Testing Laboratory
1190

FCC RADIO TEST REPORT

FCC ID	:	RI7WE310F5
Equipment	:	802.11 b/g/n WiFi Module+BT combo module
Brand Name	:	Telit
Model Name	:	WE310F5-I; WE310F5-P
Applicant	:	TELIT COMMUNICATIONS S.P.A. VIA STAZIONE DI PROSECCO 5B - SGONICO -TRIESTE - ITALY
Manufacturer	:	TELIT COMMUNICATIONS S.P.A. VIA STAZIONE DI PROSECCO 5B - SGONICO -TRIESTE - ITALY
Standard	:	47 CFR FCC Part 15.247

The product was received on Nov. 12, 2020, and testing was started from Nov. 26, 2020 and completed on Dec. 14, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications 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. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR0N1118AB	01	Initial issue of report	Jan. 18, 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: Viola Huang

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1	1
2.4-2.4835GHz	BT-LE(2Mbps)	2	1

Note:
- Bluetooth LE uses a GFSK modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	AMO	ALA321C3	Chip	N/A	2.3
2	1	TAOGLAS	GW.11.A113	Dipole	N/A	2.3

Note: The above information was declared by manufacturer.

<For 2.4GHz Band>

For IEEE 802.11b/g/n mode (1TX/1RX):

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

<For Bluetooth>

For bluetooth (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
BT-LE(1Mbps)	0.856	0.68	2.139m	1k
BT-LE(2Mbps)	0.594	2.26	1.084m	1k

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	Wifi:PuTTY_0.62、RTLBTAPP_V5.2.2.40			
Support Mode	☒	LE 1M PHY: 1 Mb/s		
	☐	LE Coded PHY (S=2): 500 Kb/s		
	☐	LE Coded PHY (S=8): 125 Kb/s		
	☒	LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

The EUT has two model names which are identical to each other in all aspects except for the following table:

EUT No.	Model Name	Description	Remark
1	WE310F5-I	Interated antenna variant (SMD)	Equip with ant.1
2	WE310F5-P	Without antenna-Expose RF pad (Dipole antenna)	Equip with ant.2

Note 1: The above information was declared by manufacturer.

Note 2: The EUT 2 was performed testing for all items.

The EUT 1 was performed testing for AC Power-line Conducted Emissions and Emissions in Restricted Frequency Bands measurement.

1.1.6 EUT Support Function

The EUT supports AP/client functions, only the client function was tested by manufacturer request.

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			
☐	HWA YA	ADD :	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)
		TEL :	886-3-327-3456 FAX : 886-3-327-0973
☒	JHUBEI	ADD :	No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302, Taiwan (R.O.C.)
		TEL :	886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH02-CB	Caster Chang	22.2~23.1°C / 56~57%	Nov. 30, 2020~Dec. 14, 2020
Radiated below 1GHz	03CH04-CB	Kevin Huang	24.4~25.2°C / 56~58%	Dec. 15, 2020~Dec. 16, 2020
Radiated above 1GHz	03CH01-CB	KJ Chang	24.4~25.2°C / 56~58%	Nov. 26, 2020~Nov. 30, 2020
	03CH06-CB	KJ Chang	23.9~24.8°C / 57~59%	Nov. 26, 2020~Nov. 30, 2020
AC Conduction	CO01-CB	Peter Wu	22~23°C / 60~61%	Dec. 09, 2020

Test site Designation No. TW0006 with FCC.
Test site registered number IC 4086D with Industry Canada.

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)	3.8 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.0 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.9 dB	Confidence levels of 95%
Conducted Emission	2.8 dB	Confidence levels of 95%
Output Power Measurement	1.4 dB	Confidence levels of 95%
Power Density Measurement	2.8 dB	Confidence levels of 95%
Bandwidth Measurement	0.4%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	Default
2440MHz	Default
2480MHz	Default
BT-LE(2Mbps)	-
2402MHz	Default
2440MHz	Default
2480MHz	Default

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
Operating Mode	Normal Link
1	Normal Link - EUT 1 in Z axis_Bluetooth
2	Normal Link - EUT 1 in Z axis_WLAN 2.4GHz
3	Normal Link - EUT 2 in Z axis_Bluetooth
4	Normal Link - EUT 2 in Z axis_WLAN 2.4GHz
For operating mode 2 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
1	EUT 2_WLAN 2.4GHz

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 - EUT 1 in Z axis_Bluetooth
2	Normal Link - EUT 1 in Z axis_WLAN 2.4GHz
3	Normal Link - EUT 2 in Z axis_Bluetooth
4	Normal Link - EUT 2 in Z axis_WLAN 2.4GHz
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
	The EUT were performed at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at X axis. So the measurement will follow this same test configuration.
1	EUT 1 in X axis_Bluetooth
2	EUT 2 in X axis_Bluetooth

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

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Fixture	Telit	CS2106B	N/A
B	NB	DELL	E6430	N/A
C	Earphone	e-Power	S90W	N/A
D	Mouse	HP	FM100	N/A
E	AP Router	ASUS	RP-N53	MSQ-RPN53
F	AP NB	DELL	E6430	N/A

For Radiated (below 1GHz):

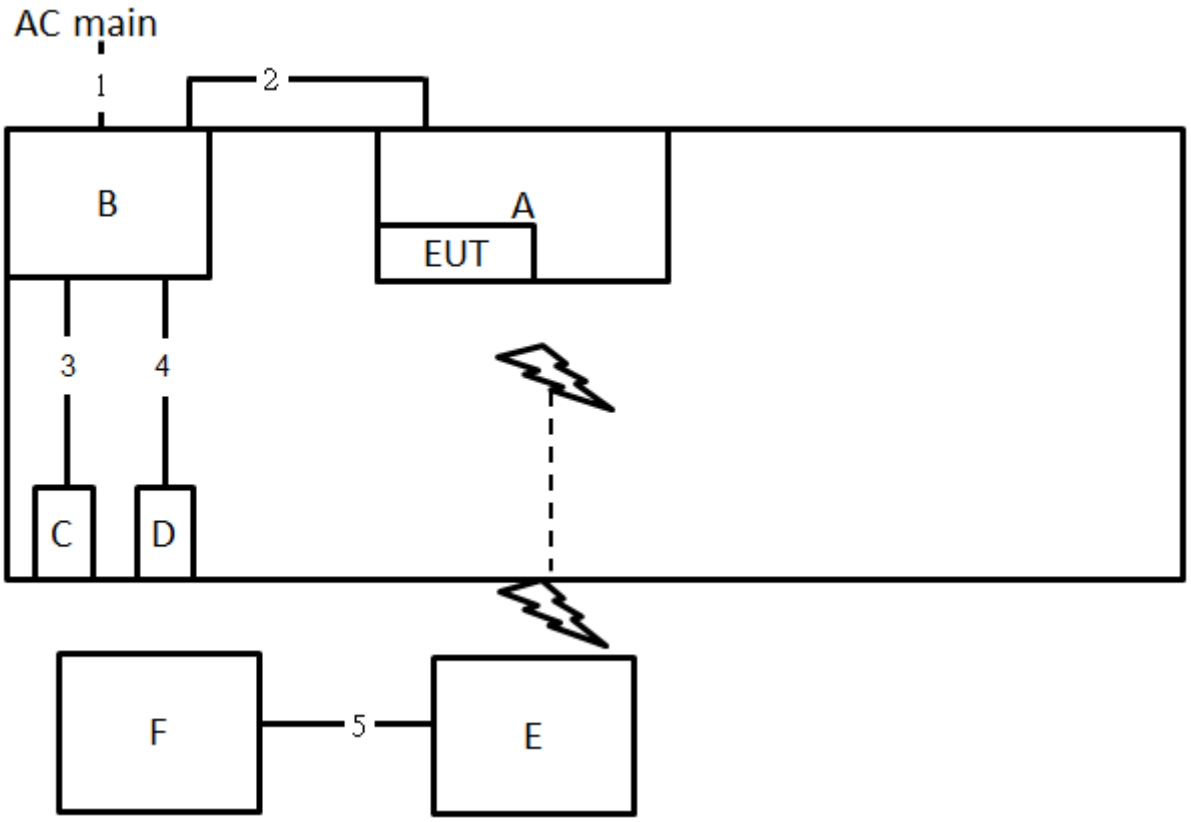
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E4300	N/A
B	WLAN AP	D-LINK	DIR860L	KA2IR860LA1
C	NB	DELL	E4300	N/A
D	Earphone	e-Power	S90W	N/A
E	Mouse	Logitech	M-U0026	N/A
F	Fixture	Telit	CS2106B	N/A

For Radiated (above 1GHz) and RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E4300	N/A
B	Fixture	Telit	CS2106B	N/A

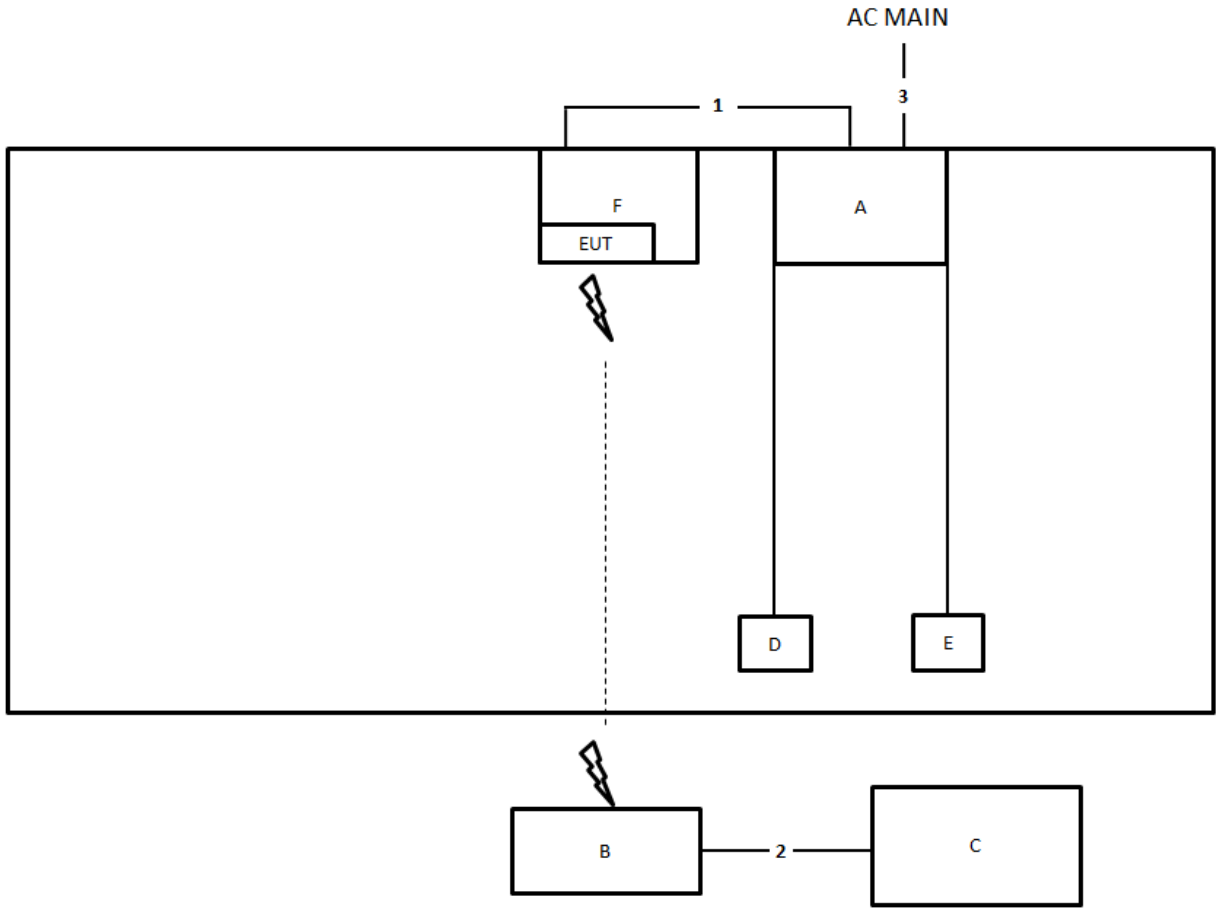
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



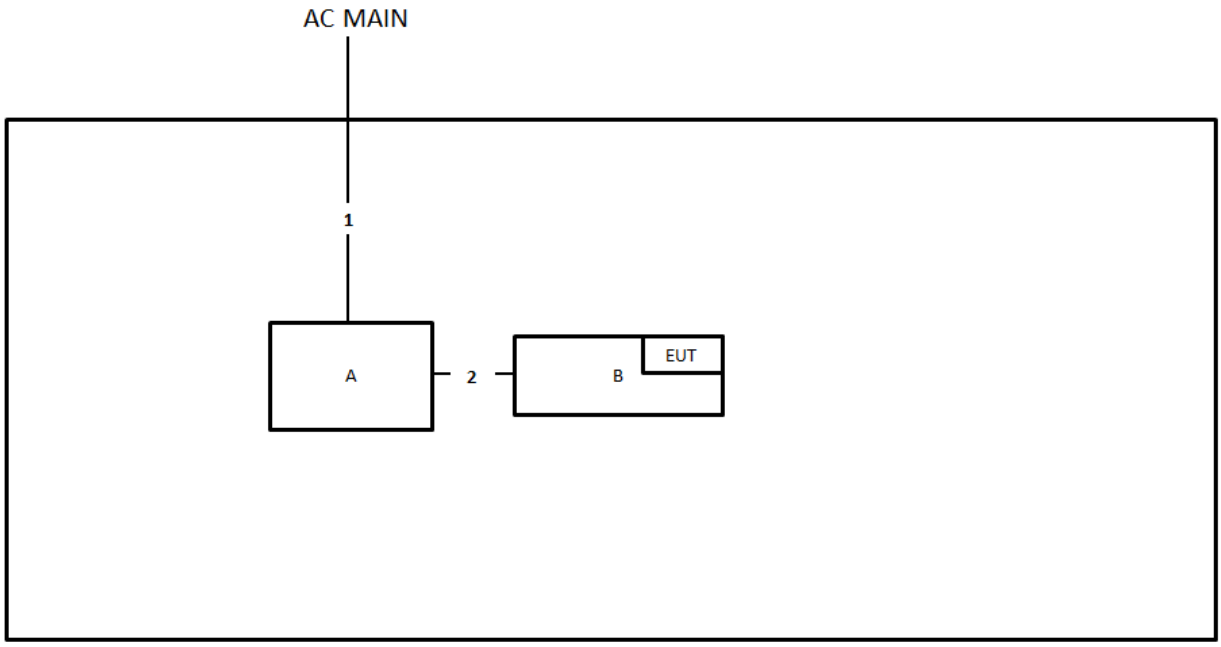
Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	Yes	0.6m
3	Audio cable	No	1.8m
4	USB cable	Yes	1.8m
5	RJ-45 cable	No	1m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	USB cable	No	1m
2	RJ-45 cable	No	1.5m
3	Power cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	No	1m

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

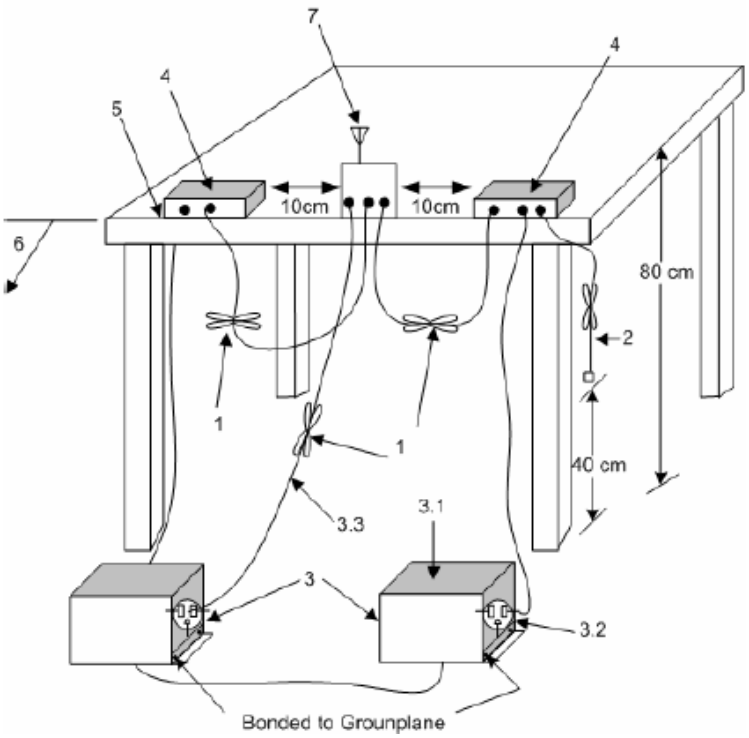
Refer a test equipment and calibration data table in this test report.

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.

1.1.1. 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

3.1.5 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.

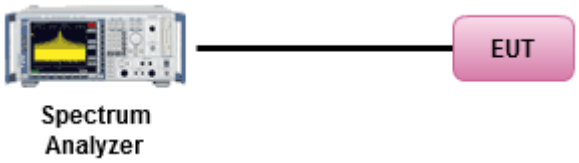
3.2.2 Measuring Instruments

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


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

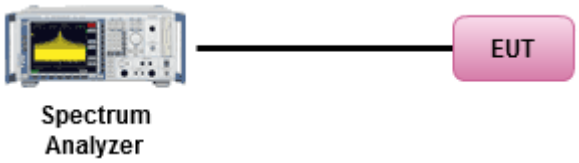
3.4.2 Measuring Instruments

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.		
	[duty cycle ≥ 98% or external video / power trigger]		
▪ 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.	

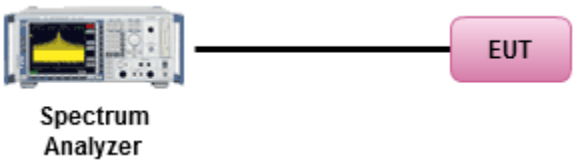
3.5.2 Measuring Instruments

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 below30 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.

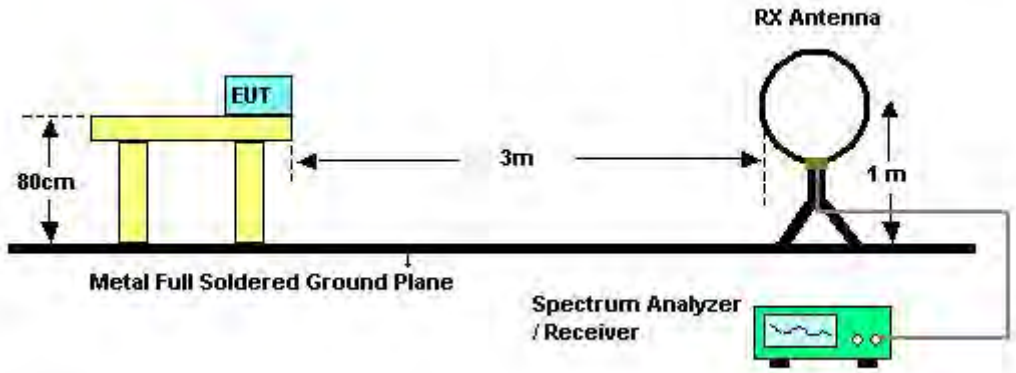
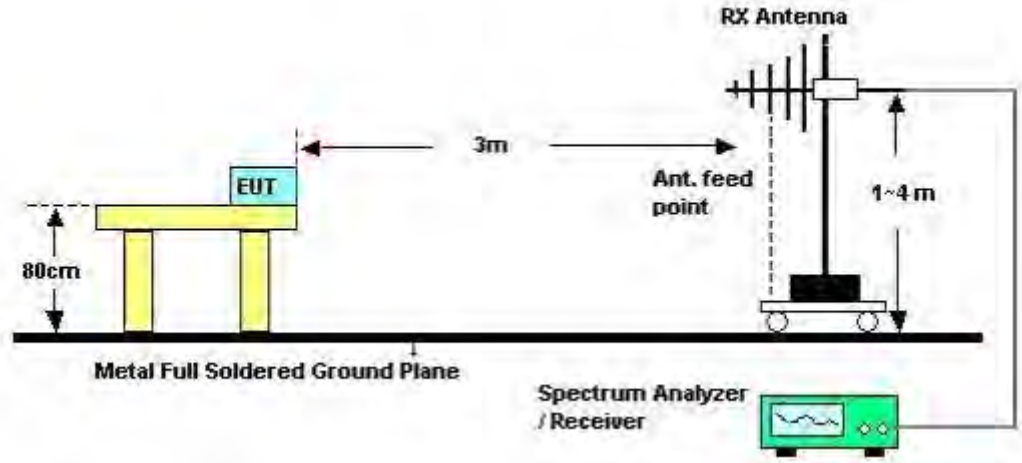
3.6.2 Measuring Instruments

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

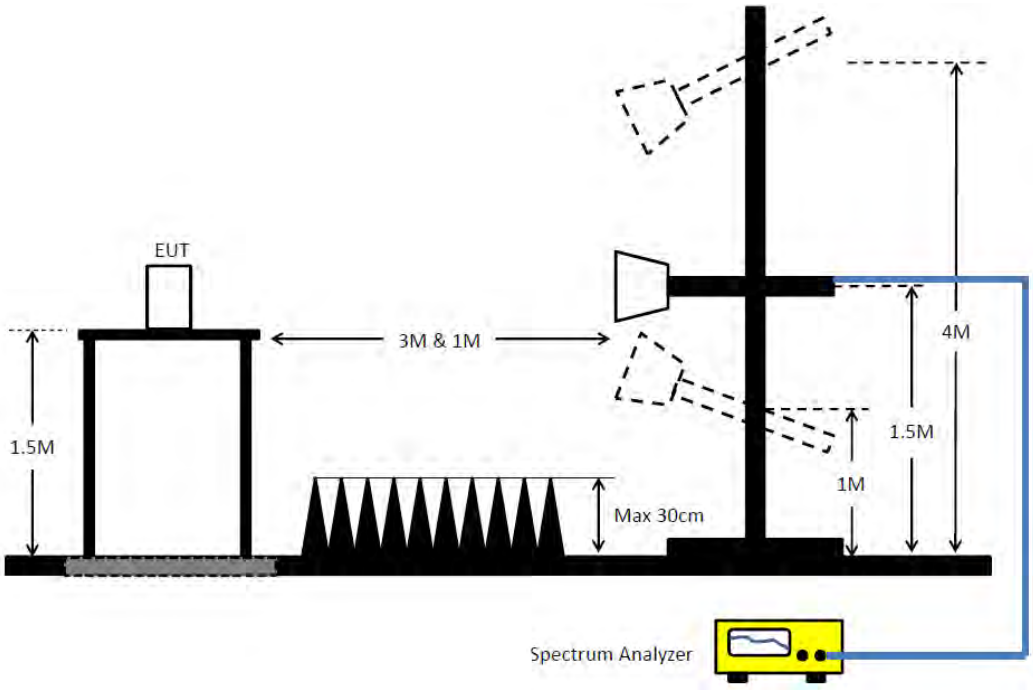
3.6.3 Test Procedures

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	Feb. 26, 2020	Feb. 25, 2021	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 25, 2019	Dec. 24, 2020	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Feb. 25, 2020	Feb. 24, 2021	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 31, 2020	Jan. 30, 2021	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 20, 2020	May 19, 2021	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	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH04-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH04-CB	30 MHz ~ 1 GHz	Aug. 08, 2020	Aug. 07, 2021	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N0607	30MHz ~ 1GHz	Oct. 11, 2020	Oct. 10, 2021	Radiation (03CH04-CB)
Pre-Amplifier	EMCI	EMC330N	980391	20MHz ~ 3GHz	May 21, 2020	May 20, 2021	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 18, 2019	Dec. 17, 2020	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+67	30MHz – 1GHz	Nov. 05, 2020	Nov. 04, 2021	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 29, 2020	May 28, 2021	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2020	Nov. 05, 2021	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2020	Jan. 07, 2021	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH01-CB)

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Apr. 16, 2020	Apr. 15, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 02, 2020	Oct. 01, 2021	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Jul. 22, 2020	Jul. 21, 2021	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 07, 2020	May 06, 2021	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	May 12, 2020	May 11, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+24	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jul. 27, 2020	Jul. 26, 2021	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Sep. 17, 2020	Sep. 16, 2021	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Sep. 17, 2020	Sep. 16, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)

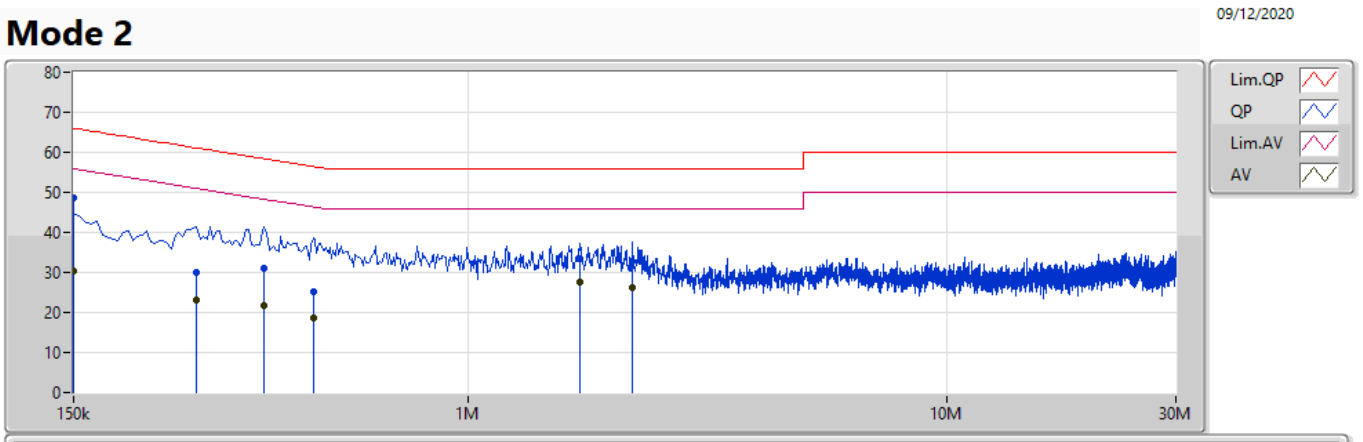
Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

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

N.C.R. means Non-Calibration required.

Summary

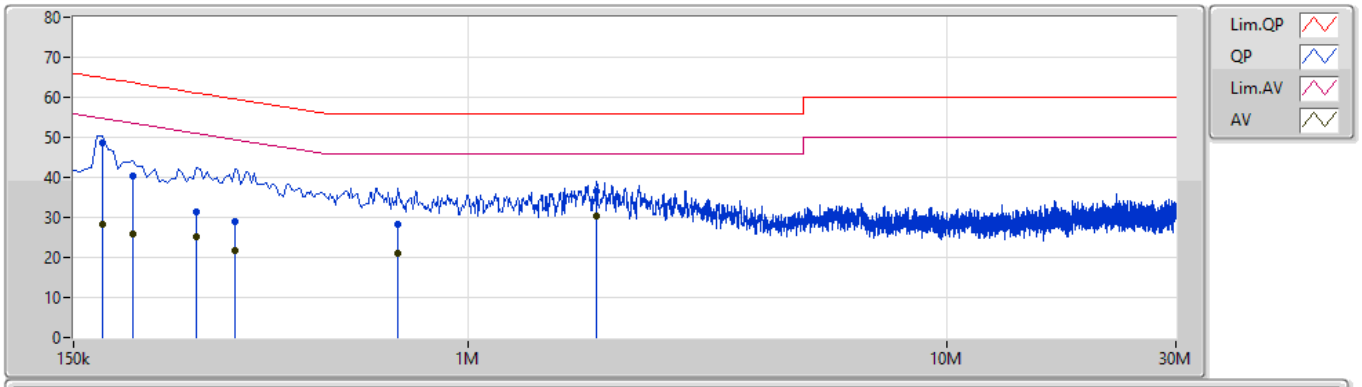
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	AV	1.851M	30.23	46.00	-15.77	Neutral



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	48.56	66.00	-17.44	9.89	Line	"Worst"	38.67	0.05	0.03	9.81
AV	150k	30.31	56.00	-25.69	9.89	Line	-	20.42	0.05	0.03	9.81
QP	271.5k	30.15	61.07	-30.92	9.89	Line	-	20.26	0.04	0.03	9.82
AV	271.5k	23.19	51.07	-27.88	9.89	Line	-	13.30	0.04	0.03	9.82
QP	375k	30.90	58.39	-27.49	9.90	Line	-	21.00	0.04	0.03	9.83
AV	375k	21.68	48.39	-26.71	9.90	Line	-	11.78	0.04	0.03	9.83
QP	474k	25.33	56.44	-31.11	9.90	Line	-	15.43	0.04	0.03	9.83
AV	474k	18.49	46.44	-27.95	9.90	Line	-	8.59	0.04	0.03	9.83
QP	1.707M	33.50	56.00	-22.50	9.97	Line	-	23.53	0.06	0.06	9.85
AV	1.707M	27.63	46.00	-18.37	9.97	Line	-	17.66	0.06	0.06	9.85
QP	2.202M	32.83	56.00	-23.17	10.00	Line	-	22.83	0.06	0.08	9.86
AV	2.202M	26.29	46.00	-19.71	10.00	Line	-	16.29	0.06	0.08	9.86

Mode 2

09/12/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	172.5k	48.60	64.83	-16.23	9.89	Neutral	-	38.71	0.04	0.03	9.82
AV	172.5k	28.18	54.83	-26.65	9.89	Neutral	-	18.29	0.04	0.03	9.82
QP	199.5k	40.33	63.63	-23.30	9.89	Neutral	-	30.44	0.04	0.03	9.82
AV	199.5k	25.92	53.63	-27.71	9.89	Neutral	-	16.03	0.04	0.03	9.82
QP	271.5k	31.48	61.07	-29.59	9.89	Neutral	-	21.59	0.04	0.03	9.82
AV	271.5k	25.05	51.07	-26.02	9.89	Neutral	-	15.16	0.04	0.03	9.82
QP	325.5k	29.00	59.56	-30.56	9.90	Neutral	-	19.10	0.04	0.03	9.83
AV	325.5k	21.89	49.56	-27.67	9.90	Neutral	-	11.99	0.04	0.03	9.83
QP	712.5k	28.26	56.00	-27.74	9.92	Neutral	-	18.34	0.05	0.04	9.83
AV	712.5k	21.10	46.00	-24.90	9.92	Neutral	-	11.18	0.05	0.04	9.83
QP	1.851M	36.40	56.00	-19.60	10.00	Neutral	-	26.40	0.07	0.07	9.86
AV	1.851M	30.23	46.00	-15.77	10.00	Neutral	"Worst"	20.23	0.07	0.07	9.86

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	662.5k	1.027M	1M03F1D	658.75k	1.022M
BT-LE(2Mbps)	1.13M	2.049M	2M05F1D	1.115M	2.044M

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

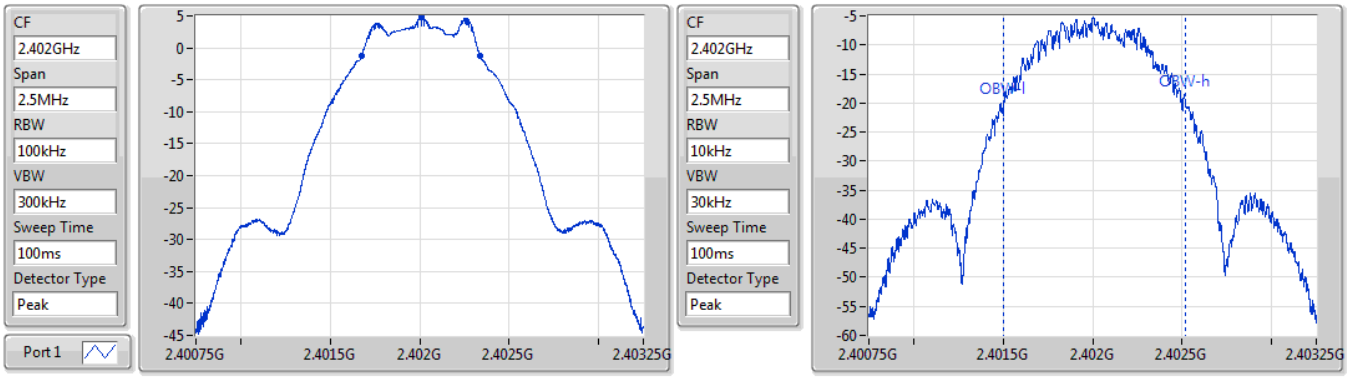
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	662.5k	1.022M
2440MHz	Pass	500k	660k	1.024M
2480MHz	Pass	500k	658.75k	1.027M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.128M	2.044M
2440MHz	Pass	500k	1.13M	2.044M
2480MHz	Pass	500k	1.115M	2.049M

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

BT-LE(1Mbps) EBW

2402MHz

14/12/2020

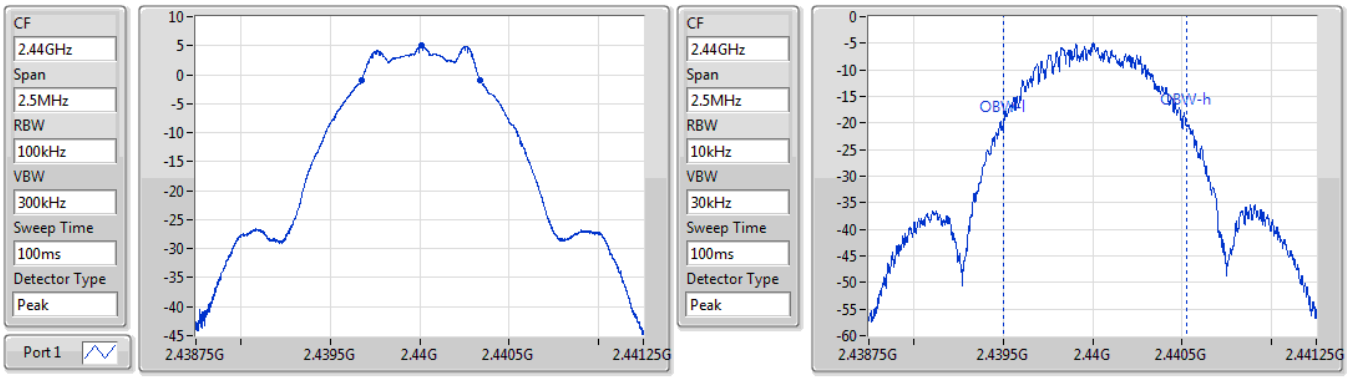


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
662.5k	2.401676G	2.402339G	1.022M	2.4015G	2.402522G	500k	1

BT-LE(1Mbps) EBW

2440MHz

14/12/2020

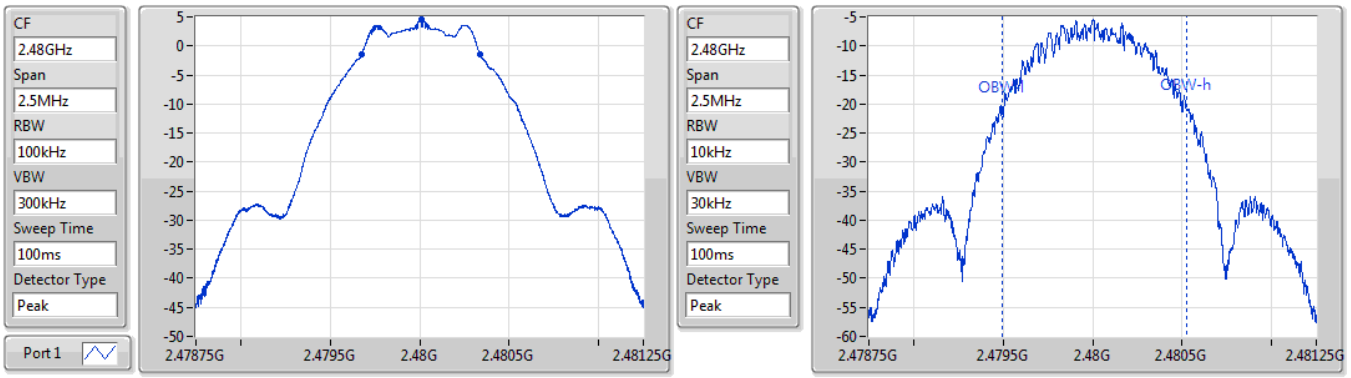


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
660k	2.439676G	2.440336G	1.024M	2.439499G	2.440523G	500k	1

BT-LE(1Mbps) EBW

2480MHz

14/12/2020

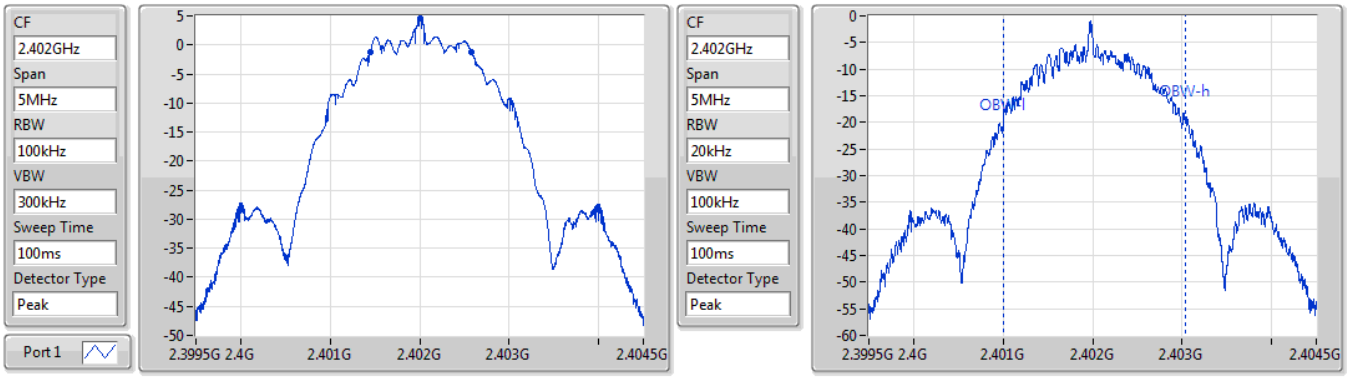


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
658.75k	2.479678G	2.480336G	1.027M	2.479498G	2.480525G	500k	1

BT-LE(2Mbps) EBW

2402MHz

14/12/2020

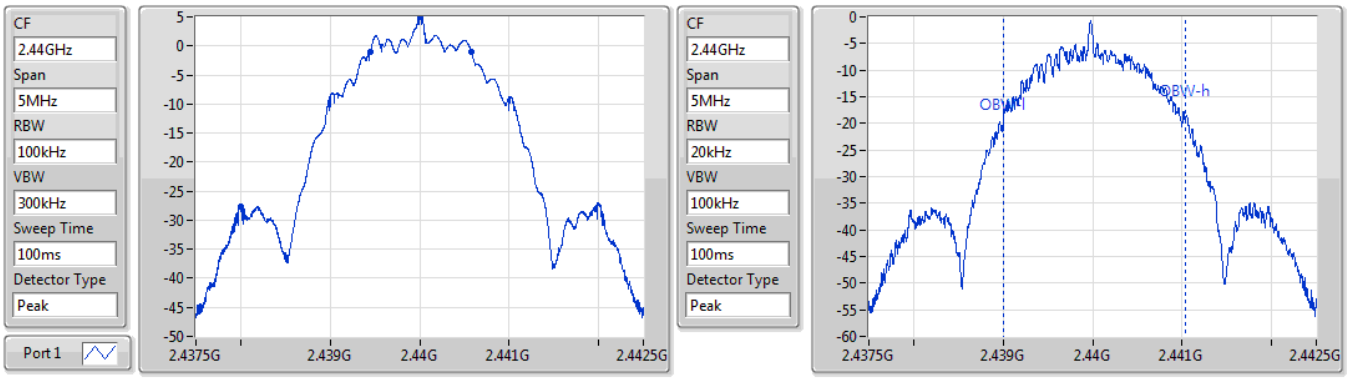


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.128M	2.401455G	2.402583G	2.044M	2.400998G	2.403042G	500k	1

BT-LE(2Mbps) EBW

2440MHz

14/12/2020

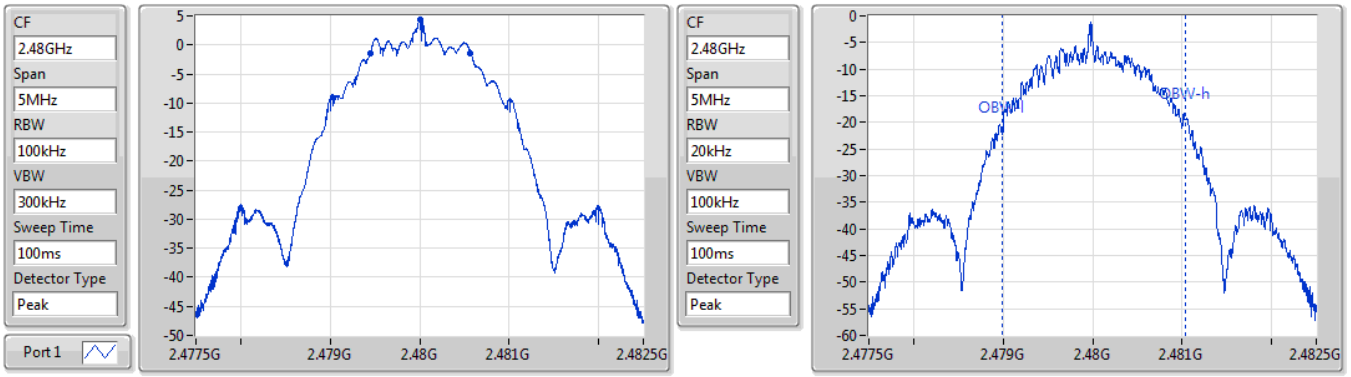


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.13M	2.439448G	2.440578G	2.044M	2.438998G	2.441042G	500k	1

BT-LE(2Mbps) EBW

2480MHz

14/12/2020



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.115M	2.479455G	2.48057G	2.049M	2.478996G	2.481044G	500k	1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	4.86	0.00306
BT-LE(2Mbps)	4.64	0.00291

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.30	4.69	30.00
2440MHz	Pass	2.30	4.86	30.00
2480MHz	Pass	2.30	4.69	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.30	4.64	30.00
2440MHz	Pass	2.30	4.50	30.00
2480MHz	Pass	2.30	4.28	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-10.34
BT-LE(2Mbps)	-13.25

RBW=3 kHz.

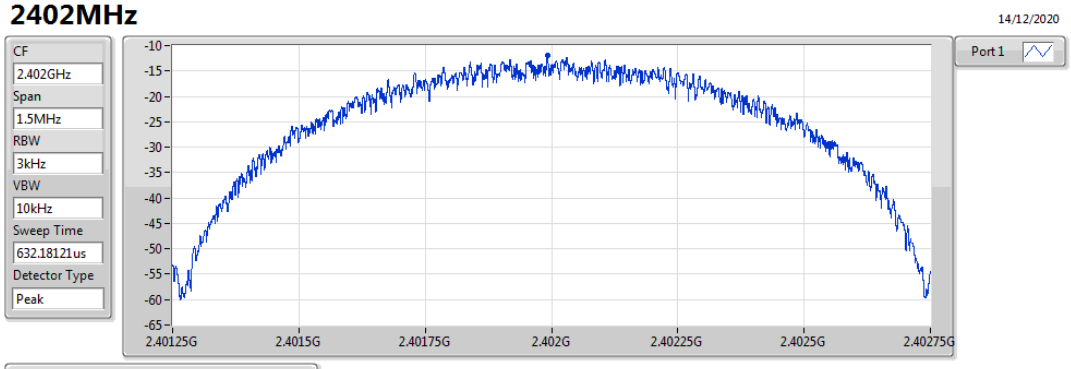
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.30	-11.99	8.00
2440MHz	Pass	2.30	-11.03	8.00
2480MHz	Pass	2.30	-10.34	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.30	-13.25	8.00
2440MHz	Pass	2.30	-18.12	8.00
2480MHz	Pass	2.30	-16.45	8.00

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

BT-LE(1Mbps) **PSD**

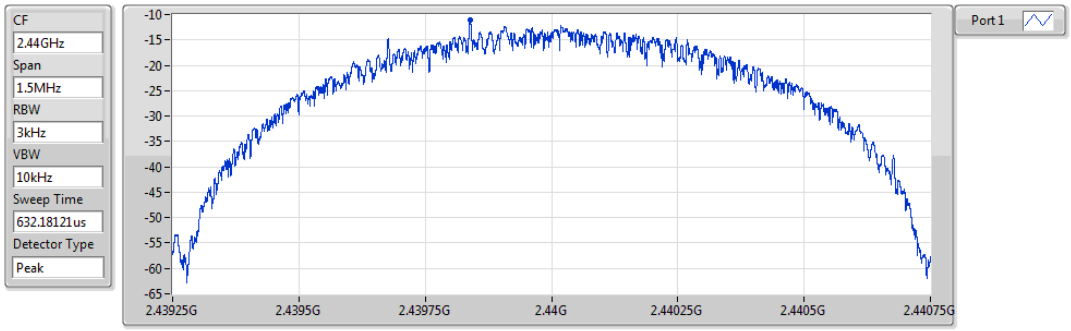
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.99	-11.99	-11.99

BT-LE(1Mbps) **PSD**

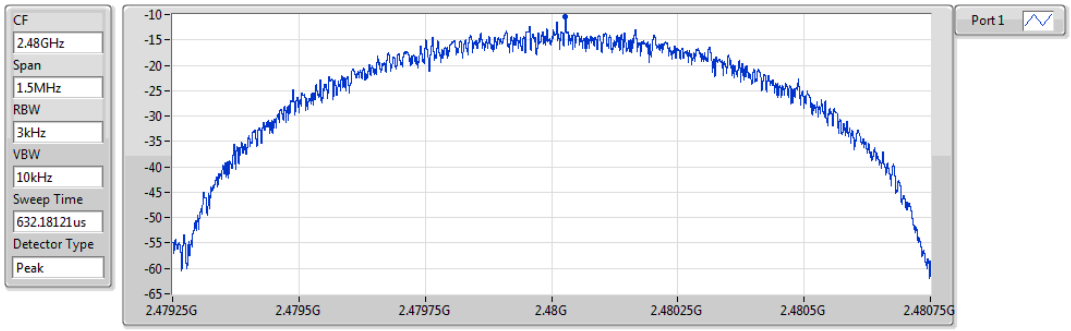
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.03	-11.03	-11.03

BT-LE(1Mbps) **PSD**

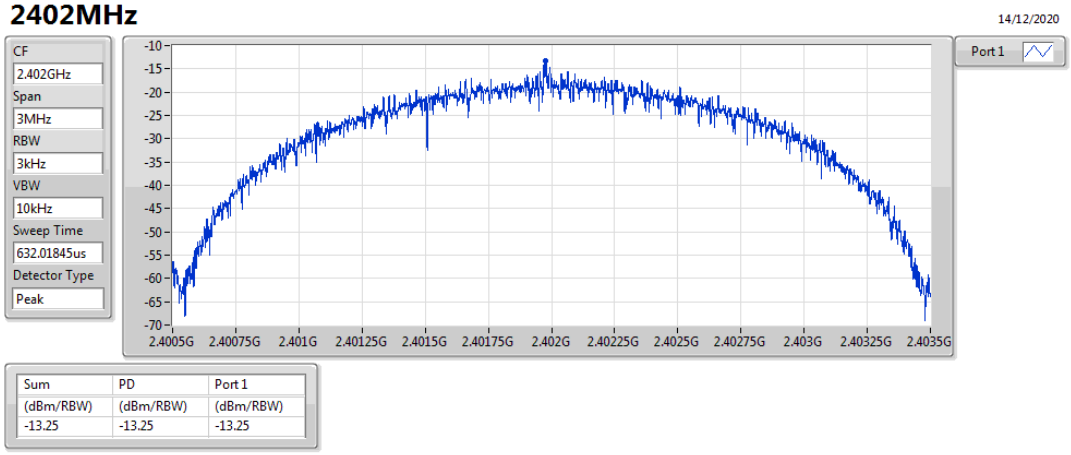
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.34	-10.34	-10.34

BT-LE(2Mbps) **PSD**

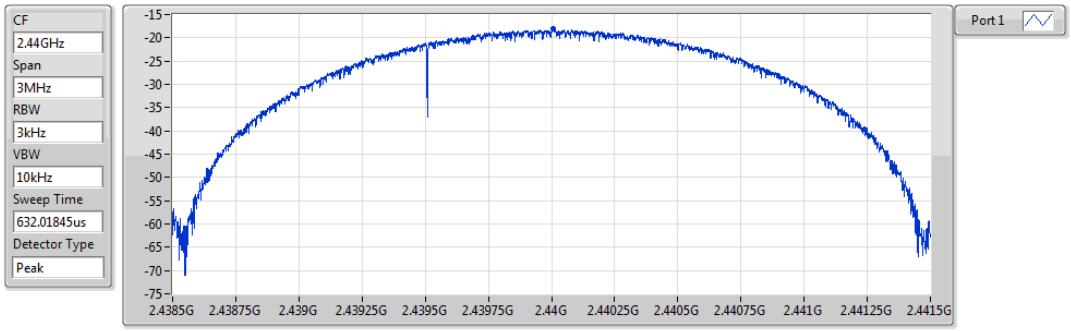
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.25	-13.25	-13.25

BT-LE(2Mbps) **PSD**

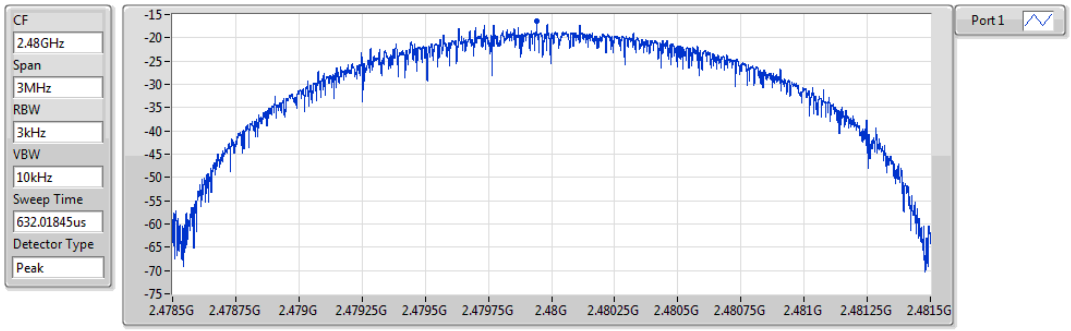
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-18.12	-18.12	-18.12

BT-LE(2Mbps) **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.45	-16.45	-16.45

Summary

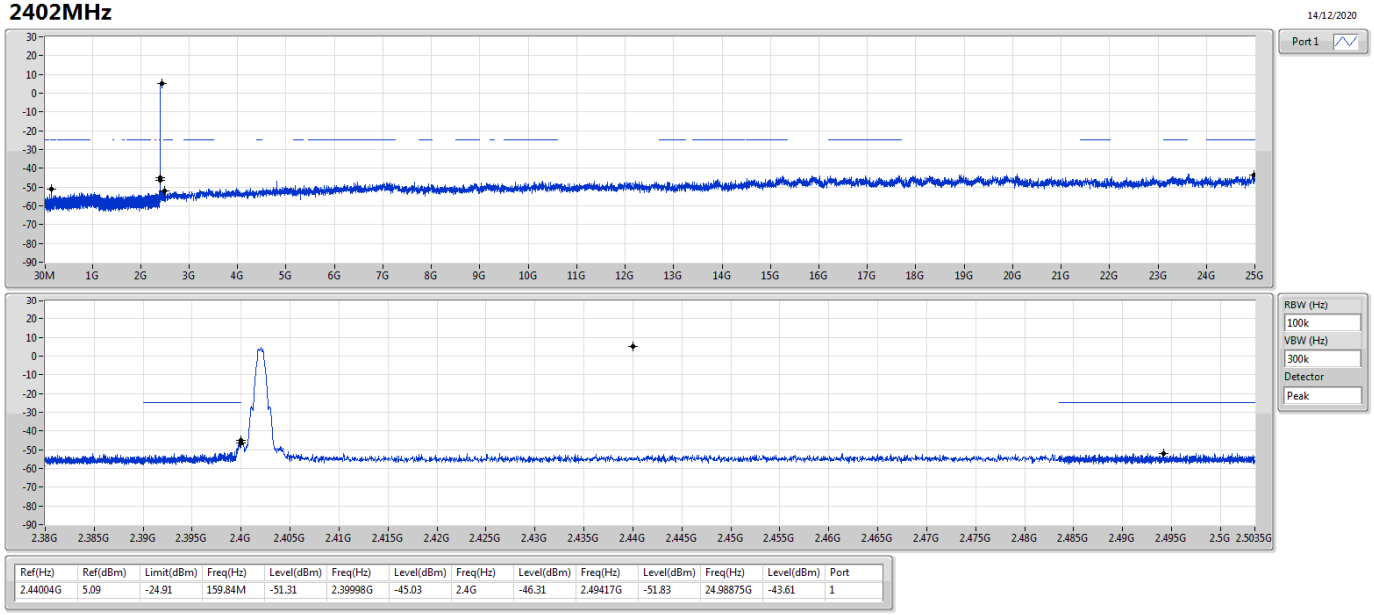
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44004G	5.09	-24.91	159.84M	-51.31	2.39998G	-45.03	2.4G	-46.31	2.49417G	-51.83	24.98875G	-43.61	1
BT-LE(2Mbps)	Pass	2.40192G	3.00	-27.00	159.84M	-50.30	2.4G	-28.35	2.4G	-37.92	2.49531G	-50.28	24.67661G	-42.24	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
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44004G	5.09	-24.91	159.84M	-51.31	2.39998G	-45.03	2.4G	-46.31	2.49417G	-51.83	24.98875G	-43.61	1
2440MHz	Pass	2.44004G	5.09	-24.91	159.84M	-50.31	2.39057G	-51.90	2.4835G	-54.12	2.48589G	-51.56	17.60146G	-43.07	1
2480MHz	Pass	2.44004G	5.09	-24.91	159.84M	-50.52	2.39986G	-51.53	2.4G	-53.12	2.48377G	-51.45	23.27058G	-42.17	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40192G	3.00	-27.00	159.84M	-50.30	2.4G	-28.35	2.4G	-37.92	2.49531G	-50.28	24.67661G	-42.24	1
2440MHz	Pass	2.40192G	3.00	-27.00	159.84M	-52.30	2.39864G	-52.35	2.4835G	-54.41	2.48578G	-51.29	16.59756G	-43.11	1
2480MHz	Pass	2.40192G	3.00	-27.00	159.84M	-49.92	2.39997G	-51.69	2.4G	-53.76	2.4859G	-50.18	16.21512G	-43.15	1

BT-LE(1Mbps) **CSE NdB**

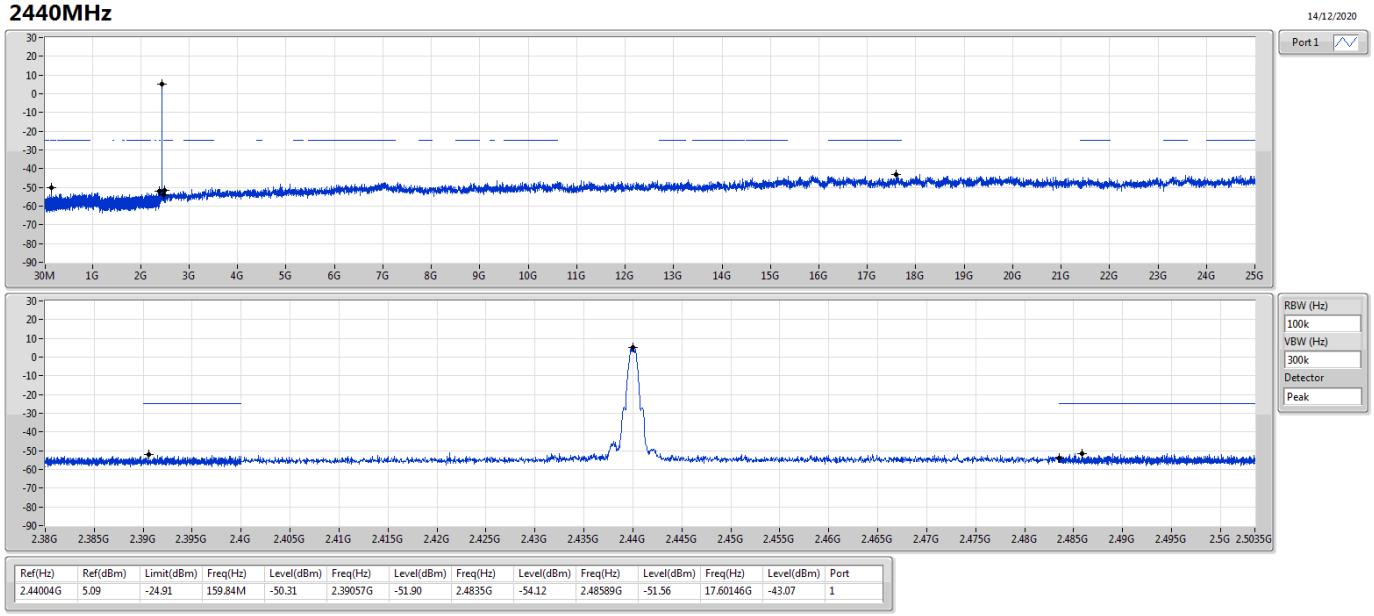
2402MHz



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
2.44004G	5.09	-24.91	159.84M	-51.31	2.39998G	-45.03	2.4G	-46.31	2.49417G	-51.83	24.98875G	-43.61	1

BT-LE(1Mbps) **CSE NdB**

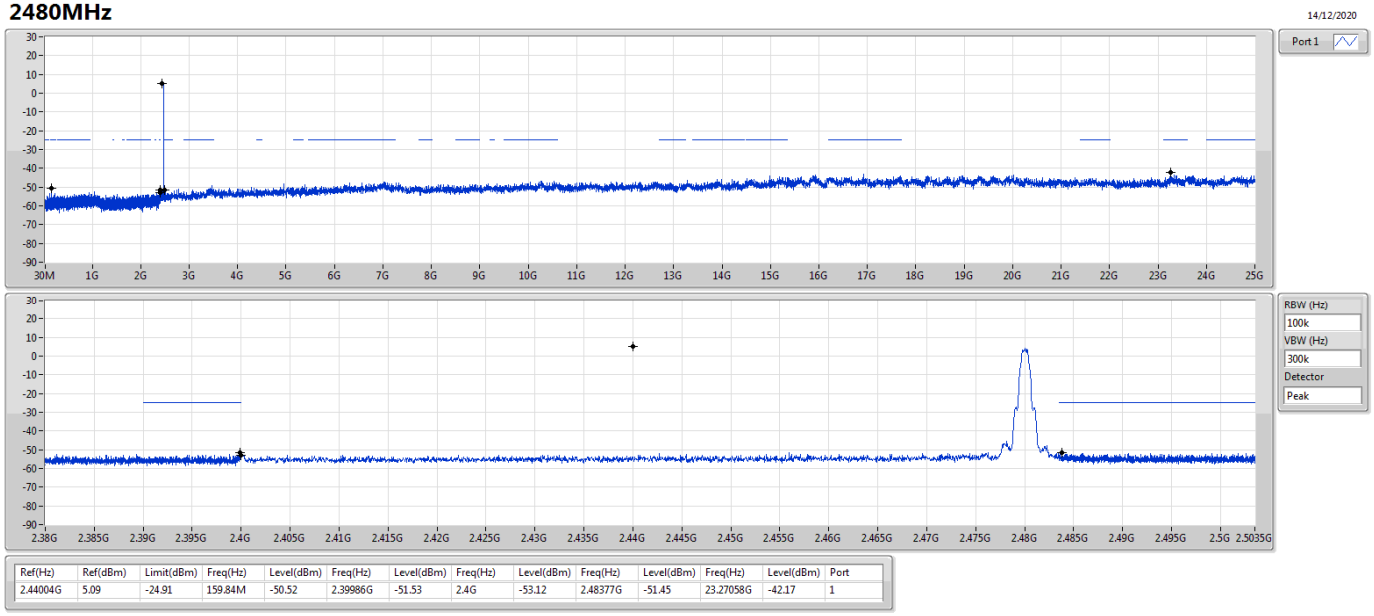
2440MHz



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
2.44004G	5.09	-24.91	159.84M	-50.31	2.39057G	-51.90	2.4835G	-54.12	2.48589G	-51.56	17.60146G	-43.07	1

BT-LE(1Mbps) **CSE NdB**

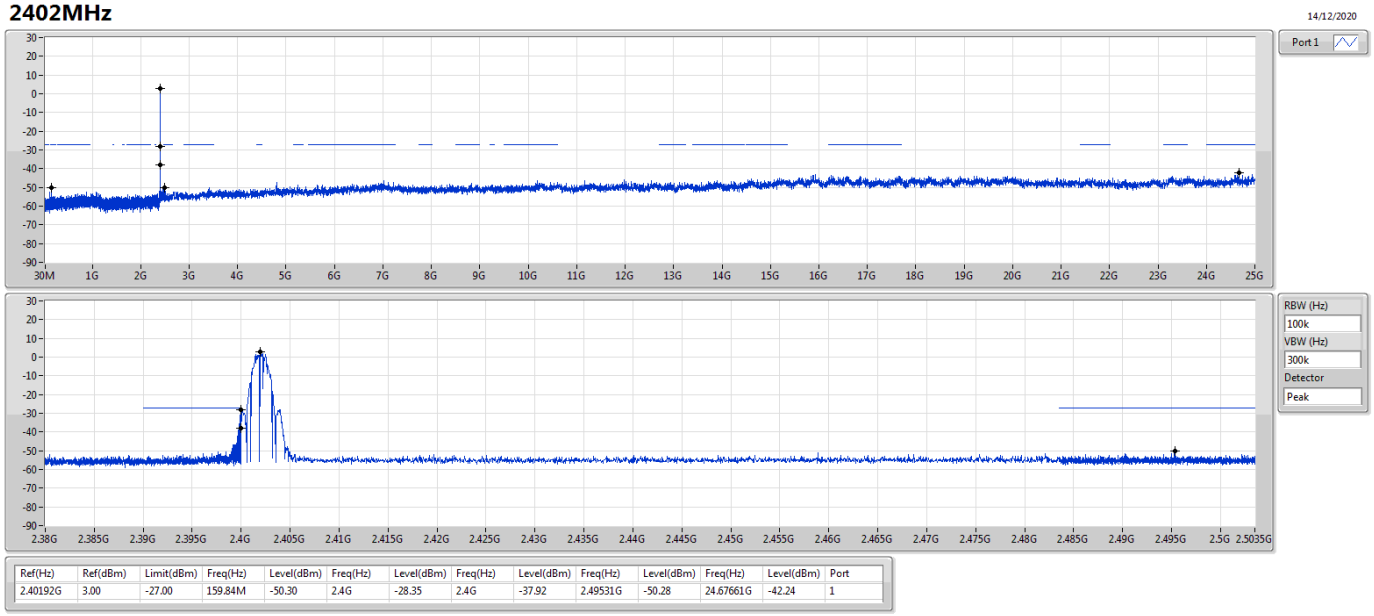
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44004G	5.09	-24.91	159.84M	-50.52	2.39986G	-51.53	2.4G	-53.12	2.48377G	-51.45	23.27058G	-42.17	1

BT-LE(2Mbps) **CSE NdB**

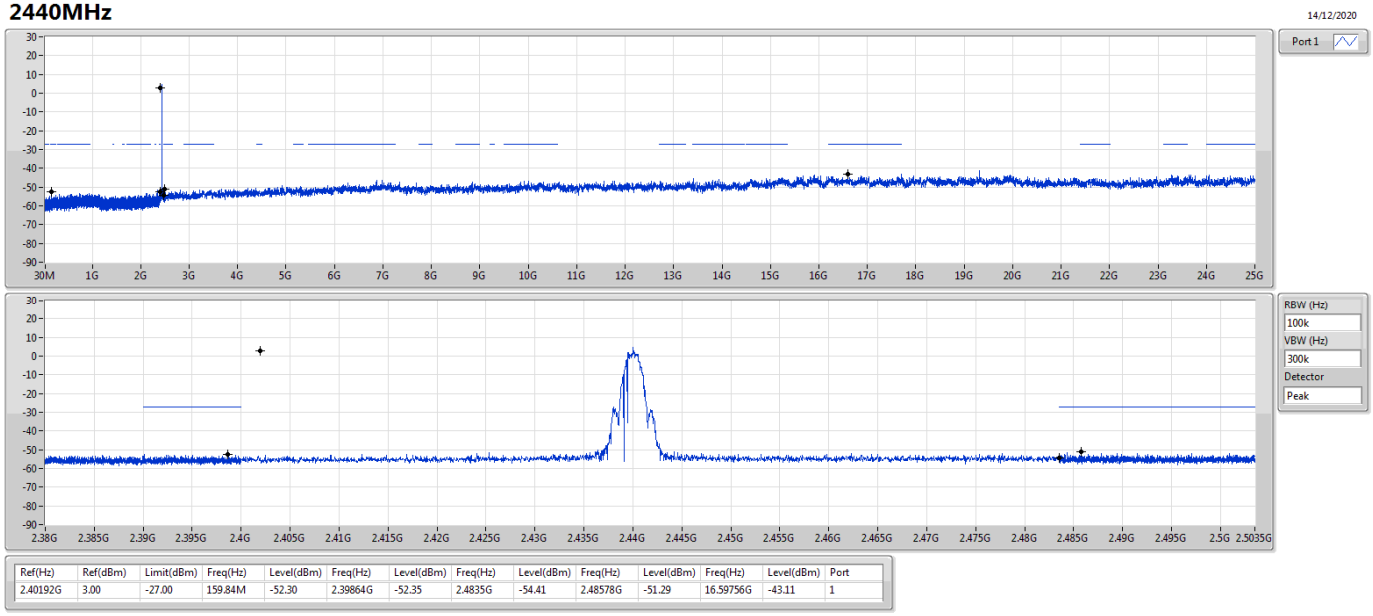
2402MHz



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
2.40192G	3.00	-27.00	159.84M	-50.30	2.4G	-28.35	2.4G	-37.92	2.49531G	-50.28	24.67661G	-42.24	1

BT-LE(2Mbps) **CSE NdB**

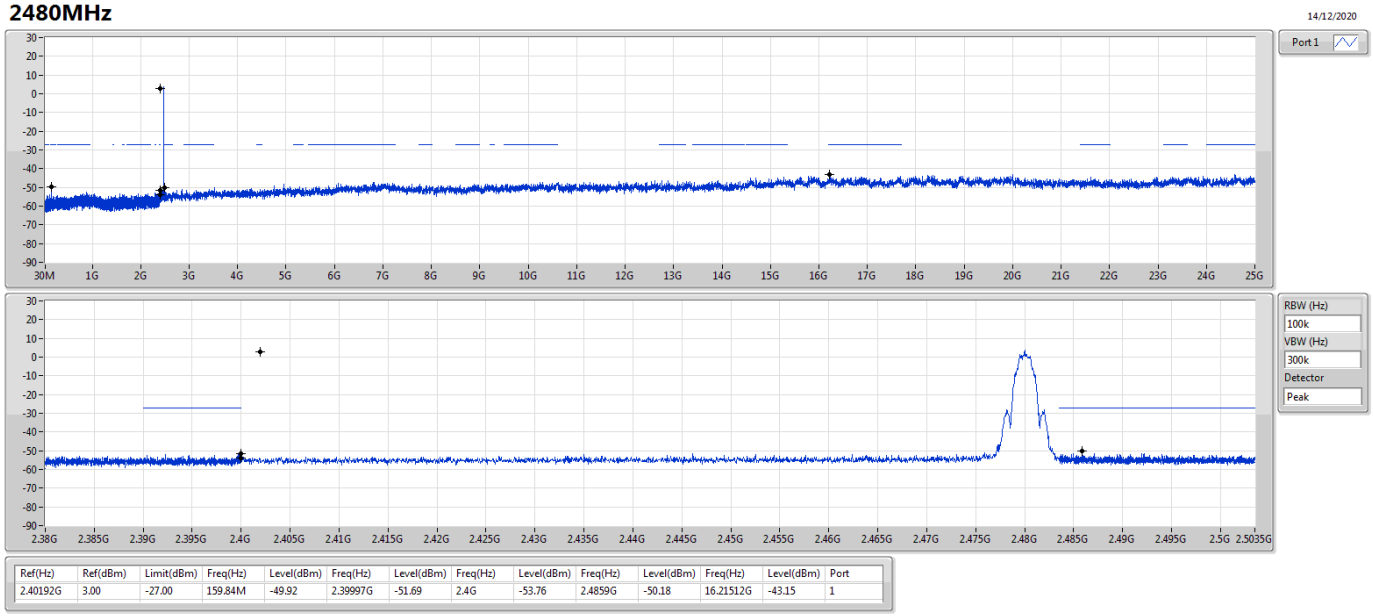
2440MHz



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
2.40192G	3.00	-27.00	159.84M	-52.30	2.39864G	-52.35	2.4835G	-54.41	2.48578G	-51.29	16.59756G	-43.11	1

BT-LE(2Mbps) **CSE NdB**

2480MHz



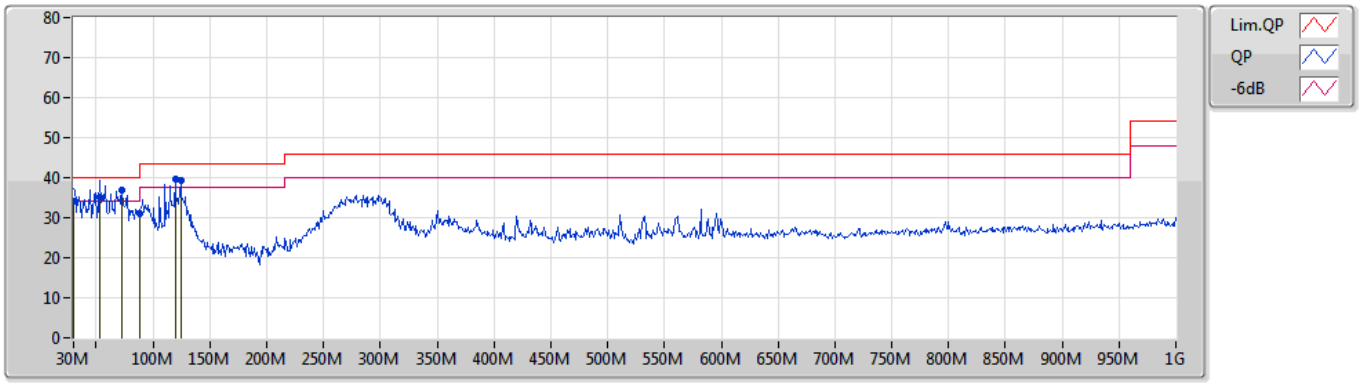
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40192G	3.00	-27.00	159.84M	-49.92	2.39997G	-51.69	2.4G	-53.76	2.4859G	-50.18	16.21512G	-43.15	1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	PK	72.68M	36.85	40.00	-3.15	Vertical

Mode 2

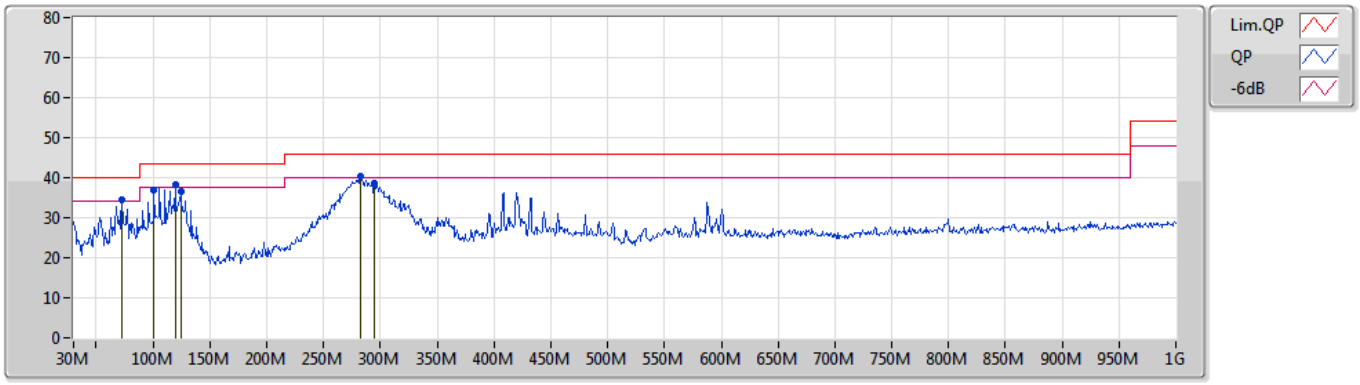
16/12/2020



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/m)	(dB/m)	(dB)	(dB)
QP	30M	34.30	40.00	-5.70	-6.50	3	Vertical	110	1.25	-	40.80	24.17	0.60	31.27
QP	53.28M	35.01	40.00	-4.99	-17.64	3	Vertical	177	1.00	-	52.65	13.18	0.77	31.59
PK	72.68M	36.85	40.00	-3.15	-18.63	3	Vertical	149	1.25	"Worst"	55.48	12.19	0.90	31.72
PK	88M	31.17	43.50	-12.33	-16.31	3	Vertical	96	1.25	-	47.48	14.39	1.00	31.70
PK	119.24M	39.70	43.50	-3.80	-12.53	3	Vertical	270	1.00	-	52.23	18.03	1.20	31.76
PK	124.09M	39.27	43.50	-4.23	-12.55	3	Vertical	237	1.00	-	51.82	17.98	1.22	31.75

Mode 2

16/12/2020



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/m)	(dB/m)	(dB)	(dB)
PK	72.68M	34.65	40.00	-5.35	-18.63	3	Horizontal	43	3.00	-	53.28	12.19	0.90	31.72
PK	100.81M	36.91	43.50	-6.59	-13.76	3	Horizontal	360	2.00	-	50.67	16.82	1.10	31.68
PK	119.24M	38.43	43.50	-5.07	-12.53	3	Horizontal	136	3.00	"Worst"	50.96	18.03	1.20	31.76
PK	124.09M	36.58	43.50	-6.92	-12.55	3	Horizontal	169	3.00	-	49.13	17.98	1.22	31.75
PK	282.2M	40.46	46.00	-5.54	-11.30	3	Horizontal	88	1.50	-	51.76	18.68	1.83	31.81
PK	294.81M	38.71	46.00	-7.29	-10.99	3	Horizontal	69	1.00	-	49.70	18.95	1.88	31.82

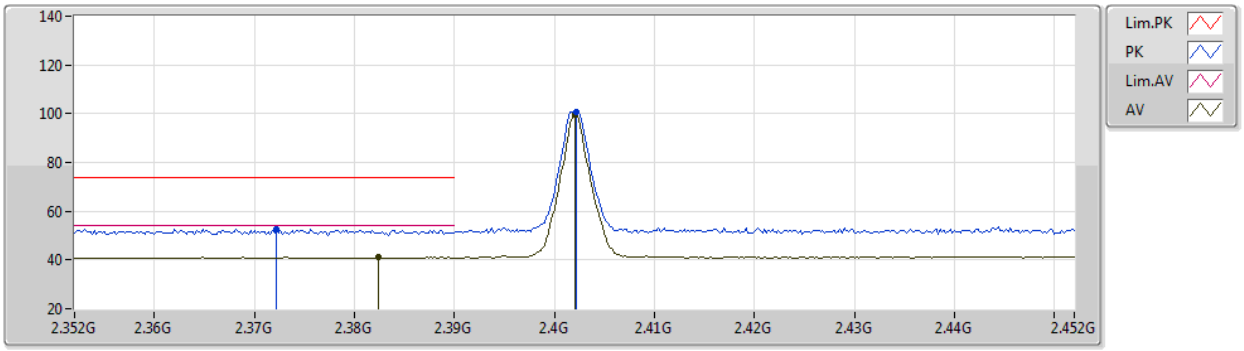
Test Mode: Mode 1
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	AV	2.4835G	44.68	54.00	-9.32	3	Vertical	83	1.25	-

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



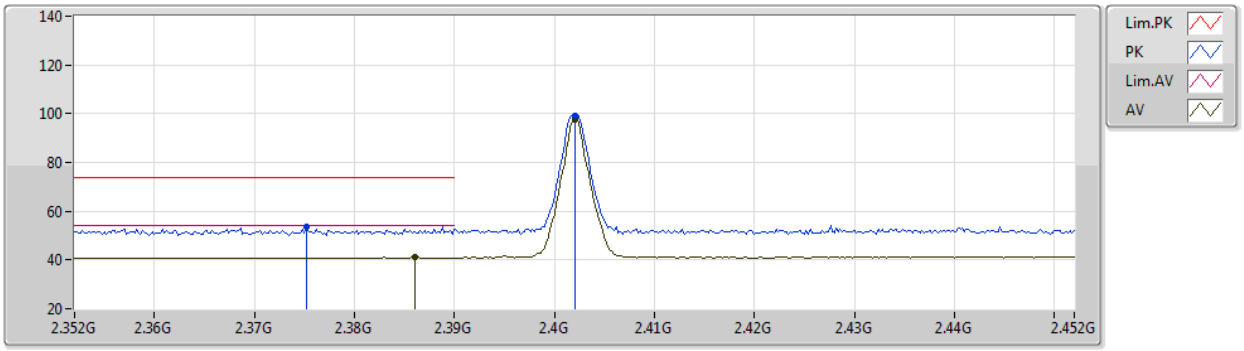
EUT X_1TX
Setting Default
01-A-K-3

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	2.3722G	52.84	74.00	-21.16	23.33	3	Vertical	86	1.59	-	27.34	2.17	-
AV	2.3824G	41.13	54.00	-12.87	11.59	3	Vertical	86	1.59	-	27.36	2.18	-
PK	2.4022G	100.93	Inf	-Inf	71.33	3	Vertical	86	1.59	-	27.40	2.20	-
AV	2.402G	99.48	Inf	-Inf	69.88	3	Vertical	86	1.59	-	27.40	2.20	-

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



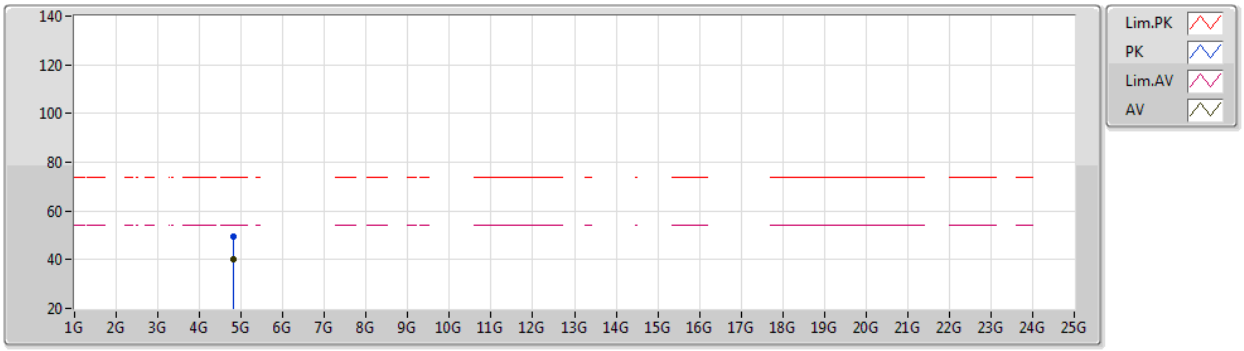
EUT X_1TX
Setting Default
01-A-K-3

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	2.3752G	53.76	74.00	-20.24	24.23	3	Horizontal	44	1.10	-	27.35	2.18	-
AV	2.386G	40.98	54.00	-13.02	11.42	3	Horizontal	44	1.10	-	27.37	2.19	-
PK	2.402G	99.21	Inf	-Inf	69.61	3	Horizontal	44	1.10	-	27.40	2.20	-
AV	2.402G	97.65	Inf	-Inf	68.05	3	Horizontal	44	1.10	-	27.40	2.20	-

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



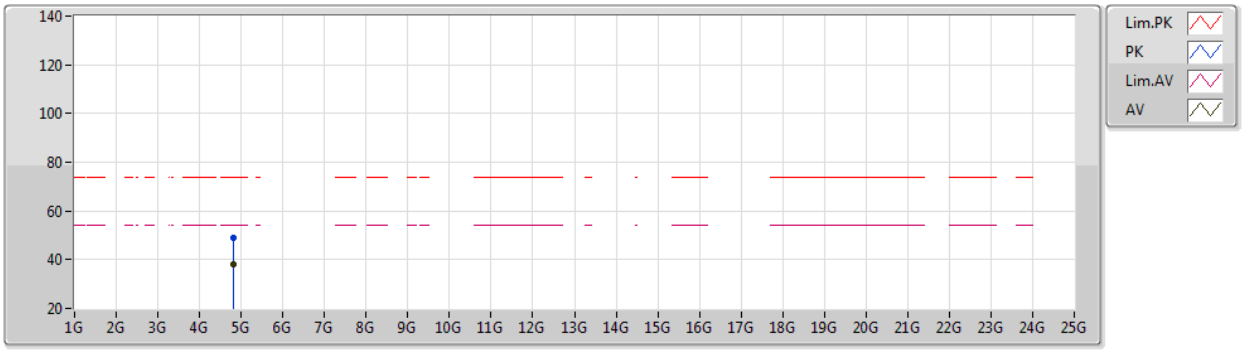
EUT X_1TX
Setting Default
01-A-K-3

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	4.80356G	49.49	74.00	-24.51	47.11	3	Vertical	125	2.47	-	32.12	5.00	34.74
AV	4.80401G	40.01	54.00	-13.99	37.63	3	Vertical	125	2.47	-	32.12	5.00	34.74

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



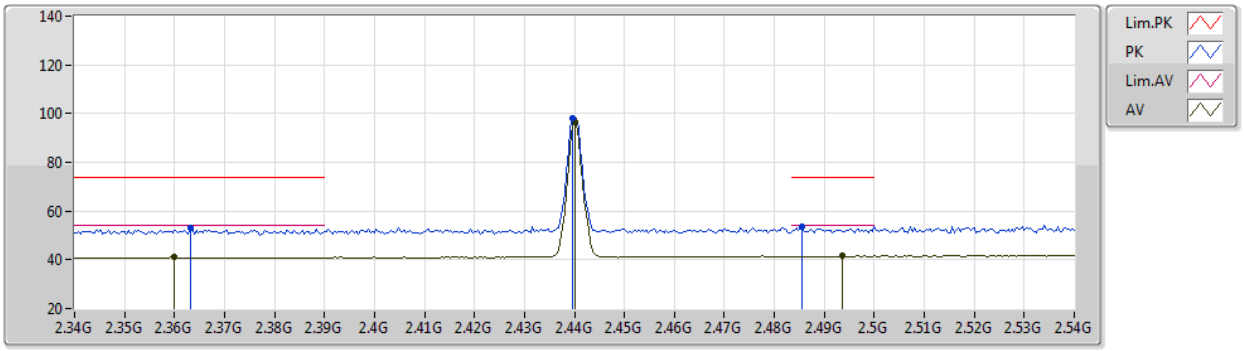
EUT X_1TX
Setting Default
01-A-K-3

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	4.80357G	48.78	74.00	-25.22	46.40	3	Horizontal	60	1.00	-	32.12	5.00	34.74
AV	4.80412G	38.02	54.00	-15.98	35.64	3	Horizontal	60	1.00	-	32.12	5.00	34.74

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



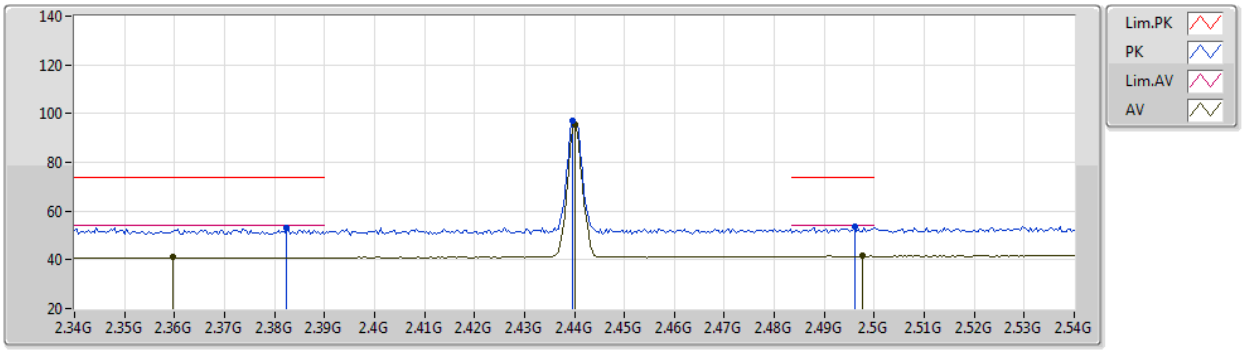
EUT X_1TX
Setting Default
01-A-K-3

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	2.3632G	53.01	74.00	-20.99	23.52	3	Vertical	87	1.72	-	27.33	2.16	-
AV	2.36G	41.39	54.00	-12.61	11.91	3	Vertical	87	1.72	-	27.32	2.16	-
PK	2.4396G	98.19	Inf	-Inf	68.47	3	Vertical	87	1.72	-	27.48	2.24	-
AV	2.44G	96.75	Inf	-Inf	67.03	3	Vertical	87	1.72	-	27.48	2.24	-
PK	2.4856G	53.61	74.00	-20.39	23.61	3	Vertical	87	1.72	-	27.71	2.29	-
AV	2.4936G	41.68	54.00	-12.32	11.63	3	Vertical	87	1.72	-	27.76	2.29	-

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



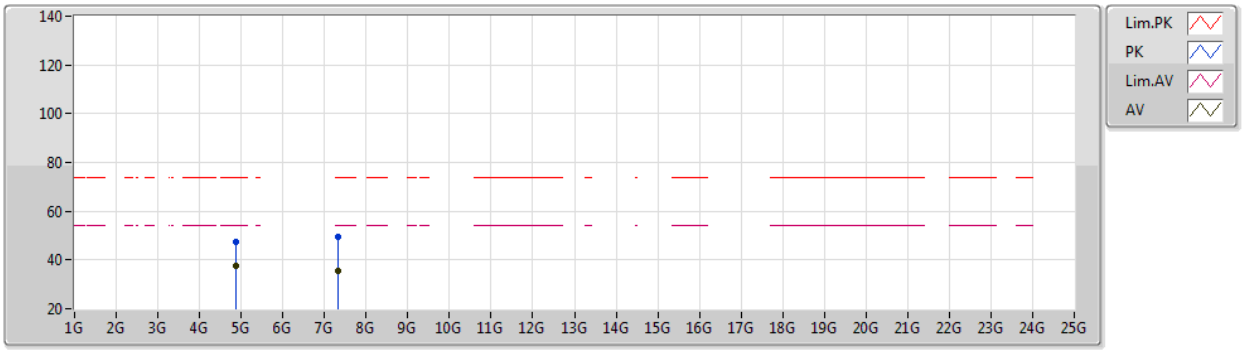
EUT X_1TX
Setting Default
01-A-K-3

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	2.3824G	53.18	74.00	-20.82	23.64	3	Horizontal	44	1.06	-	27.36	2.18	-
AV	2.3596G	41.17	54.00	-12.83	11.69	3	Horizontal	44	1.06	-	27.32	2.16	-
PK	2.4396G	96.83	Inf	-Inf	67.11	3	Horizontal	44	1.06	-	27.48	2.24	-
AV	2.44G	95.32	Inf	-Inf	65.60	3	Horizontal	44	1.06	-	27.48	2.24	-
PK	2.496G	53.76	74.00	-20.24	23.68	3	Horizontal	44	1.06	-	27.78	2.30	-
AV	2.4976G	41.64	54.00	-12.36	11.55	3	Horizontal	44	1.06	-	27.79	2.30	-

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



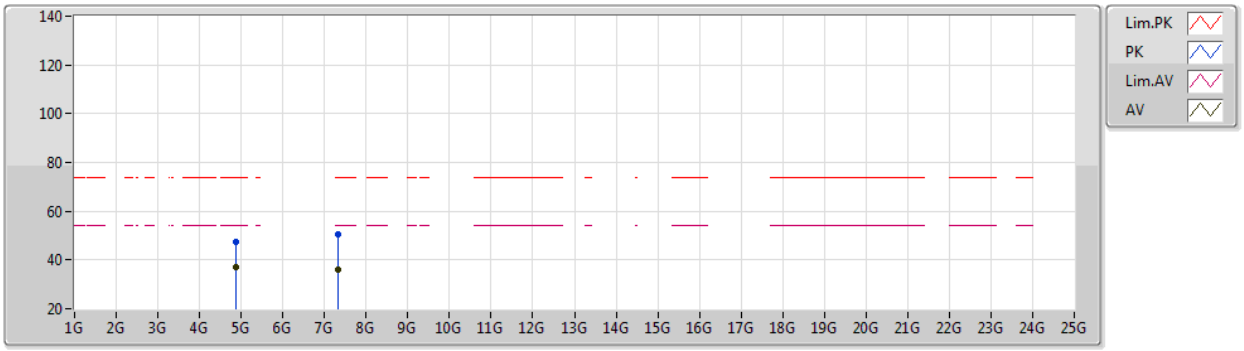
EUT X_1TX
Setting Default
01-A-K-3

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	4.8805G	47.56	74.00	-26.44	44.74	3	Vertical	120	2.20	-	32.46	5.04	34.68
AV	4.87993G	37.74	54.00	-16.26	34.92	3	Vertical	120	2.20	-	32.46	5.04	34.68
PK	7.32013G	49.74	74.00	-24.26	41.12	3	Vertical	227	1.80	-	37.18	6.32	34.88
AV	7.31986G	35.46	54.00	-18.54	26.84	3	Vertical	227	1.80	-	37.18	6.32	34.88

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



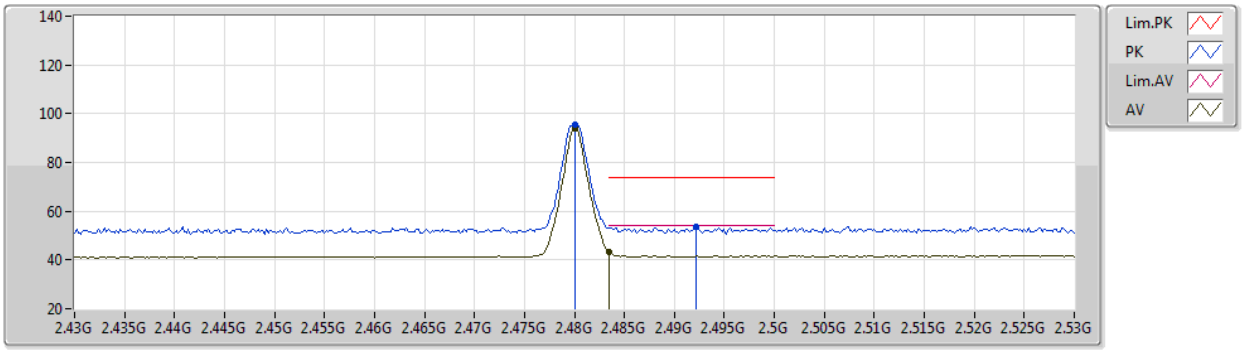
EUT X_1TX
Setting Default
01-A-K-3

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	4.88012G	47.57	74.00	-26.43	44.75	3	Horizontal	62	1.08	-	32.46	5.04	34.68
AV	4.87989G	37.23	54.00	-16.77	34.41	3	Horizontal	62	1.08	-	32.46	5.04	34.68
PK	7.31831G	50.28	74.00	-23.72	41.67	3	Horizontal	63	3.00	-	37.17	6.32	34.88
AV	7.32057G	35.88	54.00	-18.12	27.26	3	Horizontal	63	3.00	-	37.18	6.32	34.88

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



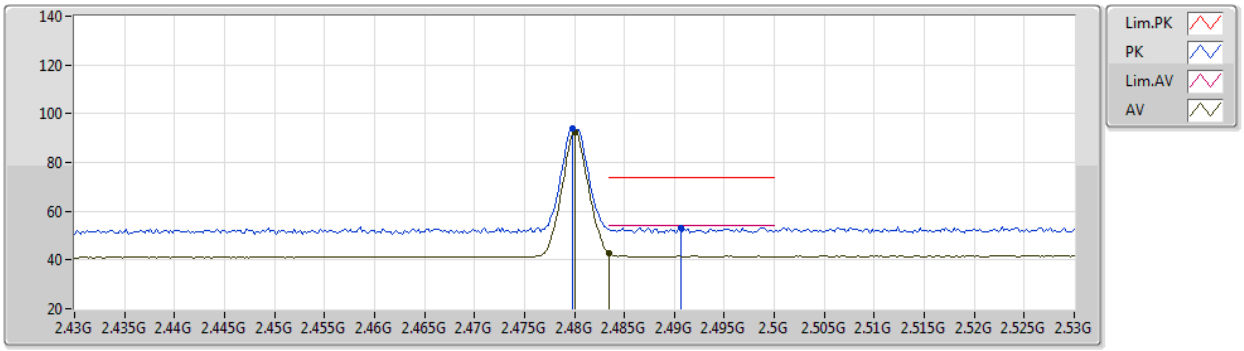
EUT X_1TX
Setting Default
01-A-K-3

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	2.48G	95.26	Inf	-Inf	65.30	3	Vertical	87	1.23	-	27.68	2.28	-
AV	2.48G	93.71	Inf	-Inf	63.75	3	Vertical	87	1.23	-	27.68	2.28	-
PK	2.4922G	53.38	74.00	-20.62	23.34	3	Vertical	87	1.23	-	27.75	2.29	-
AV	2.4835G	43.46	54.00	-10.54	13.48	3	Vertical	87	1.23	-	27.70	2.28	-

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



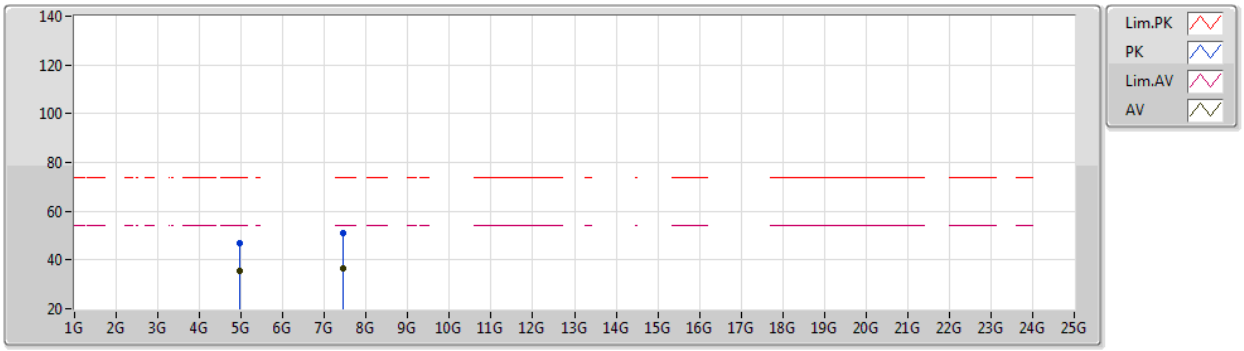
EUT X_1TX
Setting Default
01-A-K-3

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	2.4798G	93.75	Inf	-Inf	63.79	3	Horizontal	29	2.70	-	27.68	2.28	-
AV	2.48G	92.21	Inf	-Inf	62.25	3	Horizontal	29	2.70	-	27.68	2.28	-
PK	2.4906G	53.30	74.00	-20.70	23.27	3	Horizontal	29	2.70	-	27.74	2.29	-
AV	2.4835G	42.82	54.00	-11.18	12.84	3	Horizontal	29	2.70	-	27.70	2.28	-

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



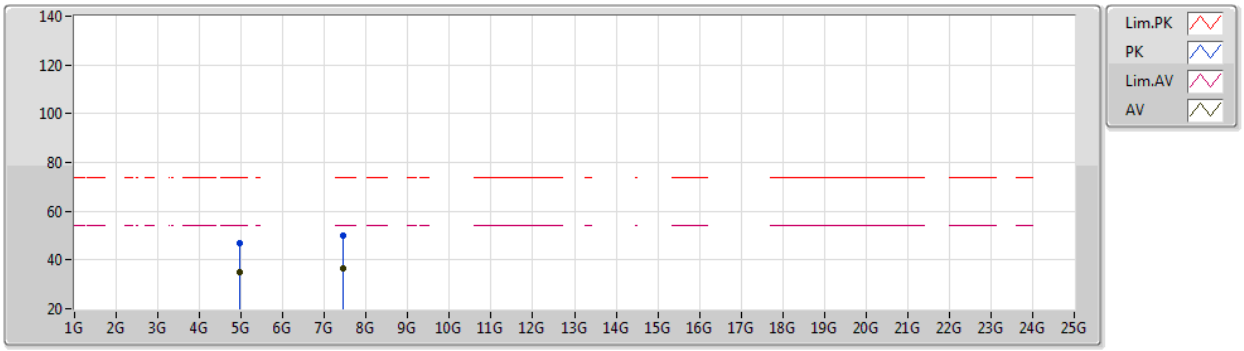
EUT X_1TX
Setting Default
01-A-K-3

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	4.95953G	46.91	74.00	-27.09	43.66	3	Vertical	88	2.13	-	32.78	5.08	34.61
AV	4.96021G	35.56	54.00	-18.44	32.31	3	Vertical	88	2.13	-	32.78	5.08	34.61
PK	7.44099G	50.92	74.00	-23.08	42.23	3	Vertical	303	2.99	-	37.22	6.38	34.91
AV	7.43863G	36.46	54.00	-17.54	27.77	3	Vertical	303	2.99	-	37.22	6.38	34.91

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



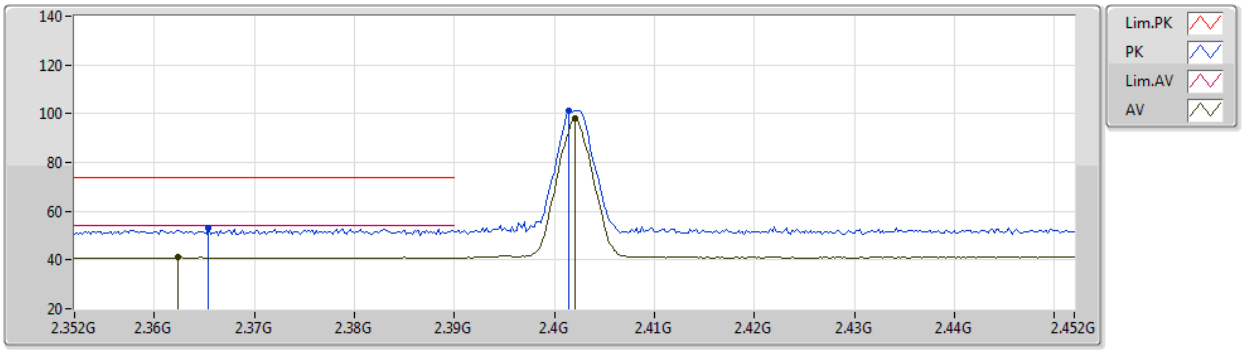
EUT X_1TX
Setting Default
01-A-K-3

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	4.96041G	46.83	74.00	-27.17	43.58	3	Horizontal	69	2.72	-	32.78	5.08	34.61
AV	4.96002G	35.06	54.00	-18.94	31.81	3	Horizontal	69	2.72	-	32.78	5.08	34.61
PK	7.44216G	49.97	74.00	-24.03	41.28	3	Horizontal	316	1.80	-	37.22	6.38	34.91
AV	7.43818G	36.52	54.00	-17.48	27.83	3	Horizontal	316	1.80	-	37.22	6.38	34.91

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



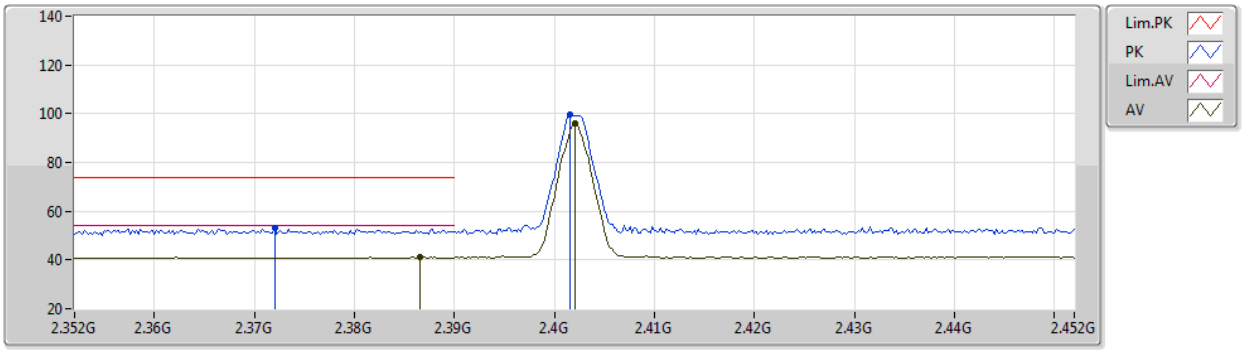
EUT X_1TX
Setting Default
01-A-K-3

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	2.3654G	53.20	74.00	-20.80	23.70	3	Vertical	84	1.59	-	27.33	2.17	-
AV	2.3624G	40.96	54.00	-13.04	11.48	3	Vertical	84	1.59	-	27.32	2.16	-
PK	2.4014G	101.41	Inf	-Inf	71.81	3	Vertical	84	1.59	-	27.40	2.20	-
AV	2.402G	97.90	Inf	-Inf	68.30	3	Vertical	84	1.59	-	27.40	2.20	-

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



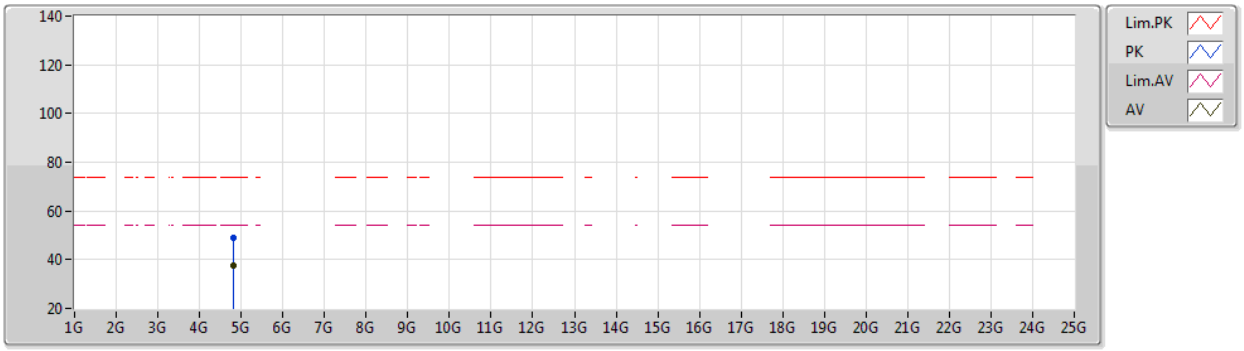
EUT X_1TX
Setting Default
01-A-K-3

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	2.372G	53.29	74.00	-20.71	23.78	3	Horizontal	43	1.09	-	27.34	2.17	-
AV	2.3866G	41.07	54.00	-12.93	11.51	3	Horizontal	43	1.09	-	27.37	2.19	-
PK	2.4016G	99.40	Inf	-Inf	69.80	3	Horizontal	43	1.09	-	27.40	2.20	-
AV	2.402G	95.89	Inf	-Inf	66.29	3	Horizontal	43	1.09	-	27.40	2.20	-

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



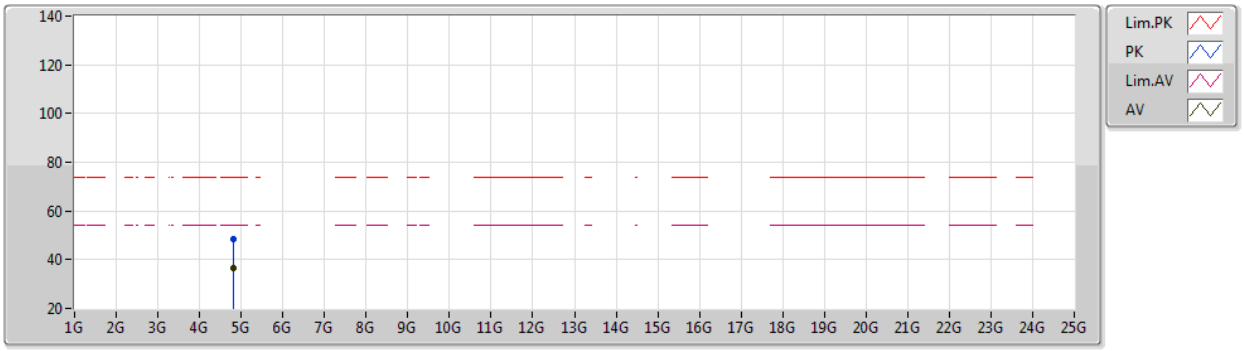
EUT X_1TX
Setting Default
01-A-K-3

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	4.805G	49.22	74.00	-24.78	46.83	3	Vertical	131	2.76	-	32.13	5.00	34.74
AV	4.80306G	37.34	54.00	-16.66	34.96	3	Vertical	131	2.76	-	32.12	5.00	34.74

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



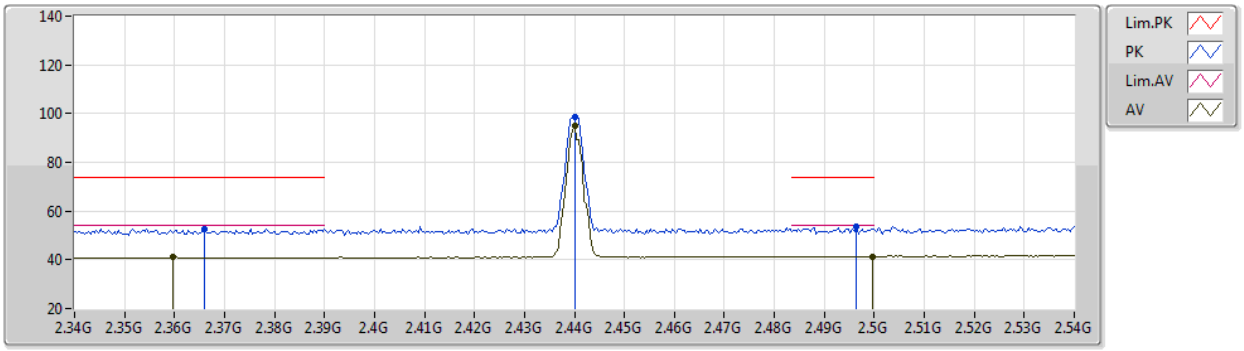
EUT X_1TX
Setting Default
01-A-K-3

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	4.80302G	48.24	74.00	-25.76	45.86	3	Horizontal	180	2.22	-	32.12	5.00	34.74
AV	4.80499G	36.36	54.00	-17.64	33.97	3	Horizontal	180	2.22	-	32.13	5.00	34.74

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



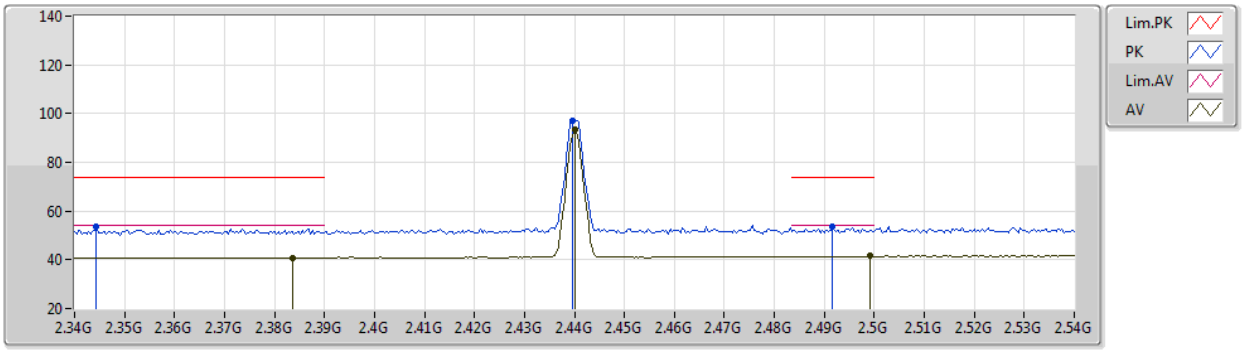
EUT X_1TX
Setting Default
01-A-K-3

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	2.366G	52.76	74.00	-21.24	23.26	3	Vertical	88	1.74	-	27.33	2.17	-
AV	2.3596G	41.18	54.00	-12.82	11.70	3	Vertical	88	1.74	-	27.32	2.16	-
PK	2.44G	98.43	Inf	-Inf	68.71	3	Vertical	88	1.74	-	27.48	2.24	-
AV	2.44G	94.90	Inf	-Inf	65.18	3	Vertical	88	1.74	-	27.48	2.24	-
PK	2.4964G	53.44	74.00	-20.56	23.36	3	Vertical	88	1.74	-	27.78	2.30	-
AV	2.4996G	41.45	54.00	-12.55	11.35	3	Vertical	88	1.74	-	27.80	2.30	-

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



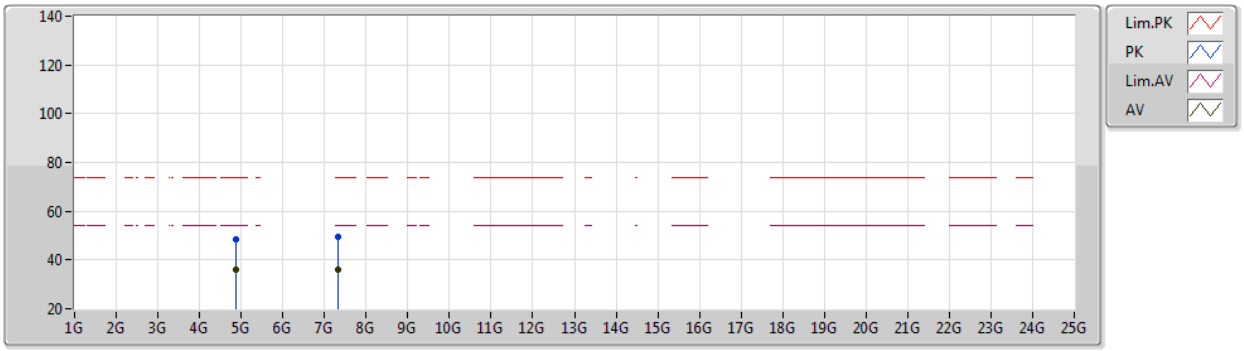
EUT X_1TX
Setting Default
01-A-K-3

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	2.3444G	53.64	74.00	-20.36	24.20	3	Horizontal	45	1.06	-	27.30	2.14	-
AV	2.3836G	40.86	54.00	-13.14	11.31	3	Horizontal	45	1.06	-	27.37	2.18	-
PK	2.4396G	97.01	Inf	-Inf	67.29	3	Horizontal	45	1.06	-	27.48	2.24	-
AV	2.44G	93.41	Inf	-Inf	63.69	3	Horizontal	45	1.06	-	27.48	2.24	-
PK	2.4916G	53.40	74.00	-20.60	23.36	3	Horizontal	45	1.06	-	27.75	2.29	-
AV	2.4992G	41.51	54.00	-12.49	11.41	3	Horizontal	45	1.06	-	27.80	2.30	-

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



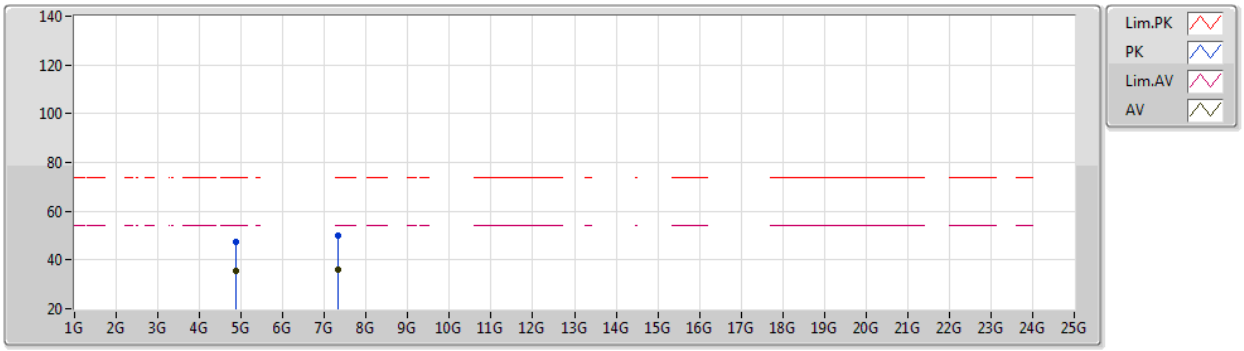
EUT X_1TX
Setting Default
01-A-K-3

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	4.88091G	48.20	74.00	-25.80	45.38	3	Vertical	107	2.25	-	32.46	5.04	34.68
AV	4.88103G	36.00	54.00	-18.00	33.18	3	Vertical	107	2.25	-	32.46	5.04	34.68
PK	7.31798G	49.50	74.00	-24.50	40.89	3	Vertical	48	1.80	-	37.17	6.32	34.88
AV	7.31763G	35.87	54.00	-18.13	27.26	3	Vertical	48	1.80	-	37.17	6.32	34.88

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



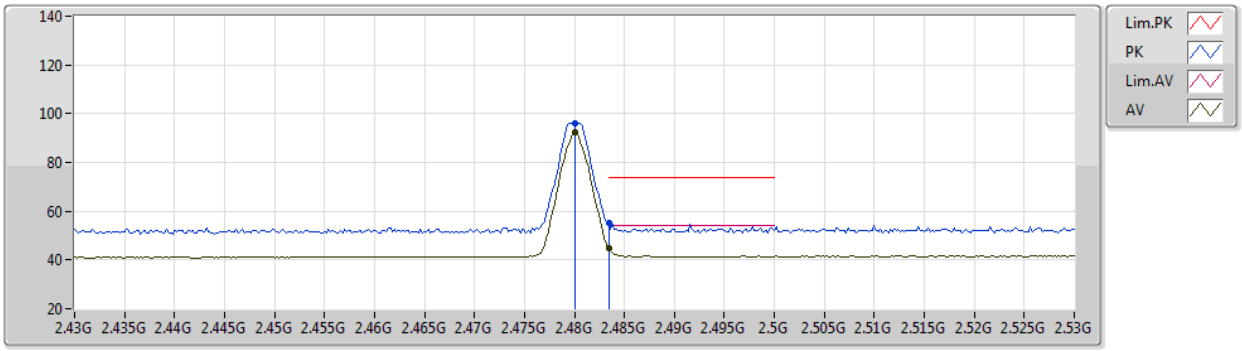
EUT X_1TX
Setting Default
01-A-K-3

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	4.88117G	47.39	74.00	-26.61	44.57	3	Horizontal	62	1.10	-	32.46	5.04	34.68
AV	4.87895G	35.49	54.00	-18.51	32.67	3	Horizontal	62	1.10	-	32.46	5.04	34.68
PK	7.31973G	50.00	74.00	-24.00	41.38	3	Horizontal	252	1.80	-	37.18	6.32	34.88
AV	7.3225G	36.02	54.00	-17.98	27.39	3	Horizontal	252	1.80	-	37.19	6.32	34.88

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



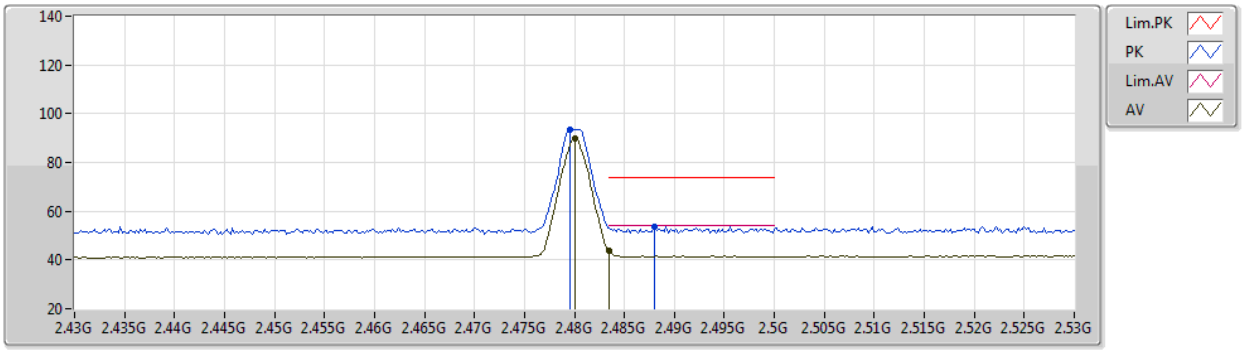
EUT X_1TX
Setting Default
01-A-K-3

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	2.48G	95.92	Inf	-Inf	65.96	3	Vertical	83	1.25	-	27.68	2.28	-
AV	2.48G	92.23	Inf	-Inf	62.27	3	Vertical	83	1.25	-	27.68	2.28	-
PK	2.4835G	55.41	74.00	-18.59	25.43	3	Vertical	83	1.25	-	27.70	2.28	-
AV	2.4835G	44.68	54.00	-9.32	14.70	3	Vertical	83	1.25	-	27.70	2.28	-

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



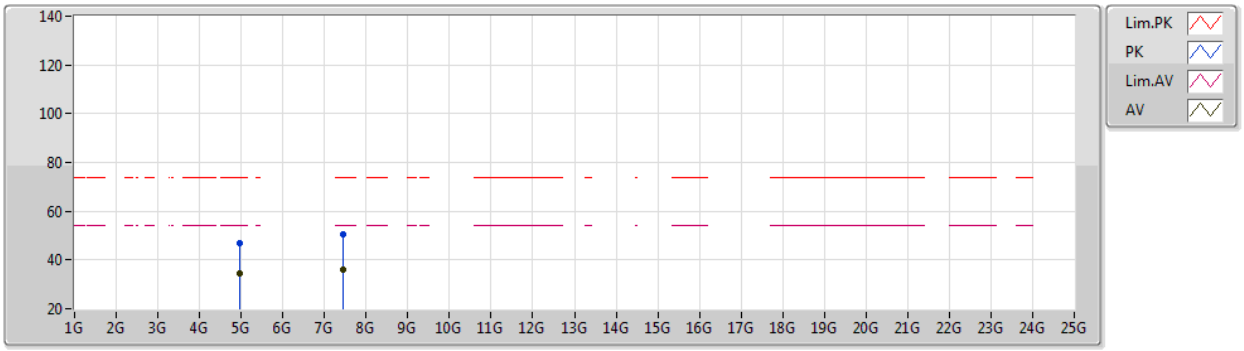
EUT X_1TX
Setting Default
01-A-K-3

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	2.4796G	93.70	Inf	-Inf	63.74	3	Horizontal	27	2.79	-	27.68	2.28	-
AV	2.48G	90.05	Inf	-Inf	60.09	3	Horizontal	27	2.79	-	27.68	2.28	-
PK	2.488G	53.72	74.00	-20.28	23.70	3	Horizontal	27	2.79	-	27.73	2.29	-
AV	2.4835G	43.61	54.00	-10.39	13.63	3	Horizontal	27	2.79	-	27.70	2.28	-

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



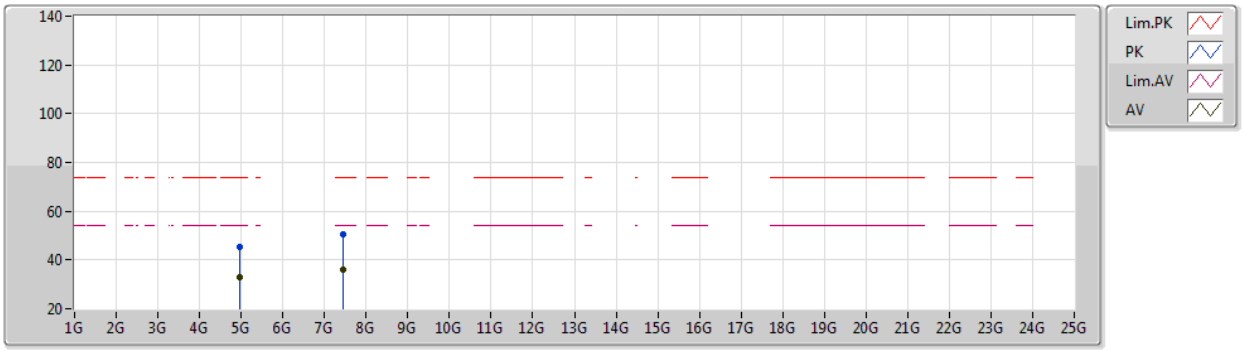
EUT X_1TX
Setting Default
01-A-K-3

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	4.95913G	46.98	74.00	-27.02	43.73	3	Vertical	84	2.10	-	32.78	5.08	34.61
AV	4.95908G	34.29	54.00	-19.71	31.04	3	Vertical	84	2.10	-	32.78	5.08	34.61
PK	7.4389G	50.27	74.00	-23.73	41.58	3	Vertical	302	1.80	-	37.22	6.38	34.91
AV	7.43859G	36.19	54.00	-17.81	27.50	3	Vertical	302	1.80	-	37.22	6.38	34.91

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



EUT X_1TX
Setting Default
01-A-K-3

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	4.96098G	45.23	74.00	-28.77	41.98	3	Horizontal	61	1.01	-	32.78	5.08	34.61
AV	4.96092G	33.01	54.00	-20.99	29.76	3	Horizontal	61	1.01	-	32.78	5.08	34.61
PK	7.44011G	50.62	74.00	-23.38	41.93	3	Horizontal	285	1.42	-	37.22	6.38	34.91
AV	7.43982G	36.29	54.00	-17.71	27.60	3	Horizontal	285	1.42	-	37.22	6.38	34.91

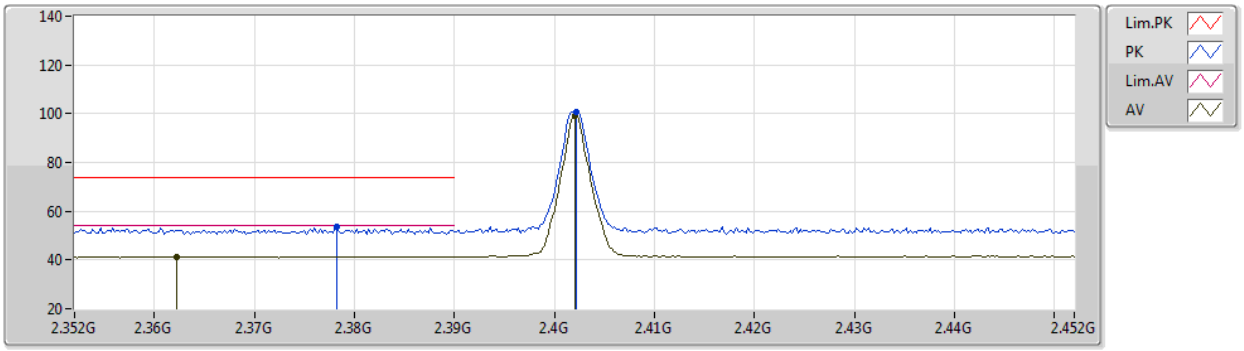
Test Mode: Mode 2
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4835G	48.54	54.00	-5.46	3	Vertical	245	2.39	-

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



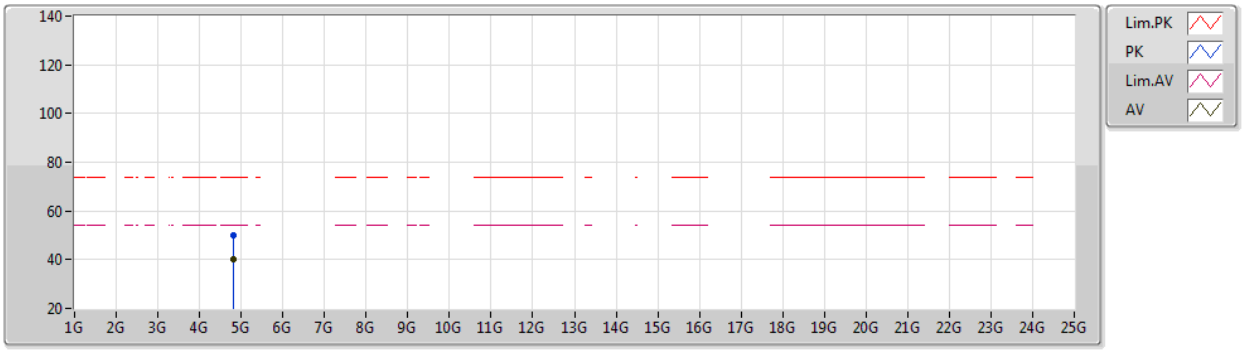
EUT X_1TX
Setting Default
01-A-G-2

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	2.3782G	53.41	74.00	-20.59	23.87	3	Vertical	95	1.93	-	27.36	2.18	-
AV	2.3622G	41.34	54.00	-12.66	11.86	3	Vertical	95	1.93	-	27.32	2.16	-
PK	2.4022G	100.79	Inf	-Inf	71.19	3	Vertical	95	1.93	-	27.40	2.20	-
AV	2.402G	99.26	Inf	-Inf	69.66	3	Vertical	95	1.93	-	27.40	2.20	-

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



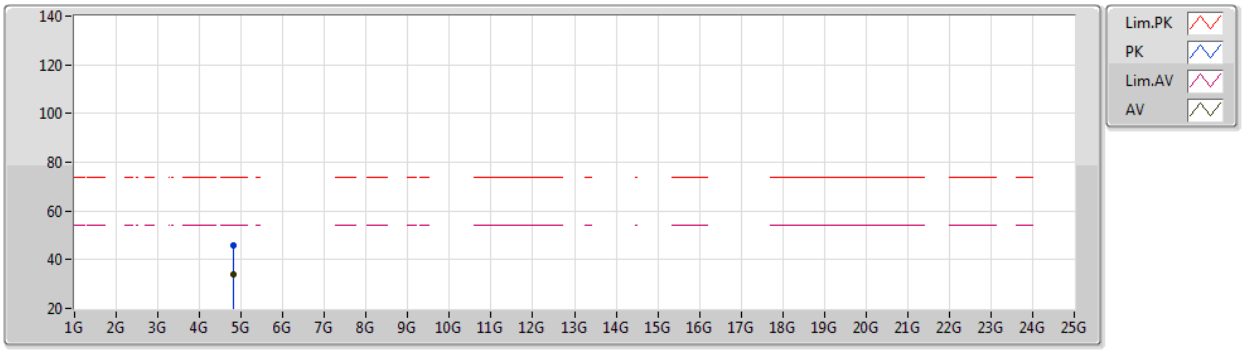
EUT X_1TX
Setting Default
01-A-G-2

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	4.80432G	49.80	74.00	-24.20	47.41	3	Vertical	136	2.41	-	32.13	5.00	34.74
AV	4.80403G	40.22	54.00	-13.78	37.84	3	Vertical	136	2.41	-	32.12	5.00	34.74

BT-LE(1Mbps)

2402MHz_TX

26/11/2020



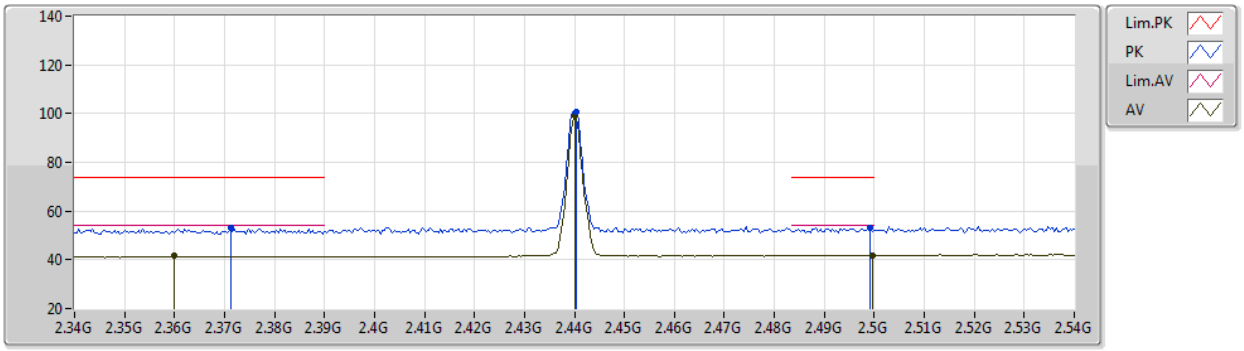
EUT X_1TX
Setting Default
01-A-G-2

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	4.80404G	46.10	74.00	-27.90	43.72	3	Horizontal	199	1.73	-	32.12	5.00	34.74
AV	4.80418G	34.20	54.00	-19.80	31.81	3	Horizontal	199	1.73	-	32.13	5.00	34.74

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



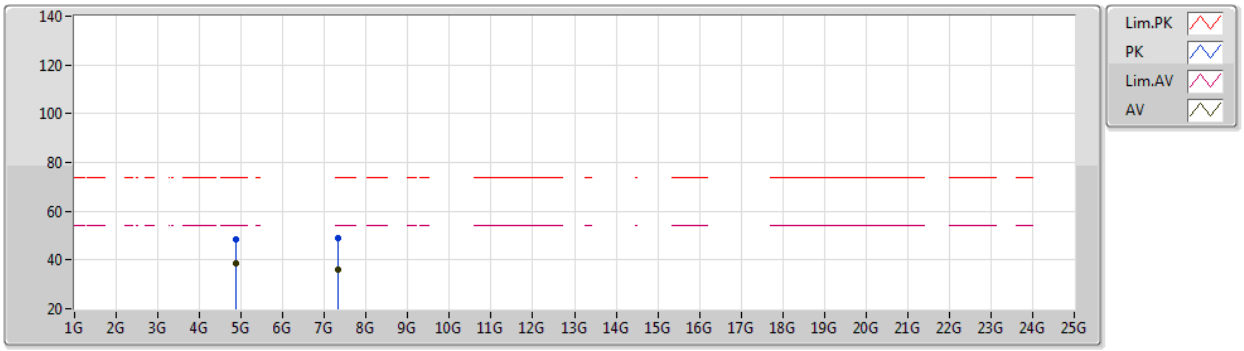
EUT X_1TX
Setting Default
01-A-G-2

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	2.3712G	52.89	74.00	-21.11	23.38	3	Vertical	57	2.17	-	27.34	2.17	-
AV	2.36G	41.52	54.00	-12.48	12.04	3	Vertical	57	2.17	-	27.32	2.16	-
PK	2.4404G	100.92	Inf	-Inf	71.20	3	Vertical	57	2.17	-	27.48	2.24	-
AV	2.44G	99.34	Inf	-Inf	69.62	3	Vertical	57	2.17	-	27.48	2.24	-
PK	2.4992G	53.07	74.00	-20.93	22.97	3	Vertical	57	2.17	-	27.80	2.30	-
AV	2.4996G	41.96	54.00	-12.04	11.86	3	Vertical	57	2.17	-	27.80	2.30	-

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



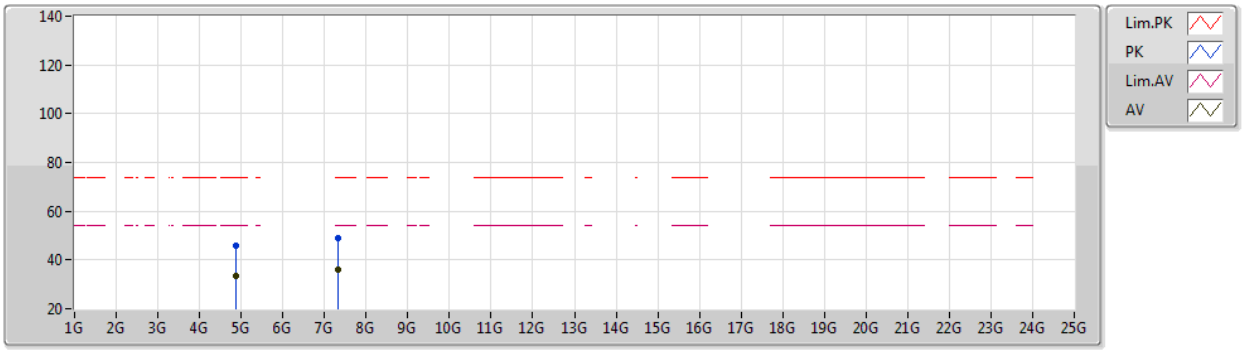
EUT X_1TX
Setting Default
01-A-G-2

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	4.87966G	48.22	74.00	-25.78	45.40	3	Vertical	135	2.45	-	32.46	5.04	34.68
AV	4.87998G	38.43	54.00	-15.57	35.61	3	Vertical	135	2.45	-	32.46	5.04	34.68
PK	7.31839G	49.11	74.00	-24.89	40.50	3	Vertical	245	1.02	-	37.17	6.32	34.88
AV	7.31845G	36.12	54.00	-17.88	27.51	3	Vertical	245	1.02	-	37.17	6.32	34.88

BT-LE(1Mbps)

2440MHz_TX

26/11/2020



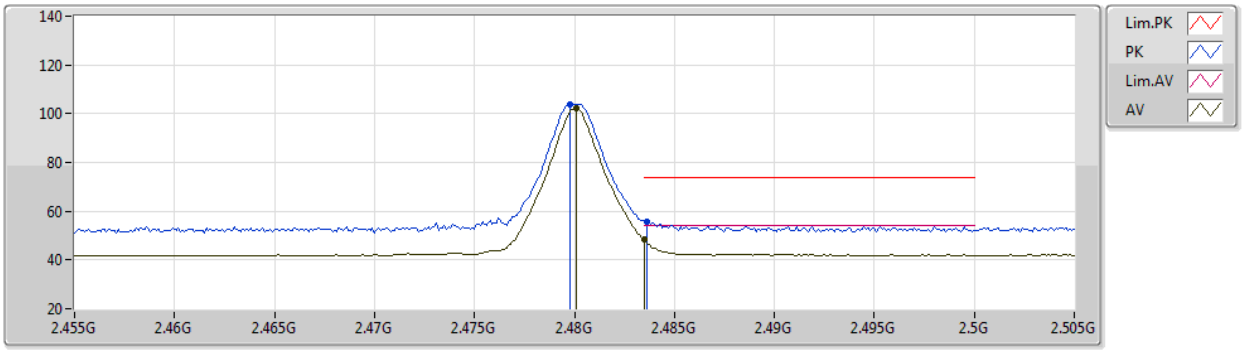
EUT X_1TX
Setting Default
01-A-G-2

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	4.87966G	45.70	74.00	-28.30	42.88	3	Horizontal	181	2.07	-	32.46	5.04	34.68
AV	4.88032G	33.24	54.00	-20.76	30.42	3	Horizontal	181	2.07	-	32.46	5.04	34.68
PK	7.31897G	49.04	74.00	-24.96	40.42	3	Horizontal	68	1.29	-	37.18	6.32	34.88
AV	7.32092G	36.11	54.00	-17.89	27.49	3	Horizontal	68	1.29	-	37.18	6.32	34.88

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



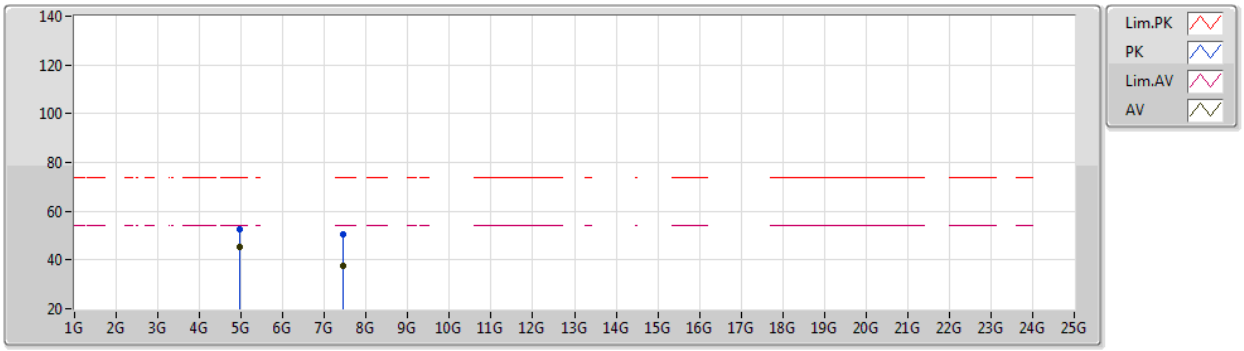
EUT X_1TX
Setting Default
01-A-G-2

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	2.4798G	103.68	Inf	-Inf	73.72	3	Vertical	245	2.39	-	27.68	2.28	-
AV	2.4801G	102.19	Inf	-Inf	72.23	3	Vertical	245	2.39	-	27.68	2.28	-
PK	2.4836G	55.82	74.00	-18.18	25.84	3	Vertical	245	2.39	-	27.70	2.28	-
AV	2.4835G	48.54	54.00	-5.46	18.56	3	Vertical	245	2.39	-	27.70	2.28	-

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



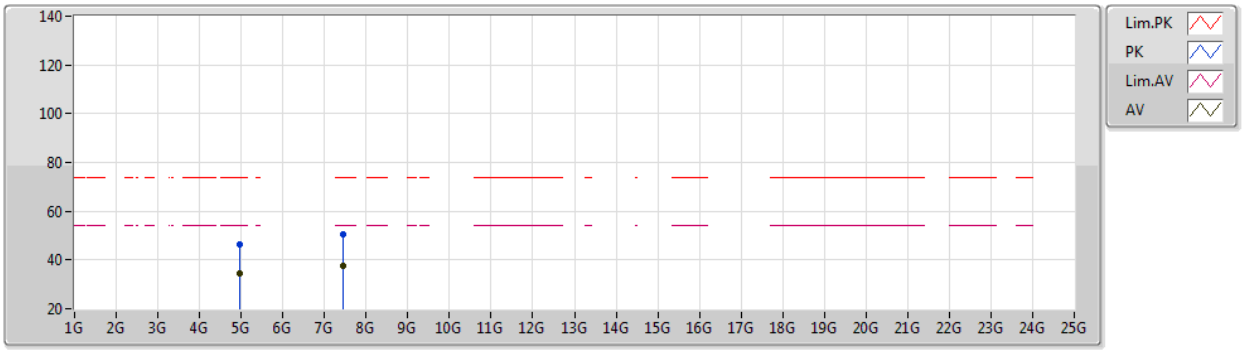
EUT X_1TX
Setting Default
01-A-G-2

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	4.9605G	52.74	74.00	-21.26	49.49	3	Vertical	128	2.52	-	32.78	5.08	34.61
AV	4.96003G	45.11	54.00	-8.89	41.86	3	Vertical	128	2.52	-	32.78	5.08	34.61
PK	7.43774G	50.69	74.00	-23.31	42.00	3	Vertical	297	1.80	-	37.22	6.38	34.91
AV	7.4377G	37.36	54.00	-16.64	28.67	3	Vertical	297	1.80	-	37.22	6.38	34.91

BT-LE(1Mbps)

2480MHz_TX

26/11/2020



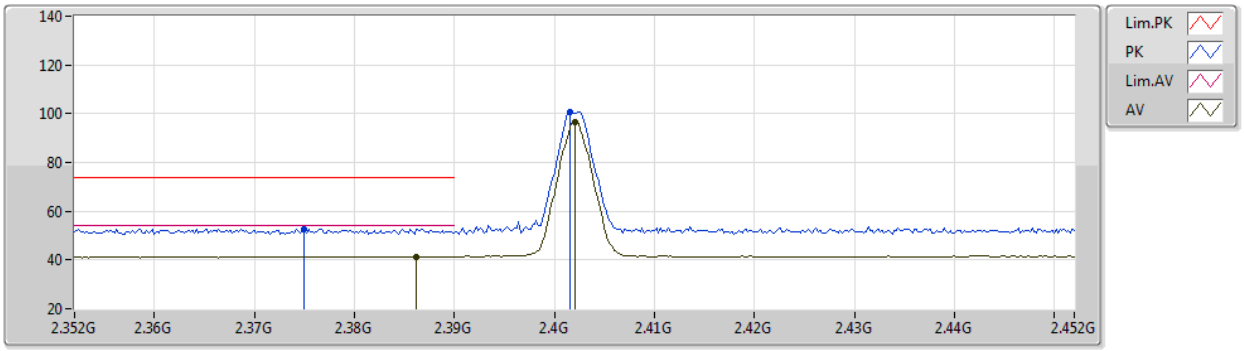
EUT X_1TX
Setting Default
01-A-G-2

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	4.95999G	46.27	74.00	-27.73	43.02	3	Horizontal	44	1.77	-	32.78	5.08	34.61
AV	4.95983G	34.54	54.00	-19.46	31.29	3	Horizontal	44	1.77	-	32.78	5.08	34.61
PK	7.44135G	50.56	74.00	-23.44	41.87	3	Horizontal	11	1.80	-	37.22	6.38	34.91
AV	7.44014G	37.35	54.00	-16.65	28.66	3	Horizontal	11	1.80	-	37.22	6.38	34.91

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



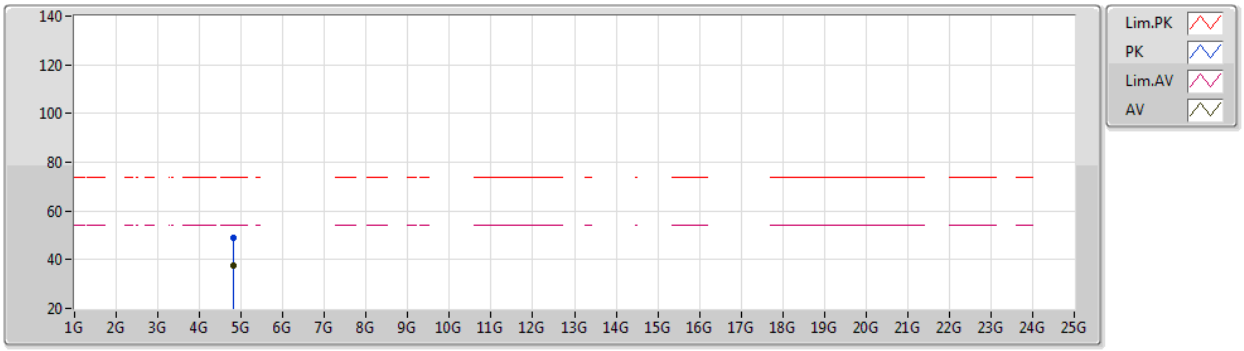
EUT X_1TX
Setting Default
01-A-G-2

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	2.375G	52.81	74.00	-21.19	23.28	3	Vertical	94	1.53	-	27.35	2.18	-
AV	2.3862G	41.35	54.00	-12.65	11.79	3	Vertical	94	1.53	-	27.37	2.19	-
PK	2.4016G	100.67	Inf	-Inf	71.07	3	Vertical	94	1.53	-	27.40	2.20	-
AV	2.402G	96.72	Inf	-Inf	67.12	3	Vertical	94	1.53	-	27.40	2.20	-

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



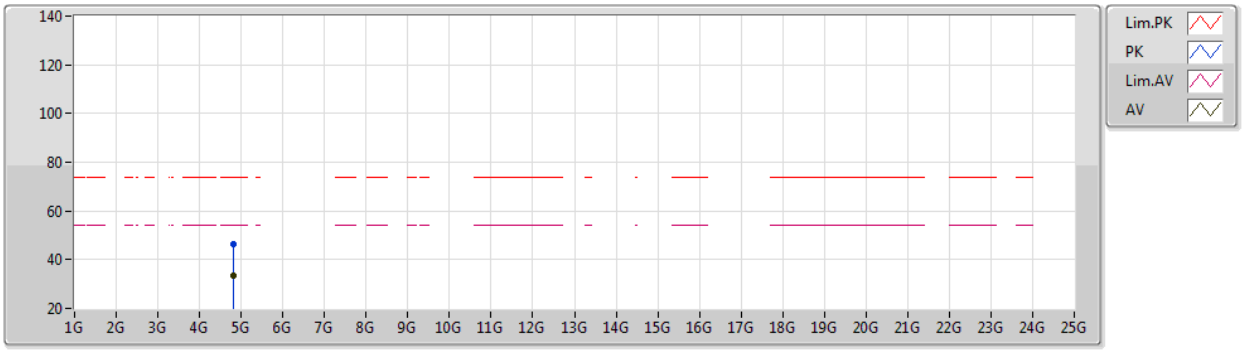
EUT X_1TX
Setting Default
01-A-G-2

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	4.80518G	48.76	74.00	-25.24	46.37	3	Vertical	138	2.36	-	32.13	5.00	34.74
AV	4.80492G	37.76	54.00	-16.24	35.37	3	Vertical	138	2.36	-	32.13	5.00	34.74

BT-LE(2Mbps)

2402MHz_TX

26/11/2020



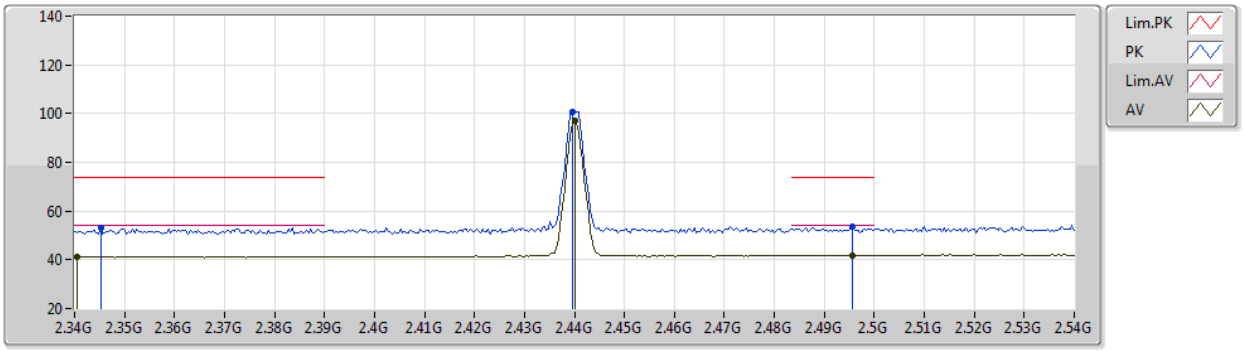
EUT X_1TX
Setting Default
01-A-G-2

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	4.8051G	46.29	74.00	-27.71	43.90	3	Horizontal	197	1.92	-	32.13	5.00	34.74
AV	4.80494G	33.41	54.00	-20.59	31.02	3	Horizontal	197	1.92	-	32.13	5.00	34.74

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



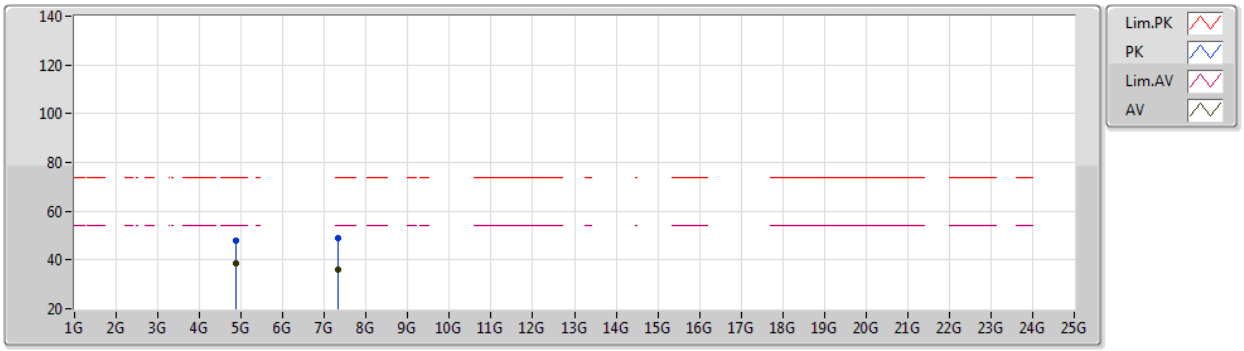
EUT X_1TX
Setting Default
01-A-G-2

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	2.3452G	53.30	74.00	-20.70	23.85	3	Vertical	58	2.16	-	27.30	2.15	-
AV	2.3404G	41.39	54.00	-12.61	11.95	3	Vertical	58	2.16	-	27.30	2.14	-
PK	2.4396G	100.87	Inf	-Inf	71.15	3	Vertical	58	2.16	-	27.48	2.24	-
AV	2.44G	97.32	Inf	-Inf	67.60	3	Vertical	58	2.16	-	27.48	2.24	-
PK	2.4956G	53.43	74.00	-20.57	23.36	3	Vertical	58	2.16	-	27.77	2.30	-
AV	2.4956G	41.86	54.00	-12.14	11.79	3	Vertical	58	2.16	-	27.77	2.30	-

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



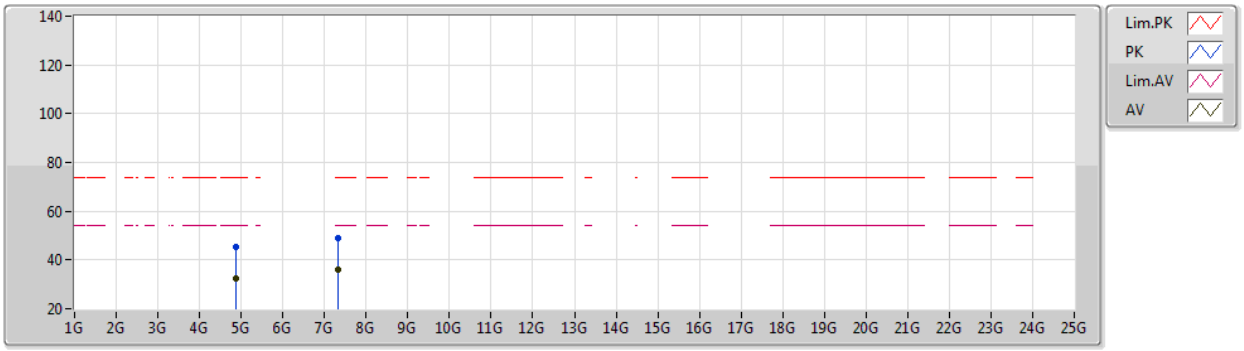
EUT X_1TX
Setting Default
01-A-G-2

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	4.87958G	47.92	74.00	-26.08	45.10	3	Vertical	44	2.84	-	32.46	5.04	34.68
AV	4.88008G	38.39	54.00	-15.61	35.57	3	Vertical	44	2.84	-	32.46	5.04	34.68
PK	7.31854G	48.85	74.00	-25.15	40.24	3	Vertical	122	1.84	-	37.17	6.32	34.88
AV	7.32085G	36.29	54.00	-17.71	27.67	3	Vertical	122	1.84	-	37.18	6.32	34.88

BT-LE(2Mbps)

2440MHz_TX

26/11/2020



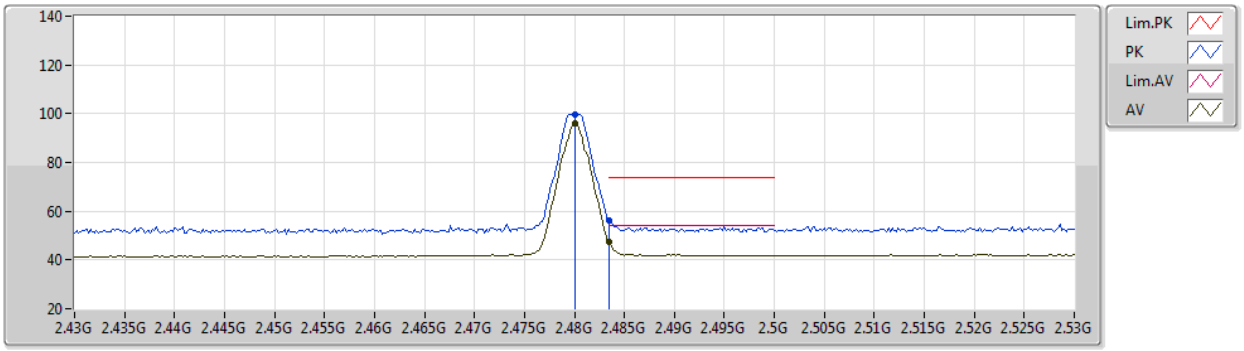
EUT X_1TX
Setting Default
01-A-G-2

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	4.881G	45.57	74.00	-28.43	42.75	3	Horizontal	181	2.09	-	32.46	5.04	34.68
AV	4.87904G	32.42	54.00	-21.58	29.60	3	Horizontal	181	2.09	-	32.46	5.04	34.68
PK	7.32134G	48.94	74.00	-25.06	40.31	3	Horizontal	197	2.82	-	37.19	6.32	34.88
AV	7.31844G	36.03	54.00	-17.97	27.42	3	Horizontal	197	2.82	-	37.17	6.32	34.88

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



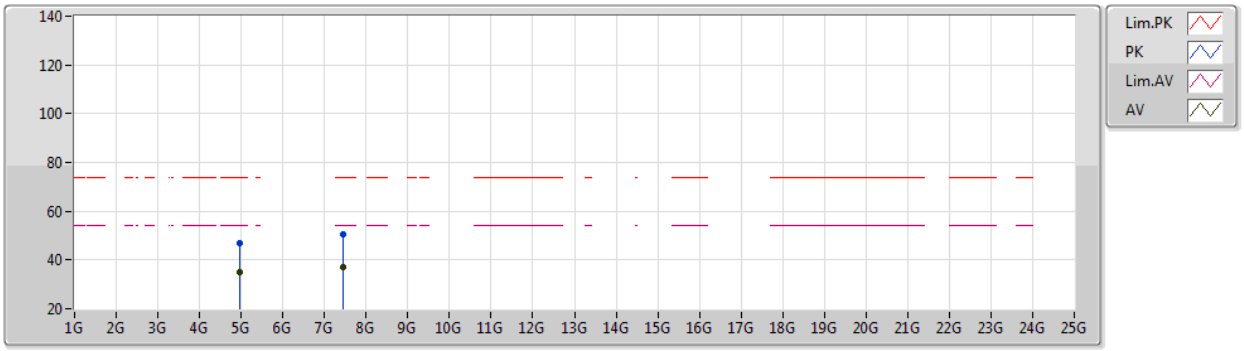
EUT X_1TX
Setting Default
01-A-G-2

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	2.48G	99.69	Inf	-Inf	69.73	3	Vertical	57	1.87	-	27.68	2.28	-
AV	2.48G	96.13	Inf	-Inf	66.17	3	Vertical	57	1.87	-	27.68	2.28	-
PK	2.4835G	56.44	74.00	-17.56	26.46	3	Vertical	57	1.87	-	27.70	2.28	-
AV	2.4835G	47.57	54.00	-6.43	17.59	3	Vertical	57	1.87	-	27.70	2.28	-

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



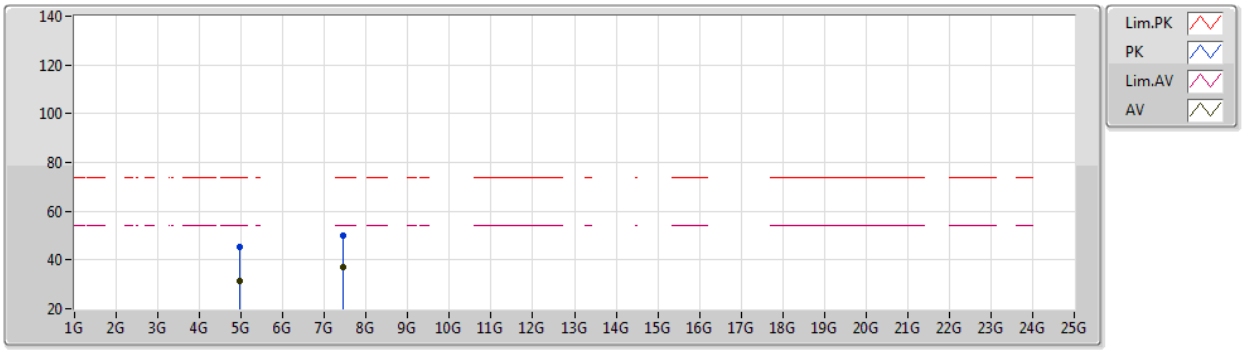
EUT X_1TX
Setting Default
01-A-G-2

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	4.96106G	46.95	74.00	-27.05	43.70	3	Vertical	136	1.66	-	32.78	5.08	34.61
AV	4.96102G	34.89	54.00	-19.11	31.64	3	Vertical	136	1.66	-	32.78	5.08	34.61
PK	7.43676G	50.34	74.00	-23.66	41.64	3	Vertical	176	1.40	-	37.23	6.38	34.91
AV	7.43772G	36.83	54.00	-17.17	28.14	3	Vertical	176	1.40	-	37.22	6.38	34.91

BT-LE(2Mbps)

2480MHz_TX

26/11/2020



EUT X_1TX
Setting Default
01-A-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	4.95948G	45.21	74.00	-28.79	41.96	3	Horizontal	36	1.52	-	32.78	5.08	34.61
AV	4.95846G	31.60	54.00	-22.40	28.35	3	Horizontal	36	1.52	-	32.78	5.08	34.61
PK	7.4378G	50.25	74.00	-23.75	41.56	3	Horizontal	327	3.00	-	37.22	6.38	34.91
AV	7.43892G	36.88	54.00	-17.12	28.19	3	Horizontal	327	3.00	-	37.22	6.38	34.91