Testing Laboratory 3787

RADIO TEST REPORT

FCC ID	:	TLZ-XM549
Equipment	:	IEEE 802.11 1X1 a/b/g/n/ac/ax Wireless LAN + Bluetooth 5.3 + 802.15.4 Tri-radio 12 x 12 LGA Module
Brand Name	:	AzureWave
Model Name	:	AW-XM549 , AW-XM549-I , AW-XM553 , AW-XM553-I
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 Dec. 16, 2022, and testing was started from Dec. 16, 2022 and completed on Sep. 13, 2023. 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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History of this test report

Report No.	Version	Description	Issued Date
FR2O0715AD	01	Initial issue of report	Oct. 12, 2023

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	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen
Report Producer: Viola Huang

1 General Description

1.1 Information

1.1.1 RF General Information

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

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1	1
2.4-2.4835GHz	BT-LE(500Kb/s)	1	1
2.4-2.4835GHz	BT-LE(125Kb/s)	1	1
2.4-2.4835GHz	BT-LE(2Mbps)	2	1

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

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	MAG. LAYERS	MSA-4008-25GC1-A2	PIFA Antenna	I-PEX	Note1
2	1	CEL	0032-02-07-00-001	PIFA Antenna	I-PEX	

Note1:

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth/Thread	WLAN 5GHz
1	2.98	5.16
2	1.30	4.30

Note 2: The above information was declared by manufacturer.
Note 3: The EUT has two antennas. Only the highest gain antenna was selected to test and record in this report. Thus, Antenna 1 was selected to perform the test.

<For WLAN 2.4GHz function>

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

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

<For WLAN 5GHz function>

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

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

<For Bluetooth function> (1TX/1RX):

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

<For Thread function> (1TX/1RX):

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.625	2.04	393.75u	3k
BT-LE(2Mbps)	0.332	4.79	210u	10k

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	DutApiMimoApApp(1.0.0.32)			
Support Mode	☒	LE 1M PHY: 1 Mb/s		
	☒	LE Coded PHY (S=2): 500 Kb/s		
	☒	LE Coded PHY (S=8): 125 Kb/s		
	☒	LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

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

Model Name	Description
AW-XM549	All the models are identical, the difference model served as marketing strategy.
AW-XM549-I	
AW-XM553	
AW-XM553-I	

Note 1: From the above models, model: AW-XM549 was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.1.6 Table for EUT Combination

EUT	Hardware Version	Description
1	01H	The difference between 01H and 02H is the layout of DC-DC power. All RF layouts are the same.
2	02H	

Note: 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	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	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	TH01-CB	Sean Ku	22.4~22.6 / 52~59	Dec. 20, 2022~Jan. 18, 2023
Radiated below 1GHz	03CH01-CB	Black Lu	22.7~24 / 57~61	Jun. 16, 2023 ~ Aug. 16, 2023
Radiated above 1GHz	03CH01-CB	Ederson Huang	22~23.9 / 57~63	Dec. 16, 2022~Jan. 17, 2023
AC Conduction	CO01-CB	Ryan Huang	22~23 / 50~51	Sep. 01, 2023~Sep. 13, 2023

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)

For test date before Jun. 01, 2023

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.2 dB	Confidence levels of 95%
Bandwidth Measurement	2.0 %	Confidence levels of 95%

For test date after May 31, 2023

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.1 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	12
2440MHz	12
2480MHz	12
BT-LE(2Mbps)	-
2402MHz	12
2440MHz	12
2480MHz	12

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: 120Vac / 60Hz
Operating Mode	Normal Link
1	EUT 2 + WLAN 2.4GHz + Bluetooth
2	EUT 2 + WLAN 5GHz + Bluetooth
3	EUT 2 + Thread
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT 1 + Thread
For operating mode 3 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	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	EUT 2 in X axis + WLAN 2.4GHz + Bluetooth
2	EUT 2 in Y axis + WLAN 2.4GHz + Bluetooth
3	EUT 2 in Z axis + WLAN 2.4GHz + Bluetooth
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT 2 in Z axis + WLAN 5GHz + Bluetooth
Mode 4 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5 will follow this same test mode.	
5	EUT 1 in Z axis + WLAN 5GHz + Bluetooth
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 6~7 will follow this same test mode.	

6	EUT 2 in Z axis + Thread
7	EUT 1 in Z axis + Thread
For operating mode 7 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. The worst-case was listed below, thus the measurement will follow this same test configuration.
1	EUT 2 in X axis

Note: The WLAN and Bluetooth function can't work at the same time.

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	EUT NB	ACER	N16Q1	N/A
B	Earphone	SHYARO CHI	MIC-04	N/A
C	Mouse	Logitech	M-U0026	N/A
D	Test Fixture	Azurewave	2460-I4	N/A
E	Client NB	DELL	E6430	N/A
F	Client	Azurewave	AW-XM549	N/A
G	Test Fixture	Azurewave	2460-I4	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Test Fixture	Azurewave	2460-I4	N/A
B	Notebook	DELL	E6230	N/A
C	Client	Azurewave	AW-XM549	N/A
D	Test Fixture	Azurewave	2460-I4	N/A
E	Notebook	DELL	E6230	N/A
F	Earphone	e-Power	S90W	N/A
G	Mouse	Logitech	M-U0026	N/A

For Radiated (above 1GHz):

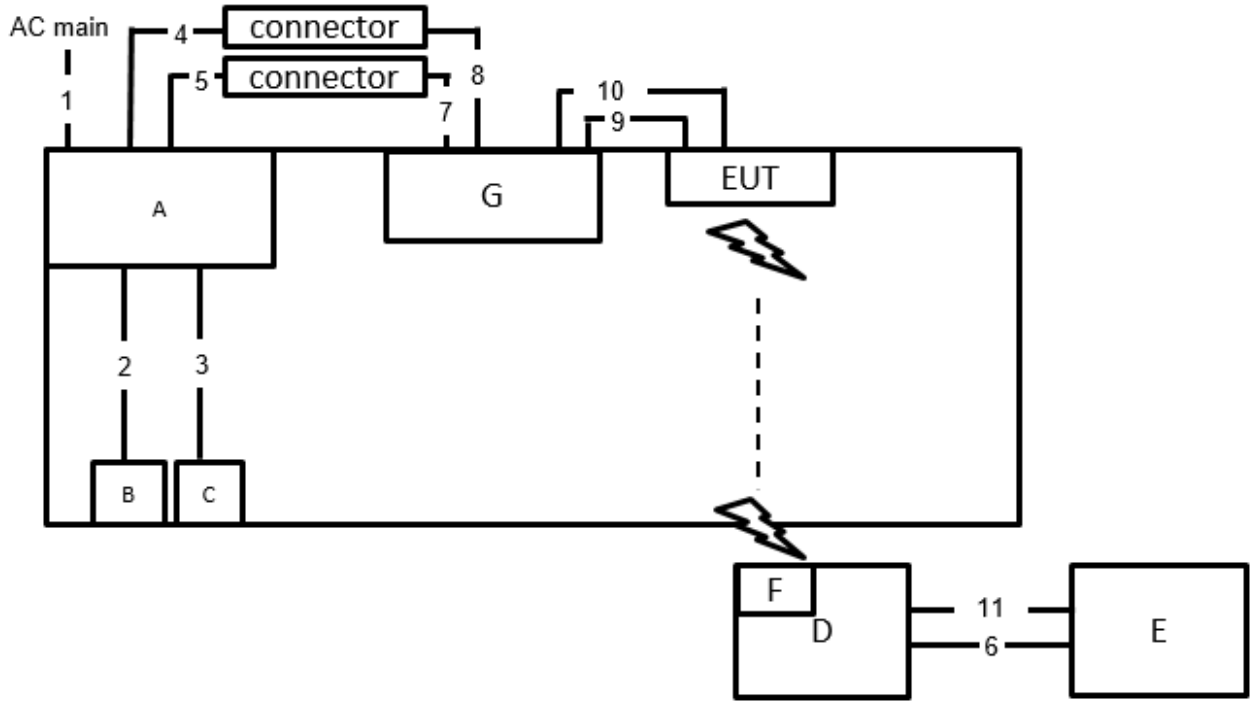
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Notebook	ACER	JALA0	N/A
C	Test Fixture	Azurewave	2510-I1	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	ACER	E4730	N/A
B	Notebook	DELL	E4300	N/A
C	Test Fixture	Azurewave	2510-I1	N/A

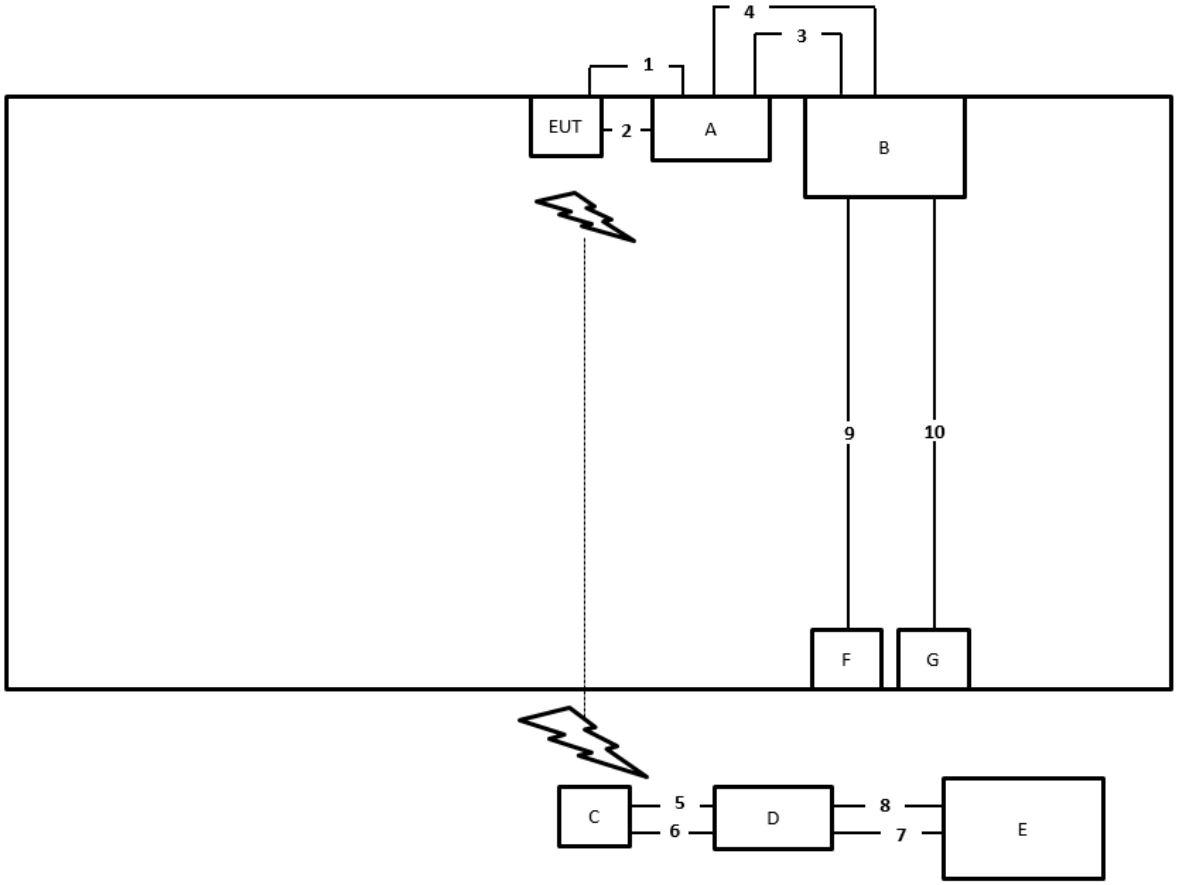
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



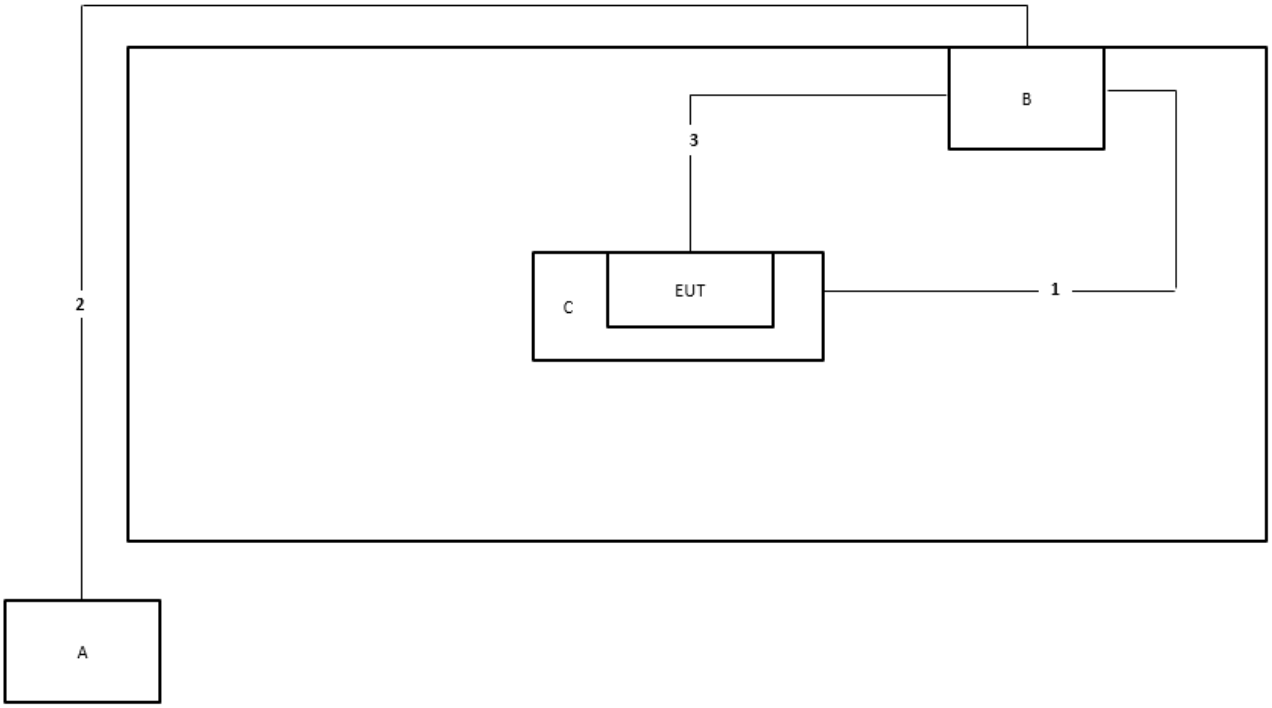
Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	Audio cable	No	1.2m
3	USB cable	Yes	1.8m
4	USB cable	Yes	1.7m
5	USB cable	Yes	1.7m
6	USB cable	Yes	0.5m
7	USB cable	Yes	0.5m
8	USB cable	Yes	0.5m
9	Type C to Micro USB cable	Yes	0.6m
10	Dupont cable	No	0.2m
11	USB cable	Yes	0.7m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	USB to Type C cable	Yes	1m
2	Console cable*7	No	0.13m
3	USB to Type C cable	Yes	1m
4	Micro USB to Micro cable	Yes	0.12m
5	USB to Type C cable	Yes	1m
6	Console cable*7	No	0.13m
7	USB to Type C cable	Yes	1m
8	Micro USB to Micro cable	Yes	0.12m
9	Earphone	No	1m
10	Mouse	Yes	1m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	USB to Micro cable	Yes	0.5m
2	RJ-45 cable	No	10m
3	USB to Micro cable	Yes	0.5m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

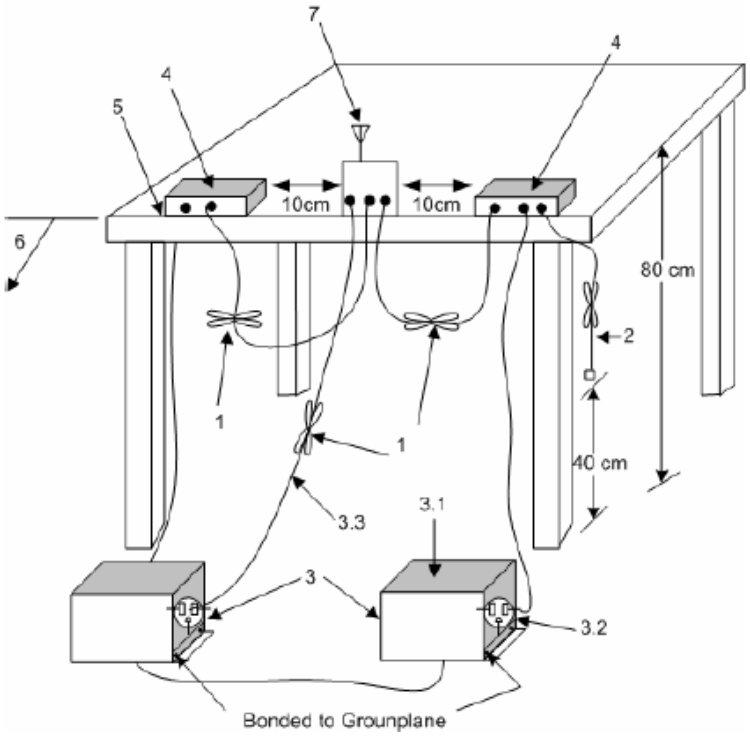
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

AC Power-line Conducted Emissions



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

1.1.1. Measurement Results Calculation

The measured Level is calculated using:

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

b. Margin = -Limit + Level

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

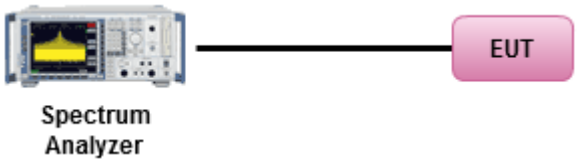
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

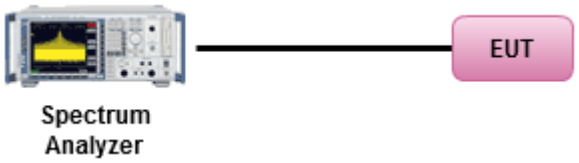
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).		
	☒ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.	
	[duty cycle ≥ 98% or external video / power trigger]	
▪ For conducted measurement.		
	▪ If The EUT supports multiple transmit chains using options given below:	
		☐ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dBc)**
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

3.5.2 Measuring Instruments

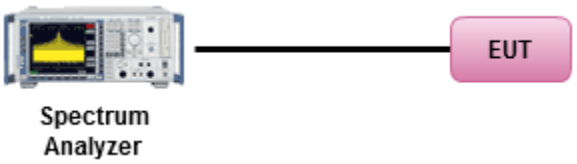
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup

Emissions in Non-restricted Frequency Bands



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

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

3.6.2 Measuring Instruments

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

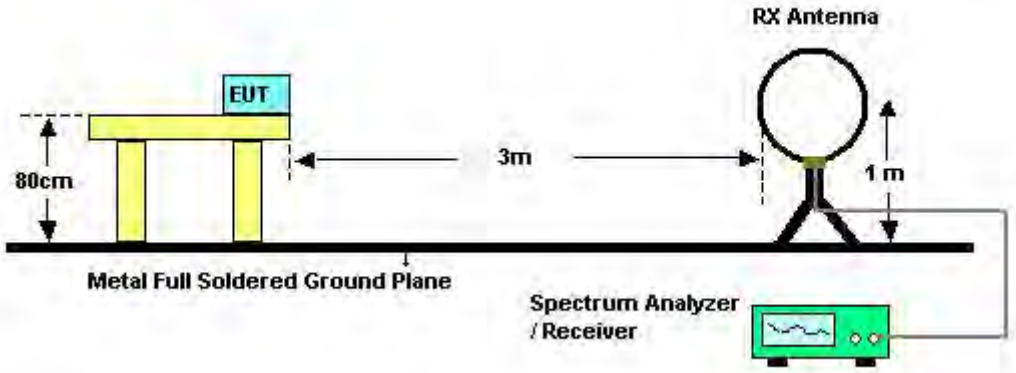
3.6.3 Test Procedures

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

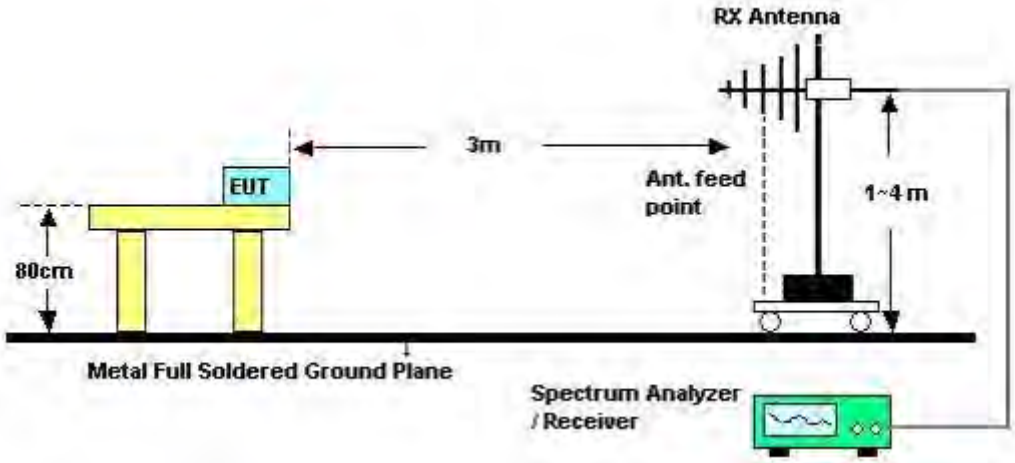
3.6.4 Test Setup

Emissions in Restricted Frequency Bands

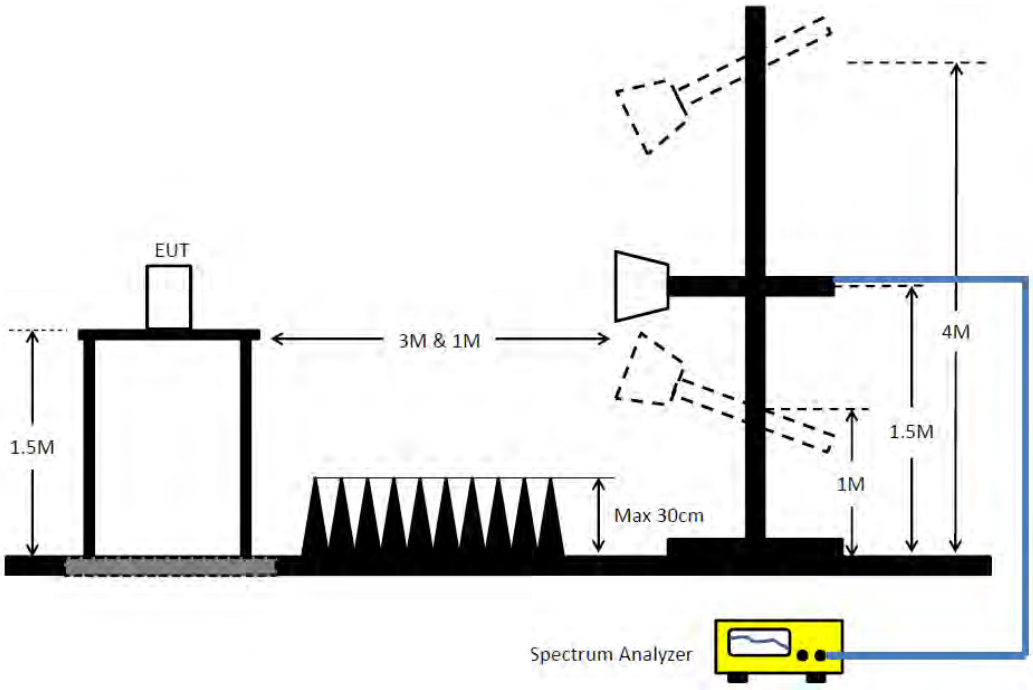
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.6.5 Measurement Results Calculation

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

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Feb. 20, 2023	Feb. 19, 2024	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 16, 2023	Feb. 15, 2024	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO01-CB)
Pulse Limiter	Rohde& Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 09, 2023	Feb. 08, 2024	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH01-CB	30 MHz ~ 1 GHz	Jan. 16, 2023	Jan. 15, 2024	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Feb. 19, 2023	Feb. 18, 2024	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH0301	20230109-2	10M~1GHz	Jan. 13, 2023	Jan. 12, 2024	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 19, 2022	May 18, 2023	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 16, 2022	Nov. 15, 2023	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Nov. 29, 2022	Nov. 29, 2023	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH01-CB)
RF Cable-low	Woken	RG402	Low Cable-16+17	30 MHz ~ 1 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 27, 2022	May 26, 2023	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 29, 2023	May 28, 2024	Conducted (TH01-CB)
Switch	SPTCB	SP-SWI	SWI-01	1 GHz –26.5 GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 21, 2022	Feb. 20, 2023	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 22, 2023	Feb. 21, 2024	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 21, 2022	Feb. 20, 2023	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 22, 2023	Feb. 21, 2024	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

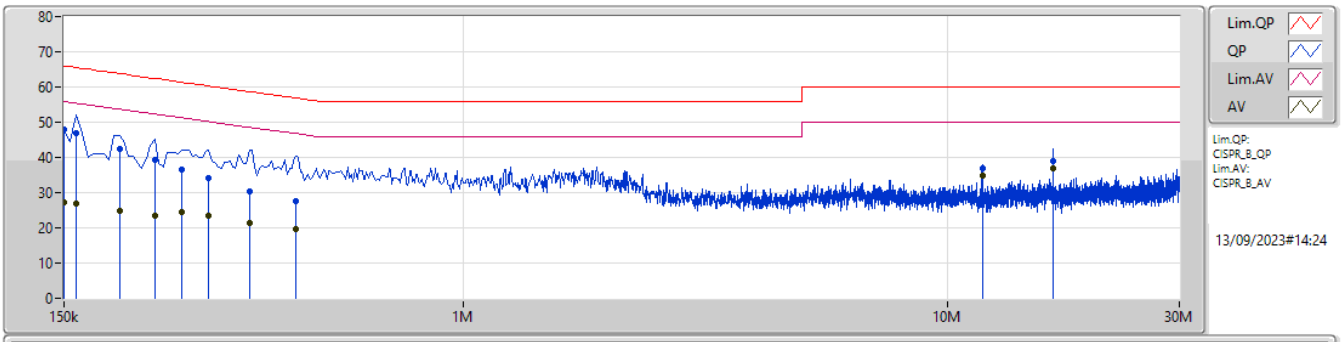
Note: Calibration Interval of instruments listed above is one year.

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

Summary

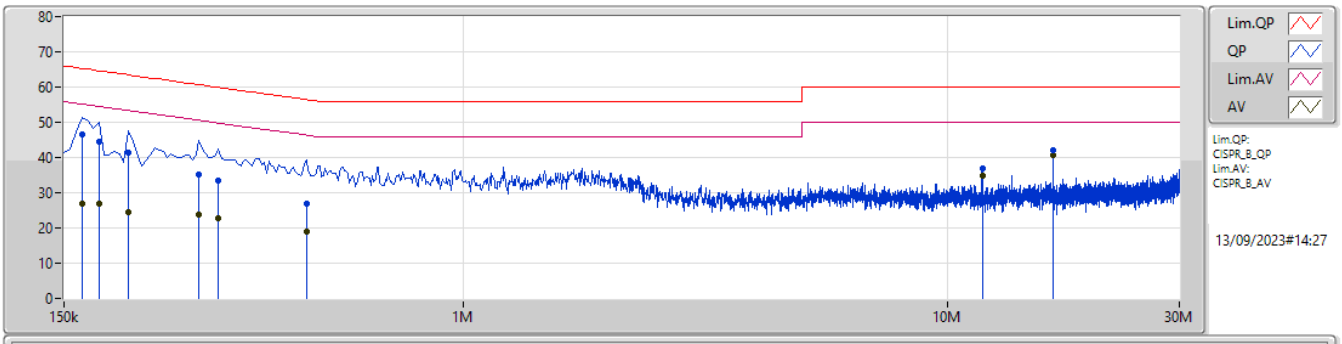
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	AV	16.463M	40.53	50.00	-9.47	Neutral

Mode 3



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	48.00	66.00	-18.00	10.00	Line	-	38.00	0.09	0.04	9.87
AV	150k	27.10	56.00	-28.90	10.00	Line	-	17.10	0.09	0.04	9.87
QP	159k	46.84	65.52	-18.68	10.00	Line	-	36.84	0.09	0.04	9.87
AV	159k	26.89	55.52	-28.63	10.00	Line	-	16.89	0.09	0.04	9.87
QP	195k	42.35	63.82	-21.47	9.98	Line	-	32.37	0.08	0.04	9.86
AV	195k	24.92	53.82	-28.90	9.98	Line	-	14.94	0.08	0.04	9.86
QP	231k	39.17	62.41	-23.24	9.99	Line	-	29.18	0.08	0.04	9.87
AV	231k	23.45	52.41	-28.96	9.99	Line	-	13.46	0.08	0.04	9.87
QP	262.5k	36.53	61.35	-24.82	10.01	Line	-	26.52	0.08	0.05	9.88
AV	262.5k	24.59	51.35	-26.76	10.01	Line	-	14.58	0.08	0.05	9.88
QP	298.5k	34.18	60.28	-26.10	10.02	Line	-	24.16	0.09	0.05	9.88
AV	298.5k	23.28	50.28	-27.00	10.02	Line	-	13.26	0.09	0.05	9.88
QP	361.5k	30.49	58.70	-28.21	10.04	Line	-	20.45	0.09	0.06	9.89
AV	361.5k	21.26	48.70	-27.44	10.04	Line	-	11.22	0.09	0.06	9.89
QP	451.5k	27.55	56.84	-29.29	10.05	Line	-	17.50	0.09	0.06	9.90
AV	451.5k	19.58	46.84	-27.26	10.05	Line	-	9.53	0.09	0.06	9.90
QP	11.76M	36.79	60.00	-23.21	10.38	Line	-	26.41	0.26	0.16	9.96
AV	11.76M	34.94	50.00	-15.06	10.38	Line	-	24.56	0.26	0.16	9.96
QP	16.467M	38.83	60.00	-21.17	10.47	Line	-	28.36	0.29	0.19	9.99
AV	16.467M	36.92	50.00	-13.08	10.47	Line	"Worst"	26.45	0.29	0.19	9.99

Mode 3



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	163.5k	46.38	65.27	-18.89	9.98	Neutral	-	36.40	0.07	0.04	9.87
AV	163.5k	26.91	55.27	-28.36	9.98	Neutral	-	16.93	0.07	0.04	9.87
QP	177k	44.42	64.62	-20.20	9.98	Neutral	-	34.44	0.07	0.04	9.87
AV	177k	26.81	54.62	-27.81	9.98	Neutral	-	16.83	0.07	0.04	9.87
QP	204k	41.51	63.44	-21.93	9.97	Neutral	-	31.54	0.07	0.04	9.86
AV	204k	24.44	53.44	-29.00	9.97	Neutral	-	14.47	0.07	0.04	9.86
QP	285k	35.16	60.67	-25.51	10.00	Neutral	-	25.16	0.07	0.05	9.88
AV	285k	23.86	50.67	-26.81	10.00	Neutral	-	13.86	0.07	0.05	9.88
QP	312k	33.57	59.92	-26.35	10.01	Neutral	-	23.56	0.07	0.05	9.89
AV	312k	22.75	49.92	-27.17	10.01	Neutral	-	12.74	0.07	0.05	9.89
QP	474k	26.77	56.44	-29.67	10.03	Neutral	-	16.74	0.07	0.06	9.90
AV	474k	19.11	46.44	-27.33	10.03	Neutral	-	9.08	0.07	0.06	9.90
QP	11.76M	36.79	60.00	-23.21	10.36	Neutral	-	26.43	0.24	0.16	9.96
AV	11.76M	34.93	50.00	-15.07	10.36	Neutral	-	24.57	0.24	0.16	9.96
QP	16.463M	42.12	60.00	-17.88	10.45	Neutral	-	31.67	0.27	0.19	9.99
AV	16.463M	40.53	50.00	-9.47	10.45	Neutral	"Worst"	30.08	0.27	0.19	9.99

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)	707.5k	1.028M	1M03F1D	705k	1.027M
BT-LE(2Mbps)	1.161M	2.035M	2M04F1D	1.159M	2.033M

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

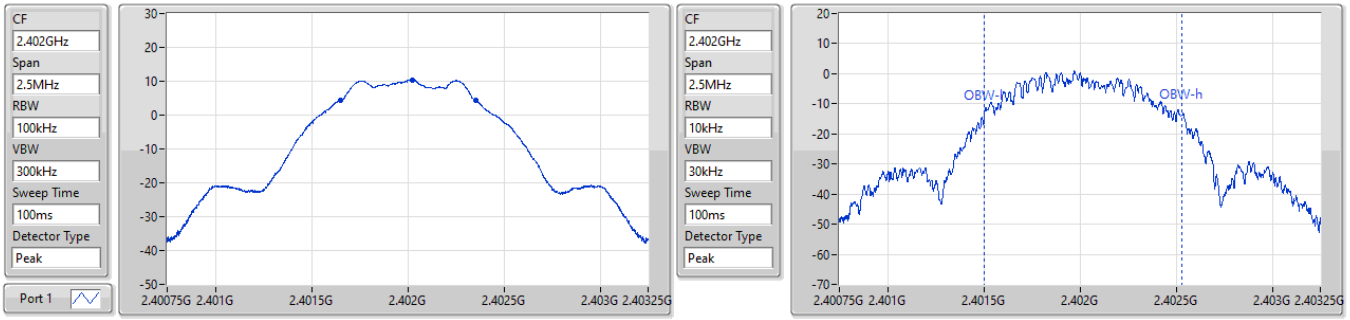
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	705k	1.027M
2440MHz	Pass	500k	706.25k	1.027M
2480MHz	Pass	500k	707.5k	1.028M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.16M	2.033M
2440MHz	Pass	500k	1.161M	2.033M
2480MHz	Pass	500k	1.159M	2.035M

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

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

2402MHz

05/01/2023

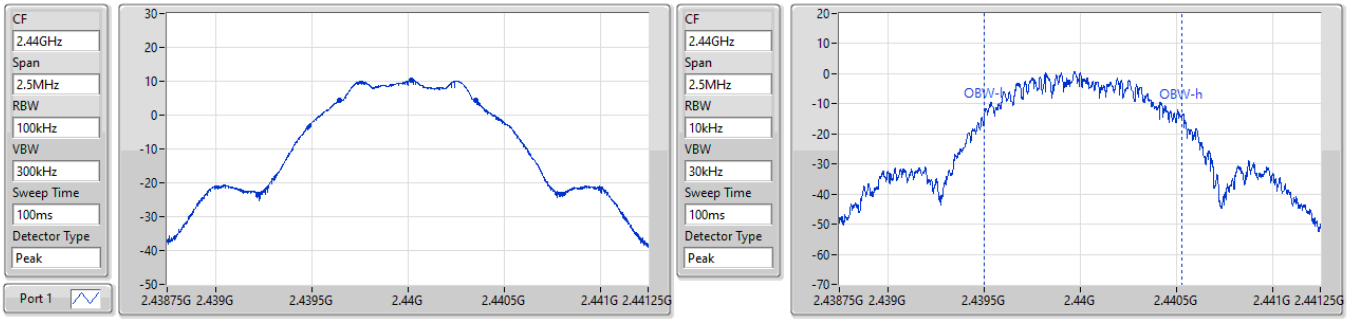


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
705k	2.40165G	2.402355G	1.027M	2.401504G	2.402531G	500k	1

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

2440MHz

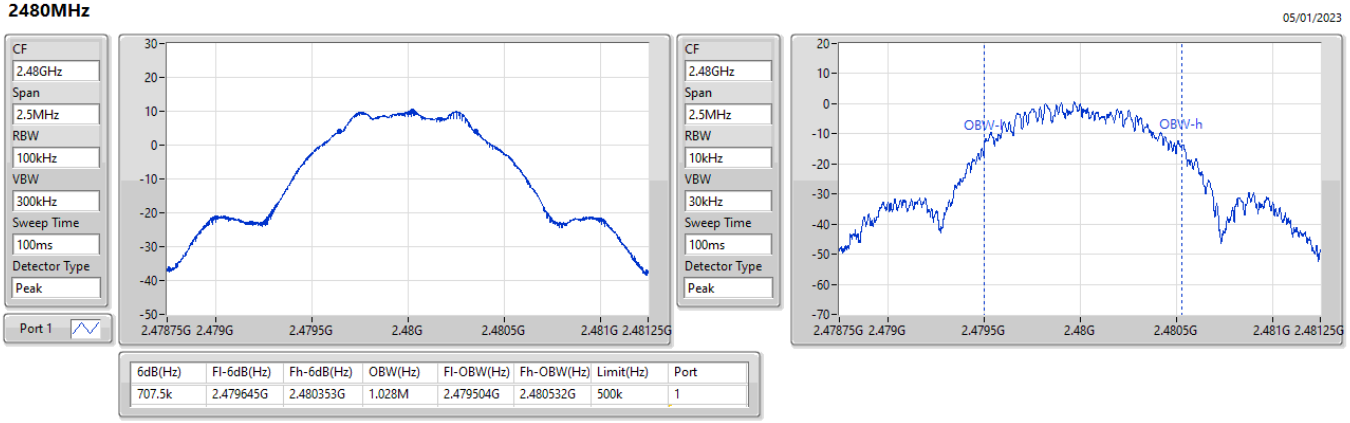
05/01/2023



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
706.25k	2.439648G	2.440354G	1.027M	2.439504G	2.440531G	500k	1

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

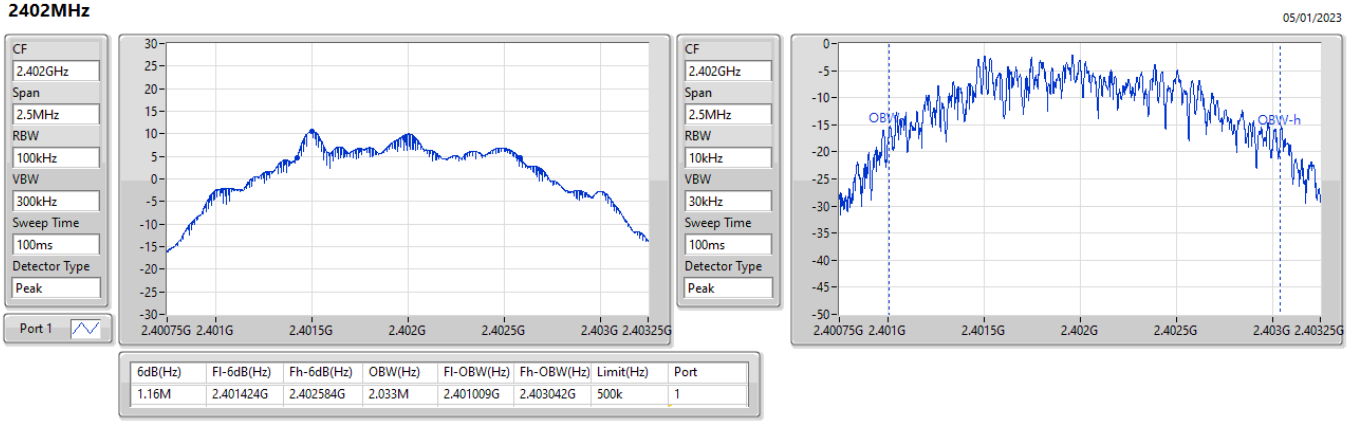
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
707.5k	2.479645G	2.480353G	1.028M	2.479504G	2.480532G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

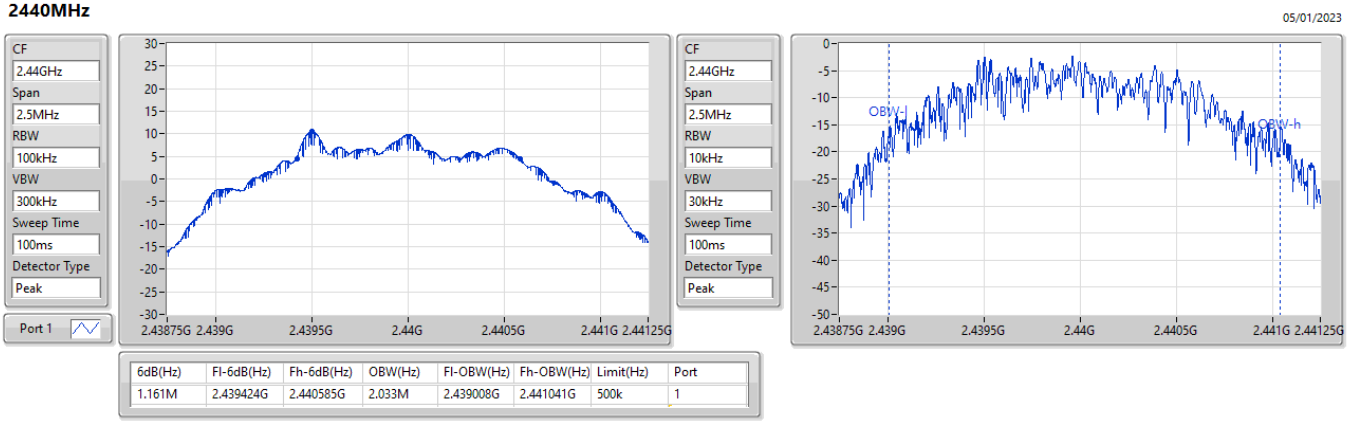
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.16M	2.401424G	2.402584G	2.033M	2.401009G	2.403042G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

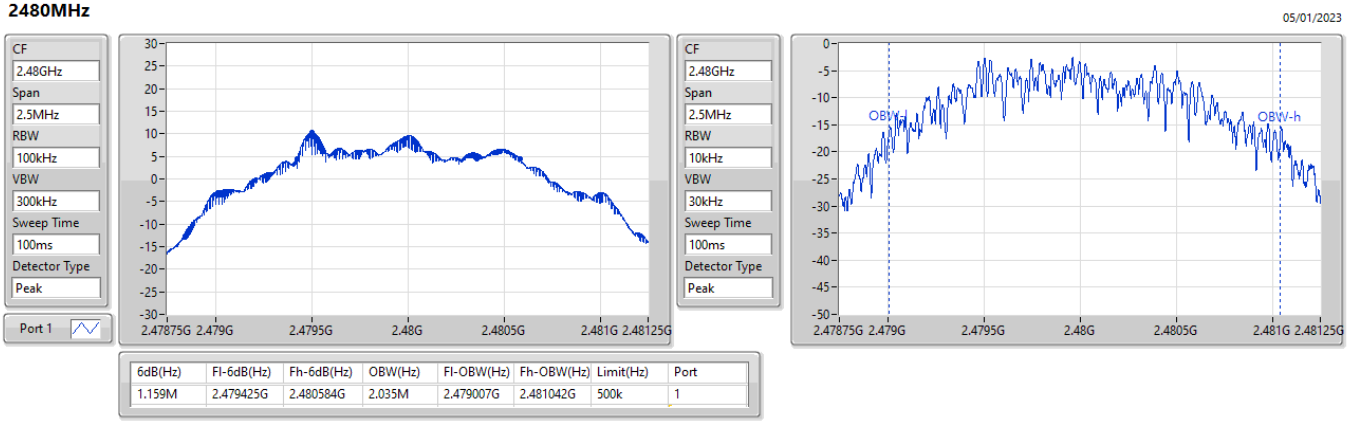
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.161M	2.439424G	2.440585G	2.033M	2.439008G	2.441041G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.159M	2.479425G	2.480584G	2.035M	2.479007G	2.481042G	500k	1

Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	11.03	0.01268
BT-LE(2Mbps)	10.91	0.01233

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	11.03	30.00
2440MHz	Pass	2.98	10.91	30.00
2480MHz	Pass	2.98	10.58	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.98	10.91	30.00
2440MHz	Pass	2.98	10.81	30.00
2480MHz	Pass	2.98	10.60	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-4.80
BT-LE(2Mbps)	-7.68

RBW = 3kHz;

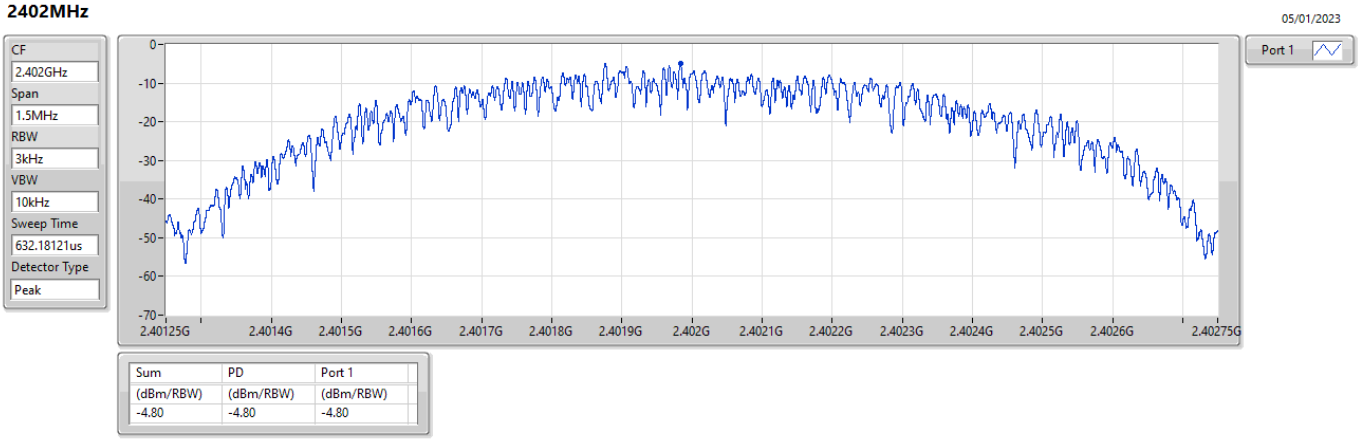
Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	-4.80	8.00
2440MHz	Pass	2.98	-5.02	8.00
2480MHz	Pass	2.98	-5.22	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.98	-7.68	8.00
2440MHz	Pass	2.98	-8.16	8.00
2480MHz	Pass	2.98	-8.10	8.00

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

2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

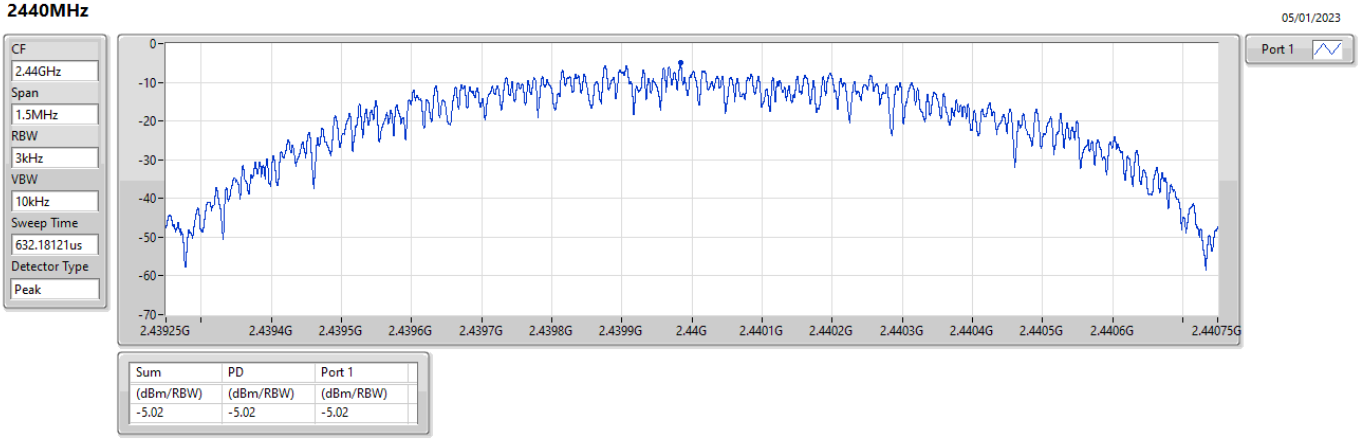
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.80	-4.80	-4.80

2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

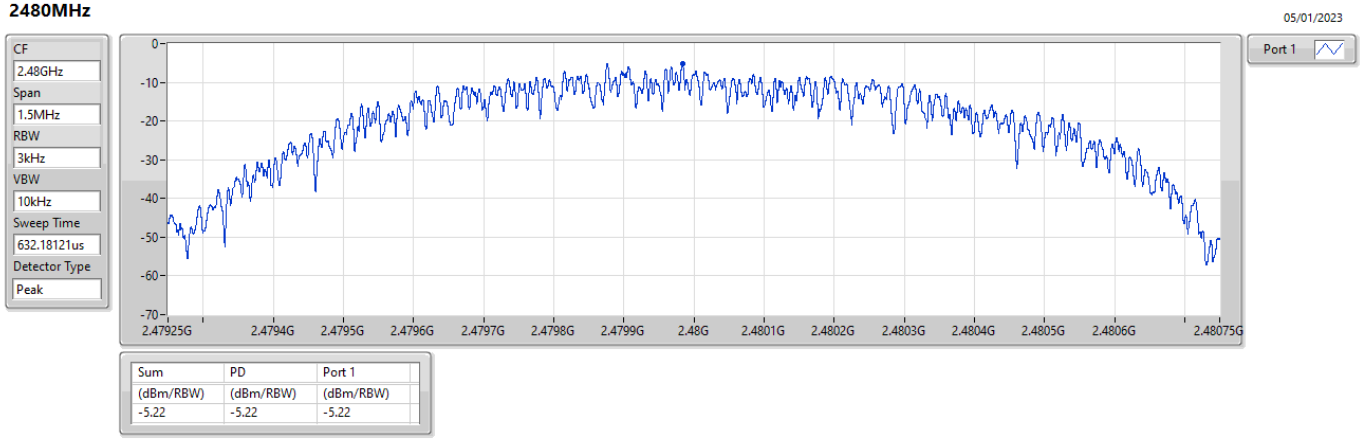
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.02	-5.02	-5.02

2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

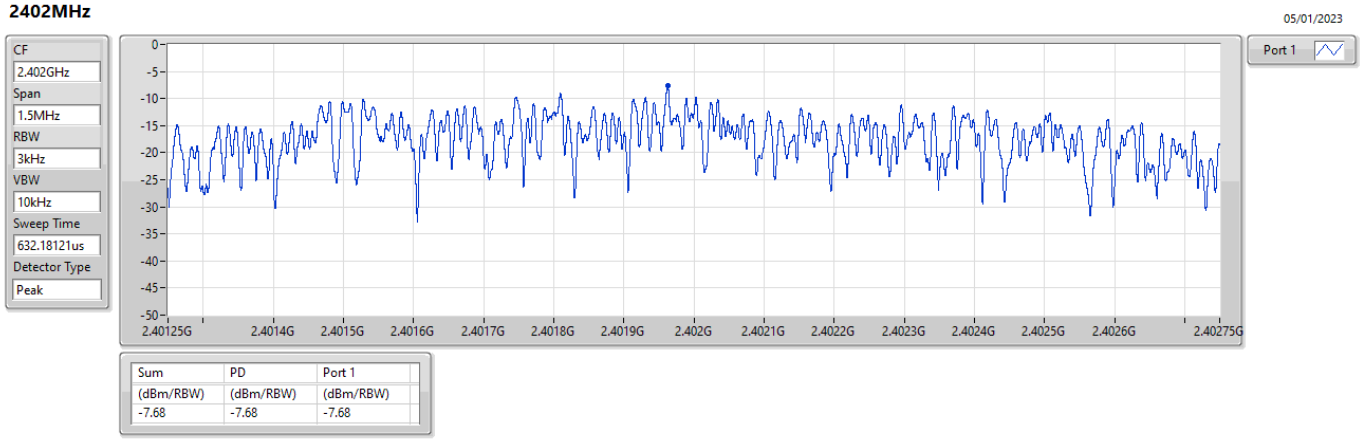
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.22	-5.22	-5.22

2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

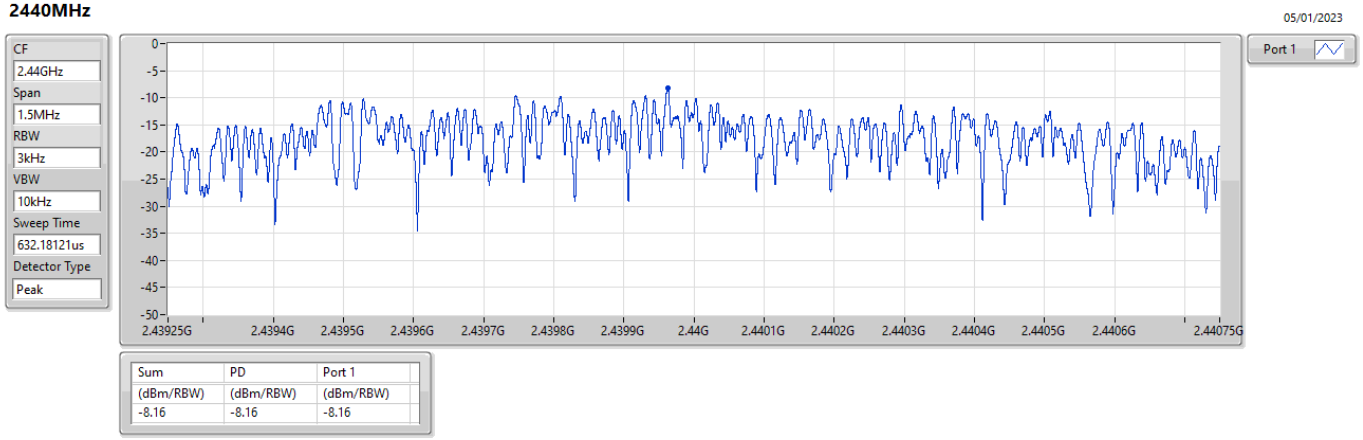
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.68	-7.68	-7.68

2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

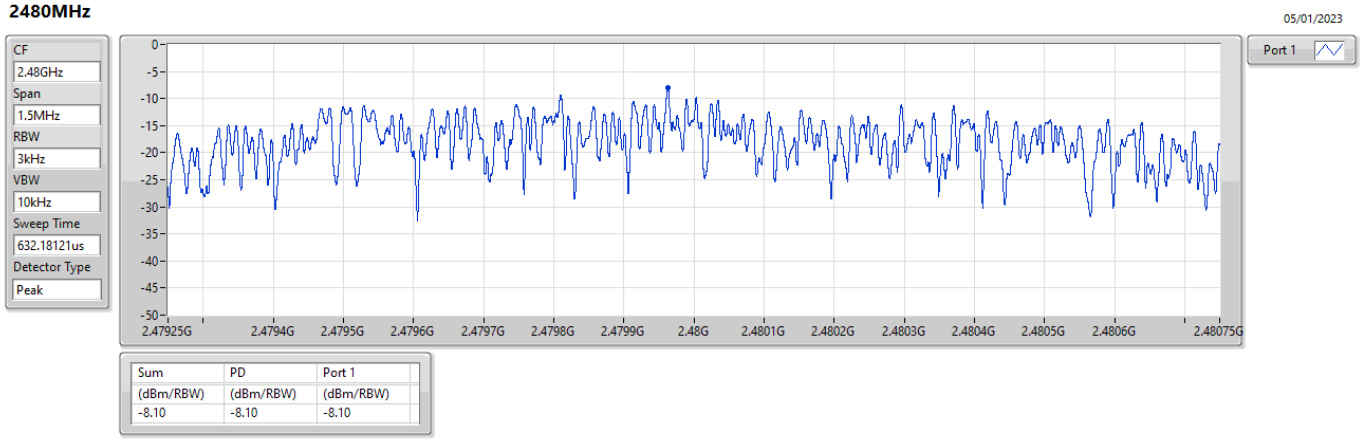
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.16	-8.16	-8.16

2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.10	-8.10	-8.10

Summary

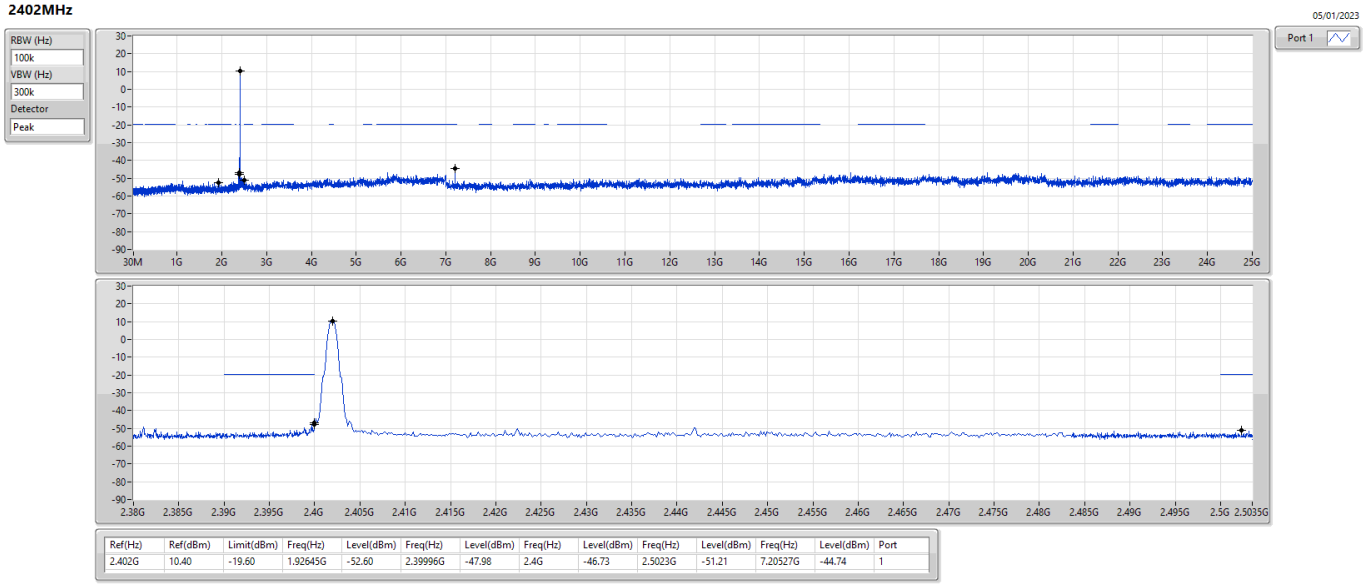
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.402G	10.40	-19.60	1.92645G	-52.60	2.39996G	-47.98	2.4G	-46.73	2.5023G	-51.21	7.20527G	-44.74	1
BT-LE(2Mbps)	Pass	2.4015G	10.62	-19.38	742.05M	-52.72	2.4G	-21.49	2.4G	-21.43	2.50098G	-52.17	7.20527G	-43.94	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	2.402G	10.40	-19.60	1.92645G	-52.60	2.39996G	-47.98	2.4G	-46.73	2.5023G	-51.21	7.20527G	-44.74	1
2440MHz	Pass	2.402G	10.40	-19.60	796.1M	-52.96	2.39996G	-50.63	2.4G	-51.59	2.50218G	-52.12	16.3501G	-47.44	1
2480MHz	Pass	2.402G	10.40	-19.60	952.38M	-52.43	2.39776G	-50.87	2.4G	-53.22	2.50234G	-51.59	6.86501G	-47.52	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.4015G	10.62	-19.38	742.05M	-52.72	2.4G	-21.49	2.4G	-21.43	2.50098G	-52.17	7.20527G	-43.94	1
2440MHz	Pass	2.4015G	10.62	-19.38	2.13913G	-52.01	2.39956G	-49.50	2.4G	-52.62	2.50118G	-51.88	14.91032G	-47.30	1
2480MHz	Pass	2.4015G	10.62	-19.38	441.25M	-52.65	2.39476G	-52.07	2.4G	-54.84	2.50018G	-51.25	16.27698G	-46.23	1

2.4-2.4835GHz_BT-LE(1Mbps) CSENdB-DTS

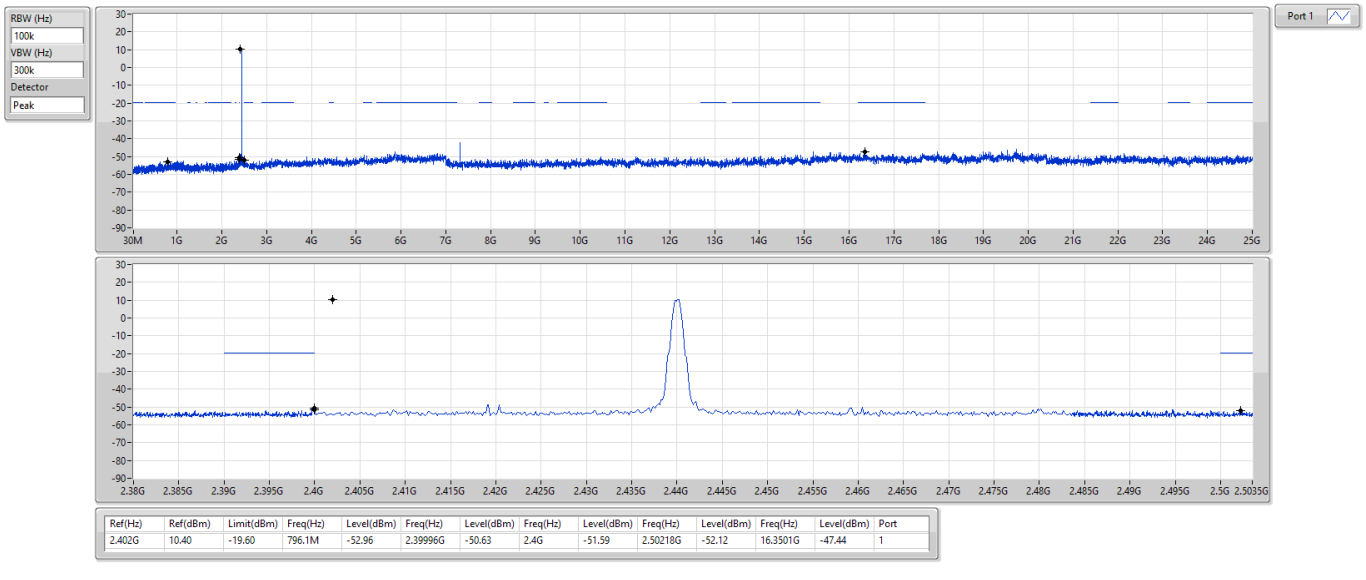
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	10.40	-19.60	1.92645G	-52.60	2.39996G	-47.98	2.4G	-46.73	2.5023G	-51.21	7.20527G	-44.74	1

2.4-2.4835GHz_BT-LE(1Mbps) CSENdB-DTS

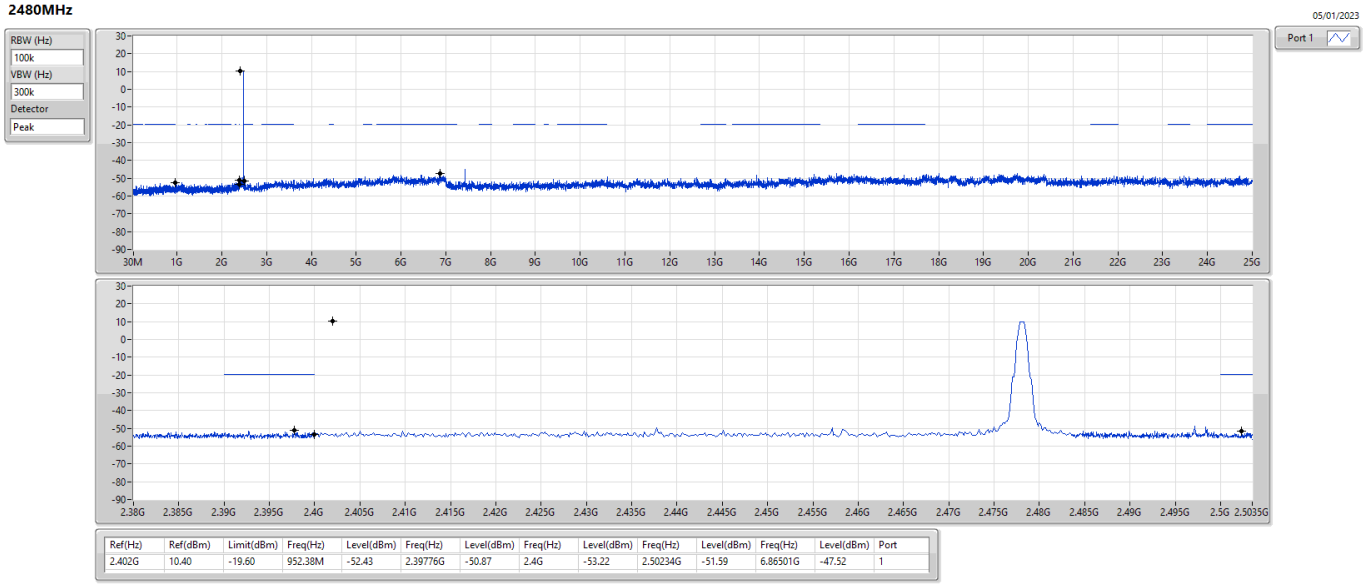
2440MHz



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
2.402G	10.40	-19.60	796.1M	-52.96	2.39996G	-50.63	2.4G	-51.59	2.50218G	-52.12	16.3501G	-47.44	1

2.4-2.4835GHz_BT-LE(1Mbps) CSENdB-DTS

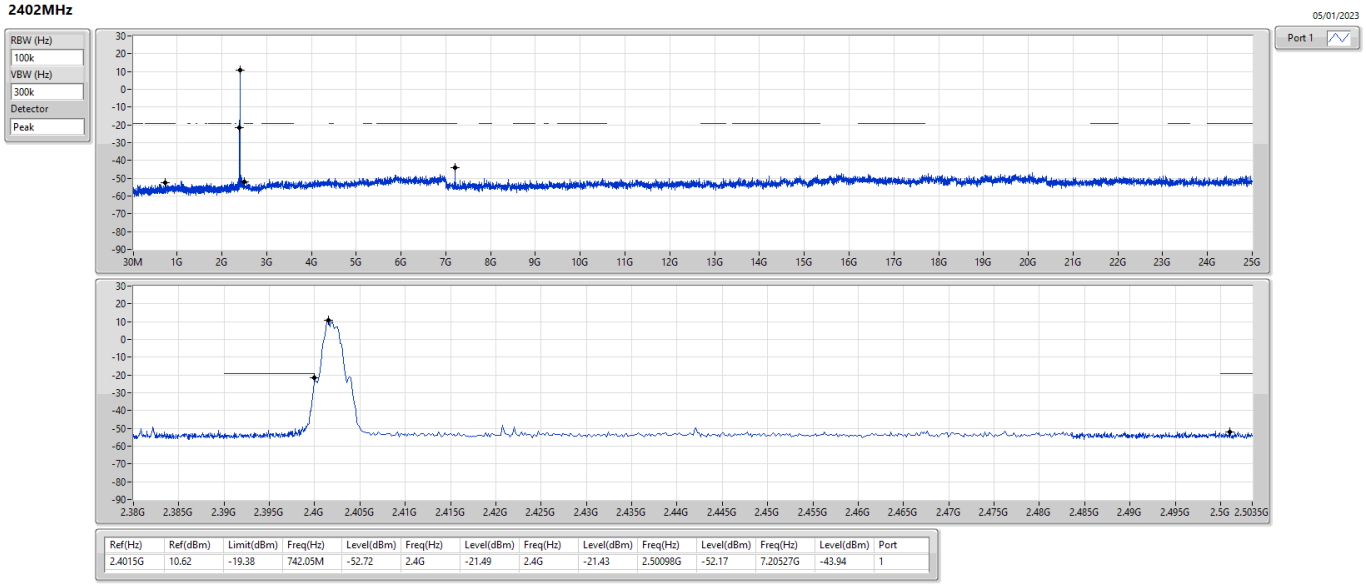
2480MHz



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
2.402G	10.40	-19.60	952.38M	-52.43	2.39776G	-50.87	2.4G	-53.22	2.50234G	-51.59	6.86501G	-47.52	1

2.4-2.4835GHz_BT-LE(2Mbps) CSENdB-DTS

2402MHz

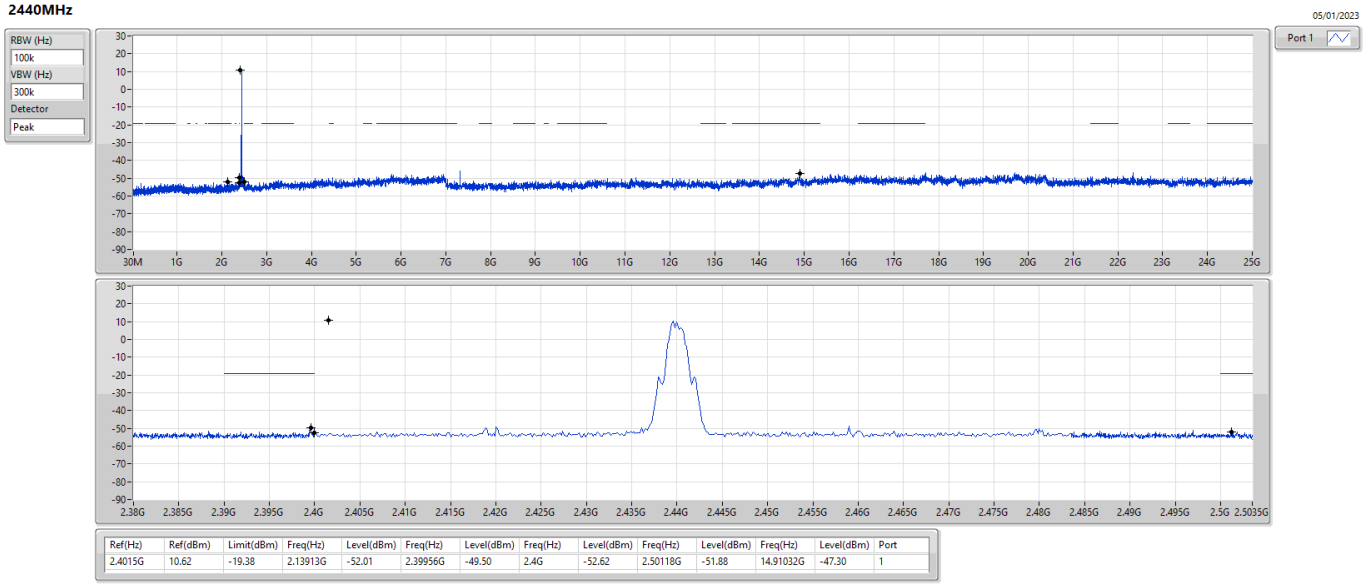


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4015G	10.62	-19.38	742.05M	-52.72	2.4G	-21.49	2.4G	-21.43	2.50098G	-52.17	7.20527G	-43.94	1

2.4-2.4835GHz_BT-LE(2Mbps)

CSENdB-DTS

2440MHz

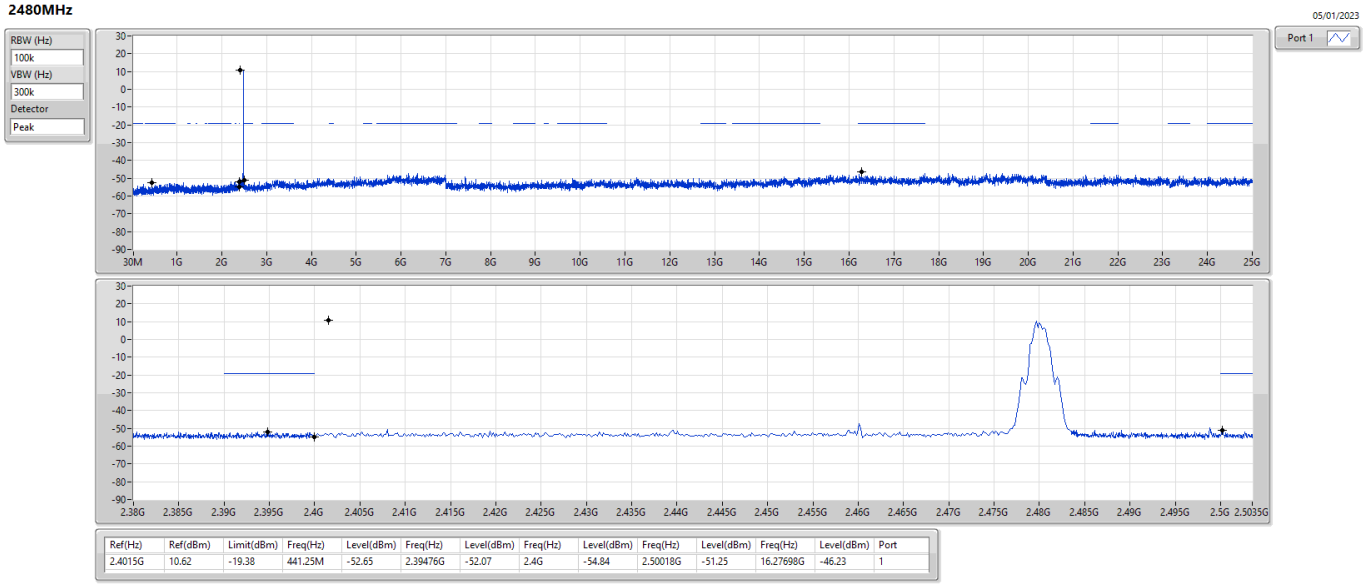


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4015G	10.62	-19.38	2.13913G	-52.01	2.39956G	-49.50	2.4G	-52.62	2.50118G	-51.88	14.91032G	-47.30	1

2.4-2.4835GHz_BT-LE(2Mbps)

CSENdB-DTS

2480MHz

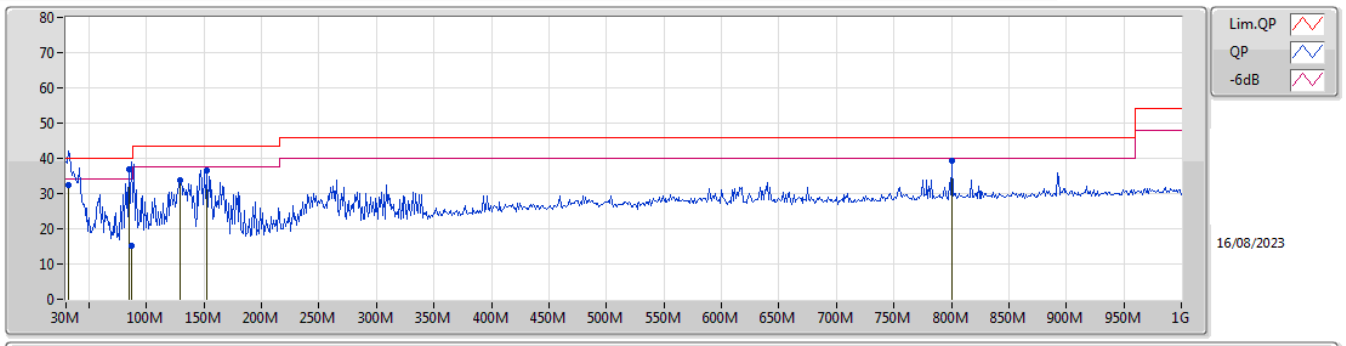


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4015G	10.62	-19.38	441.25M	-52.65	2.39476G	-52.07	2.4G	-54.84	2.50018G	-51.25	16.27698G	-46.23	1

Summary

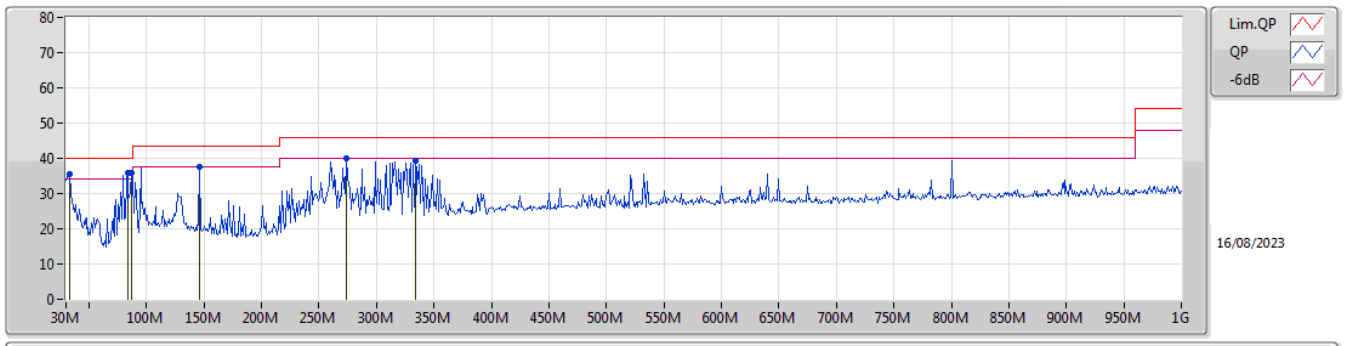
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 7	Pass	PK	85.29M	36.85	40.00	-3.15	Vertical

Mode 7



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
QP	31.94M	32.32	40.00	-7.68	-20.88	3	Vertical	42	2.00	-	53.20	22.92	0.52	44.32
PK	85.29M	36.85	40.00	-3.15	-30.76	3	Vertical	137	1.00	"Worst"	67.61	13.04	0.80	44.60
QP	87.23M	15.27	40.00	-24.73	-30.41	3	Vertical	137	1.00	-	45.68	13.38	0.81	44.60
PK	128.94M	33.73	43.50	-9.77	-26.62	3	Vertical	97	1.00	-	60.35	17.02	0.98	44.62
PK	152.22M	36.65	43.50	-6.85	-28.12	3	Vertical	139	1.00	-	64.77	15.38	1.06	44.56
PK	800.18M	39.34	46.00	-6.66	-16.18	3	Vertical	31	1.00	-	55.52	24.98	2.33	43.49

Mode 7



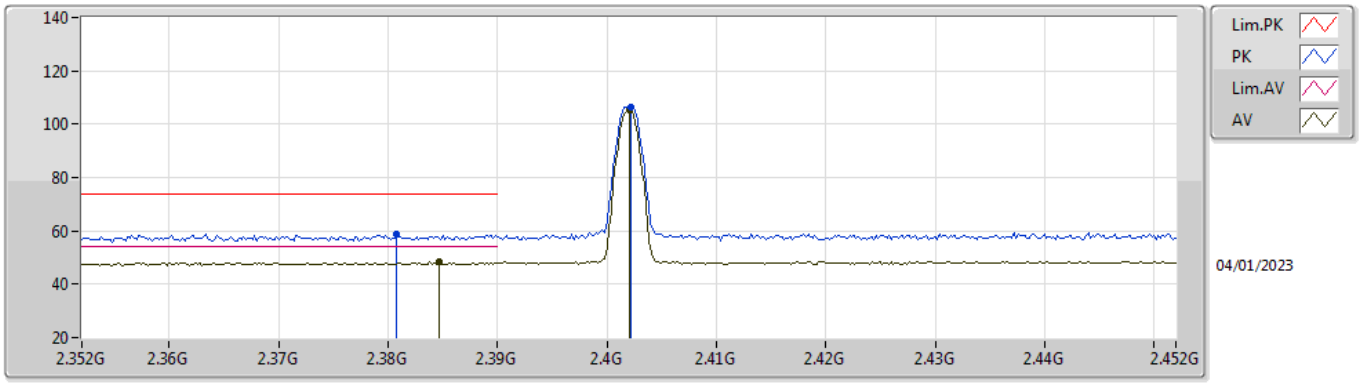
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV/m)	(dB/m)	(dB)	(dB)
PK	32.91M	35.63	40.00	-4.37	-21.55	3	Horizontal	187	1.00	-	57.18	22.25	0.52	44.32
PK	83.35M	35.87	40.00	-4.13	-31.12	3	Horizontal	305	1.00	-	66.99	12.69	0.79	44.60
PK	87.23M	35.99	40.00	-4.01	-30.41	3	Horizontal	305	1.00	"Worst"	66.40	13.38	0.81	44.60
PK	146.4M	37.56	43.50	-5.94	-27.72	3	Horizontal	83	1.50	-	65.28	15.82	1.04	44.58
PK	273.47M	40.16	46.00	-5.84	-24.87	3	Horizontal	81	1.50	-	65.03	18.04	1.41	44.32
PK	333.61M	39.43	46.00	-6.57	-23.83	3	Horizontal	26	1.00	-	63.26	18.84	1.55	44.22

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	AV	2.4944G	50.61	54.00	-3.39	3	Horizontal	69	1.74	-

BT-LE(1Mbps)

2402MHz_TX

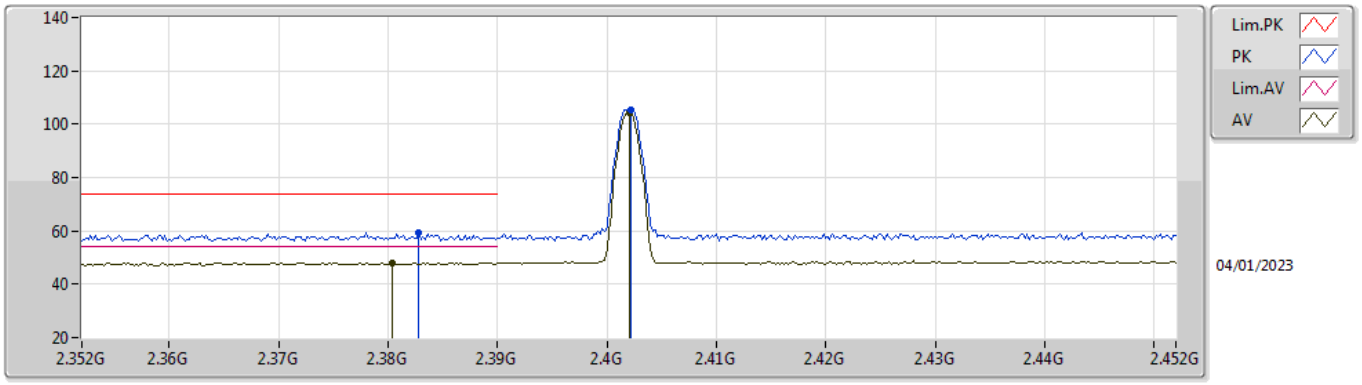


EUT X_1TX
Setting 12
01-P-K-5

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	58.69	74.00	-15.31	27.35	3	Vertical	56	1.77	-	27.76	3.58	-	
AV	2.3846G	48.46	54.00	-5.54	17.11	3	Vertical	56	1.77	-	27.77	3.58	-	
PK	2.4022G	106.42	Inf	-Inf	75.02	3	Vertical	56	1.77	-	27.80	3.60	-	
AV	2.402G	105.54	Inf	-Inf	74.14	3	Vertical	56	1.77	-	27.80	3.60	-	

BT-LE(1Mbps)

2402MHz_TX

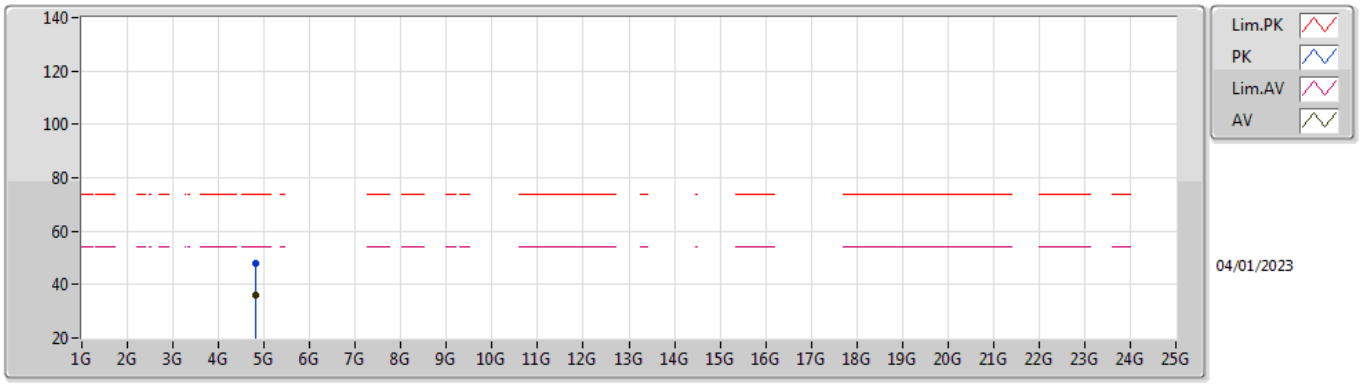


EUT X_1TX
Setting 12
01-P-K-5

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	2.3828G	59.55	74.00	-14.45	28.20	3	Horizontal	69	1.58	-	27.77	3.58	-
AV	2.3804G	48.16	54.00	-5.84	16.82	3	Horizontal	69	1.58	-	27.76	3.58	-
PK	2.4022G	105.35	Inf	-Inf	73.95	3	Horizontal	69	1.58	-	27.80	3.60	-
AV	2.402G	104.50	Inf	-Inf	73.10	3	Horizontal	69	1.58	-	27.80	3.60	-

BT-LE(1Mbps)

2402MHz_TX

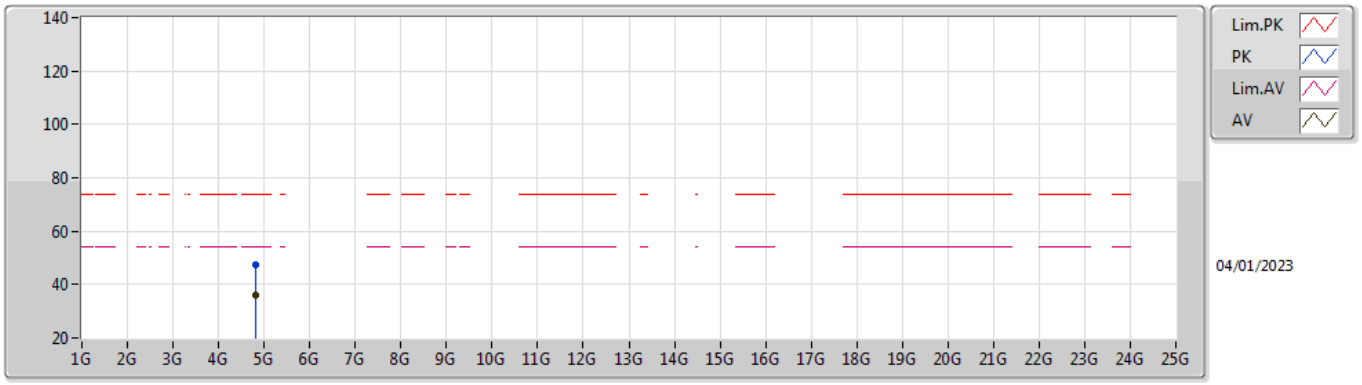


EUT X_1TX
Setting 12
01-P-K-5

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	4.80486G	48.00	74.00	-26.00	42.46	3	Vertical	91	1.03	-	32.73	5.70	32.89
AV	4.80148G	36.06	54.00	-17.94	30.54	3	Vertical	91	1.03	-	32.71	5.70	32.89

BT-LE(1Mbps)

2402MHz_TX

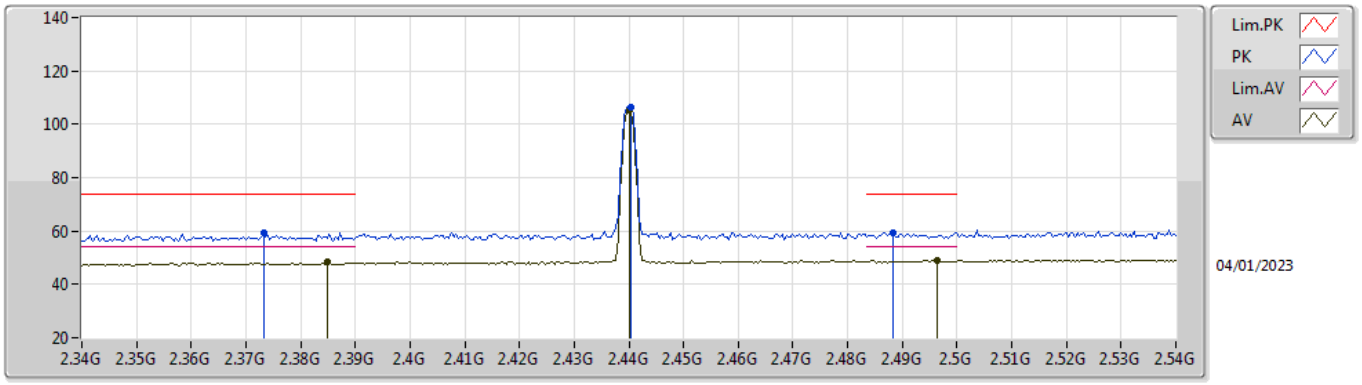


EUT X_1TX
Setting 12
01-P-K-5

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	4.80342G	47.25	74.00	-26.75	41.72	3	Horizontal	73	2.45	-	32.72	5.70	32.89
AV	4.80824G	36.13	54.00	-17.87	30.56	3	Horizontal	73	2.45	-	32.75	5.71	32.89

BT-LE(1Mbps)

2440MHz_TX

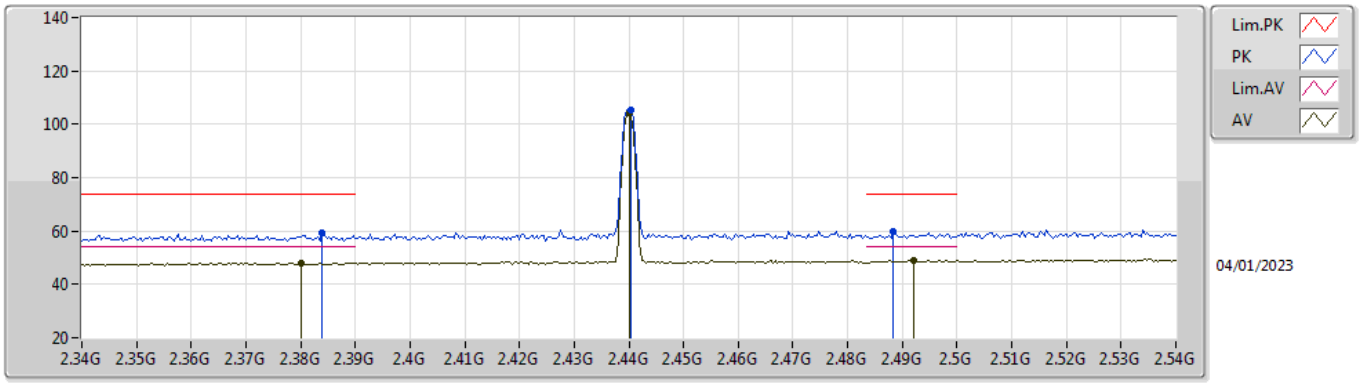


EUT X_1TX
Setting 12
01-P-K-5

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	2.3732G	59.32	74.00	-14.68	28.00	3	Vertical	47	1.80	-	27.75	3.57	-
AV	2.3848G	48.20	54.00	-5.80	16.85	3	Vertical	47	1.80	-	27.77	3.58	-
PK	2.4404G	106.39	Inf	-Inf	74.89	3	Vertical	47	1.80	-	27.88	3.62	-
AV	2.44G	105.52	Inf	-Inf	74.02	3	Vertical	47	1.80	-	27.88	3.62	-
PK	2.4884G	59.50	74.00	-14.50	27.73	3	Vertical	47	1.80	-	28.13	3.64	-
AV	2.4964G	49.13	54.00	-4.87	17.30	3	Vertical	47	1.80	-	28.18	3.65	-

BT-LE(1Mbps)

2440MHz_TX

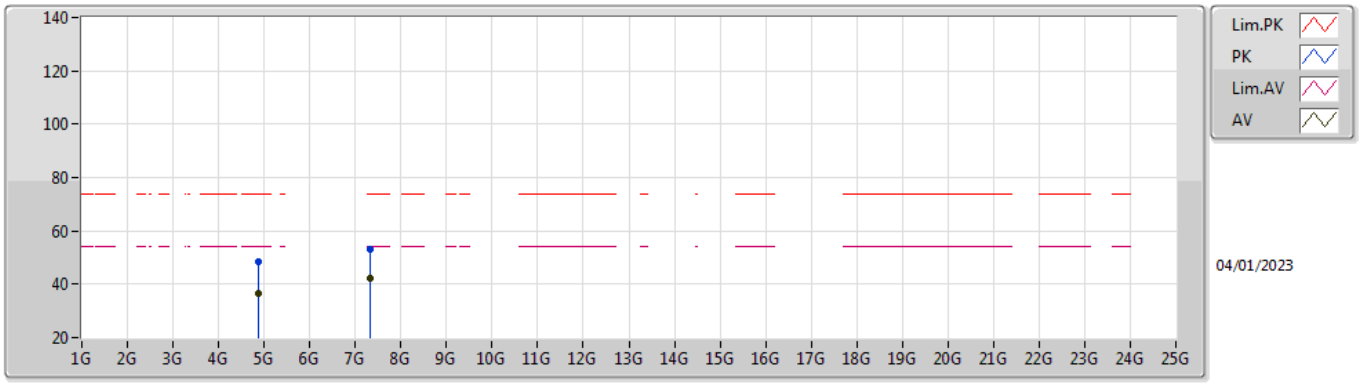


EUT X_1TX
Setting 12
01-P-K-5

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	2.384G	59.34	74.00	-14.66	27.99	3	Horizontal	69	1.74	-	27.77	3.58	-
AV	2.38G	48.16	54.00	-5.84	16.82	3	Horizontal	69	1.74	-	27.76	3.58	-
PK	2.4404G	105.14	Inf	-Inf	73.64	3	Horizontal	69	1.74	-	27.88	3.62	-
AV	2.44G	104.24	Inf	-Inf	72.74	3	Horizontal	69	1.74	-	27.88	3.62	-
PK	2.4884G	59.66	74.00	-14.34	27.89	3	Horizontal	69	1.74	-	28.13	3.64	-
AV	2.492G	49.09	54.00	-4.91	17.29	3	Horizontal	69	1.74	-	28.15	3.65	-

BT-LE(1Mbps)

2440MHz_TX

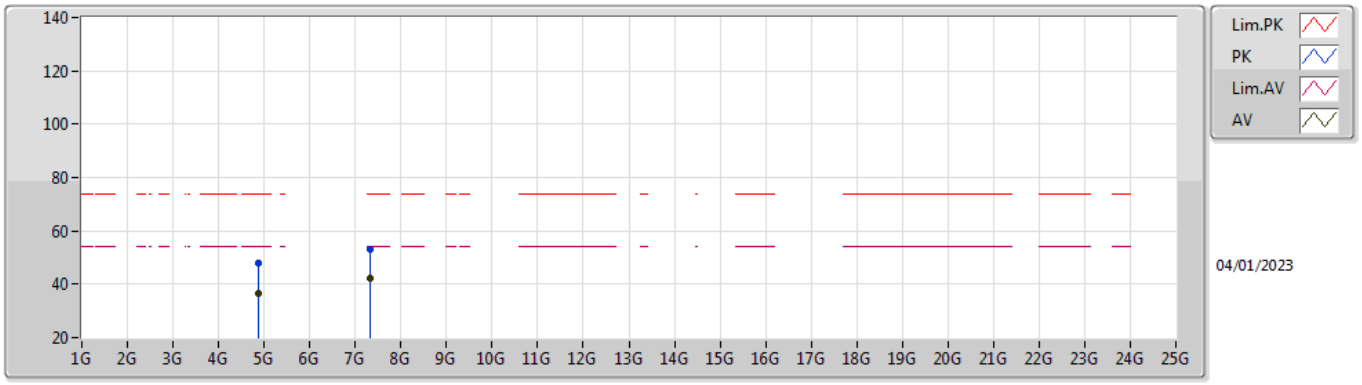


EUT X_1TX
Setting 12
01-P-K-5

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	4.87856G	48.55	74.00	-25.45	42.64	3	Vertical	331	1.50	-	33.00	5.78	32.87
AV	4.87966G	36.60	54.00	-17.40	30.69	3	Vertical	331	1.50	-	33.00	5.78	32.87
PK	7.32232G	52.92	74.00	-21.08	41.35	3	Vertical	105	2.15	-	37.60	7.16	33.19
AV	7.32208G	42.44	54.00	-11.56	30.87	3	Vertical	105	2.15	-	37.60	7.16	33.19

BT-LE(1Mbps)

2440MHz_TX

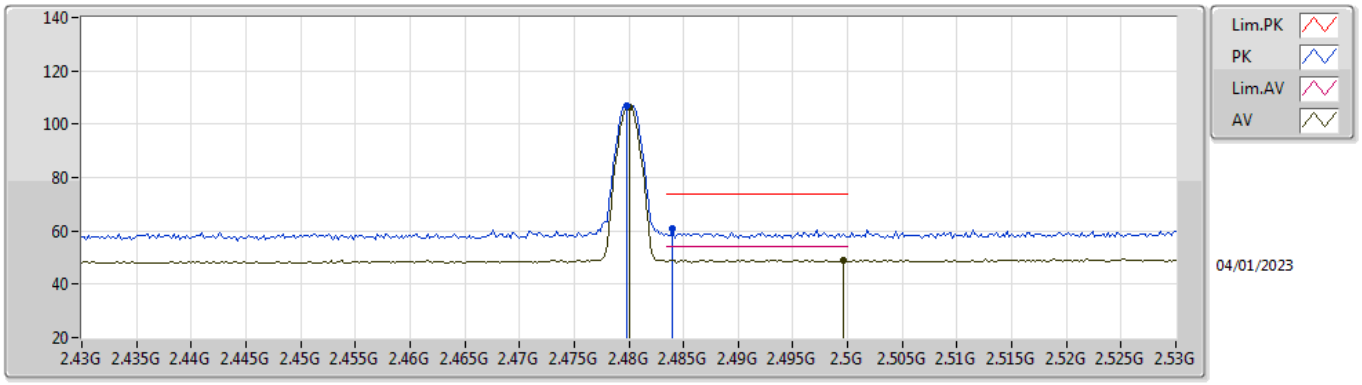


EUT X_1TX
Setting 12
01-P-K-5

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	4.87804G	48.07	74.00	-25.93	42.16	3	Horizontal	289	1.08	-	33.00	5.78	32.87
AV	4.8812G	36.53	54.00	-17.47	30.62	3	Horizontal	289	1.08	-	33.00	5.78	32.87
PK	7.3152G	53.22	74.00	-20.78	41.64	3	Horizontal	135	2.25	-	37.60	7.16	33.18
AV	7.32332G	42.30	54.00	-11.70	30.73	3	Horizontal	135	2.25	-	37.60	7.16	33.19

BT-LE(1Mbps)

2480MHz_TX

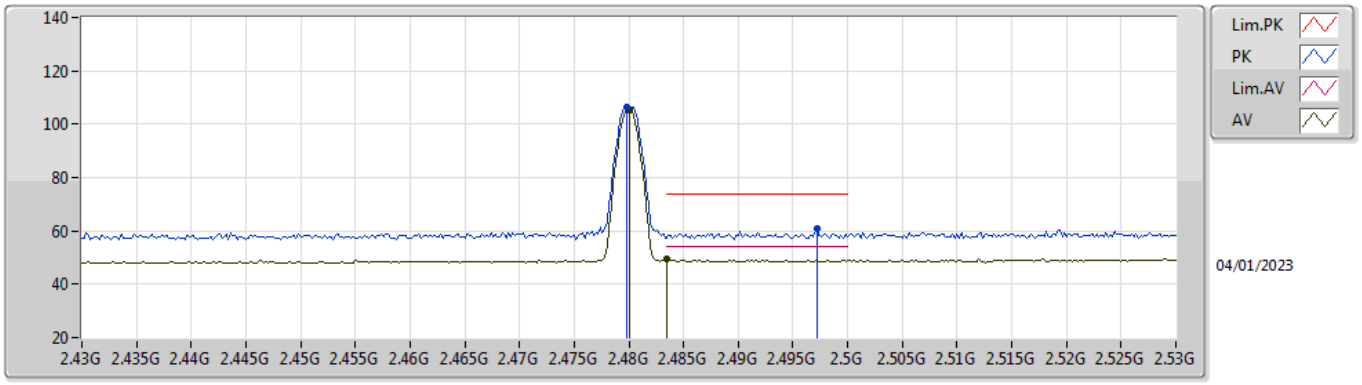


EUT X_1TX
Setting 12
01-P-K-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.4798G	107.09	Inf	-Inf	75.37	3	Vertical	48	1.80	-	28.08	3.64	-
AV	2.48G	106.25	Inf	-Inf	74.53	3	Vertical	48	1.80	-	28.08	3.64	-
PK	2.484G	60.74	74.00	-13.26	29.00	3	Vertical	48	1.80	-	28.10	3.64	-
AV	2.4996G	49.16	54.00	-4.84	17.31	3	Vertical	48	1.80	-	28.20	3.65	-

BT-LE(1Mbps)

2480MHz_TX

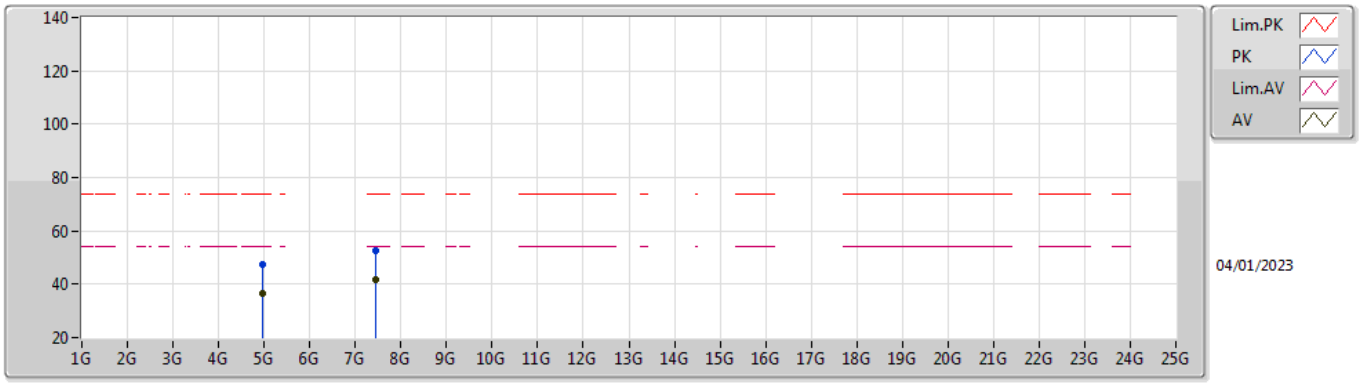


EUT X_1TX
Setting 12
01-P-K-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.4798G	106.24	Inf	-Inf	74.52	3	Horizontal	47	2.81	-	28.08	3.64	-
AV	2.48G	105.37	Inf	-Inf	73.65	3	Horizontal	47	2.81	-	28.08	3.64	-
PK	2.4972G	60.65	74.00	-13.35	28.82	3	Horizontal	47	2.81	-	28.18	3.65	-
AV	2.4835G	49.27	54.00	-4.73	17.53	3	Horizontal	47	2.81	-	28.10	3.64	-

BT-LE(1Mbps)

2480MHz_TX

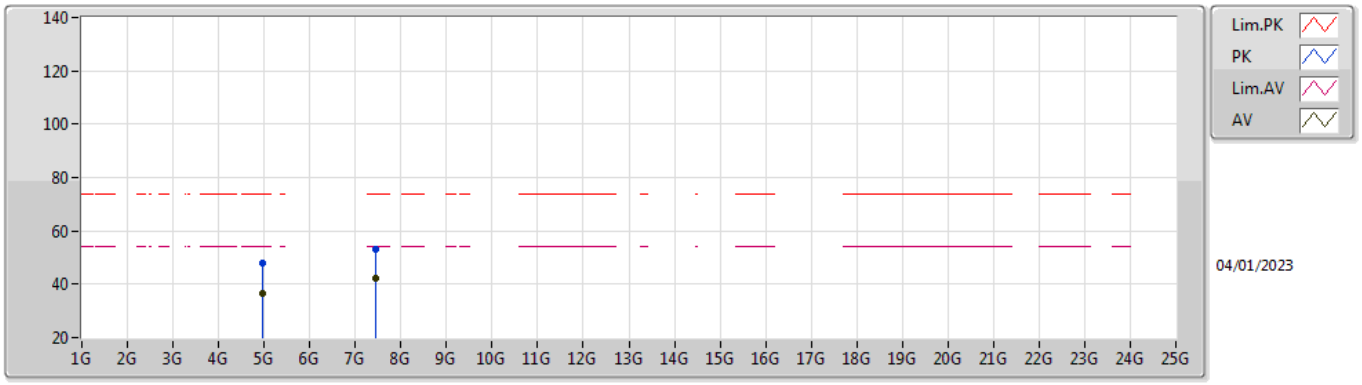


EUT X_1TX
Setting 12
01-P-K-5

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	4.96158G	47.34	74.00	-26.66	41.32	3	Vertical	226	2.68	-	33.02	5.86	32.86
AV	4.96116G	36.43	54.00	-17.57	30.41	3	Vertical	226	2.68	-	33.02	5.86	32.86
PK	7.43976G	52.43	74.00	-21.57	40.96	3	Vertical	325	1.16	-	37.50	7.22	33.25
AV	7.43826G	41.91	54.00	-12.09	30.44	3	Vertical	325	1.16	-	37.50	7.22	33.25

BT-LE(1Mbps)

2480MHz_TX

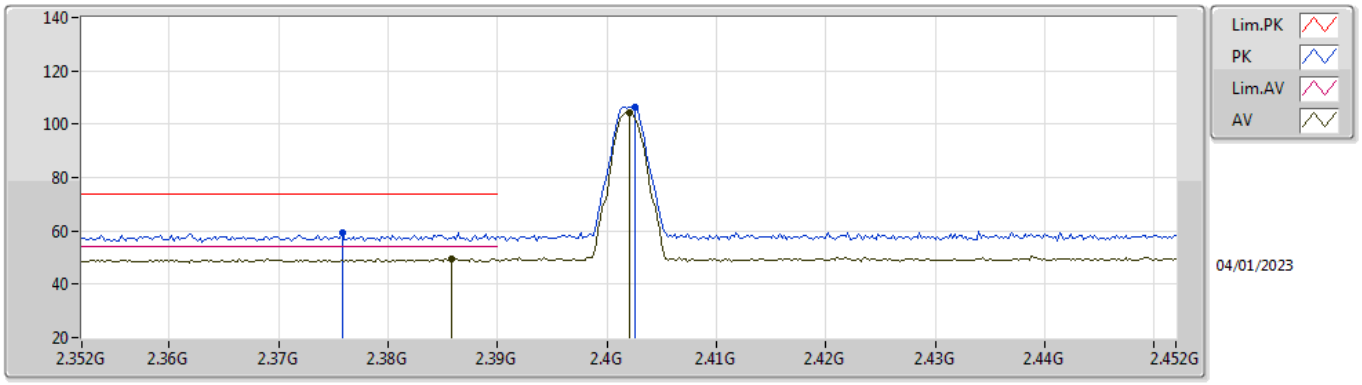


EUT X_1TX
Setting 12
01-P-K-5

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	4.96332G	47.97	74.00	-26.03	41.94	3	Horizontal	199	1.88	-	33.03	5.86	32.86
AV	4.95556G	36.62	54.00	-17.38	30.61	3	Horizontal	199	1.88	-	33.01	5.86	32.86
PK	7.43696G	53.20	74.00	-20.80	41.73	3	Horizontal	333	1.14	-	37.50	7.22	33.25
AV	7.43564G	42.25	54.00	-11.75	30.78	3	Horizontal	333	1.14	-	37.50	7.22	33.25

BT-LE(2Mbps)

2402MHz_TX

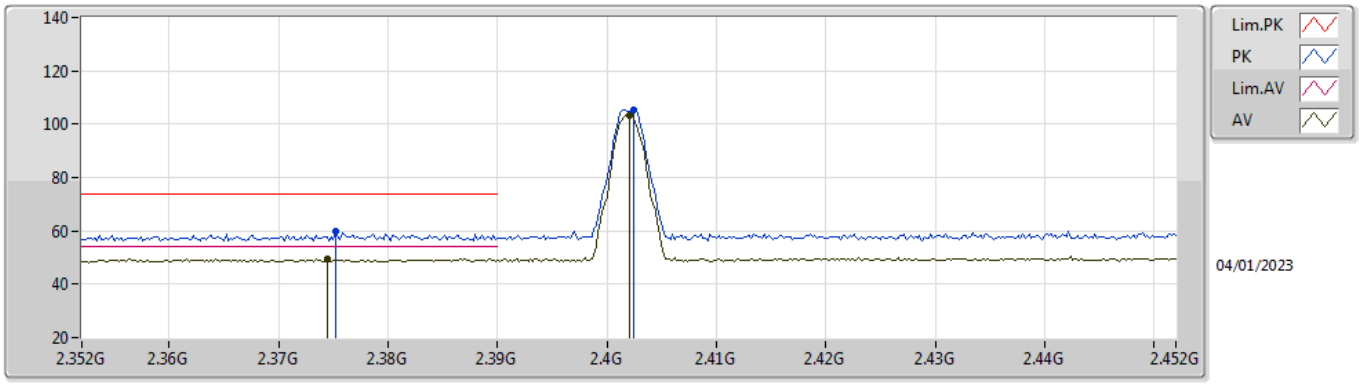


EUT X_1TX
Setting 12
01-P-K-5

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	2.3758G	59.35	74.00	-14.65	28.02	3	Vertical	56	1.77	-	27.75	3.58	-
AV	2.3858G	49.47	54.00	-4.53	18.11	3	Vertical	56	1.77	-	27.77	3.59	-
PK	2.4026G	106.50	Inf	-Inf	75.09	3	Vertical	56	1.77	-	27.81	3.60	-
AV	2.402G	104.36	Inf	-Inf	72.96	3	Vertical	56	1.77	-	27.80	3.60	-

BT-LE(2Mbps)

2402MHz_TX

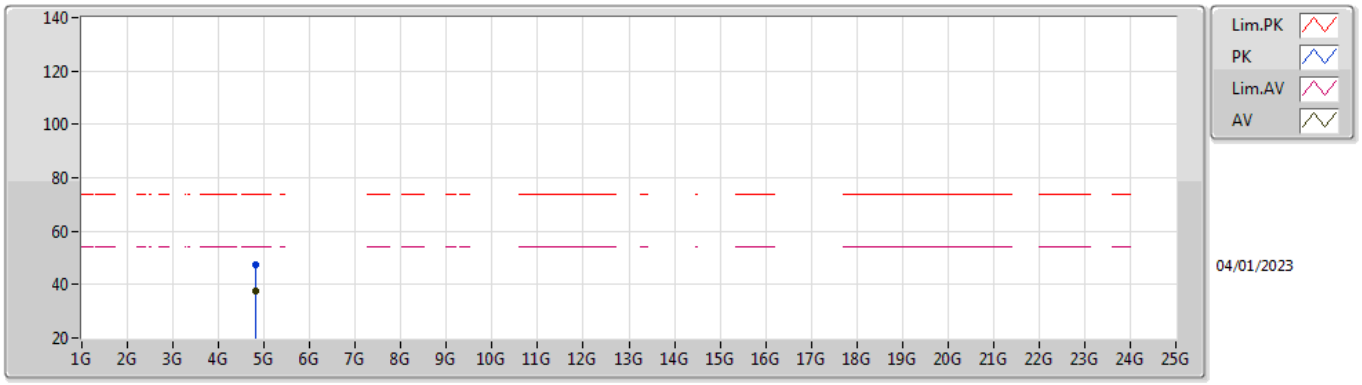


EUT X_1TX
Setting 12
01-P-K-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	2.3752G	59.99	74.00	-14.01	28.66	3	Horizontal	69	1.60	-	27.75	3.58	-
AV	2.3744G	49.60	54.00	-4.40	18.28	3	Horizontal	69	1.60	-	27.75	3.57	-
PK	2.4024G	105.24	Inf	-Inf	73.84	3	Horizontal	69	1.60	-	27.80	3.60	-
AV	2.402G	103.11	Inf	-Inf	71.71	3	Horizontal	69	1.60	-	27.80	3.60	-

BT-LE(2Mbps)

2402MHz_TX

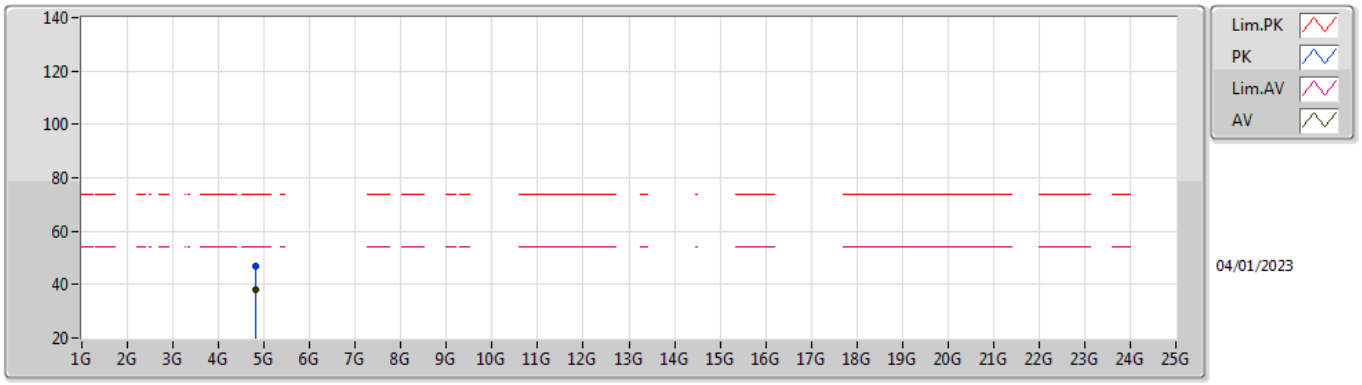


EUT X_1TX
Setting 12
01-P-K-5

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	4.80232G	47.48	74.00	-26.52	41.96	3	Vertical	140	1.56	-	32.71	5.70	32.89
AV	4.80834G	37.56	54.00	-16.44	31.99	3	Vertical	140	1.56	-	32.75	5.71	32.89

BT-LE(2Mbps)

2402MHz_TX

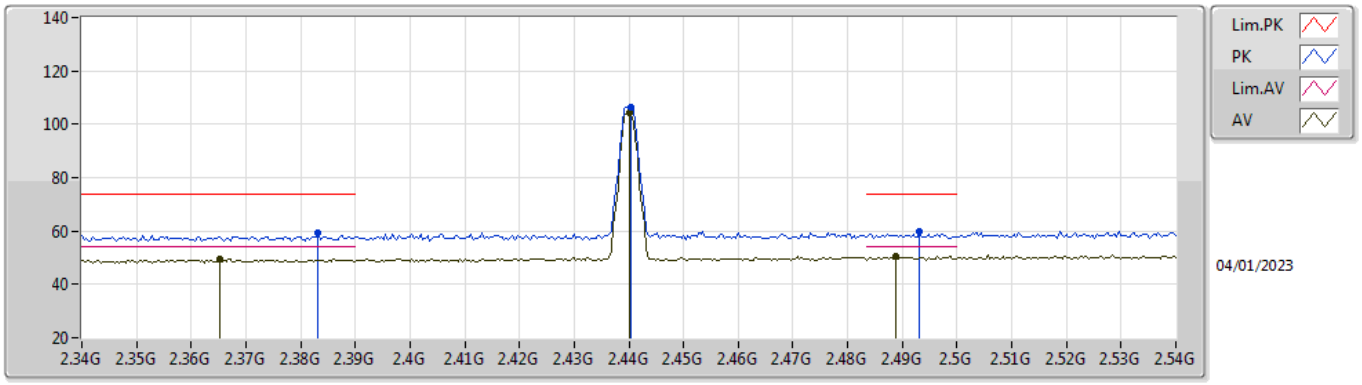


EUT X_1TX
Setting 12
01-P-K-5

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	4.80184G	46.84	74.00	-27.16	41.32	3	Horizontal	270	1.91	-	32.71	5.70	32.89
AV	4.8065G	38.06	54.00	-15.94	32.50	3	Horizontal	270	1.91	-	32.74	5.71	32.89

BT-LE(2Mbps)

2440MHz_TX

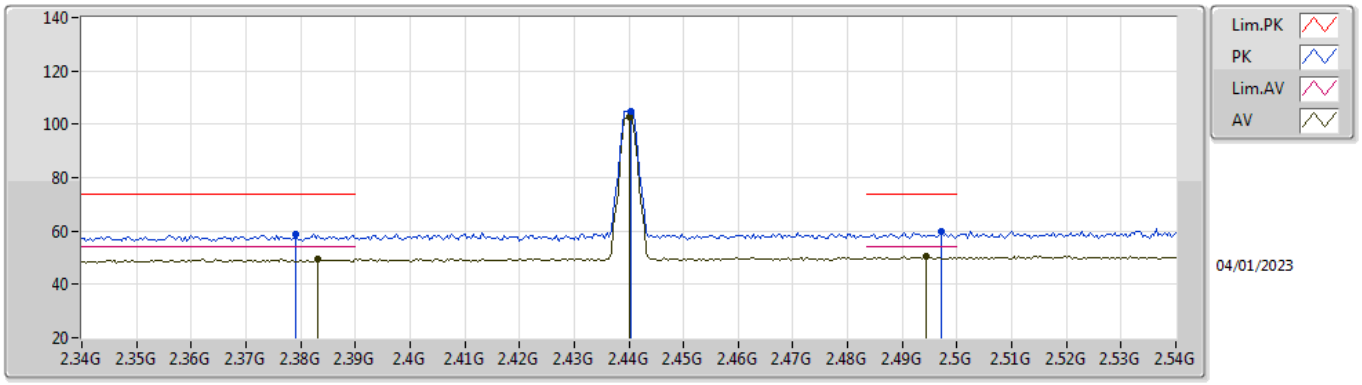


EUT X_1TX
Setting 12
01-P-K-5

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	2.3832G	59.41	74.00	-14.59	28.06	3	Vertical	47	1.80	-	27.77	3.58	-
AV	2.3652G	49.52	54.00	-4.48	18.22	3	Vertical	47	1.80	-	27.73	3.57	-
PK	2.4404G	106.37	Inf	-Inf	74.87	3	Vertical	47	1.80	-	27.88	3.62	-
AV	2.44G	104.25	Inf	-Inf	72.75	3	Vertical	47	1.80	-	27.88	3.62	-
PK	2.4932G	59.87	74.00	-14.13	28.06	3	Vertical	47	1.80	-	28.16	3.65	-
AV	2.4888G	50.54	54.00	-3.46	18.77	3	Vertical	47	1.80	-	28.13	3.64	-

BT-LE(2Mbps)

2440MHz_TX

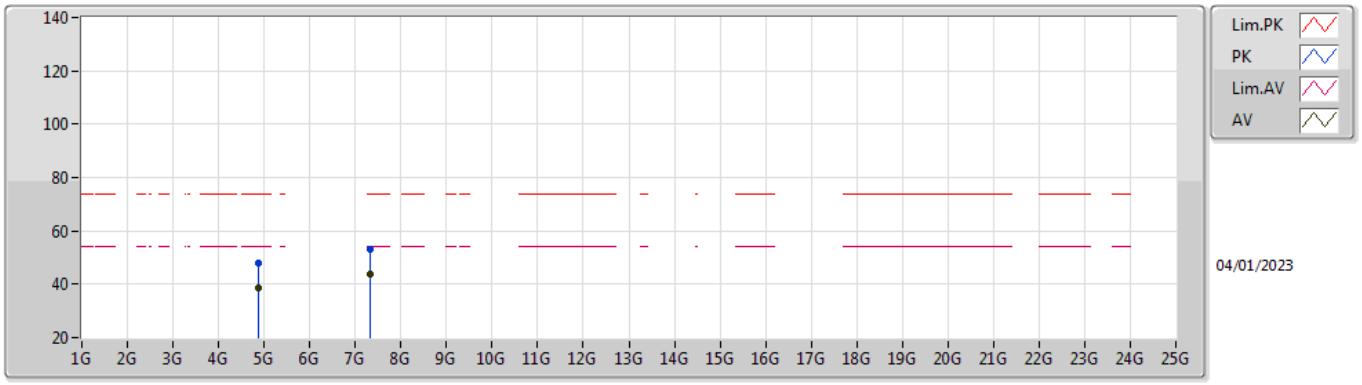


EUT X_1TX
Setting 12
01-P-K-5

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	2.3792G	58.92	74.00	-15.08	27.58	3	Horizontal	69	1.74	-	27.76	3.58	-
AV	2.3832G	49.45	54.00	-4.55	18.10	3	Horizontal	69	1.74	-	27.77	3.58	-
PK	2.4404G	105.08	Inf	-Inf	73.58	3	Horizontal	69	1.74	-	27.88	3.62	-
AV	2.44G	103.01	Inf	-Inf	71.51	3	Horizontal	69	1.74	-	27.88	3.62	-
PK	2.4972G	59.66	74.00	-14.34	27.83	3	Horizontal	69	1.74	-	28.18	3.65	-
AV	2.4944G	50.61	54.00	-3.39	18.79	3	Horizontal	69	1.74	-	28.17	3.65	-

BT-LE(2Mbps)

2440MHz_TX

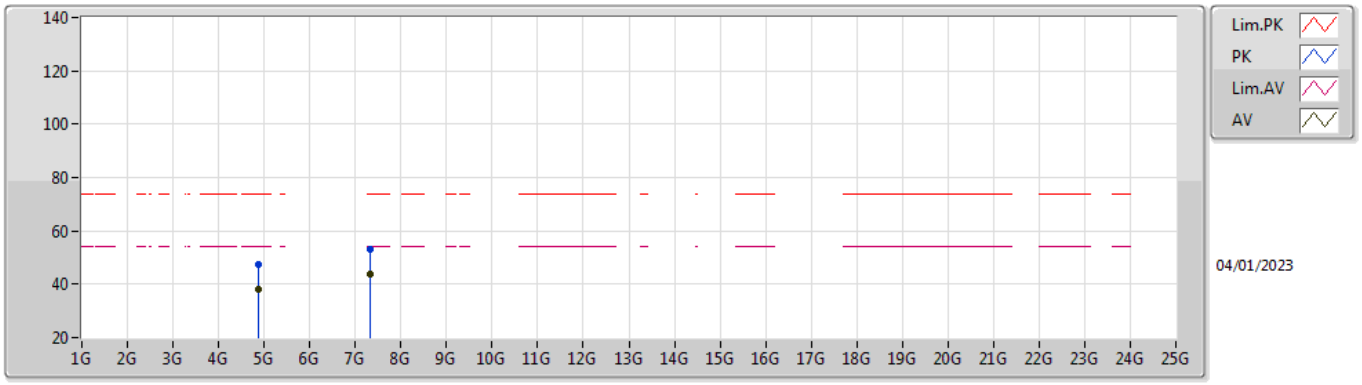


EUT X_1TX
Setting 12
01-P-K-5

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	4.88152G	47.87	74.00	-26.13	41.96	3	Vertical	88	1.15	-	33.00	5.78	32.87
AV	4.8816G	38.61	54.00	-15.39	32.70	3	Vertical	88	1.15	-	33.00	5.78	32.87
PK	7.31616G	53.07	74.00	-20.93	41.49	3	Vertical	113	1.63	-	37.60	7.16	33.18
AV	7.32092G	44.01	54.00	-9.99	32.44	3	Vertical	113	1.63	-	37.60	7.16	33.19

BT-LE(2Mbps)

2440MHz_TX

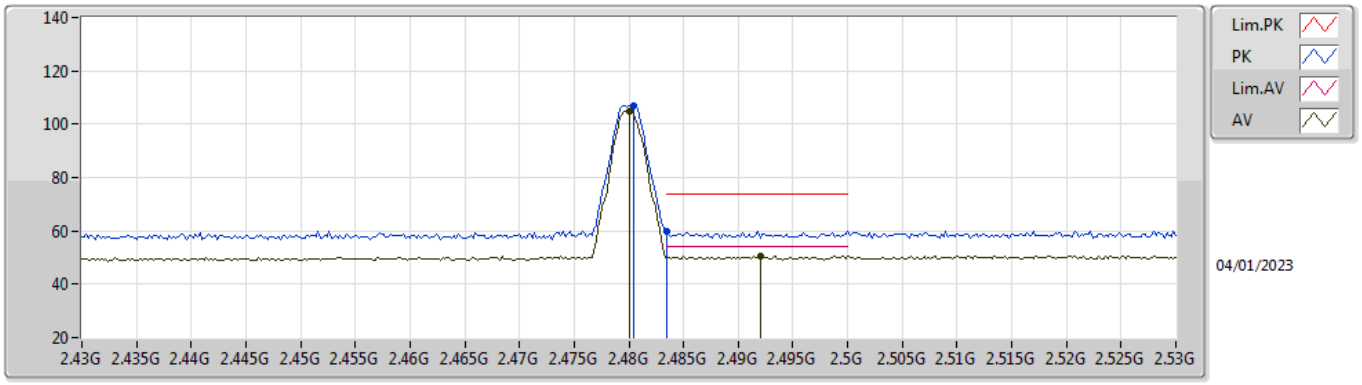


EUT X_1TX
Setting 12
01-P-K-5

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	4.88404G	47.62	74.00	-26.38	41.71	3	Horizontal	62	1.58	-	33.00	5.78	32.87
AV	4.87896G	37.97	54.00	-16.03	32.06	3	Horizontal	62	1.58	-	33.00	5.78	32.87
PK	7.32228G	52.85	74.00	-21.15	41.28	3	Horizontal	58	1.18	-	37.60	7.16	33.19
AV	7.3175G	43.84	54.00	-10.16	32.27	3	Horizontal	58	1.18	-	37.60	7.16	33.19

BT-LE(2Mbps)

2480MHz_TX

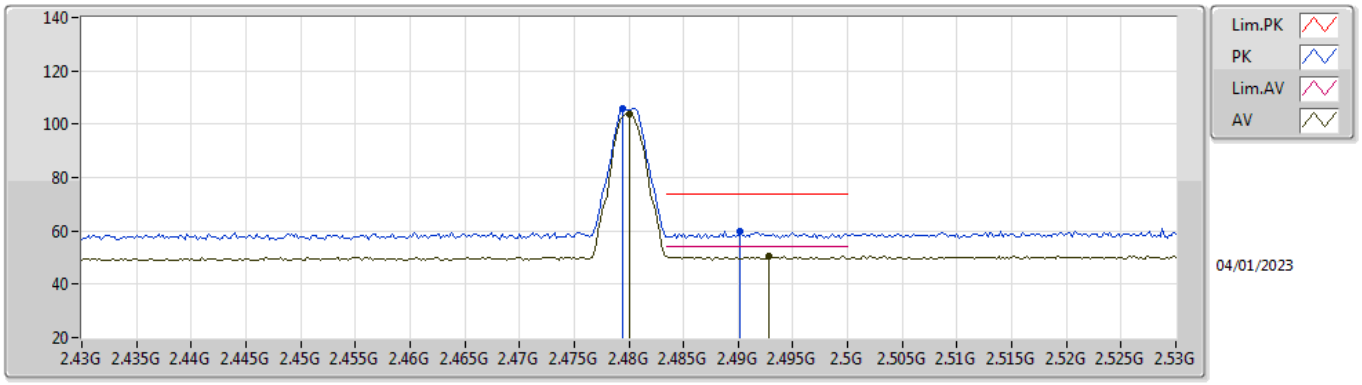


EUT X_1TX
Setting 12
01-P-K-5

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	2.4804G	107.02	Inf	-Inf	75.30	3	Vertical	47	1.80	-	28.08	3.64	-
AV	2.48G	104.93	Inf	-Inf	73.21	3	Vertical	47	1.80	-	28.08	3.64	-
PK	2.4835G	59.70	74.00	-14.30	27.96	3	Vertical	47	1.80	-	28.10	3.64	-
AV	2.492G	50.58	54.00	-3.42	18.78	3	Vertical	47	1.80	-	28.15	3.65	-

BT-LE(2Mbps)

2480MHz_TX

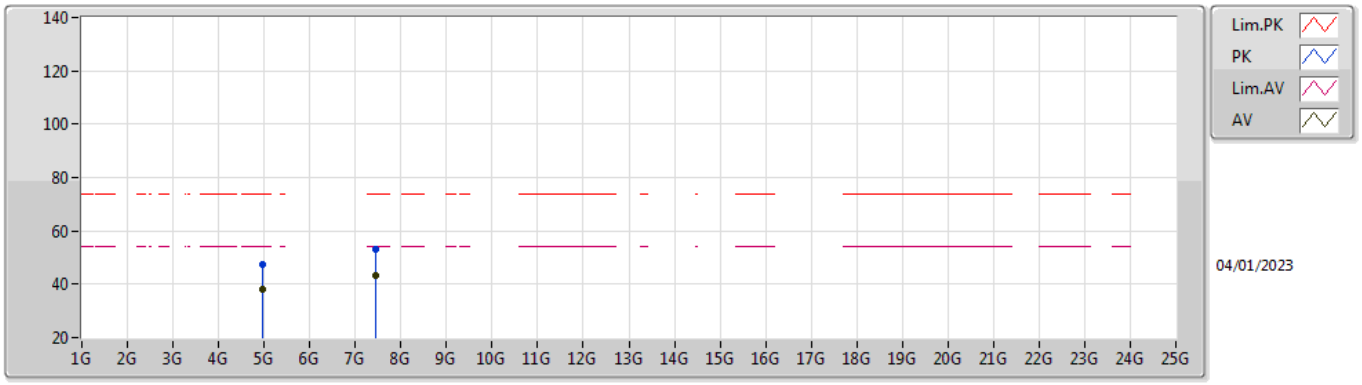


EUT X_1TX
Setting 12
01-P-K-5

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	2.4794G	105.71	Inf	-Inf	73.99	3	Horizontal	67	2.48	-	28.08	3.64	-
AV	2.48G	103.64	Inf	-Inf	71.92	3	Horizontal	67	2.48	-	28.08	3.64	-
PK	2.4902G	59.68	74.00	-14.32	27.89	3	Horizontal	67	2.48	-	28.14	3.65	-
AV	2.4928G	50.59	54.00	-3.41	18.78	3	Horizontal	67	2.48	-	28.16	3.65	-

BT-LE(2Mbps)

2480MHz_TX

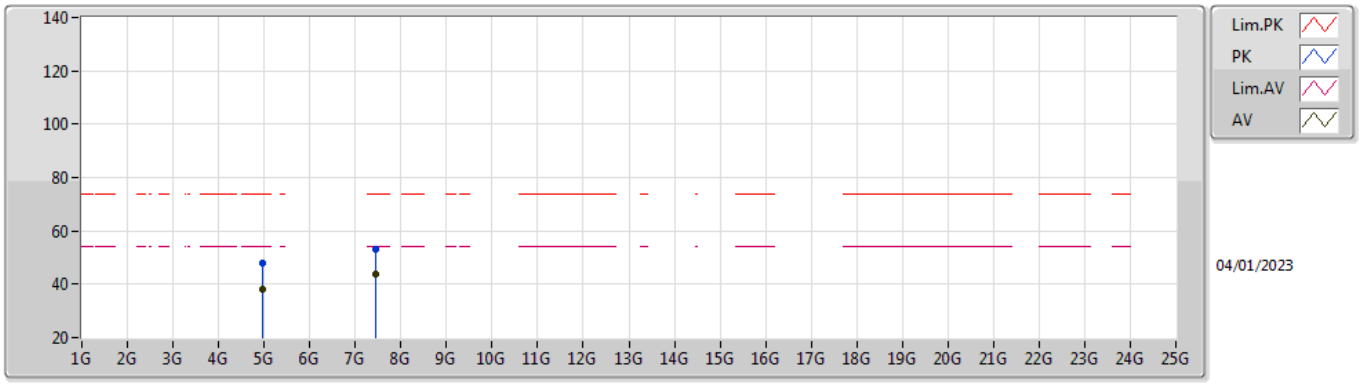


EUT X_1TX
Setting 12
01-P-K-5

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	4.95866G	47.64	74.00	-26.36	41.62	3	Vertical	172	2.18	-	33.02	5.86	32.86
AV	4.9557G	38.09	54.00	-15.91	32.08	3	Vertical	172	2.18	-	33.01	5.86	32.86
PK	7.43824G	53.21	74.00	-20.79	41.74	3	Vertical	257	2.38	-	37.50	7.22	33.25
AV	7.43666G	43.46	54.00	-10.54	31.99	3	Vertical	257	2.38	-	37.50	7.22	33.25

BT-LE(2Mbps)

2480MHz_TX



EUT X_1TX
Setting 12
01-P-K-5

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	4.95534G	47.80	74.00	-26.20	41.79	3	Horizontal	150	1.57	-	33.01	5.86	32.86
AV	4.9569G	38.10	54.00	-15.90	32.09	3	Horizontal	150	1.57	-	33.01	5.86	32.86
PK	7.43618G	52.97	74.00	-21.03	41.50	3	Horizontal	263	1.96	-	37.50	7.22	33.25
AV	7.43562G	43.66	54.00	-10.34	32.19	3	Horizontal	263	1.96	-	37.50	7.22	33.25