FCC RADIO TEST REPORT

FCC ID	:	QXO-AP302W
Equipment	:	Access Point
Brand Name	:	Extreme Networks
Model Name	:	AP302W
Applicant	:	Extreme Networks, Inc. 6480 Via Del Oro, San Jose, CA 95119
Manufacturer	:	Extreme Networks, Inc. 6480 Via Del Oro, San Jose, CA 95119
Standard	:	47 CFR FCC Part 15.247

The product was received on Sep. 09, 2020, and testing was started from Sep. 10, 2020 and completed on Oct. 30, 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: Cliff Chang

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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Photographs of EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FR09157AD	01	Initial issue of report	Nov. 18, 2020

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)	IEEE Std.	Ch. Frequency (MHz)	Channel Number
2400-2483.5	802.15.4	2405-2480	11-26 [16]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.15.4	3	1

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

1.1.2 Antenna Information

Set.	Ant.	2.4G Port	5G Port	Bluetooth & IEEE802.15.4 (Zigbee/Thread) Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	1	1	-	WNC	XKAN-N04	Printed Antenna	I-PEX	Note1
	2	2	2	-	WNC	XKAN-N04	Printed Antenna	I-PEX	
	3	-	2	1	WNC	XKAN-N04	Printed Antenna	I-PEX	
	4	-	1	-	WNC	XKAN-N04	Printed Antenna	I-PEX	

Note1:

Set.	Ant.	2.4G Port	5G Port	Bluetooth & IEEE802.15.4 (Zigbee/Thread) Port	Gain (dBi)		
					2.4GHz	5GHz	Bluetooth & IEEE802.15.4 (Zigbee/Thread)
1	1	1	1	-	4.5	6.0	-
	2	2	2	-	4.5	6.0	-
	3	-	2	1	-	6.6	4.8
	4	-	1	-	-	6.6	-

Note2: The above information was declared by manufacturer.

Dual Band Radio

<For 2.4GHz Band>

For IEEE 802.11b/g/n/VHT/ax mode (1TX/2RX):

The EUT supports 1TX/2RX function, and it supports TX diversity function.

Both Port 1 and Port 2 could be used as transmitting antenna, but only one of them will be used at one time. Port 1 and Port 2 could receive simultaneously.

For TX function: Port 1 generated the worst case than Port 2, so it is tested and recorded in the report.

For IEEE 802.11b/g/n/VHT/ax mode (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

<For 5GHz Band>

For IEEE 802.11a/n/ac/ax mode (1TX/2RX):

The EUT supports 1TX/2RX function, and it supports TX diversity function.

Both Port 1 and Port 2 could be used as transmitting antenna, but only one of them will be used at one time. Port 1 and Port 2 could receive simultaneously.

For TX function: Port 1 generated the worst case than Port 2, so it is tested and recorded in the report.

For IEEE 802.11a/n/ac/ax mode (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

5G Radio

<For 5GHz Band>

For IEEE 802.11a/n/ac/ax mode (1TX/2RX):

The EUT supports 1TX/2RX function, and it supports TX diversity function.

Both Port 1 and Port 2 could be used as transmitting antenna, but only one of them will be used at one time. Port 1 and Port 2 could receive simultaneously.

For TX function: Port 2 generated the worst case than Port 1, so it is tested and recorded in the report.

For IEEE 802.11a/n/ac/ax mode (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

BLE/IEEE802.15.4 (Zigbee/Thread) Radio

For Bluetooth & IEEE802.15.4 (Zigbee/Thread) mode (1TX/1RX):

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)
802.15.4	1	0

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

1.1.4 EUT Operational Condition

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

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT Support Function

Radio	Function		
	WLAN 2.4GHz	**WLAN 5GHz**	**Bluetooth & IEEE802.15.4 (Zigbee/Thread)**
Dual Band Radio	V	V	-
5G Radio	-	V	-
BLE/IEEE802.15.4 (Zigbee/Thread) Radio	-	-	V

Function	Support Type	Support Band
AP	Master	WLAN 2.4GHz/Bluetooth/IEEE802.15.4(Zigbee/Thread)/WLAN 5GHz Band 1~4
Bridge	Master	WLAN 2.4GHz/Bluetooth/IEEE802.15.4(Zigbee/Thread)/WLAN 5GHz Band 1+4
Mesh	Master	WLAN 2.4GHz/Bluetooth/IEEE802.15.4(Zigbee/Thread)/WLAN 5GHz Band 1+4

Note:

1. The above information was declared by manufacturer.
2. The EUT has three functions which are AP, Bridge, and Mesh mode, only the AP mode was tested and recorded in this test report.

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, Lane 724, Bo-ai St., Jhubei 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	Owen Hsu	23.2~23.8°C / 54~58%	Oct. 05, 2020 ~ Oct. 19, 2020
Radiated below 1GHz	03CH05-CB	Brian Sun	23.1~23.6°C / 54~58%	Sep. 25, 2020
Radiated above 1GHz	03CH03-CB	Paul Chen	23.6~25.5°C / 55~57%	Sep. 25, 2020 ~ Oct. 15, 2020
Radiated above 1GHz (For co-location)	03CH05-CB	Brian Sun	23.1~23.6°C / 54~58%	Sep. 25, 2020
	03CH06-CB		23.4~24.1°C / 54~57%	Oct. 30, 2020
AC Conduction	CO02-CB	Wei Li	24~25°C / 56~59%	Sep. 10, 2020 ~ Sep. 28, 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 (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.6 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	0.39%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.15.4	-
2405MHz	5
2440MHz	5
2475MHz	5
2480MHz	0

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	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + Adapter
2	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + PoE Out + PoE
3	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + Adapter
4	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + PoE Out + PoE
5	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4 + Adapter
6	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4 + PoE Out + PoE
7	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4 + Adapter
8	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4 + PoE Out + PoE
For operating mode 5 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

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	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + Adapter
2	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + PoE Out + PoE
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~5 will follow this same test mode.	
3	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth + Adapter
4	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4 + Adapter
5	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4 + Adapter
For operating mode 5 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
1	BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	5G Radio with 5GHz function + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth
2	5G Radio with 5GHz function + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4
For operating mode 1 is the worst case and it was record in this test report.	
Refer to Appendix G for Radiated Emission Co-location.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth
2	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with Bluetooth
3	Dual Band Radio with 2.4GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4
4	Dual Band Radio with 5GHz function + 5G Radio + BLE/IEEE802.15.4 (Zigbee/Thread) Radio with IEEE802.15.4
Refer to Sporton Test Report No.: FA091507 for Co-location RF Exposure Evaluation.	

Note1: The EUT only used at Y axis position.

Note2: The PoE is for measurement only, would not be marketed.

The detail information as below:

Power	Brand	Model
Adapter	powertron electronics corp.	PA1024-120IB200
PoE	Microsemi	PD-9001GR/AT/AC

Note3: The USB port was performed at the load as applicant requirement.

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

Others
RJ-45 cable*1, non-shielded, 0.1m
Bracket*1

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	ETH1/PoE Out NB	DELL	E6430	N/A
B	PASS THRU NB	DELL	E6430	N/A
C	2.4G/5G-R1 NB	DELL	E6430	N/A
D	5G-R2 NB	DELL	E6430	N/A
E	ETH2 NB	DELL	E6430	N/A
F	Flash disk	Kingston	DTSE9H	N/A
G	Adapter	powertron electronics corp.	PA1024-120IB200	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Notebook	DELL	E4300	N/A
C	Notebook	DELL	E4300	N/A
D	Notebook	DELL	E4300	N/A
E	Notebook	DELL	E4300	N/A
F	Flash disk	Kingston	DTSE9H	N/A
G	PoE	Microsemi	PD-9001GR/AT/AC	N/A
H	PoE LOAD	WNC	RLLL-M1	N/A
I	Adapter	powertron electronics corp.	PA1024-120IB200	N/A

For Radiated (above 1GHz):

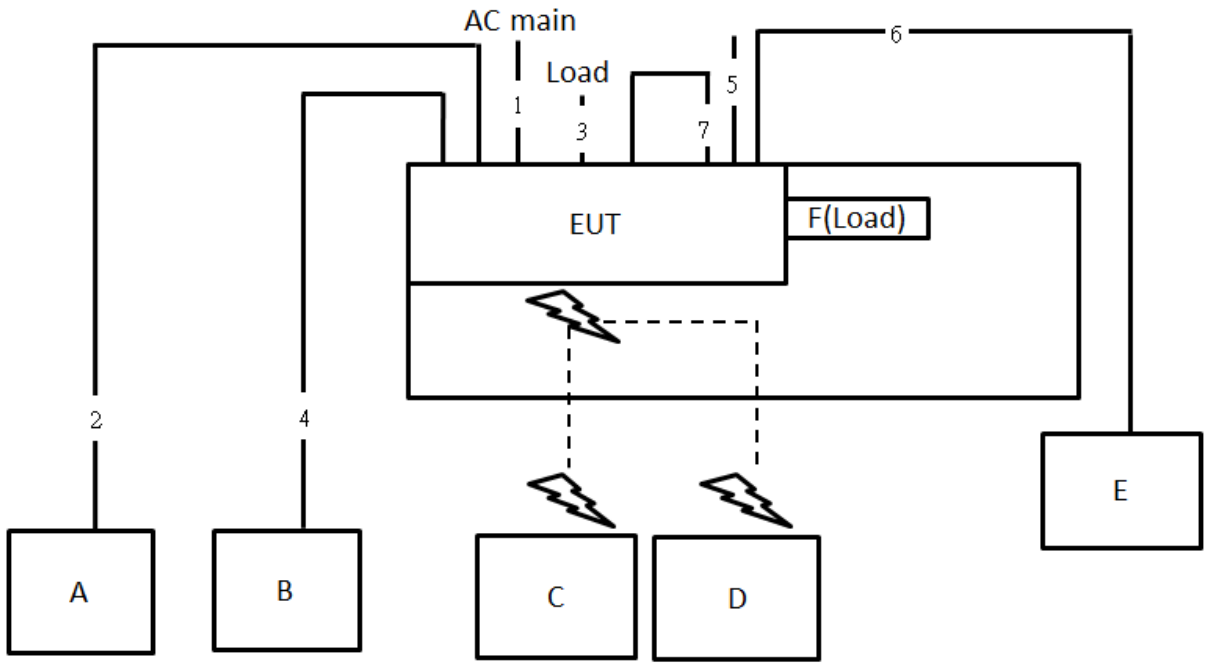
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Adapter	powertron electronics corp.	PA1024-120IB200	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Adapter	powertron electronics corp.	PA1024-120IB200	N/A

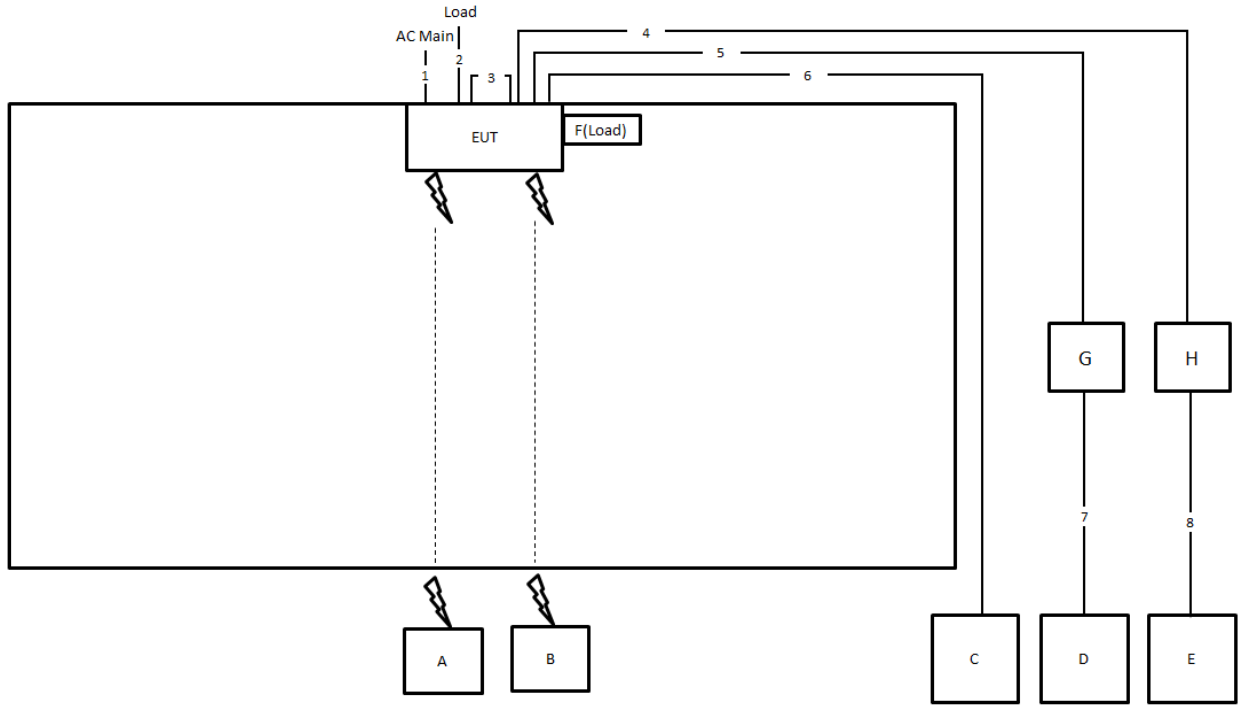
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



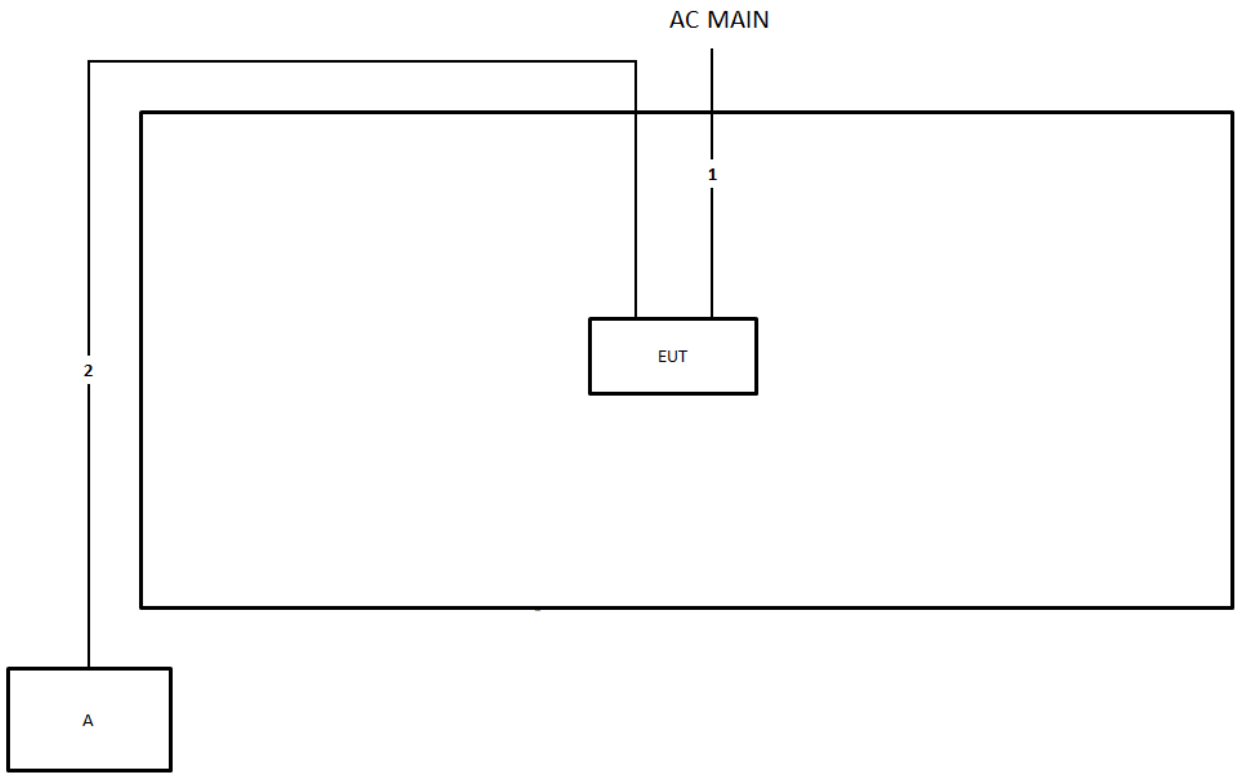
Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m
4	RJ-45 cable	No	10m
5	USB cable	Yes	1.5m
6	RJ-45 cable	No	10m
7	RJ-45 cable	No	0.1m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	USB cable	No	1.5m
3	RJ-45 cable	No	0.1m
4	RJ-45 cable	No	10m
5	RJ-45 cable	No	10m
6	RJ-45 cable	No	10m
7	RJ-45 cable	No	3m
8	RJ-45 cable	No	3m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

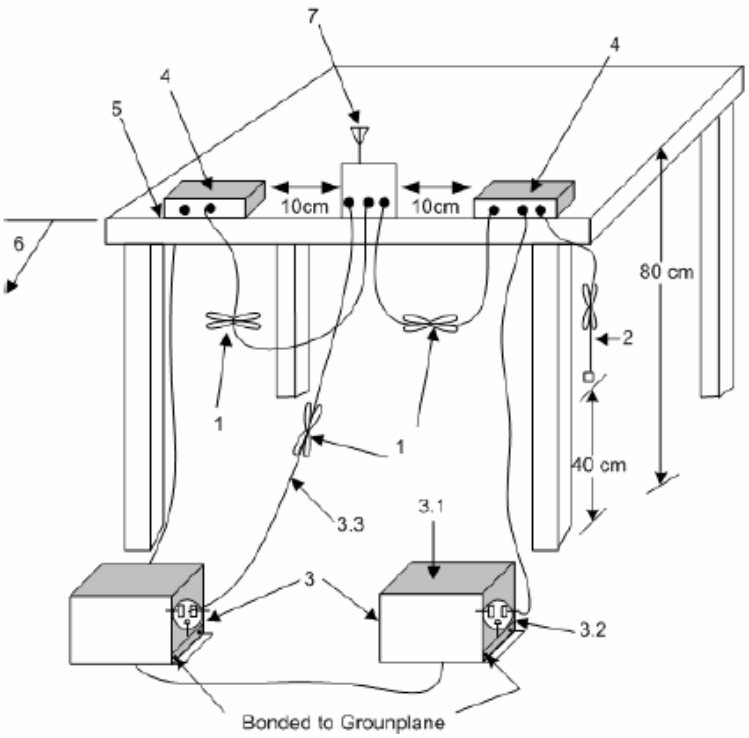
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



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

3.1.5 Measurement Results Calculation

The measured Level is calculated using:

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

b. Margin = -Limit + Level

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

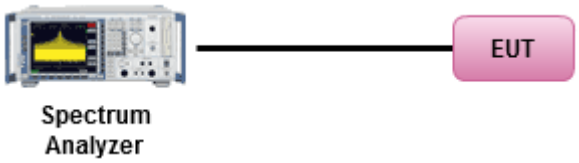
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit		
	▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)	
	▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)$ dBm	
	▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm	
	▪ Smart antenna system (SAS):	
		- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3$ dBm
		- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 – (G_{TX} – 6)/3 + 8$dB dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.		

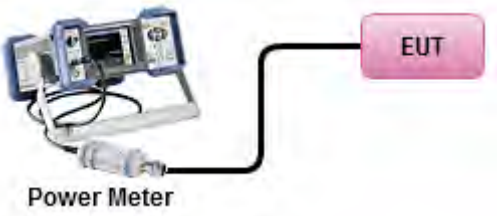
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

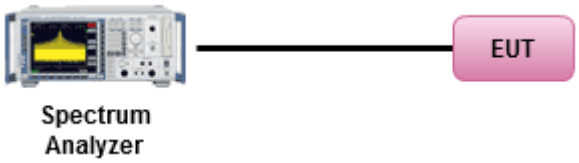
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup

Power Spectral Density
 Spectrum Analyzer

3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dBc)**
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.	

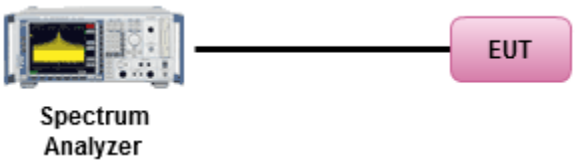
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup

Emissions in Non-restricted Frequency Bands


3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

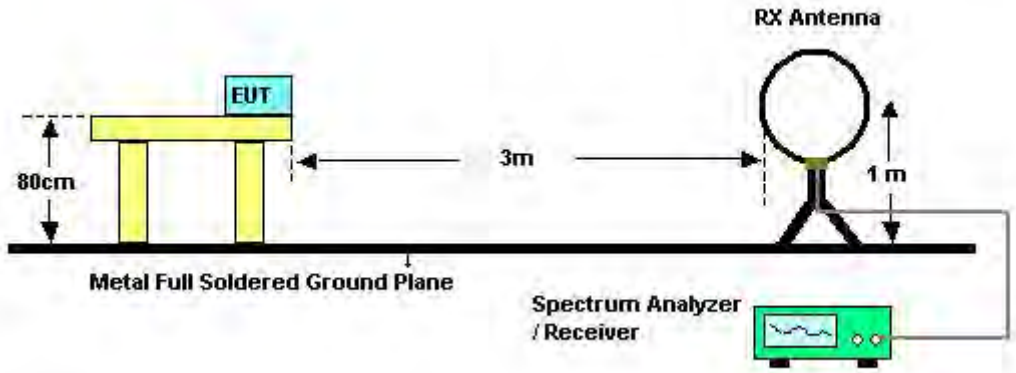
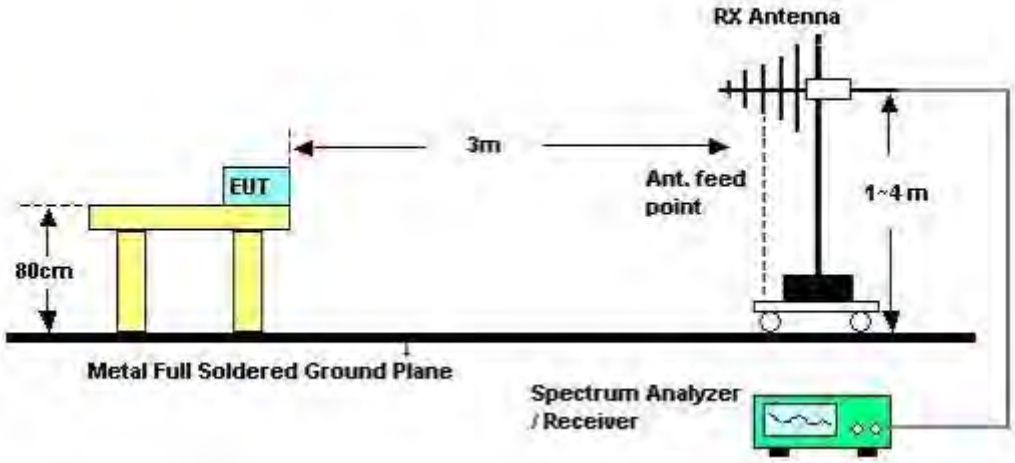
3.6.2 Measuring Instruments

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

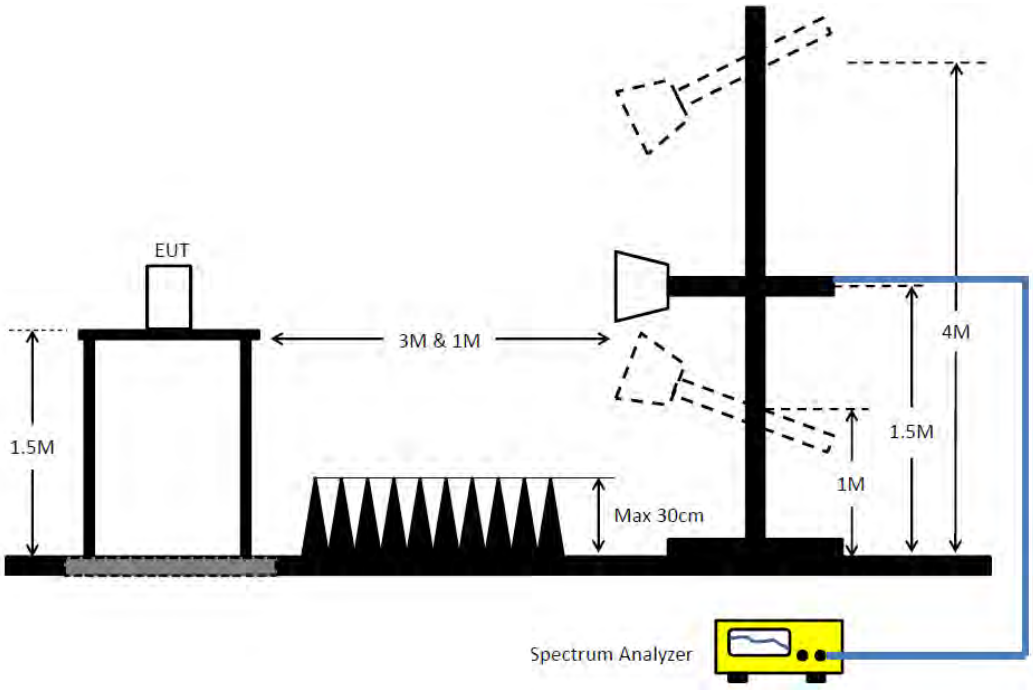
3.6.3 Test Procedures

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

3.6.4 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



3.6.5 Measurement Results Calculation

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

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 21, 2019	Nov. 20, 2020	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Oct. 30, 2019	Oct. 29, 2020	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Mar. 10, 2020	Mar. 09, 2021	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 21, 2019	Oct. 20, 2020	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 19, 2020	Mar. 18, 2021	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH05-CB)
3m Semi Anechoic Chamber(NSA)	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 10, 2020	Aug. 09, 2021	Radiation (03CH05-CB)
Site V.S.W.R	TDK	SAC-3M	03CH05-CB	1GHz ~18GHz 3m	Nov. 09, 2019	Nov. 08, 2020	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 27, 2020	Mar. 26, 2021	Radiation (03CH05-CB)
Horn Antenna	COM-POWER	AH-118	071028	1GHz~18GHz	Jun. 09, 2020	Jun. 08, 2021	Radiation (03CH05-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 28, 2020	Apr. 27, 2021	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz – 26.5GHz	Jul. 03, 2020	Jul. 02, 2021	Radiation (03CH05-CB)
Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun. 19, 2020	Jun. 18, 2021	Radiation (03CH05-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	May 12, 2020	May 11, 2021	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	LOW Cable-04+23	30MHz~1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Feb. 01, 2020	Jan. 31, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH05-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Site V.S.W.R	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 28, 2020	May 27, 2021	Radiation (03CH03-CB)
Horn Antenna	ETS‧Lindgren	3115	6821	750MHz~18GHz	Jan. 20, 2020	Jan. 19, 2021	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jul. 03, 2020	Jun. 02, 2021	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 09, 2020	Jun. 08, 2021	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Jul. 28, 2020	Jul. 27, 2021	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+27(spare)	1GHz ~ 18GHz	Jul. 03, 2020	Jul. 02, 2021	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
Site V.S.W.R	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 03, 2019	Oct. 02, 2020	Radiation (03CH06-CB)
Site V.S.W.R	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)
Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun. 19, 2020	Jun. 18, 2021	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 21, 2019	Oct. 20, 2020	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	May 12, 2020	May 11, 2021	Radiation (03CH06-CB)
RF Cable-high	HUBER+SUHNER	RG402	High Cable-05	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH06-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	HUBER+SUHNER	RG402	High Cable-05+24	1GHz~18GHz	Oct. 07, 2019	Oct. 06, 2020	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)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	May 12, 2020	May 11, 2021	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1531343	300MHz~40GHz	Aug. 04, 2020	Aug. 03, 2021	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1728001	300MHz~40GHz	Aug. 04, 2020	Aug. 03, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 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.

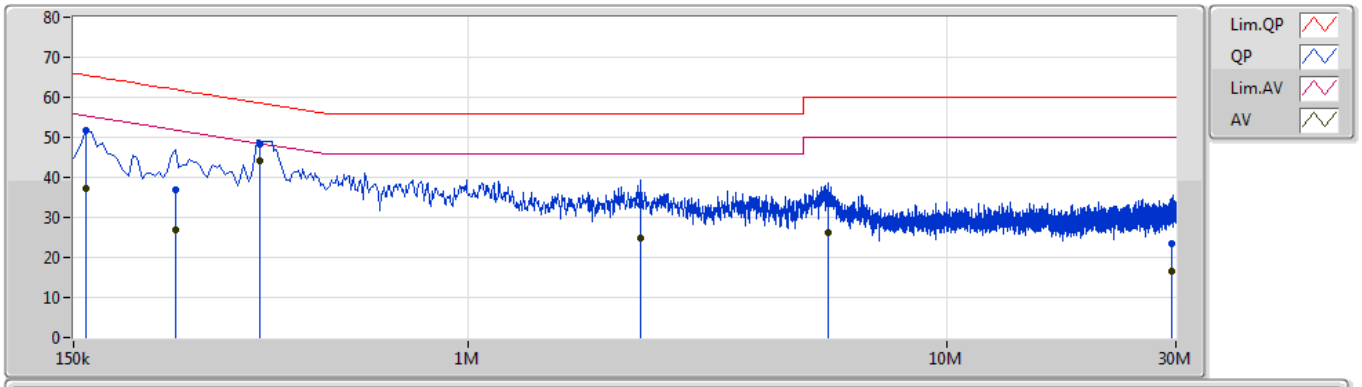
N.C.R. means Non-Calibration required.

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 5	Pass	AV	366k	44.20	48.60	-4.40	Line

Test Mode 5

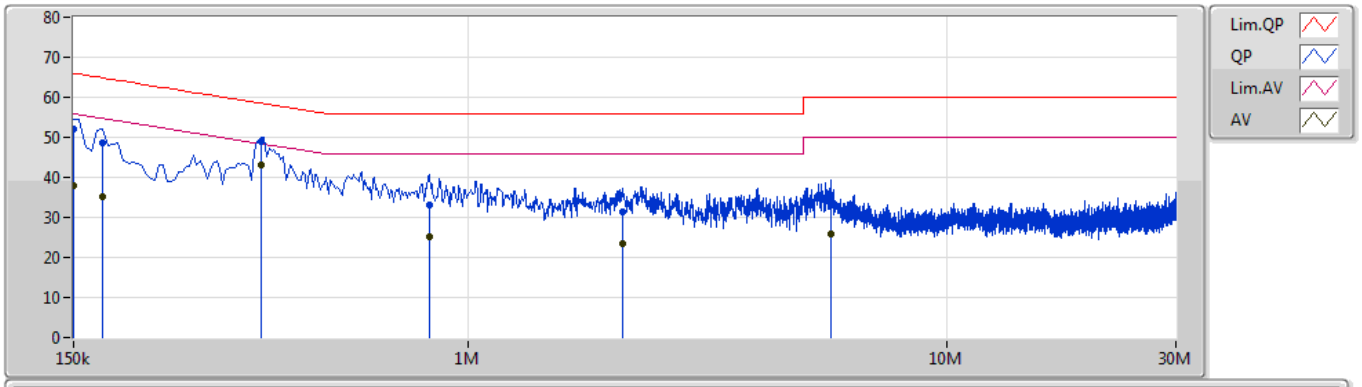
28/09/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	159k	51.65	65.52	-13.87	10.26	Line	-	41.39	0.05	0.06	10.15
AV	159k	37.28	55.52	-18.24	10.26	Line	-	27.02	0.05	0.06	10.15
QP	244.5k	37.05	61.95	-24.90	10.27	Line	-	26.78	0.05	0.07	10.15
AV	244.5k	26.74	51.95	-25.21	10.27	Line	-	16.47	0.05	0.07	10.15
QP	366k	48.28	58.60	-10.32	10.24	Line	-	38.04	0.05	0.08	10.11
AV	366k	44.20	48.60	-4.40	10.24	Line	"Worst"	33.96	0.05	0.08	10.11
QP	2.292M	33.13	56.00	-22.87	10.39	Line	-	22.74	0.10	0.16	10.13
AV	2.292M	24.94	46.00	-21.06	10.39	Line	-	14.55	0.10	0.16	10.13
QP	5.645M	33.58	60.00	-26.42	10.47	Line	-	23.11	0.16	0.15	10.16
AV	5.645M	26.07	50.00	-23.93	10.47	Line	-	15.60	0.16	0.15	10.16
QP	29.382M	23.43	60.00	-36.57	11.07	Line	-	12.36	0.62	0.24	10.21
AV	29.382M	16.53	50.00	-33.47	11.07	Line	-	5.46	0.62	0.24	10.21

Test Mode 5

28/09/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	52.18	66.00	-13.82	10.25	Neutral	-	41.93	0.05	0.05	10.15
AV	150k	37.83	56.00	-18.17	10.25	Neutral	-	27.58	0.05	0.05	10.15
QP	172.5k	48.70	64.83	-16.13	10.27	Neutral	-	38.43	0.05	0.06	10.16
AV	172.5k	35.10	54.83	-19.73	10.27	Neutral	-	24.83	0.05	0.06	10.16
QP	370.5k	48.85	58.49	-9.64	10.24	Neutral	-	38.61	0.05	0.08	10.11
AV	370.5k	43.25	48.49	-5.24	10.24	Neutral	"Worst"	33.01	0.05	0.08	10.11
QP	829.5k	33.24	56.00	-22.76	10.28	Neutral	-	22.96	0.06	0.11	10.11
AV	829.5k	25.15	46.00	-20.85	10.28	Neutral	-	14.87	0.06	0.11	10.11
QP	2.094M	31.45	56.00	-24.55	10.37	Neutral	-	21.08	0.08	0.16	10.13
AV	2.094M	23.31	46.00	-22.69	10.37	Neutral	-	12.94	0.08	0.16	10.13
QP	5.703M	33.07	60.00	-26.93	10.45	Neutral	-	22.62	0.14	0.15	10.16
AV	5.703M	25.71	50.00	-24.29	10.45	Neutral	-	15.26	0.14	0.15	10.16

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.15.4	1.638M	2.592M	2M59G1D	1.588M	2.567M

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

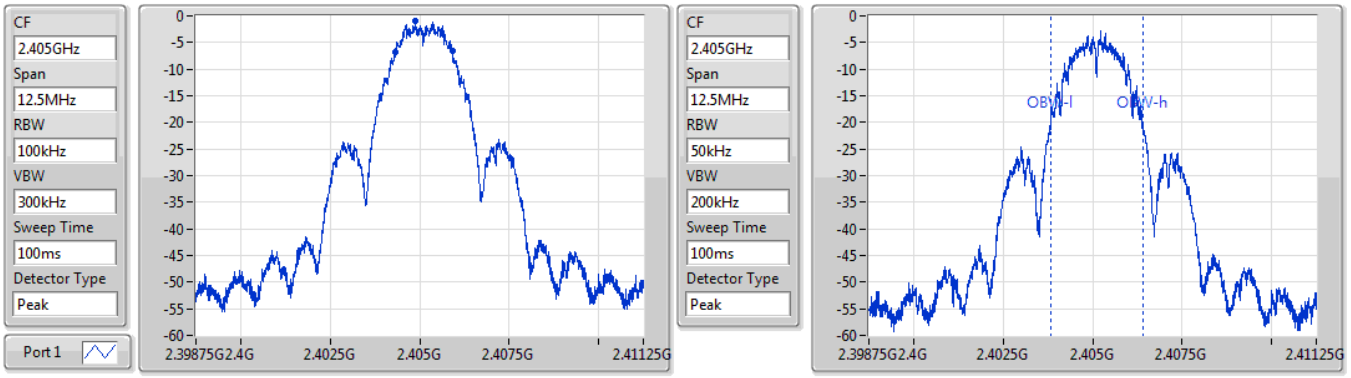
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.15.4	-	-	-	-
2405MHz	Pass	500k	1.588M	2.592M
2440MHz	Pass	500k	1.6M	2.592M
2480MHz	Pass	500k	1.594M	2.567M

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

802.15.4 **EBW**

2405MHz

15/10/2020

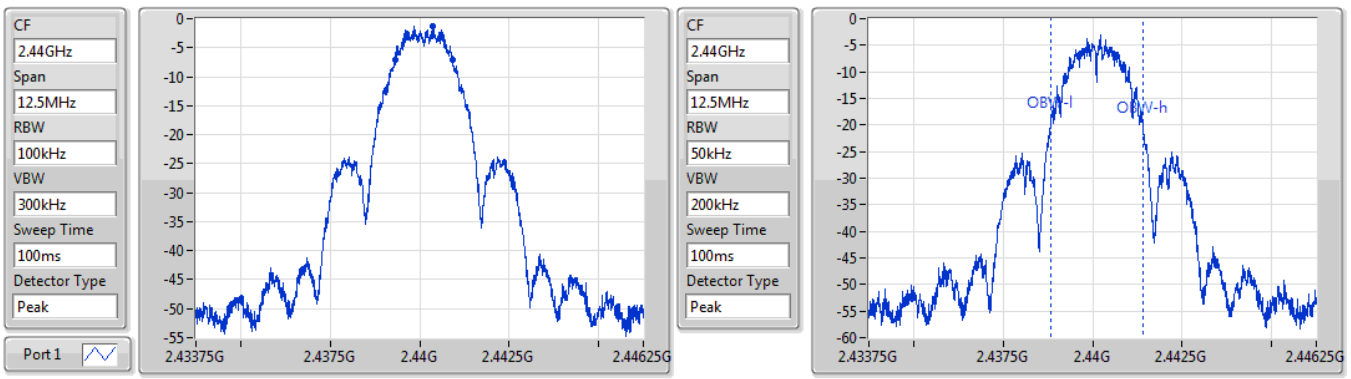


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.588M	2.404319G	2.405906G	2.592M	2.403819G	2.406412G	500k	1

802.15.4 **EBW**

2440MHz

15/10/2020

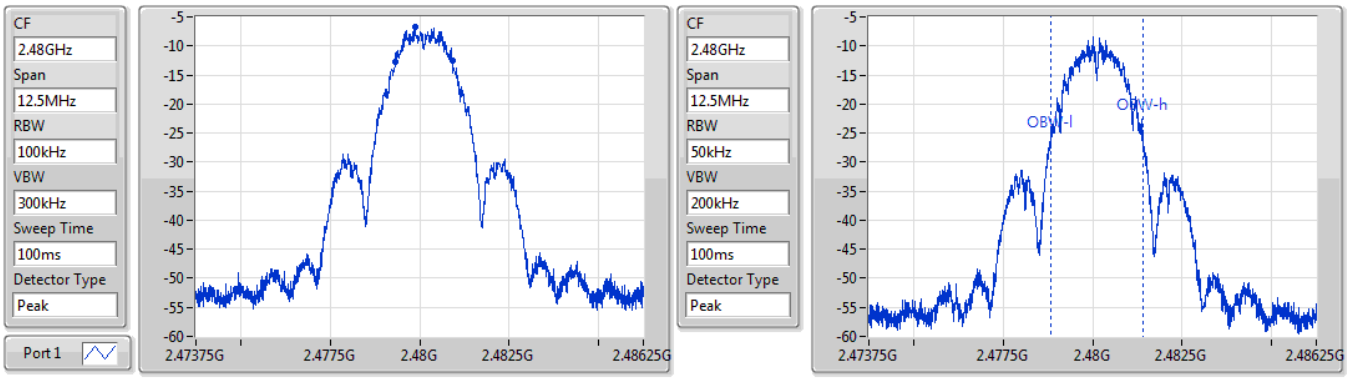


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.6M	2.439319G	2.440919G	2.592M	2.438819G	2.441412G	500k	1

802.15.4 **EBW**

2480MHz

16/10/2020



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.594M	2.479319G	2.480913G	2.567M	2.478826G	2.481393G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.15.4	3.14	0.00206

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.15.4	-	-	-	-	-
2405MHz	Pass	4.80	3.14	3.14	30.00
2440MHz	Pass	4.80	2.91	2.91	30.00
2475MHz	Pass	4.80	2.74	2.74	30.00
2480MHz	Pass	4.80	-3.08	-3.08	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.15.4	-12.82

RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

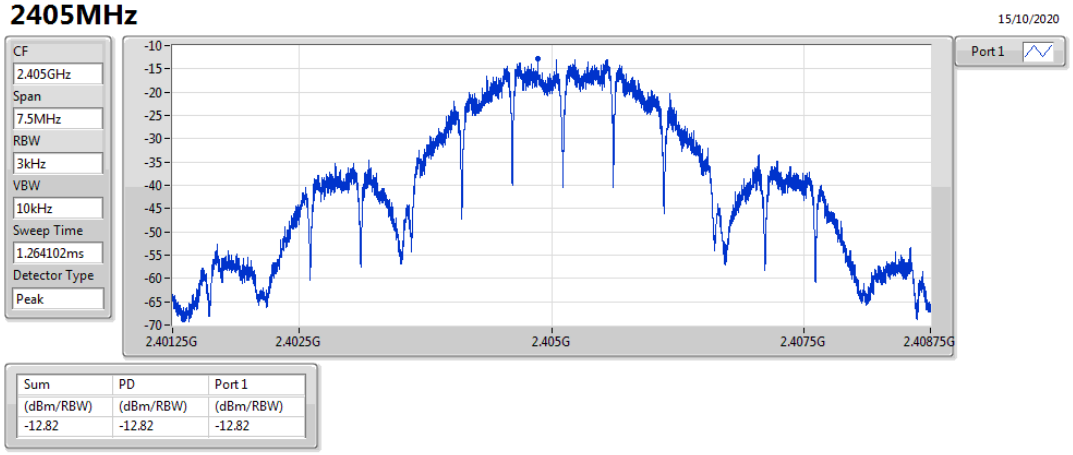
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.15.4	-	-	-	-	-
2405MHz	Pass	4.80	-12.82	-12.82	8.00
2440MHz	Pass	4.80	-13.09	-13.09	8.00
2480MHz	Pass	4.80	-17.86	-17.86	8.00

DG = Directional Gain; **RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.15.4 **PSD**

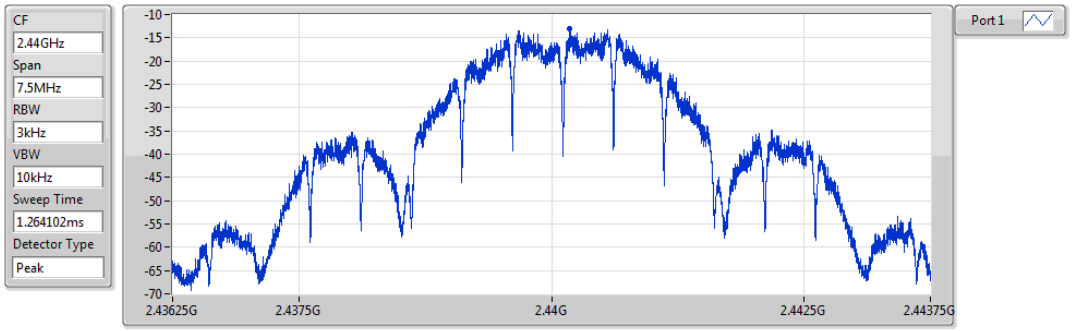
2405MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.82	-12.82	-12.82

802.15.4 **PSD**

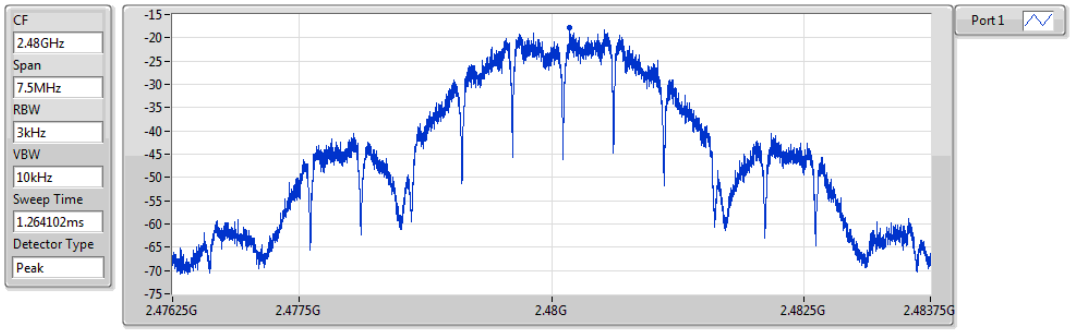
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.09	-13.09	-13.09

802.15.4 **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-17.86	-17.86	-17.86

Summary

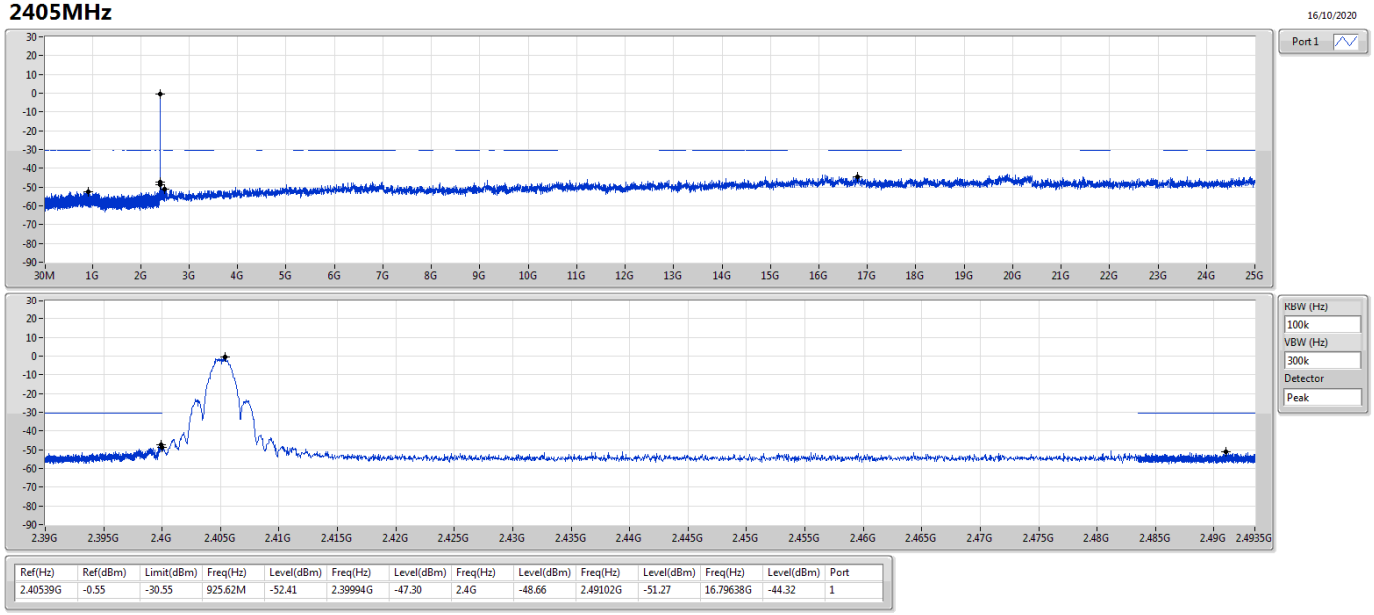
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	2.40539G	-0.55	-30.55	2.05134G	-51.99	2.39386G	-50.82	2.4835G	-47.38	2.48351G	-46.94	16.82451G	-43.98	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
802.15.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2405MHz	Pass	2.40539G	-0.55	-30.55	925.62M	-52.41	2.39994G	-47.30	2.4G	-48.66	2.49102G	-51.27	16.79638G	-44.32	1
2440MHz	Pass	2.40539G	-0.55	-30.55	951.58M	-52.10	2.39932G	-52.10	2.4835G	-53.50	2.49024G	-51.62	24.80025G	-43.67	1
2480MHz	Pass	2.40539G	-0.55	-30.55	2.05134G	-51.99	2.39386G	-50.82	2.4835G	-47.38	2.48351G	-46.94	16.82451G	-43.98	1

802.15.4 **CSE NdB**

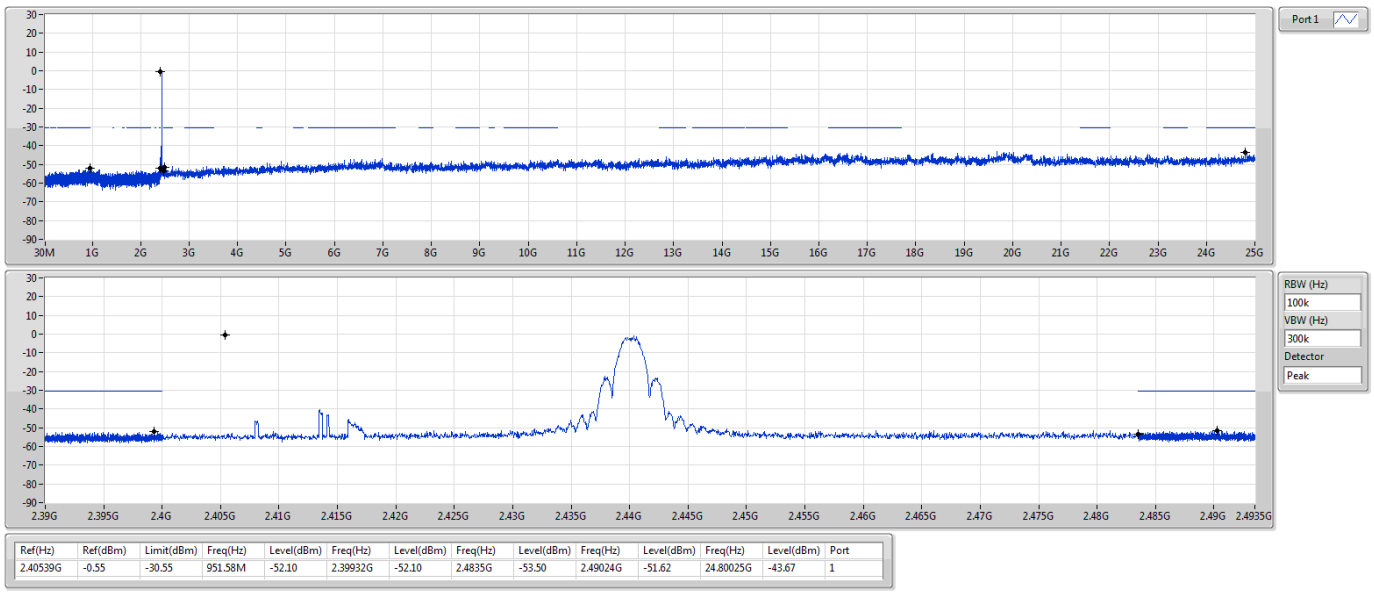
2405MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40539G	-0.55	-30.55	925.62M	-52.41	2.39994G	-47.30	2.4G	-48.66	2.49102G	-51.27	16.79638G	-44.32	1

802.15.4 **CSE NdB**

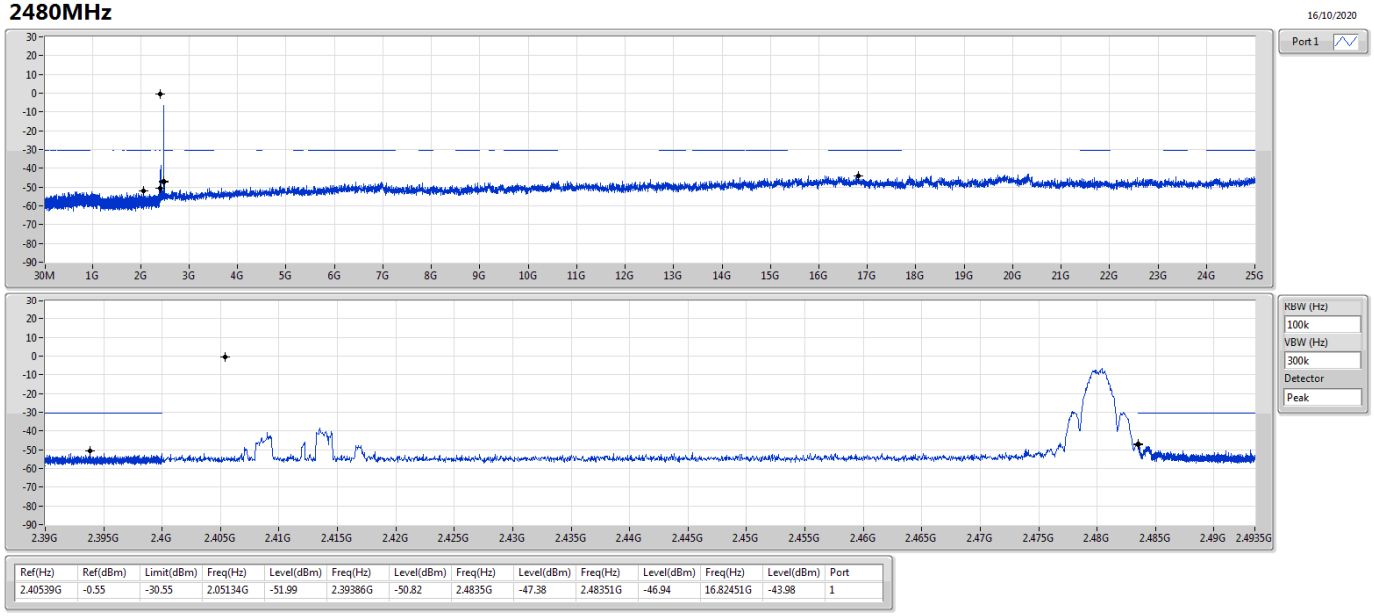
2440MHz



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
2.40539G	-0.55	-30.55	951.58M	-52.10	2.39932G	-52.10	2.4835G	-53.50	2.49024G	-51.62	24.80025G	-43.67	1

802.15.4 **CSE NdB**

2480MHz



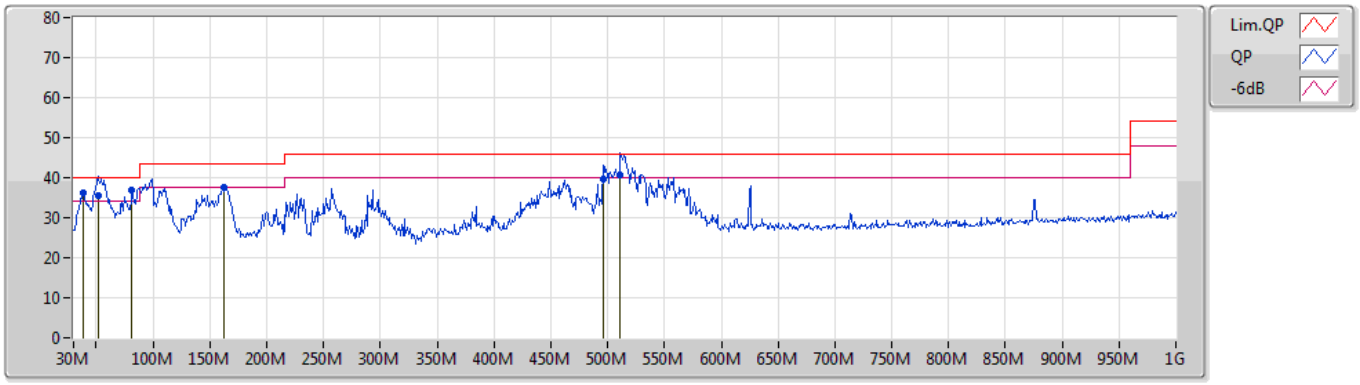
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40539G	-0.55	-30.55	2.05134G	-51.99	2.39386G	-50.82	2.4835G	-47.38	2.48351G	-46.94	16.82451G	-43.98	1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 5	Pass	PK	81.41M	36.97	40.00	-3.03	Vertical

Test Mode 5

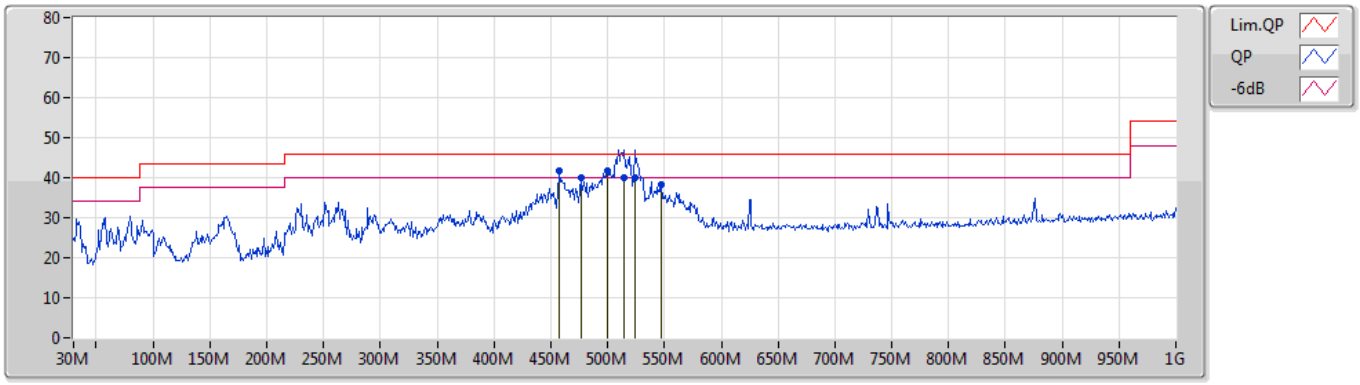
25/09/2020



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	38.73M	36.09	40.00	-3.91	-10.42	3	Vertical	194	1.00	-	46.51	19.65	1.37	31.44
QP	51.34M	35.58	40.00	-4.42	-16.35	3	Vertical	3	1.25	-	51.93	14.13	1.17	31.65
PK	81.41M	36.97	40.00	-3.03	-17.32	3	Vertical	278	2.00	"Worst"	54.29	13.04	1.40	31.76
PK	161.92M	37.49	43.50	-6.01	-13.93	3	Vertical	140	1.25	-	51.42	15.97	1.81	31.71
QP	495.6M	39.78	46.00	-6.22	-6.38	3	Vertical	103	1.00	-	46.16	22.90	3.08	32.36
QP	511.12M	40.55	46.00	-5.45	-6.22	3	Vertical	111	1.00	-	46.77	22.99	3.14	32.35

Test Mode 5

25/09/2020



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	457.77M	41.59	46.00	-4.41	-6.89	3	Horizontal	208	1.50	-	48.48	22.43	2.93	32.25
PK	476.2M	39.91	46.00	-6.09	-6.51	3	Horizontal	129	1.00	-	46.42	22.79	3.00	32.30
PK	499.48M	41.84	46.00	-4.16	-6.33	3	Horizontal	300	1.25	"Worst"	48.17	22.94	3.10	32.37
QP	514.03M	39.85	46.00	-6.15	-6.20	3	Horizontal	196	1.25	-	46.05	22.98	3.16	32.34
QP	523.73M	39.92	46.00	-6.08	-6.15	3	Horizontal	187	1.25	-	46.07	22.98	3.19	32.32
PK	547.01M	38.26	46.00	-7.74	-4.79	3	Horizontal	172	1.00	-	43.05	24.20	3.29	32.28

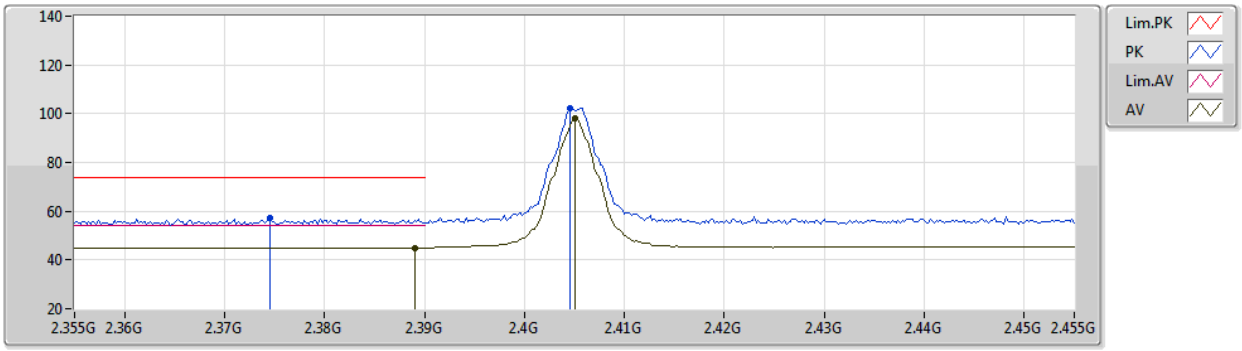
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.15.4	Pass	AV	2.4835G	53.80	54.00	-0.20	3	Vertical	332	2.00	-

802.15.4

2405MHz_TX

29/09/2020



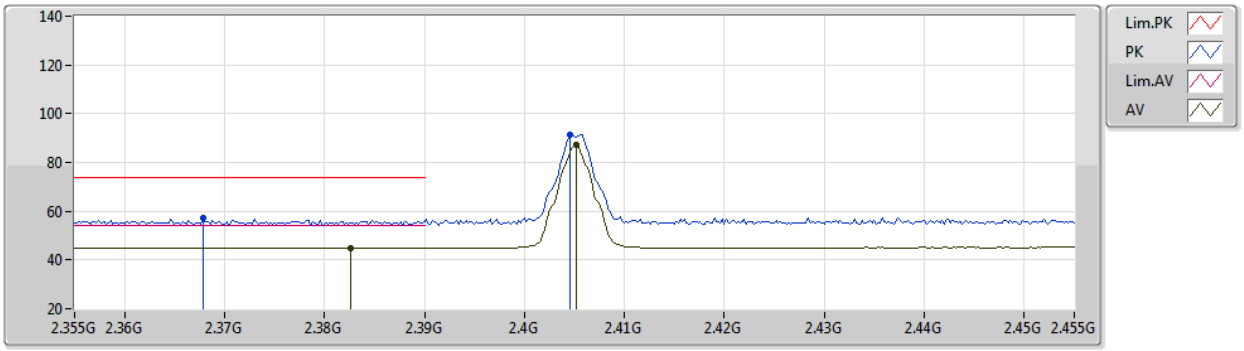
EUT Y_1TX
Setting 5
04-D-E-2

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	2.3746G	57.13	74.00	-16.87	24.63	3	Vertical	325	2.11	-	29.30	3.20	-
AV	2.389G	45.05	54.00	-8.95	12.49	3	Vertical	325	2.11	-	29.36	3.20	-
PK	2.4046G	102.48	Inf	-Inf	69.87	3	Vertical	325	2.11	-	29.41	3.20	-
AV	2.405G	98.11	Inf	-Inf	65.49	3	Vertical	325	2.11	-	29.41	3.21	-

802.15.4

2405MHz_TX

29/09/2020



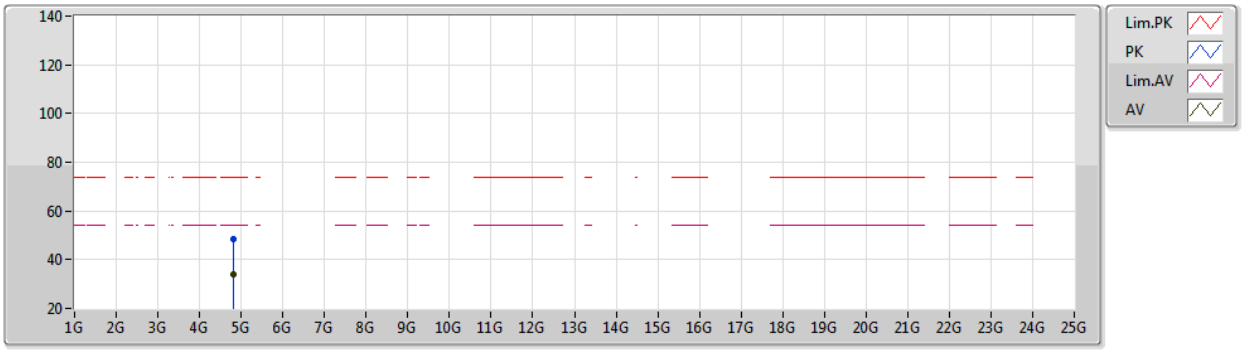
EUT Y_1TX
Setting 5
04-D-E-2

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	2.3678G	57.01	74.00	-16.99	24.54	3	Horizontal	7	1.46	-	29.27	3.20	-
AV	2.3826G	44.92	54.00	-9.08	12.39	3	Horizontal	7	1.46	-	29.33	3.20	-
PK	2.4046G	91.38	Inf	-Inf	58.77	3	Horizontal	7	1.46	-	29.41	3.20	-
AV	2.4052G	87.05	Inf	-Inf	54.43	3	Horizontal	7	1.46	-	29.41	3.21	-

802.15.4

2405MHz_TX

29/09/2020



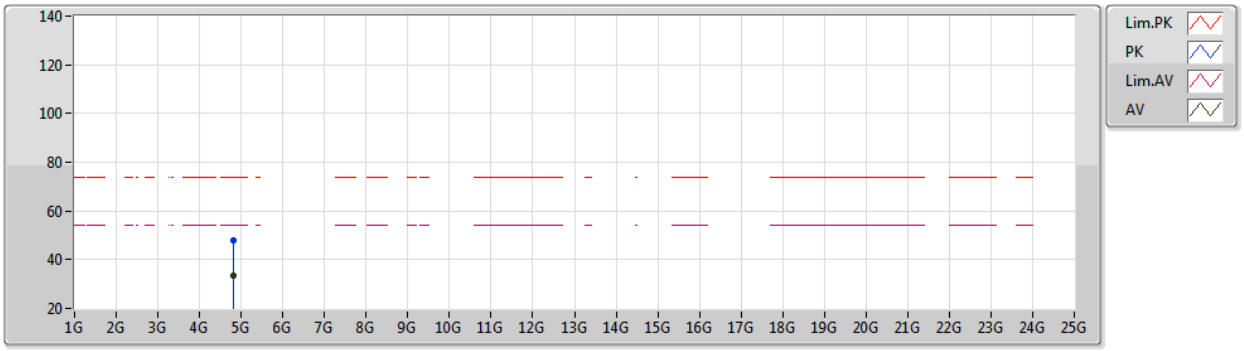
EUT Y_1TX
Setting 5
04-D-E-2

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	4.81035G	48.50	74.00	-25.50	44.33	3	Vertical	344	1.85	-	33.24	6.22	35.29
AV	4.81141G	33.95	54.00	-20.05	29.77	3	Vertical	344	1.85	-	33.25	6.22	35.29

802.15.4

2405MHz_TX

29/09/2020



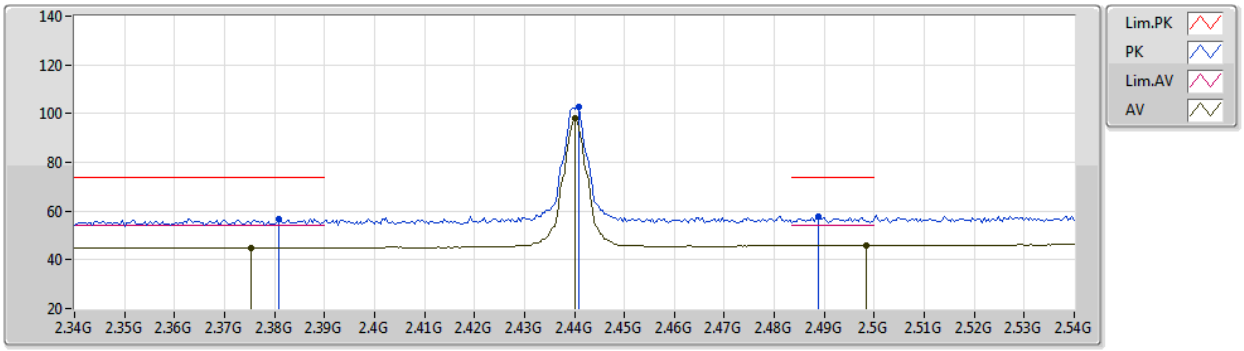
EUT Y_1TX
Setting 5
04-D-E-2

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	4.80771G	47.78	74.00	-26.22	43.63	3	Horizontal	328	1.40	-	33.23	6.21	35.29
AV	4.80888G	33.65	54.00	-20.35	29.49	3	Horizontal	328	1.40	-	33.24	6.21	35.29

802.15.4

2440MHz_TX

29/09/2020



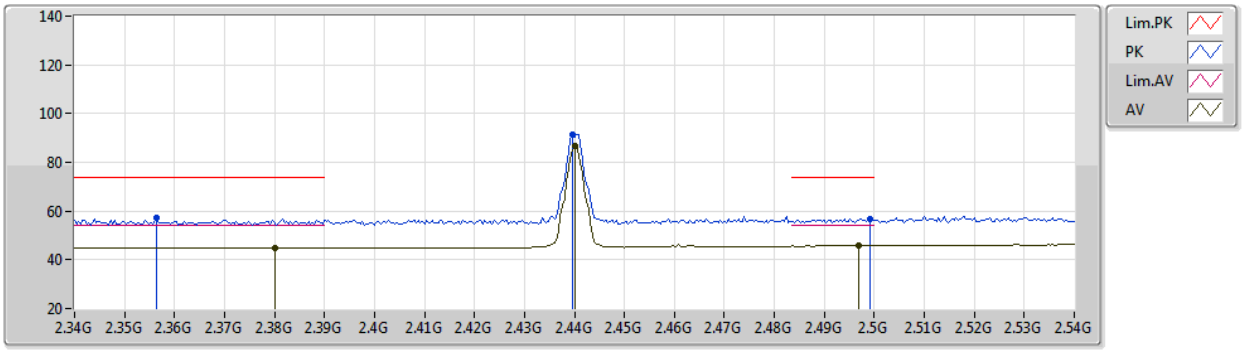
EUT Y_1TX
Setting 5
04-D-E-2

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	2.3808G	56.80	74.00	-17.20	24.28	3	Vertical	330	2.13	-	29.32	3.20	-
AV	2.3752G	44.94	54.00	-9.06	12.44	3	Vertical	330	2.13	-	29.30	3.20	-
PK	2.4408G	102.61	Inf	-Inf	69.89	3	Vertical	330	2.13	-	29.48	3.24	-
AV	2.44G	98.05	Inf	-Inf	65.33	3	Vertical	330	2.13	-	29.48	3.24	-
PK	2.4888G	57.60	74.00	-16.40	24.27	3	Vertical	330	2.13	-	30.04	3.29	-
AV	2.4984G	46.01	54.00	-7.99	12.53	3	Vertical	330	2.13	-	30.18	3.30	-

802.15.4

2440MHz_TX

29/09/2020



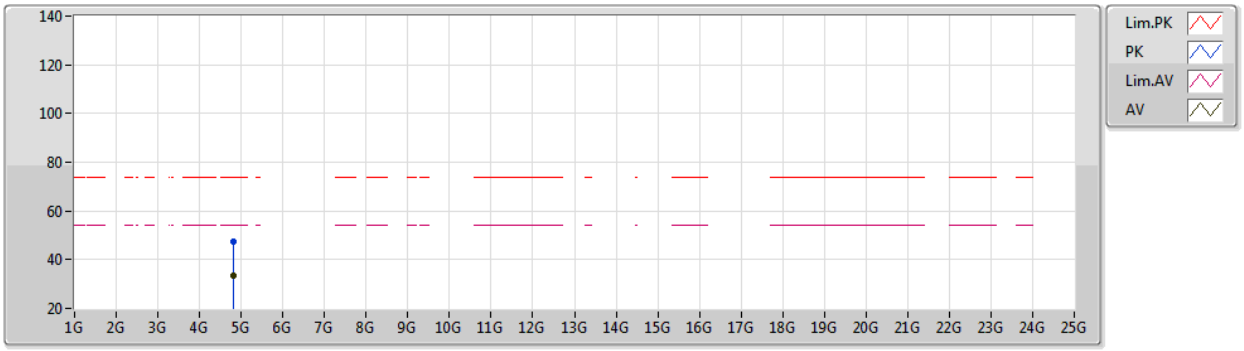
EUT Y_1TX
Setting 5
04-D-E-2

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	2.3564G	57.09	74.00	-16.91	24.66	3	Horizontal	342	2.02	-	29.23	3.20	-
AV	2.38G	44.87	54.00	-9.13	12.35	3	Horizontal	342	2.02	-	29.32	3.20	-
PK	2.4396G	91.28	Inf	-Inf	58.56	3	Horizontal	342	2.02	-	29.48	3.24	-
AV	2.44G	86.80	Inf	-Inf	54.08	3	Horizontal	342	2.02	-	29.48	3.24	-
PK	2.4992G	56.93	74.00	-17.07	23.44	3	Horizontal	342	2.02	-	30.19	3.30	-
AV	2.4968G	45.88	54.00	-8.12	12.42	3	Horizontal	342	2.02	-	30.16	3.30	-

802.15.4

2440MHz_TX

29/09/2020



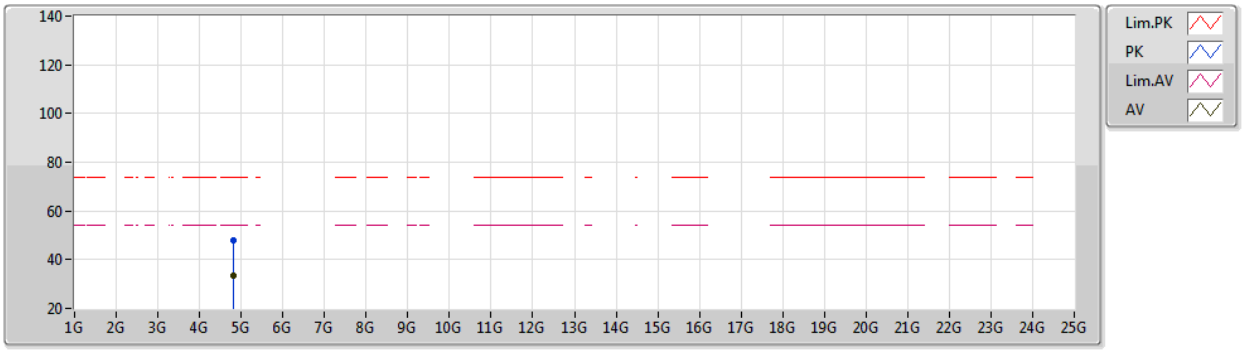
EUT Y_1TX
Setting 5
04-D-E-2

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	4.81202G	47.44	74.00	-26.56	43.26	3	Vertical	344	1.80	-	33.25	6.22	35.29
AV	4.80934G	33.37	54.00	-20.63	29.21	3	Vertical	344	1.80	-	33.24	6.21	35.29

802.15.4

2440MHz_TX

29/09/2020



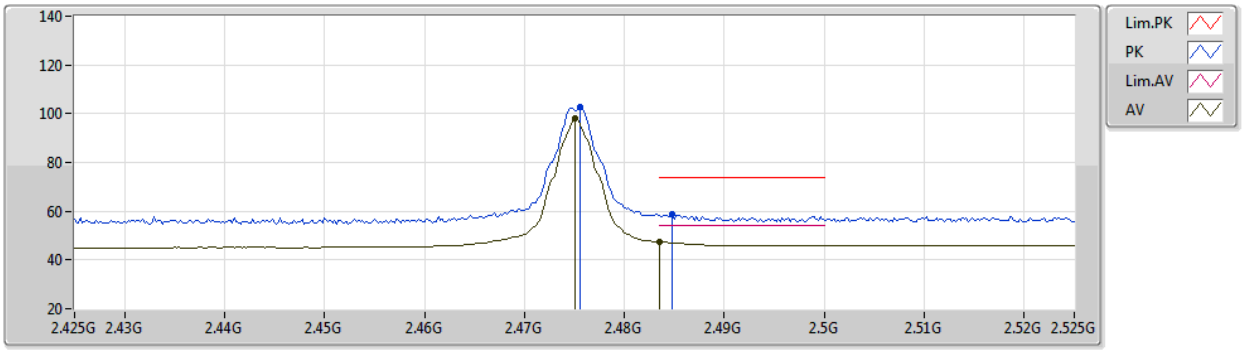
EUT Y_1TX
Setting 5
04-D-E-2

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	4.80976G	48.11	74.00	-25.89	43.95	3	Horizontal	321	1.78	-	33.24	6.21	35.29
AV	4.80926G	33.37	54.00	-20.63	29.21	3	Horizontal	321	1.78	-	33.24	6.21	35.29

802.15.4

2475MHz_TX

29/09/2020



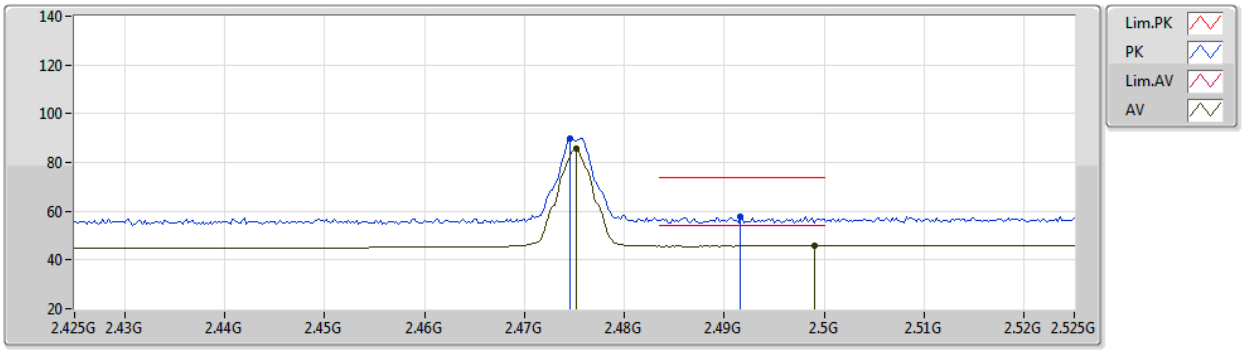
EUT Y_1TX
Setting 5
04-D-E-2

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	2.4756G	102.54	Inf	-Inf	69.40	3	Vertical	325	1.84	-	29.86	3.28	-
AV	2.475G	97.87	Inf	-Inf	64.75	3	Vertical	325	1.84	-	29.85	3.27	-
PK	2.4848G	58.77	74.00	-15.23	25.50	3	Vertical	325	1.84	-	29.99	3.28	-
AV	2.4835G	47.39	54.00	-6.61	14.14	3	Vertical	325	1.84	-	29.97	3.28	-

802.15.4

2475MHz_TX

29/09/2020



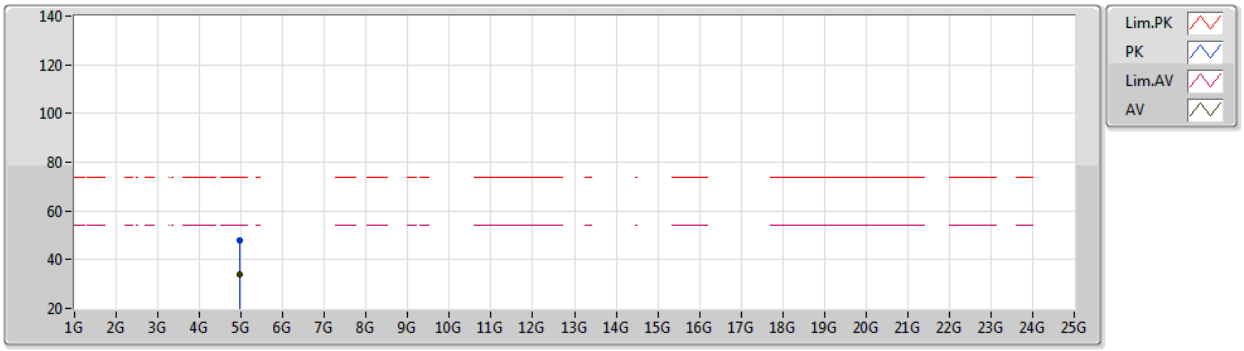
EUT Y_1TX
Setting 5
04-D-E-2

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	2.4746G	90.06	Inf	-Inf	56.95	3	Horizontal	334	1.98	-	29.84	3.27	-
AV	2.4752G	85.44	Inf	-Inf	52.31	3	Horizontal	334	1.98	-	29.85	3.28	-
PK	2.4916G	58.01	74.00	-15.99	24.64	3	Horizontal	334	1.98	-	30.08	3.29	-
AV	2.499G	45.77	54.00	-8.23	12.28	3	Horizontal	334	1.98	-	30.19	3.30	-

802.15.4

2475MHz_TX

29/09/2020



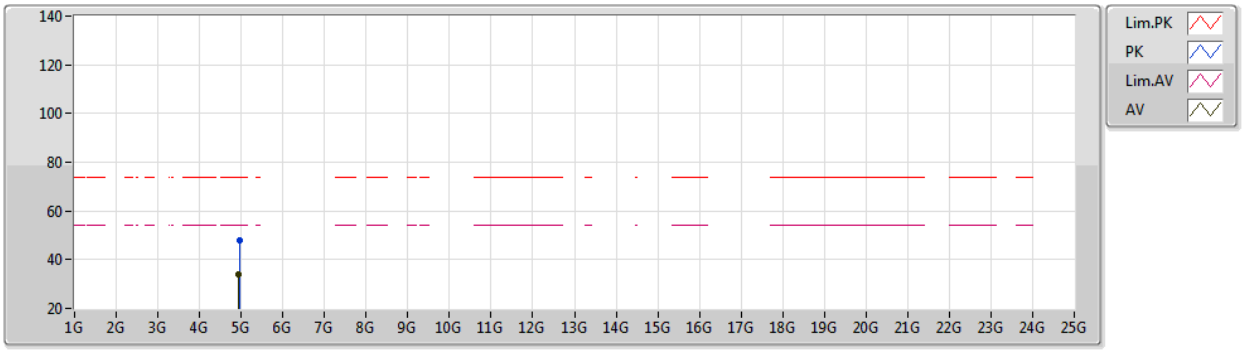
EUT Y_1TX
Setting 5
04-D-E-2

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	4.953G	47.79	74.00	-26.21	41.07	3	Vertical	128	1.80	-	34.00	5.58	32.86
AV	4.9497G	33.82	54.00	-20.18	27.11	3	Vertical	128	1.80	-	34.00	5.57	32.86

802.15.4

2475MHz_TX

29/09/2020



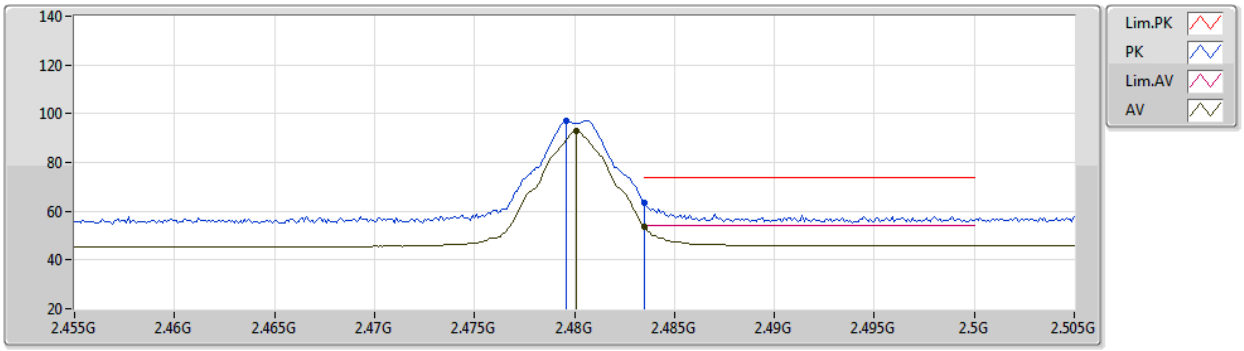
EUT Y_1TX
Setting 5
04-D-E-2

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	4.96176G	47.85	74.00	-26.15	41.13	3	Horizontal	67	1.19	-	34.00	5.58	32.86
AV	4.94916G	33.81	54.00	-20.19	27.10	3	Horizontal	67	1.19	-	34.00	5.57	32.86

802.15.4

2480MHz_TX

29/09/2020



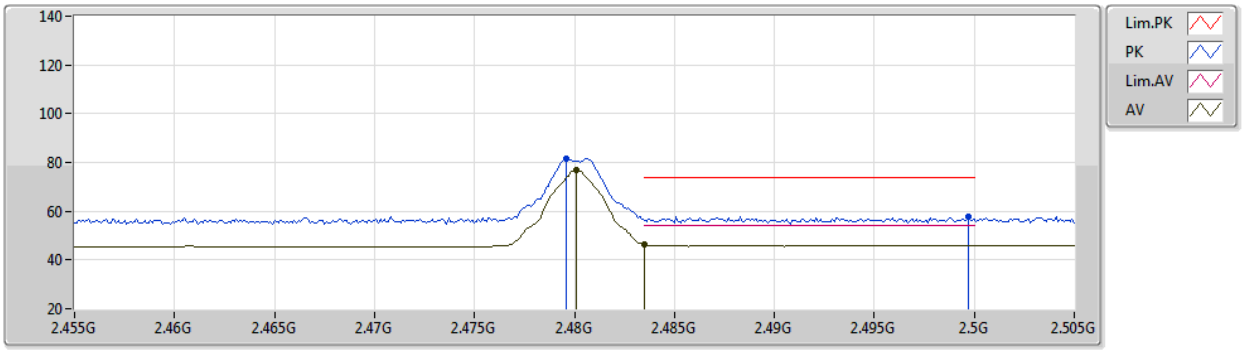
EUT Y_1TX
Setting 0
04-D-E-2

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	2.4796G	97.12	Inf	-Inf	63.93	3	Vertical	332	2.00	-	29.91	3.28	-
AV	2.4801G	92.76	Inf	-Inf	59.56	3	Vertical	332	2.00	-	29.92	3.28	-
PK	2.4835G	63.37	74.00	-10.63	30.12	3	Vertical	332	2.00	-	29.97	3.28	-
AV	2.4835G	53.80	54.00	-0.20	20.55	3	Vertical	332	2.00	-	29.97	3.28	-

802.15.4

2480MHz_TX

29/09/2020



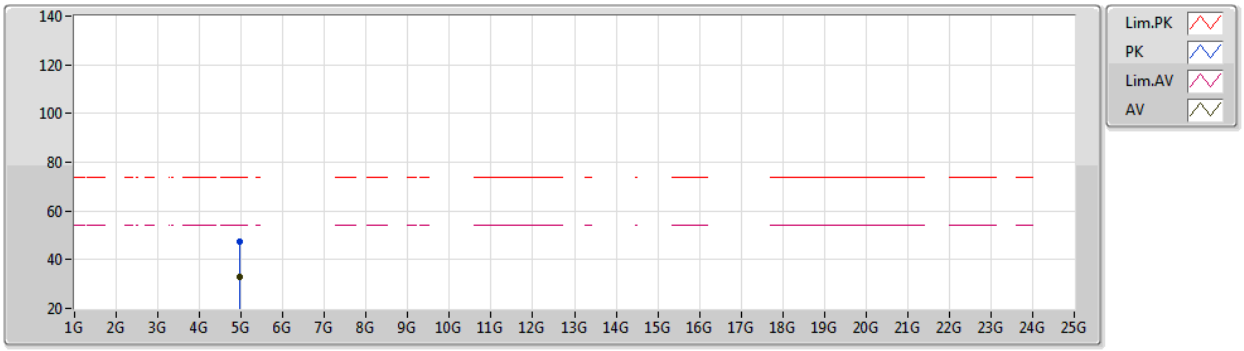
EUT Y_1TX
Setting 0
04-D-E-2

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	2.4796G	81.64	Inf	-Inf	48.45	3	Horizontal	99	1.83	-	29.91	3.28	-
AV	2.4801G	77.06	Inf	-Inf	43.86	3	Horizontal	99	1.83	-	29.92	3.28	-
PK	2.4997G	57.80	74.00	-16.20	24.30	3	Horizontal	99	1.83	-	30.20	3.30	-
AV	2.4835G	46.22	54.00	-7.78	12.97	3	Horizontal	99	1.83	-	29.97	3.28	-

802.15.4

2480MHz_TX

29/09/2020



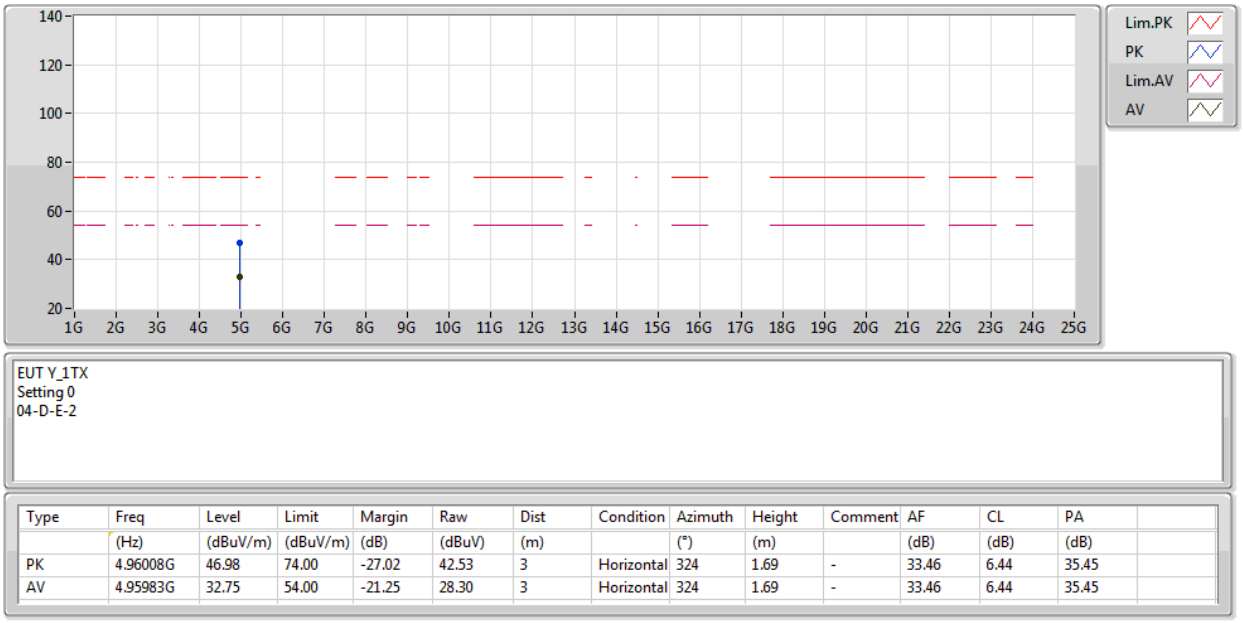
EUT Y_1TX
Setting 0
04-D-E-2

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	4.96099G	47.28	74.00	-26.72	42.82	3	Vertical	338	1.76	-	33.47	6.44	35.45
AV	4.96158G	33.05	54.00	-20.95	28.59	3	Vertical	338	1.76	-	33.47	6.44	35.45

802.15.4

2480MHz_TX

29/09/2020



EUT Y_1TX
Setting 0
04-D-E-2

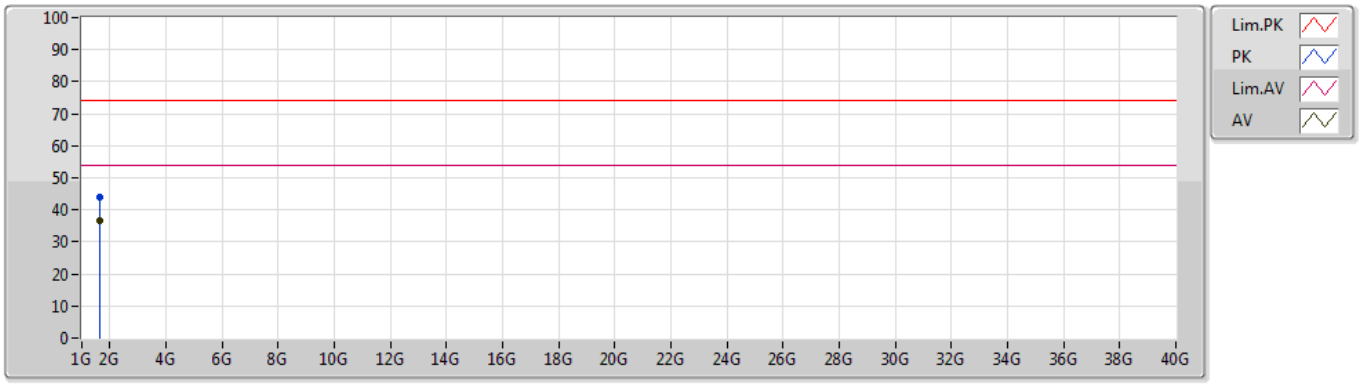
Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	4.96008G	46.98	74.00	-27.02	42.53	3	Horizontal	324	1.69	-	33.46	6.44	35.45
AV	4.95983G	32.75	54.00	-21.25	28.30	3	Horizontal	324	1.69	-	33.46	6.44	35.45

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	1.64204G	36.79	54.00	-17.21	Vertical

Mode 1

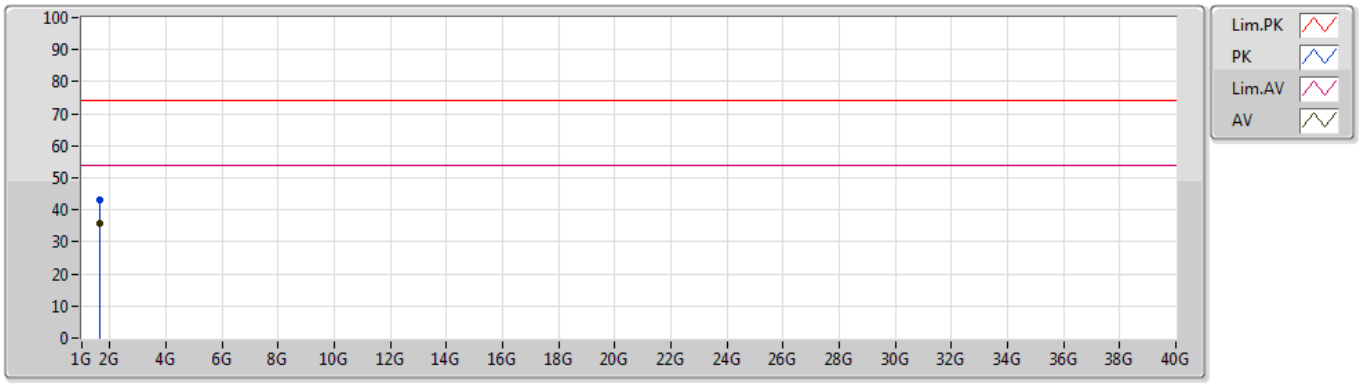
30/10/2020



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)	(dB)	(dB)	(dB)
PK	1.6598G	43.96	74.00	-30.04	-6.68	3	Vertical	155	1.03	-	50.64	25.06	2.50	34.24
AV	1.64204G	36.79	54.00	-17.21	-6.67	3	Vertical	155	1.03	"Worst"	43.46	25.10	2.50	34.27

Mode 1

30/10/2020



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)	(dB)	(dB)	(dB)
PK	1.6533G	42.95	74.00	-31.05	-6.66	3	Horizontal	97	1.00	-	49.61	25.09	2.50	34.25
AV	1.658G	35.69	54.00	-18.31	-6.67	3	Horizontal	97	1.00	"Worst"	42.36	25.07	2.50	34.24