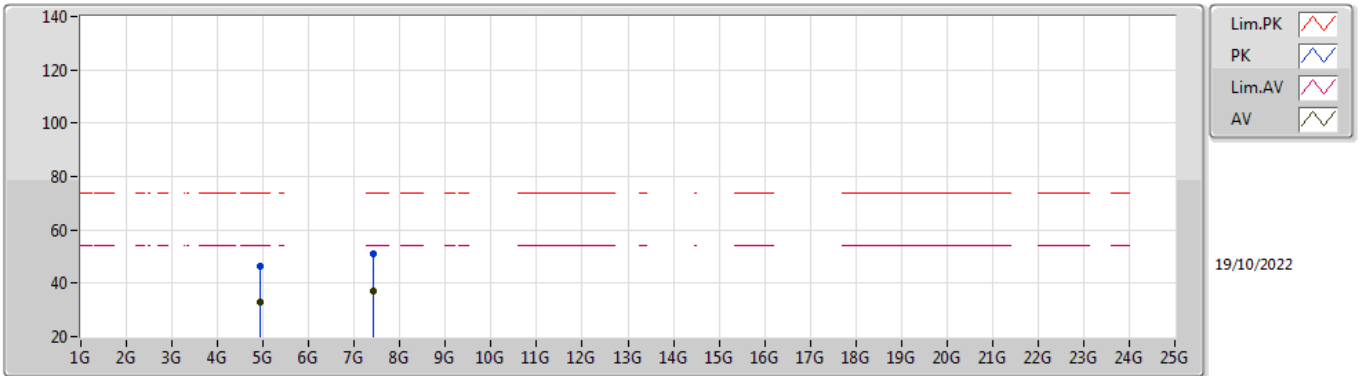
Zigbee 2475MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4744G	114.31	Inf	-Inf	82.57	3	Horizontal	145	1.68	-	28.50	3.24	-
AV	2.475G	109.13	Inf	-Inf	77.39	3	Horizontal	145	1.68	-	28.50	3.24	-
PK	2.4835G	58.26	74.00	-15.74	26.49	3	Horizontal	145	1.68	-	28.53	3.24	-
AV	2.4835G	46.65	54.00	-7.35	14.88	3	Horizontal	145	1.68	-	28.53	3.24	-

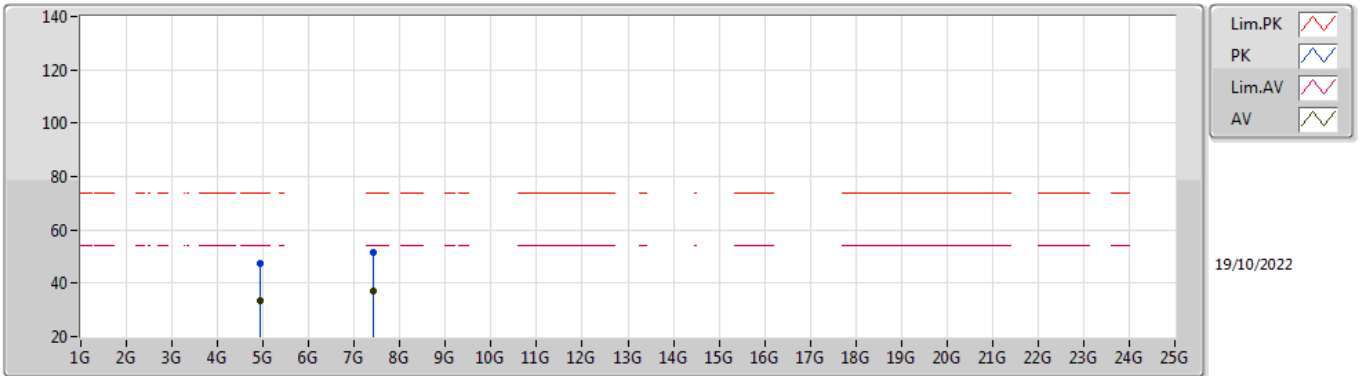
Zigbee 2475MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.94616G	46.48	74.00	-27.52	38.27	3	Vertical	192	1.51	-	33.29	5.67	30.75
AV	4.9454G	33.02	54.00	-20.98	24.81	3	Vertical	192	1.51	-	33.29	5.67	30.75
PK	7.42604G	51.03	74.00	-22.97	39.69	3	Vertical	190	1.91	-	36.50	6.83	31.99
AV	7.42764G	37.01	54.00	-16.99	25.67	3	Vertical	190	1.91	-	36.50	6.83	31.99

Zigbee 2475MHz_TX



EUT Y_1TX
Setting -1
02-F-B-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.94772G	47.25	74.00	-26.75	39.03	3	Horizontal	1	1.80	-	33.30	5.67	30.75
AV	4.94634G	33.20	54.00	-20.80	24.99	3	Horizontal	1	1.80	-	33.29	5.67	30.75
PK	7.42198G	51.39	74.00	-22.61	40.05	3	Horizontal	113	1.82	-	36.50	6.82	31.98
AV	7.4271G	37.01	54.00	-16.99	25.67	3	Horizontal	113	1.82	-	36.50	6.83	31.99