



RADIO TEST REPORT

FCC ID : G954331X
Equipment Name : DOCSIS Cable Gateway
Brand Name : Technicolor
Model Number : CGM4331COM, CGM4331COX
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. 27, 2022, and testing was started from Oct. 27, 2022 and completed on Dec. 12, 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.)



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Appendix B. Test Results of Emissions in Restricted Frequency Bands

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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	-
Reference to Sporton Project No.: 971031-03.				

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: **Cathy Chiu**



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	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	Technicolor	6227529C	folded dipole	JU401	5.48
2	2	Technicolor	6227528C	folded dipole	JU400	5.48

Note 1: The above information was declared by manufacturer.

Note 2: The EUT has two antennas for Zigbee use.

For Zigbee (1TX/1RX) :

The EUT supports the antenna with TX and RX diversity functions.

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

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		
Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Test Software Version	Telnet		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

Model Number	Description
CGM4331COM	For marketing reason the same product will be covered by different name.
CGM4331COX	

From the above models, model: CGM4331COM was selected as representative model for the test and its data was recorded in this report.

1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR971031-05AB

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

Modifications	Performance Checking
1. Changing address to "4855 Peachtree Industrial Blvd. Suite 200. Norcross, GA 30092" from "5030 Sugarloaf Parkway, Building 6, Lawrenceville Georgia, United States, 30044".	It does not affect the test.
2. Adding the chip as second source of new model to "EFR32MG13P732F512GM48" from "EFR32MG13P632F512GM48".	1. AC power-line conducted emissions. 2. Emissions in Restricted Frequency Bands.

Note: The above test items will be based on original output power to test.



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
- ♦ 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	Test Date
Radiated	03CH06-CB	Paul Hu	24.2-25.3 / 56-59	Oct. 27, 2022~ Dec. 08, 2022
AC Conduction	CO01-CB	Joe Chu	22~23 / 55~56	Dec. 12, 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%



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
Operating Mode	CTX
The EUT was performed at antenna port 1 and port 2. The antenna port 2 generated the maximum output power, so it was selected to perform the test and its test result was written in the report.	
1	EUT (antenna port 2) + Adapter 1
2	EUT (antenna port 2) + Adapter 2
3	EUT (antenna port 2) + 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	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1. The EUT was performed at antenna port 1 and port 2. The antenna port 2 generated the maximum output power, so it was selected to perform the test and its test result was written in the report. 2. The Y axis generated the worst case from the original report, so it was selected to perform the test and its test result was written in the report.	
1	EUT at Y-axis (antenna port 2) + Adapter 1
2	EUT at Y-axis (antenna port 2) + Adapter 2
3	EUT at Y-axis (antenna port 2) + adapter 3
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The Y axis generated the worst case from the original report, so it was selected to perform the test and its test result was written in the report.	
1	EUT at Y-axis (antenna port 1)
2	EUT at Y-axis (antenna port 2)



2.2 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.3 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Adapter 1	AcBel	ADK002	INPUT: 100-120V ~50/60Hz, 1.5A, OUTPUT: 12V, 4.6A
2	Adapter 2	Netbit	NBC56A120460VU	INPUT: 100-120V ~50/60Hz, 1.5A, OUTPUT: 12V, 4.6A
3	Adapter 3	Delta	ADH-55AW BA	INPUT: 100-120V ~50/60Hz, 1.0A, OUTPUT: 12.0V, 4.6A

2.4 Support Equipment

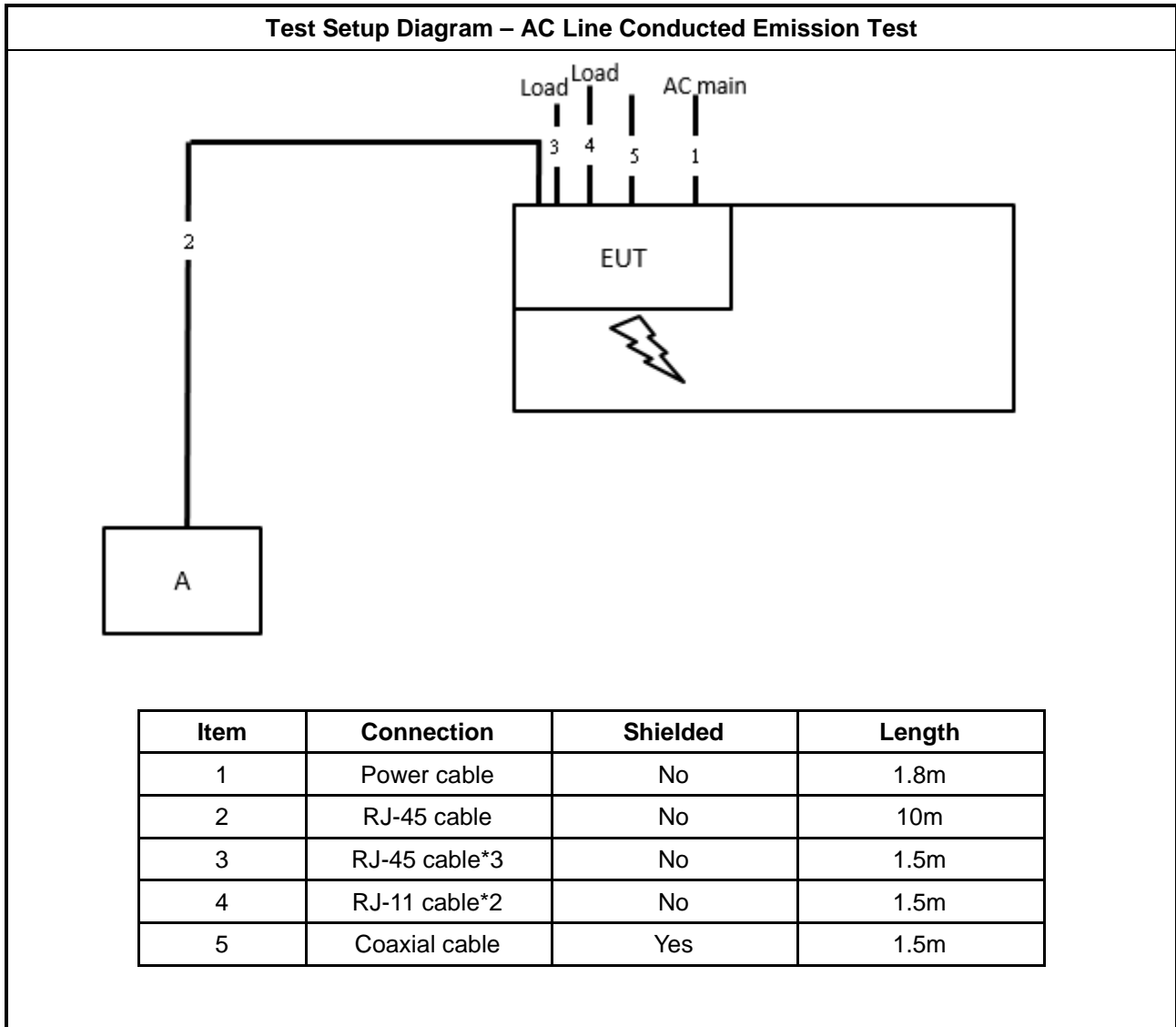
For AC Conduction:

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

For Radiated:

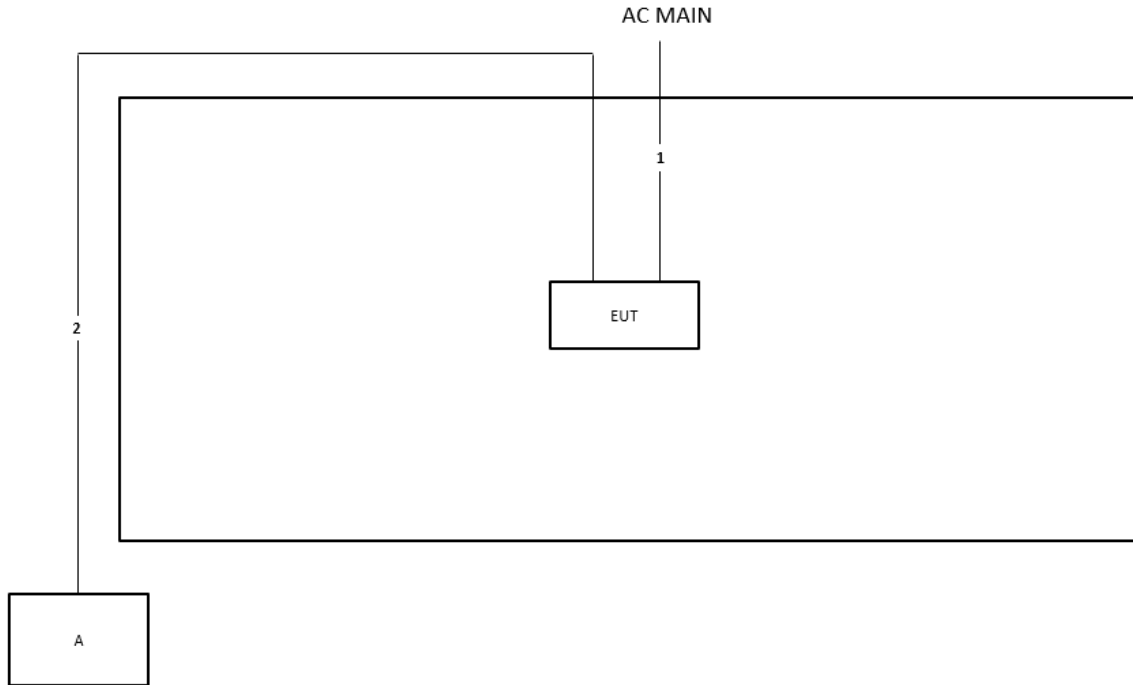
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A

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.

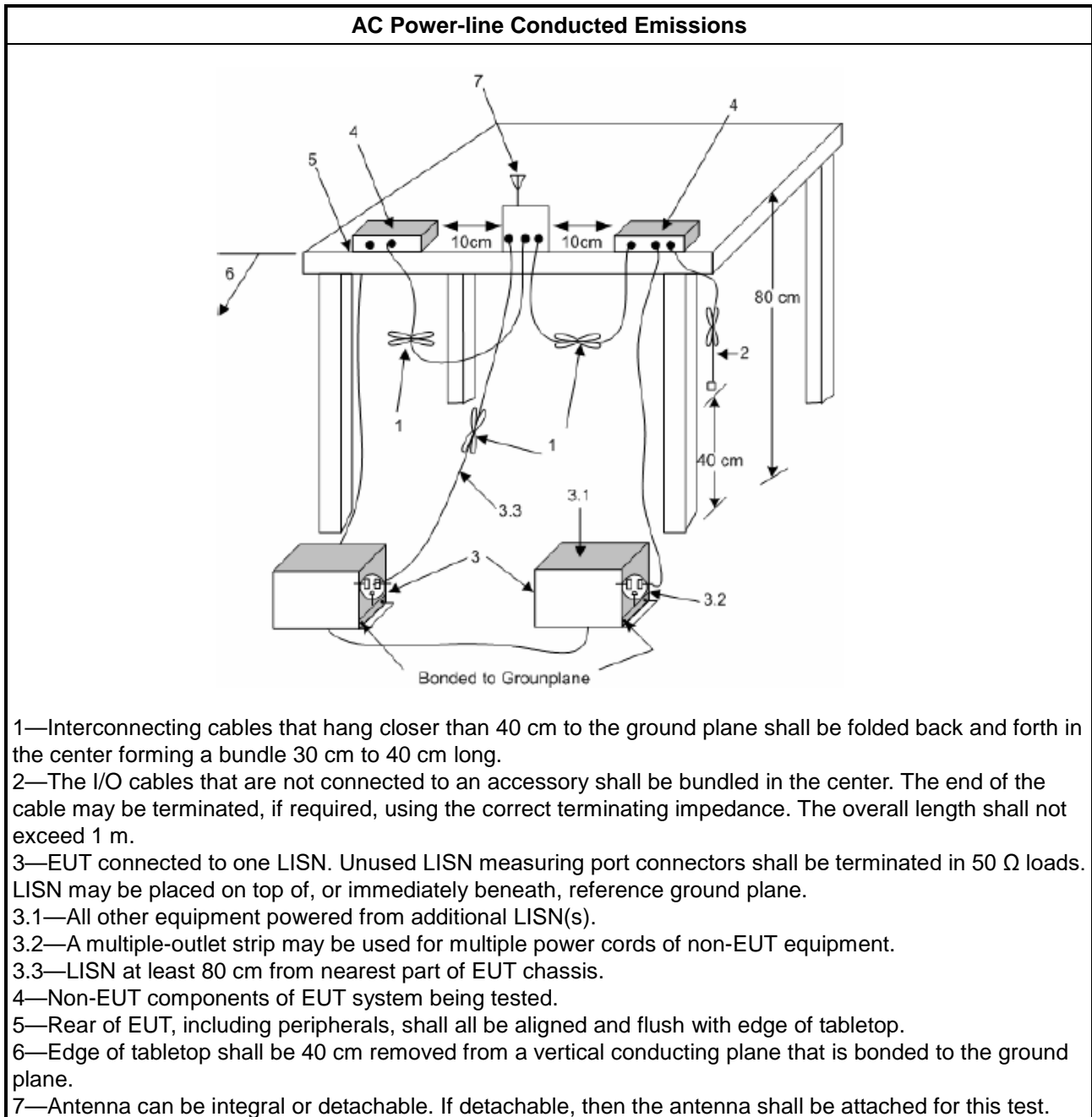
3.1.2 Measuring Instruments

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.

3.1.4 Test Setup



3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading (dBuV) = LISN Factor + Cable Loss + Read Level = Level
- b. Margin = - Limit + (Read Level + LISN Factor + Cable Loss)

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



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

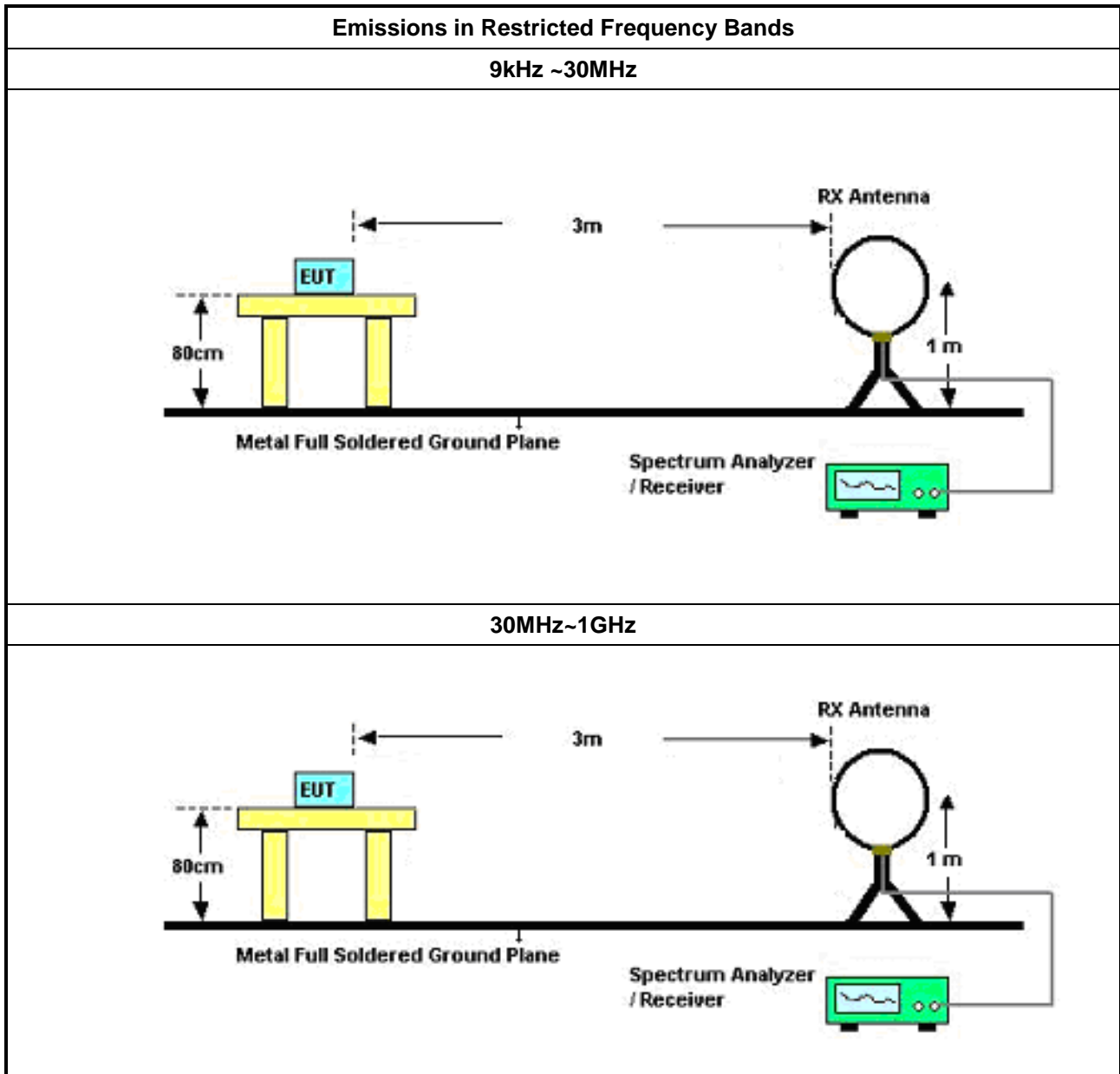
Refer a test equipment and calibration data table in this test report.

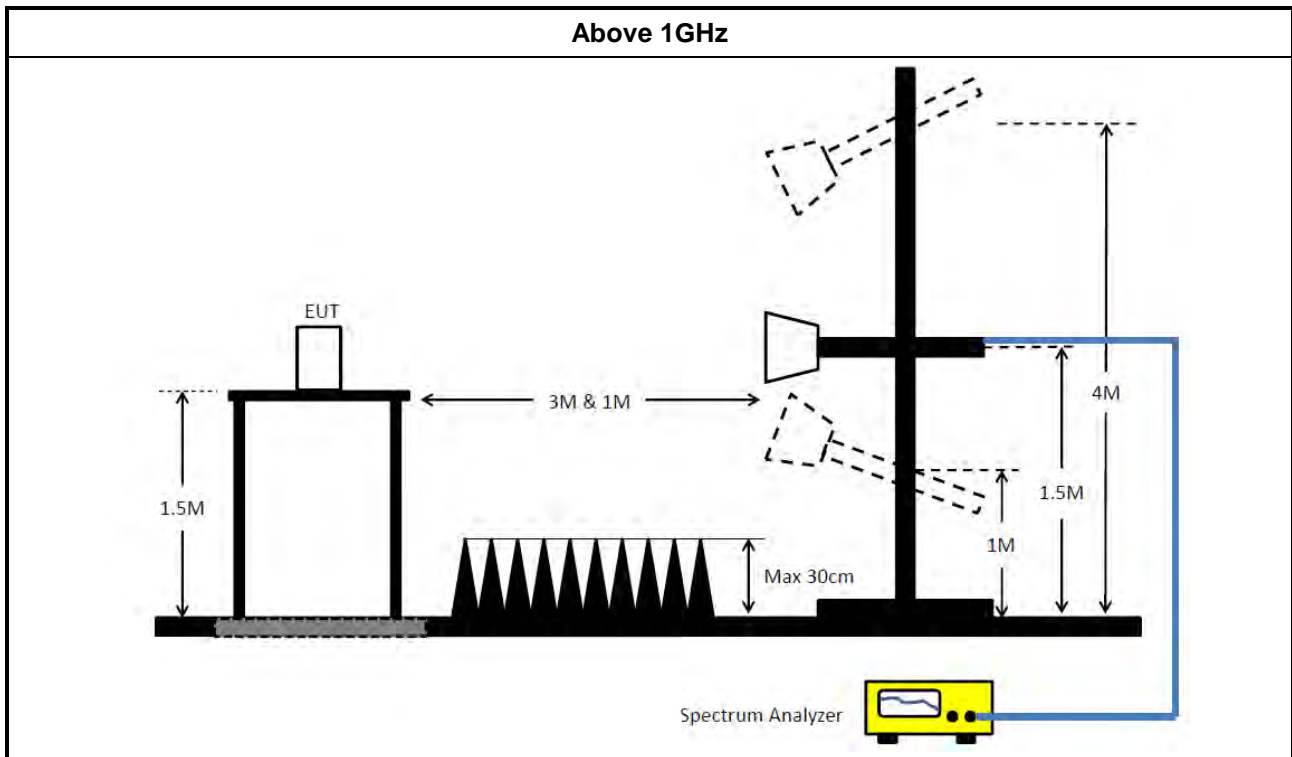


3.2.3 Test Procedures

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 + Cable Loss + Read Level - Preamp Factor (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 10 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)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH06-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 04, 2022	Aug. 03, 2023	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Sep. 30, 2022	Sep. 29, 2023	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 31, 2022	Jul. 30, 2023	Radiation (03CH06-CB))
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Aug. 09, 2022	Aug. 08, 2023	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA91702 52	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 04, 2021	Nov. 03, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	Aug 02, 2022	Aug 01, 2023	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 20, 2022	Jul. 19, 2023	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 24, 2021	Dec. 23, 2022	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-24+67	30MHz~1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-67	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-05+67	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)

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

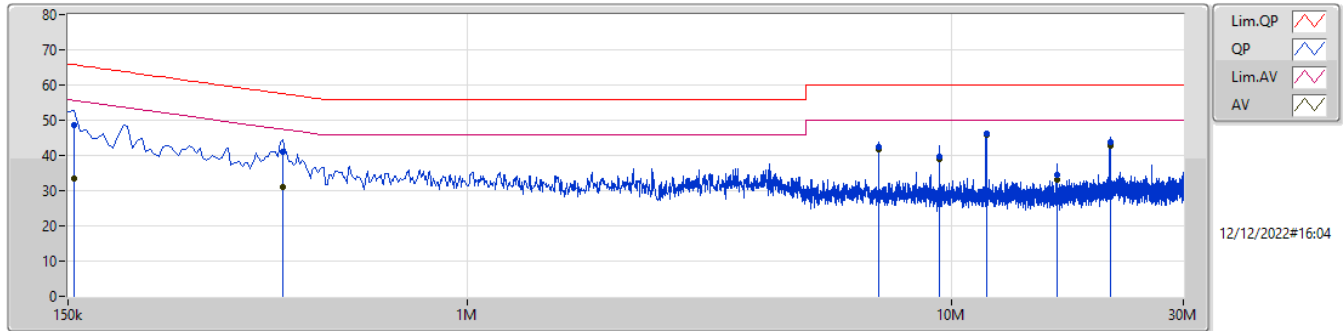
NCR means Non-Calibration required.



Summary

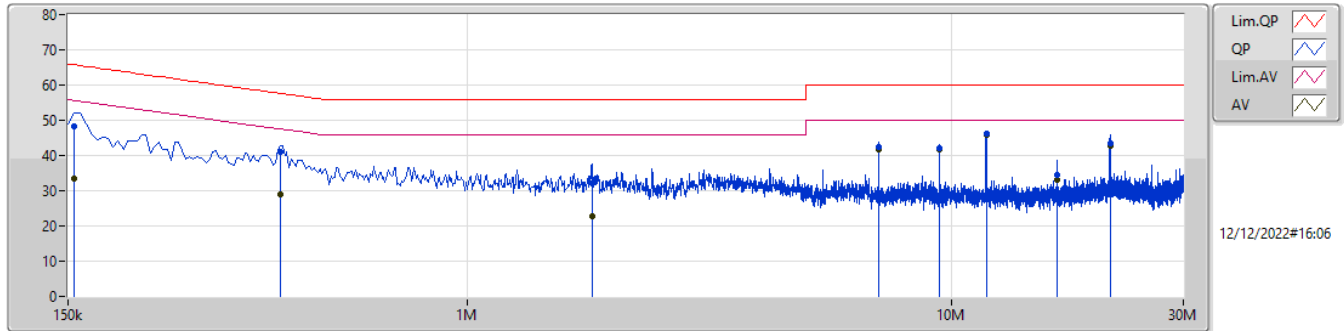
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	11.76M	45.82	50.00	-4.18	Line

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	154.5k	48.58	65.75	-17.17	9.99	Line	-	38.59	0.06	0.04	9.89
AV	154.5k	33.62	55.75	-22.13	9.99	Line	-	23.63	0.06	0.04	9.89
QP	415.5k	40.90	57.53	-16.63	10.01	Line	-	30.89	0.06	0.06	9.89
AV	415.5k	30.95	47.53	-16.58	10.01	Line	-	20.94	0.06	0.06	9.89
QP	7.058M	42.25	60.00	-17.75	10.22	Line	-	32.03	0.18	0.14	9.90
AV	7.058M	41.60	50.00	-8.40	10.22	Line	-	31.38	0.18	0.14	9.90
QP	9.411M	39.70	60.00	-20.30	10.28	Line	-	29.42	0.21	0.16	9.91
AV	9.411M	38.81	50.00	-11.19	10.28	Line	-	28.53	0.21	0.16	9.91
QP	11.76M	46.18	60.00	-13.82	10.32	Line	-	35.86	0.24	0.16	9.92
AV	11.76M	45.82	50.00	-4.18	10.32	Line	"Worst"	35.50	0.24	0.16	9.92
QP	16.467M	34.54	60.00	-25.46	10.42	Line	-	24.12	0.28	0.19	9.95
AV	16.467M	33.14	50.00	-16.86	10.42	Line	-	22.72	0.28	0.19	9.95
QP	21.17M	43.63	60.00	-16.37	10.51	Line	-	33.12	0.31	0.24	9.96
AV	21.17M	42.87	50.00	-7.13	10.51	Line	-	32.36	0.31	0.24	9.96

Mode 1



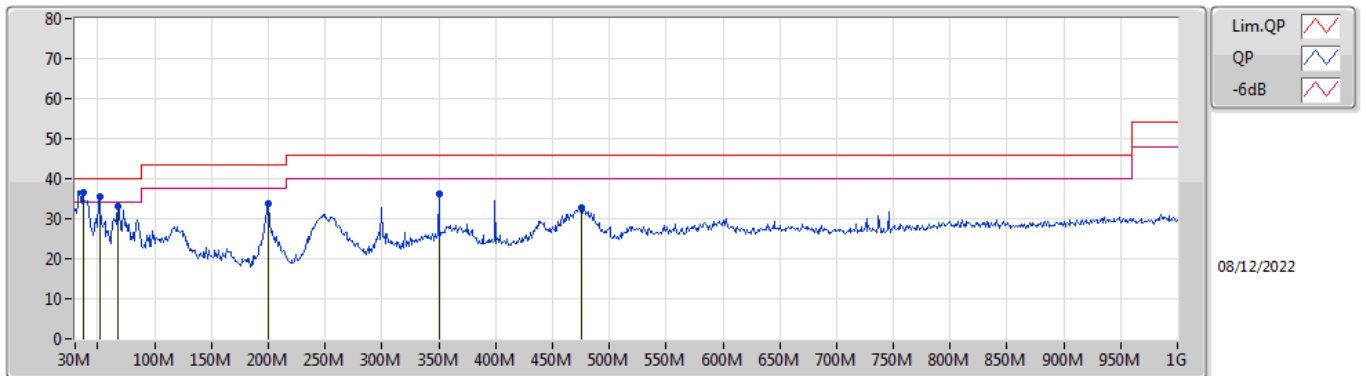
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	154.5k	48.28	65.75	-17.47	10.00	Neutral	-	38.28	0.07	0.04	9.89						
AV	154.5k	33.35	55.75	-22.40	10.00	Neutral	-	23.35	0.07	0.04	9.89						
QP	411k	41.05	57.63	-16.58	10.02	Neutral	-	31.03	0.07	0.06	9.89						
AV	411k	29.05	47.63	-18.58	10.02	Neutral	-	19.03	0.07	0.06	9.89						
QP	1.806M	31.97	56.00	-24.03	10.07	Neutral	-	21.90	0.10	0.08	9.89						
AV	1.806M	22.66	46.00	-23.34	10.07	Neutral	-	12.59	0.10	0.08	9.89						
QP	7.058M	42.27	60.00	-17.73	10.24	Neutral	-	32.03	0.20	0.14	9.90						
AV	7.058M	41.64	50.00	-8.36	10.24	Neutral	-	31.40	0.20	0.14	9.90						
QP	9.407M	42.21	60.00	-17.79	10.30	Neutral	-	31.91	0.23	0.16	9.91						
AV	9.407M	41.61	50.00	-8.39	10.30	Neutral	-	31.31	0.23	0.16	9.91						
QP	11.76M	46.14	60.00	-13.86	10.33	Neutral	-	35.81	0.25	0.16	9.92						
AV	11.76M	45.76	50.00	-4.24	10.33	Neutral	"Worst"	35.43	0.25	0.16	9.92						
QP	16.467M	34.60	60.00	-25.40	10.42	Neutral	-	24.18	0.28	0.19	9.95						
AV	16.467M	33.20	50.00	-16.80	10.42	Neutral	-	22.78	0.28	0.19	9.95						
QP	21.17M	43.45	60.00	-16.55	10.50	Neutral	-	32.95	0.30	0.24	9.96						
AV	21.17M	42.70	50.00	-7.30	10.50	Neutral	-	32.20	0.30	0.24	9.96						



Summary

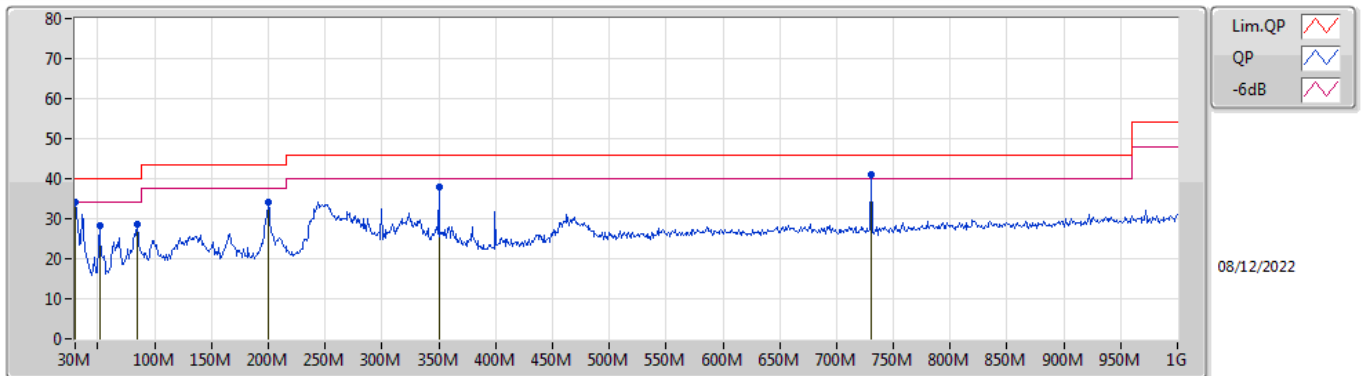
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	36.79M	36.58	40.00	-3.42	Vertical

Mode 1



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)
QP	36.79M	36.58	40.00	-3.42	-10.83	3	Vertical	170	1.00	"Worst"	47.41	20.36	0.52	31.71
PK	51.34M	35.66	40.00	-4.34	-17.69	3	Vertical	218	2.00	-	53.35	13.50	0.68	31.87
PK	67.83M	33.17	40.00	-6.83	-18.92	3	Vertical	174	2.00	-	52.09	12.19	0.84	31.95
PK	199.75M	33.67	43.50	-9.83	-15.19	3	Vertical	317	1.00	-	48.86	15.10	1.73	32.02
PK	350.1M	36.13	46.00	-9.87	-9.44	3	Vertical	77	1.25	-	45.57	20.26	2.48	32.18
PK	475.23M	32.84	46.00	-13.16	-6.37	3	Vertical	357	1.50	-	39.21	23.07	2.89	32.33

Mode 1



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	34.26	40.00	-5.74	-7.12	3	Horizontal	0	2.00	-	41.38	23.99	0.44	31.55
PK	51.34M	28.20	40.00	-11.80	-17.69	3	Horizontal	175	1.00	-	45.89	13.50	0.68	31.87
PK	84.32M	28.66	40.00	-11.34	-17.52	3	Horizontal	105	2.00	-	46.18	13.46	0.97	31.95
PK	199.75M	34.16	43.50	-9.34	-15.19	3	Horizontal	115	1.50	-	49.35	15.10	1.73	32.02
PK	350.1M	37.76	46.00	-8.24	-9.44	3	Horizontal	113	1.00	-	47.20	20.26	2.48	32.18
PK	730.34M	40.99	46.00	-5.01	-3.91	3	Horizontal	360	1.00	"Worst"	44.90	24.98	3.70	32.59



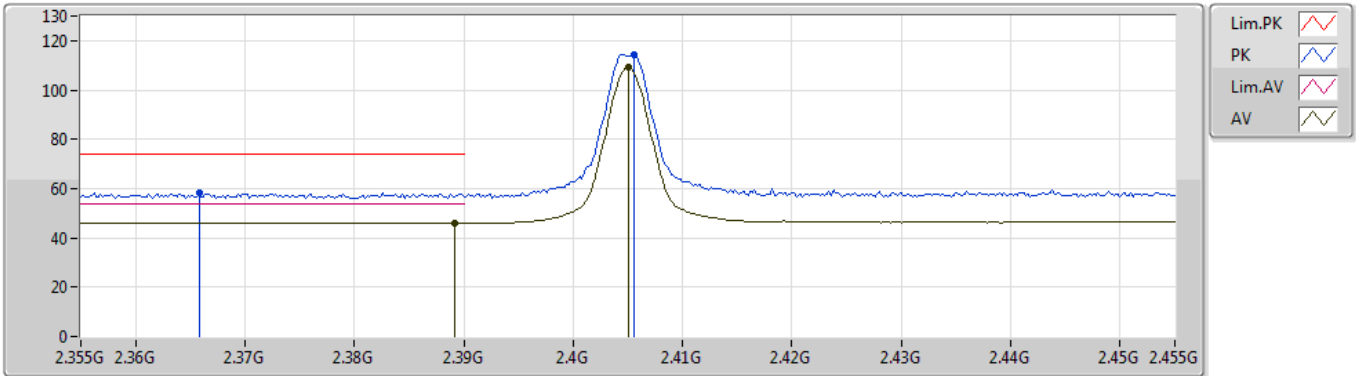
For Port 1:
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee	Pass	AV	7.42644G	49.32	54.00	-4.68	10.86	3	Vertical	100	1.48	-

Zigbee

27/06/2019

2405MHz_TX



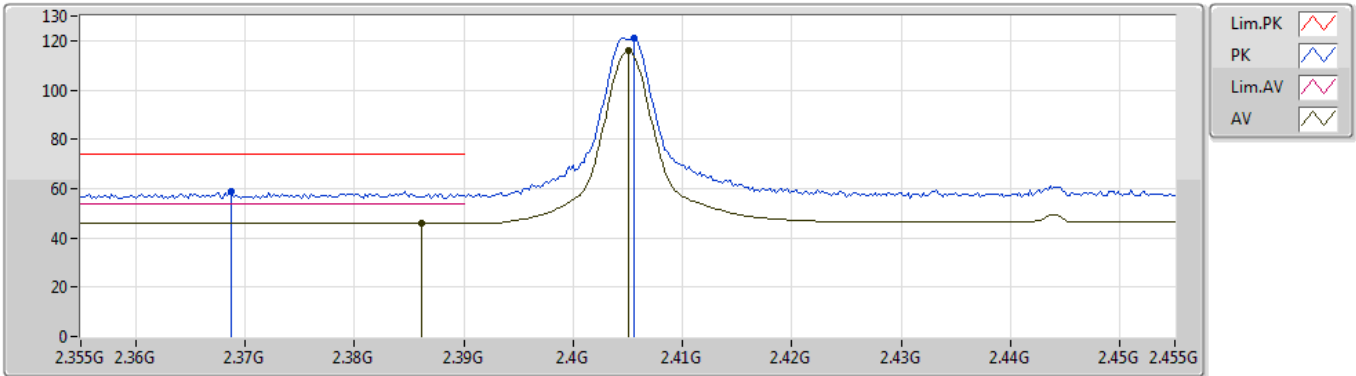
EUT Y_1TX
Setting 3
02-B-4
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3658G	58.23	74.00	-15.77	31.15	3	Vertical	82	2.96	-
AV	2.3892G	46.02	54.00	-7.98	31.20	3	Vertical	82	2.96	-
PK	2.4056G	114.42	Inf	-Inf	31.24	3	Vertical	82	2.96	-
AV	2.405G	109.32	Inf	-Inf	31.24	3	Vertical	82	2.96	-

Zigbee

27/06/2019

2405MHz_TX



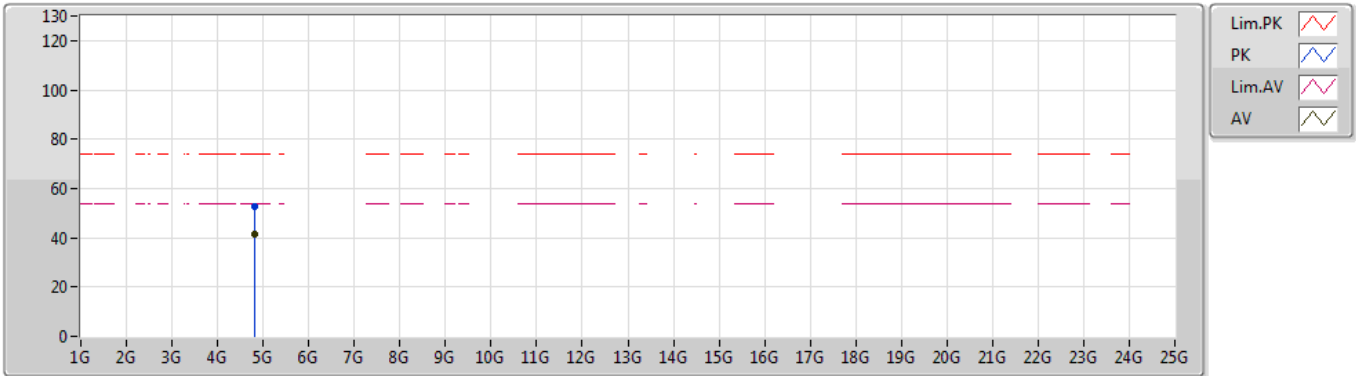
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Setting 3
02-B-4
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3688G	58.70	74.00	-15.30	31.15	3	Horizontal	173	1.73	-
AV	2.3862G	46.03	54.00	-7.97	31.20	3	Horizontal	173	1.73	-
PK	2.4056G	120.91	Inf	-Inf	31.24	3	Horizontal	173	1.73	-
AV	2.405G	115.94	Inf	-Inf	31.24	3	Horizontal	173	1.73	-

Zigbee

27/06/2019

2405MHz_TX



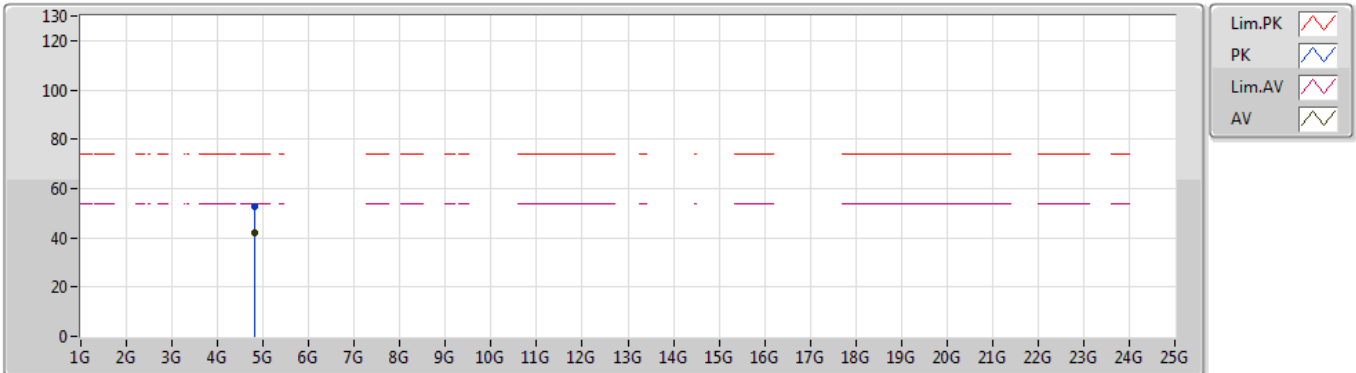
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 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.81136G	52.54	74.00	-21.46	7.13	3	Vertical	11	1.76	-
AV	4.80904G	41.74	54.00	-12.26	7.13	3	Vertical	11	1.76	-

Zigbee

27/06/2019

2405MHz_TX



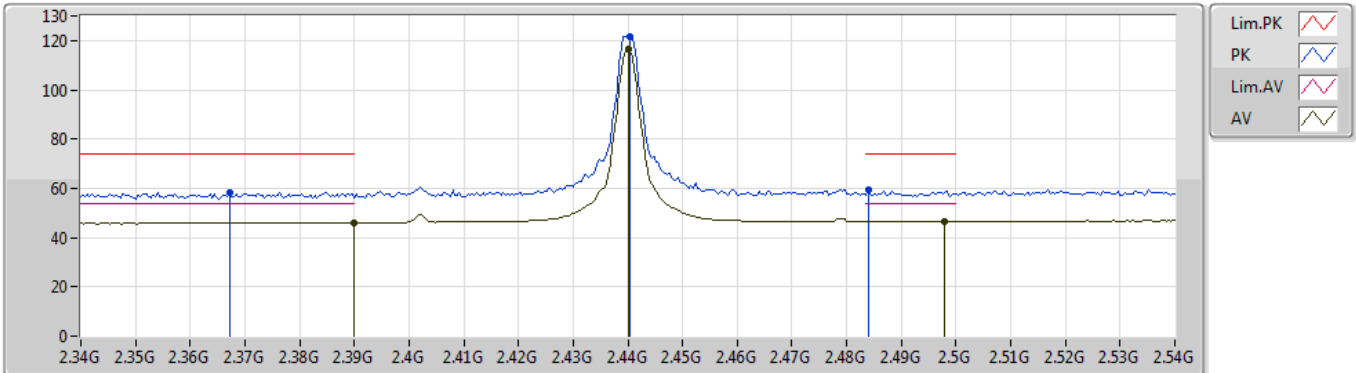
EUT Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.80928G	52.72	74.00	-21.28	7.13	3	Horizontal	54	1.86	-
AV	4.80904G	42.05	54.00	-11.95	7.13	3	Horizontal	54	1.86	-

Zigbee

26/06/2019

2440MHz_TX



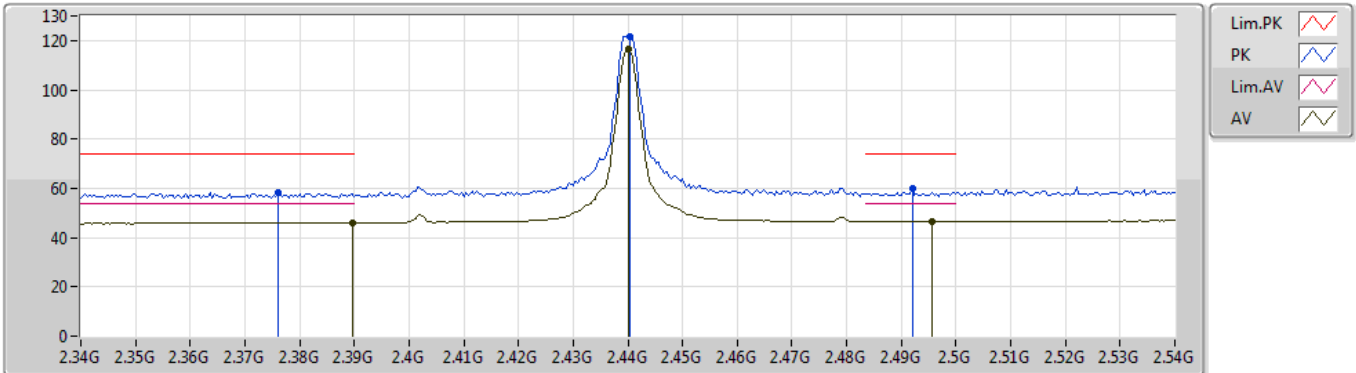
EUT Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3672G	58.22	74.00	-15.78	31.15	3	Vertical	172	2.30	-
AV	2.39G	45.99	54.00	-8.01	31.20	3	Vertical	172	2.30	-
PK	2.4404G	121.85	Inf	-Inf	31.31	3	Vertical	172	2.30	-
AV	2.44G	116.78	Inf	-Inf	31.31	3	Vertical	172	2.30	-
PK	2.484G	59.23	74.00	-14.77	31.39	3	Vertical	172	2.30	-
AV	2.498G	46.58	54.00	-7.42	31.43	3	Vertical	172	2.30	-

Zigbee

26/06/2019

2440MHz_TX



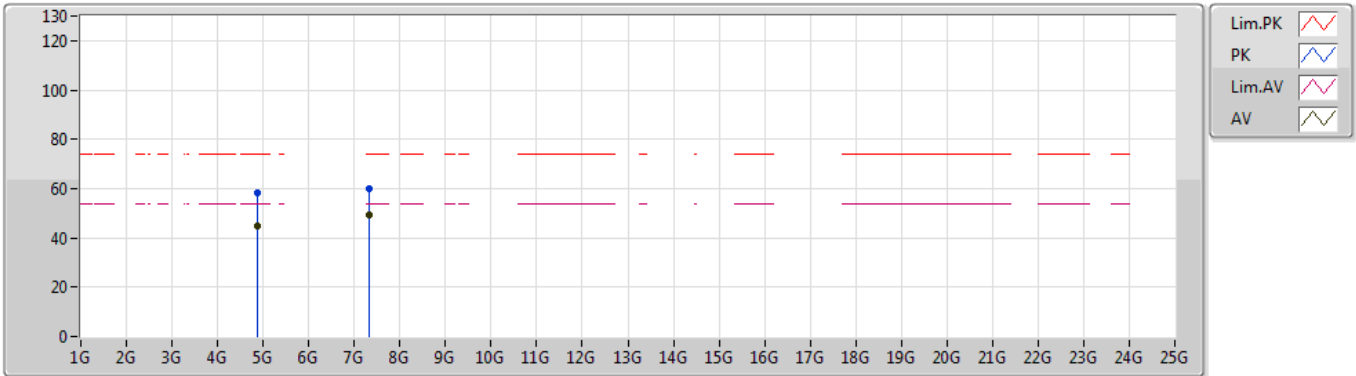
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 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.376G	58.32	74.00	-15.68	31.17	3	Horizontal	159	1.85	-
AV	2.389G	45.96	54.00	-8.04	31.20	3	Horizontal	159	1.85	-
PK	2.440G	121.71	Inf	-Inf	31.31	3	Horizontal	159	1.85	-
AV	2.44G	116.63	Inf	-Inf	31.31	3	Horizontal	159	1.85	-
PK	2.492G	59.71	74.00	-14.29	31.42	3	Horizontal	159	1.85	-
AV	2.495G	46.52	54.00	-7.48	31.42	3	Horizontal	159	1.85	-

Zigbee

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2440MHz_TX



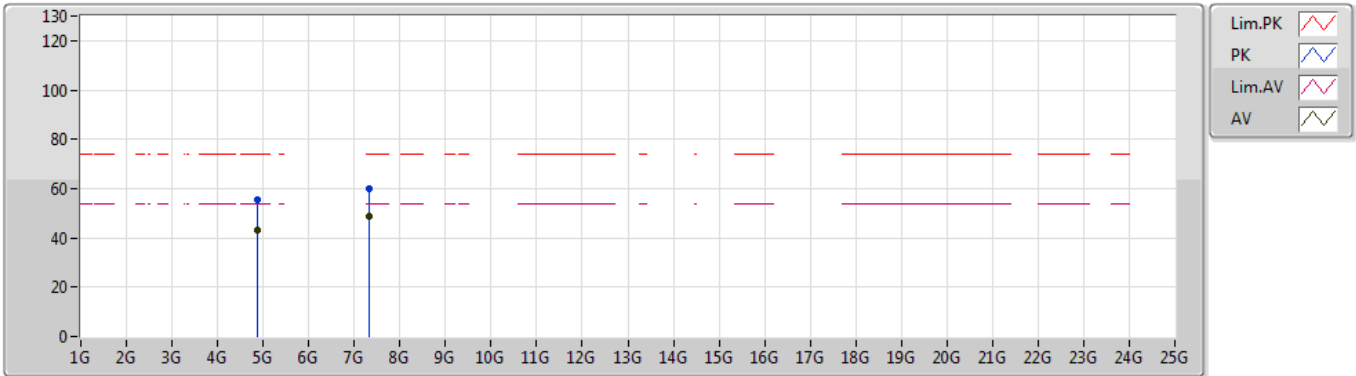
EUT_Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.8812G	58.32	74.00	-15.68	7.30	3	Vertical	46	1.53	-
AV	4.8808G	44.90	54.00	-9.10	7.30	3	Vertical	46	1.53	-
PK	7.31824G	60.12	74.00	-13.88	10.57	3	Vertical	53	1.65	-
AV	7.31856G	49.06	54.00	-4.94	10.57	3	Vertical	53	1.65	-

Zigbee

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2440MHz_TX



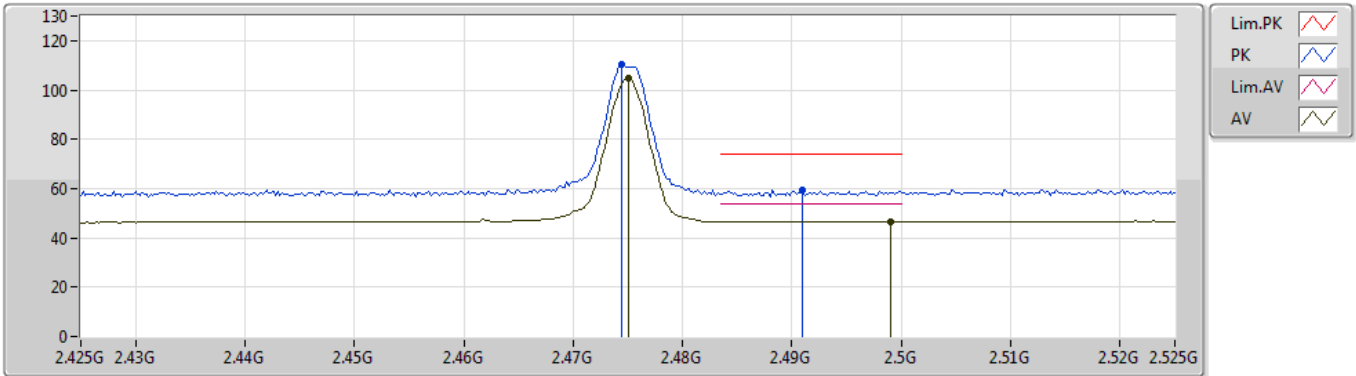
EUT Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.88104G	55.44	74.00	-18.56	7.30	3	Horizontal	99	1.58	-
AV	4.88104G	43.32	54.00	-10.68	7.30	3	Horizontal	99	1.58	-
PK	7.31816G	60.01	74.00	-13.99	10.57	3	Horizontal	51	1.65	-
AV	7.31856G	48.58	54.00	-5.42	10.57	3	Horizontal	51	1.65	-

Zigbee

26/06/2019

2475MHz_TX



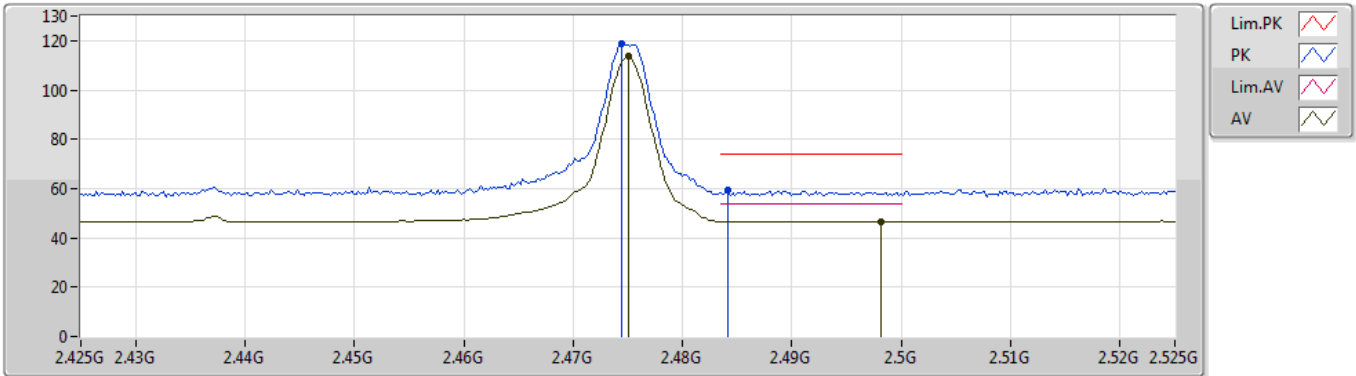
EUT Y_1TX
Setting 3
02-B-4
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.4744G	110.13	Inf	-Inf	31.38	3	Vertical	82	2.76	-
AV	2.475G	104.74	Inf	-Inf	31.38	3	Vertical	82	2.76	-
PK	2.491G	59.40	74.00	-14.60	31.42	3	Vertical	82	2.76	-
AV	2.499G	46.60	54.00	-7.40	31.43	3	Vertical	82	2.76	-

Zigbee

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2475MHz_TX



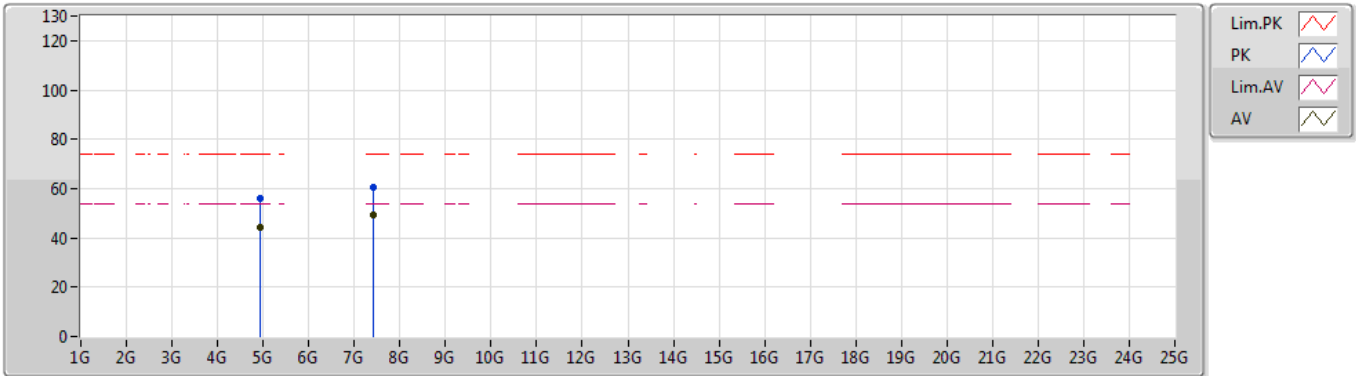
EUT Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.4744G	118.89	Inf	-Inf	31.38	3	Horizontal	164	2.05	-
AV	2.475G	113.49	Inf	-Inf	31.38	3	Horizontal	164	2.05	-
PK	2.4842G	59.57	74.00	-14.43	31.39	3	Horizontal	164	2.05	-
AV	2.4982G	46.63	54.00	-7.37	31.43	3	Horizontal	164	2.05	-

Zigbee

26/06/2019

2475MHz_TX



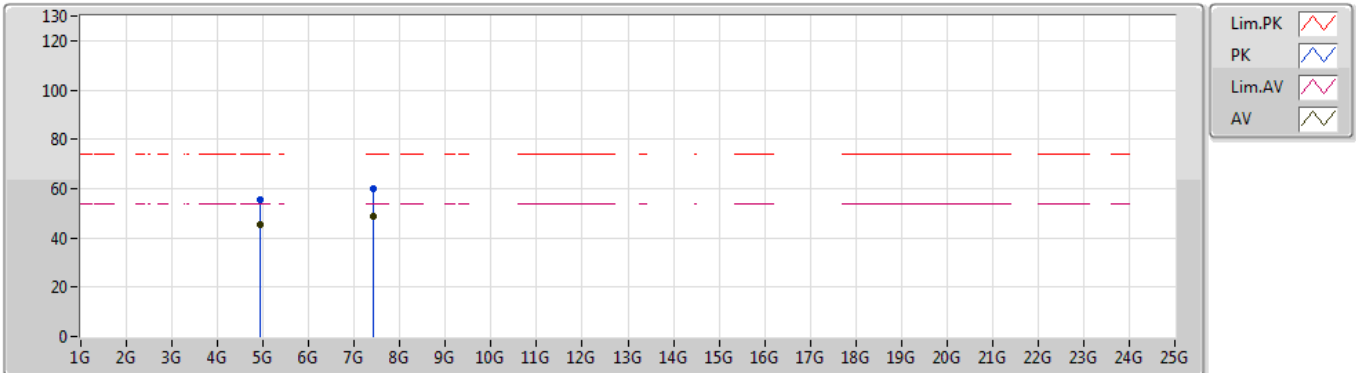
EUT_Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.9488G	56.21	74.00	-17.79	7.46	3	Vertical	281	1.37	-
AV	4.9492G	44.54	54.00	-9.46	7.46	3	Vertical	281	1.37	-
PK	7.4266G	60.34	74.00	-13.66	10.86	3	Vertical	100	1.48	-
AV	7.42644G	49.32	54.00	-4.68	10.86	3	Vertical	100	1.48	-

Zigbee

26/06/2019

2475MHz_TX



EUT_Y_1TX
 Setting 3
 02-B-4
 FSU(100015)

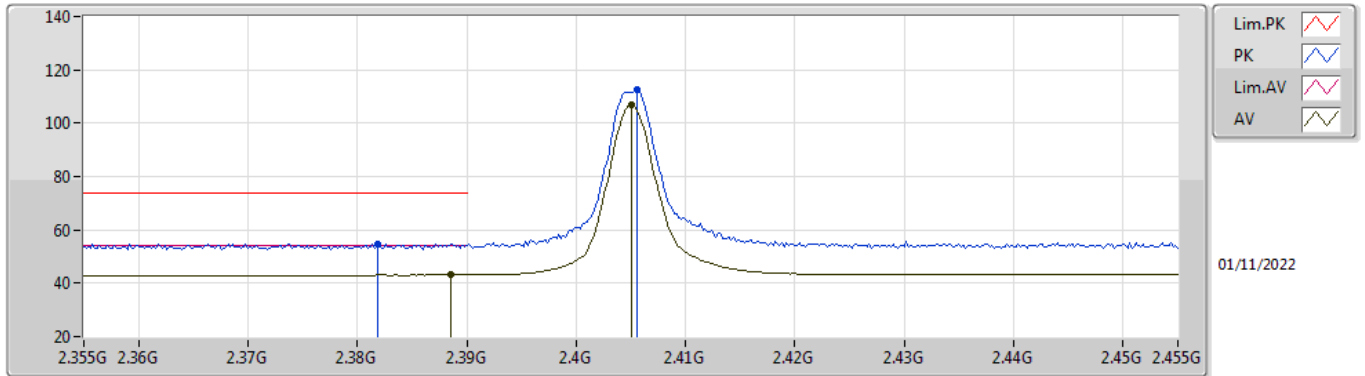
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.94864G	55.60	74.00	-18.40	7.46	3	Horizontal	25	2.32	-
AV	4.94896G	45.27	54.00	-8.73	7.46	3	Horizontal	25	2.32	-
PK	7.42324G	60.13	74.00	-13.87	10.85	3	Horizontal	60	1.66	-
AV	7.42644G	48.90	54.00	-5.10	10.86	3	Horizontal	60	1.66	-



For Port 2:
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	7.42344G	50.04	54.00	-3.96	3	Horizontal	85	1.80	-

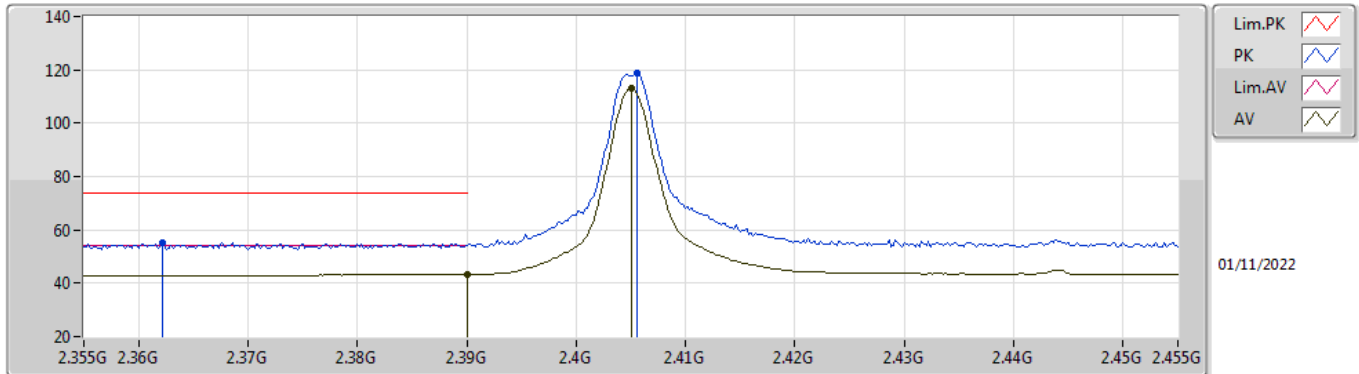
Zigbee 2405MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	2.3818G	54.80	74.00	-19.20	23.26	3	Vertical	253	2.93	-	27.67	3.87	-
AV	2.3886G	43.16	54.00	-10.84	11.63	3	Vertical	253	2.93	-	27.65	3.88	-
PK	2.4056G	112.33	Inf	-Inf	80.82	3	Vertical	253	2.93	-	27.60	3.91	-
AV	2.405G	106.87	Inf	-Inf	75.37	3	Vertical	253	2.93	-	27.60	3.90	-

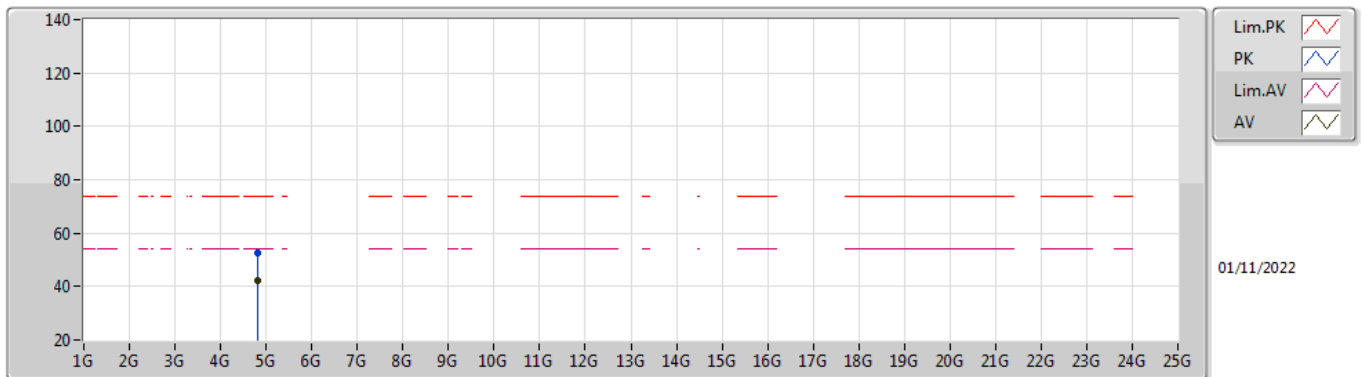
Zigbee 2405MHz_TX



EUT V_1TX
Setting 3
06-E-P-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	2.3622G	55.27	74.00	-18.73	23.68	3	Horizontal	176	1.88	-	27.75	3.84	-
AV	2.39G	43.36	54.00	-10.64	11.84	3	Horizontal	176	1.88	-	27.64	3.88	-
PK	2.4056G	118.55	Inf	-Inf	87.04	3	Horizontal	176	1.88	-	27.60	3.91	-
AV	2.405G	113.16	Inf	-Inf	81.66	3	Horizontal	176	1.88	-	27.60	3.90	-

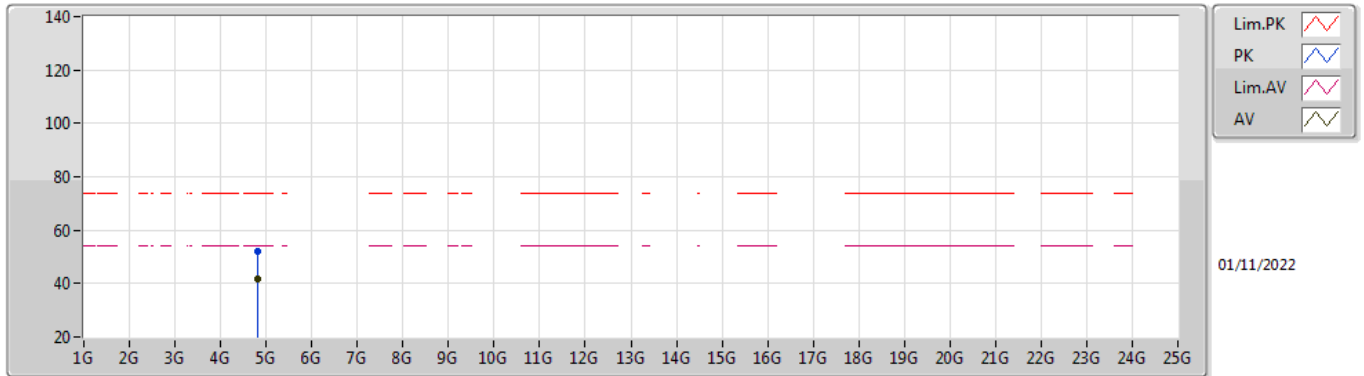
Zigbee 2405MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	4.80896G	52.49	74.00	-21.51	48.30	3	Vertical	286	1.47	-	31.32	5.40	32.53
AV	4.80904G	42.29	54.00	-11.71	38.10	3	Vertical	286	1.47	-	31.32	5.40	32.53

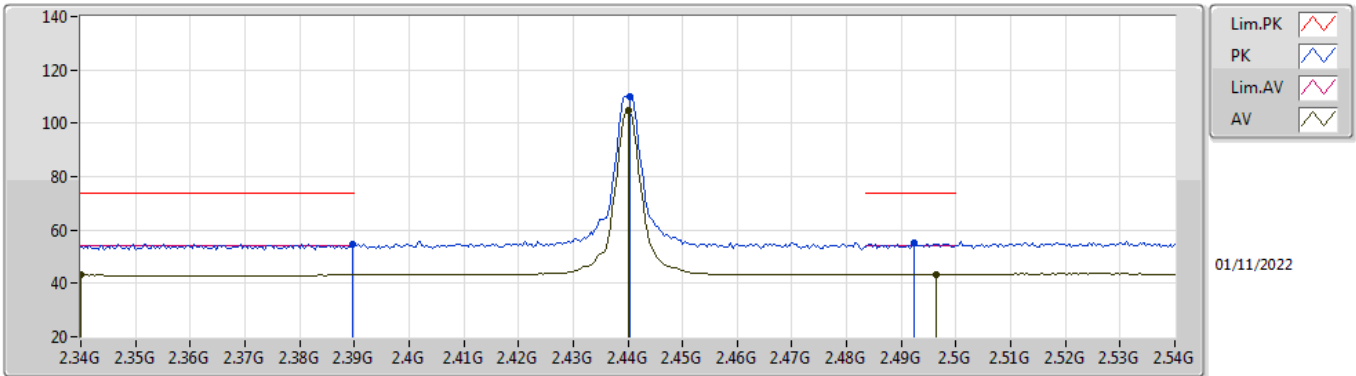
Zigbee 2405MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	4.80876G	52.18	74.00	-21.82	47.99	3	Horizontal	120	2.43	-	31.32	5.40	32.53
AV	4.809G	41.84	54.00	-12.16	37.65	3	Horizontal	120	2.43	-	31.32	5.40	32.53

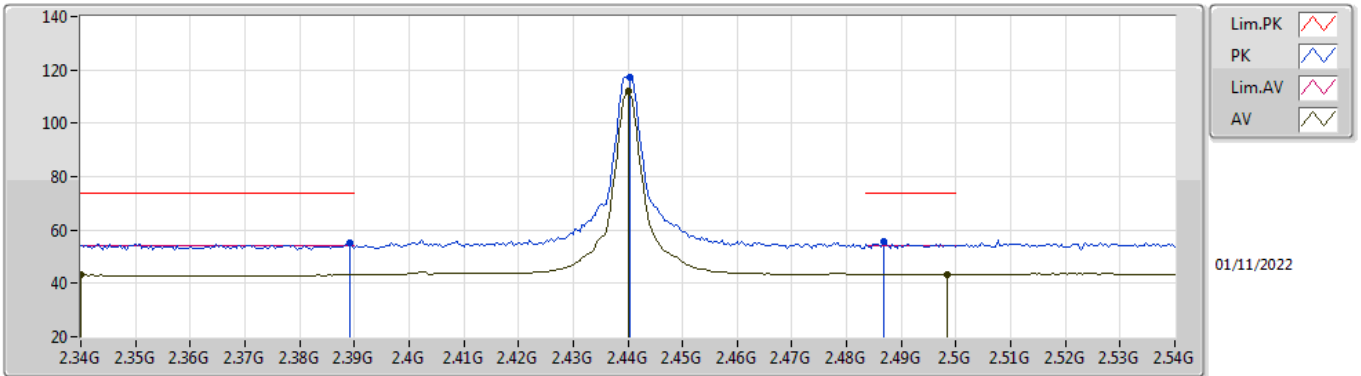
Zigbee
2440MHz_TX



EUT_V_1TX
Setting 3
06-E-P-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	2.3896G	54.91	74.00	-19.09	23.39	3	Vertical	89	2.85	-	27.64	3.88	-
AV	2.34G	43.10	54.00	-10.90	11.43	3	Vertical	89	2.85	-	27.86	3.81	-
PK	2.4404G	109.99	Inf	-Inf	78.45	3	Vertical	89	2.85	-	27.60	3.94	-
AV	2.44G	105.02	Inf	-Inf	73.48	3	Vertical	89	2.85	-	27.60	3.94	-
PK	2.4924G	54.98	74.00	-19.02	23.39	3	Vertical	89	2.85	-	27.60	3.99	-
AV	2.4964G	43.46	54.00	-10.54	11.86	3	Vertical	89	2.85	-	27.60	4.00	-

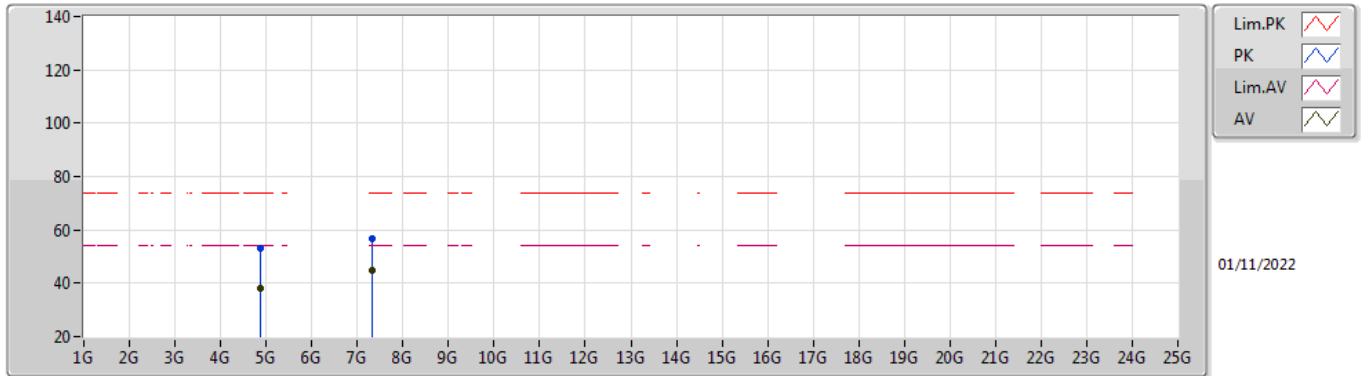
Zigbee 2440MHz_TX



EUT_V_1TX
Setting 3
06-E-P-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	55.18	74.00	-18.82	23.66	3	Horizontal	174	1.72	-	27.64	3.88	-
AV	2.34G	43.11	54.00	-10.89	11.44	3	Horizontal	174	1.72	-	27.86	3.81	-
PK	2.4404G	117.14	Inf	-Inf	85.60	3	Horizontal	174	1.72	-	27.60	3.94	-
AV	2.44G	111.95	Inf	-Inf	80.41	3	Horizontal	174	1.72	-	27.60	3.94	-
PK	2.4868G	55.52	74.00	-18.48	23.93	3	Horizontal	174	1.72	-	27.60	3.99	-
AV	2.4984G	43.45	54.00	-10.55	11.85	3	Horizontal	174	1.72	-	27.60	4.00	-

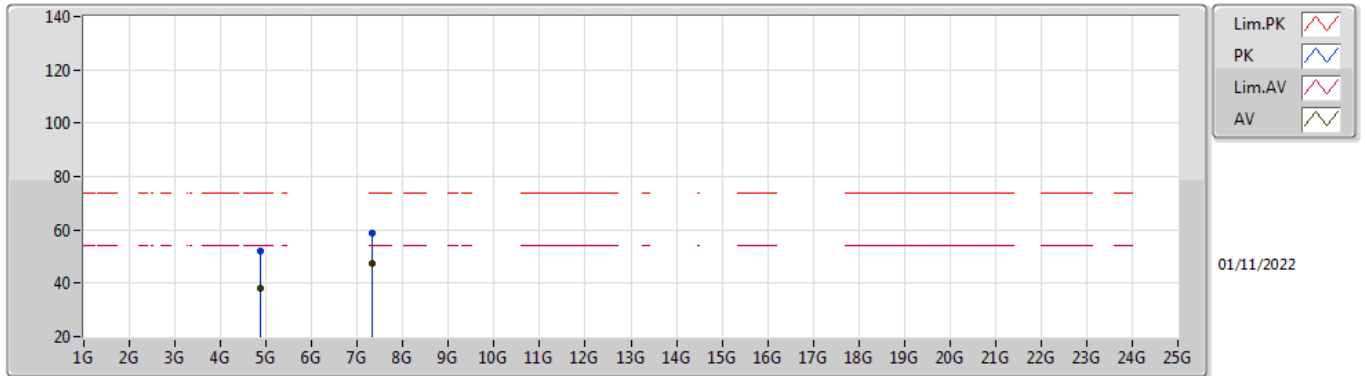
Zigbee 2440MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	4.87904G	52.89	74.00	-21.11	48.55	3	Vertical	107	2.48	-	31.40	5.44	32.50
AV	4.88108G	38.13	54.00	-15.87	33.78	3	Vertical	107	2.48	-	31.40	5.44	32.49
PK	7.31848G	56.53	74.00	-17.47	46.48	3	Vertical	6	1.80	-	36.70	6.80	33.45
AV	7.3216G	44.74	54.00	-9.26	34.69	3	Vertical	6	1.80	-	36.70	6.80	33.45

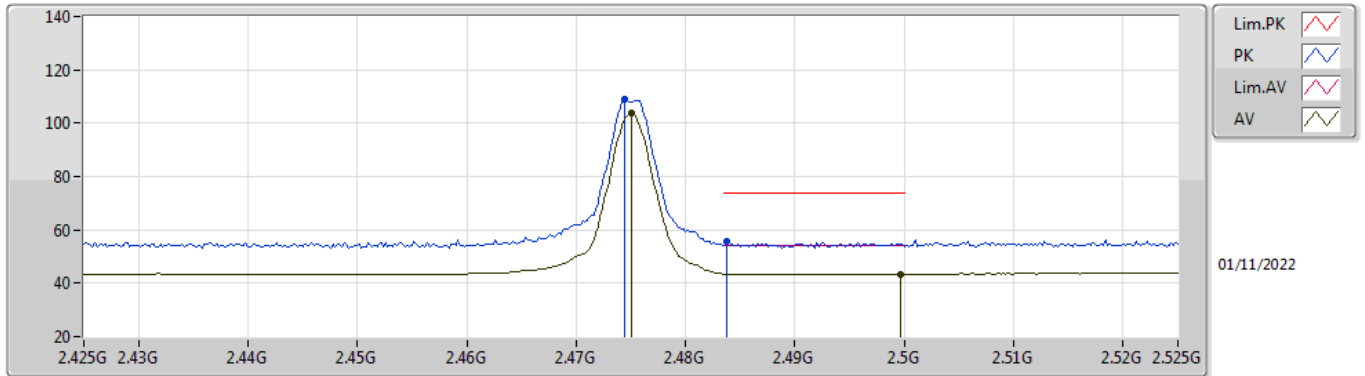
Zigbee 2440MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	4.88104G	51.96	74.00	-22.04	47.61	3	Horizontal	60	1.80	-	31.40	5.44	32.49
AV	4.881G	38.15	54.00	-15.85	33.80	3	Horizontal	60	1.80	-	31.40	5.44	32.49
PK	7.32168G	58.63	74.00	-15.37	48.58	3	Horizontal	79	1.80	-	36.70	6.80	33.45
AV	7.32156G	47.46	54.00	-6.54	37.41	3	Horizontal	79	1.80	-	36.70	6.80	33.45

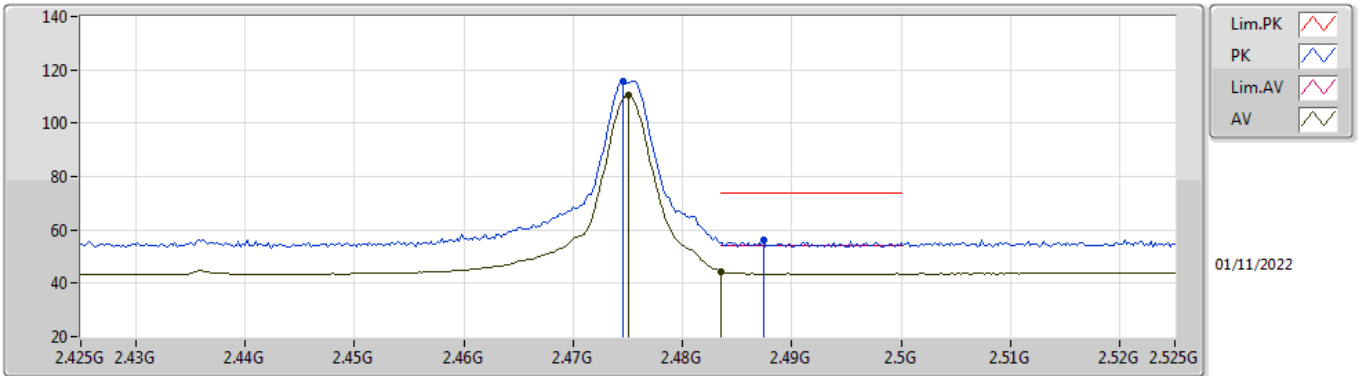
Zigbee
2475MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	108.82	Inf	-Inf	77.25	3	Vertical	242	3.00	-	27.60	3.97	-
AV	2.475G	103.69	Inf	-Inf	72.12	3	Vertical	242	3.00	-	27.60	3.97	-
PK	2.4838G	55.51	74.00	-18.49	23.93	3	Vertical	242	3.00	-	27.60	3.98	-
AV	2.4996G	43.50	54.00	-10.50	11.90	3	Vertical	242	3.00	-	27.60	4.00	-

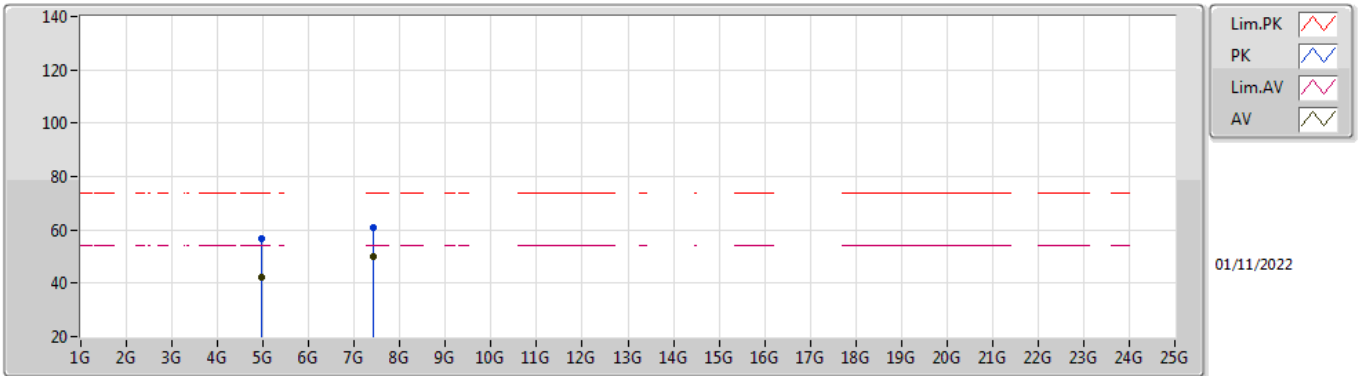
Zigbee
2475MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	2.4746G	115.72	Inf	-Inf	84.15	3	Horizontal	176	1.80	-	27.60	3.97	-
AV	2.475G	110.60	Inf	-Inf	79.03	3	Horizontal	176	1.80	-	27.60	3.97	-
PK	2.4874G	56.05	74.00	-17.95	24.46	3	Horizontal	176	1.80	-	27.60	3.99	-
AV	2.4835G	44.42	54.00	-9.58	12.84	3	Horizontal	176	1.80	-	27.60	3.98	-

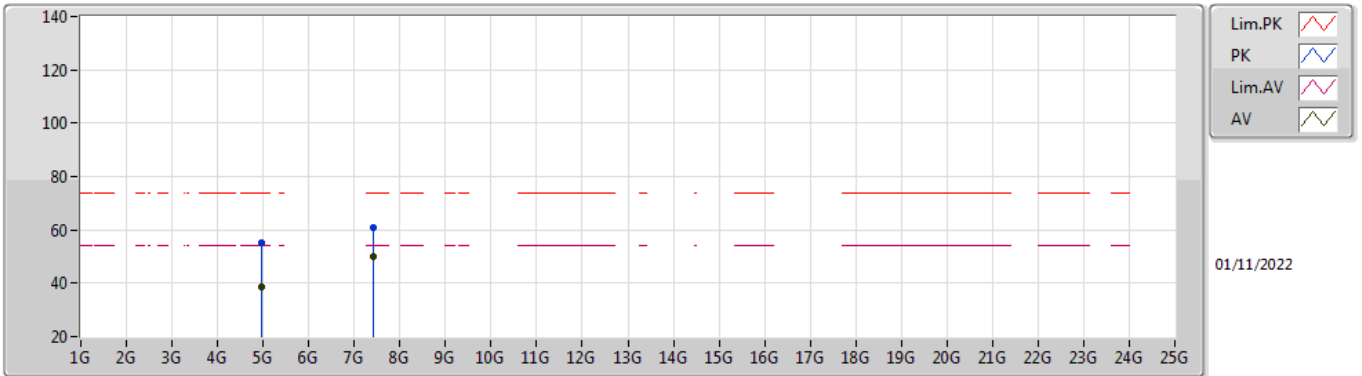
Zigbee 2475MHz_TX



EUT Y_1TX
Setting 3
06-E-P-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	4.95148G	56.91	74.00	-17.09	52.38	3	Vertical	277	1.80	-	31.51	5.48	32.46
AV	4.95104G	42.11	54.00	-11.89	37.58	3	Vertical	277	1.80	-	31.51	5.48	32.46
PK	7.42344G	60.80	74.00	-13.20	50.86	3	Vertical	284	1.39	-	36.70	6.82	33.58
AV	7.42352G	49.98	54.00	-4.02	40.04	3	Vertical	284	1.39	-	36.70	6.82	33.58

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EUT Y_1TX
Setting 3
06-E-P-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	4.9514G	55.28	74.00	-18.72	50.75	3	Horizontal	321	1.74	-	31.51	5.48	32.46
AV	4.95096G	38.75	54.00	-15.25	34.22	3	Horizontal	321	1.74	-	31.51	5.48	32.46
PK	7.42668G	61.11	74.00	-12.89	51.17	3	Horizontal	85	1.80	-	36.70	6.83	33.59
AV	7.42344G	50.04	54.00	-3.96	40.10	3	Horizontal	85	1.80	-	36.70	6.82	33.58