



RADIO TEST REPORT

FCC ID : TLZ-NM430SM

Equipment : IEEE 802.11 1X1 b/g/n Wireless LAN and Bluetooth
4.2 12mm x 12mm Stamp LGA module

Brand Name : AzureWave

Model Name : AW-NM430SM, AW-NM430

Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New
Taipei City , Taiwan 231

Manufacturer : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New
Taipei City , Taiwan 231

Standard : 47 CFR FCC Part 15.247

The product was received on Mar. 25, 2021, and testing was started from Mar. 25, 2021 and completed on Aug. 03, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

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



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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(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:

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: Sandy Chuang



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)	1.0	1TX

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	Antenna Gain(dBi)		
1	1	MAG. LAYERS	MSA-4008-25GC1-A2	PIFA	I-PEX	2.98		
Ant.	Port	Brand	Model Name	Antenna Type	Connector	Antenna Gain(dBi)	Cable Loss(dB)	Net Gain (dBi)
2	1	YAGEO	ANT3216A063R2400A	Chip	N/A	1.69	2	-0.31

Note 1: The above information was declared by manufacturer.

Note 2: For conducted test: Only the higher gain antenna “Ant. 1” was tested and recorded in the report.

<WLAN 2.4GHz Function>

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

Only Port 1 can be used as transmitting/receiving.

<Bluetooth Function> (1TX/1RX)

Only Port 1 can be used as transmitting/receiving.



1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.64	1.94	400.641u	3k

Note:

- ◆ DC is Duty Cycle.
- ◆ DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Function	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
Test Software Version	RTLBTAPP 5.2.1.21			
Support Mode	<input checked="" type="checkbox"/>	LE 1M PHY: 1 Mb/s		
	<input type="checkbox"/>	LE Coded PHY (S=2): 500 Kb/s		
	<input type="checkbox"/>	LE Coded PHY (S=8): 125 Kb/s		
	<input type="checkbox"/>	LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

Model Name	Description
AW-NM430SM	All the model names are identical, the difference model names served as marketing strategy.
AW-NM430	

Note 1: From the above models, model: AW-NM430SM was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

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

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

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

1.3 Testing Location Information

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH02-CB	Lucas Huang	20.5-20.8 / 52-64	Mar. 30, 2021
Radiated (Below 1GHz)	10CH01-CB	Peter Wu	23~24 / 58~59	Aug. 03, 2021
Radiated (Above 1GHz)	03CH02-CB	Stim Sun	20.4-21.5 / 57-59	Mar. 25, 2021~Mar. 27,2021
AC Conduction	CO02-CB	Ryo Fan	22~24 / 57~59	Jul. 26, 2021

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.2 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



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: AC120V / 60Hz
Operating Mode	Normal Link
1	EUT + Antenna 1
2	EUT + Antenna 2
Mode 2 generated the worst test result, so it was recorded in this report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density
Test Condition	Conducted measurement at transmit chains
1	EUT + Antenna 1

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	EUT in Y axis + Antenna 1
2	EUT in Z axis + Antenna 1
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT in Z axis + Antenna 2
For operating mode 3 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position, and the worst case as below:	
1	EUT in Y axis + Antenna 1
2	EUT in Z axis + Antenna 2



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	Normal Link
1	Bluetooth + WLAN 2.4GHz
Refer to Sporton Test Report No.: FA131818 for Co-location RF Exposure Evaluation.	

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

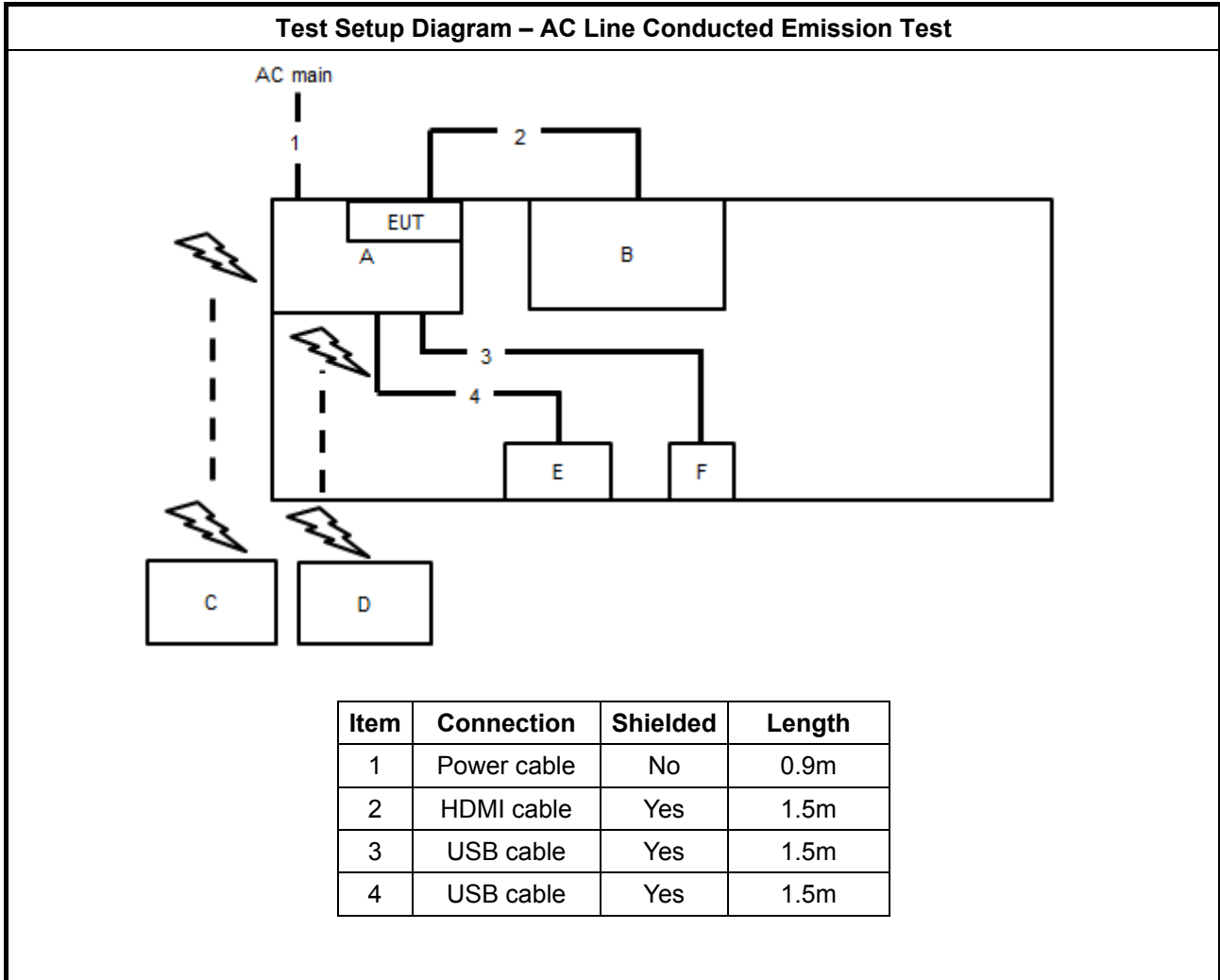
For AC Conduction / Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Fixture	ASUS	TINKER BOARD S R2.0	N/A
B	TV	ASUS	VP28U	N/A
C	AP Router	ASUS	RP-N53	MSQ-RPN53
D	Tablet	Samsung	TAB3	N/A
E	Keyboard	iCooky	SK068	N/A
F	Mouse	HP	FM100	N/A
G	Adapter	ENG	6A-181WP05	N/A

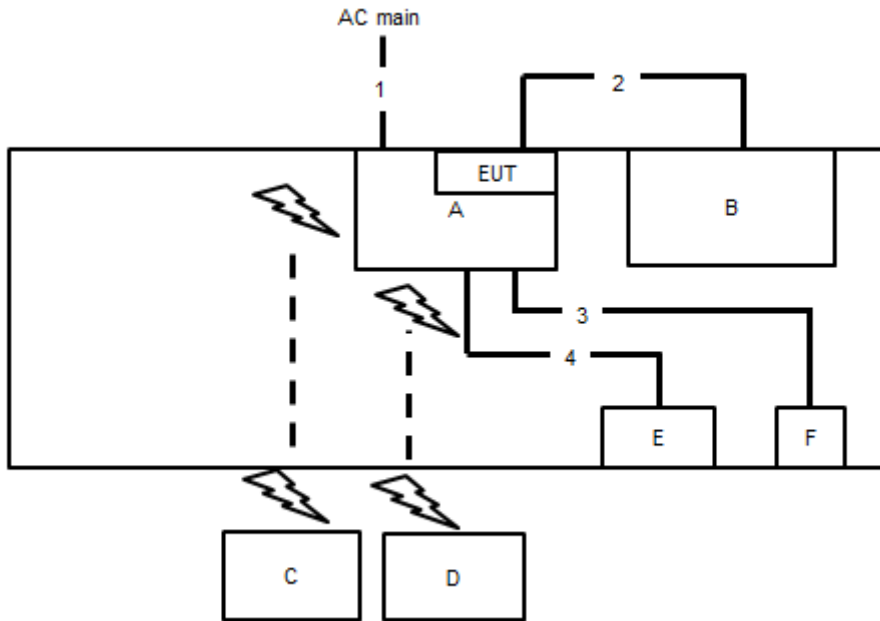
For Radiated (above 1GHz) / RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture	AzureWave	2430SM I5	N/A

2.6 Test Setup Diagram

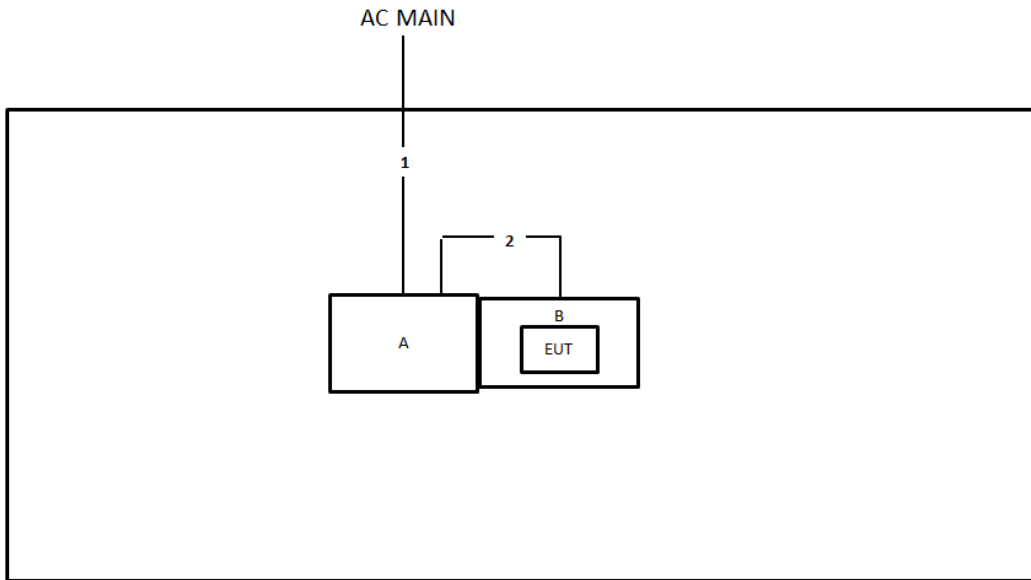


Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	0.9m
2	HDMI cable	Yes	1.5m
3	USB cable	Yes	1.5m
4	USB cable	Yes	1.5m

Test Setup Diagram - Radiated Test > 1GHz



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

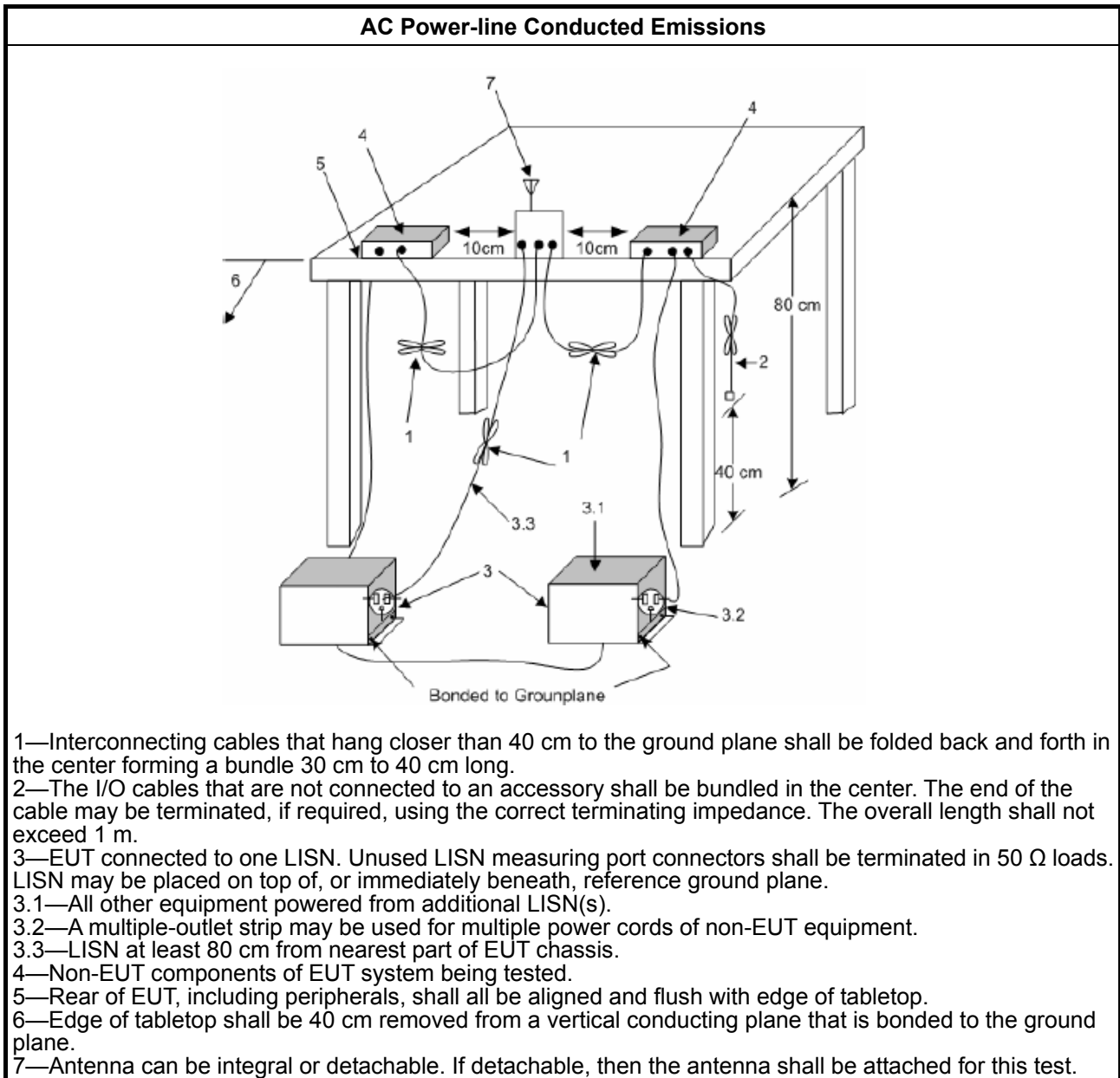
3.1.2 Measuring Instruments

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



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:
<ul style="list-style-type: none"> ▪ 6 dB bandwidth \geq 500 kHz.

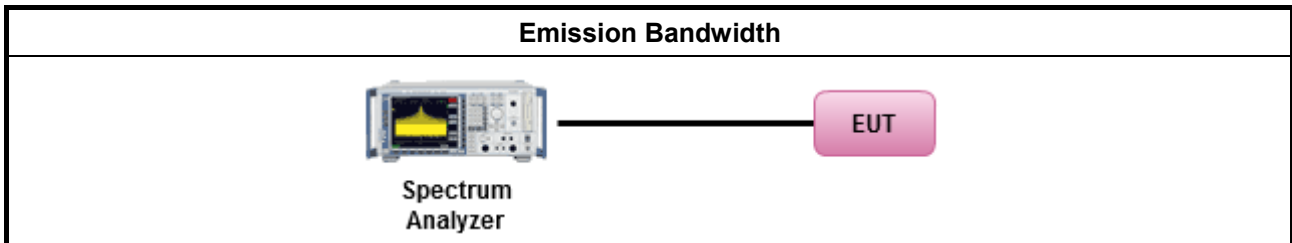
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	<ul style="list-style-type: none"> ▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none"> ▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> ▪ Smart antenna system (SAS):
	<ul style="list-style-type: none"> - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
<p>P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

3.3.2 Measuring Instruments

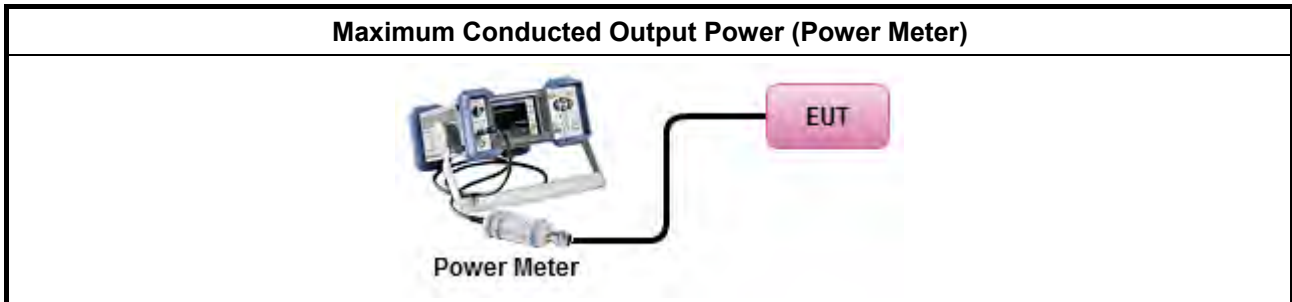
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Maximum Peak Conducted Output Power 	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
<ul style="list-style-type: none"> ▪ Maximum Conducted Output Power 	
[duty cycle ≥ 98% or external video / power trigger]	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
<input type="checkbox"/>	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	
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
<input type="checkbox"/>	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
<input type="checkbox"/>	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)	
<input type="checkbox"/>	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).
<input checked="" type="checkbox"/>	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).
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ 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. 	
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$ 	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
<ul style="list-style-type: none"> Power Spectral Density (PSD) ≤ 8 dBm/3kHz

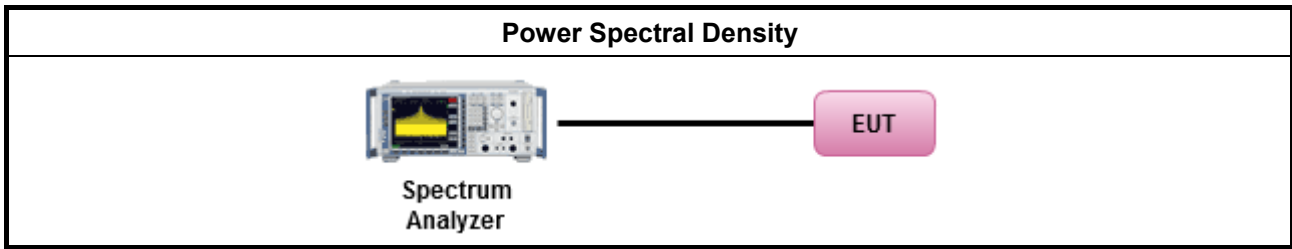
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
<ul style="list-style-type: none"> 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).
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD. [duty cycle ≥ 98% or external video / power trigger]
<ul style="list-style-type: none"> For conducted measurement.
<ul style="list-style-type: none"> If The EUT supports multiple transmit chains using options given below: <ul style="list-style-type: none"> <input type="checkbox"/> 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. <input type="checkbox"/> 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, <input type="checkbox"/> 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



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.

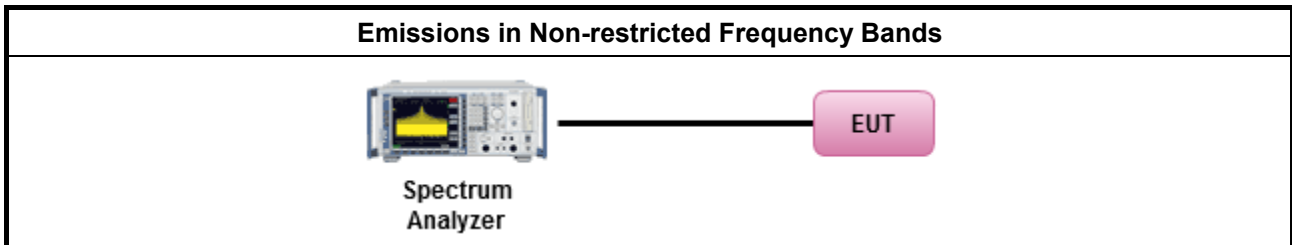
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.6.2 Measuring Instruments

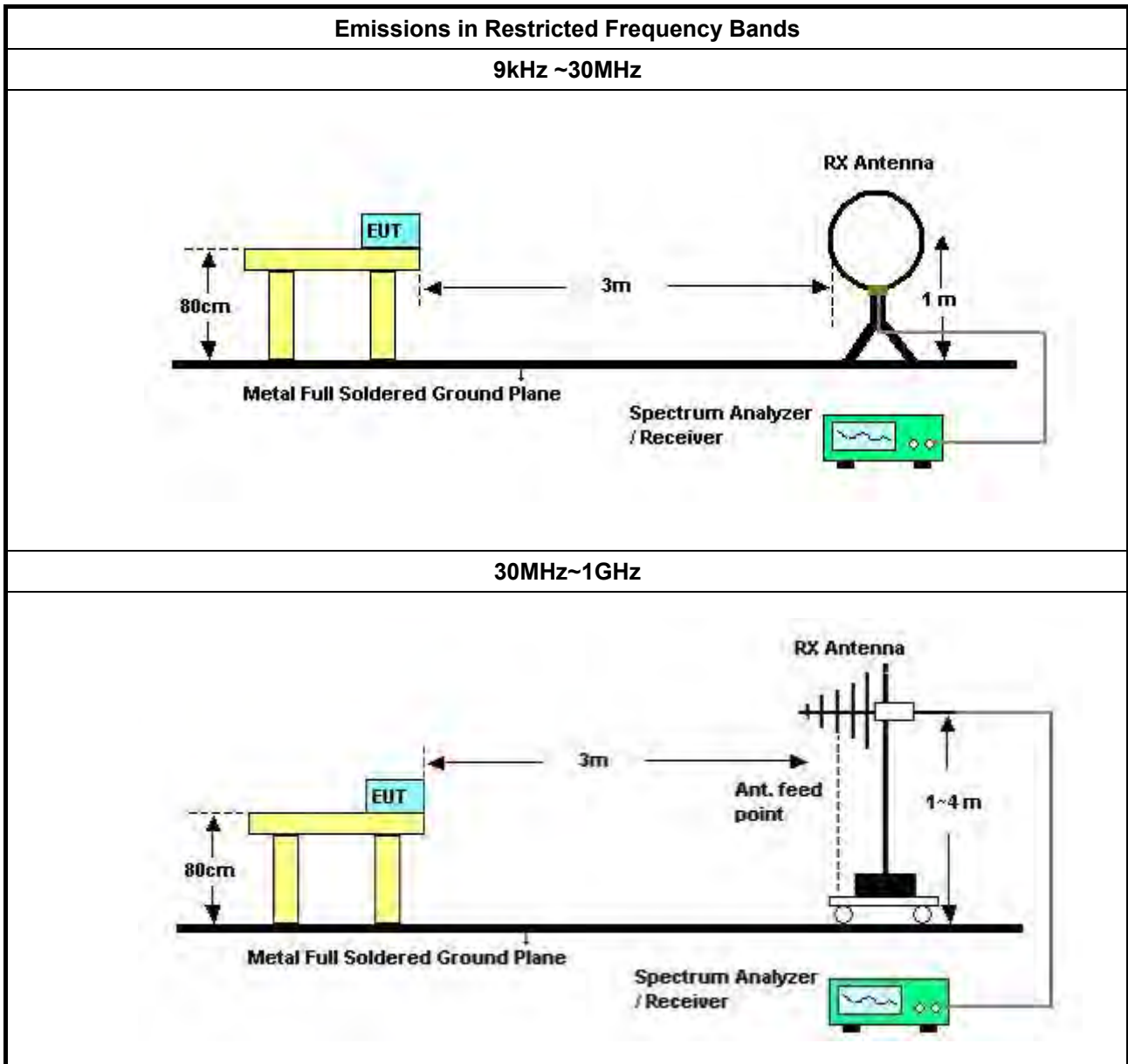
Refer a test equipment and calibration data table in this test report.

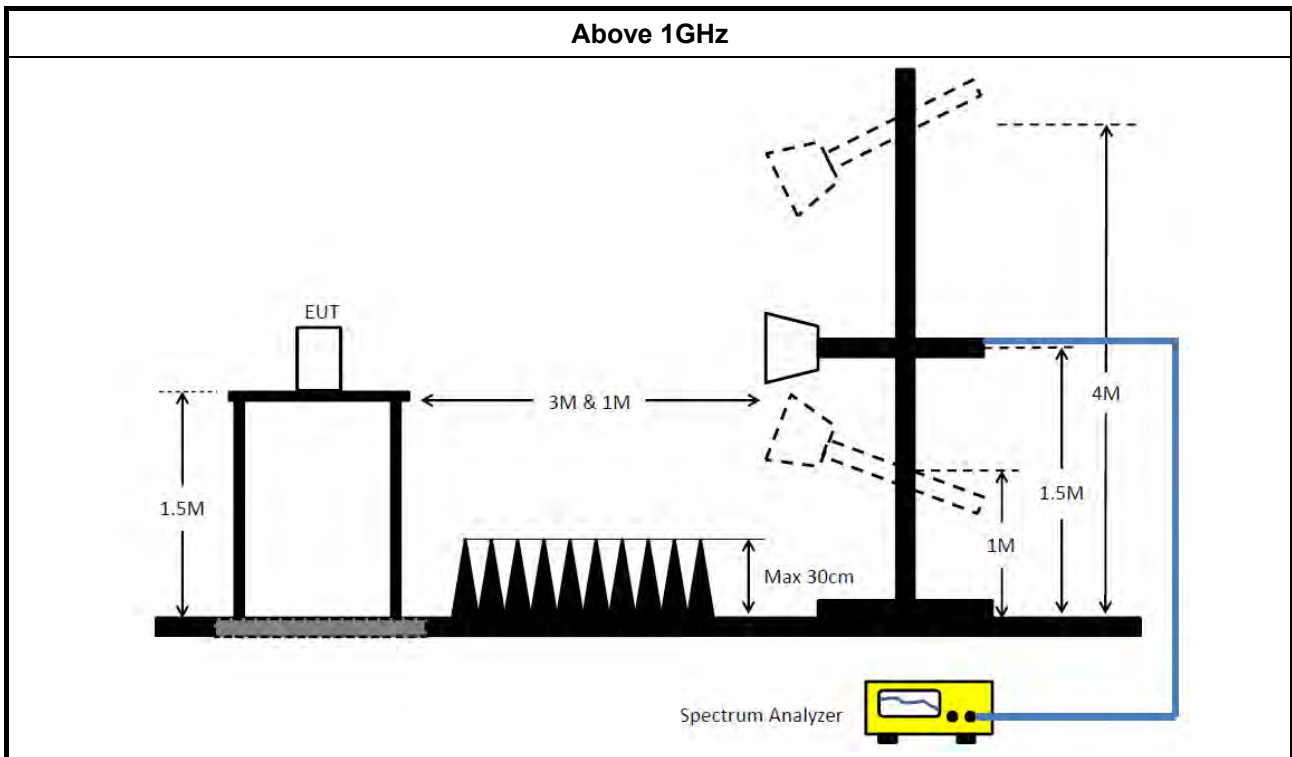


3.6.3 Test Procedures

Test Method	
<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.

3.6.4 Test Setup





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
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Dec. 04, 2020	Dec. 03, 2021	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 20, 2020	Nov. 19, 2021	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 05, 2021	May 04, 2022	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 20, 2020	Oct. 19, 2021	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 18, 2021	Mar. 17, 2022	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (10CH01-CB)
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 28, 2021	Jan. 27, 2022	Radiation (10CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 11, 2021	Mar. 10, 2022	Radiation (10CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 11, 2021	Mar. 10, 2022	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 20, 2020	Oct. 19, 2021	Radiation (10CH01-CB)
High Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 20, 2020	Oct. 19, 2021	Radiation (10CH01-CB)
Bilog Antenna with 6dB Attenuator	Chase & EMCI	CBL6111A &N-6-06	1543 &AT-N0609	30MHz ~ 1GHz	Jul. 01, 2021	Jun. 30, 2022	Radiation (10CH01-CB)
EMI Test Receiver	Rohde&Schwarz	ESCI	100186	9kHz ~ 3GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (10CH01-CB)
Spectrum Analyzer	Rohde&Schwarz	FSV30	101026	9kHz ~ 30GHz	Mar. 08, 2021	Mar. 07, 2022	Radiation (10CH01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (10CH01-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz 3m	Mar. 28, 2020	Mar. 27, 2021	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz 3m	Mar. 27, 2021	Mar. 26, 2022	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Sep. 21, 2020	Sep. 20, 2021	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 13, 2020	Jul. 12, 2021	Radiation (03CH02-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Oct. 15, 2020	Oct. 14, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-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)
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)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
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.

NCR means Non-Calibration required.

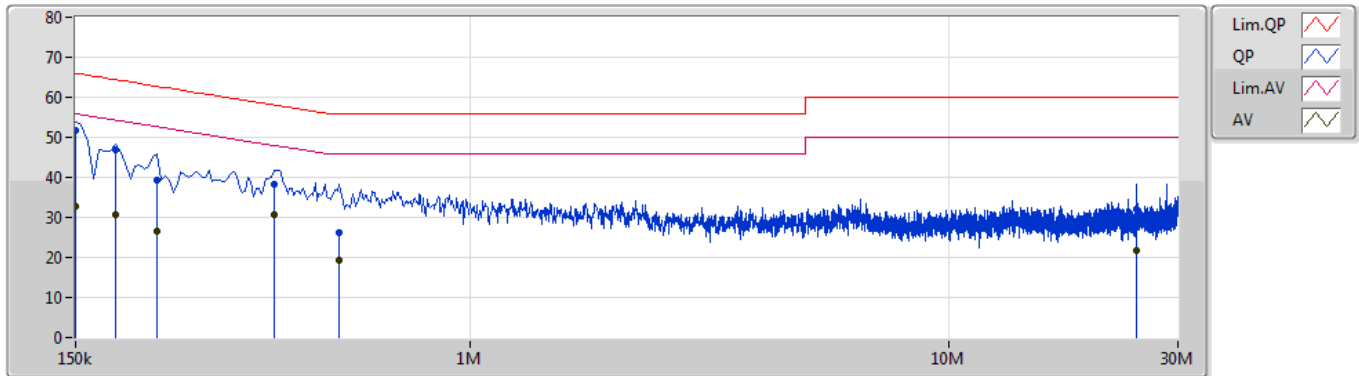


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	QP	150k	51.69	66.00	-14.31	Line

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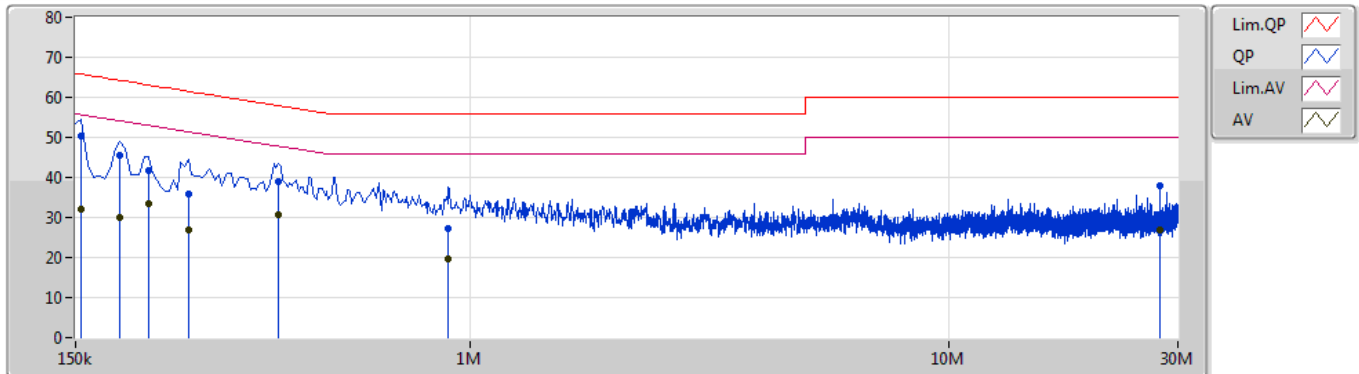
Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	150k	51.69	66.00	-14.31	10.29	Line	"Worst"	41.40	0.07	0.07	10.15
AV	150k	32.69	56.00	-23.31	10.29	Line	-	22.40	0.07	0.07	10.15
QP	181.5k	46.81	64.41	-17.60	10.30	Line	-	36.51	0.07	0.07	10.16
AV	181.5k	30.78	54.41	-23.63	10.30	Line	-	20.48	0.07	0.07	10.16
QP	222k	39.18	62.75	-23.57	10.29	Line	-	28.89	0.07	0.07	10.15
AV	222k	26.57	52.75	-26.18	10.29	Line	-	16.28	0.07	0.07	10.15
QP	388.5k	38.14	58.10	-19.96	10.25	Line	-	27.89	0.08	0.06	10.11
AV	388.5k	30.52	48.10	-17.58	10.25	Line	-	20.27	0.08	0.06	10.11
QP	532.5k	26.36	56.00	-29.64	10.26	Line	-	16.10	0.08	0.07	10.11
AV	532.5k	19.37	46.00	-26.63	10.26	Line	-	9.11	0.08	0.07	10.11
QP	24.617M	31.94	60.00	-28.06	11.01	Line	-	20.93	0.53	0.28	10.20
AV	24.617M	21.72	50.00	-28.28	11.01	Line	-	10.71	0.53	0.28	10.20

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Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	154.5k	50.21	65.75	-15.54	10.28	Neutral	"Worst"	39.93	0.06	0.07	10.15
AV	154.5k	32.23	55.75	-23.52	10.28	Neutral	-	21.95	0.06	0.07	10.15
QP	186k	45.47	64.20	-18.73	10.29	Neutral	-	35.18	0.06	0.07	10.16
AV	186k	30.03	54.20	-24.17	10.29	Neutral	-	19.74	0.06	0.07	10.16
QP	213k	41.59	63.09	-21.50	10.29	Neutral	-	31.30	0.06	0.07	10.16
AV	213k	33.58	53.09	-19.51	10.29	Neutral	-	23.29	0.06	0.07	10.16
QP	258k	35.87	61.49	-25.62	10.27	Neutral	-	25.60	0.06	0.07	10.14
AV	258k	26.83	51.49	-24.66	10.27	Neutral	-	16.56	0.06	0.07	10.14
QP	397.5k	39.11	57.91	-18.80	10.23	Neutral	-	28.88	0.06	0.06	10.11
AV	397.5k	30.52	47.91	-17.39	10.23	Neutral	-	20.29	0.06	0.06	10.11
QP	901.5k	27.29	56.00	-28.71	10.26	Neutral	-	17.03	0.08	0.08	10.10
AV	901.5k	19.73	46.00	-26.27	10.26	Neutral	-	9.47	0.08	0.08	10.10
QP	27.456M	37.82	60.00	-22.18	10.86	Neutral	-	26.96	0.38	0.29	10.19
AV	27.456M	26.88	50.00	-23.12	10.86	Neutral	-	16.02	0.38	0.29	10.19



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)	721.25k	1.037M	1M04F1D	707.5k	1.028M

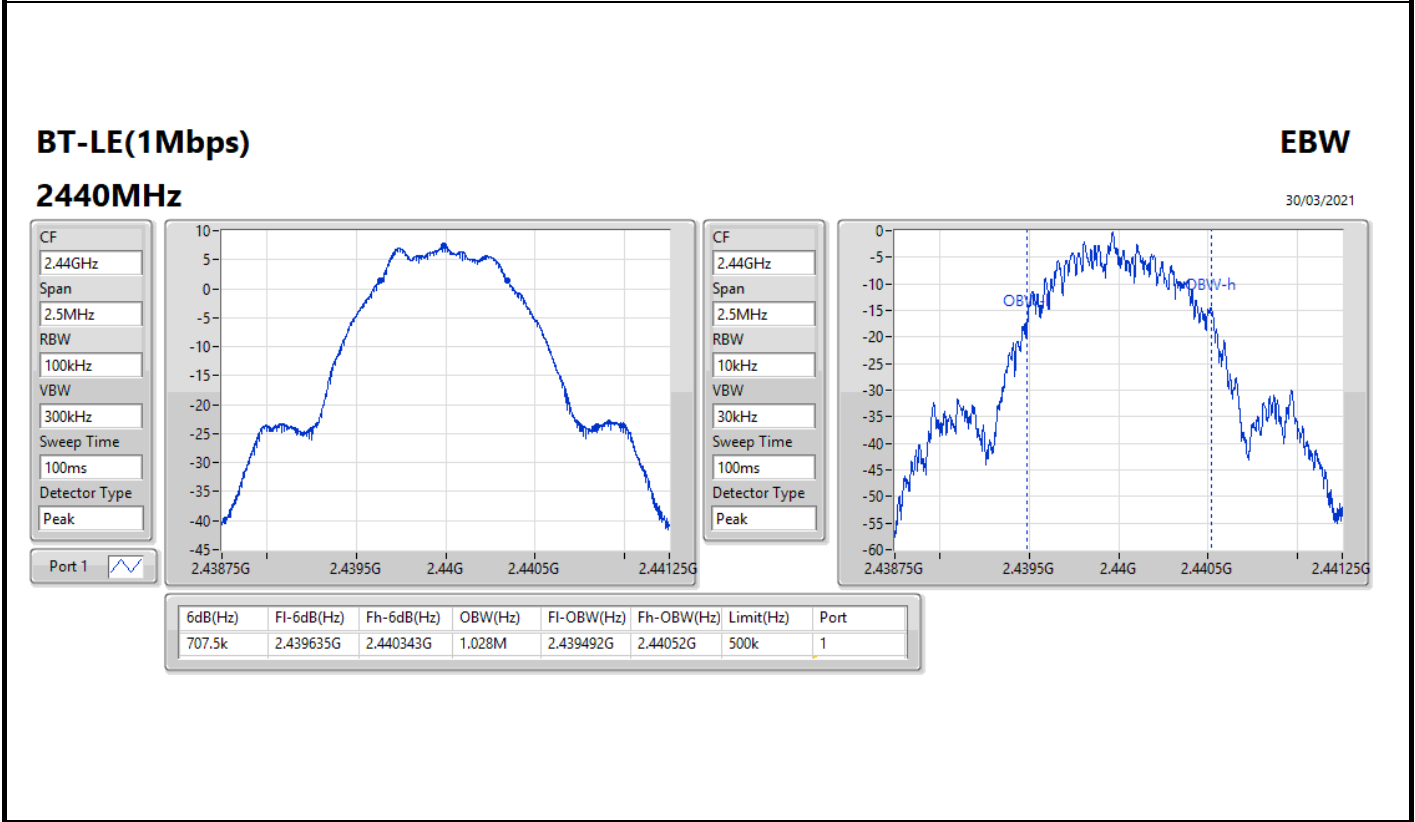
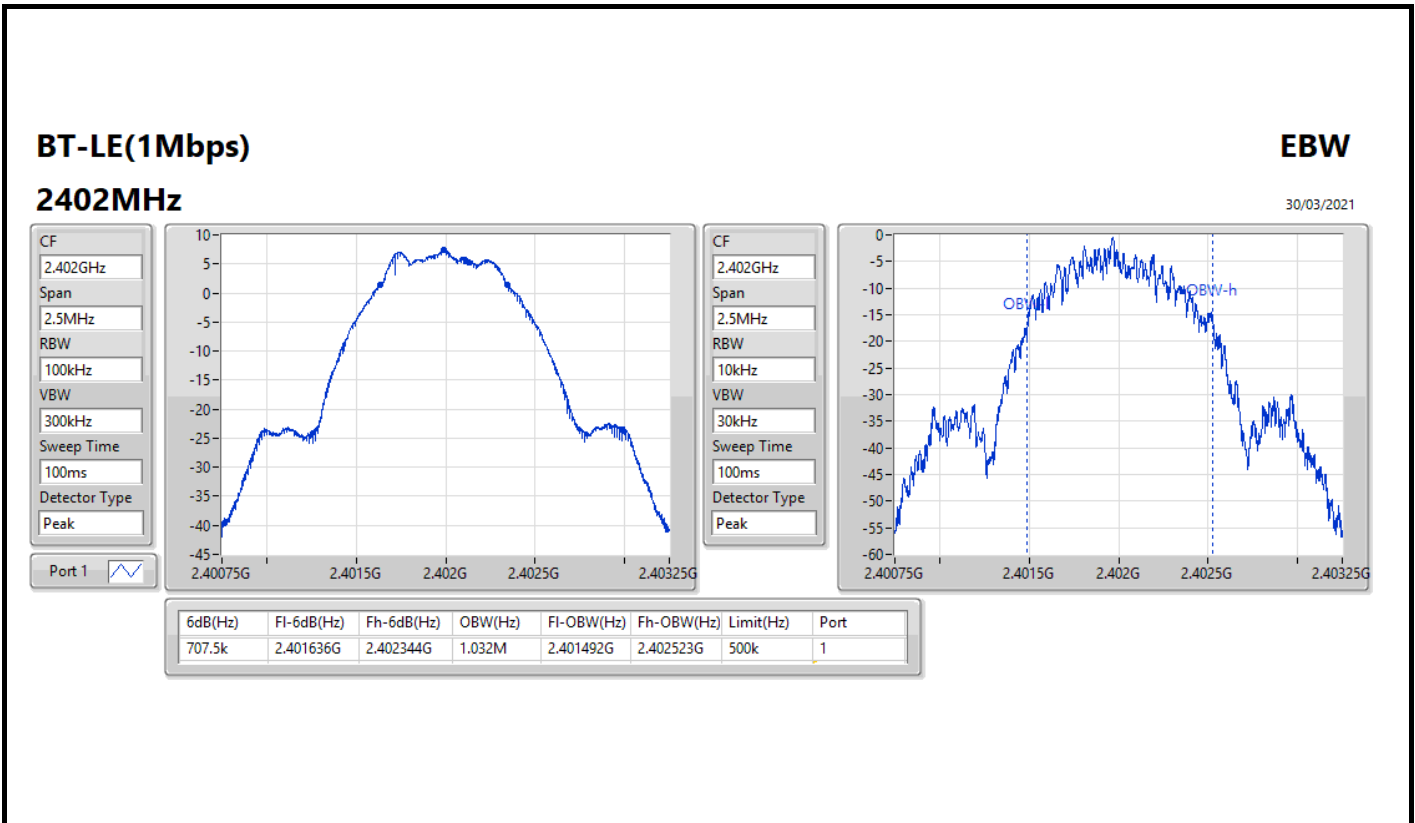
Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

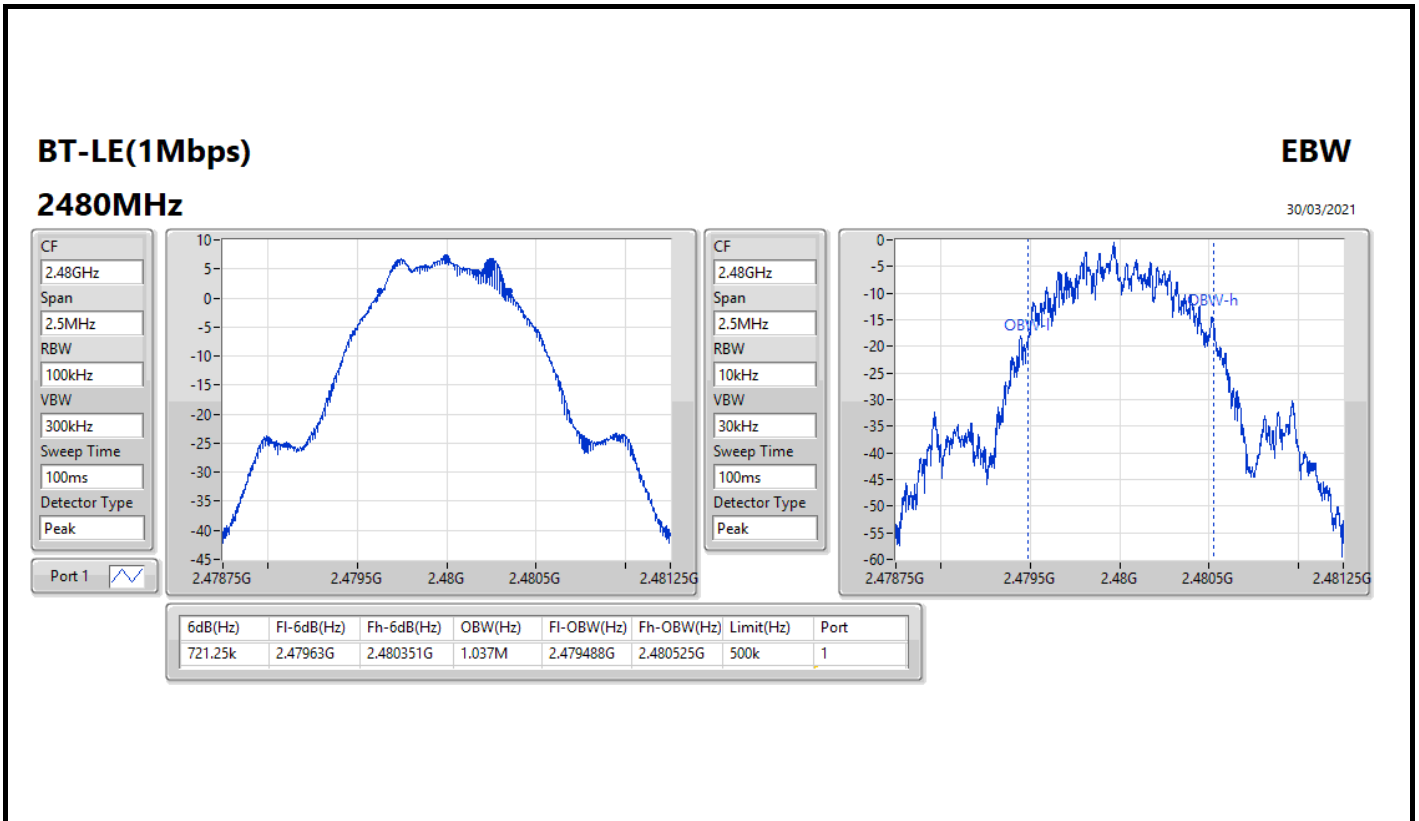


Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	707.5k	1.032M
2440MHz	Pass	500k	707.5k	1.028M
2480MHz	Pass	500k	721.25k	1.037M

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







Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.24	0.00530



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	7.24	30.00
2440MHz	Pass	2.98	7.07	30.00
2480MHz	Pass	2.98	6.94	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-6.63

RBW=3 kHz.

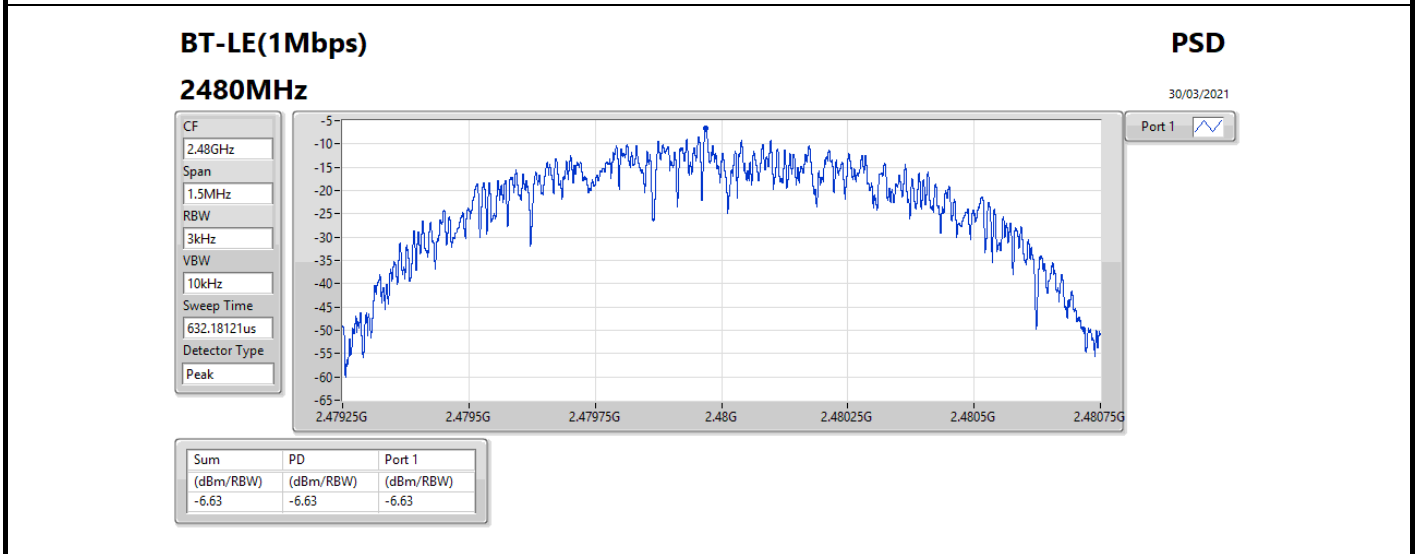
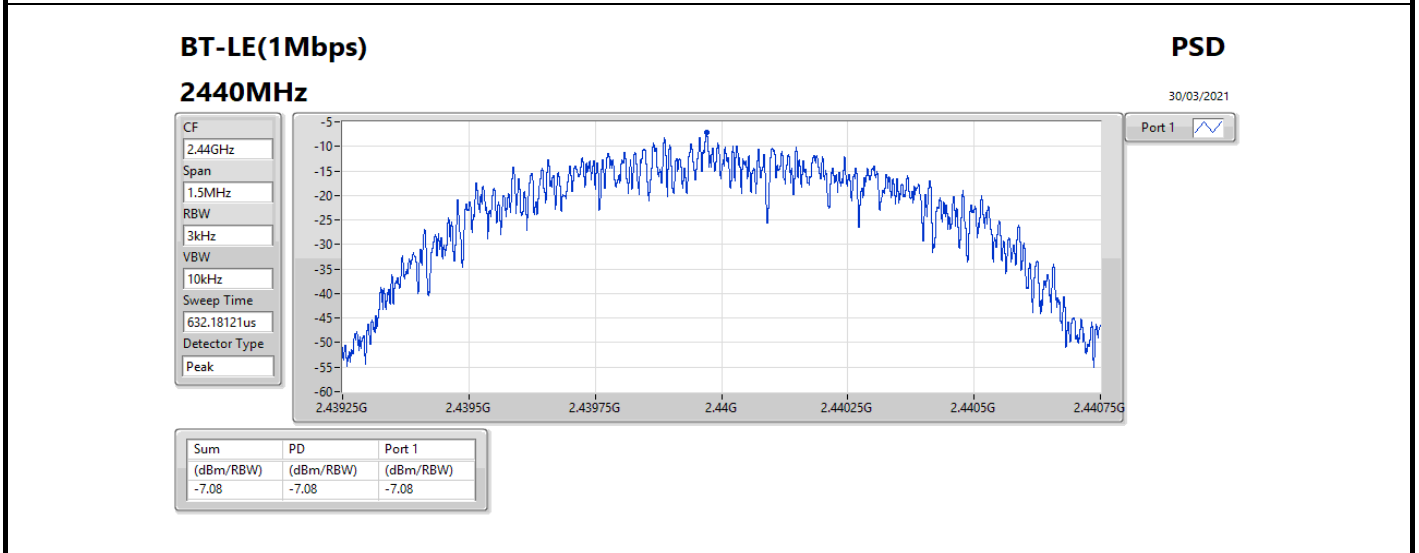
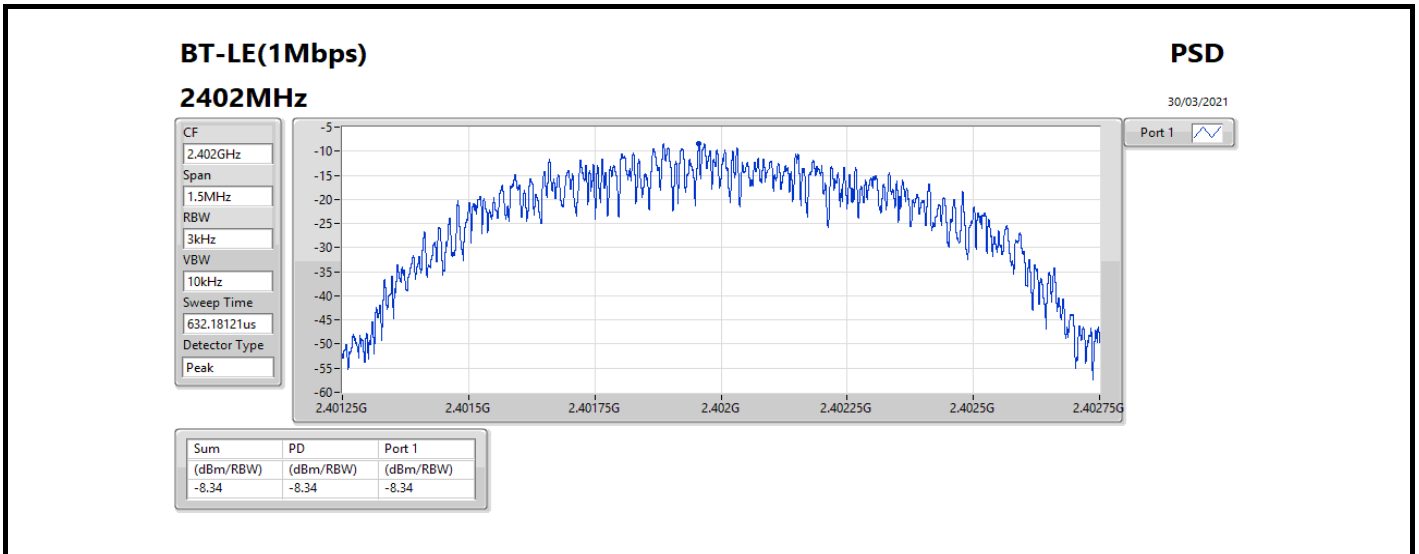


Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	-8.34	8.00
2440MHz	Pass	2.98	-7.08	8.00
2480MHz	Pass	2.98	-6.63	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;





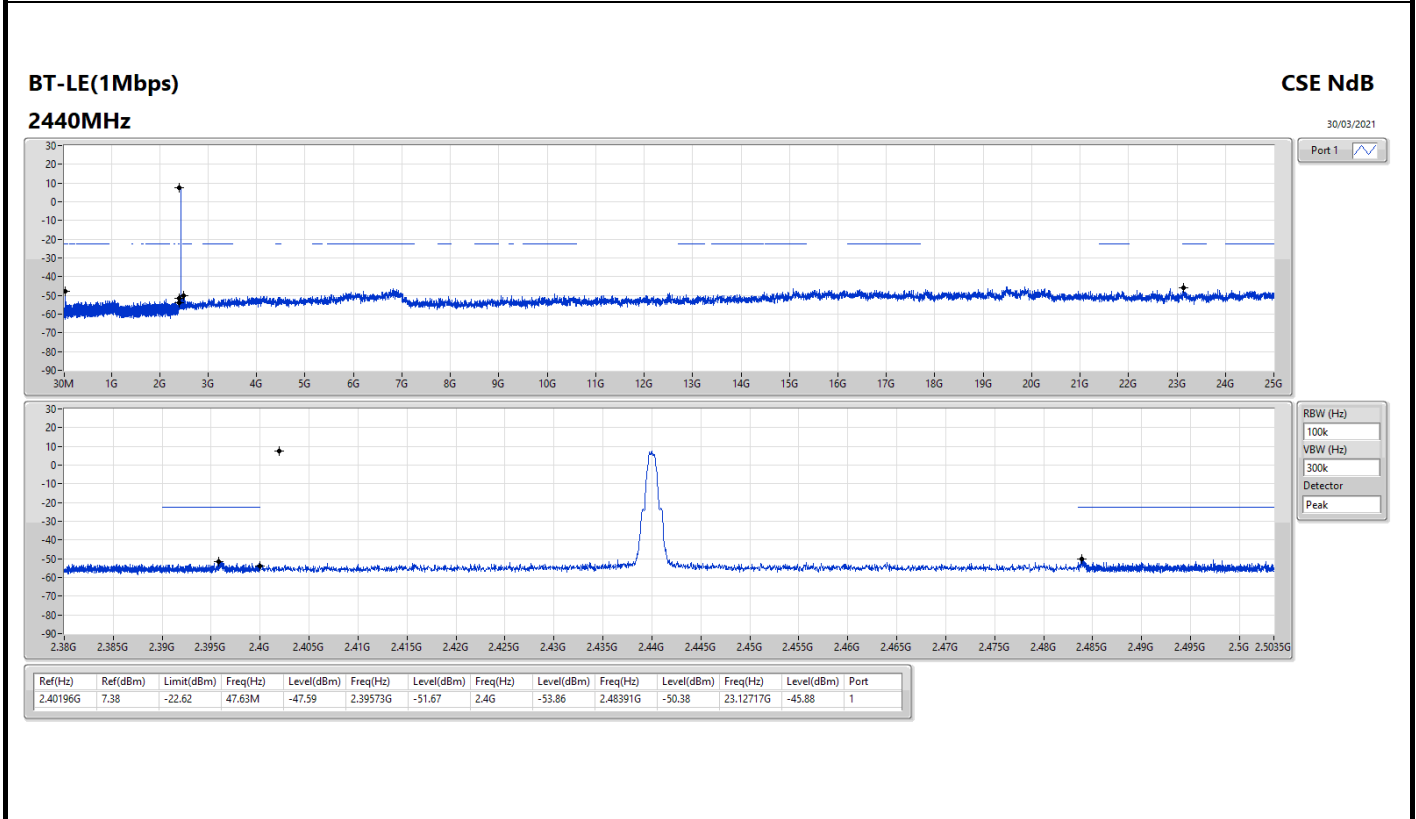
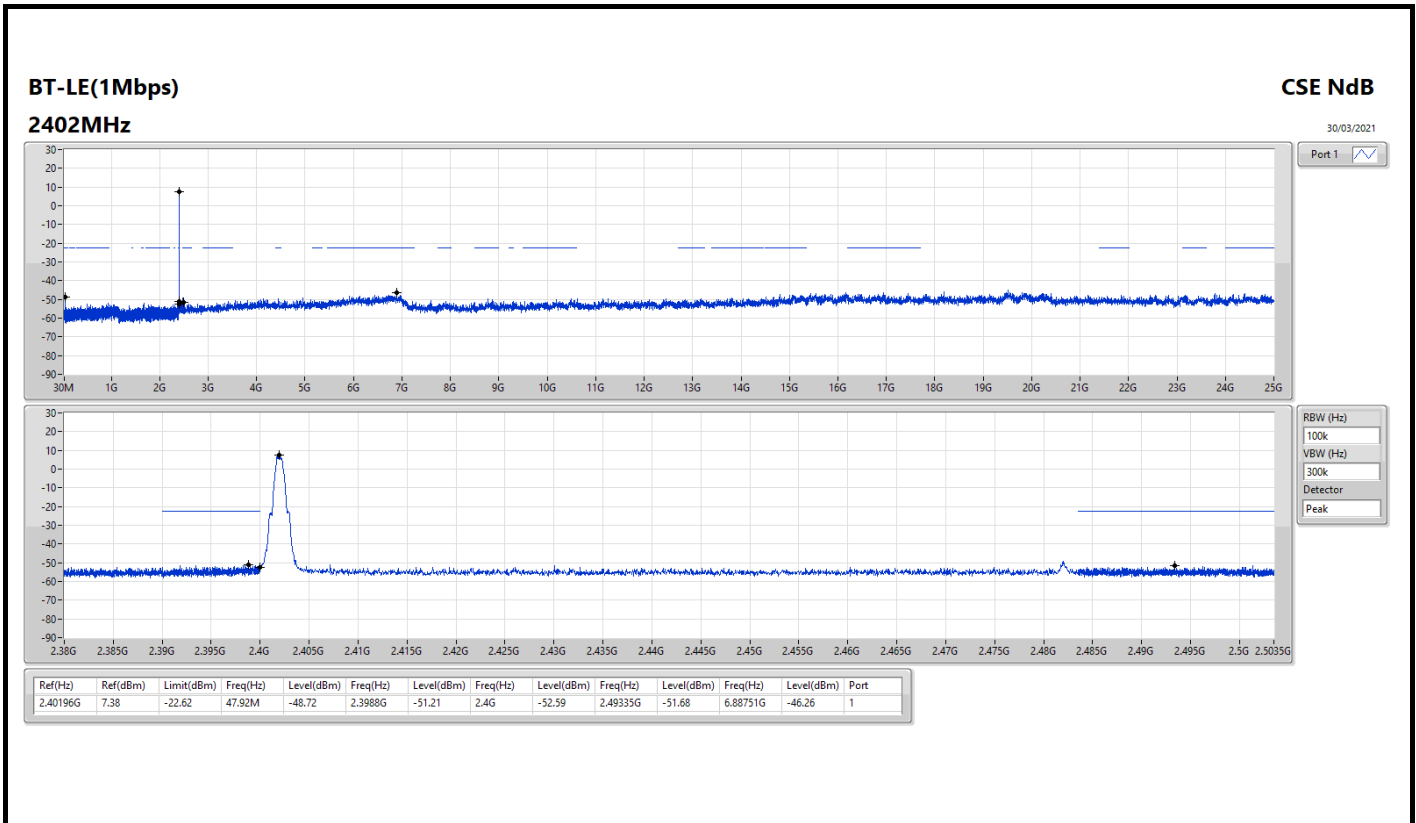
Summary

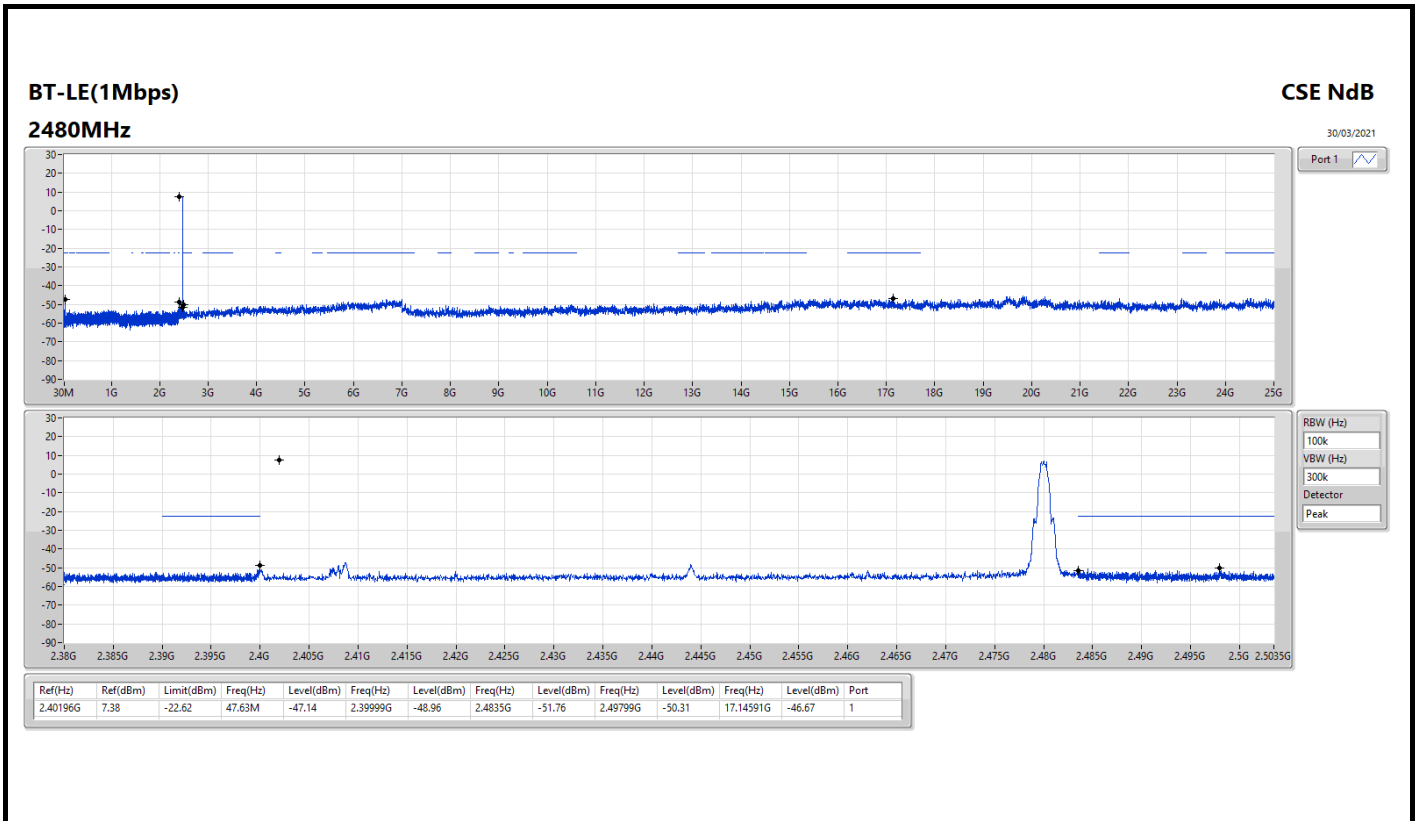
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.40196G	7.38	-22.62	47.63M	-47.14	2.39999G	-48.96	2.4835G	-51.76	2.49799G	-50.31	17.14591G	-46.67	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	2.40196G	7.38	-22.62	47.92M	-48.72	2.3988G	-51.21	2.4G	-52.59	2.49335G	-51.68	6.88751G	-46.26	1
2440MHz	Pass	2.40196G	7.38	-22.62	47.63M	-47.59	2.39573G	-51.67	2.4G	-53.86	2.48391G	-50.38	23.12717G	-45.88	1
2480MHz	Pass	2.40196G	7.38	-22.62	47.63M	-47.14	2.39999G	-48.96	2.4835G	-51.76	2.49799G	-50.31	17.14591G	-46.67	1





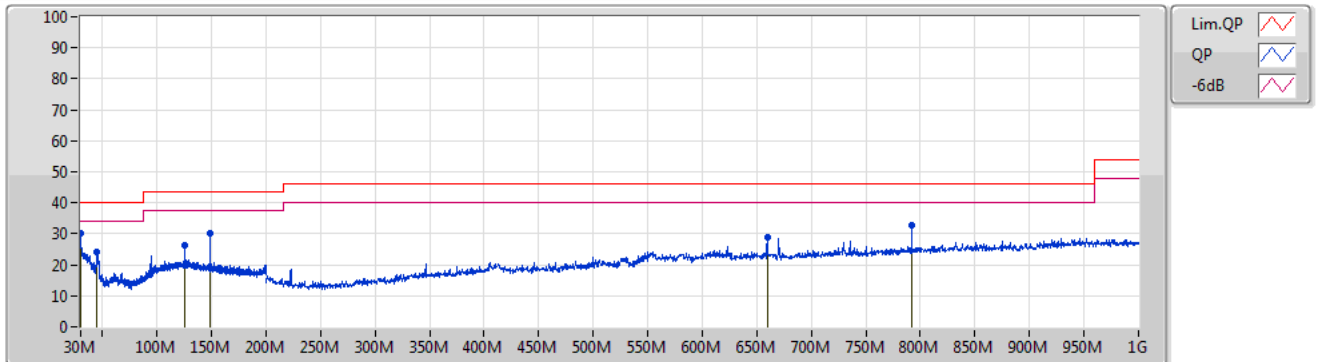


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 3	Pass	PK	30.17M	30.24	40.00	-9.76	Vertical

03/08/2021

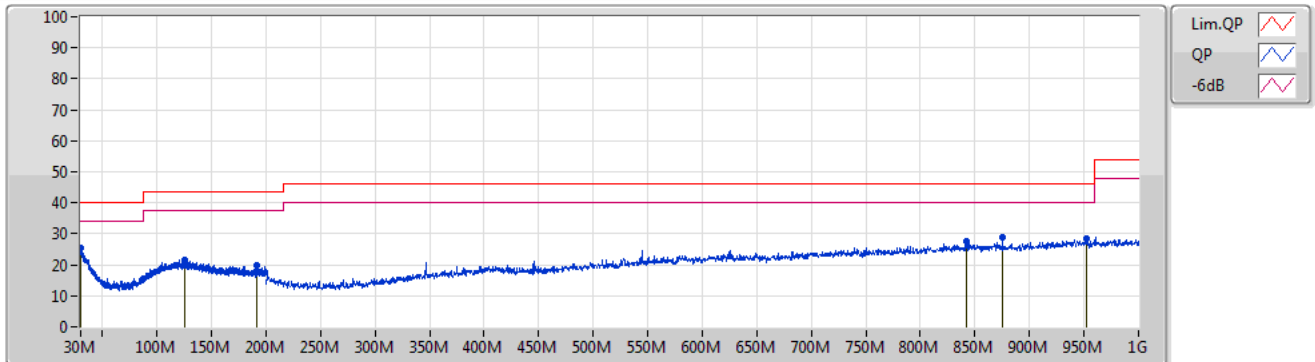
Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30.17M	30.24	40.00	-9.76	-3.13	3	Vertical	20	4.00	"Worst"	33.37	23.74	1.01	27.88
PK	45.22M	24.26	40.00	-15.74	-10.75	3	Vertical	326	1.00	-	35.01	15.78	1.40	27.93
PK	125.03M	26.28	43.50	-17.22	-6.71	3	Vertical	70	1.00	-	32.99	18.12	2.78	27.61
PK	148.83M	30.31	43.50	-13.19	-7.88	3	Vertical	257	2.00	-	38.19	16.56	3.09	27.53
PK	659.6M	28.93	46.00	-17.07	-2.88	3	Vertical	11	1.00	-	31.81	19.20	5.64	27.72
PK	792M	32.84	46.00	-13.16	-0.39	3	Vertical	254	1.00	-	33.23	20.56	6.25	27.20

03/08/2021

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30.17M	25.59	40.00	-14.41	-3.13	3	Horizontal	6	4.00	"Worst"	28.72	23.74	1.01	27.88
PK	125.03M	21.63	43.50	-21.87	-6.71	3	Horizontal	303	2.00	-	28.34	18.12	2.78	27.61
PK	191.42M	19.72	43.50	-23.78	-8.69	3	Horizontal	166	2.00	-	28.41	15.01	3.61	27.31
PK	841.6M	27.79	46.00	-18.21	1.01	3	Horizontal	355	1.00	-	26.78	21.45	6.47	26.91
PK	875.2M	28.86	46.00	-17.14	1.40	3	Horizontal	227	1.00	-	27.46	21.60	6.55	26.75
PK	952.4M	28.51	46.00	-17.49	2.78	3	Horizontal	11	1.00	-	25.73	22.12	7.00	26.34



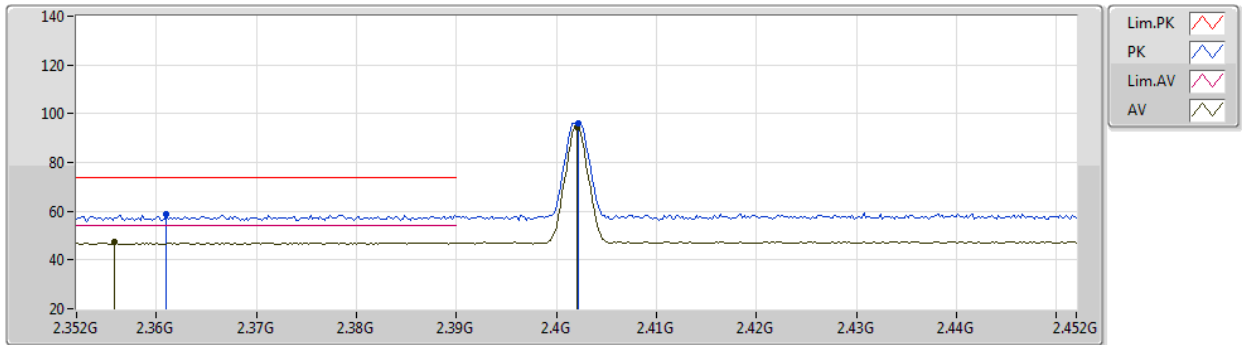
Test Mode: Mode 1
Summary

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(1Mbps)	Pass	AV	2.4862G	47.91	54.00	-6.09	3	Horizontal	308	2.40	-

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



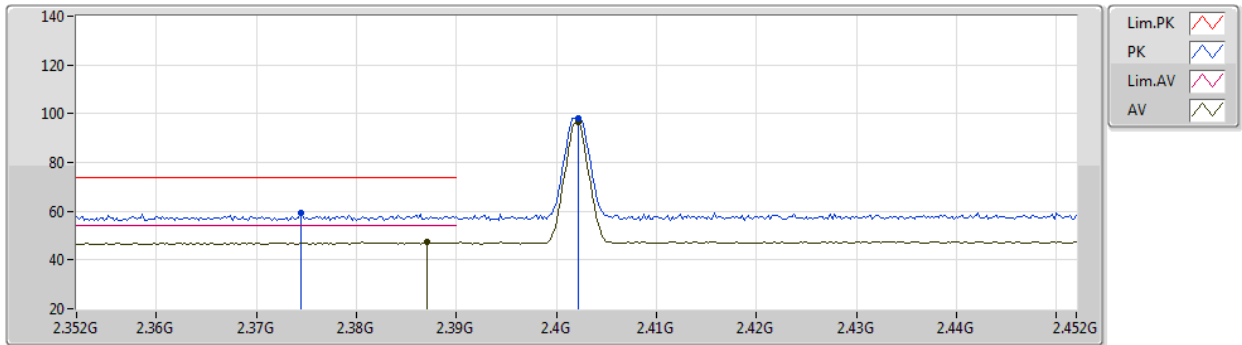
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Setting Default
02-B-R-5

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	2.361G	58.66	74.00	-15.34	27.94	3	Vertical	322	2.14	-	28.30	2.42	-
AV	2.3558G	47.37	54.00	-6.63	16.65	3	Vertical	322	2.14	-	28.30	2.42	-
PK	2.4022G	96.26	Inf	-Inf	65.56	3	Vertical	322	2.14	-	28.30	2.40	-
AV	2.402G	94.70	Inf	-Inf	64.00	3	Vertical	322	2.14	-	28.30	2.40	-

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



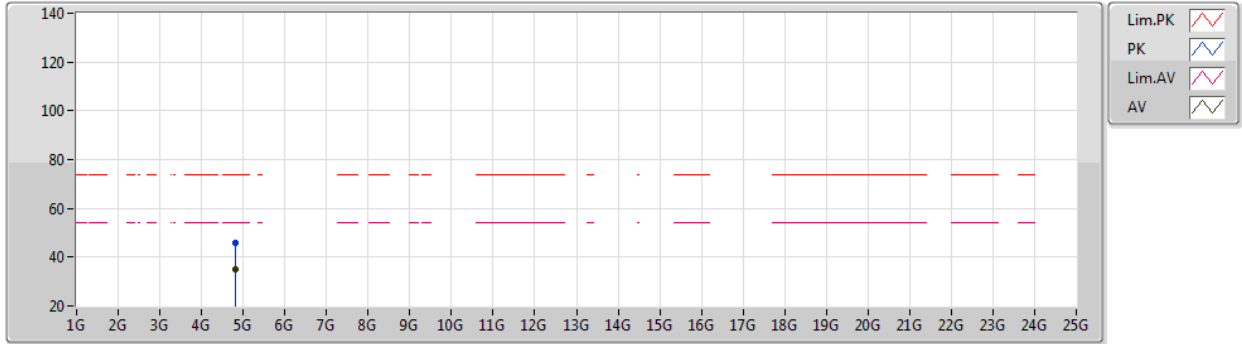
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02-B-R-5

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	2.3744G	59.08	74.00	-14.92	28.37	3	Horizontal	291	1.53	-	28.30	2.41	-
AV	2.387G	47.26	54.00	-6.74	16.55	3	Horizontal	291	1.53	-	28.30	2.41	-
PK	2.4022G	96.36	Inf	-Inf	67.66	3	Horizontal	291	1.53	-	28.30	2.40	-
AV	2.4022G	96.67	Inf	-Inf	65.97	3	Horizontal	291	1.53	-	28.30	2.40	-

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



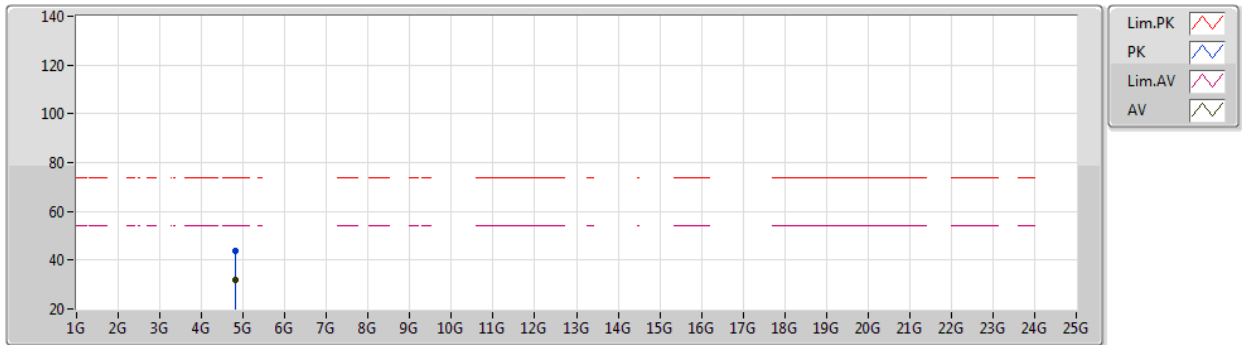
EUT Y_1TX
Setting Default
02-B-R-5

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	4.80452G	45.66	74.00	-28.34	39.91	3	Vertical	252	2.13	-	32.82	4.70	31.77
AV	4.8043G	34.83	54.00	-19.17	29.08	3	Vertical	252	2.13	-	32.82	4.70	31.77

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



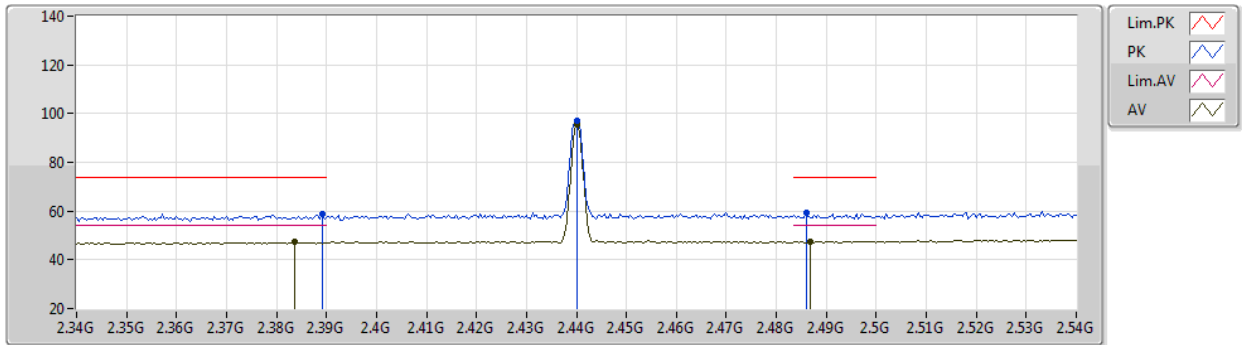
EUT Y_1TX
Setting Default
02-B-R-5

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	4.8047G	43.85	74.00	-30.15	38.10	3	Horizontal	175	1.74	-	32.82	4.70	31.77
AV	4.80432G	31.72	54.00	-22.28	25.97	3	Horizontal	175	1.74	-	32.82	4.70	31.77

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



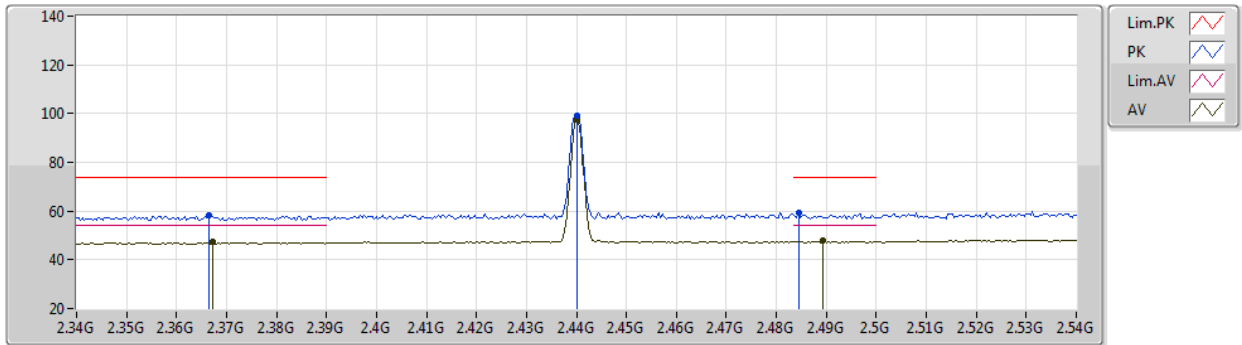
EUT Y_1TX
Setting Default
02-B-R-5

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	58.87	74.00	-15.13	28.16	3	Vertical	224	1.67	-	28.30	2.41	-
AV	2.3836G	47.17	54.00	-6.83	16.46	3	Vertical	224	1.67	-	28.30	2.41	-
PK	2.44G	96.83	Inf	-Inf	66.03	3	Vertical	224	1.67	-	28.38	2.42	-
AV	2.44G	95.31	Inf	-Inf	64.51	3	Vertical	224	1.67	-	28.38	2.42	-
PK	2.486G	59.13	74.00	-14.87	28.15	3	Vertical	224	1.67	-	28.54	2.44	-
AV	2.4868G	47.67	54.00	-6.33	16.68	3	Vertical	224	1.67	-	28.55	2.44	-

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



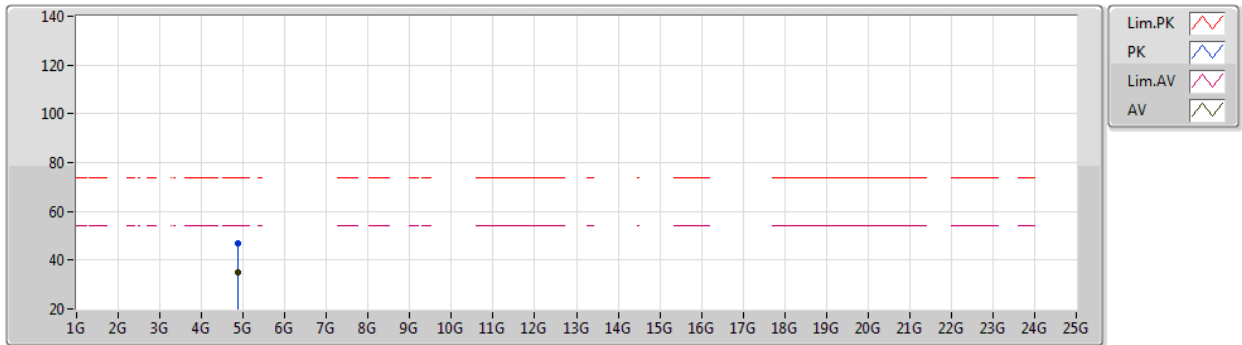
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Setting Default
02-B-R-5

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	2.3664G	58.07	74.00	-15.93	27.35	3	Horizontal	31	1.67	-	28.30	2.42	-
AV	2.3672G	47.22	54.00	-6.78	16.50	3	Horizontal	31	1.67	-	28.30	2.42	-
PK	2.44G	99.23	Inf	-Inf	68.43	3	Horizontal	31	1.67	-	28.38	2.42	-
AV	2.44G	97.66	Inf	-Inf	66.86	3	Horizontal	31	1.67	-	28.38	2.42	-
PK	2.4844G	59.42	74.00	-14.58	28.44	3	Horizontal	31	1.67	-	28.54	2.44	-
AV	2.4892G	47.70	54.00	-6.30	16.70	3	Horizontal	31	1.67	-	28.56	2.44	-

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



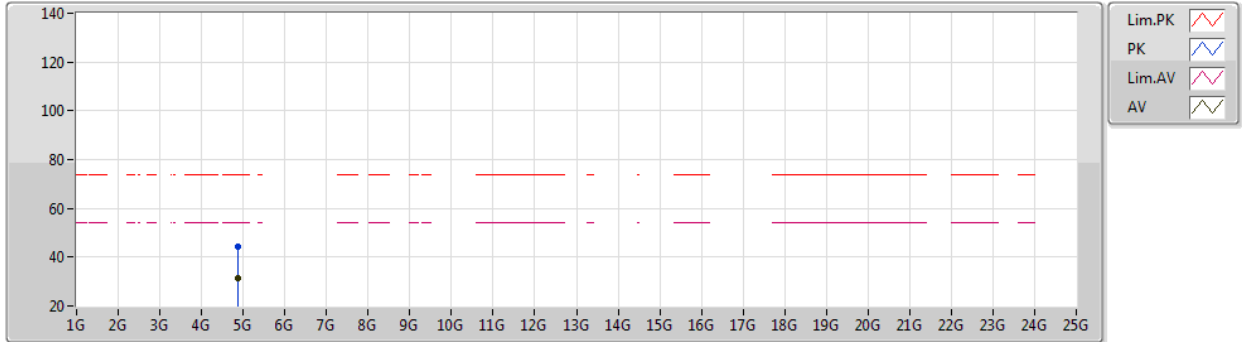
EUT Y_1TX
Setting Default
02-B-R-5

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	4.88063G	46.80	74.00	-27.20	40.78	3	Vertical	246	1.79	-	33.12	4.70	31.80
AV	4.87979G	35.03	54.00	-18.97	29.01	3	Vertical	246	1.79	-	33.12	4.70	31.80

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



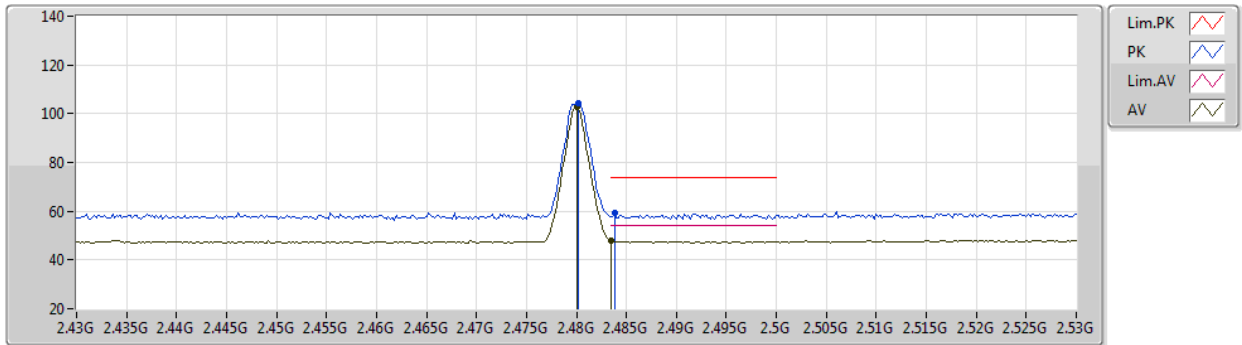
EUT Y_1TX
Setting Default
02-B-R-5

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	4.8664G	44.17	74.00	-29.83	38.19	3	Horizontal	112	1.80	-	33.07	4.70	31.79
AV	4.8624G	31.37	54.00	-22.63	25.41	3	Horizontal	112	1.80	-	33.05	4.70	31.79

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



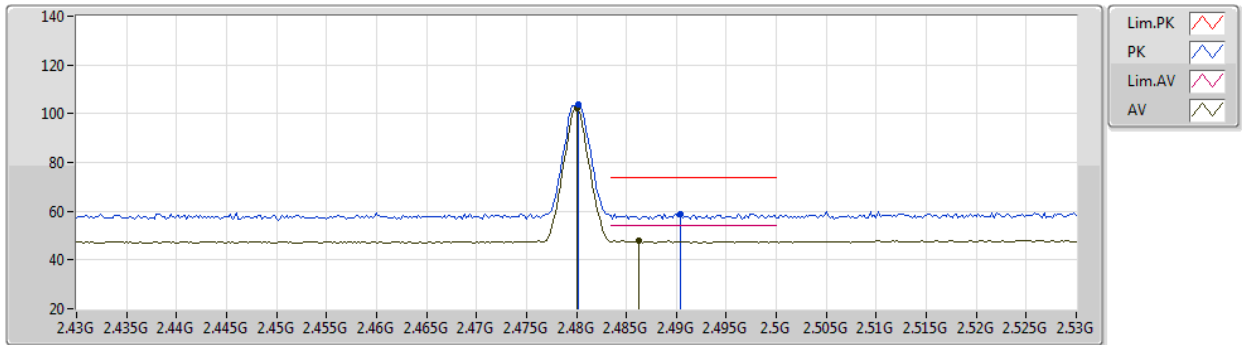
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Setting Default
02-B-R-5

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	2.4802G	104.19	Inf	-Inf	73.23	3	Vertical	360	2.48	-	28.52	2.44	-
AV	2.48G	102.63	Inf	-Inf	71.67	3	Vertical	360	2.48	-	28.52	2.44	-
PK	2.4838G	59.19	74.00	-14.81	28.21	3	Vertical	360	2.48	-	28.54	2.44	-
AV	2.4835G	47.87	54.00	-6.13	16.90	3	Vertical	360	2.48	-	28.53	2.44	-

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



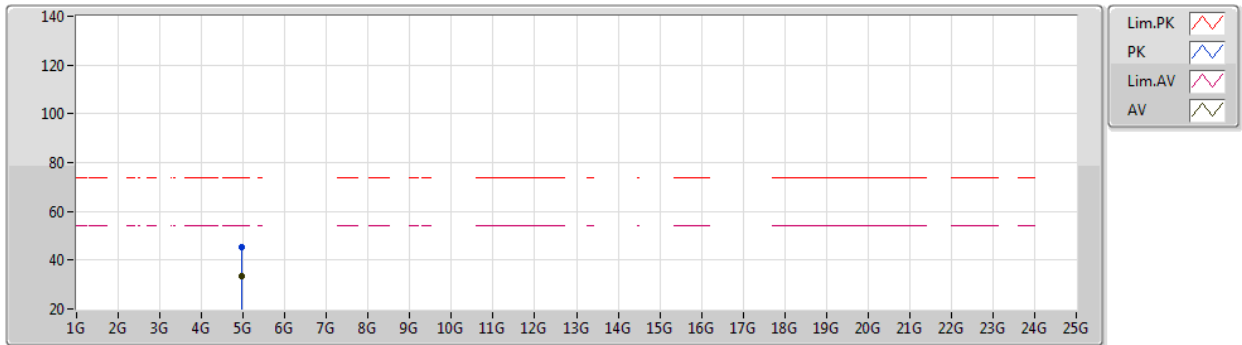
EUT Y_1TX
Setting Default
02-B-R-5

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	2.4802G	103.59	Inf	-Inf	72.63	3	Horizontal	308	2.40	-	28.52	2.44	-
AV	2.48G	102.08	Inf	-Inf	71.12	3	Horizontal	308	2.40	-	28.52	2.44	-
PK	2.4904G	58.98	74.00	-15.02	27.97	3	Horizontal	308	2.40	-	28.56	2.45	-
AV	2.4862G	47.91	54.00	-6.09	16.93	3	Horizontal	308	2.40	-	28.54	2.44	-

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



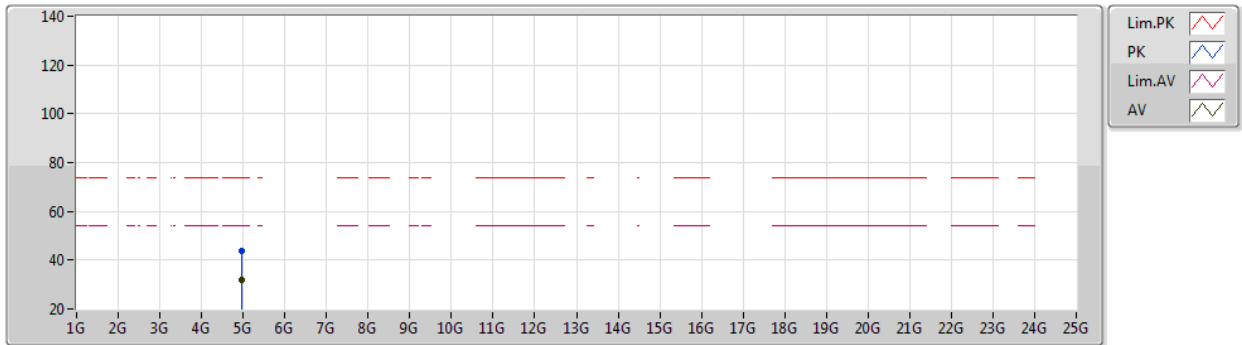
EUT Y_1TX
Setting Default
02-B-R-5

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	4.96028G	45.19	74.00	-28.81	39.10	3	Vertical	347	1.79	-	33.22	4.70	31.83
AV	4.96034G	33.57	54.00	-20.43	27.48	3	Vertical	347	1.79	-	33.22	4.70	31.83

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



EUT Y_1TX
Setting Default
02-B-R-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	4.95972G	43.95	74.00	-30.05	37.86	3	Horizontal	259	2.08	-	33.22	4.70	31.83
AV	4.95964G	32.05	54.00	-21.95	25.96	3	Horizontal	259	2.08	-	33.22	4.70	31.83



Test Mode: Mode 2

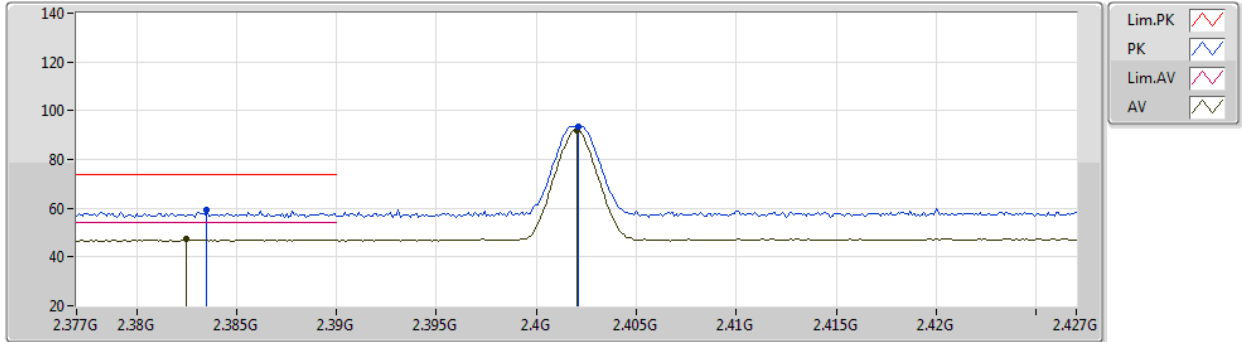
Summary

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	2.4842G	47.84	54.00	-6.16	3	Horizontal	66	2.47	-

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



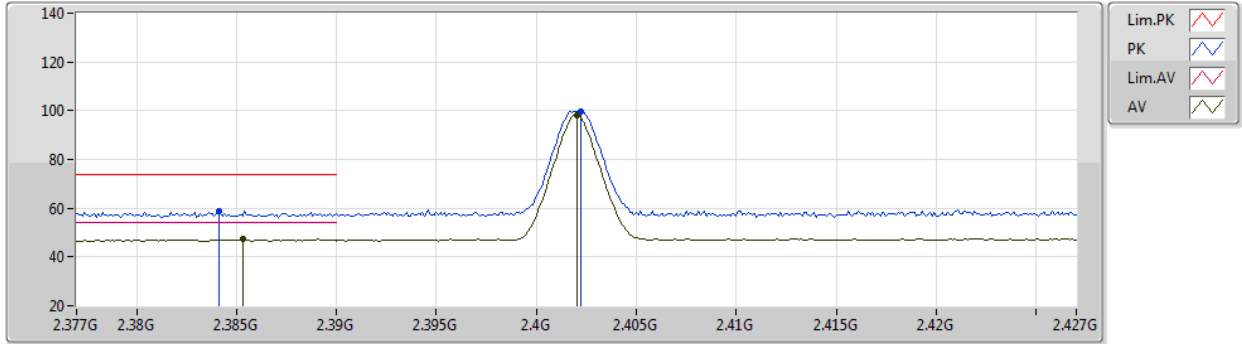
EUT Z_1TX
Setting Default
02-B-S-5

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	2.3835G	59.07	74.00	-14.93	28.36	3	Vertical	305	2.84	-	28.30	2.41	-
AV	2.3825G	47.21	54.00	-6.79	16.50	3	Vertical	305	2.84	-	28.30	2.41	-
PK	2.4021G	93.50	Inf	-Inf	62.80	3	Vertical	305	2.84	-	28.30	2.40	-
AV	2.402G	91.96	Inf	-Inf	61.26	3	Vertical	305	2.84	-	28.30	2.40	-

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



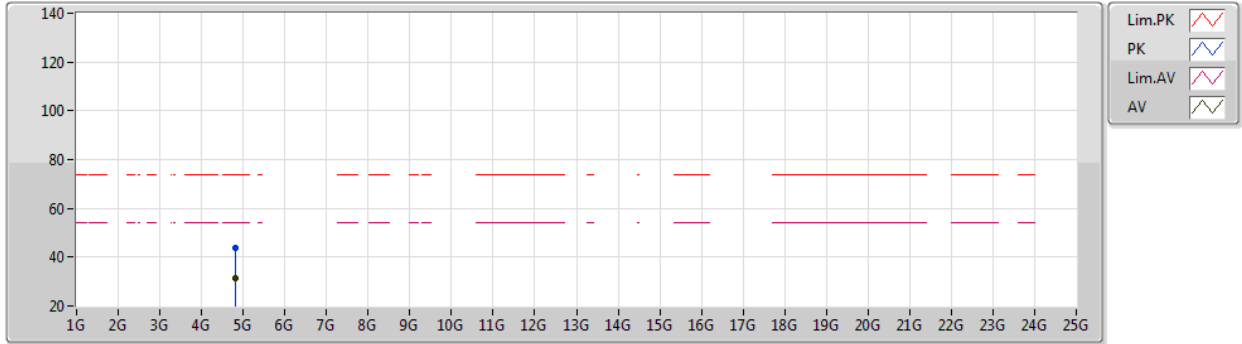
EUT Z_1TX
Setting Default
02-B-S-5

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	2.3841G	58.93	74.00	-15.07	28.22	3	Horizontal	343	2.37	-	28.30	2.41	-
AV	2.3853G	47.38	54.00	-6.62	16.67	3	Horizontal	343	2.37	-	28.30	2.41	-
PK	2.4022G	99.58	Inf	-Inf	68.88	3	Horizontal	343	2.37	-	28.30	2.40	-
AV	2.402G	98.02	Inf	-Inf	67.32	3	Horizontal	343	2.37	-	28.30	2.40	-

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



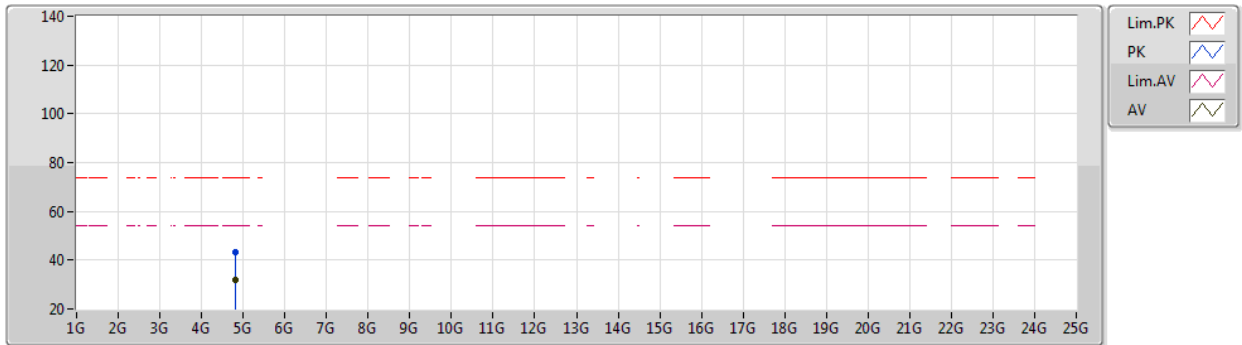
EUT Z_1TX
Setting Default
02-B-S-5

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	4.80484G	43.80	74.00	-30.20	38.05	3	Vertical	242	1.39	-	32.82	4.70	31.77
AV	4.81332G	31.60	54.00	-22.40	25.82	3	Vertical	242	1.39	-	32.85	4.70	31.77

BT-LE(1Mbps)

26/03/2021

2402MHz_TX



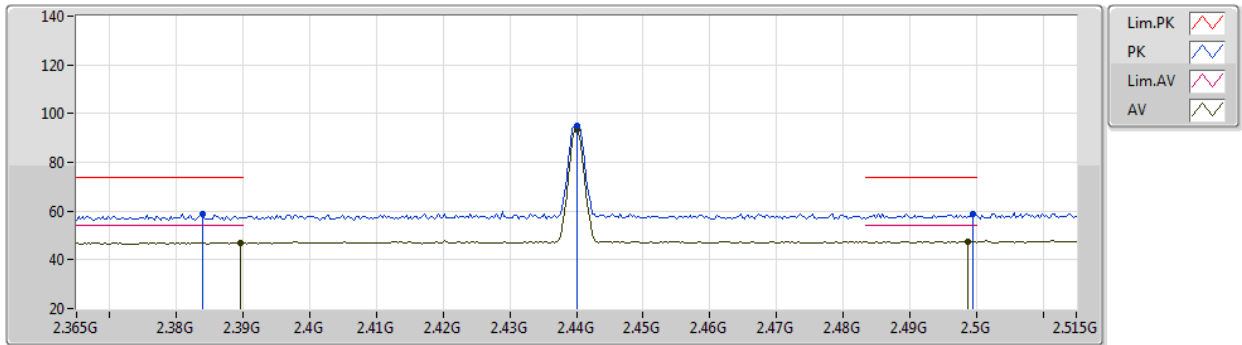
EUT Z_1TX
Setting Default
02-B-S-5

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	4.8058G	43.31	74.00	-30.69	37.56	3	Horizontal	125	1.85	-	32.82	4.70	31.77
AV	4.811G	31.71	54.00	-22.29	25.94	3	Horizontal	125	1.85	-	32.84	4.70	31.77

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



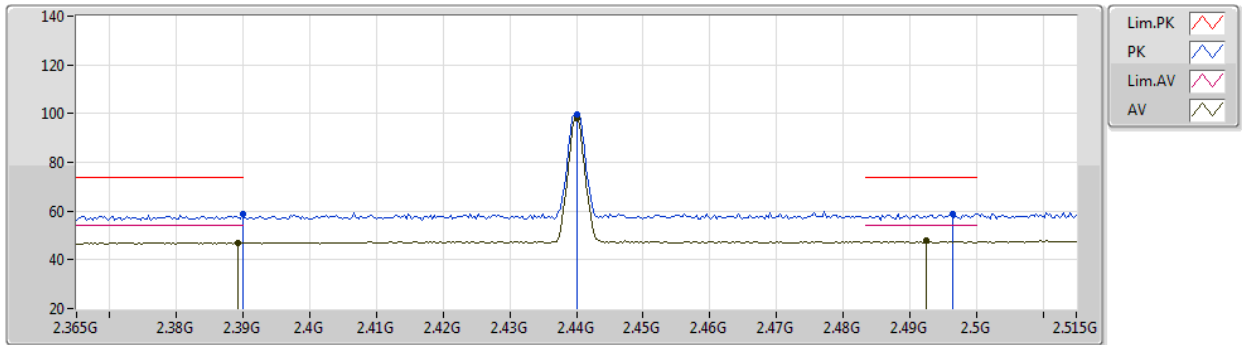
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Setting Default
02-B-S-5

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	2.3839G	58.82	74.00	-15.18	28.11	3	Vertical	307	2.77	-	28.30	2.41	-
AV	2.3896G	47.03	54.00	-6.97	16.32	3	Vertical	307	2.77	-	28.30	2.41	-
PK	2.44G	95.07	Inf	-Inf	64.27	3	Vertical	307	2.77	-	28.38	2.42	-
AV	2.44G	93.65	Inf	-Inf	62.85	3	Vertical	307	2.77	-	28.38	2.42	-
PK	2.4994G	58.88	74.00	-15.12	27.83	3	Vertical	307	2.77	-	28.60	2.45	-
AV	2.4988G	47.65	54.00	-6.35	16.60	3	Vertical	307	2.77	-	28.60	2.45	-

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



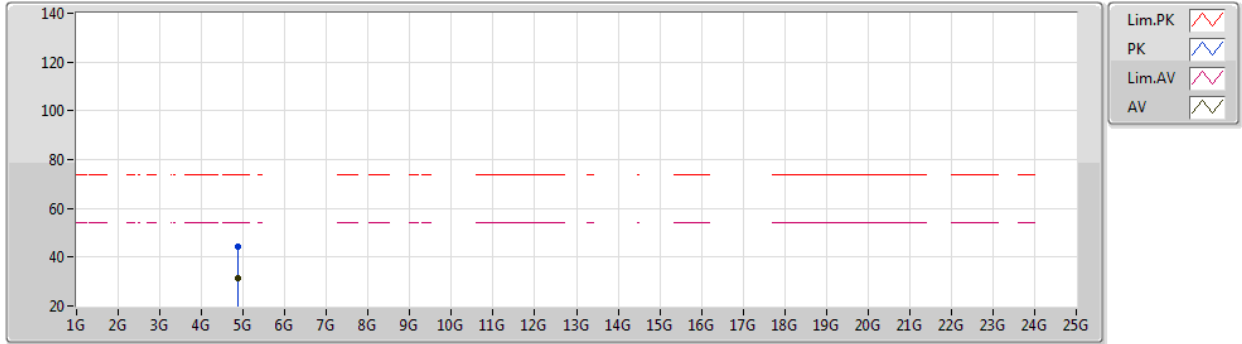
EUT Z_1TX
Setting Default
02-B-S-5

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	2.3899G	58.84	74.00	-15.16	28.13	3	Horizontal	266	2.81	-	28.30	2.41	-
AV	2.3893G	47.09	54.00	-6.91	16.38	3	Horizontal	266	2.81	-	28.30	2.41	-
PK	2.44G	99.58	Inf	-Inf	68.78	3	Horizontal	266	2.81	-	28.38	2.42	-
AV	2.44G	98.10	Inf	-Inf	67.30	3	Horizontal	266	2.81	-	28.38	2.42	-
PK	2.4964G	58.94	74.00	-15.06	27.90	3	Horizontal	266	2.81	-	28.59	2.45	-
AV	2.4925G	47.68	54.00	-6.32	16.66	3	Horizontal	266	2.81	-	28.57	2.45	-

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



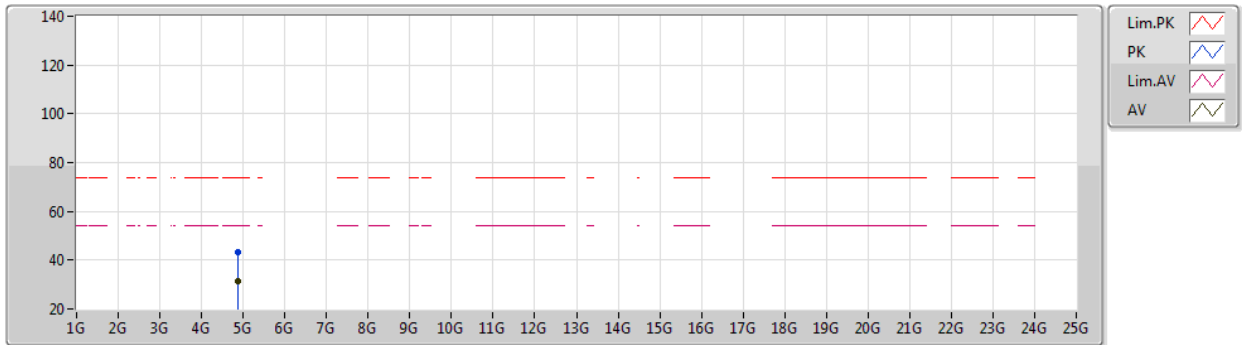
EUT Z_1TX
Setting Default
02-B-S-5

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	4.87604G	44.17	74.00	-29.83	38.17	3	Vertical	70	2.03	-	33.10	4.70	31.80
AV	4.87196G	31.49	54.00	-22.51	25.49	3	Vertical	70	2.03	-	33.09	4.70	31.79

BT-LE(1Mbps)

26/03/2021

2440MHz_TX



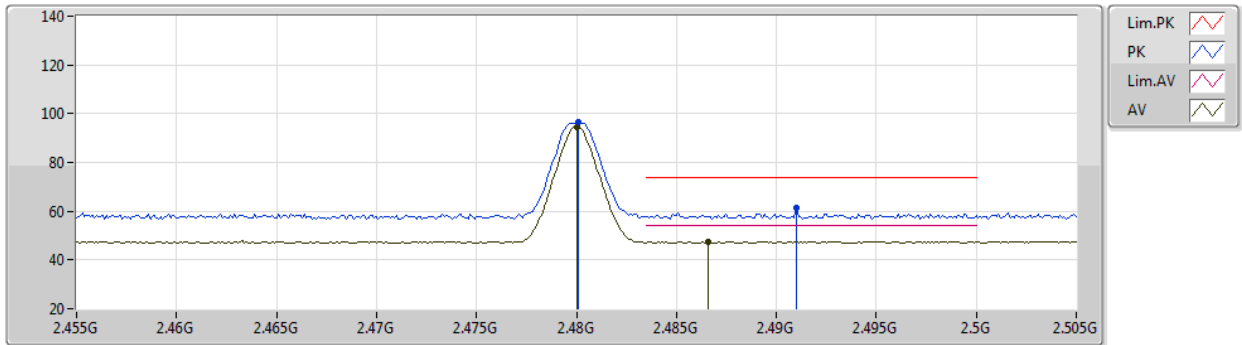
EUT Z_1TX
Setting Default
02-B-S-5

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	4.88516G	43.43	74.00	-30.57	37.39	3	Horizontal	200	2.46	-	33.14	4.70	31.80
AV	4.87396G	31.47	54.00	-22.53	25.46	3	Horizontal	200	2.46	-	33.10	4.70	31.79

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



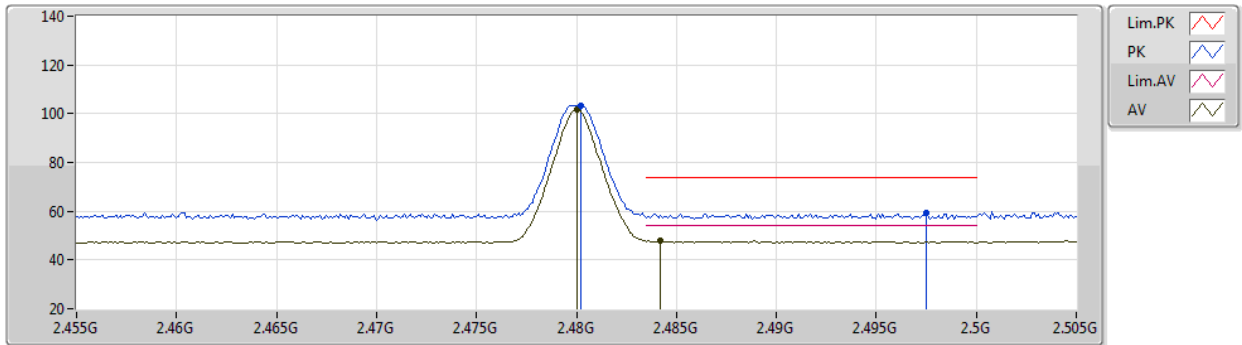
EUT Z_1TX
Setting Default
02-B-S-5

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	2.4801G	96.36	Inf	-Inf	65.40	3	Vertical	34	2.77	-	28.52	2.44	-
AV	2.48G	94.74	Inf	-Inf	63.78	3	Vertical	34	2.77	-	28.52	2.44	-
PK	2.491G	61.14	74.00	-12.86	30.13	3	Vertical	34	2.77	-	28.56	2.45	-
AV	2.4866G	47.62	54.00	-6.38	16.63	3	Vertical	34	2.77	-	28.55	2.44	-

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



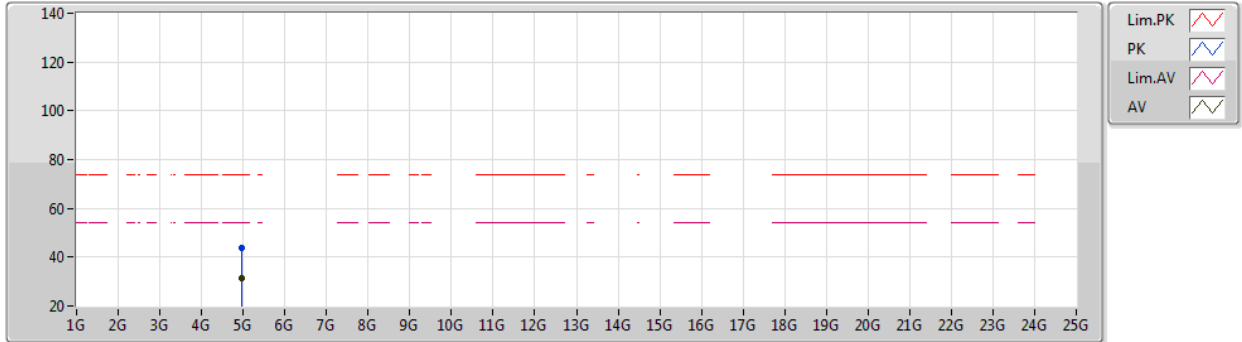
EUT Z_1TX
Setting Default
02-B-S-5

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	2.4802G	103.30	Inf	-Inf	72.34	3	Horizontal	66	2.47	-	28.52	2.44	-
AV	2.48G	101.64	Inf	-Inf	70.68	3	Horizontal	66	2.47	-	28.52	2.44	-
PK	2.4975G	59.56	74.00	-14.44	28.52	3	Horizontal	66	2.47	-	28.59	2.45	-
AV	2.4842G	47.84	54.00	-6.16	16.86	3	Horizontal	66	2.47	-	28.54	2.44	-

BT-LE(1Mbps)

26/03/2021

2480MHz_TX



EUT Z_1TX
Setting Default
02-B-S-5

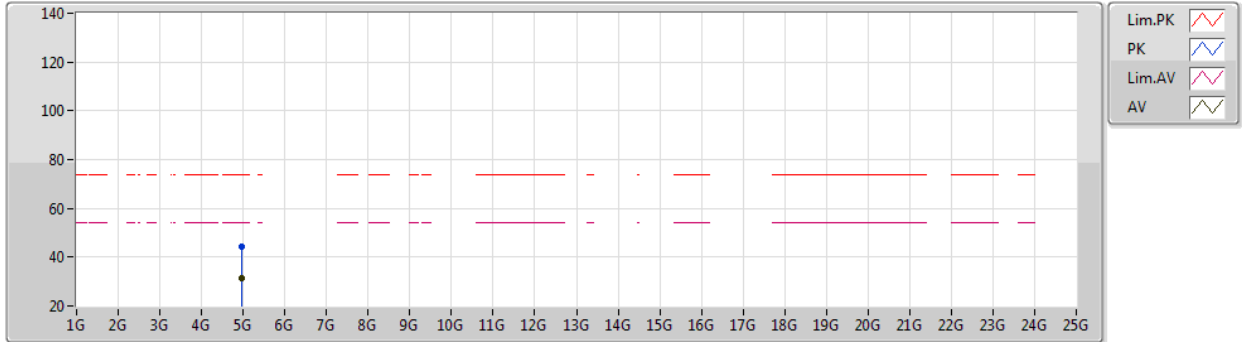
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96716G	44.03	74.00	-29.97	37.93	3	Vertical	288	1.91	-	33.23	4.70	31.83
AV	4.95156G	31.26	54.00	-22.74	25.18	3	Vertical	288	1.91	-	33.20	4.70	31.82



BT-LE(1Mbps)

26/03/2021

2480MHz_TX



EUT Z_1TX
Setting Default
02-B-S-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	4.9522G	44.40	74.00	-29.60	38.32	3	Horizontal	330	1.39	-	33.20	4.70	31.82
AV	4.95968G	31.61	54.00	-22.39	25.52	3	Horizontal	330	1.39	-	33.22	4.70	31.83